

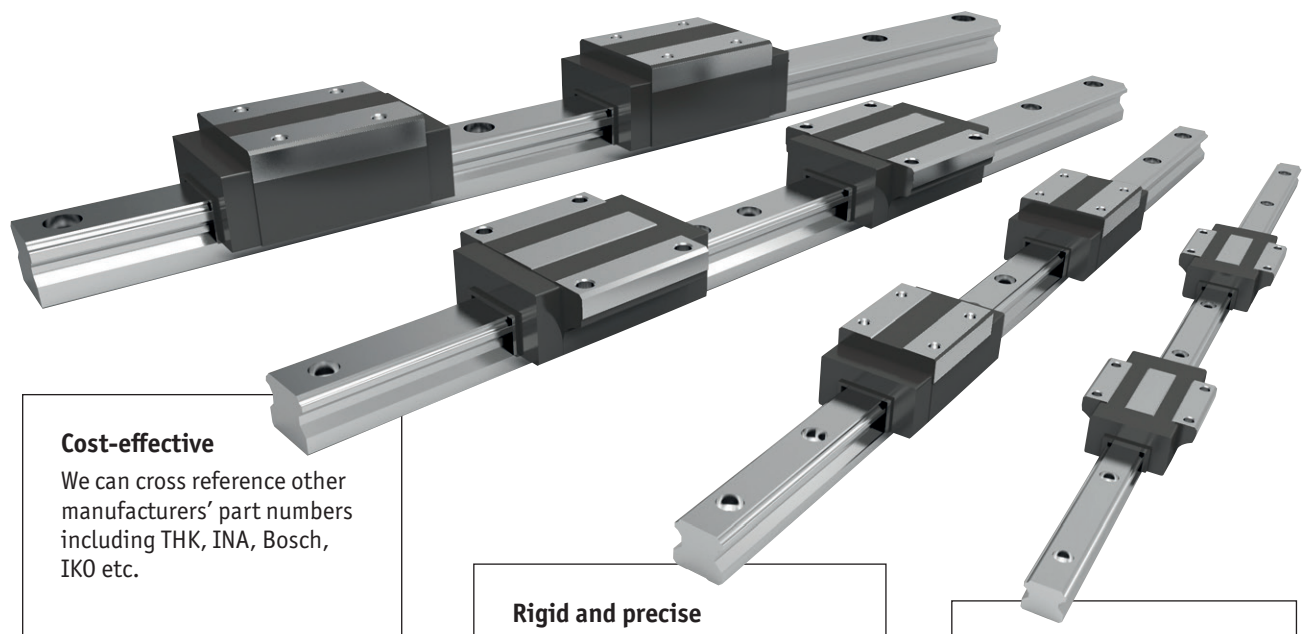


### L1016 Linear guideways

Linear guideways are widely used throughout industry for heavy-duty and precise applications.

### Precision high load rails

The use of steel balls and the design of the carriages and guideways mean that the rails can accept very heavy loads and significant moment loads. Our rails have circular as opposed to friction coefficient, lower driving resistance, lower wear and lower energy consumption.



#### Cost-effective

We can cross reference other manufacturers' part numbers including THK, INA, Bosch, IKO etc.

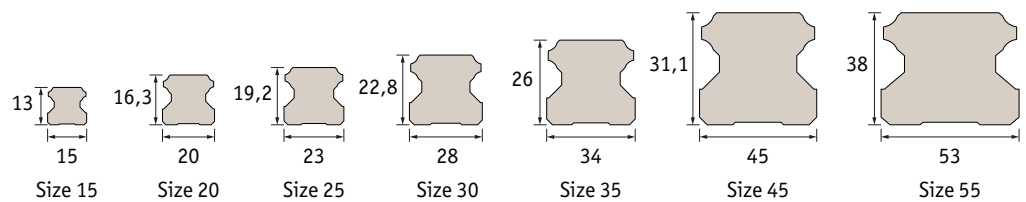
#### Rigid and precise

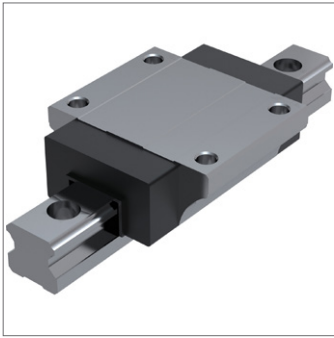
- High load rating.
- High moment load capacity.

#### Stocked

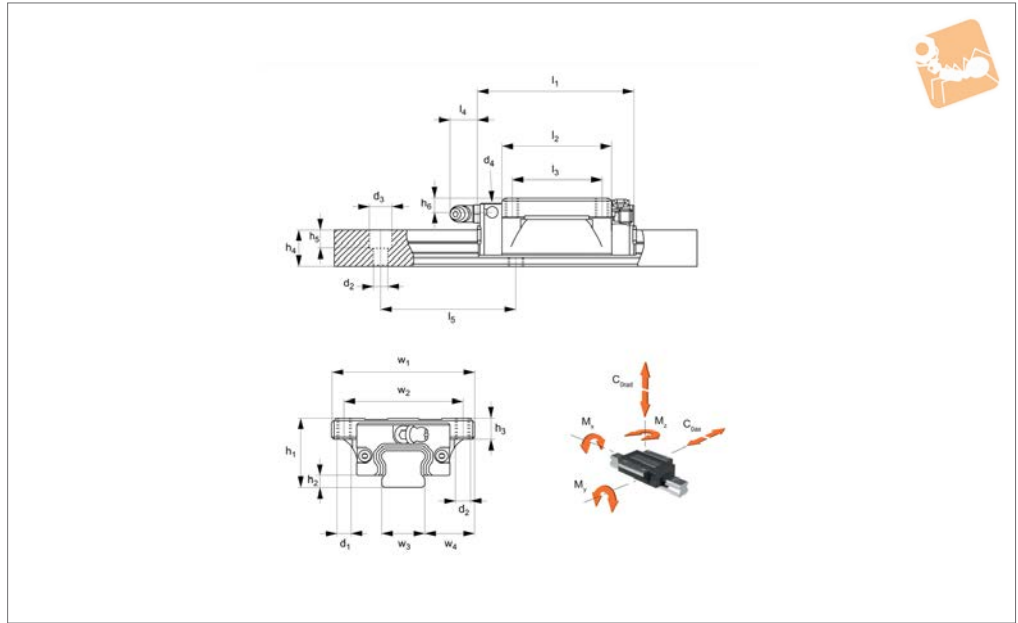
7 rail profiles ready for same day despatch. Lengths up to 4 metres.

### Rail sizes





## L1016.F



### Material

Hardened and ground steel.

### Technical Notes

Select the size and number of carriages to suit the required load then select the

required rail length, (see part nos.

L1016.15 through to L1016.55).

Standard preload carriages are  $K_0$  (no preload) or  $K_1$  (0,02 x dynamic load capacity). Other preloads available on request.

### Tips

Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$h_3$	$h_4$	$d_1$	$h_5$	$d_2$	$h_6$	$w_2$	$w_3$	$w_4$	$l_4$	Weight kg
L1016.F15	15	58.6	24	40.2	47	30	3.4	7.5	13.0	M5	5.5	4.4	5.5	38	15	16.0	5.7	0.21
L1016.F15-L	15	66.1	24	47.7	47	30	3.4	7.5	13.0	M5	5.5	4.4	5.5	38	15	16.0	5.7	0.23
L1016.F20	20	70.1	30	48.5	63	40	4.5	9.0	16.3	M6	8.5	5.4	7.1	53	20	21.5	12.3	0.40
L1016.F20-L	20	82.9	30	61.3	63	40	4.5	9.0	16.3	M6	8.5	5.4	7.1	53	20	21.5	12.3	0.46
L1016.F25	25	79.2	36	57.5	70	45	5.8	10.1	19.2	M8	9.0	6.8	10.2	57	23	23.5	12.2	0.57
L1016.F25-L	25	93.9	36	72.2	70	45	5.8	10.1	19.2	M8	9.0	6.8	10.2	57	23	23.5	12.2	0.72
L1016.F25-XL	25	108.6	36	86.9	70	45	5.8	10.1	19.2	M8	9.0	6.8	10.2	57	23	23.5	12.2	0.89
L1016.F30	30	94.8	42	67.8	90	52	7.0	12.0	22.8	M10	12.0	8.6	10.0	72	28	31.0	11.7	1.10
L1016.F30-L	30	105.0	42	78.0	90	52	7.0	12.0	22.8	M10	12.0	8.6	10.0	72	28	31.0	11.7	1.34
L1016.F30-XL	30	130.5	42	103.5	90	52	7.0	12.0	22.8	M10	12.0	8.6	10.0	72	28	31.0	11.7	1.66
L1016.F35	35	111.5	48	80.5	100	62	7.5	14.0	26.0	M10	12.0	8.6	11.5	82	34	33.0	11.5	1.50
L1016.F35-L	35	123.5	48	92.5	100	62	7.5	14.0	26.0	M10	12.0	8.6	11.5	82	34	33.0	11.5	1.90
L1016.F35-XL	35	153.5	48	122.5	100	62	7.5	14.0	26.0	M10	12.0	8.6	11.5	82	34	33.0	11.5	2.54
L1016.F45	45	129.0	60	94.0	120	80	8.9	16.0	31.1	M12	17.0	10.6	14.4	100	45	37.5	10.8	2.27
L1016.F45-L	45	145.0	60	110.0	120	80	8.9	16.0	31.1	M12	17.0	10.6	14.4	100	45	37.5	10.8	2.68
L1016.F45-XL	45	174.0	60	139.0	120	80	8.9	16.0	31.1	M12	17.0	10.6	14.4	100	45	37.5	10.8	3.42
L1016.F55	55	155.0	70	116.0	140	95	12.7	19.0	38.0	M14	20.0	12.6	14.0	116	53	43.5	10.8	3.44
L1016.F55-L	55	193.0	70	154.0	140	95	12.7	19.0	38.0	M14	20.0	12.6	14.0	116	53	43.5	10.8	4.63
L1016.F55-XL	55	210.0	70	171.0	140	95	12.7	19.0	38.0	M14	20.0	12.6	14.0	116	53	43.5	10.8	5.16

Order No.	$l_5$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load $C_{rad \& ax}$ kN	Static load $C_{Orad \& ax}$ kN
L1016.F15	60	7.5	M3 x 0,5	137	120	120	11.67	19.90
L1016.F15-L	60	7.5	M3 x 0,5	166	171	171	14.12	24.05
L1016.F20	60	9.5	M6 x 1,0	289	224	224	17.98	30.96
L1016.F20-L	60	9.5	M6 x 1,0	376	366	366	23.30	40.11
L1016.F25	60	11.0	M6 x 1,0	447	358	358	25.25	41.73
L1016.F25-L	60	11.0	M6 x 1,0	576	577	577	32.44	53.63
L1016.F25-XL	60	11.0	M6 x 1,0	691	833	833	36.58	64.30
L1016.F30	80	14.0	M6 x 1,0	719	560	560	37.33	55.50
L1016.F30-L	80	14.0	M6 x 1,0	931	836	836	48.35	71.88
L1016.F30-XL	80	14.0	M6 x 1,0	1142	1361	1361	53.83	88.18



# Flanged Carriages - Standard

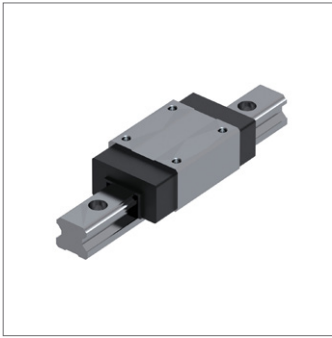
with retained ball cage



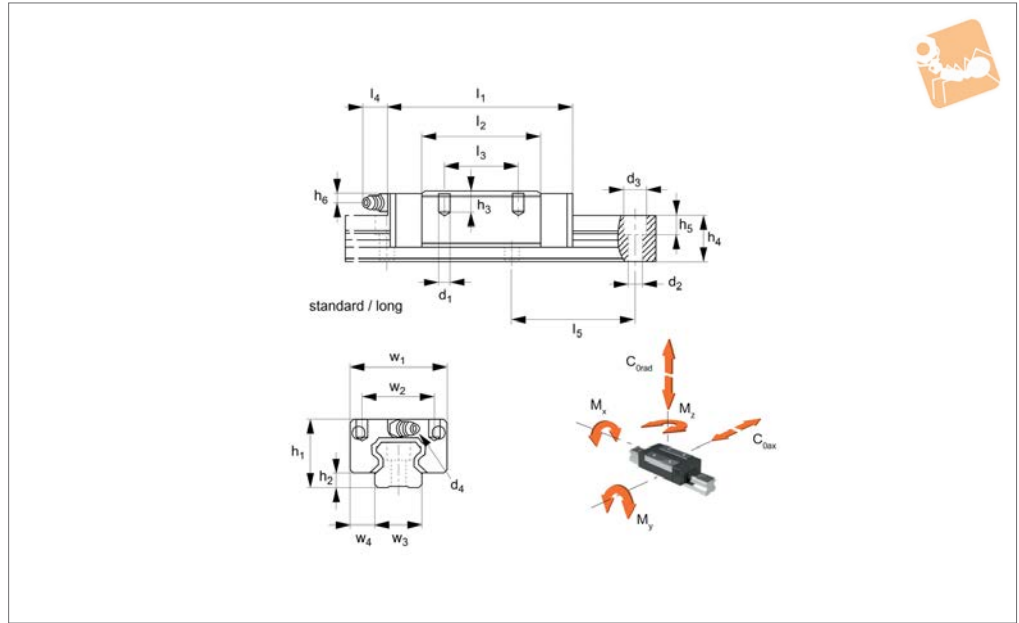
Linear Guide-ways

Order No.	l <sub>5</sub>	d <sub>3</sub>	d <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	Dyn. load C <sub>rad &amp; ax</sub> kN	Static load C <sub>0rad &amp; ax</sub> kN
<b>L1016.F35</b>	80	14.0	M6 x 1,0	1307	991	991	53.31	82.66
<b>L1016.F35-L</b>	80	14.0	M6 x 1,0	1633	1424	1424	66.61	103.29
<b>L1016.F35-XL</b>	80	14.0	M6 x 1,0	2020	2330	2330	73.29	127.68
<b>L1016.F45</b>	105	20.0	M8 x 1,25	2353	1559	1559	73.14	111.30
<b>L1016.F45-L</b>	105	20.0	M8 x 1,25	2798	2170	2170	86.99	132.39
<b>L1016.F45-XL</b>	105	20.0	M8 x 1,25	3527	3455	3455	100.52	166.87
<b>L1016.F55</b>	120	23.0	M8 x 1,25	3385	2361	2361	88.26	136.62
<b>L1016.F55-L</b>	120	23.0	M8 x 1,25	4538	4202	4202	119.10	183.14
<b>L1016.F55-XL</b>	120	23.0	M8 x 1,25	6430	6617	6617	161.43	259.71

LINEAR GUIDEWAYS



## L1016.U



### Material

Hardened and ground steel.

### Technical Notes

Select the size and number of carriages to suit the required load then select the

required rail length, (see part nos.

L1016.15 through to L1016.55).

Standard preload carriages are  $K_0$  (no preload) or  $K_1$  ( $0,02 \times$  dynamic load capacity). Other preloads available on request.

### Tips

Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$h_3$	$h_4$	$d_1$	$h_5$	$d_2$	$h_6$	$w_2$	$w_3$	$w_4$	$l_4$	Weight kg
L1016.U15	15	58.6	28	40.2	34	26	3.3	6.0	13.0	M 4	6.0	4.5	9.5	26	15	9.5	5.0	0.19
L1016.U20	20	69.3	30	48.5	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.31
L1016.U20-L	20	82.1	30	61.3	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.36
L1016.U25	25	79.2	40	57.5	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.45
L1016.U25-L	25	93.9	40	72.2	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.66
L1016.U25-XL	25	108.6	40	86.9	48	50	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.80
L1016.U30	30	94.8	45	67.8	60	40	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	0.91
L1016.U30-L	30	105.0	45	78.0	60	40	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	1.04
L1016.U30-XL	30	130.5	45	103.5	60	60	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	1.36
L1016.U35	35	111.5	55	80.5	70	50	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	1.50
L1016.U35-L	35	123.5	55	92.5	70	50	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	1.80
L1016.U35-XL	35	153.5	55	122.5	70	72	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	2.34
L1016.U45	45	129.0	70	94.0	86	60	8.9	18.0	31.1	M10	17.0	14.0	24.5	60	45	20.5	16.0	2.28
L1016.U45-L	45	145.0	70	110.0	86	60	8.9	18.0	31.1	M10	17.0	14.0	24.5	60	45	20.5	16.0	2.67
L1016.U45-XL	45	174.0	70	139.0	86	80	8.9	18.0	31.1	M10	17.0	14.0	24.5	60	45	20.5	16.0	3.35
L1016.U55	55	155.0	80	116.0	100	75	12.7	22.0	38.0	M12	20.0	16.0	24.0	75	53	23.5	16.0	3.42
L1016.U55-L	55	193.0	80	154.0	100	75	12.7	22.0	38.0	M12	20.0	16.0	24.0	75	53	23.5	16.0	4.57
L1016.U55-XL	55	210.0	80	171.0	100	95	12.7	22.0	38.0	M12	20.0	16.0	24.0	75	53	23.5	16.0	5.08

Order No.	$l_5$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load $C_{rad \& ax}$ kN	Static load $C_{Orad \& ax}$ kN
L1016.U15	60	7.5	M3 x 0,5	137	120	120	11.67	19.90
L1016.U20	60	9.5	M6 x 1,0	289	224	224	17.98	30.96
L1016.U20-L	60	9.5	M6 x 1,0	376	366	366	23.30	40.11
L1016.U25	60	11.0	M6 x 1,0	447	358	358	25.25	41.73
L1016.U25-L	60	11.0	M6 x 1,0	576	577	577	32.44	53.63
L1016.U25-XL	60	11.0	M6 x 1,0	691	833	833	36.58	64.30
L1016.U30	80	14.0	M6 x 1,0	719	560	560	37.33	55.50
L1016.U30-L	80	14.0	M6 x 1,0	931	836	836	48.35	71.88
L1016.U30-XL	80	14.0	M6 x 1,0	1142	1361	1361	53.83	88.18
L1016.U35	80	14.0	M6 x 1,0	1307	991	991	53.31	82.66
L1016.U35-L	80	14.0	M6 x 1,0	1633	1424	1424	66.61	103.29



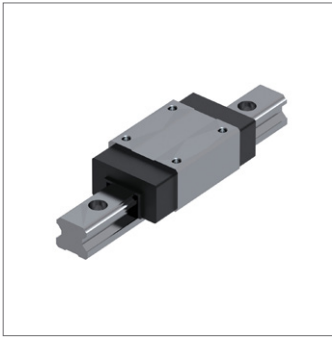
## Unflanged Carriages - Standard with retained ball cage

Linear Guide-  
ways

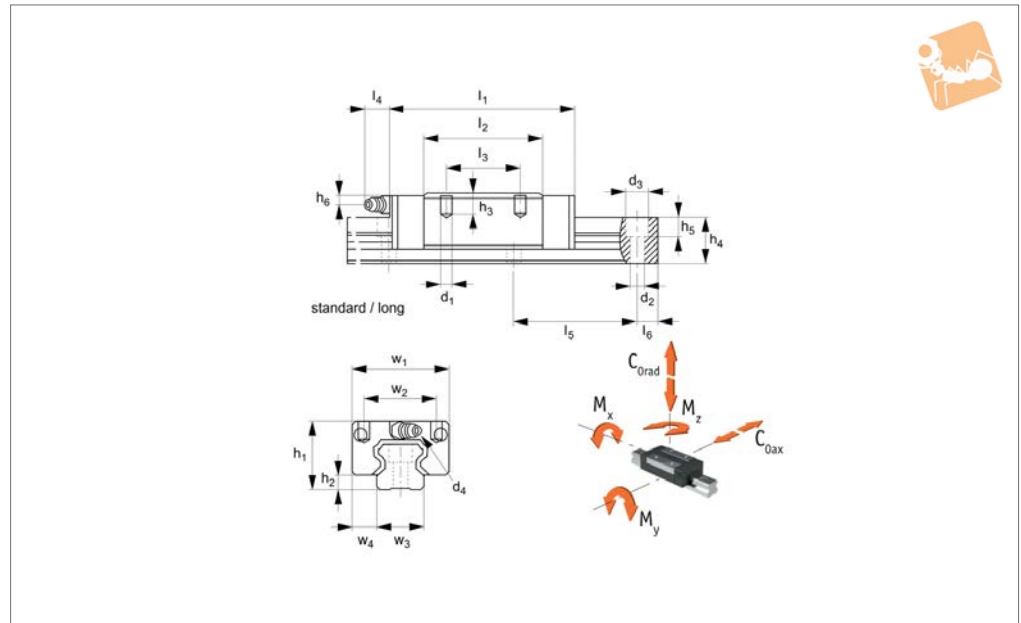
Order No.	$l_5$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load $C_{rad \& ax}$ kN	Static load $C_{0rad \& ax}$ kN
L1016.U35-XL	80	14.0	M6 x 1,0	2020	2330	2330	73.29	127.68
L1016.U45	105	20.0	M8 x 1,25	2353	1559	1559	73.14	111.30
L1016.U45-L	105	20.0	M8 x 1,25	2798	2170	2170	86.99	132.39
L1016.U45-XL	105	20.0	M8 x 1,25	3527	3455	3455	100.52	166.87
L1016.U55	120	23.0	M8 x 1,25	3385	2361	2361	88.26	136.62
L1016.U55-L	120	23.0	M8 x 1,25	4538	4202	4202	119.10	183.14
L1016.U55-XL	120	23.0	M8 x 1,25	6430	6617	6617	161.43	259.71



LINEAR GUIDEWAYS



## L1016.UL



**Material**  
Hardened and ground steel.

**Technical Notes**  
Select the size and number of carriages to

suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55). Standard preload carriages are  $K_0$  (no

preload) or  $K_1$  (0,02 x dynamic load capacity). Other preloads available on request.

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$h_3$	$h_4$	$d_1$	$h_5$	$d_2$	$h_6$	$w_2$	$w_3$	$w_4$	$l_4$	Weight kg
L1016.UL15-S	15	40.6	24	22.2	34	-	3.3	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.10
L1016.UL15	15	58.6	24	40.2	34	26	3.3	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.17
L1016.UL15-L	15	66.1	24	47.7	34	26	3.0	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.18
L1016.UL20-S	20	48.3	28	27.5	42	-	4.5	5.5	16.3	M 5	8.5	6.0	5.1	32	20	11.0	15.6	0.17
L1016.UL20	20	69.3	28	48.5	42	32	4.5	5.5	16.3	M 5	8.5	6.0	7.1	32	20	11.0	15.6	0.26
L1016.UL25-S	25	54.0	33	32.3	48	-	5.8	6.8	19.2	M 6	9.0	7.0	7.2	35	23	12.5	15.6	0.21
L1016.UL25	25	79.2	33	57.5	48	35	5.8	6.8	19.2	M 6	9.0	7.0	7.2	35	23	12.5	15.6	0.38
L1016.UL30-S	30	64.2	42	37.2	60	-	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.50
L1016.UL30	30	94.8	42	67.8	60	40	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.80
L1016.UL30-L	30	105.0	42	78.0	60	40	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.94
L1016.UL30-XL	30	130.5	42	103.5	60	60	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	1.16
L1016.UL35-S	35	75.5	48	44.5	70	-	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	0.80
L1016.UL35	35	111.5	48	80.5	70	50	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.20
L1016.UL35-L	35	123.5	48	92.5	70	50	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.40
L1016.UL35-XL	35	153.5	48	122.5	70	72	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.84
L1016.UL45	45	129.0	60	94.0	86	60	8.9	15.5	31.1	M10	17.0	14.0	14.4	60	45	20.5	16.0	1.64
L1016.UL45-L	45	145.0	60	110.0	86	60	8.9	15.5	31.1	M10	17.0	14.0	14.4	60	45	20.5	16.0	1.93
L1016.UL45-XL	45	174.0	60	139.0	86	80	8.9	15.5	31.1	M10	17.0	14.0	14.4	60	45	20.5	16.0	2.42
L1016.UL55	55	155.0	70	116.0	100	75	12.7	18.0	38.0	M12	20.0	16.0	14.0	75	53	23.5	16.0	2.67
L1016.UL55-L	55	193.0	70	154.0	100	75	12.7	18.0	38.0	M12	20.0	16.0	14.0	75	53	23.5	16.0	3.57
L1016.UL55-XL	55	210.0	70	171.0	100	95	12.7	18.0	38.0	M12	20.0	16.0	14.0	75	53	23.5	16.0	3.97

Order No.	$l_5$	$l_6$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load $C_{rad \& ax}$ kN	Static load $C_{0rad \& ax}$ kN
L1016.UL15-S	60	20.0	7.5	M3x0,5	69	32	32	5.81	9.90
L1016.UL15	60	20.0	7.5	M3x0,5	137	120	120	11.67	19.90
L1016.UL15-L	60	20.0	7.5	M3x0,5	166	171	171	14.12	24.05
L1016.UL20-S	60	20.0	9.5	M6x1,0	148	66	66	9.25	15.93
L1016.UL20	60	20.0	9.5	M6x1,0	289	224	224	17.98	30.96
L1016.UL25-S	60	20.0	11.0	M6x1,0	230	103	103	12.87	21.34
L1016.UL25	60	20.0	11.0	M6x1,0	447	358	358	25.25	41.73
L1016.UL30-S	80	20.0	14.0	M6x1,0	356	153	153	18.50	27.51
L1016.UL30	80	20.0	14.0	M6x1,0	719	560	560	37.33	55.50

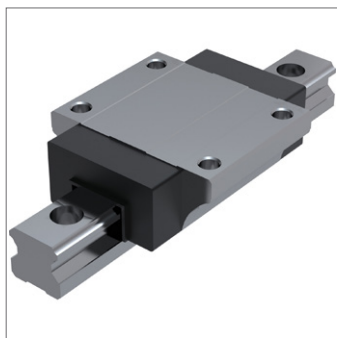


## Unflanged Carriages - Low with retained ball cage

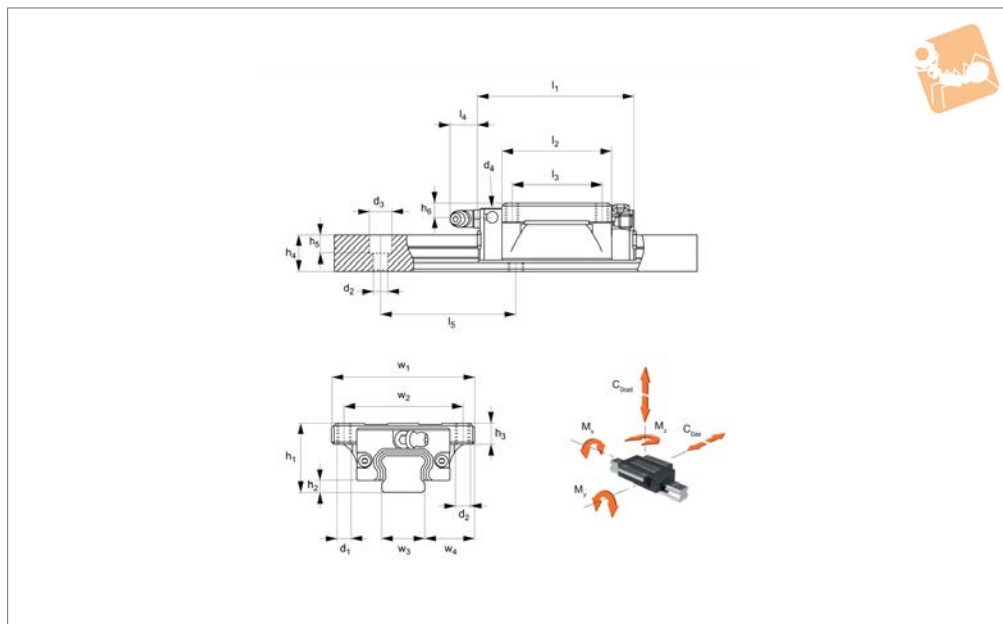
Linear Guide-  
ways

Order No.	$l_5$	$l_6$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load $C_{rad \& ax}$ kN	Static load $C_{0rad \& ax}$ kN
L1016.UL30-L	80	20.0	14.0	M6x1,0	931	836	836	48.35	71.88
L1016.UL30-XL	80	20.0	14.0	M6x1,0	1142	1361	1361	53.83	88.18
L1016.UL35-S	80	20.0	14.0	M6x1,0	655	275	275	26.72	41.43
L1016.UL35	80	20.0	14.0	M6x1,0	1307	991	991	53.31	82.66
L1016.UL35-L	80	20.0	14.0	M6x1,0	1633	1424	1424	66.61	103.29
L1016.UL35-XL	80	20.0	14.0	M6x1,0	2020	2330	2330	73.29	127.68
L1016.UL45	105	22.5	20.0	M8x1,25	2353	1559	1559	73.14	111.30
L1016.UL45-L	105	22.5	20.0	M8x1,25	2798	2170	2170	86.99	132.39
L1016.UL45-XL	105	22.5	20.0	M8x1,25	3527	3455	3455	100.52	166.87
L1016.UL55	120	30.0	23.0	M8x1,25	3385	2361	2361	88.26	136.62
L1016.UL55-L	120	30.0	23.0	M8x1,25	4538	4202	4202	119.10	183.14
L1016.UL55-XL	120	30.0	23.0	M8x1,25	6430	6617	6617	161.43	259.71

LINEAR GUIDEWAYS



## L1016.F-NC



### Material

Hardened and ground steel.

### Technical Notes

Select the size and number of carriages to

suit the required load then select the required rail length, (see part nos.

L1016.15 through to L1016.30).

Standard preload carriages are  $K_0$  (no

preload) or  $K_1$  ( $0,02 \times$  dynamic load capacity). Other preloads available on request.

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$h_3$	$h_4$	$d_1$	$h_5$	$d_2$	$h_6$	$w_2$	$w_3$	$w_4$	$l_4$	Weight g
L1016.F15-NC	15	58.6	24	40.2	47	30	3.4	7.5	13.0	M5	5.5	4.4	5.5	38	15	16.0	5.7	210
L1016.F20-NC	20	70.1	30	48.5	63	40	4.5	9.0	16.3	M6	8.5	5.4	7.1	53	20	21.5	12.3	400
L1016.F25-NC	25	79.2	36	57.5	70	45	5.8	10.1	19.2	M8	9.0	6.8	10.2	57	23	23.5	12.2	570
L1016.F30-NC	30	94.8	42	67.8	90	52	7.0	12.0	22.8	M10	12.0	8.6	10.0	72	28	31.0	11.7	1100

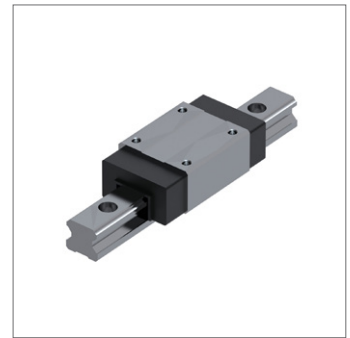
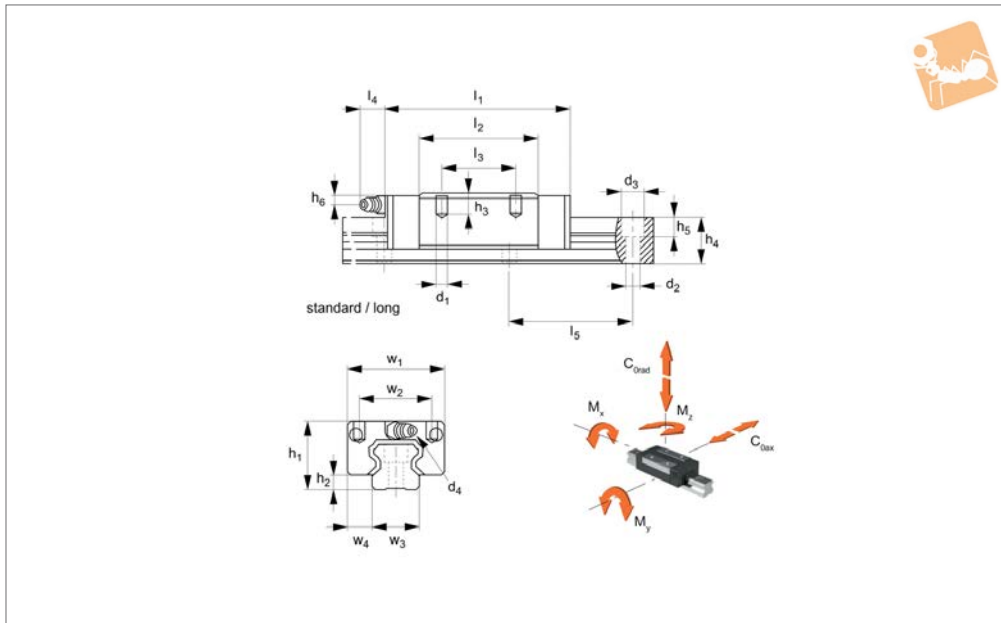
Order No.	$l_5$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load C kN	Static load $C_{0rad \& ax}$ kN
L1016.F15-NC	60	7.5	M3 x 0,5	137	120	120	11.67	19.90
L1016.F20-NC	60	9.5	M6 x 1,0	289	224	224	17.98	30.96
L1016.F25-NC	60	11.0	M6 x 1,0	447	358	358	25.25	41.73
L1016.F30-NC	80	14.0	M6 x 1,0	719	560	560	37.33	55.50





# Unflanged Carriages - Standard no ball cage

Linear Guide-  
ways



**L1016.U-NC**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel.

suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.30) Standard preload carriages are  $K_0$  (no

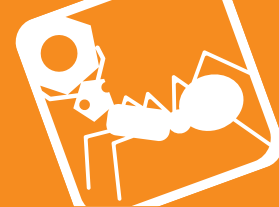
preload) or  $K_1$  (0,02 x dynamic load capacity). Other preloads available on request.

**Technical Notes**

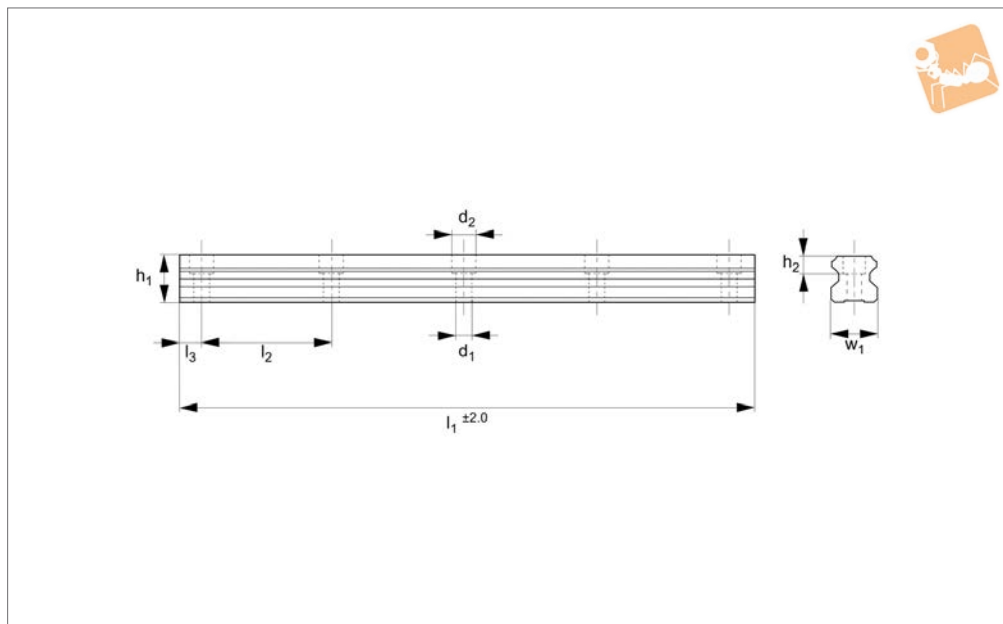
Select the size and number of carriages to

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$h_3$	$h_4$	$d_1$	$h_5$	$d_2$	$h_6$	$w_2$	$w_3$	$w_4$	$l_4$	Weight g
L1016.U15-NC	15	58.6	28	40.2	34	26	3.3	6.0	13.0	M 4	6.0	4.5	9.5	26	15	9.5	5.0	190
L1016.U20-NC	20	69.3	30	48.5	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	310
L1016.U25-NC	25	79.2	40	57.5	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	450
L1016.U30-NC	30	94.8	45	67.8	60	40	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	910

Order No.	$l_5$	$d_3$	$d_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	Dyn. load C kN	Static load $C_{Orad \& ax}$ kN
L1016.U15-NC	60	7.5	M 3x0,5	137	120	120	11.67	19.90
L1016.U20-NC	60	9.5	M 6x1,0	289	224	224	17.98	30.96
L1016.U25-NC	60	11.0	M 6x1,0	447	358	358	25.25	41.73
L1016.U30-NC	80	14.0	M 6x1,0	719	560	560	37.33	55.50



## L1016.15



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 1,4 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect screw holes from debris.

### Technical Notes

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.15-0220	15	220	13.0	60	15	20	6.0	4.5	7.5	M4	0.31
L1016.15-0280	15	280	13.0	60	15	20	6.0	4.5	7.5	M4	0.39
L1016.15-0340	15	340	13.0	60	15	20	6.0	4.5	7.5	M4	0.48
L1016.15-0400	15	400	13.0	60	15	20	6.0	4.5	7.5	M4	0.56
L1016.15-0460	15	460	13.0	60	15	20	6.0	4.5	7.5	M4	0.64
L1016.15-0520	15	520	13.0	60	15	20	6.0	4.5	7.5	M4	0.73
L1016.15-0580	15	580	13.0	60	15	20	6.0	4.5	7.5	M4	0.81
L1016.15-0640	15	640	13.0	60	15	20	6.0	4.5	7.5	M4	0.90
L1016.15-0700	15	700	13.0	60	15	20	6.0	4.5	7.5	M4	0.98
L1016.15-0760	15	760	13.0	60	15	20	6.0	4.5	7.5	M4	1.06
L1016.15-0820	15	820	13.0	60	15	20	6.0	4.5	7.5	M4	1.15
L1016.15-0880	15	880	13.0	60	15	20	6.0	4.5	7.5	M4	1.23
L1016.15-0940	15	940	13.0	60	15	20	6.0	4.5	7.5	M4	1.32
L1016.15-1000	15	1000	13.0	60	15	20	6.0	4.5	7.5	M4	1.40
L1016.15-1060	15	1060	13.0	60	15	20	6.0	4.5	7.5	M4	1.48
L1016.15-1120	15	1120	13.0	60	15	20	6.0	4.5	7.5	M4	1.57
L1016.15-1180	15	1180	13.0	60	15	20	6.0	4.5	7.5	M4	1.65
L1016.15-1240	15	1240	13.0	60	15	20	6.0	4.5	7.5	M4	1.74
L1016.15-1300	15	1300	13.0	60	15	20	6.0	4.5	7.5	M4	1.82
L1016.15-1360	15	1360	13.0	60	15	20	6.0	4.5	7.5	M4	1.90
L1016.15-1420	15	1420	13.0	60	15	20	6.0	4.5	7.5	M4	1.99
L1016.15-1480	15	1480	13.0	60	15	20	6.0	4.5	7.5	M4	2.07
L1016.15-1540	15	1540	13.0	60	15	20	6.0	4.5	7.5	M4	2.16
L1016.15-1600	15	1600	13.0	60	15	20	6.0	4.5	7.5	M4	2.24
L1016.15-1660	15	1660	13.0	60	15	20	6.0	4.5	7.5	M4	2.32
L1016.15-1720	15	1720	13.0	60	15	20	6.0	4.5	7.5	M4	2.41
L1016.15-1780	15	1780	13.0	60	15	20	6.0	4.5	7.5	M4	2.49
L1016.15-1840	15	1840	13.0	60	15	20	6.0	4.5	7.5	M4	2.58
L1016.15-1900	15	1900	13.0	60	15	20	6.0	4.5	7.5	M4	2.66
L1016.15-1960	15	1960	13.0	60	15	20	6.0	4.5	7.5	M4	2.74
L1016.15-2020	15	2020	13.0	60	15	20	6.0	4.5	7.5	M4	2.83
L1016.15-2080	15	2080	13.0	60	15	20	6.0	4.5	7.5	M4	2.91



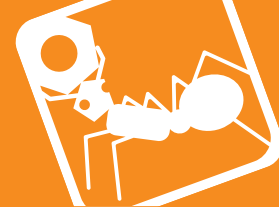
# 15mm Linear Guide Rail

standard

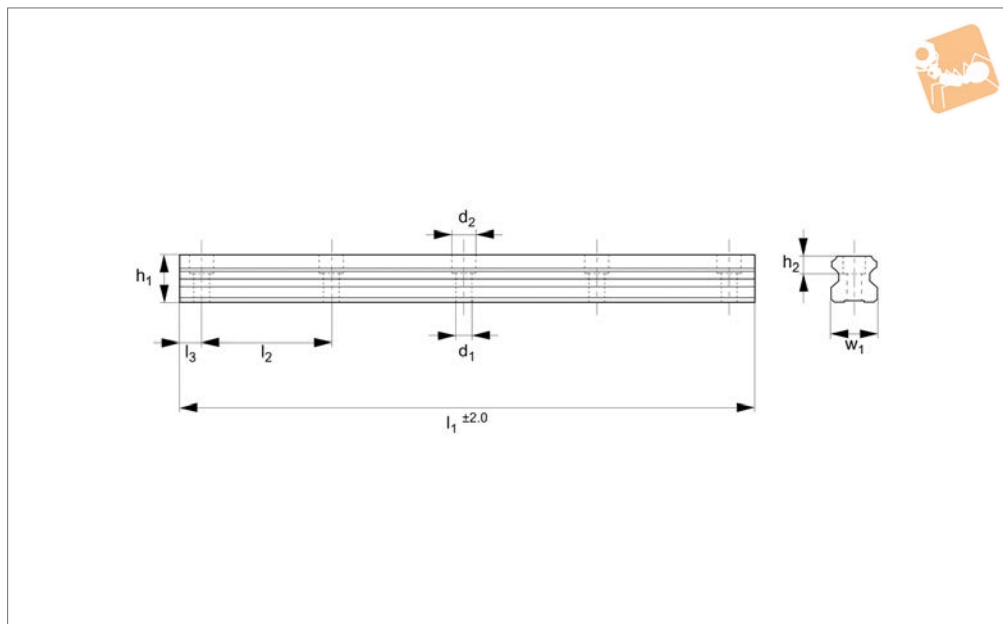
## Linear Guide-ways

Order No.	Rail size	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	l <sub>3</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	Weight kg
L1016.15-2140	15	2140	13.0	60	15	20	6.0	4.5	7.5	M4	3.00
L1016.15-2200	15	2220	13.0	60	15	20	6.0	4.5	7.5	M4	3.08
L1016.15-2260	15	2260	13.0	60	15	20	6.0	4.5	7.5	M4	3.16
L1016.15-2320	15	2320	13.0	60	15	20	6.0	4.5	7.5	M4	3.25
L1016.15-2380	15	2380	13.0	60	15	20	6.0	4.5	7.5	M4	3.33
L1016.15-2440	15	2440	13.0	60	15	20	6.0	4.5	7.5	M4	3.42
L1016.15-2500	15	2500	13.0	60	15	20	6.0	4.5	7.5	M4	3.50
L1016.15-2560	15	2560	13.0	60	15	20	6.0	4.5	7.5	M4	3.58
L1016.15-2620	15	2620	13.0	60	15	20	6.0	4.5	7.5	M4	3.67
L1016.15-2680	15	2680	13.0	60	15	20	6.0	4.5	7.5	M4	3.75
L1016.15-2740	15	2740	13.0	60	15	20	6.0	4.5	7.5	M4	3.84
L1016.15-2800	15	2800	13.0	60	15	20	6.0	4.5	7.5	M4	3.92
L1016.15-2860	15	2860	13.0	60	15	20	6.0	4.5	7.5	M4	4.00
L1016.15-2920	15	2920	13.0	60	15	20	6.0	4.5	7.5	M4	4.09
L1016.15-2980	15	2980	13.0	60	15	20	6.0	4.5	7.5	M4	4.17
L1016.15-3040	15	3040	13.0	60	15	20	6.0	4.5	7.5	M4	4.26
L1016.15-3100	15	3100	13.0	60	15	20	6.0	4.5	7.5	M4	4.34
L1016.15-3160	15	3160	13.0	60	15	20	6.0	4.5	7.5	M4	4.42
L1016.15-3220	15	3220	13.0	60	15	20	6.0	4.5	7.5	M4	4.51
L1016.15-3280	15	3280	13.0	60	15	20	6.0	4.5	7.5	M4	4.59
L1016.15-3340	15	3340	13.0	60	15	20	6.0	4.5	7.5	M4	4.68
L1016.15-3400	15	3400	13.0	60	15	20	6.0	4.5	7.5	M4	4.76
L1016.15-3460	15	3460	13.0	60	15	20	6.0	4.5	7.5	M4	4.84
L1016.15-3520	15	3520	13.0	60	15	20	6.0	4.5	7.5	M4	4.93
L1016.15-3580	15	3580	13.0	60	15	20	6.0	4.5	7.5	M4	5.01
L1016.15-3640	15	3640	13.0	60	15	20	6.0	4.5	7.5	M4	5.10
L1016.15-3700	15	3700	13.0	60	15	20	6.0	4.5	7.5	M4	5.18
L1016.15-3760	15	3760	13.0	60	15	20	6.0	4.5	7.5	M4	5.26
L1016.15-3820	15	3820	13.0	60	15	20	6.0	4.5	7.5	M4	5.35
L1016.15-3880	15	3880	13.0	60	15	20	6.0	4.5	7.5	M4	5.43
L1016.15-3940	15	3940	13.0	60	15	20	6.0	4.5	7.5	M4	5.52
L1016.15-4000	15	4000	13.0	60	15	20	6.0	4.5	7.5	M4	5.60

LINEAR GUIDEWAYS



## L1016.20



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 2,6 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

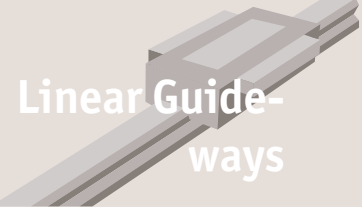
For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.20-0160	20	160	16.3	60	20	20	8.5	6	9.5	M5	0.42
L1016.20-0220	20	220	16.3	60	20	20	8.5	6	9.5	M5	0.57
L1016.20-0280	20	280	16.3	60	20	20	8.5	6	9.5	M5	0.73
L1016.20-0340	20	340	16.3	60	20	20	8.5	6	9.5	M5	0.88
L1016.20-0400	20	400	16.3	60	20	20	8.5	6	9.5	M5	1.04
L1016.20-0460	20	460	16.3	60	20	20	8.5	6	9.5	M5	1.20
L1016.20-0520	20	520	16.3	60	20	20	8.5	6	9.5	M5	1.35
L1016.20-0580	20	580	16.3	60	20	20	8.5	6	9.5	M5	1.51
L1016.20-0640	20	640	16.3	60	20	20	8.5	6	9.5	M5	1.66
L1016.20-0700	20	700	16.3	60	20	20	8.5	6	9.5	M5	1.82
L1016.20-0760	20	760	16.3	60	20	20	8.5	6	9.5	M5	1.98
L1016.20-0820	20	820	16.3	60	20	20	8.5	6	9.5	M5	2.13
L1016.20-0880	20	880	16.3	60	20	20	8.5	6	9.5	M5	2.29
L1016.20-0940	20	940	16.3	60	20	20	8.5	6	9.5	M5	2.44
L1016.20-1000	20	1000	16.3	60	20	20	8.5	6	9.5	M5	2.60
L1016.20-1060	20	1060	16.3	60	20	20	8.5	6	9.5	M5	2.76
L1016.20-1120	20	1120	16.3	60	20	20	8.5	6	9.5	M5	2.91
L1016.20-1180	20	1180	16.3	60	20	20	8.5	6	9.5	M5	3.07
L1016.20-1240	20	1240	16.3	60	20	20	8.5	6	9.5	M5	3.22
L1016.20-1300	20	1300	16.3	60	20	20	8.5	6	9.5	M5	3.38
L1016.20-1360	20	1360	16.3	60	20	20	8.5	6	9.5	M5	3.54
L1016.20-1420	20	1420	16.3	60	20	20	8.5	6	9.5	M5	3.69
L1016.20-1480	20	1480	16.3	60	20	20	8.5	6	9.5	M5	3.85
L1016.20-1540	20	1540	16.3	60	20	20	8.5	6	9.5	M5	4.00
L1016.20-1600	20	1600	16.3	60	20	20	8.5	6	9.5	M5	4.16
L1016.20-1660	20	1660	16.3	60	20	20	8.5	6	9.5	M5	4.32
L1016.20-1720	20	1720	16.3	60	20	20	8.5	6	9.5	M5	4.47
L1016.20-1780	20	1780	16.3	60	20	20	8.5	6	9.5	M5	4.63
L1016.20-1840	20	1840	16.3	60	20	20	8.5	6	9.5	M5	4.78
L1016.20-1900	20	1900	16.3	60	20	20	8.5	6	9.5	M5	4.94
L1016.20-1960	20	1960	16.3	60	20	20	8.5	6	9.5	M5	5.10
L1016.20-2020	20	2020	16.3	60	20	20	8.5	6	9.5	M5	5.25



# 20mm Linear Guide Rail

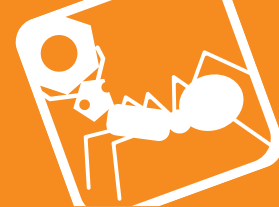
standard



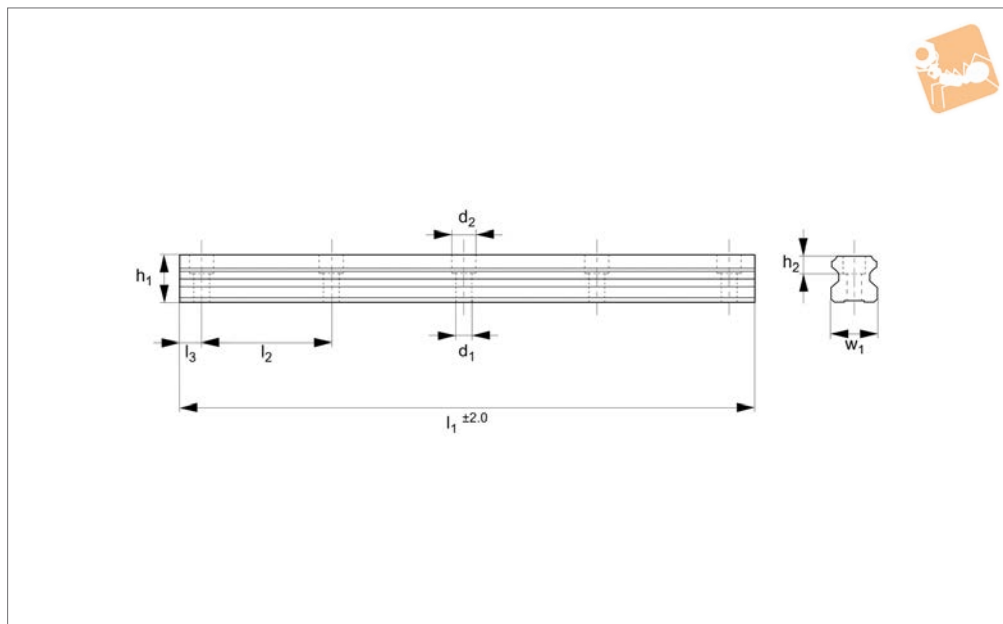
Linear Guide-ways

Order No.	Rail size	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	l <sub>3</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	Weight kg
L1016.20-2080	20	2080	16.3	60	20	20	8.5	6	9.5	M5	5.41
L1016.20-2140	20	2140	16.3	60	20	20	8.5	6	9.5	M5	5.56
L1016.20-2200	20	2200	16.3	60	20	20	8.5	6	9.5	M5	5.72
L1016.20-2260	20	2260	16.3	60	20	20	8.5	6	9.5	M5	5.88
L1016.20-2320	20	2320	16.3	60	20	20	8.5	6	9.5	M5	6.03
L1016.20-2380	20	2380	16.3	60	20	20	8.5	6	9.5	M5	6.19
L1016.20-2440	20	2440	16.3	60	20	20	8.5	6	9.5	M5	6.34
L1016.20-2500	20	2500	16.3	60	20	20	8.5	6	9.5	M5	6.50
L1016.20-2560	20	2560	16.3	60	20	20	8.5	6	9.5	M5	6.66
L1016.20-2620	20	2620	16.3	60	20	20	8.5	6	9.5	M5	6.81
L1016.20-2680	20	2680	16.3	60	20	20	8.5	6	9.5	M5	6.97
L1016.20-2740	20	2740	16.3	60	20	20	8.5	6	9.5	M5	7.12
L1016.20-2800	20	2800	16.3	60	20	20	8.5	6	9.5	M5	7.28
L1016.20-2860	20	2860	16.3	60	20	20	8.5	6	9.5	M5	7.44
L1016.20-2920	20	2920	16.3	60	20	20	8.5	6	9.5	M5	7.59
L1016.20-2980	20	2980	16.3	60	20	20	8.5	6	9.5	M5	7.75
L1016.20-3040	20	3040	16.3	60	20	20	8.5	6	9.5	M5	7.90
L1016.20-3100	20	3100	16.3	60	20	20	8.5	6	9.5	M5	8.06
L1016.20-3160	20	3160	16.3	60	20	20	8.5	6	9.5	M5	8.22
L1016.20-3220	20	3220	16.3	60	20	20	8.5	6	9.5	M5	8.37
L1016.20-3280	20	3280	16.3	60	20	20	8.5	6	9.5	M5	8.53
L1016.20-3340	20	3340	16.3	60	20	20	8.5	6	9.5	M5	8.68
L1016.20-3400	20	3400	16.3	60	20	20	8.5	6	9.5	M5	8.84
L1016.20-3460	20	3460	16.3	60	20	20	8.5	6	9.5	M5	9.00
L1016.20-3520	20	3520	16.3	60	20	20	8.5	6	9.5	M5	9.15
L1016.20-3580	20	3580	16.3	60	20	20	8.5	6	9.5	M5	9.31
L1016.20-3640	20	3640	16.3	60	20	20	8.5	6	9.5	M5	9.46
L1016.20-3700	20	3700	16.3	60	20	20	8.5	6	9.5	M5	9.62
L1016.20-3760	20	3760	16.3	60	20	20	8.5	6	9.5	M5	9.78
L1016.20-3820	20	3820	16.3	60	20	20	8.5	6	9.5	M5	9.93
L1016.20-3880	20	3880	16.3	60	20	20	8.5	6	9.5	M5	10.09
L1016.20-3940	20	3940	16.3	60	20	20	8.5	6	9.5	M5	10.24
L1016.20-4000	20	4000	16.3	60	20	20	8.5	6	9.5	M5	10.40

LINEAR GUIDEWAYS



## L1016.25



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 3,6 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.25-0160	25	160	19.2	60	23	20	9	7	11	M6	0.58
L1016.25-0220	25	220	19.2	60	23	20	9	7	11	M6	0.79
L1016.25-0280	25	280	19.2	60	23	20	9	7	11	M6	1.01
L1016.25-0340	25	340	19.2	60	23	20	9	7	11	M6	1.22
L1016.25-0400	25	400	19.2	60	23	20	9	7	11	M6	1.44
L1016.25-0440	25	440	19.2	60	23	20	9	7	11	M6	1.44
L1016.25-0460	25	460	19.2	60	23	20	9	7	11	M6	1.66
L1016.25-0520	25	520	19.2	60	23	20	9	7	11	M6	1.87
L1016.25-0580	25	580	19.2	60	23	20	9	7	11	M6	2.09
L1016.25-0640	25	640	19.2	60	23	20	9	7	11	M6	2.30
L1016.25-0700	25	700	19.2	60	23	20	9	7	11	M6	2.52
L1016.25-0760	25	760	19.2	60	23	20	9	7	11	M6	2.74
L1016.25-0820	25	820	19.2	60	23	20	9	7	11	M6	2.95
L1016.25-0880	25	880	19.2	60	23	20	9	7	11	M6	3.17
L1016.25-0940	25	940	19.2	60	23	20	9	7	11	M6	3.38
L1016.25-1000	25	1000	19.2	60	23	20	9	7	11	M6	3.60
L1016.25-1060	25	1060	19.2	60	23	20	9	7	11	M6	3.82
L1016.25-1120	25	1120	19.2	60	23	20	9	7	11	M6	4.03
L1016.25-1180	25	1180	19.2	60	23	20	9	7	11	M6	4.25
L1016.25-1240	25	1240	19.2	60	23	20	9	7	11	M6	4.46
L1016.25-1300	25	1300	19.2	60	23	20	9	7	11	M6	4.68
L1016.25-1360	25	1360	19.2	60	23	20	9	7	11	M6	4.90
L1016.25-1420	25	1420	19.2	60	23	20	9	7	11	M6	5.11
L1016.25-1480	25	1480	19.2	60	23	20	9	7	11	M6	5.33
L1016.25-1540	25	1540	19.2	60	23	20	9	7	11	M6	5.54
L1016.25-1600	25	1600	19.2	60	23	20	9	7	11	M6	5.76
L1016.25-1660	25	1660	19.2	60	23	20	9	7	11	M6	5.98
L1016.25-1720	25	1720	19.2	60	23	20	9	7	11	M6	6.19
L1016.25-1780	25	1780	19.2	60	23	20	9	7	11	M6	6.41
L1016.25-1840	25	1840	19.2	60	23	20	9	7	11	M6	6.62
L1016.25-1900	25	1900	19.2	60	23	20	9	7	11	M6	6.84
L1016.25-1960	25	1960	19.2	60	23	20	9	7	11	M6	7.06



# 25mm Linear Guide Rail

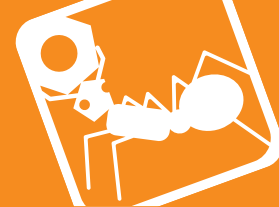
standard



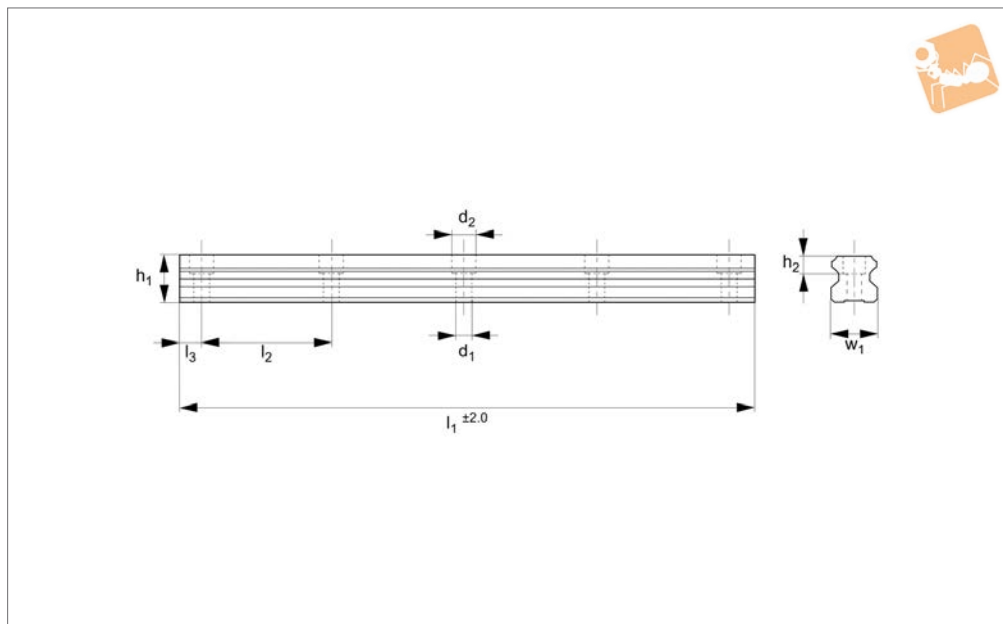
## Linear Guide-ways

Order No.	Rail size	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	l <sub>3</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	Weight kg
L1016.25-2020	25	2020	19.2	60	23	20	9	7	11	M6	7.27
L1016.25-2080	25	2080	19.2	60	23	20	9	7	11	M6	7.49
L1016.25-2140	25	2140	19.2	60	23	20	9	7	11	M6	7.70
L1016.25-2200	25	2200	19.2	60	23	20	9	7	11	M6	7.92
L1016.25-2260	25	2260	19.2	60	23	20	9	7	11	M6	8.14
L1016.25-2320	25	2320	19.2	60	23	20	9	7	11	M6	8.35
L1016.25-2380	25	2380	19.2	60	23	20	9	7	11	M6	8.57
L1016.25-2440	25	2440	19.2	60	23	20	9	7	11	M6	8.78
L1016.25-2500	25	2500	19.2	60	23	20	9	7	11	M6	9.00
L1016.25-2560	25	2560	19.2	60	23	20	9	7	11	M6	9.22
L1016.25-2620	25	2620	19.2	60	23	20	9	7	11	M6	9.43
L1016.25-2680	25	2680	19.2	60	23	20	9	7	11	M6	9.65
L1016.25-2740	25	2740	19.2	60	23	20	9	7	11	M6	9.86
L1016.25-2800	25	2800	19.2	60	23	20	9	7	11	M6	10.08
L1016.25-2860	25	2860	19.2	60	23	20	9	7	11	M6	10.30
L1016.25-2920	25	2920	19.2	60	23	20	9	7	11	M6	10.51
L1016.25-2980	25	2980	19.2	60	23	20	9	7	11	M6	10.73
L1016.25-3040	25	3040	19.2	60	23	20	9	7	11	M6	10.94
L1016.25-3100	25	3100	19.2	60	23	20	9	7	11	M6	11.16
L1016.25-3160	25	3160	19.2	60	23	20	9	7	11	M6	11.38
L1016.25-3220	25	3220	19.2	60	23	20	9	7	11	M6	11.59
L1016.25-3280	25	3280	19.2	60	23	20	9	7	11	M6	11.81
L1016.25-3340	25	3340	19.2	60	23	20	9	7	11	M6	12.02
L1016.25-3400	25	3400	19.2	60	23	20	9	7	11	M6	12.24
L1016.25-3460	25	3460	19.2	60	23	20	9	7	11	M6	12.46
L1016.25-3520	25	3520	19.2	60	23	20	9	7	11	M6	12.67
L1016.25-3580	25	3580	19.2	60	23	20	9	7	11	M6	12.89
L1016.25-3640	25	3640	19.2	60	23	20	9	7	11	M6	13.10
L1016.25-3700	25	3700	19.2	60	23	20	9	7	11	M6	13.32
L1016.25-3760	25	3760	19.2	60	23	20	9	7	11	M6	13.54
L1016.25-3820	25	3820	19.2	60	23	20	9	7	11	M6	13.75
L1016.25-3880	25	3880	19.2	60	23	20	9	7	11	M6	13.97
L1016.25-3940	25	3940	19.2	60	23	20	9	7	11	M6	14.18
L1016.25-4000	25	4000	19.2	60	23	20	9	7	11	M6	14.40

LINEAR GUIDEWAYS



## L1016.30



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 5,2 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.30-0200	30	200	22.8	80	28	20	12	9	14	M8	1.04
L1016.30-0280	30	280	22.8	80	28	20	12	9	14	M8	1.46
L1016.30-0360	30	360	22.8	80	28	20	12	9	14	M8	1.87
L1016.30-0440	30	440	22.8	80	28	20	12	9	14	M8	2.29
L1016.30-0520	30	520	22.8	80	28	20	12	9	14	M8	2.70
L1016.30-0600	30	600	22.8	80	28	20	12	9	14	M8	3.12
L1016.30-0680	30	680	22.8	80	28	20	12	9	14	M8	3.54
L1016.30-0760	30	760	22.8	80	28	20	12	9	14	M8	3.95
L1016.30-0840	30	840	22.8	80	28	20	12	9	14	M8	4.37
L1016.30-0920	30	920	22.8	80	28	20	12	9	14	M8	4.78
L1016.30-1000	30	1000	22.8	80	28	20	12	9	14	M8	5.20
L1016.30-1080	30	1080	22.8	80	28	20	12	9	14	M8	5.62
L1016.30-1160	30	1160	22.8	80	28	20	12	9	14	M8	6.03
L1016.30-1240	30	1240	22.8	80	28	20	12	9	14	M8	6.45
L1016.30-1320	30	1320	22.8	80	28	20	12	9	14	M8	6.86
L1016.30-1400	30	1400	22.8	80	28	20	12	9	14	M8	7.28
L1016.30-1480	30	1480	22.8	80	28	20	12	9	14	M8	7.70
L1016.30-1560	30	1560	22.8	80	28	20	12	9	14	M8	8.11
L1016.30-1640	30	1640	22.8	80	28	20	12	9	14	M8	8.53
L1016.30-1720	30	1720	22.8	80	28	20	12	9	14	M8	8.94
L1016.30-1800	30	1800	22.8	80	28	20	12	9	14	M8	9.36
L1016.30-1880	30	1880	22.8	80	28	20	12	9	14	M8	9.78
L1016.30-1960	30	1960	22.8	80	28	20	12	9	14	M8	10.19
L1016.30-2040	30	2040	22.8	80	28	20	12	9	14	M8	10.61
L1016.30-2120	30	2120	22.8	80	28	20	12	9	14	M8	11.02
L1016.30-2200	30	2200	22.8	80	28	20	12	9	14	M8	11.44
L1016.30-2280	30	2280	22.8	80	28	20	12	9	14	M8	11.86
L1016.30-2360	30	2360	22.8	80	28	20	12	9	14	M8	12.27
L1016.30-2440	30	2440	22.8	80	28	20	12	9	14	M8	12.69
L1016.30-2520	30	2520	22.8	80	28	20	12	9	14	M8	13.10
L1016.30-2600	30	2600	22.8	80	28	20	12	9	14	M8	13.52
L1016.30-2680	30	2680	22.8	80	28	20	12	9	14	M8	13.94



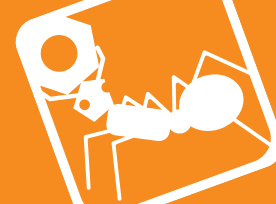


# 30mm Linear Guide Rail

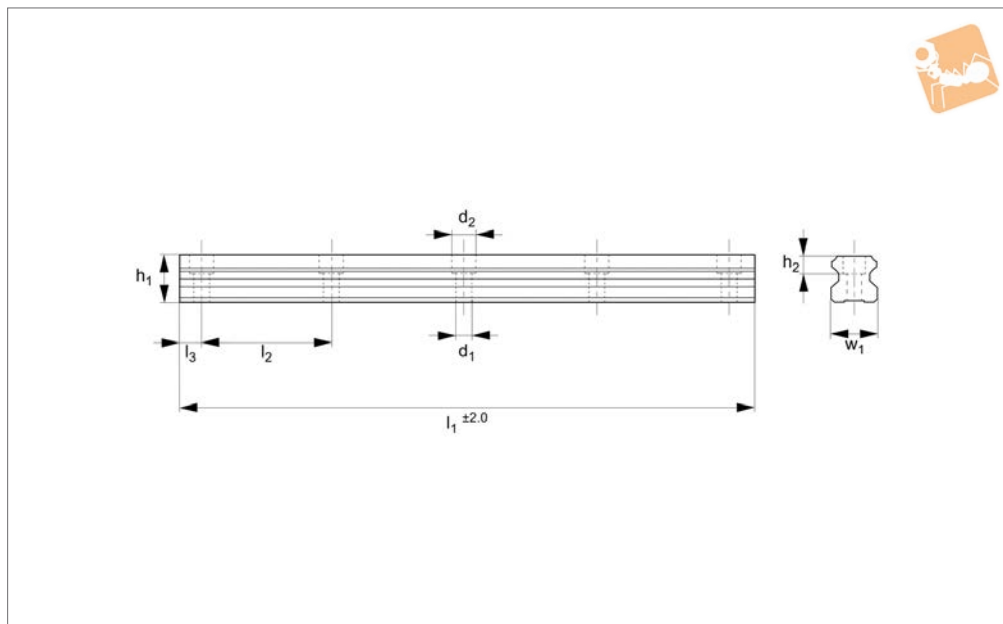
standard

Linear Guide-  
ways

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.30-2760	30	2760	22.8	80	28	20	12	9	14	M8	14.35
L1016.30-2840	30	2840	22.8	80	28	20	12	9	14	M8	14.77
L1016.30-2920	30	2920	22.8	80	28	20	12	9	14	M8	15.18
L1016.30-3000	30	3000	22.8	80	28	20	12	9	14	M8	15.60
L1016.30-3080	30	3080	22.8	80	28	20	12	9	14	M8	16.02
L1016.30-3160	30	3160	22.8	80	28	20	12	9	14	M8	16.43
L1016.30-3240	30	3240	22.8	80	28	20	12	9	14	M8	16.85
L1016.30-3320	30	3320	22.8	80	28	20	12	9	14	M8	17.26
L1016.30-3400	30	3400	22.8	80	28	20	12	9	14	M8	17.68
L1016.30-3480	30	3480	22.8	80	28	20	12	9	14	M8	18.10
L1016.30-3560	30	3560	22.8	80	28	20	12	9	14	M8	18.51
L1016.30-3640	30	3640	22.8	80	28	20	12	9	14	M8	18.93
L1016.30-3720	30	3720	22.8	80	28	20	12	9	14	M8	19.34
L1016.30-3800	30	3800	22.8	80	28	20	12	9	14	M8	19.76
L1016.30-3880	30	3880	22.8	80	28	20	12	9	14	M8	20.18
L1016.30-3960	30	3960	22.8	80	28	20	12	9	14	M8	20.59
L1016.30-4000	30	4000	22.8	80	28	20	12	9	14	M8	20.80



## L1016.35



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 7,2 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.35-0200	35	200	26.0	80	34	20	12	9	14	M8	1.44
L1016.35-0280	35	280	26.0	80	34	20	12	9	14	M8	2.02
L1016.35-0360	35	360	26.0	80	34	20	12	9	14	M8	2.59
L1016.35-0440	35	440	26.0	80	34	20	12	9	14	M8	3.17
L1016.35-0520	35	520	26.0	80	34	20	12	9	14	M8	3.74
L1016.35-0600	35	600	26.0	80	34	20	12	9	14	M8	4.32
L1016.35-0680	35	680	26.0	80	34	20	12	9	14	M8	4.90
L1016.35-0760	35	760	26.0	80	34	20	12	9	14	M8	5.47
L1016.35-0840	35	840	26.0	80	34	20	12	9	14	M8	6.05
L1016.35-0920	35	920	26.0	80	34	20	12	9	14	M8	6.62
L1016.35-1000	35	1000	26.0	80	34	20	12	9	14	M8	7.20
L1016.35-1080	35	1080	26.0	80	34	20	12	9	14	M8	7.78
L1016.35-1160	35	1160	26.0	80	34	20	12	9	14	M8	8.35
L1016.35-1240	35	1240	26.0	80	34	20	12	9	14	M8	8.93
L1016.35-1320	35	1320	26.0	80	34	20	12	9	14	M8	9.50
L1016.35-1400	35	1400	26.0	80	34	20	12	9	14	M8	10.08
L1016.35-1480	35	1480	26.0	80	34	20	12	9	14	M8	10.66
L1016.35-1560	35	1560	26.0	80	34	20	12	9	14	M8	11.23
L1016.35-1640	35	1640	26.0	80	34	20	12	9	14	M8	11.81
L1016.35-1720	35	1720	26.0	80	34	20	12	9	14	M8	12.38
L1016.35-1800	35	1800	26.0	80	34	20	12	9	14	M8	12.96
L1016.35-1880	35	1880	26.0	80	34	20	12	9	14	M8	13.54
L1016.35-1960	35	1960	26.0	80	34	20	12	9	14	M8	14.11
L1016.35-2040	35	2040	26.0	80	34	20	12	9	14	M8	14.69
L1016.35-2120	35	2120	26.0	80	34	20	12	9	14	M8	15.26
L1016.35-2200	35	2200	26.0	80	34	20	12	9	14	M8	15.84
L1016.35-2280	35	2280	26.0	80	34	20	12	9	14	M8	16.42
L1016.35-2360	35	2360	26.0	80	34	20	12	9	14	M8	16.99
L1016.35-2440	35	2440	26.0	80	34	20	12	9	14	M8	17.57
L1016.35-2520	35	2520	26.0	80	34	20	12	9	14	M8	18.14
L1016.35-2600	35	2600	26.0	80	34	20	12	9	14	M8	18.72
L1016.35-2680	35	2680	26.0	80	34	20	12	9	14	M8	19.30



# 35mm Linear Guide Rail

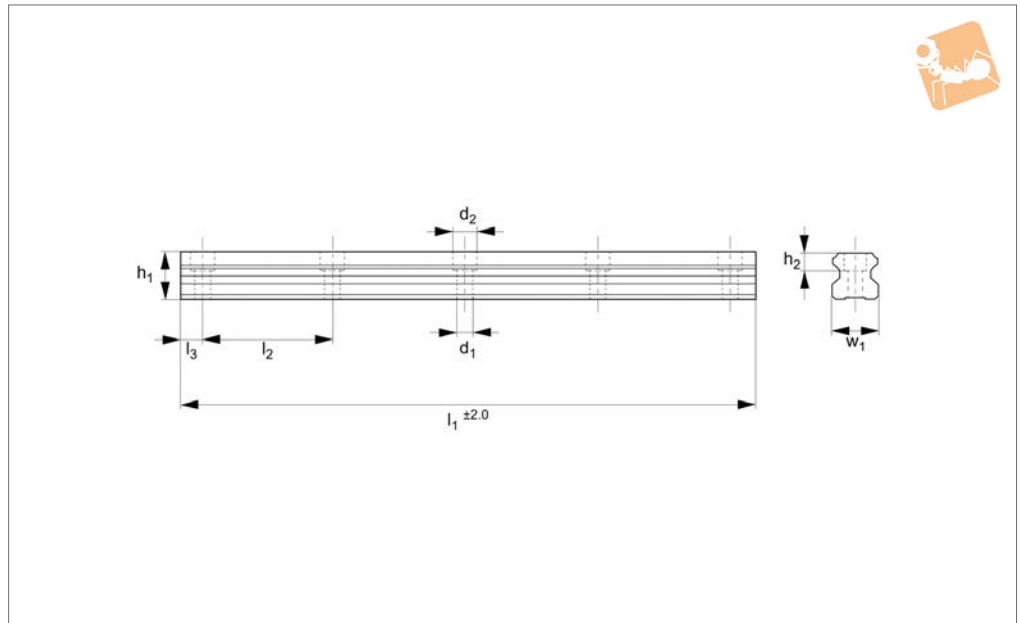
standard

## Linear Guide-ways

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.35-2760	35	2760	26.0	80	34	20	12	9	14	M8	19.87
L1016.35-2840	35	2840	26.0	80	34	20	12	9	14	M8	20.45
L1016.35-2920	35	2920	26.0	80	34	20	12	9	14	M8	21.02
L1016.35-3000	35	3000	26.0	80	34	20	12	9	14	M8	21.60
L1016.35-3080	35	3080	26.0	80	34	20	12	9	14	M8	22.18
L1016.35-3160	35	3160	26.0	80	34	20	12	9	14	M8	22.75
L1016.35-3240	35	3240	26.0	80	34	20	12	9	14	M8	23.33
L1016.35-3320	35	3320	26.0	80	34	20	12	9	14	M8	23.90
L1016.35-3400	35	3400	26.0	80	34	20	12	9	14	M8	24.48
L1016.35-3480	35	3480	26.0	80	34	20	12	9	14	M8	25.06
L1016.35-3560	35	3560	26.0	80	34	20	12	9	14	M8	25.63
L1016.35-3640	35	3640	26.0	80	34	20	12	9	14	M8	26.21
L1016.35-3720	35	3720	26.0	80	34	20	12	9	14	M8	26.78
L1016.35-3800	35	3800	26.0	80	34	20	12	9	14	M8	27.36
L1016.35-3880	35	3880	26.0	80	34	20	12	9	14	M8	27.94
L1016.35-3960	35	3960	26.0	80	34	20	12	9	14	M8	28.51
L1016.35-4000	35	4000	26.0	80	34	20	12	9	14	M8	28.80



## L1016.45



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.  
Weight: 12,3 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

For carriages to suit the required load see

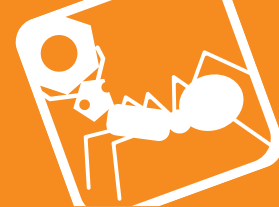
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.45-0255	45	255	31.1	105	45	22.5	17	14	20	M12	3.14
L1016.45-0360	45	360	31.1	105	45	22.5	17	14	20	M12	4.43
L1016.45-0465	45	465	31.1	105	45	22.5	17	14	20	M12	5.72
L1016.45-0570	45	570	31.1	105	45	22.5	17	14	20	M12	7.01
L1016.45-0675	45	675	31.1	105	45	22.5	17	14	20	M12	8.30
L1016.45-0780	45	780	31.1	105	45	22.5	17	14	20	M12	9.59
L1016.45-0885	45	885	31.1	105	45	22.5	17	14	20	M12	10.89
L1016.45-0990	45	990	31.1	105	45	22.5	17	14	20	M12	12.18
L1016.45-1095	45	1095	31.1	105	45	22.5	17	14	20	M12	13.47
L1016.45-1200	45	1200	31.1	105	45	22.5	17	14	20	M12	14.76
L1016.45-1305	45	1305	31.1	105	45	22.5	17	14	20	M12	16.05
L1016.45-1410	45	1410	31.1	105	45	22.5	17	14	20	M12	17.34
L1016.45-1515	45	1515	31.1	105	45	22.5	17	14	20	M12	18.63
L1016.45-1620	45	1620	31.1	105	45	22.5	17	14	20	M12	19.93
L1016.45-1725	45	1725	31.1	105	45	22.5	17	14	20	M12	21.22
L1016.45-1830	45	1830	31.1	105	45	22.5	17	14	20	M12	22.51
L1016.45-1935	45	1935	31.1	105	45	22.5	17	14	20	M12	23.80
L1016.45-2040	45	2040	31.1	105	45	22.5	17	14	20	M12	25.09
L1016.45-2145	45	2145	31.1	105	45	22.5	17	14	20	M12	26.38
L1016.45-2250	45	2250	31.1	105	45	22.5	17	14	20	M12	27.68
L1016.45-2355	45	2355	31.1	105	45	22.5	17	14	20	M12	28.97
L1016.45-2460	45	2460	31.1	105	45	22.5	17	14	20	M12	30.26
L1016.45-2565	45	2565	31.1	105	45	22.5	17	14	20	M12	31.55
L1016.45-2670	45	2670	31.1	105	45	22.5	17	14	20	M12	32.84
L1016.45-2775	45	2775	31.1	105	45	22.5	17	14	20	M12	34.13
L1016.45-2880	45	2880	31.1	105	45	22.5	17	14	20	M12	35.42
L1016.45-2985	45	2985	31.1	105	45	22.5	17	14	20	M12	36.72
L1016.45-3090	45	3090	31.1	105	45	22.5	17	14	20	M12	38.01
L1016.45-3195	45	3195	31.1	105	45	22.5	17	14	20	M12	39.30
L1016.45-3300	45	3300	31.1	105	45	22.5	17	14	20	M12	40.59
L1016.45-3405	45	3405	31.1	105	45	22.5	17	14	20	M12	41.88
L1016.45-3510	45	3510	31.1	105	45	22.5	17	14	20	M12	43.17



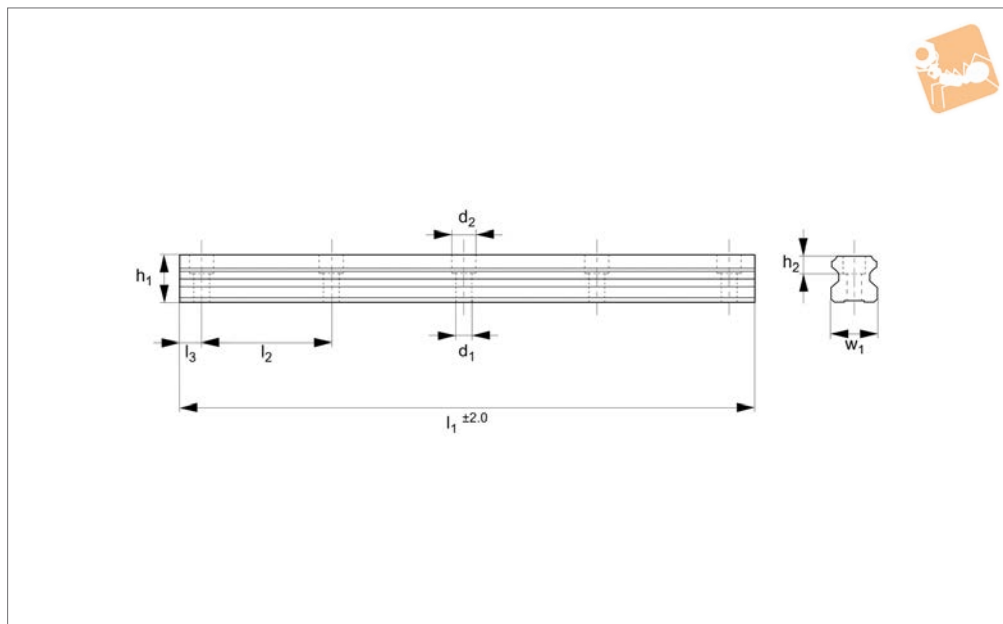
# 45mm Linear Guide Rail standard

Linear Guide-  
ways

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
<b>L1016.45-3615</b>	45	3615	31.1	105	45	22.5	17	14	20	M12	44.46
<b>L1016.45-3720</b>	45	3720	31.1	105	45	22.5	17	14	20	M12	45.76
<b>L1016.45-3825</b>	45	3825	31.1	105	45	22.5	17	14	20	M12	47.05
<b>L1016.45-3930</b>	45	3930	31.1	105	45	22.5	17	14	20	M12	48.34
<b>L1016.45-4000</b>	45	4000	31.1	105	45	22.5	17	14	20	M12	49.20



## L1016.55



### Material

Hardened and ground steel (typically 60 HRc).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 14,5 Kg/m.

### Tips

Plastic screw covers issued with the rails to protect the holes from debris.

### Technical Notes

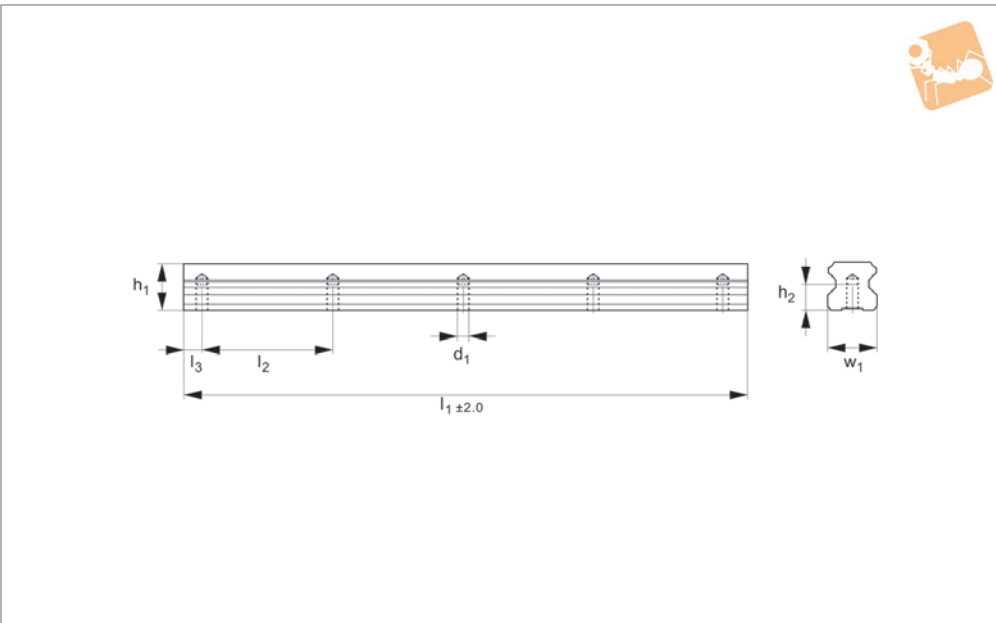
For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.55-0300	55	300	38.0	120	53	30	20	16	23	M14	4.35
L1016.55-0420	55	420	38.0	120	53	30	20	16	23	M14	6.09
L1016.55-0540	55	540	38.0	120	53	30	20	16	23	M14	7.83
L1016.55-0660	55	660	38.0	120	53	30	20	16	23	M14	9.57
L1016.55-0780	55	780	38.0	120	53	30	20	16	23	M14	11.31
L1016.55-0900	55	900	38.0	120	53	30	20	16	23	M14	13.05
L1016.55-1020	55	1020	38.0	120	53	30	20	16	23	M14	14.79
L1016.55-1140	55	1140	38.0	120	53	30	20	16	23	M14	16.53
L1016.55-1260	55	1260	38.0	120	53	30	20	16	23	M14	18.27
L1016.55-1380	55	1380	38.0	120	53	30	20	16	23	M14	20.01
L1016.55-1500	55	1500	38.0	120	53	30	20	16	23	M14	21.75
L1016.55-1620	55	1620	38.0	120	53	30	20	16	23	M14	23.49
L1016.55-1740	55	1740	38.0	120	53	30	20	16	23	M14	25.23
L1016.55-1860	55	1860	38.0	120	53	30	20	16	23	M14	26.97
L1016.55-1980	55	1980	38.0	120	53	30	20	16	23	M14	28.71
L1016.55-2100	55	2100	38.0	120	53	30	20	16	23	M14	30.45
L1016.55-2220	55	2220	38.0	120	53	30	20	16	23	M14	32.19
L1016.55-2340	55	2340	38.0	120	53	30	20	16	23	M14	33.93
L1016.55-2460	55	2460	38.0	120	53	30	20	16	23	M14	35.67
L1016.55-2580	55	2580	38.0	120	53	30	20	16	23	M14	37.41
L1016.55-2700	55	2700	38.0	120	53	30	20	16	23	M14	39.15
L1016.55-2820	55	2820	38.0	120	53	30	20	16	23	M14	40.89
L1016.55-2940	55	2940	38.0	120	53	30	20	16	23	M14	42.63
L1016.55-3060	55	3060	38.0	120	53	30	20	16	23	M14	44.37
L1016.55-3180	55	3180	38.0	120	53	30	20	16	23	M14	46.11
L1016.55-3300	55	3300	38.0	120	53	30	20	16	23	M14	47.85
L1016.55-3420	55	3420	38.0	120	53	30	20	16	23	M14	49.59
L1016.55-3540	55	3540	38.0	120	53	30	20	16	23	M14	51.33
L1016.55-3660	55	3660	38.0	120	53	30	20	16	23	M14	53.07
L1016.55-3780	55	3780	38.0	120	53	30	20	16	23	M14	54.81
L1016.55-3900	55	3900	38.0	120	53	30	20	16	23	M14	56.55
L1016.55-4000	55	4000	38.0	120	53	30	20	16	23	M14	58.00



# 15mm Linear Guide Rail

rear fixing



**L1016.RF15**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 1,4 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF15-0160	15	160	13.0	60	15	20	8	M5	0.22
L1016.RF15-0220	15	220	13.0	60	15	20	8	M5	0.31
L1016.RF15-0280	15	280	13.0	60	15	20	8	M5	0.39
L1016.RF15-0340	15	340	13.0	60	15	20	8	M5	0.48
L1016.RF15-0400	15	400	13.0	60	15	20	8	M5	0.56
L1016.RF15-0460	15	460	13.0	60	15	20	8	M5	0.64
L1016.RF15-0520	15	520	13.0	60	15	20	8	M5	0.73
L1016.RF15-0580	15	580	13.0	60	15	20	8	M5	0.81
L1016.RF15-0640	15	640	13.0	60	15	20	8	M5	0.90
L1016.RF15-0700	15	700	13.0	60	15	20	8	M5	0.98
L1016.RF15-0760	15	760	13.0	60	15	20	8	M5	1.06
L1016.RF15-0820	15	820	13.0	60	15	20	8	M5	1.15
L1016.RF15-0880	15	880	13.0	60	15	20	8	M5	1.23
L1016.RF15-0940	15	940	13.0	60	15	20	8	M5	1.32
L1016.RF15-1000	15	1000	13.0	60	15	20	8	M5	1.40
L1016.RF15-1060	15	1060	13.0	60	15	20	8	M5	1.48
L1016.RF15-1120	15	1120	13.0	60	15	20	8	M5	1.57
L1016.RF15-1180	15	1180	13.0	60	15	20	8	M5	1.65
L1016.RF15-1240	15	1240	13.0	60	15	20	8	M5	1.74
L1016.RF15-1300	15	1300	13.0	60	15	20	8	M5	1.82
L1016.RF15-1360	15	1360	13.0	60	15	20	8	M5	1.90
L1016.RF15-1420	15	1420	13.0	60	15	20	8	M5	1.99
L1016.RF15-1480	15	1480	13.0	60	15	20	8	M5	2.07
L1016.RF15-1540	15	1540	13.0	60	15	20	8	M5	2.16
L1016.RF15-1600	15	1600	13.0	60	15	20	8	M5	2.24
L1016.RF15-1660	15	1660	13.0	60	15	20	8	M5	2.32
L1016.RF15-1720	15	1720	13.0	60	15	20	8	M5	2.41
L1016.RF15-1780	15	1780	13.0	60	15	20	8	M5	2.49
L1016.RF15-1840	15	1840	13.0	60	15	20	8	M5	2.58
L1016.RF15-1900	15	1900	13.0	60	15	20	8	M5	2.66
L1016.RF15-1960	15	1960	13.0	60	15	20	8	M5	2.74
L1016.RF15-2020	15	2020	13.0	60	15	20	8	M5	2.83



Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF15-2080	15	2080	13.0	60	15	20	8	M5	2.91
L1016.RF15-2140	15	2140	13.0	60	15	20	8	M5	3.00
L1016.RF15-2200	15	2220	13.0	60	15	20	8	M5	3.08
L1016.RF15-2260	15	2260	13.0	60	15	20	8	M5	3.16
L1016.RF15-2320	15	2320	13.0	60	15	20	8	M5	3.25
L1016.RF15-2380	15	2380	13.0	60	15	20	8	M5	3.33
L1016.RF15-2440	15	2440	13.0	60	15	20	8	M5	3.42
L1016.RF15-2500	15	2500	13.0	60	15	20	8	M5	3.50
L1016.RF15-2560	15	2560	13.0	60	15	20	8	M5	3.58
L1016.RF15-2620	15	2620	13.0	60	15	20	8	M5	3.67
L1016.RF15-2680	15	2680	13.0	60	15	20	8	M5	3.75
L1016.RF15-2740	15	2740	13.0	60	15	20	8	M5	3.84
L1016.RF15-2800	15	2800	13.0	60	15	20	8	M5	3.92
L1016.RF15-2860	15	2860	13.0	60	15	20	8	M5	4.00
L1016.RF15-2920	15	2920	13.0	60	15	20	8	M5	4.09
L1016.RF15-2980	15	2980	13.0	60	15	20	8	M5	4.17
L1016.RF15-3040	15	3040	13.0	60	15	20	8	M5	4.26
L1016.RF15-3100	15	3100	13.0	60	15	20	8	M5	4.34
L1016.RF15-3160	15	3160	13.0	60	15	20	8	M5	4.42
L1016.RF15-3220	15	3220	13.0	60	15	20	8	M5	4.51
L1016.RF15-3280	15	3280	13.0	60	15	20	8	M5	4.59
L1016.RF15-3340	15	3340	13.0	60	15	20	8	M5	4.68
L1016.RF15-3400	15	3400	13.0	60	15	20	8	M5	4.76
L1016.RF15-3460	15	3460	13.0	60	15	20	8	M5	4.84
L1016.RF15-3520	15	3520	13.0	60	15	20	8	M5	4.93
L1016.RF15-3580	15	3580	13.0	60	15	20	8	M5	5.01
L1016.RF15-3640	15	3640	13.0	60	15	20	8	M5	5.10
L1016.RF15-3700	15	3700	13.0	60	15	20	8	M5	5.18
L1016.RF15-3760	15	3760	13.0	60	15	20	8	M5	5.26
L1016.RF15-3820	15	3820	13.0	60	15	20	8	M5	5.35
L1016.RF15-3880	15	3880	13.0	60	15	20	8	M5	5.43
L1016.RF15-3940	15	3940	13.0	60	15	20	8	M5	5.52
L1016.RF15-4000	15	4000	13.0	60	15	20	8	M5	5.60

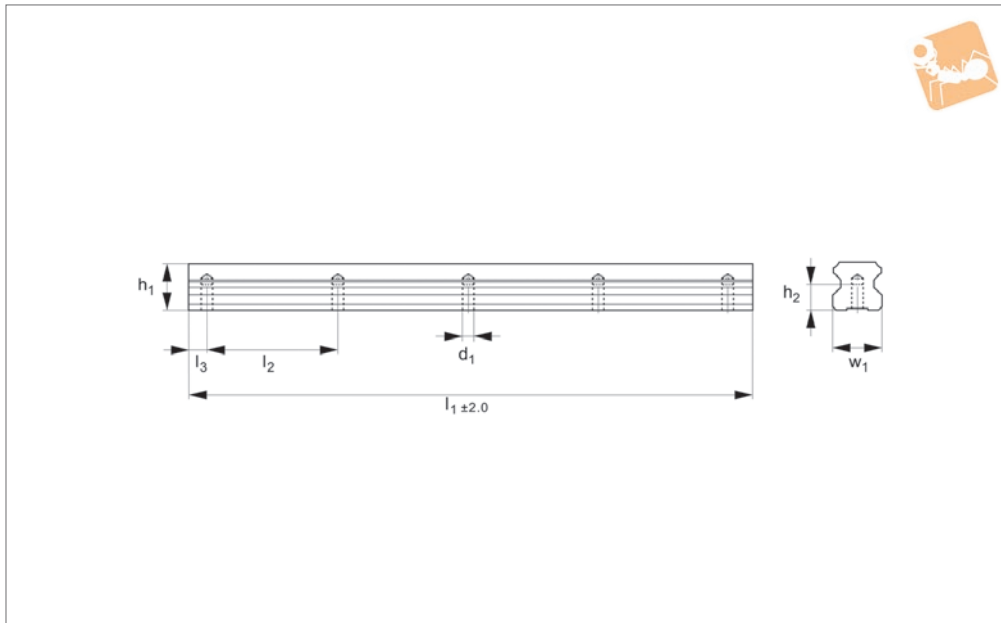




# 20mm Linear Guide Rail

rear fixing

Linear Guide-ways



**L1016.RF20**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 2,6 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF20-0160	20	160	16.3	60	20	20	10	M6	0.42
L1016.RF20-0220	20	220	16.3	60	20	20	10	M6	0.57
L1016.RF20-0280	20	280	16.3	60	20	20	10	M6	0.73
L1016.RF20-0340	20	340	16.3	60	20	20	10	M6	0.88
L1016.RF20-0400	20	400	16.3	60	20	20	10	M6	1.04
L1016.RF20-0460	20	460	16.3	60	20	20	10	M6	1.20
L1016.RF20-0520	20	520	16.3	60	20	20	10	M6	1.35
L1016.RF20-0580	20	580	16.3	60	20	20	10	M6	1.51
L1016.RF20-0640	20	640	16.3	60	20	20	10	M6	1.66
L1016.RF20-0700	20	700	16.3	60	20	20	10	M6	1.82
L1016.RF20-0760	20	760	16.3	60	20	20	10	M6	1.98
L1016.RF20-0820	20	820	16.3	60	20	20	10	M6	2.13
L1016.RF20-0880	20	880	16.3	60	20	20	10	M6	2.29
L1016.RF20-0940	20	940	16.3	60	20	20	10	M6	2.44
L1016.RF20-1000	20	1000	16.3	60	20	20	10	M6	2.60
L1016.RF20-1060	20	1060	16.3	60	20	20	10	M6	2.76
L1016.RF20-1120	20	1120	16.3	60	20	20	10	M6	2.91
L1016.RF20-1180	20	1180	16.3	60	20	20	10	M6	3.07
L1016.RF20-1240	20	1240	16.3	60	20	20	10	M6	3.22
L1016.RF20-1300	20	1300	16.3	60	20	20	10	M6	3.38
L1016.RF20-1360	20	1360	16.3	60	20	20	10	M6	3.54
L1016.RF20-1420	20	1420	16.3	60	20	20	10	M6	3.69
L1016.RF20-1480	20	1480	16.3	60	20	20	10	M6	3.85
L1016.RF20-1540	20	1540	16.3	60	20	20	10	M6	4.00
L1016.RF20-1600	20	1600	16.3	60	20	20	10	M6	4.16
L1016.RF20-1660	20	1660	16.3	60	20	20	10	M6	4.32
L1016.RF20-1720	20	1720	16.3	60	20	20	10	M6	4.47
L1016.RF20-1780	20	1780	16.3	60	20	20	10	M6	4.63
L1016.RF20-1840	20	1840	16.3	60	20	20	10	M6	4.78
L1016.RF20-1900	20	1900	16.3	60	20	20	10	M6	4.94
L1016.RF20-1960	20	1960	16.3	60	20	20	10	M6	5.10
L1016.RF20-2020	20	2020	16.3	60	20	20	10	M6	5.25



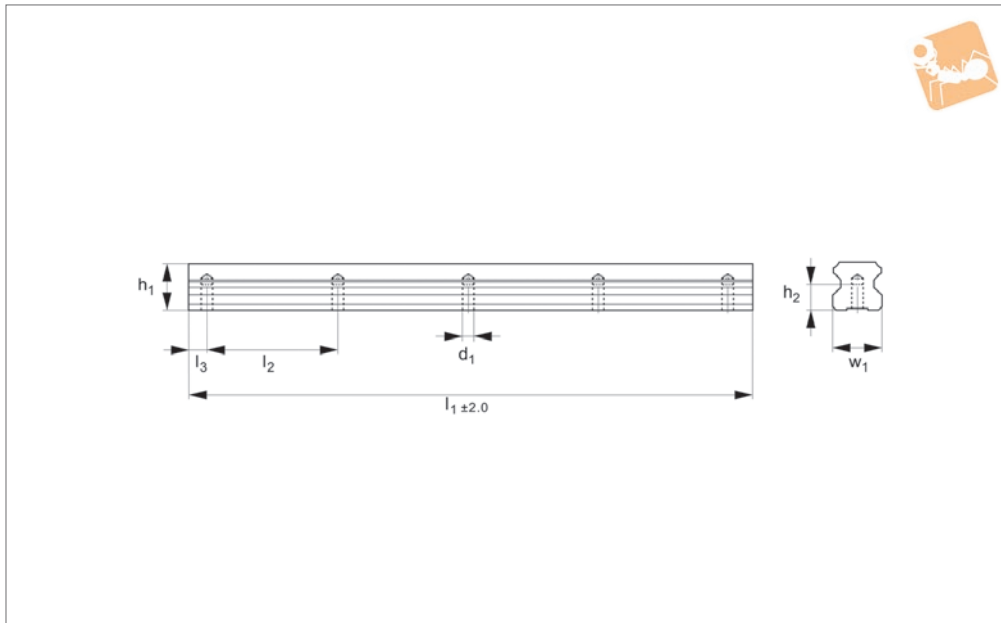
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF20-2080	20	2080	16.3	60	20	20	10	M6	5.41
L1016.RF20-2140	20	2140	16.3	60	20	20	10	M6	5.56
L1016.RF20-2200	20	2200	16.3	60	20	20	10	M6	5.72
L1016.RF20-2260	20	2260	16.3	60	20	20	10	M6	5.88
L1016.RF20-2320	20	2320	16.3	60	20	20	10	M6	6.03
L1016.RF20-2380	20	2380	16.3	60	20	20	10	M6	6.19
L1016.RF20-2440	20	2440	16.3	60	20	20	10	M6	6.34
L1016.RF20-2500	20	2500	16.3	60	20	20	10	M6	6.50
L1016.RF20-2560	20	2560	16.3	60	20	20	10	M6	6.66
L1016.RF20-2620	20	2620	16.3	60	20	20	10	M6	6.81
L1016.RF20-2680	20	2680	16.3	60	20	20	10	M6	6.97
L1016.RF20-2740	20	2740	16.3	60	20	20	10	M6	7.12
L1016.RF20-2800	20	2800	16.3	60	20	20	10	M6	7.28
L1016.RF20-2860	20	2860	16.3	60	20	20	10	M6	7.44
L1016.RF20-2920	20	2920	16.3	60	20	20	10	M6	7.59
L1016.RF20-2980	20	2980	16.3	60	20	20	10	M6	7.75
L1016.RF20-3040	20	3040	16.3	60	20	20	10	M6	7.90
L1016.RF20-3100	20	3100	16.3	60	20	20	10	M6	8.06
L1016.RF20-3160	20	3160	16.3	60	20	20	10	M6	8.22
L1016.RF20-3220	20	3220	16.3	60	20	20	10	M6	8.37
L1016.RF20-3280	20	3280	16.3	60	20	20	10	M6	8.53
L1016.RF20-3340	20	3340	16.3	60	20	20	10	M6	8.68
L1016.RF20-3400	20	3400	16.3	60	20	20	10	M6	8.84
L1016.RF20-3460	20	3460	16.3	60	20	20	10	M6	9.00
L1016.RF20-3520	20	3520	16.3	60	20	20	10	M6	9.15
L1016.RF20-3580	20	3580	16.3	60	20	20	10	M6	9.31
L1016.RF20-3640	20	3640	16.3	60	20	20	10	M6	9.46
L1016.RF20-3700	20	3700	16.3	60	20	20	10	M6	9.62
L1016.RF20-3760	20	3760	16.3	60	20	20	10	M6	9.78
L1016.RF20-3820	20	3820	16.3	60	20	20	10	M6	9.93
L1016.RF20-3880	20	3880	16.3	60	20	20	10	M6	10.09
L1016.RF20-3940	20	3940	16.3	60	20	20	10	M6	10.24
L1016.RF20-4000	20	4000	16.3	60	20	20	10	M6	10.40



# 25mm Linear Guide Rail

rear fixing

Linear Guide-ways



**L1016.RF25**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).

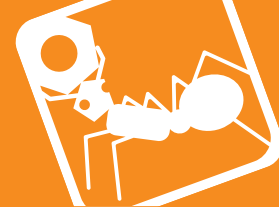
Other rail lengths on request.

Weight: 3,6 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF25-0160	25	160	19.2	60	23	20	12	M6	0.58
L1016.RF25-0220	25	220	19.2	60	23	20	12	M6	0.79
L1016.RF25-0280	25	280	19.2	60	23	20	12	M6	1.01
L1016.RF25-0340	25	340	19.2	60	23	20	12	M6	1.22
L1016.RF25-0400	25	400	19.2	60	23	20	12	M6	1.44
L1016.RF25-0460	25	460	19.2	60	23	20	12	M6	1.66
L1016.RF25-0520	25	520	19.2	60	23	20	12	M6	1.87
L1016.RF25-0580	25	580	19.2	60	23	20	12	M6	2.09
L1016.RF25-0640	25	640	19.2	60	23	20	12	M6	2.30
L1016.RF25-0700	25	700	19.2	60	23	20	12	M6	2.52
L1016.RF25-0760	25	760	19.2	60	23	20	12	M6	2.74
L1016.RF25-0820	25	820	19.2	60	23	20	12	M6	2.95
L1016.RF25-0880	25	880	19.2	60	23	20	12	M6	3.17
L1016.RF25-0940	25	940	19.2	60	23	20	12	M6	3.38
L1016.RF25-1000	25	1000	19.2	60	23	20	12	M6	3.60
L1016.RF25-1060	25	1060	19.2	60	23	20	12	M6	3.82
L1016.RF25-1120	25	1120	19.2	60	23	20	12	M6	4.03
L1016.RF25-1180	25	1180	19.2	60	23	20	12	M6	4.25
L1016.RF25-1240	25	1240	19.2	60	23	20	12	M6	4.46
L1016.RF25-1300	25	1300	19.2	60	23	20	12	M6	4.68
L1016.RF25-1360	25	1360	19.2	60	23	20	12	M6	4.90
L1016.RF25-1420	25	1420	19.2	60	23	20	12	M6	5.11
L1016.RF25-1480	25	1480	19.2	60	23	20	12	M6	5.33
L1016.RF25-1540	25	1540	19.2	60	23	20	12	M6	5.54
L1016.RF25-1600	25	1600	19.2	60	23	20	12	M6	5.76
L1016.RF25-1660	25	1660	19.2	60	23	20	12	M6	5.98
L1016.RF25-1720	25	1720	19.2	60	23	20	12	M6	6.19
L1016.RF25-1780	25	1780	19.2	60	23	20	12	M6	6.41
L1016.RF25-1840	25	1840	19.2	60	23	20	12	M6	6.62
L1016.RF25-1900	25	1900	19.2	60	23	20	12	M6	6.84
L1016.RF25-1960	25	1960	19.2	60	23	20	12	M6	7.06
L1016.RF25-2020	25	2020	19.2	60	23	20	12	M6	7.27



Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF25-2080	25	2080	19.2	60	23	20	12	M6	7.49
L1016.RF25-2140	25	2140	19.2	60	23	20	12	M6	7.70
L1016.RF25-2200	25	2200	19.2	60	23	20	12	M6	7.92
L1016.RF25-2260	25	2260	19.2	60	23	20	12	M6	8.14
L1016.RF25-2320	25	2320	19.2	60	23	20	12	M6	8.35
L1016.RF25-2380	25	2380	19.2	60	23	20	12	M6	8.57
L1016.RF25-2440	25	2440	19.2	60	23	20	12	M6	8.78
L1016.RF25-2500	25	2500	19.2	60	23	20	12	M6	9.00
L1016.RF25-2560	25	2560	19.2	60	23	20	12	M6	9.22
L1016.RF25-2620	25	2620	19.2	60	23	20	12	M6	9.43
L1016.RF25-2680	25	2680	19.2	60	23	20	12	M6	9.65
L1016.RF25-2740	25	2740	19.2	60	23	20	12	M6	9.86
L1016.RF25-2800	25	2800	19.2	60	23	20	12	M6	10.08
L1016.RF25-2860	25	2860	19.2	60	23	20	12	M6	10.30
L1016.RF25-2920	25	2920	19.2	60	23	20	12	M6	10.51
L1016.RF25-2980	25	2980	19.2	60	23	20	12	M6	10.73
L1016.RF25-3040	25	3040	19.2	60	23	20	12	M6	10.94
L1016.RF25-3100	25	3100	19.2	60	23	20	12	M6	11.16
L1016.RF25-3160	25	3160	19.2	60	23	20	12	M6	11.38
L1016.RF25-3220	25	3220	19.2	60	23	20	12	M6	11.59
L1016.RF25-3280	25	3280	19.2	60	23	20	12	M6	11.81
L1016.RF25-3340	25	3340	19.2	60	23	20	12	M6	12.02
L1016.RF25-3400	25	3400	19.2	60	23	20	12	M6	12.24
L1016.RF25-3460	25	3460	19.2	60	23	20	12	M6	12.46
L1016.RF25-3520	25	3520	19.2	60	23	20	12	M6	12.67
L1016.RF25-3580	25	3580	19.2	60	23	20	12	M6	12.89
L1016.RF25-3640	25	3640	19.2	60	23	20	12	M6	13.10
L1016.RF25-3700	25	3700	19.2	60	23	20	12	M6	13.32
L1016.RF25-3760	25	3760	19.2	60	23	20	12	M6	13.54
L1016.RF25-3820	25	3820	19.2	60	23	20	12	M6	13.75
L1016.RF25-3880	25	3880	19.2	60	23	20	12	M6	13.97
L1016.RF25-3940	25	3940	19.2	60	23	20	12	M6	14.18
L1016.RF25-4000	25	4000	19.2	60	23	20	12	M6	14.40



# 30mm Linear Guide Rail

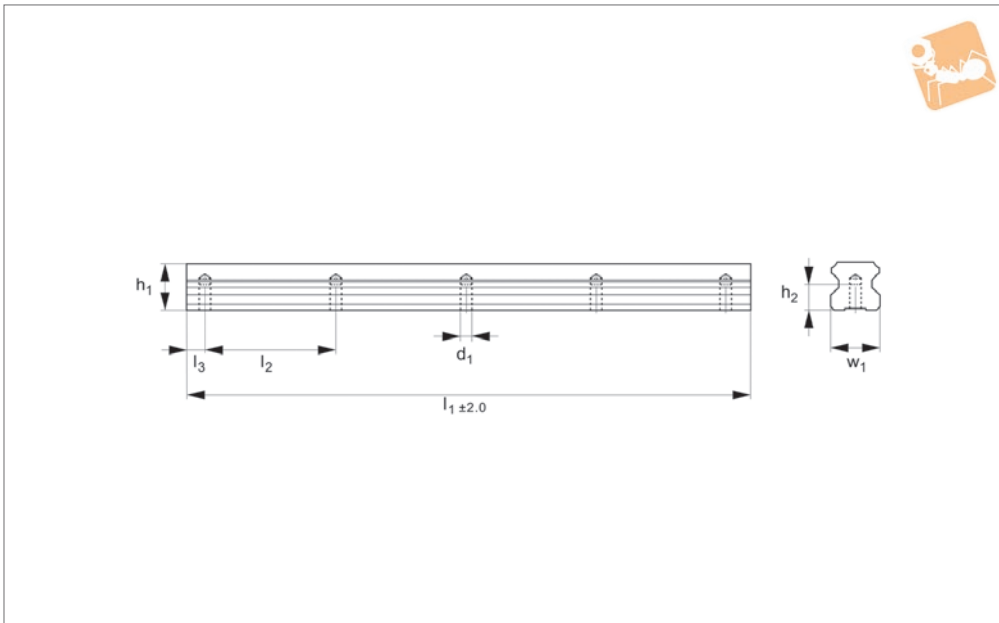
rear fixing

## Linear Guide-ways



**L1016.RF30**

LINEAR GUIDEWAYS



**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 5,2 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF30-0200	30	200	22.8	80	28	20	15	M8	1.04
L1016.RF30-0280	30	280	22.8	80	28	20	15	M8	1.46
L1016.RF30-0360	30	360	22.8	80	28	20	15	M8	1.87
L1016.RF30-0440	30	440	22.8	80	28	20	15	M8	2.29
L1016.RF30-0520	30	520	22.8	80	28	20	15	M8	2.70
L1016.RF30-0600	30	600	22.8	80	28	20	15	M8	3.12
L1016.RF30-0680	30	680	22.8	80	28	20	15	M8	3.54
L1016.RF30-0760	30	760	22.8	80	28	20	15	M8	3.95
L1016.RF30-0840	30	840	22.8	80	28	20	15	M8	4.37
L1016.RF30-0920	30	920	22.8	80	28	20	15	M8	4.78
L1016.RF30-1000	30	1000	22.8	80	28	20	15	M8	5.20
L1016.RF30-1080	30	1080	22.8	80	28	20	15	M8	5.62
L1016.RF30-1160	30	1160	22.8	80	28	20	15	M8	6.03
L1016.RF30-1240	30	1240	22.8	80	28	20	15	M8	6.45
L1016.RF30-1320	30	1320	22.8	80	28	20	15	M8	6.86
L1016.RF30-1400	30	1400	22.8	80	28	20	15	M8	7.28
L1016.RF30-1480	30	1480	22.8	80	28	20	15	M8	7.70
L1016.RF30-1560	30	1560	22.8	80	28	20	15	M8	8.11
L1016.RF30-1640	30	1640	22.8	80	28	20	15	M8	8.53
L1016.RF30-1720	30	1720	22.8	80	28	20	15	M8	8.94
L1016.RF30-1800	30	1800	22.8	80	28	20	15	M8	9.36
L1016.RF30-1880	30	1880	22.8	80	28	20	15	M8	9.78
L1016.RF30-1960	30	1960	22.8	80	28	20	15	M8	10.19
L1016.RF30-2040	30	2040	22.8	80	28	20	15	M8	10.61
L1016.RF30-2120	30	2120	22.8	80	28	20	15	M8	11.02
L1016.RF30-2200	30	2200	22.8	80	28	20	15	M8	11.44
L1016.RF30-2280	30	2280	22.8	80	28	20	15	M8	11.86
L1016.RF30-2360	30	2360	22.8	80	28	20	15	M8	12.27
L1016.RF30-2440	30	2440	22.8	80	28	20	15	M8	12.69
L1016.RF30-2520	30	2520	22.8	80	28	20	15	M8	13.10
L1016.RF30-2600	30	2600	22.8	80	28	20	15	M8	13.52
L1016.RF30-2680	30	2680	22.8	80	28	20	15	M8	13.94



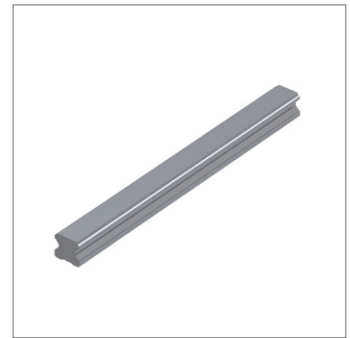
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF30-2760	30	2760	22.8	80	28	20	15	M8	14.35
L1016.RF30-2840	30	2840	22.8	80	28	20	15	M8	14.77
L1016.RF30-2920	30	2920	22.8	80	28	20	15	M8	15.18
L1016.RF30-3000	30	3000	22.8	80	28	20	15	M8	15.60
L1016.RF30-3080	30	3080	22.8	80	28	20	15	M8	16.02
L1016.RF30-3160	30	3160	22.8	80	28	20	15	M8	16.43
L1016.RF30-3240	30	3240	22.8	80	28	20	15	M8	16.85
L1016.RF30-3320	30	3320	22.8	80	28	20	15	M8	17.26
L1016.RF30-3400	30	3400	22.8	80	28	20	15	M8	17.68
L1016.RF30-3480	30	3480	22.8	80	28	20	15	M8	18.10
L1016.RF30-3560	30	3560	22.8	80	28	20	15	M8	18.51
L1016.RF30-3640	30	3640	22.8	80	28	20	15	M8	18.93
L1016.RF30-3720	30	3720	22.8	80	28	20	15	M8	19.34
L1016.RF30-3800	30	3800	22.8	80	28	20	15	M8	19.76
L1016.RF30-3880	30	3880	22.8	80	28	20	15	M8	20.18
L1016.RF30-3960	30	3960	22.8	80	28	20	15	M8	20.59
L1016.RF30-4000	30	4000	22.8	80	28	20	15	M8	20.80



# 35mm Linear Guide Rail

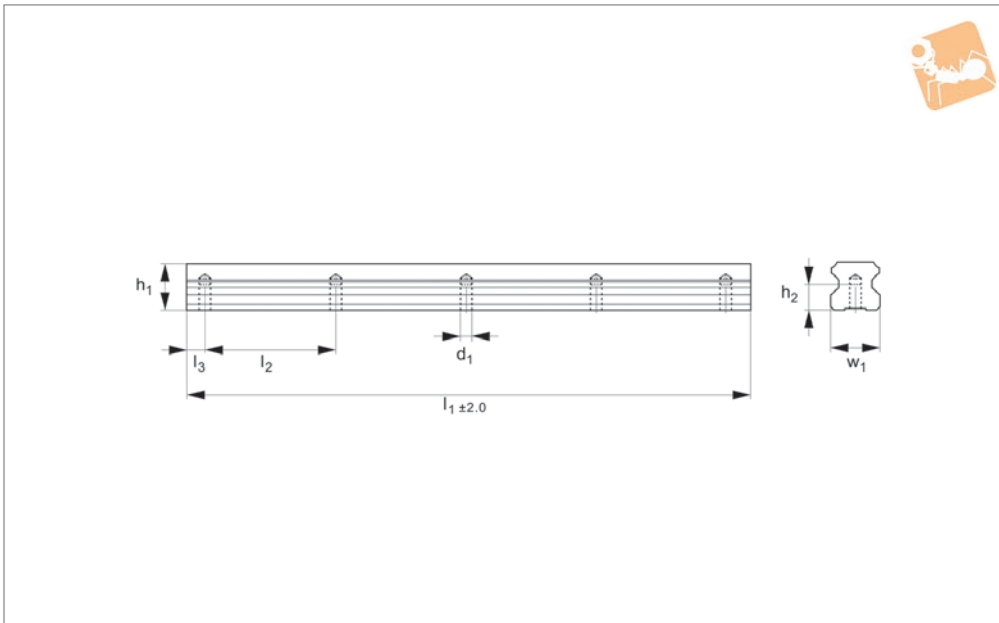
rear fixing

## Linear Guide-ways



**L1016.RF35**

LINEAR GUIDEWAYS



**Material**

Hardened and ground steel (typically 60 HRC).

**Technical Notes**

For carriages to suit the required load see

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 7,2 Kg/m.

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF35-0200	35	200	26.0	80	34	20	15	M8	1.44
L1016.RF35-0280	35	280	26.0	80	34	20	15	M8	2.02
L1016.RF35-0360	35	360	26.0	80	34	20	15	M8	2.59
L1016.RF35-0440	35	440	26.0	80	34	20	15	M8	3.17
L1016.RF35-0520	35	520	26.0	80	34	20	15	M8	3.74
L1016.RF35-0600	35	600	26.0	80	34	20	15	M8	4.32
L1016.RF35-0680	35	680	26.0	80	34	20	15	M8	4.90
L1016.RF35-0760	35	760	26.0	80	34	20	15	M8	5.47
L1016.RF35-0840	35	840	26.0	80	34	20	15	M8	6.05
L1016.RF35-0920	35	920	26.0	80	34	20	15	M8	6.62
L1016.RF35-1000	35	1000	26.0	80	34	20	15	M8	7.20
L1016.RF35-1080	35	1080	26.0	80	34	20	15	M8	7.78
L1016.RF35-1160	35	1160	26.0	80	34	20	15	M8	8.35
L1016.RF35-1240	35	1240	26.0	80	34	20	15	M8	8.93
L1016.RF35-1320	35	1320	26.0	80	34	20	15	M8	9.50
L1016.RF35-1400	35	1400	26.0	80	34	20	15	M8	10.08
L1016.RF35-1480	35	1480	26.0	80	34	20	15	M8	10.66
L1016.RF35-1560	35	1560	26.0	80	34	20	15	M8	11.23
L1016.RF35-1640	35	1640	26.0	80	34	20	15	M8	11.81
L1016.RF35-1720	35	1720	26.0	80	34	20	15	M8	12.38
L1016.RF35-1800	35	1800	26.0	80	34	20	15	M8	12.96
L1016.RF35-1880	35	1880	26.0	80	34	20	15	M8	13.54
L1016.RF35-1960	35	1960	26.0	80	34	20	15	M8	14.11
L1016.RF35-2040	35	2040	26.0	80	34	20	15	M8	14.69
L1016.RF35-2120	35	2120	26.0	80	34	20	15	M8	15.26
L1016.RF35-2200	35	2200	26.0	80	34	20	15	M8	15.84
L1016.RF35-2280	35	2280	26.0	80	34	20	15	M8	16.42
L1016.RF35-2360	35	2360	26.0	80	34	20	15	M8	16.99
L1016.RF35-2440	35	2440	26.0	80	34	20	15	M8	17.57
L1016.RF35-2520	35	2520	26.0	80	34	20	15	M8	18.14
L1016.RF35-2600	35	2600	26.0	80	34	20	15	M8	18.72
L1016.RF35-2680	35	2680	26.0	80	34	20	15	M8	19.30



Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF35-2760	35	2760	26.0	80	34	20	15	M8	19.87
L1016.RF35-2840	35	2840	26.0	80	34	20	15	M8	20.45
L1016.RF35-2920	35	2920	26.0	80	34	20	15	M8	21.02
L1016.RF35-3000	35	3000	26.0	80	34	20	15	M8	21.60
L1016.RF35-3080	35	3080	26.0	80	34	20	15	M8	22.18
L1016.RF35-3160	35	3160	26.0	80	34	20	15	M8	22.75
L1016.RF35-3240	35	3240	26.0	80	34	20	15	M8	23.33
L1016.RF35-3320	35	3320	26.0	80	34	20	15	M8	23.90
L1016.RF35-3400	35	3400	26.0	80	34	20	15	M8	24.48
L1016.RF35-3480	35	3480	26.0	80	34	20	15	M8	25.06
L1016.RF35-3560	35	3560	26.0	80	34	20	15	M8	25.63
L1016.RF35-3640	35	3640	26.0	80	34	20	15	M8	26.21
L1016.RF35-3720	35	3720	26.0	80	34	20	15	M8	26.78
L1016.RF35-3800	35	3800	26.0	80	34	20	15	M8	27.36
L1016.RF35-3880	35	3880	26.0	80	34	20	15	M8	27.94
L1016.RF35-3960	35	3960	26.0	80	34	20	15	M8	28.51
L1016.RF35-4000	35	4000	26.0	80	34	20	15	M8	28.80

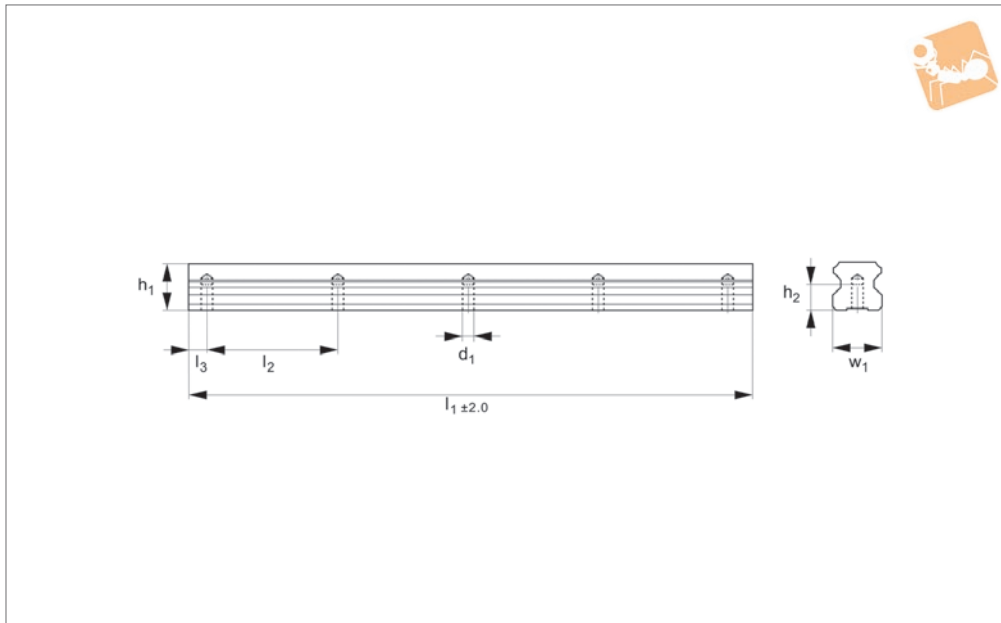




# 45mm Linear Guide Rail

rear fixing

Linear Guide-ways



**L1016.RF45**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 12,3 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.RF45-0255	45	255	31.1	105	45	22.5	24	M12	26.09
L1016.RF45-0360	45	360	31.1	105	45	22.5	24	M12	36.83
L1016.RF45-0465	45	465	31.1	105	45	22.5	24	M12	47.57
L1016.RF45-0570	45	570	31.1	105	45	22.5	24	M12	58.31
L1016.RF45-0675	45	675	31.1	105	45	22.5	24	M12	69.05
L1016.RF45-0780	45	780	31.1	105	45	22.5	24	M12	79.79
L1016.RF45-0885	45	885	31.1	105	45	22.5	24	M12	90.54
L1016.RF45-0990	45	990	31.1	105	45	22.5	24	M12	101.28
L1016.RF45-1095	45	1095	31.1	105	45	22.5	24	M12	13.47
L1016.RF45-1200	45	1200	31.1	105	45	22.5	24	M12	14.76
L1016.RF45-1305	45	1305	31.1	105	45	22.5	24	M12	16.05
L1016.RF45-1410	45	1410	31.1	105	45	22.5	24	M12	17.34
L1016.RF45-1515	45	1515	31.1	105	45	22.5	24	M12	18.63
L1016.RF45-1620	45	1620	31.1	105	45	22.5	24	M12	19.93
L1016.RF45-1725	45	1725	31.1	105	45	22.5	24	M12	21.22
L1016.RF45-1830	45	1830	31.1	105	45	22.5	24	M12	22.51
L1016.RF45-1935	45	1935	31.1	105	45	22.5	24	M12	23.80
L1016.RF45-2040	45	2040	31.1	105	45	22.5	24	M12	25.09
L1016.RF45-2145	45	2145	31.1	105	45	22.5	24	M12	26.38
L1016.RF45-2250	45	2250	31.1	105	45	22.5	24	M12	27.68
L1016.RF45-2355	45	2355	31.1	105	45	22.5	24	M12	28.97
L1016.RF45-2460	45	2460	31.1	105	45	22.5	24	M12	30.26
L1016.RF45-2565	45	2565	31.1	105	45	22.5	24	M12	31.55
L1016.RF45-2670	45	2670	31.1	105	45	22.5	24	M12	32.84
L1016.RF45-2775	45	2775	31.1	105	45	22.5	24	M12	34.13
L1016.RF45-2880	45	2880	31.1	105	45	22.5	24	M12	35.42
L1016.RF45-2985	45	2985	31.1	105	45	22.5	24	M12	36.72
L1016.RF45-3090	45	3090	31.1	105	45	22.5	24	M12	38.01
L1016.RF45-3195	45	3195	31.1	105	45	22.5	24	M12	39.30
L1016.RF45-3300	45	3300	31.1	105	45	22.5	24	M12	40.59
L1016.RF45-3405	45	3405	31.1	105	45	22.5	24	M12	41.88
L1016.RF45-3510	45	3510	31.1	105	45	22.5	24	M12	43.17

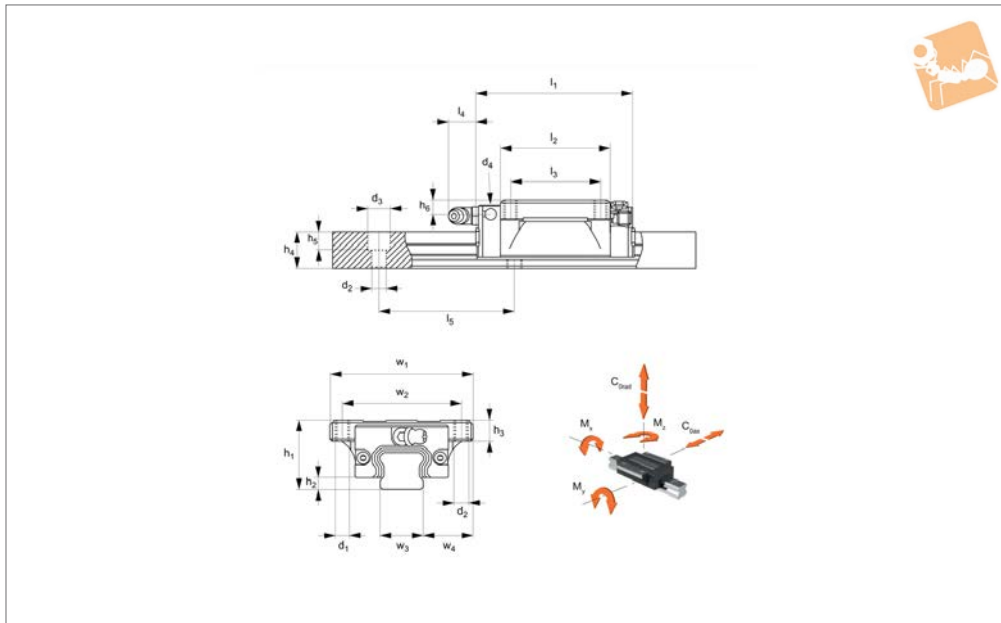


Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
<b>L1016.RF45-3615</b>	45	3615	31.1	105	45	22.5	24	M12	44.46
<b>L1016.RF45-3720</b>	45	3720	31.1	105	45	22.5	24	M12	45.76
<b>L1016.RF45-3825</b>	45	3825	31.1	105	45	22.5	24	M12	47.05
<b>L1016.RF45-3930</b>	45	3930	31.1	105	45	22.5	24	M12	48.34
<b>L1016.RF45-4000</b>	45	4000	31.1	105	45	22.5	24	M12	49.20



# Flanged Carriages - Standard blackened

## Linear Guideways



**L1016.F-BC**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel. Matt black oxide ceramic layer, Thickness 2-10 μ. No deformation of the parts. Resistant to acids, alkalis and solvents. Relatively soft layer (up to 350 HV), which clears away by rolling over in the area of the raceways. Suitable for applications in the optic and

medical industry.

**Technical Notes**

Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55). Standard preload carriages are K<sub>0</sub> (no

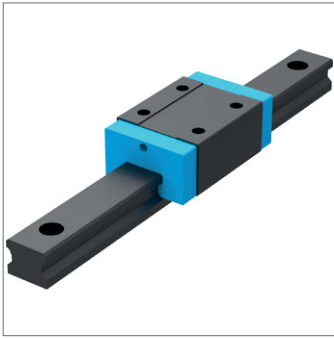
preload) or K<sub>1</sub> (0,02 x dynamic load capacity). Other preloads available on request.

**Tips**

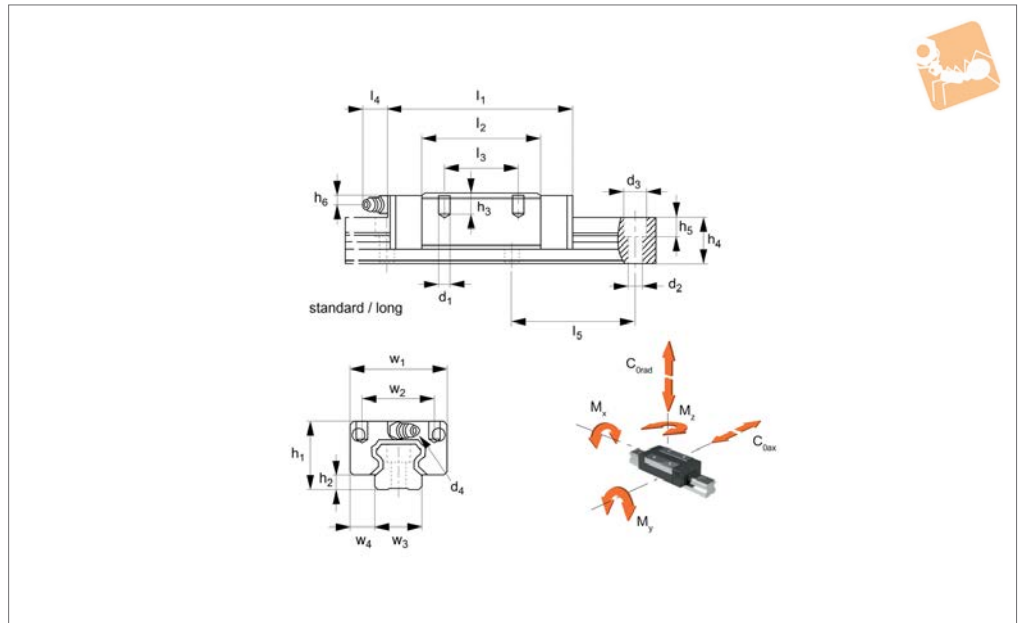
Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	l <sub>3</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	d <sub>1</sub>	h <sub>5</sub>	d <sub>2</sub>	h <sub>6</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	l <sub>4</sub>	Weight kg
L1016.F15-BC	15	58.6	24	40.2	47	30	3.3	8.0	13.0	M 5	6.0	4.5	5.5	38	15	16.0	5.0	0.21
L1016.F15-L-BC	15	66.1	24	47.7	47	30	3.3	8.0	13.0	M 5	6.0	4.5	5.5	38	15	16.0	5.0	0.23
L1016.F20-BC	20	69.3	30	48.5	63	40	4.5	9.0	16.3	M 6	8.5	6.0	7.1	53	20	21.5	15.6	0.40
L1016.F20-L-BC	20	82.1	30	61.3	63	40	4.5	9.0	16.3	M 6	8.5	6.0	7.1	53	20	21.5	15.6	0.46
L1016.F25-BC	25	79.2	36	57.5	70	45	5.8	10.0	19.2	M 8	9.0	7.0	10.2	57	23	23.5	15.6	0.57
L1016.F25-L-BC	25	93.9	36	72.2	70	45	5.8	10.0	19.2	M 8	9.0	7.0	10.2	57	23	23.5	15.6	0.72

Order No.	l <sub>5</sub>	d <sub>3</sub>	d <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	Dyn. load C <sub>rad &amp; ax</sub> kN	Static load C <sub>0rad &amp; ax</sub> kN
L1016.F15-BC	60	7.5	M3 x 0,5	137	120	120	11.67	19.90
L1016.F15-L-BC	60	7.5	M3 x 0,5	166	171	171	14.12	24.05
L1016.F20-BC	60	9.5	M6 x 1,0	289	224	224	17.98	30.96
L1016.F20-L-BC	60	9.5	M6 x 1,0	376	366	366	23.30	40.11
L1016.F25-BC	60	11.0	M6 x 1,0	447	358	358	25.25	41.73
L1016.F25-L-BC	60	11.0	M6 x 1,0	576	577	577	32.44	53.63



## L1016.U-BC



### Material

Hardened and ground steel. Matt black oxide ceramic layer. Thickness 2-10 μ. No deformation of the parts. Resistant to acids, alkalis and solvents. Relatively soft layer (up to 350 HV), which clears away by rolling over in the area of the raceways. Suitable for applications in the optic and

medical industry.

### Technical Notes

Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55). Standard preload carriages are K<sub>0</sub> (no

preload) or K<sub>1</sub> (0,02 x dynamic load capacity). Other preloads available on request.

### Tips

Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	l <sub>3</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	d <sub>1</sub>	h <sub>5</sub>	d <sub>2</sub>	h <sub>6</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	l <sub>4</sub>	Weight kg
L1016.U15-BC	15	58.6	28	40.2	34	26	3.3	6.0	13.0	M 4	6.0	4.5	9.5	26	15	9.5	5.0	0.19
L1016.U20-BC	20	69.3	30	48.5	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.31
L1016.U20-L-BC	20	82.1	30	61.3	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.36
L1016.U25-BC	25	79.2	40	57.5	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.45
L1016.U25-L-BC	25	93.9	40	72.2	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.66

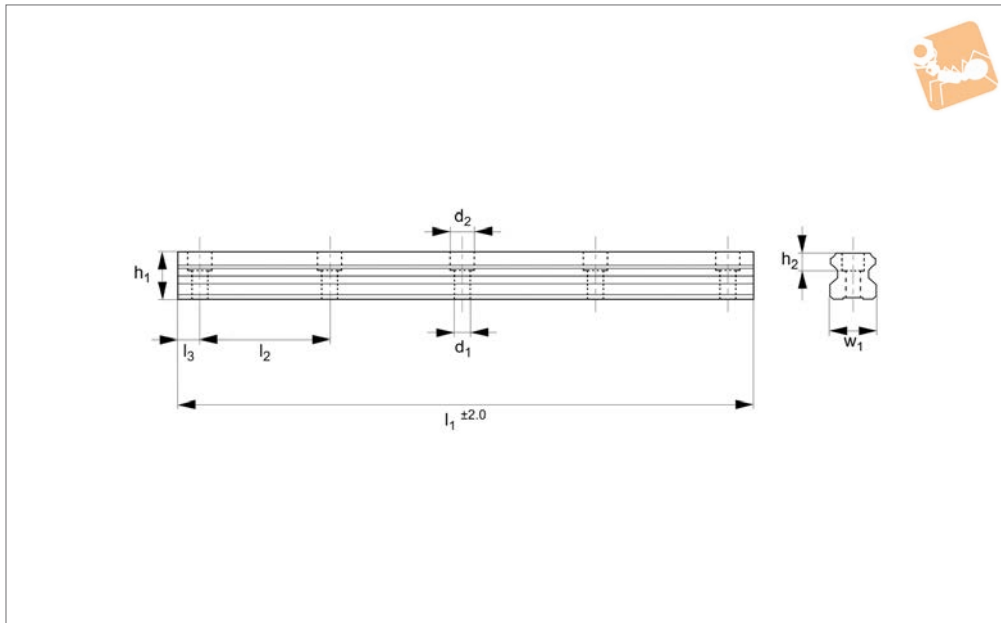
Order No.	l <sub>5</sub>	d <sub>3</sub>	d <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	Dyn. load C <sub>rad &amp; ax</sub> kN	Static load C <sub>0rad &amp; ax</sub> kN
L1016.U15-BC	60	7.5	M 3x0,5	137	120	120	11.67	19.90
L1016.U20-BC	60	9.5	M 6x1,0	289	224	224	17.98	30.96
L1016.U20-L-BC	60	9.5	M 6x1,0	376	366	366	23.30	40.11
L1016.U25-BC	60	11.0	M 6x1,0	447	358	358	25.25	41.73
L1016.U25-L-BC	60	11.0	M 6x1,0	576	577	577	32.44	53.63



# 15mm Linear Guide Rail

standard, blackened

Linear Guide-ways



**L1016.BL15**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC). Black oxide.

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 1,4 Kg/m.

**Tips**

Plastic screw covers issued with the rails to protect screw holes from debris.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL15-0160	15	160	13	60	15	20	6.0	4.5	7.5	M 4	0.22
L1016.BL15-0220	15	220	13	60	15	20	6.0	4.5	7.5	M 4	0.31
L1016.BL15-0280	15	280	13	60	15	20	6.0	4.5	7.5	M 4	0.39
L1016.BL15-0340	15	340	13	60	15	20	6.0	4.5	7.5	M 4	0.48
L1016.BL15-0400	15	400	13	60	15	20	6.0	4.5	7.5	M 4	0.56
L1016.BL15-0460	15	460	13	60	15	20	6.0	4.5	7.5	M 4	0.64
L1016.BL15-0520	15	520	13	60	15	20	6.0	4.5	7.5	M 4	0.73
L1016.BL15-0580	15	580	13	60	15	20	6.0	4.5	7.5	M 4	0.81
L1016.BL15-0640	15	640	13	60	15	20	6.0	4.5	7.5	M 4	0.90
L1016.BL15-0700	15	700	13	60	15	20	6.0	4.5	7.5	M 4	0.98
L1016.BL15-0760	15	760	13	60	15	20	6.0	4.5	7.5	M 4	1.06
L1016.BL15-0820	15	820	13	60	15	20	6.0	4.5	7.5	M 4	1.15
L1016.BL15-0880	15	880	13	60	15	20	6.0	4.5	7.5	M 4	1.23
L1016.BL15-0940	15	940	13	60	15	20	6.0	4.5	7.5	M 4	1.32
L1016.BL15-1000	15	1000	13	60	15	20	6.0	4.5	7.5	M 4	1.40
L1016.BL15-1060	15	1060	13	60	15	20	6.0	4.5	7.5	M 4	1.48
L1016.BL15-1120	15	1120	13	60	15	20	6.0	4.5	7.5	M 4	1.57
L1016.BL15-1180	15	1180	13	60	15	20	6.0	4.5	7.5	M 4	1.65
L1016.BL15-1240	15	1240	13	60	15	20	6.0	4.5	7.5	M 4	1.74
L1016.BL15-1300	15	1300	13	60	15	20	6.0	4.5	7.5	M 4	1.82
L1016.BL15-1360	15	1360	13	60	15	20	6.0	4.5	7.5	M 4	1.90
L1016.BL15-1420	15	1420	13	60	15	20	6.0	4.5	7.5	M 4	1.99
L1016.BL15-1480	15	1480	13	60	15	20	6.0	4.5	7.5	M 4	2.07
L1016.BL15-1540	15	1540	13	60	15	20	6.0	4.5	7.5	M 4	2.16
L1016.BL15-1600	15	1600	13	60	15	20	6.0	4.5	7.5	M 4	2.24
L1016.BL15-1660	15	1660	13	60	15	20	6.0	4.5	7.5	M 4	2.32
L1016.BL15-1720	15	1720	13	60	15	20	6.0	4.5	7.5	M 4	2.41
L1016.BL15-1780	15	1780	13	60	15	20	6.0	4.5	7.5	M 4	2.49
L1016.BL15-1840	15	1840	13	60	15	20	6.0	4.5	7.5	M 4	2.58
L1016.BL15-1900	15	1900	13	60	15	20	6.0	4.5	7.5	M 4	2.66
L1016.BL15-1960	15	1960	13	60	15	20	6.0	4.5	7.5	M 4	2.74
L1016.BL15-2020	15	2020	13	60	15	20	6.0	4.5	7.5	M 4	2.83



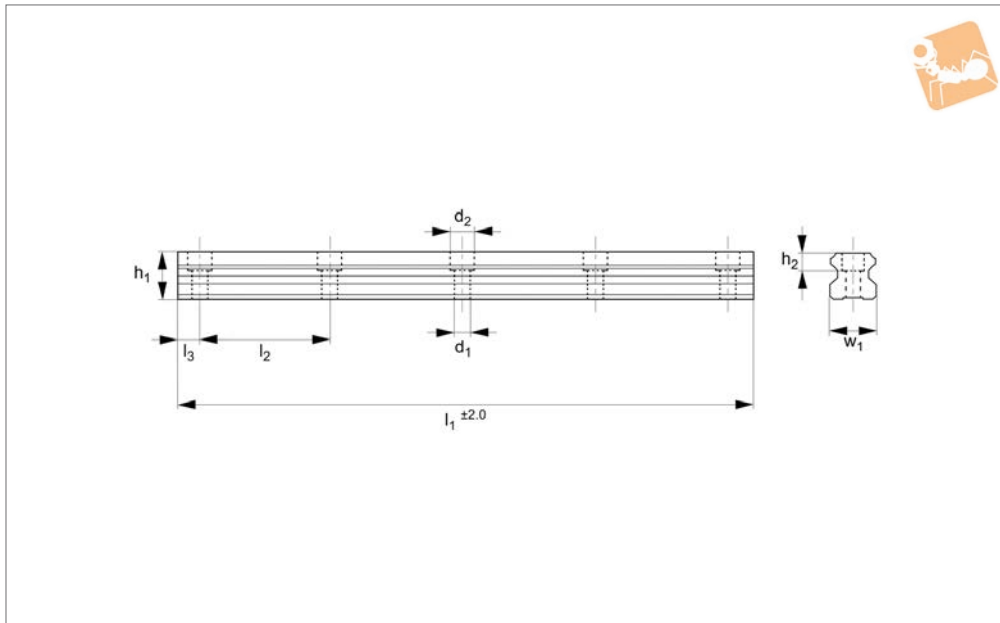
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL15-2080	15	2080	13	60	15	20	6.0	4.5	7.5	M 4	2.91
L1016.BL15-2140	15	2140	13	60	15	20	6.0	4.5	7.5	M 4	3.00
L1016.BL15-2200	15	2220	13	60	15	20	6.0	4.5	7.5	M 4	3.08
L1016.BL15-2260	15	2260	13	60	15	20	6.0	4.5	7.5	M 4	3.16
L1016.BL15-2320	15	2320	13	60	15	20	6.0	4.5	7.5	M 4	3.25
L1016.BL15-2380	15	2380	13	60	15	20	6.0	4.5	7.5	M 4	3.33
L1016.BL15-2440	15	2440	13	60	15	20	6.0	4.5	7.5	M 4	3.42
L1016.BL15-2500	15	2500	13	60	15	20	6.0	4.5	7.5	M 4	3.50
L1016.BL15-2560	15	2560	13	60	15	20	6.0	4.5	7.5	M 4	3.58
L1016.BL15-2620	15	2620	13	60	15	20	6.0	4.5	7.5	M 4	3.67
L1016.BL15-2680	15	2680	13	60	15	20	6.0	4.5	7.5	M 4	3.75
L1016.BL15-2740	15	2740	13	60	15	20	6.0	4.5	7.5	M 4	3.84
L1016.BL15-2800	15	2800	13	60	15	20	6.0	4.5	7.5	M 4	3.92
L1016.BL15-2860	15	2860	13	60	15	20	6.0	4.5	7.5	M 4	4.00
L1016.BL15-2920	15	2920	13	60	15	20	6.0	4.5	7.5	M 4	4.09
L1016.BL15-2980	15	2980	13	60	15	20	6.0	4.5	7.5	M 4	4.17
L1016.BL15-3040	15	3040	13	60	15	20	6.0	4.5	7.5	M 4	4.26
L1016.BL15-3100	15	3100	13	60	15	20	6.0	4.5	7.5	M 4	4.34
L1016.BL15-3160	15	3160	13	60	15	20	6.0	4.5	7.5	M 4	4.42
L1016.BL15-3220	15	3220	13	60	15	20	6.0	4.5	7.5	M 4	4.51
L1016.BL15-3280	15	3280	13	60	15	20	6.0	4.5	7.5	M 4	4.59
L1016.BL15-3340	15	3340	13	60	15	20	6.0	4.5	7.5	M 4	4.68
L1016.BL15-3400	15	3400	13	60	15	20	6.0	4.5	7.5	M 4	4.76
L1016.BL15-3460	15	3460	13	60	15	20	6.0	4.5	7.5	M 4	4.84
L1016.BL15-3520	15	3520	13	60	15	20	6.0	4.5	7.5	M 4	4.93
L1016.BL15-3580	15	3580	13	60	15	20	6.0	4.5	7.5	M 4	5.01
L1016.BL15-3640	15	3640	13	60	15	20	6.0	4.5	7.5	M 4	5.10
L1016.BL15-3700	15	3700	13	60	15	20	6.0	4.5	7.5	M 4	5.18
L1016.BL15-3760	15	3760	13	60	15	20	6.0	4.5	7.5	M 4	5.26
L1016.BL15-3820	15	3820	13	60	15	20	6.0	4.5	7.5	M 4	5.35
L1016.BL15-3880	15	3880	13	60	15	20	6.0	4.5	7.5	M 4	5.43
L1016.BL15-3940	15	3940	13	60	15	20	6.0	4.5	7.5	M 4	5.52
L1016.BL15-4000	15	4000	13	60	15	20	6.0	4.5	7.5	M 4	5.60



# 20mm Linear Guide Rail

standard, blackened

Linear Guide-ways



**L1016.BL20**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC). Black oxide.

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 2,6 Kg/m.

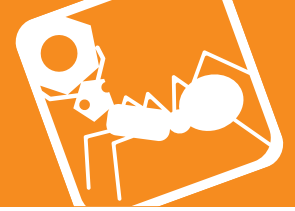
**Tips**

Plastic screw covers issued with the rails to protect the holes from debris.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL20-0160	20	160	16.3	60	20	20	8.5	6	9.5	M 5	0.42
L1016.BL20-0220	20	220	16.3	60	20	20	8.5	6	9.5	M 5	0.57
L1016.BL20-0280	20	280	16.3	60	20	20	8.5	6	9.5	M 5	0.73
L1016.BL20-0340	20	340	16.3	60	20	20	8.5	6	9.5	M 5	0.88
L1016.BL20-0400	20	400	16.3	60	20	20	8.5	6	9.5	M 5	1.04
L1016.BL20-0460	20	460	16.3	60	20	20	8.5	6	9.5	M 5	1.20
L1016.BL20-0520	20	520	16.3	60	20	20	8.5	6	9.5	M 5	1.35
L1016.BL20-0580	20	580	16.3	60	20	20	8.5	6	9.5	M 5	1.51
L1016.BL20-0640	20	640	16.3	60	20	20	8.5	6	9.5	M 5	1.66
L1016.BL20-0700	20	700	16.3	60	20	20	8.5	6	9.5	M 5	1.82
L1016.BL20-0760	20	760	16.3	60	20	20	8.5	6	9.5	M 5	1.98
L1016.BL20-0820	20	820	16.3	60	20	20	8.5	6	9.5	M 5	2.13
L1016.BL20-0880	20	880	16.3	60	20	20	8.5	6	9.5	M 5	2.29
L1016.BL20-0940	20	940	16.3	60	20	20	8.5	6	9.5	M 5	2.44
L1016.BL20-1000	20	1000	16.3	60	20	20	8.5	6	9.5	M 5	2.60
L1016.BL20-1060	20	1060	16.3	60	20	20	8.5	6	9.5	M 5	2.76
L1016.BL20-1120	20	1120	16.3	60	20	20	8.5	6	9.5	M 5	2.91
L1016.BL20-1180	20	1180	16.3	60	20	20	8.5	6	9.5	M 5	3.07
L1016.BL20-1240	20	1240	16.3	60	20	20	8.5	6	9.5	M 5	3.22
L1016.BL20-1300	20	1300	16.3	60	20	20	8.5	6	9.5	M 5	3.38
L1016.BL20-1360	20	1360	16.3	60	20	20	8.5	6	9.5	M 5	3.54
L1016.BL20-1420	20	1420	16.3	60	20	20	8.5	6	9.5	M 5	3.69
L1016.BL20-1480	20	1480	16.3	60	20	20	8.5	6	9.5	M 5	3.85
L1016.BL20-1540	20	1540	16.3	60	20	20	8.5	6	9.5	M 5	4.00
L1016.BL20-1600	20	1600	16.3	60	20	20	8.5	6	9.5	M 5	4.16
L1016.BL20-1660	20	1660	16.3	60	20	20	8.5	6	9.5	M 5	4.32
L1016.BL20-1720	20	1720	16.3	60	20	20	8.5	6	9.5	M 5	4.47
L1016.BL20-1780	20	1780	16.3	60	20	20	8.5	6	9.5	M 5	4.63
L1016.BL20-1840	20	1840	16.3	60	20	20	8.5	6	9.5	M 5	4.78
L1016.BL20-1900	20	1900	16.3	60	20	20	8.5	6	9.5	M 5	4.94
L1016.BL20-1960	20	1960	16.3	60	20	20	8.5	6	9.5	M 5	5.10
L1016.BL20-2020	20	2020	16.3	60	20	20	8.5	6	9.5	M 5	5.25



Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL20-2080	20	2080	16.3	60	20	20	8.5	6	9.5	M 5	5.41
L1016.BL20-2140	20	2140	16.3	60	20	20	8.5	6	9.5	M 5	5.56
L1016.BL20-2200	20	2200	16.3	60	20	20	8.5	6	9.5	M 5	5.72
L1016.BL20-2260	20	2260	16.3	60	20	20	8.5	6	9.5	M 5	5.88
L1016.BL20-2320	20	2320	16.3	60	20	20	8.5	6	9.5	M 5	6.03
L1016.BL20-2380	20	2380	16.3	60	20	20	8.5	6	9.5	M 5	6.19
L1016.BL20-2440	20	2440	16.3	60	20	20	8.5	6	9.5	M 5	6.34
L1016.BL20-2500	20	2500	16.3	60	20	20	8.5	6	9.5	M 5	6.50
L1016.BL20-2560	20	2560	16.3	60	20	20	8.5	6	9.5	M 5	6.66
L1016.BL20-2620	20	2620	16.3	60	20	20	8.5	6	9.5	M 5	6.81
L1016.BL20-2680	20	2680	16.3	60	20	20	8.5	6	9.5	M 5	6.97
L1016.BL20-2740	20	2740	16.3	60	20	20	8.5	6	9.5	M 5	7.12
L1016.BL20-2800	20	2800	16.3	60	20	20	8.5	6	9.5	M 5	7.28
L1016.BL20-2860	20	2860	16.3	60	20	20	8.5	6	9.5	M 5	7.44
L1016.BL20-2920	20	2920	16.3	60	20	20	8.5	6	9.5	M 5	7.59
L1016.BL20-2980	20	2980	16.3	60	20	20	8.5	6	9.5	M 5	7.75
L1016.BL20-3040	20	3040	16.3	60	20	20	8.5	6	9.5	M 5	7.90
L1016.BL20-3100	20	3100	16.3	60	20	20	8.5	6	9.5	M 5	8.06
L1016.BL20-3160	20	3160	16.3	60	20	20	8.5	6	9.5	M 5	8.22
L1016.BL20-3220	20	3220	16.3	60	20	20	8.5	6	9.5	M 5	8.37
L1016.BL20-3280	20	3280	16.3	60	20	20	8.5	6	9.5	M 5	8.53
L1016.BL20-3340	20	3340	16.3	60	20	20	8.5	6	9.5	M 5	8.68
L1016.BL20-3400	20	3400	16.3	60	20	20	8.5	6	9.5	M 5	8.84
L1016.BL20-3460	20	3460	16.3	60	20	20	8.5	6	9.5	M 5	9.00
L1016.BL20-3520	20	3520	16.3	60	20	20	8.5	6	9.5	M 5	9.15
L1016.BL20-3580	20	3580	16.3	60	20	20	8.5	6	9.5	M 5	9.31
L1016.BL20-3640	20	3640	16.3	60	20	20	8.5	6	9.5	M 5	9.46
L1016.BL20-3700	20	3700	16.3	60	20	20	8.5	6	9.5	M 5	9.62
L1016.BL20-3760	20	3760	16.3	60	20	20	8.5	6	9.5	M 5	9.78
L1016.BL20-3820	20	3820	16.3	60	20	20	8.5	6	9.5	M 5	9.93
L1016.BL20-3880	20	3880	16.3	60	20	20	8.5	6	9.5	M 5	10.09
L1016.BL20-3940	20	3940	16.3	60	20	20	8.5	6	9.5	M 5	10.24
L1016.BL20-4000	20	4000	16.3	60	20	20	8.5	6	9.5	M 5	10.40

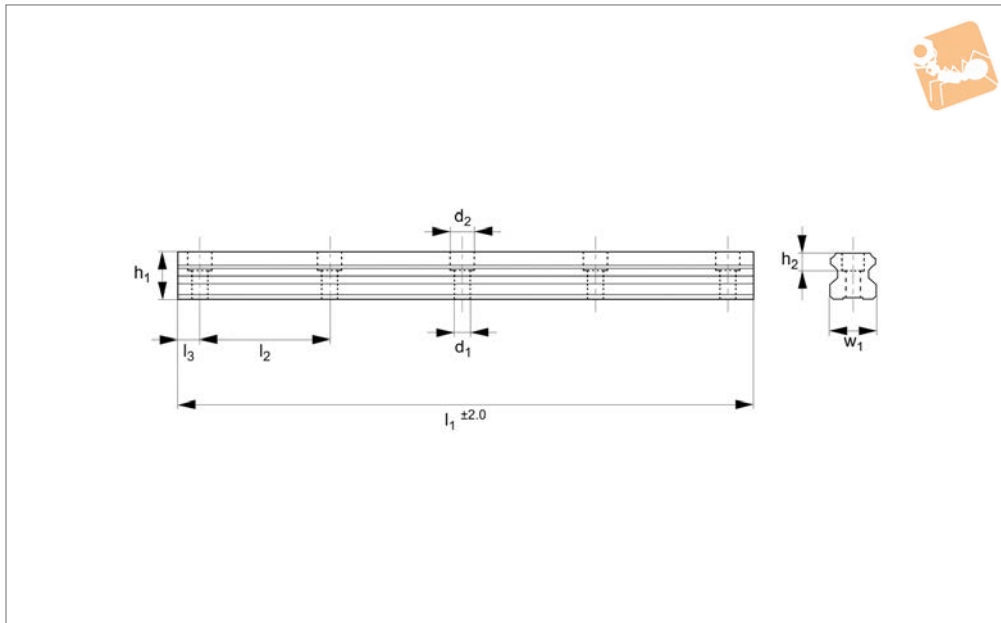




# 25mm Linear Guide Rail

standard, blackened

Linear Guide-ways



**L1016.BL25**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC). Black oxide.

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 3,6 Kg/m.

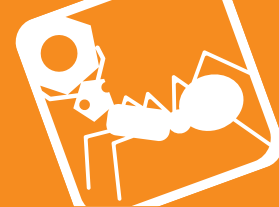
**Tips**

Plastic screw covers issued with the rails to protect the holes from debris.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL25-0160	25	160	19.2	60	23	20	9	7	11	M 6	0.58
L1016.BL25-0220	25	220	19.2	60	23	20	9	7	11	M 6	0.79
L1016.BL25-0280	25	280	19.2	60	23	20	9	7	11	M 6	1.01
L1016.BL25-0340	25	340	19.2	60	23	20	9	7	11	M 6	1.22
L1016.BL25-0400	25	400	19.2	60	23	20	9	7	11	M 6	1.44
L1016.BL25-0460	25	460	19.2	60	23	20	9	7	11	M 6	1.66
L1016.BL25-0520	25	520	19.2	60	23	20	9	7	11	M 6	1.87
L1016.BL25-0580	25	580	19.2	60	23	20	9	7	11	M 6	2.09
L1016.BL25-0640	25	640	19.2	60	23	20	9	7	11	M 6	2.30
L1016.BL25-0700	25	700	19.2	60	23	20	9	7	11	M 6	2.52
L1016.BL25-0760	25	760	19.2	60	23	20	9	7	11	M 6	2.74
L1016.BL25-0820	25	820	19.2	60	23	20	9	7	11	M 6	2.95
L1016.BL25-0880	25	880	19.2	60	23	20	9	7	11	M 6	3.17
L1016.BL25-0940	25	940	19.2	60	23	20	9	7	11	M 6	3.38
L1016.BL25-1000	25	1000	19.2	60	23	20	9	7	11	M 6	3.60
L1016.BL25-1060	25	1060	19.2	60	23	20	9	7	11	M 6	3.82
L1016.BL25-1120	25	1120	19.2	60	23	20	9	7	11	M 6	4.03
L1016.BL25-1180	25	1180	19.2	60	23	20	9	7	11	M 6	4.25
L1016.BL25-1240	25	1240	19.2	60	23	20	9	7	11	M 6	4.46
L1016.BL25-1300	25	1300	19.2	60	23	20	9	7	11	M 6	4.68
L1016.BL25-1360	25	1360	19.2	60	23	20	9	7	11	M 6	4.90
L1016.BL25-1420	25	1420	19.2	60	23	20	9	7	11	M 6	5.11
L1016.BL25-1480	25	1480	19.2	60	23	20	9	7	11	M 6	5.33
L1016.BL25-1540	25	1540	19.2	60	23	20	9	7	11	M 6	5.54
L1016.BL25-1600	25	1600	19.2	60	23	20	9	7	11	M 6	5.76
L1016.BL25-1660	25	1660	19.2	60	23	20	9	7	11	M 6	5.98
L1016.BL25-1720	25	1720	19.2	60	23	20	9	7	11	M 6	6.19
L1016.BL25-1780	25	1780	19.2	60	23	20	9	7	11	M 6	6.41
L1016.BL25-1840	25	1840	19.2	60	23	20	9	7	11	M 6	6.62
L1016.BL25-1900	25	1900	19.2	60	23	20	9	7	11	M 6	6.84
L1016.BL25-1960	25	1960	19.2	60	23	20	9	7	11	M 6	7.06
L1016.BL25-2020	25	2020	19.2	60	23	20	9	7	11	M 6	7.27



Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	$d_2$	For screws	Weight kg
L1016.BL25-2080	25	2080	19.2	60	23	20	9	7	11	M 6	7.49
L1016.BL25-2140	25	2140	19.2	60	23	20	9	7	11	M 6	7.70
L1016.BL25-2200	25	2200	19.2	60	23	20	9	7	11	M 6	7.92
L1016.BL25-2260	25	2260	19.2	60	23	20	9	7	11	M 6	8.14
L1016.BL25-2320	25	2320	19.2	60	23	20	9	7	11	M 6	8.35
L1016.BL25-2380	25	2380	19.2	60	23	20	9	7	11	M 6	8.57
L1016.BL25-2440	25	2440	19.2	60	23	20	9	7	11	M 6	8.78
L1016.BL25-2500	25	2500	19.2	60	23	20	9	7	11	M 6	9.00
L1016.BL25-2560	25	2560	19.2	60	23	20	9	7	11	M 6	9.22
L1016.BL25-2620	25	2620	19.2	60	23	20	9	7	11	M 6	9.43
L1016.BL25-2680	25	2680	19.2	60	23	20	9	7	11	M 6	9.65
L1016.BL25-2740	25	2740	19.2	60	23	20	9	7	11	M 6	9.86
L1016.BL25-2800	25	2800	19.2	60	23	20	9	7	11	M 6	10.08
L1016.BL25-2860	25	2860	19.2	60	23	20	9	7	11	M 6	10.30
L1016.BL25-2920	25	2920	19.2	60	23	20	9	7	11	M 6	10.51
L1016.BL25-2980	25	2980	19.2	60	23	20	9	7	11	M 6	10.73
L1016.BL25-3040	25	3040	19.2	60	23	20	9	7	11	M 6	10.94
L1016.BL25-3100	25	3100	19.2	60	23	20	9	7	11	M 6	11.16
L1016.BL25-3160	25	3160	19.2	60	23	20	9	7	11	M 6	11.38
L1016.BL25-3220	25	3220	19.2	60	23	20	9	7	11	M 6	11.59
L1016.BL25-3280	25	3280	19.2	60	23	20	9	7	11	M 6	11.81
L1016.BL25-3340	25	3340	19.2	60	23	20	9	7	11	M 6	12.02
L1016.BL25-3400	25	3400	19.2	60	23	20	9	7	11	M 6	12.24
L1016.BL25-3460	25	3460	19.2	60	23	20	9	7	11	M 6	12.46
L1016.BL25-3520	25	3520	19.2	60	23	20	9	7	11	M 6	12.67



# 15mm Linear Guide Rail

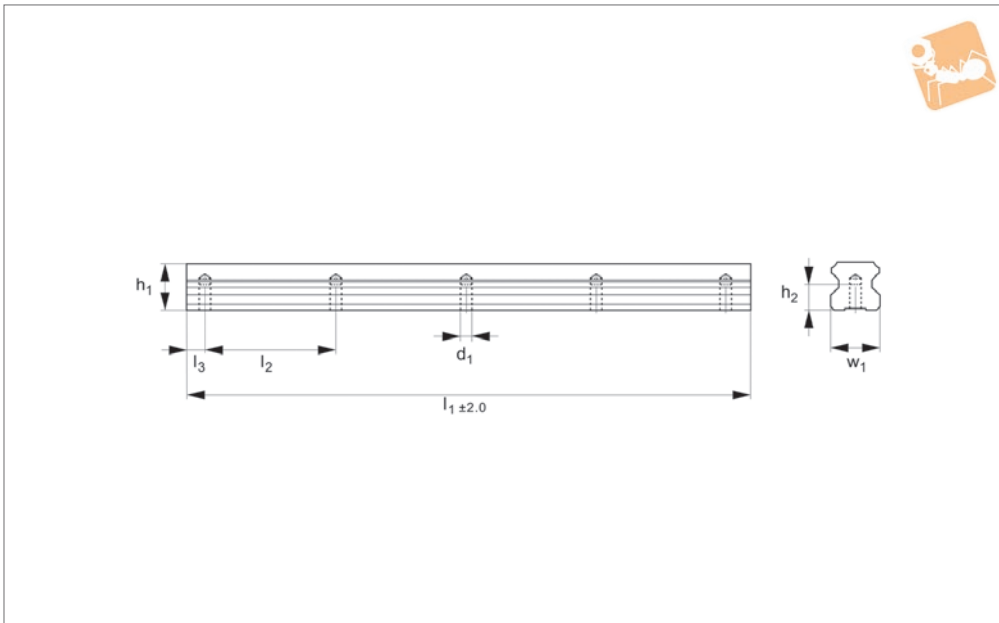
rear fixing, blackened

Linear Guide-ways



**L1016.BRF15**

LINEAR GUIDEWAYS



### Material

Hardened and ground steel (typically 60 HRC). Black Oxide

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 1,4 Kg/m.

### Technical Notes

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF15-0160	15	160	13	60	15	20	8	M 5	0.22
L1016.BRF15-0220	15	220	13	60	15	20	8	M 5	0.31
L1016.BRF15-0280	15	280	13	60	15	20	8	M 5	0.39
L1016.BRF15-0340	15	340	13	60	15	20	8	M 5	0.48
L1016.BRF15-0400	15	400	13	60	15	20	8	M 5	0.56
L1016.BRF15-0460	15	460	13	60	15	20	8	M 5	0.64
L1016.BRF15-0520	15	520	13	60	15	20	8	M 5	0.73
L1016.BRF15-0580	15	580	13	60	15	20	8	M 5	0.81
L1016.BRF15-0640	15	640	13	60	15	20	8	M 5	0.90
L1016.BRF15-0700	15	700	13	60	15	20	8	M 5	0.98
L1016.BRF15-0760	15	760	13	60	15	20	8	M 5	1.06
L1016.BRF15-0820	15	820	13	60	15	20	8	M 5	1.15
L1016.BRF15-0880	15	880	13	60	15	20	8	M 5	1.23
L1016.BRF15-0940	15	940	13	60	15	20	8	M 5	1.32
L1016.BRF15-1000	15	1000	13	60	15	20	8	M 5	1.40
L1016.BRF15-1060	15	1060	13	60	15	20	8	M 5	1.48
L1016.BRF15-1120	15	1120	13	60	15	20	8	M 5	1.57
L1016.BRF15-1180	15	1180	13	60	15	20	8	M 5	1.65
L1016.BRF15-1240	15	1240	13	60	15	20	8	M 5	1.74
L1016.BRF15-1300	15	1300	13	60	15	20	8	M 5	1.82
L1016.BRF15-1360	15	1360	13	60	15	20	8	M 5	1.90
L1016.BRF15-1420	15	1420	13	60	15	20	8	M 5	1.99
L1016.BRF15-1480	15	1480	13	60	15	20	8	M 5	2.07
L1016.BRF15-1540	15	1540	13	60	15	20	8	M 5	2.16
L1016.BRF15-1600	15	1600	13	60	15	20	8	M 5	2.24
L1016.BRF15-1660	15	1660	13	60	15	20	8	M 5	2.32
L1016.BRF15-1720	15	1720	13	60	15	20	8	M 5	2.41
L1016.BRF15-1780	15	1780	13	60	15	20	8	M 5	2.49
L1016.BRF15-1840	15	1840	13	60	15	20	8	M 5	2.58
L1016.BRF15-1900	15	1900	13	60	15	20	8	M 5	2.66
L1016.BRF15-1960	15	1960	13	60	15	20	8	M 5	2.74
L1016.BRF15-2020	15	2020	13	60	15	20	8	M 5	2.83



LINEAR GUIDEWAYS

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF15-2080	15	2080	13	60	15	20	8	M 5	2.91
L1016.BRF15-2140	15	2140	13	60	15	20	8	M 5	3.00
L1016.BRF15-2200	15	2220	13	60	15	20	8	M 5	3.08
L1016.BRF15-2260	15	2260	13	60	15	20	8	M 5	3.16
L1016.BRF15-2320	15	2320	13	60	15	20	8	M 5	3.25
L1016.BRF15-2380	15	2380	13	60	15	20	8	M 5	3.33
L1016.BRF15-2440	15	2440	13	60	15	20	8	M 5	3.42
L1016.BRF15-2500	15	2500	13	60	15	20	8	M 5	3.50
L1016.BRF15-2560	15	2560	13	60	15	20	8	M 5	3.58
L1016.BRF15-2620	15	2620	13	60	15	20	8	M 5	3.67
L1016.BRF15-2680	15	2680	13	60	15	20	8	M 5	3.75
L1016.BRF15-2740	15	2740	13	60	15	20	8	M 5	3.84
L1016.BRF15-2800	15	2800	13	60	15	20	8	M 5	3.92
L1016.BRF15-2860	15	2860	13	60	15	20	8	M 5	4.00
L1016.BRF15-2920	15	2920	13	60	15	20	8	M 5	4.09
L1016.BRF15-2980	15	2980	13	60	15	20	8	M 5	4.17
L1016.BRF15-3040	15	3040	13	60	15	20	8	M 5	4.26
L1016.BRF15-3100	15	3100	13	60	15	20	8	M 5	4.34
L1016.BRF15-3160	15	3160	13	60	15	20	8	M 5	4.42
L1016.BRF15-3220	15	3220	13	60	15	20	8	M 5	4.51
L1016.BRF15-3280	15	3280	13	60	15	20	8	M 5	4.59
L1016.BRF15-3340	15	3340	13	60	15	20	8	M 5	4.68
L1016.BRF15-3400	15	3400	13	60	15	20	8	M 5	4.76
L1016.BRF15-3460	15	3460	13	60	15	20	8	M 5	4.84
L1016.BRF15-3520	15	3520	13	60	15	20	8	M 5	4.93
L1016.BRF15-3580	15	3580	13	60	15	20	8	M 5	5.01
L1016.BRF15-3640	15	3640	13	60	15	20	8	M 5	5.10
L1016.BRF15-3700	15	3700	13	60	15	20	8	M 5	5.18
L1016.BRF15-3760	15	3760	13	60	15	20	8	M 5	5.26
L1016.BRF15-3820	15	3820	13	60	15	20	8	M 5	5.35
L1016.BRF15-3880	15	3880	13	60	15	20	8	M 5	5.43
L1016.BRF15-3940	15	3940	13	60	15	20	8	M 5	5.52
L1016.BRF15-4000	15	4000	13	60	15	20	8	M 5	5.60



# 20mm Linear Guide Rail

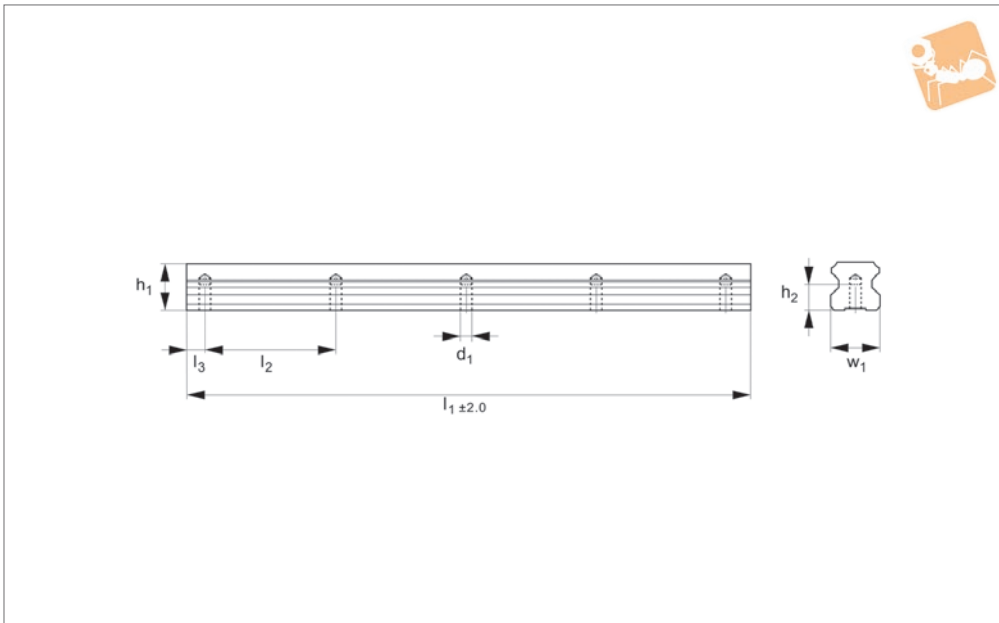
rear fixing, blackened

Linear Guide-ways



**L1016.BRF20**

LINEAR GUIDEWAYS



**Material**

Hardened and ground steel (typically 60 HRC). Black Oxide

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 2,6 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF20-0160	20	160	16.3	60	20	20	10	M 6	0.42
L1016.BRF20-0220	20	220	16.3	60	20	20	10	M 6	0.57
L1016.BRF20-0280	20	280	16.3	60	20	20	10	M 6	0.73
L1016.BRF20-0340	20	340	16.3	60	20	20	10	M 6	0.88
L1016.BRF20-0400	20	400	16.3	60	20	20	10	M 6	1.04
L1016.BRF20-0460	20	460	16.3	60	20	20	10	M 6	1.20
L1016.BRF20-0520	20	520	16.3	60	20	20	10	M 6	1.35
L1016.BRF20-0580	20	580	16.3	60	20	20	10	M 6	1.51
L1016.BRF20-0640	20	640	16.3	60	20	20	10	M 6	1.66
L1016.BRF20-0700	20	700	16.3	60	20	20	10	M 6	1.82
L1016.BRF20-0760	20	760	16.3	60	20	20	10	M 6	1.98
L1016.BRF20-0820	20	820	16.3	60	20	20	10	M 6	2.13
L1016.BRF20-0880	20	880	16.3	60	20	20	10	M 6	2.29
L1016.BRF20-0940	20	940	16.3	60	20	20	10	M 6	2.44
L1016.BRF20-1000	20	1000	16.3	60	20	20	10	M 6	2.60
L1016.BRF20-1060	20	1060	16.3	60	20	20	10	M 6	2.76
L1016.BRF20-1120	20	1120	16.3	60	20	20	10	M 6	2.91
L1016.BRF20-1180	20	1180	16.3	60	20	20	10	M 6	3.07
L1016.BRF20-1240	20	1240	16.3	60	20	20	10	M 6	3.22
L1016.BRF20-1300	20	1300	16.3	60	20	20	10	M 6	3.38
L1016.BRF20-1360	20	1360	16.3	60	20	20	10	M 6	3.54
L1016.BRF20-1420	20	1420	16.3	60	20	20	10	M 6	3.69
L1016.BRF20-1480	20	1480	16.3	60	20	20	10	M 6	3.85
L1016.BRF20-1540	20	1540	16.3	60	20	20	10	M 6	4.00
L1016.BRF20-1600	20	1600	16.3	60	20	20	10	M 6	4.16
L1016.BRF20-1660	20	1660	16.3	60	20	20	10	M 6	4.32
L1016.BRF20-1720	20	1720	16.3	60	20	20	10	M 6	4.47
L1016.BRF20-1780	20	1780	16.3	60	20	20	10	M 6	4.63
L1016.BRF20-1840	20	1840	16.3	60	20	20	10	M 6	4.78
L1016.BRF20-1900	20	1900	16.3	60	20	20	10	M 6	4.94
L1016.BRF20-1960	20	1960	16.3	60	20	20	10	M 6	5.10
L1016.BRF20-2020	20	2020	16.3	60	20	20	10	M 6	5.25



LINEAR GUIDEWAYS

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF20-2080	20	2080	16.3	60	20	20	10	M 6	5.41
L1016.BRF20-2140	20	2140	16.3	60	20	20	10	M 6	5.56
L1016.BRF20-2200	20	2200	16.3	60	20	20	10	M 6	5.72
L1016.BRF20-2260	20	2260	16.3	60	20	20	10	M 6	5.88
L1016.BRF20-2320	20	2320	16.3	60	20	20	10	M 6	6.03
L1016.BRF20-2380	20	2380	16.3	60	20	20	10	M 6	6.19
L1016.BRF20-2440	20	2440	16.3	60	20	20	10	M 6	6.34
L1016.BRF20-2500	20	2500	16.3	60	20	20	10	M 6	6.50
L1016.BRF20-2560	20	2560	16.3	60	20	20	10	M 6	6.66
L1016.BRF20-2620	20	2620	16.3	60	20	20	10	M 6	6.81
L1016.BRF20-2680	20	2680	16.3	60	20	20	10	M 6	6.97
L1016.BRF20-2740	20	2740	16.3	60	20	20	10	M 6	7.12
L1016.BRF20-2800	20	2800	16.3	60	20	20	10	M 6	7.28
L1016.BRF20-2860	20	2860	16.3	60	20	20	10	M 6	7.44
L1016.BRF20-2920	20	2920	16.3	60	20	20	10	M 6	7.59
L1016.BRF20-2980	20	2980	16.3	60	20	20	10	M 6	7.75
L1016.BRF20-3040	20	3040	16.3	60	20	20	10	M 6	7.90
L1016.BRF20-3100	20	3100	16.3	60	20	20	10	M 6	8.06
L1016.BRF20-3160	20	3160	16.3	60	20	20	10	M 6	8.22
L1016.BRF20-3220	20	3220	16.3	60	20	20	10	M 6	8.37
L1016.BRF20-3280	20	3280	16.3	60	20	20	10	M 6	8.53
L1016.BRF20-3340	20	3340	16.3	60	20	20	10	M 6	8.68
L1016.BRF20-3400	20	3400	16.3	60	20	20	10	M 6	8.84
L1016.BRF20-3460	20	3460	16.3	60	20	20	10	M 6	9.00
L1016.BRF20-3520	20	3520	16.3	60	20	20	10	M 6	9.15
L1016.BRF20-3580	20	3580	16.3	60	20	20	10	M 6	9.31
L1016.BRF20-3640	20	3640	16.3	60	20	20	10	M 6	9.46
L1016.BRF20-3700	20	3700	16.3	60	20	20	10	M 6	9.62
L1016.BRF20-3760	20	3760	16.3	60	20	20	10	M 6	9.78
L1016.BRF20-3820	20	3820	16.3	60	20	20	10	M 6	9.93
L1016.BRF20-3880	20	3880	16.3	60	20	20	10	M 6	10.09
L1016.BRF20-3940	20	3940	16.3	60	20	20	10	M 6	10.24
L1016.BRF20-4000	20	4000	16.3	60	20	20	10	M 6	10.40



# 25mm Linear Guide Rail

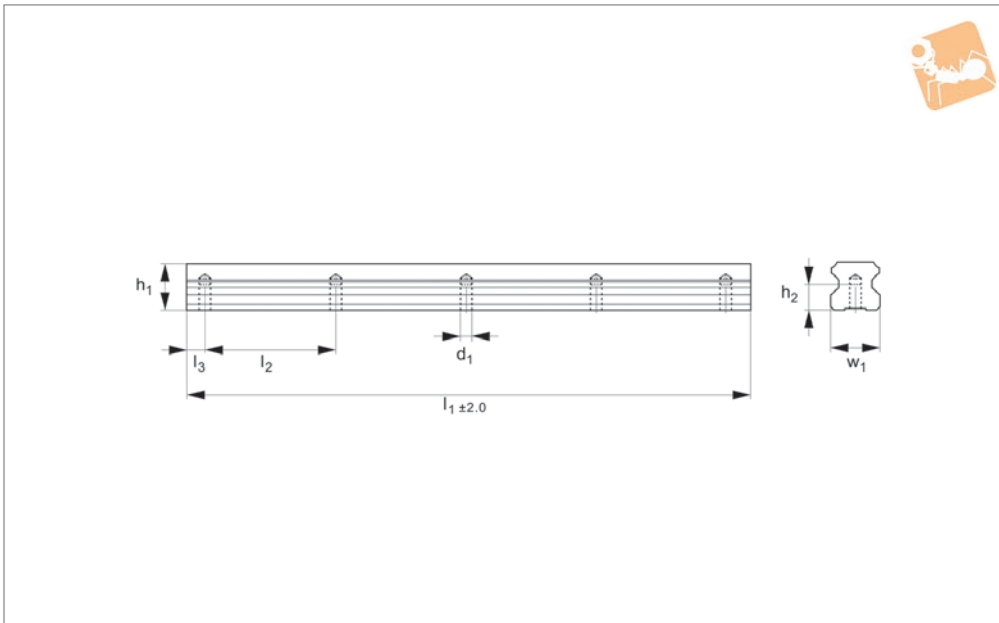
rear fixing, blackened

Linear Guide-ways



**L1016.BRF25**

LINEAR GUIDEWAYS



**Material**

Hardened and ground steel (typically 60 HRC) Black Oxide.

part nos. L1016.F (flanged) and L1016.U (unflanged).

Other rail lengths on request.

Weight: 3,6 Kg/m.

**Technical Notes**

For carriages to suit the required load see

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF25-0160	25	160	19.2	60	23	20	12	M6	0.58
L1016.BRF25-0220	25	220	19.2	60	23	20	12	M6	0.79
L1016.BRF25-0280	25	280	19.2	60	23	20	12	M6	1.01
L1016.BRF25-0340	25	340	19.2	60	23	20	12	M6	1.22
L1016.BRF25-0400	25	400	19.2	60	23	20	12	M6	1.44
L1016.BRF25-0460	25	460	19.2	60	23	20	12	M6	1.66
L1016.BRF25-0520	25	520	19.2	60	23	20	12	M6	1.87
L1016.BRF25-0580	25	580	19.2	60	23	20	12	M6	2.09
L1016.BRF25-0640	25	640	19.2	60	23	20	12	M6	2.30
L1016.BRF25-0700	25	700	19.2	60	23	20	12	M6	2.52
L1016.BRF25-0760	25	760	19.2	60	23	20	12	M6	2.74
L1016.BRF25-0820	25	820	19.2	60	23	20	12	M6	2.95
L1016.BRF25-0880	25	880	19.2	60	23	20	12	M6	3.17
L1016.BRF25-0940	25	940	19.2	60	23	20	12	M6	3.38
L1016.BRF25-1000	25	1000	19.2	60	23	20	12	M6	3.60
L1016.BRF25-1060	25	1060	19.2	60	23	20	12	M6	3.82
L1016.BRF25-1120	25	1120	19.2	60	23	20	12	M6	4.03
L1016.BRF25-1180	25	1180	19.2	60	23	20	12	M6	4.25
L1016.BRF25-1240	25	1240	19.2	60	23	20	12	M6	4.46
L1016.BRF25-1300	25	1300	19.2	60	23	20	12	M6	4.68
L1016.BRF25-1360	25	1360	19.2	60	23	20	12	M6	4.90
L1016.BRF25-1420	25	1420	19.2	60	23	20	12	M6	5.11
L1016.BRF25-1480	25	1480	19.2	60	23	20	12	M6	5.33
L1016.BRF25-1540	25	1540	19.2	60	23	20	12	M6	5.54
L1016.BRF25-1600	25	1600	19.2	60	23	20	12	M6	5.76
L1016.BRF25-1660	25	1660	19.2	60	23	20	12	M6	5.98
L1016.BRF25-1720	25	1720	19.2	60	23	20	12	M6	6.19
L1016.BRF25-1780	25	1780	19.2	60	23	20	12	M6	6.41
L1016.BRF25-1840	25	1840	19.2	60	23	20	12	M6	6.62
L1016.BRF25-1900	25	1900	19.2	60	23	20	12	M6	6.84
L1016.BRF25-1960	25	1960	19.2	60	23	20	12	M6	7.06
L1016.BRF25-2020	25	2020	19.2	60	23	20	12	M6	7.27



LINEAR GUIDEWAYS

Order No.	Rail size	$l_1$	$h_1$	$l_2$	$w_1$	$l_3$	$h_2$	$d_1$	Weight kg
L1016.BRF25-2080	25	2080	19.2	60	23	20	12	M6	7.49
L1016.BRF25-2140	25	2140	19.2	60	23	20	12	M6	7.70
L1016.BRF25-2200	25	2200	19.2	60	23	20	12	M6	7.92
L1016.BRF25-2260	25	2260	19.2	60	23	20	12	M6	8.14
L1016.BRF25-2320	25	2320	19.2	60	23	20	12	M6	8.35
L1016.BRF25-2380	25	2380	19.2	60	23	20	12	M6	8.57
L1016.BRF25-2440	25	2440	19.2	60	23	20	12	M6	8.78
L1016.BRF25-2500	25	2500	19.2	60	23	20	12	M6	9.00
L1016.BRF25-2560	25	2560	19.2	60	23	20	12	M6	9.22
L1016.BRF25-2620	25	2620	19.2	60	23	20	12	M6	9.43
L1016.BRF25-2680	25	2680	19.2	60	23	20	12	M6	9.65
L1016.BRF25-2740	25	2740	19.2	60	23	20	12	M6	9.86
L1016.BRF25-2800	25	2800	19.2	60	23	20	12	M6	10.08
L1016.BRF25-2860	25	2860	19.2	60	23	20	12	M6	10.30
L1016.BRF25-2920	25	2920	19.2	60	23	20	12	M6	10.51
L1016.BRF25-2980	25	2980	19.2	60	23	20	12	M6	10.73
L1016.BRF25-3040	25	3040	19.2	60	23	20	12	M6	10.94
L1016.BRF25-3100	25	3100	19.2	60	23	20	12	M6	11.16
L1016.BRF25-3160	25	3160	19.2	60	23	20	12	M6	11.38
L1016.BRF25-3220	25	3220	19.2	60	23	20	12	M6	11.59
L1016.BRF25-3280	25	3280	19.2	60	23	20	12	M6	11.81
L1016.BRF25-3340	25	3340	19.2	60	23	20	12	M6	12.02
L1016.BRF25-3400	25	3400	19.2	60	23	20	12	M6	12.24
L1016.BRF25-3460	25	3460	19.2	60	23	20	12	M6	12.46
L1016.BRF25-3520	25	3520	19.2	60	23	20	12	M6	12.67
L1016.BRF25-3580	25	3580	19.2	60	23	20	12	M6	12.89
L1016.BRF25-3640	25	3640	19.2	60	23	20	12	M6	13.10
L1016.BRF25-3700	25	3700	19.2	60	23	20	12	M6	13.32
L1016.BRF25-3760	25	3760	19.2	60	23	20	12	M6	13.54
L1016.BRF25-3820	25	3820	19.2	60	23	20	12	M6	13.75
L1016.BRF25-3880	25	3880	19.2	60	23	20	12	M6	13.97
L1016.BRF25-3940	25	3940	19.2	60	23	20	12	M6	14.18
L1016.BRF25-4000	25	4000	19.2	60	23	20	12	M6	14.40



#### Manual rail clamps

- Many of our customers wish to lock their moving element in position on the rails. Whilst this can be relatively simply achieved with the use of an adjustable clamping handle and thrust pad, we also offer a clamping element which can be integrated into your rail/system design.
- This is available in the standard manual version as well as (on request) a pneumatic version for linear guideways only (not compact rail systems).
- These manual clamps have a holding force of up to 2,000N.
- They are relatively compact in shape. Please bear in mind the extra space required for the clamping element when calculating the total stroke you require.

#### Applications

- Table cross beams.
- Sliding beds.
- Width adjustment stops.
- Positioning of optical equipment.



The manual rail clamps are used alongside the standard flanged or unflanged rail carriages. When selecting ensure:

- a) the rail clamp suits the rail that you are using.
- b) that the total assembly height of the rail clamp is the same as that of the rail carriage L1016.U or L1016.F.



### Load capacities – explained

- A number of load figures are stated for load capacity:

**Dynamic Load** – this is the main figure considered for linear guideways. It is the moving load that the system can bear. It takes account of the total moving load as well as considerations such as impact, vibration and fatigue.

**Static Load** – this is a load that is constant for an extended time (i.e. the dead load the system can bear before any movement). It can be in tension or compression.

For these linear guideways the radial and axial load capacities are the same.

Moment loads are twisting loads generated by offset loads in either X, Y or Z planes. Moment loads can be reduced by adding further carriages or rails to reduce any twisting of the carriage due to the load offset.

### Straightness of rails

- The measurements of the straightness of the system are taken from the running accuracy of the sliders over the length of the rails (given in microns) – see system precision page.
- For standard accuracy this equates to around 20 microns for a metre length, increasing to 35 microns for a 4 metre length.

### What lengths can be provided?

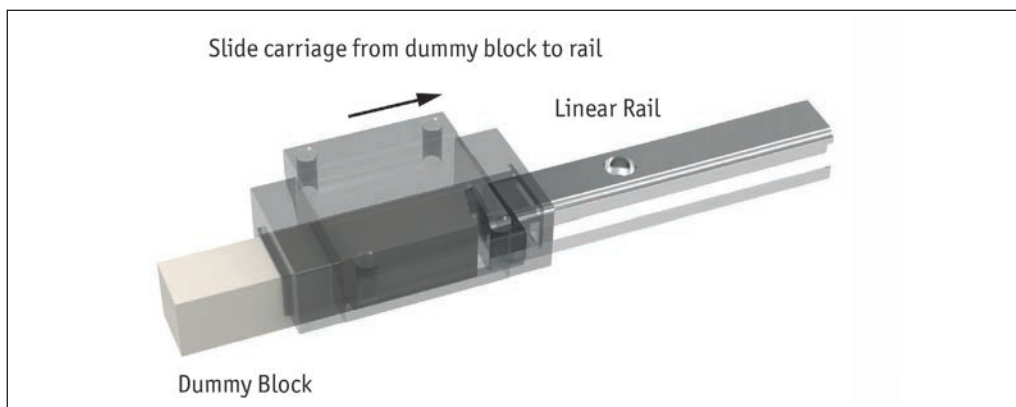
- We have standard rail lengths. These are based on the hole pitch of the rails and end machining to provide an equidistant length to the first and last hole centre.
- However we can cut the rail (from stock) to any length required – we just need to know the distance required to the first hole.
- In general our cutting procedures allow for a  $\pm 2\text{mm}$  accuracy on the overall rail length. If greater accuracy than this is required then we have to machine the end accurately (rather than cut it) and this involves extra time and cost.
- Standard maximum length for each rail size is around 4 metres. Rails can be joined together but the preparation needs to be made in our workshop. The rails will be marked clearly with the ends to be placed adjacent to each other.

### Installation

- The linear guideways are very accurate and as a result need to be installed on accurately prepared surfaces – please see installation instructions. If the two rails are installed parallel to each other, they need to be accurately aligned – see assembly precision page.
- If you are not able to prepare the surface as accurately as required you might want to consider using our Compact Rail system, as this has a master rail (T rail) and a slave rail (U rail) that allows for structural inaccuracies.

### Mounting the carriages to the rails

- In general the carriages will be supplied separately to the rails. To install the carriage onto the rails, offer the carriage up to the rails and slide it onto the rail itself.

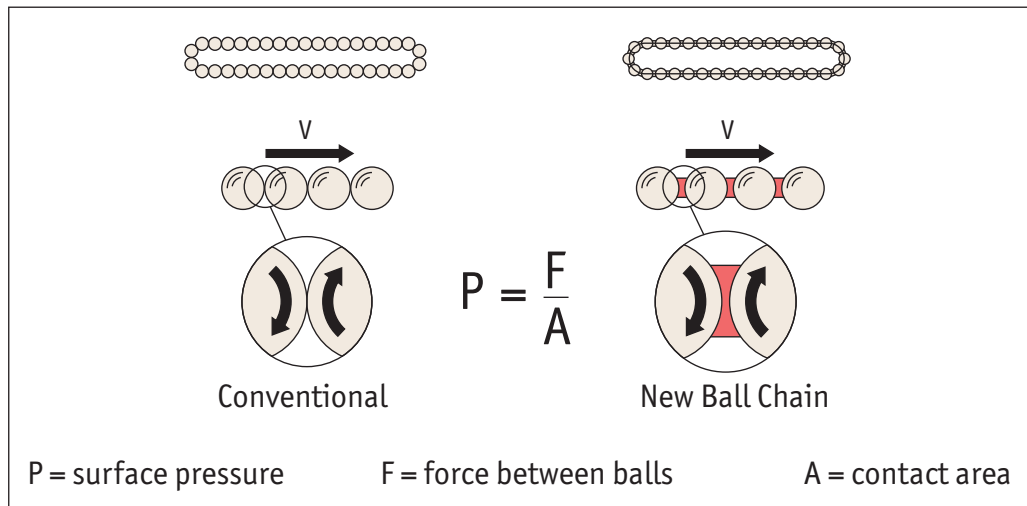




**New ball chain technology**

Our new and improved linear guideway systems include the latest “ball chain” technology with the following benefits:

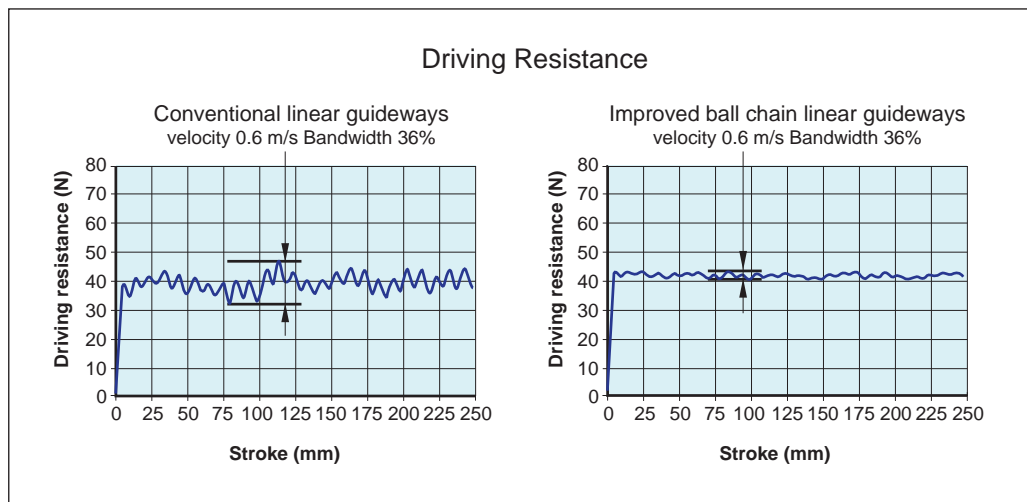
- Higher maximum velocity.
- Lower heat generation
- Lower noise generation.
- Very smooth running.
- Optimised lubrication system
- Even load distribution
- Longer service life



The rotating balls in conventional profile rail guides have point contact between each other. The rotation speed at the contact point is double the speed of the balls. The contact area (A) is so small that the surface pressure (P) tends towards infinity. This leads to heating and wear of the balls and the linear guide system.

The chain system in our new linear guides have a relatively large contact area (A), this significantly reduces the surface area pressure (P). The rotation speeds at the contact surfaces of ball and chain are the same. The ball chain is used to transport the lubricant and to create a lubrication film on the balls. The design of the carriage allows effective supply of lubricant from the lubricant connection to the circulation areas of the ball chains.

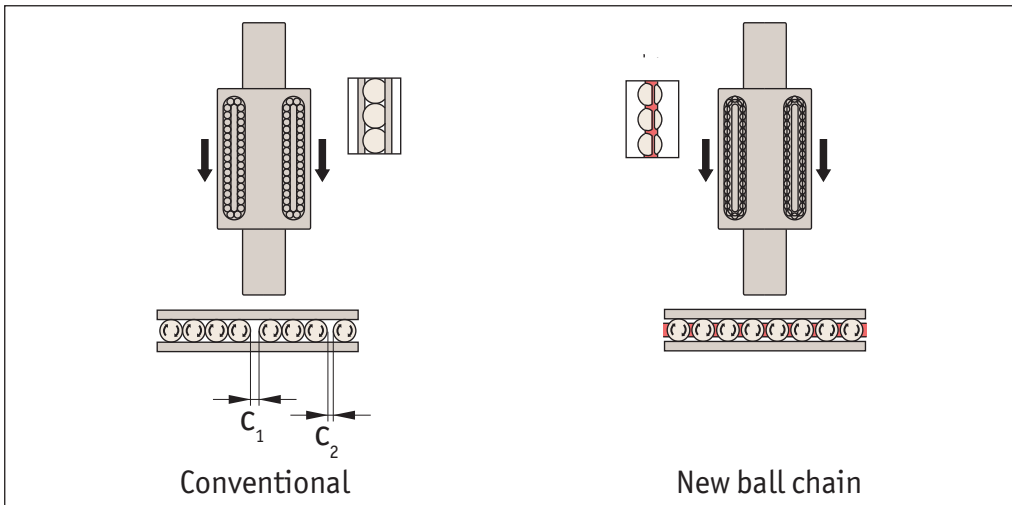
This design of the of the ball chain ends in connection with the spacer ball closes the circulation and makes the movement of the carriage smooth and quiet.



Linear Guideways from Automation Components

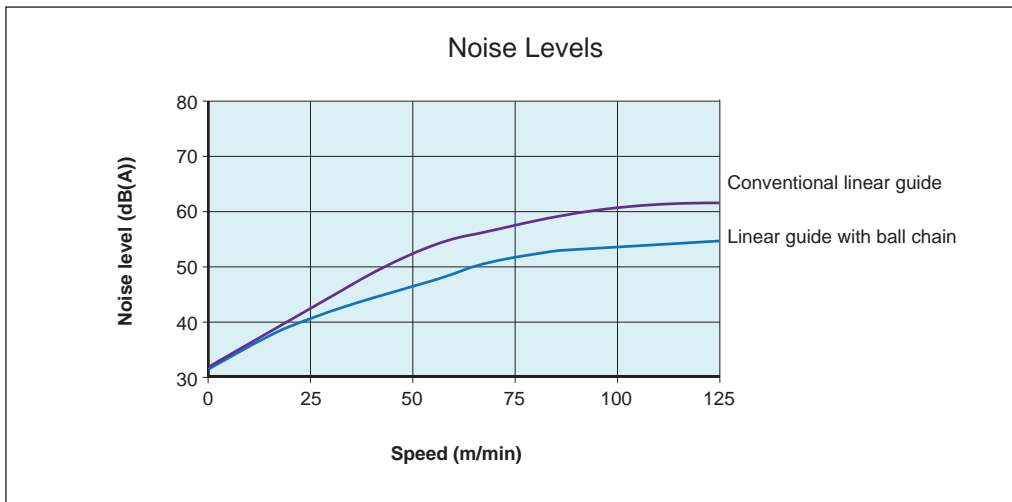
LINEAR GUIDEWAYS

#### New technology



It is not possible to keep the distance of the balls ( $C_1$ ,  $C_2$ ) constant in conventional linear guides. These irregular distances between the balls lead to uneven running behaviour.

The new ball chain system also allows the balls to be continuously supplied with lubricant, which reduces wear of the metal. This significantly extends the service life of the system and reduces lubricant and the maintenance intervals.



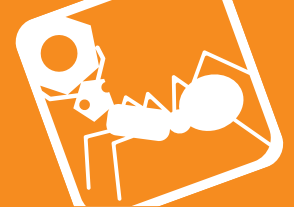
We can coat our rail with two types of corrosion protective finishes:

- Raydent coating; this is an electro-chemical process that applies a black oxide-ceramic layer (approx. 1 micron thick) that penetrates into the metal. As coating takes place at 0C the parts are not deformed. Good resistance against acids, bases and solvents.
- Chemical nickel coating; this offers a good resistance to corrosion, abrasion and chemicals. Black finish.

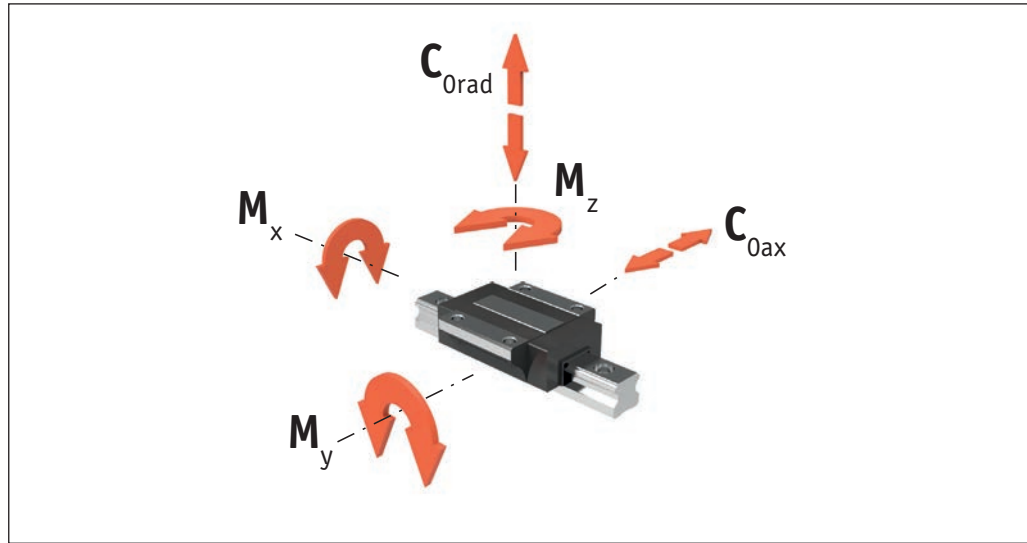
Please ask our technical department to help you select the best coating.

All of our rails are issued with oil-resistant plastic caps used to cover the screw holes. If there are aggressive chemicals present we can also provide brass versions of these caps.

Where there may be a high level of dust, dirt, weld splatters etc. we can provide bellows covers to protect the rails.



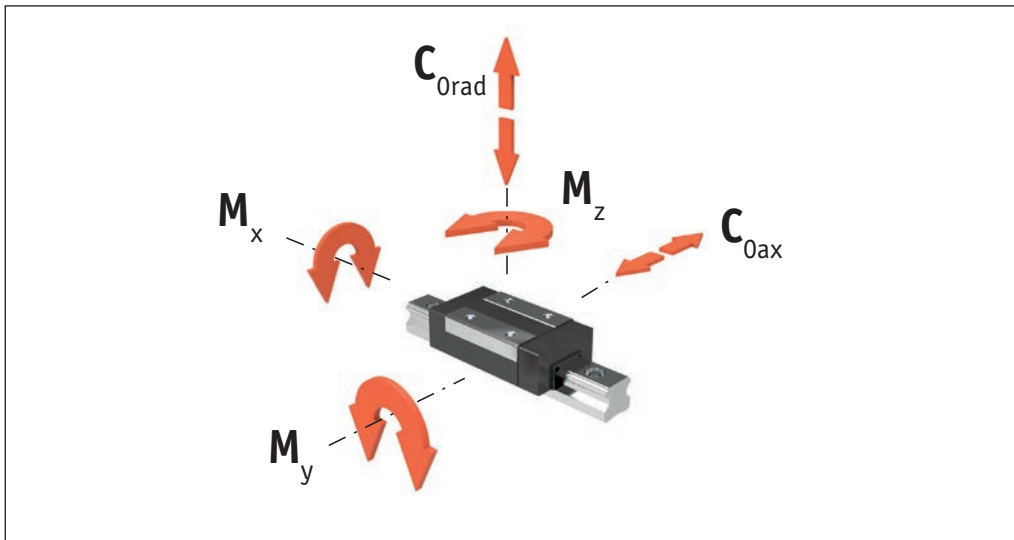
Load capacity overview - L1016.F Flanged carriages



Linear Guideways from Automation Components

Part no.	Type	Length	Max. load capacities kN		Max. static moments Nm		
			Dynamic Load C <sub>kN</sub>	Static load C <sub>Orad+ax</sub> kN	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm
L1016.F15	Flanged	Standard	11,67	19,90	137	120	120
L1016.F15-L	Flanged	Long	14,12	24,05	166	171	171
L1016.F20	Flanged	Standard	17,98	30,96	289	224	224
L1016.F20-L	Flanged	Long	23,30	40,11	376	366	366
L1016.F25	Flanged	Standard	25,25	41,73	447	358	358
L1016.F25-L	Flanged	Long	32,44	53,63	576	577	577
L1016.F25-XL	Flanged	Extra Long	36,58	64,30	691	833	833
L1016.F30	Flanged	Standard	37,33	55,50	719	560	560
L1016.F30-L	Flanged	Long	48,35	71,88	931	836	836
L1016.F30-XL	Flanged	Extra Long	53,83	88,18	1142	1361	1361
L1016.F35	Flanged	Standard	53,31	82,66	1307	991	991
L1016.F35-L	Flanged	Long	66,61	103,29	1633	1424	1424
L1016.F35-XL	Flanged	Extra Long	73,29	127,68	2020	2330	2330
L1016.F45	Flanged	Standard	73,14	111,30	2353	1559	1559
L1016.F45-L	Flanged	Long	86,99	132,39	2798	2170	2170
L1016.F45-XL	Flanged	Extra Long	100,52	166,87	3527	3455	3455
L1016.F55	Flanged	Standard	88,26	136,62	3385	2361	2361
L1016.F55-L	Flanged	Long	119,10	183,14	4538	4202	4202
L1016.F55-XL	Flanged	Extra Long	161,43	259,71	6430	6617	6617

#### Load capacity overview - L1016.U Unflanged carriages



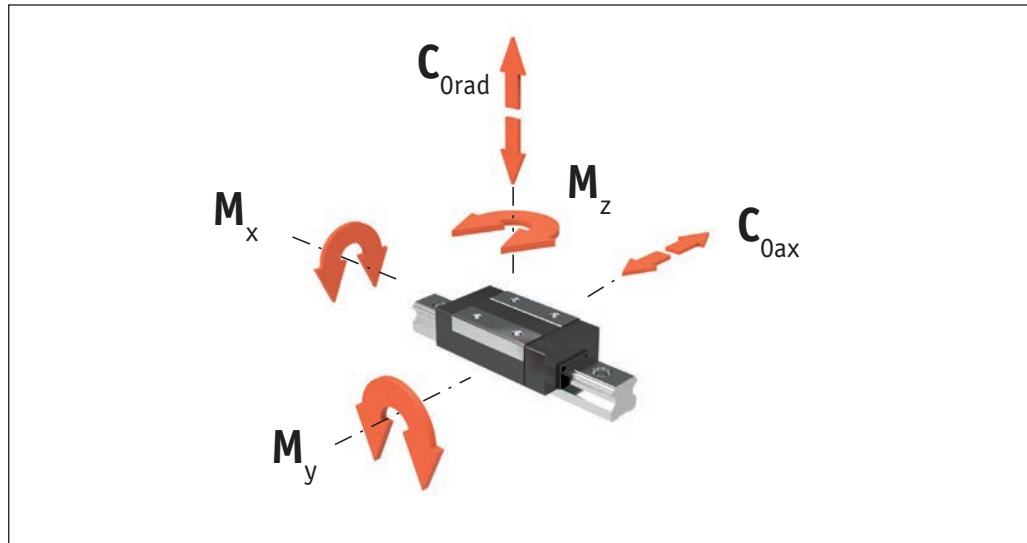
Part no.	Type	Length	Max. load capacities kN		Max. static moments Nm		
			dyn. $C_{rad}$ dyn. $C_{ax}$	stat. $C_{Orad}$ stat. $C_{Oax}$	$M_x$	$M_y$	$M_z$
L1016.U15	Unflanged	Standard	11,67	19,90	137	120	120
L1016.U20	Unflanged	Standard	17,98	30,96	289	224	224
L1016.U20-L	Unflanged	Long	23,30	40,11	376	366	366
L1016.U25	Unflanged	Standard	25,25	41,73	447	358	358
L1016.U25-L	Unflanged	Long	32,44	53,63	576	577	577
L1016.U25-XL	Unflanged	Extra Long	36,58	64,30	691	833	833
L1016.U30	Unflanged	Standard	37,33	55,50	719	560	560
L1016.U30-L	Unflanged	Long	48,35	71,88	931	836	836
L1016.U30-XL	Unflanged	Extra Long	53,83	88,18	1142	1361	1361
L1016.U35	Unflanged	Standard	53,31	82,66	1307	991	991
L1016.U35-L	Unflanged	Long	66,61	103,29	1633	1424	1424
L1016.U35-XL	Unflanged	Extra Long	73,29	127,68	2020	2330	2330
L1016.U45	Unflanged	Standard	73,14	111,30	2353	1559	1559
L1016.U45-L	Unflanged	Long	86,99	132,39	2798	2170	2170
L1016.U45-XL	Unflanged	Extra Long	100,52	166,87	3527	3455	3455
L1016.U55	Unflanged	Standard	88,26	136,62	3385	2361	2361
L1016.U55-L	Unflanged	Long	119,10	183,14	4538	4202	4202
L1016.U55-XL	Unflanged	Extra Long	161,43	259,71	6430	6617	6617

Linear Guideways from Automation Components

LINEAR GUIDEWAYS



Load capacity overview - L1016.UL Unflanged low height carriages



Linear Guideways from Automation Components

Part no.	Type	Length	Max. load capacities kN		Max. static moments Nm		
			dyn. $C_{rad}$ dyn. $C_{ax}$	stat. $C_{Orad}$ stat. $C_{Oax}$	$M_x$	$M_y$	$M_z$
L1016.UL15-S	Unflanged	Short	5,81	9,90	69	32	32
L1016.UL15	Unflanged	Standard	11,67	19,90	137	120	120
L1016.UL15-L	Unflanged	Long	14,12	24,05	166	171	171
L1016.UL20-S	Unflanged	Short	9,25	15,63	148	66	66
L1016.UL20	Unflanged	Standard	17,98	30,96	289	224	224
L1016.UL25-S	Unflanged	Short	12,87	21,34	230	103	103
L1016.UL25	Unflanged	Standard	25,25	41,73	447	358	358
L1016.UL30-S	Unflanged	Short	18,50	27,51	356	153	153
L1016.UL30	Unflanged	Standard	37,33	55,50	719	560	560
L1016.UL30-L	Unflanged	Long	48,35	71,88	931	836	836
L1016.UL30-XL	Unflanged	Extra Long	53,83	88,18	1142	1361	1361
L1016.UL35-S	Unflanged	Short	26,72	41,43	655	275	275
L1016.UL35	Unflanged	Standard	53,31	82,66	1307	991	991
L1016.UL35-L	Unflanged	Long	66,61	103,29	1633	1424	1424
L1016.UL35-XL	Unflanged	Extra Long	73,29	127,68	2020	2330	2330
L1016.UL45	Unflanged	Standard	73,14	111,30	2353	1559	1559
L1016.UL45-L	Unflanged	Long	86,99	132,39	2798	2170	2170
L1016.UL45-XL	Unflanged	Extra Long	100,52	166,87	3527	3455	3455
L1016.UL55	Unflanged	Standard	88,26	136,62	3385	2361	2361
L1016.UL55-L	Unflanged	Long	119,10	183,14	4538	4202	4202
L1016.UL55-XL	Unflanged	Extra Long	161,43	259,71	6430	6617	6617



### Radial clearance/preload

Radial clearance describes the value for the radial movement of the carriage at a constant vertical load, while the carriage moves in longitudinal direction.

Preload is defined as an effective load on the rolling element in the interior of the carriage in order to remove an existing clearance or to increase the rigidity.

The linear guideways are available in the two different preload classes  $K_0$  or  $K_1$ , see table below.

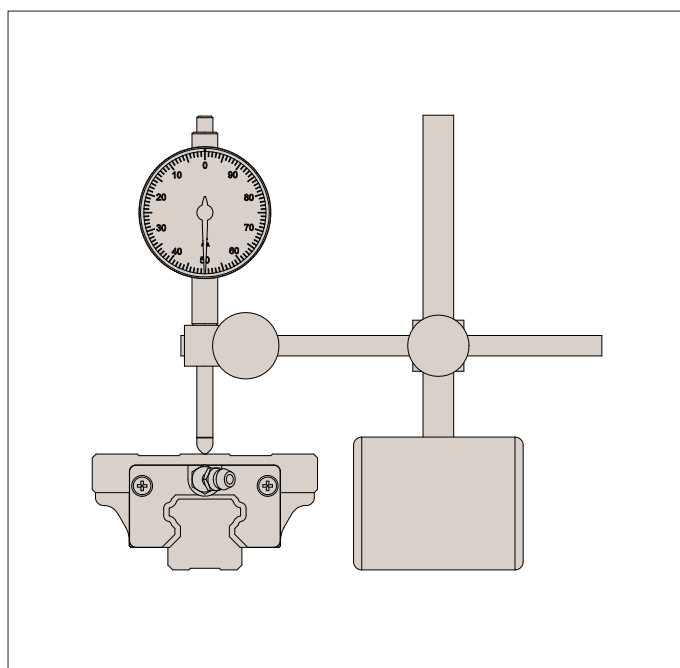
The preload influences the rigidity, precision and torque resistance and also affects the service life and displacement force.

The radial clearance for the respective preload classes are listed below.

Degree of preload	Preload class	Preload
No clearance	$K_0$	0
Small preload	$K_1$	$0,02 \times C^*$

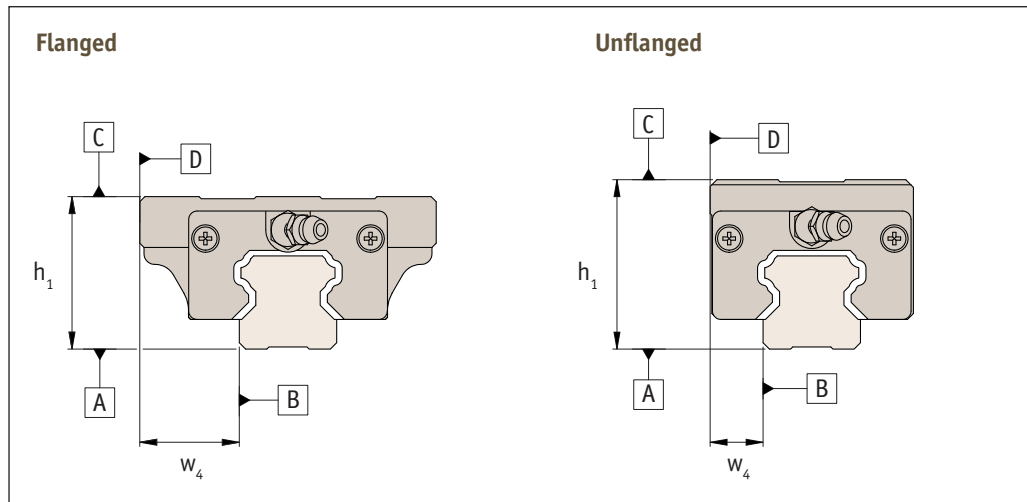
\*C is the dynamic load capacity.

Size	Radial clearance of the preload classes $\mu$	
	$K_0$ Impact free and easy movement	$K_1$ Small moments, one rail application, low vibrations
15	-3 to +3	-8 to -4
20	-3 to +3	-8 to -4
25	-4 to +4	-10 to -5
30	-4 to +4	-11 to -5
35	-5 to +5	-12 to -6
45	-6 to +6	-15 to -7
55	-7 to +7	-19 to -8



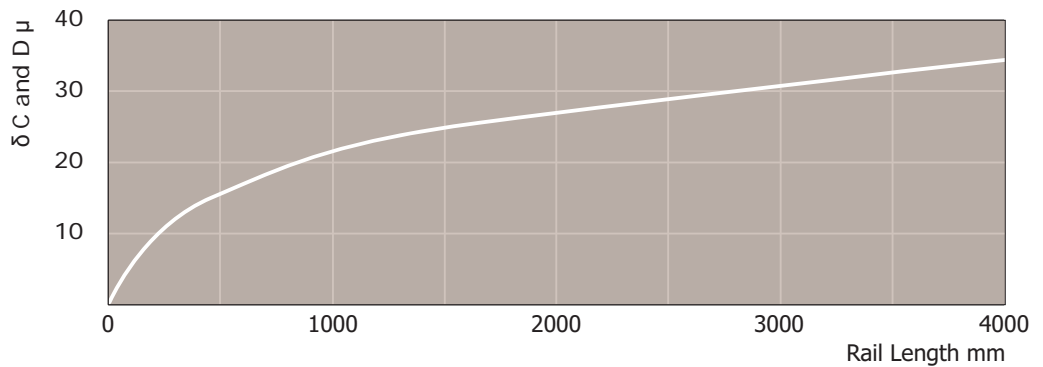


Precision means the guide accuracy or the maximum deviation of the carriage based on the side and support surfaces during the movement along the rails.



	Normal Precision (N)	H Precision (H)	P Precision (P)
Height tolerance $h_1$	$\pm 0,1$	$\pm 0,4$	0
Width tolerance $w_4$			-0,04
Guide accuracy of raceway C based on surface A	$\delta C$ see graph below		
Guide accuracy of raceway D based on surface B	$\delta D$ see graph below		

Running tolerances





### Lubrication

Linear guideway rails must generally be lubricated before commissioning. They can be lubricated with oil or grease. The correct lubricant selection has a large influence on the service life and the function of the rail, insufficient lubrication and tribocorrosion can ultimately lead to total failure.

As well as reducing friction and wear, lubricants also serve as sealant, noise reducer and corrosion protection for the linear guide. Different lubricants for special applications are available upon request (e.g. lubricant with FDA approval for use in the food industry).

Our linear guideways are coated with an anti-corrosion resistant oil at the factory. This coating needs to be removed prior to installation, then lubricated as follows:

### Important instructions for lubrication

- Linear guideways must be lubricated for operation.
- The carriage must be moved back and forth during lubrication.
- The lubricant is inserted through a lubrication nipple.
- There should be a thin film of lubricant on the rail surface at all times.
- Primary lubricated systems have an increased displacement resistance.
- Please contact us if oil lubrication is used for vertical use.
- If the stroke is <2 or >15 times the carriage length, the lubrication intervals should be reduced.

### Grease lubrication

We recommend the use of a lithium emulsified lubricant NLGI Class 2 for lubrication.

### Oil lubrication

We recommend a synthetic oil for operating temperatures between 0°C and +70°C.

### Relubrication

- Relubrication of the system must be done before the lubricant used has become dirty or shows signs of discolouration.
- Relubrication should be performed at operating temperature. The carriage must be moved back and forth during re-lubrication.
- If the stroke is <2 or >15 times the carriage length, the lubrication intervals should be more frequent.

### Lubrication intervals

Operating speed, stroke length and ambient conditions influence the selection of time between lubrication intervals. Establishing a safe lubrication interval is based solely on the applications and conditions. However, a lubrication interval should not be longer than one year.

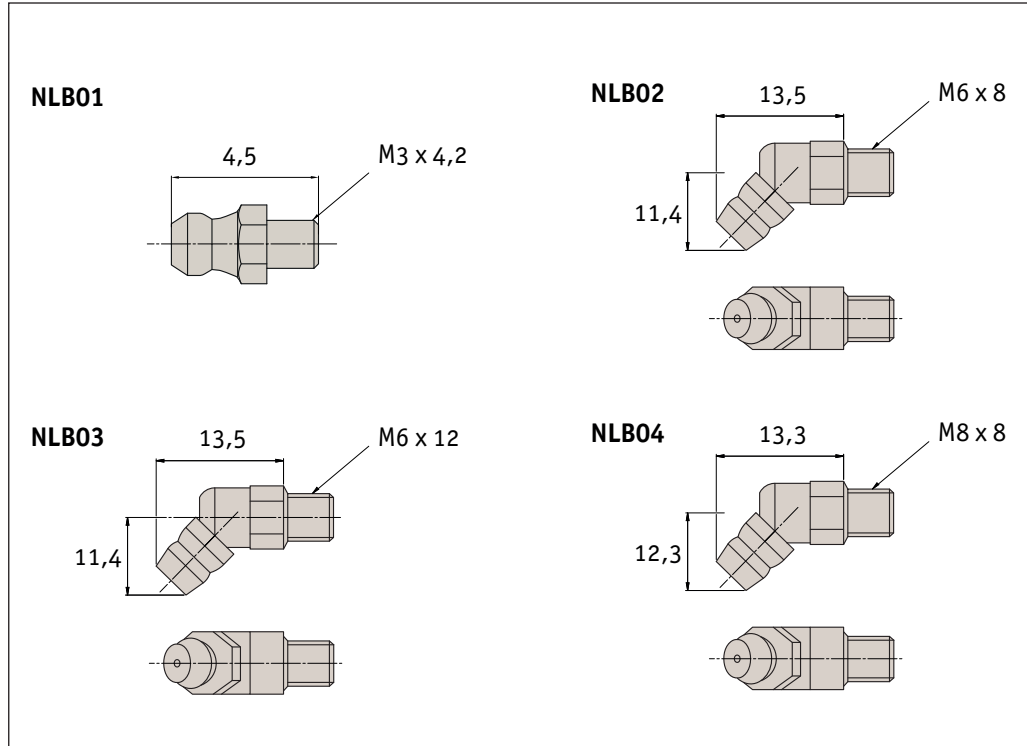


### Lubrication nipple

The following lubrication nipples are supplied.

Other lubrication nipples, such as lubrication adapters with hose inlet or with quick-coupling, are available on request.

Lubrication nipple	Size
NLB01	15
NLB02	20
	25
NLB03	30
	35
NLB04	45
	55



### Surface treatment

There are numerous application-specific surface treatments available for profile rails of the linear guideway product family, for example, black oxide coating (X), hard chrome plating (XC) or nickel plating (NIC) and an FDA-approval type for use in the food industry. For more information please contact us on 0845 850 99 40.



# Technical Information

## Friction/displacement resistance

Linear guideways have a low friction characteristic and thus low displacement resistance. The low start-up friction (breakaway force) is almost identical to the moving friction (running resistance).

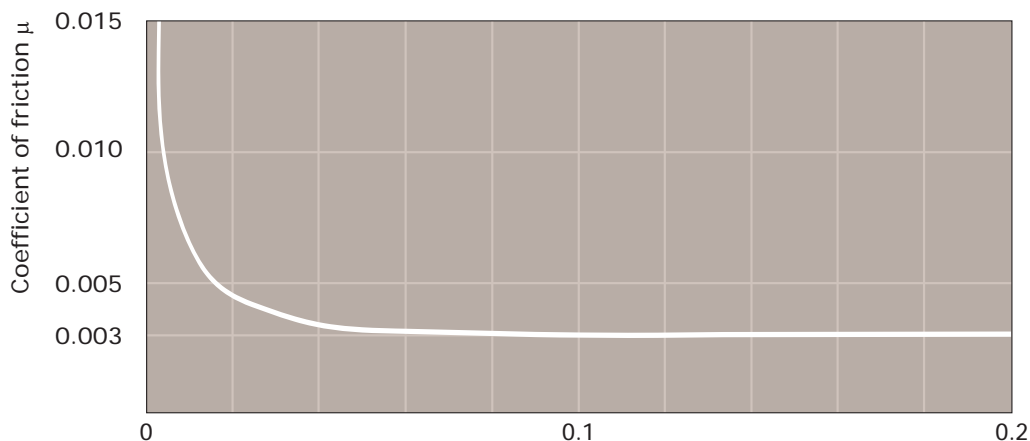
The displacement resistance ( $F_m$ ) is dependent upon several factors:

- Friction of the sealing system.
- Friction of the balls with each other.
- Friction between balls and redirection.
- Rolling resistance of the balls in the running grooves.
- Resistance of lubricant in the carriage.
- Resistance caused by contamination in the lubricant.
- Preload for increased rigidity.
- Moment load.

### Resistance of the seals f

Type	Max. seal resistance N
L1016.15	2,5 N
L1016.20	3,5 N
L1016.25	5,0 N
L1016.30	10,0 N
L1016.35	12,0 N
L1016.45	20,0 N
L1016.55	22,0 N

Coefficient of friction  $\mu$



P = Load  
C = Dynamic load capacity

### Displacement resistance $F_m$

The following formula is used for approximate calculation of the displacement resistance. Please note that the level of preload or the viscosity of the lubricant used can also influence the displacement resistance.

$$F_m = \mu \cdot F + n \cdot f$$

$F_m$  = Displacement resistance (N)

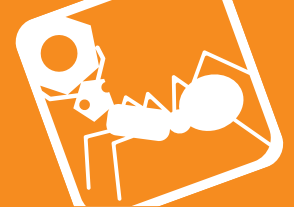
$\mu$  = Coefficient of friction

F = Load (N)

f = Resistance of the seals (N)

n = Number of sliders

Linear guideways have a coefficient of friction of approx.  $\mu = 0.002 - 0.003$



The given static load capacity ( $C_0$ ) for each carriage represents the maximum permissible load value, which if exceeded causes permanent deformations of the raceways and adversely affects the operating performance.

Checking the load must be done as follows:

- Through determination of the simultaneously occurring forces and moments for each carriage.
- By checking these values with the corresponding load capacities.

$$S_0 > \frac{C_0}{(F_x \cdot f_c)} \quad S_0 > \frac{C_0}{(F_y \cdot f_c)} \quad S_0 > \frac{M_x}{(M_1 \cdot f_c)} \quad S_0 > \frac{M_y}{(M_2 \cdot f_c)} \quad S_0 > \frac{M_z}{(M_3 \cdot f_c)}$$

$F_x, F_y$  = radial and axial resultants of external forces (N)

$M_1, M_2, M_3$  = external moments (Nm)

$C_0$  = static load capacity (N)

$M_x, M_y, M_z$  = maximum permissible moments in the different loading directions (Nm)

$f_c$  = contact factor (see next page)

$S_0$  = safety factor

#### The safety factors

The safety factor  $S_0$  can lie on the lower given limit if the forces can be determined with sufficient precision. If impacts and vibrations affect the system, overloads might occur, then the higher value should be selected.

Reduced safety results from simultaneously occurring forces and moments.

For more information please contact our technical department.

Operating conditions	$S_0$
Normal operation	1,0 ~ 1,5
Loading with vibration or shock effect	1,5 ~ 2,0
Loading with strong vibration or impacts	2,0 ≥ 3,5

### Calculation of service life

The dynamic load capacity  $C$  is a conventional variable used for calculating the service life. This load corresponds to a nominal service life of 50 Km. The relationship between calculated service life  $L_{Km}$  (in Km), dynamic load capacity  $C$  (in N) and equivalent load  $P$  (in N) is given in the formula below.

$$L_{Km} = \left( \frac{C}{P} \cdot \frac{f_c \cdot f_t}{f_i} \right)^3 \cdot 50 \text{ Km}$$

$f_c$  = Contact factor

$C$  = Dynamic load (N)

$f_i$  = Application coefficient

$P$  = See below (N)

$f_t$  = Temperature factor

The equivalent load  $P$  corresponds in its effects to the sum of the forces and moments working simultaneously on a slider. If these different load components are known,  $P$  results from the formula below.

$$P = |F_x| + |F_y| + \left( \frac{|M_x|}{M_x} + \frac{|M_y|}{M_y} + \frac{|M_z|}{M_z} \right) C_0$$

### Contact factor $f_c$

The contact factor  $f_c$  refers to applications in which several carriages pass the same rail section. If two or more carriages are moved over the same point on a rail, the static and dynamic loading values must be multiplied with the numbers from the table below.

Number of carriages	1	2	3	4	5
$f_c$	1	0,81	0,72	0,66	0,61

### Application coefficient $f_i$

The application coefficient  $f_i$  can be understood as the dynamic safety factor. Refer to the table below for the values.

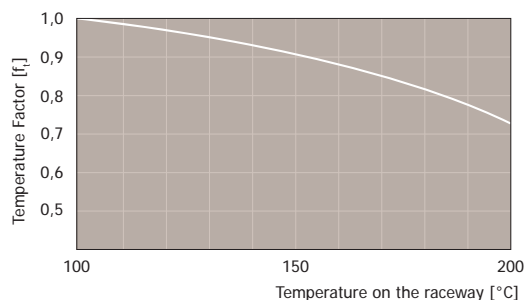
Operating conditions	Speed	$f_i$
Neither external impacts nor vibrations	Low speed $V \leq 15$ m/min.	1 - 1,5
Light impacts or vibrations	Average speed $V \leq 60$ m/min.	1,5 - 2
Average and high external impacts or vibration	High speed $V > 60$ m/min.	2 - 3,5

### Temperature factor $f_t$

If the temperature affecting the system exceeds 100°C, the temperature factor  $f_t$  must be included in the service life calculation.

Note 1: For temperatures above 80°C, the seals and end caps must be designed for higher thermal resistance.

Note 2: Special processing to ensure the movement of the guides is required for temperatures above 120°C.



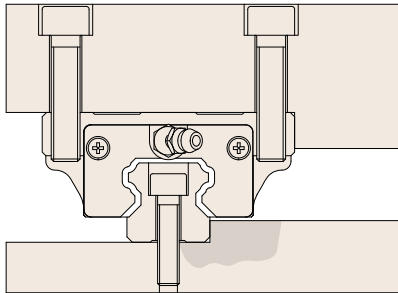


**Installation examples**

The following drawings illustrate some assembly examples for rail/carriage combinations corresponding to the structure of various machine frames.

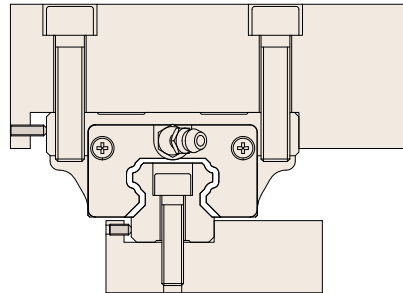
**Example 1**

Assembly of carriage and rail on shoulder edges



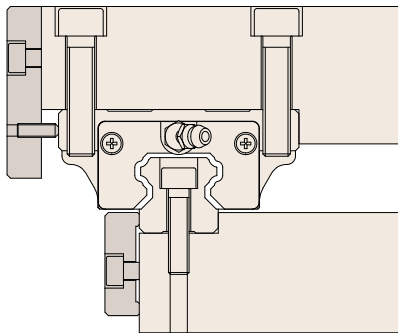
**Example 2**

Securing carriage and rail using set screws



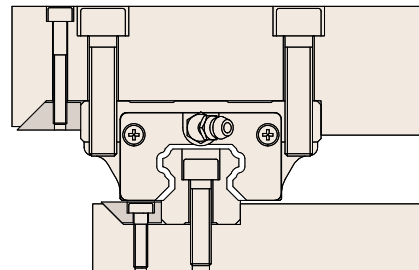
**Example 3**

Securing carriage and rail using pressure plates



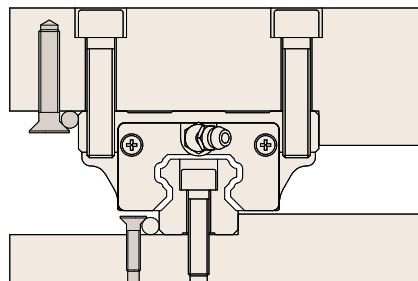
**Example 4**

Securing carriage and rail using taper gibs



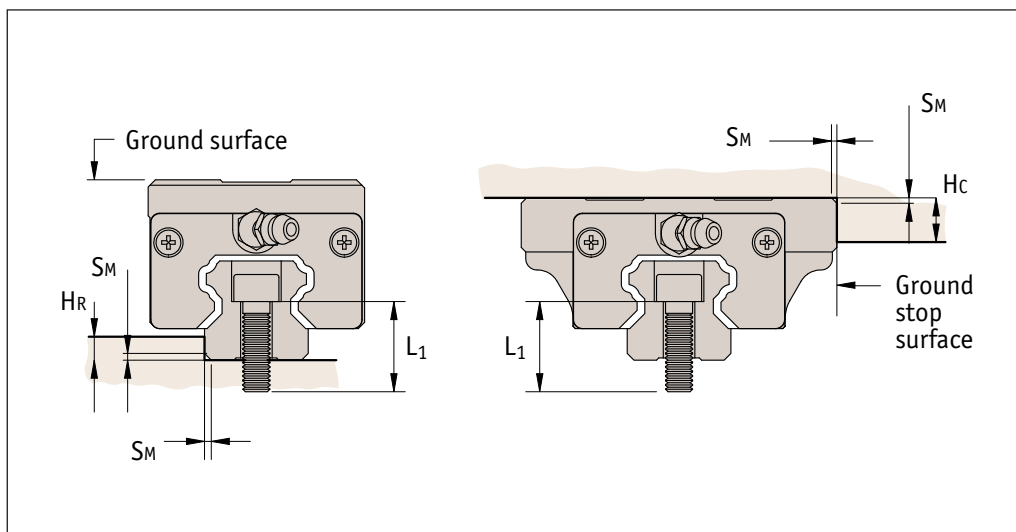
**Example 5**

Securing carriage and rail using bolts





The given radii and shoulder heights in the table must be observed when assembling rails and carriages on the stop edges to ensure perfect seating of carriages or guideways.



Size	SM	HR	Hc	L <sub>1</sub>
15	0,6	3,1	5	M4 x 16
20	0,9	4,3	6	M5 x 20
25	1,1	5,6	7	M6 x 25
30	1,4	6,8	8	M8 x 30
35	1,4	7,3	9	M8 x 30
45	1,6	8,7	11	M12 x 40
55	1,6	11,8	12	M14 x 45

Values in mm. HR\* is the maximum height when using side seal on carriage.

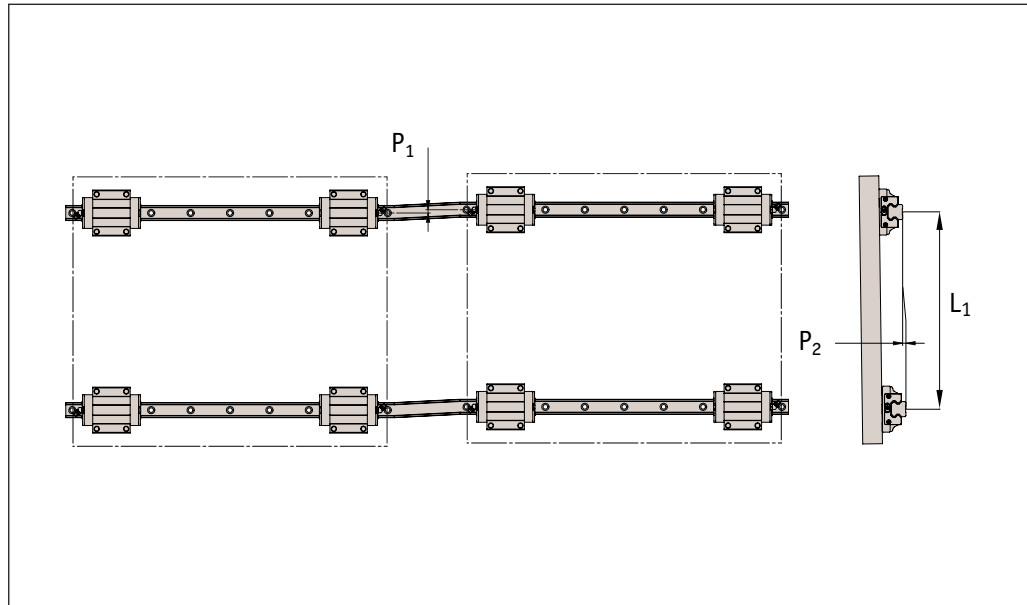
Linear Guideways from Automation Components

LINEAR GUIDEWAYS



**Assembly precision**

The maximum permissible deviations of the rail surfaces for assembly are given in the following drawing and the table below.

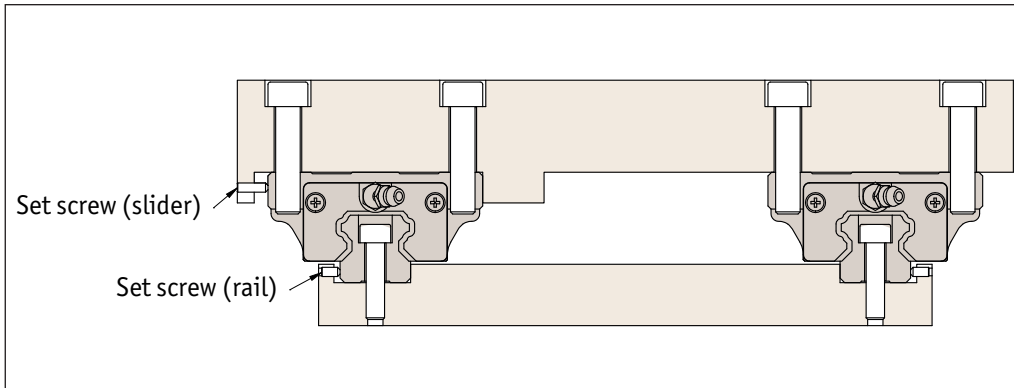


Size	Permissible tolerance for parallelism $P_1 \mu$		$P_2 = L_1 \times$ (calculation factor)		
	$K_1$	$K_0$	Calculator factor (x) $P_2 \mu$	$K_1$	$K_0$
15	18	25	0,17	0,26	
20	20	25	0,17	0,26	
25	22	30	0,17	0,26	
30	30	40	0,22	0,34	
35	35	50	0,30	0,42	
45	40	60	0,34	0,50	
55	50	70	0,42	0,60	

The bolt sizes to be used and optimum tightening torques for rail assembly are listed in the table below.

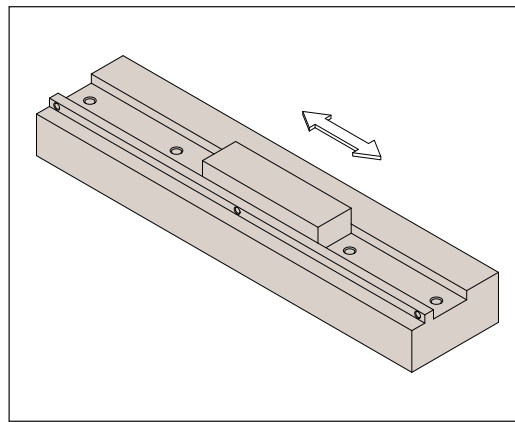
Bolt	Tightening torque $M_t$ Nm	
	Steel 10,9	Steel 12,9
M 4	4,4	5,1
M 5	8,7	10
M 6	15	18
M 8	36	43
M12	125	145
M14	200	235

### Assembly process



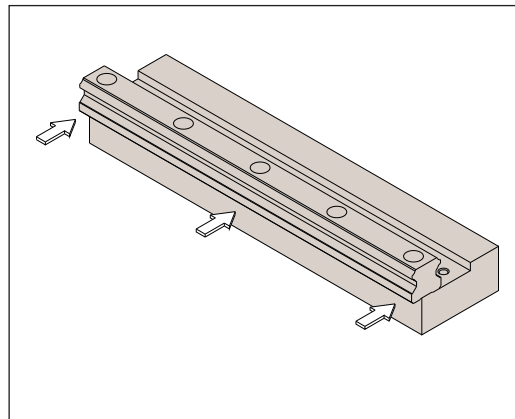
### Fixing guide rails 1

Whet the assembly surface with a whetstone and also remove burrs, unevenness and dirt. Note: All linear guides are preserved with anti-corrosion oil at the factory. This protection must be removed before installation. In doing so, please ensure that the surfaces are coated with low-viscosity oil for the purpose of further protection against corrosion.

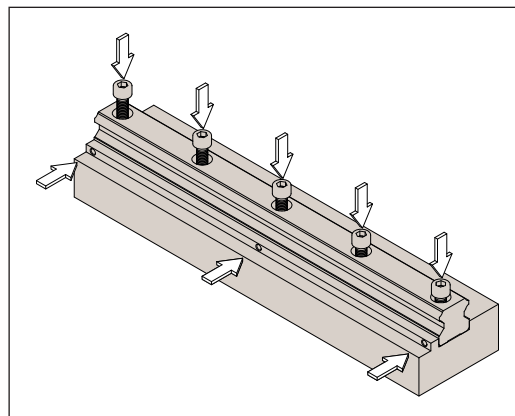


### Fixing guide rails 2

Carefully lay the guide rail on the assembly surface and slightly tighten the fixing screws so that the guide rail lightly touches the assembly surface (align the guide rail along the shoulder edge of the assembly surface). Note: The fixing screws of the linear guide must be clean. Check if the fixing holes are located in the correct place when you insert the bolts. A forced tightening of a fixing screw in an offset hole can negatively affect accuracy.



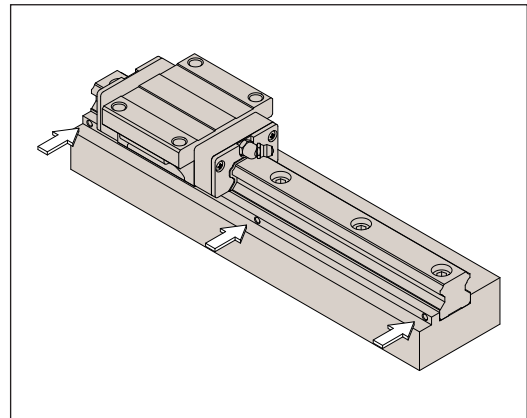
### Fixing guide rails 2 continued





**Fixing guide rails 3**

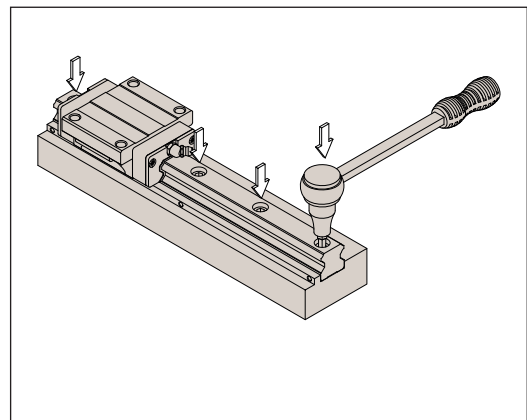
Tighten the thrust bolts on the guide rail until there is close contact on the side stop surface.



**Fixing guide rails 4**

Tighten the fixing screws with a torque wrench to the prescribed torque.

Note: For a high degree of accuracy, the fixing screws of the guide rail must be tightened in sequence outward from the centre.



**Fixing guide rails 5**

Assemble the other rails in the same manner to complete the installation of the guide rails.

**Table assembly 1**

Set the table carefully on the carriage and tighten the fixing screws only lightly.

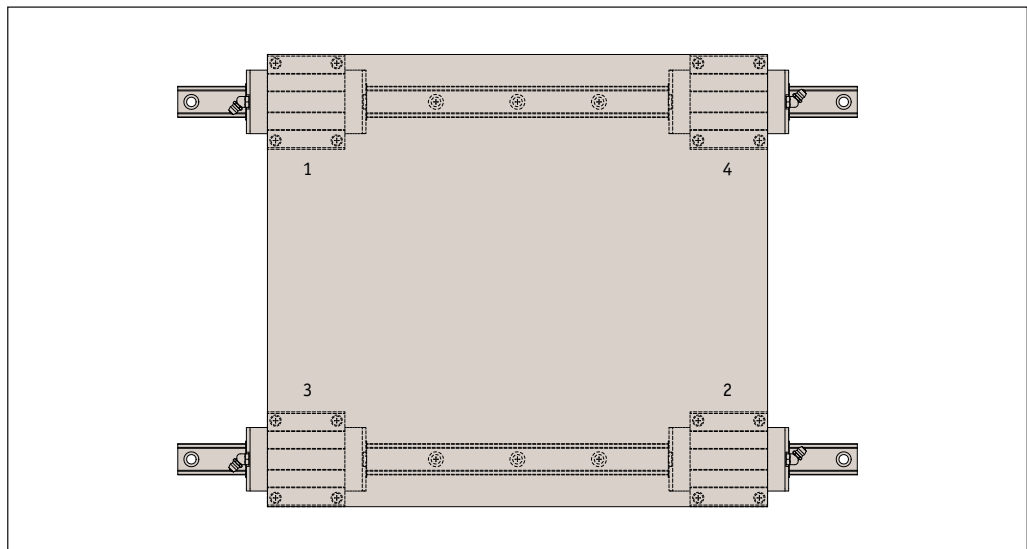
**Table assembly 2**

Press the carriage on the main guide side with the thrust bolts against the shoulder edge of the table and position the table.

**Table assembly 3**

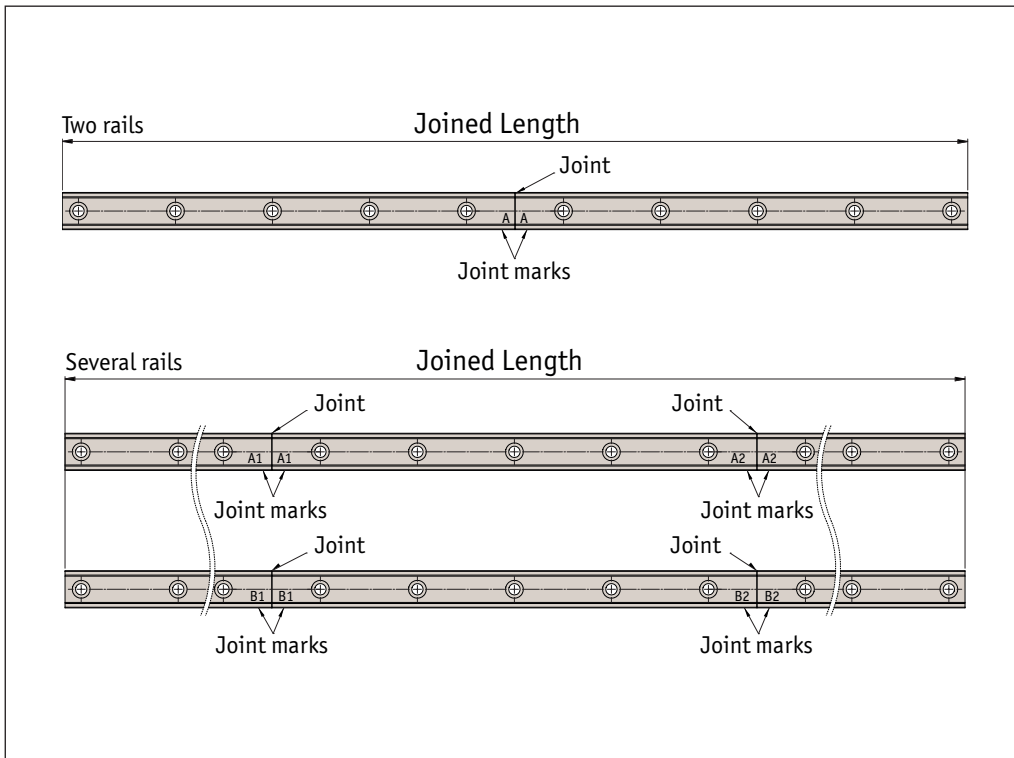
Tighten the fixing screws on the main side and the lateral side completely tight to finish the installation. Note: To attach the table uniformly, tighten the fixing screws diagonally (1, 2, 3, 4).

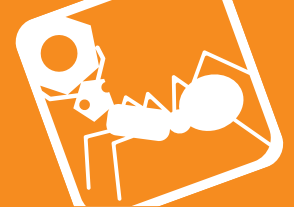
This method saves time when straightening the guide rail and makes the manufacture of positioning pins unnecessary, which considerably reduces assembly time.



### Joining rails

Guide rails longer than the one part maximum length are put together from two or more rails. When putting guide rails together, ensure the register marks are positioned correctly.





Miniature linear guideway systems are widely used throughout industry for precise, compact applications.

### Precise and stainless

The gothic arch shape of the rails have a 45° contact ensuring similar load capacities in all directions. Use of a large number of stainless steel balls enables a high moment and load capacity within a compact space. These smooth running rails have low break-away forces and a low coefficient of friction.

LINEAR GUIDEWAYS

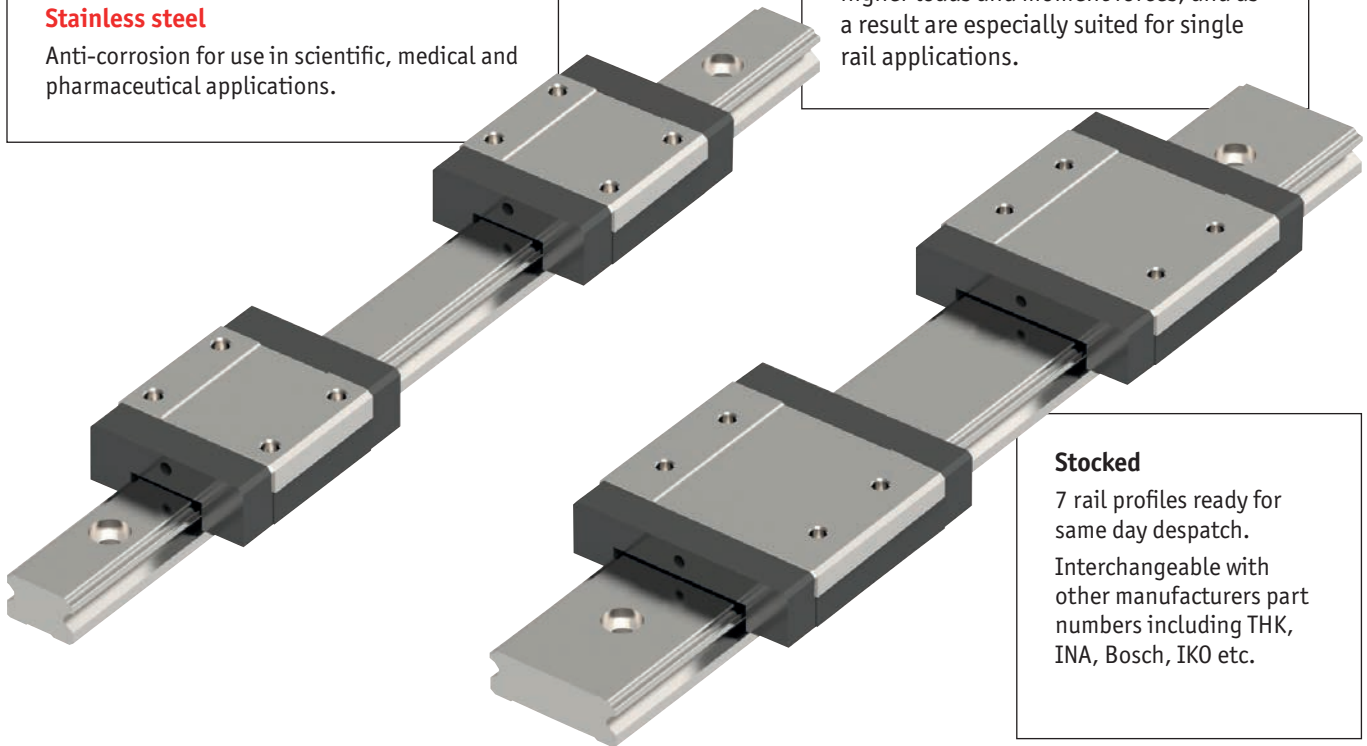
### Stainless steel

Anti-corrosion for use in scientific, medical and pharmaceutical applications.

### Standard and wide versions

Our standard width is a compact, high performance rail in six sizes.

The wide version can generally accept higher loads and moment forces, and as a result are especially suited for single rail applications.



### Stocked

7 rail profiles ready for same day despatch.

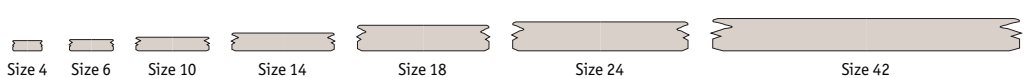
Interchangeable with other manufacturers part numbers including THK, INA, Bosch, IKO etc.

### Rail sizes

#### L1010 Standard Version



#### L1012 Wide Version

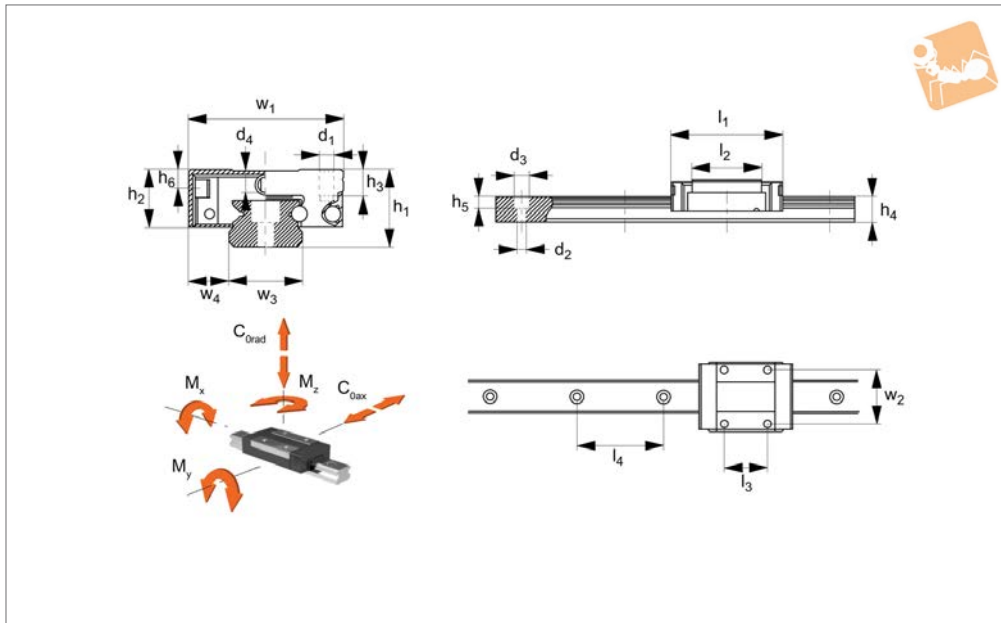




# Miniature Rail Carriages

standard rail width

# Linear Guide-ways



## L1010.C

LINEAR GUIDEWAYS

### Material

Corrosion resistant stainless steel body (440C), with hardened stainless steel ball bearings.  
Black plastic end plates and ball bearing retainers.

### Technical Notes

Max. speed 3 m/s. max. acceleration 40m/s<sup>2</sup>.

Temperature range -40°C to +80°C.

Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1010.07 through to L1010.15).

### Tips

Carriages are supplied with a dummy plastic rail. When mounting carriages onto rail, slide directly from the dummy rail

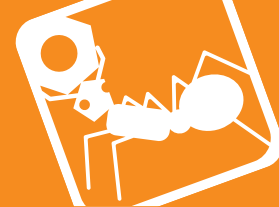
onto the steel rail. Do not simply remove the carriage from the dummy rail - the balls will become loose making the carriage unusable.

### Important Notes

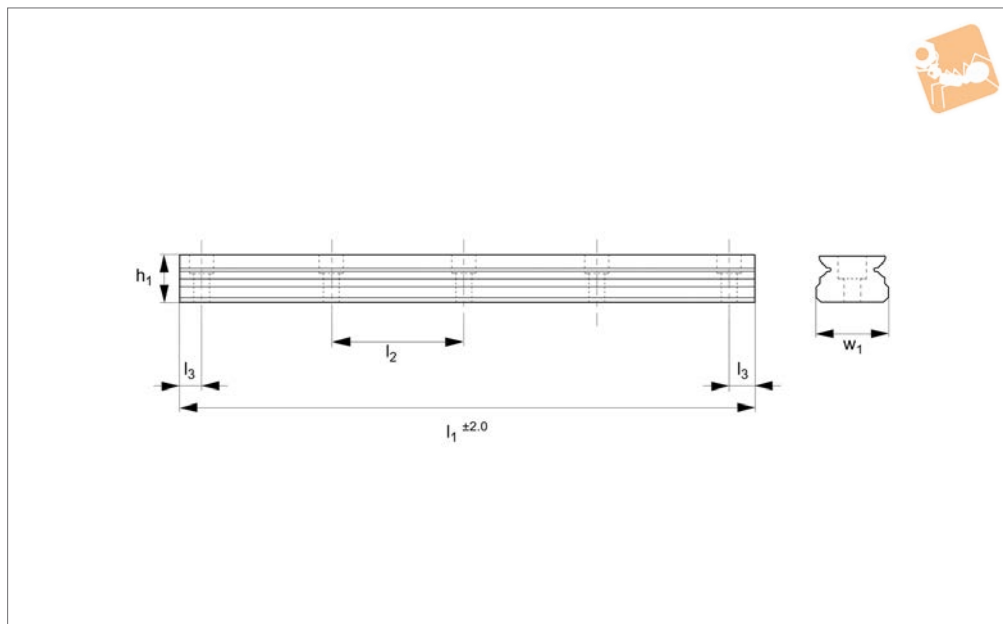
\*Size 3 and Size 5 carriage must be ordered with rails.

Order No.	For rail	$l_1$	$l_2$	$l_3$	$l_4$	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$	$h_6$	$d_2$	$d_3$	$d_4$	For screws $d_1$	Weight g
L1010.C03	3*	11.9	6.7	3.5	10	4	3.2	1.1	2.6	-	1.5	-	M1,6	0.3	M1,6	0.9
L1010.C03L	3*	16.1	11.0	5.5	10	4	3.2	1.1	2.6	-	1.5	-	M1,6	0.3	M2	1.2
L1010.C05	5*	16.3	10.0	-	15	6	4.7	1.5	3.5	1.0	2.0	2.4	3.5	0.7	M2	3.5
L1010.C05L	5*	19.7	13.5	7	15	6	4.6	2.0	3.5	1.0	2.0	2.4	3.5	0.7	M2,6	4.0
L1010.C07	7	24.1	14.3	8	15	8	6.6	2.5	4.7	2.3	2.8	2.4	4.2	1.1	M2	8.0
L1010.C07L	7	31.5	21.8	13	15	8	6.7	2.5	4.7	2.3	2.8	2.4	4.2	1.1	M2	14.0
L1010.C09	9	30.9	20.5	10	20	10	7.9	3.0	5.5	3.5	3.3	3.5	6.0	1.3	M3	18.0
L1010.C09L	9	41.1	30.8	16	20	10	8.0	3.0	5.5	3.5	3.3	3.5	6.0	1.3	M3	28.0
L1010.C12	12	35.8	22.0	15	25	13	10.1	3.5	7.5	4.5	4.3	3.5	6.0	1.3	M3	34.0
L1010.C12L	12	47.8	34.0	20	25	13	10.2	3.5	7.5	4.5	4.3	3.5	6.0	1.3	M3	51.0
L1010.C15	15	43.4	27.0	20	40	16	12.2	5.5	9.5	4.5	4.3	3.5	6.0	1.8	M3	61.0
L1010.C15L	15	60.2	44.0	25	40	16	12.2	5.5	9.5	4.5	4.3	3.5	6.0	1.8	M3	90.0

Order No.	Static load N	$C_{Orad \& ax}$	$w_1$	$w_2$	$w_3$	$w_4$	Dyn. load N	$C_{rad \& ax}$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1010.C03	310		8	-	3	2.5	190		0.6	0.4	0.4
L1010.C03L	575		8	-	3	2.5	295		0.9	1.1	1.1
L1010.C05	550		12	8	5	3.5	335		1.7	1.0	1.0
L1010.C05L	900		12	-	5	3.5	470		2.4	2.1	2.1
L1010.C07	1440		17	12	7	5.0	890		5.2	3.3	3.3
L1010.C07L	2440		17	12	7	5.0	1310		9.0	7.7	7.7
L1010.C09	2495		20	15	9	5.5	1570		11.7	6.4	6.4
L1010.C09L	3880		20	15	9	5.5	2135		18.2	12.4	12.4
L1010.C12	3465		27	20	12	7.5	2308		21.5	12.9	12.9
L1010.C12L	5630		27	20	12	7.5	3240		34.9	30.2	30.2
L1010.C15	5590		32	25	15	8.5	3810		43.6	27.0	27.0
L1010.C15L	9080		32	25	15	8.5	5350		70.0	63.3	63.3



### L1010.03



#### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

#### Technical Notes

Supplied with special low profile hex

screws.

Select the size and number of carriages to suit the required load (see part L1010.C).

Other rail lengths on request.

Weight: 0,05 Kg/m.

#### Important Notes

This size rail has a through thread from underside.

Must be ordered with corresponding sized carriage.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	For screws	$w_1$
L1010.03-0025	25	10	2.5	2.6	M1,6	3
L1010.03-0035	35	10	2.5	2.6	M1,6	3
L1010.03-0045	45	10	2.5	2.6	M1,6	3
L1010.03-0055	55	10	2.5	2.6	M1,6	3
L1010.03-0065	65	10	2.5	2.6	M1,6	3
L1010.03-0075	75	10	2.5	2.6	M1,6	3
L1010.03-0085	85	10	2.5	2.6	M1,6	3
L1010.03-0095	95	10	2.5	2.6	M1,6	3
L1010.03-0105	105	10	2.5	2.6	M1,6	3
L1010.03-0115	115	10	2.5	2.6	M1,6	3
L1010.03-0125	125	10	2.5	2.6	M1,6	3
L1010.03-0135	135	10	2.5	2.6	M1,6	3
L1010.03-0145	145	10	2.5	2.6	M1,6	3
L1010.03-0155	155	10	2.5	2.6	M1,6	3
L1010.03-0165	165	10	2.5	2.6	M1,6	3
L1010.03-0175	175	10	2.5	2.6	M1,6	3
L1010.03-0185	185	10	2.5	2.6	M1,6	3
L1010.03-0195	195	10	2.5	2.6	M1,6	3
L1010.03-0205	205	10	2.5	2.6	M1,6	3
L1010.03-0215	215	10	2.5	2.6	M1,6	3
L1010.03-0225	225	10	2.5	2.6	M1,6	3
L1010.03-0235	235	10	2.5	2.6	M1,6	3
L1010.03-0245	245	10	2.5	2.6	M1,6	3
L1010.03-0255	255	10	2.5	2.6	M1,6	3
L1010.03-0265	265	10	2.5	2.6	M1,6	3
L1010.03-0275	275	10	2.5	2.6	M1,6	3
L1010.03-0285	285	10	2.5	2.6	M1,6	3
L1010.03-0295	295	10	2.5	2.6	M1,6	3
L1010.03-0305	305	10	2.5	2.6	M1,6	3
L1010.03-0315	315	10	2.5	2.6	M1,6	3
L1010.03-0325	325	10	2.5	2.6	M1,6	3
L1010.03-0335	335	10	2.5	2.6	M1,6	3
L1010.03-0345	345	10	2.5	2.6	M1,6	3





# 3mm Miniature Linear Rail

standard width

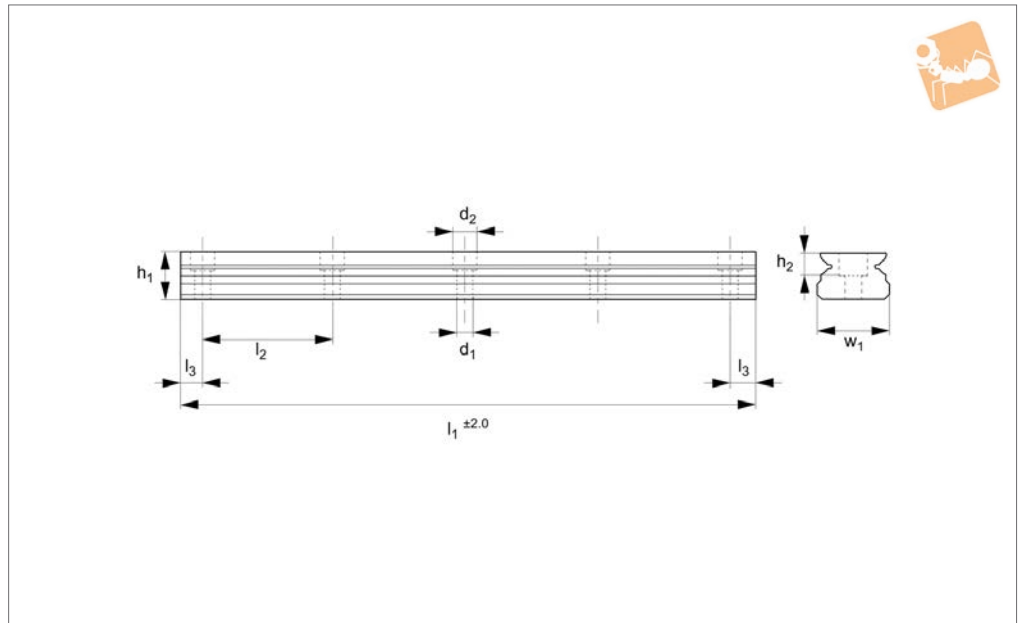
Linear Guide-ways

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	For screws	$w_1$
L1010.03-0355	355	10	2.5	2.6	M1,6	3
L1010.03-0365	365	10	2.5	2.6	M1,6	3
L1010.03-0375	375	10	2.5	2.6	M1,6	3
L1010.03-0385	385	10	2.5	2.6	M1,6	3
L1010.03-0395	395	10	2.5	2.6	M1,6	3
L1010.03-0405	405	10	2.5	2.6	M1,6	3
L1010.03-0415	415	10	2.5	2.6	M1,6	3
L1010.03-0425	425	10	2.5	2.6	M1,6	3
L1010.03-0435	435	10	2.5	2.6	M1,6	3
L1010.03-0445	445	10	2.5	2.6	M1,6	3
L1010.03-0455	455	10	2.5	2.6	M1,6	3
L1010.03-0465	465	10	2.5	2.6	M1,6	3
L1010.03-0475	475	10	2.5	2.6	M1,6	3
L1010.03-0485	485	10	2.5	2.6	M1,6	3
L1010.03-0495	495	10	2.5	2.6	M1,6	3
L1010.03-0505	505	10	2.5	2.6	M1,6	3
L1010.03-0515	515	10	2.5	2.6	M1,6	3
L1010.03-0525	525	10	2.5	2.6	M1,6	3
L1010.03-0535	535	10	2.5	2.6	M1,6	3
L1010.03-0545	545	10	2.5	2.6	M1,6	3
L1010.03-0555	555	10	2.5	2.6	M1,6	3
L1010.03-0565	565	10	2.5	2.6	M1,6	3
L1010.03-0575	575	10	2.5	2.6	M1,6	3
L1010.03-0585	585	10	2.5	2.6	M1,6	3
L1010.03-0595	595	10	2.5	2.6	M1,6	3
L1010.03-0605	605	10	2.5	2.6	M1,6	3
L1010.03-0615	615	10	2.5	2.6	M1,6	3
L1010.03-0625	625	10	2.5	2.6	M1,6	3
L1010.03-0635	635	10	2.5	2.6	M1,6	3
L1010.03-0645	645	10	2.5	2.6	M1,6	3
L1010.03-0655	655	10	2.5	2.6	M1,6	3
L1010.03-0665	665	10	2.5	2.6	M1,6	3
L1010.03-0675	675	10	2.5	2.6	M1,6	3
L1010.03-0685	685	10	2.5	2.6	M1,6	3
L1010.03-0695	695	10	2.5	2.6	M1,6	3
L1010.03-0705	705	10	2.5	2.6	M1,6	3
L1010.03-0715	715	10	2.5	2.6	M1,6	3
L1010.03-0725	725	10	2.5	2.6	M1,6	3
L1010.03-0735	735	10	2.5	2.6	M1,6	3
L1010.03-0745	745	10	2.5	2.6	M1,6	3
L1010.03-0755	755	10	2.5	2.6	M1,6	3
L1010.03-0765	765	10	2.5	2.6	M1,6	3
L1010.03-0775	775	10	2.5	2.6	M1,6	3
L1010.03-0785	785	10	2.5	2.6	M1,6	3
L1010.03-0795	795	10	2.5	2.6	M1,6	3
L1010.03-0805	805	10	2.5	2.6	M1,6	3
L1010.03-0815	815	10	2.5	2.6	M1,6	3
L1010.03-0825	825	10	2.5	2.6	M1,6	3
L1010.03-0835	835	10	2.5	2.6	M1,6	3
L1010.03-0845	845	10	2.5	2.6	M1,6	3
L1010.03-0855	855	10	2.5	2.6	M1,6	3
L1010.03-0865	865	10	2.5	2.6	M1,6	3
L1010.03-0875	875	10	2.5	2.6	M1,6	3
L1010.03-0885	885	10	2.5	2.6	M1,6	3
L1010.03-0895	895	10	2.5	2.6	M1,6	3
L1010.03-0905	905	10	2.5	2.6	M1,6	3
L1010.03-0915	915	10	2.5	2.6	M1,6	3
L1010.03-0925	925	10	2.5	2.6	M1,6	3
L1010.03-0935	935	10	2.5	2.6	M1,6	3
L1010.03-0945	945	10	2.5	2.6	M1,6	3
L1010.03-0955	955	10	2.5	2.6	M1,6	3
L1010.03-0965	965	10	2.5	2.6	M1,6	3
L1010.03-0975	975	10	2.5	2.6	M1,6	3
L1010.03-0985	985	10	2.5	2.6	M1,6	3
L1010.03-0995	995	10	2.5	2.6	M1,6	3

LINEAR GUIDEWAYS



## L1010.05



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Supplied with special low profile hex

screws.

Select the size and number of carriages to suit the required load (see part L1010.C).

Other rail lengths on request.

Weight: 0,12 Kg/m.

### Important Notes

Must be ordered with corresponding sized carriage.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1010.05-0040	40	15	5	3.5	1	2.4	3.5	M2	5	4.8
L1010.05-0055	55	15	5	3.5	1	2.4	3.5	M2	5	6.6
L1010.05-0070	70	15	5	3.5	1	2.4	3.5	M2	5	8.4
L1010.05-0085	85	15	5	3.5	1	2.4	3.5	M2	5	10.2
L1010.05-0100	100	15	5	3.5	1	2.4	3.5	M2	5	12.0
L1010.05-0115	115	15	5	3.5	1	2.4	3.5	M2	5	13.8
L1010.05-0130	130	15	5	3.5	1	2.4	3.5	M2	5	15.6
L1010.05-0145	145	15	5	3.5	1	2.4	3.5	M2	5	17.4
L1010.05-0160	160	15	5	3.5	1	2.4	3.5	M2	5	19.2
L1010.05-0175	175	15	5	3.5	1	2.4	3.5	M2	5	21.0
L1010.05-0190	190	15	5	3.5	1	2.4	3.5	M2	5	22.8
L1010.05-0205	205	15	5	3.5	1	2.4	3.5	M2	5	24.6
L1010.05-0220	220	15	5	3.5	1	2.4	3.5	M2	5	26.4
L1010.05-0235	235	15	5	3.5	1	2.4	3.5	M2	5	28.2
L1010.05-0250	250	15	5	3.5	1	2.4	3.5	M2	5	30.0
L1010.05-0265	265	15	5	3.5	1	2.4	3.5	M2	5	31.8
L1010.05-0280	280	15	5	3.5	1	2.4	3.5	M2	5	33.6
L1010.05-0295	295	15	5	3.5	1	2.4	3.5	M2	5	35.4
L1010.05-0310	310	15	5	3.5	1	2.4	3.5	M2	5	37.2
L1010.05-0325	325	15	5	3.5	1	2.4	3.5	M2	5	39.0
L1010.05-0340	340	15	5	3.5	1	2.4	3.5	M2	5	40.8
L1010.05-0355	355	15	5	3.5	1	2.4	3.5	M2	5	42.6
L1010.05-0370	370	15	5	3.5	1	2.4	3.5	M2	5	44.4
L1010.05-0385	385	15	5	3.5	1	2.4	3.5	M2	5	46.2
L1010.05-0400	400	15	5	3.5	1	2.4	3.5	M2	5	48.0
L1010.05-0415	415	15	5	3.5	1	2.4	3.5	M2	5	49.8
L1010.05-0430	430	15	5	3.5	1	2.4	3.5	M2	5	51.6
L1010.05-0445	445	15	5	3.5	1	2.4	3.5	M2	5	53.4
L1010.05-0460	460	15	5	3.5	1	2.4	3.5	M2	5	55.2
L1010.05-0475	475	15	5	3.5	1	2.4	3.5	M2	5	57.0
L1010.05-0490	490	15	5	3.5	1	2.4	3.5	M2	5	58.8
L1010.05-0505	505	15	5	3.5	1	2.4	3.5	M2	5	60.6



# 5mm Miniature Linear Rail

standard width

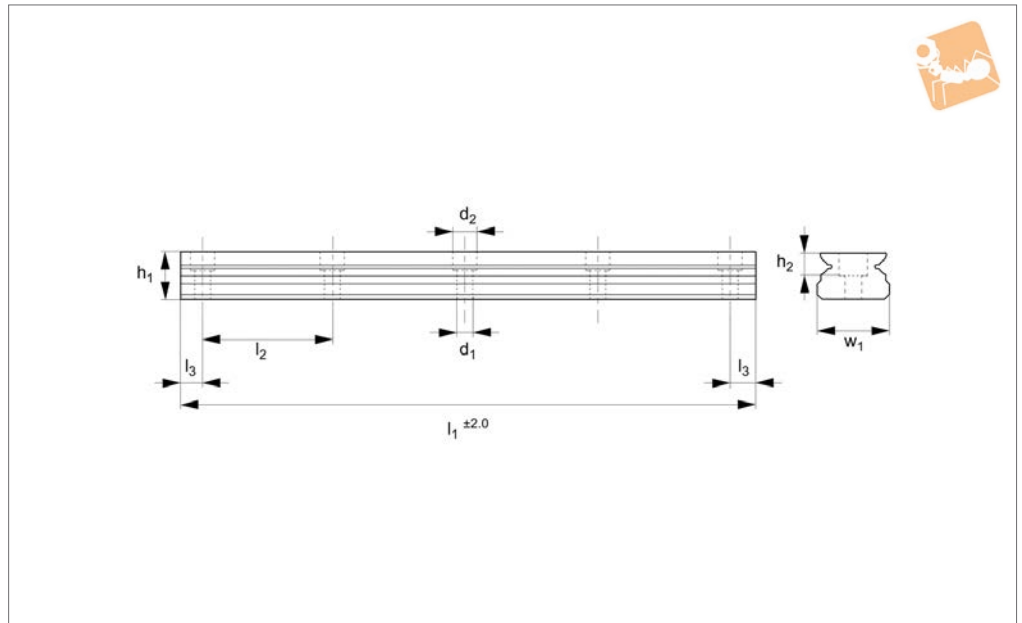
Linear Guide-ways

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	w <sub>1</sub>	Weight kg
L1010.05-0520	520	15	5	3.5	1	2.4	3.5	M2	5	62.4
L1010.05-0535	535	15	5	3.5	1	2.4	3.5	M2	5	64.2
L1010.05-0550	550	15	5	3.5	1	2.4	3.5	M2	5	66.0
L1010.05-0565	565	15	5	3.5	1	2.4	3.5	M2	5	67.8
L1010.05-0580	580	15	5	3.5	1	2.4	3.5	M2	5	69.6
L1010.05-0595	595	15	5	3.5	1	2.4	3.5	M2	5	71.4
L1010.05-0610	610	15	5	3.5	1	2.4	3.5	M2	5	73.2
L1010.05-0625	625	15	5	3.5	1	2.4	3.5	M2	5	75.0
L1010.05-0640	640	15	5	3.5	1	2.4	3.5	M2	5	76.8
L1010.05-0655	655	15	5	3.5	1	2.4	3.5	M2	5	78.6
L1010.05-0670	670	15	5	3.5	1	2.4	3.5	M2	5	80.4
L1010.05-0685	685	15	5	3.5	1	2.4	3.5	M2	5	82.2
L1010.05-0700	700	15	5	3.5	1	2.4	3.5	M2	5	84.0
L1010.05-0715	715	15	5	3.5	1	2.4	3.5	M2	5	85.8
L1010.05-0730	730	15	5	3.5	1	2.4	3.5	M2	5	87.6
L1010.05-0745	745	15	5	3.5	1	2.4	3.5	M2	5	89.4
L1010.05-0760	760	15	5	3.5	1	2.4	3.5	M2	5	91.2
L1010.05-0775	775	15	5	3.5	1	2.4	3.5	M2	5	93.0
L1010.05-0790	790	15	5	3.5	1	2.4	3.5	M2	5	94.8
L1010.05-0805	805	15	5	3.5	1	2.4	3.5	M2	5	96.6
L1010.05-0820	820	15	5	3.5	1	2.4	3.5	M2	5	98.4
L1010.05-0835	835	15	5	3.5	1	2.4	3.5	M2	5	100.2
L1010.05-0850	850	15	5	3.5	1	2.4	3.5	M2	5	102.0
L1010.05-0865	865	15	5	3.5	1	2.4	3.5	M2	5	103.8
L1010.05-0880	880	15	5	3.5	1	2.4	3.5	M2	5	105.6
L1010.05-0895	895	15	5	3.5	1	2.4	3.5	M2	5	107.4
L1010.05-0910	910	15	5	3.5	1	2.4	3.5	M2	5	109.2
L1010.05-0925	925	15	5	3.5	1	2.4	3.5	M2	5	111.0
L1010.05-0940	940	15	5	3.5	1	2.4	3.5	M2	5	112.8
L1010.05-0955	955	15	5	3.5	1	2.4	3.5	M2	5	114.6
L1010.05-0970	970	15	5	3.5	1	2.4	3.5	M2	5	116.4
L1010.05-0985	985	15	5	3.5	1	2.4	3.5	M2	5	118.2
L1010.05-1000	1000	15	5	3.5	1	2.4	3.5	M2	5	120.0

LINEAR GUIDEWAYS



## L1010.07



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1010.C).

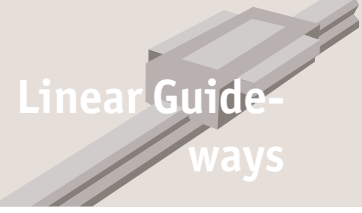
Other rail lengths on request.  
Weight: 0,22 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1010.07-0040	40	15	5	4.7	2.3	2.4	4.2	M2	7	8.8
L1010.07-0055	55	15	5	4.7	2.3	2.4	4.2	M2	7	12.1
L1010.07-0070	70	15	5	4.7	2.3	2.4	4.2	M2	7	15.4
L1010.07-0085	85	15	5	4.7	2.3	2.4	4.2	M2	7	18.7
L1010.07-0100	100	15	5	4.7	2.3	2.4	4.2	M2	7	22.0
L1010.07-0115	115	15	5	4.7	2.3	2.4	4.2	M2	7	25.3
L1010.07-0130	130	15	5	4.7	2.3	2.4	4.2	M2	7	28.6
L1010.07-0145	145	15	5	4.7	2.3	2.4	4.2	M2	7	31.9
L1010.07-0160	160	15	5	4.7	2.3	2.4	4.2	M2	7	35.2
L1010.07-0175	175	15	5	4.7	2.3	2.4	4.2	M2	7	38.5
L1010.07-0190	190	15	5	4.7	2.3	2.4	4.2	M2	7	41.8
L1010.07-0205	205	15	5	4.7	2.3	2.4	4.2	M2	7	45.1
L1010.07-0220	220	15	5	4.7	2.3	2.4	4.2	M2	7	48.4
L1010.07-0235	235	15	5	4.7	2.3	2.4	4.2	M2	7	51.7
L1010.07-0250	250	15	5	4.7	2.3	2.4	4.2	M2	7	55.0
L1010.07-0265	265	15	5	4.7	2.3	2.4	4.2	M2	7	58.3
L1010.07-0280	280	15	5	4.7	2.3	2.4	4.2	M2	7	61.6
L1010.07-0295	295	15	5	4.7	2.3	2.4	4.2	M2	7	64.9
L1010.07-0310	310	15	5	4.7	2.3	2.4	4.2	M2	7	68.2
L1010.07-0325	325	15	5	4.7	2.3	2.4	4.2	M2	7	71.5
L1010.07-0340	340	15	5	4.7	2.3	2.4	4.2	M2	7	74.8
L1010.07-0355	355	15	5	4.7	2.3	2.4	4.2	M2	7	78.1
L1010.07-0370	370	15	5	4.7	2.3	2.4	4.2	M2	7	81.4
L1010.07-0385	385	15	5	4.7	2.3	2.4	4.2	M2	7	84.7
L1010.07-0400	400	15	5	4.7	2.3	2.4	4.2	M2	7	88.0
L1010.07-0415	415	15	5	4.7	2.3	2.4	4.2	M2	7	91.3
L1010.07-0430	430	15	5	4.7	2.3	2.4	4.2	M2	7	94.6
L1010.07-0445	445	15	5	4.7	2.3	2.4	4.2	M2	7	97.9
L1010.07-0460	460	15	5	4.7	2.3	2.4	4.2	M2	7	101.2
L1010.07-0475	475	15	5	4.7	2.3	2.4	4.2	M2	7	104.5
L1010.07-0490	490	15	5	4.7	2.3	2.4	4.2	M2	7	107.8
L1010.07-0505	505	15	5	4.7	2.3	2.4	4.2	M2	7	111.1
L1010.07-0520	520	15	5	4.7	2.3	2.4	4.2	M2	7	114.4
L1010.07-0535	535	15	5	4.7	2.3	2.4	4.2	M2	7	117.7



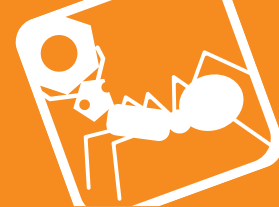
# 7mm Miniature Linear Rail

standard width

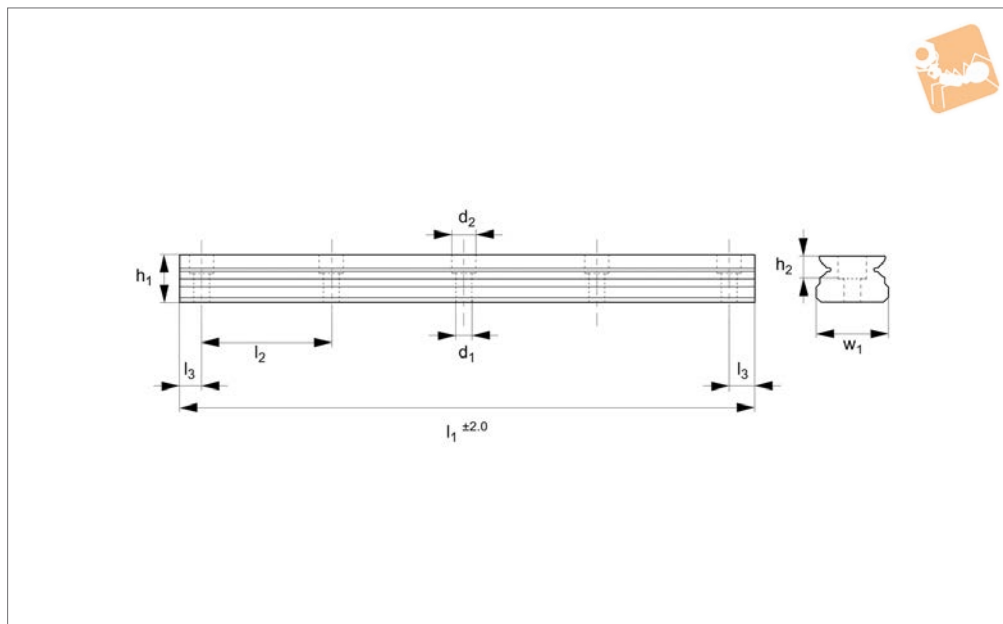


Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	w <sub>1</sub>	Weight kg
L1010.07-0550	550	15	5	4.7	2.3	2.4	4.2	M2	7	121.0
L1010.07-0565	565	15	5	4.7	2.3	2.4	4.2	M2	7	124.3
L1010.07-0580	580	15	5	4.7	2.3	2.4	4.2	M2	7	127.6
L1010.07-0595	595	15	5	4.7	2.3	2.4	4.2	M2	7	130.9
L1010.07-0610	610	15	5	4.7	2.3	2.4	4.2	M2	7	134.2
L1010.07-0625	625	15	5	4.7	2.3	2.4	4.2	M2	7	137.5
L1010.07-0640	640	15	5	4.7	2.3	2.4	4.2	M2	7	140.8
L1010.07-0655	655	15	5	4.7	2.3	2.4	4.2	M2	7	144.1
L1010.07-0670	670	15	5	4.7	2.3	2.4	4.2	M2	7	147.4
L1010.07-0685	685	15	5	4.7	2.3	2.4	4.2	M2	7	150.7
L1010.07-0700	700	15	5	4.7	2.3	2.4	4.2	M2	7	154.0
L1010.07-0715	715	15	5	4.7	2.3	2.4	4.2	M2	7	157.3
L1010.07-0730	730	15	5	4.7	2.3	2.4	4.2	M2	7	160.6
L1010.07-0745	745	15	5	4.7	2.3	2.4	4.2	M2	7	163.9
L1010.07-0760	760	15	5	4.7	2.3	2.4	4.2	M2	7	167.2
L1010.07-0775	775	15	5	4.7	2.3	2.4	4.2	M2	7	170.5
L1010.07-0790	790	15	5	4.7	2.3	2.4	4.2	M2	7	173.8
L1010.07-0805	805	15	5	4.7	2.3	2.4	4.2	M2	7	177.1
L1010.07-0820	820	15	5	4.7	2.3	2.4	4.2	M2	7	180.4
L1010.07-0835	835	15	5	4.7	2.3	2.4	4.2	M2	7	183.7
L1010.07-0850	850	15	5	4.7	2.3	2.4	4.2	M2	7	187.0
L1010.07-0865	865	15	5	4.7	2.3	2.4	4.2	M2	7	190.3
L1010.07-0880	880	15	5	4.7	2.3	2.4	4.2	M2	7	193.6
L1010.07-0895	895	15	5	4.7	2.3	2.4	4.2	M2	7	196.9
L1010.07-0910	910	15	5	4.7	2.3	2.4	4.2	M2	7	200.2
L1010.07-0925	925	15	5	4.7	2.3	2.4	4.2	M2	7	203.5
L1010.07-0940	940	15	5	4.7	2.3	2.4	4.2	M2	7	206.8
L1010.07-0955	955	15	5	4.7	2.3	2.4	4.2	M2	7	210.1
L1010.07-0970	970	15	5	4.7	2.3	2.4	4.2	M2	7	213.4
L1010.07-0985	985	15	5	4.7	2.3	2.4	4.2	M2	7	216.7
L1010.07-1000	1000	15	5	4.7	2.3	2.4	4.2	M2	7	220.0

LINEAR GUIDEWAYS



## L1010.09



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1010.C).

Other rail lengths on request.  
Weight: 0,30 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1010.09-0055	55	20	7.5	5.5	3.5	3.5	6	M3	9	16.5
L1010.09-0075	75	20	7.5	5.5	3.5	3.5	6	M3	9	22.5
L1010.09-0095	95	20	7.5	5.5	3.5	3.5	6	M3	9	28.5
L1010.09-0115	115	20	7.5	5.5	3.5	3.5	6	M3	9	34.5
L1010.09-0135	135	20	7.5	5.5	3.5	3.5	6	M3	9	40.5
L1010.09-0155	155	20	7.5	5.5	3.5	3.5	6	M3	9	46.5
L1010.09-0175	175	20	7.5	5.5	3.5	3.5	6	M3	9	52.5
L1010.09-0195	195	20	7.5	5.5	3.5	3.5	6	M3	9	58.5
L1010.09-0215	215	20	7.5	5.5	3.5	3.5	6	M3	9	64.5
L1010.09-0235	235	20	7.5	5.5	3.5	3.5	6	M3	9	70.5
L1010.09-0255	255	20	7.5	5.5	3.5	3.5	6	M3	9	76.5
L1010.09-0275	275	20	7.5	5.5	3.5	3.5	6	M3	9	82.5
L1010.09-0295	295	20	7.5	5.5	3.5	3.5	6	M3	9	88.5
L1010.09-0315	315	20	7.5	5.5	3.5	3.5	6	M3	9	94.5
L1010.09-0335	335	20	7.5	5.5	3.5	3.5	6	M3	9	100.5
L1010.09-0355	355	20	7.5	5.5	3.5	3.5	6	M3	9	106.5
L1010.09-0375	375	20	7.5	5.5	3.5	3.5	6	M3	9	112.5
L1010.09-0395	395	20	7.5	5.5	3.5	3.5	6	M3	9	118.5
L1010.09-0415	415	20	7.5	5.5	3.5	3.5	6	M3	9	124.5
L1010.09-0435	435	20	7.5	5.5	3.5	3.5	6	M3	9	130.5
L1010.09-0455	455	20	7.5	5.5	3.5	3.5	6	M3	9	136.5
L1010.09-0475	475	20	7.5	5.5	3.5	3.5	6	M3	9	142.5
L1010.09-0495	495	20	7.5	5.5	3.5	3.5	6	M3	9	148.5
L1010.09-0515	515	20	7.5	5.5	3.5	3.5	6	M3	9	154.5
L1010.09-0535	535	20	7.5	5.5	3.5	3.5	6	M3	9	160.5
L1010.09-0555	555	20	7.5	5.5	3.5	3.5	6	M3	9	166.5
L1010.09-0575	575	20	7.5	5.5	3.5	3.5	6	M3	9	172.5
L1010.09-0595	595	20	7.5	5.5	3.5	3.5	6	M3	9	178.5
L1010.09-0615	615	20	7.5	5.5	3.5	3.5	6	M3	9	184.5
L1010.09-0635	635	20	7.5	5.5	3.5	3.5	6	M3	9	190.5
L1010.09-0655	655	20	7.5	5.5	3.5	3.5	6	M3	9	196.5
L1010.09-0675	675	20	7.5	5.5	3.5	3.5	6	M3	9	202.5
L1010.09-0695	695	20	7.5	5.5	3.5	3.5	6	M3	9	208.5
L1010.09-0715	715	20	7.5	5.5	3.5	3.5	6	M3	9	214.5



# 9mm Miniature Linear Rail

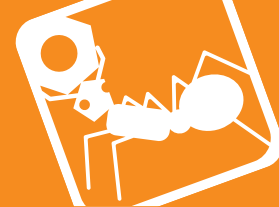
standard width



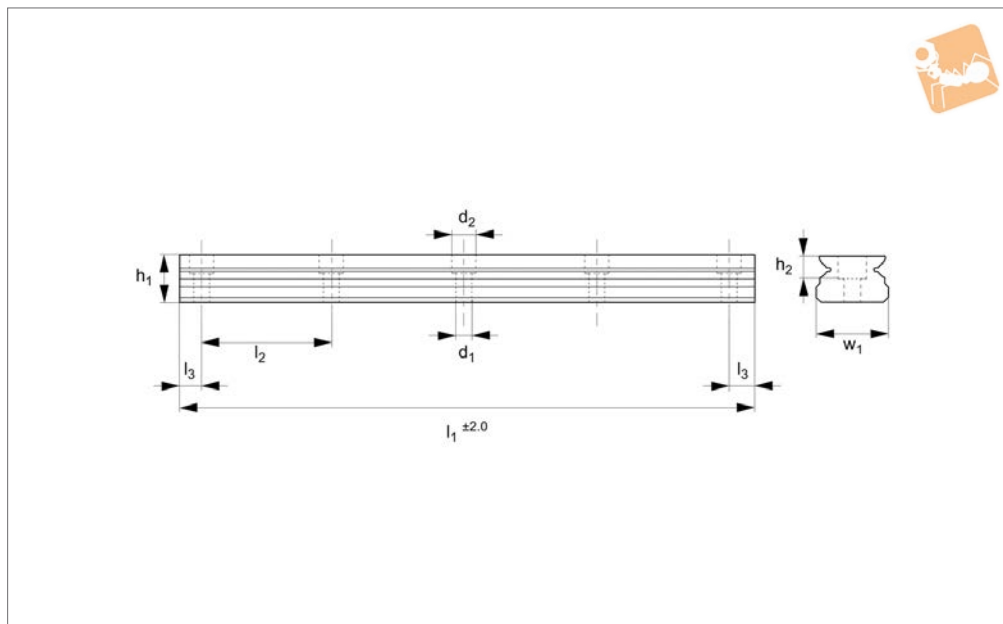
Linear Guide-ways

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	w <sub>1</sub>	Weight kg
L1010.09-0735	735	20	7.5	5.5	3.5	3.5	6	M3	9	220.5
L1010.09-0755	755	20	7.5	5.5	3.5	3.5	6	M3	9	226.5
L1010.09-0775	775	20	7.5	5.5	3.5	3.5	6	M3	9	232.5
L1010.09-0795	795	20	7.5	5.5	3.5	3.5	6	M3	9	238.5
L1010.09-0815	815	20	7.5	5.5	3.5	3.5	6	M3	9	244.5
L1010.09-0835	835	20	7.5	5.5	3.5	3.5	6	M3	9	250.5
L1010.09-0855	855	20	7.5	5.5	3.5	3.5	6	M3	9	256.5
L1010.09-0875	875	20	7.5	5.5	3.5	3.5	6	M3	9	262.5
L1010.09-0895	895	20	7.5	5.5	3.5	3.5	6	M3	9	268.5
L1010.09-0915	915	20	7.5	5.5	3.5	3.5	6	M3	9	274.5
L1010.09-0935	935	20	7.5	5.5	3.5	3.5	6	M3	9	280.5
L1010.09-0955	955	20	7.5	5.5	3.5	3.5	6	M3	9	286.5
L1010.09-0975	975	20	7.5	5.5	3.5	3.5	6	M3	9	292.5
L1010.09-0995	995	20	7.5	5.5	3.5	3.5	6	M3	9	298.5

LINEAR GUIDEWAYS



## L1010.12



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1010.C).

Other rail lengths on request.  
Weight: 0,60 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1010.12-0070	70	25	10	7.5	4.5	3.5	6	M3	12	42
L1010.12-0095	95	25	10	7.5	4.5	3.5	6	M3	12	57
L1010.12-0120	120	25	10	7.5	4.5	3.5	6	M3	12	72
L1010.12-0145	145	25	10	7.5	4.5	3.5	6	M3	12	87
L1010.12-0170	170	25	10	7.5	4.5	3.5	6	M3	12	102
L1010.12-0195	195	25	10	7.5	4.5	3.5	6	M3	12	117
L1010.12-0220	220	25	10	7.5	4.5	3.5	6	M3	12	132
L1010.12-0245	245	25	10	7.5	4.5	3.5	6	M3	12	147
L1010.12-0270	270	25	10	7.5	4.5	3.5	6	M3	12	162
L1010.12-0295	295	25	10	7.5	4.5	3.5	6	M3	12	177
L1010.12-0320	320	25	10	7.5	4.5	3.5	6	M3	12	192
L1010.12-0345	345	25	10	7.5	4.5	3.5	6	M3	12	207
L1010.12-0370	370	25	10	7.5	4.5	3.5	6	M3	12	222
L1010.12-0395	395	25	10	7.5	4.5	3.5	6	M3	12	237
L1010.12-0420	420	25	10	7.5	4.5	3.5	6	M3	12	252
L1010.12-0445	445	25	10	7.5	4.5	3.5	6	M3	12	267
L1010.12-0470	470	25	10	7.5	4.5	3.5	6	M3	12	282
L1010.12-0495	495	25	10	7.5	4.5	3.5	6	M3	12	297
L1010.12-0520	520	25	10	7.5	4.5	3.5	6	M3	12	312
L1010.12-0545	545	25	10	7.5	4.5	3.5	6	M3	12	327
L1010.12-0570	570	25	10	7.5	4.5	3.5	6	M3	12	342
L1010.12-0595	595	25	10	7.5	4.5	3.5	6	M3	12	357
L1010.12-0620	620	25	10	7.5	4.5	3.5	6	M3	12	372
L1010.12-0645	645	25	10	7.5	4.5	3.5	6	M3	12	387
L1010.12-0670	670	25	10	7.5	4.5	3.5	6	M3	12	402
L1010.12-0695	695	25	10	7.5	4.5	3.5	6	M3	12	417
L1010.12-0720	720	25	10	7.5	4.5	3.5	6	M3	12	432
L1010.12-0745	745	25	10	7.5	4.5	3.5	6	M3	12	447
L1010.12-0770	770	25	10	7.5	4.5	3.5	6	M3	12	462
L1010.12-0795	795	25	10	7.5	4.5	3.5	6	M3	12	477
L1010.12-0820	820	25	10	7.5	4.5	3.5	6	M3	12	492
L1010.12-0845	845	25	10	7.5	4.5	3.5	6	M3	12	507
L1010.12-0870	870	25	10	7.5	4.5	3.5	6	M3	12	522
L1010.12-0895	895	25	10	7.5	4.5	3.5	6	M3	12	537



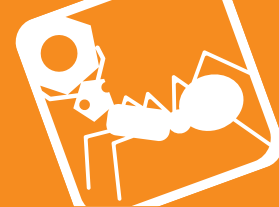


# 12mm Miniature Linear Rail

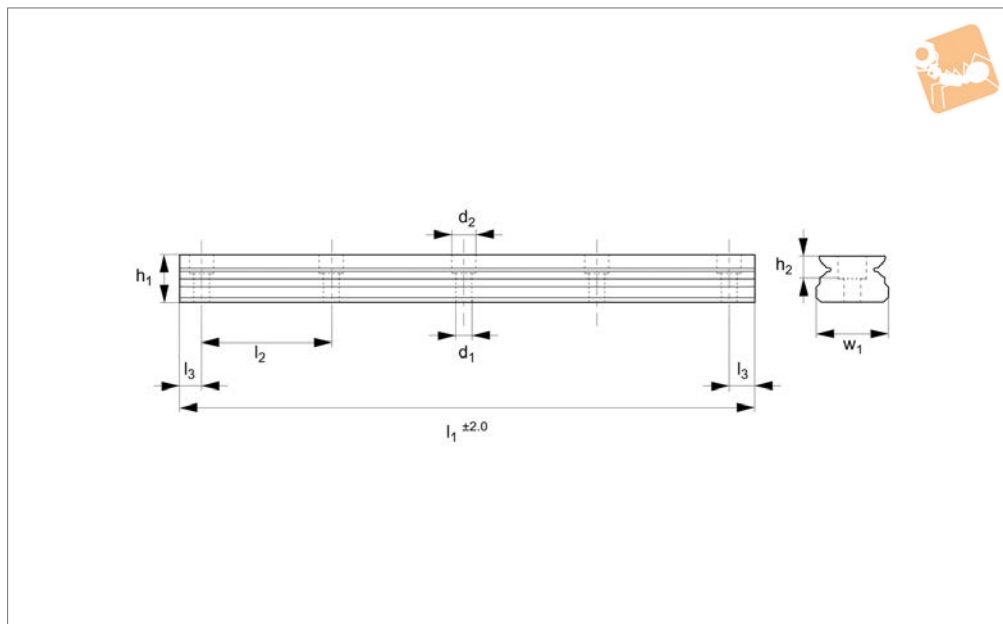
standard width

Linear Guide-ways

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
<b>L1010.12-0920</b>	920	25	10	7.5	4.5	3.5	6	M3	12	552
<b>L1010.12-0945</b>	945	25	10	7.5	4.5	3.5	6	M3	12	567
<b>L1010.12-0970</b>	970	25	10	7.5	4.5	3.5	6	M3	12	582
<b>L1010.12-0995</b>	995	25	10	7.5	4.5	3.5	6	M3	12	597



## L1010.15



### Material

Corrosion resistant stainless steel, hardened to 58-60 HRC (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1010.C).

Other rail lengths on request.  
Weight: 0,93 Kg/m.

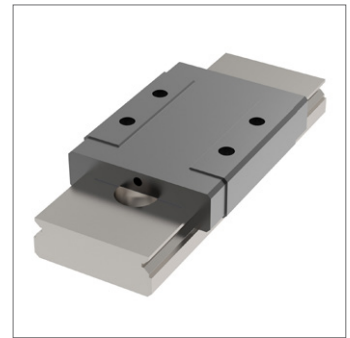
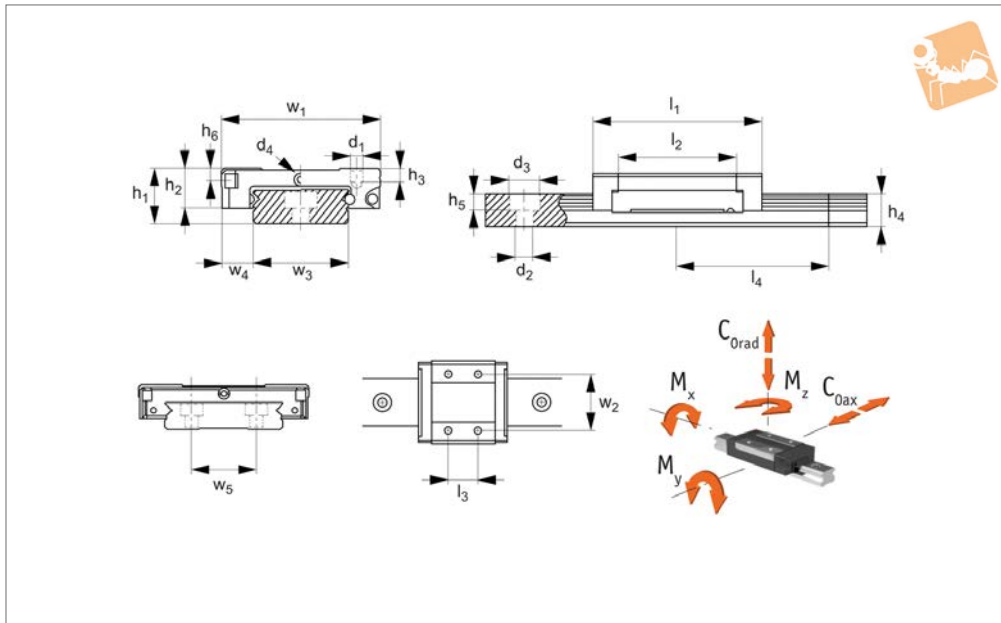
Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1010.15-0070	70	40	15	9.5	4.5	3.5	6	M3	15	65.1
L1010.15-0110	110	40	15	9.5	4.5	3.5	6	M3	15	102.3
L1010.15-0150	150	40	15	9.5	4.5	3.5	6	M3	15	139.5
L1010.15-0190	190	40	15	9.5	4.5	3.5	6	M3	15	176.7
L1010.15-0230	230	40	15	9.5	4.5	3.5	6	M3	15	213.9
L1010.15-0270	270	40	15	9.5	4.5	3.5	6	M3	15	251.1
L1010.15-0310	310	40	15	9.5	4.5	3.5	6	M3	15	288.3
L1010.15-0350	350	40	15	9.5	4.5	3.5	6	M3	15	325.5
L1010.15-0390	390	40	15	9.5	4.5	3.5	6	M3	15	362.7
L1010.15-0430	430	40	15	9.5	4.5	3.5	6	M3	15	399.9
L1010.15-0470	470	40	15	9.5	4.5	3.5	6	M3	15	437.1
L1010.15-0510	510	40	15	9.5	4.5	3.5	6	M3	15	474.3
L1010.15-0550	550	40	15	9.5	4.5	3.5	6	M3	15	511.5
L1010.15-0590	590	40	15	9.5	4.5	3.5	6	M3	15	548.7
L1010.15-0630	630	40	15	9.5	4.5	3.5	6	M3	15	585.9
L1010.15-0670	670	40	15	9.5	4.5	3.5	6	M3	15	623.1
L1010.15-0710	710	40	15	9.5	4.5	3.5	6	M3	15	660.3
L1010.15-0750	750	40	15	9.5	4.5	3.5	6	M3	15	697.5
L1010.15-0790	790	40	15	9.5	4.5	3.5	6	M3	15	734.7
L1010.15-0830	830	40	15	9.5	4.5	3.5	6	M3	15	771.9
L1010.15-0870	870	40	15	9.5	4.5	3.5	6	M3	15	809.1
L1010.15-0910	910	40	15	9.5	4.5	3.5	6	M3	15	846.3
L1010.15-0950	950	40	15	9.5	4.5	3.5	6	M3	15	883.5
L1010.15-0990	990	40	15	9.5	4.5	3.5	6	M3	15	920.7



# Miniature Rail Carriages

wide version

# Linear Guide-ways



## L1012.C

LINEAR GUIDEWAYS

### Material

Corrosion resistant stainless steel body (440C), with hardened stainless steel ball bearings.  
Black plastic end plates and ball bearing retainers.

s<sup>2</sup>.

Temperature range -40°C to +80°C.  
Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1012.10 through to L1012.42).

(plastic) rail. When mounting carriages onto rail, slide directly from the dummy rail onto the steel rail. Do not simply remove the carriage from the dummy rail - the balls will become loose making the carriage unusable.

### Technical Notes

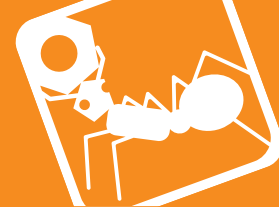
Max.speed 3 m/s. max. acceleration 40m/

### Tips

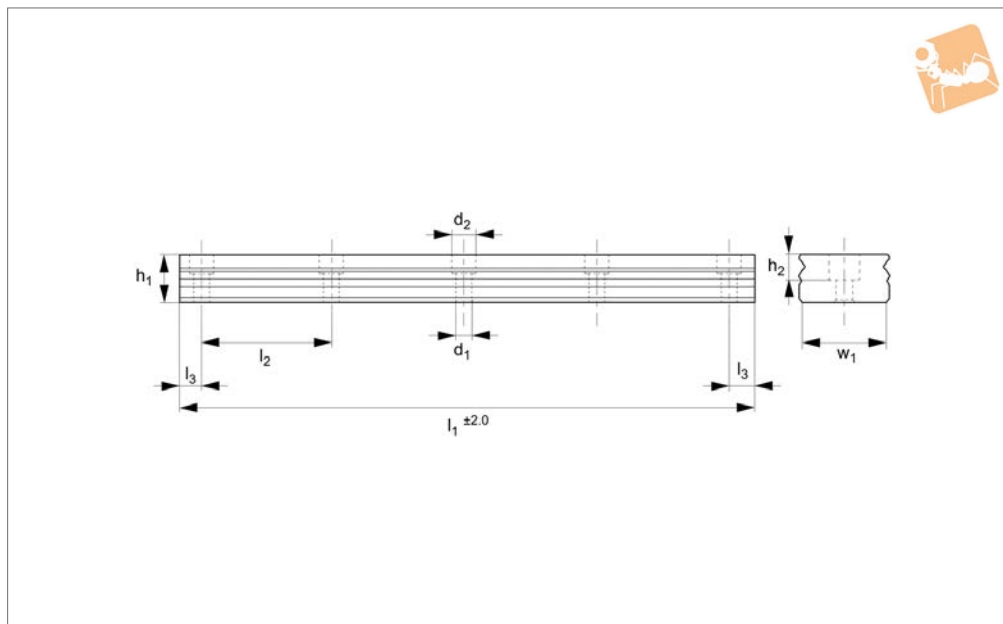
Carriages are supplied with a dummy

Order No.	For rail	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	Static load C <sub>0rad &amp; ax</sub> N	Weight g
L1012.C10	10	21.1	15.1	6.5	20	6.5	5.0	1.5	4	1.6	2.3	M2,5	3.0	5.5	0.9	900	8
L1012.C10L	10	27.2	21.2	11	20	6.5	5.0	1.5	4	1.6	2.3	M2,5	3.0	5.5	0.9	1315	19
L1012.C14	14	31.6	21.2	10	30	9	7.0	3	5.2	3.5	3.2	M3	3.5	6	1.1	2095	27
L1012.C14L	14	40.5	30.1	19	30	9	7.0	3	5.2	3.5	3.2	M3	3.5	6	1.1	3140	37
L1012.C18	18	39.1	27.9	12	30	12	8.6	3.0	7.3	4.5	4.0	M3	3.5	6	1.3	3605	37
L1012.C18L	18	50.7	39.5	24	30	12	8.6	3.0	7.3	4.5	4.0	M3	3.5	6	1.3	4990	57
L1012.C24	24	44.4	31.0	15	40	14	10.1	3.5	8.5	4.5	4.5	M3	4.5	8	1.3	5200	65
L1012.C24L	24	59.4	46.0	28	40	14	10.1	3.5	8.5	4.5	4.5	M3	4.5	8	1.3	7800	93
L1012.C42	42	55.3	38.5	20	40	16	12.0	4.5	9.5	4.5	4.5	M4	4.5	8	1.8	8385	137
L1012.C42L	42	74.4	57.6	35	40	16	12.0	4.5	9.5	4.5	4.5	M4	4.5	8	1.8	12580	200

Order No.	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>	Dyn. load C <sub>rad &amp; ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm
L1012.C10	17	13	10	3.5	-	475	4.6	2.2	2.2
L1012.C10L	17	13	10	3.5	-	615	6.8	4.1	4.1
L1012.C14	25	19	14	5.5	-	1180	15	7.3	7.3
L1012.C14L	25	19	14	5.5	-	1570	22.6	14.9	14.9
L1012.C18	30	21	18	6	-	2030	33.2	13.7	13.7
L1012.C18L	30	23	18	6	-	2550	45.9	26.7	26.7
L1012.C24	40	28	24	8	-	3065	63.7	26.3	26.3
L1012.C24L	40	28	24	8	-	4070	95.6	56.4	56.4
L1012.C42	60	45	42	9	23	5065	171.7	45.7	45.7
L1012.C42L	60	45	42	9	23	6725	257	93.1	93.1



## L1012.10



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1012.C).

Other rail lengths on request.  
Weight: 0,3 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1012.10-0055	55	20	7.5	4	1.6	3	5.5	M2,5	10	16.5
L1012.10-0075	75	20	7.5	4	1.6	3	5.5	M2,5	10	22.5
L1012.10-0095	95	20	7.5	4	1.6	3	5.5	M2,5	10	28.5
L1012.10-0115	115	20	7.5	4	1.6	3	5.5	M2,5	10	34.5
L1012.10-0135	135	20	7.5	4	1.6	3	5.5	M2,5	10	40.5
L1012.10-0155	155	20	7.5	4	1.6	3	5.5	M2,5	10	46.5
L1012.10-0175	175	20	7.5	4	1.6	3	5.5	M2,5	10	52.5
L1012.10-0195	195	20	7.5	4	1.6	3	5.5	M2,5	10	58.5
L1012.10-0215	215	20	7.5	4	1.6	3	5.5	M2,5	10	64.5
L1012.10-0235	235	20	7.5	4	1.6	3	5.5	M2,5	10	70.5
L1012.10-0255	255	20	7.5	4	1.6	3	5.5	M2,5	10	76.5
L1012.10-0275	275	20	7.5	4	1.6	3	5.5	M2,5	10	82.5
L1012.10-0295	295	20	7.5	4	1.6	3	5.5	M2,5	10	88.5
L1012.10-0315	315	20	7.5	4	1.6	3	5.5	M2,5	10	94.5
L1012.10-0335	335	20	7.5	4	1.6	3	5.5	M2,5	10	100.5
L1012.10-0355	355	20	7.5	4	1.6	3	5.5	M2,5	10	106.5
L1012.10-0375	375	20	7.5	4	1.6	3	5.5	M2,5	10	112.5
L1012.10-0395	395	20	7.5	4	1.6	3	5.5	M2,5	10	118.5
L1012.10-0415	415	20	7.5	4	1.6	3	5.5	M2,5	10	124.5
L1012.10-0435	435	20	7.5	4	1.6	3	5.5	M2,5	10	130.5
L1012.10-0455	455	20	7.5	4	1.6	3	5.5	M2,5	10	136.5
L1012.10-0475	475	20	7.5	4	1.6	3	5.5	M2,5	10	142.5
L1012.10-0495	495	20	7.5	4	1.6	3	5.5	M2,5	10	148.5
L1012.10-0515	515	20	7.5	4	1.6	3	5.5	M2,5	10	154.5
L1012.10-0535	535	20	7.5	4	1.6	3	5.5	M2,5	10	160.5
L1012.10-0555	555	20	7.5	4	1.6	3	5.5	M2,5	10	166.5
L1012.10-0575	575	20	7.5	4	1.6	3	5.5	M2,5	10	172.5
L1012.10-0595	595	20	7.5	4	1.6	3	5.5	M2,5	10	178.5
L1012.10-0615	615	20	7.5	4	1.6	3	5.5	M2,5	10	184.5
L1012.10-0635	635	20	7.5	4	1.6	3	5.5	M2,5	10	190.5
L1012.10-0655	655	20	7.5	4	1.6	3	5.5	M2,5	10	196.5
L1012.10-0675	675	20	7.5	4	1.6	3	5.5	M2,5	10	202.5
L1012.10-0695	695	20	7.5	4	1.6	3	5.5	M2,5	10	208.5
L1012.10-0715	715	20	7.5	4	1.6	3	5.5	M2,5	10	214.5



# 10mm Miniature Linear Rail

wide version



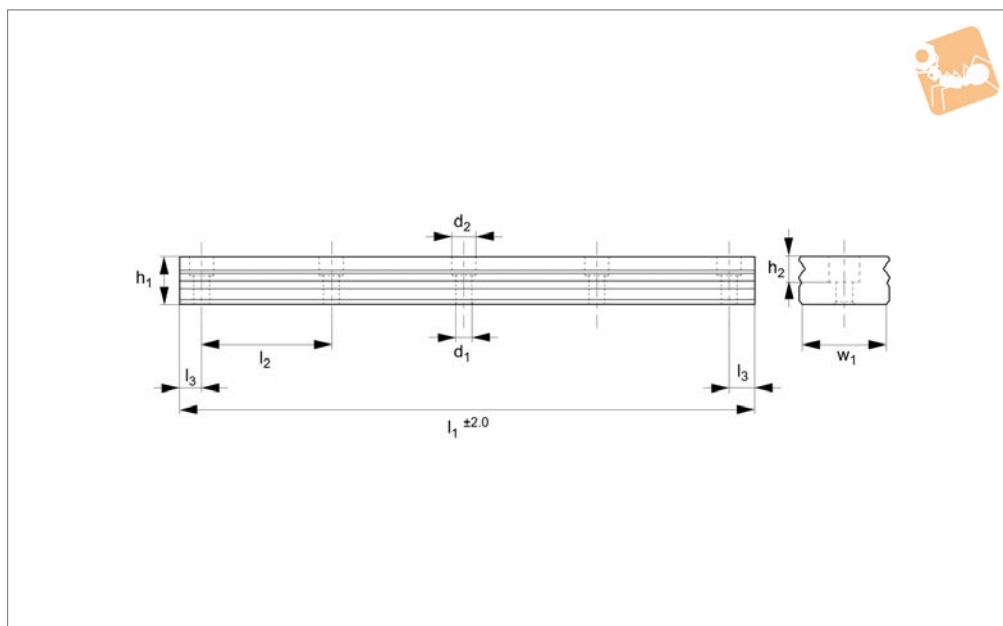
Linear Guide-ways

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	For screws	w <sub>1</sub>	Weight kg
L1012.10-0735	735	20	7.5	4	1.6	3	5.5	M2,5	10	220.5
L1012.10-0755	755	20	7.5	4	1.6	3	5.5	M2,5	10	226.5
L1012.10-0775	775	20	7.5	4	1.6	3	5.5	M2,5	10	232.5
L1012.10-0795	795	20	7.5	4	1.6	3	5.5	M2,5	10	238.5
L1012.10-0815	815	20	7.5	4	1.6	3	5.5	M2,5	10	244.5
L1012.10-0835	835	20	7.5	4	1.6	3	5.5	M2,5	10	250.5
L1012.10-0855	855	20	7.5	4	1.6	3	5.5	M2,5	10	256.5
L1012.10-0875	875	20	7.5	4	1.6	3	5.5	M2,5	10	262.5
L1012.10-0895	895	20	7.5	4	1.6	3	5.5	M2,5	10	268.5
L1012.10-0915	915	20	7.5	4	1.6	3	5.5	M2,5	10	274.5
L1012.10-0935	935	20	7.5	4	1.6	3	5.5	M2,5	10	280.5
L1012.10-0955	955	20	7.5	4	1.6	3	5.5	M2,5	10	286.5
L1012.10-0975	975	20	7.5	4	1.6	3	5.5	M2,5	10	292.5
L1012.10-0995	995	20	7.5	4	1.6	3	5.5	M2,5	10	298.5

LINEAR GUIDEWAYS



## L1012.14



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1012.C).

Other rail lengths on request.  
Weight: 0,5 Kg/m.

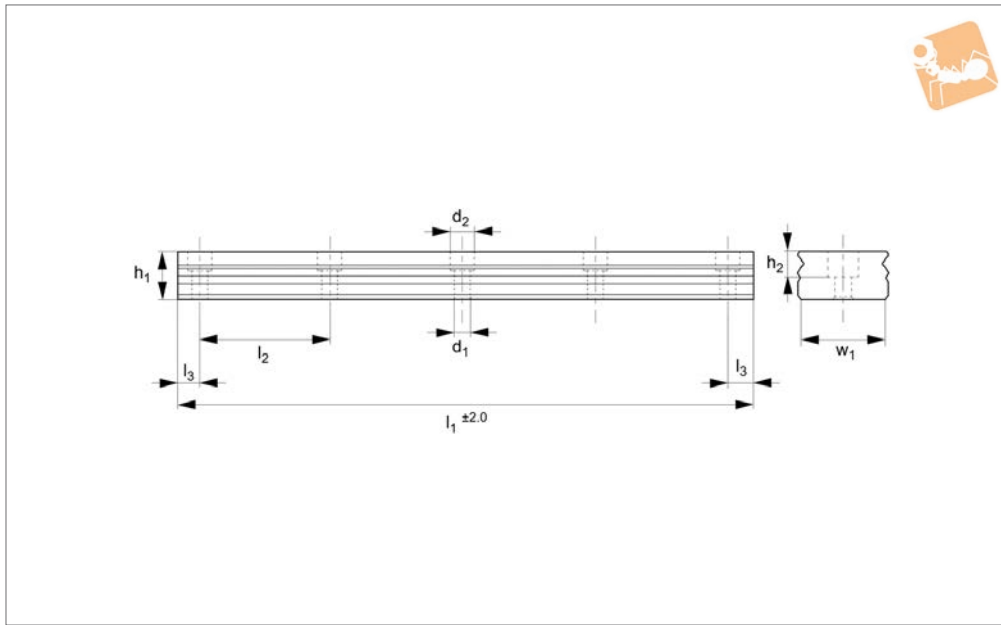
Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1012.14-0050	50	30	10	5.2	3.5	3.5	6	M3	14	25
L1012.14-0080	80	30	10	5.2	3.5	3.5	6	M3	14	40
L1012.14-0110	110	30	10	5.2	3.5	3.5	6	M3	14	55
L1012.14-0140	140	30	10	5.2	3.5	3.5	6	M3	14	70
L1012.14-0170	170	30	10	5.2	3.5	3.5	6	M3	14	85
L1012.14-0200	200	30	10	5.2	3.5	3.5	6	M3	14	100
L1012.14-0230	230	30	10	5.2	3.5	3.5	6	M3	14	115
L1012.14-0260	260	30	10	5.2	3.5	3.5	6	M3	14	130
L1012.14-0290	290	30	10	5.2	3.5	3.5	6	M3	14	145
L1012.14-0320	320	30	10	5.2	3.5	3.5	6	M3	14	160
L1012.14-0350	350	30	10	5.2	3.5	3.5	6	M3	14	175
L1012.14-0380	380	30	10	5.2	3.5	3.5	6	M3	14	190
L1012.14-0410	410	30	10	5.2	3.5	3.5	6	M3	14	205
L1012.14-0440	440	30	10	5.2	3.5	3.5	6	M3	14	220
L1012.14-0470	470	30	10	5.2	3.5	3.5	6	M3	14	235
L1012.14-0500	500	30	10	5.2	3.5	3.5	6	M3	14	250
L1012.14-0530	530	30	10	5.2	3.5	3.5	6	M3	14	265
L1012.14-0560	560	30	10	5.2	3.5	3.5	6	M3	14	280
L1012.14-0590	590	30	10	5.2	3.5	3.5	6	M3	14	295
L1012.14-0620	620	30	10	5.2	3.5	3.5	6	M3	14	310
L1012.14-0650	650	30	10	5.2	3.5	3.5	6	M3	14	325
L1012.14-0680	680	30	10	5.2	3.5	3.5	6	M3	14	340
L1012.14-0710	710	30	10	5.2	3.5	3.5	6	M3	14	355
L1012.14-0740	740	30	10	5.2	3.5	3.5	6	M3	14	370
L1012.14-0770	770	30	10	5.2	3.5	3.5	6	M3	14	385
L1012.14-0800	800	30	10	5.2	3.5	3.5	6	M3	14	400
L1012.14-0830	830	30	10	5.2	3.5	3.5	6	M3	14	415
L1012.14-0860	860	30	10	5.2	3.5	3.5	6	M3	14	430
L1012.14-0890	890	30	10	5.2	3.5	3.5	6	M3	14	445
L1012.14-0920	920	30	10	5.2	3.5	3.5	6	M3	14	460
L1012.14-0950	950	30	10	5.2	3.5	3.5	6	M3	14	475
L1012.14-0980	980	30	10	5.2	3.5	3.5	6	M3	14	490



# 18mm Miniature Linear Rail

wide version

Linear Guide-ways



**L1012.18**

LINEAR GUIDEWAYS

### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

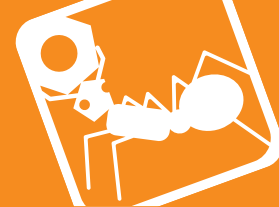
### Technical Notes

Select the size and number of carriages to suit the required load (see part L1012.C).

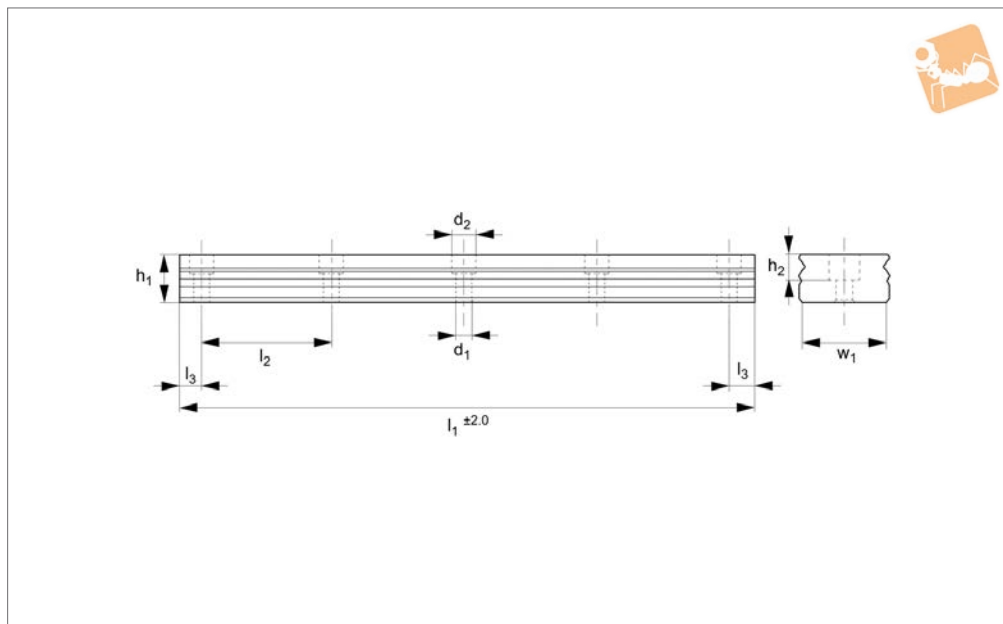
Other rail lengths on request.

Weight: 0,9 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1012.18-0050	50	30	10	7.3	4.5	3.5	6	M3	18	45
L1012.18-0080	80	30	10	7.3	4.5	3.5	6	M3	18	72
L1012.18-0110	110	30	10	7.3	4.5	3.5	6	M3	18	99
L1012.18-0140	140	30	10	7.3	4.5	3.5	6	M3	18	126
L1012.18-0170	170	30	10	7.3	4.5	3.5	6	M3	18	153
L1012.18-0200	200	30	10	7.3	4.5	3.5	6	M3	18	180
L1012.18-0230	230	30	10	7.3	4.5	3.5	6	M3	18	207
L1012.18-0260	260	30	10	7.3	4.5	3.5	6	M3	18	234
L1012.18-0290	290	30	10	7.3	4.5	3.5	6	M3	18	261
L1012.18-0320	320	30	10	7.3	4.5	3.5	6	M3	18	288
L1012.18-0350	350	30	10	7.3	4.5	3.5	6	M3	18	315
L1012.18-0380	380	30	10	7.3	4.5	3.5	6	M3	18	342
L1012.18-0410	410	30	10	7.3	4.5	3.5	6	M3	18	369
L1012.18-0440	440	30	10	7.3	4.5	3.5	6	M3	18	396
L1012.18-0470	470	30	10	7.3	4.5	3.5	6	M3	18	423
L1012.18-0500	500	30	10	7.3	4.5	3.5	6	M3	18	450
L1012.18-0530	530	30	10	7.3	4.5	3.5	6	M3	18	477
L1012.18-0560	560	30	10	7.3	4.5	3.5	6	M3	18	504
L1012.18-0590	590	30	10	7.3	4.5	3.5	6	M3	18	531
L1012.18-0620	620	30	10	7.3	4.5	3.5	6	M3	18	558
L1012.18-0650	650	30	10	7.3	4.5	3.5	6	M3	18	585
L1012.18-0680	680	30	10	7.3	4.5	3.5	6	M3	18	612
L1012.18-0710	710	30	10	7.3	4.5	3.5	6	M3	18	639
L1012.18-0740	740	30	10	7.3	4.5	3.5	6	M3	18	666
L1012.18-0770	770	30	10	7.3	4.5	3.5	6	M3	18	693
L1012.18-0800	800	30	10	7.3	4.5	3.5	6	M3	18	720
L1012.18-0830	830	30	10	7.3	4.5	3.5	6	M3	18	747
L1012.18-0860	860	30	10	7.3	4.5	3.5	6	M3	18	774
L1012.18-0890	890	30	10	7.3	4.5	3.5	6	M3	18	801
L1012.18-0920	920	30	10	7.3	4.5	3.5	6	M3	18	828
L1012.18-0950	950	30	10	7.3	4.5	3.5	6	M3	18	855
L1012.18-0980	980	30	10	7.3	4.5	3.5	6	M3	18	882



## L1012.24



### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1012.C).

Other rail lengths on request.  
Weight: 1,5 Kg/m.

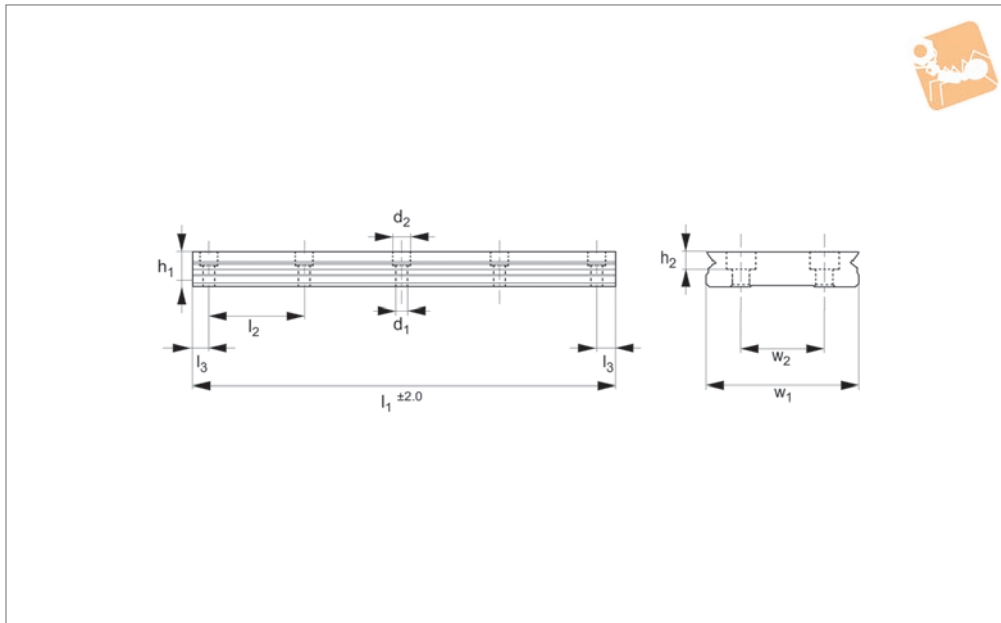
Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	Weight kg
L1012.24-0070	70	40	15	8.5	4.5	4.5	8	M4	24	0.105
L1012.24-0110	110	40	15	8.5	4.5	4.5	8	M4	24	0.165
L1012.24-0150	150	40	15	8.5	4.5	4.5	8	M4	24	0.225
L1012.24-0190	190	40	15	8.5	4.5	4.5	8	M4	24	0.285
L1012.24-0230	230	40	15	8.5	4.5	4.5	8	M4	24	0.345
L1012.24-0270	270	40	15	8.5	4.5	4.5	8	M4	24	0.405
L1012.24-0310	310	40	15	8.5	4.5	4.5	8	M4	24	0.465
L1012.24-0350	350	40	15	8.5	4.5	4.5	8	M4	24	0.525
L1012.24-0390	390	40	15	8.5	4.5	4.5	8	M4	24	0.585
L1012.24-0430	430	40	15	8.5	4.5	4.5	8	M4	24	0.645
L1012.24-0470	470	40	15	8.5	4.5	4.5	8	M4	24	0.705
L1012.24-0510	510	40	15	8.5	4.5	4.5	8	M4	24	0.765
L1012.24-0550	550	40	15	8.5	4.5	4.5	8	M4	24	0.825
L1012.24-0590	590	40	15	8.5	4.5	4.5	8	M4	24	0.885
L1012.24-0630	630	40	15	8.5	4.5	4.5	8	M4	24	0.945
L1012.24-0670	670	40	15	8.5	4.5	4.5	8	M4	24	1.005
L1012.24-0710	710	40	15	8.5	4.5	4.5	8	M4	24	1.065
L1012.24-0750	750	40	15	8.5	4.5	4.5	8	M4	24	1.125
L1012.24-0790	790	40	15	8.5	4.5	4.5	8	M4	24	1.185
L1012.24-0830	830	40	15	8.5	4.5	4.5	8	M4	24	1.245
L1012.24-0870	870	40	15	8.5	4.5	4.5	8	M4	24	1.305
L1012.24-0910	910	40	15	8.5	4.5	4.5	8	M4	24	1.365
L1012.24-0950	950	40	15	8.5	4.5	4.5	8	M4	24	1.425
L1012.24-0990	990	40	15	8.5	4.5	4.5	8	M4	24	1.485





# 42mm Miniature Linear Rail wide version

Linear Guide-  
ways



**L1012.42**

LINEAR GUIDEWAYS

### Material

Corrosion resistant stainless steel, hardened (similar to 440C).

### Technical Notes

Select the size and number of carriages to suit the required load (see part L1012.C).

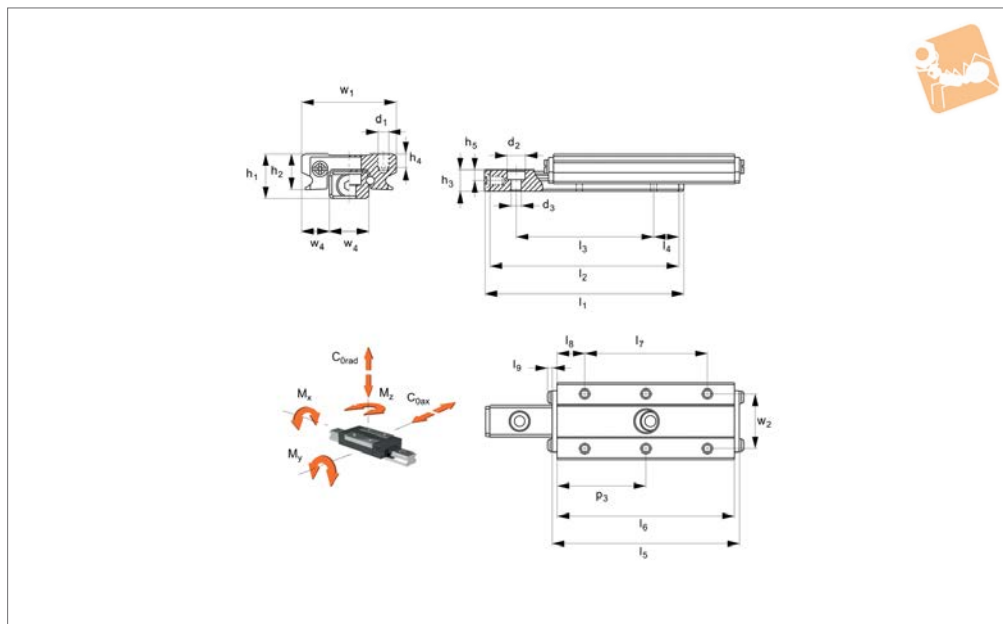
Other rail lengths on request.

Weight: 2.8 Kg/m.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$h_2$	$d_1$	$d_2$	For screws	$w_1$	$w_2$	Weight kg
L1012.42-0110	110	40	15	9.5	4.5	4.5	8	M 4	42	23	0.308
L1012.42-0150	150	40	15	9.5	4.5	4.5	8	M 4	42	23	0.420
L1012.42-0190	190	40	15	9.5	4.5	4.5	8	M 4	42	23	0.532
L1012.42-0230	230	40	15	9.5	4.5	4.5	8	M 4	42	23	0.644
L1012.42-0270	270	40	15	9.5	4.5	4.5	8	M 4	42	23	0.756
L1012.42-0310	310	40	15	9.5	4.5	4.5	8	M 4	42	23	0.868
L1012.42-0350	350	40	15	9.5	4.5	4.5	8	M 4	42	23	0.980
L1012.42-0390	390	40	15	9.5	4.5	4.5	8	M 4	42	23	1.092
L1012.42-0430	430	40	15	9.5	4.5	4.5	8	M 4	42	23	1.204
L1012.42-0470	470	40	15	9.5	4.5	4.5	8	M 4	42	23	1.316
L1012.42-0510	510	40	15	9.5	4.5	4.5	8	M 4	42	23	1.428
L1012.42-0550	550	40	15	9.5	4.5	4.5	8	M 4	42	23	1.540
L1012.42-0590	590	40	15	9.5	4.5	4.5	8	M 4	42	23	1.652
L1012.42-0630	630	40	15	9.5	4.5	4.5	8	M 4	42	23	1.764
L1012.42-0670	670	40	15	9.5	4.5	4.5	8	M 4	42	23	1.876
L1012.42-0710	710	40	15	9.5	4.5	4.5	8	M 4	42	23	1.988
L1012.42-0750	750	40	15	9.5	4.5	4.5	8	M 4	42	23	2.100
L1012.42-0790	790	40	15	9.5	4.5	4.5	8	M 4	42	23	2.212
L1012.42-0830	830	40	15	9.5	4.5	4.5	8	M 4	42	23	2.324
L1012.42-0870	870	40	15	9.5	4.5	4.5	8	M 4	42	23	2.436
L1012.42-0910	910	40	15	9.5	4.5	4.5	8	M 4	42	23	2.548
L1012.42-0950	950	40	15	9.5	4.5	4.5	8	M 4	42	23	2.660
L1012.42-0990	990	40	15	9.5	4.5	4.5	8	M 4	42	23	2.772



## L1013



### Material

Rail and carriage: Hardened stainless steel.  
 Back plate and screws: Stainless steel.  
 Ball: Steel.

### Technical Notes

The carriage has two rows of steel balls.  
 The ball track has a gothic profile with a

45° contact angle to achieve equal load capacity in a mono block.  
 This enables greater space to accommodate larger rolling elements.  
 The steel balls roll without recirculation resulting in smooth operation, low friction and no vibration.

### Important Notes

Max. Temperature +150°C

Order No.	Stroke max.	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$l_7$	$l_8$	$l_9$	$h_1$	$h_2$	$h_3$	$h_4$	$h_5$
L1013.07-030	27	30	28.0	15	6.5	30	28.0	15	6.5	1.0	8	6.5	4.7	2.5	2.3
L1013.07-045	41	45	43.0	30	6.5	45	43.0	30	6.5	1.0	8	6.5	4.7	2.5	2.3
L1013.07-060	55	60	58.0	45	6.5	60	58.0	45	6.5	1.0	8	6.5	4.7	2.5	2.3
L1013.09-040	38	40	38.0	20	9.0	40	38.0	20	9.0	1.3	10	7.8	5.5	3.0	3.5
L1013.09-060	58	60	58.0	40	9.0	60	58.0	40	9.0	1.3	10	7.8	5.5	3.0	3.5
L1013.09-080	78	80	78.0	60	9.0	80	78.0	60	9.0	1.3	10	7.8	5.5	3.0	3.5
L1013.12-050	44	50	47.4	25	11.2	50	47.4	25	11.2	1.3	13	10.0	7.5	3.5	4.5
L1013.12-075	69	75	72.4	50	11.2	75	72.4	50	11.2	1.3	13	10.0	7.5	3.5	4.5
L1013.12-100	94	100	97.4	75	11.2	100	97.4	75	11.2	1.3	13	10.0	7.5	3.5	4.5

Order No.	$d_1$	$d_2$	$d_3$	$w_1$	$w_2$	$w_3$	$w_4$	Static load $C_0$ N	$M_y$ Nm	$M_z$ Nm
L1013.07-030	M2	4.2	2.4	17	12	7	5.0	1580	5.9	3.4
L1013.07-045	M2	4.2	2.4	17	12	7	5.0	2500	3.1	8.0
L1013.07-060	M2	4.2	2.4	17	12	7	5.0	3330	12.4	14.6
L1013.09-040	M3	6.0	3.5	20	15	9	5.5	2773	13.1	6.8
L1013.09-060	M3	6.0	3.5	20	15	9	5.5	4170	19.7	16.0
L1013.09-080	M3	6.0	3.5	20	15	9	5.5	5547	26.2	29.2
L1013.12-050	M3	6.0	3.5	27	20	12	7.5	4340	27.0	16.0
L1013.12-075	M3	6.0	3.5	27	20	12	7.5	6510	40.1	35.6
L1013.12-100	M3	6.0	3.5	27	20	12	7.5	8670	54.0	62.8



### Load capacities – explained

- A number of load figures are stated for load capacity:

**Dynamic loads** – this is the main figure considered for miniature linear guideways. It is the moving load that the system can bear. It takes account of the total moving load as well as considerations such as impact, vibration and fatigue.

**Static loads** – this is a load that is constant for an extended time (i.e. the dead load the system can bear before any movement). It can be in tension or compression.

For these miniature linear guideways the radial and axial load capacities are the same.

Moment loads are twisting loads generated by offset loads in either X, Y or Z planes. Moment loads can be reduced by adding further carriages or rails to reduce any twisting of the carriage due to the load offset.

### Why is there a standard width and a wide version rail?

- The wider version system is generally used as a single rail system as it can accept higher loads and moment loads, whilst maintaining a very low height.
- The standard width rail can be used either as stand-alone rails or are more frequently used as a pair of rails in parallel.

### Straightness of rails

- The measurements of the straightness of the system are taken from the running accuracy of the sliders over the length of the rails (given in microns) – see accuracy and preload page. For standard accuracy this equates to around 15µ for a 300mm length, increasing to 25µ for a 1 metre length.

### What lengths can be provided?

- We have standard rail lengths. These are based on the hole pitch of the rails and end machining to provide an equidistant length to the first and last hole centre.
- However we can cut the rail (from stock) to any length required – we just need to know the distance required for the first hole.
- In general our cutting procedures allow for a ±2mm accuracy on the overall rail length. If greater accuracy than this is required then we have to machine the end accurately (rather than cut it) and this involves extra time and cost.
- Standard maximum length for each rail size is around 1 metre. Rails can be joined together but the preparation needs to be made in our workshop. The rails will be marked clearly with the ends to be placed adjacent to each other.

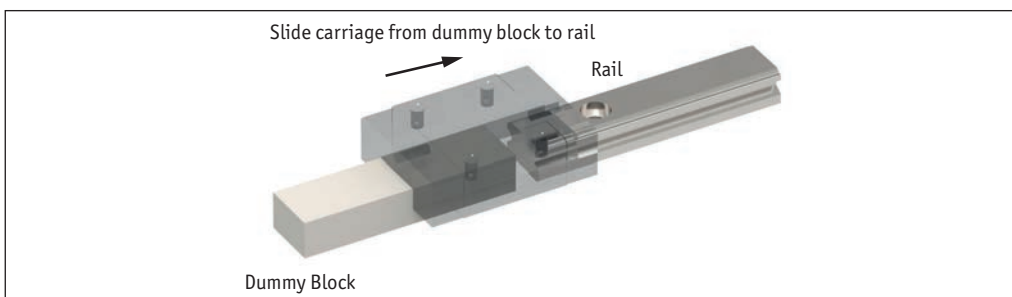
### Installation

- The miniature linear guideways are very accurate and as a result need to be installed on accurately prepared surfaces - please see installation instructions. If two rails are installed in parallel, they need to be precisely aligned - see assembly precision page.

### Mounting the carriages to the rails

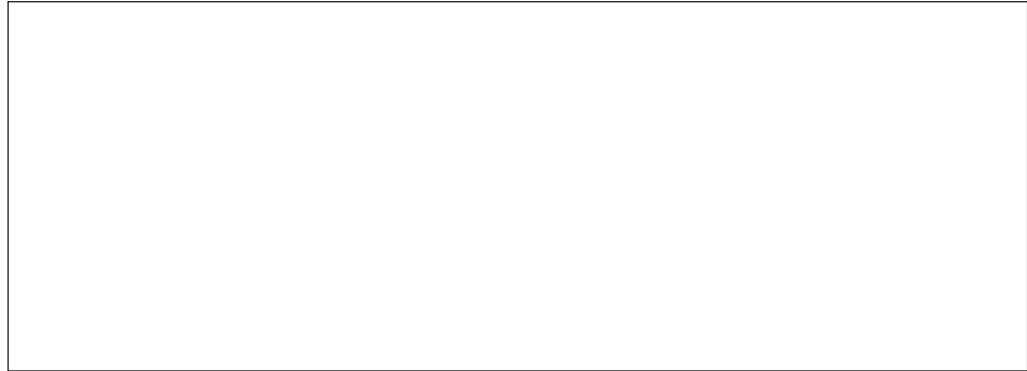
- In general the carriages will be supplied separately to the rails. The carriages are supplied mounted on plastic “dummy” blocks. To install the carriage onto the rails, offer the carriage (still on its dummy block) up to the rails and slide off the dummy block and onto the rail itself.

**Do not simply remove the carriage from the dummy block, as some of the bearings might become displaced, rendering the carriage unusable.**





Precision



	Dimensions	$\mu$
$h_1$	Height tolerance $h_1$	$\pm 40$
$h_1$	Permissible height difference of different carriages at the same position on the rail	25
$W_4$	Width tolerance $w_4$	$\pm 40$
$W_4$	Permissible width difference of different carriages at the same position on the rail	30

Running accuracy

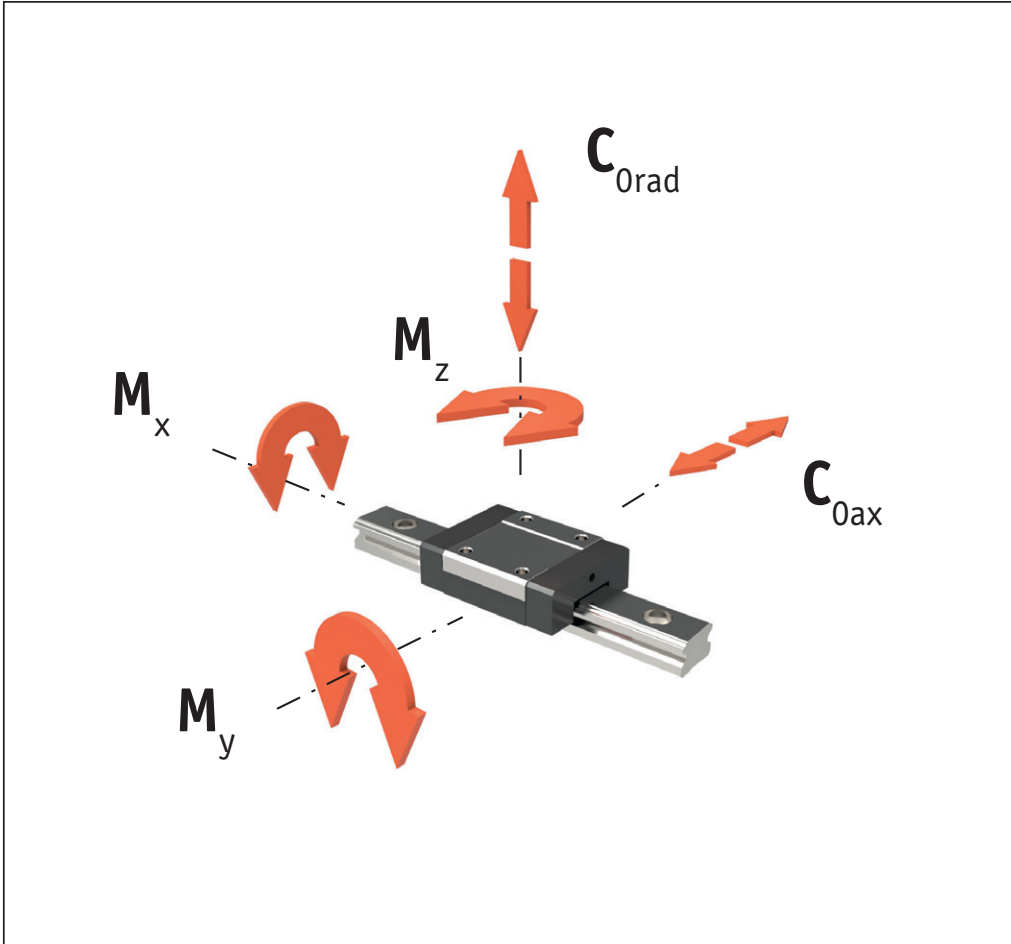
Preload

The miniature linear guideways are available in the two different preload classes  $K_0$  and  $K_5$ . The preload influences the rigidity, precision and torque resistance as well as offering the product service life and displacement force. The standard preload is  $K_0$ .

Type	Preload classes	
	Small $K_0$	Standard $K_5$
	Very quiet running ( $\mu$ )	Quiet and precise running ( $\mu$ )
L1010.03 & L1012.06	+3 to 0	+1 to 0
L1010.05 & L1012.10	+3 to 0	+1 to 0
L1010.07 & L1012.14	+4 to 0	+2 to 0
L1010.09 & L1012.18	+4 to 0	+2 to 0
L1010.12 & L1012.24	+5 to 0	+2 to 0
L1010.15 & L1012.42	+6 to 0	+3 to 0



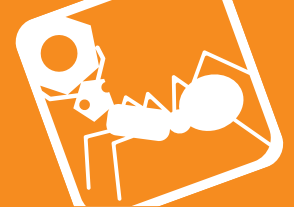
### L1010 - Standard width



Type	Max. load capacities		Max. static moment loads		
	dyn. $C_{rad}$ & $C_{ax}$ N	stat. $C_{0rad}$ & $C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1010.C03	190	310	0,6	0,4	0,4
L1010.C03L	295	575	0,9	1,1	1,1
L1010.C05	335	550	1,7	1,0	1,0
L1010.C05L	470	900	2,4	2,1	2,1
L1010.C07	890	1400	5,2	3,3	3,3
L1010.C07L	1310	2440	9,0	7,7	7,7
L1010.C09	1570	2495	11,7	6,4	6,4
L1010.C09L	2135	3880	18,2	12,4	12,4s
L1010.C12	2308	3465	21,5	12,9	12,9
L1010.C12L	3240	5630	34,9	30,2	30,2
L1010.C15	3810	5590	43,6	27,0	27,0
L1010.C15L	5350	9080	70,0	63,0	63,0

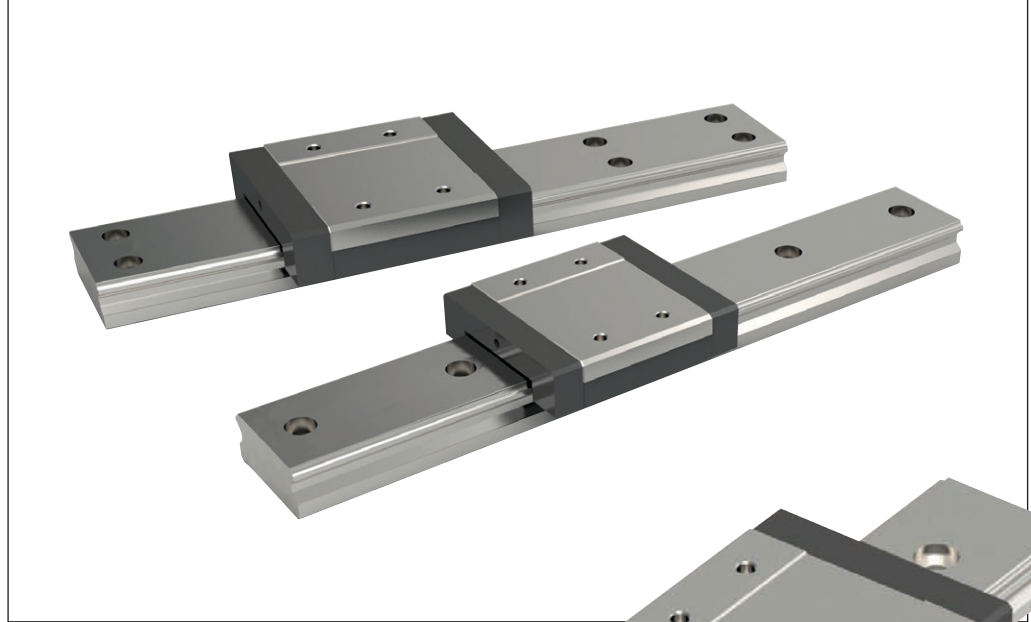
Miniature Linear Guideways from Automation Components

LINEAR GUIDEWAYS

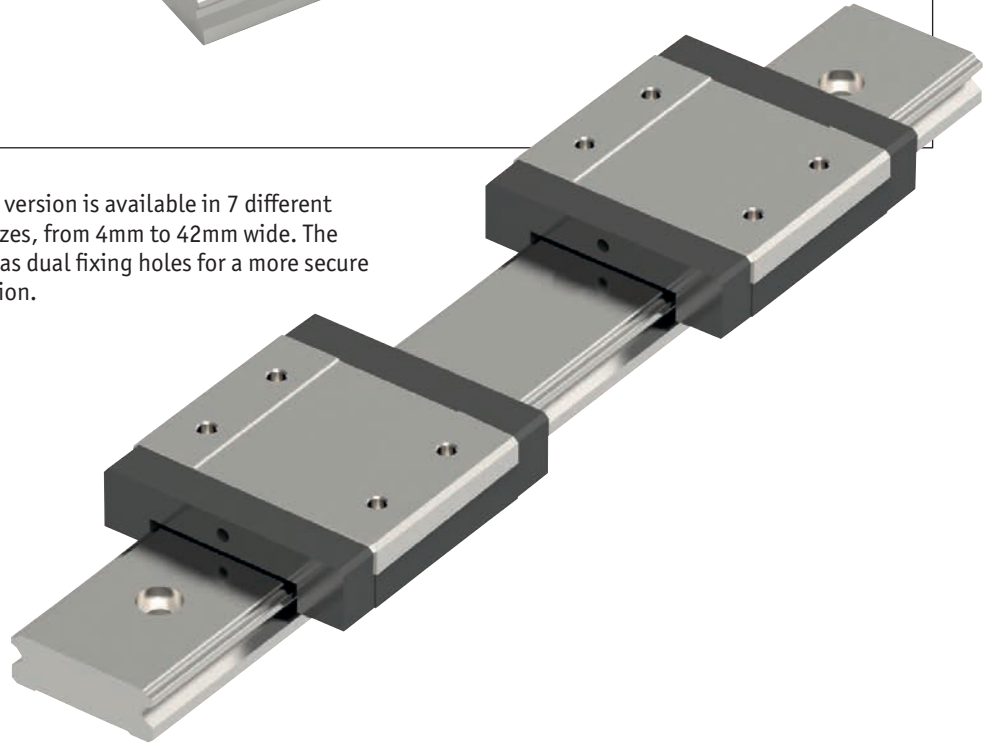


## Wide version

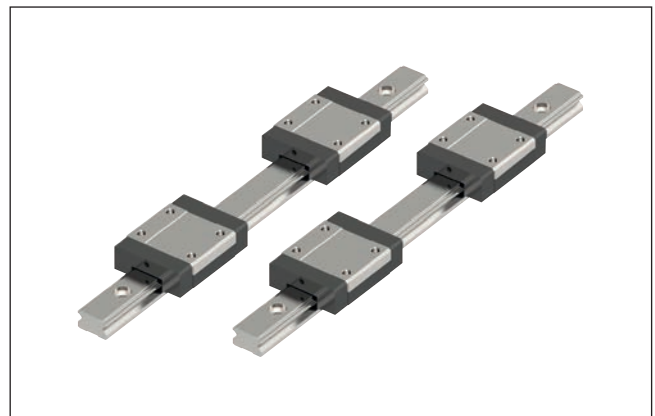
Miniature linear guideways come in two types - standard width and wide version. The standard width is a compact, high performance rail, often used in pairs as it takes smaller load forces than the wide version. For standard width products, please see part no. L1010.



The wide version is available in 7 different profile sizes, from 4mm to 42mm wide. The size 42 has dual fixing holes for a more secure installation.



The wide version is often used in single rail applications due to its increase load capacities, unlike the standard width, which is predominately used in pairs.

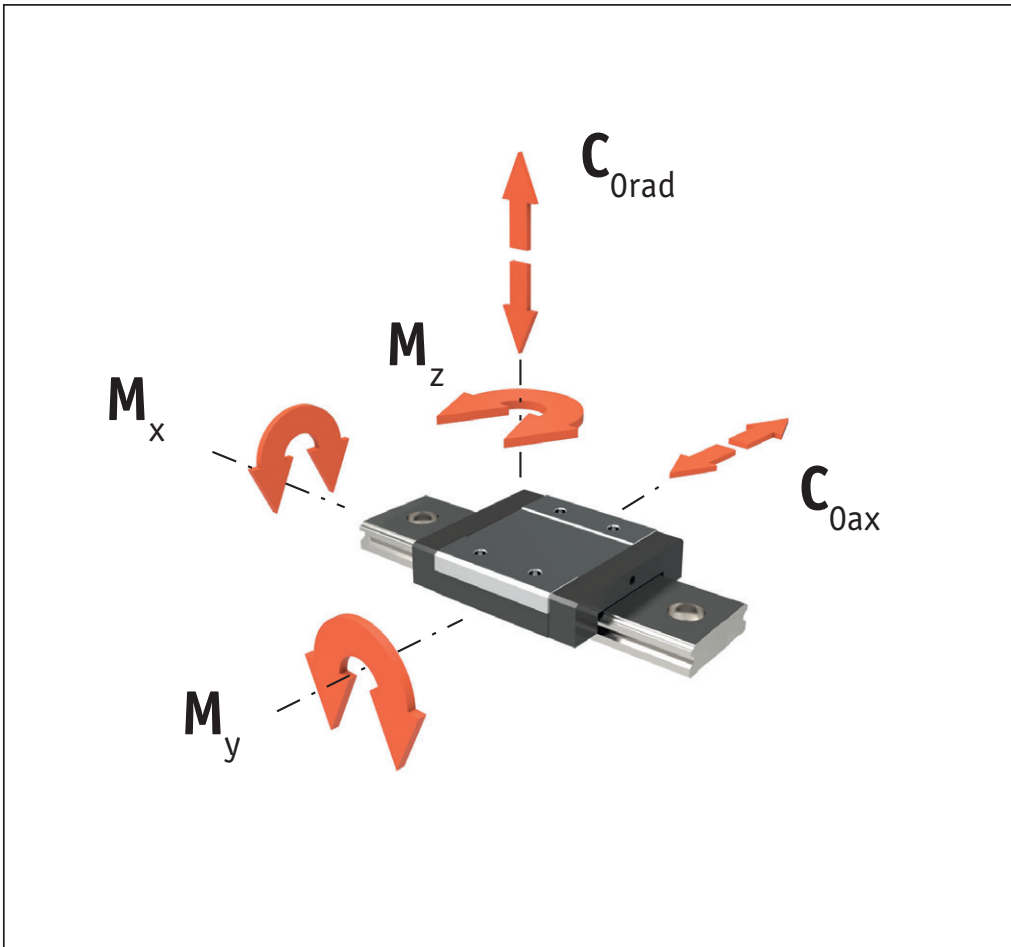


Miniature Linear Guideways from Automation Components

LINEAR GUIDEWAYS



#### L1012 - Wide version



Type	Max. load capacities		Max. static moment loads		
	dyn. $C_{rad}$ & $C_{ax}$ N	stat. $C_{0rad}$ & $C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1012.C04L	310	625	1,6	1,2	1,2
L1012.C06	280	530	1,6	0,9	0,9
L1012.C06L	370	800	2,5	1,9	1,9
L1012.C10	475	900	4,6	2,2	2,2
L1012.C10L	615	1315	6,8	4,1	4,1
L1012.C14	1180	2095	15	7,3	7,3
L1012.C14L	1570	3140	22,6	14,9	14,9
L1012.C18	2030	3605	33,2	13,7	13,7
L1012.C18L	2550	4990	45,9	26,7	26,7
L1012.C24	3065	5200	63,7	26,3	26,3
L1012.C24L	4070	7800	33,2	13,7	13,7
L1012.C42	5065	8385	171,7	45,7	45,7
L1012.C42L	6725	12580	257	93,1	93,1

Miniature Linear Guideways from Automation Components

LINEAR GUIDEWAYS



### Friction

The miniature linear guideways profile system has a low friction characteristic with constant running resistance and low breakaway force.

#### Causes of friction

- Friction of the sealing system.
- Friction of the balls with each other.
- Friction between balls and redirection.
- Rolling resistance of the balls in the gothic arch running grooves.
- Resistance of lubricant in the carriage.
- Resistance caused by contamination in the lubricant.

Friction with lubricated end seal			
Type	N <sub>max.</sub>	Type	N <sub>max.</sub>
L1010.05	0,08	L1012.06	0,2
L1010.07	0,1	L1012.10	0,2
L1010.09	0,1	L1012.14	0,4
L1010.12	0,4	L1012.18	0,8
L1010.15	1,0	L1012.24	1,0
		L1012.42	1,0

$$F_m = \mu \cdot F$$

$F_m$  = friction force (N)

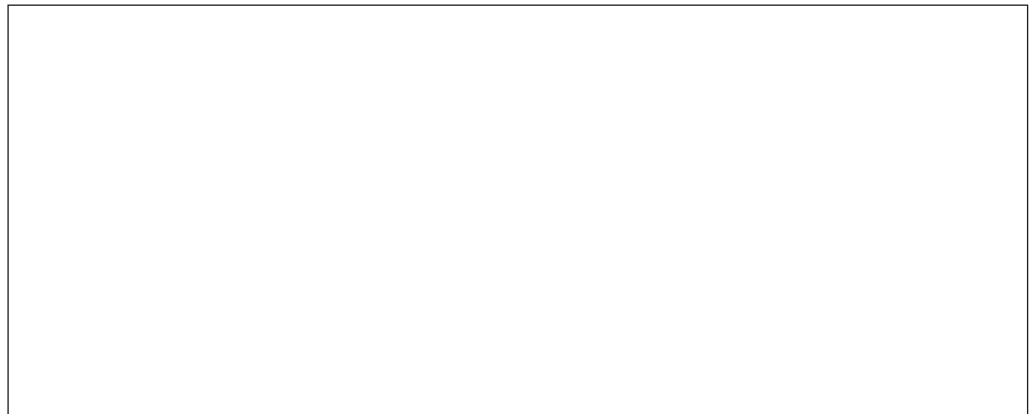
$F$  = load (N)

Miniature linear guideways rails have a coefficient of friction of approximately  $\mu = 0,002 - 0,003$

### Seal

The carriages of the miniature linear guideways are equipped with end seals on both sides.

The design of the end seal ensures a good and dust-proof seal. This extends the product service life, reduces the loss of lubricant and guarantees the optimum system lubrication over a long time. The special design of the stripper allows a low seal resistance and has no adverse influence on the running of the system.







### Lubrication

The contact points between ball and track are separated from each other by a microscopically thin oil film. The lubrication ensures:

- Reduced friction.
- Reduced wear.
- Corrosion protection.
- Better thermal distribution and therefore increase in life.

### Important instructions for lubrication

- The profile rails must be lubricated for operation.
- The carriage must be moved back and forth during lubrication.
- The lubricant can also be applied to the tracks.
- The lubricant can be injected into the lubrication holes on both sides of the carriage.
- There should be a thin film of lubricant on the rail surface at all times.
- If the stroke is <2 or >15 times the carriage length, the lubrication intervals should be more frequent.

Type	First lubrication cm <sup>3</sup>
L1010.C05	0,04
L1010.C07	0,12
L1010.C09	0,23
L1010.C12	0,41
L1010.C15	0,78

Type	First lubrication cm <sup>3</sup>
L1012.C10	0,05
L1012.C14	0,23
L1012.C18	0,30
L1012.C24	0,52
L1012.C42	0,87

### Grease lubrication

When using grease lubrication, we recommend synthetic-oil based lithium grease with a viscosity according to ISO VG 32-100.

### Oil lubrication

We recommend CLP or CGLP synthetic oil (DIN 51517) or HLP (DIN 51524) and a viscosity range conforming to ISO VG32-100 for operating temperatures between 0°C and +70°C. We recommend a viscosity according to ISO VG 10 for use at low temperatures. For application-specific special lubrication please contact the sales department.

### Relubrication

- Relubrication of the system must be done before the lubricant has become dirty or shows signs of discolouration.
- An application of approx. 50% of the quantity used for first lubrication is sufficient for re-lubrication.
- Relubrication is performed at operating temperature. During relubrication, the carriage should be moved back and forth.
- If the stroke is <2 or >15 times the carriage length, the lubrication intervals should be more frequent.

### Lubrication intervals

Operating speed, stroke length and ambient conditions influence the selection of time between lubrication intervals.

Establishing a safe lubrication interval is based on the specific applications and operating conditions. However, a lubrication interval should not be greater than one year.



**Static Load ( $P_0$ ) and static moment load ( $M_0$ )**

**Permissible static load**

The permissible static load of the miniature linear guideways profile rail is limited by:

- Static load of each linear guide.
- Permissible load of the fixing screws.
- Permissible load of all components used in the surrounding construction.
- Static safety factor, which is required by the application.

The equivalent static load and the static moment are the largest load, or the largest moment load, which are calculated based on formulae 3 and 4.

**Static load capacity  $C_0$**

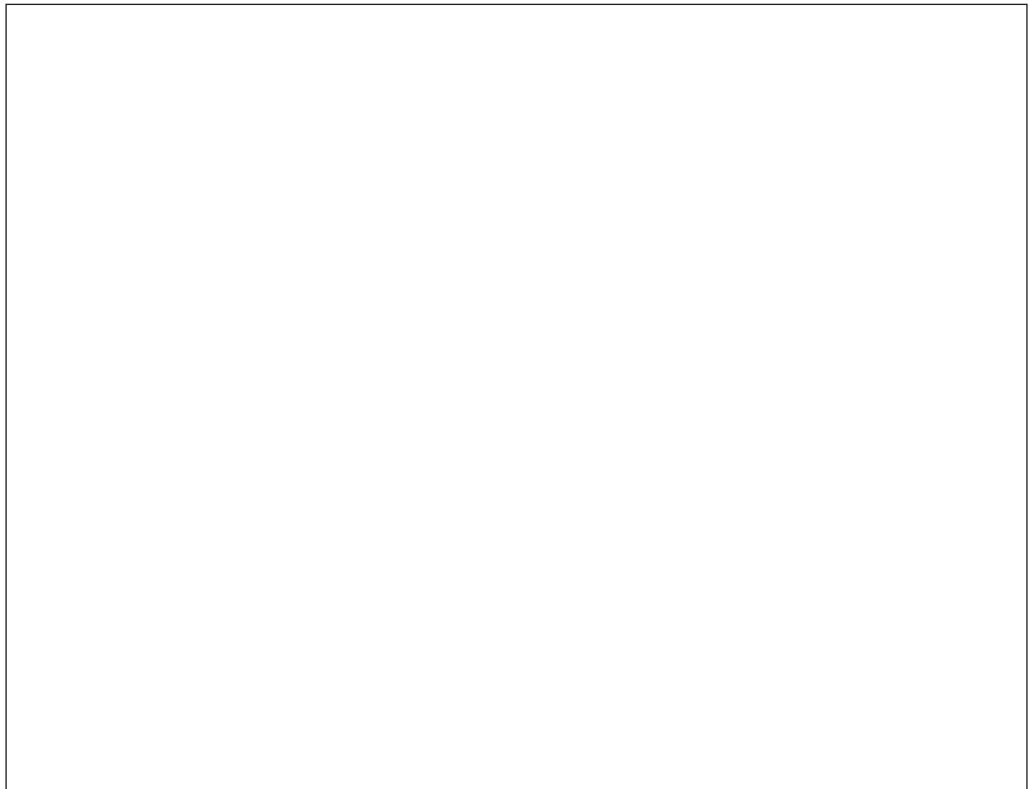
The static load capacity  $C_0$  of ball recirculating guides is defined according to DIN 636, Part 2 as the load which gives a Hertzian stress of 4,200 MPa with the existing lubrication between track and balls in the centre of the highest loaded contact surface.

Note: In the loading centre, there is a permanent deformation of approx. 0.01 % of the ball diameter under this load (according to DIN 636, Part 2).

**Static safety factor  $S_0$**

When observing the static safety factor  $S_0$  the miniature linear guideways profile rails allow a permissible operation and high running precision as is required for each application.

For calculation of the static safety factor  $S_0$ , see below.





### Dynamic load capacity C

If the dynamic loads work vertically with equal size and direction, the calculated service life of the linear guide can theoretically reach 100 Km travel (as per DIN 636, Part 2).

### Combined load in combination with a moment

If both load and moment loads work on the profile rails, the equivalent dynamic load is calculated with formula 9. According to DIN 636, Part 1, the equivalent load should not exceed  $0.5 \times C$ .

### Equivalent dynamic load and speed

With changing load and speed, these must be considered individually since each parameter influences the service life.

### Equivalent dynamic load

If only the load changes, the equivalent dynamic load can be calculated with formula 5.

### Equivalent speed

If only the speed changes, the equivalent speed is calculated with formula 6.

If speed and load change, the equivalent dynamic load is calculated with formula 7.

### Combined dynamic load

With combined exterior load in an arbitrary angle, the equivalent dynamic load is calculated with formula 8.

$$P = \sqrt[3]{\frac{q_1 \cdot F_1^3 + q_2 \cdot F_2^3 + \dots + q_n \cdot F_n^3}{100}} \quad \text{Formula 5}$$

$$\bar{v} = \frac{q_1 \cdot v_1 + q_2 \cdot v_2 + \dots + q_n \cdot v_n}{100} \quad \text{Formula 6}$$

$$P = \sqrt[3]{\frac{q_1 \cdot v_1 \cdot F_1^3 + q_2 \cdot v_2 \cdot F_2^3 + \dots + q_n \cdot v_n \cdot F_n^3}{100}} \quad \text{Formula 7}$$

$$P = |F_x| + |F_y| \quad \text{Formula 8}$$

$$P = |F_x| + |F_y| + \left( \frac{|M_x|}{M_x} + \frac{|M_y|}{M_y} + \frac{|M_z|}{M_z} \cdot C_0 \right) \quad \text{Formula 9}$$

- |  |  |
|--|--|
| P = equivalent dynamic load (N)              | $F_x$ = external dynamic load – horizontal (N)   |
| q = stroke (in %)                            | $C_0$ = static load capacity (N)   |
| $F_1$ = individual load levels (N)           | $M_1, M_2, M_3$ = external moments (Nm)  |
| v = average speed (m/min)                    | $M_x, M_y, M_z$ = maximum permissible moments in the different loading directions (Nm) |
| $\bar{v}$ = individual speed levels (m/min)  |  |
| F = external dynamic load (N)                |  |
| $F_y$ = external dynamic load – vertical (N) |  |



An example of a profile rail or a batch of identical profile rails under the same running conditions, which use ordinary materials with normal service life and operating conditions, can reach 90% of the calculated service life (as per DIN 636 Part 2).

By taking 50 Km travel as a basis, the dynamic load capacity is usually 20% over the values as per the DIN standard. The relationship between the two load capacities can be seen from formulae 10 and 11.

**Calculation of service life**

Formulae 12 and 13 are used for calculating the service life, if equivalent dynamic load and average speed are constant.

$$C_{(50)} = 1,26 \cdot C_{(100)} \quad \text{Formula 10}$$

$$C_{(100)} = 0,79 \cdot C_{(50)} \quad \text{Formula 11}$$

$$L = \left( \frac{C_{(100)}}{P} \right)^3 \cdot 10^5 \quad \text{Formula 12}$$

$$L_h = \frac{L}{2 \cdot s \cdot n \cdot 60} = \frac{L}{V_m} \cdot \left( \frac{C}{P} \right)^3 \quad \text{Formula 13}$$

L = service life based on 100,000 (m)

L<sub>h</sub> = service life (h)

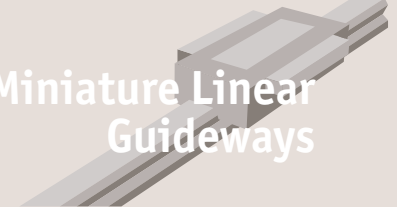
C = dynamic load capacity (N)

P = equivalent dynamic load (N)

s = stroke length (m)

n = stroke frequency (min<sup>-1</sup>)

V<sub>m</sub> = average speed (m/min)



$$e1 \text{ (mm)} = b \text{ (mm)} \cdot f_1 \cdot 10^{-4}$$

Formula 14

$$e2 \text{ (mm)} = d \text{ (mm)} \cdot f_2 \cdot 10^{-5}$$

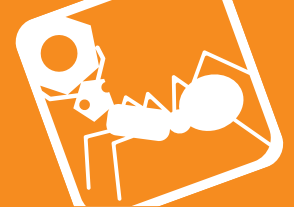
Formula 15

$$e3 \text{ (mm)} = f_3 \cdot 10^{-3}$$

Formula 16

Type	f <sub>1</sub>	f <sub>2</sub>	f <sub>3</sub>
L1010.C05	4	8	2
L1010.C05L	3	5	2
L1010.C07	5	11	4
L1010.C07L	4	6	4
L1010.C09	5	11	6
L1010.C09L	5	7	5
L1010.C12	6	13	8
L1010.C12L	5	8	8
L1010.C15	7	11	12
L1010.C15L	7	8	11
L1012.C04	2	5	2
L1012.C04L	2	3	1
L1012.C06	2	5	2
L1012.C06L	2	3	2
L1012.C10	2	6	4
L1012.C10L	2	4	4
L1012.C18	2	7	6
L1012.C18L	2	5	5
L1012.C24	3	8	8
L1012.C24L	2	5	7
L1012.C42	2	9	11
L1012.C42L	2	5	10

Tightening torque for fixing screws Nm			
Screw Quality 12,9	Steel	Cast iron	Non-ferrous metal
M2	0,6	0,4	0,3
M3	1,8	1,3	1,0
M4	4,0	2,5	2,0

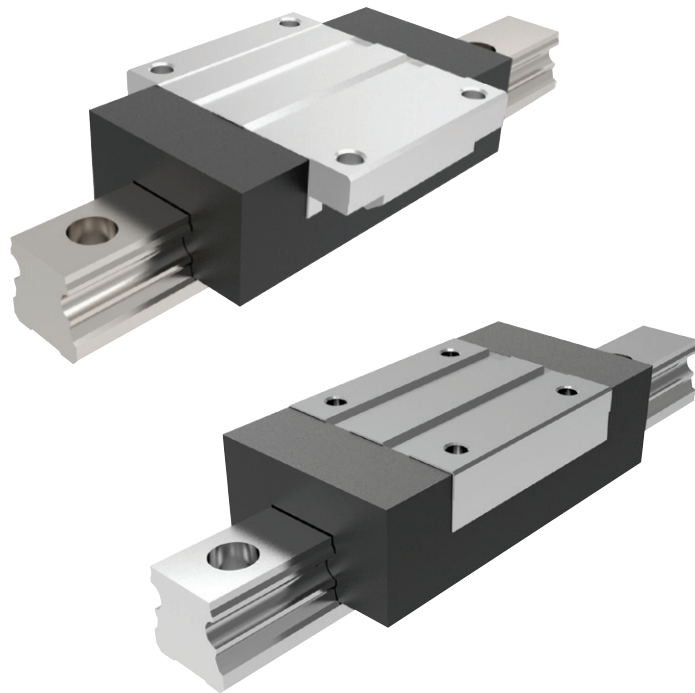


### Product overview

Automation aluminium profile rails and ball bearing runner blocks are designed especially for all sorts of linear movements and are therefore suitable for use in most type of applications.

The rails consist of profiled aluminium, having two pressed-in hardened stainless steel shafts serving as the raceways for the balls of the runner blocks. Advantages are the light-weight and corrosive resistant materials. Fixing holes in the attachment surfaces enable machine parts to be directly mounted onto the runner blocks.

With this combination, it is possible for us to offer a guide system, which achieves a good price/performance ratio.



### Product range

- There are two versions of our carriages: flanged and unflanged.
- There are two accuracies for our carriages: standard precision (0) and a high precision called "P" (available on request).
- The standard carriage is not pre-loaded.
- The dynamic load rating (C in the data tables) is based on a service life of 100 Km.

### Advantages

- Compact, light-weight design with a weight saving of 60% compared to steel versions.
- Same fixing hole dimensions as steel, ball linear guideway systems.
- Much greater parallelism and height offsets of mounting bases possible, providing a degree of misalignment.
- Performs well in aggressive environments (dust, shavings etc.).
- Significantly better corrosion resistance compared to steel versions.
- Carriages initially greased in-factory, therefore provided with long-term lubrication.
- Due to ball retainers in the carriages, carriages can be removed from the rail without any loss of balls.
- Complete interchangeability between other manufacturers steel rail systems.
- Both sides of rail are reference edges. The carriages have one reference edge, which can be verified by turning it on the rail.

### Application range:

Speed	$v_{max} = 2 \text{ m/s}$
Acceleration	$a_{max} = 30 \text{ m/s}^2$
Temperature	$T = 0^\circ - 60^\circ\text{C}$

### Applications

Our rails can be used in a broad range of applications - especially in light machinery, handling technology, jigs and fixtures, assembly technology, manual displacement systems, machine enclosures, door - and window technology, display systems, aerospace, medical, food and many more.

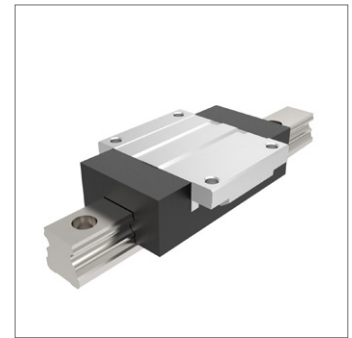
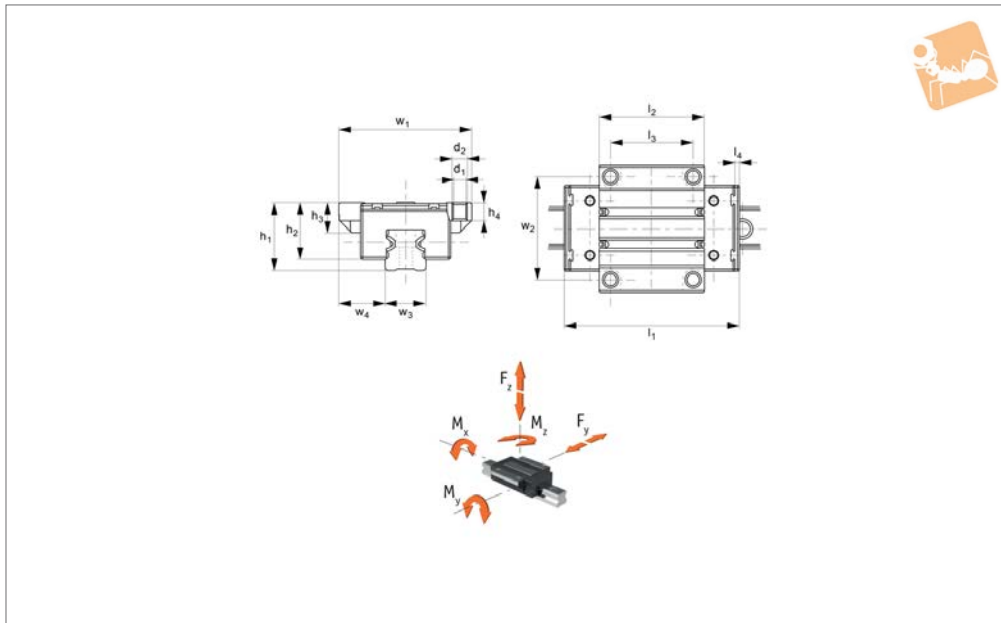
Our aluminium rail guides cannot be used in the following applications:

- Main axis of a CNC or tooling machine.
- Aggressive and dusty environments.
- Oscillating conveyor systems.
- Danger of life or physical systems (for example unsecured overhead installation).



# Flanged Aluminium Carriages with retained ball cage

Linear Guide-  
ways



**L1018.F**

LINEAR GUIDEWAYS

### Material

Aluminium block (X46Cr13 hardened to F35), tensile strength 350N/mm<sup>2</sup>.  
Stainless steel inserts hardened, and stainless ball bearings (DIN 1.4034).

### Technical Notes

Compact, light-weight design. 60% saving versus steel versions.

Select the size and number of carriages to suit the required load then select the

required rail length, (see rail part nos. L1018). Standard carriages are not preloaded.

Mounting dimensions are identical to those of most steel linear guide rails, making them interchangeable.

### Tips

**These are aluminium rail carriages and can only be used with corresponding aluminium linear rails L1018. For stan-**

**ard steel linear guideways and carriages see part no. L1016.**

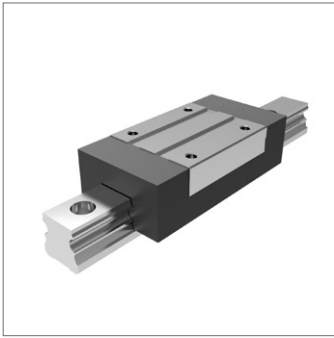
### Important Notes

Static loads ratings are difficult to calculate clearly due to the combination of materials. Do not exceed  $F_{max}$  or maximum static moment load rating. See load calculations on technical pages.

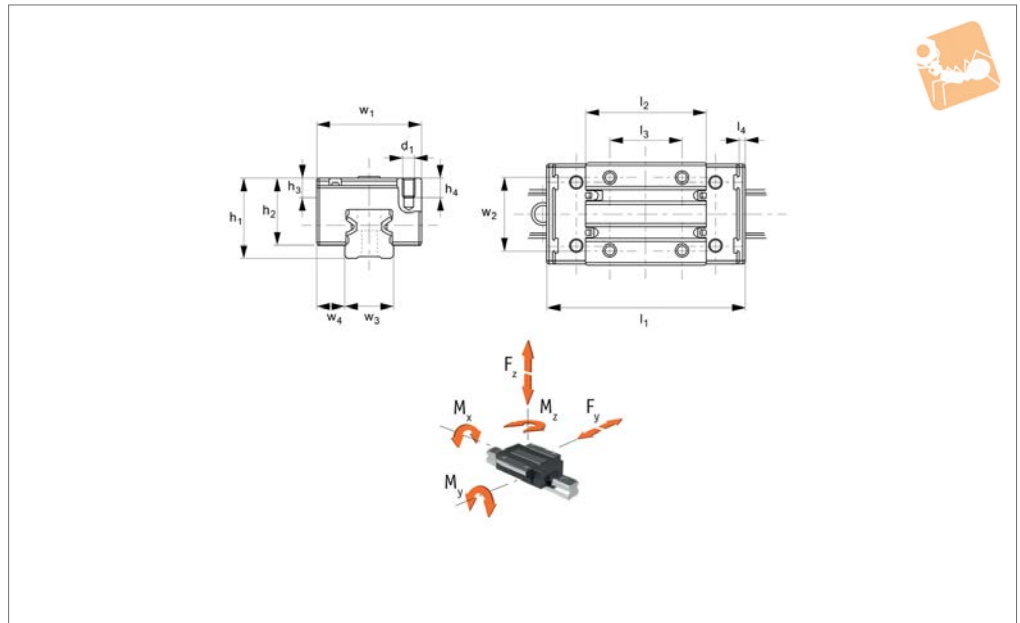
Order No.	Rail size	$l_1$	$w_1$	$h_1$ $\pm 0.03$	$d_1$	$d_2$	$h_2$	$h_3$	$h_4$	$l_2$	$l_3$	$l_4$	$w_2$	Weight kg
L1018.F15	15	64.0	47	24	4.3	M5	19.8	11	6.0	37.8	30	2.5	38	0.08
L1018.F20	20	85.9	63	30	5.3	M6	24.7	13	8.0	51.5	40	2.8	53	0.18
L1018.F25	25	96.0	70	36	6.7	M8	29.9	17	9.3	58.0	45	3.0	57	0.26

Order No.	$w_3$	$w_4$ $\pm 0.05$	F max. N	$C_0$ rad & ax N	Dyn. load C N	Dyn. moment $M_x$ Nm	Dyn. moment $M_{y \& z}$ Nm	Static moment $M_x$ Nm	Static moment $M_{y \& z}$ Nm
L1018.F15	15	16.0	2.000		5.000	36	29	14	12
L1018.F20	20	21.5	4.400		11.000	101	89	40	35
L1018.F25	23	23.5	6.400		16.000	165	147	66	59



## L1018.U



### Material

Aluminium block (X46Cr13 hardened to F35), tensile strength 350N/mm<sup>2</sup>.  
Stainless steel inserts hardened, and stainless ball bearings (DIN 1.4034).

### Technical Notes

Compact, light-weight design. 60% saving versus steel versions.

Select the size and number of carriages to suit the required load then select the

required rail length, (see rail part nos. L1018). Standard carriages are not preloaded.

Mounting dimensions are identical to those of most steel linear guide rails, making them interchangeable.

### Tips

**These are aluminium rail carriages and can only be used with corresponding aluminium linear rails L1018. For stan-**

**ard steel linear guideways and carriages see part no. L1016.**

### Important Notes

Static loads ratings are difficult to calculate clearly due to the combination of materials. Do not exceed F<sub>max.</sub> or maximum static moment load rating. See load calculations on technical pages.

Order No.	Rail size	l <sub>1</sub>	w <sub>1</sub>	h <sub>1</sub> ±0.03	d <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>2</sub>	w <sub>3</sub>	Weight kg
L1018.U15	15	64.0	34	24	M4	19.8	4.1	6.0	37.8	26	2.5	26	15	0.07
L1018.U20	20	85.9	44	30	M5	24.7	5.5	7.5	51.5	36	2.8	32	20	0.15
L1018.U25	25	96.0	48	36	M6	29.9	6.4	9.0	58.0	35	3.0	35	23	0.22

Order No.	w <sub>4</sub> ±0.05	F N max.	Dyn. load C <sub>rad &amp; ax</sub> N	M <sub>x</sub> dyn. Nm	M <sub>x</sub> static Nm max.	M <sub>y</sub> + M <sub>z</sub> dyn. Nm	M <sub>y</sub> + M <sub>z</sub> static Nm max.
L1018.U15	9.5	2.000	5.000	36	14	29	12
L1018.U20	12.0	4.400	11.000	101	40	89	35
L1018.U25	12.5	6.400	16.000	165	66	147	59





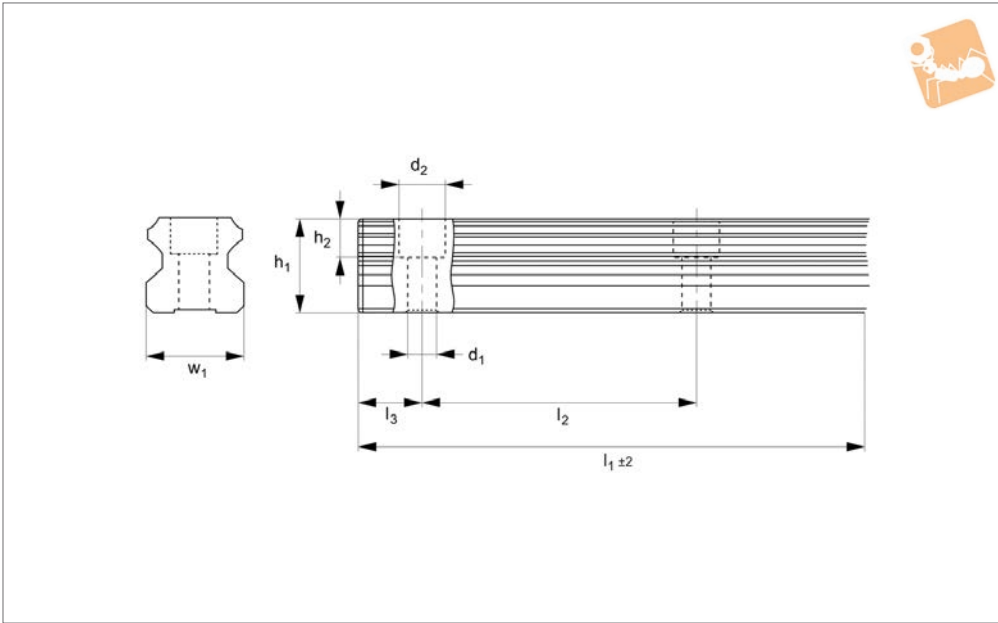
# 15mm Aluminium Linear Guide Rail

with stainless raceways

Linear Guide-ways



**L1018.15**



LINEAR GUIDEWAYS

**Material**

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

**Technical Notes**

Compact, light-weight design. 60% saving

**Tips**

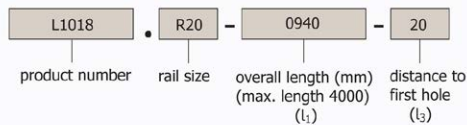
**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.15-0180	180	15	14.0	4.4	7.5	6.2	60	28	10.30
L1018.15-0240	240	15	14.0	4.4	7.5	6.2	60	28	13.70
L1018.15-0300	300	15	14.0	4.4	7.5	6.2	60	28	17.10
L1018.15-0360	360	15	14.0	4.4	7.5	6.2	60	28	20.50
L1018.15-0420	420	15	14.0	4.4	7.5	6.2	60	28	23.90
L1018.15-0480	480	15	14.0	4.4	7.5	6.2	60	28	27.40
L1018.15-0540	540	15	14.0	4.4	7.5	6.2	60	28	30.80
L1018.15-0600	600	15	14.0	4.4	7.5	6.2	60	28	34.20
L1018.15-0660	660	15	14.0	4.4	7.5	6.2	60	28	37.60
L1018.15-0720	720	15	14.0	4.4	7.5	6.2	60	28	41.00
L1018.15-0780	780	15	14.0	4.4	7.5	6.2	60	28	44.50
L1018.15-0840	840	15	14.0	4.4	7.5	6.2	60	28	47.90
L1018.15-0900	900	15	14.0	4.4	7.5	6.2	60	28	51.30
L1018.15-0960	960	15	14.0	4.4	7.5	6.2	60	28	54.70
L1018.15-1020	1020	15	14.0	4.4	7.5	6.2	60	28	58.14
L1018.15-1080	1080	15	14.0	4.4	7.5	6.2	60	28	61.56
L1018.15-1140	1140	15	14.0	4.4	7.5	6.2	60	28	64.98
L1018.15-1200	1200	15	14.0	4.4	7.5	6.2	60	28	68.40
L1018.15-1260	1260	15	14.0	4.4	7.5	6.2	60	28	71.82
L1018.15-1320	1320	15	14.0	4.4	7.5	6.2	60	28	75.24
L1018.15-1380	1380	15	14.0	4.4	7.5	6.2	60	28	78.66
L1018.15-1440	1440	15	14.0	4.4	7.5	6.2	60	28	82.08
L1018.15-1500	1550	15	14.0	4.4	7.5	6.2	60	28	88.35
L1018.15-1560	1560	15	14.0	4.4	7.5	6.2	60	28	88.92
L1018.15-1620	1620	15	14.0	4.4	7.5	6.2	60	28	92.34
L1018.15-1680	1680	15	14.0	4.4	7.5	6.2	60	28	95.76
L1018.15-1740	1740	15	14.0	4.4	7.5	6.2	60	28	99.18
L1018.15-1800	1800	15	14.0	4.4	7.5	6.2	60	28	102.60
L1018.15-1860	1860	15	14.0	4.4	7.5	6.2	60	28	106.02
L1018.15-1920	1920	15	14.0	4.4	7.5	6.2	60	28	109.44
L1018.15-1980	1980	15	14.0	4.4	7.5	6.2	60	28	112.86



Order No.	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.15-2040	2040	15	14.0	4.4	7.5	6.2	60	28	116.28
L1018.15-2100	2100	15	14.0	4.4	7.5	6.2	60	28	119.70
L1018.15-2160	2160	15	14.0	4.4	7.5	6.2	60	28	123.12
L1018.15-2220	2220	15	14.0	4.4	7.5	6.2	60	28	126.54
L1018.15-2280	2280	15	14.0	4.4	7.5	6.2	60	28	129.96
L1018.15-2340	2340	15	14.0	4.4	7.5	6.2	60	28	133.38
L1018.15-2400	2400	15	14.0	4.4	7.5	6.2	60	28	136.80
L1018.15-2460	2460	15	14.0	4.4	7.5	6.2	60	28	140.22
L1018.15-2520	2520	15	14.0	4.4	7.5	6.2	60	28	143.64
L1018.15-2580	2580	15	14.0	4.4	7.5	6.2	60	28	147.06
L1018.15-2640	2640	15	14.0	4.4	7.5	6.2	60	28	150.48
L1018.15-2700	2700	15	14.0	4.4	7.5	6.2	60	28	153.90
L1018.15-2760	2760	15	14.0	4.4	7.5	6.2	60	28	157.32
L1018.15-2820	2820	15	14.0	4.4	7.5	6.2	60	28	160.74
L1018.15-2880	2880	15	14.0	4.4	7.5	6.2	60	28	164.16
L1018.15-2940	2940	15	14.0	4.4	7.5	6.2	60	28	167.58
L1018.15-3000	3000	15	14.0	4.4	7.5	6.2	60	28	171.00
L1018.15-3060	3060	15	14.0	4.4	7.5	6.2	60	28	174.42
L1018.15-3120	3120	15	14.0	4.4	7.5	6.2	60	28	177.84
L1018.15-3180	3180	15	14.0	4.4	7.5	6.2	60	28	181.26
L1018.15-3240	3240	15	14.0	4.4	7.5	6.2	60	28	184.68
L1018.15-3300	3300	15	14.0	4.4	7.5	6.2	60	28	188.10
L1018.15-3360	3360	15	14.0	4.4	7.5	6.2	60	28	191.52
L1018.15-3420	3420	15	14.0	4.4	7.5	6.2	60	28	194.94
L1018.15-3480	3480	15	14.0	4.4	7.5	6.2	60	28	198.36
L1018.15-3540	3540	15	14.0	4.4	7.5	6.2	60	28	201.78
L1018.15-3600	3600	15	14.0	4.4	7.5	6.2	60	28	205.20
L1018.15-3660	3660	15	14.0	4.4	7.5	6.2	60	28	208.62
L1018.15-3720	3720	15	14.0	4.4	7.5	6.2	60	28	212.04
L1018.15-3780	3780	15	14.0	4.4	7.5	6.2	60	28	215.46
L1018.15-3840	3840	15	14.0	4.4	7.5	6.2	60	28	218.88
L1018.15-3900	3900	15	14.0	4.4	7.5	6.2	60	28	222.30
L1018.15-3960	3960	15	14.0	4.4	7.5	6.2	60	28	225.72
L1018.15-4000	4000	15	14.0	4.4	7.5	6.2	60	28	228.00

### Ordering Example

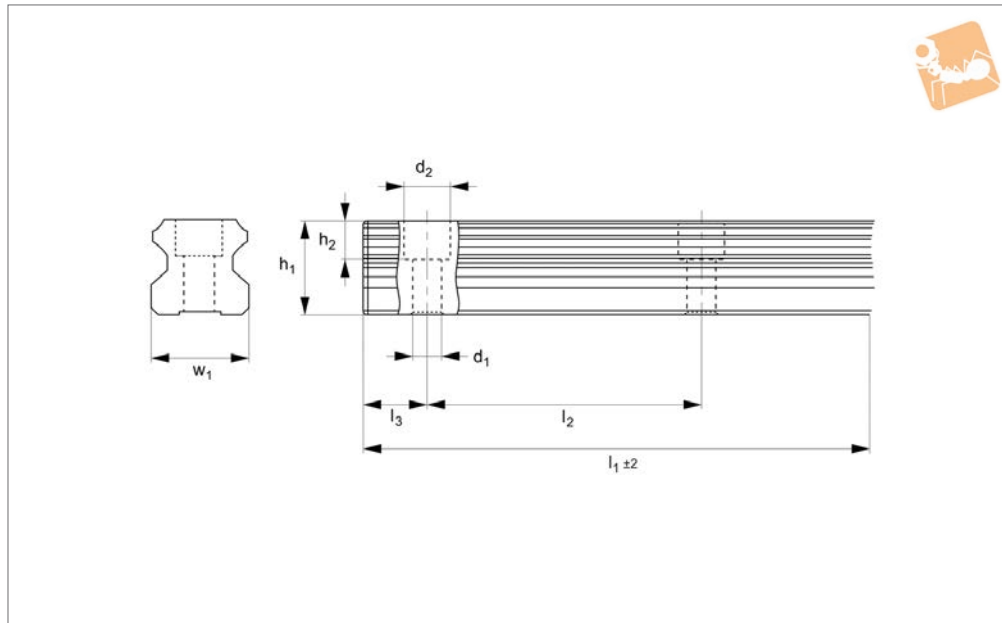




# 20mm Aluminium Linear Guide Rail

with stainless raceways

Linear Guide-ways



**L1018.20**

LINEAR GUIDEWAYS

### Material

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

### Technical Notes

Compact, light-weight design. 60% saving

### Tips

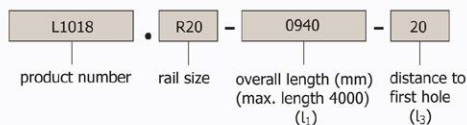
**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.20-0180	20	180	20	19.3	6.0	9.4	7.7	60	30	0.1
L1018.20-0240	20	240	20	19.3	6.0	9.4	7.7	60	30	0.1
L1018.20-0300	20	300	20	19.3	6.0	9.4	7.7	60	30	0.2
L1018.20-0360	20	360	20	19.3	6.0	9.4	7.7	60	30	0.2
L1018.20-0420	20	420	20	19.3	6.0	9.4	7.7	60	30	0.2
L1018.20-0480	20	480	20	19.3	6.0	9.4	7.7	60	30	0.3
L1018.20-0540	20	540	20	19.3	6.0	9.4	7.7	60	30	0.3
L1018.20-0600	20	600	20	19.3	6.0	9.4	7.7	60	30	0.3
L1018.20-0660	20	660	20	19.3	6.0	9.4	7.7	60	30	0.4
L1018.20-0720	20	720	20	19.3	6.0	9.4	7.7	60	30	0.4
L1018.20-0780	20	780	20	19.3	6.0	9.4	7.7	60	30	0.4
L1018.20-0840	20	840	20	19.3	6.0	9.4	7.7	60	30	0.5
L1018.20-0900	20	900	20	19.3	6.0	9.4	7.7	60	30	0.5
L1018.20-0960	20	960	20	19.3	6.0	9.4	7.7	60	30	0.5
L1018.20-1020	20	1020	20	19.3	6.0	9.4	7.7	60	30	0.6
L1018.20-1080	20	1080	20	19.3	6.0	9.4	7.7	60	30	0.6
L1018.20-1140	20	1140	20	19.3	6.0	9.4	7.7	60	30	0.6
L1018.20-1200	20	1200	20	19.3	6.0	9.4	7.7	60	30	0.7
L1018.20-1260	20	1260	20	19.3	6.0	9.4	7.7	60	30	0.7
L1018.20-1320	20	1320	20	19.3	6.0	9.4	7.7	60	30	0.8
L1018.20-1380	20	1380	20	19.3	6.0	9.4	7.7	60	30	0.8
L1018.20-1440	20	1440	20	19.3	6.0	9.4	7.7	60	30	0.8
L1018.20-1500	20	1500	20	19.3	6.0	9.4	7.7	60	30	0.9
L1018.20-1560	20	1560	20	19.3	6.0	9.4	7.7	60	30	0.9
L1018.20-1620	20	1620	20	19.3	6.0	9.4	7.7	60	30	0.9
L1018.20-1680	20	1680	20	19.3	6.0	9.4	7.7	60	30	1.0
L1018.20-1740	20	1740	20	19.3	6.0	9.4	7.7	60	30	1.0
L1018.20-1800	20	1800	20	19.3	6.0	9.4	7.7	60	30	1.0
L1018.20-1860	20	1860	20	19.3	6.0	9.4	7.7	60	30	1.1
L1018.20-1920	20	1920	20	19.3	6.0	9.4	7.7	60	30	1.1
L1018.20-1980	20	1980	20	19.3	6.0	9.4	7.7	60	30	1.1



Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.20-2040	20	2040	20	19.3	6.0	9.4	7.7	60	30	1.2
L1018.20-2100	20	2100	20	19.3	6.0	9.4	7.7	60	30	1.2
L1018.20-2160	20	2160	20	19.3	6.0	9.4	7.7	60	30	1.2
L1018.20-2220	20	2220	20	19.3	6.0	9.4	7.7	60	30	1.3
L1018.20-2280	20	2280	20	19.3	6.0	9.4	7.7	60	30	1.3
L1018.20-2340	20	2340	20	19.3	6.0	9.4	7.7	60	30	1.3
L1018.20-2400	20	2400	20	19.3	6.0	9.4	7.7	60	30	1.4
L1018.20-2460	20	2460	20	19.3	6.0	9.4	7.7	60	30	1.4
L1018.20-2520	20	2520	20	19.3	6.0	9.4	7.7	60	30	1.4
L1018.20-2580	20	2580	20	19.3	6.0	9.4	7.7	60	30	1.5
L1018.20-2640	20	2640	20	19.3	6.0	9.4	7.7	60	30	1.5
L1018.20-2700	20	2700	20	19.3	6.0	9.4	7.7	60	30	1.5
L1018.20-2760	20	2760	20	19.3	6.0	9.4	7.7	60	30	1.6
L1018.20-2820	20	2820	20	19.3	6.0	9.4	7.7	60	30	1.6
L1018.20-2880	20	2880	20	19.3	6.0	9.4	7.7	60	30	1.6
L1018.20-2940	20	2940	20	19.3	6.0	9.4	7.7	60	30	1.7
L1018.20-3000	20	3000	20	19.3	6.0	9.4	7.7	60	30	1.7
L1018.20-3060	20	3060	20	19.3	6.0	9.4	7.7	60	30	1.7
L1018.20-3120	20	3120	20	19.3	6.0	9.4	7.7	60	30	1.8
L1018.20-3180	20	3180	20	19.3	6.0	9.4	7.7	60	30	1.8
L1018.20-3240	20	3240	20	19.3	6.0	9.4	7.7	60	30	1.8
L1018.20-3300	20	3300	20	19.3	6.0	9.4	7.7	60	30	1.9
L1018.20-3360	20	3360	20	19.3	6.0	9.4	7.7	60	30	1.9
L1018.20-3420	20	3420	20	19.3	6.0	9.4	7.7	60	30	1.9
L1018.20-3480	20	3480	20	19.3	6.0	9.4	7.7	60	30	2.0
L1018.20-3540	20	3540	20	19.3	6.0	9.4	7.7	60	30	2.0
L1018.20-3600	20	3600	20	19.3	6.0	9.4	7.7	60	30	2.1
L1018.20-3660	20	3660	20	19.3	6.0	9.4	7.7	60	30	2.1
L1018.20-3720	20	3720	20	19.3	6.0	9.4	7.7	60	30	2.1
L1018.20-3780	20	3780	20	19.3	6.0	9.4	7.7	60	30	2.2
L1018.20-3840	20	3840	20	19.3	6.0	9.4	7.7	60	30	2.2
L1018.20-3900	20	3900	20	19.3	6.0	9.4	7.7	60	30	2.2
L1018.20-3960	20	3960	20	19.3	6.0	9.4	7.7	60	30	2.3
L1018.20-4000	20	4000	20	19.3	6.0	9.4	7.7	60	30	2.3

### Ordering Example





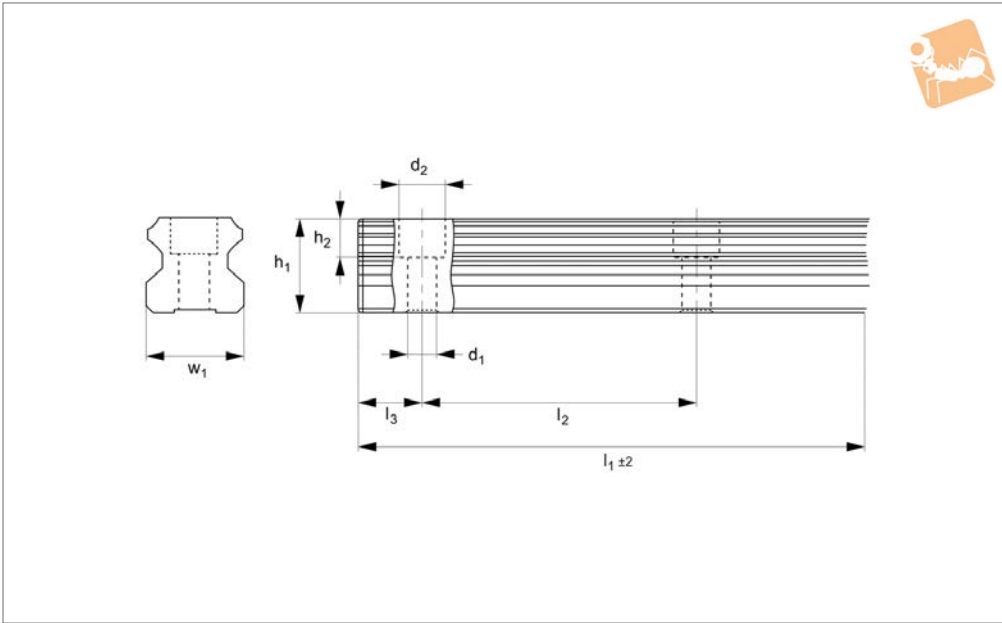
# 25mm Aluminium Linear Guide Rail

with stainless raceways

Linear Guide-ways



**L1018.25**



LINEAR GUIDEWAYS

**Material**

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

**Technical Notes**

Compact, light-weight design. 60% saving

**Tips**

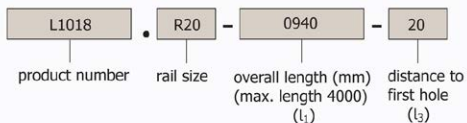
**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.25-0180	25	180	25	21.8	7.0	11.0	8.9	60	30	0.2
L1018.25-0240	25	240	25	21.8	7.0	11.0	8.9	60	30	0.3
L1018.25-0300	25	300	25	21.8	7.0	11.0	8.9	60	30	0.4
L1018.25-0360	25	360	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-0420	25	420	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-0480	25	480	25	21.8	7.0	11.0	8.9	60	30	0.6
L1018.25-0540	25	540	25	21.8	7.0	11.0	8.9	60	30	0.7
L1018.25-0600	25	600	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-0660	25	660	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-0720	25	720	25	21.8	7.0	11.0	8.9	60	30	0.9
L1018.25-0780	25	780	25	21.8	7.0	11.0	8.9	60	30	1.0
L1018.25-0840	25	840	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-0900	25	900	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-0960	25	960	25	21.8	7.0	11.0	8.9	60	30	1.2
L1018.25-1020	25	1020	25	21.8	7.0	11.0	8.9	60	30	0.0
L1018.25-1080	25	1080	25	21.8	7.0	11.0	8.9	60	30	0.1
L1018.25-1140	25	1140	25	21.8	7.0	11.0	8.9	60	30	0.2
L1018.25-1200	25	1200	25	21.8	7.0	11.0	8.9	60	30	0.3
L1018.25-1260	25	1260	25	21.8	7.0	11.0	8.9	60	30	0.3
L1018.25-1320	25	1320	25	21.8	7.0	11.0	8.9	60	30	0.4
L1018.25-1380	25	1380	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-1440	25	1440	25	21.8	7.0	11.0	8.9	60	30	0.6
L1018.25-1500	25	1500	25	21.8	7.0	11.0	8.9	60	30	0.6
L1018.25-1560	25	1560	25	21.8	7.0	11.0	8.9	60	30	0.7
L1018.25-1620	25	1620	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-1680	25	1680	25	21.8	7.0	11.0	8.9	60	30	0.9
L1018.25-1740	25	1740	25	21.8	7.0	11.0	8.9	60	30	0.9
L1018.25-1800	25	1800	25	21.8	7.0	11.0	8.9	60	30	1.0
L1018.25-1860	25	1860	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-1920	25	1920	25	21.8	7.0	11.0	8.9	60	30	1.2
L1018.25-1980	25	1980	25	21.8	7.0	11.0	8.9	60	30	1.2



Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_1$	$d_2$	$h_2$	$l_2$	$l_3$	Weight kg
L1018.25-2040	25	2040	25	21.8	7.0	11.0	8.9	60	30	0.1
L1018.25-2100	25	2100	25	21.8	7.0	11.0	8.9	60	30	0.1
L1018.25-2160	25	2160	25	21.8	7.0	11.0	8.9	60	30	0.2
L1018.25-2220	25	2220	25	21.8	7.0	11.0	8.9	60	30	0.3
L1018.25-2280	25	2280	25	21.8	7.0	11.0	8.9	60	30	0.4
L1018.25-2340	25	2340	25	21.8	7.0	11.0	8.9	60	30	0.4
L1018.25-2400	25	2400	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-2460	25	2460	25	21.8	7.0	11.0	8.9	60	30	0.6
L1018.25-2520	25	2520	25	21.8	7.0	11.0	8.9	60	30	0.7
L1018.25-2580	25	2580	25	21.8	7.0	11.0	8.9	60	30	0.7
L1018.25-2640	25	2640	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-2700	25	2700	25	21.8	7.0	11.0	8.9	60	30	0.9
L1018.25-2760	25	2760	25	21.8	7.0	11.0	8.9	60	30	1.0
L1018.25-2820	25	2820	25	21.8	7.0	11.0	8.9	60	30	1.0
L1018.25-2880	25	2880	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-2940	25	2940	25	21.8	7.0	11.0	8.9	60	30	1.2
L1018.25-3000	25	3000	25	21.8	7.0	11.0	8.9	60	30	0.0
L1018.25-3060	25	3060	25	21.8	7.0	11.0	8.9	60	30	0.1
L1018.25-3120	25	3120	25	21.8	7.0	11.0	8.9	60	30	0.2
L1018.25-3180	25	3180	25	21.8	7.0	11.0	8.9	60	30	0.2
L1018.25-3240	25	3240	25	21.8	7.0	11.0	8.9	60	30	0.3
L1018.25-3300	25	3300	25	21.8	7.0	11.0	8.9	60	30	0.4
L1018.25-3360	25	3360	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-3420	25	3420	25	21.8	7.0	11.0	8.9	60	30	0.5
L1018.25-3480	25	3480	25	21.8	7.0	11.0	8.9	60	30	0.6
L1018.25-3540	25	3540	25	21.8	7.0	11.0	8.9	60	30	0.7
L1018.25-3600	25	3600	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-3660	25	3660	25	21.8	7.0	11.0	8.9	60	30	0.8
L1018.25-3720	25	3720	25	21.8	7.0	11.0	8.9	60	30	0.9
L1018.25-3780	25	3780	25	21.8	7.0	11.0	8.9	60	30	1.0
L1018.25-3840	25	3840	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-3900	25	3900	25	21.8	7.0	11.0	8.9	60	30	1.1
L1018.25-3960	25	3960	25	21.8	7.0	11.0	8.9	60	30	1.2
L1018.25-4000	25	4000	25	21.8	7.0	11.0	28	60	30	5.0

### Ordering Example

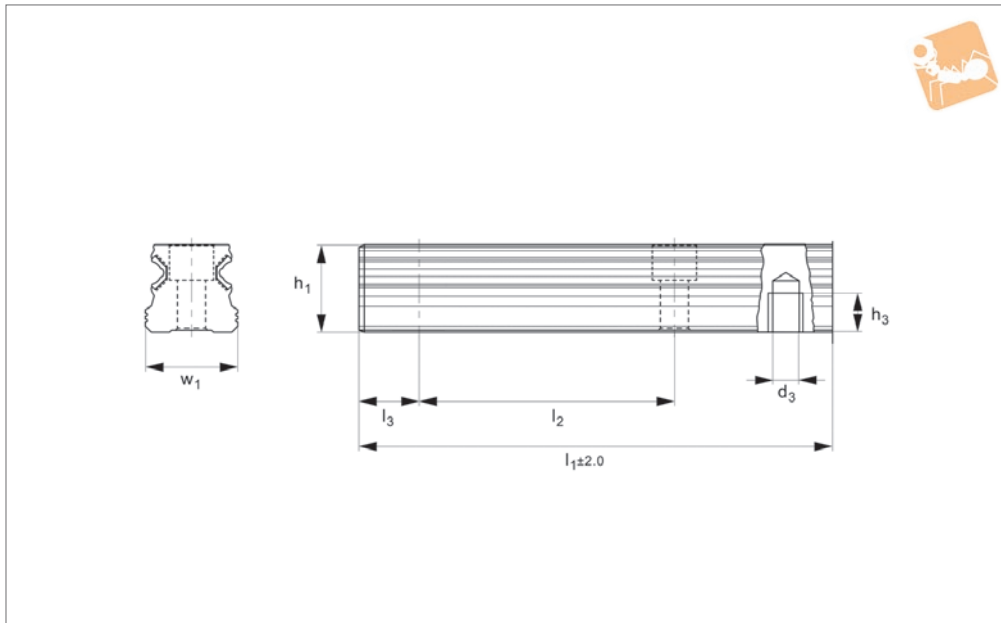




# 15mm Aluminium Linear Guide Rail

rear fixing with stainless raceways

Linear Guide-ways



**L1018.15R**

LINEAR GUIDEWAYS

### Material

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

### Technical Notes

Compact, light-weight design. 60% saving

### Tips

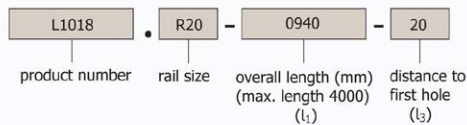
**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_3$	$h_3$	$l_2$	$l_3$	Weight kg
L1018.15-0180-R	15	180	15	14.3	M5	7	60	28	0.1
L1018.15-0240-R	15	240	15	14.3	M5	7	60	28	0.1
L1018.15-0300-R	15	300	15	14.3	M5	7	60	28	0.2
L1018.15-0360-R	15	360	15	14.3	M5	7	60	28	0.2
L1018.15-0420-R	15	420	15	14.3	M5	7	60	28	0.2
L1018.15-0480-R	15	480	15	14.3	M5	7	60	28	0.3
L1018.15-0540-R	15	540	15	14.3	M5	7	60	28	0.3
L1018.15-0600-R	15	600	15	14.3	M5	7	60	28	0.3
L1018.15-0660-R	15	660	15	14.3	M5	7	60	28	0.4
L1018.15-0720-R	15	720	15	14.3	M5	7	60	28	0.4
L1018.15-0780-R	15	780	15	14.3	M5	7	60	28	0.4
L1018.15-0840-R	15	840	15	14.3	M5	7	60	28	0.5
L1018.15-0900-R	15	900	15	14.3	M5	7	60	28	0.5
L1018.15-0960-R	15	960	15	14.3	M5	7	60	28	0.5
L1018.15-1020-R	15	1020	15	14.3	M5	7	60	28	0.6
L1018.15-1080-R	15	1080	15	14.3	M5	7	60	28	0.6
L1018.15-1140-R	15	1140	15	14.3	M5	7	60	28	0.6
L1018.15-1200-R	15	1200	15	14.3	M5	7	60	28	0.7
L1018.15-1260-R	15	1260	15	14.3	M5	7	60	28	0.7
L1018.15-1320-R	15	1320	15	14.3	M5	7	60	28	0.8
L1018.15-1380-R	15	1380	15	14.3	M5	7	60	28	0.8
L1018.15-1440-R	15	1440	15	14.3	M5	7	60	28	0.8
L1018.15-1500-R	15	1500	15	14.3	M5	7	60	28	0.9
L1018.15-1560-R	15	1560	15	14.3	M5	7	60	28	0.9
L1018.15-1620-R	15	1620	15	14.3	M5	7	60	28	0.9
L1018.15-1680-R	15	1680	15	14.3	M5	7	60	28	1.0
L1018.15-1740-R	15	1740	15	14.3	M5	7	60	28	1.0
L1018.15-1800-R	15	1800	15	14.3	M5	7	60	28	1.0
L1018.15-1860-R	15	1860	15	14.3	M5	7	60	28	1.1
L1018.15-1940-R	15	1940	15	14.3	M5	7	60	28	1.1
L1018.15-1980-R	15	1980	15	14.3	M5	7	60	28	1.1



Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_3$	$h_3$	$l_2$	$l_3$	Weight kg
L1018.15-2040-R	15	2040	15	14.3	M5	7	60	28	1.2
L1018.15-2100-R	15	2100	15	14.3	M5	7	60	28	1.2
L1018.15-2160-R	15	2160	15	14.3	M5	7	60	28	1.2
L1018.15-2220-R	15	2220	15	14.3	M5	7	60	28	1.3
L1018.15-2280-R	15	2280	15	14.3	M5	7	60	28	1.3
L1018.15-2340-R	15	2340	15	14.3	M5	7	60	28	1.3
L1018.15-2400-R	15	2400	15	14.3	M5	7	60	28	1.4
L1018.15-2460-R	15	2460	15	14.3	M5	7	60	28	1.4
L1018.15-2520-R	15	2520	15	14.3	M5	7	60	28	1.4
L1018.15-2580-R	15	2580	15	14.3	M5	7	60	28	1.5
L1018.15-2640-R	15	2640	15	14.3	M5	7	60	28	1.5
L1018.15-2700-R	15	2700	15	14.3	M5	7	60	28	1.5
L1018.15-2760-R	15	2760	15	14.3	M5	7	60	28	1.6
L1018.15-2820-R	15	2820	15	14.3	M5	7	60	28	1.6
L1018.15-2880-R	15	2880	15	14.3	M5	7	60	28	1.6
L1018.15-2940-R	15	2940	15	14.3	M5	7	60	28	1.7
L1018.15-3000-R	15	3000	15	14.3	M5	7	60	28	1.7
L1018.15-3060-R	15	3060	15	14.3	M5	7	60	28	1.7
L1018.15-3120-R	15	3120	15	14.3	M5	7	60	28	1.8
L1018.15-3180-R	15	3180	15	14.3	M5	7	60	28	1.8
L1018.15-3240-R	15	3240	15	14.3	M5	7	60	28	1.8
L1018.15-3300-R	15	3300	15	14.3	M5	7	60	28	1.9
L1018.15-3360-R	15	3360	15	14.3	M5	7	60	28	1.9
L1018.15-3420-R	15	3420	15	14.3	M5	7	60	28	1.9
L1018.15-3480-R	15	3480	15	14.3	M5	7	60	28	2.0
L1018.15-3540-R	15	3540	15	14.3	M5	7	60	28	2.0
L1018.15-3600-R	15	3600	15	14.3	M5	7	60	28	2.1
L1018.15-3660-R	15	3660	15	14.3	M5	7	60	28	2.1
L1018.15-3720-R	15	3720	15	14.3	M5	7	60	28	2.1
L1018.15-3780-R	15	3780	15	14.3	M5	7	60	28	2.2
L1018.15-3840-R	15	3840	15	14.3	M5	7	60	28	2.2
L1018.15-3900-R	15	3900	15	14.3	M5	7	60	28	2.2
L1018.15-3960-R	15	3960	15	14.3	M5	7	60	28	2.3
L1018.15-4000-R	15	4000	15	14.3	M5	7	60	28	2.3

### Ordering Example



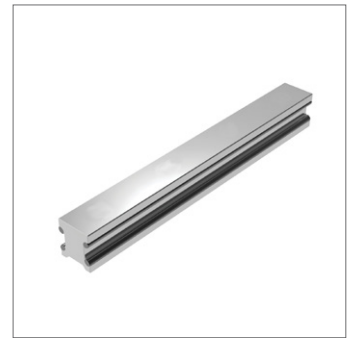




# 20mm Aluminium Linear Guide Rail

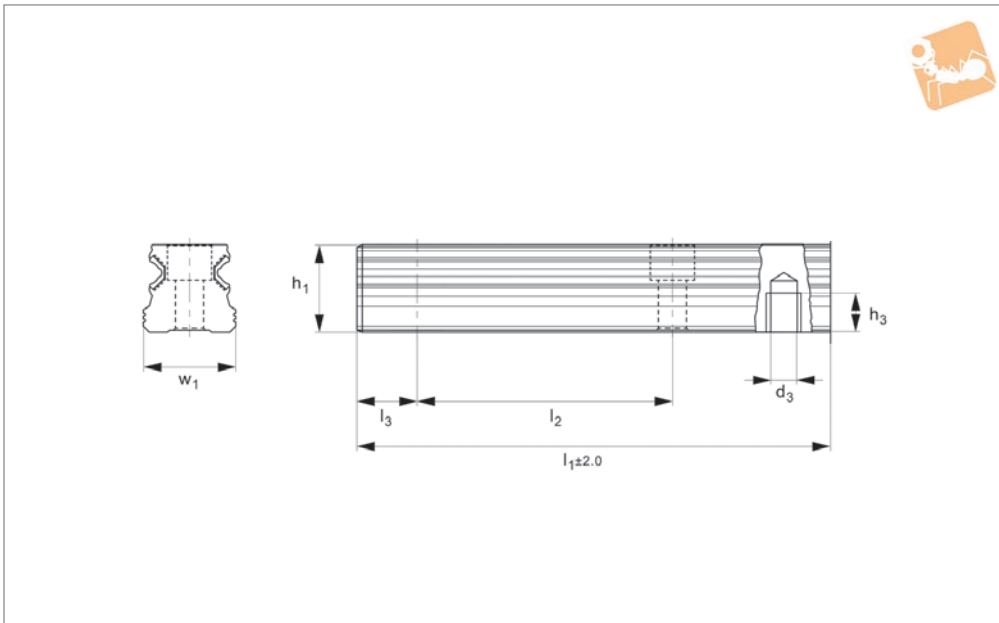
rear fixing with stainless raceways

Linear Guide-ways



**L1018.20R**

LINEAR GUIDEWAYS



**Material**

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

**Technical Notes**

Compact, light-weight design. 60% saving

**Tips**

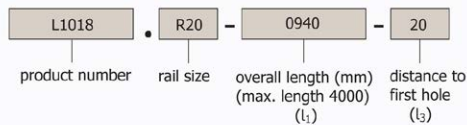
**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub>	d <sub>3</sub>	h <sub>3</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1018.20-0180-R	20	20	19.3	180	M6	9	60	28	0.2
L1018.20-0240-R	20	20	19.3	240	M6	9	60	28	0.2
L1018.20-0300-R	20	20	19.3	300	M6	9	60	28	0.3
L1018.20-0360-R	20	20	19.3	360	M6	9	60	28	0.4
L1018.20-0420-R	20	20	19.3	420	M6	9	60	28	0.4
L1018.20-0480-R	20	20	19.3	480	M6	9	60	28	0.5
L1018.20-0540-R	20	20	19.3	540	M6	9	60	28	0.5
L1018.20-0600-R	20	20	19.3	600	M6	9	60	28	0.6
L1018.20-0660-R	20	20	19.3	660	M6	9	60	28	0.6
L1018.20-0720-R	20	20	19.3	720	M6	9	60	28	0.7
L1018.20-0780-R	20	20	19.3	780	M6	9	60	28	0.8
L1018.20-0840-R	20	20	19.3	840	M6	9	60	28	0.8
L1018.20-0900-R	20	20	19.3	900	M6	9	60	28	0.9
L1018.20-0960-R	20	20	19.3	960	M6	9	60	28	0.9
L1018.20-1020-R	20	20	19.3	1020	M6	9	60	28	1.0
L1018.20-1080-R	20	20	19.3	1080	M6	9	60	28	1.1
L1018.20-1140-R	20	20	19.3	1140	M6	9	60	28	1.1
L1018.20-1200-R	20	20	19.3	1200	M6	9	60	28	1.2
L1018.20-1260-R	20	20	19.3	1260	M6	9	60	28	1.2
L1018.20-1320-R	20	20	19.3	1320	M6	9	60	28	1.3
L1018.20-1380-R	20	20	19.3	1380	M6	9	60	28	1.4
L1018.20-1440-R	20	20	19.3	1440	M6	9	60	28	1.4
L1018.20-1500-R	20	20	19.3	1500	M6	9	60	28	1.5
L1018.20-1560-R	20	20	19.3	1560	M6	9	60	28	1.5
L1018.20-1620-R	20	20	19.3	1620	M6	9	60	28	1.6
L1018.20-1680-R	20	20	19.3	1680	M6	9	60	28	1.6
L1018.20-1740-R	20	20	19.3	1740	M6	9	60	28	1.7
L1018.20-1800-R	20	20	19.3	1800	M6	9	60	28	1.8
L1018.20-1860-R	20	20	19.3	1860	M6	9	60	28	1.8
L1018.20-1920-R	20	20	19.3	1920	M6	9	60	28	1.9
L1018.20-1980-R	20	20	19.3	1980	M6	9	60	28	1.9



Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub>	d <sub>3</sub>	h <sub>3</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1018.20-2040-R	20	20	19.3	2040	M6	9	60	28	2.0
L1018.20-2100-R	20	20	19.3	2100	M6	9	60	28	2.1
L1018.20-2160-R	20	20	19.3	2160	M6	9	60	28	2.1
L1018.20-2220-R	20	20	19.3	2220	M6	9	60	28	2.2
L1018.20-2280-R	20	20	19.3	2280	M6	9	60	28	2.2
L1018.20-2340-R	20	20	19.3	2340	M6	9	60	28	2.3
L1018.20-2400-R	20	20	19.3	2400	M6	9	60	28	2.4
L1018.20-2460-R	20	20	19.3	2460	M6	9	60	28	2.4
L1018.20-2520-R	20	20	19.3	2520	M6	9	60	28	2.5
L1018.20-2580-R	20	20	19.3	2580	M6	9	60	28	2.5
L1018.20-2640-R	20	20	19.3	2640	M6	9	60	28	2.6
L1018.20-2700-R	20	20	19.3	2700	M6	9	60	28	2.6
L1018.20-2760-R	20	20	19.3	2760	M6	9	60	28	2.7
L1018.20-2820-R	20	20	19.3	2820	M6	9	60	28	2.8
L1018.20-2880-R	20	20	19.3	2880	M6	9	60	28	2.8
L1018.20-2940-R	20	20	19.3	2940	M6	9	60	28	2.9
L1018.20-3000-R	20	20	19.3	3000	M6	9	60	28	2.9
L1018.20-3060-R	20	20	19.3	3060	M6	9	60	28	3.0
L1018.20-3120-R	20	20	19.3	3120	M6	9	60	28	3.1
L1018.20-3180-R	20	20	19.3	3180	M6	9	60	28	3.1
L1018.20-3240-R	20	20	19.3	3240	M6	9	60	28	3.2
L1018.20-3300-R	20	20	19.3	3300	M6	9	60	28	3.2
L1018.20-3360-R	20	20	19.3	3360	M6	9	60	28	3.3
L1018.20-3420-R	20	20	19.3	3420	M6	9	60	28	3.4
L1018.20-3480-R	20	20	19.3	3480	M6	9	60	28	3.4
L1018.20-3540-R	20	20	19.3	3540	M6	9	60	28	3.5
L1018.20-3600-R	20	20	19.3	3600	M6	9	60	28	3.5
L1018.20-3660-R	20	20	19.3	3660	M6	9	60	28	3.6
L1018.20-3720-R	20	20	19.3	3720	M6	9	60	28	3.6
L1018.20-3780-R	20	20	19.3	3780	M6	9	60	28	3.7
L1018.20-3840-R	20	20	19.3	3840	M6	9	60	28	3.8
L1018.20-3900-R	20	20	19.3	3900	M6	9	60	28	3.8
L1018.20-3960-R	20	20	19.3	3960	M6	9	60	28	3.9
L1018.20-4000-R	20	20	19.3	4000	M6	9	60	28	3.9

### Ordering Example





# 25mm Aluminium Linear Guide Rail

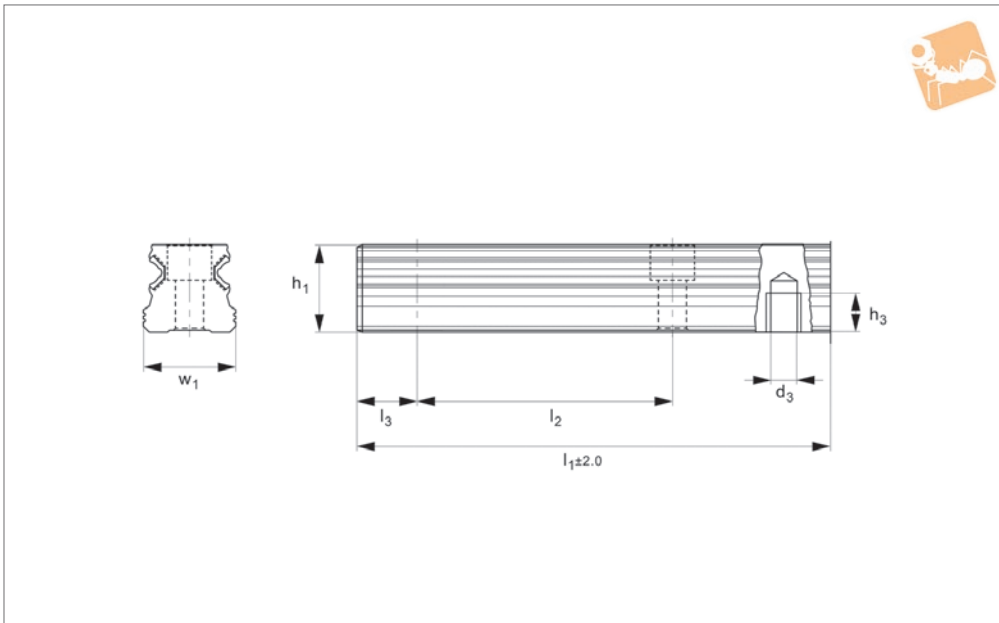
rear fixing with stainless raceways

Linear Guide-ways



**L1018.25R**

LINEAR GUIDEWAYS



**Material**

Aluminium profile (AlMgSi0.5, anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway.

**weight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.**

**Technical Notes**

Compact, light-weight design. 60% saving

**Tips**

**These are very lightweight aluminium rails and can only be used with our light-**

Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_3$	$h_3$	$l_2$	$l_3$	Weight kg
L1018.25-0180-R	25	180	25	21.8	M6	12	60	28	0.2
L1018.25-0240-R	25	240	25	21.8	M6	12	60	28	0.3
L1018.25-0300-R	25	300	25	21.8	M6	12	60	28	0.4
L1018.25-0360-R	25	360	25	21.8	M6	12	60	28	0.5
L1018.25-0420-R	25	420	25	21.8	M6	12	60	28	0.5
L1018.25-0480-R	25	480	25	21.8	M6	12	60	28	0.6
L1018.25-0540-R	25	540	25	21.8	M6	12	60	28	0.7
L1018.25-0600-R	25	600	25	21.8	M6	12	60	28	0.8
L1018.25-0660-R	25	660	25	21.8	M6	12	60	28	0.8
L1018.25-0720-R	25	720	25	21.8	M6	12	60	28	0.9
L1018.25-0780-R	25	780	25	21.8	M6	12	60	28	1.0
L1018.25-0840-R	25	840	25	21.8	M6	12	60	28	1.1
L1018.25-0900-R	25	900	25	21.8	M6	12	60	28	1.1
L1018.25-0960-R	25	960	25	21.8	M6	12	60	28	1.2
L1018.25-1020-R	25	1020	25	21.8	M6	12	60	28	1.3
L1018.25-1080-R	25	1080	25	21.8	M6	12	60	28	1.4
L1018.25-1140-R	25	1140	25	21.8	M6	12	60	28	1.4
L1018.25-1200-R	25	1200	25	21.8	M6	12	60	28	1.5
L1018.25-1260-R	25	1260	25	21.8	M6	12	60	28	1.6
L1018.25-1320-R	25	1320	25	21.8	M6	12	60	28	1.7
L1018.25-1380-R	25	1380	25	21.8	M6	12	60	28	1.7
L1018.25-1440-R	25	1440	25	21.8	M6	12	60	28	1.8
L1018.25-1500-R	25	1500	25	21.8	M6	12	60	28	1.9
L1018.25-1560-R	25	1560	25	21.8	M6	12	60	28	2.0
L1018.25-1620-R	25	1620	25	21.8	M6	12	60	28	2.0
L1018.25-1680-R	25	1680	25	21.8	M6	12	60	28	2.1
L1018.25-1740-R	25	1740	25	21.8	M6	12	60	28	2.2
L1018.25-1800-R	25	1800	25	21.8	M6	12	60	28	2.3
L1018.25-1860-R	25	1860	25	21.8	M6	12	60	28	2.3
L1018.25-1920-R	25	1920	25	21.8	M6	12	60	28	2.4
L1018.25-1980-R	25	1980	25	21.8	M6	12	60	28	2.5



Order No.	Rail size	$l_1$	$w_1$	$h_1$	$d_3$	$h_3$	$l_2$	$l_3$	Weight kg
L1018.25-2040-R	25	2040	25	21.8	M6	12	60	28	2.6
L1018.25-2100-R	25	2100	25	21.8	M6	12	60	28	2.6
L1018.25-2160-R	25	2160	25	21.8	M6	12	60	28	2.7
L1018.25-2220-R	25	2220	25	21.8	M6	12	60	28	2.8
L1018.25-2280-R	25	2280	25	21.8	M6	12	60	28	2.9
L1018.25-2340-R	25	2340	25	21.8	M6	12	60	28	2.9
L1018.25-2400-R	25	2400	25	21.8	M6	12	60	28	3.0
L1018.25-2460-R	25	2460	25	21.8	M6	12	60	28	3.1
L1018.25-2520-R	25	2520	25	21.8	M6	12	60	28	3.2
L1018.25-2580-R	25	2580	25	21.8	M6	12	60	28	3.2
L1018.25-2640-R	25	2640	25	21.8	M6	12	60	28	3.3
L1018.25-2700-R	25	2700	25	21.8	M6	12	60	28	3.4
L1018.25-2760-R	25	2760	25	21.8	M6	12	60	28	3.5
L1018.25-2820-R	25	2820	25	21.8	M6	12	60	28	3.5
L1018.25-2880-R	25	2880	25	21.8	M6	12	60	28	3.6
L1018.25-2940-R	25	2940	25	21.8	M6	12	60	28	3.7
L1018.25-3000-R	25	3000	25	21.8	M6	12	60	28	3.8
L1018.25-3060-R	25	3060	25	21.8	M6	12	60	28	3.8
L1018.25-3120-R	25	3120	25	21.8	M6	12	60	28	3.9
L1018.25-3180-R	25	3180	25	21.8	M6	12	60	28	4.0
L1018.25-3240-R	25	3240	25	21.8	M6	12	60	28	4.1
L1018.25-3300-R	25	3300	25	21.8	M6	12	60	28	4.1
L1018.25-3360-R	25	3360	25	21.8	M6	12	60	28	4.2
L1018.25-3420-R	25	3420	25	21.8	M6	12	60	28	4.3
L1018.25-3480-R	25	3480	25	21.8	M6	12	60	28	4.4
L1018.25-3540-R	25	3540	25	21.8	M6	12	60	28	4.4
L1018.25-3600-R	25	3600	25	21.8	M6	12	60	28	4.5
L1018.25-3660-R	25	3660	25	21.8	M6	12	60	28	4.6
L1018.25-3720-R	25	3720	25	21.8	M6	12	60	28	4.7
L1018.25-3780-R	25	3780	25	21.8	M6	12	60	28	4.7
L1018.25-3840-R	25	3840	25	21.8	M6	12	60	28	4.8
L1018.25-3900-R	25	3900	25	21.8	M6	12	60	28	4.9
L1018.25-3960-R	25	3960	25	21.8	M6	12	60	28	5.0
L1018.25-4000-R	25	4000	25	21.8	M6	12	60	28	5.0

### Ordering Example





### Determination of the carriage size:

1. Pre-select the carriages
2. Determine  $F_{comb}$  (see below)
3. Calculate the ratio of the dynamic load capacity "C" of the selected carriages relative to  $F_{comb}$  ( $F_{comb}$  divided by "C")

If  $F_{comb}/C > 0.4$ : carriage is sized too small, select the next largest size and repeat the calculation (step 2 and 3).

The ratio must always be  $F_{comb}/C \leq 0.4$ , otherwise  $F_{max}$  will be exceeded.

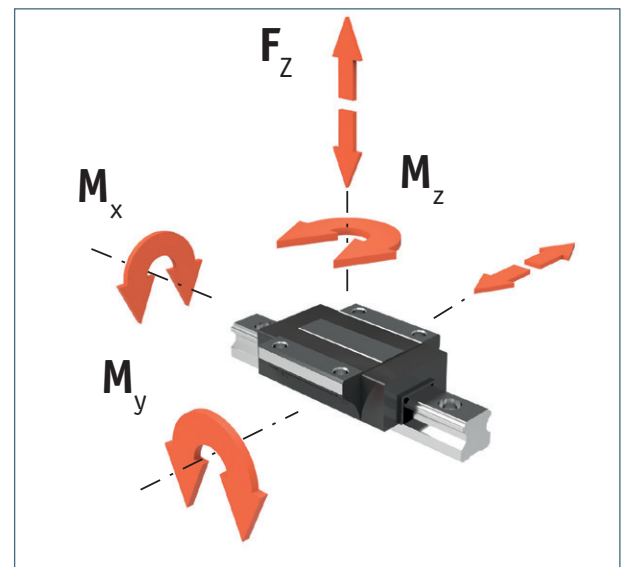
#### Note:

The load ratio  $F_{comb}/C$  is the quotient of the equivalent dynamic load on the bearing divided by the dynamic load capacity "C".

### Calculation of load on bearing for a carriage:

$$F_{comb} = b \cdot \left( |F_z| + |F_y| + C \cdot \frac{|M_x|}{M_t} + C \cdot \frac{|M_y|}{M_L} + C \cdot \frac{|M_z|}{M_L} \right)$$

$F_{comb}$	= combined equivalent load	(N)
$F_y, F_z$	= Dynamic load	(N)
$M_x$	= torque of the X-axis <sup>1)</sup>	(Nm)
$M_y$	= torque of the Y-axis <sup>2)</sup>	(Nm)
$M_z$	= Moment um die Z-Achse <sup>2)</sup>	(Nm)
$M_t$	= dynamic torsional moment load capacity	(Nm)
$M_L$	= dynamic longitudinal moment load capacity	(Nm)
C	= dynamic load capacity	(N)
b	= operating factor, (see below)	



— For values, see carriage data tables  
 — For values, see carriage data tables  
 — For values, see carriage data tables  
 For values, see table  
 "Recommended values for operating factors "b".

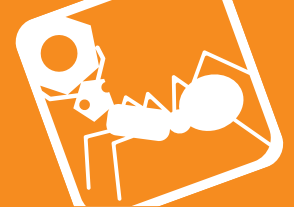
- 1) Torque  $M_x$  will only be fully effective in an application with a single guide rail.
- 2) Torque  $M_y$  or  $M_x$  will only be fully effective when only a single carriage is mounted on one guide rail.

### Recommended operating factors b:

Values for operating factors b	
1,0	Clean environment, low technical demands, manual operation
1,5	In a linear motion axis with ball screw drive
2,0	Linear motion axis with toothed belt drive
6,0	Linear motion axis with pneumatic drive
9,0	In very dirty environments

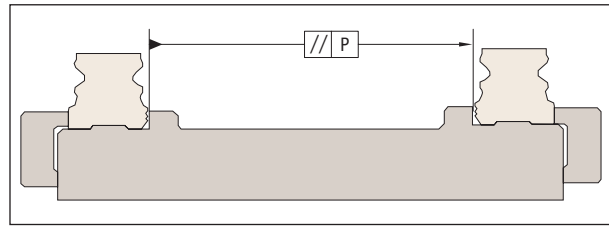
### Static load rating

A static load rating can not be easily determined, because of the composite material (aluminium/stainless steel combination). Instead of this, you can find the values  $F_{max}$  and  $M_{max}$ .



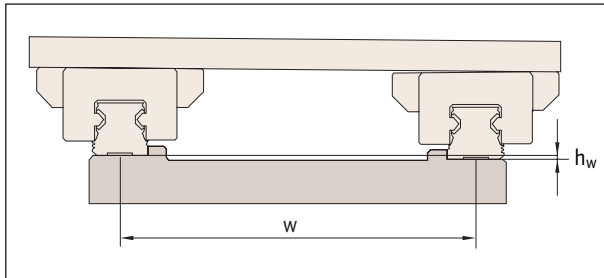
### Parallelism

Please note the parallelism is required in the structure for correct installation. Parallelism of the installed rails is measured at the guide rails and the carriages. Any parallelism offset will cause a slight increase in preload on one side of the assembly. As long as values specified in the table are met, the effect of parallelism offsets on the service life can generally be neglected.



Size	Permissible deviation in parallelism $P_{max}$	
	Standard	Preload
15	0,027	0,018
20	0,031	0,021
25	0,034	0,022

mm



Calculation factor f	Standard $1,2 \cdot 10^{-3}$	Preload $0,75 \cdot 10^{-3}$
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### Height deviation

Permissible height deviation in lateral direction " $h_w$ "

$$h_w \leq w \cdot f$$

$h_w$  = Allowable height deviation (mm)  
 $w$  = Distance between rails (mm)  
 $f$  = Calculation factor

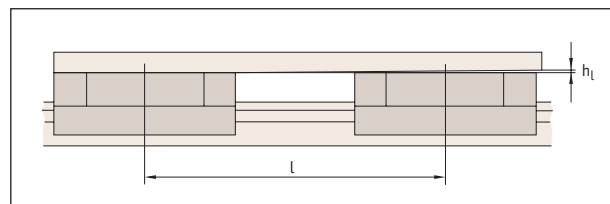
### Allowable height deviation in longitudinal direction

Allowable height deviation in longitudinal direction " $h_l$ "

$$h_l \leq b \cdot g$$

$h_l$  = Permissible height deviation (mm)  
 $b$  = Distance between carriages (mm)  
 $g$  = Calculation factor

$$h_l = L \times [6 \times 10^{-4}]$$



Calculation factor g	Standard $6 \times 10^{-4}$	Preload $2,1 \times 10^{-4}$
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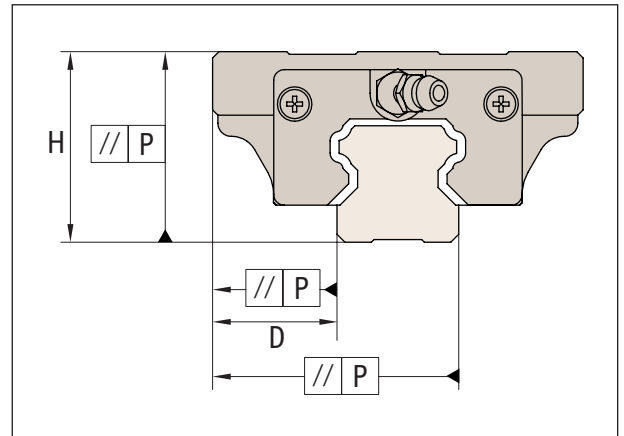


### Height tolerance "H"

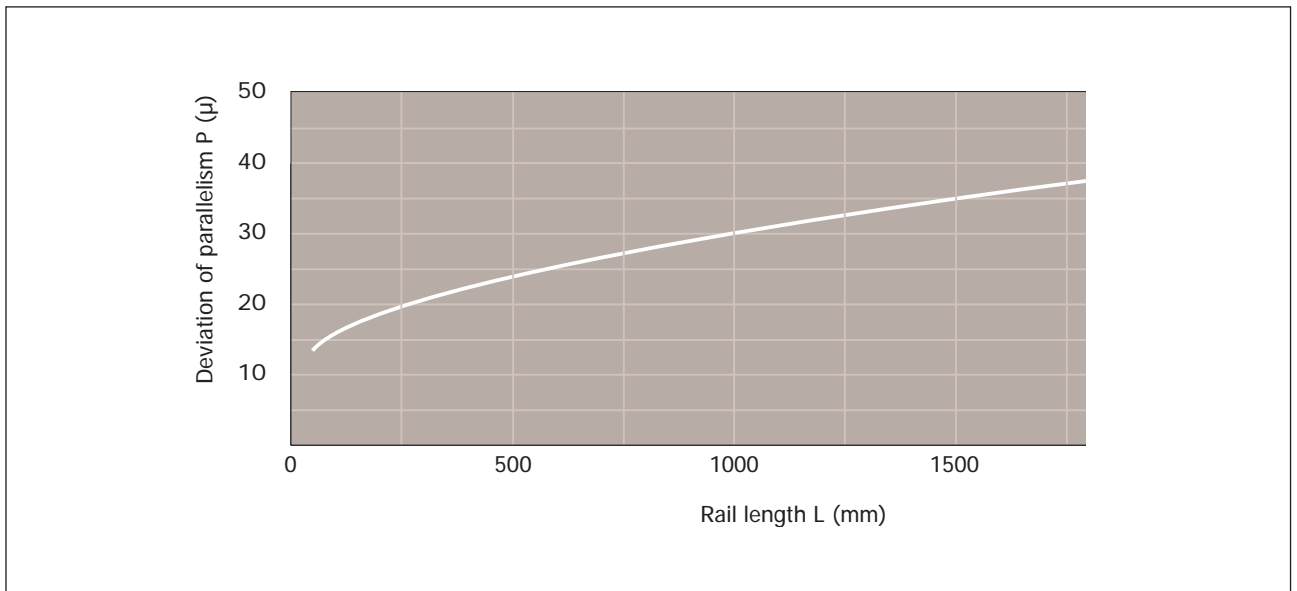
The height tolerance of several carriages on a rail is maximum  $\pm 30\mu$ . In a combination of several carriages and rails the maximum is  $\pm 120\mu$ .

### Side tolerance "D"

The maximum side tolerance of several carriages on a rail is  $\pm 30\mu$ . In a combination of several carriages and rails, the maximum is  $\pm 70\mu$ .



### Deviation of parallelism





We aim to achieve a lifetime lubrication, which we define as at least 30,000Km. The following conditions apply:

- Initial greasing with Dynalub 510
- Mounted seal unit
- No exposure to metal-working fluids
- Ambient temperature  $T = 20^{\circ}$  to  $30^{\circ}\text{C}$

First, the ratio  $F_{\text{comb}} / C$  is calculated with  $F_{\text{comb}}$  according to the formula on the previous page and the dynamic load rating  $C$  from the data tables. With this value you go then in to the diagram below.

If  $F_{\text{comb}} / C \leq 0,15$ , it lies in the zone A of the diagram below.

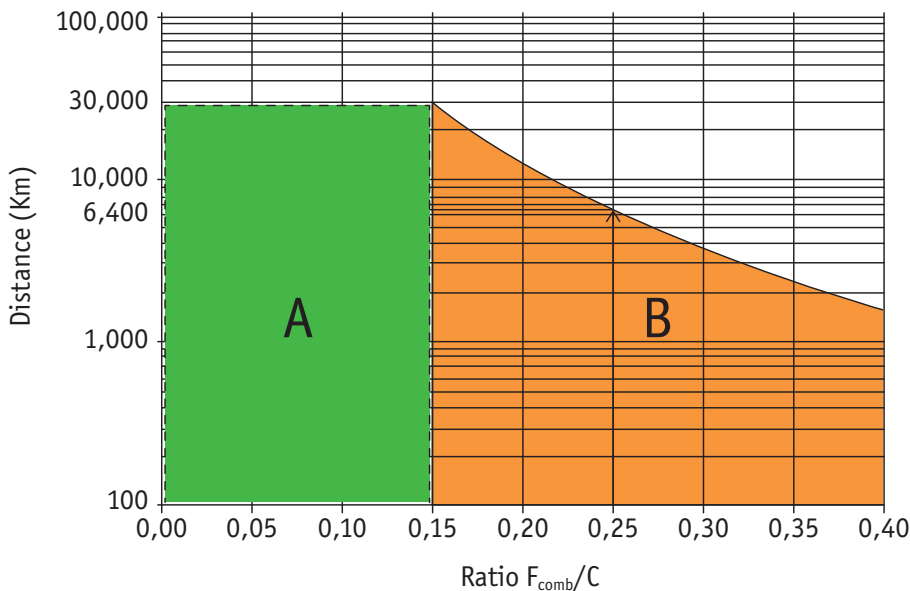
This means it will have lifetime lubrication.

With  $0,15 < F_{\text{comb}}/C \leq 0,4$  it lies in the zone B of the diagram below.

For this you must distinguish two cases:  
For example  $F_{\text{comb}} / C = 0,25$  goes up to 6400km.

- If the running distance required is  $< 6400$  km, then there is a lifetime lubrication here.
- If the running distance required is  $> 6400$  km, then instead of the sealed unit, you should use the lubrication unit option.

If value  $F_{\text{comb}}/C > 0,4$  then  $F_{\text{max}}$  is exceeded.



#### Note

- Take account of the general service life of lubricants.
- If other lubricants are used, this may lead to a reduction in the re-lubrication intervals, the achievable travel in short-stroke applications and the load capacities. Possible chemical interactions between the plastic materials, lubricants and preservative oils must also be taken into account.
- Do not use greases with solid particles such as graphite or  $\text{MoS}_2$ .
- If your application involves more demanding environmental requirements such as clean room, vacuum, food industry, increased exposure to fluids or aggressive media, extreme temperatures, please consult us. These situations must be investigated on a case by case basis and may require the use of a special lubricant.

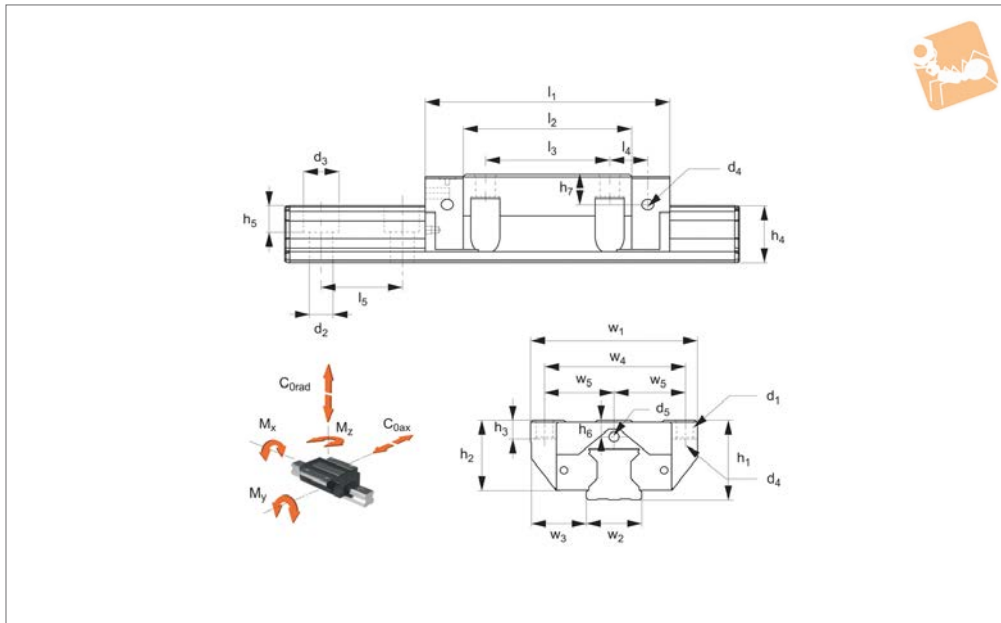




# Needle Roller - Flanged Carriages

needle roller

Linear Guide-ways



**L1017.F**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel.

**Technical Notes**

Needle roller linear guideways can take significantly higher loads than the same size standard (ball) linear guideways. Select the size and number of carriages to

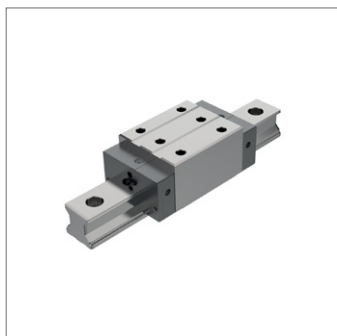
suit the required load then select the required rail length, (see part nos. L1017.25 through to L1017.65). Standard preload carriages are  $K_0$  (no preload) or  $K_1$  (0,02 x dynamic load capacity). Other preloads available on request.

**Tips**

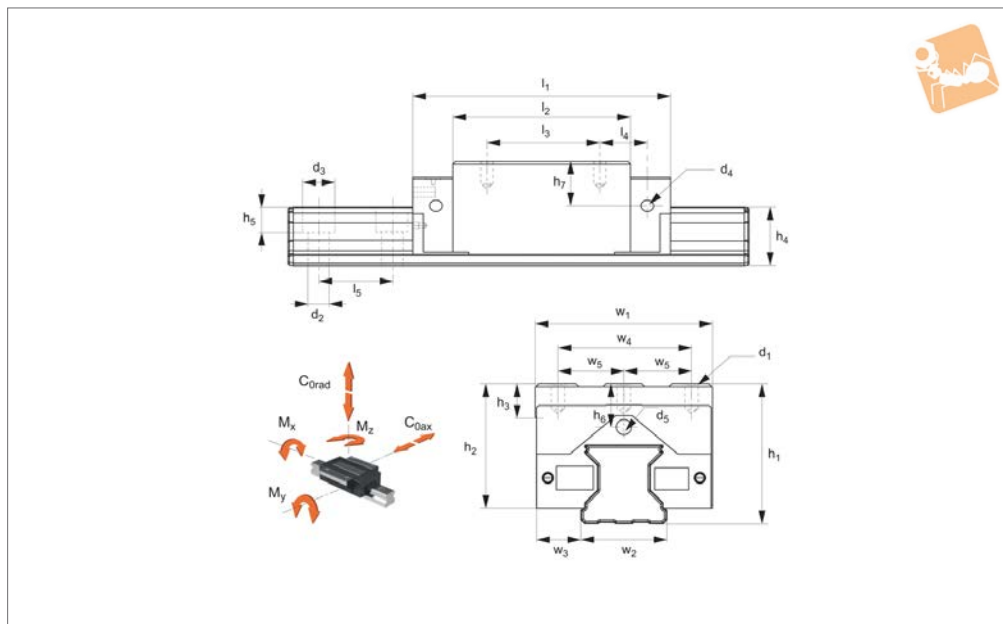
These are very heavy duty needle roller rail carriages and can only be used with corresponding needle roller rails L1017. For standard linear guideways and carriages see part no. L1016.

Order No.	Rail size	w <sub>1</sub>	w <sub>2</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>	h <sub>7</sub>	d <sub>1</sub>	Weight g
L1017.F35	35	100	34	48	122	84	42	13	31	17.0	5	16.4	M10	1700
L1017.F45	45	120	45	60	156	110	52	15	38	19.0	6	21.8	M12	3400

Order No.	d <sub>2</sub>	d <sub>3</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>	Dyn. load C <sub>rad &amp; ax</sub> kN max.	Static load C <sub>0rad &amp; ax</sub> kN max.	Moment M <sub>x</sub> Nm max.	Moment M <sub>y</sub> Nm max.	Moment M <sub>z</sub> Nm max.
L1017.F35	9	14	62	19	40	33	82	41	57	154	2742	1946	1946
L1017.F45	14	20	80	29.2	52.5	37.5	100	50	95.9	255	6350	4450	4450



## L1017.U



### Material

Hardened and ground steel.

### Technical Notes

Needle roller linear guideways can take significantly higher loads than the same size standard (ball) linear guideways. Select the size and number of carriages to

suit the required load then select the required rail length, (see part nos. L1017.25 through to L1017.65). Standard preload carriages are  $K_0$  (no preload) or  $K_1$  ( $0,02 \times$  dynamic load capacity). Other preloads available on request.

### Tips

**These are very heavy duty needle roller rail carriages and can only be used with corresponding needle roller rails L1017. For standard linear guideways and carriages see part no. L1016.**

Order No.	Rail size	$w_1$	$w_2$	$h_1$	$l_1$	$l_2$	$h_2$	$h_3$	$h_4$	$h_5$	$h_6$	$h_7$	$d_1$	$d_2$
<b>L1017.U35</b>	35	70	34	55	122	84	49	13	31	17.0	17	23.4	M8x16	9
<b>L1017.U45</b>	45	86	45	70	156	110	62	13	38	17.0	24.6	31.8	M10x20	14

Order No.	$d_3$	$d_4$	$d_5$	$l_3$	$l_4$	$l_5$	$w_3$	$w_4$	$w_5$	Dyn. load $C_{rad \& ax}$ kN max.	Static load $C_{Orad \& ax}$ kN max.	Moment $M_x$ Nm max.	Moment $M_y$ Nm max.	Moment $M_z$ Nm max.
<b>L1017.U35</b>	14	M6x8	M6x12	50	25	40	18	50	25	57	154	2742	1946	1946
<b>L1017.U45</b>	20	M6x8	M6x12	60	39.2	52.5	20.5	60	30	95.9	255	6350	4450	4450



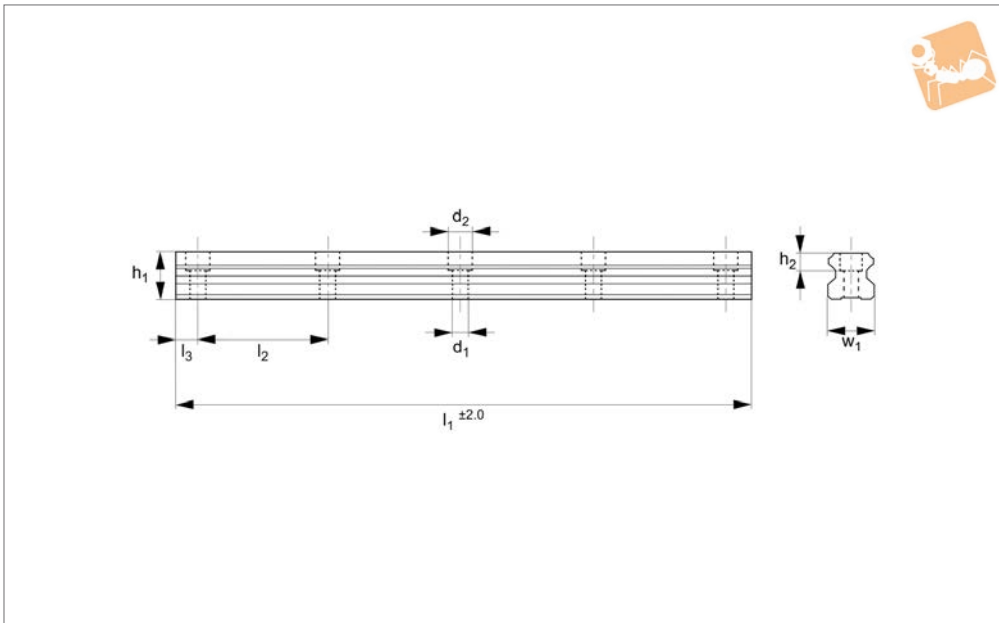
# 25mm Needle Roller Linear Rail

heavy duty

Linear Guide-ways



**L1017.25**



LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

**Technical Notes**

For carriages to suit the required load see

part nos. L1017.FN (flanged) and L1017.UN (unflanged).  
Supplied with plastic covers for screws.

**Tips**

**These are very heavy duty needle roller**

**rails and can only be used with corresponding needle roller carriages L1017. For standard linear guideways and carriages see part no. L1016.**

Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.25-0120	25	23	24.5	120	30	M6	9	7	11	14	0.41
L1017.25-0180	25	23	24.5	180	30	M6	9	7	11	14	0.61
L1017.25-0240	25	23	24.5	240	30	M6	9	7	11	14	0.82
L1017.25-0300	25	23	24.5	300	30	M6	9	7	11	14	1.02
L1017.25-0360	25	23	24.5	360	30	M6	9	7	11	14	1.22
L1017.25-0420	25	23	24.5	420	30	M6	9	7	11	14	1.43
L1017.25-0480	25	23	24.5	480	30	M6	9	7	11	14	1.63
L1017.25-0540	25	23	24.5	540	30	M6	9	7	11	14	1.84
L1017.25-0600	25	23	24.5	600	30	M6	9	7	11	14	2.04
L1017.25-0660	25	23	24.5	660	30	M6	9	7	11	14	2.24
L1017.25-0720	25	23	24.5	720	30	M6	9	7	11	14	2.45
L1017.25-0780	25	23	24.5	780	30	M6	9	7	11	14	2.65
L1017.25-0840	25	23	24.5	840	30	M6	9	7	11	14	2.86
L1017.25-0900	25	23	24.5	900	30	M6	9	7	11	14	3.06
L1017.25-0960	25	23	24.5	960	30	M6	9	7	11	14	3.26
L1017.25-1020	25	23	24.5	1020	30	M6	9	7	11	14	3.47
L1017.25-1080	25	23	24.5	1080	30	M6	9	7	11	14	3.67
L1017.25-1140	25	23	24.5	1140	30	M6	9	7	11	14	3.88
L1017.25-1200	25	23	24.5	1200	30	M6	9	7	11	14	4.08
L1017.25-1260	25	23	24.5	1260	30	M6	9	7	11	14	4.28
L1017.25-1320	25	23	24.5	1320	30	M6	9	7	11	14	4.49
L1017.25-1380	25	23	24.5	1380	30	M6	9	7	11	14	4.69
L1017.25-1440	25	23	24.5	1440	30	M6	9	7	11	14	4.90
L1017.25-1500	25	23	24.5	1500	30	M6	9	7	11	14	5.10
L1017.25-1560	25	23	24.5	1560	30	M6	9	7	11	14	5.30
L1017.25-1620	25	23	24.5	1620	30	M6	9	7	11	14	5.51
L1017.25-1680	25	23	24.5	1680	30	M6	9	7	11	14	5.71
L1017.25-1740	25	23	24.5	1740	30	M6	9	7	11	14	5.92
L1017.25-1800	25	23	24.5	1800	30	M6	9	7	11	14	6.12
L1017.25-1860	25	23	24.5	1860	30	M6	9	7	11	14	6.32
L1017.25-1920	25	23	24.5	1920	30	M6	9	7	11	14	6.53
L1017.25-1980	25	23	24.5	1980	30	M6	9	7	11	14	6.73



LINEAR GUIDEWAYS

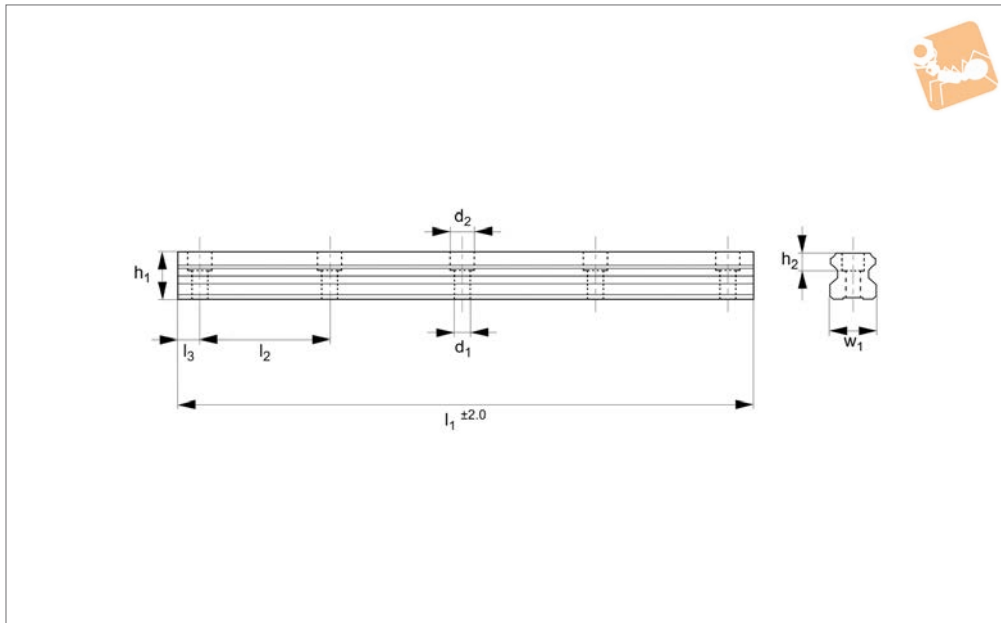
Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.25-2040	25	23	24.5	2040	30	M6	9	7	11	14	6.94
L1017.25-2100	25	23	24.5	2100	30	M6	9	7	11	14	7.14
L1017.25-2160	25	23	24.5	2160	30	M6	9	7	11	14	7.34
L1017.25-2220	25	23	24.5	2220	30	M6	9	7	11	14	7.55
L1017.25-2280	25	23	24.5	2280	30	M6	9	7	11	14	7.75
L1017.25-2340	25	23	24.5	2340	30	M6	9	7	11	14	7.96
L1017.25-2400	25	23	24.5	2400	30	M6	9	7	11	14	8.16
L1017.25-2460	25	23	24.5	2460	30	M6	9	7	11	14	8.36
L1017.25-2520	25	23	24.5	2520	30	M6	9	7	11	14	8.57
L1017.25-2580	25	23	24.5	2580	30	M6	9	7	11	14	8.77
L1017.25-2640	25	23	24.5	2640	30	M6	9	7	11	14	8.98
L1017.25-2700	25	23	24.5	2700	30	M6	9	7	11	14	9.18
L1017.25-2760	25	23	24.5	2760	30	M6	9	7	11	14	9.38
L1017.25-2820	25	23	24.5	2820	30	M6	9	7	11	14	9.59
L1017.25-2880	25	23	24.5	2880	30	M6	9	7	11	14	9.79
L1017.25-2940	25	23	24.5	2940	30	M6	9	7	11	14	10.00
L1017.25-3000	25	23	24.5	3000	30	M6	9	7	11	14	10.20
L1017.25-3060	25	23	24.5	3060	30	M6	9	7	11	14	10.40
L1017.25-3120	25	23	24.5	3120	30	M6	9	7	11	14	10.61
L1017.25-3180	25	23	24.5	3180	30	M6	9	7	11	14	10.81
L1017.25-3240	25	23	24.5	3240	30	M6	9	7	11	14	11.02
L1017.25-3300	25	23	24.5	3300	30	M6	9	7	11	14	11.22
L1017.25-3360	25	23	24.5	3360	30	M6	9	7	11	14	11.42
L1017.25-3420	25	23	24.5	3420	30	M6	9	7	11	14	11.63
L1017.25-3480	25	23	24.5	3480	30	M6	9	7	11	14	11.83
L1017.25-3540	25	23	24.5	3540	30	M6	9	7	11	14	12.04
L1017.25-3600	25	23	24.5	3600	30	M6	9	7	11	14	12.24
L1017.25-3660	25	23	24.5	3660	30	M6	9	7	11	14	12.44
L1017.25-3720	25	23	24.5	3720	30	M6	9	7	11	14	12.65
L1017.25-3780	25	23	24.5	3780	30	M6	9	7	11	14	12.85
L1017.25-3840	25	23	24.5	3840	30	M6	9	7	11	14	13.06
L1017.25-3900	25	23	24.5	3900	30	M6	9	7	11	14	13.26
L1017.25-3960	25	23	24.5	3960	30	M6	9	7	11	14	13.46



# 35mm Needle Roller Linear Rail

heavy duty

Linear Guide-ways



**L1017.35**

LINEAR GUIDEWAYS

### Material

Hardened and ground steel (typically 60 HRC).

part nos. L1017.FN (flanged) and L1017.UN (unflanged).  
Supplied with plastic covers for screws.

**rails and can only be used with corresponding needle roller carriages L1017. For standard linear guideways and carriages see part no. L1016.**

### Technical Notes

For carriages to suit the required load see

### Tips

**These are very heavy duty needle roller**

Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.35-0320	30	34	32	320	40	M8	17	9	15	20	18.4
L1017.35-0400	30	34	32	400	40	M8	17	9	15	20	23.0
L1017.35-0480	30	34	32	480	40	M8	17	9	15	20	27.6
L1017.35-0560	30	34	32	560	40	M8	17	9	15	20	32.1
L1017.35-0640	30	34	32	640	40	M8	17	9	15	20	36.7
L1017.35-0720	30	34	32	720	40	M8	17	9	15	20	41.3
L1017.35-0800	30	34	32	800	40	M8	17	9	15	20	45.9
L1017.35-0880	30	34	32	880	40	M8	17	9	15	20	50.5
L1017.35-0960	30	34	32	960	40	M8	17	9	15	20	55.1
L1017.35-1040	30	34	32	1040	40	M8	17	9	15	20	2.3
L1017.35-1120	30	34	32	1120	40	M8	17	9	15	20	6.9
L1017.35-1200	30	34	32	1200	40	M8	17	9	15	20	11.5
L1017.35-1280	30	34	32	1280	40	M8	17	9	15	20	16.1
L1017.35-1360	30	34	32	1360	40	M8	17	9	15	20	20.7
L1017.35-1440	30	34	32	1440	40	M8	17	9	15	20	25.3
L1017.35-1520	30	34	32	1520	40	M8	17	9	15	20	29.8
L1017.35-1600	30	34	32	1600	40	M8	17	9	15	20	34.4
L1017.35-1680	30	34	32	1680	40	M8	17	9	15	20	39.0
L1017.35-1760	30	34	32	1760	40	M8	17	9	15	20	43.6
L1017.35-1840	30	34	32	1840	40	M8	17	9	15	20	48.2
L1017.35-1920	30	34	32	1920	40	M8	17	9	15	20	52.8
L1017.35-2000	30	34	32	2000	40	M8	17	9	15	20	0.0
L1017.35-2080	30	34	32	2080	40	M8	17	9	15	20	4.6
L1017.35-2160	30	34	32	2160	40	M8	17	9	15	20	9.2
L1017.35-2240	30	34	32	2240	40	M8	17	9	15	20	13.8
L1017.35-2320	30	34	32	2320	40	M8	17	9	15	20	18.4
L1017.35-2400	30	34	32	2400	40	M8	17	9	15	20	23.0
L1017.35-2480	30	34	32	2480	40	M8	17	9	15	20	27.6
L1017.35-2560	30	34	32	2560	40	M8	17	9	15	20	32.1
L1017.35-2640	30	34	32	2640	40	M8	17	9	15	20	36.7
L1017.35-2720	30	34	32	2720	40	M8	17	9	15	20	41.3
L1017.35-2800	30	34	32	2800	40	M8	17	9	15	20	45.9



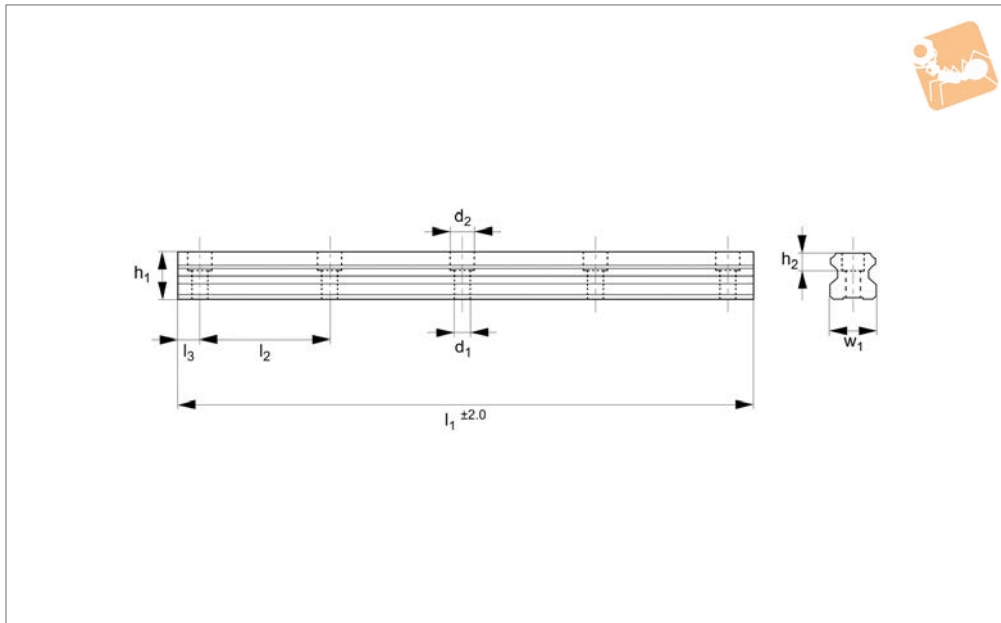
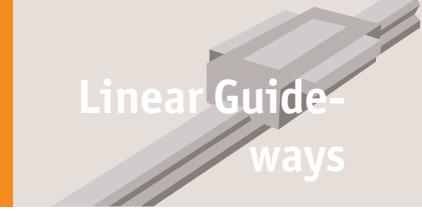
Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.35-2880	30	34	32	2880	40	M8	17	9	15	20	50.5
L1017.35-2960	30	34	32	2960	40	M8	17	9	15	20	55.1
L1017.35-3040	30	34	32	3040	40	M8	17	9	15	20	2.3
L1017.35-3120	30	34	32	3120	40	M8	17	9	15	20	6.9
L1017.35-3200	30	34	32	3200	40	M8	17	9	15	20	11.5
L1017.35-3280	30	34	32	3280	40	M8	17	9	15	20	16.1
L1017.35-3360	30	34	32	3360	40	M8	17	9	15	20	20.7
L1017.35-3440	30	34	32	3440	40	M8	17	9	15	20	25.3
L1017.35-3520	30	34	32	3520	40	M8	17	9	15	20	29.8
L1017.35-3600	30	34	32	3600	40	M8	17	9	15	20	34.4
L1017.35-3680	30	34	32	3680	40	M8	17	9	15	20	39.0
L1017.35-3760	30	34	32	3760	40	M8	17	9	15	20	43.6
L1017.35-3840	30	34	32	3840	40	M8	17	9	15	20	48.2
L1017.35-3920	30	34	32	3920	40	M8	17	9	15	20	52.8
L1017.35-4000	30	34	32	4000	40	M8	17	9	15	20	229.6



# 45mm Needle Roller Linear Rail

heavy duty

Linear Guide-ways



**L1017.45**

LINEAR GUIDEWAYS

### Material

Hardened and ground steel (typically 60 HRC).

part nos. L1017.FN (flanged) and L1017.UN (unflanged).  
Supplied with plastic covers for screws.

**rails and can only be used with corresponding needle roller carriages L1017. For standard linear guideways and carriages see part no. L1016.**

### Technical Notes

For carriages to suit the required load see

### Tips

**These are very heavy duty needle roller**

Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screw	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.45-0320	45	45	40	320	52.5	M12	17	14	20	25	3.42
L1017.45-0400	45	45	40	400	52.5	M12	17	14	20	25	4.28
L1017.45-0480	45	45	40	480	52.5	M12	17	14	20	25	5.14
L1017.45-0560	45	45	40	560	52.5	M12	17	14	20	25	5.99
L1017.45-0640	45	45	40	640	52.5	M12	17	14	20	25	6.85
L1017.45-0720	45	45	40	720	52.5	M12	17	14	20	25	7.70
L1017.45-0800	45	45	40	800	52.5	M12	17	14	20	25	8.56
L1017.45-0880	45	45	40	880	52.5	M12	17	14	20	25	9.42
L1017.45-0960	45	45	40	960	52.5	M12	17	14	20	25	10.27
L1017.45-1040	45	45	40	1040	52.5	M12	17	14	20	25	11.13
L1017.45-1120	45	45	40	1120	52.5	M12	17	14	20	25	11.98
L1017.45-1200	45	45	40	1200	52.5	M12	17	14	20	25	12.84
L1017.45-1280	45	45	40	1280	52.5	M12	17	14	20	25	13.70
L1017.45-1360	45	45	40	1360	52.5	M12	17	14	20	25	14.55
L1017.45-1440	45	45	40	1440	52.5	M12	17	14	20	25	15.41
L1017.45-1520	45	45	40	1520	52.5	M12	17	14	20	25	16.26
L1017.45-1600	45	45	40	1600	52.5	M12	17	14	20	25	17.12
L1017.45-1680	45	45	40	1680	52.5	M12	17	14	20	25	17.98
L1017.45-1760	45	45	40	1760	52.5	M12	17	14	20	25	18.83
L1017.45-1840	45	45	40	1840	52.5	M12	17	14	20	25	19.69
L1017.45-1920	45	45	40	1920	52.5	M12	17	14	20	25	20.54
L1017.45-2000	45	45	40	2000	52.5	M12	17	14	20	25	21.40
L1017.45-2080	45	45	40	2080	52.5	M12	17	14	20	25	22.26
L1017.45-2160	45	45	40	2160	52.5	M12	17	14	20	25	23.11
L1017.45-2240	45	45	40	2240	52.5	M12	17	14	20	25	23.97
L1017.45-2320	45	45	40	2320	52.5	M12	17	14	20	25	24.82
L1017.45-2400	45	45	40	2400	52.5	M12	17	14	20	25	25.68
L1017.45-2480	45	45	40	2480	52.5	M12	17	14	20	25	26.54
L1017.45-2560	45	45	40	2560	52.5	M12	17	14	20	25	27.39
L1017.45-2640	45	45	40	2640	52.5	M12	17	14	20	25	28.25
L1017.45-2720	45	45	40	2720	52.5	M12	17	14	20	25	29.10
L1017.45-2800	45	45	40	2800	52.5	M12	17	14	20	25	29.96



Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screw	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.45-2880	45	45	40	2880	52.5	M12	17	14	20	25	30.82
L1017.45-2960	45	45	40	2960	52.5	M12	17	14	20	25	31.67
L1017.45-3040	45	45	40	3040	52.5	M12	17	14	20	25	32.53
L1017.45-3120	45	45	40	3120	52.5	M12	17	14	20	25	33.38
L1017.45-3200	45	45	40	3200	52.5	M12	17	14	20	25	34.24
L1017.45-3280	45	45	40	3280	52.5	M12	17	14	20	25	35.10
L1017.45-3360	45	45	40	3360	52.5	M12	17	14	20	25	35.95
L1017.45-3440	45	45	40	3440	52.5	M12	17	14	20	25	36.81
L1017.45-3520	45	45	40	3520	52.5	M12	17	14	20	25	37.66
L1017.45-3600	45	45	40	3600	52.5	M12	17	14	20	25	38.52
L1017.45-3680	45	45	40	3680	52.5	M12	17	14	20	25	39.38
L1017.45-3760	45	45	40	3760	52.5	M12	17	14	20	25	40.23
L1017.45-3840	45	45	40	3840	52.5	M12	17	14	20	25	41.09
L1017.45-3920	45	45	40	3920	52.5	M12	17	14	20	25	41.94
L1017.45-4000	45	45	40	4000	52.5	M12	17	14	20	25	42.80





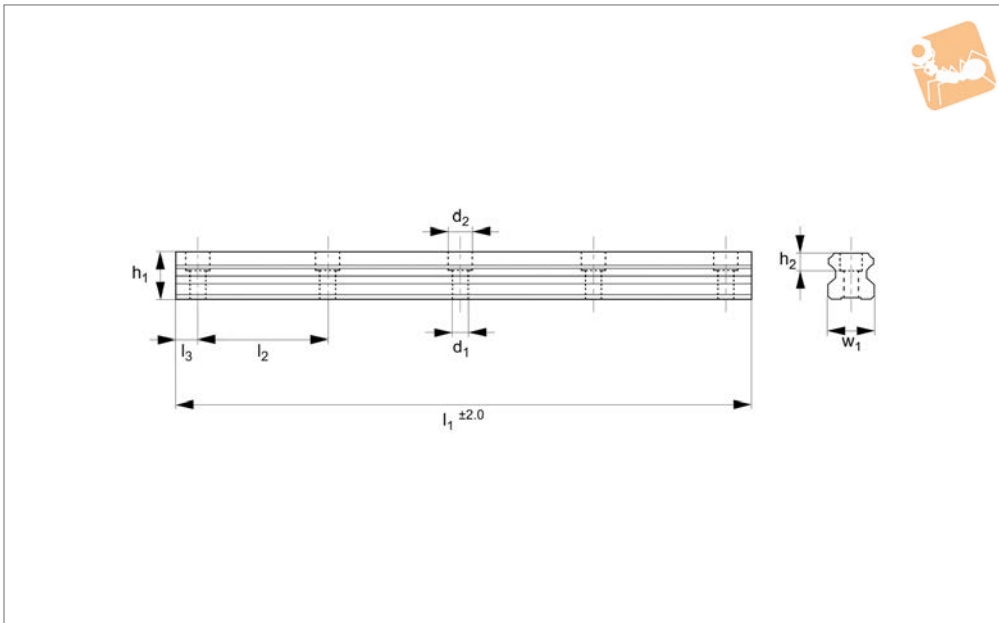
# 55mm Needle Roller Linear Rail

heavy duty

Linear Guide-ways



**L1017.55**



LINEAR GUIDEWAYS

### Material

Hardened and ground steel (typically 60 HRC).

### Technical Notes

For carriages to suit the required load see

part nos. L1017.FN (flanged) and L1017.UN (unflanged).

Supplied with plastic covers for screws.

### Tips

**These are very heavy duty needle roller**

**rails and can only be used with corresponding needle roller carriages L1017. For standard linear guideways and carriages see part no. L1016.**

Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.55-0315	55	53	48	315	60	M14	20	16	24	29	4.79
L1017.55-0420	55	53	48	420	60	M14	20	16	24	29	6.38
L1017.55-0525	55	53	48	525	60	M14	20	16	24	29	7.98
L1017.55-0630	55	53	48	630	60	M14	20	16	24	29	9.58
L1017.55-0735	55	53	48	735	60	M14	20	16	24	29	11.17
L1017.55-0840	55	53	48	840	60	M14	20	16	24	29	12.77
L1017.55-0945	55	53	48	945	60	M14	20	16	24	29	14.36
L1017.55-0960	55	53	48	960	60	M14	20	16	24	29	14.59
L1017.55-1050	55	53	48	1050	60	M14	20	16	24	29	15.96
L1017.55-1155	55	53	48	1155	60	M14	20	16	24	29	17.56
L1017.55-1260	55	53	48	1260	60	M14	20	16	24	29	19.15
L1017.55-1365	55	53	48	1365	60	M14	20	16	24	29	20.75
L1017.55-1470	55	53	48	1470	60	M14	20	16	24	29	22.34
L1017.55-1575	55	53	48	1575	60	M14	20	16	24	29	23.94
L1017.55-1680	55	53	48	1680	60	M14	20	16	24	29	25.54
L1017.55-1785	55	53	48	1785	60	M14	20	16	24	29	27.13
L1017.55-1890	55	53	48	1890	60	M14	20	16	24	29	28.73
L1017.55-1995	55	53	48	1995	60	M14	20	16	24	29	30.32
L1017.55-2100	55	53	48	2100	60	M14	20	16	24	29	31.92
L1017.55-2205	55	53	48	2205	60	M14	20	16	24	29	33.52
L1017.55-2310	55	53	48	2310	60	M14	20	16	24	29	35.11
L1017.55-2415	55	53	48	2415	60	M14	20	16	24	29	36.71
L1017.55-2520	55	53	48	2520	60	M14	20	16	24	29	38.30
L1017.55-2625	55	53	48	2625	60	M14	20	16	24	29	39.90
L1017.55-2730	55	53	48	2730	60	M14	20	16	24	29	41.50
L1017.55-2835	55	53	48	2835	60	M14	20	16	24	29	43.09
L1017.55-2940	55	53	48	2940	60	M14	20	16	24	29	44.69
L1017.55-3045	55	53	48	3045	60	M14	20	16	24	29	46.28
L1017.55-3150	55	53	48	3150	60	M14	20	16	24	29	47.88
L1017.55-3255	55	53	48	3255	60	M14	20	16	24	29	49.48
L1017.55-3360	55	53	48	3360	60	M14	20	16	24	29	51.07
L1017.55-3465	55	53	48	3465	60	M14	20	16	24	29	52.67

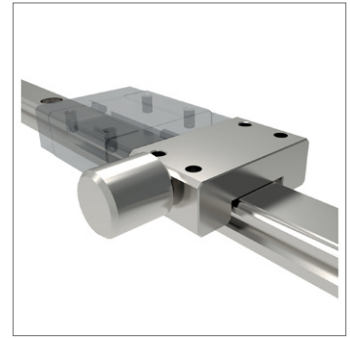


Order No.	Rail size	w <sub>1</sub>	h <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	For screws	h <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	Weight kg
L1017.55-3570	55	53	48	3570	60	M14	20	16	24	29	54.26
L1017.55-3675	55	53	48	3675	60	M14	20	16	24	29	55.86
L1017.55-3780	55	53	48	3780	60	M14	20	16	24	29	57.46
L1017.55-3885	55	53	48	3885	60	M14	20	16	24	29	59.05
L1017.55-3990	55	53	48	3990	60	M14	20	16	24	29	60.65



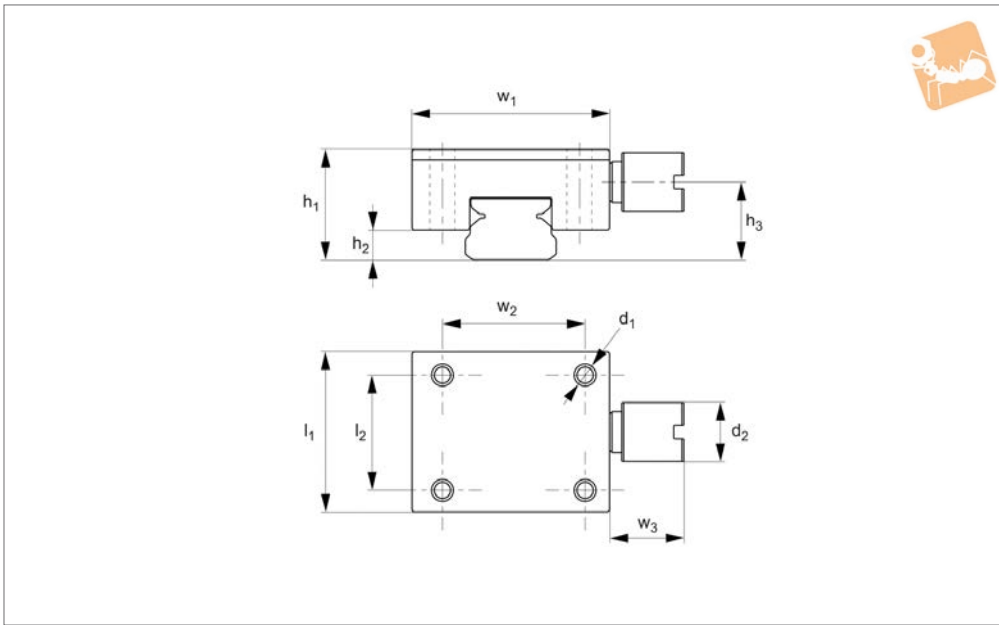
# Manual Clamps for Miniature Rail for L1010 and L1012

Linear Guide-ways



**L1010.CL**

LINEAR GUIDEWAYS



**Material**

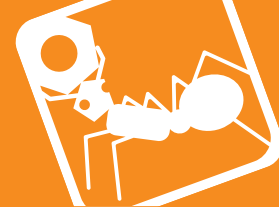
Corrosion resistant stainless steel, hardened (similar to 440C).

**Technical Notes**

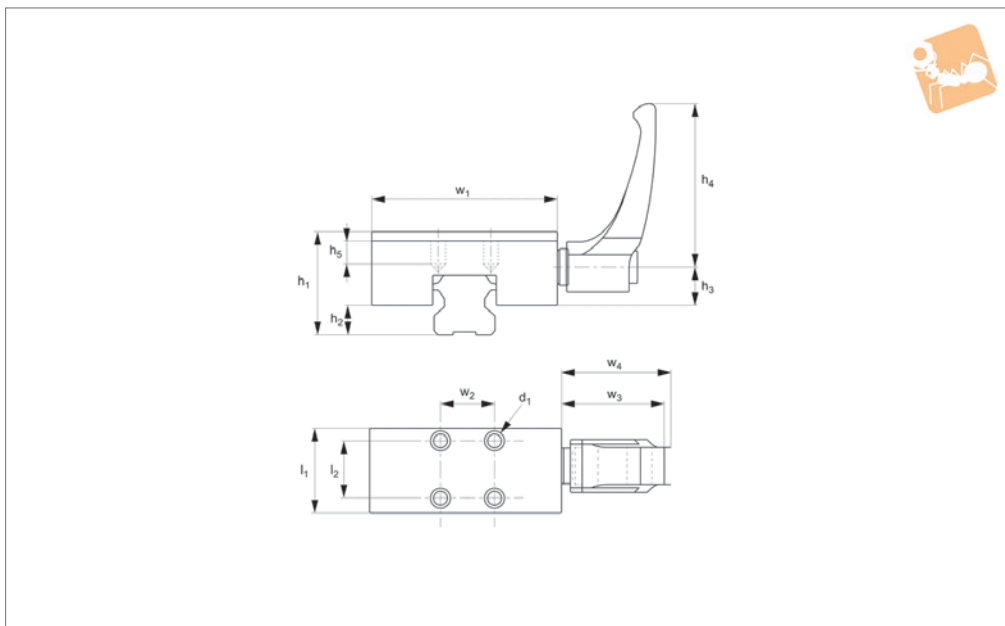
The manual rail clamps are used alongside the rail carriges. Activating the clamping

knob presses the clamp contact surfaces onto the rail, clamping it in place.

Order No.	For rail	$h_1$	$l_1$	$w_1$	$h_2$	$h_3$	$l_2$	$w_2$	$w_3$	$d_1$	$d_2$	Holding force kgf	Torque to Nm
L1010.CL07	L1010.07	8	12	17	2	4.3	8	12	7	M2	6	65	0.11
L1010.CL09	L1010.09	10	17	20	2.7	5.35	11	15	9	M3	8	100	0.17
L1010.CL12	L1010.12	13	19	27	3.5	7.15	13	20	10	M3	10	150	0.35
L1010.CL15	L1010.15	16	20	32	5	8.05	14	25	14	M3	12	180	0.75
L1012.CL14	L1012.14	9	12	25	3	4.3	8	19	6.65	M2	6	65	0.10
L1012.CL18	L1012.18	12	17	30	4.2	5.85	11	23	9	M3	8	100	0.17
L1012.CL24	L1012.24	14	19	40	4	7.65	13	30	10	M3	10	150	0.35
L1012.CL42	L1012.42	16	22	60	4.5	8.55	15	45	14.7	M4	12	180	0.75



**L1016.CL**



**Material**  
Aluminium body, steel contact faces.

**Technical Notes**  
The manual rail clamps are used in

conjunction with the rail carriages L1016.F and L1016.U (flanged and unflanged). By adjusting the clamping lever, the contact sections are pressed into contact with the rail, clamping the carriage in place.

Order No.	For rail	$h_1$	$l_1$	$w_1$	$h_2$	$h_3$	$h_4$	$l_2$	$w_2$	$w_3$	$w_4$	$d_1$	Holding force N	Torque to Nm
L1016.CL15-24	15	24	25	47	4.5	12.5	44	17	17	30.5	33.5	M 4	1200	5
L1016.CL15-28	15	28	25	47	4.5	12.5	44	17	17	30.5	33.5	M 4	1200	5
L1016.CL20-28	20	28	24	60	8.0	13.0	63	15	15	38.5	41.5	M 5	1200	7
L1016.CL20-30	20	30	24	60	8.0	13.0	63	15	15	38.5	41.5	M 5	1200	7
L1016.CL25-33	25	33	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL25-36	25	36	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL25-40	25	40	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL30-42	30	42	39	90	12.0	21.5	78	22	22	46.5	50.5	M 6	2000	15
L1016.CL35-48	35	48	39	100	13.0	21.5	78	24	24	46.5	50.5	M 8	2000	15
L1016.CL45-60	45	60	44	120	12.0	26.5	78	26	26	46.5	50.5	M10	2000	15
L1016.CL55-70	55	70	49	140	17.0	31.0	95	30	30	56.5	61.5	M14	2000	22



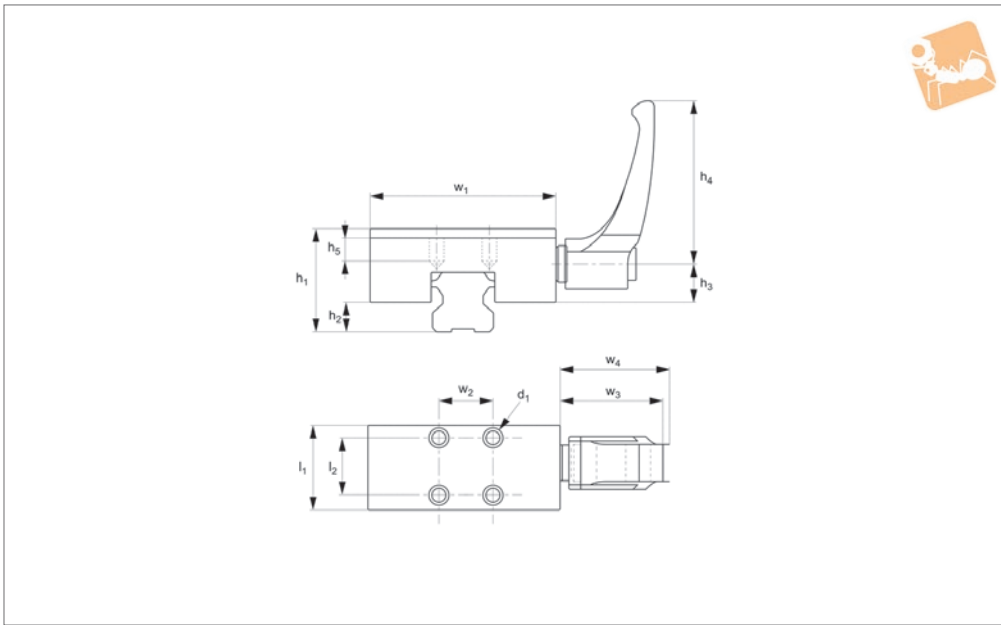
# Rail Clamp for aluminium rail L1018

Linear Guide-  
ways



**L1018.CL**

LINEAR GUIDEWAYS



**Material**

Aluminium body, plastic contact faces.

contact sections are pressed into contact with the rail, clamping the carriage in place.

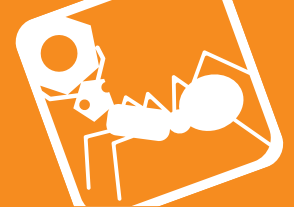
L1018.

**Technical Notes**

By adjusting the clamping lever, the

Suitable for our aluminium linear rails

Order No.	For rail	$h_1$	$l_1$	$w_1$	$h_2$	$h_3$	$h_4$	$l_2$	$w_2$	$w_3$	$w_4$	$d_1$	Holding force N	Torque to Nm max.
<b>L1018.CL15-24</b>	15	24	20	34	4.5	12.9	40	10	10	29.9	33.3	M 3	130	3
<b>L1018.CL20-30</b>	20	30	24	44	6.0	16.0	40	12	12	29.9	33.4	M 4	250	3
<b>L1018.CL25-36</b>	25	36	30	48	7.0	19.6	44	15	15	29.8	33.3	M 5	330	3



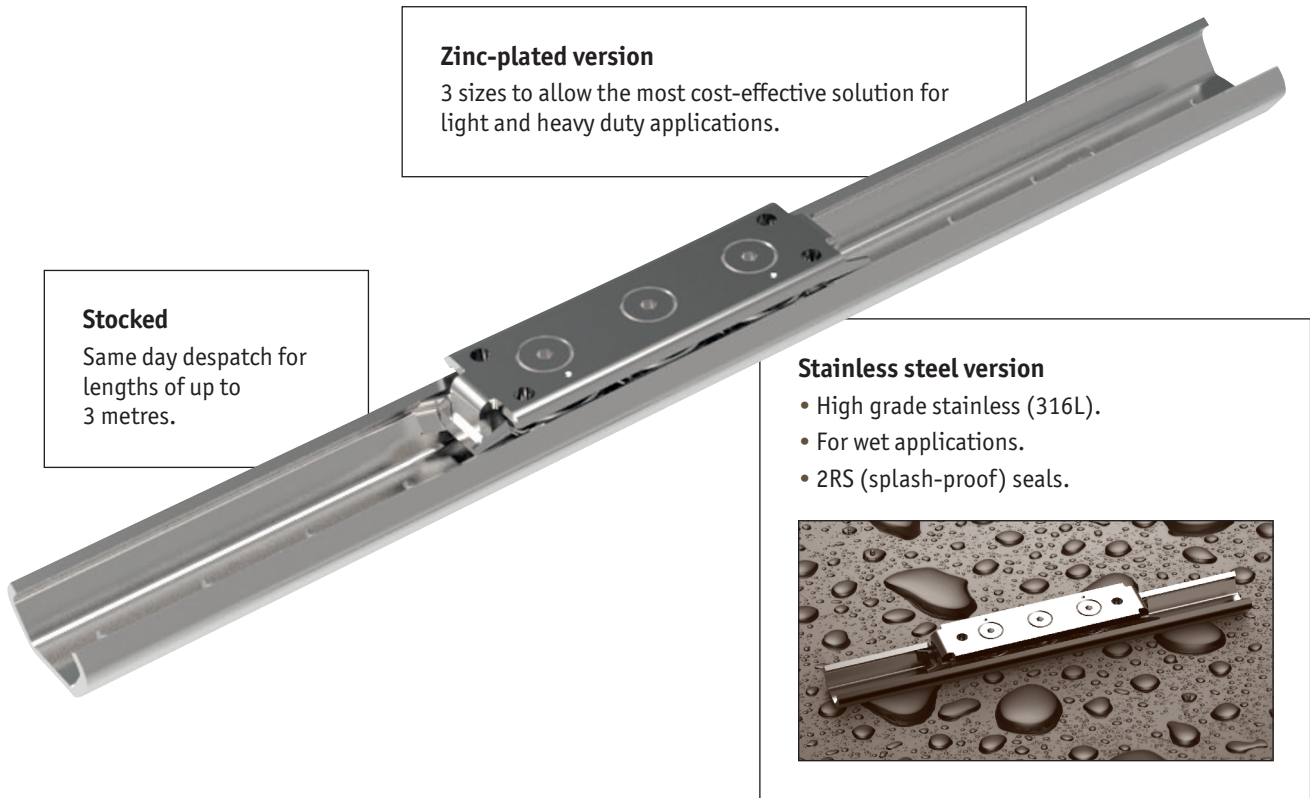
The X rail system is a highly cost-effective product made of zinc plated steel (L1970), the stainless steel version (L1971) has a high level of corrosion resistance.

**Cost-effective and corrosion resistant**

The X rail is relatively inexpensive as it is based on a rolled formed, steel section. It allows for adjustments due to misalignment of the structure that it is being used on and with internal raceways is suited for robust use but is not suitable for applications having significant moment loads.

The stainless steel (316L) version uses FDA and USDA compliant materials.

LONG LINEAR RAILS



**Zinc-plated version**

3 sizes to allow the most cost-effective solution for light and heavy duty applications.

**Stocked**

Same day despatch for lengths of up to 3 metres.

**Stainless steel version**

- High grade stainless (316L).
- For wet applications.
- 2RS (splash-proof) seals.

**Flexibility in set-up**

X rail allows the sliders one rail to remain fixed in place but allows some lateral movement of the sliders in the other rail to adapt to any misalignment.



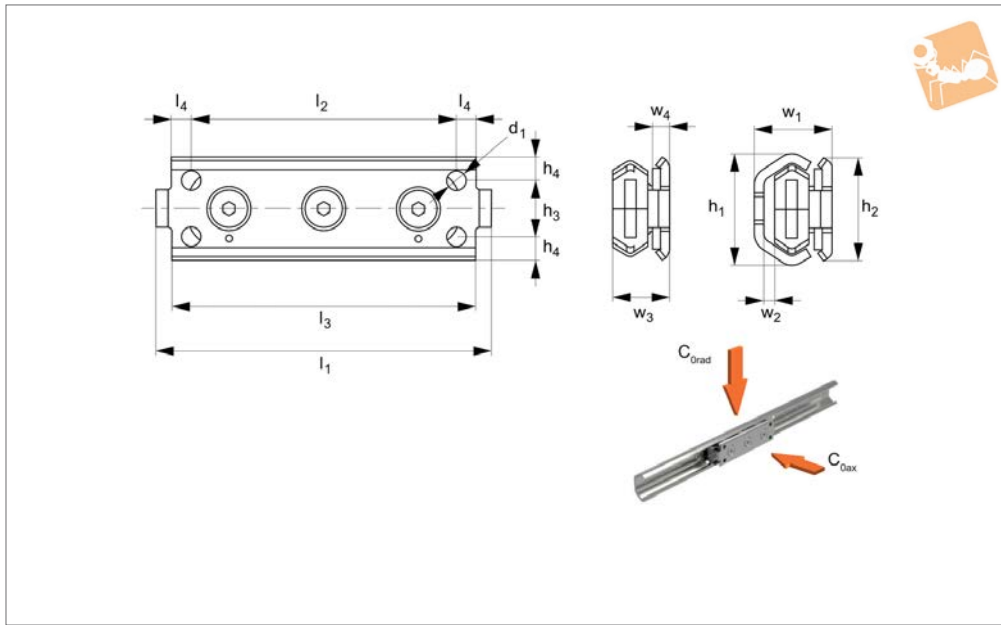
Using two T rails good set-up accuracy is required



# Low Profile Steel Sliders for T rail (master)



## Long Linear Rails



### L1970.LP

LONG LINEAR RAILS

#### Material

Steel (BS1449-HR1), zinc plated.  
Rollers with metal seals (2Z).

#### Technical Notes

The three sizes of sliders are suited to the relevant L1970.TES rail size.

Select the size and quantity to suit the required load.

#### Tips

The punched dot marked on the slider body indicates the orientation for the loading of the fixed rollers.

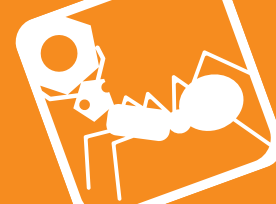
The middle roller is eccentric, allowing the preload to be easily adjusted when mounted inside the rail.

Coefficient of friction (without seals) 0.01.

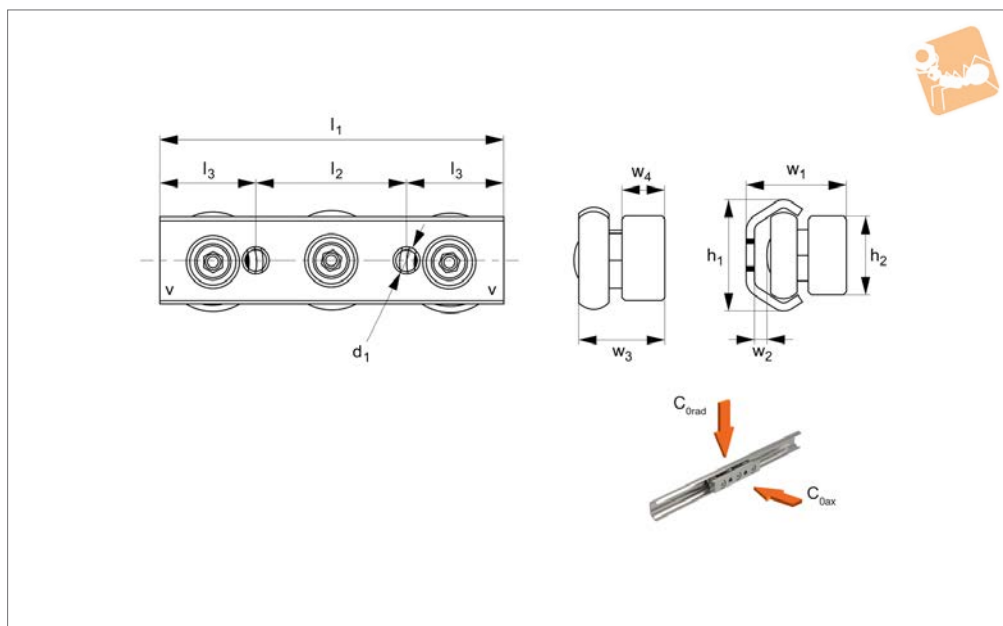
Order No.	Size	$h_1$	$h_2$	$h_3$	$h_4$	$l_1$	$l_2$	Weight kg
L1970.20T-080	20	19.2	18	-	9	80	60	0.05
L1970.30T-088	30	29.5	27	15	6	88	70	0.11
L1970.45T-150	45	46.4	40	23	8.5	150	120	0.40

Order No.	$l_3$	$l_4$	$d_1$	$w_1$	$w_2$	$w_3$	$w_4$	Load $C_{0\text{ax}}$ N max.	Load $C_{0\text{rad}}$ N max.
L1970.20T-080	71	10	M5	16	2.5	11.5	5.5	185	326
L1970.30T-088	80	5	M5	20.5	3.5	15	4.5	435	870
L1970.45T-150	135	7.5	M6	31	5	22	4	935	1740



**L1970.SBT**



**Material**

Steel (BS1449-HR1), zinc plated.  
Rollers with metal seals (2Z).

**Technical Notes**

The three sizes of sliders are suited to the relevant L1970.TES rail size.

For size 20 sliders there are two threaded holes on the centreline.

Select the size and quantity to suit the required load.

**Tips**

The „V“ marks on the slider body indicate

the orientation for the loading of the fixed roller.

The middle roller is eccentric, allowing the preload to be easily adjusted when mounted inside the rail.

Coefficient of friction (without seals) 0.01.

Order No.	Size	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	Weight kg
L1970.20T-060	20	19.2	10	-	-	60	20	0.04
L1970.26T-080	26	26.1	25	-	12.5	80	30	0.10
L1970.30T-080	30	29.5	20	-	-	80	35	0.17
L1970.40T-135	40	39.5	35	23	6.0	135	-	0.45
L1970.45T-120	45	46.4	25	-	-	120	55	0.47

Order No.	l <sub>3</sub>	l <sub>4</sub>	d <sub>1</sub>	d <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 ax</sub> N max.	Load C <sub>0 rad</sub> N max.
L1970.20T-060	20	-	M5	-	17.8	2.6	13	6	185	326
L1970.26T-080	25.0	-	M 5	-	22.00	3.7	15.80	4	400	800
L1970.30T-080	22.5	-	M6	-	26.5	3.3	20.7	10	435	870
L1970.40T-135	7.5	120	-	M 6	28.65	5.0	20.65	6	800	1600
L1970.45T-120	32.5	-	M8	-	38.0	5.1	28.9	12	935	1740

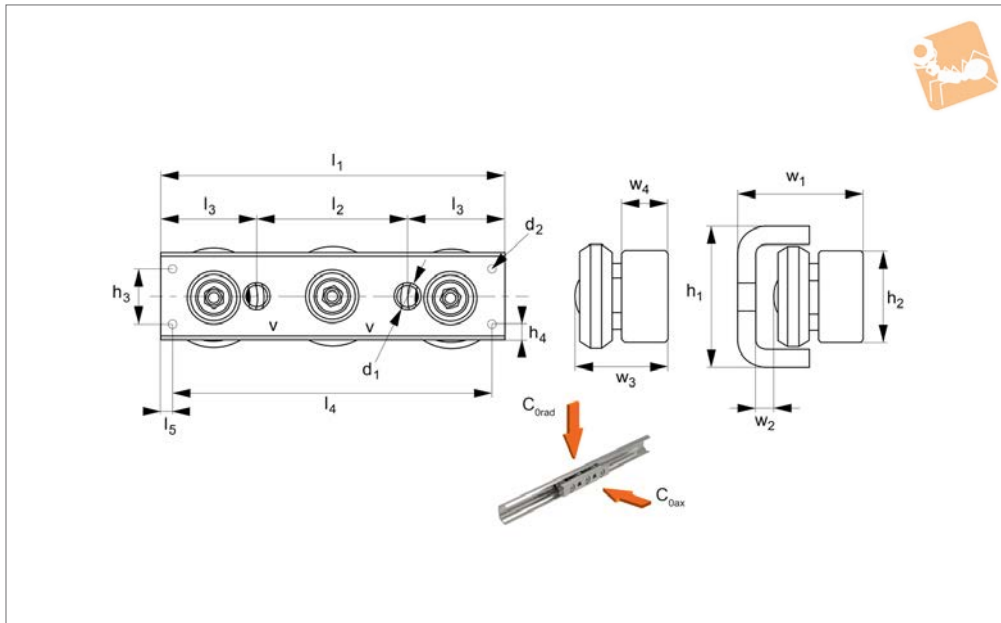




# Solid Body Steel Sliders for U rail (slave)



## Long Linear Rails



## L1970.SBU

LONG LINEAR RAILS

### Material

Steel (BS1449-HR1), zinc plated.  
Rollers with metal seals (Z2).

### Technical Notes

The three sizes of sliders are suited to the relevant L1970.UES rail size.

Select the size and quantity to suit the required load.

### Tips

The „V” marks on the slider body indicate the orientation for the loading of the fixed rollers.

The middle roller is eccentric, allowing the preload to be easily adjusted when mounted inside the rail. Coefficient of friction (without seals) 0.01.

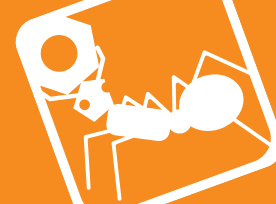
### Important Notes

Sliders in U rails cannot accept axial loads.

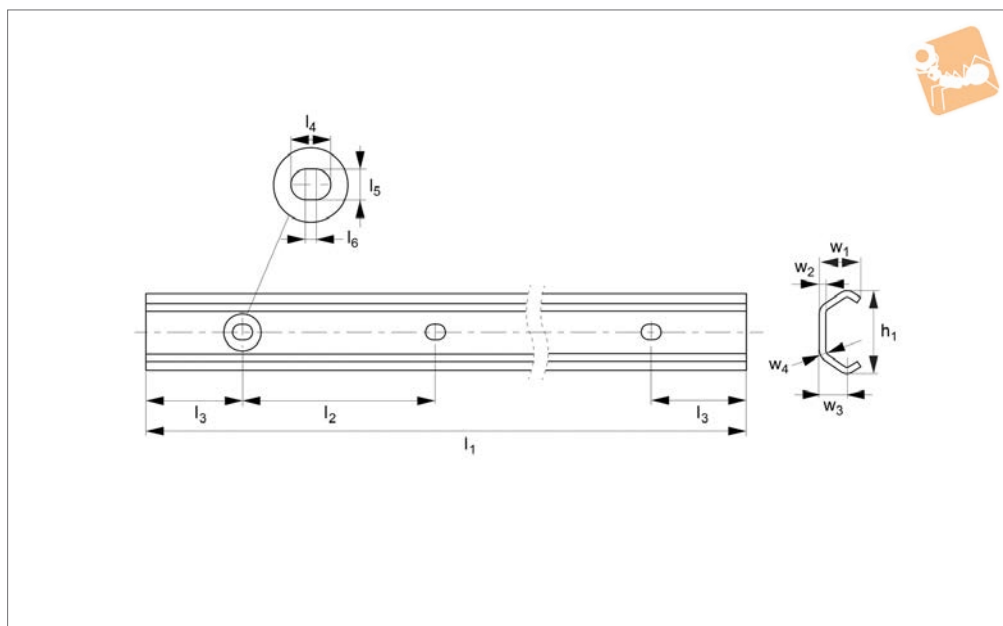
Order No.	Size	$h_1$	$h_2$	$h_3$	$h_4$	$l_1$	$l_2$	Weight kg
L1970.30U-080	30	31.8	20	-	-	80	35	0.16
L1970.40U-135	40	38.5	35	23	8	135	-	0.45
L1970.45U-120	45	44.8	25	-	-	120	55	0.45

Order No.	$l_3$	$l_4$	$l_5$	$d_1$	$d_2$	$w_1$	$w_2$	$w_3$	$w_4$	Load $C_{0\ rad}$ N max.
L1970.30U-080	22.5	-	-	M6	-	$27,95 \pm 1,00$	3.5	19.2	10	870
L1970.40U-135	-	120	7.5	-	M 6	$29,95 \pm 1,60$	-	-	6	1600
L1970.45U-120	32.5	-	-	M8	-	$37,25 \pm 1,75$	5	25.5	12	1740



## L1970.T



**Material**  
Steel (BS1449-HR1), zinc plated.

7380) or Torx screws (see part no. L1970.S).

**Technical Notes**  
Use hex. socket oval head screws (ISO

Order No.	Rail size	For screw	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	$w_4$	Weight kg
L1970.20T-1040	20	M 4	19.2	1040	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	0.47
L1970.20T-2080	20	M 4	19.2	2080	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	0.47
L1970.20T-3120	20	M 4	19.2	3120	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	0.47
L1970.26T-1040	26	M 5	26.1	1040	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	0.80
L1970.26T-2080	26	M 5	26.1	2080	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	0.80
L1970.26T-3120	26	M 5	26.1	3120	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	0.80
L1970.30T-1040	30	M 5	29.5	1040	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	0.90
L1970.30T-2080	30	M 5	29.5	2080	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	0.90
L1970.30T-3120	30	M 5	29.5	3120	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	0.90
L1970.40T-1040	40	M 8	39.5	1040	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	1.55
L1970.40T-2080	40	M 8	39.5	2080	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	1.55
L1970.40T-3120	40	M 8	39.5	3120	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	1.55
L1970.45T-1040	45	M 8	46.4	1040	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	2.29
L1970.45T-2080	45	M 8	46.4	2080	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	2.29
L1970.45T-3120	45	M 8	46.4	3120	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	2.29

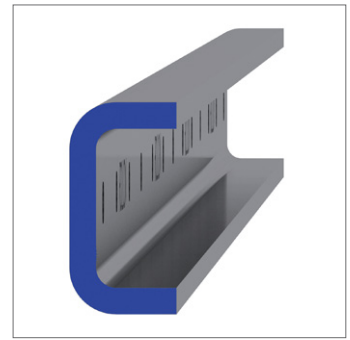
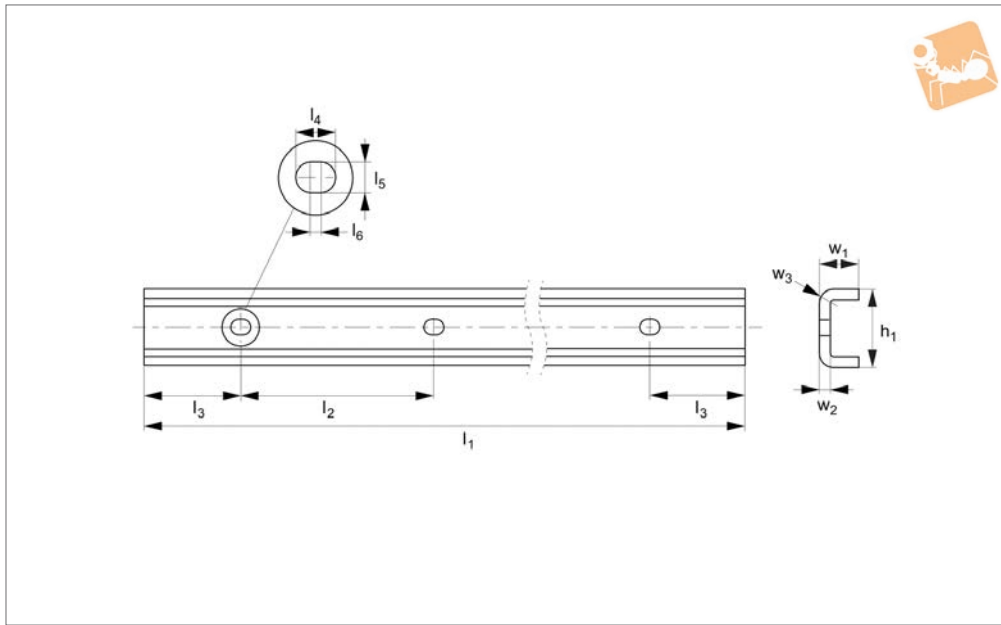


# Steel X Rail

## U rail (slave)



# Long Linear Rails



# L1970.U

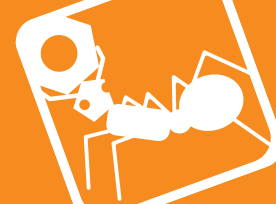
LONG LINEAR RAILS

**Material**  
Steel (BS1449-HR1), zinc plated.

7380) or Torx screws (see part no. L1970.S).

**Technical Notes**  
Use hex. socket oval head screws (ISO

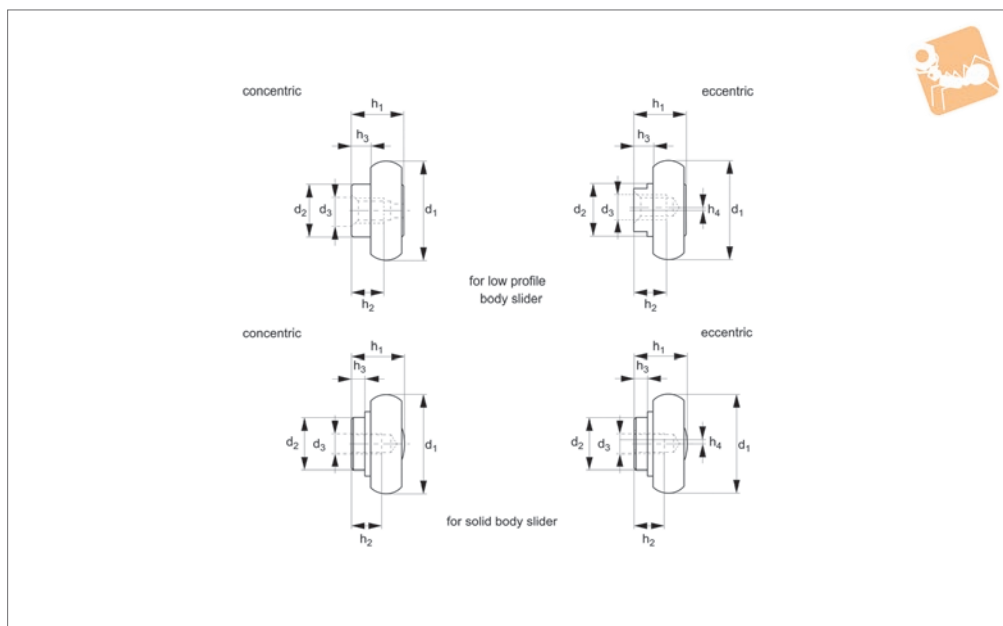
Order No.	Rail size	For screw	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	Weight kg
L1970.30U-1040	30	M5	31.8	1040	80	40	8.4	6.4	2	16	4	7	1.4
L1970.30U-2080	30	M5	31.8	2080	80	40	8.4	6.4	2	16	4	7	2.8
L1970.30U-3120	30	M5	31.8	3120	80	40	8.4	6.4	2	16	4	7	4.2
L1970.40U-1040	40	M8	38.5	1040	80	40	13	9	4	21.0	3	6	1.7
L1970.40U-2080	40	M8	38.5	2080	80	40	13	9	4	21.0	3	6	3.4
L1970.40U-3120	40	M8	38.5	3120	80	40	13	9	4	21.0	3	6	5.1
L1970.45U-1040	45	M8	44.8	1040	80	40	11	9	2	24.5	4.5	9.5	2.9
L1970.45U-2080	45	M8	44.8	2080	80	40	11	9	2	24.5	4.5	9.5	5.8
L1970.45U-3120	45	M8	44.8	3120	80	40	11	9	2	24.5	4.5	9.5	8.7



LONG LINEAR RAILS



## L1970.CRT



### Material

Rollers with metal seals (2Z).

### Technical Notes

For use with X rail steel sliders in T type rail.

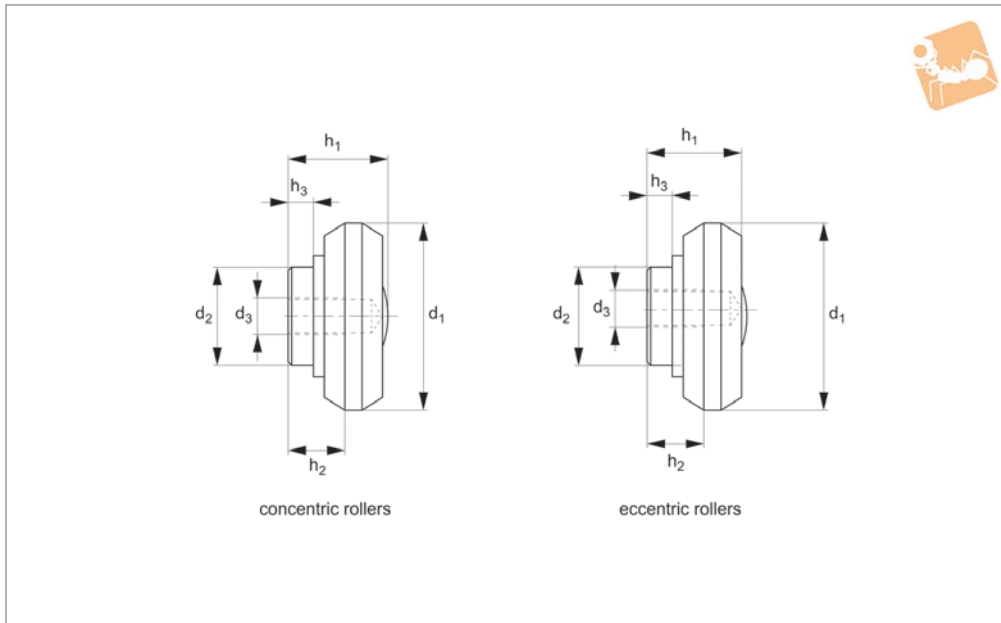
Order No.	For slider type	Type	Body	$h_1$	$h_2$	$h_3$	$h_4$	$d_1$	$d_2$	$d_3$	$w_1$	$w_2$	$w_3$	Weight g
L1970.CRPN20	L1970.20T-080	Concentric	Low prof.	8.2	6.0	4.0	-	14.0	9	M 4	8.5	6.0	4.0	5
L1970.CRPA20	L1970.20T-080	Eccentric	Low prof.	8.2	6.0	4.0	0.5	14.0	9	M 4	8.5	6.0	4.0	5
L1970.CRPN30	L1970.30T-088	Concentric	Low prof.	12.0	8.0	4.5	-	22.8	12	M 5	12.0	7.0	4.5	20
L1970.CRPA30	L1970.30T-088	Eccentric	Low prof.	12.0	8.0	4.5	0.6	22.8	12	M 5	12.0	7.0	4.5	20
L1970.CRPN45	L1970.45T-150	Concentric	Low prof.	17.3	11.5	6.0	-	35.6	17	M 6	18.0	12.0	6.0	68
L1970.CRPA45	L1970.45T-150	Eccentric	Low prof.	17.3	11.5	6.0	0.8	35.6	17	M 6	18.0	12.0	6.0	68
L1970.CRN20	L1970.20T-060	Concentric	Solid	8.7	6.7	6.0	-	14.0	6	M 4	8.7	6.0	1.8	5
L1970.CRA20	L1970.20T-060	Eccentric	Solid	8.7	6.7	6.0	0.5	14.0	6	M 4	8.7	6.0	1.8	5
L1970.CRN30	L1970.30T-080	Concentric	Solid	13.8	10.3	9.0	-	22.8	10	M 5	14.0	9.0	3.8	20
L1970.CRA30	L1970.30T-080	Eccentric	Solid	13.8	10.3	9.0	0.6	22.8	10	M 5	14.0	9.0	3.8	20
L1970.CRN45	L1970.45T-120	Concentric	Solid	20.5	15.0	14.5	-	35.6	12	M 6	20.5	14.5	4.5	68
L1970.CRA45	L1970.45T-120	Eccentric	Solid	20.5	15.0	14.5	0.8	35.6	12	M 6	20.5	14.5	4.5	68



# Steel Replacement Rollers for U version steel X rail



Long Linear  
Rails



**L1970.CRU**

LONG LINEAR RAILS

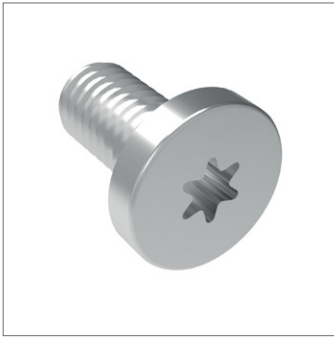
### Material

Rollers with metal seals (2Z).

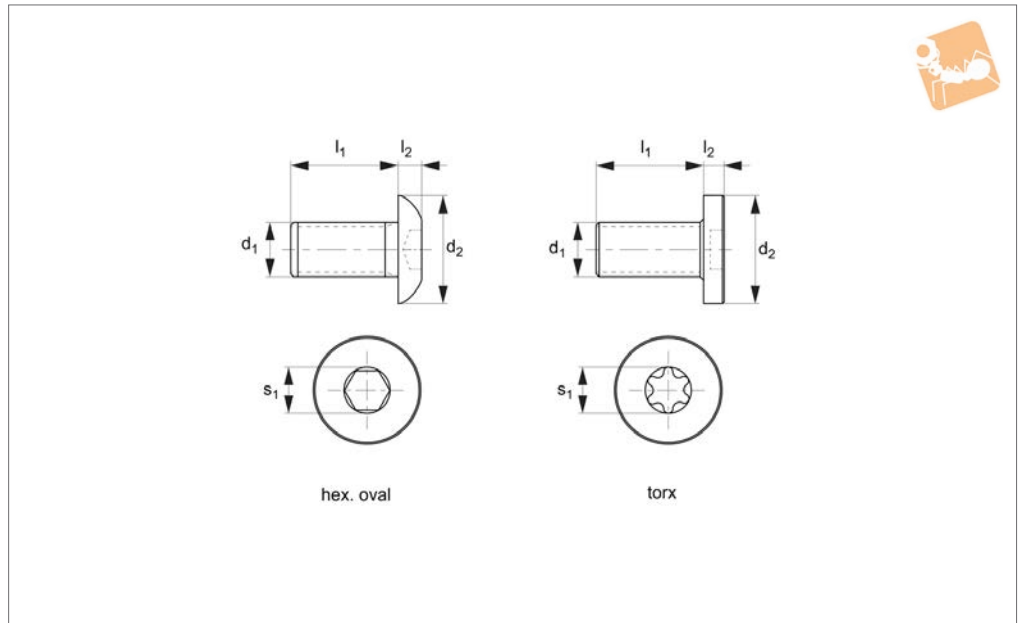
### Technical Notes

For use with X rail steel sliders in U type rail.

Order No.	For slider type	Type	Body	$h_1$	$h_2$	$h_3$	$d_1$	$d_2$	$d_3$	Weight g
L1970.CPN20	L1970.20U-060	Concentric	Solid	7.35	5.5	1.8	14.0	6	M 4	4
L1970.CPA20	L1970.20U-060	Eccentric	Solid	7.35	5.5	1.8	14.0	6	M 4	4
L1970.CPN30	L1970.30U-080	Concentric	Solid	13.00	7.0	3.5	23.2	10	M 5	18
L1970.CPA30	L1970.30U-080	Eccentric	Solid	13.00	7.0	3.5	23.2	10	M 5	18
L1970.CPN45	L1970.45U-120	Concentric	Solid	18.00	12.0	4.5	35.0	12	M 6	60
L1970.CPA45	L1970.45U-120	Eccentric	Solid	18.00	12.0	4.5	35.0	12	M 6	60



**L1970.S**

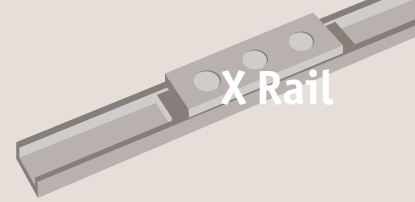


**Material**

ISO 7380 hex. socket oval head and Torx screws (both zinc plated).

Strength class 10,9.

Order No.	Type	$l_1$	$l_2$	$s_1$	Torque to Nm	$d_1 \times p$	$d_2$
L1970.T20	Torx	8	2	T20	3	M4 x 0,7	8
L1970.T30	Torx	10	2	T25	9	M5 x 0,8	10
L1970.T45	Torx	16	3	T40	22	M8 x 1,25	16



### Specifications

- Maximum speed 1,5 m/s.
- Maximum acceleration 2 m/s<sup>2</sup>.
- Maximum rail length 3120 mm.
- Three rail sizes 20, 30 and 45.
- Temperature range steel -30°C to +120°C.
- Temperature range stainless -30°C to +100°C.
- Sliders have two fixed rollers and one eccentric roller for adjustment of preload.
- Two slider body types; solid slider version and low profile slider version (T rails only).
- Joining of rails together, if required please discuss with our Technical Department.
- Not suitable for large moment loads (in this case use two or more sliders/rails to reduce moment loads).
- For applications with high moment and/or higher precision loads please use our Compact Rail System.

### Applications



#### Safety guarding

Extending protective systems  
sliding gates  
automatic pick & place



#### Sliding doors & windows

Internal sliding doors  
gates • roof lights  
display cases



#### Medical technology

X-ray equipment  
dental chairs  
bed extensions



#### Food, drink & pharmaceuticals

Food handling conveyors  
pharmaceutical factories  
stainless display equipment



#### Transport (naval)

Sliding hatches  
pull-out storage



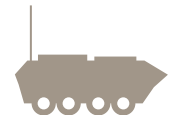
#### Transport (rail)

Seat adjustment  
sliding doors  
battery removal units



#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



#### Transport (military)

Sliding seats  
protective hatches  
stretcher extensions



#### Water & waste

Sliding protective hatches  
wash down applications  
water tank doors



L1970 Zinc-plated steel version



Zinc-Plated Steel

Solid body slider



L1970.CEST/U  
(2Z dust proof seals)

Low profile slider

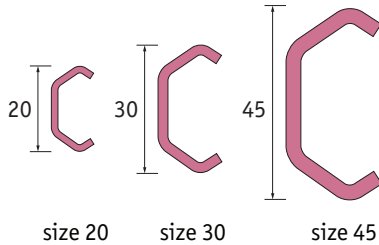


L1970.CES  
(2Z dust proof seals)



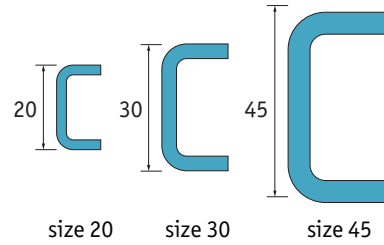
Zinc-Plated Steel

T Rail (master)



L1970.TES

U Rail (slave)



L1970.UES

L1971 Stainless Steel version



Stainless Steel

Solid body



L1971.CEXT/U  
(2RS splash proof seals)

Low profile slider

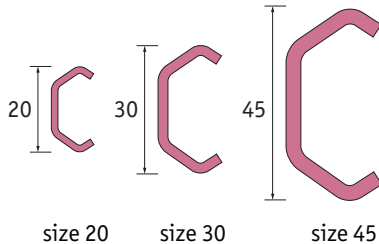


L1971.CEX  
(2RS splash proof seals)



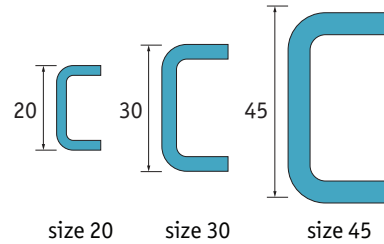
Stainless Steel

T Rail (master)



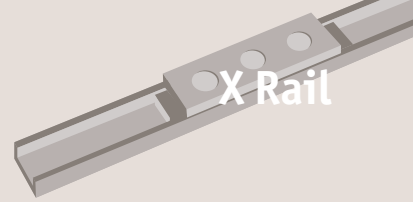
size 20 size 30 size 45

U Rail (slave)

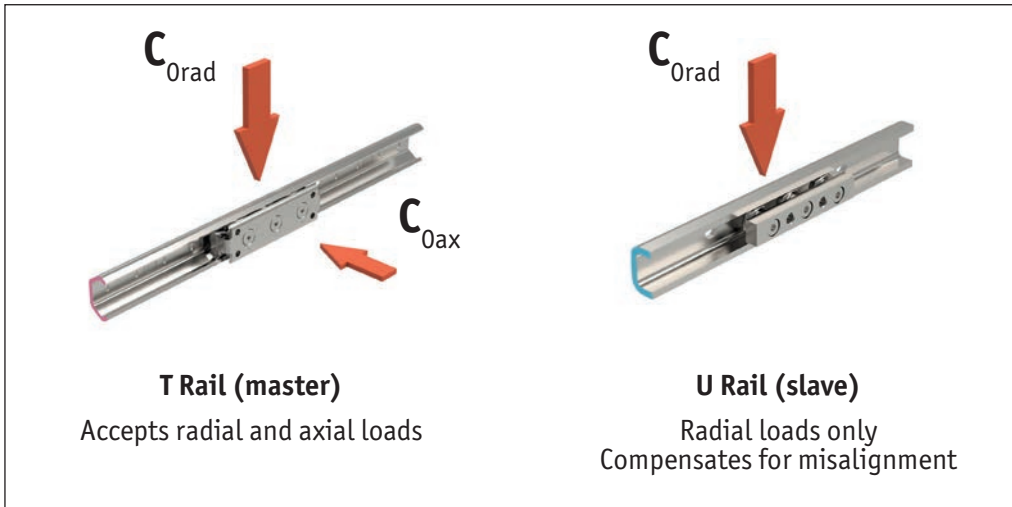


size 20 size 30 size 45





### Two rail types



### Selecting the correct rail

#### Firstly

The decision needs to be made if zinc plated steel or stainless steel rails and sliders are required.

- The zinc plated steel version (L1970) of the product is considerably less expensive than the 316L stainless steel type (L1971).
- The rollers in the zinc plated (L1970) sliders are protected by 2Z metal bearing covers. These are not meant to be used in anything other than a dry environment.
- The L1971 stainless steel X rail system is resistant to water and many chemicals. The slider rollers have rubber 2RS roller seals – being water resistant (not to be used fully submersed).

#### Secondly

The size of system to be used is selected.

- There are three different rail and slider sizes: 20, 30 and 45.
- The load that is being carried and its shape needs to be considered. The X rail system is not really suited for moment loads. If moment loads exist then two or more rails/sliders should be used to offset this. Typically 2, 4 or more sliders are used and the load carried should be divided over the number of sliders bearing in mind that if using a U rail slider along with a T rail, the U rail sliders do not have any axial load capacity.
- The rails are supplied in standard lengths of 1040mm, 2080mm and 3120mm – and can easily be cut to other required lengths by Automotion (on request).

#### Finally

Decide whether a low profile slider or a solid body slider is required (low profile sliders are only available for T rails). The low profile (L1970.CES and L1971.CEX) sliders are less expensive than the solid body sliders.

#### Please note

It is very important to ensure that the correct low profile fixing screws are used with this rail (see part no. L1970.S for zinc plated steel and L1971.S for stainless steel). Using other higher profile heads may lead to contact between the underside of the slider and the top of the screws.

X Rail from Automotion Components

LONG LINEAR RAILS



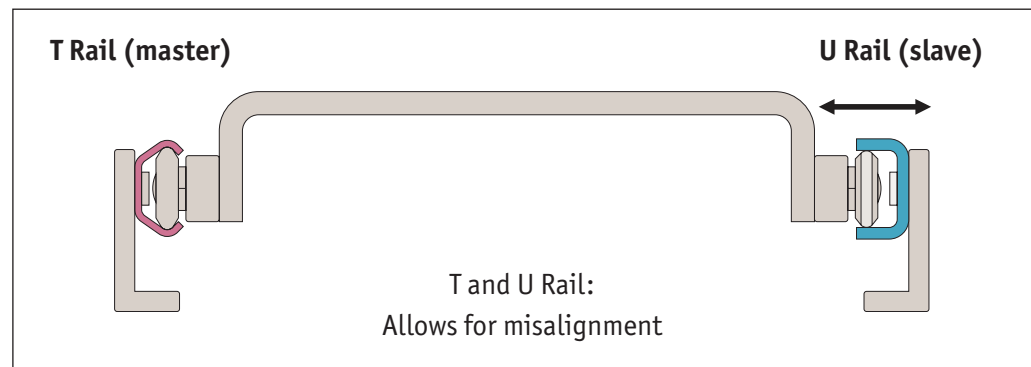
### T rails (master) and U rails (slave)

It is often the case, with the X rail system, that two T rails are used in the system design. However, where there are substantial alignment issues it is better to use a T rail (master) and U rail (slave) as below.

This allows the slider in the T rail to remain fixed in the place, but allows some lateral movement of the sliders in the U rail to adapt to any misalignment and avoid any issues of stiction.

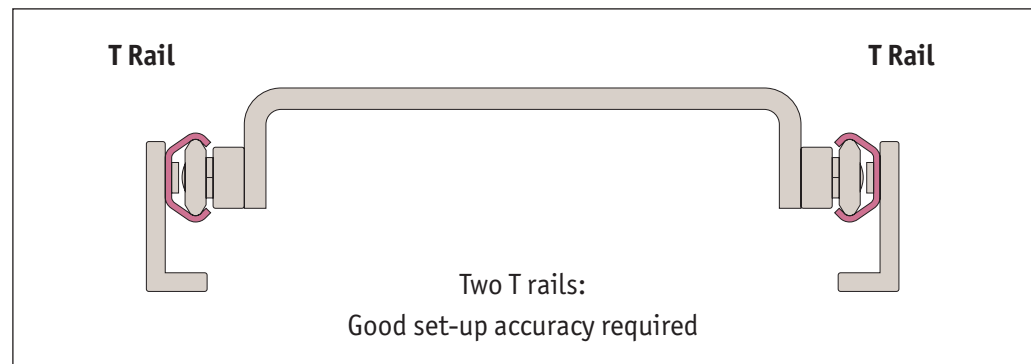
U rails have flat parallel raceways that allow free lateral movement of the sliders. The maximum lateral movement for each size rail is shown in the table that follows.

### T and U rails



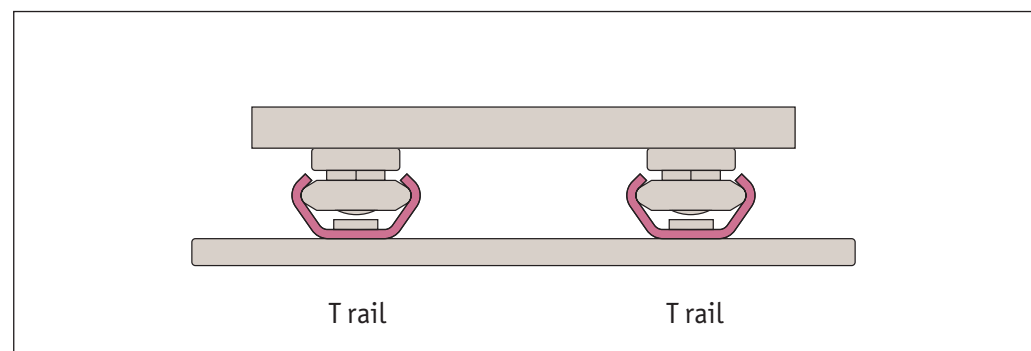
### T and T rails

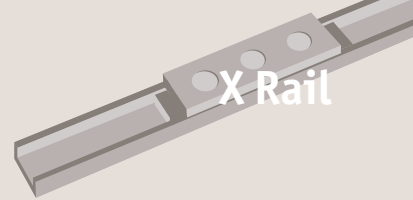
Some customers prefer to use two T rails as shown below. Whilst this is acceptable, a greater degree of accuracy is required in the structure on which the system is used.



It is however also acceptable (but not the preferred method), to use the rails as below but the alignment accuracy needed is slightly greater and in this set up only T type rails can be used. In this instance we recommend the use of solid body sliders L1970.CEST (steel) or L1971.CEST (stainless) rather than the low profile sliders.

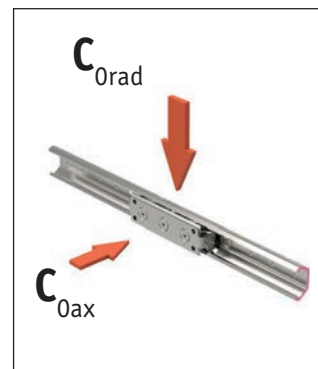
Ensure a significant margin of safety is applied to the load ratings or consider using our hardened steel Compact Rail System.





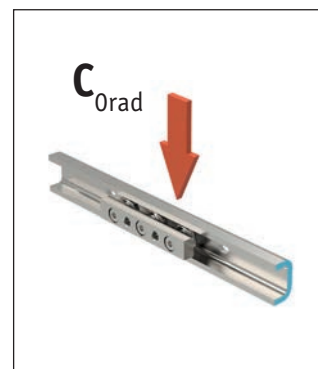
### L1970 and L1971 slider load ratings for T rails

Part no.	Material	Body	$C_{Orad}$ N	$C_{Oax}$ N
L1970.20T-060	Steel	Solid	326	185
L1970.30T-080	Steel	Solid	870	435
L1970.45T-120	Steel	Solid	1740	935
L1970.20T-080	Steel	Low Profile	326	185
L1970.30T-088	Steel	Low Profile	870	435
L1970.45T-150	Steel	Low Profile	1740	935
L1971.20T-060	Stainless Steel	Solid	300	170
L1971.30T-080	Stainless Steel	Solid	800	400
L1971.45T-120	Stainless Steel	Solid	1600	860
L1971.20T-080	Stainless Steel	Low Profile	300	170
L1971.30T-088	Stainless Steel	Low Profile	800	400
L1971.45T-160	Stainless Steel	Low Profile	1600	860



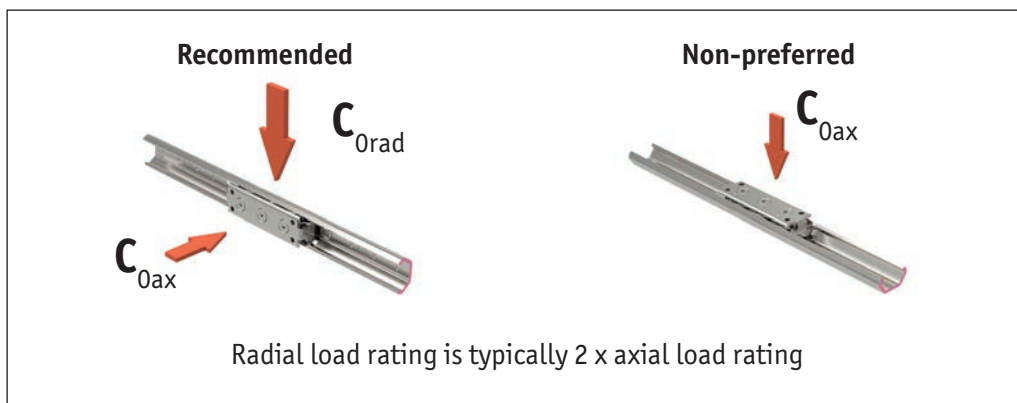
### L1970 and L1971 slider load ratings for U rails

Part no.	Material	Body	$C_{Orad}$ N	$C_{Oax}$ N
L1970.20U-060	Steel	Solid	326	-
L1970.30U-080	Steel	Solid	870	-
L1970.45U-120	Steel	Solid	1740	-
L1971.20U-060	Stainless Steel	Solid	300	-
L1971.30U-080	Stainless Steel	Solid	800	-
L1971.45U-120	Stainless Steel	Solid	1600	-



### Orientation of rails

The radial load that the sliders can take is significantly higher than the axial load, so where possible the rails should be set up with the sliders taking the loads in this plane.



U rail sliders cannot accept axial loads



### Why should I consider using the X Rail system?

The X rail system is very cost-effective.

Using a master (T rail) and slave rail (U rail), the structure onto which the rail is installed does not have to be machined as accurately as when using other rail systems - this can result in major cost savings for many projects.

It is highly resistant to dirt. The L1971 stainless steel X rail is very corrosion resistant and can be used in wet environments (not submerged).

### Are there any disadvantages?

The X rail system is made of a rolled formed section. It is not suited to high moment loads. If moment loads are present then typically more sliders and/or an extra rail is used to provide a system where less moment loads are applied to the sliders.

If you have applications with significant moment loads we would recommend the use of our Compact Rail System which is made from cold drawn steel section and has hardened raceways.

### How do I change the smoothness of the running of the sliders in the rails?

Each slider is supplied with a small spanner. This can be used to push the eccentric roller towards the top of the rail (making it run more stiffly), or pulled away slightly to make the sliders run very smoothly. The eccentric rollers are clearly marked and the slider should be installed the correct way up in the rail. Generally this is with the fixed rollers towards the bottom of the rail (providing the loading points). The simple instructions are shown in the catalogue.

### I want to use the rail outside or in a slightly wet environment?

The stainless steel version (L1971) is made of highly corrosion resistant 316L stainless steel. The rollers are also stainless steel but harder (440C stainless) and are fitted with 2RS rubber seals (splash proof). They can be used outside and in marine applications (e.g. sliding doors and hatches).

### Do you hold these parts in stock?

Yes.

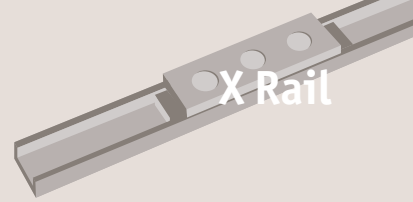
### Can I get CAD files of these parts?

Most of the 3D models (in many formats) are available for download directly from our website [www.automotioncomponents.co.uk](http://www.automotioncomponents.co.uk)

## CAD - Download in 3 easy steps

Most of our products are available to download directly from our website. Get the CAD you need for your application in minutes, no registration required.

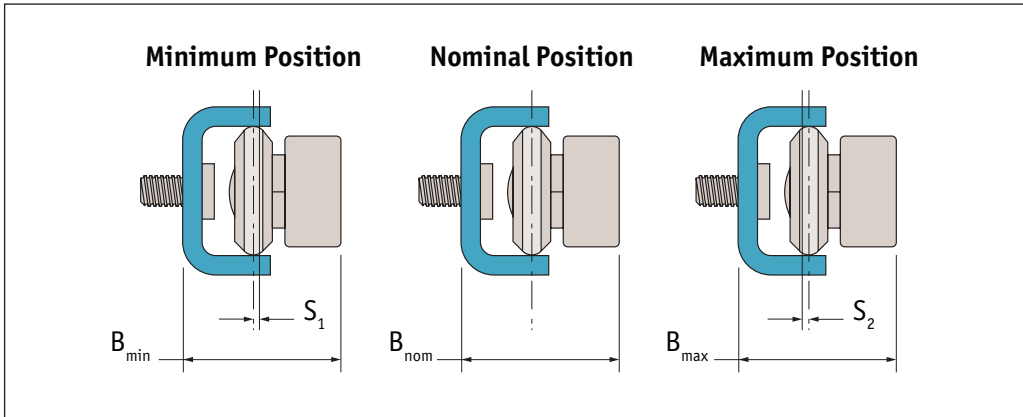
<p><b>Step 1: Find the part you need</b></p> <p>Find the part or enter the Automotion part number into the search bar.</p>																			
<p><b>Step 2: Choose the CAD option</b></p> <p>Click on the CAD button below the product window to the right of the drawing.</p>																			
<p><b>Step 3: Download your format</b></p> <p>Choose the the format you require, and download it to your computer.</p>	<table border="1"> <tbody> <tr> <td>L1016.CL ACIS</td> <td>865.93 kB</td> <td></td> </tr> <tr> <td>L1016.CL IGES</td> <td>1.19 MB</td> <td></td> </tr> <tr> <td>L1016.CL Parasolid</td> <td>352.62 kB</td> <td></td> </tr> <tr> <td>L1016.CL ProE</td> <td>2.89 MB</td> <td></td> </tr> <tr> <td>L1016.CL SolidWorks</td> <td>1.66 MB</td> <td></td> </tr> <tr> <td>L1016.CL Step</td> <td>718.85 kB</td> <td></td> </tr> </tbody> </table>	L1016.CL ACIS	865.93 kB		L1016.CL IGES	1.19 MB		L1016.CL Parasolid	352.62 kB		L1016.CL ProE	2.89 MB		L1016.CL SolidWorks	1.66 MB		L1016.CL Step	718.85 kB	
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L1016.CL ProE	2.89 MB																		
L1016.CL SolidWorks	1.66 MB																		
L1016.CL Step	718.85 kB																		



### Slave rail compensation

In a T+U-System, the slider in the T rail carries axial and radial loads and guides the movement of the slider in the U rail. U rails have flat parallel raceways that allow free lateral movement for the sliders. The maximum freedom a slider in the U rail can offer can be calculated using the values  $S_1$  and  $S_2$ . With nominal value  $B_{nom}$  as the starting point,  $S_1$  indicates the maximum allowed movement into the rail, while  $S_2$  represents the maximum offset towards the outside of the rail.

If the length of the rail is known, the maximum allowable angle of deviation of the mounting surface is shown below. In this case the slide in the U rail has the freedom to travel from the innermost position  $S_1$  to the outermost position  $S_2$ .

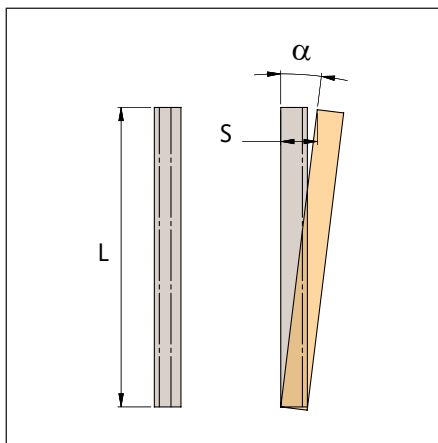


U rail size	$S_1$	$S_2$	$B_{min}$	$B_{nom}$	$B_{max}$
20	0,60	0,60	17,65	18,25	18,85
30	1,00	1,00	26,95	27,95	28,95
45	1,75	1,75	35,50	37,25	39,00

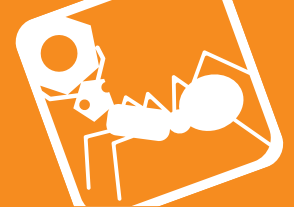
### Guideline for maximum angle deviation $\alpha$ , achievable with the longest guide rail

$$\alpha = \arctan \frac{S^*}{L}$$

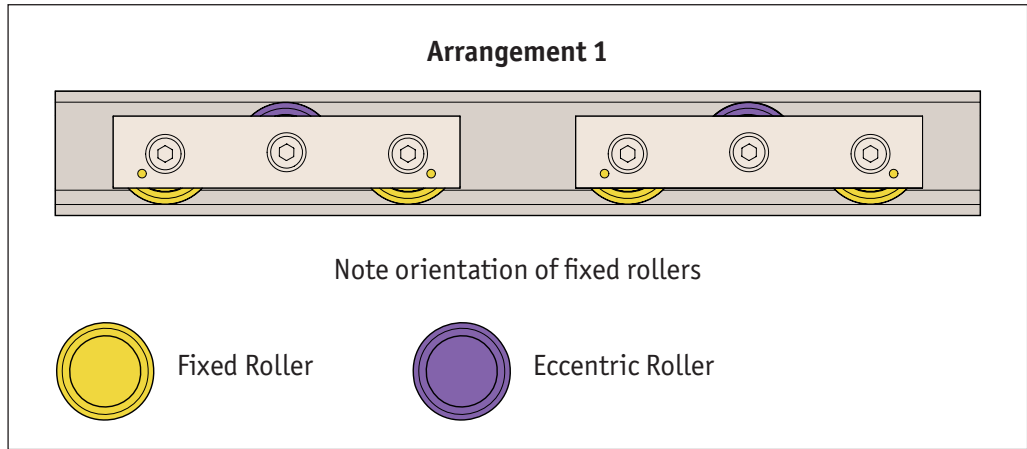
$S^*$  = sum of  $S_1$  and  $S_2$   
 $L$  = length of the rail



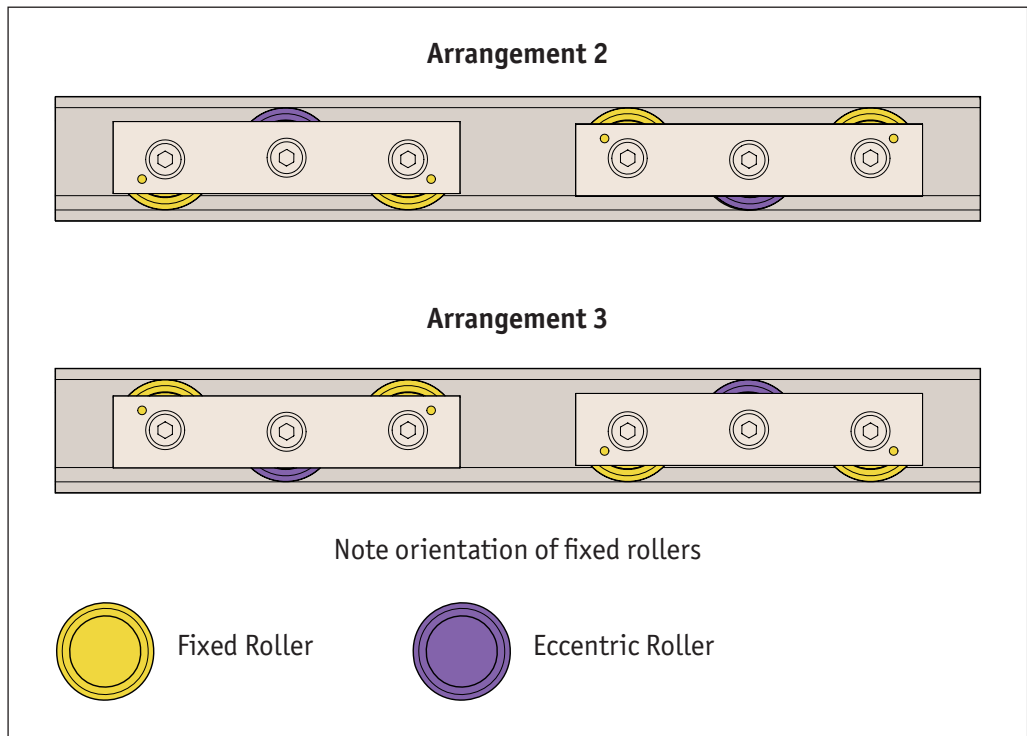
Size	Rail length	Offset $S^*$	Angle $\alpha$ °
20	3120	1,2	0,022
30	3120	2,0	0,037
45	3120	3,5	0,064



The standard arrangement of the sliders (when used in a horizontal application) is as follows:

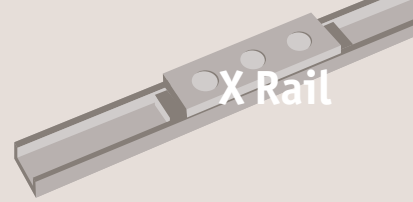


For other applications (e.g. horizontal or vertical) the alternative arrangements are as follows:



X Rail from Automation Components

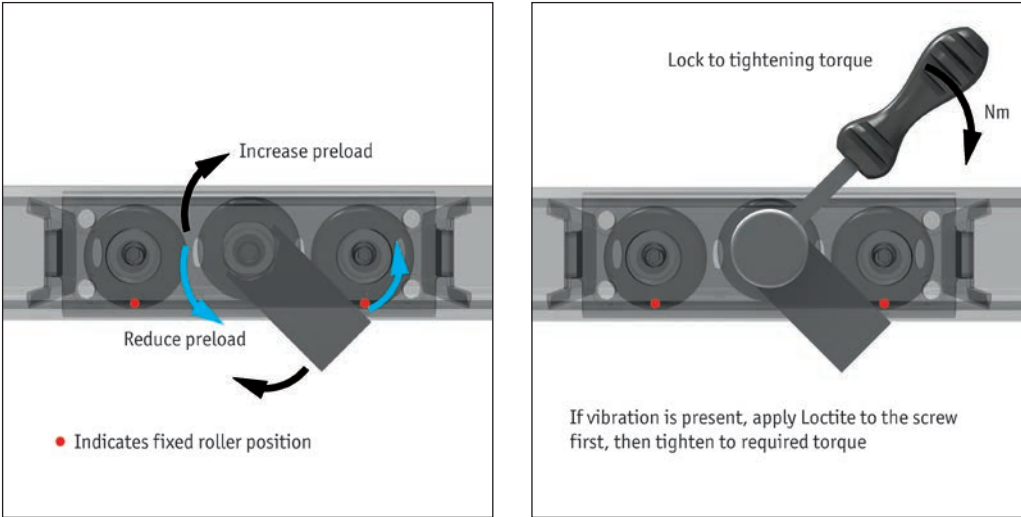
LONG LINEAR RAILS



### Adjusting the sliders

If delivered separately, or if the sliders need to be installed in another rail, the sliders must be re-adjusted. In this case, follow the instructions below.

The “•” or “V” marked on the slider indicates the direction of the fixed rollers.



The sliders have three large rollers. The two at either end are fixed and the direction of these fixed positions is marked on the sliders with a dot or an arrow.

Insert the sliders into the rails with the fixed rollers set to take the load in the best direction.

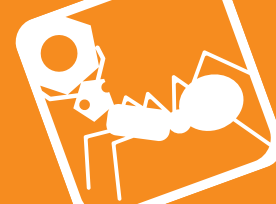
The middle roller is on an eccentric pivot that is easily adjusted (using the thin spanner that is supplied with them and a hexagon key). This allows the preload of the system to be set as required – stiff or free running.

Generally the sliders will not be inserted into the rails when leaving the factory. To set the sliders to the required preload is a simple procedure:

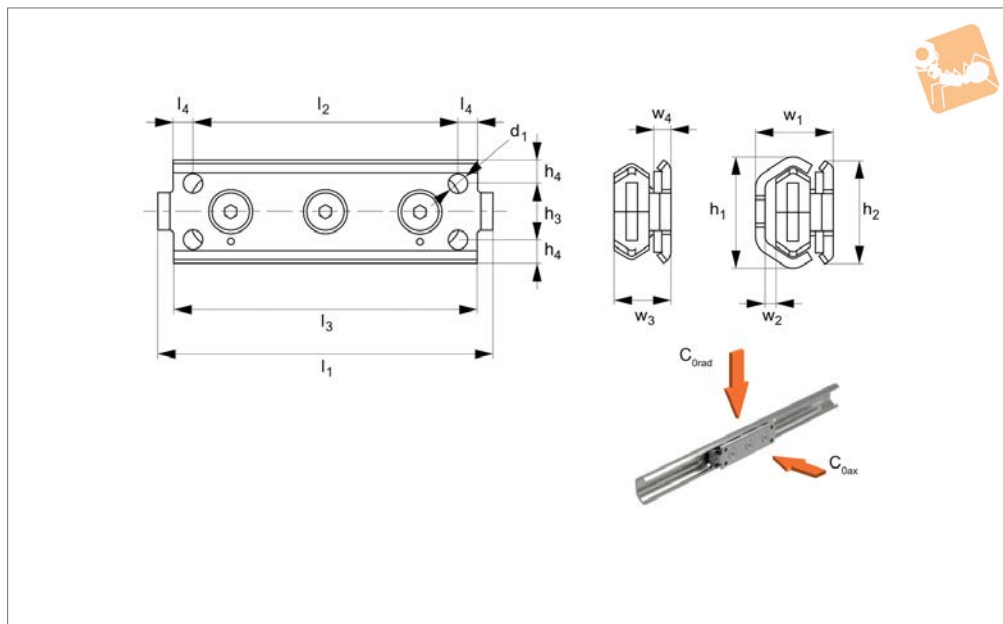
- Ensure raceways are clean.
- Remove the small plastic wipers (from the low profile sliders) and insert the slider into the rail.
- Slightly loosen the centre roller (using the spanner and a hexagon key).
- For U rails a packer should be used to set the slider in its middle lateral position.
- Use the flat spanner provided to move the middle roller on its eccentric to adjust the stiffness of its running. Not too loose so that there is excess play and not too tight that a lot of friction is generated.
- Lock the roller in the desired position with the spanner and a hexagon key.
- Move the slider the length of the rail to check required running – it should move easily with no play at any point on the rail.
- Tighten the fixing screw to the correct torque – whilst holding the spanner in place to ensure no further movement (see correct torque values in table below).
- Finally (if using a slider with a wiper), re-install the wipers if required.

Size	Tightening torque Nm
20	3
30	7
45	12

ov-x-rail-adjusting-sliders-rmh-Updated - 08-03-2023



## L1971.LP



### Material

Body stainless steel (316L), stainless steel (AISI 440) rollers with 2RS, water resistant rubber seals.

### Technical Notes

The three sizes of sliders are suited to the

relevant L1971.TEX rail size.

Select the size and quantity to suit the required load.

### Tips

The punched dot marked on the slider body indicates the orientation for the loading of

the fixed rollers.

The middle roller is eccentric, allowing the preload to be easily adjusted when mounted inside the rail.

Coefficient of friction (without seals) 0.01.

Order No.	Size	$d_1$	$l_1$	$h_1$	$h_2$	$h_3$	$h_4$	$l_2$	Weight kg
L1971.20T-080	20	M5	80	19.2	18	-	9.0	60	0.05
L1971.30T-088	30	M5	88	29.5	27	15	6.0	70	0.12
L1971.45T-150	45	M6	150	46.4	40	23	8.5	120	0.47

Order No.	$l_3$	$l_4$	$w_1$	$w_2$	$w_3$	$w_4$	Load $C_{0\ rad}$ N max.	Load $C_{0\ ax}$ N max.
L1971.20T-080	71	5.5	16.0	2.5	11.5	5.5	300	170
L1971.30T-088	80	5.0	20.5	3.5	15.0	4.5	800	400
L1971.45T-150	135	7.5	31.0	5.0	22.0	4.0	1600	860

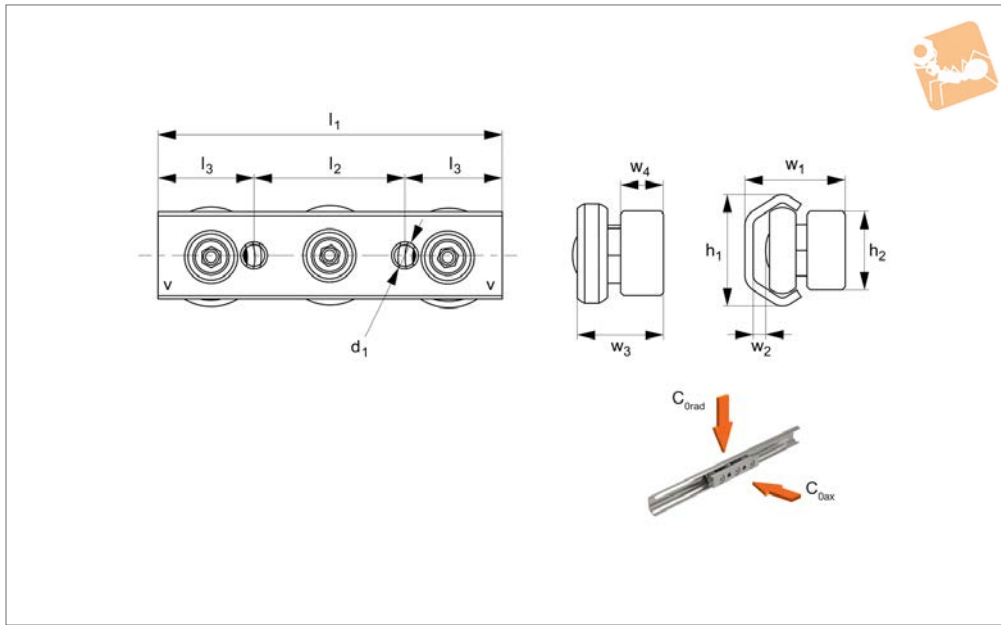




# Solid Body Stainless Sliders for T rail (master)



Long Linear  
Rails



**L1971.SBT**

LONG LINEAR RAILS

### Material

Body stainless steel (316L), stainless steel (AISI 440) rollers with 2RS, water resistant rubber seals.

For size 20 sliders there are two threaded holes on the centreline. Select the size and quantity to suit the required load.

rollers.

The middle roller is eccentric, allowing the preload to be easily adjusted when mounted inside the rail.

Coefficient of friction (without seals) 0.01.

### Technical Notes

The three sizes of sliders are suited to the relevant L1971.TEX rail size.

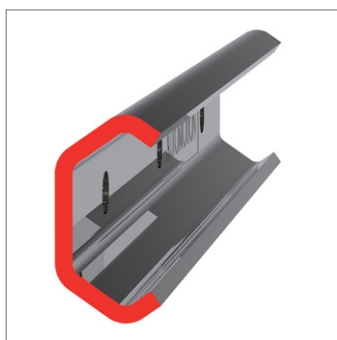
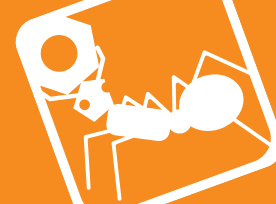
### Tips

The „V“ marks on the slider body indicate the orientation for the loading of the fixed

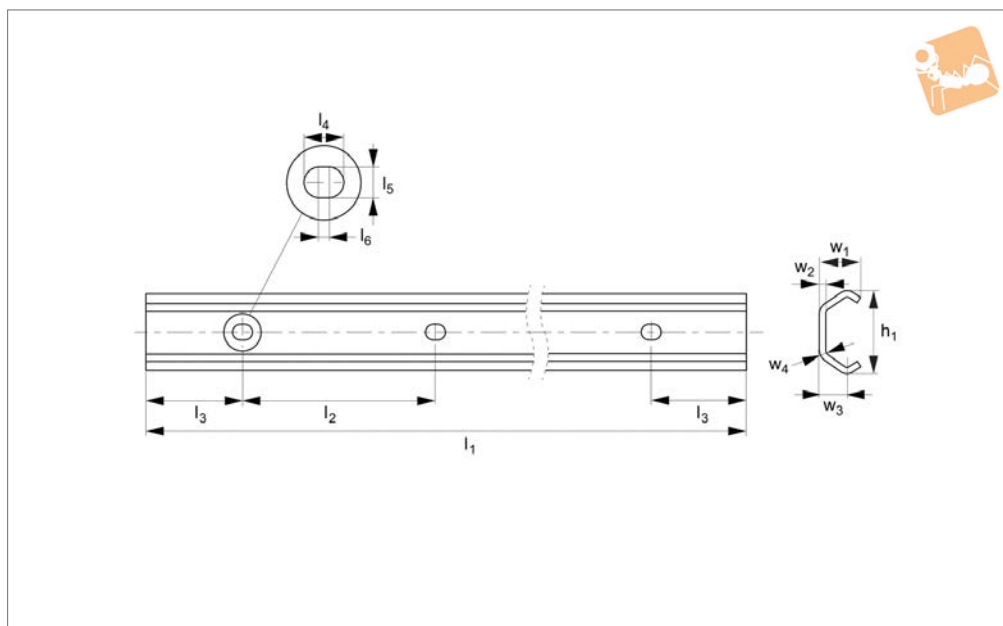
Order No.	Size	d <sub>1</sub>	l <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Weight kg
L1971.20T-060	20	M5	60	-	19.2	10	-	0.04
L1971.26T-080	26	M 5	80	-	26.1	25	-	0.10
L1971.30T-080	30	M6	80	-	29.5	20	-	0.17
L1971.40T-135	40	-	135	M 6	39.5	35	23	0.45
L1971.45T-120	45	M8	120	-	46.4	25	-	0.47

Order No.	h <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.	Load C <sub>0 ax</sub> N max.
L1971.20T-060	-	20	20	-	17.8	2.6	13.0	6	300	170
L1971.26T-080	12.5	30	25.0	-	22.00	3.7	15.80	4	740	370
L1971.30T-080	-	35	22.5	-	26.5	3.3	20.7	10	800	400
L1971.40T-135	6.0	-	7.5	120	28.65	5.0	20.65	6	1470	740
L1971.45T-120	-	55	32.5	-	38.0	5.1	28.9	12	1600	860



## L1971.T



### Material

Stainless steel (316L). Corrosion resistant FDA/USDA compliant materials.

### Technical Notes

X rail is for light duty loads, select number

of carriages to suit.

### Tips

Use hex. socket oval head screws (ISO 7380), see part no. L1971.S.

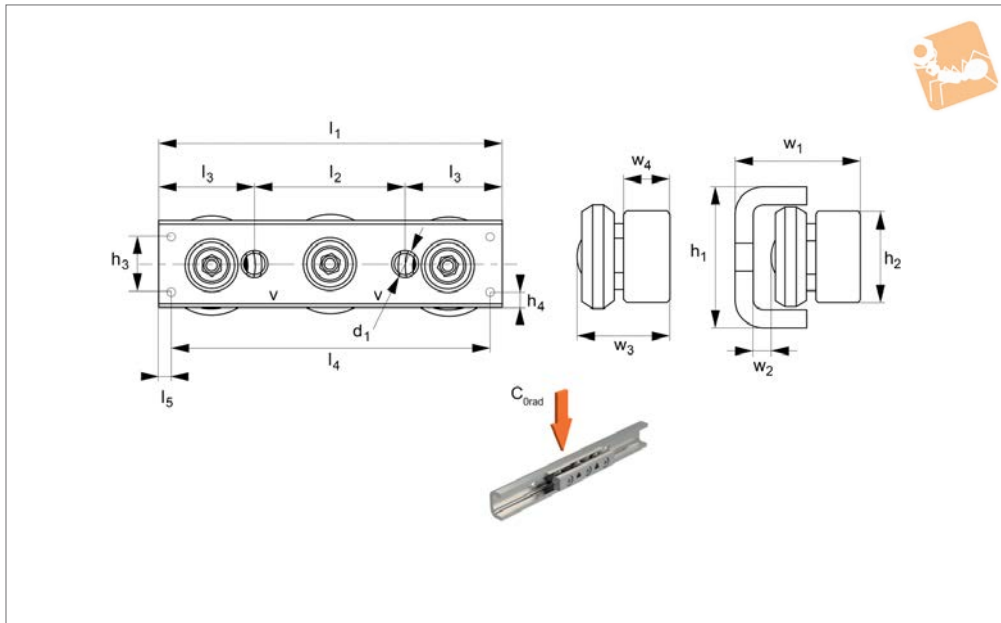
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	$w_4$	For screw	Weight kg
L1971.20T-1040	20	1040	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.20T-2080	20	2080	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.20T-3120	20	3120	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.26T-1040	26	1040	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 4	0.80
L1971.26T-2080	26	2080	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 5	0.80
L1971.26T-3120	26	3120	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 5	0.80
L1971.30T-1040	30	1040	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.30T-2080	30	2080	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.30T-3120	30	3120	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.40T-1040	40	1040	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.40T-2080	40	2080	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.40T-3120	40	3120	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.45T-1040	45	1040	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29
L1971.45T-2080	45	2080	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29
L1971.45T-3120	45	3120	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29



# Solid Body Stainless Sliders for U rail (slave)



Long Linear  
Rails



**L1971.SBU**

LONG LINEAR RAILS

### Material

Body stainless steel (316L), stainless steel (AISI 440) rollers with 2RS, water resistant rubber seals.

### Technical Notes

The three sizes of sliders are suited to the relevant L1971.UEX rail size.

Select the size and quantity to suit the required load.

### Tips

The „V“ marks on the slider body indicate the orientation for the loading of the fixed rollers.

The middle roller is eccentric, allowing the

preload to be easily adjusted when mounted inside the rail.  
Coefficient of friction (without seals) 0.01.

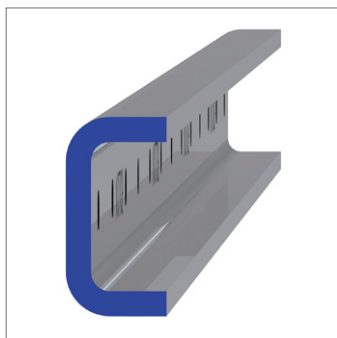
### Important Notes

Sliders in U rails cannot accept axial loads.

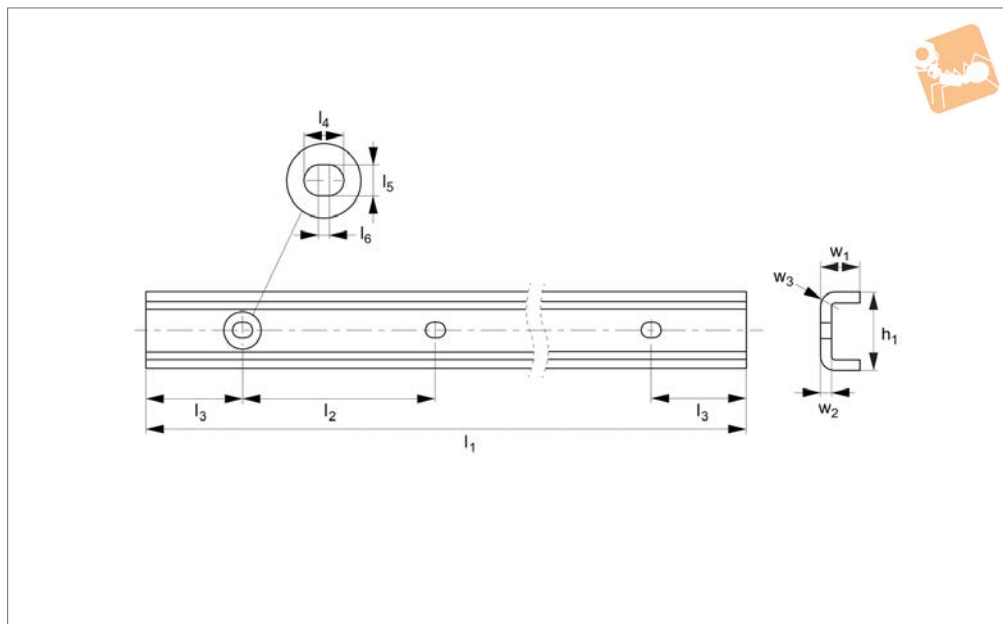
Order No.	Size	d <sub>1</sub>	l <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Weight kg
L1971.30U-080	30	M6	80	-	31.8	20	-	0.16
L1971.40U-135	40	-	135	M 6	38.5	35	23	0.45
L1971.45U-120	45	M8	120	-	44.8	25	-	0.45

Order No.	h <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.
L1971.30U-080	-	35	22.5	-	-	27,95 ± 0,60	3.5	19.2	10	800
L1971.40U-135	8	-	-	120	7.5	29,95 ± 1.60	-	-	6	1470
L1971.45U-120	-	55	32.5	-	-	37,25 ± 0,60	5.0	25.5	12	1600



**L1971.U**



**Material**

Stainless steel (316L). Corrosion resistant FDA/USDA compliant materials.

**Technical Notes**

X rail is for light duty loads, select number

of carriages to suit.

**Tips**

Use hex. socket oval head screws (ISO 7380), see part no. L1971.S.

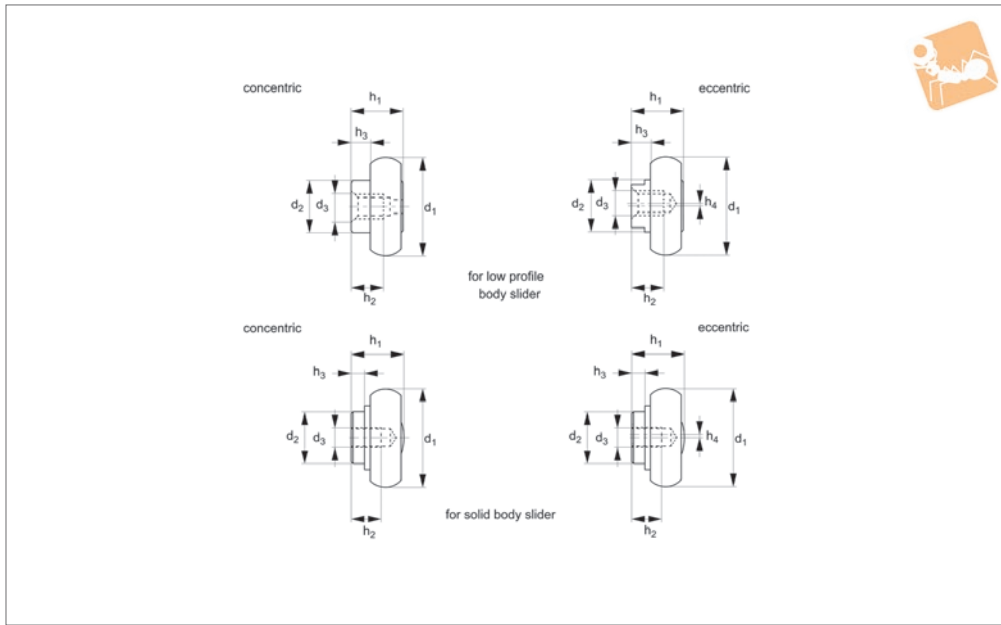
Order No.	Rail size	$l_1$	$h_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	For screw	Weight kg
L1971.30U-1040	30	1040	31.8	80	40	8.4	6.4	2	16	4	7	M5	1.4
L1971.30U-2080	30	2080	31.8	80	40	8.4	6.4	2	16	4	7	M5	2.8
L1971.30U-3120	30	3120	31.8	80	40	8.4	6.4	2	16	4	7	M5	4.2
L1971.40U-1040	40	1040	38.5	80	40	13	9	4	21.0	3	6	M8	1.7
L1971.40U-2080	40	2080	38.5	80	40	13	9	4	21.0	3	6	M8	3.4
L1971.40U-3120	40	3120	38.5	80	40	13	9	4	21.0	3	6	M8	5.1
L1971.45U-1040	45	1040	44.8	80	40	11	9	2	24.5	4.5	9.5	M8	2.9
L1971.45U-2080	45	2080	44.8	80	40	11	9	2	24.5	4.5	9.5	M8	5.8
L1971.45U-3120	45	3120	44.8	80	40	11	9	2	24.5	4.5	9.5	M8	8.7



# Stainless Replacement Rollers for T version stainless X rail



Long Linear  
Rails



**L1971.CRT**

LONG LINEAR RAILS

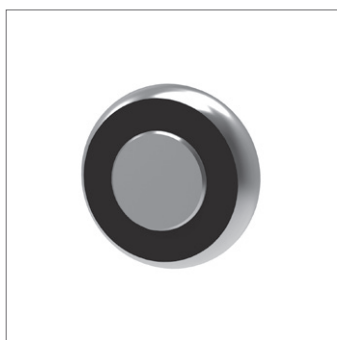
### Material

Rollers stainless steel (AISI 440C) with water resistant rubber seals (2RS).

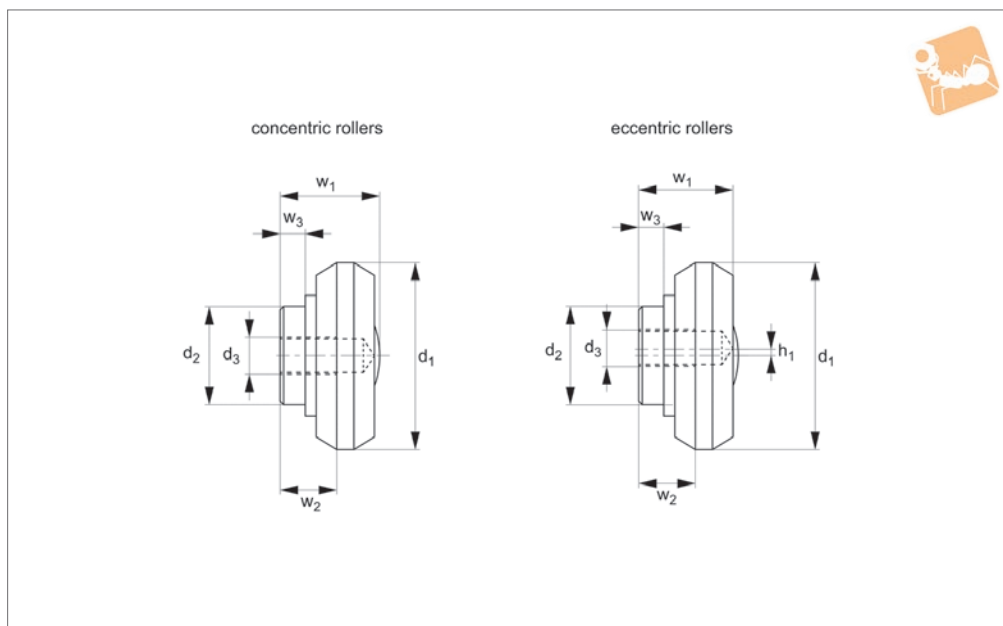
### Technical Notes

For use with X rail stainless steel sliders in T type stainless steel rail.

Order No.	For slider type	Type	Body	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight g
L1971.CRPNX20	L1971.20T-080	Concentric	Low prof.	14.0	8	M4	8.5	6	4.0	-	6
L1971.CRPAX20	L1971.20T-080	Eccentric	Low prof.	14.0	8	M4	8.5	6	4.0	0.5	6
L1971.CRPNX30	L1971.30T-088	Concentric	Low prof.	22.8	12	M5	12.0	7	4.5	-	20
L1971.CRPAX30	L1971.30T-088	Eccentric	Low prof.	22.8	12	M5	12.0	7	4.5	0.6	20
L1971.CRPNX45	L1971.45T-150	Concentric	Low prof.	35.6	16	M6	18.0	12	6.0	-	68
L1971.CRPAX45	L1971.45T-150	Eccentric	Low prof.	35.6	16	M6	18.0	12	6.0	0.8	68
L1971.CRNX20	L1971.20T-060	Concentric	Solid	14.0	6	M4	8.7	6	1.8	-	6
L1971.CRAX20	L1971.20T-060	Eccentric	Solid	14.0	6	M4	8.7	6	1.8	0.5	6
L1971.CRNX30	L1971.30T-080	Concentric	Solid	22.8	10	M5	14.0	9	3.8	-	22
L1971.CRAX30	L1971.30T-080	Eccentric	Solid	22.8	10	M5	14.0	9	3.8	0.6	22
L1971.CRNX45	L1971.45T-120	Concentric	Solid	35.6	12	M6	20.5	14.5	4.5	-	70
L1971.CRAX45	L1971.45T-120	Eccentric	Solid	35.6	12	M6	20.5	14.5	4.5	0.8	70



**L1971.CRU**



### Material

Rollers stainless steel (AISI 440C) with water resistant rubber seals (2RS).

### Technical Notes

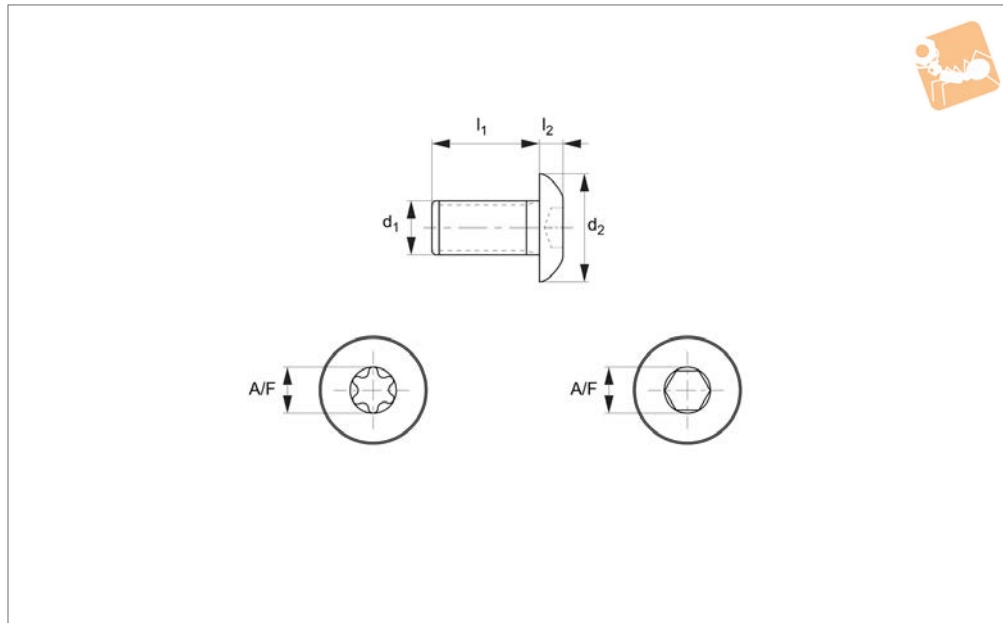
For use with X rail stainless steel sliders in U type stainless steel rail.

Order No.	For slider type	Type	Body	$d_1$	$d_2$	$d_3$	$h_1$	$w_1$	$w_2$	$w_3$	Weight g
L1971.CPNX20	L1971.20U-060	Concentric	Solid	14	6	M4	-	7.35	5.5	1.8	4
L1971.CPAX20	L1971.20U-060	Eccentric	Solid	14	6	M4	0.4	7.35	5.5	1.8	4
L1971.CPNX30	L1971.30U-080	Concentric	Solid	23.2	10	M5	-	13	7	3.8	18
L1971.CPAX30	L1971.30U-080	Eccentric	Solid	23.2	10	M5	0.6	13	7	3.8	18
L1971.CPNX45	L1971.45U-120	Concentric	Solid	35	12	M6	-	18	12	4.5	60
L1971.CPAX45	L1971.45U-120	Eccentric	Solid	35	12	M6	0.8	18	12	4.5	60



## Fixing screws for stainless steel X rail

## Long Linear Rails



### L1971.S

LONG LINEAR RAILS

#### Material

ISO 7380 hex. socket or Torx oval head screws A4 (316) stainless steel.

Order No.	Size	Type	d <sub>1</sub> x p	l <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub> max.	Torque to Nm	A/F
L1971.T20	TX-1	Torx oval	M4 x 0,7	8	7,6	2,2	3	2,5
L1971.T30	TX-2	Torx oval	M5 x 0,8	10	9,5	2,8	9	3
L1971.T45	TX-6	Torx oval	M8 x 1,25	16	14	4,4	22	5



The compact rail systems are unique. They have many major advantages over other rail systems.

### Easy and cost-effective to set up

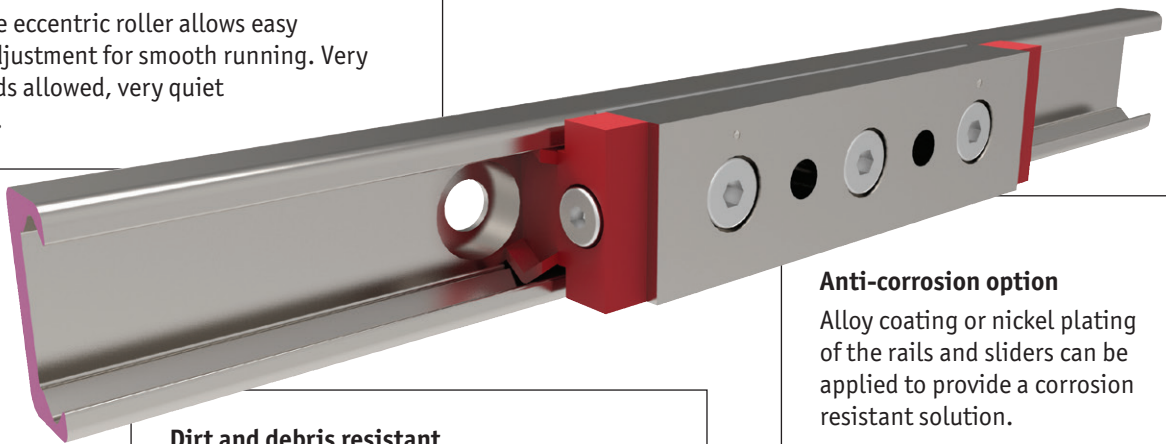
The rails are easy to set up and can adjust for some misalignment of the structure on which it is being used. The compact rail system achieves this by using a master (T type) rail, and a slave (U type) rail. This allows the sliders in the T rail to remain fixed in place but allows lateral movement of the sliders in the U rail to adapt to any misalignment and avoid any issues of stiction.

Slave (U) rails have flat, parallel raceways that allow free lateral movement of the sliders. This flexibility can mean a large saving in the machining of the structure surface making it a very cost-effective solution.



### Fast, smooth and quiet

The unique eccentric roller allows easy preload adjustment for smooth running. Very high speeds allowed, very quiet operation.



### Anti-corrosion option

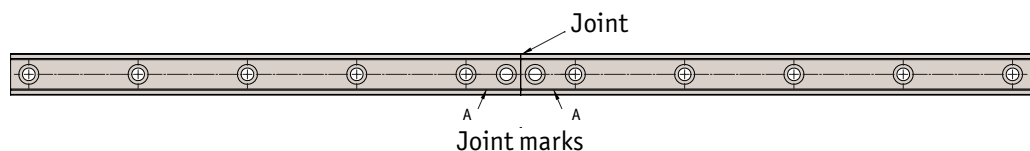
Alloy coating or nickel plating of the rails and sliders can be applied to provide a corrosion resistant solution.

### Dirt and debris resistant

The internal raceways are resistant to dirt and debris, larger roller bearings with seals and wipers are used (compared to small ball bearings on other systems).

### Unlimited rail lengths

Rails can be easily joined together for unlimited rail lengths, and extra hole needs to be machined at the joint area. The rails need to be selected so they are "matched" and a joining tool needs to be used to align the rails.





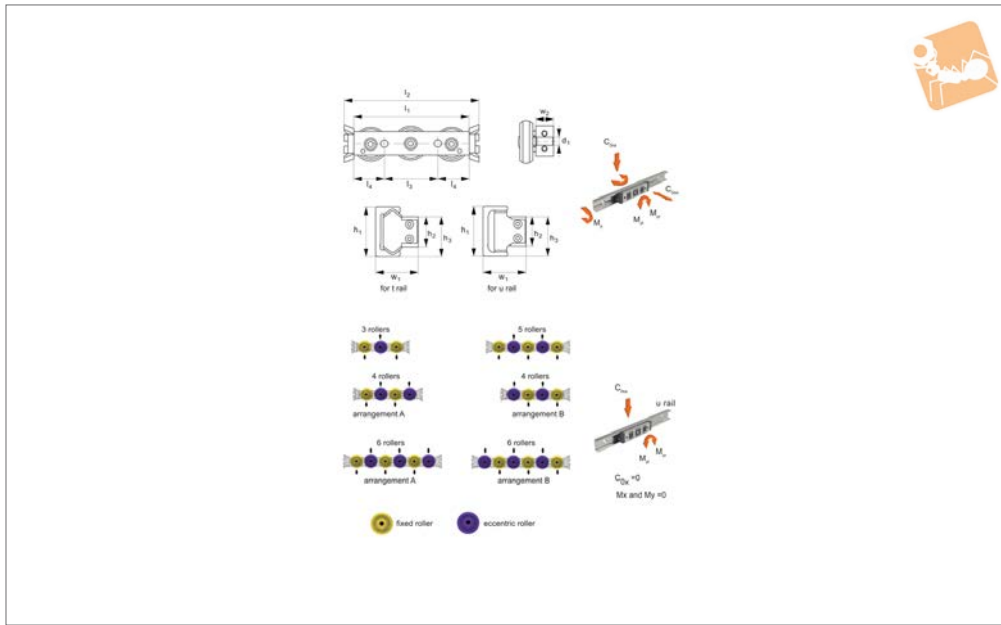


# Light Duty Sliders - Size 18

no side seal - front fixing



Long Linear  
Rails



**L1918.CS**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

the required number of carriages to carry the load (taking into account any moment loads).  
Unlike the N series sliders these CS sliders do not have protective side seals.

either way up in the rail dependent on where the loads will be applied.  
Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Quiet and fast (up to 3 m/s).

### Technical Notes

To be used with compact rail size 18.  
Select the relevant carriage for the rail and

### Tips

The U rail sliders cannot accept axial loads.  
The 3 and 5 bearing sliders can be used

Order No.	For rail type	No. of rollers	Seal type	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.05	h <sub>3</sub> +0.05 -0.25	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	Weight kg
L1918.18CS-060-2RST	T	3	Rubber	M 5	18	9.5	14	60	76	20	20	1.5	4.7	0.04
L1918.18CS-060-2RSU	U	3	Rubber	M 5	18	9.5	14	60	76	20	20	0	0	0.04
L1918.18CS-080-2RSTA	T	4	Rubber	M 5	18	9.5	14	80	96	40	20	2.8	7	0.05
L1918.18CS-080-2RSUA	U	4	Rubber	M 5	18	9.5	14	80	96	40	20	0	0	0.05
L1918.18CS-080-2RSTB	T	4	Rubber	M 5	18	9.5	14	80	96	40	20	2.8	7	0.05
L1918.18CS-080-2RSUB	U	4	Rubber	M 5	18	9.5	14	80	96	40	20	0	0	0.05
L1918.18CS-100-2RST	T	5	Rubber	M 5	18	9.5	14	100	116	20	20	2.8	9.4	0.06
L1918.18CS-100-2RSU	U	5	Rubber	M 5	18	9.5	14	100	116	20	20	0	0	0.06
L1918.18CS-120-2RSTA	T	6	Rubber	M 5	18	9.5	14	100	116	20	20	3.3	11.8	0.07
L1918.18CS-120-2RSUA	U	6	Rubber	M 5	18	9.5	14	120	136	40	20	0	0	0.07
L1918.18CS-120-2RSTB	T	6	Rubber	M 5	18	9.5	14	120	136	40	20	3.3	11.8	0.07
L1918.18CS-120-2RSUB	U	6	Rubber	M 5	18	9.5	14	120	136	40	20	0	0	0.07

Order No.	M <sub>zr</sub> Nm	M <sub>zfl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Dyn. load C N max.	Static load C <sub>0 ax</sub> N max.	Arrangement type	Static load C <sub>0 rad</sub> N max.
L1918.18CS-060-2RST	8.2	8.2	15	5.7	1530	260	-	820
L1918.18CS-060-2RSU	8.2	8.2	15	5.7	1530	0	-	820
L1918.18CS-080-2RSTA	8.2	24.7	15	5.7	1530	300	A	820
L1918.18CS-080-2RSUA	8.2	24.7	15	5.7	1530	0	A	820
L1918.18CS-080-2RSTB	24.7	8.2	15	5.7	1530	300	B	820
L1918.18CS-080-2RSUB	24.7	8.2	15	5.7	1530	0	B	820



Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	Dyn. load C N max.	Static load $C_{0ax}$ N max.	Arrangement type	Static load $C_{0rad}$ N max.
L1918.18CS-100-2RST	24.7	24.7	15	5.7	1830	360	-	975
L1918.18CS-100-2RSU	24.7	24.7	15	5.7	1830	0	-	975
L1918.18CS-120-2RSTA	24.7	41.1	15	5.7	1830	400	A	975
L1918.18CS-120-2RSUA	24.7	41.1	15	5.7	1830	0	A	975
L1918.18CS-120-2RSTB	41.1	24.7	15	5.7	1830	400	B	975
L1918.18CS-120-2RSUB	41.1	24.7	15	5.7	1830	0	B	975

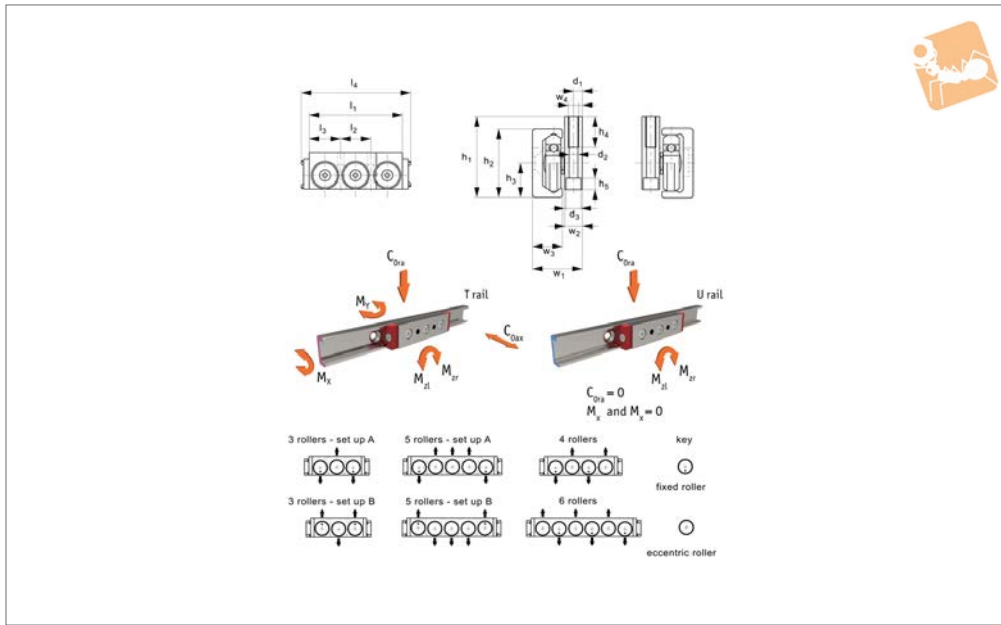


# Light Duty Sliders, size 18

side seal, with wipers



## Long Linear Rails



### L1918.CR

LONG LINEAR RAILS

#### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

#### Technical Notes

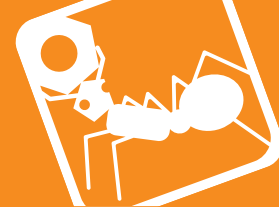
To be used with compact rail size 18.

#### Tips

Easy to install (one or more rollers are

Order No.	For rail type	No. of rollers	d <sub>1</sub> for screw	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm
L1918.18CR-060-TA	T	3	M5	4.2	7.5	18	9	22	8	3	60	20	20	74	1.6
L1918.18CR-060-UA	U	3	M5	4.2	7.5	18	9	22	8	3	60	20	20	74	0
L1918.18CR-060-TB	T	3	M5	4.2	7.5	18	9	22	8	3	60	20	20	74	1.6
L1918.18CR-060-UB	U	3	M5	4.2	7.5	18	9	22	8	3	60	20	20	74	0
L1918.18CR-080-TA	T	4	M5	4.2	7.5	18	9	22	8	3	80	40	20	94	2.9
L1918.18CR-080-UA	U	4	M5	4.2	7.5	18	9	22	8	3	80	40	20	94	0
L1918.18CR-080-TB	T	4	M5	4.2	7.5	18	9	22	8	3	80	40	20	94	2.9
L1918.18CR-080-UB	U	4	M5	4.2	7.5	18	9	22	8	3	80	40	20	94	0
L1918.18CR-100-TA	T	5	M5	4.2	7.5	18	9	22	8	3	100	20	20	114	2.9
L1918.18CR-100-UA	U	5	M5	4.2	7.5	18	9	22	8	3	100	20	20	114	0
L1918.18CR-100-TB	T	5	M5	4.2	7.5	18	9	22	8	3	100	20	20	114	2.9
L1918.18CR-100-UB	U	5	M5	4.2	7.5	18	9	22	8	3	100	20	20	114	0
L1918.18CR-120-TA	T	6	M5	4.2	7.5	18	9	22	8	3	120	40	20	134	3.4
L1918.18CR-120-UA	U	6	M5	4.2	7.5	18	9	22	8	3	120	40	20	134	0
L1918.18CR-120-TB	T	6	M5	4.2	7.5	18	9	22	8	3	120	40	20	134	3.4
L1918.18CR-120-UB	U	6	M5	4.2	7.5	18	9	22	8	3	120	40	20	134	0

Order No.	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zi</sub> Nm	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Dyn. load C <sub>N</sub> max.	Static load C <sub>0 ax</sub> N max.	Static load C <sub>0 rad</sub> N max.
L1918.18CR-060-TA	4.8	8.3	8.3	17.4	8	8.3	4	1540	262	825
L1918.18CR-060-UA	0	8.3	8.3	17.4	8	8.3	4	1540	0	825
L1918.18CR-060-TB	4.8	8.3	8.3	17.4	8	8.3	4	1540	262	825
L1918.18CR-060-UB	0	8.3	8.3	17.4	8	8.3	4	1540	0	825
L1918.18CR-080-TA	7.1	8.3	24.9	17.4	8	8.3	4	1540	310	825



LONG LINEAR RAILS

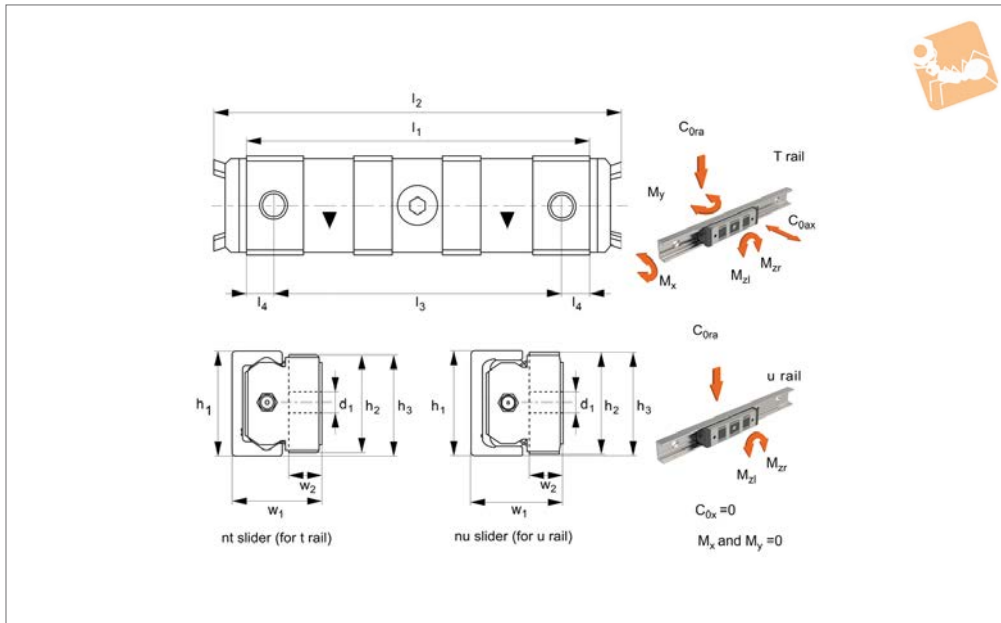
Order No.	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$	$w_2$	$w_3$	$w_4$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Static load $C_{0\text{ rad.}}$ N max.
<b>L1918.18CR-080-UA</b>	0	8.3	24.9	17.4	8	8.3	4	1540	0	825
<b>L1918.18CR-080-TB</b>	7.1	24.9	8.3	17.4	8	8.3	4	1540	310	825
<b>L1918.18CR-080-UB</b>	0	24.9	8.3	17.4	8	8.3	4	1540	0	825
<b>L1918.18CR-100-TA</b>	9.5	24.9	24.9	17.4	8	8.3	4	1832	365	978
<b>L1918.18CR-100-UA</b>	0	24.9	24.9	17.4	8	8.3	4	1832	0	978
<b>L1918.18CR-100-TB</b>	9.5	24.9	24.9	17.4	8	8.3	4	1832	365	978
<b>L1918.18CR-100-UB</b>	0	24.9	24.9	17.4	8	8.3	4	1832	0	978
<b>L1918.18CR-120-TA</b>	11.9	24.9	41.2	17.4	8	8.3	4	1832	442	978
<b>L1918.18CR-120-UA</b>	0	24.9	41.2	17.4	8	8.3	4	1832	0	978
<b>L1918.18CR-120-TB</b>	11.9	41.2	24.9	17.4	8	8.3	4	1832	442	978
<b>L1918.18CR-120-UB</b>	0	41.2	24.9	17.4	8	8.3	4	1832	0	978



# Light Duty Sliders, size 18 standard



## Long Linear Rails



### L1918.N

LONG LINEAR RAILS

#### Material

Die cast aluminium body, chemically nickel plated.  
Steel rollers (100Cr6) with metal seals (2Z).  
Polyester end pieces and nitrilic rubber side seals.

#### Technical Notes

To be used with compact rail size 18.  
Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).  
Maintenance free, self-lubricating wipers.

#### Tips

Easy to install (the middle roller is eccentric allowing for adjustable preload). Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 3 m/s).

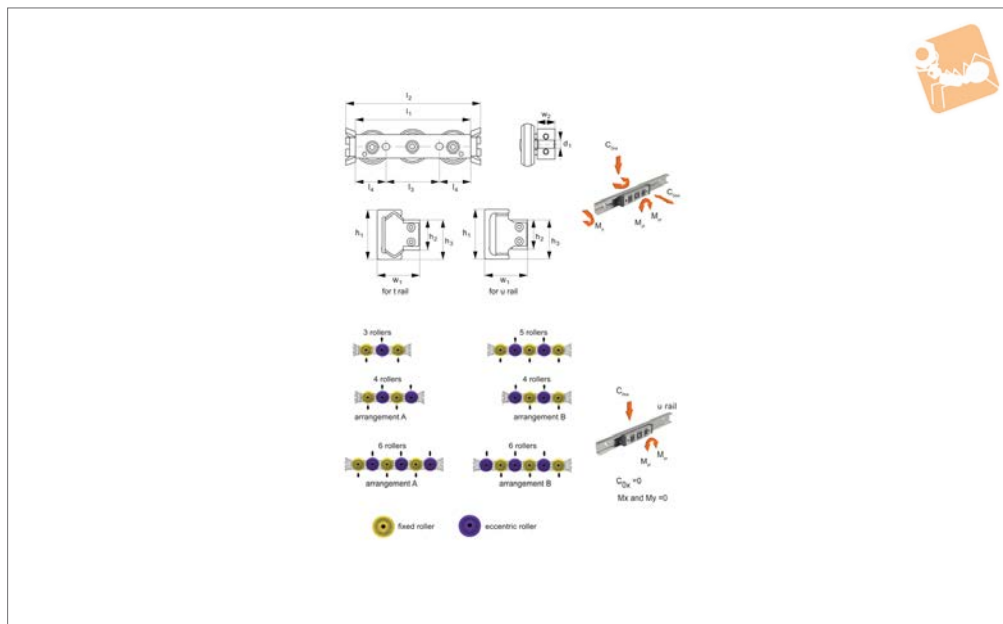
Order No.	For rail type	No. of rollers	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.2	h <sub>3</sub> ±0.25	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1918.NT18	T	3	1530	260	820	M5	18	17.6	18.3	62	74	52	0.03
L1918.NU18	U	3	1530	0	820	M5	18	17.6	18.3	62	74	52	0.03

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>z1</sub> Nm	w <sub>1</sub> -0.15	w <sub>2</sub>
L1918.NT18	5	1.5	4.7	8.2	8.2	16.5	6.4
L1918.NU18	5	0	0	8.2	8.2	16.5	6.4



## L1918.CSW



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CSW sliders do not have protective side seals.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 3 m/s).

### Technical Notes

To be used with compact rail size 18.

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	+0.25 -0.10	h <sub>2</sub> +0 -0.05	h <sub>3</sub> +0.05 -0.25	Weight g
L1918.CSW18-060-2ZT	T	3	Metal	1530	260	820	M 5	18	9.5	14	0.04
L1918.CSW18-060-2ZU	U	3	Metal	1530	0	820	M 5	18	9.5	14	0.04
L1918.CSW18-080-2ZTA	T	4	Metal	1530	300	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2ZUA	U	4	Metal	1530	0	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2ZTB	T	4	Metal	1530	300	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2ZUB	U	4	Metal	1530	0	820	M 5	18	9.5	14	0.05
L1918.CSW18-100-2ZT	T	5	Metal	1830	360	975	M 5	18	9.5	14	0.06
L1918.CSW18-100-2ZU	U	5	Metal	1830	0	975	M 5	18	9.5	14	0.06
L1918.CSW18-120-2ZTA	T	6	Metal	1830	400	975	M 5	18	9.5	14	0.07
L1918.CSW18-120-2ZUA	U	6	Metal	1830	0	975	M 5	18	9.5	14	0.07
L1918.CSW18-120-2ZTB	T	6	Metal	1830	400	975	M 5	18	9.5	14	0.07
L1918.CSW18-120-2ZUB	U	6	Metal	1830	0	975	M 5	18	9.5	14	0.07
L1918.CSW18-060-2RST	T	3	Rubber	1530	260	820	M 5	18	9.5	14	0.04
L1918.CSW18-060-2RSU	U	3	Rubber	1530	0	820	M 5	18	9.5	14	0.04
L1918.CSW18-080-2RSTA	T	4	Rubber	1530	300	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2RSUA	U	4	Rubber	1530	0	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2RSTB	T	4	Rubber	1530	300	820	M 5	18	9.5	14	0.05
L1918.CSW18-080-2RSUB	U	4	Rubber	1530	0	820	M 5	18	9.5	14	0.05
L1918.CSW18-100-2RST	T	5	Rubber	1830	360	975	M 5	18	9.5	14	0.06
L1918.CSW18-100-2RSU	U	5	Rubber	1830	0	975	M 5	18	9.5	14	0.06
L1918.CSW18-120-2RSTA	T	6	Rubber	1830	400	975	M 5	18	9.5	14	0.07
L1918.CSW18-120-2RSUA	U	6	Rubber	1830	0	975	M 5	18	9.5	14	0.07
L1918.CSW18-120-2RSTB	T	6	Rubber	1830	400	975	M 5	18	9.5	14	0.07



# Light Duty Sliders - Size 18

no side seal - front fixing

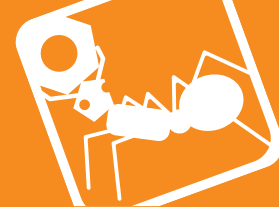


Long Linear  
Rails

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.05	h <sub>3</sub> +0.05 -0.25	Weight g
L1918.CSW18-120-2RSUB	U	6	Rubber	1830	0	975	M 5	18	9.5	14	0.07

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Arrangement type
L1918.CSW18-060-2ZT	60	76	20	20	1.5	4.7	8.2	8.2	15	5.7	-
L1918.CSW18-060-2ZU	60	76	20	20	0	0	8.2	8.2	15	5.7	-
L1918.CSW18-080-2ZTA	80	96	40	20	2.8	7	8.2	24.7	15	5.7	A
L1918.CSW18-080-2ZUA	80	96	40	20	0	0	8.2	24.7	15	5.7	A
L1918.CSW18-080-2ZTB	80	96	40	20	2.8	7	24.7	8.2	15	5.7	B
L1918.CSW18-080-2ZUB	80	96	40	20	0	0	24.7	8.2	15	5.7	B
L1918.CSW18-100-2ZT	100	116	20	20	2.8	9.4	24.7	24.7	15	5.7	-
L1918.CSW18-100-2ZU	100	116	20	20	0	0	24.7	24.7	15	5.7	-
L1918.CSW18-120-2ZTA	120	116	20	20	3.3	11.8	24.7	41.1	15	5.7	A
L1918.CSW18-120-2ZUA	120	136	40	20	0	0	24.7	41.1	15	5.7	A
L1918.CSW18-120-2ZTB	120	136	40	20	3.3	11.8	41.1	24.7	15	5.7	B
L1918.CSW18-120-2ZUB	120	136	40	20	0	0	41.1	24.7	15	5.7	B
L1918.CSW18-060-2RST	60	76	20	20	1.5	4.7	8.2	8.2	15	5.7	-
L1918.CSW18-060-2RSU	60	76	20	20	0	0	8.2	8.2	15	5.7	-
L1918.CSW18-080-2RSTA	80	96	40	20	2.8	7	8.2	24.7	15	5.7	A
L1918.CSW18-080-2RSUA	80	96	40	20	0	0	8.2	24.7	15	5.7	A
L1918.CSW18-080-2RSTB	80	96	40	20	2.8	7	24.7	8.2	15	5.7	B
L1918.CSW18-080-2RSUB	80	96	40	20	0	0	24.7	8.2	15	5.7	B
L1918.CSW18-100-2RST	100	116	20	20	2.8	9.4	24.7	24.7	15	5.7	-
L1918.CSW18-100-2RSU	100	116	20	20	0	0	24.7	24.7	15	5.7	-
L1918.CSW18-120-2RSTA	100	116	20	20	3.3	11.8	24.7	41.1	15	5.7	A
L1918.CSW18-120-2RSUA	120	136	40	20	0	0	24.7	41.1	15	5.7	A
L1918.CSW18-120-2RSTB	120	136	40	20	3.3	11.8	41.1	24.7	15	5.7	B
L1918.CSW18-120-2RSUB	120	136	40	20	0	0	41.1	24.7	15	5.7	B

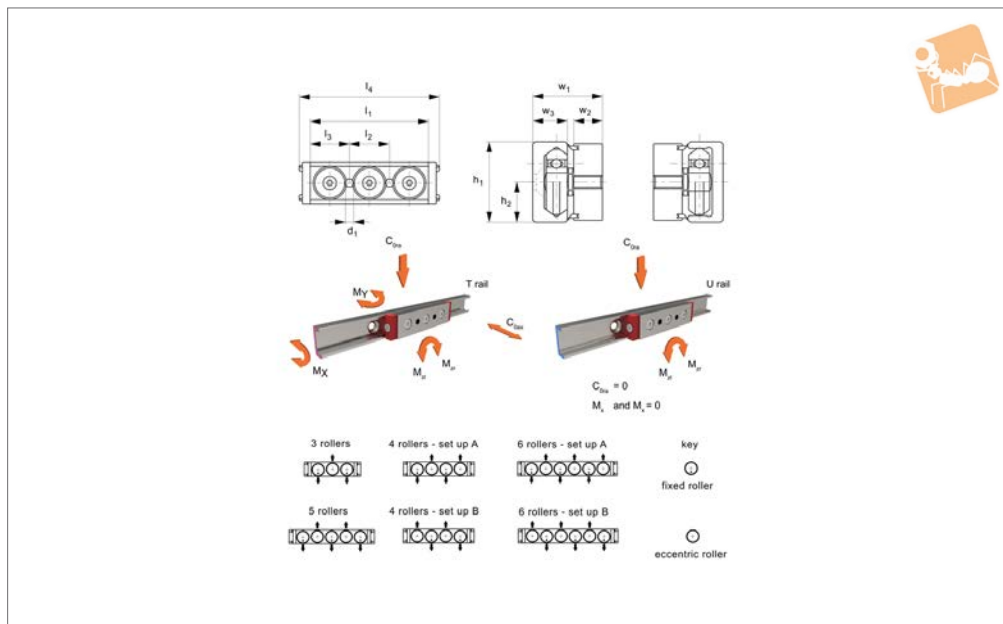
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1918.CL



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

The 3 and 5 bearing sliders can be used either way up in the rail dependent on where the loads will be applied. Easy to install (one or more rollers are eccentric allowing for adjustable preload). Quiet and fast (up to 3 m/s).

### Technical Notes

To be used with compact rail size 18.

### Tips

The U rail sliders cannot accept axial loads.

Order No.	For rail type	No. of rollers	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm
L1918.18CL-060-T	T	3	M5	18	9.0	60	20	20	74	1.6	4.8
L1918.18CL-060-U	U	3	M5	18	9.0	60	20	20	74	0	0
L1918.18CL-080-TA	T	4	M5	18	9.0	80	20	40	94	2.9	7.1
L1918.18CL-080-UA	U	4	M5	18	9.0	80	20	40	94	0	0
L1918.18CL-080-TB	T	4	M5	18	9.0	80	20	40	94	2.9	7.1
L1918.18CL-080-UB	U	4	M5	18	9.0	80	20	40	94	0	0
L1918.18CL-100-T	T	5	M5	18	9.0	100	20	20	114	2.9	9.5
L1918.18CL-100-U	U	5	M5	18	9.0	100	20	20	114	0	0
L1918.18CL-120-TA	T	6	M5	18	9.0	120	20	40	134	3.4	11.9
L1918.18CL-120-UA	U	6	M5	18	9.0	120	20	40	134	0	0
L1918.18CL-120-TB	T	6	M5	18	9.0	120	20	40	134	3.4	11.9
L1918.18CL-120-UB	U	6	M5	18	9.0	120	20	40	134	0	0

Order No.	M <sub>zr</sub> Nm	M <sub>zd</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	w <sub>3</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1918.18CL-060-T	8.3	8.3	15	5.7	8.3	1540	262	825
L1918.18CL-060-U	8.3	8.3	15	5.7	8.3	1540	0	825
L1918.18CL-080-TA	8.3	24.9	15	5.7	8.3	1540	310	825
L1918.18CL-080-UA	8.3	24.9	15	5.7	8.3	1540	0	825
L1918.18CL-080-TB	24.9	8.3	15	5.7	8.3	1540	310	825
L1918.18CL-080-UB	24.9	8.3	15	5.7	8.3	1540	0	825
L1918.18CL-100-T	24.9	24.9	15	5.7	8.3	1832	365	978
L1918.18CL-100-U	24.9	24.9	15	5.7	8.3	1832	0	978
L1918.18CL-120-TA	24.9	41.2	15	5.7	8.3	1832	442	978





# Light Duty Sliders, size 18

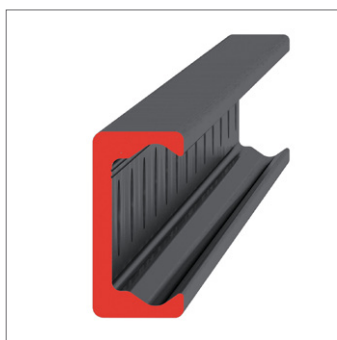
side seal, with wipers



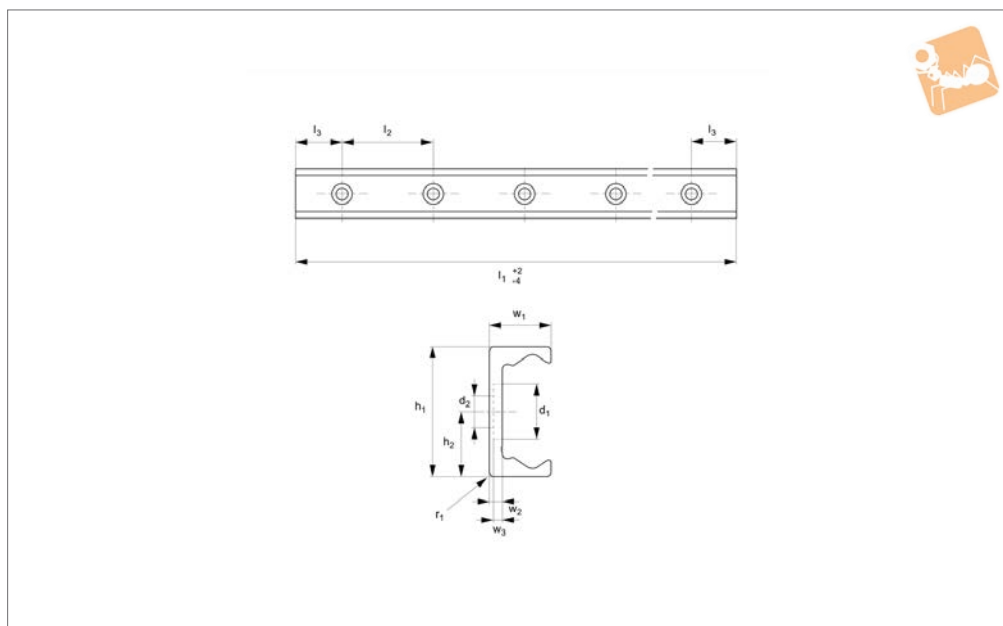
## Long Linear Rails

Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Static load $C_{0\text{ rad.}}$ N max.
<b>L1918.18CL-120-UA</b>	24.9	41.2	15	5.7	8.3	1832	0	978
<b>L1918.18CL-120-TB</b>	41.2	24.9	15	5.7	8.3	1832	442	978
<b>L1918.18CL-120-UB</b>	41.2	24.9	15	5.7	8.3	1832	0	978

LONG LINEAR RAILS



### L1918.18T-C



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding U-C rail.

Special low profile Torx head screws provided free of charge.

Weight: 0,55 Kg/m.

#### Tips

Standard carriages are the L1918.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.18T-0160-C	9.5	M4	18	9	160	80	40	1.5	8.25	2.8	2
L1918.18T-0240-C	9.5	M4	18	9	240	80	40	1.5	8.25	2.8	2
L1918.18T-0320-C	9.5	M4	18	9	320	80	40	1.5	8.25	2.8	2
L1918.18T-0400-C	9.5	M4	18	9	400	80	40	1.5	8.25	2.8	2
L1918.18T-0480-C	9.5	M4	18	9	480	80	40	1.5	8.25	2.8	2
L1918.18T-0560-C	9.5	M4	18	9	560	80	40	1.5	8.25	2.8	2
L1918.18T-0640-C	9.5	M4	18	9	640	80	40	1.5	8.25	2.8	2
L1918.18T-0720-C	9.5	M4	18	9	720	80	40	1.5	8.25	2.8	2
L1918.18T-0800-C	9.5	M4	18	9	800	80	40	1.5	8.25	2.8	2
L1918.18T-0880-C	9.5	M4	18	9	880	80	40	1.5	8.25	2.8	2
L1918.18T-0960-C	9.5	M4	18	9	960	80	40	1.5	8.25	2.8	2
L1918.18T-1040-C	9.5	M4	18	9	1040	80	40	1.5	8.25	2.8	2
L1918.18T-1120-C	9.5	M4	18	9	1120	80	40	1.5	8.25	2.8	2
L1918.18T-1200-C	9.5	M4	18	9	1200	80	40	1.5	8.25	2.8	2
L1918.18T-1280-C	9.5	M4	18	9	1280	80	40	1.5	8.25	2.8	2
L1918.18T-1360-C	9.5	M4	18	9	1360	80	40	1.5	8.25	2.8	2
L1918.18T-1440-C	9.5	M4	18	9	1440	80	40	1.5	8.25	2.8	2
L1918.18T-1520-C	9.5	M4	18	9	1520	80	40	1.5	8.25	2.8	2
L1918.18T-1600-C	9.5	M4	18	9	1600	80	40	1.5	8.25	2.8	2
L1918.18T-1680-C	9.5	M4	18	9	1680	80	40	1.5	8.25	2.8	2
L1918.18T-1760-C	9.5	M4	18	9	1760	80	40	1.5	8.25	2.8	2
L1918.18T-1840-C	9.5	M4	18	9	1840	80	40	1.5	8.25	2.8	2
L1918.18T-1920-C	9.5	M4	18	9	1920	80	40	1.5	8.25	2.8	2
L1918.18T-2000-C	9.5	M4	18	9	2000	80	40	1.5	8.25	2.8	2
L1918.18T-2080-C	9.5	M4	18	9	2080	80	40	1.5	8.25	2.8	2
L1918.18T-2160-C	9.5	M4	18	9	2160	80	40	1.5	8.25	2.8	2
L1918.18T-2240-C	9.5	M4	18	9	2240	80	40	1.5	8.25	2.8	2
L1918.18T-2320-C	9.5	M4	18	9	2320	80	40	1.5	8.25	2.8	2
L1918.18T-2400-C	9.5	M4	18	9	2400	80	40	1.5	8.25	2.8	2
L1918.18T-2480-C	9.5	M4	18	9	2480	80	40	1.5	8.25	2.8	2
L1918.18T-2560-C	9.5	M4	18	9	2560	80	40	1.5	8.25	2.8	2

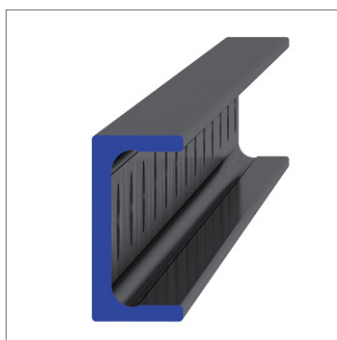


## Light Duty T Rail counterbored holes

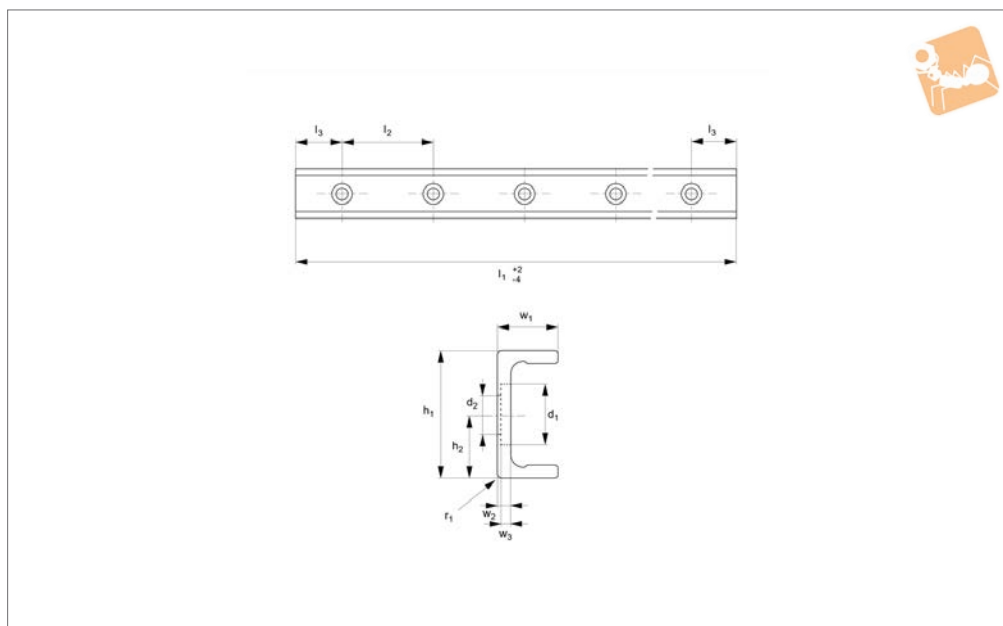


## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.18T-2640-C	9.5	M4	18	9	2640	80	40	1.5	8.25	2.8	2
L1918.18T-2720-C	9.5	M4	18	9	2720	80	40	1.5	8.25	2.8	2
L1918.18T-2800-C	9.5	M4	18	9	2800	80	40	1.5	8.25	2.8	2
L1918.18T-2880-C	9.5	M4	18	9	2880	80	40	1.5	8.25	2.8	2
L1918.18T-2960-C	9.5	M4	18	9	2960	80	40	1.5	8.25	2.8	2
L1918.18T-3040-C	9.5	M4	18	9	3040	80	40	1.5	8.25	2.8	2



### L1918.18U-C



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-C counterbored rail type (most popular), which is usually used with a corresponding T-C rail.

Special low profile Torx head screws provided free of charge.

Weight: 0,55 Kg/m.

#### Tips

Standard carriages are the L1918.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.18U-0160-C	9.5	M4	18	9	160	80	40	1	8.25	2.6	1.9
L1918.18U-0240-C	9.5	M4	18	9	240	80	40	1	8.25	2.6	1.9
L1918.18U-0320-C	9.5	M4	18	9	320	80	40	1	8.25	2.6	1.9
L1918.18U-0400-C	9.5	M4	18	9	400	80	40	1	8.25	2.6	1.9
L1918.18U-0480-C	9.5	M4	18	9	480	80	40	1	8.25	2.6	1.9
L1918.18U-0560-C	9.5	M4	18	9	560	80	40	1	8.25	2.6	1.9
L1918.18U-0640-C	9.5	M4	18	9	640	80	40	1	8.25	2.6	1.9
L1918.18U-0720-C	9.5	M4	18	9	720	80	40	1	8.25	2.8	1.9
L1918.18U-0800-C	9.5	M4	18	9	800	80	40	1	8.25	2.6	1.9
L1918.18U-0880-C	9.5	M4	18	9	880	80	40	1	8.25	2.6	1.9
L1918.18U-0960-C	9.5	M4	18	9	960	80	40	1	8.25	2.6	1.9
L1918.18U-1040-C	9.5	M4	18	9	1040	80	40	1	8.25	2.6	1.9
L1918.18U-1120-C	9.5	M4	18	9	1120	80	40	1	8.25	2.6	1.9
L1918.18U-1200-C	9.5	M4	18	9	1200	80	40	1	8.25	2.6	1.9
L1918.18U-1280-C	9.5	M4	18	9	1280	80	40	1	8.25	2.6	1.9
L1918.18U-1360-C	9.5	M4	18	9	1360	80	40	1	8.25	2.6	1.9
L1918.18U-1440-C	9.5	M4	18	9	1440	80	40	1	8.25	2.6	1.9
L1918.18U-1520-C	9.5	M4	18	9	1520	80	40	1	8.25	2.6	1.9
L1918.18U-1600-C	9.5	M4	18	9	1600	80	40	1	8.25	2.6	1.9
L1918.18U-1680-C	9.5	M4	18	9	1680	80	40	1	8.25	2.6	1.9
L1918.18U-1760-C	9.5	M4	18	9	1760	80	40	1	8.25	2.6	1.9
L1918.18U-1840-C	9.5	M4	18	9	1840	80	40	1	8.25	2.6	1.9
L1918.18U-1920-C	9.5	M4	18	9	1920	80	40	1	8.25	2.6	1.9
L1918.18U-2000-C	9.5	M4	18	9	2000	80	40	1	8.25	2.6	1.9
L1918.18U-2080-C	9.5	M4	18	9	2080	80	40	1	8.25	2.6	1.9
L1918.18U-2160-C	9.5	M4	18	9	2160	80	40	1	8.25	2.6	1.9
L1918.18U-2240-C	9.5	M4	18	9	2240	80	40	1	8.25	2.6	1.9
L1918.18U-2320-C	9.5	M4	18	9	2320	80	40	1	8.25	2.6	1.9
L1918.18U-2400-C	9.5	M4	18	9	2400	80	40	1	8.25	2.6	1.9
L1918.18U-2480-C	9.5	M4	18	9	2480	80	40	1	8.25	2.6	1.9
L1918.18U-2560-C	9.5	M4	18	9	2560	80	40	1	8.25	2.6	1.9

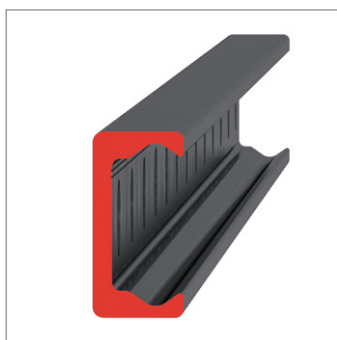


## Light Duty U Rail counterbored holes

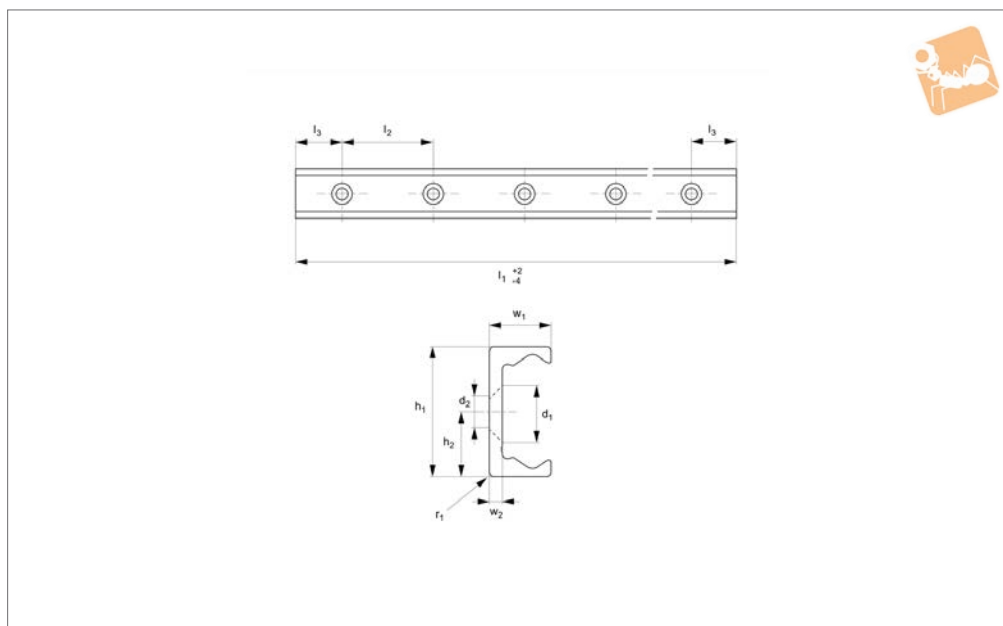


## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.18U-2640-C	9.5	M4	18	9	2640	80	40	1	8.25	2.6	1.9
L1918.18U-2720-C	9.5	M4	18	9	2720	80	40	1	8.25	2.6	1.9
L1918.18U-2800-C	9.5	M4	18	9	2800	80	40	1	8.25	2.6	1.9
L1918.18U-2880-C	9.5	M4	18	9	2880	80	40	1	8.25	2.6	1.9
L1918.18U-2960-C	9.5	M4	18	9	2960	80	40	1	8.25	2.6	1.9
L1918.18U-3040-C	9.5	M4	18	9	3040	80	40	1	8.25	2.6	1.9



### L1918.18T-V



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).

This is the T-V countersunk rail which is usually used with a corresponding U-V rail.

For fixing use countersunk DIN 7991 screws.

Weight: 0,55 Kg/m.

#### Tips

Standard carriages are the L1918.CL series.

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.18T-0160-V	M4	18	9	160	80	40	1.5	8.25	2.8
L1918.18T-0240-V	M4	18	9	240	80	40	1.5	8.25	2.8
L1918.18T-0320-V	M4	18	9	320	80	40	1.5	8.25	2.8
L1918.18T-0400-V	M4	18	9	400	80	40	1.5	8.25	2.8
L1918.18T-0480-V	M4	18	9	480	80	40	1.5	8.25	2.8
L1918.18T-0560-V	M4	18	9	560	80	40	1.5	8.25	2.8
L1918.18T-0640-V	M4	18	9	640	80	40	1.5	8.25	2.8
L1918.18T-0720-V	M4	18	9	720	80	40	1.5	8.25	2.8
L1918.18T-0800-V	M4	18	9	800	80	40	1.5	8.25	2.8
L1918.18T-0880-V	M4	18	9	880	80	40	1.5	8.25	2.8
L1918.18T-0960-V	M4	18	9	960	80	40	1.5	8.25	2.8
L1918.18T-1040-V	M4	18	9	1040	80	40	1.5	8.25	2.8
L1918.18T-1120-V	M4	18	9	1120	80	40	1.5	8.25	2.8
L1918.18T-1200-V	M4	18	9	1200	80	40	1.5	8.25	2.8
L1918.18T-1280-V	M4	18	9	1280	80	40	1.5	8.25	2.8
L1918.18T-1360-V	M4	18	9	1360	80	40	1.5	8.25	2.8
L1918.18T-1440-V	M4	18	9	1440	80	40	1.5	8.25	2.8
L1918.18T-1520-V	M4	18	9	1520	80	40	1.5	8.25	2.8
L1918.18T-1600-V	M4	18	9	1600	80	40	1.5	8.25	2.8
L1918.18T-1680-V	M4	18	9	1680	80	40	1.5	8.25	2.8
L1918.18T-1760-V	M4	18	9	1760	80	40	1.5	8.25	2.8
L1918.18T-1840-V	M4	18	9	1840	80	40	1.5	8.25	2.8
L1918.18T-1920-V	M4	18	9	1920	80	40	1.5	8.25	2.8
L1918.18T-2000-V	M4	18	9	2000	80	40	1.5	8.25	2.8
L1918.18T-2080-V	M4	18	9	2080	80	40	1.5	8.25	2.8
L1918.18T-2160-V	M4	18	9	2160	80	40	1.5	8.25	2.8
L1918.18T-2240-V	M4	18	9	2240	80	40	1.5	8.25	2.8
L1918.18T-2320-V	M4	18	9	2320	80	40	1.5	8.25	2.8
L1918.18T-2400-V	M4	18	9	2400	80	40	1.5	8.25	2.8
L1918.18T-2480-V	M4	18	9	2480	80	40	1.5	8.25	2.8
L1918.18T-2560-V	M4	18	9	2560	80	40	1.5	8.25	2.8

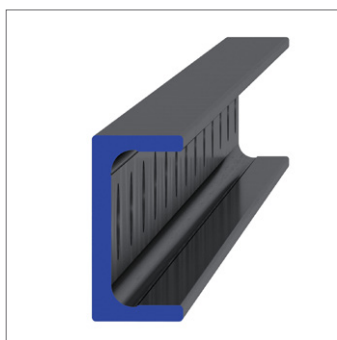


## Light Duty T Rail countersunk holes

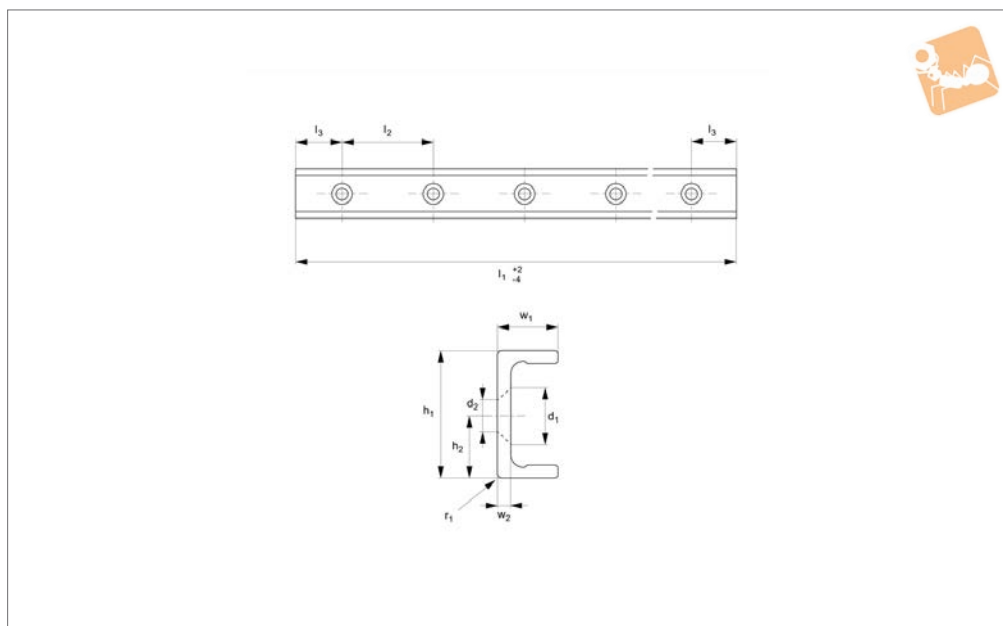


## Long Linear Rails

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.18T-2640-V	M4	18	9	2640	80	40	1.5	8.25	2.8
L1918.18T-2720-V	M4	18	9	2720	80	40	1.5	8.25	2.8
L1918.18T-2800-V	M4	18	9	2800	80	40	1.5	8.25	2.8
L1918.18T-2880-V	M4	18	9	2880	80	40	1.5	8.25	2.8
L1918.18T-2960-V	M4	18	9	2960	80	40	1.5	8.25	2.8
L1918.18T-3040-V	M4	18	9	3040	80	40	1.5	8.25	2.8



### L1918.18U-V



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-V countersunk rail type which is usually used with a corresponding T-V rail.

For fixing use countersunk DIN 7991 screws.

Weight: 0,55 Kg/m.

#### Tips

Standard carriages are the L1918.CL series.

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.18U-0160-V	M4	18	9	160	80	40	1	8.25	2.6
L1918.18U-0240-V	M4	18	9	240	80	40	1	8.25	2.6
L1918.18U-0320-V	M4	18	9	320	80	40	1	8.25	2.6
L1918.18U-0400-V	M4	18	9	400	80	40	1	8.25	2.6
L1918.18U-0480-V	M4	18	9	480	80	40	1	8.25	2.6
L1918.18U-0560-V	M4	18	9	560	80	40	1	8.25	2.6
L1918.18U-0640-V	M4	18	9	640	80	40	1	8.25	2.6
L1918.18U-0720-V	M4	18	9	720	80	40	1	8.25	2.6
L1918.18U-0800-V	M4	18	9	800	80	40	1	8.25	2.6
L1918.18U-0880-V	M4	18	9	880	80	40	1	8.25	2.6
L1918.18U-0960-V	M4	18	9	960	80	40	1	8.25	2.6
L1918.18U-1040-V	M4	18	9	1040	80	40	1	8.25	2.6
L1918.18U-1120-V	M4	18	9	1120	80	40	1	8.25	2.6
L1918.18U-1200-V	M4	18	9	1200	80	40	1	8.25	2.6
L1918.18U-1280-V	M4	18	9	1280	80	40	1	8.25	2.6
L1918.18U-1360-V	M4	18	9	1360	80	40	1	8.25	2.6
L1918.18U-1440-V	M4	18	9	1440	80	40	1	8.25	2.6
L1918.18U-1520-V	M4	18	9	1520	80	40	1	8.25	2.6
L1918.18U-1600-V	M4	18	9	1600	80	40	1	8.25	2.6
L1918.18U-1680-V	M4	18	9	1680	80	40	1	8.25	2.6
L1918.18U-1760-V	M4	18	9	1760	80	40	1	8.25	2.6
L1918.18U-1840-V	M4	18	9	1840	80	40	1	8.25	2.6
L1918.18U-1920-V	M4	18	9	1920	80	40	1	8.25	2.6
L1918.18U-2000-V	M4	18	9	2000	80	40	1	8.25	2.6
L1918.18U-2080-V	M4	18	9	2080	80	40	1	8.25	2.6
L1918.18U-2160-V	M4	18	9	2160	80	40	1	8.25	2.6
L1918.18U-2240-V	M4	18	9	2240	80	40	1	8.25	2.6
L1918.18U-2320-V	M4	18	9	2320	80	40	1	8.25	2.6
L1918.18U-2400-V	M4	18	9	2400	80	40	1	8.25	2.6
L1918.18U-2480-V	M4	18	9	2480	80	40	1	8.25	2.6
L1918.18U-2560-V	M4	18	9	2560	80	40	1	8.25	2.6



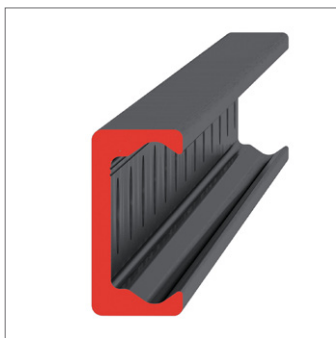
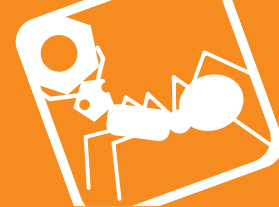


## Light Duty U Rail countersunk holes

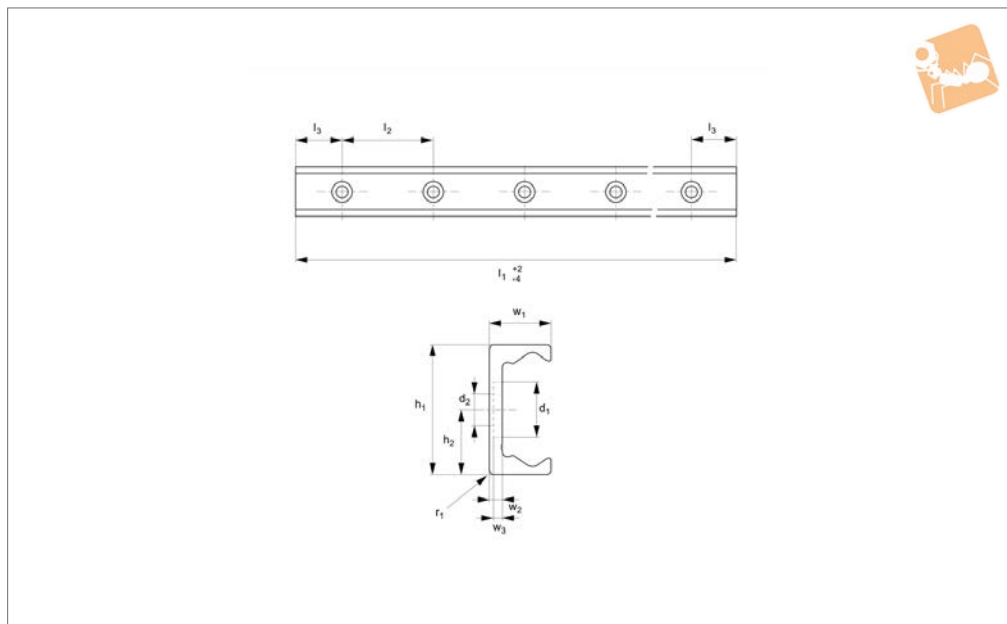


## Long Linear Rails

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.18U-2640-V	M4	18	9	2640	80	40	1	8.25	2.6
L1918.18U-2720-V	M4	18	9	2720	80	40	1	8.25	2.6
L1918.18U-2800-V	M4	18	9	2800	80	40	1	8.25	2.6
L1918.18U-2880-V	M4	18	9	2880	80	40	1	8.25	2.6
L1918.18U-2960-V	M4	18	9	2960	80	40	1	8.25	2.6
L1918.18U-3040-V	M4	18	9	3040	80	40	1	8.25	2.6



## L1918.TLC18



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.

Special low profile Torx head screws provided free of charge.

Weight: 0,55 Kg/m.

### Tips

Standard carriages are the L1918.N versions (die cast aluminium alloy with wipers). Alternatively the L1918.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.TLC18-0160	9.5	M4	18	9	160	80	40	1.5	8.25	2.8	2
L1918.TLC18-0240	9.5	M4	18	9	240	80	40	1.5	8.25	2.8	2
L1918.TLC18-0320	9.5	M4	18	9	320	80	40	1.5	8.25	2.8	2
L1918.TLC18-0400	9.5	M4	18	9	400	80	40	1.5	8.25	2.8	2
L1918.TLC18-0480	9.5	M4	18	9	480	80	40	1.5	8.25	2.8	2
L1918.TLC18-0560	9.5	M4	18	9	560	80	40	1.5	8.25	2.8	2
L1918.TLC18-0640	9.5	M4	18	9	640	80	40	1.5	8.25	2.8	2
L1918.TLC18-0720	9.5	M4	18	9	720	80	40	1.5	8.25	2.8	2
L1918.TLC18-0800	9.5	M4	18	9	800	80	40	1.5	8.25	2.8	2
L1918.TLC18-0880	9.5	M4	18	9	880	80	40	1.5	8.25	2.8	2
L1918.TLC18-0960	9.5	M4	18	9	960	80	40	1.5	8.25	2.8	2
L1918.TLC18-1040	9.5	M4	18	9	1040	80	40	1.5	8.25	2.8	2
L1918.TLC18-1120	9.5	M4	18	9	1120	80	40	1.5	8.25	2.8	2
L1918.TLC18-1200	9.5	M4	18	9	1200	80	40	1.5	8.25	2.8	2
L1918.TLC18-1280	9.5	M4	18	9	1280	80	40	1.5	8.25	2.8	2
L1918.TLC18-1360	9.5	M4	18	9	1360	80	40	1.5	8.25	2.8	2
L1918.TLC18-1440	9.5	M4	18	9	1440	80	40	1.5	8.25	2.8	2
L1918.TLC18-1520	9.5	M4	18	9	1520	80	40	1.5	8.25	2.8	2
L1918.TLC18-1600	9.5	M4	18	9	1600	80	40	1.5	8.25	2.8	2
L1918.TLC18-1680	9.5	M4	18	9	1680	80	40	1.5	8.25	2.8	2
L1918.TLC18-1760	9.5	M4	18	9	1760	80	40	1.5	8.25	2.8	2
L1918.TLC18-1840	9.5	M4	18	9	1840	80	40	1.5	8.25	2.8	2
L1918.TLC18-1920	9.5	M4	18	9	1920	80	40	1.5	8.25	2.8	2
L1918.TLC18-2000	9.5	M4	18	9	2000	80	40	1.5	8.25	2.8	2

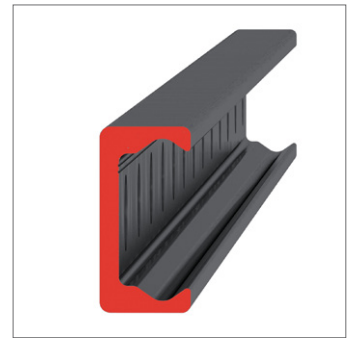
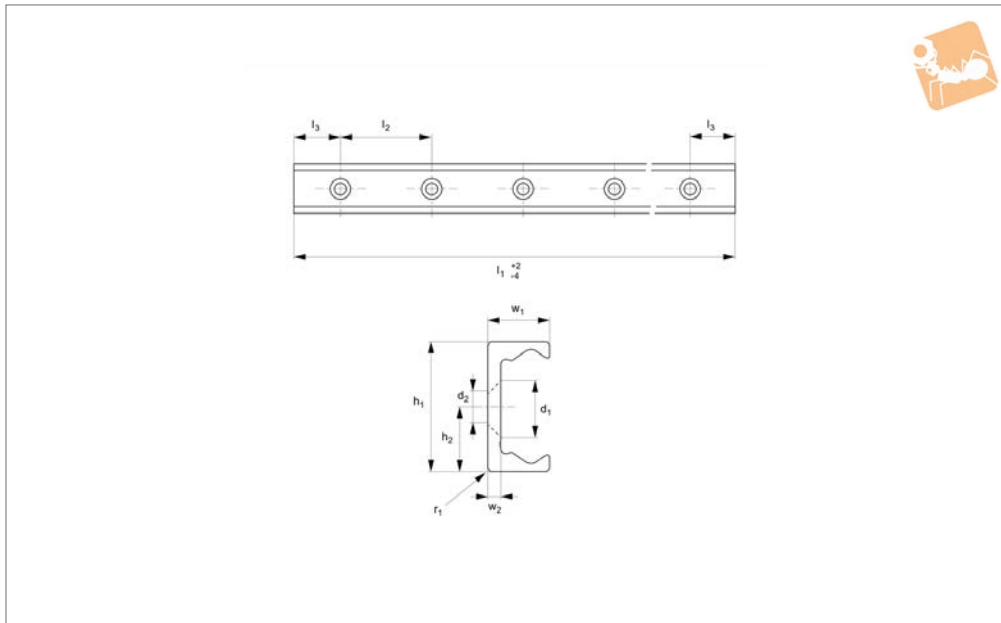


# Light Duty T Rail

countersunk holes



# Long Linear Rails



## L1918.TLV18

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

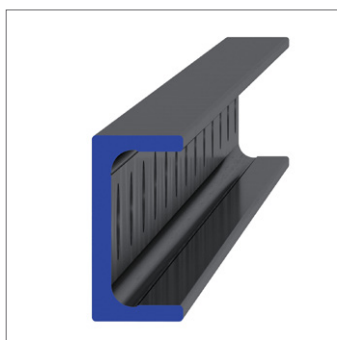
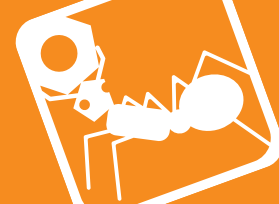
The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).  
This is the TLV countersunk rail which is usually used with a corresponding ULV rail. For fixing use countersunk DIN 7991 screws.  
Weight: 0,55 Kg/m.

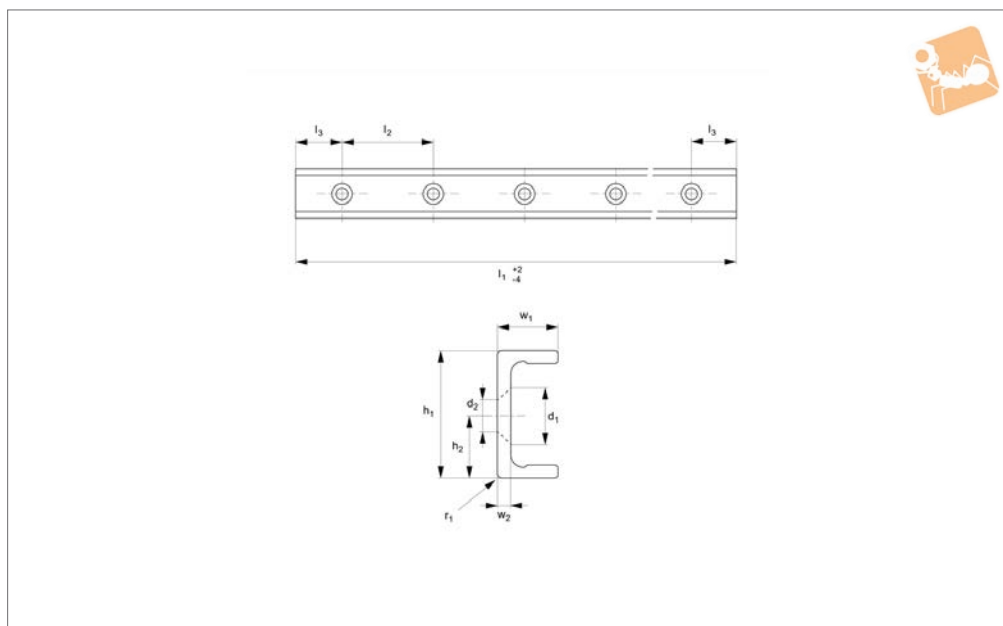
### Tips

Standard carriages are the L1918.N versions (die cast aluminium alloy with wipers). Alternatively the L1918.C type is also available (without wipers).

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.TLV18-0160	M4	18	9	160	80	40	1.5	8.25	2.8
L1918.TLV18-0240	M4	18	9	240	80	40	1.5	8.25	2.8
L1918.TLV18-0320	M4	18	9	320	80	40	1.5	8.25	2.8
L1918.TLV18-0400	M4	18	9	400	80	40	1.5	8.25	2.8
L1918.TLV18-0480	M4	18	9	480	80	40	1.5	8.25	2.8
L1918.TLV18-0560	M4	18	9	560	80	40	1.5	8.25	2.8
L1918.TLV18-0640	M4	18	9	640	80	40	1.5	8.25	2.8
L1918.TLV18-0720	M4	18	9	720	80	40	1.5	8.25	2.8
L1918.TLV18-0800	M4	18	9	800	80	40	1.5	8.25	2.8
L1918.TLV18-0880	M4	18	9	880	80	40	1.5	8.25	2.8
L1918.TLV18-0960	M4	18	9	960	80	40	1.5	8.25	2.8
L1918.TLV18-1040	M4	18	9	1040	80	40	1.5	8.25	2.8
L1918.TLV18-1120	M4	18	9	1120	80	40	1.5	8.25	2.8
L1918.TLV18-1200	M4	18	9	1200	80	40	1.5	8.25	2.8
L1918.TLV18-1280	M4	18	9	1280	80	40	1.5	8.25	2.8
L1918.TLV18-1360	M4	18	9	1360	80	40	1.5	8.25	2.8
L1918.TLV18-1440	M4	18	9	1440	80	40	1.5	8.25	2.8
L1918.TLV18-1520	M4	18	9	1520	80	40	1.5	8.25	2.8
L1918.TLV18-1600	M4	18	9	1600	80	40	1.5	8.25	2.8
L1918.TLV18-1680	M4	18	9	1680	80	40	1.5	8.25	2.8
L1918.TLV18-1760	M4	18	9	1760	80	40	1.5	8.25	2.8
L1918.TLV18-1840	M4	18	9	1840	80	40	1.5	8.25	2.8
L1918.TLV18-1920	M4	18	9	1920	80	40	1.5	8.25	2.8
L1918.TLV18-2000	M4	18	9	2000	80	40	1.5	8.25	2.8



## L1918.ULV18



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULV countersunk rail type which is usually used with a corresponding TLV rail.

For fixing use countersunk DIN 7991 screws.

Weight: 0,55 Kg/m.

### Tips

Standard carriages are the L1918.N versions (die cast aluminium alloy with wipers). Alternatively the L1918.C type is also available (without wipers).

Order No.	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.ULV18-0160	M4	18	9	160	80	40	1	8.25	2.6
L1918.ULV18-0240	M4	18	9	240	80	40	1	8.25	2.6
L1918.ULV18-0320	M4	18	9	320	80	40	1	8.25	2.6
L1918.ULV18-0400	M4	18	9	400	80	40	1	8.25	2.6
L1918.ULV18-0480	M4	18	9	480	80	40	1	8.25	2.6
L1918.ULV18-0560	M4	18	9	560	80	40	1	8.25	2.6
L1918.ULV18-0640	M4	18	9	640	80	40	1	8.25	2.6
L1918.ULV18-0720	M4	18	9	720	80	40	1	8.25	2.6
L1918.ULV18-0800	M4	18	9	800	80	40	1	8.25	2.6
L1918.ULV18-0880	M4	18	9	880	80	40	1	8.25	2.6
L1918.ULV18-0960	M4	18	9	960	80	40	1	8.25	2.6
L1918.ULV18-1040	M4	18	9	1040	80	40	1	8.25	2.6
L1918.ULV18-1120	M4	18	9	1120	80	40	1	8.25	2.6
L1918.ULV18-1200	M4	18	9	1200	80	40	1	8.25	2.6
L1918.ULV18-1280	M4	18	9	1280	80	40	1	8.25	2.6
L1918.ULV18-1360	M4	18	9	1360	80	40	1	8.25	2.6
L1918.ULV18-1440	M4	18	9	1440	80	40	1	8.25	2.6
L1918.ULV18-1520	M4	18	9	1520	80	40	1	8.25	2.6
L1918.ULV18-1600	M4	18	9	1600	80	40	1	8.25	2.6
L1918.ULV18-1680	M4	18	9	1680	80	40	1	8.25	2.6
L1918.ULV18-1760	M4	18	9	1760	80	40	1	8.25	2.6
L1918.ULV18-1840	M4	18	9	1840	80	40	1	8.25	2.6
L1918.ULV18-1920	M4	18	9	1920	80	40	1	8.25	2.6
L1918.ULV18-2000	M4	18	9	2000	80	40	1	8.25	2.6

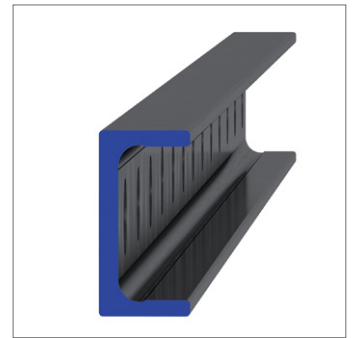
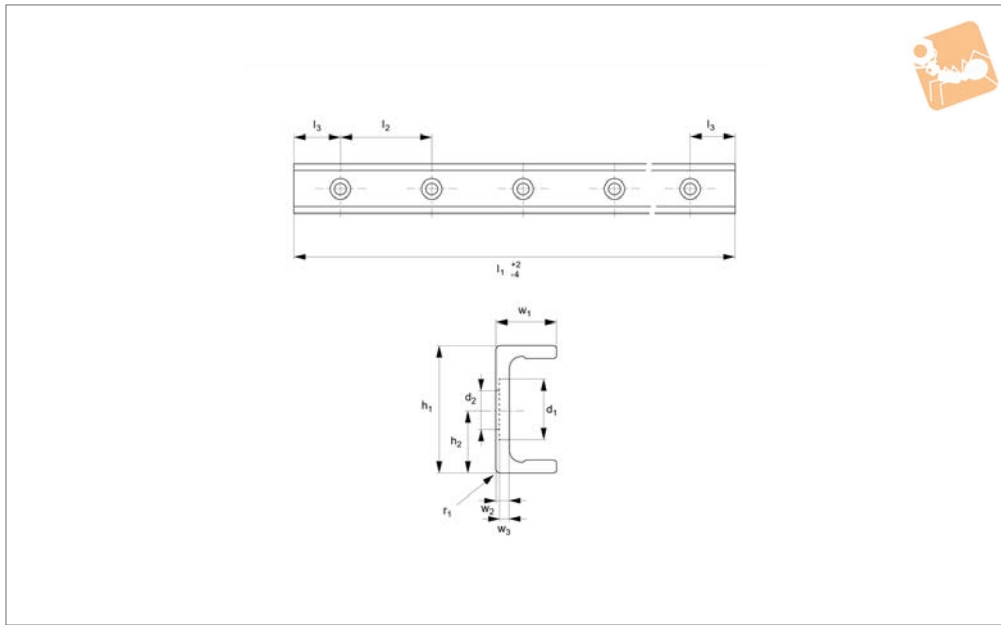


# Light Duty U Rail

counterbored holes



## Long Linear Rails



## L1918.ULC18

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

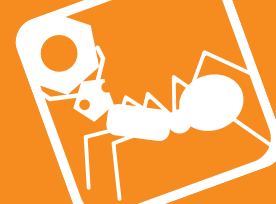
with a T master rail.

This is the ULC counterbored rail type (most popular), which is usually used with a corresponding TLC rail. Special low profile Torx head screws provided free of charge.  
Weight: 0,55 Kg/m.

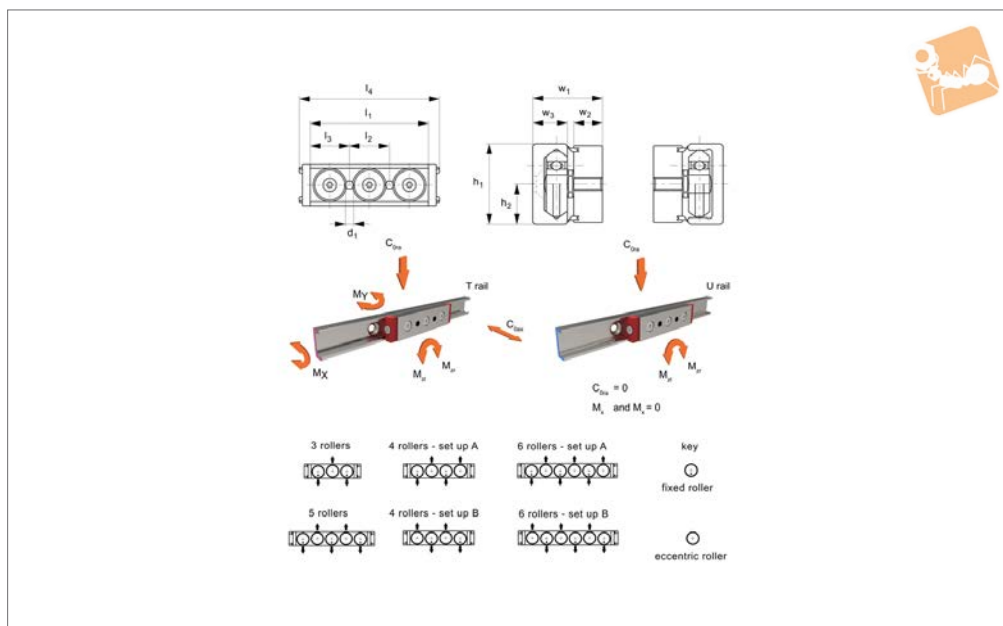
### Tips

Standard carriages are the L1918.N versions (die cast aluminium alloy with wipers). Alternatively the L1918.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1918.ULC18-0160	9.5	M4	18	9	160	80	40	1	8.25	2.6	1.9
L1918.ULC18-0240	9.5	M4	18	9	240	80	40	1	8.25	2.6	1.9
L1918.ULC18-0320	9.5	M4	18	9	320	80	40	1	8.25	2.6	1.9
L1918.ULC18-0400	9.5	M4	18	9	400	80	40	1	8.25	2.6	1.9
L1918.ULC18-0480	9.5	M4	18	9	480	80	40	1	8.25	2.6	1.9
L1918.ULC18-0560	9.5	M4	18	9	560	80	40	1	8.25	2.6	1.9
L1918.ULC18-0640	9.5	M4	18	9	640	80	40	1	8.25	2.6	1.9
L1918.ULC18-0720	9.5	M4	18	9	720	80	40	1	8.25	2.8	1.9
L1918.ULC18-0800	9.5	M4	18	9	800	80	40	1	8.25	2.6	1.9
L1918.ULC18-0880	9.5	M4	18	9	880	80	40	1	8.25	2.6	1.9
L1918.ULC18-0960	9.5	M4	18	9	960	80	40	1	8.25	2.6	1.9
L1918.ULC18-1040	9.5	M4	18	9	1040	80	40	1	8.25	2.6	1.9
L1918.ULC18-1120	9.5	M4	18	9	1120	80	40	1	8.25	2.6	1.9
L1918.ULC18-1200	9.5	M4	18	9	1200	80	40	1	8.25	2.6	1.9
L1918.ULC18-1280	9.5	M4	18	9	1280	80	40	1	8.25	2.6	1.9
L1918.ULC18-1360	9.5	M4	18	9	1360	80	40	1	8.25	2.6	1.9
L1918.ULC18-1440	9.5	M4	18	9	1440	80	40	1	8.25	2.6	1.9
L1918.ULC18-1520	9.5	M4	18	9	1520	80	40	1	8.25	2.6	1.9
L1918.ULC18-1600	9.5	M4	18	9	1600	80	40	1	8.25	2.6	1.9
L1918.ULC18-1680	9.5	M4	18	9	1680	80	40	1	8.25	2.6	1.9
L1918.ULC18-1760	9.5	M4	18	9	1760	80	40	1	8.25	2.6	1.9
L1918.ULC18-1840	9.5	M4	18	9	1840	80	40	1	8.25	2.6	1.9
L1918.ULC18-1920	9.5	M4	18	9	1920	80	40	1	8.25	2.6	1.9
L1918.ULC18-2000	9.5	M4	18	9	2000	80	40	1	8.25	2.6	1.9



## L1928.CL



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

either way up in the rail dependent on where the loads will be applied.  
Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 28H.

### Tips

The U rail sliders cannot accept axial loads.  
The 3 and 5 bearing sliders can be used

Order No.	For rail type	No. of rollers	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm
L1928.28CL-080-T	T	3	M5	28	14	80	35	22.5	94	6.4	16.4
L1928.28CL-080-U	U	3	M5	28	14	80	35	22.5	94	0	0
L1928.28CL-100-TA	T	4	M5	28	14	100	50	25.0	114	11.8	22.3
L1928.28CL-100-UA	U	4	M5	28	14	100	50	25.0	114	0	0
L1928.28CL-100-TB	T	4	M5	28	14	100	50	25.0	114	11.8	22.3
L1928.28CL-100-UB	U	4	M5	28	14	100	50	25.0	114	0	0
L1928.28CL-125-T	T	5	M5	28	14	125	25	25.0	139	11.8	30.0
L1928.28CL-125-U	U	5	M5	28	14	125	25	25.0	139	0	0
L1928.28CL-150-TA	T	6	M5	28	14	150	50	25.0	164	14.1	37.3
L1928.28CL-150-UA	U	6	M5	28	14	150	50	25.0	164	0	0
L1928.28CL-150-TB	T	6	M5	28	14	150	50	25.0	164	14.1	37.3
L1928.28CL-150-UB	U	6	M5	28	14	150	50	25.0	164	0	0

Order No.	M <sub>zr</sub> Nm	M <sub>z1</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	w <sub>3</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1928.28CL-080-T	28.0	28.0	24.1	10	12.3	4345	652	2213
L1928.28CL-080-U	28.0	28.0	24.1	10	12.3	4345	0	2213
L1928.28CL-100-TA	28.0	84.1	24.1	10	12.3	4345	765	2213
L1928.28CL-100-UA	28.0	84.1	24.1	10	12.3	4345	0	2213
L1928.28CL-100-TB	84.1	27.2	24.1	10	12.3	4345	765	2213
L1928.28CL-100-UB	84.1	27.2	24.1	10	12.3	4345	0	2213
L1928.28CL-125-T	84.1	84.1	24.1	10	12.3	5160	919	2630
L1928.28CL-125-U	84.1	84.1	24.1	10	12.3	5160	0	2630
L1928.28CL-150-TA	84.1	140.0	24.1	10	12.3	5160	1102	2630



## Medium Duty Sliders, size 28

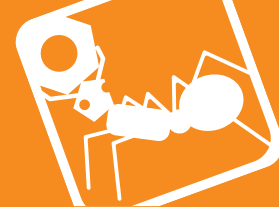
side seal, front fixing, with wiper



### Long Linear Rails

Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0ax}$ N max.	Static load $C_{0rad}$ N max.
<b>L1928.28CL-150-UA</b>	84.1	140.0	24.1	10	12.3	5160	0	2630
<b>L1928.28CL-150-TB</b>	140.0	84.1	24.1	10	12.3	5160	1102	2630
<b>L1928.28CL-150-UB</b>	140.0	84.1	24.1	10	12.3	5160	0	2630

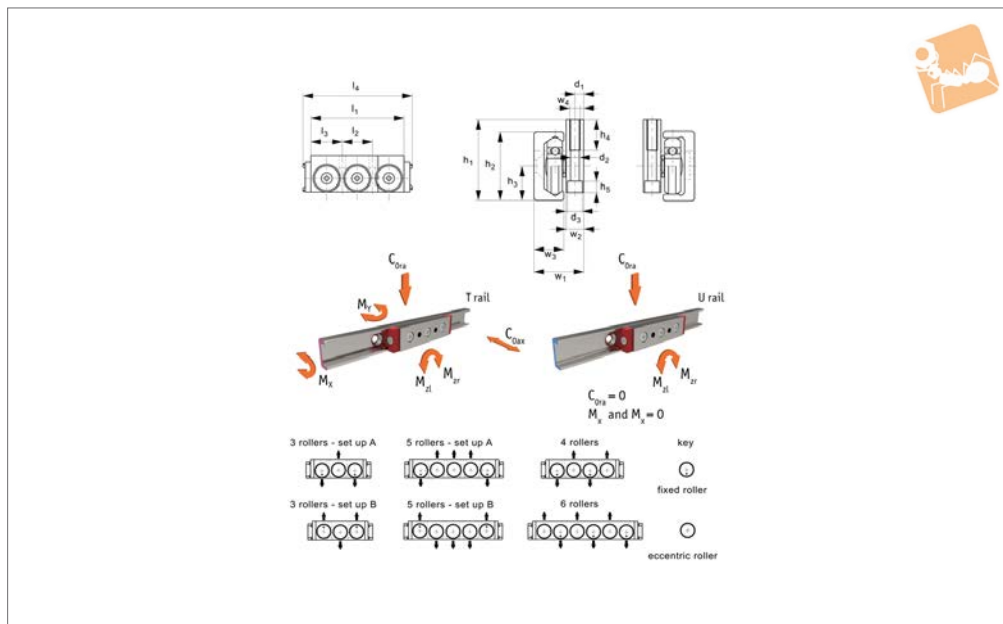
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1928.CR



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 28H.

### Tips

Easy to install (one or more rollers are

Order No.	For rail type	No. of rollers	d <sub>1</sub> for screw	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm
L1928.28CR-080-TA	T	3	M6	5.2	9	28	14	32	10	5.5	80	36	22	94	6.4
L1928.28CR-080-UA	U	3	M6	5.2	9	28	14	32	10	5.5	80	36	22	94	0
L1928.28CR-080-TB	T	3	M6	5.2	9	28	14	32	10	5.5	80	36	22	94	6.4
L1928.28CR-080-UB	U	3	M6	5.2	9	28	14	32	10	5.5	80	36	22	94	0
L1928.28CR-100-TA	T	4	M6	5.2	9	28	14	32	10	5.5	100	28	22	114	11.8
L1928.28CR-100-UA	U	4	M6	5.2	9	28	14	32	10	5.5	100	28	22	114	0
L1928.28CR-100-TB	T	4	M6	5.2	9	28	14	32	10	5.5	100	28	22	114	11.8
L1928.28CR-100-UB	U	4	M6	5.2	9	28	14	32	10	5.5	100	28	22	114	0
L1928.28CR-125-TA	T	5	M6	5.2	9	28	14	32	10	5.5	125	27	22	139	11.8
L1928.28CR-125-UA	U	5	M6	5.2	9	28	14	32	10	5.5	125	27	22	139	0
L1928.28CR-125-TB	T	5	M6	5.2	9	28	14	32	10	5.5	125	27	22	139	11.8
L1928.28CR-125-UB	U	5	M6	5.2	9	28	14	32	10	5.5	125	27	22	139	0
L1928.28CR-150-TA	T	6	M6	5.2	9	28	14	32	10	5.5	150	27	22	164	14.1
L1928.28CR-150-UA	U	6	M6	5.2	9	28	14	32	10	5.5	150	27	22	164	0
L1928.28CR-150-TB	T	6	M6	5.2	9	28	14	32	10	5.5	150	27	22	164	14.1
L1928.28CR-150-UB	U	6	M6	5.2	9	28	14	32	10	5.5	150	27	22	164	0

Order No.	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>ztl</sub> Nm	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1928.28CR-080-TA	16.4	28.0	28.0	24.1	10	12.3	5	4345	652	2213
L1928.28CR-080-UA	0	28.0	28.0	24.1	10	12.3	5	4345	0	2213
L1928.28CR-080-TB	16.4	28.0	28.0	24.1	10	12.3	5	4345	652	2213
L1928.28CR-080-UB	0	28.0	28.0	24.1	10	12.3	5	4345	0	2213
L1928.28CR-100-TA	22.3	28.0	84.1	24.1	10	12.3	5	4345	765	2213





## Medium Duty Sliders, size 28

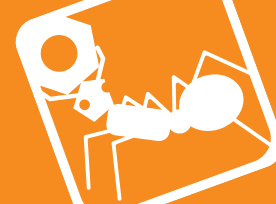
no side seal, side fixing, with wiper



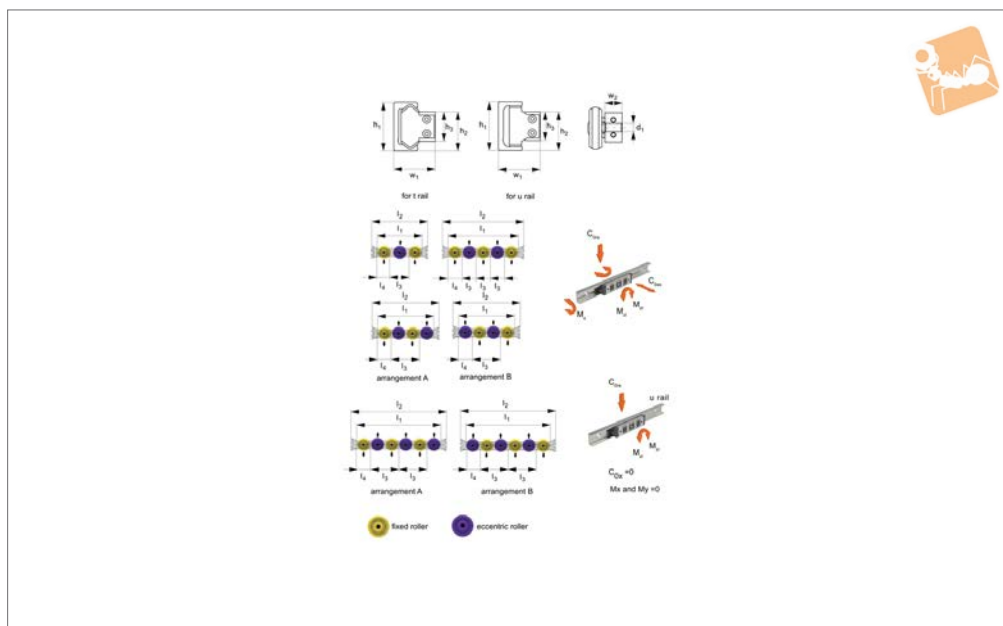
Long Linear  
Rails

Order No.	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$	$w_2$	$w_3$	$w_4$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Static load $C_{0\text{ rad.}}$ N max.
L1928.28CR-100-UA	0	28.0	84.1	24.1	10	12.3	5	4345	0	2213
L1928.28CR-100-TB	22.3	84.1	28.0	24.1	10	12.3	5	4345	765	2213
L1928.28CR-100-UB	0	84.1	28.0	24.1	10	12.3	5	4345	0	2213
L1928.28CR-125-TA	30.0	84.1	84.1	24.1	10	12.3	5	5160	919	2630
L1928.28CR-125-UA	0	84.1	84.1	24.1	10	12.3	5	5160	0	2630
L1928.28CR-125-TB	30.0	84.1	84.1	24.1	10	12.3	5	5160	919	2630
L1928.28CR-125-UB	0	84.1	84.1	24.1	10	12.3	5	5160	0	2630
L1928.28CR-150-TA	37.3	84.1	140.0	24.1	10	12.3	5	5160	1102	2630
L1928.28CR-150-UA	0	84.1	140.0	24.1	10	12.3	5	5160	0	2630
L1928.28CR-150-TB	37.3	140.0	84.1	24.1	10	12.3	5	5160	1102	2630
L1928.28CR-150-UB	0	140.0	84.1	24.1	10	12.3	5	5160	0	2630

LONG LINEAR RAILS



## L1928.CSW



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CSW sliders do not have protective side seals.

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 28.

### Tips

Easy to install (one or more rollers are

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>Oax</sub> N	C <sub>Orad</sub> N	d <sub>1</sub>	+0.25 -0.10	h <sub>2</sub> +0 -0.10	h <sub>3</sub> +0.05 -0.35	Weight kg
L1928.CSW28-080-2ZT	T	3	Metal	4260	640	2170	M5	28	14.9	21.7	0.115
L1928.CSW28-080-2ZU	U	3	Metal	4260	0	2170	M5	28	14.9	21.7	0.115
L1928.CSW28-100-2ZTA	T	4	Metal	4260	750	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2ZUA	U	4	Metal	4260	0	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2ZTB	T	4	Metal	4260	750	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2ZUB	U	4	Metal	4260	0	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-125-2ZT	T	5	Metal	5065	900	2580	M5	28	14.9	21.7	0.24
L1928.CSW28-125-2ZU	U	5	Metal	5065	0	2580	M5	28	14.9	21.7	0.24
L1928.CSW28-150-2ZTA	T	6	Metal	5065	1070	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-150-2ZUA	U	6	Metal	5065	0	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-150-2ZTB	T	6	Metal	5065	1070	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-150-2ZUB	U	6	Metal	5065	0	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-080-2RST	T	3	Rubber	4260	640	2170	M5	28	14.9	21.7	0.155
L1928.CSW28-080-2RSU	U	3	Rubber	4260	0	2170	M5	28	14.9	21.7	0.155
L1928.CSW28-100-2RSTA	T	4	Rubber	4260	750	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2RSUA	U	4	Rubber	4260	0	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2RSTB	T	4	Rubber	4260	750	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-100-2RSUB	U	4	Rubber	4260	0	2170	M5	28	14.9	21.7	0.195
L1928.CSW28-125-2RST	T	5	Rubber	5065	900	2580	M5	28	14.9	21.7	0.24
L1928.CSW28-125-2RSU	U	5	Rubber	5065	0	2580	M5	28	14.9	21.7	0.24
L1928.CSW28-150-2RSTA	T	6	Rubber	5065	1070	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-150-2RSUA	U	6	Rubber	5065	0	2580	M5	28	14.9	21.7	0.29



# Medium Duty Sliders, size 28

no side seal, front fixing



Long Linear  
Rails

Order No.	For rail type	No. of rollers	Seal type	C <sub>N</sub>	C <sub>0ax</sub> <sub>N</sub>	C <sub>0rad</sub> <sub>N</sub>	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.10	h <sub>3</sub> +0.05 -0.35	Weight kg
L1928.CSW28-150-2RSTB	T	6	Rubber	5065	1070	2580	M5	28	14.9	21.7	0.29
L1928.CSW28-150-2RSUB	U	6	Rubber	5065	0	2580	M5	28	14.9	21.7	0.29

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zi</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>
L1928.CSW28-080-2ZT	80	100	35	22.5	6.2	16	27.2	27.2	23.9	9.7
L1928.CSW28-080-2ZU	80	100	35	22.5	0	0	27.2	27.2	23.9	9.7
L1928.CSW28-100-2ZTA	100	120	50	25	11.5	21.7	27.2	81.7	23.9	9.7
L1928.CSW28-100-2ZUA	100	120	50	25	0	0	27.2	81.7	23.9	9.7
L1928.CSW28-100-2ZTB	100	120	50	25	11.5	21.7	81.7	27.2	23.9	9.7
L1928.CSW28-100-2ZUB	100	120	50	25	0	0	81.7	27.2	23.9	9.7
L1928.CSW28-125-2ZT	125	145	25	25	11.5	29	81.7	81.7	23.9	9.7
L1928.CSW28-125-2ZU	125	145	25	25	0	0	81.7	81.7	23.9	9.7
L1928.CSW28-150-2ZTA	150	170	50	25	13.7	36.2	81.7	136.1	23.9	9.7
L1928.CSW28-150-2ZUA	150	170	50	25	0	0	81.7	136.1	23.9	9.7
L1928.CSW28-150-2ZTB	150	170	50	25	13.7	36.2	136.1	81.7	23.9	9.7
L1928.CSW28-150-2ZUB	150	170	50	25	0	0	136.1	81.7	23.9	9.7
L1928.CSW28-080-2RST	80	100	35	22.5	6.2	16	27.2	27.2	23.9	9.7
L1928.CSW28-080-2RSU	80	100	35	22.5	0	0	27.2	27.2	23.9	9.7
L1928.CSW28-100-2RSTA	100	120	50	25	11.5	21.7	27.2	81.7	23.9	9.7
L1928.CSW28-100-2RSUA	100	120	50	25	0	0	27.2	81.7	23.9	9.7
L1928.CSW28-100-2RSTB	100	120	50	25	11.5	21.7	81.7	27.2	23.9	9.7
L1928.CSW28-100-2RSUB	100	120	50	25	0	0	81.7	27.2	23.9	9.7
L1928.CSW28-125-2RST	125	145	25	25	11.5	29	81.7	81.7	23.9	9.7
L1928.CSW28-125-2RSU	125	145	25	25	0	0	81.7	81.7	23.9	9.7
L1928.CSW28-150-2RSTA	150	170	50	25	13.7	36.2	81.7	136.1	23.9	9.7
L1928.CSW28-150-2RSUA	150	170	50	25	0	0	81.7	136.1	23.9	9.7
L1928.CSW28-150-2RSTB	150	170	50	25	13.7	36.2	136.1	81.7	23.9	9.7
L1928.CSW28-150-2RSUB	150	170	50	25	0	0	136.1	81.7	23.9	9.7

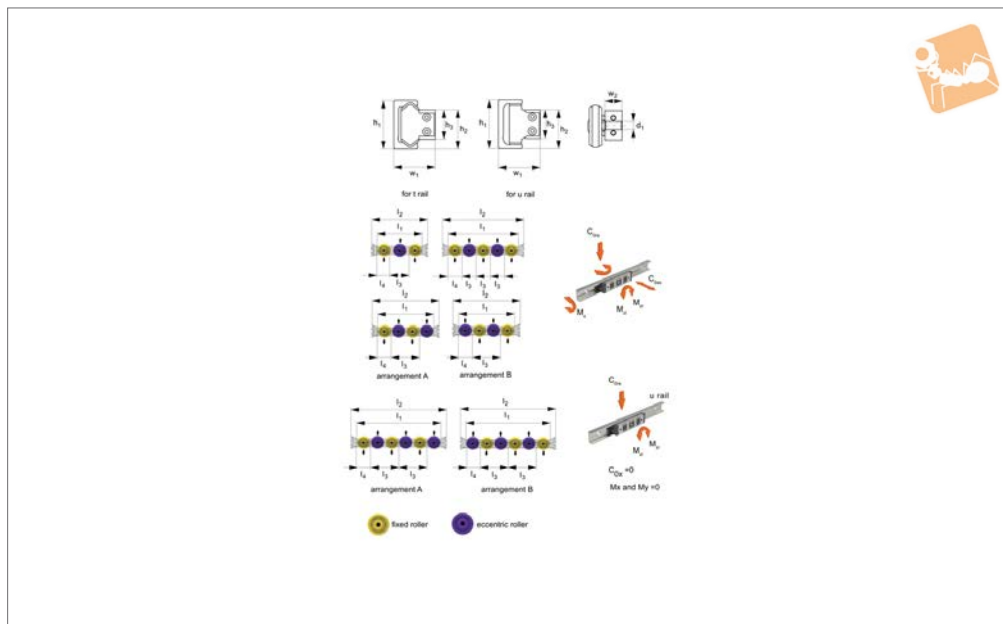
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1928.CS



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CS sliders do not have protective side seals.

The 3 and 5 bearing sliders can be used either way up in the rail dependent on where the loads will be applied.

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.

Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 28.

### Tips

The U rail sliders cannot accept axial loads.

Order No.	For rail type	No. of rollers	Seal type	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0.0 -0.10	h <sub>3</sub> +0.05 -0.35	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	Weight g
L1928.28CS-080-2RST	T	3	Rubber	M5	28	14.9	21.7	80	100	35	22.5	6.2	16	0.15
L1928.28CS-080-2RSU	U	3	Rubber	M5	28	14.9	21.7	80	100	35	22.5	0	0	0.15
L1928.28CS-100-2RSTA	T	4	Rubber	M5	28	14.9	21.7	100	120	50	25	11.5	21.7	0.19
L1928.28CS-100-2RSUA	U	4	Rubber	M5	28	14.9	21.7	100	120	50	25	0	0	0.19
L1928.28CS-100-2RSTB	T	4	Rubber	M5	28	14.9	21.7	100	120	50	25	11.5	21.7	0.19
L1928.28CS-100-2RSUB	U	4	Rubber	M5	28	14.9	21.7	100	120	50	25	0	0	0.19
L1928.28CS-125-2RST	T	5	Rubber	M5	28	14.9	21.7	125	145	25	25	11.5	29	0.24
L1928.28CS-125-2RSU	U	5	Rubber	M5	28	14.9	21.7	125	145	25	25	0	0	0.24
L1928.28CS-150-2RSTA	T	6	Rubber	M5	28	14.9	21.7	150	170	50	25	13.7	36.2	0.29
L1928.28CS-150-2RSUA	U	6	Rubber	M5	28	14.9	21.7	150	170	50	25	0	0	0.29
L1928.28CS-150-2RSTB	T	6	Rubber	M5	28	14.9	21.7	150	170	50	25	13.7	36.2	0.29
L1928.28CS-150-2RSUB	U	6	Rubber	M5	28	14.9	21.7	150	170	50	25	0	0	0.29



## Medium Duty Sliders - Size 28

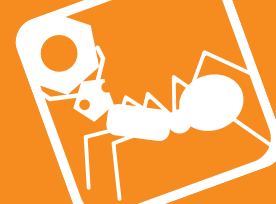
no side seal - front fixing - with wiper



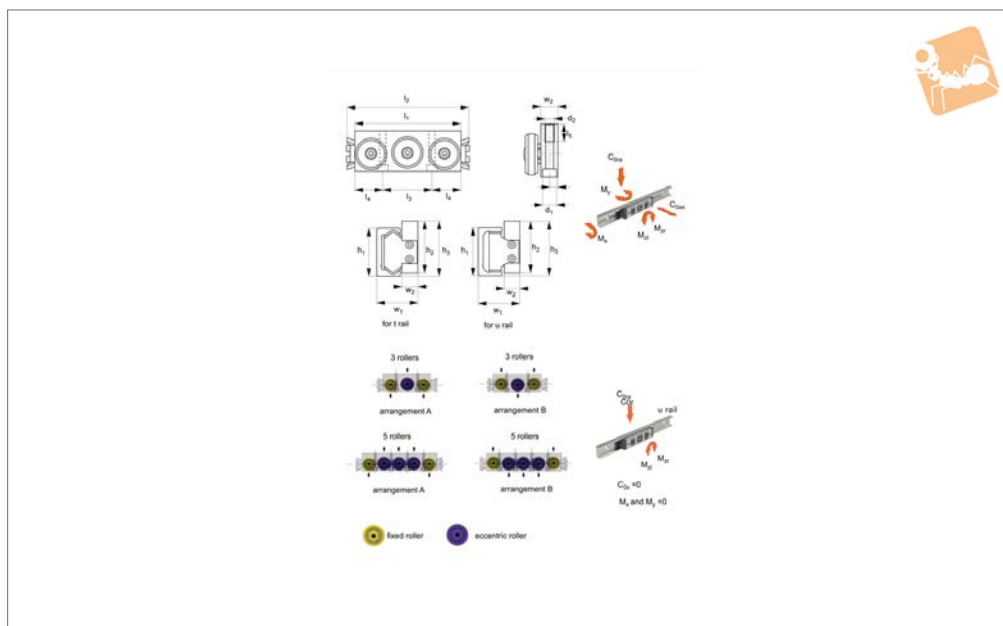
Long Linear  
Rails

Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	Dyn. load C N max.	Static load $C_{0 ax}$ N max.	Arrangement type	Static load $C_{0 rad}$ N max.
L1928.28CS-080-2RST	27.2	27.2	23.9	9.7	4260	640	-	2170
L1928.28CS-080-2RSU	27.2	27.2	23.9	9.7	4260	0	-	2170
L1928.28CS-100-2RSTA	27.2	81.7	23.9	9.7	4260	750	A	2170
L1928.28CS-100-2RSUA	27.2	81.7	23.9	9.7	4260	0	A	2170
L1928.28CS-100-2RSTB	81.7	27.2	23.9	9.7	4260	750	B	2170
L1928.28CS-100-2RSUB	81.7	27.2	23.9	9.7	4260	0	B	2170
L1928.28CS-125-2RST	81.7	81.7	23.9	9.7	5065	900	-	2580
L1928.28CS-125-2RSU	81.7	81.7	23.9	9.7	5065	0	-	2580
L1928.28CS-150-2RSTA	81.7	136.1	23.9	9.7	5065	1070	A	2580
L1928.28CS-150-2RSUA	81.7	136.1	23.9	9.7	5065	0	A	2580
L1928.28CS-150-2RSTB	136.1	81.7	23.9	9.7	5065	1070	B	2580
L1928.28CS-150-2RSUB	136.1	87.1	23.9	9.7	5065	0	B	2580

LONG LINEAR RAILS



## L1928.CDW



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CDW sliders do not have protective side seals.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 18.

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub> for screw	d <sub>2</sub> thread	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.50	h <sub>3</sub> +0.05 -0.35	l <sub>1</sub>	Weight g
L1928.CDW28-080-2RSTA	T	3	Rubber	4260	640	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2RSUA	U	3	Rubber	4260	0	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2ZTA	T	3	Metal	4260	640	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2ZUA	U	3	Metal	4260	0	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-125-2RSTA	T	5	Rubber	5065	900	2580	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-125-2RSUA	U	5	Rubber	5065	0	2580	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-125-2ZTA	T	5	Metal	5065	900	2580	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-125-2ZUA	U	5	Metal	5065	0	2580	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-080-2RSTB	T	3	Rubber	4260	640	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2RSUB	U	3	Rubber	4260	0	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2ZTB	T	3	Metal	4260	640	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-080-2ZUB	U	3	Metal	4260	0	2170	M5	M6	28	29.9	32	80	0.22
L1928.CDW28-125-2RSTB	T	5	Rubber	5065	900	2580	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-125-2RSUB	U	5	Rubber	5065	0	2580	M5	M6	28	29.9	32	125	0.30



# Medium Duty Sliders - size 28

no side seal - top fixing



## Long Linear Rails

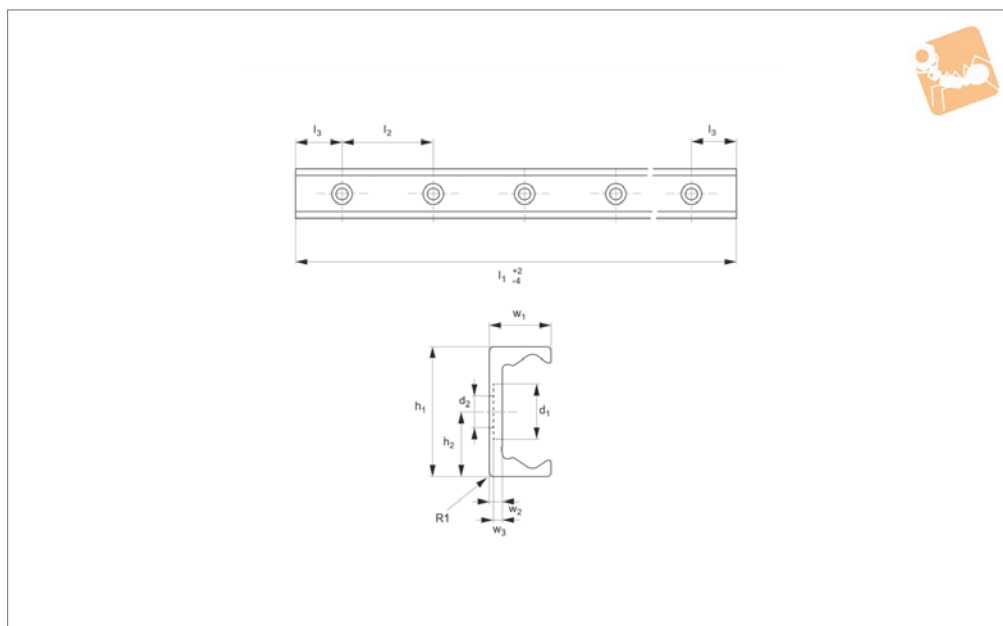
Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub> for screw	d <sub>2</sub> thread	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.50	h <sub>3</sub> +0.05 -0.35	l <sub>1</sub>	Weight g
L1928.CDW28-125-2ZTB	T	5	Metal	506 5	900	258 0	M5	M6	28	29.9	32	125	0.30
L1928.CDW28-125-2ZUB	U	5	Metal	506 5	0	258 0	M5	M6	28	29.9	32	125	0.30

Order No.	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.20	w <sub>2</sub>	w <sub>3</sub>	No. of holes	Arrangement type
L1928.CDW28-080-2RSTA	100	36	22	15	6.2	16	27.2	27.2	24.1	9.9	4.9	2	A
L1928.CDW28-080-2RSUA	100	36	22	15	0	0	27.2	27.2	24.1	9.9	4.9	2	A
L1928.CDW28-080-2ZTA	100	36	22	15	6.2	16	27.2	27.2	24.1	9.9	4.9	2	A
L1928.CDW28-080-2ZUA	100	36	22	15	0	0	27.2	27.2	24.1	9.9	4.9	2	A
L1928.CDW28-125-2RSTA	145	27	22	15	11.5	29	81.7	81.7	24.1	9.9	4.9	4	A
L1928.CDW28-125-2RSUA	145	27	22	15	0	0	81.7	81.7	24.1	9.9	4.9	4	A
L1928.CDW28-125-2ZTA	145	27	22	15	11.5	29	81.7	81.7	24.1	9.9	4.9	4	A
L1928.CDW28-125-2ZUA	145	27	22	15	0	0	81.7	81.7	24.1	9.9	4.9	4	A
L1928.CDW28-080-2RSTB	100	36	22	15	6.2	16	27.2	27.2	24.1	9.9	4.9	2	B
L1928.CDW28-080-2RSUB	100	36	22	15	0	0	27.2	27.2	24.1	9.9	4.9	2	B
L1928.CDW28-080-2ZTB	100	36	22	15	6.2	16	27.2	27.2	24.1	9.9	4.9	2	B
L1928.CDW28-080-2ZUB	100	36	22	15	0	0	27.2	27.2	24.1	9.9	4.9	2	B
L1928.CDW28-125-2RSTB	145	27	22	15	11.5	29	81.7	81.7	24.1	9.9	4.9	4	B
L1928.CDW28-125-2RSUB	145	27	22	15	0	0	81.7	81.7	24.1	9.9	4.9	4	B
L1928.CDW28-125-2ZTB	145	27	22	15	11.5	29	81.7	81.7	24.1	9.9	4.9	4	B
L1928.CDW28-125-2ZUB	145	27	22	15	0	0	81.7	81.7	24.1	9.9	4.9	4	B

LONG LINEAR RAILS



### L1928.TLC28



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.

Special low profile Torx head screws provided free of charge.

Weight: 1,0 Kg/m.

#### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.TLC28-0240	11	M5	28	14	240	80	40	1	12.3	3	2
L1928.TLC28-0320	11	M5	28	14	320	80	40	1	12.3	3	2
L1928.TLC28-0400	11	M5	28	14	400	80	40	1	12.3	3	2
L1928.TLC28-0480	11	M5	28	14	480	80	40	1	12.3	3	2
L1928.TLC28-0560	11	M5	28	14	560	80	40	1	12.3	3	2
L1928.TLC28-0640	11	M5	28	14	640	80	40	1	12.3	3	2
L1928.TLC28-0720	11	M5	28	14	720	80	40	1	12.3	3	2
L1928.TLC28-0800	11	M5	28	14	800	80	40	1	12.3	3	2
L1928.TLC28-0880	11	M5	28	14	880	80	40	1	12.3	3	2
L1928.TLC28-0960	11	M5	28	14	960	80	40	1	12.3	3	2
L1928.TLC28-1040	11	M5	28	14	1040	80	40	1	12.3	3	2
L1928.TLC28-1120	11	M5	28	14	1120	80	40	1	12.3	3	2
L1928.TLC28-1200	11	M5	28	14	1200	80	40	1	12.3	3	2
L1928.TLC28-1280	11	M5	28	14	1280	80	40	1	12.3	3	2
L1928.TLC28-1360	11	M5	28	14	1360	80	40	1	12.3	3	2
L1928.TLC28-1440	11	M5	28	14	1440	80	40	1	12.3	3	2
L1928.TLC28-1520	11	M5	28	14	1520	80	40	1	12.3	3	2
L1928.TLC28-1600	11	M5	28	14	1600	80	40	1	12.3	3	2
L1928.TLC28-1680	11	M5	28	14	1680	80	40	1	12.3	3	2
L1928.TLC28-1760	11	M5	28	14	1760	80	40	1	12.3	3	2
L1928.TLC28-1840	11	M5	28	14	1840	80	40	1	12.3	3	2
L1928.TLC28-1920	11	M5	28	14	1920	80	40	1	12.3	3	2
L1928.TLC28-2000	11	M5	28	14	2000	80	40	1	12.3	3	2
L1928.TLC28-2080	11	M5	28	14	2080	80	40	1	12.3	3	2
L1928.TLC28-2160	11	M5	28	14	2160	80	40	1	12.3	3	2
L1928.TLC28-2240	11	M5	28	14	2240	80	40	1	12.3	3	2
L1928.TLC28-2320	11	M5	28	14	2320	80	40	1	12.3	3	2
L1928.TLC28-2400	11	M5	28	14	2400	80	40	1	12.3	3	2
L1928.TLC28-2480	11	M5	28	14	2480	80	40	1	12.3	3	2
L1928.TLC28-2560	11	M5	28	14	2560	80	40	1	12.3	3	2
L1928.TLC28-2640	11	M5	28	14	2640	80	40	1	12.3	3	2



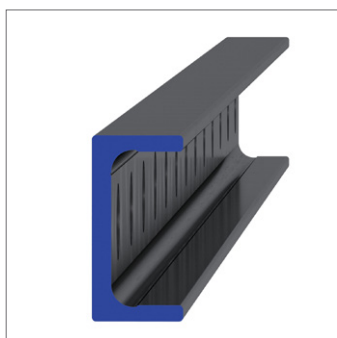


## Medium Duty T Rail counterbored holes

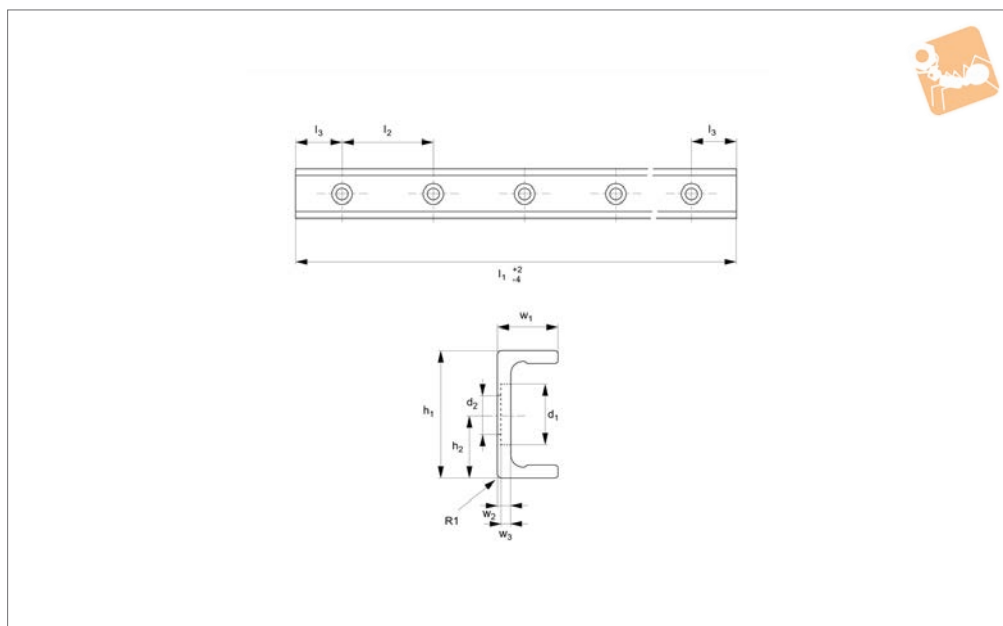


## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.TLC28-2720	11	M5	28	14	2720	80	40	1	12.3	3	2
L1928.TLC28-2800	11	M5	28	14	2800	80	40	1	12.3	3	2
L1928.TLC28-2880	11	M5	28	14	2880	80	40	1	12.3	3	2
L1928.TLC28-2960	11	M5	28	14	2960	80	40	1	12.3	3	2
L1928.TLC28-3040	11	M5	28	14	3040	80	40	1	12.3	3	2
L1928.TLC28-3120	11	M5	28	14	3120	80	40	1	12.3	3	2
L1928.TLC28-3200	11	M5	28	14	3200	80	40	1	12.3	3	2



### L1928.ULC28



#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULC counterbored rail type (most popular), which is usually used with a corresponding TLC rail.

Special low profile Torx head screws provided free of charge.

Weight: 1,0 Kg/m.

#### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.ULC28-0240	11	M5	28	14	240	80	40	1	12	3	2
L1928.ULC28-0320	11	M5	28	14	320	80	40	1	12	3	2
L1928.ULC28-0400	11	M5	28	14	400	80	40	1	12	3	2
L1928.ULC28-0480	11	M5	28	14	480	80	40	1	12	3	2
L1928.ULC28-0560	11	M5	28	14	560	80	40	1	12	3	2
L1928.ULC28-0640	11	M5	28	14	640	80	40	1	12	3	2
L1928.ULC28-0720	11	M5	28	14	720	80	40	1	12	3	2
L1928.ULC28-0800	11	M5	28	14	800	80	40	1	12	3	2
L1928.ULC28-0880	11	M5	28	14	880	80	40	1	12	3	2
L1928.ULC28-0960	11	M5	28	14	960	80	40	1	12	3	2
L1928.ULC28-1040	11	M5	28	14	1040	80	40	1	12	3	2
L1928.ULC28-1120	11	M5	28	14	1120	80	40	1	12	3	2
L1928.ULC28-1200	11	M5	28	14	1200	80	40	1	12	3	2
L1928.ULC28-1280	11	M5	28	14	1280	80	40	1	12	3	2
L1928.ULC28-1360	11	M5	28	14	1360	80	40	1	12	3	2
L1928.ULC28-1440	11	M5	28	14	1440	80	40	1	12	3	2
L1928.ULC28-1520	11	M5	28	14	1520	80	40	1	12	3	2
L1928.ULC28-1600	11	M5	28	14	1600	80	40	1	12	3	2
L1928.ULC28-1680	11	M5	28	14	1680	80	40	1	12	3	2
L1928.ULC28-1760	11	M5	28	14	1760	80	40	1	12	3	2
L1928.ULC28-1840	11	M5	28	14	1840	80	40	1	12	3	2
L1928.ULC28-1920	11	M5	28	14	1920	80	40	1	12	3	2
L1928.ULC28-2000	11	M5	28	14	2000	80	40	1	12	3	2
L1928.ULC28-2080	11	M5	28	14	2080	80	40	1	12	3	2
L1928.ULC28-2160	11	M5	28	14	2160	80	40	1	12	3	2
L1928.ULC28-2240	11	M5	28	14	2240	80	40	1	12	3	2
L1928.ULC28-2320	11	M5	28	14	2320	80	40	1	12	3	2
L1928.ULC28-2400	11	M5	28	14	2400	80	40	1	12	3	2
L1928.ULC28-2480	11	M5	28	14	2480	80	40	1	12	3	2
L1928.ULC28-2560	11	M5	28	14	2560	80	40	1	12	3	2
L1928.ULC28-2640	11	M5	28	14	2640	80	40	1	12	3	2

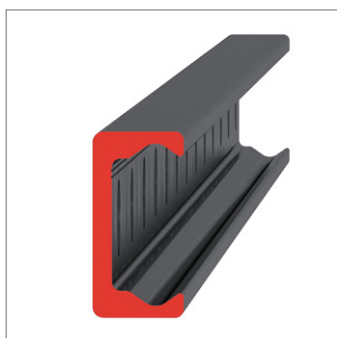
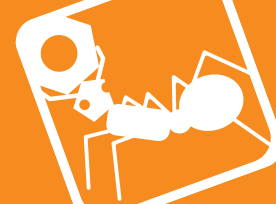


## Medium Duty U Rail counterbored holes

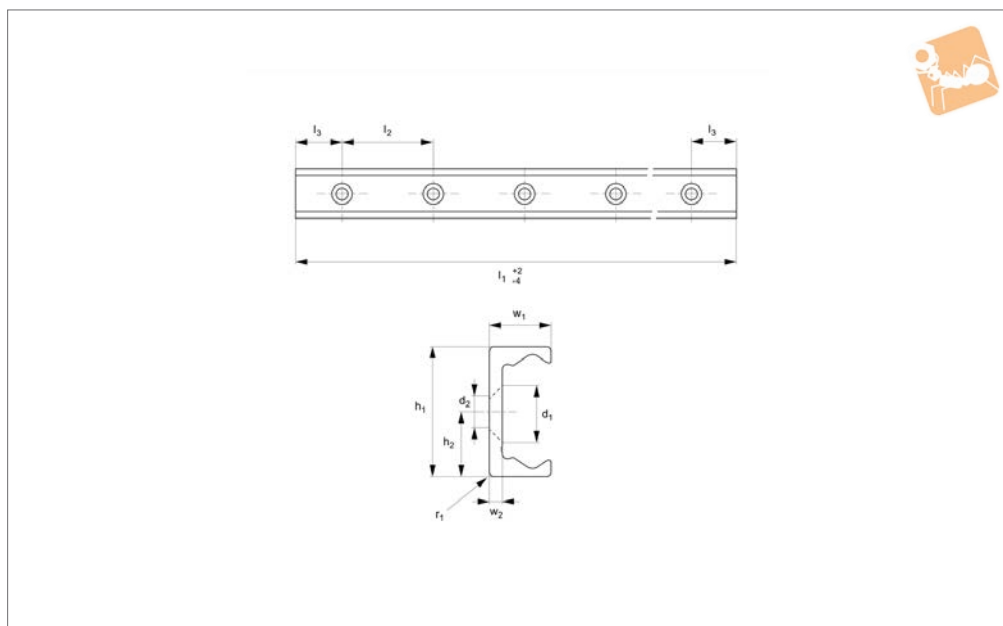


## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.ULC28-2720	11	M5	28	14	2720	80	40	1	12	3	2
L1928.ULC28-2800	11	M5	28	14	2800	80	40	1	12	3	2
L1928.ULC28-2880	11	M5	28	14	2880	80	40	1	12	3	2
L1928.ULC28-2960	11	M5	28	14	2960	80	40	1	12	3	2
L1928.ULC28-3040	11	M5	28	14	3040	80	40	1	12	3	2
L1928.ULC28-3120	11	M5	28	14	3120	80	40	1	12	3	2
L1928.ULC28-3200	11	M5	28	14	3200	80	40	1	12	3	2



## L1928.TLV28



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for misalignment).

This is the TLV countersunk rail which is usually used with a corresponding ULV rail.

For fixing use countersunk DIN 7991 screws.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1928.TLV28-0240	M5	28	14	240	80	40	1	12.3	3
L1928.TLV28-0320	M5	28	14	320	80	40	1	12.3	3
L1928.TLV28-0400	M5	28	14	400	80	40	1	12.3	3
L1928.TLV28-0480	M5	28	14	480	80	40	1	12.3	3
L1928.TLV28-0560	M5	28	14	560	80	40	1	12.3	3
L1928.TLV28-0640	M5	28	14	640	80	40	1	12.3	3
L1928.TLV28-0720	M5	28	14	720	80	40	1	12.3	3
L1928.TLV28-0800	M5	28	14	800	80	40	1	12.3	3
L1928.TLV28-0880	M5	28	14	880	80	40	1	12.3	3
L1928.TLV28-0960	M5	28	14	960	80	40	1	12.3	3
L1928.TLV28-1040	M5	28	14	1040	80	40	1	12.3	3
L1928.TLV28-1120	M5	28	14	1120	80	40	1	12.3	3
L1928.TLV28-1200	M5	28	14	1200	80	40	1	12.3	3
L1928.TLV28-1280	M5	28	14	1280	80	40	1	12.3	3
L1928.TLV28-1360	M5	28	14	1360	80	40	1	12.3	3
L1928.TLV28-1440	M5	28	14	1440	80	40	1	12.3	3
L1928.TLV28-1520	M5	28	14	1520	80	40	1	12.3	3
L1928.TLV28-1600	M5	28	14	1600	80	40	1	12.3	3
L1928.TLV28-1680	M5	28	14	1680	80	40	1	12.3	3
L1928.TLV28-1760	M5	28	14	1760	80	40	1	12.3	3
L1928.TLV28-1840	M5	28	14	1840	80	40	1	12.3	3
L1928.TLV28-1920	M5	28	14	1920	80	40	1	12.3	3
L1928.TLV28-2000	M5	28	14	2000	80	40	1	12.3	3
L1928.TLV28-2080	M5	28	14	2080	80	40	1	12.3	3
L1928.TLV28-2160	M5	28	14	2160	80	40	1	12.3	3
L1928.TLV28-2240	M5	28	14	2240	80	40	1	12.3	3
L1928.TLV28-2320	M5	28	14	2320	80	40	1	12.3	3
L1928.TLV28-2400	M5	28	14	2400	80	40	1	12.3	3
L1928.TLV28-2480	M5	28	14	2480	80	40	1	12.3	3
L1928.TLV28-2560	M5	28	14	2560	80	40	1	12.3	3
L1928.TLV28-2640	M5	28	14	2640	80	40	1	12.3	3



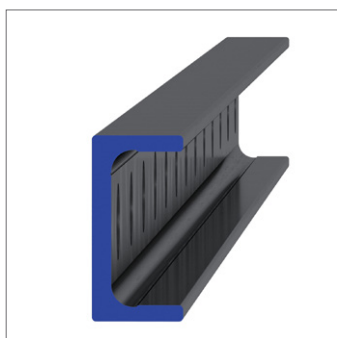
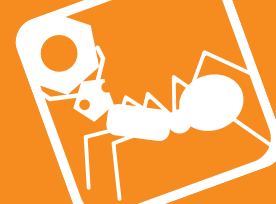
## Medium Duty T Rail

countersunk holes

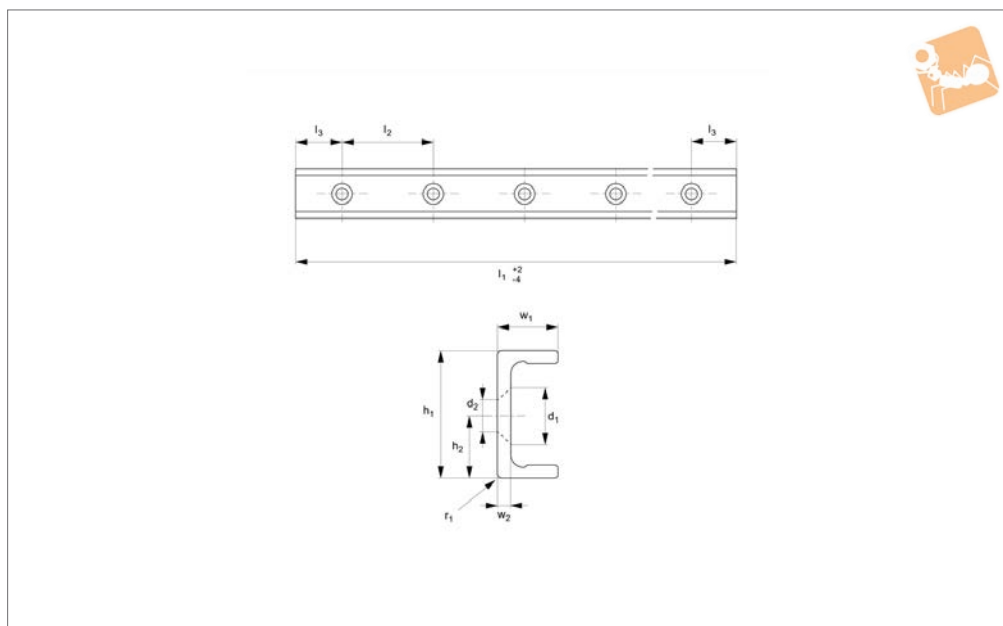


## Long Linear Rails

Order No.	$d_2$	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$
L1928.TLV28-2720	M5	28	14	2720	80	40	1	12.3	3
L1928.TLV28-2800	M5	28	14	2800	80	40	1	12.3	3
L1928.TLV28-2880	M5	28	14	2880	80	40	1	12.3	3
L1928.TLV28-2960	M5	28	14	2960	80	40	1	12.3	3
L1928.TLV28-3040	M5	28	14	3040	80	40	1	12.3	3
L1928.TLV28-3120	M5	28	14	3120	80	40	1	12.3	3
L1928.TLV28-3200	M5	28	14	3200	80	40	1	12.3	3



## L1928.ULV28



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULV countersunk rail type which is usually used with a corresponding TLV rail.

For fixing use countersunk DIN 7991 screws.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1928.ULV28-0240	M5	28	14	240	80	40	1	12	3
L1928.ULV28-0320	M5	28	14	320	80	40	1	12	3
L1928.ULV28-0400	M5	28	14	400	80	40	1	12	3
L1928.ULV28-0480	M5	28	14	480	80	40	1	12	3
L1928.ULV28-0560	M5	28	14	560	80	40	1	12	3
L1928.ULV28-0640	M5	28	14	640	80	40	1	12	3
L1928.ULV28-0720	M5	28	14	720	80	40	1	12	3
L1928.ULV28-0800	M5	28	14	800	80	40	1	12	3
L1928.ULV28-0880	M5	28	14	880	80	40	1	12	3
L1928.ULV28-0960	M5	28	14	960	80	40	1	12	3
L1928.ULV28-1040	M5	28	14	1040	80	40	1	12	3
L1928.ULV28-1120	M5	28	14	1120	80	40	1	12	3
L1928.ULV28-1200	M5	28	14	1200	80	40	1	12	3
L1928.ULV28-1280	M5	28	14	1280	80	40	1	12	3
L1928.ULV28-1360	M5	28	14	1360	80	40	1	12	3
L1928.ULV28-1440	M5	28	14	1440	80	40	1	12	3
L1928.ULV28-1520	M5	28	14	1520	80	40	1	12	3
L1928.ULV28-1600	M5	28	14	1600	80	40	1	12	3
L1928.ULV28-1680	M5	28	14	1680	80	40	1	12	3
L1928.ULV28-1760	M5	28	14	1760	80	40	1	12	3
L1928.ULV28-1840	M5	28	14	1840	80	40	1	12	3
L1928.ULV28-1920	M5	28	14	1920	80	40	1	12	3
L1928.ULV28-2000	M5	28	14	2000	80	40	1	12	3
L1928.ULV28-2080	M5	28	14	2080	80	40	1	12	3
L1928.ULV28-2160	M5	28	14	2160	80	40	1	12	3
L1928.ULV28-2240	M5	28	14	2240	80	40	1	12	3
L1928.ULV28-2320	M5	28	14	2320	80	40	1	12	3
L1928.ULV28-2400	M5	28	14	2400	80	40	1	12	3
L1928.ULV28-2480	M5	28	14	2480	80	40	1	12	3
L1928.ULV28-2560	M5	28	14	2560	80	40	1	12	3
L1928.ULV28-2640	M5	28	14	2640	80	40	1	12	3

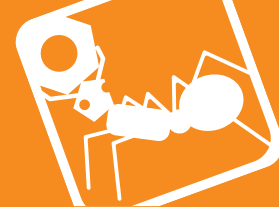


## Medium Duty U Rail countersunk holes

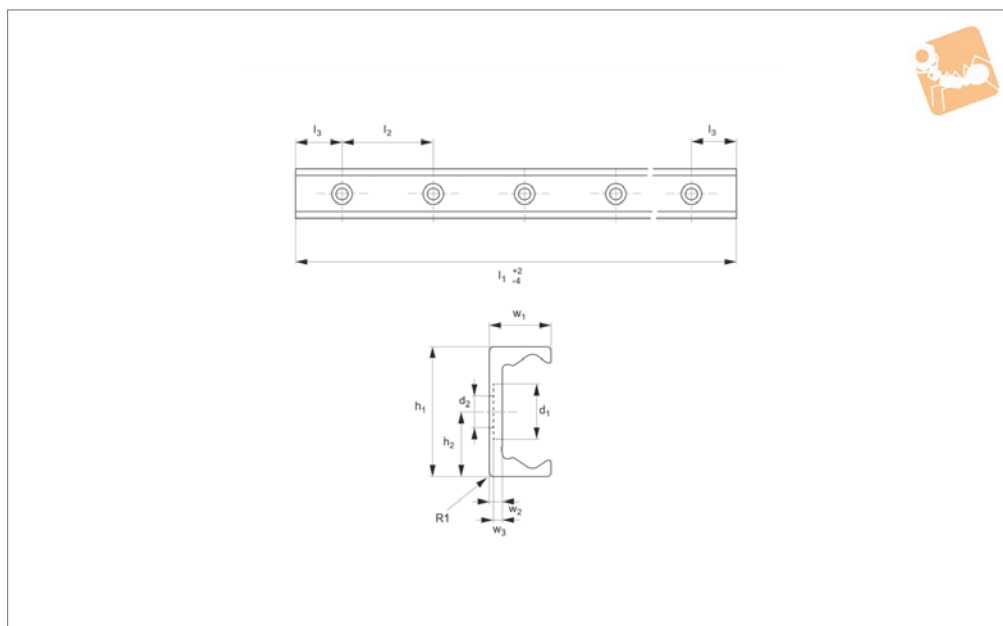


## Long Linear Rails

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1928.ULV28-2720	M5	28	14	2720	80	40	1	12	3
L1928.ULV28-2800	M5	28	14	2800	80	40	1	12	3
L1928.ULV28-2880	M5	28	14	2880	80	40	1	12	3
L1928.ULV28-2960	M5	28	14	2960	80	40	1	12	3
L1928.ULV28-3040	M5	28	14	3040	80	40	1	12	3
L1928.ULV28-3120	M5	28	14	3120	80	40	1	12	3
L1928.ULV28-3200	M5	28	14	3200	80	40	1	12	3



## L1928.28T-C



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding U-C rail.

Special low profile Torx head screws provided free of charge.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.28T-0240-C	11	M5	28	14	240	80	40	12.3	3	2
L1928.28T-0320-C	11	M5	28	14	320	80	40	12.3	3	2
L1928.28T-0400-C	11	M5	28	14	400	80	40	12.3	3	2
L1928.28T-0480-C	11	M5	28	14	480	80	40	12.3	3	2
L1928.28T-0560-C	11	M5	28	14	560	80	40	12.3	3	2
L1928.28T-0640-C	11	M5	28	14	640	80	40	12.3	3	2
L1928.28T-0720-C	11	M5	28	14	720	80	40	12.3	3	2
L1928.28T-0800-C	11	M5	28	14	800	80	40	12.3	3	2
L1928.28T-0880-C	11	M5	28	14	880	80	40	12.3	3	2
L1928.28T-0960-C	11	M5	28	14	960	80	40	12.3	3	2
L1928.28T-1040-C	11	M5	28	14	1040	80	40	12.3	3	2
L1928.28T-1120-C	11	M5	28	14	1120	80	40	12.3	3	2
L1928.28T-1200-C	11	M5	28	14	1200	80	40	12.3	3	2
L1928.28T-1280-C	11	M5	28	14	1280	80	40	12.3	3	2
L1928.28T-1360-C	11	M5	28	14	1360	80	40	12.3	3	2
L1928.28T-1440-C	11	M5	28	14	1440	80	40	12.3	3	2
L1928.28T-1520-C	11	M5	28	14	1520	80	40	12.3	3	2
L1928.28T-1600-C	11	M5	28	14	1600	80	40	12.3	3	2
L1928.28T-1680-C	11	M5	28	14	1680	80	40	12.3	3	2
L1928.28T-1760-C	11	M5	28	14	1760	80	40	12.3	3	2
L1928.28T-1840-C	11	M5	28	14	1840	80	40	12.3	3	2
L1928.28T-1920-C	11	M5	28	14	1920	80	40	12.3	3	2
L1928.28T-2000-C	11	M5	28	14	2000	80	40	12.3	3	2
L1928.28T-2080-C	11	M5	28	14	2080	80	40	12.3	3	2
L1928.28T-2160-C	11	M5	28	14	2160	80	40	12.3	3	2
L1928.28T-2240-C	11	M5	28	14	2240	80	40	12.3	3	2
L1928.28T-2320-C	11	M5	28	14	2320	80	40	12.3	3	2
L1928.28T-2400-C	11	M5	28	14	2400	80	40	12.3	3	2
L1928.28T-2480-C	11	M5	28	14	2480	80	40	12.3	3	2
L1928.28T-2560-C	11	M5	28	14	2560	80	40	12.3	3	2
L1928.28T-2640-C	11	M5	28	14	2640	80	40	12.3	3	2





# Medium Duty T Rail

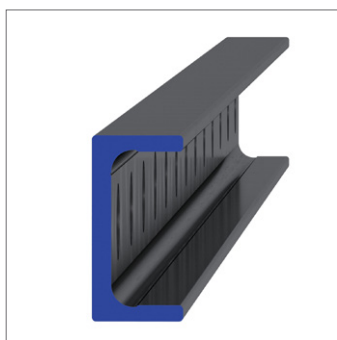
counterbored holes



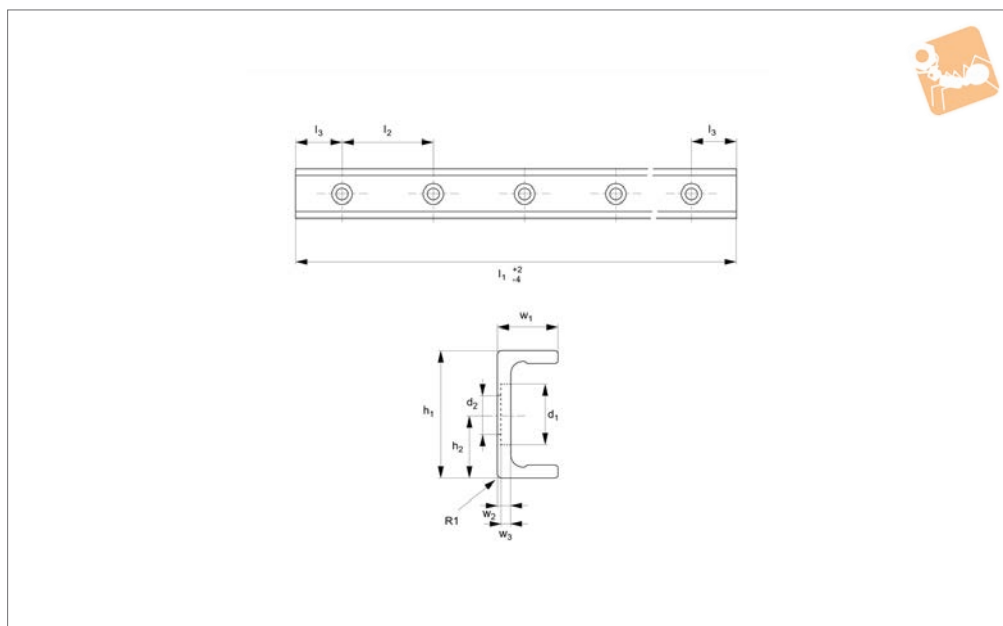
## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.28T-2720-C	11	M5	28	14	2720	80	40	12.3	3	2
L1928.28T-2800-C	11	M5	28	14	2800	80	40	12.3	3	2
L1928.28T-2880-C	11	M5	28	14	2880	80	40	12.3	3	2
L1928.28T-2960-C	11	M5	28	14	2960	80	40	12.3	3	2
L1928.28T-3040-C	11	M5	28	14	3040	80	40	12.3	3	2
L1928.28T-3120-C	11	M5	28	14	3120	80	40	12.3	3	2
L1928.28T-3200-C	11	M5	28	14	3200	80	40	12.3	3	2
L1928.28T-3280-C	11	M5	28	14	3280	80	40	12.3	3	2
L1928.28T-3360-C	11	M5	28	14	3360	80	40	12.3	3	2
L1928.28T-3440-C	11	M5	28	14	3440	80	40	12.3	3	2
L1928.28T-3520-C	11	M5	28	14	3520	80	40	12.3	3	2
L1928.28T-3600-C	11	M5	28	14	3600	80	40	12.3	3	2
L1928.28T-3680-C	11	M5	28	14	3680	80	40	12.3	3	2
L1928.28T-3760-C	11	M5	28	14	3760	80	40	12.3	3	2
L1928.28T-3840-C	11	M5	28	14	3840	80	40	12.3	3	2
L1928.28T-3920-C	11	M5	28	14	3920	80	40	12.3	3	2
L1928.28T-4000-C	11	M5	28	14	4000	80	40	12.3	3	2
L1928.28T-4080-C	11	M5	28	14	4080	80	40	12.3	3	2

LONG LINEAR RAILS



## L1928.28U-C



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-C counterbored rail type (most popular), which is usually used with a corresponding T-C rail.

Special low profile Torx head screws provided free of charge.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.28U-0240-C	11	M5	28	14	240	80	40	12	3	2
L1928.28U-0320-C	11	M5	28	14	320	80	40	12	3	2
L1928.28U-0400-C	11	M5	28	14	400	80	40	12	3	2
L1928.28U-0480-C	11	M5	28	14	480	80	40	12	3	2
L1928.28U-0560-C	11	M5	28	14	560	80	40	12	3	2
L1928.28U-0640-C	11	M5	28	14	640	80	40	12	3	2
L1928.28U-0720-C	11	M5	28	14	720	80	40	12	3	2
L1928.28U-0800-C	11	M5	28	14	800	80	40	12	3	2
L1928.28U-0880-C	11	M5	28	14	880	80	40	12	3	2
L1928.28U-0960-C	11	M5	28	14	960	80	40	12	3	2
L1928.28U-1040-C	11	M5	28	14	1040	80	40	12	3	2
L1928.28U-1120-C	11	M5	28	14	1120	80	40	12	3	2
L1928.28U-1200-C	11	M5	28	14	1200	80	40	12	3	2
L1928.28U-1280-C	11	M5	28	14	1280	80	40	12	3	2
L1928.28U-1360-C	11	M5	28	14	1360	80	40	12	3	2
L1928.28U-1440-C	11	M5	28	14	1440	80	40	12	3	2
L1928.28U-1520-C	11	M5	28	14	1520	80	40	12	3	2
L1928.28U-1600-C	11	M5	28	14	1600	80	40	12	3	2
L1928.28U-1680-C	11	M5	28	14	1680	80	40	12	3	2
L1928.28U-1760-C	11	M5	28	14	1760	80	40	12	3	2
L1928.28U-1840-C	11	M5	28	14	1840	80	40	12	3	2
L1928.28U-1920-C	11	M5	28	14	1920	80	40	12	3	2
L1928.28U-2000-C	11	M5	28	14	2000	80	40	12	3	2
L1928.28U-2080-C	11	M5	28	14	2080	80	40	12	3	2
L1928.28U-2160-C	11	M5	28	14	2160	80	40	12	3	2
L1928.28U-2240-C	11	M5	28	14	2240	80	40	12	3	2
L1928.28U-2320-C	11	M5	28	14	2320	80	40	12	3	2
L1928.28U-2400-C	11	M5	28	14	2400	80	40	12	3	2
L1928.28U-2480-C	11	M5	28	14	2480	80	40	12	3	2
L1928.28U-2560-C	11	M5	28	14	2560	80	40	12	3	2
L1928.28U-2640-C	11	M5	28	14	2640	80	40	12	3	2



# Medium Duty U Rail

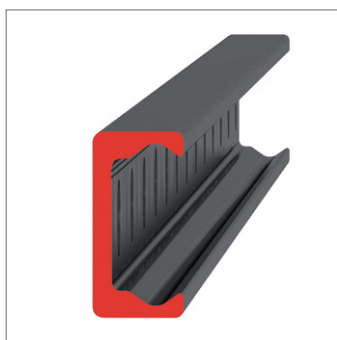
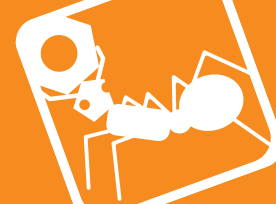
counterbored holes



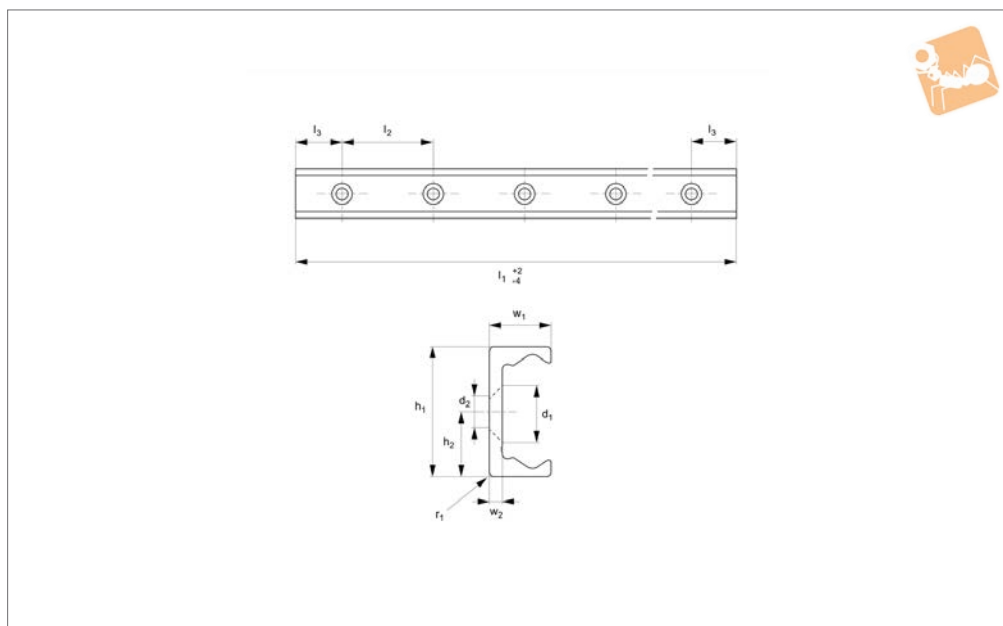
## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.28U-2720-C	11	M5	28	14	2720	80	40	12	3	2
L1928.28U-2800-C	11	M5	28	14	2800	80	40	12	3	2
L1928.28U-2880-C	11	M5	28	14	2880	80	40	12	3	2
L1928.28U-2960-C	11	M5	28	14	2960	80	40	12	3	2
L1928.28U-3040-C	11	M5	28	14	3040	80	40	12	3	2
L1928.28U-3120-C	11	M5	28	14	3120	80	40	12	3	2
L1928.28U-3200-C	11	M5	28	14	3200	80	40	12	3	2
L1928.28U-3280-C	11	M5	28	14	3280	80	40	12	3	2
L1928.28U-3360-C	11	M5	28	14	3360	80	40	12	3	2
L1928.28U-3440-C	11	M5	28	14	3440	80	40	12	3	2
L1928.28U-3520-C	11	M5	28	14	3520	80	40	12	3	2
L1928.28U-3600-C	11	M5	28	14	3600	80	40	12	3	2
L1928.28U-3680-C	11	M5	28	14	3680	80	40	12	3	2
L1928.28U-3760-C	11	M5	28	14	3760	80	40	12	3	2
L1928.28U-3840-C	11	M5	28	14	3840	80	40	12	3	2
L1928.28U-3920-C	11	M5	28	14	3920	80	40	12	3	2
L1928.28U-4000-C	11	M5	28	14	4000	80	40	12	3	2
L1928.28U-4080-C	11	M5	28	14	4080	80	40	12	3	2

LONG LINEAR RAILS



## L1928.28T-V



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for misalignment).

This is the T-V countersunk rail which is usually used with a corresponding U-V rail.

For fixing use countersunk DIN 7991 screws.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	d for screws
L1928.28T-0240-V	28	14	240	80	40	1	12.3	3	M5
L1928.28T-0320-V	28	14	320	80	40	1	12.3	3	M5
L1928.28T-0400-V	28	14	400	80	40	1	12.3	3	M5
L1928.28T-0480-V	28	14	480	80	40	1	12.3	3	M5
L1928.28T-0560-V	28	14	560	80	40	1	12.3	3	M5
L1928.28T-0640-V	28	14	640	80	40	1	12.3	3	M5
L1928.28T-0720-V	28	14	720	80	40	1	12.3	3	M5
L1928.28T-0800-V	28	14	800	80	40	1	12.3	3	M5
L1928.28T-0880-V	28	14	880	80	40	1	12.3	3	M5
L1928.28T-0960-V	28	14	960	80	40	1	12.3	3	M5
L1928.28T-1040-V	28	14	1040	80	40	1	12.3	3	M5
L1928.28T-1120-V	28	14	1120	80	40	1	12.3	3	M5
L1928.28T-1200-V	28	14	1200	80	40	1	12.3	3	M5
L1928.28T-1280-V	28	14	1280	80	40	1	12.3	3	M5
L1928.28T-1360-V	28	14	1360	80	40	1	12.3	3	M5
L1928.28T-1440-V	28	14	1440	80	40	1	12.3	3	M5
L1928.28T-1520-V	28	14	1520	80	40	1	12.3	3	M5
L1928.28T-1600-V	28	14	1600	80	40	1	12.3	3	M5
L1928.28T-1680-V	28	14	1680	80	40	1	12.3	3	M5
L1928.28T-1760-V	28	14	1760	80	40	1	12.3	3	M5
L1928.28T-1840-V	28	14	1840	80	40	1	12.3	3	M5
L1928.28T-1920-V	28	14	1920	80	40	1	12.3	3	M5
L1928.28T-2000-V	28	14	2000	80	40	1	12.3	3	M5
L1928.28T-2080-V	28	14	2080	80	40	1	12.3	3	M5
L1928.28T-2160-V	28	14	2160	80	40	1	12.3	3	M5
L1928.28T-2240-V	28	14	2240	80	40	1	12.3	3	M5
L1928.28T-2320-V	28	14	2320	80	40	1	12.3	3	M5
L1928.28T-2400-V	28	14	2400	80	40	1	12.3	3	M5
L1928.28T-2480-V	28	14	2480	80	40	1	12.3	3	M5
L1928.28T-2560-V	28	14	2560	80	40	1	12.3	3	M5
L1928.28T-2640-V	28	14	2640	80	40	1	12.3	3	M5

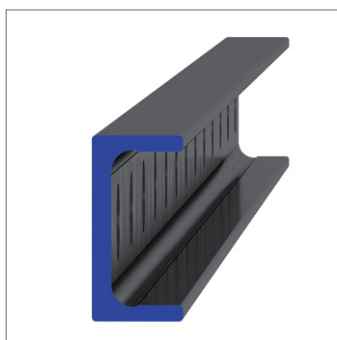


## Medium Duty T Rail countersunk holes

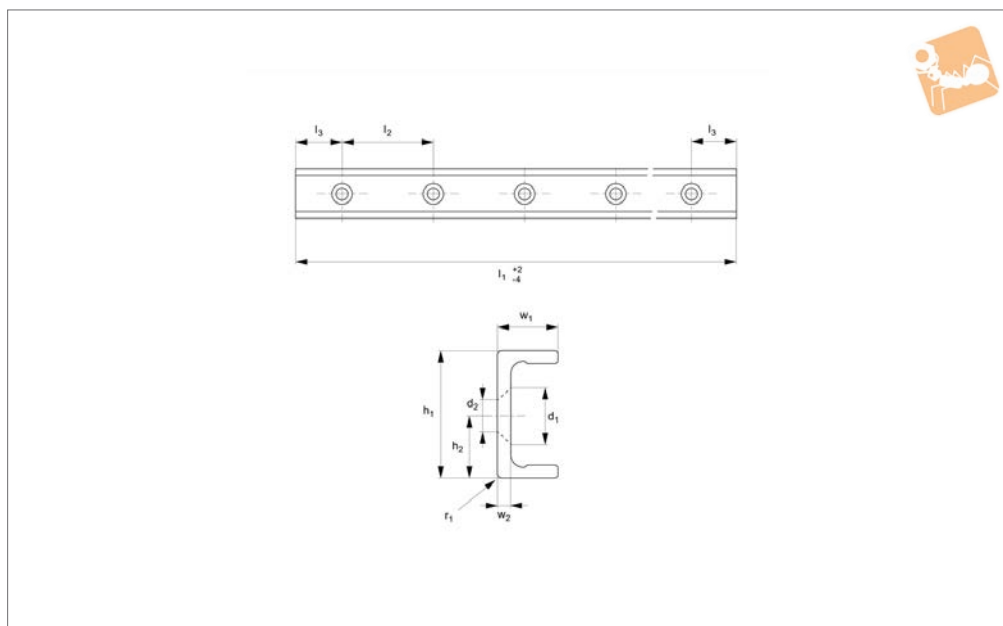


## Long Linear Rails

Order No.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	d for screws
L1928.28T-2720-V	28	14	2720	80	40	1	12.3	3	M5
L1928.28T-2800-V	28	14	2800	80	40	1	12.3	3	M5
L1928.28T-2880-V	28	14	2880	80	40	1	12.3	3	M5
L1928.28T-2960-V	28	14	2960	80	40	1	12.3	3	M5
L1928.28T-3040-V	28	14	3040	80	40	1	12.3	3	M5
L1928.28T-3120-V	28	14	3120	80	40	1	12.3	3	M5
L1928.28T-3200-V	28	14	3200	80	40	1	12.3	3	M5
L1928.28T-3280-V	28	14	3280	80	40	1	12.3	3	M5
L1928.28T-3360-V	28	14	3360	80	40	1	12.3	3	M5
L1928.28T-3440-V	28	14	3440	80	40	1	12.3	3	M5
L1928.28T-3520-V	28	14	3520	80	40	1	12.3	3	M5
L1928.28T-3600-V	28	14	3600	80	40	1	12.3	3	M5
L1928.28T-3680-V	28	14	3680	80	40	1	12.3	3	M5
L1928.28T-3760-V	28	14	3760	80	40	1	12.3	3	M5
L1928.28T-3840-V	28	14	3840	80	40	1	12.3	3	M5
L1928.28T-3920-V	28	14	3920	80	40	1	12.3	3	M5
L1928.28T-4000-V	28	14	4000	80	40	1	12.3	3	M5
L1928.28T-4080-V	28	14	4080	80	40	1	12.3	3	M5



## L1928.28U-V



### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-V countersunk rail type which is usually used with a corresponding T-V rail.

For fixing use countersunk DIN 7991 screws.

Weight: 1,0 Kg/m.

### Tips

Standard carriages are the L1928.N versions (die cast aluminium alloy with wipers). Alternatively the L1928.C type is also available (without wipers).

Order No.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	d for screws
L1928.28U-0240-V	28	14	240	80	40	1	12	3	M5
L1928.28U-0320-V	28	14	320	80	40	1	12	3	M5
L1928.28U-0400-V	28	14	400	80	40	1	12	3	M5
L1928.28U-0480-V	28	14	480	80	40	1	12	3	M5
L1928.28U-0560-V	28	14	560	80	40	1	12	3	M5
L1928.28U-0640-V	28	14	640	80	40	1	12	3	M5
L1928.28U-0720-V	28	14	720	80	40	1	12	3	M5
L1928.28U-0800-V	28	14	800	80	40	1	12	3	M5
L1928.28U-0880-V	28	14	880	80	40	1	12	3	M5
L1928.28U-0960-V	28	14	960	80	40	1	12	3	M5
L1928.28U-1040-V	28	14	1040	80	40	1	12	3	M5
L1928.28U-1120-V	28	14	1120	80	40	1	12	3	M5
L1928.28U-1200-V	28	14	1200	80	40	1	12	3	M5
L1928.28U-1280-V	28	14	1280	80	40	1	12	3	M5
L1928.28U-1360-V	28	14	1360	80	40	1	12	3	M5
L1928.28U-1440-V	28	14	1440	80	40	1	12	3	M5
L1928.28U-1520-V	28	14	1520	80	40	1	12	3	M5
L1928.28U-1600-V	28	14	1600	80	40	1	12	3	M5
L1928.28U-1680-V	28	14	1680	80	40	1	12	3	M5
L1928.28U-1760-V	28	14	1760	80	40	1	12	3	M5
L1928.28U-1840-V	28	14	1840	80	40	1	12	3	M5
L1928.28U-1920-V	28	14	1920	80	40	1	12	3	M5
L1928.28U-2000-V	28	14	2000	80	40	1	12	3	M5
L1928.28U-2080-V	28	14	2080	80	40	1	12	3	M5
L1928.28U-2160-V	28	14	2160	80	40	1	12	3	M5
L1928.28U-2240-V	28	14	2240	80	40	1	12	3	M5
L1928.28U-2320-V	28	14	2320	80	40	1	12	3	M5
L1928.28U-2400-V	28	14	2400	80	40	1	12	3	M5
L1928.28U-2480-V	28	14	2480	80	40	1	12	3	M5
L1928.28U-2560-V	28	14	2560	80	40	1	12	3	M5
L1928.28U-2640-V	28	14	2640	80	40	1	12	3	M5



## Medium Duty U Rail countersunk holes



## Long Linear Rails

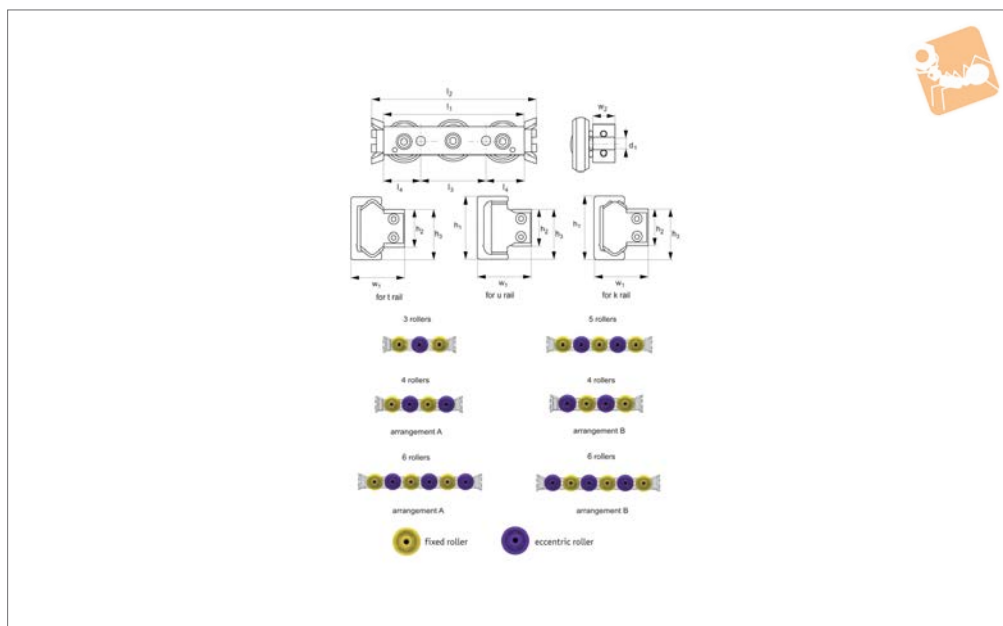
Order No.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	d for screws
L1928.28U-2720-V	28	14	2720	80	40	1	12	3	M5
L1928.28U-2800-V	28	14	2800	80	40	1	12	3	M5
L1928.28U-2880-V	28	14	2880	80	40	1	12	3	M5
L1928.28U-2960-V	28	14	2960	80	40	1	12	3	M5
L1928.28U-3040-V	28	14	3040	80	40	1	12	3	M5
L1928.28U-3120-V	28	14	3120	80	40	1	12	3	M5
L1928.28U-3200-V	28	14	3200	80	40	1	12	3	M5
L1928.28U-3280-V	28	14	3280	80	40	1	12	3	M5
L1928.28U-3360-V	28	14	3360	80	40	1	12	3	M5
L1928.28U-3440-V	28	14	3440	80	40	1	12	3	M5
L1928.28U-3520-V	28	14	3520	80	40	1	12	3	M5
L1928.28U-3600-V	28	14	3600	80	40	1	12	3	M5
L1928.28U-3680-V	28	14	3680	80	40	1	12	3	M5
L1928.28U-3760-V	28	14	3760	80	40	1	12	3	M5
L1928.28U-3840-V	28	14	3840	80	40	1	12	3	M5
L1928.28U-3920-V	28	14	3920	80	40	1	12	3	M5
L1928.28U-4000-V	28	14	4000	80	40	1	12	3	M5
L1928.28U-4080-V	28	14	4080	80	40	1	12	3	M5



LONG LINEAR RAILS



## L1935.CSW



### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Coefficient of friction (without seals) 0.005.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 35.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0.05 -0.15	h <sub>3</sub> +0.10 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1935.CSW35-100-2ZT	T	3	Metal	804 0	106 0	351 0	M6	35	19.9	27.85	100	120	45	0.27
L1935.CSW35-100-2ZU	U	3	Metal	804 0	106 0	351 0	M6	35	19.9	27.85	100	120	45	0.27
L1935.CSW35-120-2ZTA	T	4	Metal	804 0	122 0	351 0	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2ZUA	U	4	Metal	804 0	122 0	351 0	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2ZTB	T	4	Metal	804 0	122 0	351 0	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2ZUB	U	4	Metal	804 0	122 0	351 0	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-150-2ZT	T	5	Metal	956 5	146 0	418 0	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-150-2ZU	U	5	Metal	956 5	146 0	418 0	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-180-2ZTA	T	6	Metal	956 5	178 0	418 0	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2ZUA	U	6	Metal	956 5	178 0	418 0	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2ZTB	T	6	Metal	956 5	178 0	418 0	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2ZUB	U	6	Metal	956 5	178 0	418 0	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-100-2RST	T	3	Rubber	804 0	106 0	351 0	M6	35	19.9	27.85	100	120	45	0.27
L1935.CSW35-100-2RSU	U	3	Rubber	804 0	106 0	351 0	M6	35	19.9	27.85	100	120	45	0.27





# Medium Duty Sliders, size 35

no side seal, front fixing



Long Linear  
Rails

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0.05 -0.15	h <sub>3</sub> +0.10 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1935.CSW35-120-2RSTA	T	4	Rubber	8040	1220	3510	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSUA	U	4	Rubber	8040	0	3510	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSTB	T	4	Rubber	8040	1220	3510	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSUB	U	4	Rubber	8040	0	3510	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-150-2RST	T	5	Rubber	9565	1460	4180	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-150-2RSU	U	5	Rubber	9565	0	4180	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-180-2RSTA	T	6	Rubber	9565	1780	4180	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RSUA	U	6	Rubber	9565	0	4180	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RST	T	6	Rubber	9565	1780	4180	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RSUB	U	6	Rubber	9565	0	4180	M6	35	19.9	27.85	180	200	60	0.49

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>z1</sub> Nm	w <sub>1</sub> +0.1 -0.3	w <sub>2</sub>
L1935.CSW35-100-2ZT	27.5	12.9	33.7	61.5	61.5	30.2	11.9
L1935.CSW35-100-2ZU	27.5	0	0	61.5	61.5	30.2	11.9
L1935.CSW35-120-2ZTA	30.0	23.9	43.3	52.7	158.1	30.2	11.9
L1935.CSW35-120-2ZUA	30.0	0	0	52.7	158.1	30.2	11.9
L1935.CSW35-120-2ZTB	30.0	23.9	43.3	158.1	52.7	30.2	11.9
L1935.CSW35-120-2ZUB	30.0	0	0	158.1	52.7	30.2	11.9
L1935.CSW35-150-2ZT	30.0	23.9	57.7	158.1	158.1	30.2	11.9
L1935.CSW35-150-2ZU	30.0	0	0	158.1	158.1	30.2	11.9
L1935.CSW35-180-2ZTA	30.0	28.5	72.2	158.1	263.4	30.2	11.9
L1935.CSW35-180-2ZUA	30.0	0	0	158.1	263.4	30.2	11.9
L1935.CSW35-180-2ZTB	30.0	28.5	72.2	263.4	158.1	30.2	11.9
L1935.CSW35-180-2ZUB	30.0	0	0	263.4	158.1	30.2	11.9
L1935.CSW35-100-2RST	27.5	12.9	33.7	61.5	61.5	30.2	11.9
L1935.CSW35-100-2RSU	27.5	0	0	61.5	61.5	30.2	11.9
L1935.CSW35-120-2RSTA	30.0	23.9	43.3	52.7	158.1	30.2	11.9
L1935.CSW35-120-2RSUA	30.0	0	0	52.7	158.1	30.2	11.9
L1935.CSW35-120-2RSTB	30.0	23.9	43.3	158.1	52.7	30.2	11.9
L1935.CSW35-120-2RSUB	30.0	0	0	158.1	52.7	30.2	11.9
L1935.CSW35-150-2RST	30.0	23.9	57.7	158.1	158.1	30.2	11.9
L1935.CSW35-150-2RSU	30.0	0	0	158.1	158.1	30.2	11.9
L1935.CSW35-180-2RSTA	30.0	28.5	72.2	158.1	263.4	30.2	11.9
L1935.CSW35-180-2RSUA	30.0	0	0	158.1	263.4	30.2	11.9

LONG LINEAR RAILS



Order No.	$I_4$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$W_1$ +0.1 -0.3	$W_2$
L1935.CSW35-180-2RST	30.0	28.5	72.2	263.4	158.1	30.2	11.9
L1935.CSW35-180-2RSUB	30.0	0	0	263.4	158.1	30.2	11.9

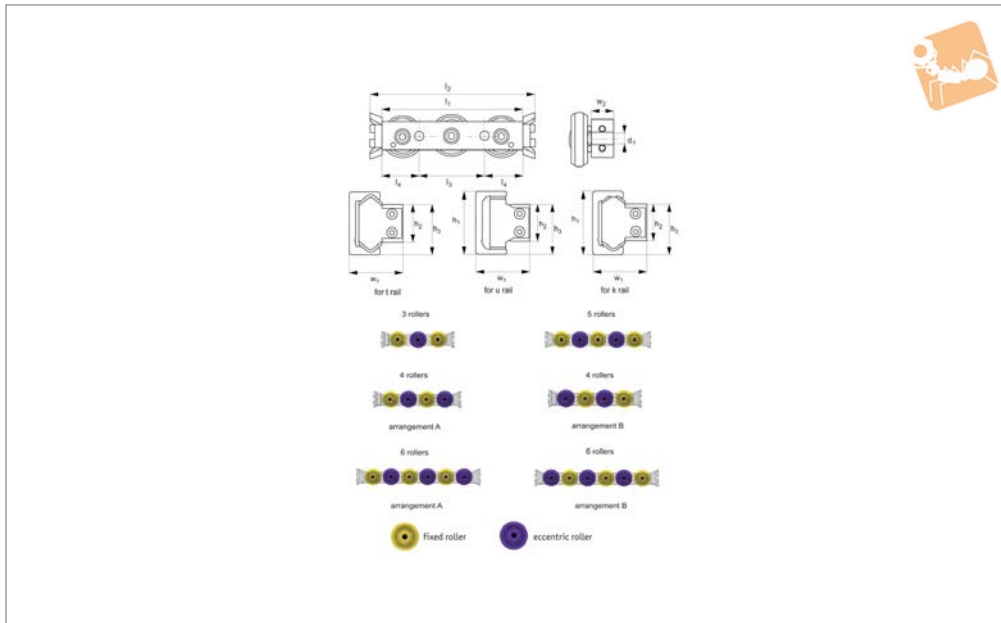


# Medium Duty Sliders, size 35

no side seal, front fixing, with wiper



Long Linear  
Rails



**L1935.CS**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

either way up in the rail dependent on where the loads will be applied.  
Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.005.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 35.

### Tips

The U rail sliders cannot accept axial loads.  
The 3 and 5 bearing sliders can be used

Order No.	For rail type	No. of rollers	Seal type	d <sub>1</sub>	h <sub>1</sub> +0.35 - 0.10	h <sub>2</sub> +0.05 - 0.15	h <sub>3</sub> +0.10 - 0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	Weig ht kg
L1935.35CS-100-2RST	T	3	Rubber	M6	35	19.9	27.85	100	120	45	27.5	12.9	33.7	0.27
L1935.35CS-100-2RSU	U	3	Rubber	M6	35	19.9	27.85	100	120	45	27.5	0	0	0.27
L1935.35CS-120-2RSTA	T	4	Rubber	M6	35	19.9	27.85	120	140	60	30.0	23.9	43.3	0.33
L1935.35CS-120-2RSUA	U	4	Rubber	M6	35	19.9	27.85	120	140	60	30.0	0	0	0.33
L1935.35CS-120-2RSTB	T	4	Rubber	M6	35	19.9	27.85	120	140	60	30.0	23.9	43.3	0.33
L1935.35CS-120-2RSUB	U	4	Rubber	M6	35	19.9	27.85	120	140	60	30.0	0	0	0.33
L1935.35CS-150-2RST	T	5	Rubber	M6	35	19.9	27.85	150	170	30	30.0	23.9	57.7	0.41
L1935.35CS-150-2RSU	U	5	Rubber	M6	35	19.9	27.85	150	170	30	30.0	0	0	0.41
L1935.35CS-180-2RSTA	T	6	Rubber	M6	35	19.9	27.85	180	200	60	30.0	28.5	72.2	0.49
L1935.35CS-180-2RSUA	U	6	Rubber	M6	35	19.9	27.85	180	200	60	30.0	0	0	0.49
L1935.35CS-180-2RST	T	6	Rubber	M6	35	19.9	27.85	180	200	60	30.0	28.5	72.2	0.49
L1935.35CS-180-2RSUB	U	6	Rubber	M6	35	19.9	27.85	180	200	60	30.0	0	0	0.49



Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ +0.1 -0.3	$w_2$	Dyn. load C N max.	Static load $C_{0 ax}$ N max.	Static load $C_{0 rad}$ N max.
L1935.35CS-100-2RST	61.5	61.5	30.2	11.9	8040	1060	3510
L1935.35CS-100-2RSU	61.5	61.5	30.2	11.9	8040	0	3510
L1935.35CS-120-2RSTA	52.7	158.1	30.2	11.9	8040	1220	3510
L1935.35CS-120-2RSUA	52.7	158.1	30.2	11.9	8040	0	3510
L1935.35CS-120-2RSTB	158.1	52.7	30.2	11.9	8040	1220	3510
L1935.35CS-120-2RSUB	158.1	52.7	30.2	11.9	8040	0	3510
L1935.35CS-150-2RST	158.1	158.1	30.2	11.9	9565	1460	4180
L1935.35CS-150-2RSU	158.1	158.1	30.2	11.9	9565	0	4180
L1935.35CS-180-2RSTA	158.1	263.4	30.2	11.9	9565	1780	4180
L1935.35CS-180-2RSUA	158.1	263.4	30.2	11.9	9565	0	4180
L1935.35CS-180-2RST	263.4	158.1	30.2	11.9	9565	1780	4180
L1935.35CS-180-2RSUB	263.4	158.1	30.2	11.9	9565	0	4180

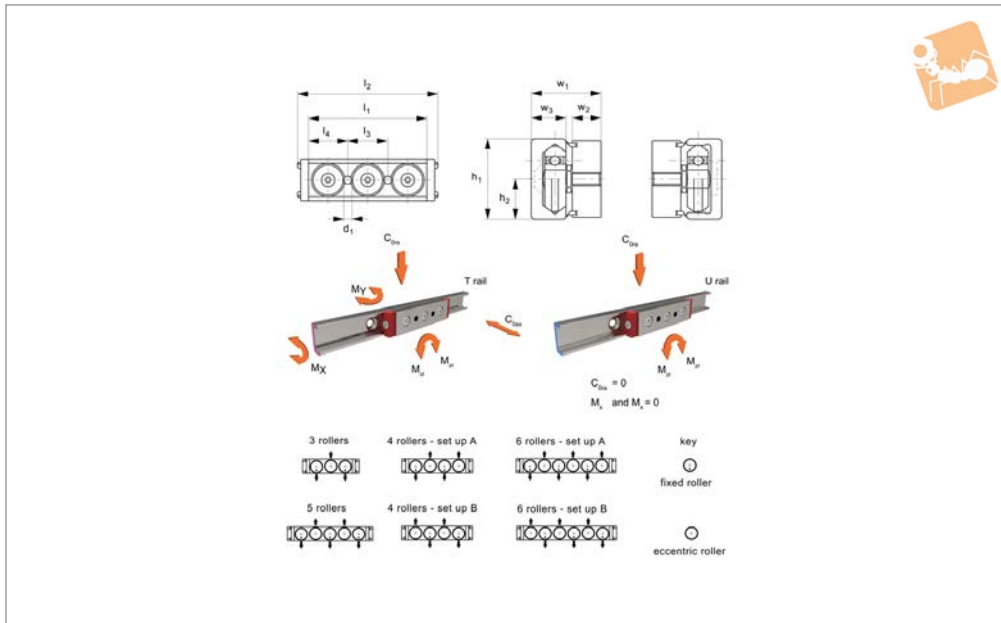


# Medium Duty Sliders, size 35

side seal, front fixing, with wiper



Long Linear  
Rails



**L1935.CL**

LONG LINEAR RAILS

**Material**

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

either way up in the rail dependent on where the loads will be applied. Easy to install (one or more rollers are eccentric allowing for adjustable preload). Coefficient of friction (without seals) 0.003. Quiet and fast (up to 5 m/s).

**Technical Notes**

To be used with compact rail size 35.

**Tips**

The U rail sliders cannot accept axial loads. The 3 and 5 bearing sliders can be used

Order No.	For rail type	No. of rollers	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm
L1935.35CL-100-T	T	3	M6	35	17.5	100	114	45	27.5	13.1	34.3
L1935.35CL-100-U	U	3	M6	35	17.5	100	114	45	27.5	0	0
L1935.35CL-120-TA	T	4	M6	35	17.5	120	134	60	30.0	24.3	44.1
L1935.35CL-120-UA	U	4	M6	35	17.5	120	134	60	30.0	0	0
L1935.35CL-120-TB	T	4	M6	35	17.5	120	134	60	30.0	24.3	44.1
L1935.35CL-120-UB	U	4	M6	35	17.5	120	134	60	30.0	0	0
L1935.35CL-150-T	T	5	M6	35	17.5	150	164	30	30.0	24.3	58.8
L1935.35CL-150-U	U	5	M6	35	17.5	150	164	30	30.0	0	0
L1935.35CL-180-TA	T	6	M6	35	17.5	180	194	60	30.0	29.0	75.6
L1935.35CL-180-UA	U	6	M6	35	17.5	180	194	60	30.0	0	0
L1935.35CL-180-TB	T	6	M6	35	17.5	180	194	60	30.0	29.0	75.6
L1935.35CL-180-UB	U	6	M6	35	17.5	180	194	60	30.0	0	0

Order No.	M <sub>Zr</sub> Nm	M <sub>Zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	w <sub>3</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1935.35CL-100-T	62.7	62.75	30	16.5	12	8200	1080	3580
L1935.35CL-100-U	62.7	62.7	30	16.5	12	8200	0	3580
L1935.35CL-120-TA	53.7	161.2	30	16.5	12	8200	1240	3580
L1935.35CL-120-UA	53.7	161.2	30	16.5	12	8200	0	3580
L1935.35CL-120-TB	161.2	53.7	30	16.5	12	8200	1240	3580
L1935.35CL-120-UB	161.2	53.7	30	16.5	12	8200	0	3580
L1935.35CL-150-T	161.2	161.2	30	16.5	12	9756	1490	4260
L1935.35CL-150-U	161.2	161.2	30	16.5	12	9756	0	4260
L1935.35CL-180-TA	161.2	268.6	30	16.5	12	9756	1810	4260



Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Static load $C_{0\text{ rad.}}$ N max.
<b>L1935.35CL-180-UA</b>	161.2	268.6	30	16.5	12	9756	0	4260
<b>L1935.35CL-180-TB</b>	268.6	161.2	30	16.5	12	9756	1810	4260
<b>L1935.35CL-180-UB</b>	268.6	161.2	30	16.5	12	9756	0	4260

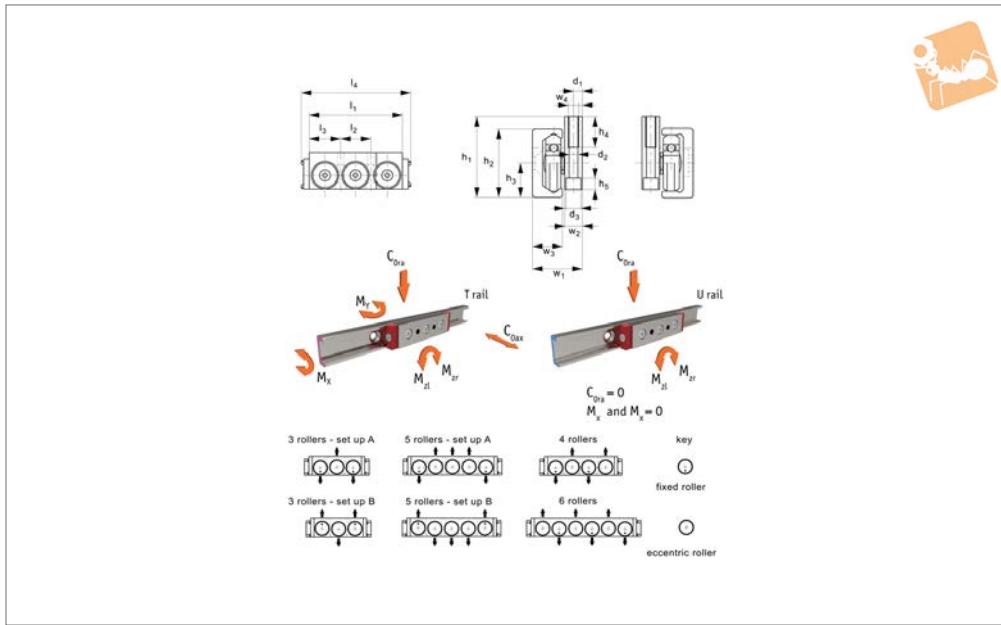


# Medium Duty Sliders, size 35

no side seal, side fixing, with wiper



Long Linear  
Rails



**L1935.CR**

LONG LINEAR RAILS

**Material**

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

**Technical Notes**

To be used with compact rail size 35.

**Tips**

Easy to install (one or more rollers are

Order No.	For rail type	No. of rollers	d <sub>1</sub> for screw	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm
L1935.35CR-100-TA	T	3	M8	6.7	11	35	17.5	37	15	5.5	100	114	45	27.5	13.1
L1935.35CR-100-UA	U	3	M8	6.8	12	35	17.5	37	15	5.5	100	114	45	27.5	0
L1935.35CR-120-TA	T	4	M8	6.9	13	35	17.5	37	15	5.5	120	134	60	30.0	24.3
L1935.35CR-120-UA	U	4	M8	6.10	14	35	17.5	37	15	5.5	120	134	60	30.0	0
L1935.35CR-120-TB	T	4	M8	6.11	15	35	17.5	37	15	5.5	120	134	60	30.0	24.3
L1935.35CR-120-UB	U	4	M8	6.12	16	35	17.5	37	15	5.5	120	134	60	30.0	0
L1935.35CR-150-TA	T	5	M8	6.13	17	35	17.5	37	15	5.5	150	164	30	30.0	24.3
L1935.35CR-150-UA	U	5	M8	6.14	18	35	17.5	37	15	5.5	150	164	30	30.0	0
L1935.35CR-180-TA	T	6	M8	6.15	19	35	17.5	37	15	5.5	180	194	60	30.0	29.0
L1935.35CR-180-UA	U	6	M8	6.16	20	35	17.5	37	15	5.5	180	194	60	30.0	0
L1935.35CR-180-TB	T	6	M8	6.17	21	35	17.5	37	15	5.5	180	194	60	30.0	29.0
L1935.35CR-180-UB	U	6	M8	6.18	22	35	17.5	37	15	5.5	180	194	60	30.0	0

Order No.	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Dyn. load C <sub>N</sub> max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1935.35CR-100-TA	34.3	62.7	62.7	29.9	16.5	12	6	8200	1080	3580
L1935.35CR-100-UA	0	62.7	62.7	29.9	16.5	12	6	8200	0	3580
L1935.35CR-120-TA	44.1	53.7	161.2	29.9	16.5	12	6	8200	1240	3580
L1935.35CR-120-UA	0	53.7	161.2	29.9	16.5	12	6	8200	0	3580
L1935.35CR-120-TB	44.1	161.2	53.7	29.9	16.5	12	6	8200	1240	3580
L1935.35CR-120-UB	0	161.2	53.7	29.9	16.5	12	6	8200	0	3580
L1935.35CR-150-TA	58.8	161.2	161.2	29.9	16.5	12	6	9576	1490	4280



Order No.	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$	$w_2$	$w_3$	$w_4$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Static load $C_{0\text{ rad.}}$ N max.
<b>L1935.35CR-150- UA</b>	0	161.2	161.2	29.9	16.5	12	6	9576	0	4280
<b>L1935.35CR-180- TA</b>	73.6	161.2	268.6	29.9	16.5	12	6	9576	1810	4280
<b>L1935.35CR-180- UA</b>	0	161.2	268.6	29.9	16.5	12	6	9576	0	4280
<b>L1935.35CR-180- TB</b>	73.6	268.6	161.2	29.9	16.5	12	6	9576	1810	4280
<b>L1935.35CR-180- UB</b>	0	268.6	161.2	29.9	16.5	12	6	9576	0	4280



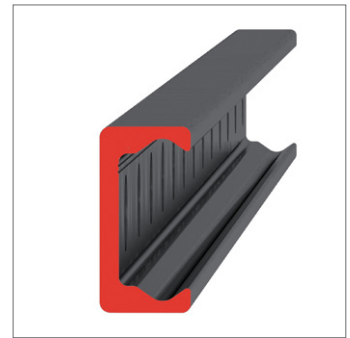
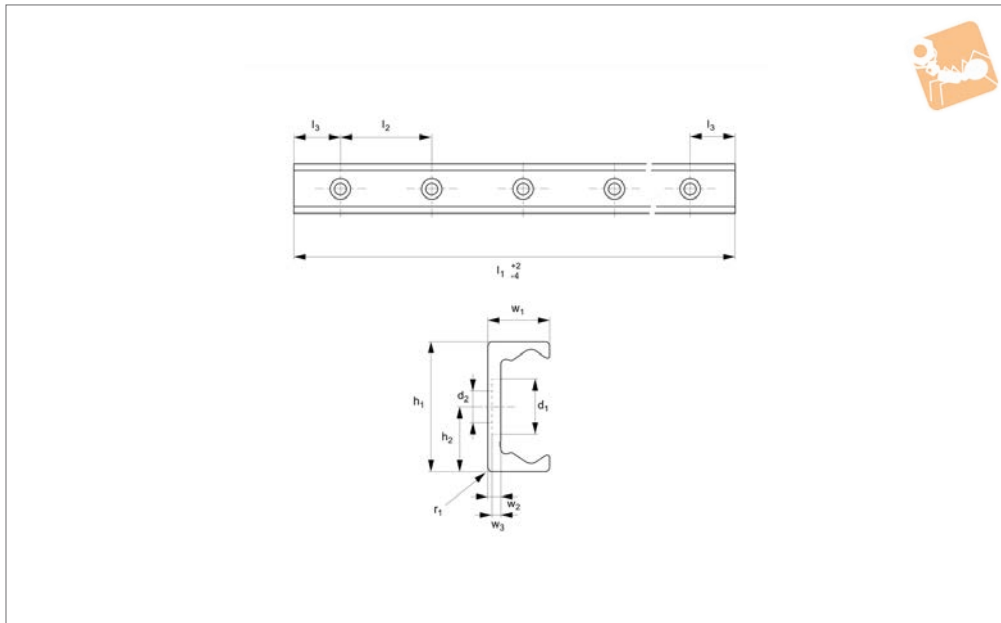


# Medium Duty T Rail

counterbored holes



## Long Linear Rails



## L1935.TLC35

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

used with a U slave rail (allows for system misalignment).

Weight: 1,7 Kg/m.

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.

### Technical Notes

The T rail is a master rail and is usually

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.TLC35-0320	14.5	M6	35	17.5	320	80	40	2	16	3.5	2.7
L1935.TLC35-0400	14.5	M6	35	17.5	400	80	40	2	16	3.5	2.7
L1935.TLC35-0480	14.5	M6	35	17.5	480	80	40	2	16	3.5	2.7
L1935.TLC35-0560	14.5	M6	35	17.5	560	80	40	2	16	3.5	2.7
L1935.TLC35-0640	14.5	M6	35	17.5	640	80	40	2	16	3.5	2.7
L1935.TLC35-0720	14.5	M6	35	17.5	720	80	40	2	16	3.5	2.7
L1935.TLC35-0800	14.5	M6	35	17.5	800	80	40	2	16	3.5	2.7
L1935.TLC35-0880	14.5	M6	35	17.5	880	80	40	2	16	3.5	2.7
L1935.TLC35-0960	14.5	M6	35	17.5	960	80	40	2	16	3.5	2.7
L1935.TLC35-1040	14.5	M6	35	17.5	1040	80	40	2	16	3.5	2.7
L1935.TLC35-1120	14.5	M6	35	17.5	1120	80	40	2	16	3.5	2.7
L1935.TLC35-1200	14.5	M6	35	17.5	1200	80	40	2	16	3.5	2.7
L1935.TLC35-1280	14.5	M6	35	17.5	1280	80	40	2	16	3.5	2.7
L1935.TLC35-1360	14.5	M6	35	17.5	1360	80	40	2	16	3.5	2.7
L1935.TLC35-1440	14.5	M6	35	17.5	1440	80	40	2	16	3.5	2.7
L1935.TLC35-1520	14.5	M6	35	17.5	1520	80	40	2	16	3.5	2.7
L1935.TLC35-1600	14.5	M6	35	17.5	1600	80	40	2	16	3.5	2.7
L1935.TLC35-1680	14.5	M6	35	17.5	1680	80	40	2	16	3.5	2.7
L1935.TLC35-1760	14.5	M6	35	17.5	1760	80	40	2	16	3.5	2.7
L1935.TLC35-1840	14.5	M6	35	17.5	1840	80	40	2	16	3.5	2.7
L1935.TLC35-1920	14.5	M6	35	17.5	1920	80	40	2	16	3.5	2.7
L1935.TLC35-2000	14.5	M6	35	17.5	2000	80	40	2	16	3.5	2.7
L1935.TLC35-2080	14.5	M6	35	17.5	2080	80	40	2	16	3.5	2.7
L1935.TLC35-2160	14.5	M6	35	17.5	2160	80	40	2	16	3.5	2.7
L1935.TLC35-2240	14.5	M6	35	17.5	2240	80	40	2	16	3.5	2.7
L1935.TLC35-2320	14.5	M6	35	17.5	2320	80	40	2	16	3.5	2.7
L1935.TLC35-2400	14.5	M6	35	17.5	2400	80	40	2	16	3.5	2.7
L1935.TLC35-2480	14.5	M6	35	17.5	2480	80	40	2	16	3.5	2.7
L1935.TLC35-2560	14.5	M6	35	17.5	2560	80	40	2	16	3.5	2.7
L1935.TLC35-2640	14.5	M6	35	17.5	2640	80	40	2	16	3.5	2.7
L1935.TLC35-2720	14.5	M6	35	17.5	2720	80	40	2	16	3.5	2.7



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
<b>L1935.TLC35-2800</b>	14.5	M6	35	17.5	2800	80	40	2	16	3.5	2.7
<b>L1935.TLC35-2880</b>	14.5	M6	35	17.5	2880	80	40	2	16	3.5	2.7
<b>L1935.TLC35-2960</b>	14.5	M6	35	17.5	2960	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3040</b>	14.5	M6	35	17.5	3040	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3120</b>	14.5	M6	35	17.5	3120	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3200</b>	14.5	M6	35	17.5	3200	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3280</b>	14.5	M6	35	17.5	3280	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3360</b>	14.5	M6	35	17.5	3360	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3440</b>	14.5	M6	35	17.5	3440	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3520</b>	14.5	M6	35	17.5	3520	80	40	2	16	3.5	2.7
<b>L1935.TLC35-3600</b>	14.5	M6	35	17.5	3600	80	40	2	16	3.5	2.7

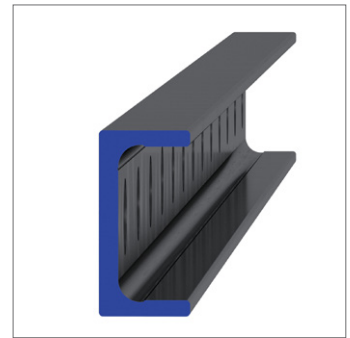
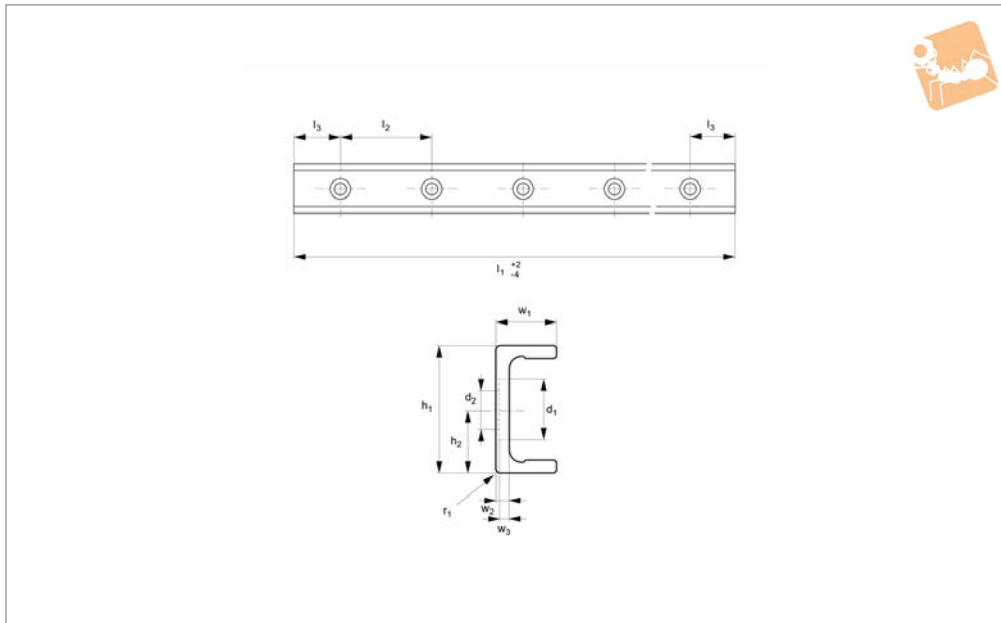


# Medium Duty U Rail

counterbored holes



Long Linear  
Rails



**L1935.ULC35**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used with a T master rail.  
This is the ULC counterbored rail type (most popular), which is usually used with

a corresponding TLC rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 1,7 Kg/m.

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.ULC35-0320	14.5	M6	35	17.5	320	80	40	2	16	3.5	2.7
L1935.ULC35-0400	14.5	M6	35	17.5	400	80	40	2	16	3.5	2.7
L1935.ULC35-0480	14.5	M6	35	17.5	480	80	40	2	16	3.5	2.7
L1935.ULC35-0560	14.5	M6	35	17.5	560	80	40	2	16	3.5	2.7
L1935.ULC35-0640	14.5	M6	35	17.5	640	80	40	2	16	3.5	2.7
L1935.ULC35-0720	14.5	M6	35	17.5	720	80	40	2	16	3.5	2.7
L1935.ULC35-0800	14.5	M6	35	17.5	800	80	40	2	16	3.5	2.7
L1935.ULC35-0880	14.5	M6	35	17.5	880	80	40	2	16	3.5	2.7
L1935.ULC35-0960	14.5	M6	35	17.5	960	80	40	2	16	3.5	2.7
L1935.ULC35-1040	14.5	M6	35	17.5	1040	80	40	2	16	3.5	2.7
L1935.ULC35-1120	14.5	M6	35	17.5	1120	80	40	2	16	3.5	2.7
L1935.ULC35-1200	14.5	M6	35	17.5	1200	80	40	2	16	3.5	2.7
L1935.ULC35-1280	14.5	M6	35	17.5	1280	80	40	2	16	3.5	2.7
L1935.ULC35-1360	14.5	M6	35	17.5	1360	80	40	2	16	3.5	2.7
L1935.ULC35-1440	14.5	M6	35	17.5	1440	80	40	2	16	3.5	2.7
L1935.ULC35-1520	14.5	M6	35	17.5	1520	80	40	2	16	3.5	2.7
L1935.ULC35-1600	14.5	M6	35	17.5	1600	80	40	2	16	3.5	2.7
L1935.ULC35-1680	14.5	M6	35	17.5	1680	80	40	2	16	3.5	2.7
L1935.ULC35-1760	14.5	M6	35	17.5	1760	80	40	2	16	3.5	2.7
L1935.ULC35-1840	14.5	M6	35	17.5	1840	80	40	2	16	3.5	2.7
L1935.ULC35-1920	14.5	M6	35	17.5	1920	80	40	2	16	3.5	2.7
L1935.ULC35-2000	14.5	M6	35	17.5	2000	80	40	2	16	3.5	2.7
L1935.ULC35-2080	14.5	M6	35	17.5	2080	80	40	2	16	3.5	2.7
L1935.ULC35-2160	14.5	M6	35	17.5	2160	80	40	2	16	3.5	2.7
L1935.ULC35-2240	14.5	M6	35	17.5	2240	80	40	2	16	3.5	2.7
L1935.ULC35-2320	14.5	M6	35	17.5	2320	80	40	2	16	3.5	2.7
L1935.ULC35-2400	14.5	M6	35	17.5	2400	80	40	2	16	3.5	2.7
L1935.ULC35-2480	14.5	M6	35	17.5	2480	80	40	2	16	3.5	2.7
L1935.ULC35-2560	14.5	M6	35	17.5	2560	80	40	2	16	3.5	2.7
L1935.ULC35-2640	14.5	M6	35	17.5	2640	80	40	2	16	3.5	2.7
L1935.ULC35-2720	14.5	M6	35	17.5	2720	80	40	2	16	3.5	2.7
L1935.ULC35-2800	14.5	M6	35	17.5	2800	80	40	2	16	3.5	2.7
L1935.ULC35-2880	14.5	M6	35	17.5	2880	80	40	2	16	3.5	2.7



Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.ULC35-2960	14.5	M6	35	17.5	2960	80	40	2	16	3.5	2.7
L1935.ULC35-3040	14.5	M6	35	17.5	3040	80	40	2	16	3.5	2.7
L1935.ULC35-3120	14.5	M6	35	17.5	3120	80	40	2	16	3.5	2.7
L1935.ULC35-3200	14.5	M6	35	17.5	3200	80	40	2	16	3.5	2.7
L1935.ULC35-3280	14.5	M6	35	17.5	3280	80	40	2	16	3.5	2.7
L1935.ULC35-3360	14.5	M6	35	17.5	3360	80	40	2	16	3.5	2.7
L1935.ULC35-3440	14.5	M6	35	17.5	3440	80	40	2	16	3.5	2.7
L1935.ULC35-3520	14.5	M6	35	17.5	3520	80	40	2	16	3.5	2.7
L1935.ULC35-3600	14.5	M6	35	17.5	3600	80	40	2	16	3.5	2.7

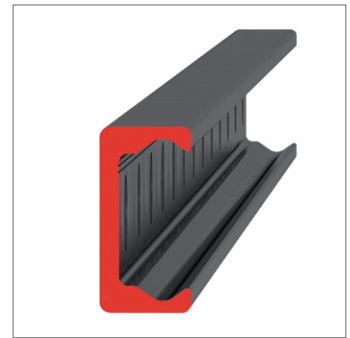
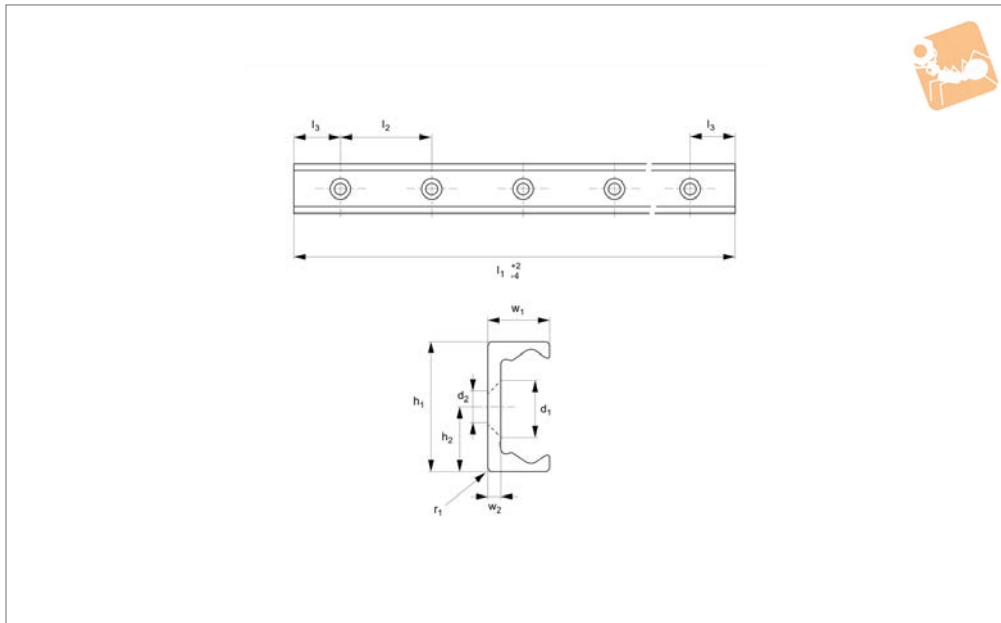


# Medium Duty T Rail

countersunk holes



## Long Linear Rails



### L1935.TLV35

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually used with a U slave rails (allows for misalignment).  
This is the TLV countersunk rail which is

usually used with a corresponding ULV rail.  
For fixing use countersunk DIN 7991 screws.  
Weight: 1,7 Kg/m.

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.TLV35-0320	M6	35	17.5	320	80	40	1	16	3.5
L1935.TLV35-0400	M6	35	17.5	400	80	40	1	16	3.5
L1935.TLV35-0480	M6	35	17.5	480	80	40	1	16	3.5
L1935.TLV35-0560	M6	35	17.5	560	80	40	1	16	3.5
L1935.TLV35-0640	M6	35	17.5	640	80	40	1	16	3.5
L1935.TLV35-0720	M6	35	17.5	720	80	40	1	16	3.5
L1935.TLV35-0800	M6	35	17.5	800	80	40	1	16	3.5
L1935.TLV35-0880	M6	35	17.5	880	80	40	1	16	3.5
L1935.TLV35-0960	M6	35	17.5	960	80	40	1	16	3.5
L1935.TLV35-1040	M6	35	17.5	1040	80	40	1	16	3.5
L1935.TLV35-1120	M6	35	17.5	1120	80	40	1	16	3.5
L1935.TLV35-1200	M6	35	17.5	1200	80	40	1	16	3.5
L1935.TLV35-1280	M6	35	17.5	1280	80	40	1	16	3.5
L1935.TLV35-1360	M6	35	17.5	1360	80	40	1	16	3.5
L1935.TLV35-1440	M6	35	17.5	1440	80	40	1	16	3.5
L1935.TLV35-1520	M6	35	17.5	1520	80	40	1	16	3.5
L1935.TLV35-1600	M6	35	17.5	1600	80	40	1	16	3.5
L1935.TLV35-1680	M6	35	17.5	1680	80	40	1	16	3.5
L1935.TLV35-1760	M6	35	17.5	1760	80	40	1	16	3.5
L1935.TLV35-1840	M6	35	17.5	1840	80	40	1	16	3.5
L1935.TLV35-1920	M6	35	17.5	1920	80	40	1	16	3.5
L1935.TLV35-2000	M6	35	17.5	2000	80	40	1	16	3.5
L1935.TLV35-2080	M6	35	17.5	2080	80	40	1	16	3.5
L1935.TLV35-2160	M6	35	17.5	2160	80	40	1	16	3.5
L1935.TLV35-2240	M6	35	17.5	2240	80	40	1	16	3.5
L1935.TLV35-2320	M6	35	17.5	2320	80	40	1	16	3.5
L1935.TLV35-2400	M6	35	17.5	2400	80	40	1	16	3.5
L1935.TLV35-2480	M6	35	17.5	2480	80	40	1	16	3.5
L1935.TLV35-2560	M6	35	17.5	2560	80	40	1	16	3.5
L1935.TLV35-2640	M6	35	17.5	2640	80	40	1	16	3.5
L1935.TLV35-2720	M6	35	17.5	2720	80	40	1	16	3.5
L1935.TLV35-2800	M6	35	17.5	2800	80	40	1	16	3.5
L1935.TLV35-2880	M6	35	17.5	2880	80	40	1	16	3.5



Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.TLV35-2960	M6	35	17.5	2960	80	40	1	16	3.5
L1935.TLV35-3040	M6	35	17.5	3040	80	40	1	16	3.5
L1935.TLV35-3120	M6	35	17.5	3120	80	40	1	16	3.5
L1935.TLV35-3200	M6	35	17.5	3200	80	40	1	16	3.5
L1935.TLV35-3280	M6	35	17.5	3280	80	40	1	16	3.5
L1935.TLV35-3360	M6	35	17.5	3360	80	40	1	16	3.5
L1935.TLV35-3440	M6	35	17.5	3440	80	40	1	16	3.5
L1935.TLV35-3520	M6	35	17.5	3520	80	40	1	16	3.5
L1935.TLV35-3600	M6	35	17.5	3600	80	40	1	16	3.5

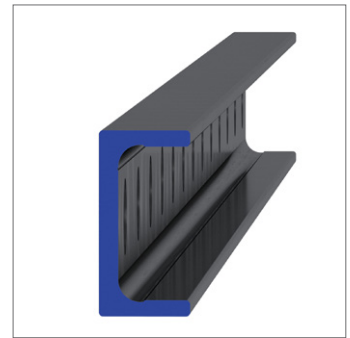
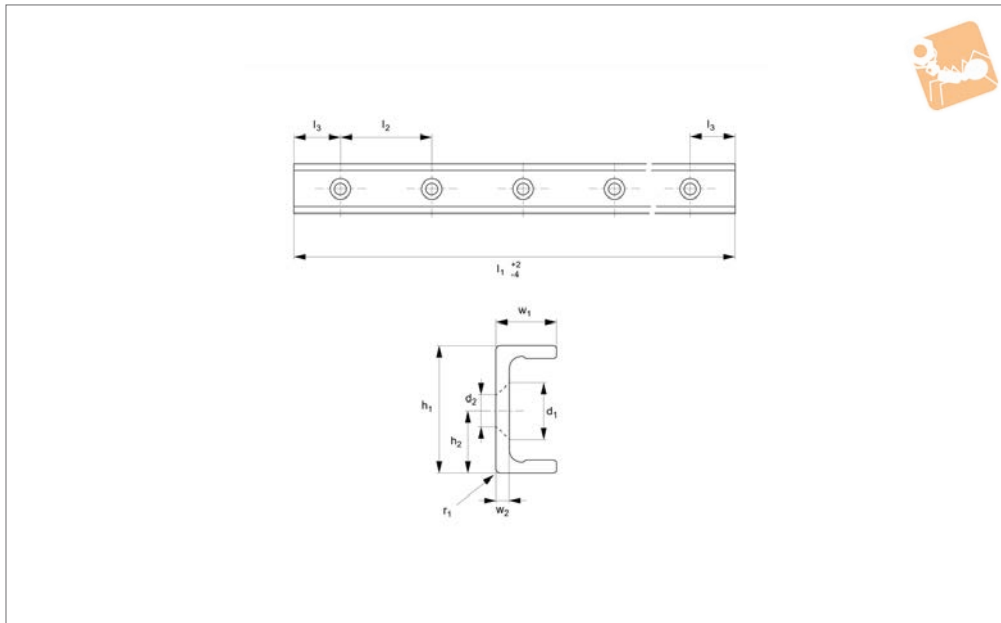


# Medium Duty U Rail

countersunk holes



## Long Linear Rails



### L1935.ULV35

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used with a T master rail.  
This is the ULV countersunk rail type which is usually used with a corresponding TLV

rail.

For fixing use countersunk DIN 7991 screws.  
Weight: 1,7 Kg/m.

Order No.	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.ULV35-0320	M6	35	17.5	320	80	40	1	16	3.5
L1935.ULV35-0400	M6	35	17.5	400	80	40	1	16	3.5
L1935.ULV35-0480	M6	35	17.5	480	80	40	1	16	3.5
L1935.ULV35-0560	M6	35	17.5	560	80	40	1	16	3.5
L1935.ULV35-0640	M6	35	17.5	640	80	40	1	16	3.5
L1935.ULV35-0720	M6	35	17.5	720	80	40	1	16	3.5
L1935.ULV35-0800	M6	35	17.5	800	80	40	1	16	3.5
L1935.ULV35-0880	M6	35	17.5	880	80	40	1	16	3.5
L1935.ULV35-0960	M6	35	17.5	960	80	40	1	16	3.5
L1935.ULV35-1040	M6	35	17.5	1040	80	40	1	16	3.5
L1935.ULV35-1120	M6	35	17.5	1120	80	40	1	16	3.5
L1935.ULV35-1200	M6	35	17.5	1200	80	40	1	16	3.5
L1935.ULV35-1280	M6	35	17.5	1280	80	40	1	16	3.5
L1935.ULV35-1360	M6	35	17.5	1360	80	40	1	16	3.5
L1935.ULV35-1440	M6	35	17.5	1440	80	40	1	16	3.5
L1935.ULV35-1520	M6	35	17.5	1520	80	40	1	16	3.5
L1935.ULV35-1600	M6	35	17.5	1600	80	40	1	16	3.5
L1935.ULV35-1680	M6	35	17.5	1680	80	40	1	16	3.5
L1935.ULV35-1760	M6	35	17.5	1760	80	40	1	16	3.5
L1935.ULV35-1840	M6	35	17.5	1840	80	40	1	16	3.5
L1935.ULV35-1920	M6	35	17.5	1920	80	40	1	16	3.5
L1935.ULV35-2000	M6	35	17.5	2000	80	40	1	16	3.5
L1935.ULV35-2080	M6	35	17.5	2080	80	40	1	16	3.5
L1935.ULV35-2160	M6	35	17.5	2160	80	40	1	16	3.5
L1935.ULV35-2240	M6	35	17.5	2240	80	40	1	16	3.5
L1935.ULV35-2320	M6	35	17.5	2320	80	40	1	16	3.5
L1935.ULV35-2400	M6	35	17.5	2400	80	40	1	16	3.5
L1935.ULV35-2480	M6	35	17.5	2480	80	40	1	16	3.5
L1935.ULV35-2560	M6	35	17.5	2560	80	40	1	16	3.5
L1935.ULV35-2640	M6	35	17.5	2640	80	40	1	16	3.5
L1935.ULV35-2720	M6	35	17.5	2720	80	40	1	16	3.5
L1935.ULV35-2800	M6	35	17.5	2800	80	40	1	16	3.5
L1935.ULV35-2880	M6	35	17.5	2880	80	40	1	16	3.5



Order No.	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.ULV35-2960	M6	35	17.5	2960	80	40	1	16	3.5
L1935.ULV35-3040	M6	35	17.5	3040	80	40	1	16	3.5
L1935.ULV35-3120	M6	35	17.5	3120	80	40	1	16	3.5
L1935.ULV35-3200	M6	35	17.5	3200	80	40	1	16	3.5
L1935.ULV35-3280	M6	35	17.5	3280	80	40	1	16	3.5
L1935.ULV35-3360	M6	35	17.5	3360	80	40	1	16	3.5
L1935.ULV35-3440	M6	35	17.5	3440	80	40	1	16	3.5
L1935.ULV35-3520	M6	35	17.5	3520	80	40	1	16	3.5
L1935.ULV35-3600	M6	35	17.5	3600	80	40	1	16	3.5

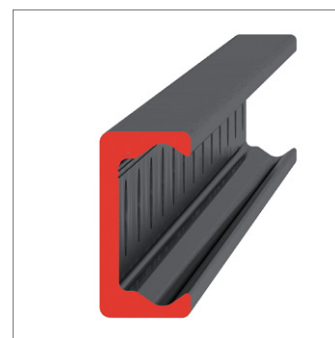
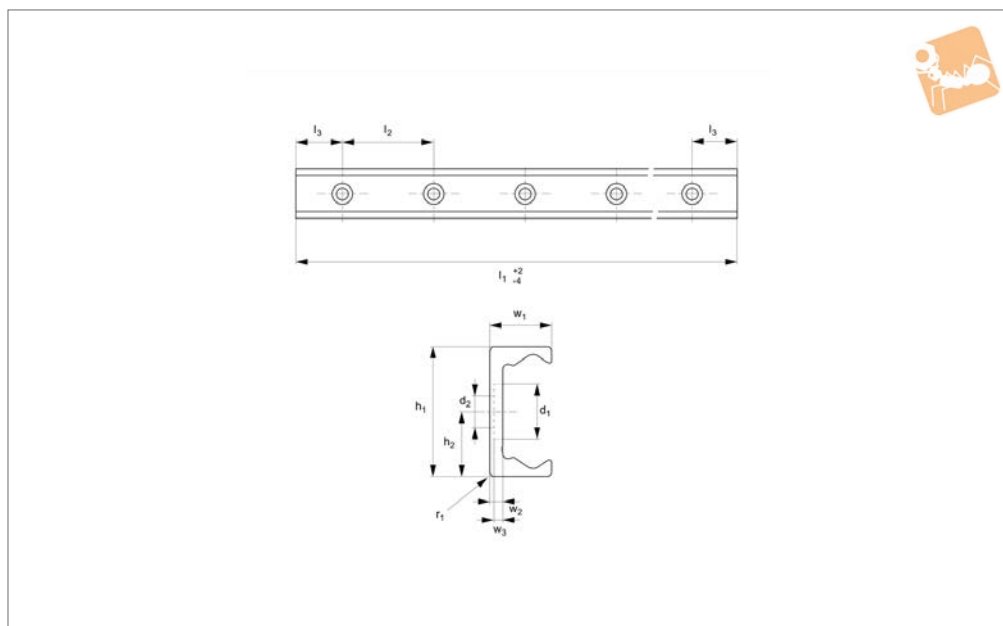




# Medium Duty T Rail

counterbored holes

# Long Linear Rails



## L1935.35T-C

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding U-C rail.

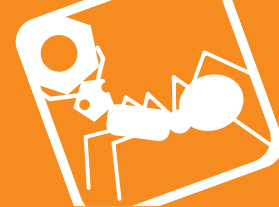
Special low profile Torx head screws provided free of charge.

Weight: 1,7 Kg/m.

### Tips

Standard carriages are the L1935.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.35T-0240-C	14.5	M6	35	17.5	240	80	40	2	16	3.5	2.7
L1935.35T-0320-C	14.5	M6	35	17.5	320	80	40	2	16	3.5	2.7
L1935.35T-0400-C	14.5	M6	35	17.5	400	80	40	2	16	3.5	2.7
L1935.35T-0480-C	14.5	M6	35	17.5	480	80	40	2	16	3.5	2.7
L1935.35T-0560-C	14.5	M6	35	17.5	560	80	40	2	16	3.5	2.7
L1935.35T-0640-C	14.5	M6	35	17.5	640	80	40	2	16	3.5	2.7
L1935.35T-0720-C	14.5	M6	35	17.5	720	80	40	2	16	3.5	2.7
L1935.35T-0800-C	14.5	M6	35	17.5	800	80	40	2	16	3.5	2.7
L1935.35T-0880-C	14.5	M6	35	17.5	880	80	40	2	16	3.5	2.7
L1935.35T-0960-C	14.5	M6	35	17.5	960	80	40	2	16	3.5	2.7
L1935.35T-1040-C	14.5	M6	35	17.5	1040	80	40	2	16	3.5	2.7
L1935.35T-1120-C	14.5	M6	35	17.5	1120	80	40	2	16	3.5	2.7
L1935.35T-1200-C	14.5	M6	35	17.5	1200	80	40	2	16	3.5	2.7
L1935.35T-1280-C	14.5	M6	35	17.5	1280	80	40	2	16	3.5	2.7
L1935.35T-1360-C	14.5	M6	35	17.5	1360	80	40	2	16	3.5	2.7
L1935.35T-1440-C	14.5	M6	35	17.5	1440	80	40	2	16	3.5	2.7
L1935.35T-1520-C	14.5	M6	35	17.5	1520	80	40	2	16	3.5	2.7
L1935.35T-1600-C	14.5	M6	35	17.5	1600	80	40	2	16	3.5	2.7
L1935.35T-1680-C	14.5	M6	35	17.5	1680	80	40	2	16	3.5	2.7
L1935.35T-1760-C	14.5	M6	35	17.5	1760	80	40	2	16	3.5	2.7
L1935.35T-1840-C	14.5	M6	35	17.5	1840	80	40	2	16	3.5	2.7
L1935.35T-1920-C	14.5	M6	35	17.5	1920	80	40	2	16	3.5	2.7
L1935.35T-2000-C	14.5	M6	35	17.5	2000	80	40	2	16	3.5	2.7
L1935.35T-2080-C	14.5	M6	35	17.5	2080	80	40	2	16	3.5	2.7
L1935.35T-2160-C	14.5	M6	35	17.5	2160	80	40	2	16	3.5	2.7
L1935.35T-2240-C	14.5	M6	35	17.5	2240	80	40	2	16	3.5	2.7
L1935.35T-2320-C	14.5	M6	35	17.5	2320	80	40	2	16	3.5	2.7
L1935.35T-2400-C	14.5	M6	35	17.5	2400	80	40	2	16	3.5	2.7
L1935.35T-2480-C	14.5	M6	35	17.5	2480	80	40	2	16	3.5	2.7
L1935.35T-2560-C	14.5	M6	35	17.5	2560	80	40	2	16	3.5	2.7
L1935.35T-2640-C	14.5	M6	35	17.5	2640	80	40	2	16	3.5	2.7



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.35T-2720-C	14.5	M6	35	17.5	2720	80	40	2	16	3.5	2.7
L1935.35T-2800-C	14.5	M6	35	17.5	2800	80	40	2	16	3.5	2.7
L1935.35T-2880-C	14.5	M6	35	17.5	2880	80	40	2	16	3.5	2.7
L1935.35T-2960-C	14.5	M6	35	17.5	2960	80	40	2	16	3.5	2.7
L1935.35T-3040-C	14.5	M6	35	17.5	3040	80	40	2	16	3.5	2.7
L1935.35T-3120-C	14.5	M6	35	17.5	3120	80	40	2	16	3.5	2.7
L1935.35T-3200-C	14.5	M6	35	17.5	3200	80	40	2	16	3.5	2.7
L1935.35T-3280-C	14.5	M6	35	17.5	3280	80	40	2	16	3.5	2.7
L1935.35T-3360-C	14.5	M6	35	17.5	3360	80	40	2	16	3.5	2.7
L1935.35T-3440-C	14.5	M6	35	17.5	3440	80	40	2	16	3.5	2.7
L1935.35T-3520-C	14.5	M6	35	17.5	3520	80	40	2	16	3.5	2.7
L1935.35T-3600-C	14.5	M6	35	17.5	3600	80	40	2	16	3.5	2.7
L1935.35T-3680-C	14.5	M6	35	17.5	3680	80	40	2	16	3.5	2.7
L1935.35T-3760-C	14.5	M6	35	17.5	3760	80	40	2	16	3.5	2.7
L1935.35T-3840-C	14.5	M6	35	17.5	3840	80	40	2	16	3.5	2.7
L1935.35T-3920-C	14.5	M6	35	17.5	3920	80	40	2	16	3.5	2.7
L1935.35T-4000-C	14.5	M6	35	17.5	4000	80	40	2	16	3.5	2.7
L1935.35T-4080-C	14.5	M6	35	17.5	4080	80	40	2	16	3.5	2.7

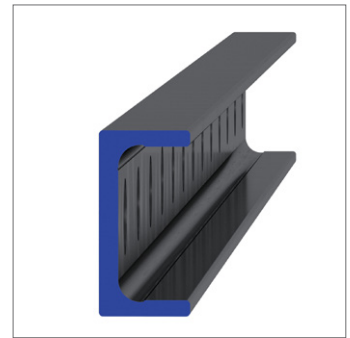
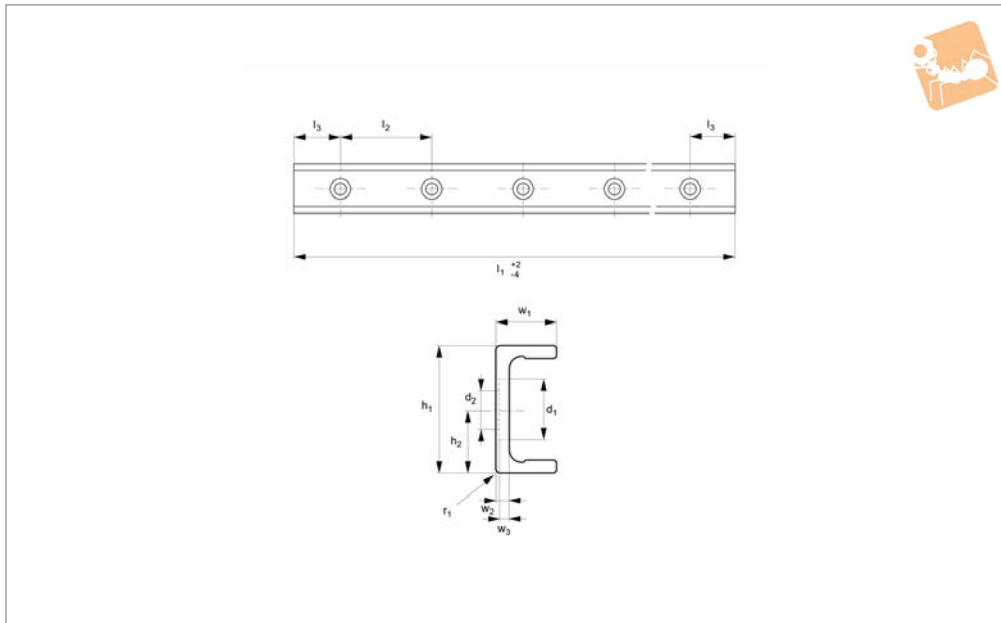


# Medium Duty U Rail

counterbored holes



## Long Linear Rails



### L1935.35U-C

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-C counterbored rail type (most popular), which is usually used with a corresponding T-C rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 1,7 Kg/m.

#### Tips

Standard carriages are the L1935.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.35U-0240-C	14.5	M6	35	17.5	240	80	40	2	16	3.5	2.7
L1935.35U-0320-C	14.5	M6	35	17.5	320	80	40	2	16	3.5	2.7
L1935.35U-0400-C	14.5	M6	35	17.5	400	80	40	2	16	3.5	2.7
L1935.35U-0480-C	14.5	M6	35	17.5	480	80	40	2	16	3.5	2.7
L1935.35U-0560-C	14.5	M6	35	17.5	560	80	40	2	16	3.5	2.7
L1935.35U-0640-C	14.5	M6	35	17.5	640	80	40	2	16	3.5	2.7
L1935.35U-0720-C	14.5	M6	35	17.5	720	80	40	2	16	3.5	2.7
L1935.35U-0800-C	14.5	M6	35	17.5	800	80	40	2	16	3.5	2.7
L1935.35U-0880-C	14.5	M6	35	17.5	880	80	40	2	16	3.5	2.7
L1935.35U-0960-C	14.5	M6	35	17.5	960	80	40	2	16	3.5	2.7
L1935.35U-1040-C	14.5	M6	35	17.5	1040	80	40	2	16	3.5	2.7
L1935.35U-1120-C	14.5	M6	35	17.5	1120	80	40	2	16	3.5	2.7
L1935.35U-1200-C	14.5	M6	35	17.5	1200	80	40	2	16	3.5	2.7
L1935.35U-1280-C	14.5	M6	35	17.5	1280	80	40	2	16	3.5	2.7
L1935.35U-1360-C	14.5	M6	35	17.5	1360	80	40	2	16	3.5	2.7
L1935.35U-1440-C	14.5	M6	35	17.5	1440	80	40	2	16	3.5	2.7
L1935.35U-1520-C	14.5	M6	35	17.5	1520	80	40	2	16	3.5	2.7
L1935.35U-1600-C	14.5	M6	35	17.5	1600	80	40	2	16	3.5	2.7
L1935.35U-1680-C	14.5	M6	35	17.5	1680	80	40	2	16	3.5	2.7
L1935.35U-1760-C	14.5	M6	35	17.5	1760	80	40	2	16	3.5	2.7
L1935.35U-1840-C	14.5	M6	35	17.5	1840	80	40	2	16	3.5	2.7
L1935.35U-1920-C	14.5	M6	35	17.5	1920	80	40	2	16	3.5	2.7
L1935.35U-2000-C	14.5	M6	35	17.5	2000	80	40	2	16	3.5	2.7
L1935.35U-2080-C	14.5	M6	35	17.5	2080	80	40	2	16	3.5	2.7
L1935.35U-2160-C	14.5	M6	35	17.5	2160	80	40	2	16	3.5	2.7
L1935.35U-2240-C	14.5	M6	35	17.5	2240	80	40	2	16	3.5	2.7
L1935.35U-2320-C	14.5	M6	35	17.5	2320	80	40	2	16	3.5	2.7
L1935.35U-2400-C	14.5	M6	35	17.5	2400	80	40	2	16	3.5	2.7
L1935.35U-2480-C	14.5	M6	35	17.5	2480	80	40	2	16	3.5	2.7
L1935.35U-2560-C	14.5	M6	35	17.5	2560	80	40	2	16	3.5	2.7
L1935.35U-2640-C	14.5	M6	35	17.5	2640	80	40	2	16	3.5	2.7



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1935.35U-2720-C	14.5	M6	35	17.5	2720	80	40	2	16	3.5	2.7
L1935.35U-2800-C	14.5	M6	35	17.5	2800	80	40	2	16	3.5	2.7
L1935.35U-2880-C	14.5	M6	35	17.5	2880	80	40	2	16	3.5	2.7
L1935.35U-2960-C	14.5	M6	35	17.5	2960	80	40	2	16	3.5	2.7
L1935.35U-3040-C	14.5	M6	35	17.5	3040	80	40	2	16	3.5	2.7
L1935.35U-3120-C	14.5	M6	35	17.5	3120	80	40	2	16	3.5	2.7
L1935.35U-3200-C	14.5	M6	35	17.5	3200	80	40	2	16	3.5	2.7
L1935.35U-3280-C	14.5	M6	35	17.5	3280	80	40	2	16	3.5	2.7
L1935.35U-3360-C	14.5	M6	35	17.5	3360	80	40	2	16	3.5	2.7
L1935.35U-3440-C	14.5	M6	35	17.5	3440	80	40	2	16	3.5	2.7
L1935.35U-3520-C	14.5	M6	35	17.5	3520	80	40	2	16	3.5	2.7
L1935.35U-3600-C	14.5	M6	35	17.5	3600	80	40	2	16	3.5	2.7
L1935.35U-3680-C	14.5	M6	35	17.5	3680	80	40	2	16	3.5	2.7
L1935.35U-3760-C	14.5	M6	35	17.5	3760	80	40	2	16	3.5	2.7
L1935.35U-3840-C	14.5	M6	35	17.5	3840	80	40	2	16	3.5	2.7
L1935.35U-3920-C	14.5	M6	35	17.5	3920	80	40	2	16	3.5	2.7
L1935.35U-4000-C	14.5	M6	35	17.5	4000	80	40	2	16	3.5	2.7
L1935.35U-4080-C	14.5	M6	35	17.5	4080	80	40	2	16	3.5	2.7

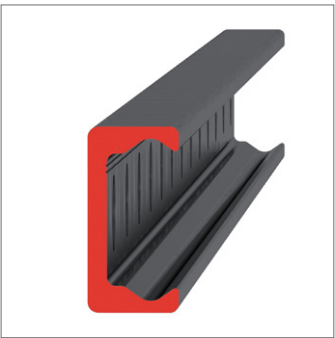
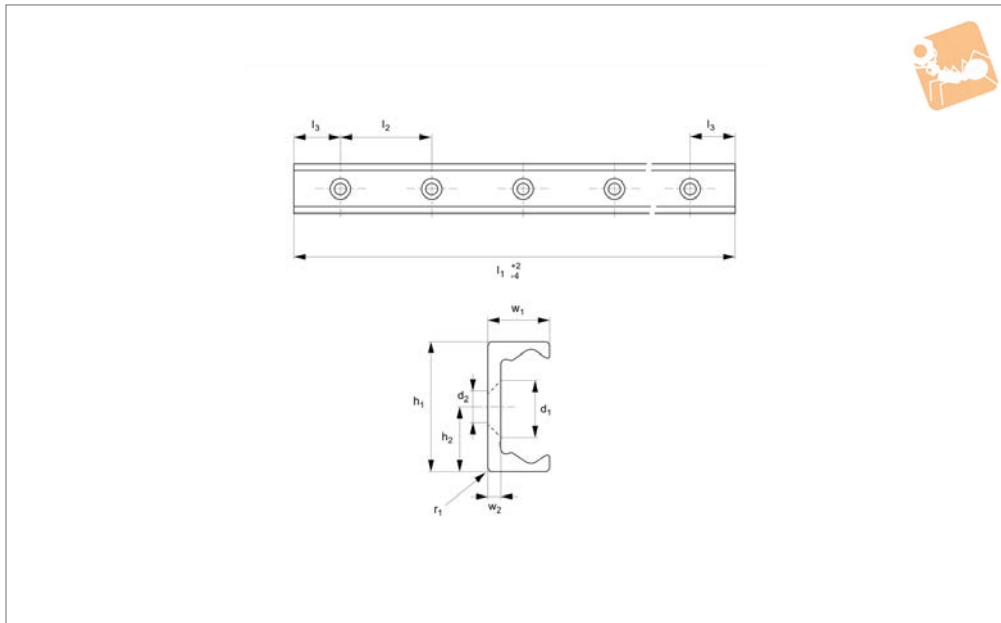


# Medium Duty T Rail

countersunk holes



## Long Linear Rails



## L1935.35T-V

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).

This is the T-V countersunk rail which is usually used with a corresponding U-V rail. For fixing use countersunk DIN 7991 screws.

Weight: 1,7 Kg/m.

### Tips

Standard carriages are the L1935.CL series.

Order No.	$d_2$ for screws	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$
L1935.35T-0240-V	M6	35	17.5	240	80	40	1	16	3.5
L1935.35T-0320-V	M6	35	17.5	320	80	40	1	16	3.5
L1935.35T-0400-V	M6	35	17.5	400	80	40	1	16	3.5
L1935.35T-0480-V	M6	35	17.5	480	80	40	1	16	3.5
L1935.35T-0560-V	M6	35	17.5	560	80	40	1	16	3.5
L1935.35T-0640-V	M6	35	17.5	640	80	40	1	16	3.5
L1935.35T-0720-V	M6	35	17.5	720	80	40	1	16	3.5
L1935.35T-0800-V	M6	35	17.5	800	80	40	1	16	3.5
L1935.35T-0880-V	M6	35	17.5	880	80	40	1	16	3.5
L1935.35T-0960-V	M6	35	17.5	960	80	40	1	16	3.5
L1935.35T-1040-V	M6	35	17.5	1040	80	40	1	16	3.5
L1935.35T-1120-V	M6	35	17.5	1120	80	40	1	16	3.5
L1935.35T-1200-V	M6	35	17.5	1200	80	40	1	16	3.5
L1935.35T-1280-V	M6	35	17.5	1280	80	40	1	16	3.5
L1935.35T-1360-V	M6	35	17.5	1360	80	40	1	16	3.5
L1935.35T-1440-V	M6	35	17.5	1440	80	40	1	16	3.5
L1935.35T-1520-V	M6	35	17.5	1520	80	40	1	16	3.5
L1935.35T-1600-V	M6	35	17.5	1600	80	40	1	16	3.5
L1935.35T-1680-V	M6	35	17.5	1680	80	40	1	16	3.5
L1935.35T-1760-V	M6	35	17.5	1760	80	40	1	16	3.5
L1935.35T-1840-V	M6	35	17.5	1840	80	40	1	16	3.5
L1935.35T-1920-V	M6	35	17.5	1920	80	40	1	16	3.5
L1935.35T-2000-V	M6	35	17.5	2000	80	40	1	16	3.5
L1935.35T-2080-V	M6	35	17.5	2080	80	40	1	16	3.5
L1935.35T-2160-V	M6	35	17.5	2160	80	40	1	16	3.5
L1935.35T-2240-V	M6	35	17.5	2240	80	40	1	16	3.5
L1935.35T-2320-V	M6	35	17.5	2320	80	40	1	16	3.5
L1935.35T-2400-V	M6	35	17.5	2400	80	40	1	16	3.5
L1935.35T-2480-V	M6	35	17.5	2480	80	40	1	16	3.5
L1935.35T-2560-V	M6	35	17.5	2560	80	40	1	16	3.5
L1935.35T-2640-V	M6	35	17.5	2640	80	40	1	16	3.5



Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.35T-2720-V	M6	35	17.5	2720	80	40	1	16	3.5
L1935.35T-2800-V	M6	35	17.5	2800	80	40	1	16	3.5
L1935.35T-2880-V	M6	35	17.5	2880	80	40	1	16	3.5
L1935.35T-2960-V	M6	35	17.5	2960	80	40	1	16	3.5
L1935.35T-3040-V	M6	35	17.5	3040	80	40	1	16	3.5
L1935.35T-3120-V	M6	35	17.5	3120	80	40	1	16	3.5
L1935.35T-3200-V	M6	35	17.5	3200	80	40	1	16	3.5
L1935.35T-3280-V	M6	35	17.5	3280	80	40	1	16	3.5
L1935.35T-3360-V	M6	35	17.5	3360	80	40	1	16	3.5
L1935.35T-3440-V	M6	35	17.5	3440	80	40	1	16	3.5
L1935.35T-3520-V	M6	35	17.5	3520	80	40	1	16	3.5
L1935.35T-3600-V	M6	35	17.5	3600	80	40	1	16	3.5
L1935.35T-3680-V	M6	35	17.5	3680	80	40	1	16	3.5
L1935.35T-3760-V	M6	35	17.5	3760	80	40	1	16	3.5
L1935.35T-3840-V	M6	35	17.5	3840	80	40	1	16	3.5
L1935.35T-3920-V	M6	35	17.5	3920	80	40	1	16	3.5
L1935.35T-4000-V	M6	35	17.5	4000	80	40	1	16	3.5
L1935.35T-4080-V	M6	35	17.5	4080	80	40	1	16	3.5

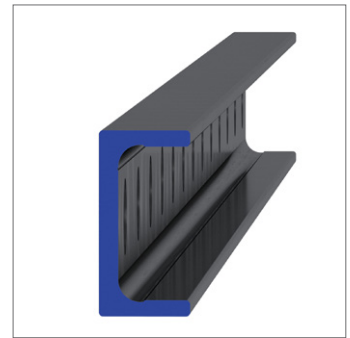
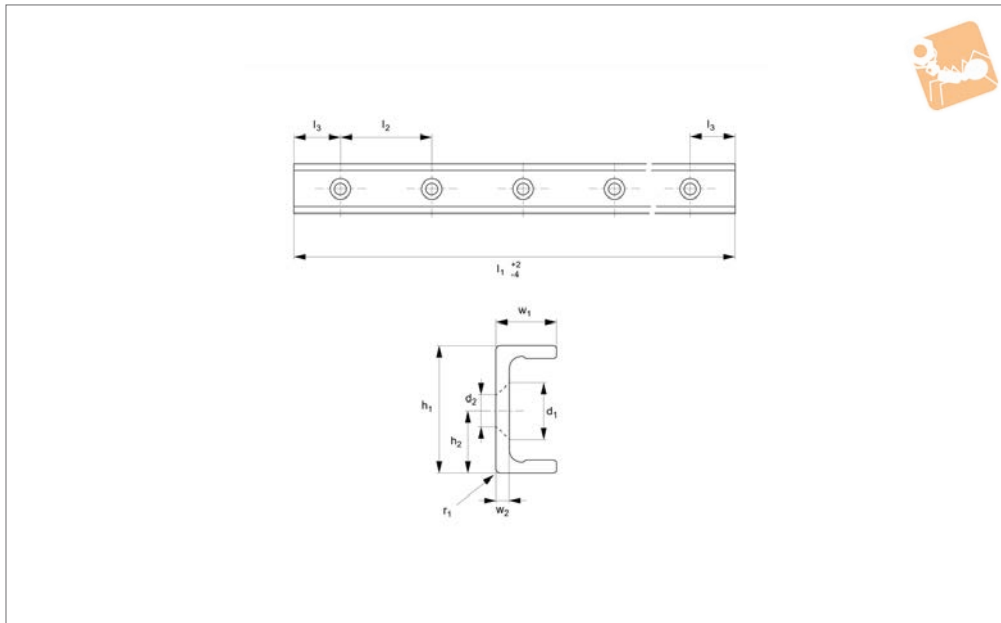


# Medium Duty U Rail

countersunk holes



## Long Linear Rails



## L1935.35U-V

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-V countersunk rail type which is usually used with a corresponding T-V rail.

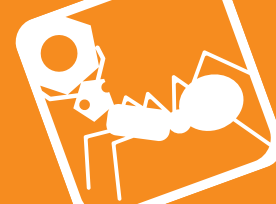
For fixing use countersunk DIN 7991 screws.

Weight: 1,7 Kg/m.

### Tips

Standard carriages are the L1935.CL series.

Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.35U-0240-V	M6	35	17.5	240	80	40	1	16	3.5
L1935.35U-0320-V	M6	35	17.5	320	80	40	1	16	3.5
L1935.35U-0400-V	M6	35	17.5	400	80	40	1	16	3.5
L1935.35U-0480-V	M6	35	17.5	480	80	40	1	16	3.5
L1935.35U-0560-V	M6	35	17.5	560	80	40	1	16	3.5
L1935.35U-0640-V	M6	35	17.5	640	80	40	1	16	3.5
L1935.35U-0720-V	M6	35	17.5	720	80	40	1	16	3.5
L1935.35U-0800-V	M6	35	17.5	800	80	40	1	16	3.5
L1935.35U-0880-V	M6	35	17.5	880	80	40	1	16	3.5
L1935.35U-0960-V	M6	35	17.5	960	80	40	1	16	3.5
L1935.35U-1040-V	M6	35	17.5	1040	80	40	1	16	3.5
L1935.35U-1120-V	M6	35	17.5	1120	80	40	1	16	3.5
L1935.35U-1200-V	M6	35	17.5	1200	80	40	1	16	3.5
L1935.35U-1280-V	M6	35	17.5	1280	80	40	1	16	3.5
L1935.35U-1360-V	M6	35	17.5	1360	80	40	1	16	3.5
L1935.35U-1440-V	M6	35	17.5	1440	80	40	1	16	3.5
L1935.35U-1520-V	M6	35	17.5	1520	80	40	1	16	3.5
L1935.35U-1600-V	M6	35	17.5	1600	80	40	1	16	3.5
L1935.35U-1680-V	M6	35	17.5	1680	80	40	1	16	3.5
L1935.35U-1760-V	M6	35	17.5	1760	80	40	1	16	3.5
L1935.35U-1840-V	M6	35	17.5	1840	80	40	1	16	3.5
L1935.35U-1920-V	M6	35	17.5	1920	80	40	1	16	3.5
L1935.35U-2000-V	M6	35	17.5	2000	80	40	1	16	3.5
L1935.35U-2080-V	M6	35	17.5	2080	80	40	1	16	3.5
L1935.35U-2160-V	M6	35	17.5	2160	80	40	1	16	3.5
L1935.35U-2240-V	M6	35	17.5	2240	80	40	1	16	3.5
L1935.35U-2320-V	M6	35	17.5	2320	80	40	1	16	3.5
L1935.35U-2400-V	M6	35	17.5	2400	80	40	1	16	3.5
L1935.35U-2480-V	M6	35	17.5	2480	80	40	1	16	3.5
L1935.35U-2560-V	M6	35	17.5	2560	80	40	1	16	3.5
L1935.35U-2640-V	M6	35	17.5	2640	80	40	1	16	3.5



Order No.	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1935.35U-2720-V	M6	35	17.5	2720	80	40	1	16	3.5
L1935.35U-2800-V	M6	35	17.5	2800	80	40	1	16	3.5
L1935.35U-2880-V	M6	35	17.5	2880	80	40	1	16	3.5
L1935.35U-2960-V	M6	35	17.5	2960	80	40	1	16	3.5
L1935.35U-3040-V	M6	35	17.5	3040	80	40	1	16	3.5
L1935.35U-3120-V	M6	35	17.5	3120	80	40	1	16	3.5
L1935.35U-3200-V	M6	35	17.5	3200	80	40	1	16	3.5
L1935.35U-3280-V	M6	35	17.5	3280	80	40	1	16	3.5
L1935.35U-3360-V	M6	35	17.5	3360	80	40	1	16	3.5
L1935.35U-3440-V	M6	35	17.5	3440	80	40	1	16	3.5
L1935.35U-3520-V	M6	35	17.5	3520	80	40	1	16	3.5
L1935.35U-3600-V	M6	35	17.5	3600	80	40	1	16	3.5
L1935.35U-3680-V	M6	35	17.5	3680	80	40	1	16	3.5
L1935.35U-3760-V	M6	35	17.5	3760	80	40	1	16	3.5
L1935.35U-3840-V	M6	35	17.5	3840	80	40	1	16	3.5
L1935.35U-3920-V	M6	35	17.5	3920	80	40	1	16	3.5
L1935.35U-4000-V	M6	35	17.5	4000	80	40	1	16	3.5
L1935.35U-4080-V	M6	35	17.5	4080	80	40	1	16	3.5



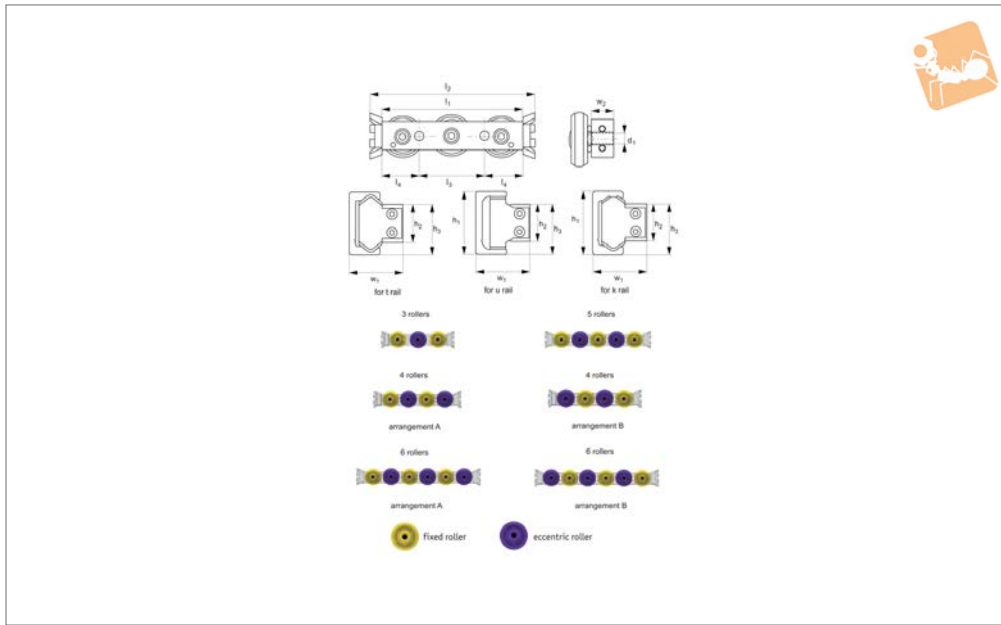


# Heavy Duty Sliders - Size 43

no side seal - front fixing - with wiper



Long Linear  
Rails



**L1943.CS**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CS sliders do not have protective side seals.

The 3 and 5 bearing sliders can be used either way up in the rail dependent on where the loads will be applied. Easy to install (one or more rollers are eccentric allowing for adjustable preload). Coefficient of friction (without seals) 0.005.

Quiet and fast (up to 7 m/s).

### Technical Notes

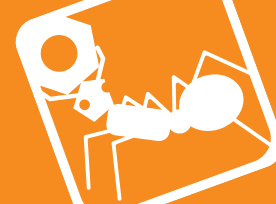
To be used with compact rail size 43.

### Tips

The U rail sliders cannot accept axial loads.

Order No.	For rail type	No. of rollers	Seal type	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.15	h <sub>3</sub> +0.10 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight g
L1943.43CS-120-2RST	T	3	Rubber	M 8	43	24.9	34.3	120	140	55	0.53
L1943.43CS-120-2RSU	U	3	Rubber	M 8	43	24.9	34.3	120	140	55	0.53
L1943.43CS-150-2RSTA	T	4	Rubber	M 8	43	24.9	34.3	150	170	80	0.68
L1943.43CS-150-2RSUA	U	4	Rubber	M 8	43	24.9	34.3	150	170	80	0.68
L1943.43CS-150-2RSTB	T	4	Rubber	M 8	43	24.9	34.3	150	170	80	0.68
L1943.43CS-150-2RSUB	U	4	Rubber	M 8	43	24.9	34.3	150	170	80	0.68
L1943.43CS-190-2RST	T	5	Rubber	M 8	43	24.9	34.3	190	210	40	0.84
L1943.43CS-190-2RSU	U	5	Rubber	M 8	43	24.9	34.3	190	210	40	0.84
L1943.43CS-230-2RSTA	T	6	Rubber	M 8	43	24.9	34.3	230	250	80	1.01
L1943.43CS-230-2RSUA	U	6	Rubber	M 8	43	24.9	34.3	230	250	80	1.01
L1943.43CS-230-2RSTB	T	6	Rubber	M 8	43	24.9	34.3	230	250	80	1.01
L1943.43CS-230-2RSUB	U	6	Rubber	M 8	43	24.9	34.3	230	250	80	1.01

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Set up type	Static load C <sub>0 rad.</sub> N max.
L1943.43CS-120-2RST	32.5	23.6	60	104.5	104.5	37	14.5	12280	1570	-	5500
L1943.43CS-120-2RSU	32.5	0	0	104.5	104.5	37	14.5	12280	0	-	5500
L1943.43CS-150-2RSTA	35	43.6	81.5	104.5	313.5	37	14.5	12280	1855	A	5500
L1943.43CS-150-2RSUA	35	0	0	104.5	313.5	37	14.5	12280	0	A	5500
L1943.43CS-150-2RSTB	35	43.6	81.5	104.5	104.5	37	14.5	12280	1855	B	5500
L1943.43CS-150-2RSUB	35	0	0	313.5	104.5	37	14.5	12280	0	B	5500



Order No.	$l_4$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	Dyn. load C N max.	Static load $C_{0\text{ ax.}}$ N max.	Set up type	Static load $C_{0\text{ rad.}}$ N max.
<b>L1943.43CS-190-2RST</b>	35	43.6	108.6	313.5	313.5	37	14.5	14675	2215	-	6540
<b>L1943.43CS-190-2RSU</b>	35	0	0	313.5	313.5	37	14.5	14675	0	-	6540
<b>L1943.43CS-230-2RSTA</b>	35	52	135.8	313.5	522.5	37	14.5	14675	2645	A	6540
<b>L1943.43CS-230-2RSUA</b>	35	0	0	313.5	522.5	37	14.5	14675	0	A	6540
<b>L1943.43CS-230-2RSTB</b>	35	52	135.8	522.5	313.5	37	14.5	14675	2645	B	6540
<b>L1943.43CS-230-2RSUB</b>	35	0	0	522.5	313.5	37	14.5	14675	0	B	6540

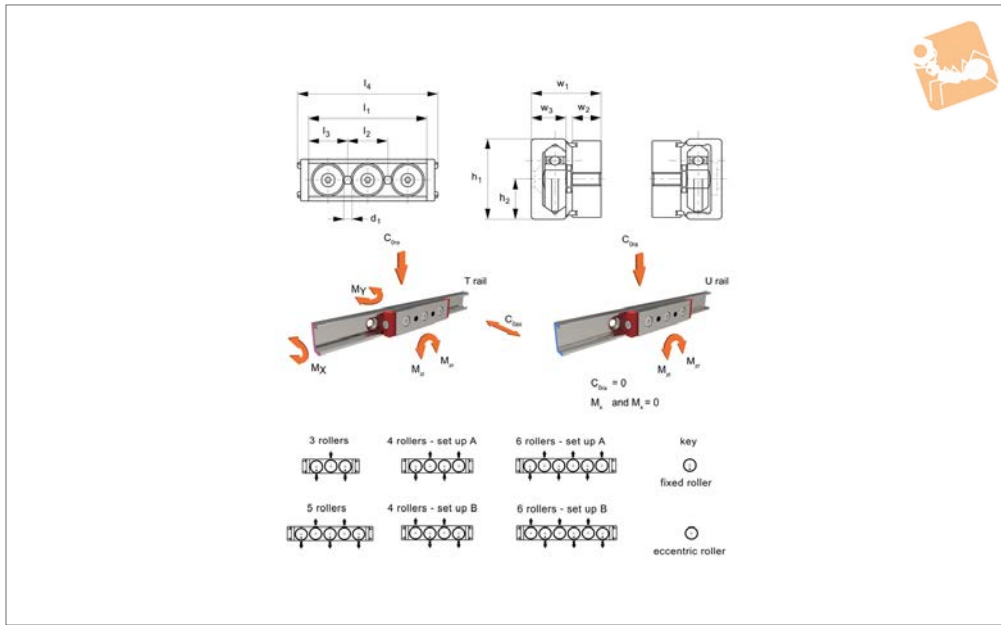


# Heavy Duty Sliders - Size 43

side seal - front fixing - with wiper



Long Linear  
Rails



**L1943.CL**

LONG LINEAR RAILS

**Material**

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

either way up in the rail dependent on where the loads will be applied. Easy to install (one or more rollers are eccentric allowing for adjustable preload). Coefficient of friction (without seals) 0.003. Quiet and fast (up to 5 m/s).

**Technical Notes**

To be used with compact rail size 43.

**Tips**

The U rail sliders cannot accept axial loads. The 3 and 5 bearing sliders can be used

Order No.	For rail type	No. of rollers	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm
L1943.43CL-120-T	T	3	M 8	43	21.5	120	55	32.5	134	23.7	60.1
L1943.43CL-120-U	U	3	M 8	43	21.5	120	55	32.5	134	-	-
L1943.43CL-150-TA	T	4	M 8	43	21.5	150	80	35.0	164	43.7	81.6
L1943.43CL-150-UA	U	4	M 8	43	21.5	150	80	35.0	164	-	-
L1943.43CL-150-TB	T	4	M 8	43	21.5	150	80	35.0	164	43.7	81.6
L1943.43CL-150-UB	U	4	M 8	43	21.5	150	80	35.0	164	-	-
L1943.43CL-190-T	T	5	M 8	43	21.5	190	40	35.0	204	43.7	108.7
L1943.43CL-190-U	U	5	M 8	43	21.5	190	40	35.0	204	-	-
L1943.43CL-230-TA	T	6	M 8	43	21.5	230	80	35.0	244	52.5	136.0
L1943.43CL-230-UA	U	6	M 8	43	21.5	230	80	35.0	244	-	-
L1943.43CL-230-TB	T	6	M 8	43	21.5	230	80	35.0	244	52.5	136.0
L1943.43CL-230-UB	U	6	M 8	43	21.5	230	80	35.0	244	-	-

Order No.	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	w <sub>3</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Set up type	Static load C <sub>0 rad.</sub> N max.
L1943.43CL-120-T	104.7	104.7	37.5	15	21	12300	1580	-	5520
L1943.43CL-120-U	104.7	104.7	37.5	15	21	12300	-	-	5520
L1943.43CL-150-TA	104.7	313.8	37.5	15	21	12300	1890	A	5520
L1943.43CL-150-UA	104.7	313.8	37.5	15	21	12300	-	A	5520
L1943.43CL-150-TB	313.8	104.5	37.5	15	21	12300	1890	B	5520
L1943.43CL-150-UB	313.8	104.5	37.5	15	21	12300	-	B	5520
L1943.43CL-190-T	313.8	313.8	37.5	15	21	14680	2220	-	6560
L1943.43CL-190-U	313.8	313.8	37.5	15	21	14680	-	-	6560
L1943.43CL-230-TA	313.8	523.0	37.5	15	21	14680	2650	A	6560



Order No.	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	w <sub>3</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Set up type	Static load C <sub>0 rad.</sub> N max.
<b>L1943.43CL-230-UA</b>	313.8	523.0	37.5	15	21	14680	-	A	6560
<b>L1943.43CL-230-TB</b>	523.0	313.8	37.5	15	21	14680	2650	B	6560
<b>L1943.43CL-230-UB</b>	523.0	313.8	37.5	15	21	14680	-	B	6560

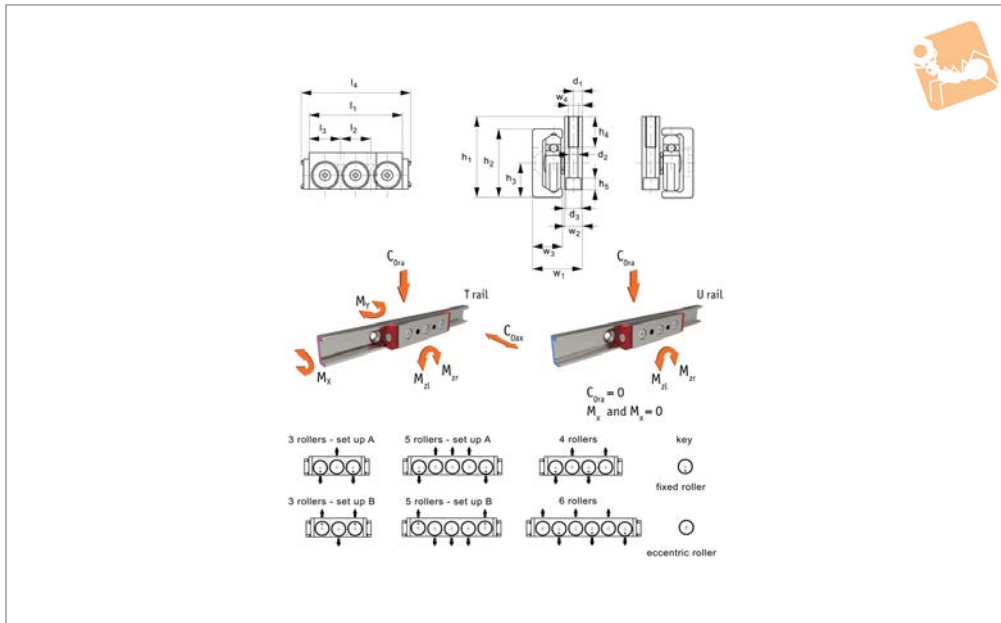


# Heavy Duty Sliders, size 43

no side seal, side fixing, with wiper



Long Linear  
Rails



**L1943.CR**

LONG LINEAR RAILS

**Material**

Zinc plated steel body.  
Steel rollers (100Cr6) with rubber seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.003.  
Quiet and fast (up to 5 m/s).

**Technical Notes**

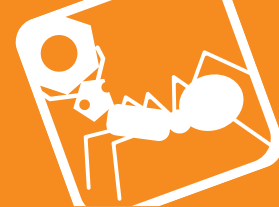
To be used with compact rail size 43.

**Tips**

Easy to install (one or more rollers are

Order No.	For rail type	No. of rollers	d <sub>1</sub> for screw	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm
L1943.43CR-120-TA	T	3	M8	6.7	11	43	21.5	47	16	6.5	120	56	32	134	23.7
L1943.43CR-120-UA	U	3	M8	6.7	11	43	21.5	47	16	6.5	120	56	32	134	0
L1943.43CR-120-TB	T	3	M8	6.7	11	43	21.5	47	16	6.5	120	56	32	134	23.7
L1943.43CR-120-UB	U	3	M8	6.7	11	43	21.5	47	16	6.5	120	56	32	134	0
L1943.43CR-150-TA	T	4	M8	6.7	11	43	21.5	47	16	6.5	150	86	32	164	43.7
L1943.43CR-150-UA	U	4	M8	6.7	11	43	21.5	47	16	6.5	150	86	32	164	0
L1943.43CR-150-TB	T	4	M8	6.7	11	43	21.5	47	16	6.5	150	86	32	164	43.7
L1943.43CR-150-UB	U	4	M8	6.7	11	43	21.5	47	16	6.5	150	86	32	164	0
L1943.43CR-190-TA	T	5	M8	6.7	11	43	21.5	47	16	6.5	190	42	32	204	43.7
L1943.43CR-190-UA	U	5	M8	6.7	11	43	21.5	47	16	6.5	190	42	32	204	0
L1943.43CR-190-TB	T	5	M8	6.7	11	43	21.5	47	16	6.5	190	42	32	204	43.7
L1943.43CR-190-UB	U	5	M8	6.7	11	43	21.5	47	16	6.5	190	42	32	204	0
L1943.43CR-230-TA	T	6	M8	6.7	11	43	21.5	47	16	6.5	230	83	32	244	52.5
L1943.43CR-230-UA	U	6	M8	6.7	11	43	21.5	47	16	6.5	230	83	32	244	0
L1943.43CR-230-TB	T	6	M8	6.7	11	43	21.5	47	16	6.5	230	83	32	244	52.5
L1943.43CR-230-UB	U	6	M8	6.7	11	43	21.5	47	16	6.5	230	83	32	244	0

Order No.	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zi</sub> Nm	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Dyn. load C <sub>N</sub> max.	Static load C <sub>0 ax</sub> N max.	Static load C <sub>0 rad</sub> N max.
L1943.43CR-120-TA	60.1	104.7	104.7	37.5	15	21	7.5	12300	1580	5520
L1943.43CR-120-UA	0	104.7	104.7	37.5	15	21	7.5	12300	0	5520
L1943.43CR-120-TB	60.1	104.7	104.7	37.5	15	21	7.5	12300	1580	5520
L1943.43CR-120-UB	0	104.7	104.7	37.5	15	21	7.5	12300	0	5520
L1943.43CR-150-TA	81.6	104.7	313.8	37.5	15	21	7.5	12300	1890	5520



LONG LINEAR RAILS

Order No.	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$	$w_2$	$w_3$	$w_4$	Dyn. load C N max.	Static load $C_{0\ ax}$ N max.	Static load $C_{0\ rad}$ N max.
L1943.43CR-150-UA	0	104.7	313.8	37.5	15	21	7.5	12300	0	5520
L1943.43CR-150-TB	81.6	313.8	104.5	37.5	15	21	7.5	12300	1890	5520
L1943.43CR-150-UB	0	313.8	104.5	37.5	15	21	7.5	12300	0	5520
L1943.43CR-190-TA	108.7	313.8	313.8	37.5	15	21	7.5	14680	2220	6560
L1943.43CR-190-UA	0	313.8	313.8	37.5	15	21	7.5	14680	0	6560
L1943.43CR-190-TB	108.7	313.8	313.8	37.5	15	21	7.5	14680	2220	6560
L1943.43CR-190-UB	0	313.8	313.8	37.5	15	21	7.5	14680	0	6560
L1943.43CR-230-TA	136.0	313.8	523.0	37.5	15	21	7.5	14680	2650	6560
L1943.43CR-230-UA	0	313.8	523.0	37.5	15	21	7.5	14680	0	6560
L1943.43CR-230-TB	136.0	523.0	313.8	37.5	15	21	7.5	14680	2650	6560
L1943.43CR-230-UB	0	523.0	313.8	37.5	15	21	7.5	14680	0	6560

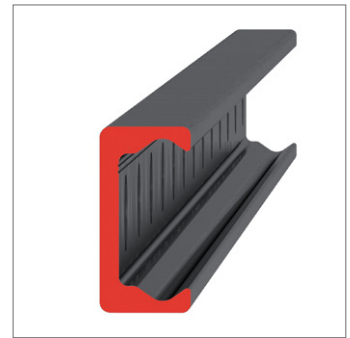
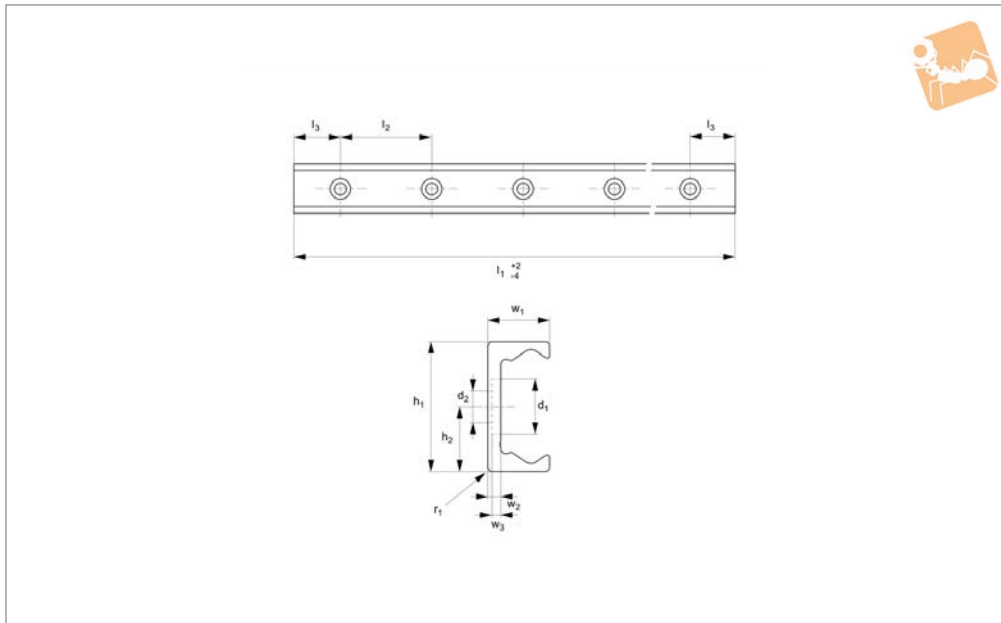


# Heavy Duty T Rail

counterbored holes



## Long Linear Rails



### L1943.43T-C

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding U-C rail.  
Special low profile Torx head screws provided free of charge.

Weight: 2,6 Kg/m.

#### Tips

Standard carriages are the L1943.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.43T-0400-C	18	M8	43	21.5	400	80	40	2.5	21	4.5	3.1
L1943.43T-0480-C	18	M8	43	21.5	480	80	40	2.5	21	4.5	3.1
L1943.43T-0560-C	18	M8	43	21.5	560	80	40	2.5	21	4.5	3.1
L1943.43T-0640-C	18	M8	43	21.5	640	80	40	2.5	21	4.5	3.1
L1943.43T-0720-C	18	M8	43	21.5	720	80	40	2.5	21	4.5	3.1
L1943.43T-0800-C	18	M8	43	21.5	800	80	40	2.5	21	4.5	3.1
L1943.43T-0880-C	18	M8	43	21.5	880	80	40	2.5	21	4.5	3.1
L1943.43T-0960-C	18	M8	43	21.5	960	80	40	2.5	21	4.5	3.1
L1943.43T-1040-C	18	M8	43	21.5	1040	80	40	2.5	21	4.5	3.1
L1943.43T-1120-C	18	M8	43	21.5	1120	80	40	2.5	21	4.5	3.1
L1943.43T-1200-C	18	M8	43	21.5	1200	80	40	2.5	21	4.5	3.1
L1943.43T-1280-C	18	M8	43	21.5	1280	80	40	2.5	21	4.5	3.1
L1943.43T-1360-C	18	M8	43	21.5	1360	80	40	2.5	21	4.5	3.1
L1943.43T-1440-C	18	M8	43	21.5	1440	80	40	2.5	21	4.5	3.1
L1943.43T-1520-C	18	M8	43	21.5	1520	80	40	2.5	21	4.5	3.1
L1943.43T-1600-C	18	M8	43	21.5	1600	80	40	2.5	21	4.5	3.1
L1943.43T-1680-C	18	M8	43	21.5	1680	80	40	2.5	21	4.5	3.1
L1943.43T-1760-C	18	M8	43	21.5	1760	80	40	2.5	21	4.5	3.1
L1943.43T-1840-C	18	M8	43	21.5	1840	80	40	2.5	21	4.5	3.1
L1943.43T-1920-C	18	M8	43	21.5	1920	80	40	2.5	21	4.5	3.1
L1943.43T-2000-C	18	M8	43	21.5	2000	80	40	2.5	21	4.5	3.1
L1943.43T-2080-C	18	M8	43	21.5	2080	80	40	2.5	21	4.5	3.1
L1943.43T-2160-C	18	M8	43	21.5	2160	80	40	2.5	21	4.5	3.1
L1943.43T-2240-C	18	M8	43	21.5	2240	80	40	2.5	21	4.5	3.1
L1943.43T-2320-C	18	M8	43	21.5	2320	80	40	2.5	21	4.5	3.1
L1943.43T-2400-C	18	M8	43	21.5	2400	80	40	2.5	21	4.5	3.1
L1943.43T-2480-C	18	M8	43	21.5	2480	80	40	2.5	21	4.5	3.1
L1943.43T-2560-C	18	M8	43	21.5	2560	80	40	2.5	21	4.5	3.1
L1943.43T-2640-C	18	M8	43	21.5	2640	80	40	2.5	21	4.5	3.1
L1943.43T-2720-C	18	M8	43	21.5	2720	80	40	2.5	21	4.5	3.1
L1943.43T-2800-C	18	M8	43	21.5	2800	80	40	2.5	21	4.5	3.1



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.43T-2880-C	18	M8	43	21.5	2880	80	40	2.5	21	4.5	3.1
L1943.43T-2960-C	18	M8	43	21.5	2960	80	40	2.5	21	4.5	3.1
L1943.43T-3040-C	18	M8	43	21.5	3040	80	40	2.5	21	4.5	3.1
L1943.43T-3120-C	18	M8	43	21.5	3120	80	40	2.5	21	4.5	3.1
L1943.43T-3200-C	18	M8	43	21.5	3200	80	40	2.5	21	4.5	3.1
L1943.43T-3280-C	18	M8	43	21.5	3280	80	40	2.5	21	4.5	3.1
L1943.43T-3360-C	18	M8	43	21.5	3360	80	40	2.5	21	4.5	3.1
L1943.43T-3440-C	18	M8	43	21.5	3440	80	40	2.5	21	4.5	3.1
L1943.43T-3520-C	18	M8	43	21.5	3520	80	40	2.5	21	4.5	3.1
L1943.43T-3600-C	18	M8	43	21.5	3600	80	40	2.5	21	4.5	3.1
L1943.43T-3680-C	18	M8	43	21.5	3680	80	40	2.5	21	4.5	3.1
L1943.43T-3760-C	18	M8	43	21.5	3760	80	40	2.5	21	4.5	3.1
L1943.43T-3840-C	18	M8	43	21.5	3840	80	40	2.5	21	4.5	3.1
L1943.43T-3920-C	18	M8	43	21.5	3920	80	40	2.5	21	4.5	3.1
L1943.43T-4000-C	18	M8	43	21.5	4000	80	40	2.5	21	4.5	3.1
L1943.43T-4080-C	18	M8	43	21.5	4080	80	40	2.5	21	4.5	3.1



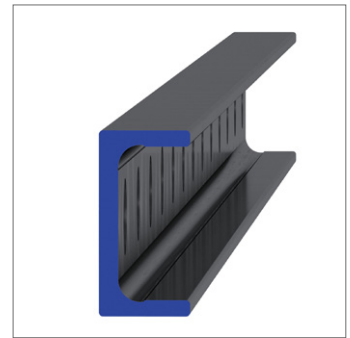
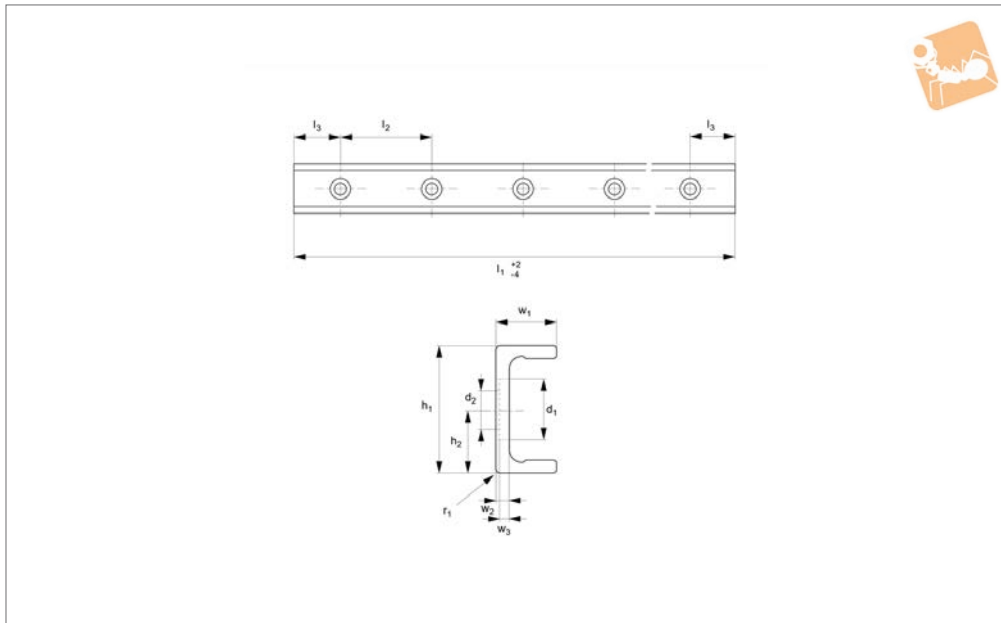


# Heavy Duty U Rail

counterbored holes



Long Linear  
Rails



**L1943.43U-C**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-C counterbored rail type (most popular), which is usually used with a corresponding T-C rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.CL series.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.43U-0400-C	18	M8	43	21.5	400	80	40	2.5	21	4.5	3.1
L1943.43U-0480-C	18	M8	43	21.5	480	80	40	2.5	21	4.5	3.1
L1943.43U-0560-C	18	M8	43	21.5	560	80	40	2.5	21	4.5	3.1
L1943.43U-0640-C	18	M8	43	21.5	640	80	40	2.5	21	4.5	3.1
L1943.43U-0720-C	18	M8	43	21.5	720	80	40	2.5	21	4.5	3.1
L1943.43U-0800-C	18	M8	43	21.5	800	80	40	2.5	21	4.5	3.1
L1943.43U-0880-C	18	M8	43	21.5	880	80	40	2.5	21	4.5	3.1
L1943.43U-0960-C	18	M8	43	21.5	960	80	40	2.5	21	4.5	3.1
L1943.43U-1040-C	18	M8	43	21.5	1040	80	40	2.5	21	4.5	3.1
L1943.43U-1120-C	18	M8	43	21.5	1120	80	40	2.5	21	4.5	3.1
L1943.43U-1200-C	18	M8	43	21.5	1200	80	40	2.5	21	4.5	3.1
L1943.43U-1280-C	18	M8	43	21.5	1280	80	40	2.5	21	4.5	3.1
L1943.43U-1360-C	18	M8	43	21.5	1360	80	40	2.5	21	4.5	3.1
L1943.43U-1440-C	18	M8	43	21.5	1440	80	40	2.5	21	4.5	3.1
L1943.43U-1520-C	18	M8	43	21.5	1520	80	40	2.5	21	4.5	3.1
L1943.43U-1600-C	18	M8	43	21.5	1600	80	40	2.5	21	4.5	3.1
L1943.43U-1680-C	18	M8	43	21.5	1680	80	40	2.5	21	4.5	3.1
L1943.43U-1760-C	18	M8	43	21.5	1760	80	40	2.5	21	4.5	3.1
L1943.43U-1840-C	18	M8	43	21.5	1840	80	40	2.5	21	4.5	3.1
L1943.43U-1920-C	18	M8	43	21.5	1920	80	40	2.5	21	4.5	3.1
L1943.43U-2000-C	18	M8	43	21.5	2000	80	40	2.5	21	4.5	3.1
L1943.43U-2080-C	18	M8	43	21.5	2080	80	40	2.5	21	4.5	3.1
L1943.43U-2160-C	18	M8	43	21.5	2160	80	40	2.5	21	4.5	3.1
L1943.43U-2240-C	18	M8	43	21.5	2240	80	40	2.5	21	4.5	3.1
L1943.43U-2320-C	18	M8	43	21.5	2320	80	40	2.5	21	4.5	3.1
L1943.43U-2400-C	18	M8	43	21.5	2400	80	40	2.5	21	4.5	3.1
L1943.43U-2480-C	18	M8	43	21.5	2480	80	40	2.5	21	4.5	3.1
L1943.43U-2560-C	18	M8	43	21.5	2560	80	40	2.5	21	4.5	3.1
L1943.43U-2640-C	18	M8	43	21.5	2640	80	40	2.5	21	4.5	3.1
L1943.43U-2720-C	18	M8	43	21.5	2720	80	40	2.5	21	4.5	3.1
L1943.43U-2800-C	18	M8	43	21.5	2800	80	40	2.5	21	4.5	3.1



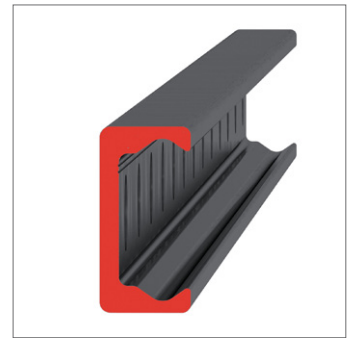
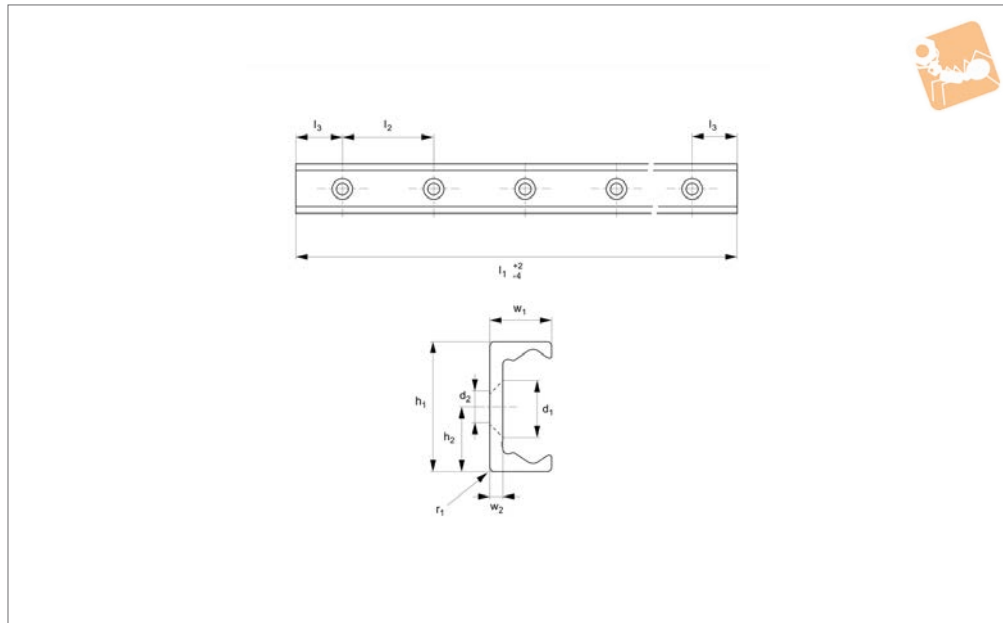
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L1943.43U-2880-C	18	M8	43	21.5	2880	80	40	2.5	21	4.5	3.1
L1943.43U-2960-C	18	M8	43	21.5	2960	80	40	2.5	21	4.5	3.1
L1943.43U-3040-C	18	M8	43	21.5	3040	80	40	2.5	21	4.5	3.1
L1943.43U-3120-C	18	M8	43	21.5	3120	80	40	2.5	21	4.5	3.1
L1943.43U-3200-C	18	M8	43	21.5	3200	80	40	2.5	21	4.5	3.1
L1943.43U-3280-C	18	M8	43	21.5	3280	80	40	2.5	21	4.5	3.1
L1943.43U-3360-C	18	M8	43	21.5	3360	80	40	2.5	21	4.5	3.1
L1943.43U-3440-C	18	M8	43	21.5	3440	80	40	2.5	21	4.5	3.1
L1943.43U-3520-C	18	M8	43	21.5	3520	80	40	2.5	21	4.5	3.1
L1943.43U-3600-C	18	M8	43	21.5	3600	80	40	2.5	21	4.5	3.1
L1943.43U-3680-C	18	M8	43	21.5	3680	80	40	2.5	21	4.5	3.1
L1943.43U-3760-C	18	M8	43	21.5	3760	80	40	2.5	21	4.5	3.1
L1943.43U-3840-C	18	M8	43	21.5	3840	80	40	2.5	21	4.5	3.1
L1943.43U-3920-C	18	M8	43	21.5	3920	80	40	2.5	21	4.5	3.1
L1943.43U-4000-C	18	M8	43	21.5	4000	80	40	2.5	21	4.5	3.1
L1943.43U-4080-C	18	M8	43	21.5	4080	80	40	2.5	21	4.5	3.1



# Heavy Duty T Rail

countersunk holes

# Long Linear Rails



## L1943.43T-V

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).

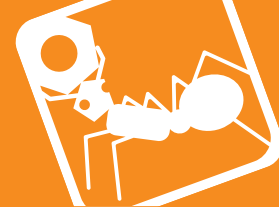
This is the T-V countersunk rail which is usually used with a corresponding U-V rail. For fixing use countersunk DIN 7991 screws.

Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.CL series.

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1943.43T-0400-V	M8	43	21.5	400	80	40	1	21	4.5
L1943.43T-0480-V	M8	43	21.5	480	80	40	1	21	4.5
L1943.43T-0560-V	M8	43	21.5	560	80	40	1	21	4.5
L1943.43T-0640-V	M8	43	21.5	640	80	40	1	21	4.5
L1943.43T-0720-V	M8	43	21.5	720	80	40	1	21	4.5
L1943.43T-0800-V	M8	43	21.5	800	80	40	1	21	4.5
L1943.43T-0880-V	M8	43	21.5	880	80	40	1	21	4.5
L1943.43T-0960-V	M8	43	21.5	960	80	40	1	21	4.5
L1943.43T-1040-V	M8	43	21.5	1040	80	40	1	21	4.5
L1943.43T-1120-V	M8	43	21.5	1120	80	40	1	21	4.5
L1943.43T-1200-V	M8	43	21.5	1200	80	40	1	21	4.5
L1943.43T-1280-V	M8	43	21.5	1280	80	40	1	21	4.5
L1943.43T-1360-V	M8	43	21.5	1360	80	40	1	21	4.5
L1943.43T-1440-V	M8	43	21.5	1440	80	40	1	21	4.5
L1943.43T-1520-V	M8	43	21.5	1520	80	40	1	21	4.5
L1943.43T-1600-V	M8	43	21.5	1600	80	40	1	21	4.5
L1943.43T-1680-V	M8	43	21.5	1680	80	40	1	21	4.5
L1943.43T-1760-V	M8	43	21.5	1760	80	40	1	21	4.5
L1943.43T-1840-V	M8	43	21.5	1840	80	40	1	21	4.5
L1943.43T-1920-V	M8	43	21.5	1920	80	40	1	21	4.5
L1943.43T-2000-V	M8	43	21.5	2000	80	40	1	21	4.5
L1943.43T-2080-V	M8	43	21.5	2080	80	40	1	21	4.5
L1943.43T-2160-V	M8	43	21.5	2160	80	40	1	21	4.5
L1943.43T-2240-V	M8	43	21.5	2240	80	40	1	21	4.5
L1943.43T-2320-V	M8	43	21.5	2320	80	40	1	21	4.5
L1943.43T-2400-V	M8	43	21.5	2400	80	40	1	21	4.5
L1943.43T-2480-V	M8	43	21.5	2480	80	40	1	21	4.5
L1943.43T-2560-V	M8	43	21.5	2560	80	40	1	21	4.5
L1943.43T-2640-V	M8	43	21.5	2640	80	40	1	21	4.5
L1943.43T-2720-V	M8	43	21.5	2720	80	40	1	21	4.5
L1943.43T-2800-V	M8	43	21.5	2800	80	40	1	21	4.5



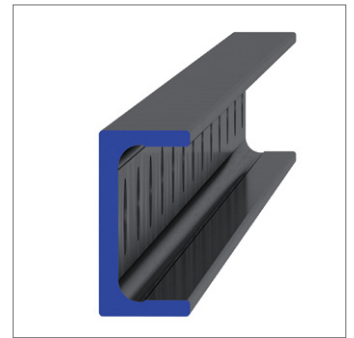
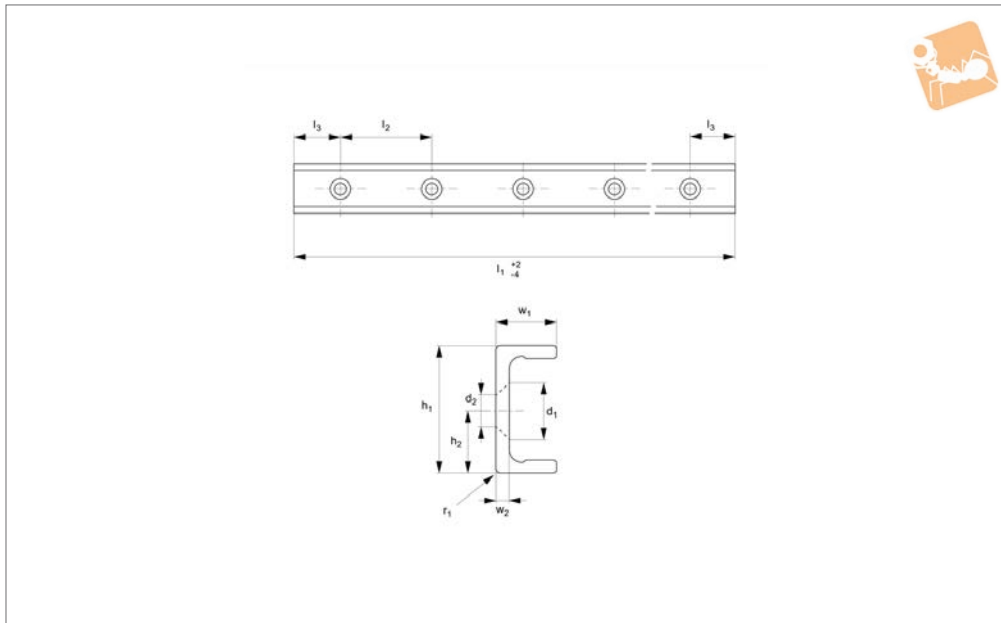
Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1943.43T-2880-V	M8	43	21.5	2880	80	40	1	21	4.5
L1943.43T-2960-V	M8	43	21.5	2960	80	40	1	21	4.5
L1943.43T-3040-V	M8	43	21.5	3040	80	40	1	21	4.5
L1943.43T-3120-V	M8	43	21.5	3120	80	40	1	21	4.5
L1943.43T-3200-V	M8	43	21.5	3200	80	40	1	21	4.5
L1943.43T-3280-V	M8	43	21.5	3280	80	40	1	21	4.5
L1943.43T-3360-V	M8	43	21.5	3360	80	40	1	21	4.5
L1943.43T-3440-V	M8	43	21.5	3440	80	40	1	21	4.5
L1943.43T-3520-V	M8	43	21.5	3520	80	40	1	21	4.5
L1943.43T-3600-V	M8	43	21.5	3600	80	40	1	21	4.5
L1943.43T-3680-V	M8	43	21.5	3680	80	40	1	21	4.5
L1943.43T-3760-V	M8	43	21.5	3760	80	40	1	21	4.5
L1943.43T-3840-V	M8	43	21.5	3840	80	40	1	21	4.5
L1943.43T-3920-V	M8	43	21.5	3920	80	40	1	21	4.5
L1943.43T-4000-V	M8	43	21.5	4000	80	40	1	21	4.5
L1943.43T-4080-V	M8	43	21.5	4080	80	40	1	21	4.5



# Heavy Duty U Rail countersunk holes



Long Linear  
Rails



**L1943.43U-V**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the U-V countersunk rail type which is usually used with a corresponding T-V rail.

For fixing use countersunk DIN 7991 screws.

Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.CL series.

Order No.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	d for screws
L1943.43U-0400-V	43	21.5	400	80	40	1	21	4.5	M8
L1943.43U-0480-V	43	21.5	480	80	40	1	21	4.5	M8
L1943.43U-0560-V	43	21.5	560	80	40	1	21	4.5	M8
L1943.43U-0640-V	43	21.5	640	80	40	1	21	4.5	M8
L1943.43U-0720-V	43	21.5	720	80	40	1	21	4.5	M8
L1943.43U-0800-V	43	21.5	800	80	40	1	21	4.5	M8
L1943.43U-0880-V	43	21.5	880	80	40	1	21	4.5	M8
L1943.43U-0960-V	43	21.5	960	80	40	1	21	4.5	M8
L1943.43U-1040-V	43	21.5	1040	80	40	1	21	4.5	M8
L1943.43U-1120-V	43	21.5	1120	80	40	1	21	4.5	M8
L1943.43U-1200-V	43	21.5	1200	80	40	1	21	4.5	M8
L1943.43U-1280-V	43	21.5	1280	80	40	1	21	4.5	M8
L1943.43U-1360-V	43	21.5	1360	80	40	1	21	4.5	M8
L1943.43U-1440-V	43	21.5	1440	80	40	1	21	4.5	M8
L1943.43U-1520-V	43	21.5	1520	80	40	1	21	4.5	M8
L1943.43U-1600-V	43	21.5	1600	80	40	1	21	4.5	M8
L1943.43U-1680-V	43	21.5	1680	80	40	1	21	4.5	M8
L1943.43U-1760-V	43	21.5	1760	80	40	1	21	4.5	M8
L1943.43U-1840-V	43	21.5	1840	80	40	1	21	4.5	M8
L1943.43U-1920-V	43	21.5	1920	80	40	1	21	4.5	M8
L1943.43U-2000-V	43	21.5	2000	80	40	1	21	4.5	M8
L1943.43U-2080-V	43	21.5	2080	80	40	1	21	4.5	M8
L1943.43U-2160-V	43	21.5	2160	80	40	1	21	4.5	M8
L1943.43U-2240-V	43	21.5	2240	80	40	1	21	4.5	M8
L1943.43U-2320-V	43	21.5	2320	80	40	1	21	4.5	M8
L1943.43U-2400-V	43	21.5	2400	80	40	1	21	4.5	M8
L1943.43U-2480-V	43	21.5	2480	80	40	1	21	4.5	M8
L1943.43U-2560-V	43	21.5	2560	80	40	1	21	4.5	M8
L1943.43U-2640-V	43	21.5	2640	80	40	1	21	4.5	M8
L1943.43U-2720-V	43	21.5	2720	80	40	1	21	4.5	M8
L1943.43U-2800-V	43	21.5	2800	80	40	1	21	4.5	M8



LONG LINEAR RAILS

Order No.	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	d for screws
L1943.43U-2880-V	43	21.5	2880	80	40	1	21	4.5	M8
L1943.43U-2960-V	43	21.5	2960	80	40	1	21	4.5	M8
L1943.43U-3040-V	43	21.5	3040	80	40	1	21	4.5	M8
L1943.43U-3120-V	43	21.5	3120	80	40	1	21	4.5	M8
L1943.43U-3200-V	43	21.5	3200	80	40	1	21	4.5	M8
L1943.43U-3280-V	43	21.5	3280	80	40	1	21	4.5	M8
L1943.43U-3360-V	43	21.5	3360	80	40	1	21	4.5	M8
L1943.43U-3440-V	43	21.5	3440	80	40	1	21	4.5	M8
L1943.43U-3520-V	43	21.5	3520	80	40	1	21	4.5	M8
L1943.43U-3600-V	43	21.5	3600	80	40	1	21	4.5	M8
L1943.43U-3680-V	43	21.5	3680	80	40	1	21	4.5	M8
L1943.43U-3760-V	43	21.5	3760	80	40	1	21	4.5	M8
L1943.43U-3840-V	43	21.5	3840	80	40	1	21	4.5	M8
L1943.43U-3920-V	43	21.5	3920	80	40	1	21	4.5	M8
L1943.43U-4000-V	43	21.5	4000	80	40	1	21	4.5	M8
L1943.43U-4080-V	43	21.5	4080	80	40	1	21	4.5	M8

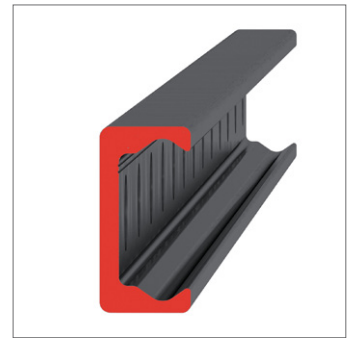
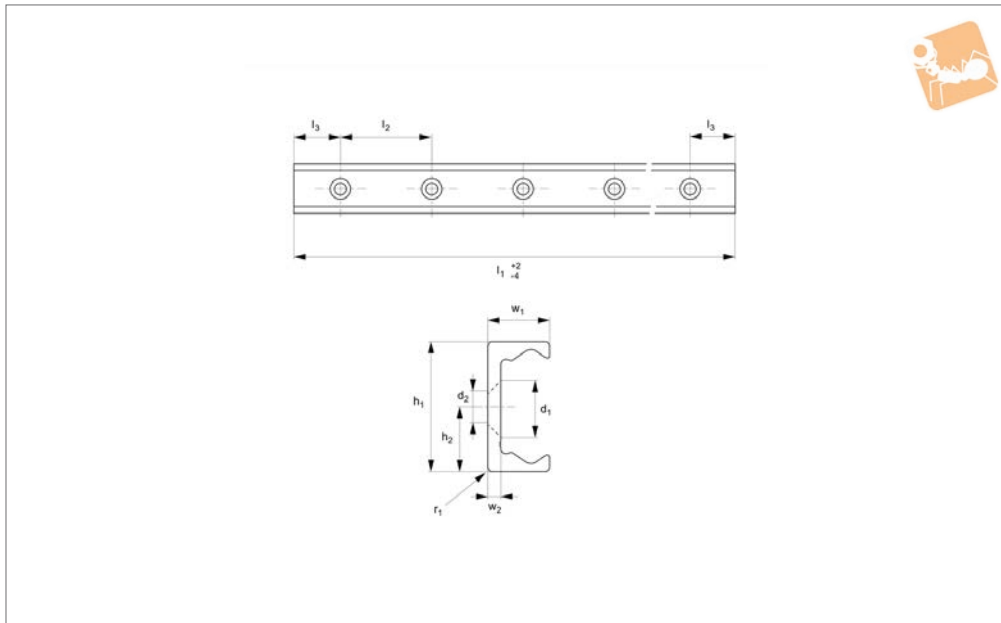


# Heavy Duty T Rail

countersunk holes



## Long Linear Rails



## L1943.TLV43

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

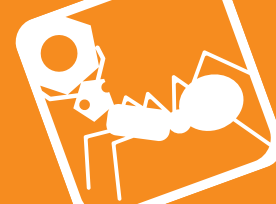
The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).  
This is the TLV countersunk rail which is usually used with a corresponding ULV rail. For fixing use countersunk DIN 7991 screws.  
Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.N versions (die cast aluminium alloy with wipers). Alternatively the L1943.C type is also available (without wipers).

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.TLV43-0400	M8	43	21.5	400	80	40	1	21	4.5
L1943.TLV43-0480	M8	43	21.5	480	80	40	1	21	4.5
L1943.TLV43-0560	M8	43	21.5	560	80	40	1	21	4.5
L1943.TLV43-0640	M8	43	21.5	640	80	40	1	21	4.5
L1943.TLV43-0720	M8	43	21.5	720	80	40	1	21	4.5
L1943.TLV43-0800	M8	43	21.5	800	80	40	1	21	4.5
L1943.TLV43-0880	M8	43	21.5	880	80	40	1	21	4.5
L1943.TLV43-0960	M8	43	21.5	960	80	40	1	21	4.5
L1943.TLV43-1040	M8	43	21.5	1040	80	40	1	21	4.5
L1943.TLV43-1120	M8	43	21.5	1120	80	40	1	21	4.5
L1943.TLV43-1200	M8	43	21.5	1200	80	40	1	21	4.5
L1943.TLV43-1280	M8	43	21.5	1280	80	40	1	21	4.5
L1943.TLV43-1360	M8	43	21.5	1360	80	40	1	21	4.5
L1943.TLV43-1440	M8	43	21.5	1440	80	40	1	21	4.5
L1943.TLV43-1520	M8	43	21.5	1520	80	40	1	21	4.5
L1943.TLV43-1600	M8	43	21.5	1600	80	40	1	21	4.5
L1943.TLV43-1680	M8	43	21.5	1680	80	40	1	21	4.5
L1943.TLV43-1760	M8	43	21.5	1760	80	40	1	21	4.5
L1943.TLV43-1840	M8	43	21.5	1840	80	40	1	21	4.5
L1943.TLV43-1920	M8	43	21.5	1920	80	40	1	21	4.5
L1943.TLV43-2000	M8	43	21.5	2000	80	40	1	21	4.5
L1943.TLV43-2080	M8	43	21.5	2080	80	40	1	21	4.5
L1943.TLV43-2160	M8	43	21.5	2160	80	40	1	21	4.5
L1943.TLV43-2240	M8	43	21.5	2240	80	40	1	21	4.5
L1943.TLV43-2320	M8	43	21.5	2320	80	40	1	21	4.5
L1943.TLV43-2400	M8	43	21.5	2400	80	40	1	21	4.5
L1943.TLV43-2480	M8	43	21.5	2480	80	40	1	21	4.5
L1943.TLV43-2560	M8	43	21.5	2560	80	40	1	21	4.5
L1943.TLV43-2640	M8	43	21.5	2640	80	40	1	21	4.5
L1943.TLV43-2720	M8	43	21.5	2720	80	40	1	21	4.5
L1943.TLV43-2800	M8	43	21.5	2800	80	40	1	21	4.5



Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.TLV43-2880	M8	43	21.5	2880	80	40	1	21	4.5
L1943.TLV43-2960	M8	43	21.5	2960	80	40	1	21	4.5
L1943.TLV43-3040	M8	43	21.5	3040	80	40	1	21	4.5
L1943.TLV43-3120	M8	43	21.5	3120	80	40	1	21	4.5
L1943.TLV43-3200	M8	43	21.5	3200	80	40	1	21	4.5
L1943.TLV43-3280	M8	43	21.5	3280	80	40	1	21	4.5
L1943.TLV43-3360	M8	43	21.5	3360	80	40	1	21	4.5
L1943.TLV43-3440	M8	43	21.5	3440	80	40	1	21	4.5
L1943.TLV43-3520	M8	43	21.5	3520	80	40	1	21	4.5
L1943.TLV43-3600	M8	43	21.5	3600	80	40	1	21	4.5
L1943.TLV43-3680	M8	43	21.5	3680	80	40	1	21	4.5
L1943.TLV43-3760	M8	43	21.5	3760	80	40	1	21	4.5
L1943.TLV43-3840	M8	43	21.5	3840	80	40	1	21	4.5
L1943.TLV43-3920	M8	43	21.5	3920	80	40	1	21	4.5
L1943.TLV43-4000	M8	43	21.5	4000	80	40	1	21	4.5
L1943.TLV43-4080	M8	43	21.5	4080	80	40	1	21	4.5



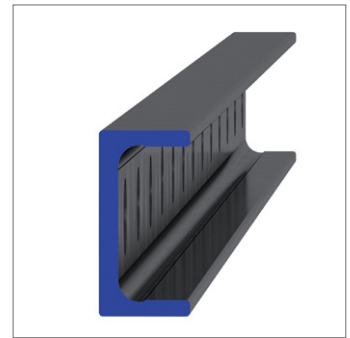
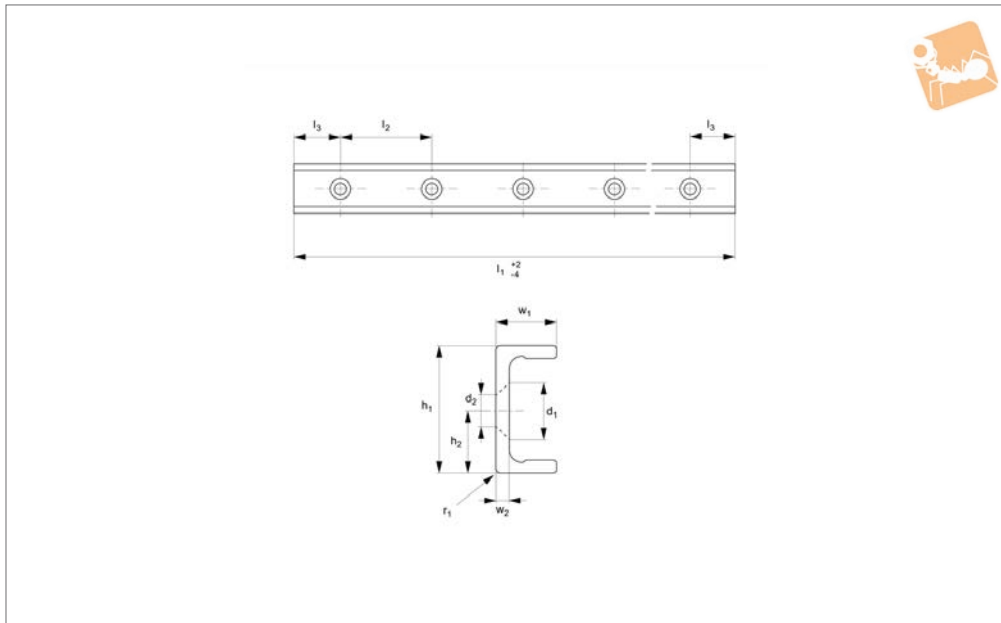


# Heavy Duty U Rail

countersunk holes



## Long Linear Rails



## L1943.ULV43

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULV countersunk rail type which is usually used with a corresponding TLV rail.

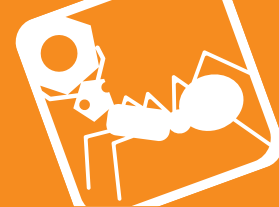
For fixing use countersunk DIN 7991 screws.

Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.N versions (die cast aluminium alloy with wipers). Alternatively the L1943.C type is also available (without wipers).

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.ULV43-0400	M8	43	21.5	400	80	40	1	21	4.5
L1943.ULV43-0480	M8	43	21.5	480	80	40	1	21	4.5
L1943.ULV43-0560	M8	43	21.5	560	80	40	1	21	4.5
L1943.ULV43-0640	M8	43	21.5	640	80	40	1	21	4.5
L1943.ULV43-0720	M8	43	21.5	720	80	40	1	21	4.5
L1943.ULV43-0800	M8	43	21.5	800	80	40	1	21	4.5
L1943.ULV43-0880	M8	43	21.5	880	80	40	1	21	4.5
L1943.ULV43-0960	M8	43	21.5	960	80	40	1	21	4.5
L1943.ULV43-1040	M8	43	21.5	1040	80	40	1	21	4.5
L1943.ULV43-1120	M8	43	21.5	1120	80	40	1	21	4.5
L1943.ULV43-1200	M8	43	21.5	1200	80	40	1	21	4.5
L1943.ULV43-1280	M8	43	21.5	1280	80	40	1	21	4.5
L1943.ULV43-1360	M8	43	21.5	1360	80	40	1	21	4.5
L1943.ULV43-1440	M8	43	21.5	1440	80	40	1	21	4.5
L1943.ULV43-1520	M8	43	21.5	1520	80	40	1	21	4.5
L1943.ULV43-1600	M8	43	21.5	1600	80	40	1	21	4.5
L1943.ULV43-1680	M8	43	21.5	1680	80	40	1	21	4.5
L1943.ULV43-1760	M8	43	21.5	1760	80	40	1	21	4.5
L1943.ULV43-1840	M8	43	21.5	1840	80	40	1	21	4.5
L1943.ULV43-1920	M8	43	21.5	1920	80	40	1	21	4.5
L1943.ULV43-2000	M8	43	21.5	2000	80	40	1	21	4.5
L1943.ULV43-2080	M8	43	21.5	2080	80	40	1	21	4.5
L1943.ULV43-2160	M8	43	21.5	2160	80	40	1	21	4.5
L1943.ULV43-2240	M8	43	21.5	2240	80	40	1	21	4.5
L1943.ULV43-2320	M8	43	21.5	2320	80	40	1	21	4.5
L1943.ULV43-2400	M8	43	21.5	2400	80	40	1	21	4.5
L1943.ULV43-2480	M8	43	21.5	2480	80	40	1	21	4.5
L1943.ULV43-2560	M8	43	21.5	2560	80	40	1	21	4.5
L1943.ULV43-2640	M8	43	21.5	2640	80	40	1	21	4.5
L1943.ULV43-2720	M8	43	21.5	2720	80	40	1	21	4.5
L1943.ULV43-2800	M8	43	21.5	2800	80	40	1	21	4.5



LONG LINEAR RAILS

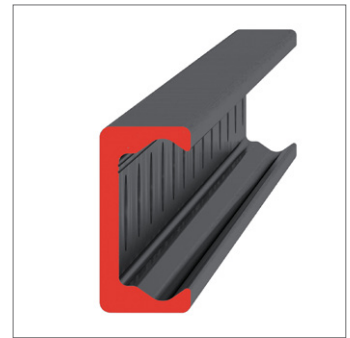
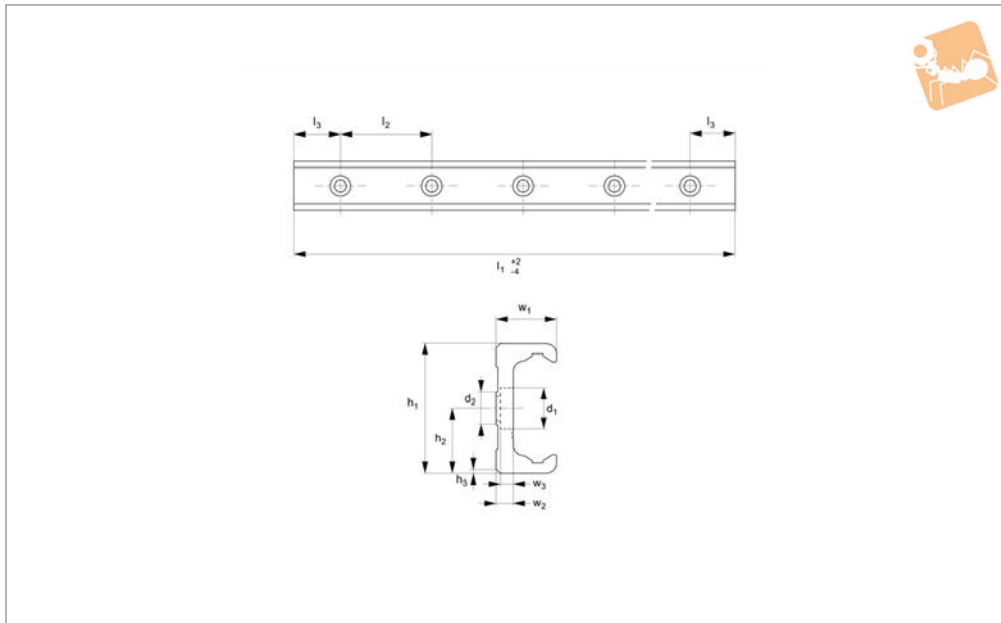
Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.ULV43-2880	M8	43	21.5	2880	80	40	1	21	4.5
L1943.ULV43-2960	M8	43	21.5	2960	80	40	1	21	4.5
L1943.ULV43-3040	M8	43	21.5	3040	80	40	1	21	4.5
L1943.ULV43-3120	M8	43	21.5	3120	80	40	1	21	4.5
L1943.ULV43-3200	M8	43	21.5	3200	80	40	1	21	4.5
L1943.ULV43-3280	M8	43	21.5	3280	80	40	1	21	4.5
L1943.ULV43-3360	M8	43	21.5	3360	80	40	1	21	4.5
L1943.ULV43-3440	M8	43	21.5	3440	80	40	1	21	4.5
L1943.ULV43-3520	M8	43	21.5	3520	80	40	1	21	4.5
L1943.ULV43-3600	M8	43	21.5	3600	80	40	1	21	4.5
L1943.ULV43-3680	M8	43	21.5	3680	80	40	1	21	4.5
L1943.ULV43-3760	M8	43	21.5	3760	80	40	1	21	4.5
L1943.ULV43-3840	M8	43	21.5	3840	80	40	1	21	4.5
L1943.ULV43-3920	M8	43	21.5	3920	80	40	1	21	4.5
L1943.ULV43-4000	M8	43	21.5	4000	80	40	1	21	4.5
L1943.ULV43-4080	M8	43	21.5	4080	80	40	1	21	4.5



# Very Heavy Duty T Rail

counterbored holes

## Long Linear Rails



## L1963.TLC63

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.

Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.TLC63-0560	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.TLC63-0640	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.TLC63-0720	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.TLC63-0800	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.TLC63-0880	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.TLC63-0960	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.TLC63-1040	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.TLC63-1120	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.TLC63-1200	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.TLC63-1280	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.TLC63-1360	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.TLC63-1440	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.TLC63-1520	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.TLC63-1600	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.TLC63-1680	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.TLC63-1760	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.TLC63-1840	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.TLC63-1920	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.TLC63-2000	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.TLC63-2080	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.TLC63-2160	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.TLC63-2240	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.TLC63-2320	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.TLC63-2400	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.TLC63-2480	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.TLC63-2560	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2
L1963.TLC63-2640	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.TLC63-2720	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.TLC63-2800	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2
L1963.TLC63-2880	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.TLC63-2960	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2

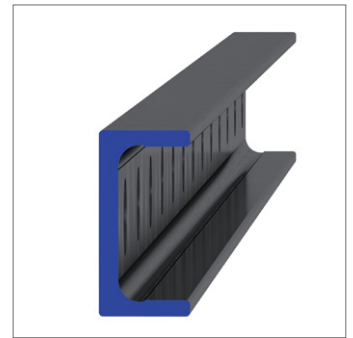
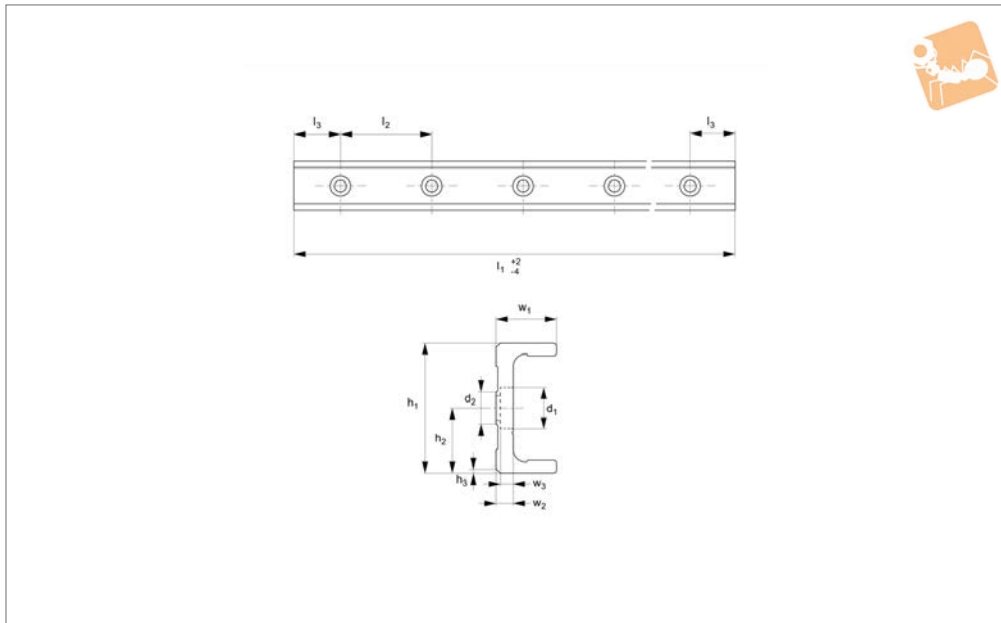


Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.TLC63-3040	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.TLC63-3120	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.TLC63-3200	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.TLC63-3280	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.TLC63-3360	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.TLC63-3440	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.TLC63-3520	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.TLC63-3600	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.TLC63-3680	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.TLC63-3760	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.TLC63-3840	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.TLC63-3920	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.TLC63-4000	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.TLC63-4080	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

# Very Heavy Duty U Rail

counterbored holes

## Long Linear Rails



## L1963.ULC63

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULC counterbored rail type (most popular), which is usually used with a corresponding TLC rail. Special low profile Torx head screws provided free of charge.  
Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.ULC63-0400	15	M8	63	31.5	2x45°	400	80	40	28	8	5.2
L1963.ULC63-0480	15	M8	63	31.5	2x45°	480	80	40	28	8	5.2
L1963.ULC63-0560	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.ULC63-0640	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.ULC63-0720	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.ULC63-0800	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.ULC63-0880	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.ULC63-0960	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.ULC63-1040	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.ULC63-1120	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.ULC63-1200	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.ULC63-1280	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.ULC63-1360	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.ULC63-1440	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.ULC63-1520	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.ULC63-1600	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.ULC63-1680	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.ULC63-1760	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.ULC63-1840	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.ULC63-1920	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.ULC63-2000	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.ULC63-2080	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.ULC63-2160	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.ULC63-2240	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.ULC63-2320	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.ULC63-2400	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.ULC63-2480	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.ULC63-2560	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2
L1963.ULC63-2640	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.ULC63-2720	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.ULC63-2800	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
<b>L1963.ULC63-2880</b>	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
<b>L1963.ULC63-2960</b>	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
<b>L1963.ULC63-3040</b>	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
<b>L1963.ULC63-3120</b>	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
<b>L1963.ULC63-3200</b>	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
<b>L1963.ULC63-3280</b>	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
<b>L1963.ULC63-3360</b>	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
<b>L1963.ULC63-3440</b>	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
<b>L1963.ULC63-3520</b>	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
<b>L1963.ULC63-3600</b>	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
<b>L1963.ULC63-3680</b>	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
<b>L1963.ULC63-3760</b>	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
<b>L1963.ULC63-3840</b>	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
<b>L1963.ULC63-3920</b>	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
<b>L1963.ULC63-4000</b>	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
<b>L1963.ULC63-4080</b>	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

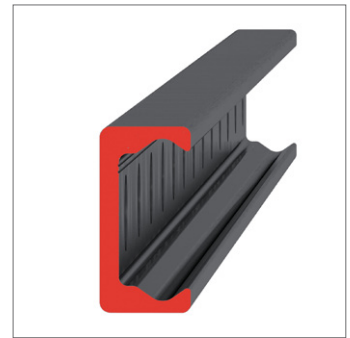
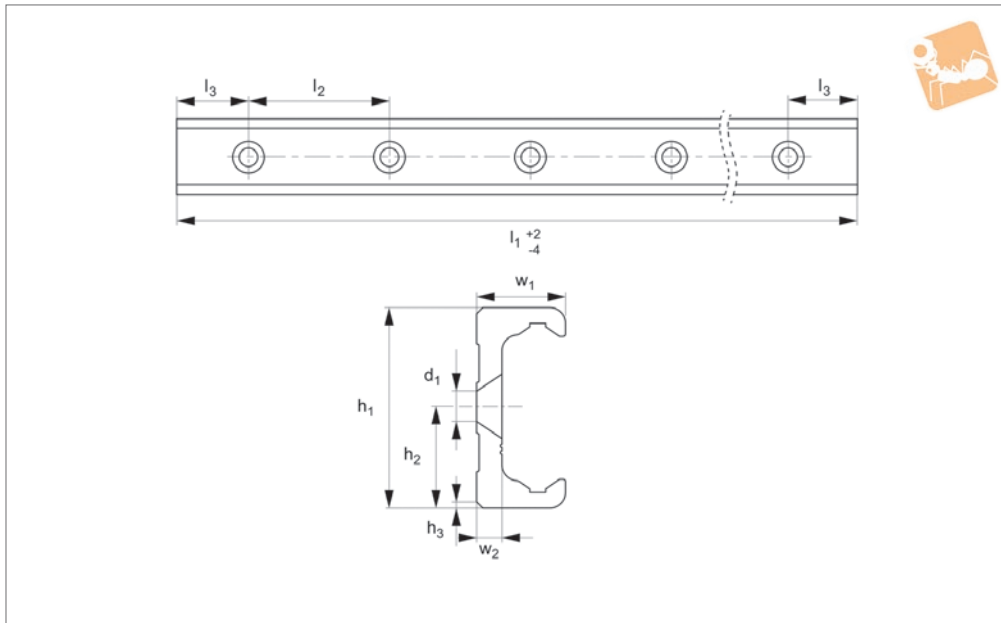


# Very Heavy Duty T Rail

countersunk holes



Long Linear  
Rails



**L1963.TLV63**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).  
This is the TLV countersunk rail which is usually used with a corresponding ULV rail.  
For fixing use countersunk DIN 7991 screws.  
Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.TLV63-0400	M10	63	31.5	2x45°	400	80	40	28	8
L1963.TLV63-0480	M10	63	31.5	2x45°	480	80	40	28	8
L1963.TLV63-0560	M10	63	31.5	2x45°	560	80	40	28	8
L1963.TLV63-0640	M10	63	31.5	2x45°	640	80	40	28	8
L1963.TLV63-0720	M10	63	31.5	2x45°	720	80	40	28	8
L1963.TLV63-0800	M10	63	31.5	2x45°	800	80	40	28	8
L1963.TLV63-0880	M10	63	31.5	2x45°	880	80	40	28	8
L1963.TLV63-0960	M10	63	31.5	2x45°	960	80	40	28	8
L1963.TLV63-1040	M10	63	31.5	2x45°	1040	80	40	28	8
L1963.TLV63-1120	M10	63	31.5	2x45°	1120	80	40	28	8
L1963.TLV63-1200	M10	63	31.5	2x45°	1200	80	40	28	8
L1963.TLV63-1280	M10	63	31.5	2x45°	1280	80	40	28	8
L1963.TLV63-1360	M10	63	31.5	2x45°	1360	80	40	28	8
L1963.TLV63-1440	M10	63	31.5	2x45°	1440	80	40	28	8
L1963.TLV63-1520	M10	63	31.5	2x45°	1520	80	40	28	8
L1963.TLV63-1600	M10	63	31.5	2x45°	1600	80	40	28	8
L1963.TLV63-1680	M10	63	31.5	2x45°	1680	80	40	28	8
L1963.TLV63-1760	M10	63	31.5	2x45°	1760	80	40	28	8
L1963.TLV63-1840	M10	63	31.5	2x45°	1840	80	40	28	8
L1963.TLV63-1920	M10	63	31.5	2x45°	1920	80	40	28	8
L1963.TLV63-2000	M10	63	31.5	2x45°	2000	80	40	28	8
L1963.TLV63-2080	M10	63	31.5	2x45°	2080	80	40	28	8
L1963.TLV63-2160	M10	63	31.5	2x45°	2160	80	40	28	8
L1963.TLV63-2240	M10	63	31.5	2x45°	2240	80	40	28	8
L1963.TLV63-2320	M10	63	31.5	2x45°	2320	80	40	28	8
L1963.TLV63-2400	M10	63	31.5	2x45°	2400	80	40	28	8
L1963.TLV63-2480	M10	63	31.5	2x45°	2480	80	40	28	8
L1963.TLV63-2560	M10	63	31.5	2x45°	2560	80	40	28	8
L1963.TLV63-2640	M10	63	31.5	2x45°	2640	80	40	28	8
L1963.TLV63-2720	M10	63	31.5	2x45°	2720	80	40	28	8
L1963.TLV63-2800	M10	63	31.5	2x45°	2800	80	40	28	8



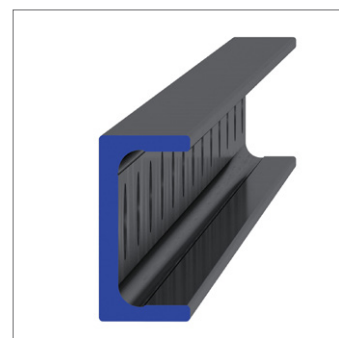
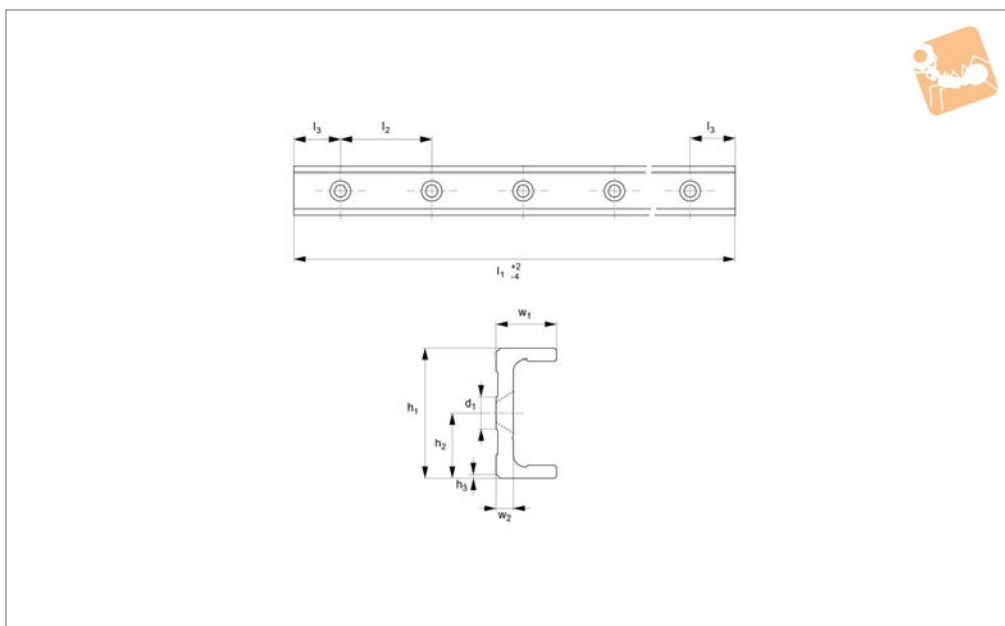
Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.TLV63-2880	M10	63	31.5	2x45°	2880	80	40	28	8
L1963.TLV63-2960	M10	63	31.5	2x45°	2960	80	40	28	8
L1963.TLV63-3040	M10	63	31.5	2x45°	3040	80	40	28	8
L1963.TLV63-3120	M10	63	31.5	2x45°	3120	80	40	28	8
L1963.TLV63-3200	M10	63	31.5	2x45°	3200	80	40	28	8
L1963.TLV63-3280	M10	63	31.5	2x45°	3280	80	40	28	8
L1963.TLV63-3360	M10	63	31.5	2x45°	3360	80	40	28	8
L1963.TLV63-3440	M10	63	31.5	2x45°	3440	80	40	28	8
L1963.TLV63-3520	M10	63	31.5	2x45°	3520	80	40	28	8
L1963.TLV63-3600	M10	63	31.5	2x45°	3600	80	40	28	8
L1963.TLV63-3680	M10	63	31.5	2x45°	3680	80	40	28	8
L1963.TLV63-3760	M10	63	31.5	2x45°	3760	80	40	28	8
L1963.TLV63-3840	M10	63	31.5	2x45°	3840	80	40	28	8
L1963.TLV63-3920	M10	63	31.5	2x45°	3920	80	40	28	8
L1963.TLV63-4000	M10	63	31.5	2x45°	4000	80	40	28	8
L1963.TLV63-4080	M10	63	31.5	2x45°	4080	80	40	28	8



# Very Heavy Duty U Rail

countersunk holes

## Long Linear Rails



### L1963.ULV63

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.

Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULV countersunk rail type which is usually used with a corresponding TLV rail.

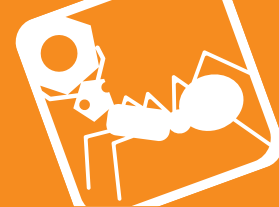
For fixing use countersunk DIN 7991 screws.

Weight: 6,0 Kg/m.

#### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.ULV63-0400	M10	63	31.5	2x45°	400	80	40	28	8
L1963.ULV63-0480	M10	63	31.5	2x45°	480	80	40	28	8
L1963.ULV63-0560	M10	63	31.5	2x45°	560	80	40	28	8
L1963.ULV63-0640	M10	63	31.5	2x45°	640	80	40	28	8
L1963.ULV63-0720	M10	63	31.5	2x45°	720	80	40	28	8
L1963.ULV63-0800	M10	63	31.5	2x45°	800	80	40	28	8
L1963.ULV63-0880	M10	63	31.5	2x45°	880	80	40	28	8
L1963.ULV63-0960	M10	63	31.5	2x45°	960	80	40	28	8
L1963.ULV63-1040	M10	63	31.5	2x45°	1040	80	40	28	8
L1963.ULV63-1120	M10	63	31.5	2x45°	1120	80	40	28	8
L1963.ULV63-1200	M10	63	31.5	2x45°	1200	80	40	28	8
L1963.ULV63-1280	M10	63	31.5	2x45°	1280	80	40	28	8
L1963.ULV63-1360	M10	63	31.5	2x45°	1360	80	40	28	8
L1963.ULV63-1440	M10	63	31.5	2x45°	1440	80	40	28	8
L1963.ULV63-1520	M10	63	31.5	2x45°	1520	80	40	28	8
L1963.ULV63-1600	M10	63	31.5	2x45°	1600	80	40	28	8
L1963.ULV63-1680	M10	63	31.5	2x45°	1680	80	40	28	8
L1963.ULV63-1760	M10	63	31.5	2x45°	1760	80	40	28	8
L1963.ULV63-1840	M10	63	31.5	2x45°	1840	80	40	28	8
L1963.ULV63-1920	M10	63	31.5	2x45°	1920	80	40	28	8
L1963.ULV63-2000	M10	63	31.5	2x45°	2000	80	40	28	8
L1963.ULV63-2080	M10	63	31.5	2x45°	2080	80	40	28	8
L1963.ULV63-2160	M10	63	31.5	2x45°	2160	80	40	28	8
L1963.ULV63-2240	M10	63	31.5	2x45°	2240	80	40	28	8
L1963.ULV63-2320	M10	63	31.5	2x45°	2320	80	40	28	8
L1963.ULV63-2400	M10	63	31.5	2x45°	2400	80	40	28	8
L1963.ULV63-2480	M10	63	31.5	2x45°	2480	80	40	28	8
L1963.ULV63-2560	M10	63	31.5	2x45°	2560	80	40	28	8
L1963.ULV63-2640	M10	63	31.5	2x45°	2640	80	40	28	8
L1963.ULV63-2720	M10	63	31.5	2x45°	2720	80	40	28	8
L1963.ULV63-2800	M10	63	31.5	2x45°	2800	80	40	28	8



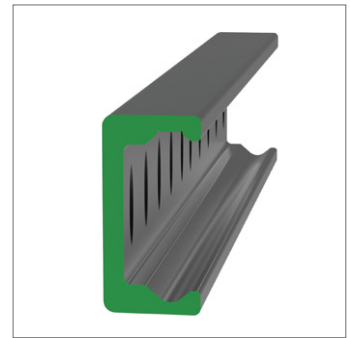
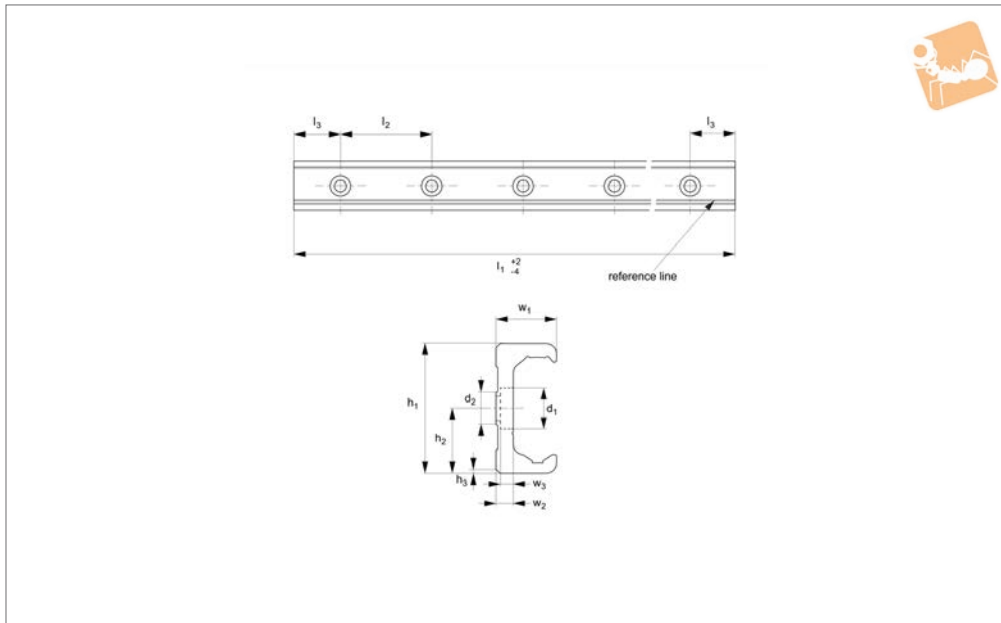
LONG LINEAR RAILS

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.ULV63-2880	M10	63	31.5	2x45°	2880	80	40	28	8
L1963.ULV63-2960	M10	63	31.5	2x45°	2960	80	40	28	8
L1963.ULV63-3040	M10	63	31.5	2x45°	3040	80	40	28	8
L1963.ULV63-3120	M10	63	31.5	2x45°	3120	80	40	28	8
L1963.ULV63-3200	M10	63	31.5	2x45°	3200	80	40	28	8
L1963.ULV63-3280	M10	63	31.5	2x45°	3280	80	40	28	8
L1963.ULV63-3360	M10	63	31.5	2x45°	3360	80	40	28	8
L1963.ULV63-3440	M10	63	31.5	2x45°	3440	80	40	28	8
L1963.ULV63-3520	M10	63	31.5	2x45°	3520	80	40	28	8
L1963.ULV63-3600	M10	63	31.5	2x45°	3600	80	40	28	8
L1963.ULV63-3680	M10	63	31.5	2x45°	3680	80	40	28	8
L1963.ULV63-3760	M10	63	31.5	2x45°	3760	80	40	28	8
L1963.ULV63-3840	M10	63	31.5	2x45°	3840	80	40	28	8
L1963.ULV63-3920	M10	63	31.5	2x45°	3920	80	40	28	8
L1963.ULV63-4000	M10	63	31.5	2x45°	4000	80	40	28	8
L1963.ULV63-4080	M10	63	31.5	2x45°	4080	80	40	28	8

# Very Heavy Duty K Rail

counterbored holes

## Long Linear Rails



## L1963.KLC63

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The K rail is a master rail and is usually used with a U slave rail (allows for system misalignment in two planes).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with

wipers). Alternatively the L1963.C type is also available (without wipers).

### Important Notes

K Rails are not suited for vertical applications.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.KLC63-0400	15	M8	63	31.5	2x45°	400	80	40	28	8	5.2
L1963.KLC63-0480	15	M8	63	31.5	2x45°	480	80	40	28	8	5.2
L1963.KLC63-0560	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.KLC63-0640	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.KLC63-0720	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.KLC63-0800	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.KLC63-0880	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.KLC63-0960	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.KLC63-1040	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.KLC63-1120	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.KLC63-1200	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.KLC63-1280	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.KLC63-1360	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.KLC63-1440	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.KLC63-1520	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.KLC63-1600	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.KLC63-1680	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.KLC63-1760	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.KLC63-1840	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.KLC63-1920	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.KLC63-2000	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.KLC63-2080	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.KLC63-2160	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.KLC63-2240	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.KLC63-2320	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.KLC63-2400	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.KLC63-2480	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.KLC63-2560	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2



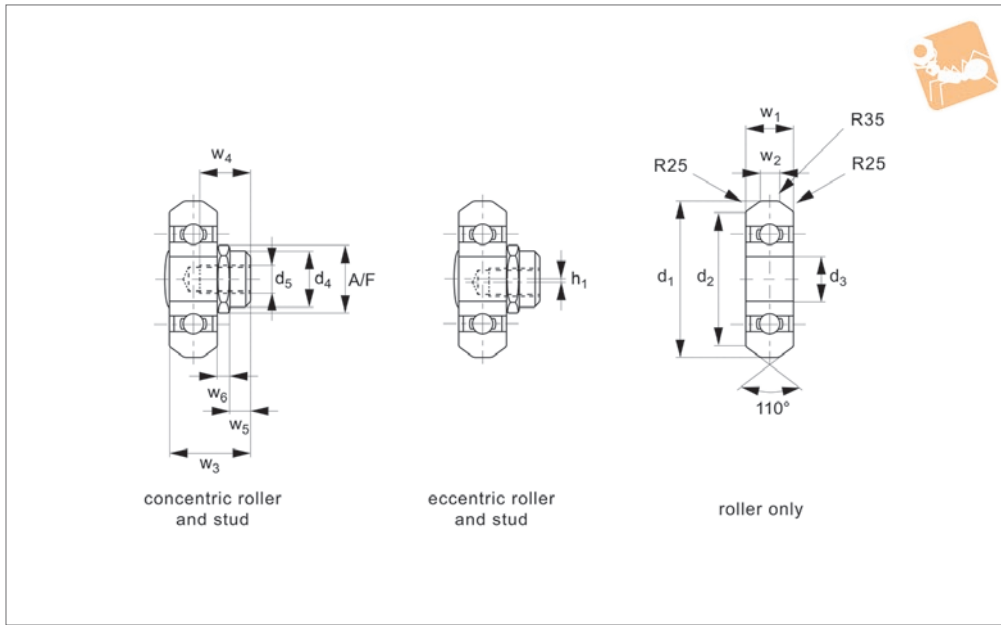
Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.KLC63-2640	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.KLC63-2720	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.KLC63-2800	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2
L1963.KLC63-2880	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.KLC63-2960	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
L1963.KLC63-3040	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.KLC63-3120	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.KLC63-3200	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.KLC63-3280	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.KLC63-3360	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.KLC63-3440	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.KLC63-3520	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.KLC63-3600	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.KLC63-3680	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.KLC63-3760	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.KLC63-3840	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.KLC63-3920	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.KLC63-4000	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.KLC63-4080	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2



# Individual Rollers



## Long Linear Rails



### L1900.CB

LONG LINEAR RAILS

#### Material

Steel (100Cr6) rollers with 2RS seals (splashproof). 2Z seals (for dust protection) available on request.

Lubricated for life.

#### Technical Notes

To choose the correct replacement roller

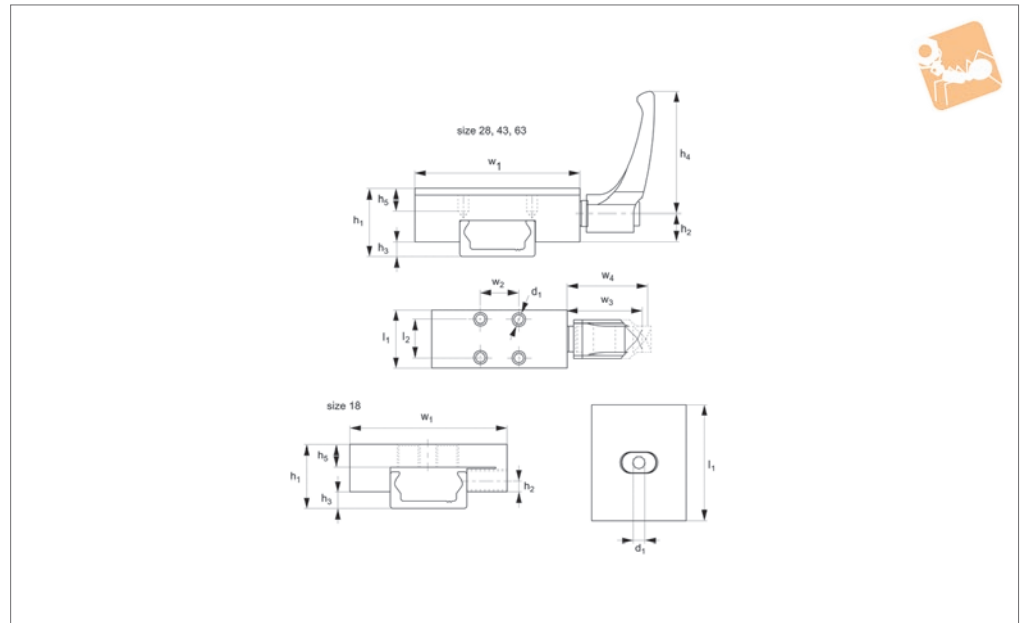
select either the plain, concentric or eccentric roller with the correct seal type.

Order No.	For rail type	For rail size	Roller type	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>
L1918.CBC18-2RS	T and U	18	Concentric	14.0	12.4	-	6	M 4	-	4	1.6
L1918.CBE18-2RS	T and U	18	Eccentric	14.0	12.4	-	6	M 4	0.4	4	1.6
L1918.CBR18-2RS	T and U	18	Roller only	14.0	12.4	5	-	-	-	4	1.6
L1928.CBC28-2RS	T and U	28	Concentric	22.4	19.2	-	10	M 5	-	7	2.4
L1928.CBE28-2RS	T and U	28	Eccentric	22.4	19.2	-	10	M 5	0.5	7	2.4
L1928.CBR28-2RS	T and U	28	Roller only	22.4	19.2	7	-	-	-	7	2.4
L1943.CBC43-2RS	T and U	43	Concentric	35.0	30.8	-	12	M 6	-	11	5.0
L1943.CBE43-2RS	T and U	43	Eccentric	35.0	30.8	-	12	M 6	0.8	11	5.0
L1943.CBR43-2RS	T and U	43	Roller only	35.0	30.8	10	-	-	-	11	5.0

Order No.	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>	w <sub>6</sub>	A/F	Dyn. load C <sub>0</sub> kN	Static load C kN
L1918.CBC18-2RS	7.3	5	1.8	1.5	8	0.4	0.8
L1918.CBE18-2RS	7.3	5	1.8	1.5	8	0.4	0.8
L1918.CBR18-2RS	-	-	-	-	-	0.4	0.8
L1928.CBC28-2RS	13.0	8	3.8	2.2	13	1.1	2.5
L1928.CBE28-2RS	13.0	8	3.8	2.2	13	1.1	2.5
L1928.CBR28-2RS	-	-	-	-	-	1.1	2.5
L1943.CBC43-2RS	18.0	11	4.3	2.5	15	2.7	6.0
L1943.CBE43-2RS	18.0	11	4.3	2.5	15	2.7	6.0
L1943.CBR43-2RS	-	-	-	-	-	2.7	6.0



**L1900.CL**



**Important Notes**

Aluminium clamp body with steel clamping face.

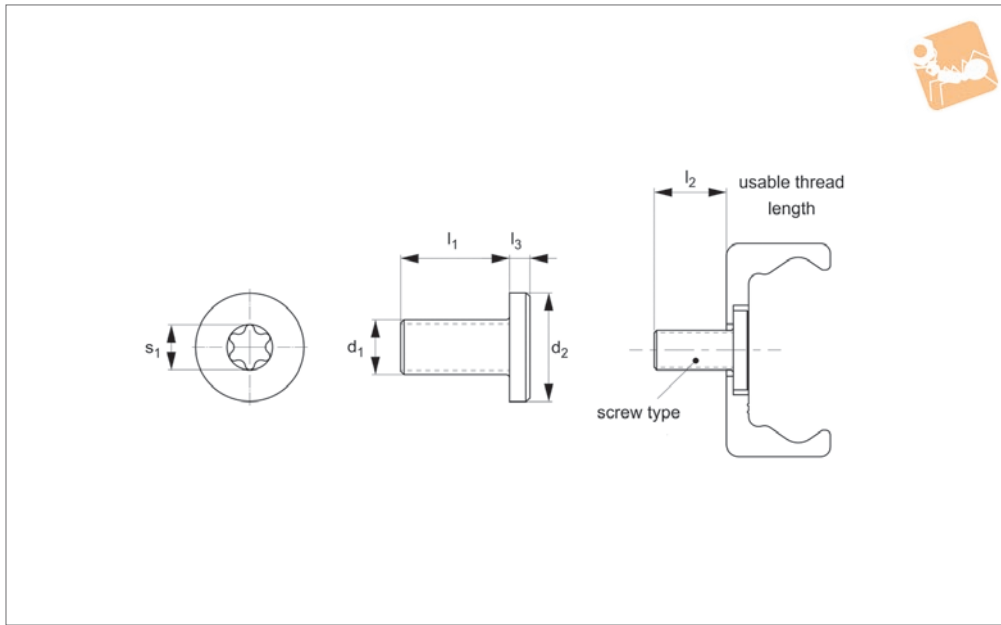
Order No.	For rail size	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Holding force N	Torque to Nm
<b>L1918.CL18</b>	18	M5	15	3.2	3	-	6	43	-	35	-	-	-	150	0.5
<b>L1928.CL28</b>	28	M5	24	17	5	64	6	24	15	68	33.5	38.5	41.5	1200	7
<b>L1943.CL43</b>	43	M8	37	28.5	8	78	12	39	22	105	41.5	46.5	50.5	2000	15
<b>L1963.CL63</b>	63	M8	50.5	35	9.5	80	12	44	26	138	41.5	54.5	59.5	2000	15



# Low Profile Screws for compact rail



# Long Linear Rails



**L1900.S**

LONG LINEAR RAILS

### Material

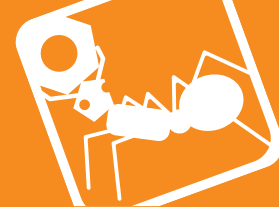
Special low head Torx screws (zinc or nickel plated).  
Strength class 10,9.

### Technical Notes

Standard screws are zinc plated.  
Nickel plated versions are used with anti-corrosion treated (nickel plated on alloy

coated) rails.

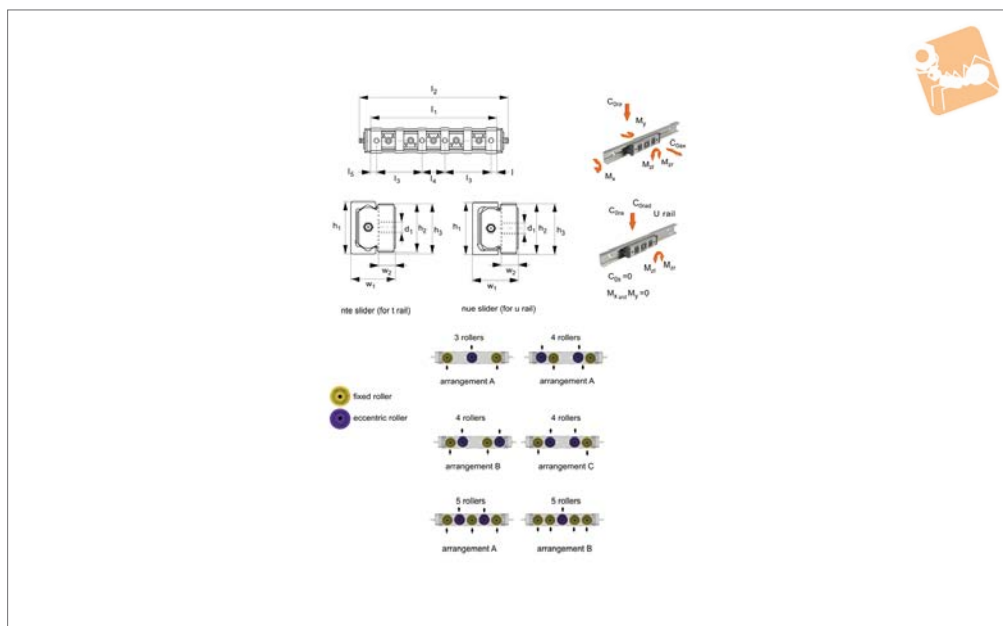
Order No.	For rail	Finish	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	s <sub>1</sub>	Torque to Nm
L1943.M08-16	Size 43	Zinc plated	M8 x1,25	16	16	14.6	3	T40	22
L1963.M08-20	Size 63	Zinc plated	M8 x1,25	20	20	18.6	5	T40	35
L1935.M06-13	Size 35	Zinc plated	M6 x 1,0	13	13	12.8	2.7	T30	12
L1928.M05-10	Size 28	Zinc plated	M5 x 0,8	10	10	9	2	T25	9
L1918.M04-08	Size 18	Zinc plated	M4 x 0,7	8	8	7	2	T20	3
L1943.M08-16-NP	Size 43	Nickel plated	M8 x1,25	16	16	14.6	3	T40	22
L1963.M08-20-NP	Size 63	Nickel plated	M8 x1,25	20	20	18.6	5	T40	35
L1935.M06-13-NP	Size 35	Nickel plated	M6 x 1,0	13	13	12.8	2.7	T30	12
L1928.M05-10-NP	Size 28	Nickel plated	M5 x 0,8	10	10	9	2	T25	9
L1918.M04-08-NP	Size 18	Nickel plated	M4 x 0,7	8	8	7	2	T20	3



LONG LINEAR RAILS



## L1928.NL



### Material

Die cast aluminium body, chemically nickel plated.

Steel rollers (100Cr6) with metal seals (2Z).

Polyester end pieces and nitrilic rubber side seals.

### Technical Notes

To be used with compact rail size 28.

Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).

Maintenance free, self-lubricating wipers.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).

Coefficient of friction (without seals) 0.003.

Quiet and fast (up to 5 m/s).

Order No.	For rail type	No. of rollers	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0.10 -0.20	h <sub>3</sub> +0.15 -0.35	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Weight kg
L1928.NTE28L-3A	T	3	426 0	640	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NTE28L-4A	T	4	426 0	750	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NTE28L-4B	T	4	426 0	750	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NTE28L-4C	T	4	426 0	750	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NTE28L-5A	T	5	506 5	900	257 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NTE28L-5B	T	5	681 6	640	347 2	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-3A	U	3	426 0	0	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-4A	U	4	426 0	0	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-4B	U	4	426 0	0	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-4C	U	4	426 0	0	217 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-5A	U	5	506 5	0	257 0	M5	28	26.5	28	140	176	52	26	0.2
L1928.NUE28L-5B	U	5	681 6	0	347 2	M5	28	26.5	28	140	176	52	26	0.2

Order No.	l <sub>5</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> +0.25 -0.10	w <sub>2</sub>
L1928.NTE28L-3A	5	6.2	29	54.4	54.4	24	9
L1928.NTE28L-4A	5	11.5	29	54.4	108.5	24	9





# Medium Duty Sliders, size 28

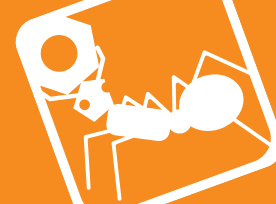
cast body, long



Long Linear  
Rails

Order No.	$I_5$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ +0.25 -0.10	$w_2$
L1928.NTE28L-4B	5	11.5	29	108.5	54.4	24	9
L1928.NTE28L-4C	5	11.5	29	81.7	81.7	24	9
L1928.NTE28L-5A	5	11.5	29	54.4	54.4	24	9
L1928.NTE28L-5B	5	6.2	29	54.4	54.4	24	9
L1928.NUE28L-3A	5	0	0	54.4	54.4	24	9
L1928.NUE28L-4A	5	0	0	54.4	108.5	24	9
L1928.NUE28L-4B	5	0	0	108.5	54.4	24	9
L1928.NUE28L-4C	5	0	0	81.7	81.7	24	9
L1928.NUE28L-5A	5	0	0	54.4	54.4	24	9
L1928.NUE28L-5B	5	0	0	54.4	54.4	24	9

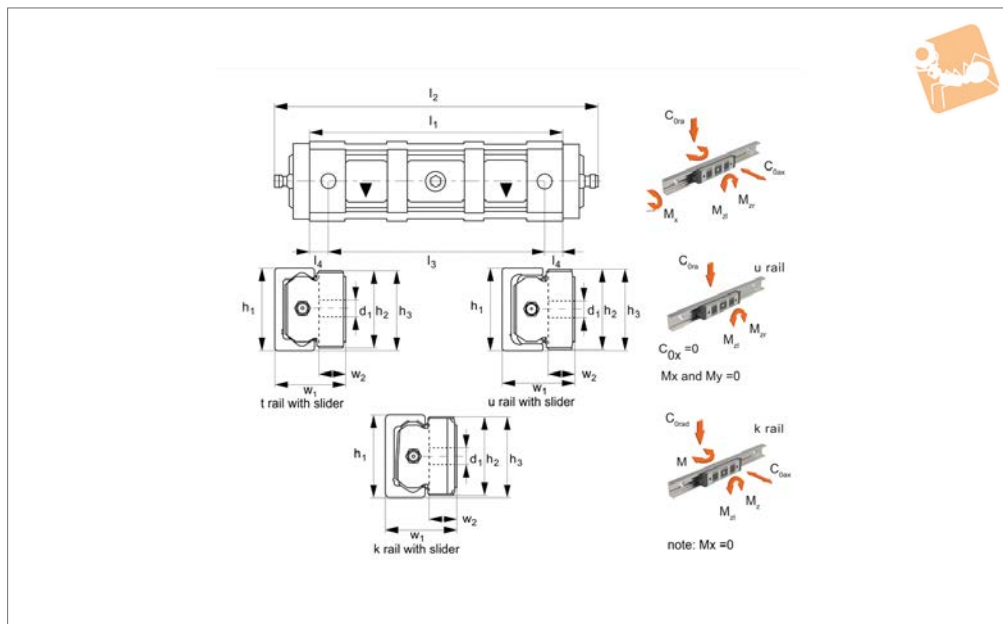
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1943.N



### Material

Die cast aluminium body, chemically nickel plated.  
Steel rollers (100Cr6) with metal seals (2Z).  
Polyester end pieces and nitrilic rubber side seals.

### Technical Notes

To be used with compact rail size 43.  
Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).  
Maintenance free, self-lubricating wipers.

### Tips

Easy to install (the middle bearing is eccentric allowing for adjustable preload).  
Quiet and fast (up to 7 m/s).

Order No.	For rail type	No. of rollers	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.3	h <sub>3</sub> +0.20 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1943.NTE43	T	3	12280	1570	5500	M8	43	40	41.9	134	170	114	0.385
L1943.NUE43	U	3	12280	0	5500	M8	43	40	41.9	134	170	114	0.385
L1943.NKE43	K	3	12280	1320	5100	M8	43	40	41.9	134	170	114	0.385

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	w <sub>1</sub> +0.25 -0.10	w <sub>2</sub>
L1943.NTE43	10	23.6	60	104.5	37	13.7
L1943.NUE43	10	0	0	104.5	37	13.7
L1943.NKE43	10	0	50.4	96.9	37	13.7

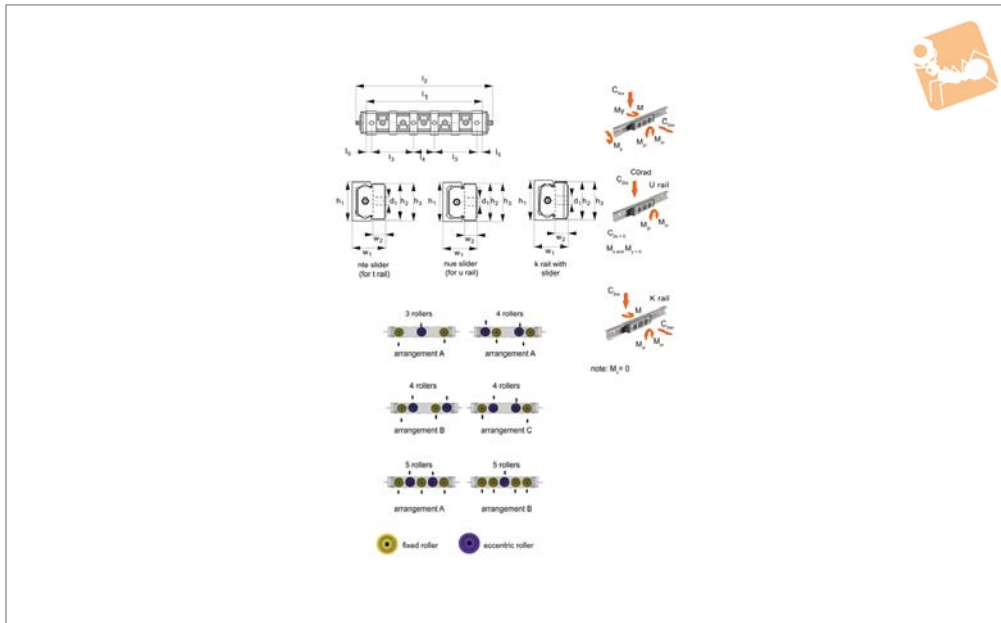


# Heavy Duty Sliders - Size 43

standard - long



Long Linear  
Rails



**L1943.NL**

LONG LINEAR RAILS

### Material

Die cast aluminium body, chemically nickel plated.  
Steel rollers (100Cr6) with metal seals (2Z).  
Polyester end pieces and nitrilic rubber side seals.

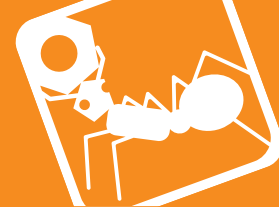
### Technical Notes

To be used with compact rail size 43.  
Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).  
Maintenance free, self-lubricating wipers.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.00.  
Quiet and fast (up to 7 m/s).

Order No.	For rail type	No. of rollers	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.30	h <sub>3</sub> +0.20 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Weight kg
L1943.NTE43L-3A	T	3	1228 0	157 0	550 0	M 8	43	41	42.7	208	245	75.5	37	0.45
L1943.NTE43L-4A	T	4	1228 0	185 5	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NTE43L-4B	T	4	1228 0	185 5	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NTE43L-4C	T	4	1228 0	185 5	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NTE43L-5A	T	5	1467 5	221 5	654 0	M 8	43	41	42.7	208	245	75.5	37	0.59
L1943.NTE43L-5B	T	5	1965 0	157 0	880 0	M 8	43	41	42.7	208	245	75.5	37	0.59
L1943.NUE43L-3A	U	3	1228 0	0	550 0	M 8	43	41	42.7	208	245	75.5	37	0.45
L1943.NUE43L-4A	U	4	1228 0	0	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NUE43L-4B	U	4	1228 0	0	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NUE43L-4C	U	4	1228 0	0	550 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NUE43L-5A	U	5	1467 5	0	654 0	M 8	43	41	42.7	208	245	75.5	37	0.59
L1943.NUE43L-5B	U	5	1965 0	0	880 0	M 8	43	41	42.7	208	245	75.5	37	0.59
L1943.NKE43L-3A	K	3	1228 0	132 0	510 0	M 8	43	41	42.7	208	245	75.5	37	0.45
L1943.NKE43L-4A	K	4	1228 0	132 0	510 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NKE43L-4B	K	4	1228 0	132 0	510 0	M 8	43	41	42.7	208	245	75.5	37	0.52



Order No.	For rail type	No. of rollers	C N	C <sub>Oax</sub> N	C <sub>Orad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.30	h <sub>3</sub> +0.20 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Weight kg
L1943.NKE43L-4C	K	4	1228 0	132 0	510 0	M 8	43	41	42.7	208	245	75.5	37	0.52
L1943.NKE43L-5A	K	5	1467 5	198 0	606 2	M 8	43	41	42.7	208	245	75.5	37	0.59
L1943.NKE43L-5B	K	5	1965 0	198 0	880 0	M 8	43	41	42.7	208	245	75.5	37	0.59

Order No.	l <sub>5</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zi</sub> Nm	w <sub>1</sub> +0.25 -0.10	w <sub>2</sub>	Arrangement type
L1943.NTE43L-3A	10	23.6	108	209	209	37	13.7	A
L1943.NTE43L-4A	10	43.6	108	209	418	37	13.7	A
L1943.NTE43L-4B	10	43.6	108	418	418	37	13.7	B
L1943.NTE43L-4C	10	43.6	108	313	313	37	13.7	C
L1943.NTE43L-5A	10	43.6	108	313	313	37	13.7	A
L1943.NTE43L-5B	10	23.6	108	209	209	37	13.7	B
L1943.NUE43L-3A	10	0	0	209	209	37	13.7	A
L1943.NUE43L-4A	10	0	0	209	418	37	13.7	A
L1943.NUE43L-4B	10	0	0	418	209	37	13.7	B
L1943.NUE43L-4C	10	0	0	313	313	37	13.7	C
L1943.NUE43L-5A	10	0	0	313	313	37	13.7	A
L1943.NUE43L-5B	10	0	0	209	209	37	13.7	B
L1943.NKE43L-3A	10	0	97.7	188	188	37	13.7	A
L1943.NKE43L-4A	10	0	97.7	188	377	37	13.7	A
L1943.NKE43L-4B	10	0	97.7	377	188	37	13.7	B
L1943.NKE43L-4C	10	0	097.7	283	283	37	13.7	C
L1943.NKE43L-5A	10	0	97.7	283	283	37	13.7	A
L1943.NKE43L-5B	10	0	97.7	188	188	37	13.7	B

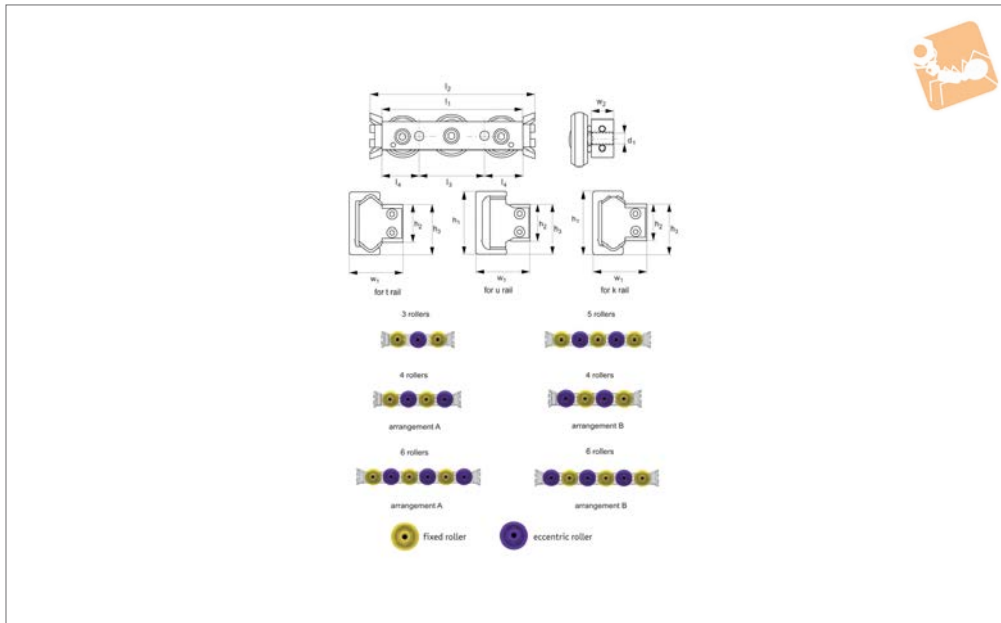


# Heavy Duty Sliders - Size 43

no side seal - front fixing



Long Linear  
Rails



**L1943.CSW**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CSW sliders do not have protective side seals.

eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.005.  
Quiet and fast (up to 7 m/s).

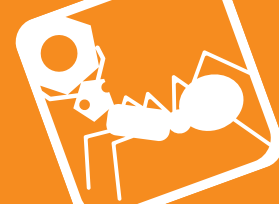
### Technical Notes

To be used with compact rail size 43.

### Tips

Easy to install (one or more rollers are

Order No.	For rail type	Seal type	C N	C <sub>Oax</sub> N	C <sub>Orad</sub> N	d <sub>1</sub>	+0.35 -0.10 h <sub>1</sub>	+0 -0.15 h <sub>2</sub>	+0.10 -0.30 h <sub>3</sub>	l <sub>1</sub>	Weight kg
L1943.CSW43-120-2ZT	T	Metal	12280	1570	5500	M 8	43	24.9	34.3	120	0.53
L1943.CSW43-120-2ZU	U	Metal	12280	0	5500	M 8	43	24.9	34.3	120	0.53
L1943.CSW43-150-2ZTA	T	Metal	12280	1855	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2ZUA	U	Metal	12280	0	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2ZTB	T	Metal	12280	1855	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2ZUB	U	Metal	12280	0	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-190-2ZT	T	Metal	14675	2215	6540	M 8	43	24.9	34.3	190	0.84
L1943.CSW43-190-2ZU	U	Metal	14675	0	6540	M 8	43	24.9	34.3	190	0.84
L1943.CSW43-230-2ZTA	T	Metal	14675	2645	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-230-2ZUA	U	Metal	14675	0	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-230-2ZTB	T	Metal	14675	2645	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-230-2ZUB	U	Metal	14675	0	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-120-2RST	T	Rubber	12280	1570	5500	M 8	43	24.9	34.3	120	0.53
L1943.CSW43-120-2RSU	U	Rubber	12280	0	5500	M 8	43	24.9	34.3	120	0.53
L1943.CSW43-150-2RSTA	T	Rubber	12280	1855	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2RSUA	U	Rubber	12280	0	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2RSTB	T	Rubber	12280	1855	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-150-2RSUB	U	Rubber	12280	0	5500	M 8	43	24.9	34.3	150	0.68
L1943.CSW43-190-2RST	T	Rubber	14675	2215	6540	M 8	43	24.9	34.3	190	0.84
L1943.CSW43-190-2RSU	U	Rubber	14675	0	6540	M 8	43	24.9	34.3	190	0.84
L1943.CSW43-230-2RSTA	T	Rubber	14675	2645	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-230-2RSUA	U	Rubber	14675	0	6540	M 8	43	24.9	34.3	230	1.01



Order No.	For rail type	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.15	h <sub>3</sub> +0.10 -0.30	l <sub>1</sub>	Weight kg
L1943.CSW43-230-2RSTB	T	Rubber	14675	2645	6540	M 8	43	24.9	34.3	230	1.01
L1943.CSW43-230-2RSUB	U	Rubber	14675	0	6540	M 8	43	24.9	34.3	230	1.01

Order No.	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Set up type
L1943.CSW43-120-2ZT	140	55	32.5	23.6	60	104.5	104.5	37	14.5	-
L1943.CSW43-120-2ZU	140	55	32.5	0	0	104.5	104.5	37	14.5	-
L1943.CSW43-150-2ZTA	170	80	35	43.6	81.5	104.5	313.5	37	14.5	A
L1943.CSW43-150-2ZUA	170	80	35	0	0	104.5	313.5	37	14.5	A
L1943.CSW43-150-2ZTB	170	80	35	43.6	81.5	313.5	104.5	37	14.5	B
L1943.CSW43-150-2ZUB	170	80	35	0	0	313.5	104.5	37	14.5	B
L1943.CSW43-190-2ZT	210	40	35	43.6	108.6	313.5	313.5	37	14.5	-
L1943.CSW43-190-2ZU	210	40	35	0	0	313.5	313.5	37	14.5	-
L1943.CSW43-230-2ZTA	250	80	35	52	135.8	313.5	522.5	37	14.5	A
L1943.CSW43-230-2ZUA	250	80	35	0	0	313.5	522.5	37	14.5	A
L1943.CSW43-230-2ZTB	250	80	35	52	135.8	522.5	313.5	37	14.5	B
L1943.CSW43-230-2ZUB	250	80	35	0	0	522.5	313.5	37	14.5	B
L1943.CSW43-120-2RST	140	55	32.5	23.6	60	104.5	104.5	37	14.5	-
L1943.CSW43-120-2RSU	140	55	32.5	0	0	104.5	104.5	37	14.5	-
L1943.CSW43-150-2RSTA	170	80	35	43.6	81.5	104.5	313.5	37	14.5	A
L1943.CSW43-150-2RSUA	170	80	35	0	0	104.5	313.5	37	14.5	A
L1943.CSW43-150-2RSTB	170	80	35	43.6	81.5	313.5	104.5	37	14.5	B
L1943.CSW43-150-2RSUB	170	80	35	0	0	313.5	104.5	37	14.5	B
L1943.CSW43-190-2RST	210	40	35	43.6	108.6	313.5	313.5	37	14.5	-
L1943.CSW43-190-2RSU	210	40	35	0	0	313.5	313.5	37	14.5	-
L1943.CSW43-230-2RSTA	250	80	35	52	135.8	313.5	522.5	37	14.5	A
L1943.CSW43-230-2RSUA	250	80	35	0	0	313.5	522.5	37	14.5	A
L1943.CSW43-230-2RSTB	250	80	35	52	135.8	522.5	313.5	37	14.5	B
L1943.CSW43-230-2RSUB	250	80	35	0	0	522.5	313.5	37	14.5	B

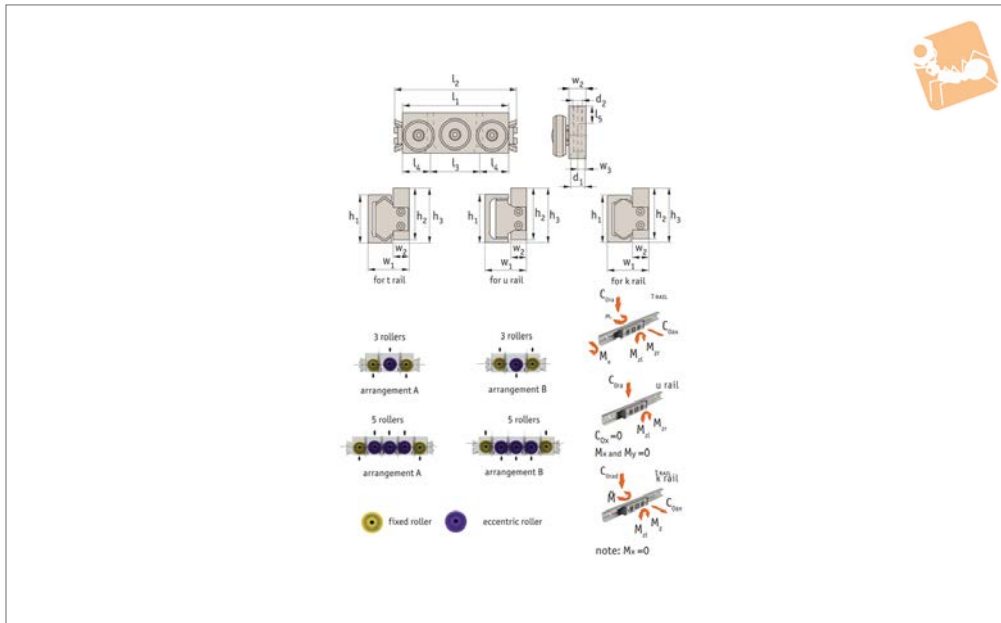


# Heavy Duty Sliders - Size 43

no side seal - top fixing



Long Linear  
Rails



**L1943.CDW**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with metal (2Z) or rubber (2RS) seals.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.005.  
Quiet and fast (up to 7 m/s).

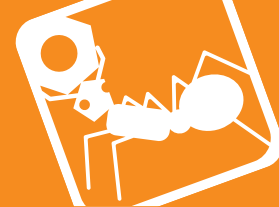
### Technical Notes

To be used with compact rail size 43.

Unlike the N series sliders these CDW sliders do not have protective side seals.

Order No.	For rail type	No. of rollers	Seal type	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub> screw	d <sub>2</sub> thread	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.50	Weight kg
L1943.CDW43-120-2ZTA	T	3	Metal	12280	1570	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2ZUA	U	3	Metal	12280	0	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2ZTB	T	3	Metal	12280	1570	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2ZUB	U	3	Metal	12280	0	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-190-2ZTA	T	5	Metal	14675	2215	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2ZUA	U	5	Metal	14675	0	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2ZTB	T	5	Metal	14675	2215	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2ZUB	U	5	Metal	14675	0	6540	M 6	M 6	43	44.9	0.95
L1943.CDW43-120-2RSTA	T	3	Rubber	12280	1570	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2RSUA	U	3	Rubber	12280	0	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2RSTB	T	3	Rubber	12280	1570	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-120-2RSUB	U	3	Rubber	12280	0	5500	M 6	M 8	43	44.9	0.64
L1943.CDW43-190-2RSTA	T	5	Rubber	14675	2215	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2RSUA	U	5	Rubber	14675	0	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2RSTB	T	5	Rubber	14675	2215	6540	M 6	M 8	43	44.9	0.95
L1943.CDW43-190-2RSUB	U	5	Rubber	14675	0	6540	M 5	M 8	43	44.9	0.95

Order No.	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.20	w <sub>2</sub>	w <sub>3</sub>	No. of holes	Arrangement type
L1943.CDW43-120-2ZTA	47	120	140	56	32	15	23.6	60.0	104.5	104.5	37.3	14.8	7.3	2	A



LONG LINEAR RAILS

Order No.	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zj</sub> Nm	w <sub>1</sub> ±0.20	w <sub>2</sub>	w <sub>3</sub>	No. of holes	Arrangement type
L1943.CDW43-120-2ZUA	47	120	140	56	32	15	0	0	104.5	104.5	37.3	14.8	7.3	2	A
L1943.CDW43-120-2ZTB	47	120	140	56	32	15	23.6	60.0	104.5	104.5	37.3	14.8	7.3	2	B
L1943.CDW43-120-2ZUB	47	120	140	56	32	15	0	0	104.5	104.5	37.3	14.8	7.3	2	B
L1943.CDW43-190-2ZTA	47	190	210	42	32	15	43.6	108.6	313.5	313.5	37.3	14.8	7.3	4	A
L1943.CDW43-190-2ZUA	47	190	210	42	32	15	0	0	313.5	313.5	37.3	14.8	7.3	4	A
L1943.CDW43-190-2ZTB	47	190	210	42	32	15	43.6	108.6	313.5	313.5	37.3	14.8	7.3	4	B
L1943.CDW43-190-2ZUB	47	190	210	42	32	15	0	0	313.5	313.5	37.3	14.8	7.3	4	B
L1943.CDW43-120-2RSTA	47	120	140	56	32	15	23.6	60.0	104.5	104.5	37.3	14.8	7.3	2	A
L1943.CDW43-120-2RSUA	47	120	140	56	32	15	0	0	104.5	104.5	37.3	14.8	7.3	2	A
L1943.CDW43-120-2RSTB	47	120	140	56	32	15	23.6	60.0	104.5	104.5	37.3	14.8	7.3	2	B
L1943.CDW43-120-2RSUB	47	120	140	56	32	15	0	0	104.5	104.5	37.3	14.8	7.3	2	B
L1943.CDW43-190-2RSTA	47	190	210	42	32	15	43.6	108.6	313.5	313.5	37.3	14.8	7.3	4	A
L1943.CDW43-190-2RSUA	47	190	210	42	32	15	0	0	313.5	313.5	37.3	14.8	7.3	4	A
L1943.CDW43-190-2RSTB	47	190	210	42	32	15	43.6	108.6	313.5	313.5	37.3	14.8	7.3	4	B
L1943.CDW43-190-2RSUB	47	190	210	42	32	15	0	0	313.5	313.5	37.3	14.8	7.3	4	B



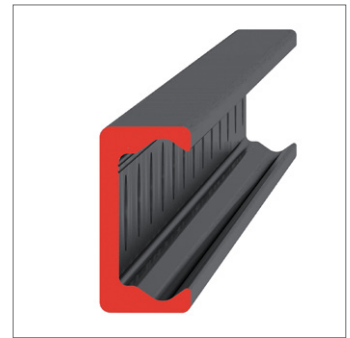
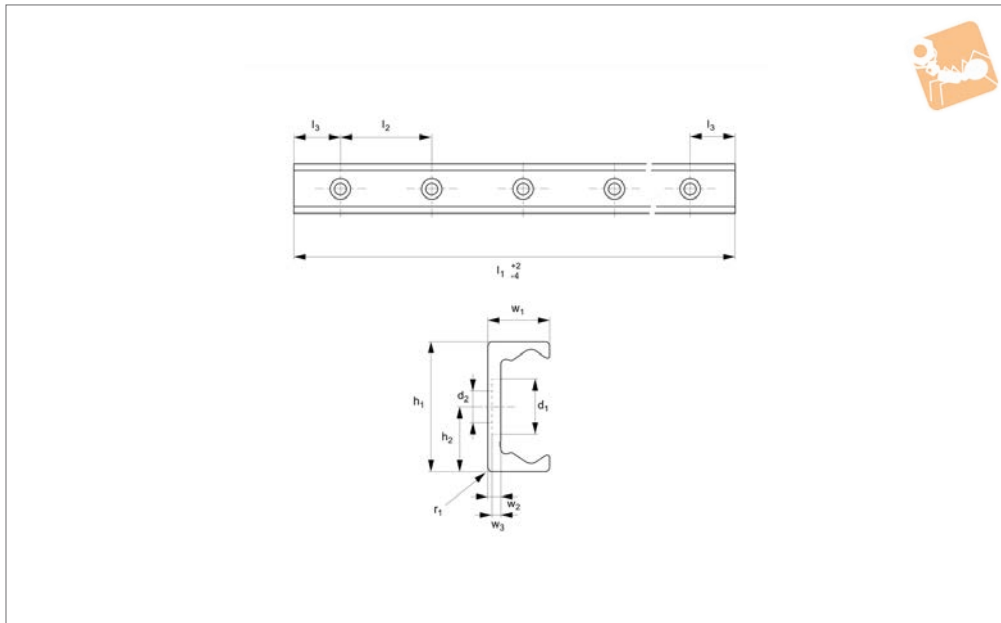


# Heavy Duty T Rail

counterbored holes



## Long Linear Rails



## L1943.TLC43

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.

Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.N versions (die cast aluminium alloy with wipers). Alternatively the L1943.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.TLC43-0400	18	M8	43	21.5	400	80	40	2.5	21	4.5	3.1
L1943.TLC43-0480	18	M8	43	21.5	480	80	40	2.5	21	4.5	3.1
L1943.TLC43-0560	18	M8	43	21.5	560	80	40	2.5	21	4.5	3.1
L1943.TLC43-0640	18	M8	43	21.5	640	80	40	2.5	21	4.5	3.1
L1943.TLC43-0720	18	M8	43	21.5	720	80	40	2.5	21	4.5	3.1
L1943.TLC43-0800	18	M8	43	21.5	800	80	40	2.5	21	4.5	3.1
L1943.TLC43-0880	18	M8	43	21.5	880	80	40	2.5	21	4.5	3.1
L1943.TLC43-0960	18	M8	43	21.5	960	80	40	2.5	21	4.5	3.1
L1943.TLC43-1040	18	M8	43	21.5	1040	80	40	2.5	21	4.5	3.1
L1943.TLC43-1120	18	M8	43	21.5	1120	80	40	2.5	21	4.5	3.1
L1943.TLC43-1200	18	M8	43	21.5	1200	80	40	2.5	21	4.5	3.1
L1943.TLC43-1280	18	M8	43	21.5	1280	80	40	2.5	21	4.5	3.1
L1943.TLC43-1360	18	M8	43	21.5	1360	80	40	2.5	21	4.5	3.1
L1943.TLC43-1440	18	M8	43	21.5	1440	80	40	2.5	21	4.5	3.1
L1943.TLC43-1520	18	M8	43	21.5	1520	80	40	2.5	21	4.5	3.1
L1943.TLC43-1600	18	M8	43	21.5	1600	80	40	2.5	21	4.5	3.1
L1943.TLC43-1680	18	M8	43	21.5	1680	80	40	2.5	21	4.5	3.1
L1943.TLC43-1760	18	M8	43	21.5	1760	80	40	2.5	21	4.5	3.1
L1943.TLC43-1840	18	M8	43	21.5	1840	80	40	2.5	21	4.5	3.1
L1943.TLC43-1920	18	M8	43	21.5	1920	80	40	2.5	21	4.5	3.1
L1943.TLC43-2000	18	M8	43	21.5	2000	80	40	2.5	21	4.5	3.1
L1943.TLC43-2080	18	M8	43	21.5	2080	80	40	2.5	21	4.5	3.1
L1943.TLC43-2160	18	M8	43	21.5	2160	80	40	2.5	21	4.5	3.1
L1943.TLC43-2240	18	M8	43	21.5	2240	80	40	2.5	21	4.5	3.1
L1943.TLC43-2320	18	M8	43	21.5	2320	80	40	2.5	21	4.5	3.1
L1943.TLC43-2400	18	M8	43	21.5	2400	80	40	2.5	21	4.5	3.1
L1943.TLC43-2480	18	M8	43	21.5	2480	80	40	2.5	21	4.5	3.1
L1943.TLC43-2560	18	M8	43	21.5	2560	80	40	2.5	21	4.5	3.1
L1943.TLC43-2640	18	M8	43	21.5	2640	80	40	2.5	21	4.5	3.1
L1943.TLC43-2720	18	M8	43	21.5	2720	80	40	2.5	21	4.5	3.1
L1943.TLC43-2800	18	M8	43	21.5	2800	80	40	2.5	21	4.5	3.1



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r <sub>1</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.TLC43-2880	18	M8	43	21.5	2880	80	40	2.5	21	4.5	3.1
L1943.TLC43-2960	18	M8	43	21.5	2960	80	40	2.5	21	4.5	3.1
L1943.TLC43-3040	18	M8	43	21.5	3040	80	40	2.5	21	4.5	3.1
L1943.TLC43-3120	18	M8	43	21.5	3120	80	40	2.5	21	4.5	3.1
L1943.TLC43-3200	18	M8	43	21.5	3200	80	40	2.5	21	4.5	3.1
L1943.TLC43-3280	18	M8	43	21.5	3280	80	40	2.5	21	4.5	3.1
L1943.TLC43-3360	18	M8	43	21.5	3360	80	40	2.5	21	4.5	3.1
L1943.TLC43-3440	18	M8	43	21.5	3440	80	40	2.5	21	4.5	3.1
L1943.TLC43-3520	18	M8	43	21.5	3520	80	40	2.5	21	4.5	3.1
L1943.TLC43-3600	18	M8	43	21.5	3600	80	40	2.5	21	4.5	3.1
L1943.TLC43-3680	18	M8	43	21.5	3680	80	40	2.5	21	4.5	3.1
L1943.TLC43-3760	18	M8	43	21.5	3760	80	40	2.5	21	4.5	3.1
L1943.TLC43-3840	18	M8	43	21.5	3840	80	40	2.5	21	4.5	3.1
L1943.TLC43-3920	18	M8	43	21.5	3920	80	40	2.5	21	4.5	3.1
L1943.TLC43-4000	18	M8	43	21.5	4000	80	40	2.5	21	4.5	3.1
L1943.TLC43-4080	18	M8	43	21.5	4080	80	40	2.5	21	4.5	3.1

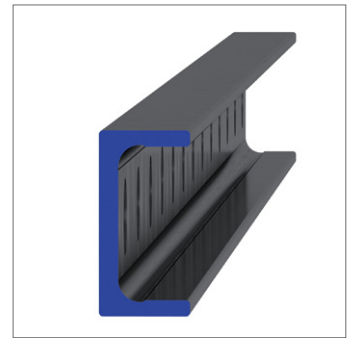
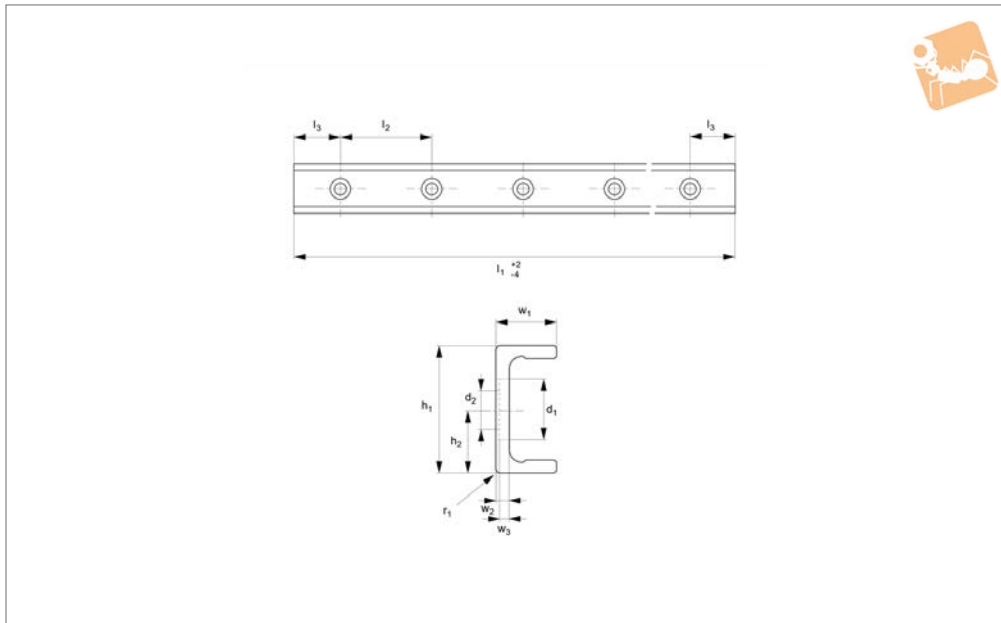


# Heavy Duty U Rail

counterbored holes



## Long Linear Rails



## L1943.ULC43

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

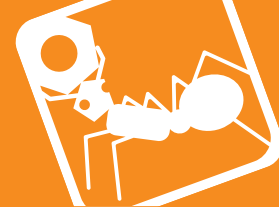
with a T master rail.

This is the ULC counterbored rail type (most popular), which is usually used with a corresponding TLC rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 2,6 Kg/m.

### Tips

Standard carriages are the L1943.N versions (die cast aluminium alloy with wipers). Alternatively the L1943.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.ULC43-0400	18	M8	43	21.5	400	80	40	2.5	21	4.5	3.1
L1943.ULC43-0480	18	M8	43	21.5	480	80	40	2.5	21	4.5	3.1
L1943.ULC43-0560	18	M8	43	21.5	560	80	40	2.5	21	4.5	3.1
L1943.ULC43-0640	18	M8	43	21.5	640	80	40	2.5	21	4.5	3.1
L1943.ULC43-0720	18	M8	43	21.5	720	80	40	2.5	21	4.5	3.1
L1943.ULC43-0800	18	M8	43	21.5	800	80	40	2.5	21	4.5	3.1
L1943.ULC43-0880	18	M8	43	21.5	880	80	40	2.5	21	4.5	3.1
L1943.ULC43-0960	18	M8	43	21.5	960	80	40	2.5	21	4.5	3.1
L1943.ULC43-1040	18	M8	43	21.5	1040	80	40	2.5	21	4.5	3.1
L1943.ULC43-1120	18	M8	43	21.5	1120	80	40	2.5	21	4.5	3.1
L1943.ULC43-1200	18	M8	43	21.5	1200	80	40	2.5	21	4.5	3.1
L1943.ULC43-1280	18	M8	43	21.5	1280	80	40	2.5	21	4.5	3.1
L1943.ULC43-1360	18	M8	43	21.5	1360	80	40	2.5	21	4.5	3.1
L1943.ULC43-1440	18	M8	43	21.5	1440	80	40	2.5	21	4.5	3.1
L1943.ULC43-1520	18	M8	43	21.5	1520	80	40	2.5	21	4.5	3.1
L1943.ULC43-1600	18	M8	43	21.5	1600	80	40	2.5	21	4.5	3.1
L1943.ULC43-1680	18	M8	43	21.5	1680	80	40	2.5	21	4.5	3.1
L1943.ULC43-1760	18	M8	43	21.5	1760	80	40	2.5	21	4.5	3.1
L1943.ULC43-1840	18	M8	43	21.5	1840	80	40	2.5	21	4.5	3.1
L1943.ULC43-1920	18	M8	43	21.5	1920	80	40	2.5	21	4.5	3.1
L1943.ULC43-2000	18	M8	43	21.5	2000	80	40	2.5	21	4.5	3.1
L1943.ULC43-2080	18	M8	43	21.5	2080	80	40	2.5	21	4.5	3.1
L1943.ULC43-2160	18	M8	43	21.5	2160	80	40	2.5	21	4.5	3.1
L1943.ULC43-2240	18	M8	43	21.5	2240	80	40	2.5	21	4.5	3.1
L1943.ULC43-2320	18	M8	43	21.5	2320	80	40	2.5	21	4.5	3.1
L1943.ULC43-2400	18	M8	43	21.5	2400	80	40	2.5	21	4.5	3.1
L1943.ULC43-2480	18	M8	43	21.5	2480	80	40	2.5	21	4.5	3.1
L1943.ULC43-2560	18	M8	43	21.5	2560	80	40	2.5	21	4.5	3.1
L1943.ULC43-2640	18	M8	43	21.5	2640	80	40	2.5	21	4.5	3.1
L1943.ULC43-2720	18	M8	43	21.5	2720	80	40	2.5	21	4.5	3.1
L1943.ULC43-2800	18	M8	43	21.5	2800	80	40	2.5	21	4.5	3.1



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.ULC43-2880	18	M8	43	21.5	2880	80	40	2.5	21	4.5	3.1
L1943.ULC43-2960	18	M8	43	21.5	2960	80	40	2.5	21	4.5	3.1
L1943.ULC43-3040	18	M8	43	21.5	3040	80	40	2.5	21	4.5	3.1
L1943.ULC43-3120	18	M8	43	21.5	3120	80	40	2.5	21	4.5	3.1
L1943.ULC43-3200	18	M8	43	21.5	3200	80	40	2.5	21	4.5	3.1
L1943.ULC43-3280	18	M8	43	21.5	3280	80	40	2.5	21	4.5	3.1
L1943.ULC43-3360	18	M8	43	21.5	3360	80	40	2.5	21	4.5	3.1
L1943.ULC43-3440	18	M8	43	21.5	3440	80	40	2.5	21	4.5	3.1
L1943.ULC43-3520	18	M8	43	21.5	3520	80	40	2.5	21	4.5	3.1
L1943.ULC43-3600	18	M8	43	21.5	3600	80	40	2.5	21	4.5	3.1
L1943.ULC43-3680	18	M8	43	21.5	3680	80	40	2.5	21	4.5	3.1
L1943.ULC43-3760	18	M8	43	21.5	3760	80	40	2.5	21	4.5	3.1
L1943.ULC43-3840	18	M8	43	21.5	3840	80	40	2.5	21	4.5	3.1
L1943.ULC43-3920	18	M8	43	21.5	3920	80	40	2.5	21	4.5	3.1
L1943.ULC43-4000	18	M8	43	21.5	4000	80	40	2.5	21	4.5	3.1
L1943.ULC43-4080	18	M8	43	21.5	4080	80	40	2.5	21	4.5	3.1

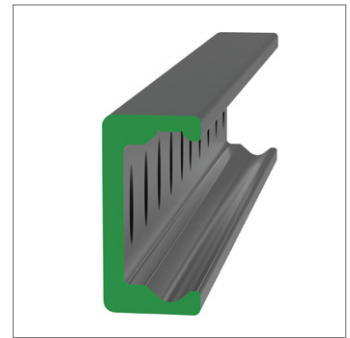
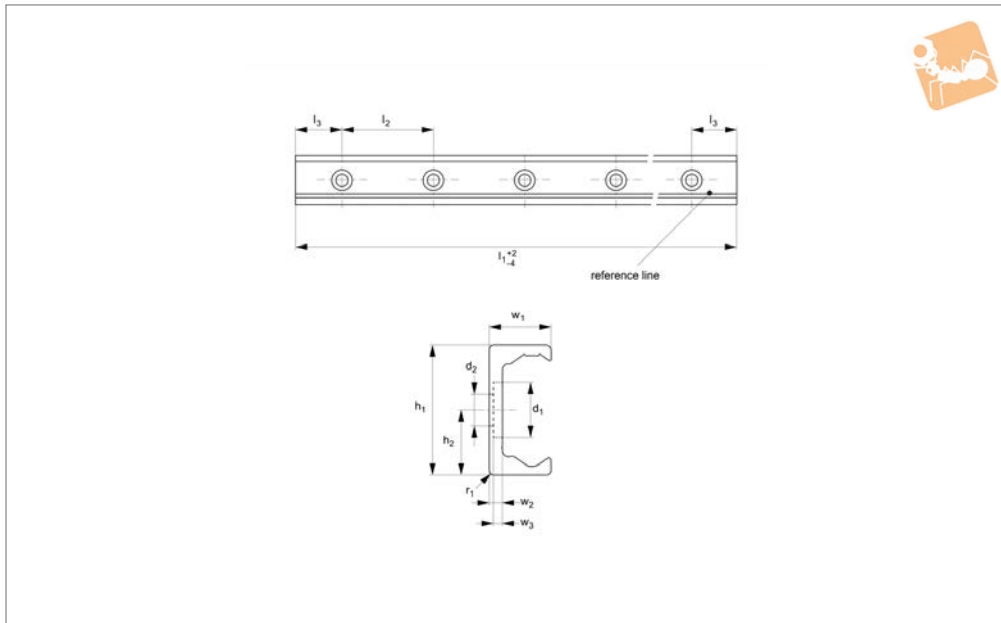


# Heavy Duty K Rail

counterbored holes



Long Linear  
Rails



**L1943.KLC43**

LONG LINEAR RAILS

**Material**

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

**Technical Notes**

The K rail is a master rail and is usually used with a U slave rail (allows for system misalignment in two planes).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 2,6 Kg/m.

**Tips**

Standard carriages are the L1943.N versions (die cast aluminium alloy with

wipers). Alternatively the L1943.C type is also available (without wipers).

**Important Notes**

K Rails are not suited for vertical applications.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.KLC43-0400	18	M8	43	21.5	400	80	40	2.5	21	4.5	3.1
L1943.KLC43-0480	18	M8	43	21.5	480	80	40	2.5	21	4.5	3.1
L1943.KLC43-0560	18	M8	43	21.5	560	80	40	2.5	21	4.5	3.1
L1943.KLC43-0640	18	M8	43	21.5	640	80	40	2.5	21	4.5	3.1
L1943.KLC43-0720	18	M8	43	21.5	720	80	40	2.5	21	4.5	3.1
L1943.KLC43-0800	18	M8	43	21.5	800	80	40	2.5	21	4.5	3.1
L1943.KLC43-0880	18	M8	43	21.5	880	80	40	2.5	21	4.5	3.1
L1943.KLC43-0960	18	M8	43	21.5	960	80	40	2.5	21	4.5	3.1
L1943.KLC43-1040	18	M8	43	21.5	1040	80	40	2.5	21	4.5	3.1
L1943.KLC43-1120	18	M8	43	21.5	1120	80	40	2.5	21	4.5	3.1
L1943.KLC43-1200	18	M8	43	21.5	1200	80	40	2.5	21	4.5	3.1
L1943.KLC43-1280	18	M8	43	21.5	1280	80	40	2.5	21	4.5	3.1
L1943.KLC43-1360	18	M8	43	21.5	1360	80	40	2.5	21	4.5	3.1
L1943.KLC43-1440	18	M8	43	21.5	1440	80	40	2.5	21	4.5	3.1
L1943.KLC43-1520	18	M8	43	21.5	1520	80	40	2.5	21	4.5	3.1
L1943.KLC43-1600	18	M8	43	21.5	1600	80	40	2.5	21	4.5	3.1
L1943.KLC43-1680	18	M8	43	21.5	1680	80	40	2.5	21	4.5	3.1
L1943.KLC43-1760	18	M8	43	21.5	1760	80	40	2.5	21	4.5	3.1
L1943.KLC43-1840	18	M8	43	21.5	1840	80	40	2.5	21	4.5	3.1
L1943.KLC43-1920	18	M8	43	21.5	1920	80	40	2.5	21	4.5	3.1
L1943.KLC43-2000	18	M8	43	21.5	2000	80	40	2.5	21	4.5	3.1
L1943.KLC43-2080	18	M8	43	21.5	2080	80	40	2.5	21	4.5	3.1
L1943.KLC43-2160	18	M8	43	21.5	2160	80	40	2.5	21	4.5	3.1
L1943.KLC43-2240	18	M8	43	21.5	2240	80	40	2.5	21	4.5	3.1
L1943.KLC43-2320	18	M8	43	21.5	2320	80	40	2.5	21	4.5	3.1
L1943.KLC43-2400	18	M8	43	21.5	2400	80	40	2.5	21	4.5	3.1
L1943.KLC43-2480	18	M8	43	21.5	2480	80	40	2.5	21	4.5	3.1
L1943.KLC43-2560	18	M8	43	21.5	2560	80	40	2.5	21	4.5	3.1



Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1943.KLC43-2640	18	M8	43	21.5	2640	80	40	2.5	21	4.5	3.1
L1943.KLC43-2720	18	M8	43	21.5	2720	80	40	2.5	21	4.5	3.1
L1943.KLC43-2800	18	M8	43	21.5	2800	80	40	2.5	21	4.5	3.1
L1943.KLC43-2960	18	M8	43	21.5	2960	80	40	2.5	21	4.5	3.1
L1943.KLC43-3040	18	M8	43	21.5	3040	80	40	2.5	21	4.5	3.1
L1943.KLC43-3120	18	M8	43	21.5	3120	80	40	2.5	21	4.5	3.1
L1943.KLC43-3200	18	M8	43	21.5	3200	80	40	2.5	21	4.5	3.1
L1943.KLC43-3280	18	M8	43	21.5	3280	80	40	2.5	21	4.5	3.1
L1943.KLC43-3360	18	M8	43	21.5	3360	80	40	2.5	21	4.5	3.1
L1943.KLC43-3440	18	M8	43	21.5	3440	80	40	2.5	21	4.5	3.1
L1943.KLC43-3520	18	M8	43	21.5	3520	80	40	2.5	21	4.5	3.1
L1943.KLC43-3600	18	M8	43	21.5	3600	80	40	2.5	21	4.5	3.1

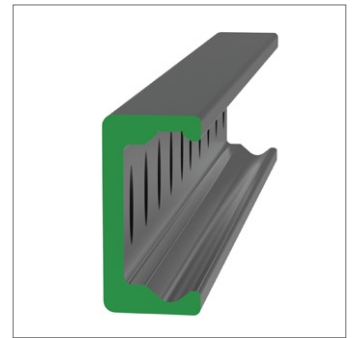
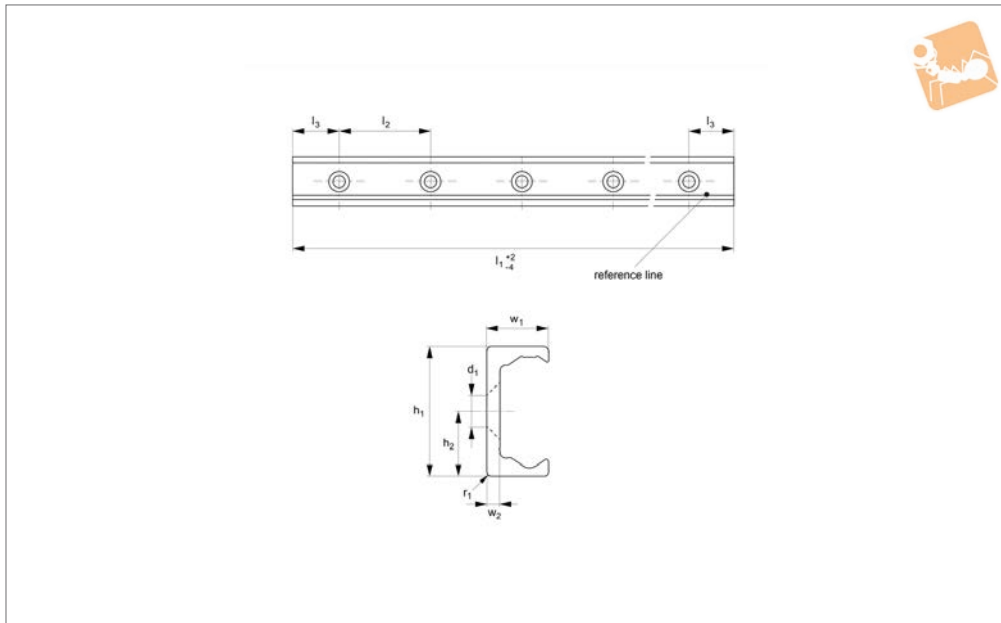


# Heavy Duty K Rail

countersunk holes



## Long Linear Rails



### L1943.KLV43

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The K rail is a master rail and is usually used with a U slave rail (allows for system

misalignment in two planes).

This is the countersunk rail type which is usually used with a corresponding ULV rail. For fixing use countersunk DIN 7991 screws.

Weight: 2,6 Kg/m.

#### Tips

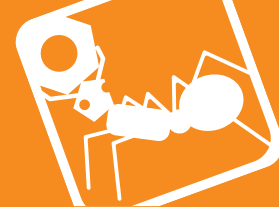
Standard carriages are the L1943.N

versions (die cast aluminium alloy with wipers). Alternatively the L1943.C type is also available (without wipers).

#### Important Notes

K Rails are not suited for vertical applications.

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.KLV43-0400	M8	43	21.5	400	80	40	1	21	4.5
L1943.KLV43-0480	M8	43	21.5	480	80	40	1	21	4.5
L1943.KLV43-0560	M8	43	21.5	560	80	40	1	21	4.5
L1943.KLV43-0640	M8	43	21.5	640	80	40	1	21	4.5
L1943.KLV43-0720	M8	43	21.5	720	80	40	1	21	4.5
L1943.KLV43-0800	M8	43	21.5	800	80	40	1	21	4.5
L1943.KLV43-0880	M8	43	21.5	880	80	40	1	21	4.5
L1943.KLV43-0960	M8	43	21.5	960	80	40	1	21	4.5
L1943.KLV43-1040	M8	43	21.5	1040	80	40	1	21	4.5
L1943.KLV43-1120	M8	43	21.5	1120	80	40	1	21	4.5
L1943.KLV43-1200	M8	43	21.5	1200	80	40	1	21	4.5
L1943.KLV43-1280	M8	43	21.5	1280	80	40	1	21	4.5
L1943.KLV43-1360	M8	43	21.5	1360	80	40	1	21	4.5
L1943.KLV43-1440	M8	43	21.5	1440	80	40	1	21	4.5
L1943.KLV43-1520	M8	43	21.5	1520	80	40	1	21	4.5
L1943.KLV43-1600	M8	43	21.5	1600	80	40	1	21	4.5
L1943.KLV43-1680	M8	43	21.5	1680	80	40	1	21	4.5
L1943.KLV43-1760	M8	43	21.5	1760	80	40	1	21	4.5
L1943.KLV43-1840	M8	43	21.5	1840	80	40	1	21	4.5
L1943.KLV43-1920	M8	43	21.5	1920	80	40	1	21	4.5
L1943.KLV43-2000	M8	43	21.5	2000	80	40	1	21	4.5
L1943.KLV43-2080	M8	43	21.5	2080	80	40	1	21	4.5
L1943.KLV43-2160	M8	43	21.5	2160	80	40	1	21	4.5
L1943.KLV43-2240	M8	43	21.5	2240	80	40	1	21	4.5
L1943.KLV43-2320	M8	43	21.5	2320	80	40	1	21	4.5
L1943.KLV43-2400	M8	43	21.5	2400	80	40	1	21	4.5
L1943.KLV43-2480	M8	43	21.5	2480	80	40	1	21	4.5
L1943.KLV43-2560	M8	43	21.5	2560	80	40	1	21	4.5
L1943.KLV43-2640	M8	43	21.5	2640	80	40	1	21	4.5



Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	r	w <sub>1</sub>	w <sub>2</sub>
L1943.KLV43-2720	M8	43	21.5	2720	80	40	1	21	4.5
L1943.KLV43-2800	M8	43	21.5	2800	80	40	1	21	4.5
L1943.KLV43-2880	M8	43	21.5	2880	80	40	1	21	4.5
L1943.KLV43-2960	M8	43	21.5	2960	80	40	1	21	4.5
L1943.KLV43-3040	M8	43	21.5	3040	80	40	1	21	4.5
L1943.KLV43-3120	M8	43	21.5	3120	80	40	1	21	4.5
L1943.KLV43-3200	M8	43	21.5	3200	80	40	1	21	4.5
L1943.KLV43-3280	M8	43	21.5	3280	80	40	1	21	4.5
L1943.KLV43-3360	M8	43	21.5	3360	80	40	1	21	4.5
L1943.KLV43-3440	M8	43	21.5	3440	80	40	1	21	4.5
L1943.KLV43-3520	M8	43	21.5	3520	80	40	1	21	4.5
L1943.KLV43-3600	M8	43	21.5	3600	80	40	1	21	4.5
L1943.43K-0400-V	M8	43	21.5	400	80	40	1	21	4.5
L1943.43K-0480-V	M8	43	21.5	480	80	40	1	21	4.5
L1943.43K-0560-V	M8	43	21.5	560	80	40	1	21	4.5
L1943.43K-0640-V	M8	43	21.5	640	80	40	1	21	4.5
L1943.43K-0720-V	M8	43	21.5	720	80	40	1	21	4.5
L1943.43K-0800-V	M8	43	21.5	800	80	40	1	21	4.5
L1943.43K-0880-V	M8	43	21.5	880	80	40	1	21	4.5
L1943.43K-0960-V	M8	43	21.5	960	80	40	1	21	4.5
L1943.43K-1040-V	M8	43	21.5	1040	80	40	1	21	4.5
L1943.43K-1120-V	M8	43	21.5	1120	80	40	1	21	4.5
L1943.43K-1200-V	M8	43	21.5	1200	80	40	1	21	4.5
L1943.43K-1280-V	M8	43	21.5	1280	80	40	1	21	4.5
L1943.43K-1360-V	M8	43	21.5	1360	80	40	1	21	4.5
L1943.43K-1440-V	M8	43	21.5	1440	80	40	1	21	4.5
L1943.43K-1520-V	M8	43	21.5	1520	80	40	1	21	4.5
L1943.43K-1600-V	M8	43	21.5	1600	80	40	1	21	4.5
L1943.43K-1680-V	M8	43	21.5	1680	80	40	1	21	4.5
L1943.43K-1760-V	M8	43	21.5	1760	80	40	1	21	4.5
L1943.43K-1840-V	M8	43	21.5	1840	80	40	1	21	4.5
L1943.43K-1920-V	M8	43	21.5	1920	80	40	1	21	4.5
L1943.43K-2000-V	M8	43	21.5	2000	80	40	1	21	4.5
L1943.43K-2080-V	M8	43	21.5	2080	80	40	1	21	4.5
L1943.43K-2160-V	M8	43	21.5	2160	80	40	1	21	4.5
L1943.43K-2240-V	M8	43	21.5	2240	80	40	1	21	4.5
L1943.43K-2320-V	M8	43	21.5	2320	80	40	1	21	4.5
L1943.43K-2400-V	M8	43	21.5	2400	80	40	1	21	4.5
L1943.43K-2480-V	M8	43	21.5	2480	80	40	1	21	4.5
L1943.43K-2560-V	M8	43	21.5	2560	80	40	1	21	4.5
L1943.43K-2640-V	M8	43	21.5	2640	80	40	1	21	4.5
L1943.43K-2720-V	M8	43	21.5	2720	80	40	1	21	4.5
L1943.43K-2800-V	M8	43	21.5	2800	80	40	1	21	4.5
L1943.43K-2880-V	M8	43	21.5	2880	80	40	1	21	4.5
L1943.43K-2960-V	M8	43	21.5	2960	80	40	1	21	4.5
L1943.43K-3040-V	M8	43	21.5	3040	80	40	1	21	4.5
L1943.43K-3120-V	M8	43	21.5	3120	80	40	1	21	4.5
L1943.43K-3200-V	M8	43	21.5	3200	80	40	1	21	4.5
L1943.43K-3280-V	M8	43	21.5	3280	80	40	1	21	4.5
L1943.43K-3360-V	M8	43	21.5	3360	80	40	1	21	4.5
L1943.43K-3440-V	M8	43	21.5	3440	80	40	1	21	4.5
L1943.43K-3520-V	M8	43	21.5	3520	80	40	1	21	4.5
L1943.43K-3600-V	M8	43	21.5	3600	80	40	1	21	4.5
L1943.43K-3680-V	M8	43	21.5	3680	80	40	1	21	4.5
L1943.43K-3760-V	M8	43	21.5	3760	80	40	1	21	4.5
L1943.43K-3840-V	M8	43	21.5	3840	80	40	1	21	4.5
L1943.43K-3920-V	M8	43	21.5	3920	80	40	1	21	4.5
L1943.43K-4000-V	M8	43	21.5	4000	80	40	1	21	4.5
L1943.43K-4080-V	M8	43	21.5	4080	80	40	1	21	4.5

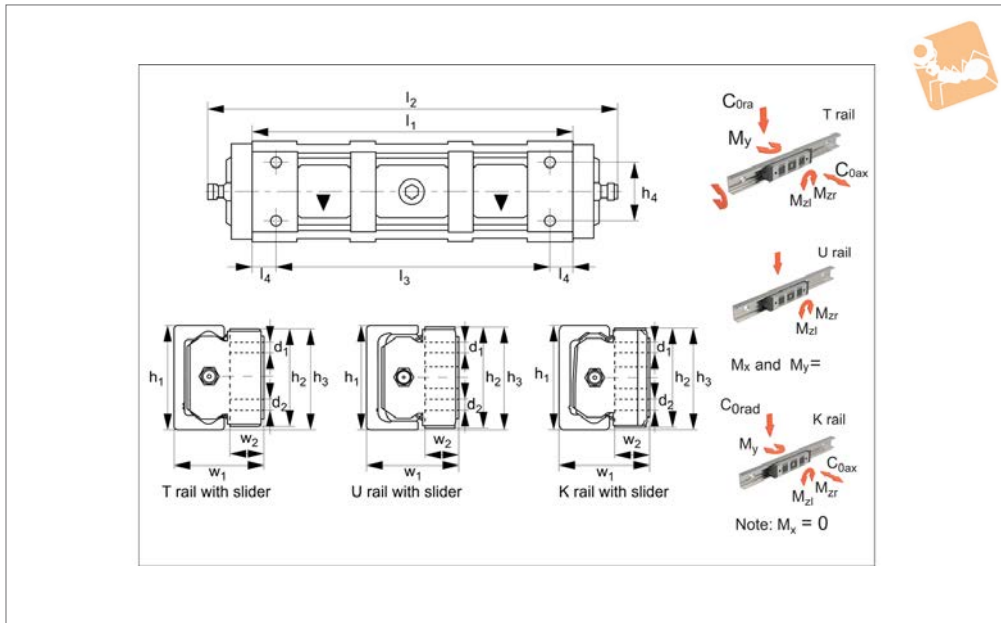




# Very Heavy Duty Sliders, size 63 standard



Long Linear  
Rails



**L1963.N**

LONG LINEAR RAILS

### Material

Die cast aluminium body, chemically nickel plated.  
Steel rollers (100Cr6) with combined metal/rubber seals (2ZR).  
Polyester end pieces and nitrilic rubber side seals.

### Technical Notes

To be used with compact rail size 63.  
Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).  
Maintenance free, self-lubricating wipers.

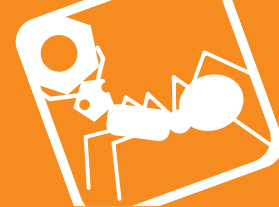
### Tips

Easy to install (the middle bearing is eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.006.  
Quiet and fast (up to 9 m/s).

Order No.	For rail type	No. of rollers	C N	$C_{0ax}$ N	$C_{0rad}$ N	$d_1$	$h_1$ +0.35 -0.10	$h_2$ +0.10 -0.20	$h_3$ +0 -0.50	$h_4$	Weight kg
L1963.NTE63	T	3	30750	6000	12500	M8	63	60	62	34	1.070
L1963.NUE63	U	3	30750	0	12500	M8	63	60	62	34	1.070
L1963.NKE63	K	3	30750	5045	11550	M8	63	60	62	34	1.070

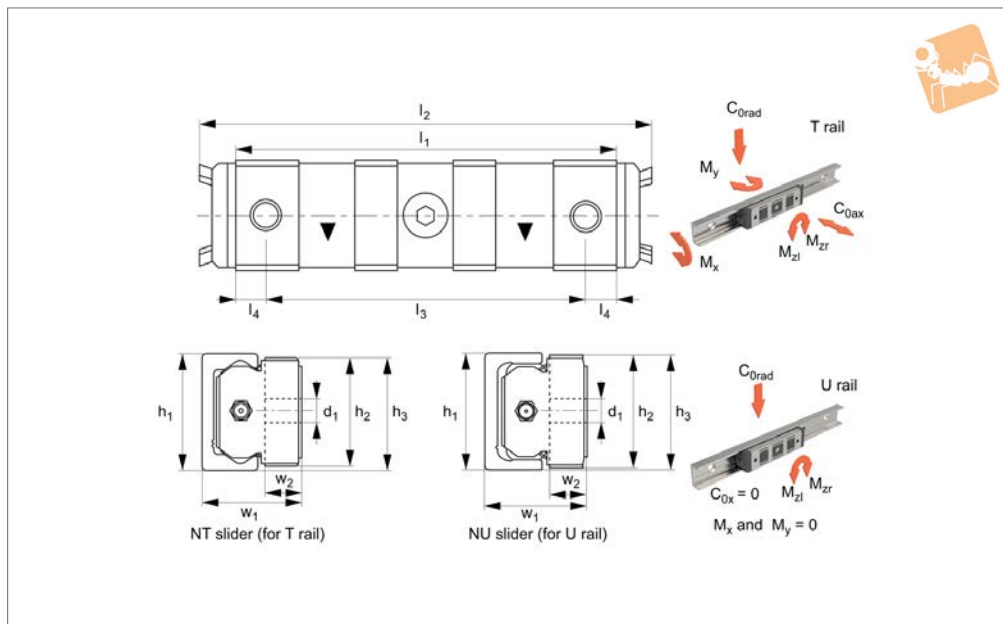
Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	$w_1$ +0.25 -0.10	$w_2$
L1963.NTE63	188	225	168	10	125	271	367	50.5	20.2
L1963.NUE63	188	225	168	10	0	0	367	50.5	20.2
L1963.NKE63	188	225	168	10	0	235	335	50.5	20.2



LONG LINEAR RAILS



## L1928.N



### Material

Die cast aluminium body, chemically nickel plated.

Steel rollers (100Cr6) with metal seals (2Z).

Polyester end pieces and nitrilic rubber side seals.

### Technical Notes

To be used with compact rail size 28.  
 Select the relevant sliders to suit the rail size and the required load to be carried (taking into account any moment loads).  
 Maintenance free, self-lubricating wipers.

### Tips

Easy to install (the middle roller is eccentric allowing for adjustable preload).  
 Quiet and fast (up to 5 m/s).

Order No.	For rail type	No. of rollers	C N	C <sub>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.25 -0.10	h <sub>2</sub> +0 -0.20	h <sub>3</sub> +0.15 -0.35	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1928.NTE28	T	3	4260	640	2170	M5	28	26.5	28	88	124	78	0.115
L1928.NUE28	U	3	4260	0	2170	M5	28	26.5	28	88	124	78	0.115

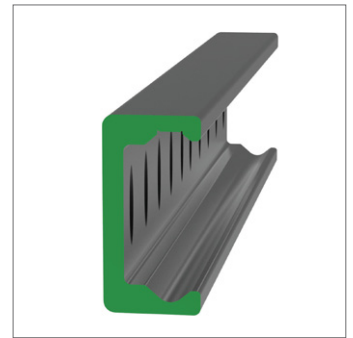
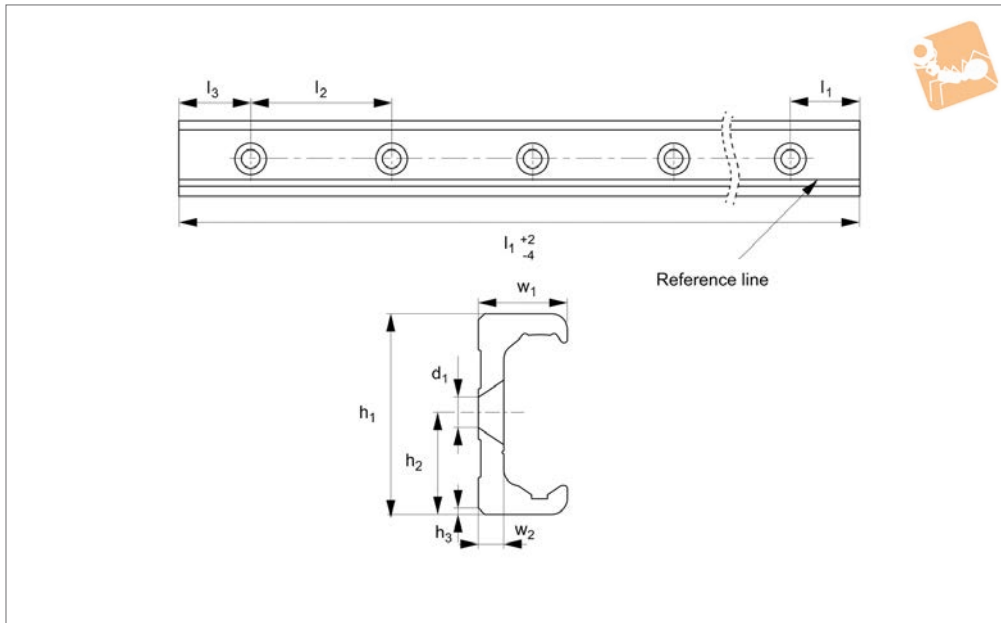
  

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>
L1928.NTE28	5	6.2	16	27.2	27.2	24	9.3
L1928.NUE28	5	0	0	27.2	27.2	24	9.3

# Very Heavy Duty K Rail

countersunk holes

## Long Linear Rails



## L1963.KLV63

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The K rail is a master rail and is usually used with a U slave rail (allows for system

misalignment in two planes).

This is the countersunk rail type which is usually used with a corresponding ULV rail. For fixing use countersunk DIN 7991 screws.

Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N

versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

### Important Notes

K Rails are not suited for vertical applications.

Order No.	$d_1$ for screw	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$
L1963.KLV63-0400	M10	63	31.5	2x45°	400	80	40	28	8
L1963.KLV63-0480	M10	63	31.5	2x45°	480	80	40	28	8
L1963.KLV63-0560	M10	63	31.5	2x45°	560	80	40	28	8
L1963.KLV63-0640	M10	63	31.5	2x45°	640	80	40	28	8
L1963.KLV63-0720	M10	63	31.5	2x45°	720	80	40	28	8
L1963.KLV63-0800	M10	63	31.5	2x45°	800	80	40	28	8
L1963.KLV63-0880	M10	63	31.5	2x45°	880	80	40	28	8
L1963.KLV63-0960	M10	63	31.5	2x45°	960	80	40	28	8
L1963.KLV63-1040	M10	63	31.5	2x45°	1040	80	40	28	8
L1963.KLV63-1120	M10	63	31.5	2x45°	1120	80	40	28	8
L1963.KLV63-1200	M10	63	31.5	2x45°	1200	80	40	28	8
L1963.KLV63-1280	M10	63	31.5	2x45°	1280	80	40	28	8
L1963.KLV63-1360	M10	63	31.5	2x45°	1360	80	40	28	8
L1963.KLV63-1440	M10	63	31.5	2x45°	1440	80	40	28	8
L1963.KLV63-1520	M10	63	31.5	2x45°	1520	80	40	28	8
L1943.KLV63-1600	M10	63	31.5	2x45°	1600	80	40	28	8
L1963.KLV63-1680	M10	63	31.5	2x45°	1680	80	40	28	8
L1963.KLV63-1760	M10	63	31.5	2x45°	1760	80	40	28	8
L1963.KLV63-1840	M10	63	31.5	2x45°	1840	80	40	28	8
L1963.KLV63-1920	M10	63	31.5	2x45°	1920	80	40	28	8
L1963.KLV63-2000	M10	63	31.5	2x45°	2000	80	40	28	8
L1963.KLV63-2080	M10	63	31.5	2x45°	2080	80	40	28	8
L1963.KLV63-2160	M10	63	31.5	2x45°	2160	80	40	28	8
L1963.KLV63-2240	M10	63	31.5	2x45°	2240	80	40	28	8
L1963.KLV63-2320	M10	63	31.5	2x45°	2320	80	40	28	8
L1963.KLV63-2400	M10	63	31.5	2x45°	2400	80	40	28	8
L1963.KLV63-2480	M10	63	31.5	2x45°	2480	80	40	28	8
L1963.KLV63-2560	M10	63	31.5	2x45°	2560	80	40	28	8
L1963.KLV63-2640	M10	63	31.5	2x45°	2640	80	40	28	8



Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.KLV63-2720	M10	63	31.5	2x45°	2720	80	40	28	8
L1963.KLV63-2800	M10	63	31.5	2x45°	2800	80	40	28	8
L1963.KLV63-2880	M10	63	31.5	2x45°	2880	80	40	28	8
L1963.KLV63-2960	M10	63	31.5	2x45°	2960	80	40	28	8
L1963.KLV63-3040	M10	63	31.5	2x45°	3040	80	40	28	8
L1963.KLV63-3120	M10	63	31.5	2x45°	3120	80	40	28	8
L1963.KLV63-3200	M10	63	31.5	2x45°	3200	80	40	28	8
L1963.KLV63-3280	M10	63	31.5	2x45°	3280	80	40	28	8
L1963.KLV63-3360	M10	63	31.5	2x45°	3360	80	40	28	8
L1963.KLV63-3440	M10	63	31.5	2x45°	3440	80	40	28	8
L1963.KLV63-3520	M10	63	31.5	2x45°	3520	80	40	28	8
L1963.KLV63-3600	M10	63	31.5	2x45°	3600	80	40	28	8
L1963.KLV63-3680	M10	63	31.5	2x45°	3680	80	40	28	8
L1963.KLV63-3760	M10	63	31.5	2x45°	3760	80	40	28	8
L1963.KLV63-3840	M10	63	31.5	2x45°	3840	80	40	28	8
L1963.KLV63-3920	M10	63	31.5	2x45°	3920	80	40	28	8
L1963.KLV63-4000	M10	63	31.5	2x45°	4000	80	40	28	8
L1963.KLV63-4080	M10	63	31.5	2x45°	4080	80	40	28	8

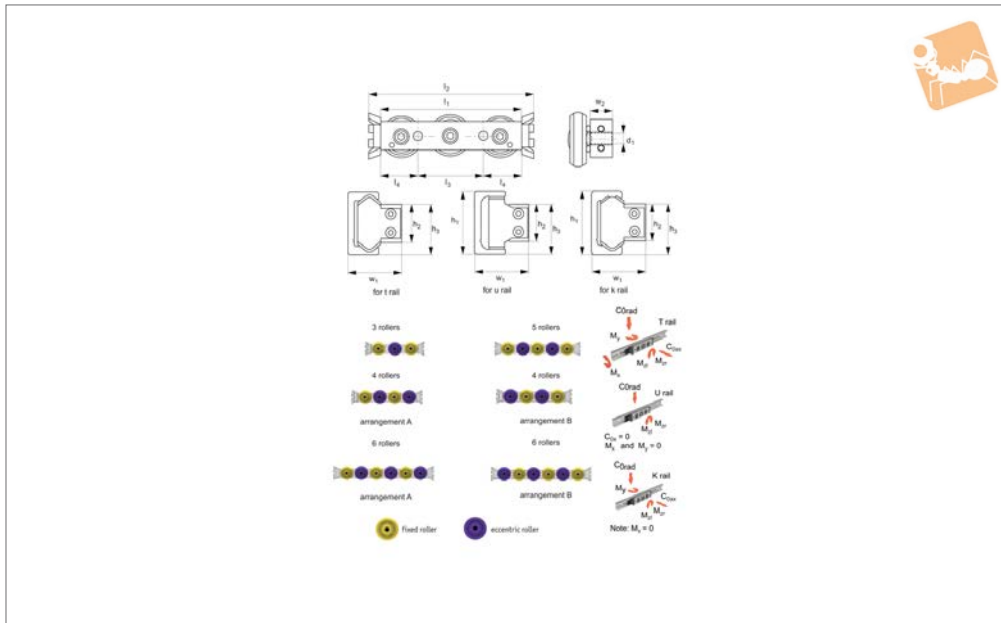


# Very Heavy Sliders, size 63

no side seal, front fixing, with wiper



Long Linear  
Rails



**L1963.CS**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with a special combined metal and rubber seal (2ZR).

### Technical Notes

To be used with compact rail size 63.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

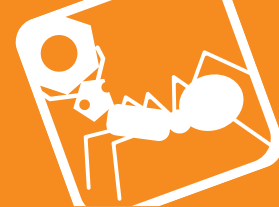
Unlike the N series sliders these CSW sliders do not have protective side seals.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.006.  
Quiet and fast (up to 9 m/s).

Order No.	For rail type	No. of rollers	Seal type	d	$h_1$ +0.35 -0.10+0.5	$h_2$  -0+0.15 -0.30	$h_3$  -0.30	$l_1$	$l_2$	$l_3$	$l_4$	$M_x$ Nm	$M_y$ Nm	Weight kg
L1963.63CS-180-2ZT	T	3	Metal	M8	63	39.5	51.6	180	200	54	9	125	271	1.66
L1963.63CS-180-2ZU	U	3	Metal	M8	63	39.5	51.6	180	200	54	9	0	0	1.66
L1963.63CS-180-2ZK	K	3	Metal	M8	63	39.5	51.6	180	200	54	9	0	235	1.66
L1963.63CS-235-2ZTA	T	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	250	413	2.17
L1963.63CS-235-2ZUA	U	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	0	0	2.17
L1963.63CS-235-2ZKA	K	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	0	294	2.17
L1963.63CS-235-2ZTB	T	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	250	413	2.17
L1963.63CS-235-2ZUBA	U	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	0	0	2.17
L1963.63CS-235-2ZKB	K	4	Metal	M8	63	39.5	51.6	235	255	54	9.5	0	294	2.17
L1963.63CS-290-2ZT	T	5	Metal	M8	63	39.5	51.6	290	310	54	10	250	511	2.67
L1963.63CS-290-2ZU	U	5	Metal	M8	63	39.5	51.6	290	310	54	10	0	0	2.67
L1963.63CS-290-2ZK	K	5	Metal	M8	63	39.5	51.6	290	310	54	10	0	589	2.67
L1963.63CS-345-2ZTA	T	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	350	689	3.17
L1963.63CS-345-2ZUA	U	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	0	0	3.17
L1963.63CS-345-2ZKA	K	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	0	589	3.17
L1963.63CS-345-2ZTB	T	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	350	689	3.17
L1963.63CS-345-2ZUB	U	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	0	0	3.17
L1963.63CS-345-2ZKB	K	6	Metal	M8	63	39.5	51.6	345	365	54	10.5	0	589	3.17

Order No.	$M_{Zr}$ Nm	$M_{Zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	Dyn. load C N max.	Static load $C_{0ax}$ N max.	Static load $C_{0rad}$ N max.
L1963.63CS-180-2ZT	367	367	49.8	19.5	30750	6000	12500
L1963.63CS-180-2ZU	367	367	49.8	19.5	30750	0	12500
L1963.63CS-180-2ZK	335	335	49.8	19.5	30750	5045	11550
L1963.63CS-235-2ZTA	367	1100	49.8	19.5	30750	7200	12500



LONG LINEAR RAILS

Order No.	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Dyn. load C N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> N max.
L1963.63CS-235-2ZUA	367	1100	49.8	19.5	30750	0	12500
L1963.63CS-235-2ZKA	335	935	49.8	19.5	30750	5045	11550
L1963.63CS-235-2ZTB	1100	367	49.8	19.5	30750	7200	12500
L1963.63CS-235-2ZUBA	1100	367	49.8	19.5	30750	0	12500
L1963.63CS-235-2ZKB	935	335	49.8	19.5	30750	5045	11550
L1963.63CS-290-2ZT	1100	1100	49.8	19.5	36600	8500	15000
L1963.63CS-290-2ZU	1100	1100	49.8	19.5	36600	0	15000
L1963.63CS-290-2ZK	935	935	49.8	19.5	36600	6000	13745
L1963.63CS-345-2ZTA	1100	1830	49.8	19.5	36600	10000	15000
L1963.63CS-345-2ZUA	1100	1830	49.8	19.5	36600	0	15000
L1963.63CS-345-2ZKA	935	1560	49.8	19.5	36600	6000	13745
L1963.63CS-345-2ZTB	1830	1100	49.8	19.5	36600	10000	15000
L1963.63CS-345-2ZUB	1830	1100	49.8	19.5	36600	0	15000
L1963.63CS-345-2ZKB	1560	935	49.8	19.5	36600	6000	13745

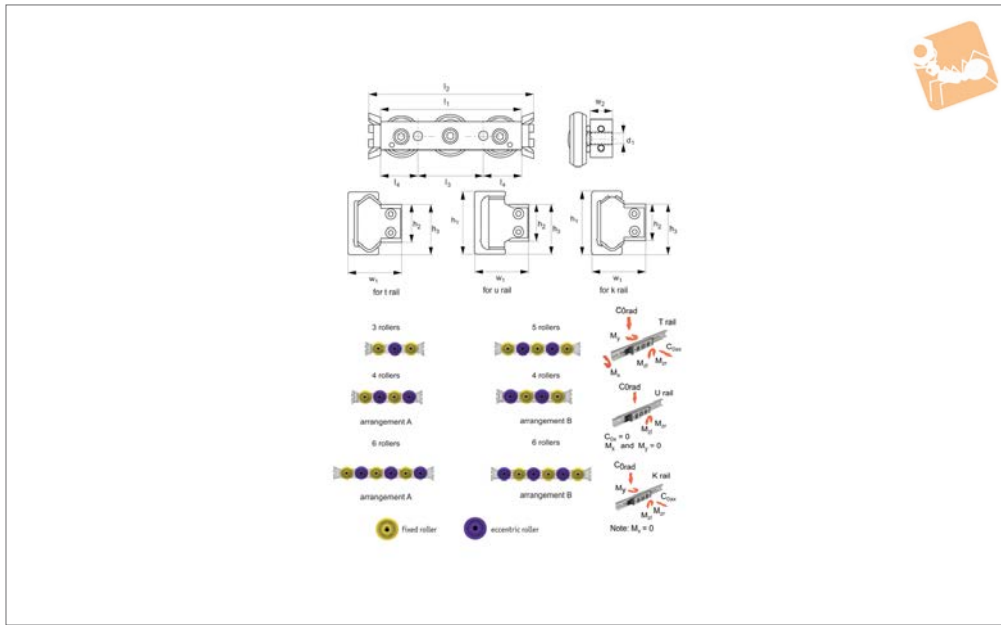


# Very Heavy Sliders - Size 63

no side seal - front fixing - with wiper



Long Linear  
Rails



**L1963.CSW**

LONG LINEAR RAILS

### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with a special combined metal and rubber seal (2ZR).

### Technical Notes

To be used with compact rail size 63.

Select the relevant carriage for the rail and the required number of carriages to carry the load (taking into account any moment loads).

Unlike the N series sliders these CSW sliders do not have protective side seals.

### Tips

Easy to install (one or more rollers are eccentric allowing for adjustable preload).  
Coefficient of friction (without seals) 0.006.  
Quiet and fast (up to 9 m/s).

Order No.	For rail type	No. of rollers	Seal type	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0.5 -0	h <sub>3</sub> +0.10 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight kg
L1963.CSW63-180-2ZT	T	3	Metal	M 8	63	39.5	51.6	180	200	54	1.66
L1963.CSW63-180-2ZU	U	3	Metal	M 8	63	39.5	51.6	180	200	54	1.66
L1963.CSW63-180-2ZK	K	3	Metal	M 8	63	39.5	51.6	180	200	54	1.66
L1963.CSW63-235-2ZTA	T	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-235-2ZUA	U	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-235-2ZKA	K	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-235-2ZTB	T	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-235-2ZUBA	U	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-235-2ZKB	K	4	Metal	M 8	63	39.5	51.6	235	255	54	2.17
L1963.CSW63-290-2ZT	T	5	Metal	M 8	63	39.5	51.6	290	310	54	2.67
L1963.CSW63-290-2ZU	U	5	Metal	M 8	63	39.5	51.6	290	310	54	2.67
L1963.CSW63-290-2ZK	K	5	Metal	M 8	63	39.5	51.6	290	310	54	2.67
L1963.CSW63-345-2ZTA	T	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17
L1963.CSW63-345-2ZUA	U	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17
L1963.CSW63-345-2ZKA	K	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17
L1963.CSW63-345-2ZTB	T	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17
L1963.CSW63-345-2ZUB	U	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17
L1963.CSW63-345-2ZKB	K	6	Metal	M 8	63	39.5	51.6	345	365	54	3.17

Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Dyn. load C N max.	Static load C <sub>0 ax</sub> N max.	Arrangement type	Static load C <sub>0 rad</sub> N max.
L1963.CSW63-180-2ZT	9	125	271	367	367	49.8	19.5	30750	6000	-	12500
L1963.CSW63-180-2ZU	9	0	0	367	367	49.8	19.5	30750	0	-	12500
L1963.CSW63-180-2ZK	9	0	235	335	335	49.8	19.5	30750	5045	-	11550
L1963.CSW63-235-2ZTA	9.5	250	413	367	1100	49.8	19.5	30750	7200	A	12500



Order No.	$l_4$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	Dyn. load C N max.	Static load $C_{0 ax}$ N max.	Arrangement type	Static load $C_{0 rad}$ N max.
L1963.CSW63-235-2ZUA	9.5	0	0	367	1100	49.8	19.5	30750	0	A	12500
L1963.CSW63-235-2ZKA	9.5	0	294	335	935	49.8	19.5	30750	5045	A	11550
L1963.CSW63-235-2ZTB	9.5	250	413	1100	367	49.8	19.5	30750	7200	B	12500
L1963.CSW63-235-2ZUBA	9.5	0	0	1100	367	49.8	19.5	30750	0	A	12500
L1963.CSW63-235-2ZKB	9.5	0	294	935	335	49.8	19.5	30750	5045	B	11550
L1963.CSW63-290-2ZT	10	250	511	1100	1100	49.8	19.5	36600	8500	-	15000
L1963.CSW63-290-2ZU	10	0	0	1100	1100	49.8	19.5	36600	0	-	15000
L1963.CSW63-290-2ZK	10	0	589	935	935	49.8	19.5	36600	6000	-	13745
L1963.CSW63-345-2ZTA	10.5	350	689	1100	1830	49.8	19.5	36600	10000	A	15000
L1963.CSW63-345-2ZUA	10.5	0	0	1100	1830	49.8	19.5	36600	0	A	15000
L1963.CSW63-345-2ZKA	10.5	0	589	935	1560	49.8	19.5	36600	6000	A	13745
L1963.CSW63-345-2ZTB	10.5	350	689	1830	1100	49.8	19.5	36600	10000	B	15000
L1963.CSW63-345-2ZUB	10.5	0	0	1830	1100	49.8	19.5	36600	0	B	15000
L1963.CSW63-345-2ZKB	10.5	0	589	1560	935	49.8	19.5	36600	6000	B	13745



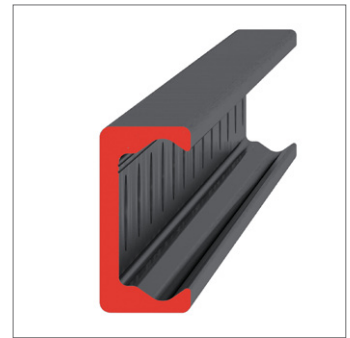
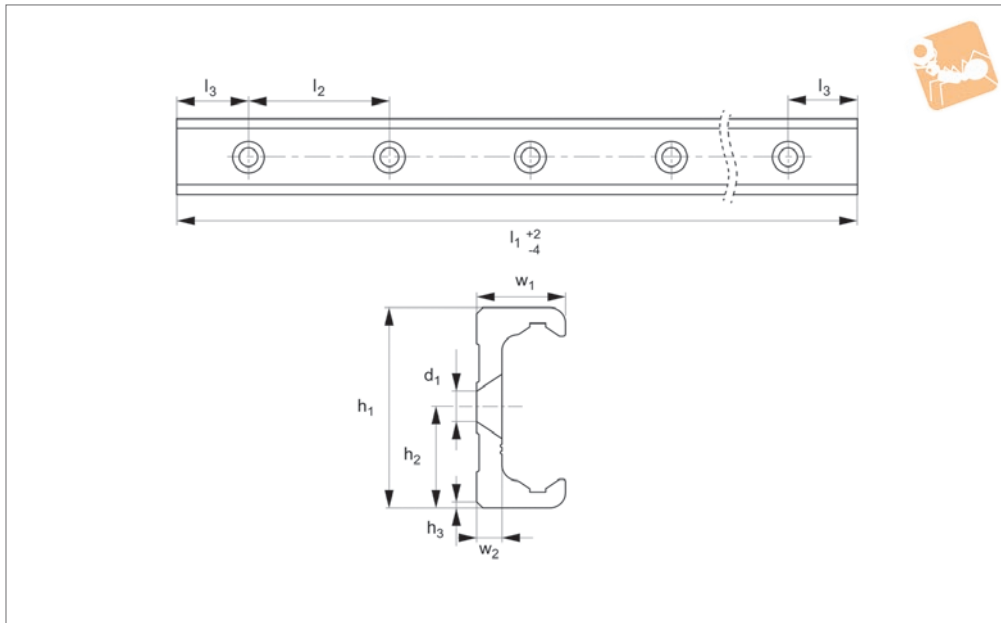


# Very Heavy Duty T Rail

countersunk holes



Long Linear  
Rails



**L1963.63T-V**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

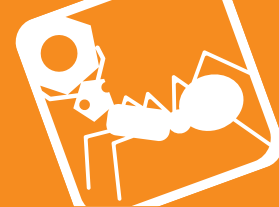
The T rail is a master rail and is usually

used with a U slave rails (allows for misalignment).  
This is the TLV countersunk rail which is usually used with a corresponding ULV rail.  
For fixing use countersunk DIN 7991 screws.  
Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.63T-0400-V	M8	63	31.5	2x45°	400	80	40	28	8
L1963.63T-0480-V	M8	63	31.5	2x45°	480	80	40	28	8
L1963.63T-0560-V	M8	63	31.5	2x45°	560	80	40	28	8
L1963.63T-0640-V	M8	63	31.5	2x45°	640	80	40	28	8
L1963.63T-0720-V	M8	63	31.5	2x45°	720	80	40	28	8
L1963.63T-0800-V	M8	63	31.5	2x45°	800	80	40	28	8
L1963.63T-0880-V	M8	63	31.5	2x45°	880	80	40	28	8
L1963.63T-0960-V	M8	63	31.5	2x45°	960	80	40	28	8
L1963.63T-1040-V	M8	63	31.5	2x45°	1040	80	40	28	8
L1963.63T-1120-V	M8	63	31.5	2x45°	1120	80	40	28	8
L1963.63T-1200-V	M8	63	31.5	2x45°	1200	80	40	28	8
L1963.63T-1280-V	M8	63	31.5	2x45°	1280	80	40	28	8
L1963.63T-1360-V	M8	63	31.5	2x45°	1360	80	40	28	8
L1963.63T-1440-V	M8	63	31.5	2x45°	1440	80	40	28	8
L1963.63T-1520-V	M8	63	31.5	2x45°	1520	80	40	28	8
L1963.63T-1600-V	M8	63	31.5	2x45°	1600	80	40	28	8
L1963.63T-1680-V	M8	63	31.5	2x45°	1680	80	40	28	8
L1963.63T-1760-V	M8	63	31.5	2x45°	1760	80	40	28	8
L1963.63T-1840-V	M8	63	31.5	2x45°	1840	80	40	28	8
L1963.63T-1920-V	M8	63	31.5	2x45°	1920	80	40	28	8
L1963.63T-2000-V	M8	63	31.5	2x45°	2000	80	40	28	8
L1963.63T-2080-V	M8	63	31.5	2x45°	2080	80	40	28	8
L1963.63T-2160-V	M8	63	31.5	2x45°	2160	80	40	28	8
L1963.63T-2240-V	M8	63	31.5	2x45°	2240	80	40	28	8
L1963.63T-2320-V	M8	63	31.5	2x45°	2320	80	40	28	8
L1963.63T-2400-V	M8	63	31.5	2x45°	2400	80	40	28	8
L1963.63T-2480-V	M8	63	31.5	2x45°	2480	80	40	28	8
L1963.63T-2560-V	M8	63	31.5	2x45°	2560	80	40	28	8
L1963.63T-2640-V	M8	63	31.5	2x45°	2640	80	40	28	8
L1963.63T-2720-V	M8	63	31.5	2x45°	2720	80	40	28	8
L1963.63T-2800-V	M8	63	31.5	2x45°	2800	80	40	28	8



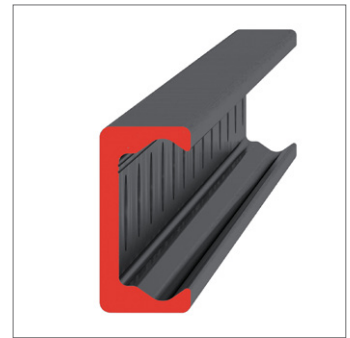
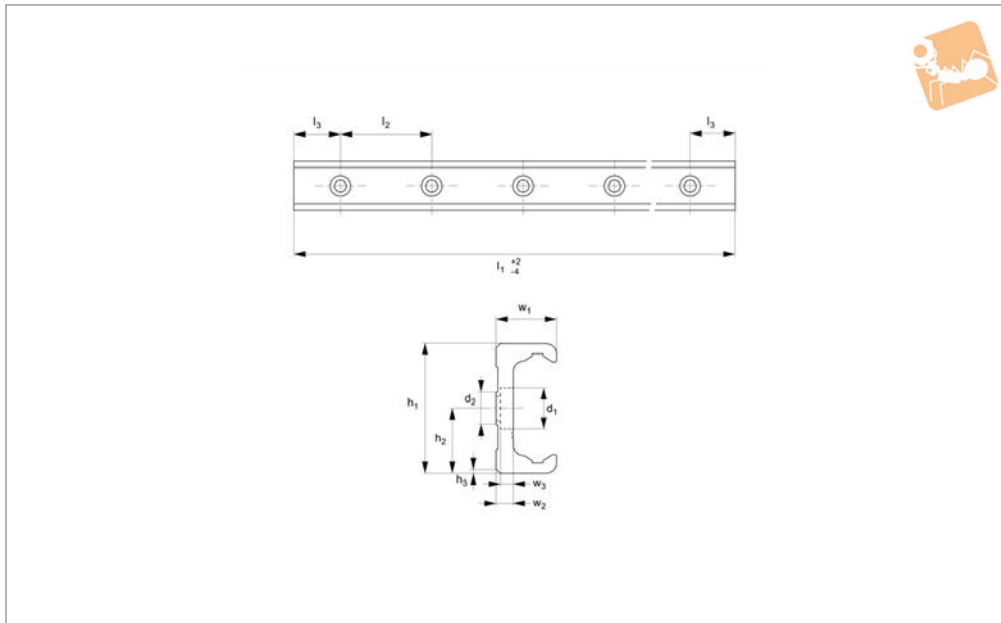
Order No.	d <sub>1</sub> for screw	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.63T-2880-V	M8	63	31.5	2x45°	2880	80	40	28	8
L1963.63T-2960-V	M8	63	31.5	2x45°	2960	80	40	28	8
L1963.63T-3040-V	M8	63	31.5	2x45°	3040	80	40	28	8
L1963.63T-3120-V	M8	63	31.5	2x45°	3120	80	40	28	8
L1963.63T-3200-V	M8	63	31.5	2x45°	3200	80	40	28	8
L1963.63T-3280-V	M8	63	31.5	2x45°	3280	80	40	28	8
L1963.63T-3360-V	M8	63	31.5	2x45°	3360	80	40	28	8
L1963.63T-3440-V	M8	63	31.5	2x45°	3440	80	40	28	8
L1963.63T-3520-V	M8	63	31.5	2x45°	3520	80	40	28	8
L1963.63T-3600-V	M8	63	31.5	2x45°	3600	80	40	28	8
L1963.63T3680-V	M8	63	31.5	2x45°	3680	80	40	28	8
L1963.63T-3760-V	M8	63	31.5	2x45°	3760	80	40	28	8
L1963.63T-3840-V	M8	63	31.5	2x45°	3840	80	40	28	8
L1963.63T-3920-V	M8	63	31.5	2x45°	3920	80	40	28	8
L1963.63T-4000-V	M8	63	31.5	2x45°	4000	80	40	28	8
L1963.63T-4080-V	M8	63	31.5	2x45°	4080	80	40	28	8



# Very Heavy Duty T Rail

counterbored holes

## Long Linear Rails



### L1963.63T-C

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The T rail is a master rail and is usually

used with a U slave rail (allows for system misalignment).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.

Weight: 6,0 Kg/m.

#### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.63T-0560-C	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.63T-0640-C	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.63T-0720-C	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.63T-0800-C	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.63T-0880-C	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.63T-0960-C	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.63T-1040-C	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.63T-1120-C	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.63T-1200-C	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.63T-1280-C	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.63T-1360-C	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.63T-1440-C	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.63T-1520-C	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.63T-1600-C	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.63T-1680-C	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.63T-1760-C	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.63T-1840-C	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.63T-1920-C	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.63T-2000-C	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.63T-2080-C	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.63T-2160-C	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.63T-2240-C	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.63T-2320-C	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.63T-2400-C	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.63T-2480-C	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.63T-2560-C	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2
L1963.63T-2640-C	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.63T-2720-C	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.63T-2800-C	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2
L1963.63T-2880-C	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.63T-2960-C	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2

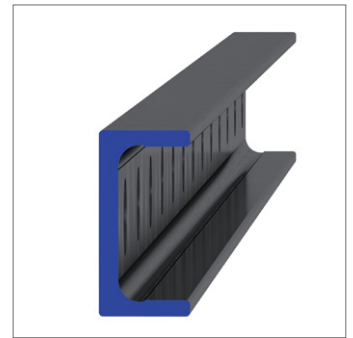
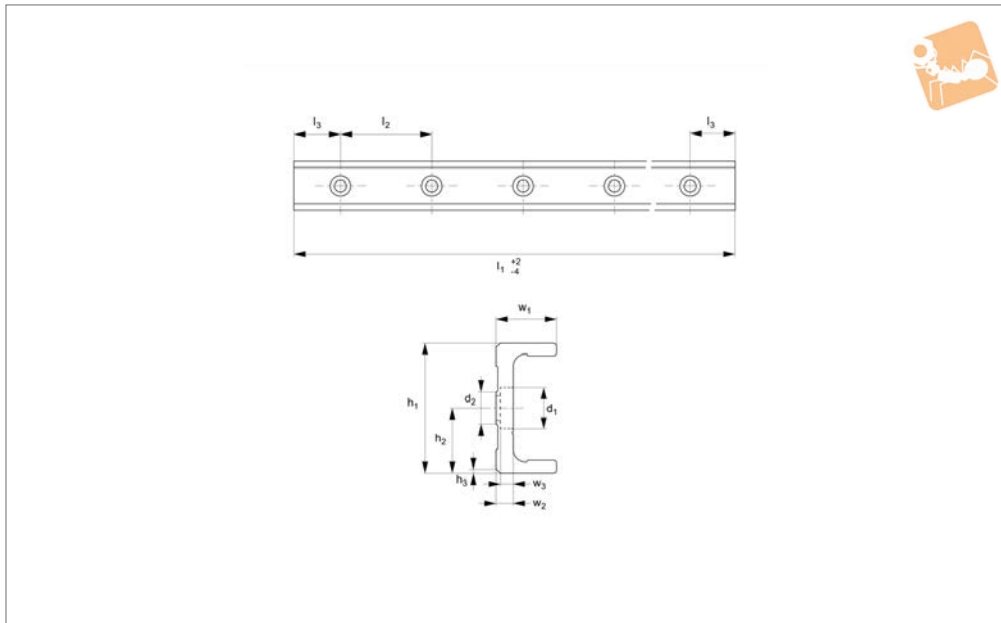


Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
<b>L1963.63T-3040-C</b>	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
<b>L1963.63T-3120-C</b>	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
<b>L1963.63T-3200-C</b>	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
<b>L1963.63T-3280-C</b>	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
<b>L1963.63T-3360-C</b>	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
<b>L1963.63T-3440-C</b>	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
<b>L1963.63T-3520-C</b>	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
<b>L1963.63T-3600-C</b>	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
<b>L1963.63T-3680-C</b>	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
<b>L1963.63T-3760-C</b>	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
<b>L1963.63T-3840-C</b>	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
<b>L1963.63T-3920-C</b>	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
<b>L1963.63T-4000-C</b>	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
<b>L1963.63T-4080-C</b>	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

# Very Heavy Duty U Rail

counterbored holes

## Long Linear Rails



### L1963.63U-C

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The U rail is a slave rail and is usually used

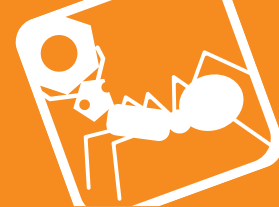
with a T master rail.

This is the ULC counterbored rail type (most popular), which is usually used with a corresponding TLC rail. Special low profile Torx head screws provided free of charge.  
Weight: 6,0 Kg/m.

#### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.63U-0400-C	15	M8	63	31.5	2x45°	400	80	40	28	8	5.2
L1963.63U-0480-C	15	M8	63	31.5	2x45°	480	80	40	28	8	5.2
L1963.63U-0560-C	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.63U-0640-C	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.63U-0720-C	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.63U-0800-C	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.63U-0880-C	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.63U-0960-C	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.63U-1040-C	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.63U-1120-C	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.63U-1200-C	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.63U-1280-C	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.63U-1360-C	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.63U-1440-C	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.63U-1520-C	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.63U-1600-C	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.63U-1680-C	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.63U-1760-C	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.63U-1840-C	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.63U-1920-C	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.63U-2000-C	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.63U-2080-C	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.63U-2160-C	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.63U-2240-C	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.63U-2320-C	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.63U-2400-C	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.63U-2480-C	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.63U-2560-C	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2
L1963.63U-2640-C	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.63U-2720-C	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.63U-2800-C	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2

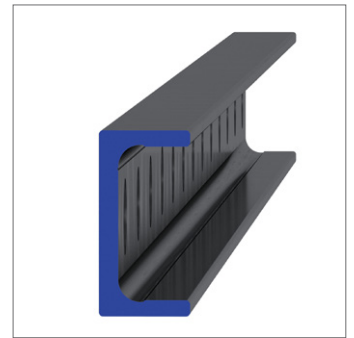
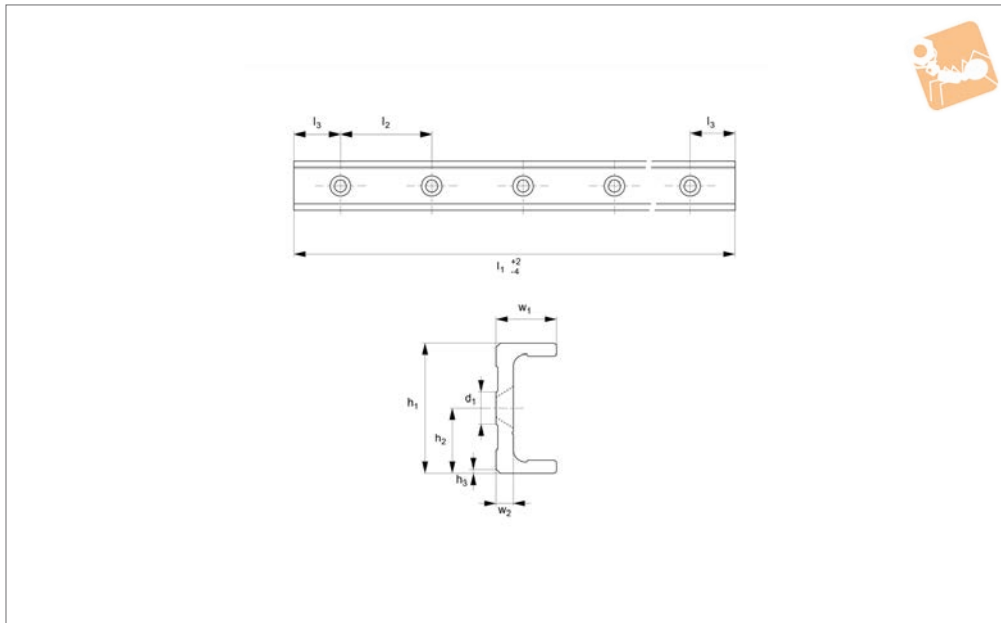


Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
<b>L1963.63U-2880-C</b>	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
<b>L1963.63U-2960-C</b>	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
<b>L1963.63U-3040-C</b>	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
<b>L1963.63U-3120-C</b>	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
<b>L1963.63U-3200-C</b>	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
<b>L1963.63U-3280-C</b>	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
<b>L1963.63U-3360-C</b>	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
<b>L1963.63U-3440-C</b>	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
<b>L1963.63U-3520-C</b>	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
<b>L1963.63U-3600-C</b>	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
<b>L1963.63U-3680-C</b>	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
<b>L1963.63U-3760-C</b>	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
<b>L1963.63U-3840-C</b>	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
<b>L1963.63U-3920-C</b>	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
<b>L1963.63U-4000-C</b>	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
<b>L1963.63U-4080-C</b>	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

# Very Heavy Duty U Rail

countersunk holes

# Long Linear Rails



**L1963.63U-V**

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The U rail is a slave rail and is usually used

with a T master rail.

This is the ULV countersunk rail type which is usually used with a corresponding TLV rail.

For fixing use countersunk DIN 7991 screws.

Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

Order No.	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.63U-0400-V	M8	63	31.5	2x45°	400	80	40	28	8
L1963.63U-0480-V	M8	63	31.5	2x45°	480	80	40	28	8
L1963.63U-0560-V	M8	63	31.5	2x45°	560	80	40	28	8
L1963.63U-0640-V	M8	63	31.5	2x45°	640	80	40	28	8
L1963.63U-0720-V	M8	63	31.5	2x45°	720	80	40	28	8
L1963.63U-0800-V	M8	63	31.5	2x45°	800	80	40	28	8
L1963.63U-0880-V	M8	63	31.5	2x45°	880	80	40	28	8
L1963.63U-0960-V	M8	63	31.5	2x45°	960	80	40	28	8
L1963.63U-1040-V	M8	63	31.5	2x45°	1040	80	40	28	8
L1963.63U-1120-V	M8	63	31.5	2x45°	1120	80	40	28	8
L1963.63U-1200-V	M8	63	31.5	2x45°	1200	80	40	28	8
L1963.63U-1280-V	M8	63	31.5	2x45°	1280	80	40	28	8
L1963.63U-1360-V	M8	63	31.5	2x45°	1360	80	40	28	8
L1963.63U-1440-V	M8	63	31.5	2x45°	1440	80	40	28	8
L1963.63U-1520-V	M8	63	31.5	2x45°	1520	80	40	28	8
L1963.63U-1600-V	M8	63	31.5	2x45°	1600	80	40	28	8
L1963.63U-1680-V	M8	63	31.5	2x45°	1680	80	40	28	8
L1963.63U-1760-V	M8	63	31.5	2x45°	1760	80	40	28	8
L1963.63U-1840-V	M8	63	31.5	2x45°	1840	80	40	28	8
L1963.63U-1920-V	M8	63	31.5	2x45°	1920	80	40	28	8
L1963.63U-2000-V	M8	63	31.5	2x45°	2000	80	40	28	8
L1963.63U-2080-V	M8	63	31.5	2x45°	2080	80	40	28	8
L1963.63U-2160-V	M8	63	31.5	2x45°	2160	80	40	28	8
L1963.63U-2240-V	M8	63	31.5	2x45°	2240	80	40	28	8
L1963.63U-2320-V	M8	63	31.5	2x45°	2320	80	40	28	8
L1963.63U-2400-V	M8	63	31.5	2x45°	2400	80	40	28	8
L1963.63U-2480-V	M8	63	31.5	2x45°	2480	80	40	28	8
L1963.63U-2560-V	M8	63	31.5	2x45°	2560	80	40	28	8
L1963.63U-2640-V	M8	63	31.5	2x45°	2640	80	40	28	8
L1963.63U-2720-V	M8	63	31.5	2x45°	2720	80	40	28	8
L1963.63U-2800-V	M8	63	31.5	2x45°	2800	80	40	28	8



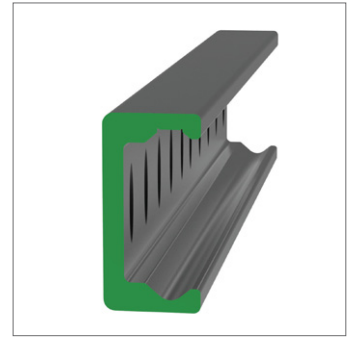
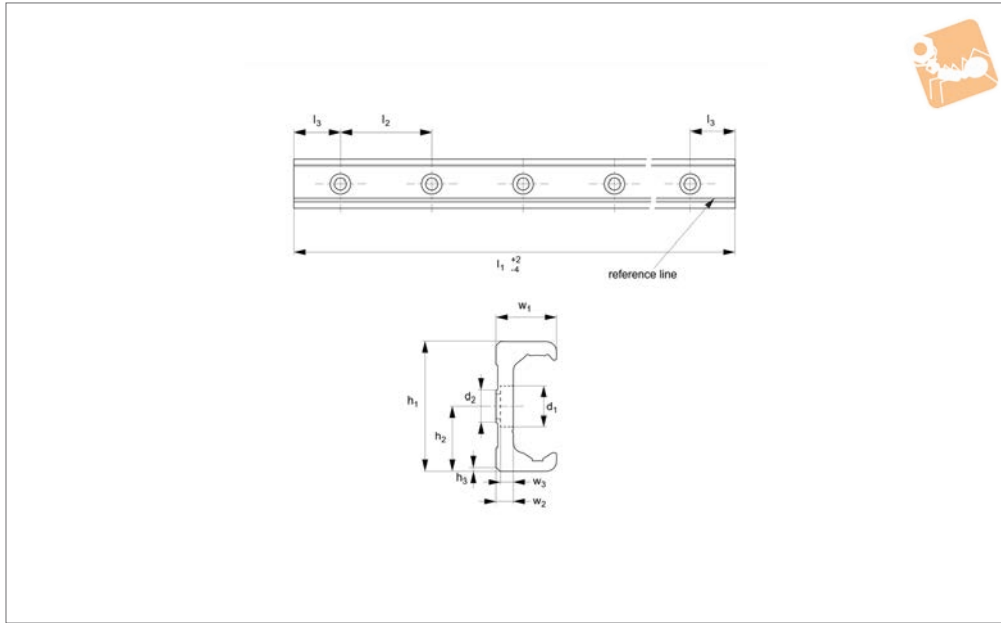
Order No.	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.63U-2880-V	M8	63	31.5	2x45°	2880	80	40	28	8
L1963.63U-2960-V	M8	63	31.5	2x45°	2960	80	40	28	8
L1963.63U-3040-V	M8	63	31.5	2x45°	3040	80	40	28	8
L1963.63U-3120-V	M8	63	31.5	2x45°	3120	80	40	28	8
L1963.63U-3200-V	M8	63	31.5	2x45°	3200	80	40	28	8
L1963.63U-3280-V	M8	63	31.5	2x45°	3280	80	40	28	8
L1963.63U-3360-V	M8	63	31.5	2x45°	3360	80	40	28	8
L1963.63U-3440-V	M8	63	31.5	2x45°	3440	80	40	28	8
L1963.63U-3520-V	M8	63	31.5	2x45°	3520	80	40	28	8
L1963.63U-3600-V	M8	63	31.5	2x45°	3600	80	40	28	8
L1963.63U-3680-V	M8	63	31.5	2x45°	3680	80	40	28	8
L1963.63U-3760-V	M8	63	31.5	2x45°	3760	80	40	28	8
L1963.63U-3840-V	M8	63	31.5	2x45°	3840	80	40	28	8
L1963.63U-3920-V	M8	63	31.5	2x45°	3920	80	40	28	8
L1963.63U-4000-V	M8	63	31.5	2x45°	4000	80	40	28	8
L1963.63U-4080-V	M8	63	31.5	2x45°	4080	80	40	28	8



# Very Heavy Duty K Rail

counterbored holes

## Long Linear Rails



### L1963.63K-C

LONG LINEAR RAILS

#### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

#### Technical Notes

The K rail is a master rail and is usually used with a U slave rail (allows for system misalignment in two planes).

This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.  
Weight: 6,0 Kg/m.

#### Tips

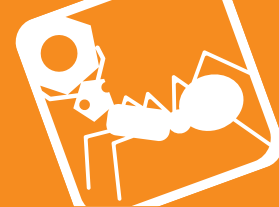
Standard carriages are the L1963.N versions (die cast aluminium alloy with

wipers). Alternatively the L1963.C type is also available (without wipers).

#### Important Notes

K Rails are not suited for vertical applications.

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.63K-0400-C	15	M8	63	31.5	2x45°	400	80	40	28	8	5.2
L1963.63K-0480-C	15	M8	63	31.5	2x45°	480	80	40	28	8	5.2
L1963.63K-0560-C	15	M8	63	31.5	2x45°	560	80	40	28	8	5.2
L1963.63K-0640-C	15	M8	63	31.5	2x45°	640	80	40	28	8	5.2
L1963.63K-0720-C	15	M8	63	31.5	2x45°	720	80	40	28	8	5.2
L1963.63K-0800-C	15	M8	63	31.5	2x45°	800	80	40	28	8	5.2
L1963.63K-0880-C	15	M8	63	31.5	2x45°	880	80	40	28	8	5.2
L1963.63K-0960-C	15	M8	63	31.5	2x45°	960	80	40	28	8	5.2
L1963.63K-1040-C	15	M8	63	31.5	2x45°	1040	80	40	28	8	5.2
L1963.63K-1120-C	15	M8	63	31.5	2x45°	1120	80	40	28	8	5.2
L1963.63K-1200-C	15	M8	63	31.5	2x45°	1200	80	40	28	8	5.2
L1963.63K-1280-C	15	M8	63	31.5	2x45°	1280	80	40	28	8	5.2
L1963.63K-1360-C	15	M8	63	31.5	2x45°	1360	80	40	28	8	5.2
L1963.63K-1440-C	15	M8	63	31.5	2x45°	1440	80	40	28	8	5.2
L1963.63K-1520-C	15	M8	63	31.5	2x45°	1520	80	40	28	8	5.2
L1963.63K-1600-C	15	M8	63	31.5	2x45°	1600	80	40	28	8	5.2
L1963.63K-1680-C	15	M8	63	31.5	2x45°	1680	80	40	28	8	5.2
L1963.63K-1760-C	15	M8	63	31.5	2x45°	1760	80	40	28	8	5.2
L1963.63K-1840-C	15	M8	63	31.5	2x45°	1840	80	40	28	8	5.2
L1963.63K-1920-C	15	M8	63	31.5	2x45°	1920	80	40	28	8	5.2
L1963.63K-2000-C	15	M8	63	31.5	2x45°	2000	80	40	28	8	5.2
L1963.63K-2080-C	15	M8	63	31.5	2x45°	2080	80	40	28	8	5.2
L1963.63K-2160-C	15	M8	63	31.5	2x45°	2160	80	40	28	8	5.2
L1963.63K-2240-C	15	M8	63	31.5	2x45°	2240	80	40	28	8	5.2
L1963.63K-2320-C	15	M8	63	31.5	2x45°	2320	80	40	28	8	5.2
L1963.63K-2400-C	15	M8	63	31.5	2x45°	2400	80	40	28	8	5.2
L1963.63K-2480-C	15	M8	63	31.5	2x45°	2480	80	40	28	8	5.2
L1963.63K-2560-C	15	M8	63	31.5	2x45°	2560	80	40	28	8	5.2

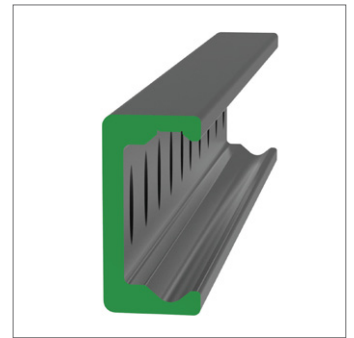
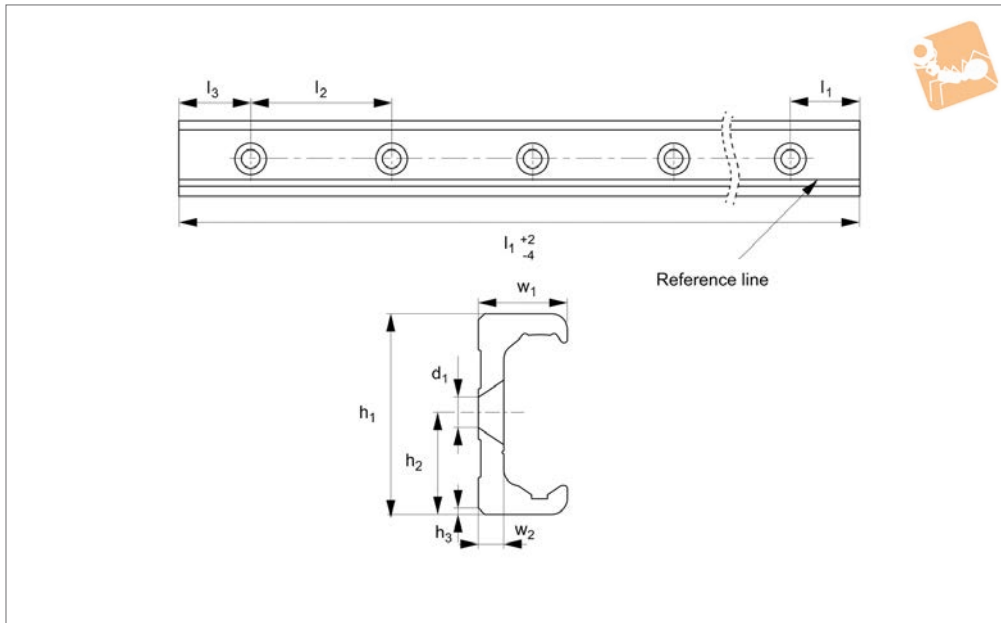


Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.63K-2640-C	15	M8	63	31.5	2x45°	2640	80	40	28	8	5.2
L1963.63K-2720-C	15	M8	63	31.5	2x45°	2720	80	40	28	8	5.2
L1963.63K-2800-C	15	M8	63	31.5	2x45°	2800	80	40	28	8	5.2
L1963.63K-2880-C	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.63K-2960-C	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
L1963.63K-3040-C	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.63K-3120-C	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.63K-3200-C	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.63K-3280-C	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.63K-3360-C	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.63K-3440-C	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.63K-3520-C	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.63K-3600-C	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.63K-3680-C	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.63K-3760-C	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.63K-3840-C	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.63K-3920-C	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.63K-4000-C	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.63K-4080-C	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

# Very Heavy Duty K Rail

countersunk holes

## Long Linear Rails



## L1963.63K-V

LONG LINEAR RAILS

### Material

Carbon steel. Raceways induction hardened and ground.  
Electrolytic zinc-plated (excluding raceways).

### Technical Notes

The K rail is a master rail and is usually used with a U slave rail (allows for system

misalignment in two planes).

This is the countersunk rail type which is usually used with a corresponding ULV rail. For fixing use countersunk DIN 7991 screws.

Weight: 6,0 Kg/m.

### Tips

Standard carriages are the L1963.N

versions (die cast aluminium alloy with wipers). Alternatively the L1963.C type is also available (without wipers).

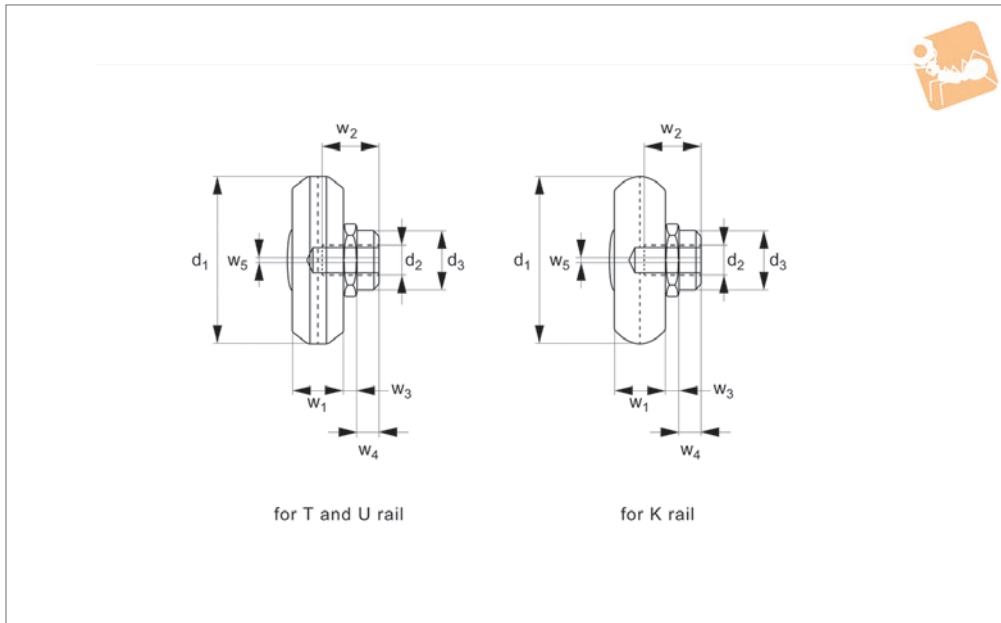
### Important Notes

K Rails are not suited for vertical applications.

Order No.	$d_1$	$h_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$
L1963.63K-0400-V	M8	63	31.5	2x45°	400	80	40	28	8
L1963.63K-0480-V	M8	63	31.5	2x45°	480	80	40	28	8
L1963.63K-0560-V	M8	63	31.5	2x45°	560	80	40	28	8
L1963.63K-0640-V	M8	63	31.5	2x45°	640	80	40	28	8
L1963.63K-0720-V	M8	63	31.5	2x45°	720	80	40	28	8
L1963.63K-0800-V	M8	63	31.5	2x45°	800	80	40	28	8
L1963.63K-0880-V	M8	63	31.5	2x45°	880	80	40	28	8
L1963.63K-0960-V	M8	63	31.5	2x45°	960	80	40	28	8
L1963.63K-1040-V	M8	63	31.5	2x45°	1040	80	40	28	8
L1963.63K-1120-V	M8	63	31.5	2x45°	1120	80	40	28	8
L1963.63K-1200-V	M8	63	31.5	2x45°	1200	80	40	28	8
L1963.63K-1280-V	M8	63	31.5	2x45°	1280	80	40	28	8
L1963.63K-1360-V	M8	63	31.5	2x45°	1360	80	40	28	8
L1963.63K-1440-V	M8	63	31.5	2x45°	1440	80	40	28	8
L1963.63K-1520-V	M8	63	31.5	2x45°	1520	80	40	28	8
L1943.63K-1600-V	M8	63	31.5	2x45°	1600	80	40	28	8
L1963.63K-1680-V	M8	63	31.5	2x45°	1680	80	40	28	8
L1963.63K-1760-V	M8	63	31.5	2x45°	1760	80	40	28	8
L1963.63K-1840-V	M8	63	31.5	2x45°	1840	80	40	28	8
L1963.63K-1920-V	M8	63	31.5	2x45°	1920	80	40	28	8
L1963.63K-2000-V	M8	63	31.5	2x45°	2000	80	40	28	8
L1963.63K-2080-V	M8	63	31.5	2x45°	2080	80	40	28	8
L1963.63K-2160-V	M8	63	31.5	2x45°	2160	80	40	28	8
L1963.63K-2240-V	M8	63	31.5	2x45°	2240	80	40	28	8
L1963.63K-2320-V	M8	63	31.5	2x45°	2320	80	40	28	8
L1963.63K-2400-V	M8	63	31.5	2x45°	2400	80	40	28	8
L1963.63K-2480-V	M8	63	31.5	2x45°	2480	80	40	28	8
L1963.63K-2560-V	M8	63	31.5	2x45°	2560	80	40	28	8
L1963.63K-2640-V	M8	63	31.5	2x45°	2640	80	40	28	8



Order No.	d <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>
L1963.63K-2720-V	M8	63	31.5	2x45°	2720	80	40	28	8
L1963.63K-2800-V	M8	63	31.5	2x45°	2800	80	40	28	8
L1963.63K-2880-V	M8	63	31.5	2x45°	2880	80	40	28	8
L1963.63K-2960-V	M8	63	31.5	2x45°	2960	80	40	28	8
L1963.63K-3040-V	M8	63	31.5	2x45°	3040	80	40	28	8
L1963.63K-3120-V	M8	63	31.5	2x45°	3120	80	40	28	8
L1963.63K-3200-V	M8	63	31.5	2x45°	3200	80	40	28	8
L1963.63K-3280-V	M8	63	31.5	2x45°	3280	80	40	28	8
L1963.63K-3360-V	M8	63	31.5	2x45°	3360	80	40	28	8
L1963.63K-3440-V	M8	63	31.5	2x45°	3440	80	40	28	8
L1963.63K-3520-V	M8	63	31.5	2x45°	3520	80	40	28	8
L1963.63K-3600-V	M8	63	31.5	2x45°	3600	80	40	28	8
L1963.63K-3680-V	M8	63	31.5	2x45°	3680	80	40	28	8
L1963.63K-3760-V	M8	63	31.5	2x45°	3760	80	40	28	8
L1963.63K-3840-V	M8	63	31.5	2x45°	3840	80	40	28	8
L1963.63K-3920-V	M8	63	31.5	2x45°	3920	80	40	28	8
L1963.63K-4000-V	M8	63	31.5	2x45°	4000	80	40	28	8
L1963.63K-4080-V	M8	63	31.5	2x45°	4080	80	40	28	8



**L1900.CPN**

LONG LINEAR RAILS

**Material**

Steel (100Cr6) rollers with either 2Z seals (for dust protection) or 2RS seals (splash-proof).  
Lubricated for life.  
The size 63 rollers are a combination of

metal seals with a limited degree of splash-proof protection.

**Technical Notes**

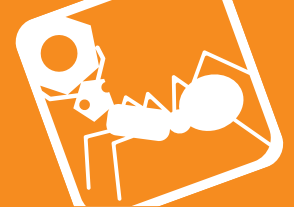
To choose the correct replacement roller select either the concentric or eccentric

roller with the correct seal type.

**Important Notes**

Aluminium clamp body with steel clamping face.

Order No.	For rail type	For rail size	Seal type	Roller type	C N	C <sub>0rad</sub> N	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>
L1918.CPN18-2Z	T and U	18	Metal	Concentric	765	410	14	M4	6	4	5.5	1.55	1.8	-
L1918.CPA18-2Z	T and U	18	Metal	Eccentric	765	410	14	M4	6	4	5.5	1.55	1.8	0.4
L1928.CPN28-2Z	T and U	28	Metal	Concentric	2130	1085	23.2	M5	10	7	7	2.2	3.8	-
L1928.CPA28-2Z	T and U	28	Metal	Eccentric	2130	1085	23.2	M5	10	7	7	2.2	3.8	0.6
L1935.CPN35-2Z	T and U	35	Metal	Concentric	4020	1755	28.2	M5	12	7.5	9	2.55	4.2	-
L1935.CPA35-2Z	T and U	35	Metal	Eccentric	4020	1755	28.2	M5	12	7.5	9	2.55	4.2	0.7
L1943.CPN43-2Z	T and U	43	Metal	Concentric	6140	2750	35	M6	12	11	12	2.5	4.5	-
L1943.CPA43-2Z	T and U	43	Metal	Eccentric	6140	2750	35	M6	12	11	12	2.5	4.5	0.8
L1943.CPN63-2ZR	T and U	63	Metal	Concentric	15375	6250	50	M8	18	17.5	16	2.3	6.0	-
L1943.CPA63-2ZR	T and U	63	Metal	Eccentric	15375	6250	50	M10	18	17.5	16	2.3	6.0	1.2
L1918.CPN18-2RS	T and U	18	Rubber	Concentric	765	410	14	M4	6	4	5.5	1.55	1.8	-
L1918.CPA18-2RS	T and U	18	Rubber	Eccentric	765	410	14	M4	6	4	5.5	1.55	1.8	0.4
L1928.CPN28-2RS	T and U	28	Rubber	Concentric	2130	1085	23.2	M5	10	7	7	2.2	3.8	-
L1928.CPA28-2RS	T and U	28	Rubber	Eccentric	2130	1085	23.2	M5	10	7	7	2.2	3.8	0.6
L1935.CPN35-2RS	T and U	35	Rubber	Concentric	4020	1755	28.2	M5	12	7.5	9	2.55	4.2	-
L1935.CPA35-2RS	T and U	35	Rubber	Eccentric	4020	1755	28.2	M5	12	7.5	9	2.55	4.2	0.7
L1943.CPN43-2RS	T and U	43	Rubber	Concentric	6140	2750	35	M6	12	11	12	2.5	4.5	-
L1943.CPA43-2RS	T and U	43	Rubber	Eccentric	6140	2750	35	M6	12	11	12	2.5	4.5	0.8
L1943.CRN43-2Z	K	43	Metal	Concentric	6140	2550	35.6	M6	12	11	12	2.5	4.5	-
L1943.CRA43-2Z	K	43	Metal	Eccentric	6140	2550	35.6	M6	12	11	12	2.5	4.5	0.8
L1943.CRN63-2ZR	K	63	Metal	Concentric	15375	5775	49.7	M8	18	17.5	16	2.3	6.0	-
L1943.CRA63-2ZR	K	63	Metal	Eccentric	15375	5775	49.7	M8	18	17.5	16	2.3	6.0	1.2



### Specifications

- Maximum speed 9 m/s.
- Maximum acceleration 20 m/s<sup>2</sup>.
- Maximum unjoined rail length 3600 mm.
- 4 rail sizes – 18, 28, 35 and 43.
- Three rail types - T rail, U rail and K rail.
- Rail lengths from 160mm upwards.
- Rail raceways hardened and ground.
- Accuracy 0,15mm over 3,5 metres.
- Maximum radial load per slider is 15,000 N.
- Temperature range -30°C to +120°C.
- Roller bearings seals either 2Z (dust proof) or 2RS (splash proof), lubricated for life.
- Roller bearings from 100Cr6.
- Easy adjustment of preload.
- Three slider body types.
- Rails can be joined together, please contact our Technical Department for details.
- Special anti-corrosion coatings and finishes on request.

### Applications



#### Special purpose & packaging machines

Precision positioning systems  
handling units  
robotic systems • cutting machines



#### Seating

Sliding seats  
disability ramps  
seat extensions



#### Safety guarding

Extending protective systems  
sliding gates  
automatic pick & place



#### Sliding doors & windows

Internal sliding doors  
gates • roof lights  
display cases



#### Photography & lighting

Sliding tracks  
positioning of lights  
shielding systems



#### Medical technology

X-ray equipment  
dental chairs  
bed extensions



#### Food, drink & pharmaceuticals

Food handling conveyors  
pharmaceutical factories  
stainless display equipment



#### Transport (naval)

Sliding hatches  
pull-out storage



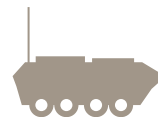
#### Transport (rail)

Seat adjustment  
sliding doors  
battery removal units



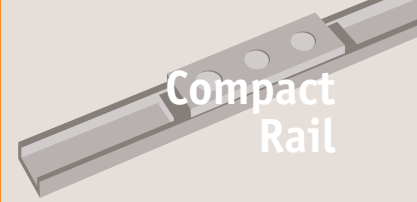
#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



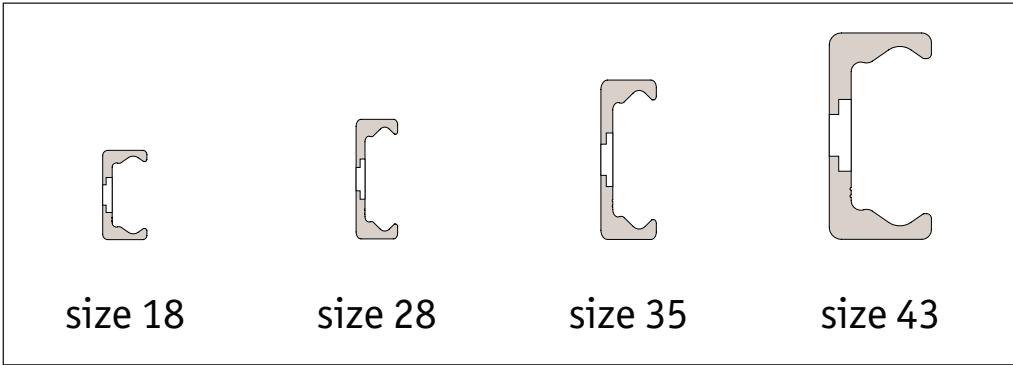
#### Transport (military)

Sliding seats  
protective hatches  
stretcher extensions

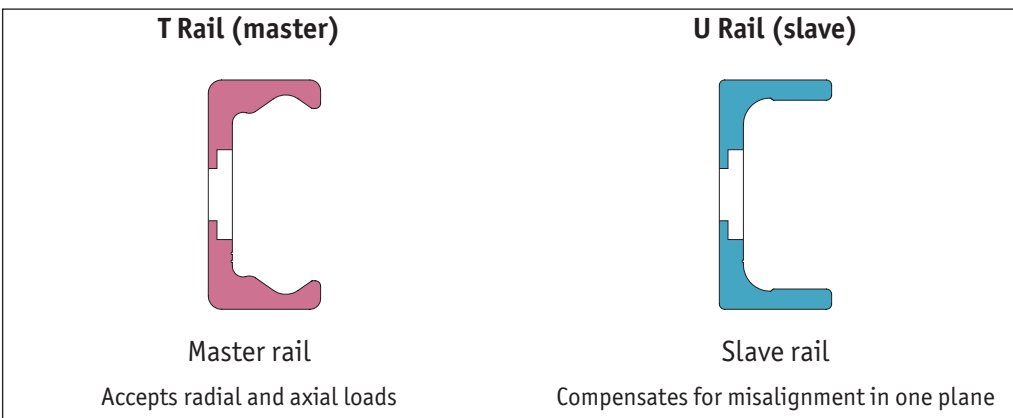


# Compact Rail from Automotion Components


### Rail sizes



### Rail types



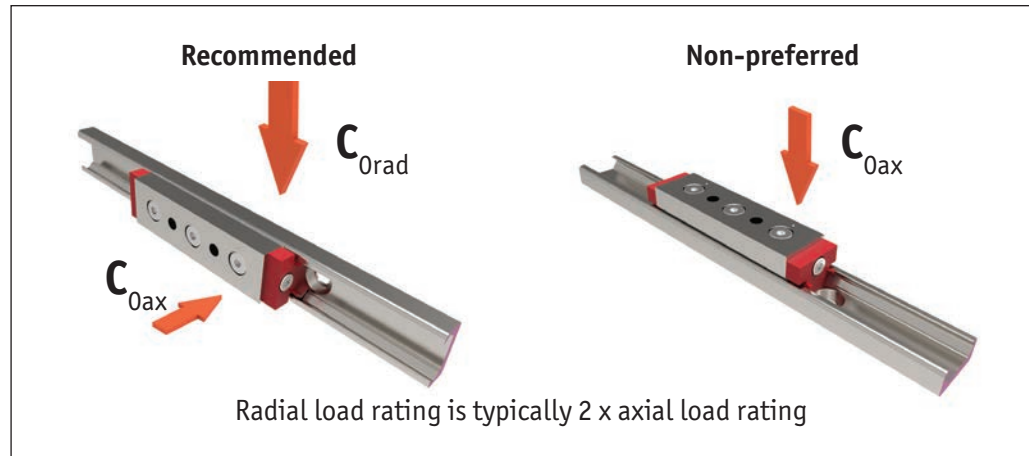
### Sliders

<p><b>Solid body, front mount - Type CL</b> Solid steel, zinc plated body with removable end wipers side seals, fixing in top face</p>	
<p><b>Solid body, front mount - Type CS</b> Narrow body, solid steel zinc plated with removable end wipers no side seals, fixing on top face</p>	
<p><b>Solid body, side mount - Type CR</b> Solid steel, zinc plated body with removable end wipers side seals, fixing in side of body</p>	



**Orientation of rails**

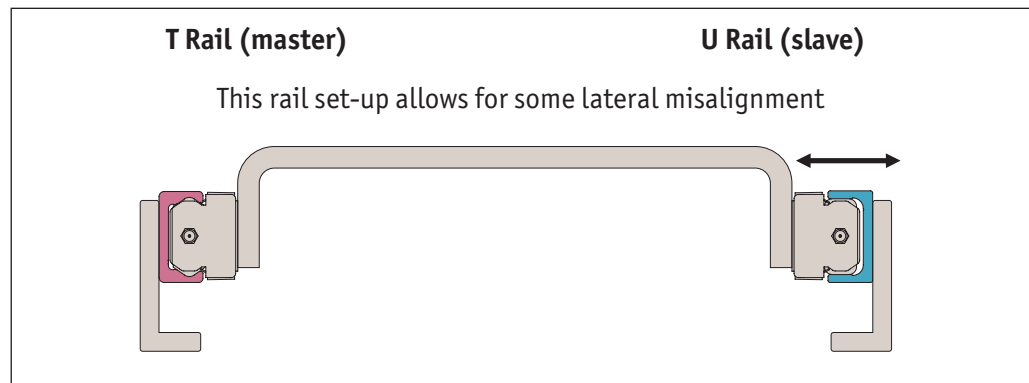
The radial load that the sliders can take is significantly higher than the axial load, so where possible the rails should be set up with the sliders taking the loads in this plane.



One of the key benefits of the compact rail system is that it compensates for misalignment in the structure. This often results in a major cost saving when compared to the use of other guideways which have to be very accurately installed.

The compact rail system achieves this by using a master (T type) rail, and a slave (U type) rail. This allows the slides in the T rail to remain fixed in place but allows lateral movement of the sliders in the U rail to adapt to any misalignment and avoid any issues of stiction.

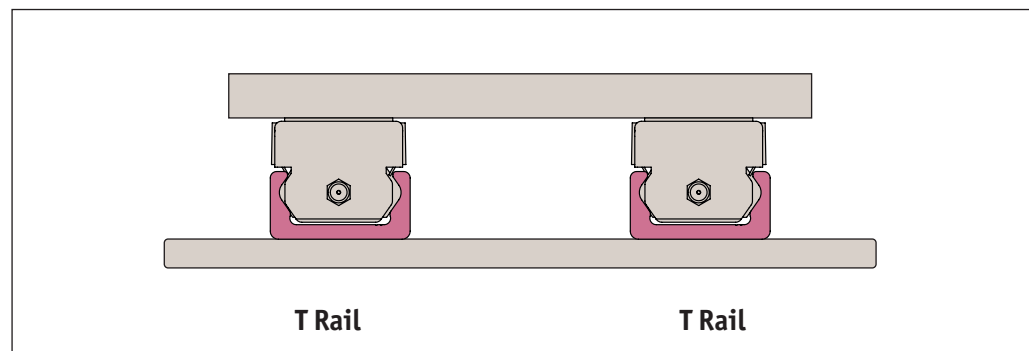
U rails have flat, parallel raceways that allow free lateral movement of the sliders. The maximum lateral movement for each size is shown in later tables.



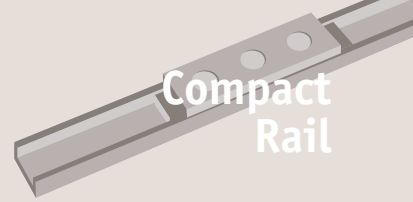
**Using flat rails**

It is acceptable (but not the preferred method), to use rails as below but the alignment accuracy needed is slightly greater and in this set-up only T type rails can be used.

In this case the axial load figure  $C_{0ax}$  should be used in any calculations (which is considerably less than the radial load figure  $C_{0rad}$ ).







### Why should I consider using compact rails?

- Compact rails have a number of major advantages over the traditional use of recirculating ball linear guideways. Using a master (T) rail and slave rail (U) rail, the structure onto which the rails are installed does not have to be machined so accurately – this can result in major cost savings for many projects.
- The raceways of the compact rail system are on the inside of the rail profile, and this, highly effective side and end sealing, and the use of large diameter roller bearings (as opposed to miniature ball bearings), means that the system is highly resistant to dirt and debris.
- Unlike linear guideways, the preload of the sliders can be adjusted as required. This can result in a very smooth running system.
- Rails can be easily joined together to make unlimited rail lengths.
- The rails and sliders can be provided with alloy coating and stainless steel roller bearings for applications that may become wet.

### Are there any disadvantages?

- The compact rail system's accuracy is around 0,15mm over a 3 metre length – this is not as accurate as recirculating ball linear guideways.
- Recirculating ball linear guideways have higher load capacities for both axial and radial loads.

### How do I change the smoothness of the running of the sliders in the rails?

- Each slider is supplied with a small spanner. This can be used to push the eccentric roller towards the top of the rail (making it run stiffly), or pulled away slightly to make the sliders run very smoothly. The eccentric rollers are clearly marked and the slider should be installed the correct way up in the rail. Generally this is with the fixed rollers towards the bottom of the rail (providing the loading points). The simple instructions are shown in the catalogue.

### I want to use the rail outside or in a slightly wet environment?

- A nickel or alloy plating can be applied to the compact rail, this is our preferred anti-corrosion solution. Please see our anti-corrosion section for details.
- The sliders can also be nickel plated and provided with stainless 440C roller bearings with 2RS (splash-proof) seals.

### What about if I want to motorise my application?

- We have a full range of motorised linear stages based on the compact rail systems – these are our uniline stages.
- Maximum stroke for these (in a single piece) is around 6 metres.

### Do you hold these parts in stock?

- In general we hold all the rail in stock as well as most the most popular C series sliders.

### Can I get CAD files of these parts?

- Most of the 3D models (in many formats) are available for download directly from our website [www.automotioncomponents.co.uk](http://www.automotioncomponents.co.uk)

### I am not sure which is the best rail/slider combination for my application?

- Please send us a sketch listing the main points of the application and our Technical Department will deal with this promptly. If required we can also arrange a visit to discuss the application and to show you the different systems available.



**Anti-corrosion treatments**

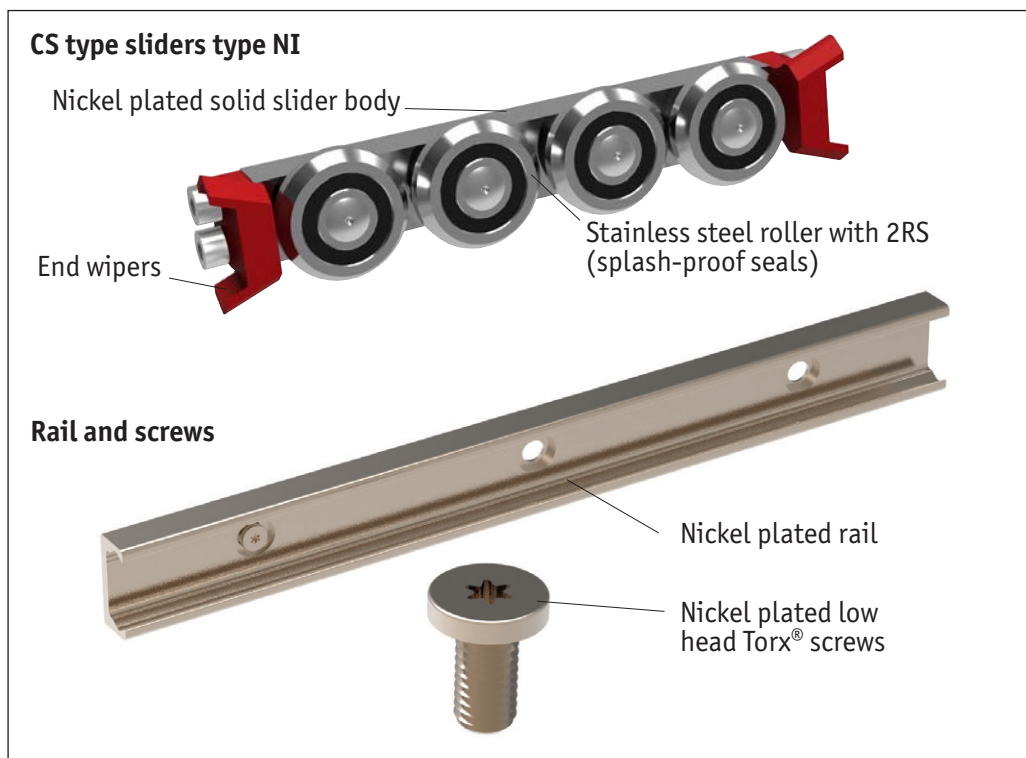
The compact rail systems have the following protective coatings as standard:

- Rails: zinc plated (with the exception of the area of the raceways themselves), these are ground after the plating process.
- Sliders have a zinc plated solid steel body.

We can upgrade the anti-corrosion protection of the system by offering the following:

- Nickel plating the rails. In this case the nickel plating is applied after the grinding of the raceways. In this way the whole of the rail is anti-corrosion protected.
- Sliders can also be fully nickel plated. Stainless steel (440C) rollers can be used with 2RS (splash proof) seals and stainless steel screws for the sliders.
- The special low head Torx screws can be supplied nickel plated.

**Anti-corrosion protection option**



Compact Rail from Automation Components

LONG LINEAR RAILS

This is a basic overview for rail system selection. For full technical details and advice please refer to the technical pages in our catalogue, or alternatively send details on a sketch to our Technical Department who will be happy to advise on the application.

### 1 Consider the size and overall weight of the load

- There are four different rail sizes (18, 28, 35 and 43).
- A large percentage of applications use size 28 or size 43 rails and sliders. Whilst rails can be used singly, for the majority of applications they are used in pairs (typically a T and a U rail).
- Normally at least two sliders are used per rail. So as a starting point, divide the total load (in Kg.) by the number of sliders and multiply by 10 to give the expected load per slider in Newtons. Compare this to the dynamic load  $C_{0rad}$  load ratings in the load capacity summary tables. More sliders can be added to increase the system load capacity, or select a slider with more roller bearings (the standard sliders have three roller bearings), up to six roller bearings per sliders are available.
- Where possible the rails should be installed on their side as this gives the maximum load rating per slider. Typically the radial load of a slider is twice its axial load rating.

### 2 Type of slider

- Our standard sliders are solid body, front mount with side seal type CL. These have a wide body and are available front mount and side mount.
- Some customers however prefer to use narrow solid steel body sliders type CS. These types do not have side seals.

### 3 System travel

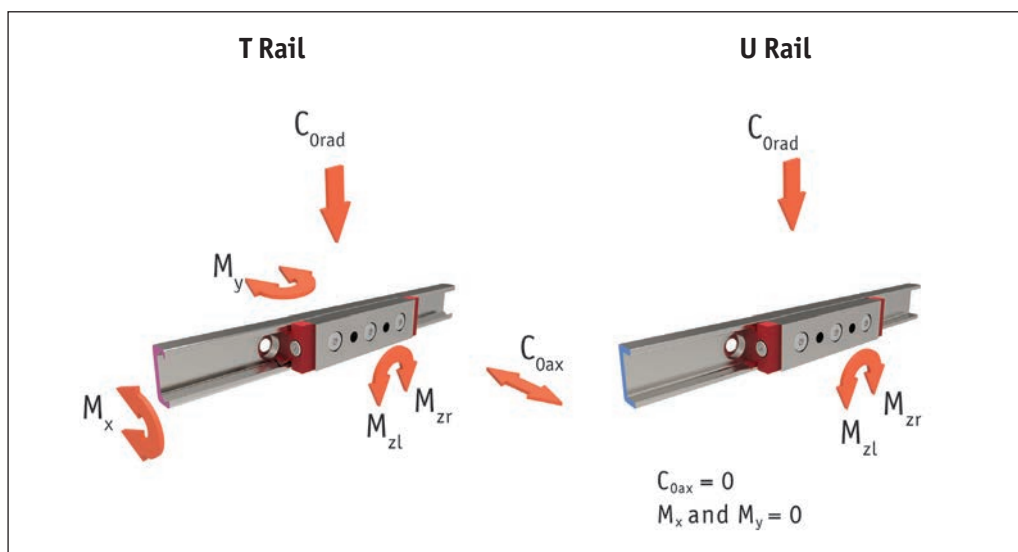
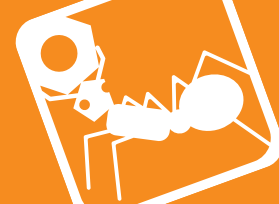
- Thinking about the physical dimension of the load will give an indication of how far apart the sliders should be positioned in the rails. This, and the distance apart that the rails and the sliders are positioned, affect the moment loads that the sliders experience.
- The above factors will give a good indication of the rail size to be used. In many cases the rails size that could be used might be smaller than would be expected (due to the impressive load ratings of the sliders). In many cases customers quite often "up-size" the rail so that it "looks" more appropriate to the size of the load being carried.
- Considering the distance apart of the sliders and the movement (stroke) required in the system will determine the overall rail length required.
- Rails can be joined together to make unlimited rail lengths. For this we have to select suitable rails, machine the ends and add an extra fixing hole. The rails can then be aligned with a simple tool.

### 4 Rail types

- Typically a T rail is used on one side and a U rail on the other. The U rail allows for lateral movement of the U slider in the U rail - this reduces the need for accuracy in the structure that the rails are used on, as the T rail becomes a master rail and the U rail a slave rail (unlike linear guideways where to prevent irregular movement the rails have to be aligned highly accurately).
- In some instances there can also be significant height inaccuracies and in this case the T rail can be replaced by a K rail (K rails cannot be used in vertical applications).
- There are two versions of each rails type. These end in either a C or a V and indicate the type of fixing screw required to fix the rail to the structure. The C (counterbored) type is most widely used compared to the V (countersunk) type. The counterbored fixing in the rails allows for more flexibility in the fixing hole position of the structure. Special low profile counterbore screws are provided with the type C rails.

### 5 Environment

- In normal, dry applications, the zinc plated finish of the rails combined with the standard 2Z (dust proof) seals of the roller bearings in the sliders is sufficient.
- In some cases the rails may become wet. In this case we have the option to apply a special coating to the rails, please discuss with our Technical Department. This has good corrosion resistance (see notes on Salt Spray tests), and should be combined with either nickel or alloy plated sliders with stainless steel rollers (440C), and 2RS roller bearing seals (splash proof) these are generally of the CL or CS type and are shown in the catalogue. The 2RS seals are "splash proof" - they cannot operate fully immersed.



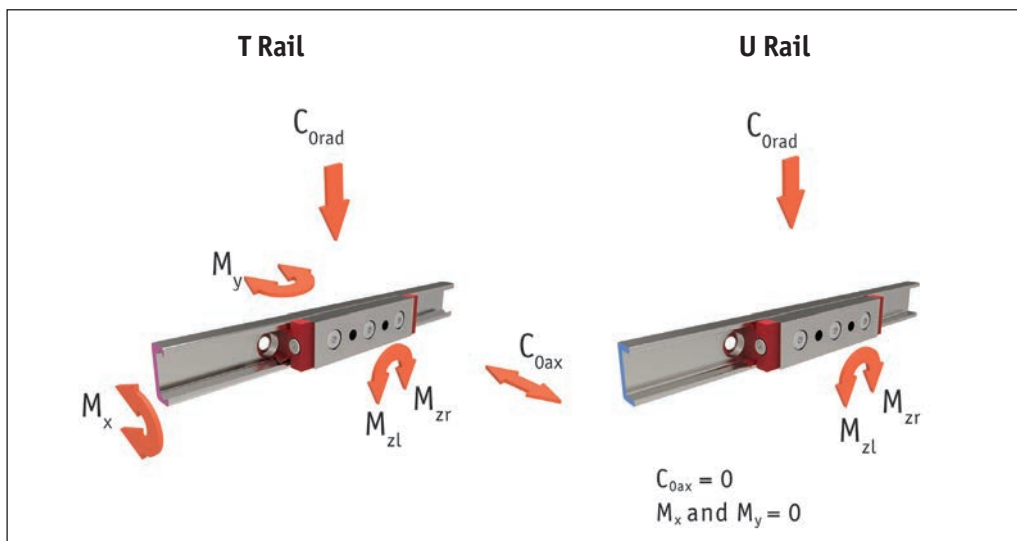
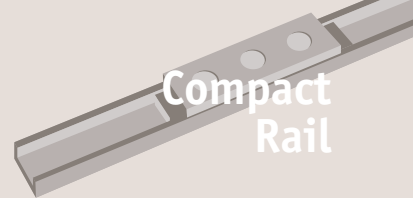
**Important note**

The load rating of the sliders tables apply to the use of the sliders in the T (master) rail.

For sliders in U rails:

- $C_{Oax} = 0$
- $M_x = 0$
- $M_y = 0$

Part no.	No. of rollers	Load capacities and moments						
		Max. dyn. C N	Max. static $C_{Orad}$ N	Max. static $C_{Oax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	
							$M_{zr}$	$M_{zl}$
<b>Side seal, front fixing</b>								
L1918.18CL-060	3	1540	825	262	1,6	4,8	8,3	8,3
L1918.18CL-080-A	4	1540	825	310	2,9	7,1	8,3	24,9
L1918.18CL-080-B	4	1540	825	310	2,9	7,1	24,9	8,3
L1918.18CL-100	5	1832	978	365	2,9	9,5	24,9	24,9
L1918.18CL-120-A	6	1832	978	442	3,4	11,9	24,9	41,2
L1918.18CL-120-B	6	1832	978	422	3,4	11,9	41,2	24,9
<b>Side seal, top fixing</b>								
L1918.18CR-060-A	3	1540	825	262	1,6	4,8	8,3	8,3
L1918.18CR-060-B	3	1540	825	262	1,6	4,8	8,3	8,3
L1918.18CR-080-A	4	1540	825	310	2,9	7,1	8,3	24,9
L1918.18CR-080-B	4	1540	825	310	2,9	7,1	24,9	8,3
L1918.18CR-100-A	5	1832	978	365	2,9	9,5	24,9	24,9
L1918.18CR-100-B	5	1832	978	365	2,9	9,5	24,9	24,9
L1918.18CR-120-A	6	1832	978	442	3,4	11,9	24,9	41,2
L1918.18CR-120-B	6	1832	978	442	3,4	11,9	41,2	24,9
<b>No side seal, front fixing</b>								
L1918.18CS-060	3	1530	820	260	1,5	4,7	8,32	8,2
L1918.18CS-080-A	4	1530	820	300	2,8	7,0	8,2	24,7
L1918.18CS-080-B	4	1530	820	300	2,8	7,0	24,7	8,2
L1918.18CS-100	5	1830	975	360	2,8	9,4	24,7	24,7
L1918.18CS-120-A	6	1830	975	440	3,3	11,8	24,7	41,1
L1918.18CS-120-B	6	1830	975	440	3,3	11,8	41,1	24,7



Part no.	No. of rollers	Load capacities and moments						
		Max. dyn. C N	Max. static C <sub>Orad</sub> N	Max. static C <sub>0ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	
							M <sub>zr</sub>	M <sub>zl</sub>
<b>Side seal, front fixing</b>								
L1928.28CL-080	3	4345	2213	652	6,4	16,4	28,0	28,0
L1928.28CL-100-A	4	4345	2213	765	11,8	22,3	28,0	84,1
L1928.28CL-100-B	4	4345	2213	765	11,8	22,3	84,1	27,2
L1928.28CL-125	5	5160	2630	919	11,8	30,0	84,1	84,1
L1928.28CL-150-A	6	5160	2630	1102	14,1	37,3	84,1	140,0
L1928.28CL-150-B	6	5160	2630	1102	14,1	37,3	140,0	84,1
<b>Side seal, top fixing</b>								
L1928.28CR-080-A	3	4345	2213	652	6,4	16,4	28,0	28,0
L1928.28CR-080-B	3	4345	2213	652	6,4	16,4	28,0	28,0
L1928.28CR-100-A	4	4345	2213	765	11,8	22,3	28,0	84,1
L1928.28CR-100-B	4	4345	2213	765	11,8	22,3	84,1	27,2
L1928.28CR-125-A	5	5160	2630	919	11,8	30,0	84,1	84,1
L1928.28CR-125-B	5	5160	2630	919	11,8	30,0	84,1	84,1
L1928.28CR-150-A	6	5160	2630	1102	14,1	37,3	84,1	140,0
L1928.28CR-150-B	6	5160	2630	1102	14,1	37,3	140,0	84,1
<b>No side seal, front fixing</b>								
L1928.28CS-080	3	4260	2170	640	6,2	16,0	27,2	27,2
L1928.28CS-100-A	4	4260	2170	750	11,5	21,7	27,2	81,7
L1928.28CS-100-B	4	4260	2170	750	11,5	21,7	81,7	27,2
L1928.28CS-125	5	5065	2580	900	11,5	29,0	81,7	81,7
L1928.28CS-150-A	6	5065	2580	1070	13,7	36,2	81,7	136,1
L1928.28CS-150-B	6	5065	2580	1070	13,7	36,2	136,1	81,7

### Important note

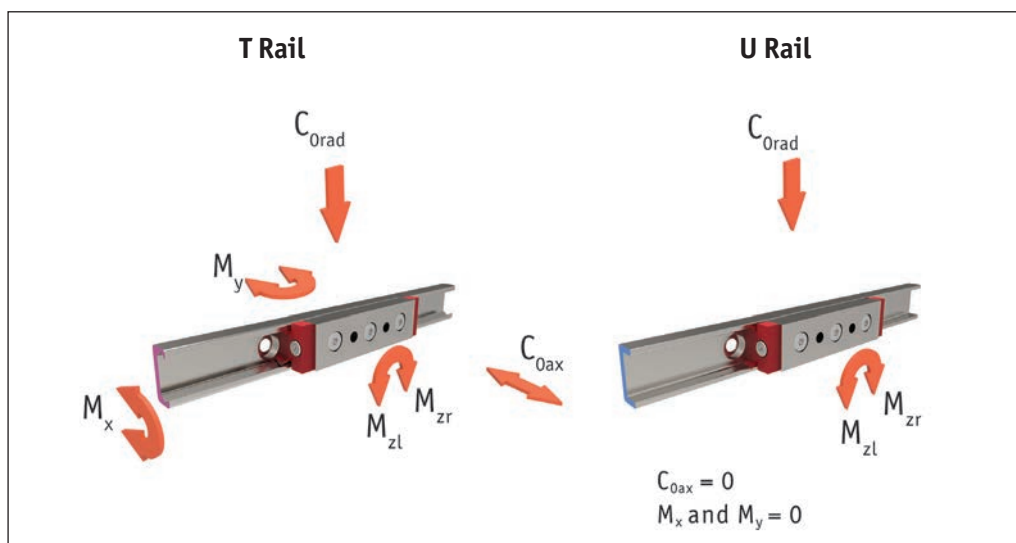
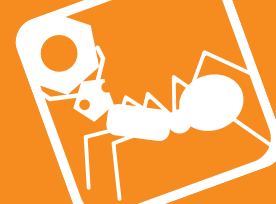
The value of the C sliders in the tables apply to the use of the sliders in the T (master) rail.

For C sliders in U rails:

$$C_{0ax} = 0$$

$$M_x = 0$$

$$M_y = 0$$



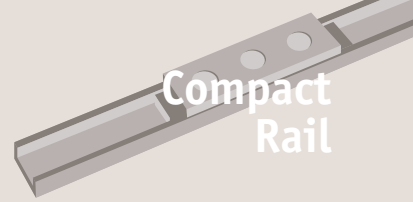
#### Important note

The value of the C sliders in the tables apply to the use of the sliders in the T (master) rail.

For C sliders in U rails:

$C_{0ax} = 0$   
 $M_x = 0$   
 $M_y = 0$

Part no.	No. of rollers	Load capacities and moments						
		Max. dyn. C N	Max. static $C_{Orad}$ N	Max. static $C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	
							$M_{zr}$	$M_{zl}$
<b>Side seal, front fixing</b>								
L1943.43CL-120	3	12300	5520	1580	23,7	60,1	104,7	104,7
L1943.43CL-150-A	4	12300	5520	1890	43,7	81,6	104,7	313,8
L1943.43CL-150-B	4	12300	5520	1890	43,7	81,6	313,8	104,5
L1943.43CL-190	5	14680	6560	2220	43,7	108,7	313,8	313,8
L1943.43CL-230-A	6	14680	6560	2650	52,5	136,0	313,8	523,0
L1943.43CL-230-B	6	14680	6560	2650	52,5	136,0	523,0	313,8
<b>Side seal, top fixing</b>								
L1943.43CR-120-A	3	12300	5520	1580	23,7	60,1	104,7	104,7
L1943.43CR-120-B	3	12300	5520	1580	23,7	60,1	104,7	104,7
L1943.43CR-150-A	4	12300	5520	1890	43,7	81,6	104,7	313,8
L1943.43CR-150-B	4	12300	5520	1890	43,7	81,6	313,8	104,5
L1943.43CR-190-A	5	14680	6560	2220	43,7	108,7	313,8	313,8
L1943.43CR-190-B	5	14680	6560	2650	52,5	136,0	313,8	523,0
L1943.43CR-230-A	6	14680	6560	2650	52,5	136,0	313,8	523,0
L1943.43CR-230-B	6	14680	6560	2650	52,5	136,0	523,0	313,8
<b>No side seal, front fixing</b>								
L1943.43CL-120	3	12280	5500	1570	26,6	60,0	104,5	104,5
L1943.43CL-150-A	4	12280	5500	1855	43,6	81,5	104,5	313,5
L1943.43CL-150-B	4	12280	5500	1855	43,6	81,5	313,5	104,5
L1943.43CL-190	5	14675	6540	2215	43,6	108,6	313,5	313,5
L1943.43CL-230-A	6	14675	6540	2645	52,0	135,8	313,5	522,5
L1943.43CL-230-B	6	14675	6540	2645	52,0	135,8	522,5	313,5



### Representation of slider arrangement for various load cases

#### Arrangement 1

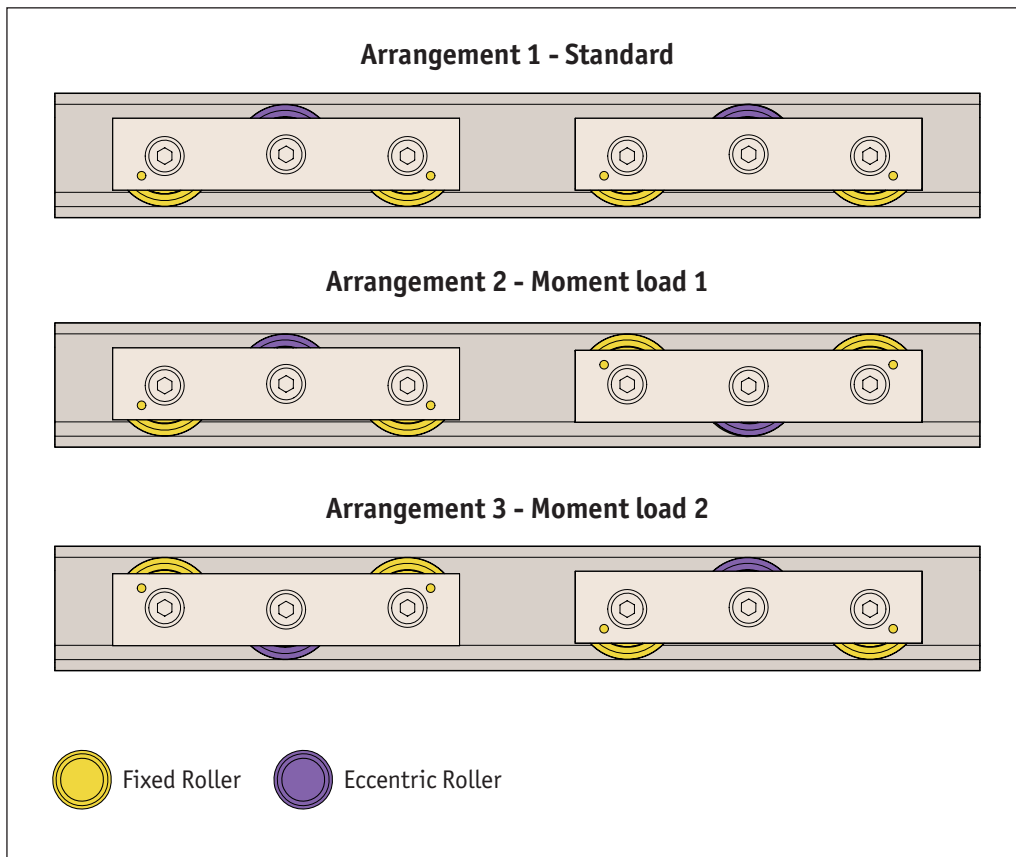
- Standard arrangement if no other information is given. This arrangement is recommended if the load point is located within the two outside points of the sliders.

#### Arrangement 2

- This is the recommended arrangement for use of two sliders under an  $M_z$  moment load when using one rail. Also see previous page: Two sliders under load moment  $M_z$ .

#### Arrangement 3

- For using a pair of guide rails with two sliders each under an  $M_z$  moment load, the second system should be designed in arrangement 3. This results in the following combination: Guide rail 1 with two sliders in arrangement 2 and guide rail 2 with two sliders in arrangement 3. This allows even load and moment load distribution between the two parallel rails.

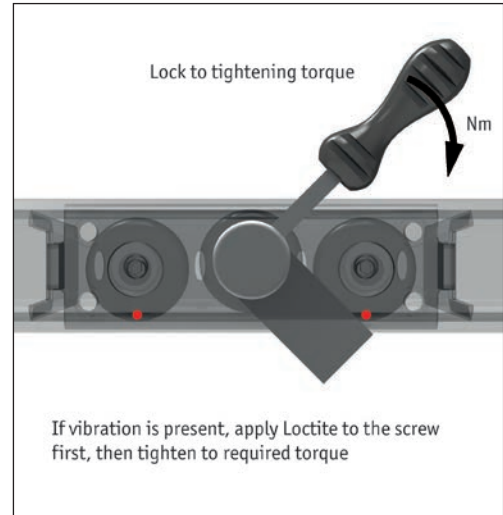
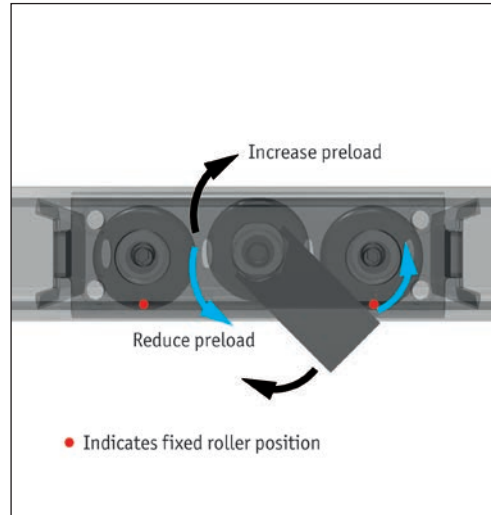




**Adjusting the sliders**

If delivered separately, or if the sliders need to be installed in another rail, the sliders must be re-adjusted. In this case, follow the instructions below.

The “•” or “V” marked on the slider indicates the direction of the fixed rollers.



The sliders have three (or more) large roller bearings. In general, the two at either end are fixed and the direction of these fixed rollers is marked on the sliders with a dot or an arrow.

Insert the sliders into the rails with the fixed rollers set to take the load in the best direction.

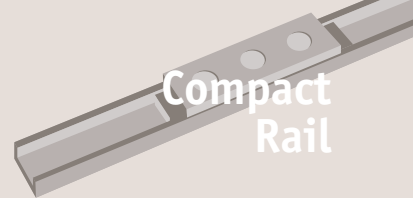
The middle roller is on an eccentric pivot that is easily adjusted (using the thin spanner that is supplied with them and a hexagon key). This allows the preload of the system to be set as required – stiff or free running.

Generally the sliders will not be inserted into the rails when leaving the factory. To set the sliders to the required preload is a simple procedure:

- Ensure raceways are clean.
- Remove the small plastic end wipers and insert the slider into the rail.
- Slightly loosen the eccentric roller (using the spanner and a hexagon key).
- For U rails a packer should be used to set the slider in its middle lateral position.
- Use the flat spanner provided to move the middle roller on its eccentric to adjust the stiffness of its running. Not too loose so that there is excess play and not too tight that a lot of friction is generated.
- Lock the eccentric roller in the desired position with the spanner and a hexagon key.
- Move the slider the length of the rail to check required running – it should move easily with no play at any point on the rail.
- Tighten the fixing screw to the correct torque – whilst holding the spanner in place to ensure no further movement (see correct torque values in table below).
- Finally (if using a slider with a wiper), re-install the wipers if required.

Size	Tightening torque Nm
18	3
28	7
35	12
43	12





### Manual rail clamps

- Many of our customers wish to lock their moving element in position on the rails. Whilst this can be relatively simply achieved with the use of an adjustable clamping handle and thrust pad, we also offer a clamping element which can be integrated into your rail/system design.
- This is available in the standard manual version as well as (on request) a pneumatic version for linear guideways only (not compact rail systems).
- These manual clamps have a holding force of up to 2,000N.
- They are relatively compact in shape. Please bear in mind the extra force required for the clamping element when calculating the total movement you require.

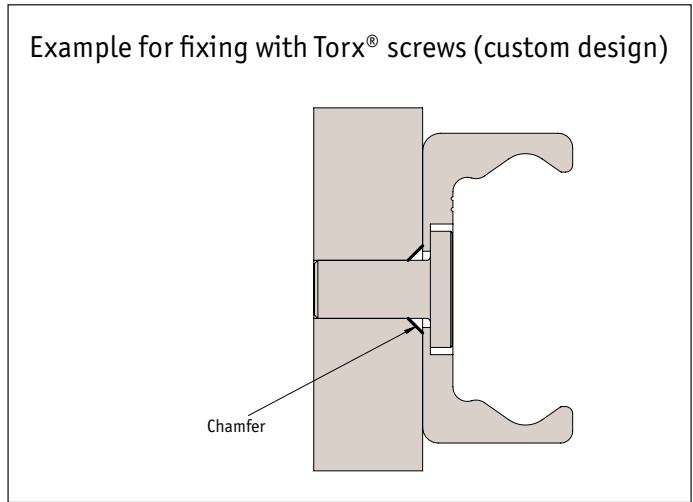
### Applications

- Table cross beams.
- Sliding beds.
- Width adjustment stops.
- Positioning of optical equipment.



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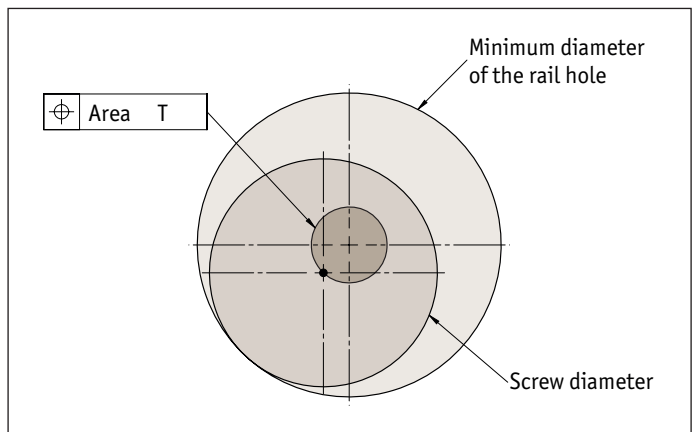


Size	Chamfer
18	0,5 x 45°
28	0,6 x 45°
35	0,5 x 45°
43	1,0 x 45°

**Using counterbored hole rails**

The low profile screws for counterbored holes are used with rails identified by T-C, U-C or K-C. The cylindrical screw allows some play in the countersunk fixing hole, so that an optimum alignment of the rail can be achieved during installation.

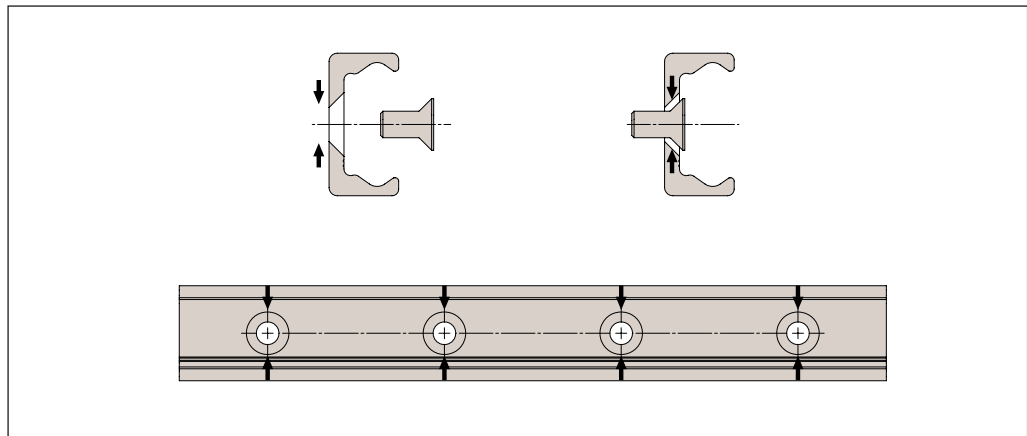
The area T is the diameter of the possible offset, in which the screw centre point can move during the alignment. The minimum chamfers on the fixing threads are listed in the table above.

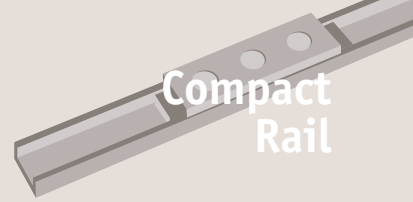


Rail size	Area T
18	Ø 0,4
28	Ø 0,8
35	Ø 1,0
43	Ø 1,2

**Using countersunk hole rails**

These rails are identified by T-V, U-V or K-V. The selection of rails with 90° countersunk holes requires the precise alignment of the threaded holes for installation. Here the complex alignment of the rail to an external reference is omitted, since the rail aligns during installation by the self-centering of the countersunk screws on the machined hole pattern.



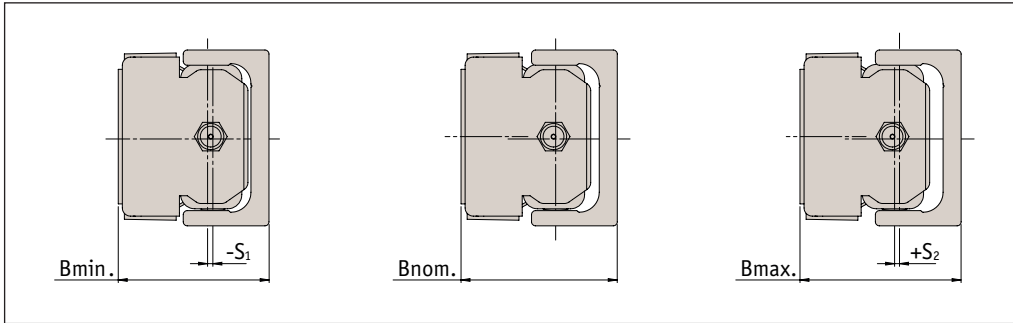


### T and U system maximum offset

U rails have flat parallel raceways that allow free lateral movement of the sliders.

The maximum axial offset that can be compensated for in each slider of the U rail is made up of the combined values  $S_1$  and  $S_2$  listed in the following table.

Considered from a nominal value  $B_{nom}$  as the starting point,  $S_1$  indicates the maximum offset into the rail, while  $S_2$  represents the maximum offset towards the outside of the rail.

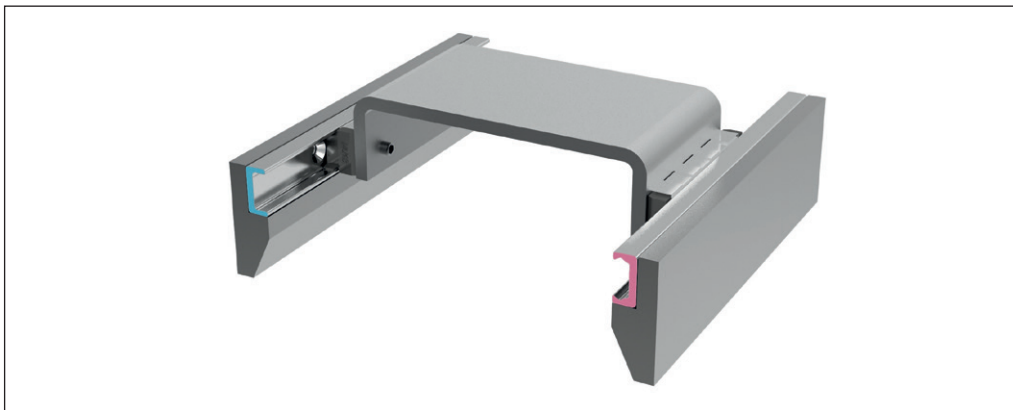


Slider type	$S_1$	$S_2$	$B_{min}$	$B_{nom}$	$B_{max}$
L1918.18CL/CS	0,3	1,1	14,7	15,0	16,1
L1918.18CR	0,3	1,1	14,7	15,0	16,1
L1928.28CL/CS	0,6	1,3	23,3	23,9	25,2
L1928.28CR	0,6	1,3	23,3	23,9	25,2
L1935.35CL/CS	1,3	2,7	28,8	30,1	32,8
L1935.35CR	1,3	2,7	28,8	30,1	32,8
L1943.43CL/CS	1,4	2,5	35,6	37,0	39,5
L1943.43CR	1,4	2,5	35,9	37,3	39,8

All values in mm.

### T (master) rails and U (slave) rails

It is often the case that two T rails are used in the system design but where there are substantial alignment issues it is better to use a T (master) rail and a U (slave) rail as below.



This allows the slider in the T rail to remain fixed in the place, but allows some lateral movement of the sliders in the U rail to adapt to any misalignment and avoid any issues of stiction.

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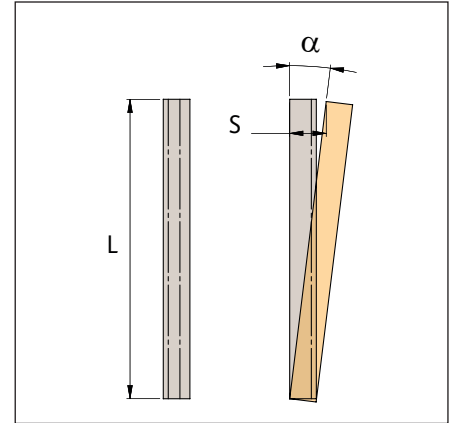
The application example in the following drawing shows that the T and U system implements a problem-free function of the slider even with an angled offset in the mounting surfaces.

If the length of the guide rails is known, the maximum allowable angle deviation of the surfaces can be determined using this formula (the slider in the U rail moves here from the innermost position  $S_1$  to outermost position  $S_2$ ):

$$\alpha = \arctan \frac{S^*}{L}$$

$S^*$  = sum of  $S_1$  and  $S_2$

L = length of the rail

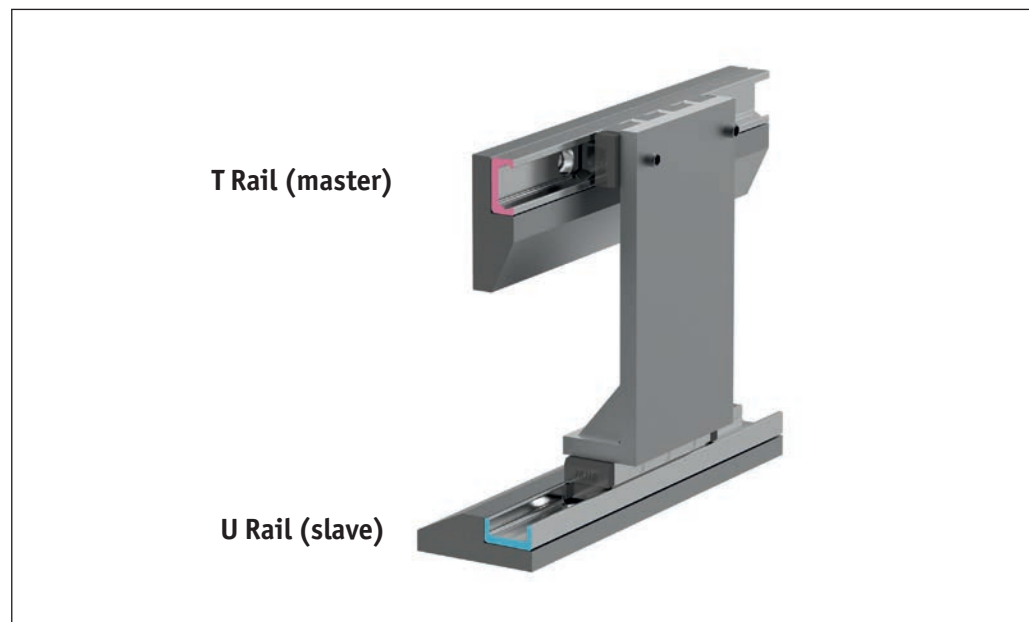


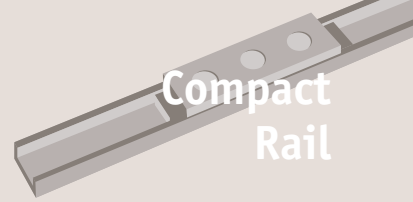
The following table contains guidelines for this maximum angle deviation  $\alpha$ , achievable with the longest guide rail from one piece.

Rail size	Rail length	Offset S	Angle $\alpha$ °
18	2000	1,4	0,040
28	3200	1,9	0,034
35	3600	4	0,063
43	3600	3,9	0,062

The T and U system can be set up in different arrangements. In the example below, a T rail accepts the vertical components of a load. A U rail attached underneath the component to be guided prevents the vertical panel from swinging and is used as moment support.

In this way both a vertical offset in the structure, as well as possible existing unevenness of the support surface, are compensated for.



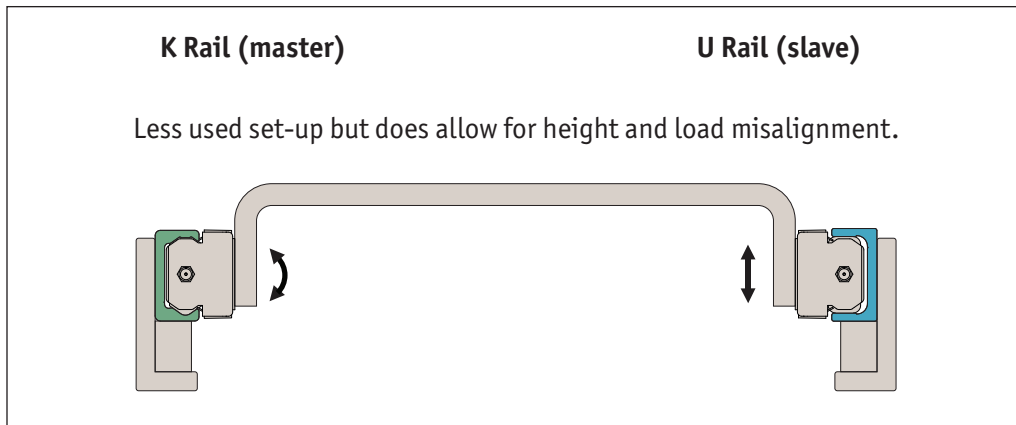


### K and U System Tolerance Compensation

#### Deviations in Parallelism in Two Planes

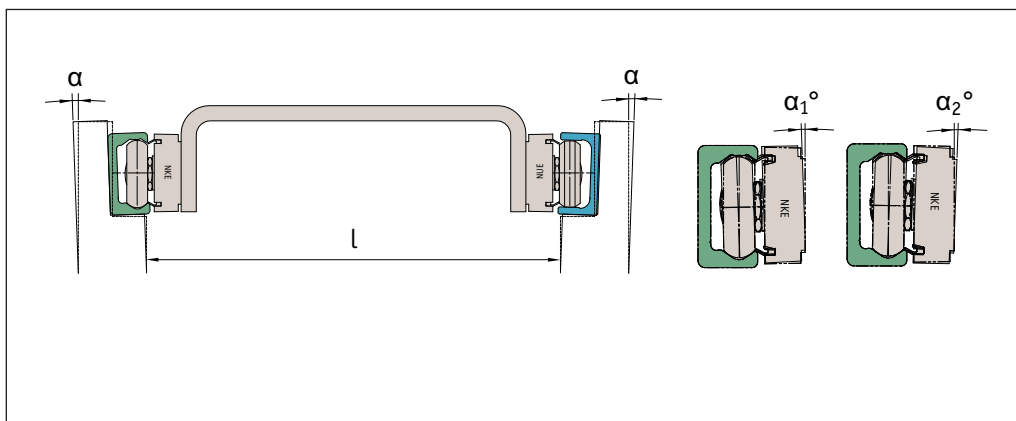
The K and U system, like the T and U system, can compensate for axial deviations in parallelism. Additionally, the K and U system has the option of rotating the slider in the rail, which will compensate for other deviations in parallelism, e.g. height offset.

The unique raceway contour of the K rail allows the slider a certain rotation around its longitudinal axis with the same linear precision as with a T rail. With the use of a K and U system, the K rail accounts for the main loads and is the master rail. The U rail is used as a support bearing and takes only radial forces and  $M_z$  moments. The K rail must always be installed so that the radial load of the slider is always supported by at least two load bearing roller sliders, which lie on the V-shaped raceway (reference line) of the rail.



K rails and sliders are available in both sizes 43 and 63. The NKE slider may only be used in K rails. The maximum allowable rotation angle of the NKE and NUE sliders are shown in the table.  $\alpha_1$  is the maximum rotation angle counterclockwise,  $\alpha_2$  is clockwise.

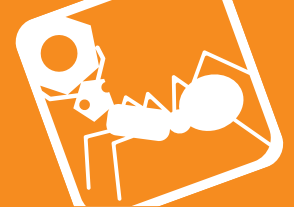
Slider Type	$\alpha_1^\circ$	$\alpha_2^\circ$
L1943.NKE43	2	2
L1943.NUE43	2	2
L1943.NKE63	1	1
L1943.NUE63	1	1



K rails are particularly useful where the distance between the rails is significant. It compensates for height misalignment and the particular errors of a structure.

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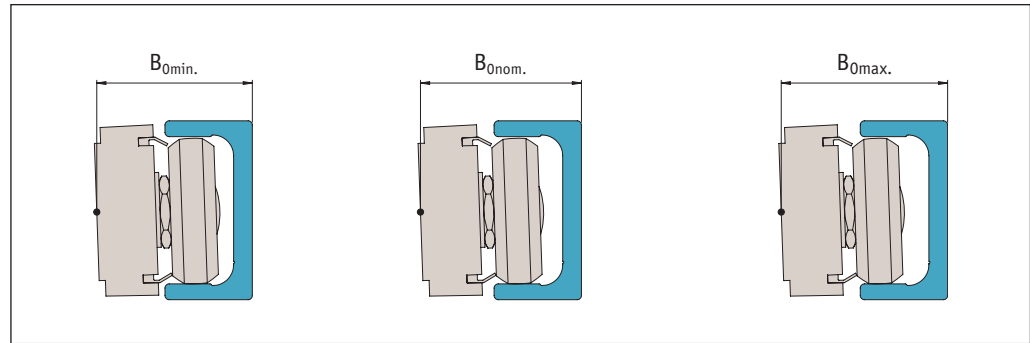
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**K and U System Maximum Offset**

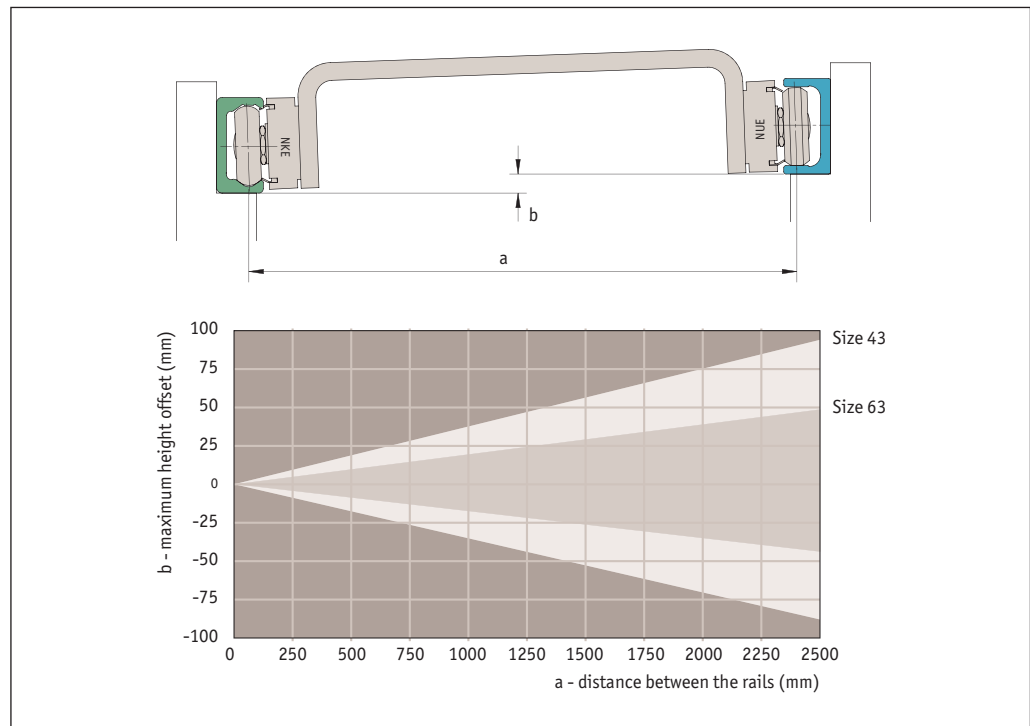
It must be noted that the slider in the U rail will turn during the movement and rotation of the slider in the K rail to allow an axial offset. During the combined effect of these movements, you must not exceed the maximum values (see table below). If a maximum rotated NUE slider is observed (2° for size 43 and 1° for size 63), the maximum and minimum position of the slider in the U rail results from the values  $B_{0max}$  and  $B_{0min}$ , which are already considered by the additional rotation caused axial offset.

$B_{0nom}$  is a recommended nominal starting value for the position of a NUE slider in the U rail of a K and U system.



Slider Type	$B_{0min}$	$B_{0nom}$	$B_{0max}$
L1943.NUE43 L1943.NUE43L	37,60	38,85	40,10
L1943.CSW43	37,60	38,85	40,10
L1943.CDW43	37,90	39,15	40,40
L1963.CSW63	49,85	51,80	53,75
L1963.NUE63	50,95	52,70	53,45

If a K rail is used in combination with a U rail, a pronounced height difference between the two rails can also be compensated for. The following illustration shows the maximum height offset "b" of the mounting surfaces in relation to the distance "a" of the rails.

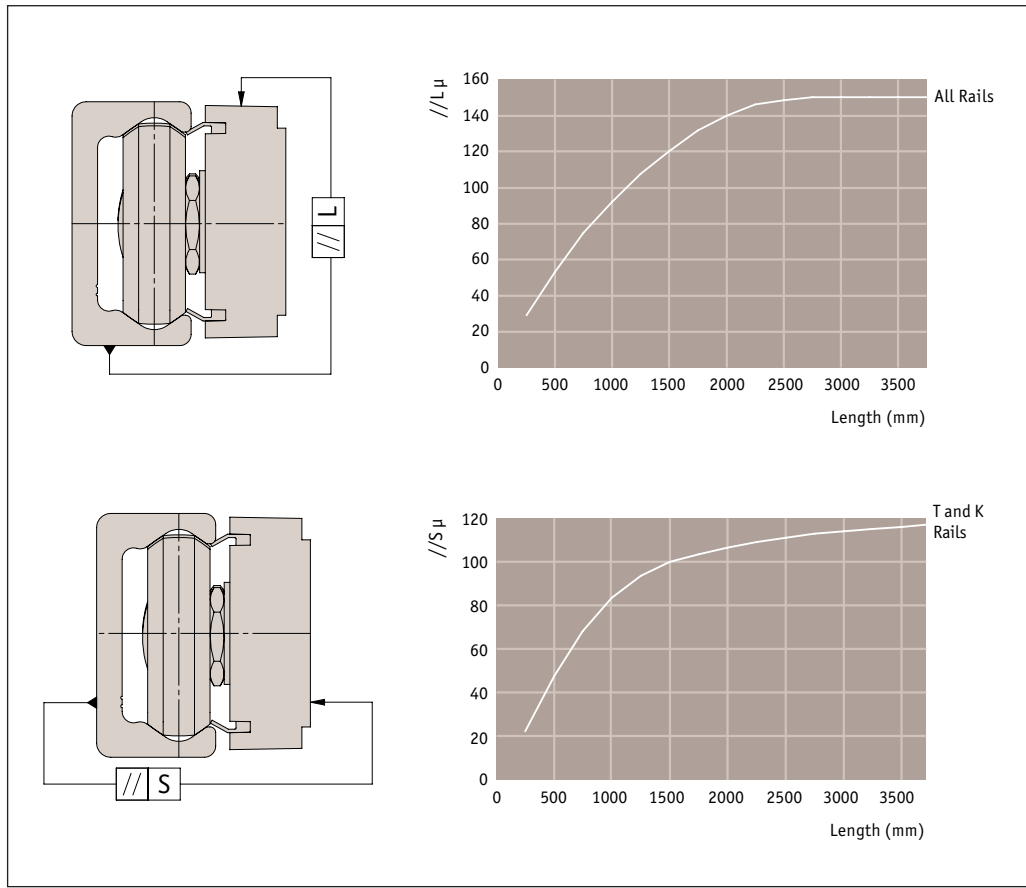


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### Linear accuracy

Linear accuracy is defined as the maximum deviation of the slider in the rail based on the side and support surface during straight line movement. The linear accuracy, depicted in the graphs below, applies to rails that are carefully installed using all screw holes onto a level and rigid structure.



### Deviation of accuracy with two 3 roller sliders in one rail

Type	All rails
<p>Slider with equal arrangement</p>	$\delta L = 0,2$
<p>Slider with opposite arrangement</p>	$\delta L = 1,0$
ALL	$\delta S = 0,05$

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ov-compact-rails-accuracy-rmh- Updated - 13-03-2023

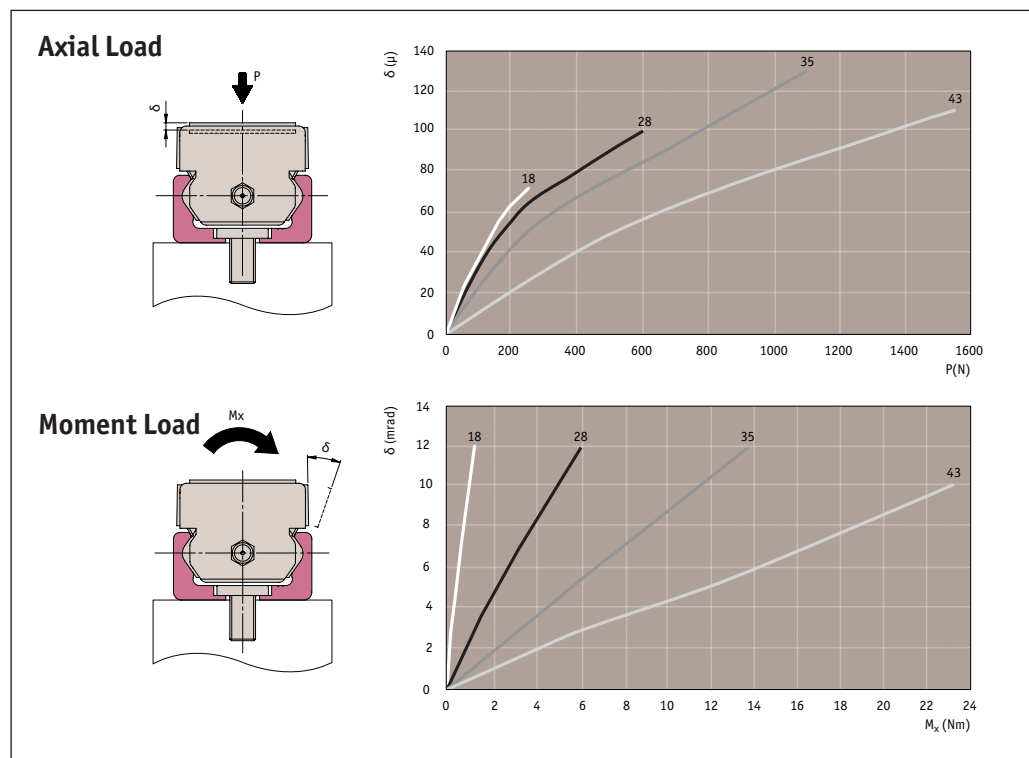
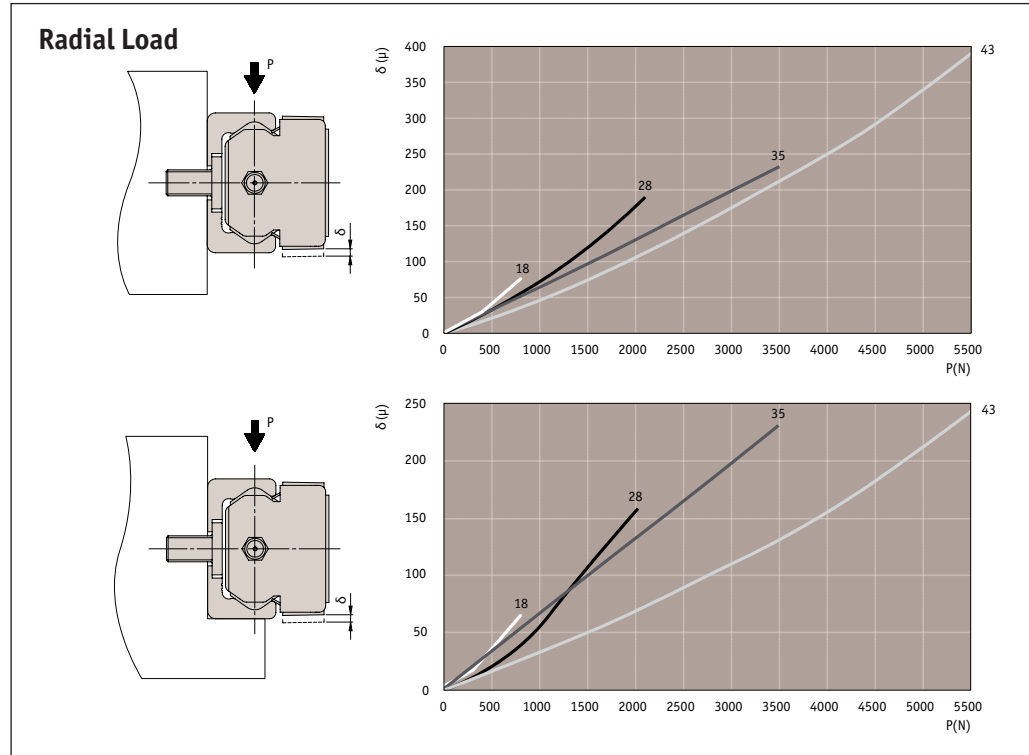


**Total deformation**

In the following deformation diagrams the total deviation of the linear guide is indicated under the effect of external loads P or moment loads M. As seen from the graphs, the rigidity can be increased by supporting the sides of the rails. The graph values indicate only the deformation of the linear guide, the supporting structure is assumed to be infinitely rigid.

All graphs refer to sliders with 3 rollers and  $K_1$  preload (standard setting). An increased preload,  $K_2$ , reduces the deformation values by 25%.

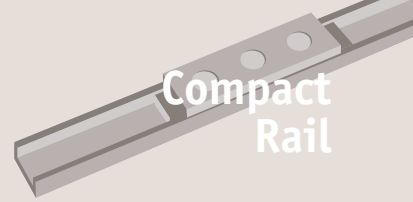
**Size 18-43**



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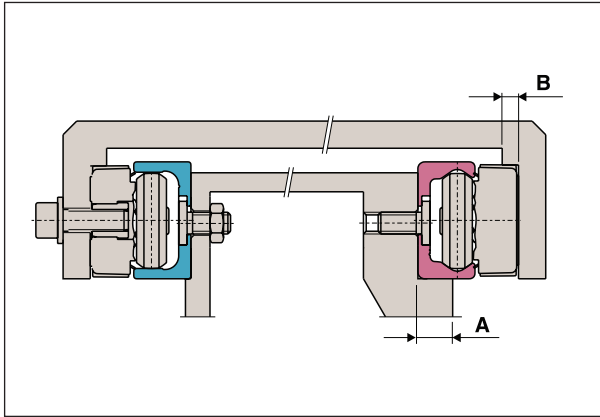
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### Supported sides

If a higher system rigidity is required, support of the rail sides is recommended, which can also be used as the reference surface. The minimum required support depth can be taken from the table.



Rail size	A	B
18	5	4
28	8	4
35	11	5
43	14	5

### U rail offset

Even the K and U system can be used in different arrangements. If the same example as with the T and U system is observed, this solution, in addition to the prevention of vibrations and moments, also enables the compensation of larger deviations in parallelism in the vertical direction, without negative consequences to the guide. This is particularly important for longer strokes as it is more difficult to obtain a correct vertical parallelism.



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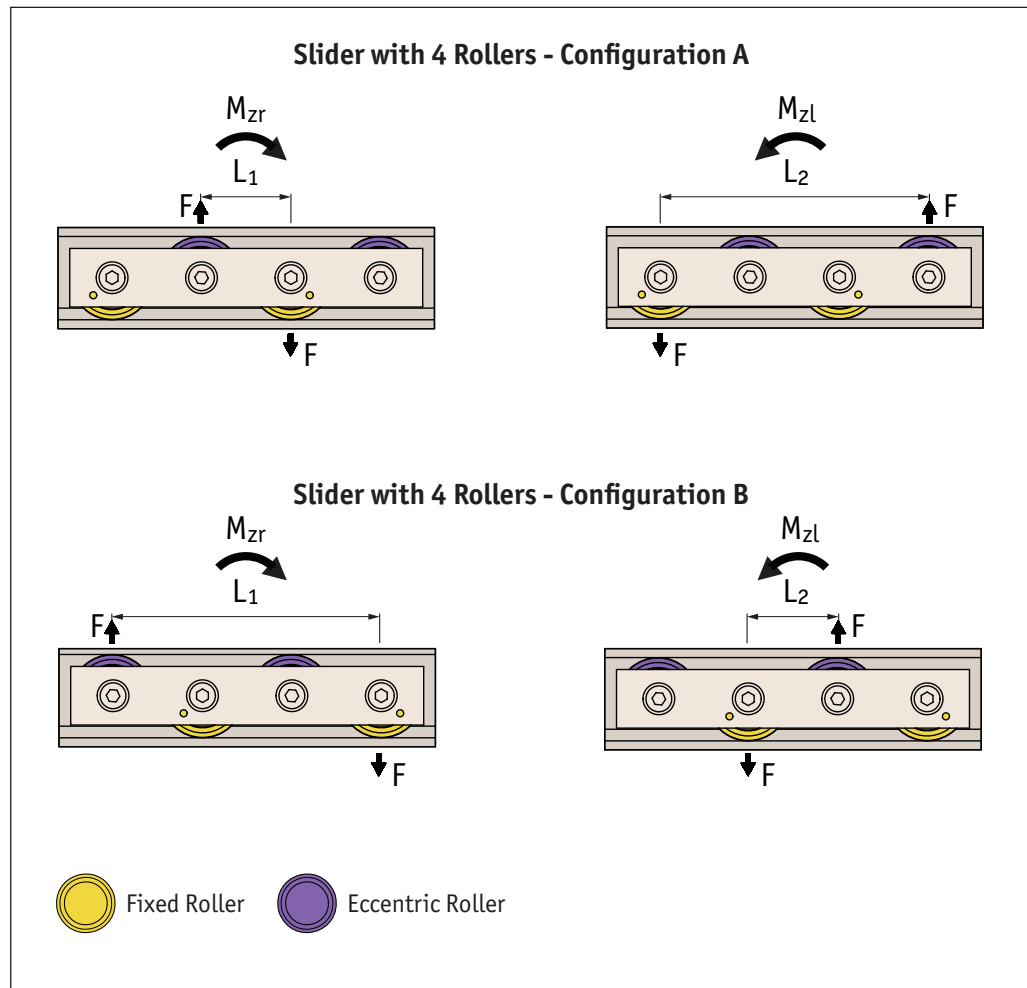


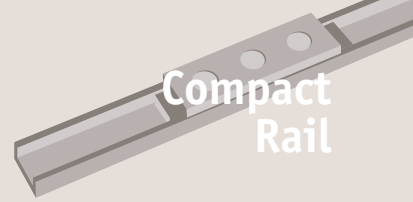
**Configurations and behaviour of the sliders under yawing moments  $M_z$**

**Individual slider under load moment  $M_z$**

When an overhanging load in an application with a single slider per rail causes an  $M_z$  moment in one direction, a 4 to 6 roller Compact Rail slider is available. These sliders are available in both configurations A and B in regards to the roller arrangement (to counter the acting  $M_z$  moment). The moment capacity of these sliders in the  $M_z$  direction varies significantly through spacing  $L_1$  and  $L_2$  in accordance with the direction of rotation of  $M_z$ . Especially when using two parallel rails, for example with a T+U system, it is extremely important to pay attention to the correct combination of the slider configuration A and B, in order to use the maximum load capacities of the slider.

The diagrams below illustrate this concept of the A and B configuration for sliders with 4 and 6 rollers. The maximum allowable  $M_z$  moment is identical in both directions for all 3 and 5 roller sliders.





### Two sliders under $M_z$ moment loads

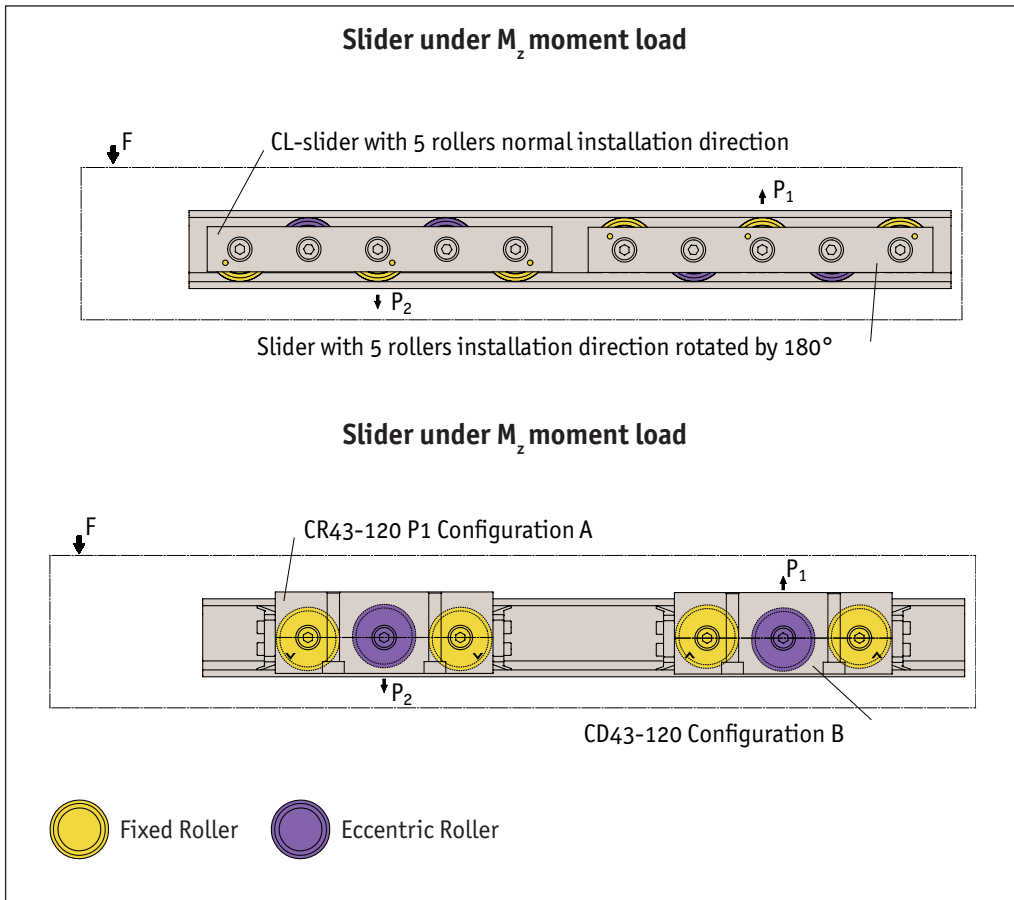
If an overhanging load acts in an application with two sliders per rail and thus causes an  $M_z$  moment in one direction, there are differing support reactions with the two sliders.

For this reason, an optimal arrangement of different slider configurations to reach the maximum load capacity must be applied.

In practice this means, sliders with 3 or 5 rollers, both sliders are installed rotated by  $180^\circ$  so that the slider is always loaded on the side with the most rollers.

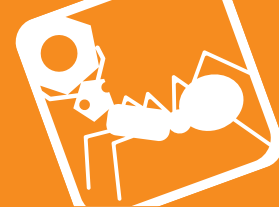
For an even number of rollers this has no effect.

The side mount slider with installation option from above or below cannot be installed due to the position of the rollers in reference to the installation side (therefore they are available in the configurations of both A and B).



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### Lubrication of the raceways

Proper lubrication during normal conditions:

- Reduces friction and wear.
- Reduces the load of the contact surfaces through elastic deformations.
- Reduces running noise

To reach the calculated service life, a film of lubricant should always be present between the raceway and roller; this also protects against corrosion of the ground raceways.

### Roller bearing lubrication

The bearings inside the rollers are lubricated for life. Custom lubrication of the roller sliders for use in high temperature environments or in the food industry is available upon request. For more information, please contact our Technical Department.

### Lubrication when using sliders

The series sliders are provided with end wipers made of polyamide, to remove the contaminants on the raceways. Since the sliders do not have a self-lubrication kit, manual lubrication of the raceways is required. A guideline is to lubricate the raceways every 100 Km or every 6 months. We recommend a roller bearing lubricant with a lithium base of average consistency as a lubricant.

Lubricant	Thickening agent	Temperature range °C	Dynamic viscosity mPas
Roller bearing lubricant	Lithium soap	-30° to + 170°	4500

### Replacement of N slider wiper head

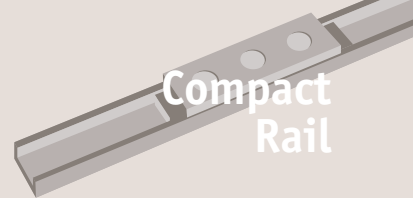
Sliders CL and CR are equipped with a safety system made of longitudinal sealing gaskets and rigid, spring preloaded wipers on both sides of the head for automatic cleaning of the raceways. The slider heads can be removed for replacement. To do this it is necessary to loosen the fittings, which should be re-fastened after installing the new heads with the following tightening torque:

Slider type	Tightening torque Nm
Size 28	0,4 - 0,5
Size 43	0,6 - 0,7

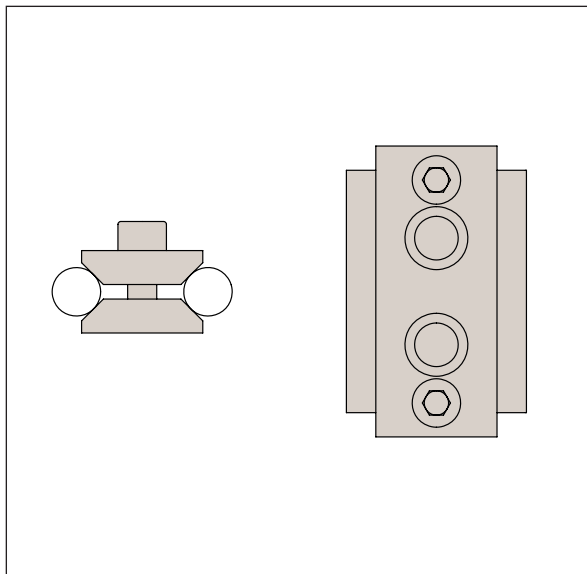
### Lubrication when using C sliders

The C series sliders are provided with end wipers made of polyamide, to remove the contaminants on the raceways. Since the sliders do not have a self-lubrication kit, manual lubrication of the raceways is required. A guideline is to lubricate the raceways every 100 Km or every 6 months. We recommend a roller bearing lubricant with a lithium base of average consistency as a lubricant.

Lubricant	Thickening agent	Temperature range °C	Dynamic viscosity mPas
Roller bearing lubricant	Lithium soap	-30° to + 170°	4500

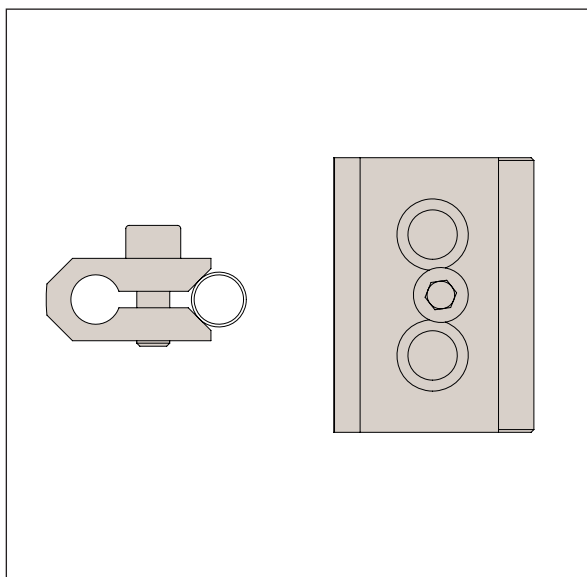


### Alignment fixture AT (for T and U rail)



Rail size	Alignment fixture
L1918.AT18	AT 18
L1928.AT28	AT 28
L1935.AT35	AT 35
L1943.AT43	AT 43

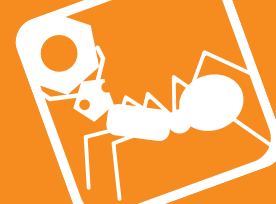
### Alignment fixture AK (for K rail)



Rail size	Alignment fixture
L1943.AK43	AK 43

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**The Choice Between X Rail and Compact Rail**

The X rail system is considerably less expensive than compact rail system. However the compact rail is able to take significant moment loads (unlike the X rail) as the rails themselves are made from cold-drawn steel and have hardened raceways.

Occasionally we have applications where the cost of the standard compact rail sliders makes the combined cost of the compact rail system outweigh some of its benefits.

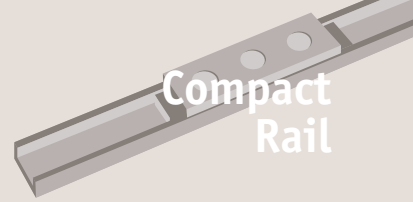
In these rare cases (and where there is a significant volume of product required) we can offer X rail sliders which fit directly into the compact rail.

Here is a comparison of the slider capacities:

	C N	C <sub>0rad</sub> N	C <sub>0ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z5</sub> Nm
L1918.NT18	1530	820	260	1,5	4,7	8,2
L1970.20T	1068	543	185	1,1	3,2	5,2
	C N	C <sub>0rad</sub> N	C <sub>0ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z5</sub> Nm
L1928.NTE28	4260	2170	640	6,2	16,0	27,2
L1970.30T	2882	1346	454	4,4	10,3	16,8
	C N	C <sub>0rad</sub> N	C <sub>0ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z5</sub> Nm
L1943.NTE43	12280	5500	1570	23,6	60,0	104,5
L1970.45T	8181	3307	1120	16,8	42,8	69,5

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### Preload classes

The factory installed systems, consisting of rails and sliders, are available in two preload classes:

- Standard preload  $K_1$  means a rail slider combination with minimum preload which means the rollers are adjusted free of clearance for optimal running properties
- Usually preload  $K_2$  is used for rail slider systems for increasing the rigidity. When using a system with  $K_2$  preload a reduction of the loading capacities and service life must be taken into consideration.

The excess is the distance between the contact lines of the roller pins minus  $y$ . This coefficient  $Y$  is used in the calculation formula for checking the static load.

Preload class	Excess*	Rail size	Reduction Y
$K_1$	0,01	all	-
$K_2$	0,03	18	0,1
	0,04	28	0,1
	0,05	35	0,1
	0,06	43 63	0,1

\* Measured on the largest interior dimension between the raceways.

### External preload

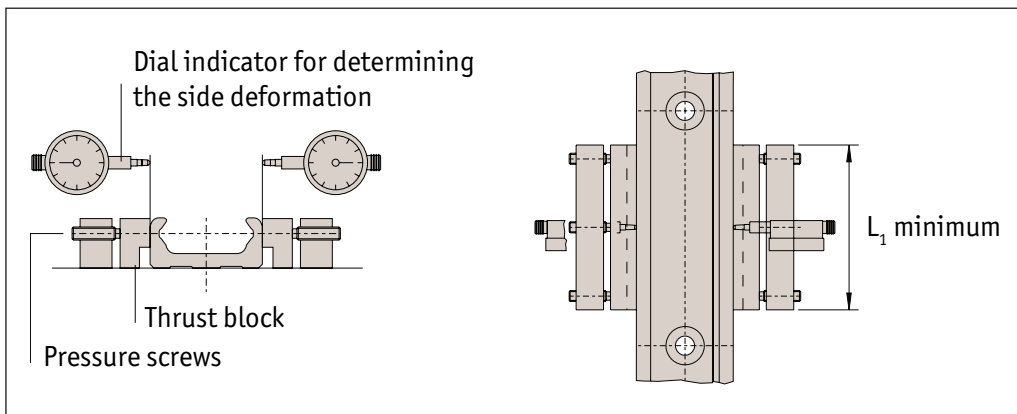
The unique design of the Compact Rail product family enables the application of a partial external preload on selected locations along the entire rail.

An external preload can be applied by pressure along the side surfaces of the guide rail according to the drawing below. This local preload results in higher rigidity only at the locations where it is necessary (e.g. on reversing points with high dynamic forces).

This partial preload increases the service life of the linear guide by avoiding a continually increased preload over the entire length of the rail. Also the required drive force of the linear slider in the non-preloaded areas is reduced.

The amount of the externally applied preload is determined using two dial indicators to measure the deformation of the rail sides. These are deformed by thrust blocks with pressure screws. The external preload must be initially applied when the slider is not directly located in the pressure zone.

Rail size	$L_1$
18	40
28	55
35	75
43	80





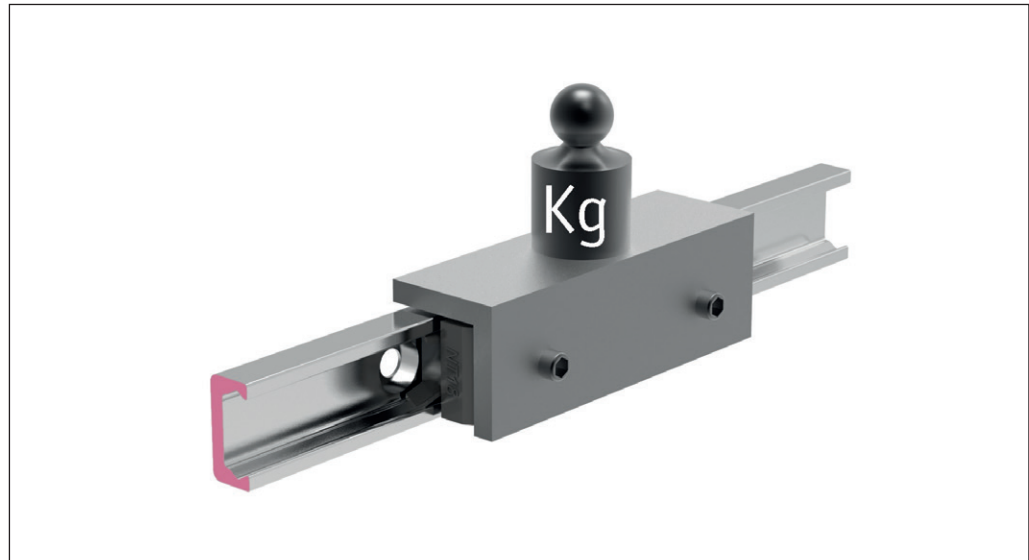
**Drive force**

**Frictional resistance**

The drive force required for moving the slider is determined by the combined resistance of the rollers, wipers and seals.

The surface machining of the raceways and rollers have a minimal coefficient of friction, which remains almost the same in both the static and dynamic state. The wiper and longitudinal seals are designed for an optimum protection of the system, without a significant negative effect on the quality of motion.

The overall friction of the compact rail also depends on external factors such as lubrication, preload and additional forces. The following table contains the coefficients of friction for each slider type (for CS and CD sliders no friction occurs to  $\mu_s$ ).



Size	Roller friction $\mu$	Wiper friction $\mu_w$	Friction of longitudinal seals $\mu_s$
18	0,003	$\frac{\ln (m \cdot 1000)}{0,98 \cdot m \cdot 1000}$	0,0015
28	0,003	$\frac{\ln (m \cdot 1000)}{0,06 \cdot m \cdot 1000}$	$\frac{\ln (m \cdot 1000)}{0,15 \cdot m \cdot 1000}$
35	0,005		
43	0,005		

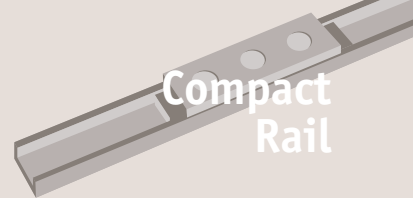
Where m is load in kilograms.

The values given in the above table apply to external loads, which, with sliders with three rollers, are at least 10% of the maximum load rating. For calculating the driving force for lower loads, please contact our Technical Department.

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### Calculation of drive force

The minimum required drive force for the slider is determined with the coefficients of friction and the following formula:

$$F = (\mu + \mu_w + \mu_s) \cdot m \cdot g$$

$m$  = mass (Kg)

$g$  = 9,81 m/s<sup>2</sup>

$\mu$  = Roller friction

$\mu_w$  = Wiper friction

$\mu_s$  = Friction of longitudinal

Example calculation:

If an NTE43 slider is used with a radial load of 100 Kg, the result is  $\mu = 0,005$  (from table); and from the formula the following is calculated:

$$\mu_s = \frac{\ln(100000)}{0,15 \cdot 100000} = 0,00076$$

$$\mu_w = \frac{\ln(100000)}{0,06 \cdot 100000} = 0,0019$$

Therefore the minimum driving force for this example:

$$F = (0,005 + 0,0019 + 0,00076) \cdot 100 \cdot 9,81 = 7,51 \text{ N}$$

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The radial load capacity rating,  $C_{0rad}$ , the axial load capacity rating  $C_{0ax}$ , and moments loads  $M_x$ ,  $M_y$ ,  $M_z$  indicate the maximum permissible values of the load.

Higher loads will have a detrimental effect on the running quality.

A safety factor,  $S_0$ , is used to check the static load, which takes into account the basic parameters of the application:

Conditions	Safety factor $S_0$
No shock or vibration, smooth and low-frequency reverse, high assembly accuracy, no elastic deformations	1 - 1,5
Normal installation conditions	1,5 - 2
Shock and vibration, high frequency reverse, significant elastic deformation	2 - 3,5

The ratio of the actual load to maximum permissible load may be as large as the reciprocal of the accepted safety factor,  $S_0$ , at the most.

$\frac{P_{0rad}}{C_{0rad}} \leq \frac{1}{S_0}$	$\frac{P_{0ax}}{C_{0ax}} \leq \frac{1}{S_0}$	$\frac{M_1}{M_x} \leq \frac{1}{S_0}$	$\frac{M_2}{M_y} \leq \frac{1}{S_0}$	$\frac{M_3}{M_z} \leq \frac{1}{S_0}$
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The above formulae are valid for a single load case.

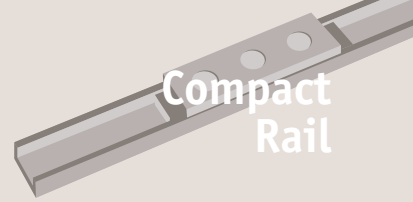
If two or more forces are acting simultaneously, please check the following formula:

$$\frac{P_{0rad}}{C_{0rad}} + \frac{P_{0ax}}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} + y \leq \frac{1}{S_0}$$

$P_{0rad}$  = effective radial load  
 $C_{0rad}$  = permissible radial load  
 $P_{0ax}$  = effective axial load  
 $C_{0ax}$  = permissible axial load  
 $M_1$  = effective moment in the X-direction  
 $M_x$  = permissible moment in the X-direction  
 $M_2$  = effective moment in the Y-direction  
 $M_y$  = permissible moment in the Y-direction  
 $M_3$  = effective moment in the Z-direction  
 $M_z$  = permissible moment in the Z-direction  
 $y$  = reduction due to preload

The safety factor  $S_0$  can lie on the lower given limit if the occurring forces can be determined with sufficient precision.

If shock and vibration are present, the higher value should be selected. For dynamic applications a higher safety level is required.



LONG LINEAR RAILS

### Calculation formulae

#### Example formulae for determining the forces on the most heavily loaded slider

The parameters in the formulae are shown below.

$F$	=	effective force (N)	$M_1, M_2$	=	effective moment (Nm)
$F_g$	=	weight-force (N)	$m$	=	mass (Kg)
$P_1, P_2, P_3, P_4$	=	effective load on the slider (N)	$a$	=	acceleration ( $m/s^2$ )

### Horizontal movement

#### Static test

**Slider load**

$$P_1 = F \cdot \frac{b}{a+b}$$

in addition each slider is loaded by a moment:

$$M_1 = \frac{F}{2} \cdot c$$

**Slider load**

$$P_{1a} \approx P_{2a} = \frac{F}{2}$$

$$P_{2b} \approx P_{1b} = F \cdot \frac{a}{b}$$

**Slider load**

$$P_2 = F \cdot \frac{a}{b}$$

$$P_1 = P_2 + F$$



Horizontal movement

Static test

**Slider load**

$$P_1 = \frac{F}{4} - \left( \frac{F}{2} \cdot \frac{b}{c} \right) - \left( \frac{F}{2} \cdot \frac{a}{d} \right)$$

$$P_2 = \frac{F}{4} - \left( \frac{F}{2} \cdot \frac{b}{c} \right) - \left( \frac{F}{2} \cdot \frac{a}{d} \right)$$

$$P_3 = \frac{F}{4} - \left( \frac{F}{2} \cdot \frac{b}{c} \right) - \left( \frac{F}{2} \cdot \frac{a}{d} \right)$$

$$P_4 = \frac{F}{4} - \left( \frac{F}{2} \cdot \frac{b}{c} \right) - \left( \frac{F}{2} \cdot \frac{a}{d} \right)$$

Note: Its defined that slider number 4 is always located closest to the point where the force is applied.

Vertical movement

Static test

**Slider load**

$$P_{2a} \approx P_{1b} = F \cdot \frac{a}{b}$$

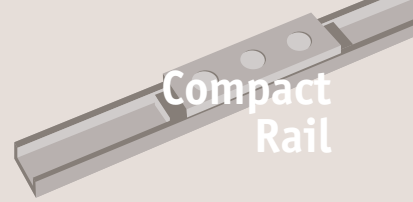
Horizontal movement

Static test

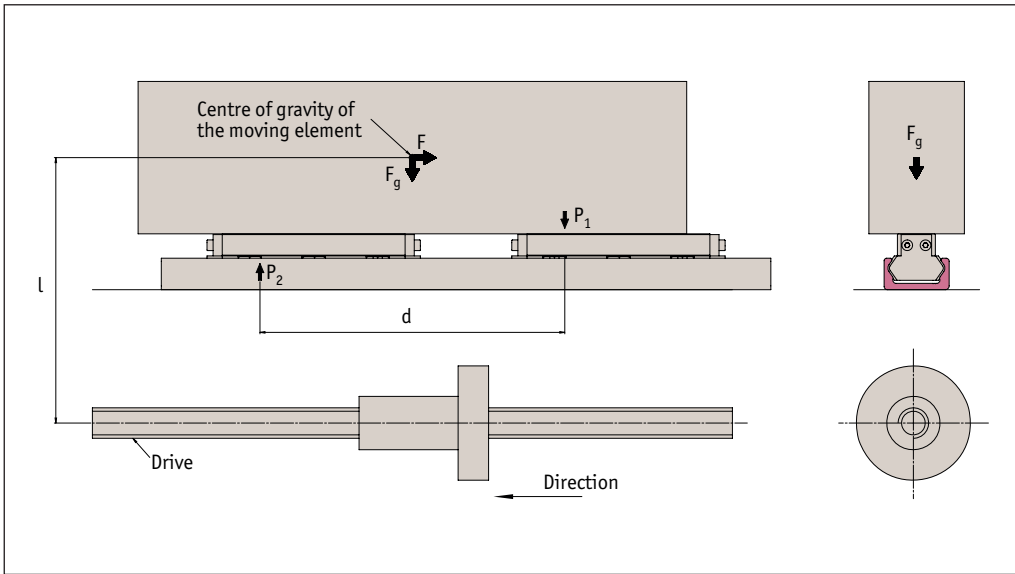
**Slider load**

$$P_1 = F$$

$$M_2 = F \cdot a$$



# Compact Rail from Automotion Components

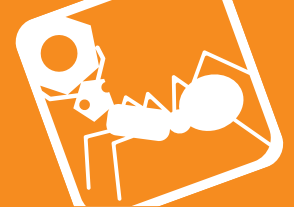


### Horizontal movement

Test with a moving element of the weight-force  $F_g$  at the instant the direction of movement changes:

Inertial force	Slider load at time of reverse	
$F = m \cdot a$	$P_1 = \frac{F \cdot l}{d} + \frac{F_g}{2}$	$P_2 = \frac{F_g}{2} - \frac{F \cdot l}{d}$

$F$	=	effective force (N)
$F_g$	=	weight-force (N)
$P_1, P_2, P_3, P_4$	=	effective load on the slider (N)
$M_1, M_2$	=	effective moment (Nm)
$m$	=	mass (Kg)
$a$	=	acceleration ( $m/s^2$ )



The dynamic load capacity C is a conventional variable used for calculating the service life. This load corresponds to a nominal service life of 100 Km. For values of the individual slider see Load Capacities. The following formulae link the calculated theoretical service life to the dynamic load capacity and the equivalent load:

$$L_{km} = 100 \cdot \left( \frac{C}{P} \cdot \frac{f_c}{f_i} \cdot f_h \right)^3$$

$L_{km}$  = theoretical service life in Km       $f_c$  = contact factor  
 $C$  = dynamic load capacity in N       $f_i$  = application coefficient  
 $P$  = effective equivalent load in N       $f_h$  = stroke factor

The equivalent load P corresponds in its effects to the sum of the forces and moments working simultaneously on a slider. If these different load components are known, P results as follows:

$$P_1 = P_r + \left( \frac{P_a}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \right) \cdot C_{0rad}$$

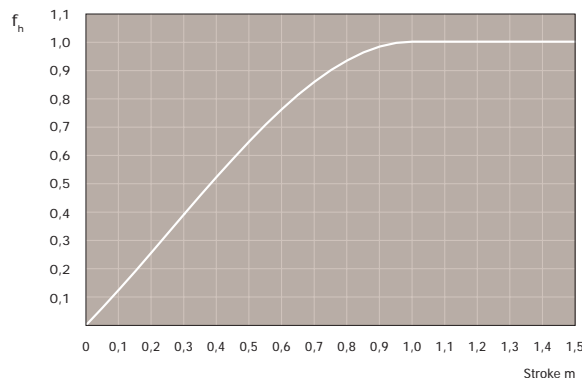
Here the external loads are assumed as constant in time. Brief loads, which do not exceed the maximum load capacities, do not have any relevant effect on the service life and can therefore be discounted. The contact factor  $f_c$  refers to applications in which several sliders pass the same rail section. If two or more sliders move over the same point of a rail, the contact factor according to the table would be taken into account in the formula for calculation of the service life.

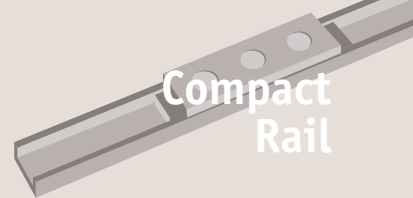
Number of sliders	1	2	3	4
$f_c$	1,00	0,80	0,70	0,63

The application coefficient  $f_i$  takes into account the operational conditions in the service life calculation. It has similar significance to the safety factor  $S_0$  in the static load test. It is calculated as described in the following table:

Conditions	Application coefficient $f_i$
Neither shocks or vibrations, smooth and low-frequency direction change; clean operating conditions; low speeds (<1 m/s)	1,0 - 1,5
Slight vibrations, average speeds (1 - 2.5 m/s) and average frequency of direction change	1,5 - 2,0
Shock and vibration, high speeds (>2.5 m/s) and high-frequency direction change; extreme dirt contamination	2,0 - 3,5

The stroke factor  $f_h$  takes into account the higher load of the raceways and rollers during short strokes on the same total length of the run. The corresponding values are taken from the following graph (for strokes longer than 1m,  $f_h = 1$ ):





### Setting the preload

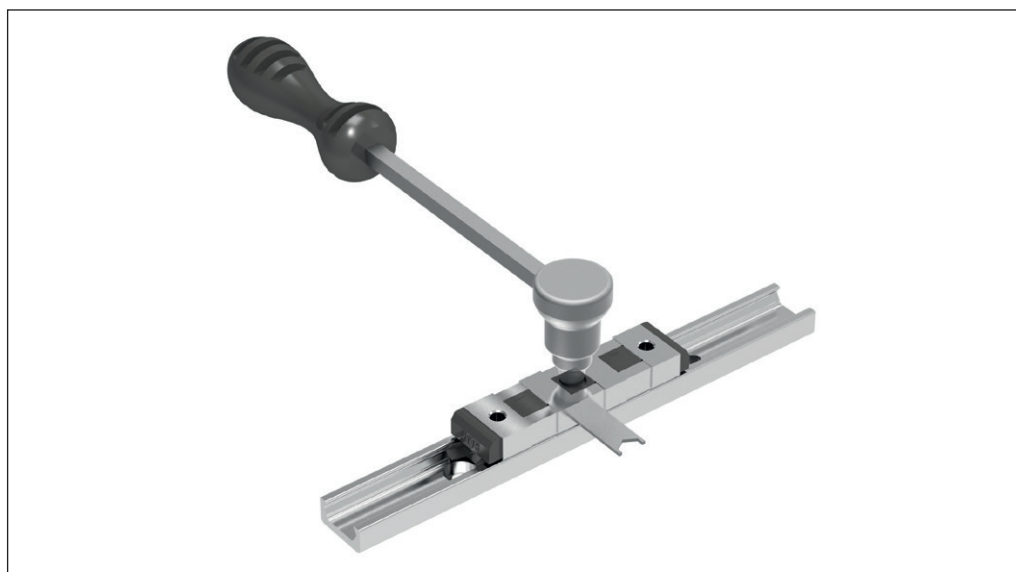
The slides have three or more large roller bearings. In the case of a standard three roller bearing slider, the two at either end are fixed and the direction of these fixed positions is marked on the sliders with a dot or an arrow. Insert the sliders in the rails with the fixed rollers set to take the load in the best direction.

The middle roller is on an eccentric that is easily adjusted using the thin spanner that is supplied with the sliders. This allows the preload of the system to be set as required - either stiff or free running.

Generally the slider will not be installed into the rails when leaving the factory. To set them to the required preload is a simple procedure:

- Ensure the raceways are clean.
- Insert the sliders in the rail (remove the small plastic wipers).
- Slightly loosen the eccentric roller (using the spanner and a hexagon key).
- For U rails, a packer should be used to set the slider in its middle lateral position.
- Use the flat spanner provided to move the eccentric roller (marked with a red dot on the screw) to adjust the stiffness of its running; not too loose so that there is excess play and not too tight that a lot of friction is generated.
- Lock the roller in the desired position with the spanner and a hexagon key.
- For sliders with more than one eccentric roller repeat this process with all the eccentric roller bearings; make sure that all the rollers have uniform contact with the rails.
- Move the slider along the length of the rail to check required running - it should move easily; with no play at any point on the rail.
- Tighten the fixing screw to the correct torque - whilst holding the spanner in place to ensure no further movement.
- Finally, if using a slider with a wiper that you have removed prior to installation - re-install the wipers if required.

Slider size	Tightening torque Nm
18	3
28	7
35	12
43	12



Compact Rail from Automotion Components

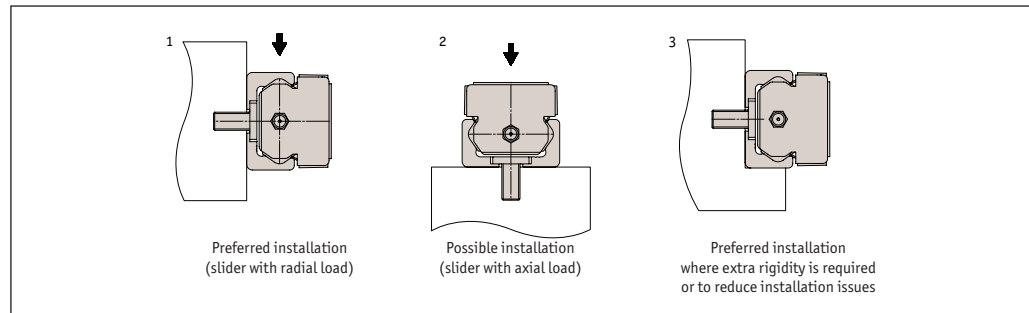
LONG LINEAR RAILS



Both the T and K type rails can be installed in two positions relative to the external force. For axial loading of the slider, the load capacity is reduced because of the decline in contact area caused by the change in position. Therefore, the rails should be installed where possible in such a way that the load of the rollers acts in the radial direction.

For critical applications with vibrations or a higher demand for rigidity, a support of the rail is beneficial.

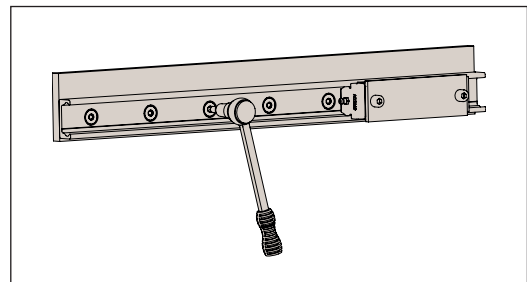
This reduces the deformation of the rail sides and the load on the screws. The installation of a rail with countersunk holes requires an external reference for alignment. This reference can also be used as a rail support if required. All information in this section on alignment of the rails, refers to rails with cylindrical countersunk holes. Rails with countersunk holes self-align using the specified fixing hole pattern.



**Rail Installation Without Support**

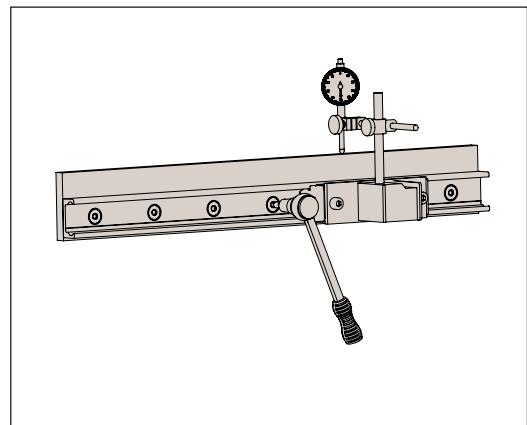
**Rail Installation 1**

- Carefully lay the guide rail with the installed slider on the mounting surface and slightly tighten the fixing screws so that the guide rail lightly touches the mounting surface.



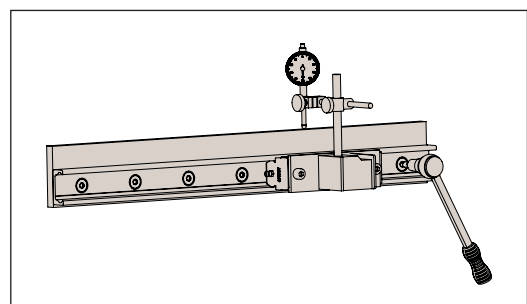
**Rail Installation 2**

- Install a dial indicator so that the offset of the rail to a reference line can be measured. Now position the slider in the centre of the rail and set the dial indicator to zero. Move the slider back and forth between each two hole spacings and carefully align the rail.
- Fasten the three centre screws of this area with the specified tightening torque.
- Now position the slider on one end of the rail and carefully align the rail to zero on the dial indicator.

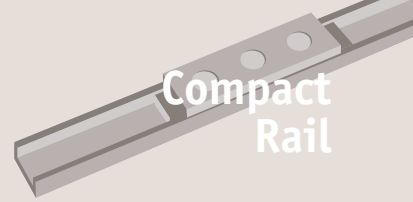


**Rail Installation 3**

- Begin to tighten the screws as specified while moving the slider together with the dial indicator. Make sure that it does not show any significant deflection. Repeat this procedure from the other end of the rail.



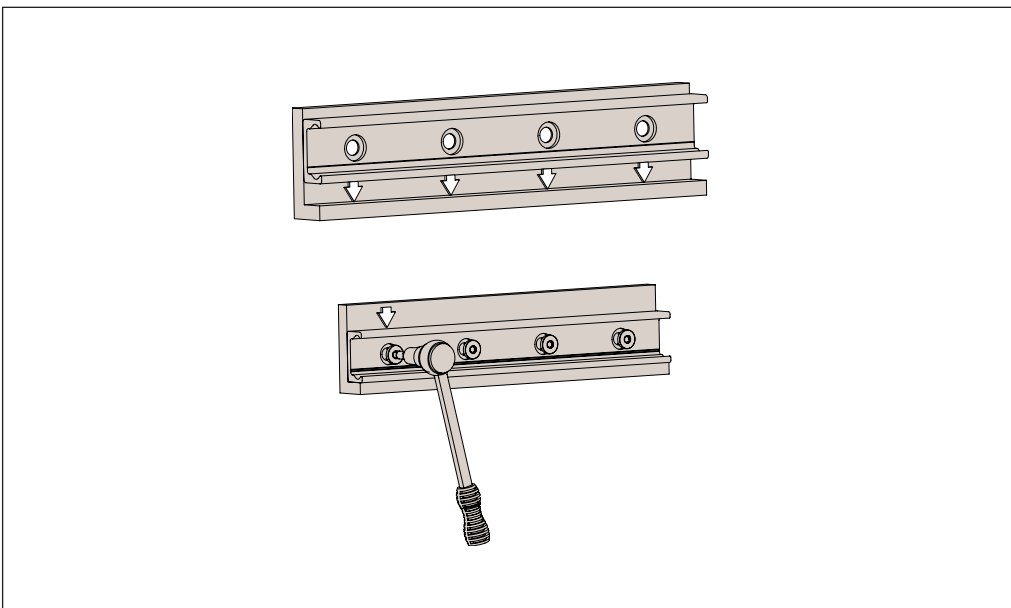




#### Rail installation with reference surface as support

- Remove unevenness, burrs and dirt from the support surface.
- Press the rail against the support surface and insert all screws without tightening them.
- Start tightening the fixing screws to the specified torque on one end of the rail while continuing to hold pressure on the rail against the support surface.

Screw type	Rail size	Tightening torque Nm
M4	18	3
M5	28	9
M6	35	12
M8	43	22



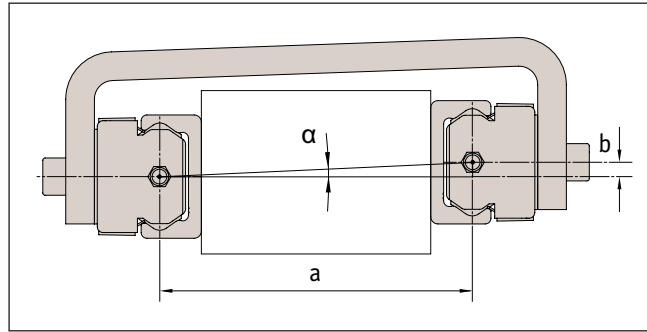
# Compact Rail from Automation Components

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**Parallel installation of two rails**

If two T rails or a T and U system are installed, the height difference of the two rails must not exceed a certain value, in order to ensure proper guiding. These maximum values result from the maximum allowable twisting angle of the rollers in the raceways. These values account for a load capacity reduction of 30% on the T rail and must be carefully observed.



Size	$\alpha$
18	1,0 mrad (0,057°)
28	2,5 mrad (0,143°)
35	2,6 mrad (0,149°)
43	3,0 mrad (0,171°)

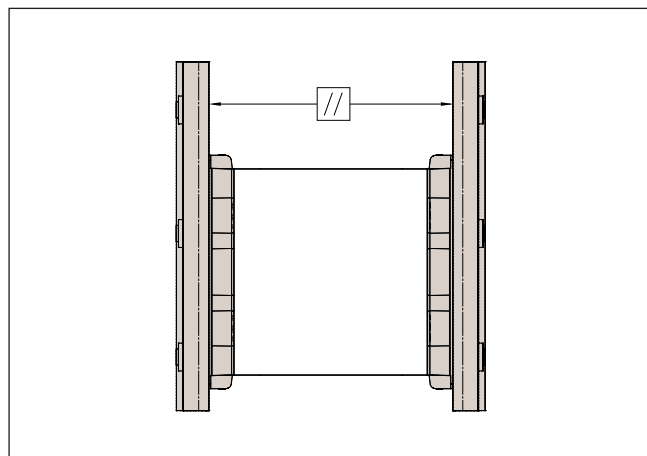
Example:

NTE43: if  $a = 500 \text{ mm}$

$b = a \cdot \tan \alpha = 1,5 \text{ mm}$

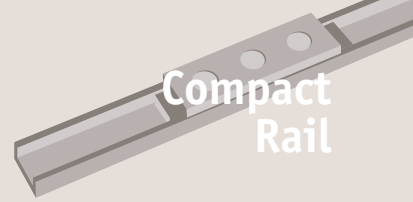
**Using two T rails**

When using two T rails, the maximum parallelism deviation must not be exceeded. Otherwise stresses can occur, which can result in a reduction in load capacity and service life.



Size	//
18	0,03
28	0,04
35	0,04
43	0,05

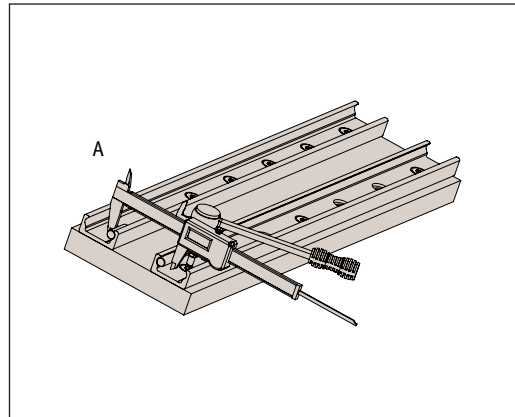
For parallelism problems, it is recommended to use a T and U or K and U system, since these combinations compensate for inaccuracies.  $K_1$  is the standard slider preload,  $K_2$  is the increased preload setting where extra rigidity is required.



### Flat, parallel installation of two T rails

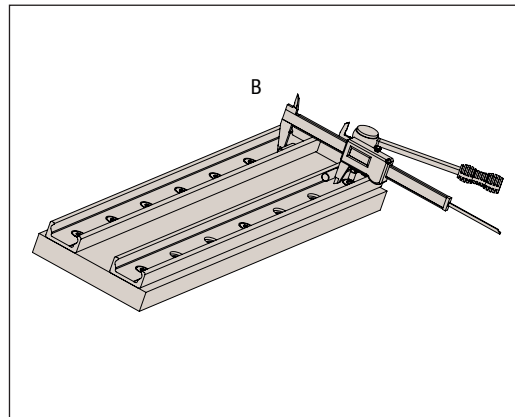
#### Parallel installation 1

- Clean chips and dirt from the prepared mounting surfaces and fasten the first rail as described in the section on installation of a single rail.
- Fasten the second rail at the ends and the centre.
- Tighten the screws in Position A and measure the distance between the raceways of the two rails, this can be aided by using a dowel positioned in the two raceway grooves.



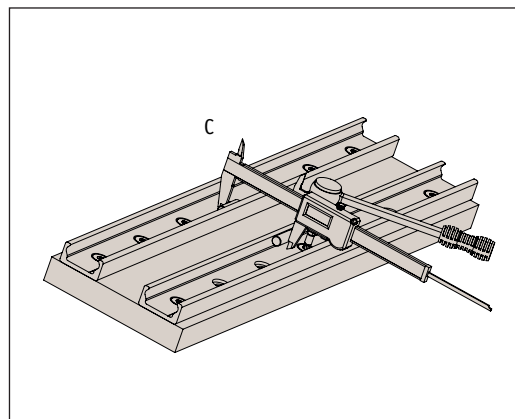
#### Parallel installation 2

- Fasten the rail in Position B so that the distance between the raceways does not exceed the measured values in Position A while maintaining the tolerances for parallel installation.



#### Parallel installation 3

- Fasten the screw in Position C so that the distance of the raceways is as close to an average between the two values from A and B as possible.
- Fasten all other screws and check the specified tightening torque of all fixing screws.



Compact Rail from Automation Components

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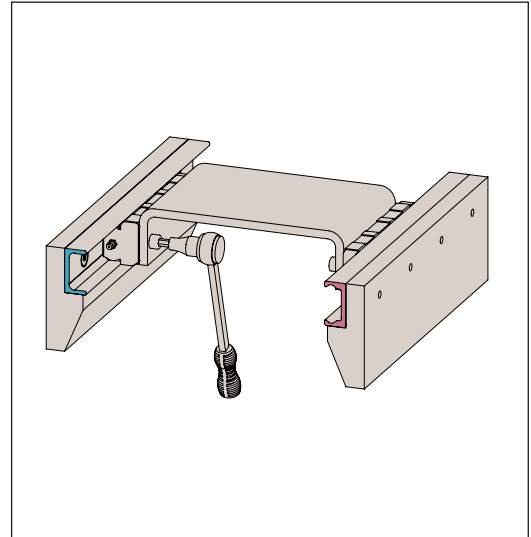


### Installation of the T and U systems

When using a two-track parallel linear guide system we recommend the use of a master/slave rail system. The combination of T and U rails for compensating of deviations in parallelism or the K and U system to compensate for deviations in parallelism in two planes.

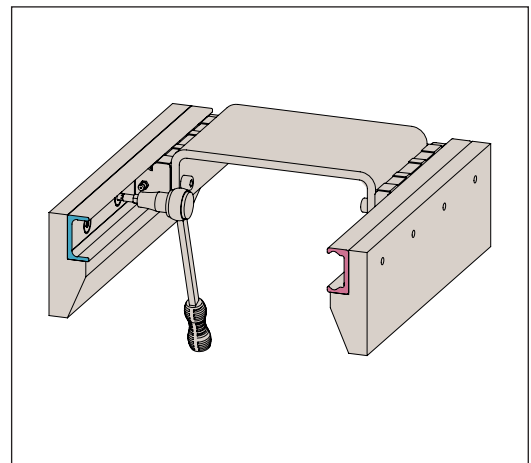
#### Installation step 1

- For a master/slave rail system the master (T) rail is always installed first. This is then used as a reference for the slave (U type) rail.
- Then proceed as described in the section on installation of a single rail.
- Install the master rail and only tighten the fixing screws slightly.
- Insert the sliders into the rails and install the element to be moved, without tightening the screws.
- Insert the element in the centre of the rails and tighten it to the correct tightening torque.



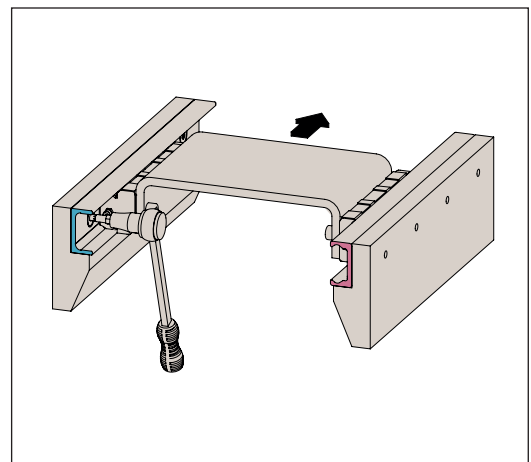
#### Installation step 2

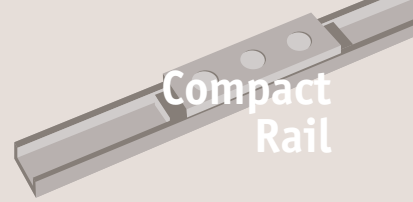
- Tighten the centre rail fixing screws to the specified torque.



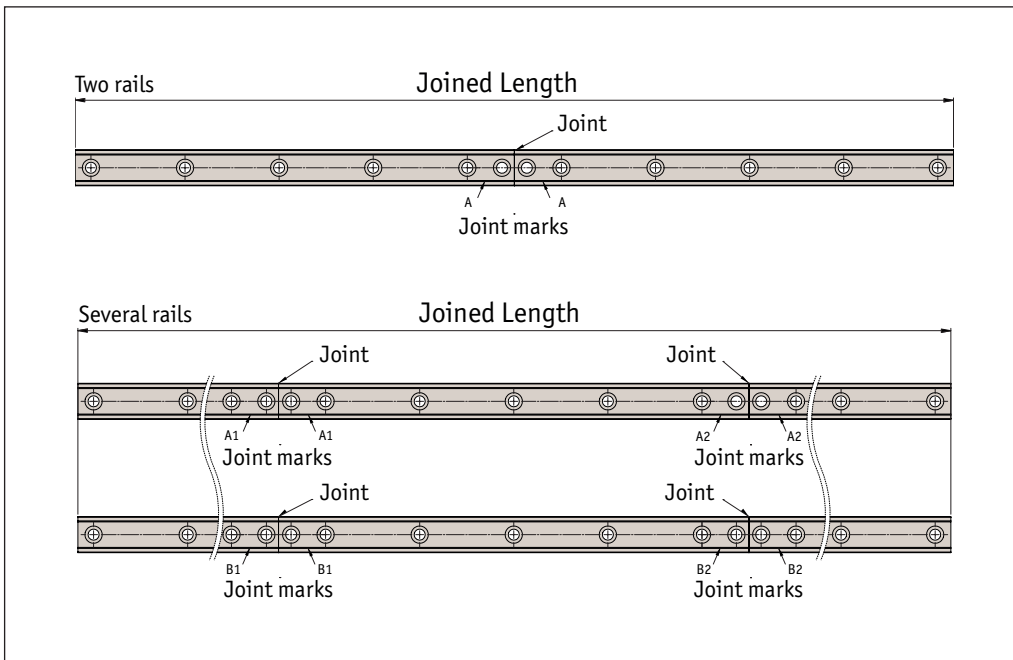
#### Installation step 3

- Move the element to one end of the rail and start tightening the rest of the screws in the direction away from the slider.





If long guide rails are required, two or more rails can be joined to the desired length. When putting guide rails together, be sure that the register marks shown below are positioned correctly.

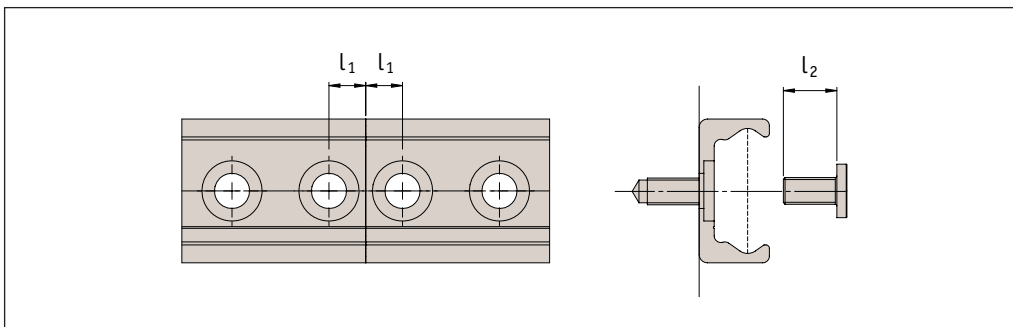


### General information

Each rail has a one piece maximum length. Longer lengths are achieved by joining two or more rails together (joined rails).

We then machine the rail ends at a right angle to the end face and mark them.

Additional fixing screws are included with the delivery, which ensure a problem-free transition of the slider over the joints, if the following installation procedures are followed. Two additional threaded holes are required in the load-bearing structure. The alignment tool for aligning the rail joint should be ordered (see below).



Rail size	$l_1$	Threaded hole (load bearing structure)	$l_2$	Alignment tool
18	7	M4	8	L1918.AT18
28	8	M5	10	L1928.AT28
35	10	M6	13	L1935.AT35
43	11	M8	16	L1943.AT43
K43	11	M8	16	L1943.AK43

Compact Rail from Automotion Components

LONG LINEAR RAILS

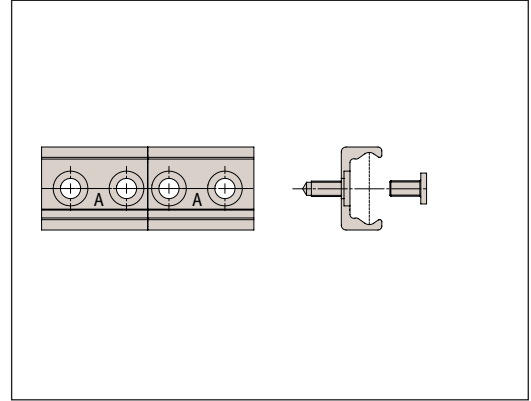


### Installation of joined rails

After the fixing holes for the rails are made in the load-bearing structure, the joined rails can be installed according to the following procedure:

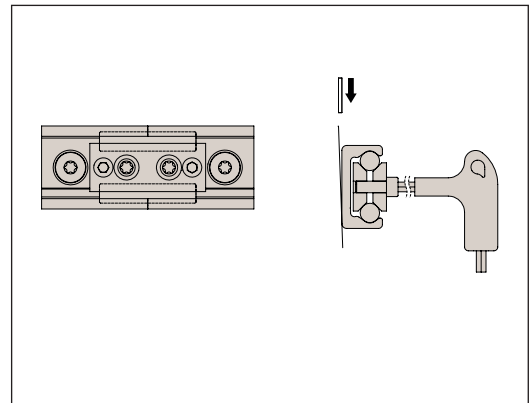
#### Installation of joined rails step 1

- Fix the individual rails on the mounting surface by tightening all screws except for each last one on the rail joint.
- Install the end fixing screws without tightening them.



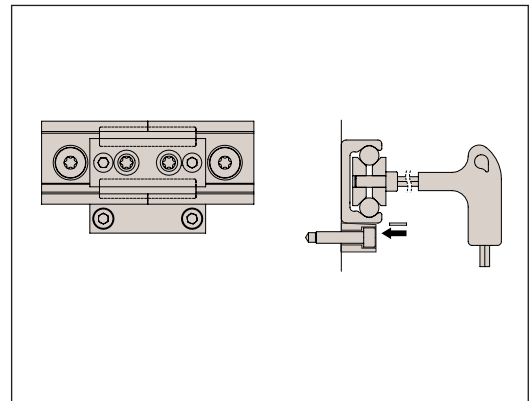
#### Installation of joined rails step 2

- Place the alignment fixture on the rail joint and tighten both set screws uniformly, until the raceways are aligned.
- After doing this, check if both rail backs lie evenly on the mounting surface. If a gap has formed there, it must be shimmed.



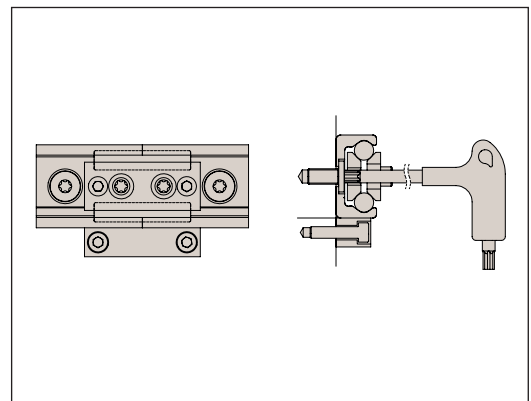
#### Installation of joined rails step 3

- The bottom of the rails should be supported in the area of the transition. Here a possible existing gap should be looked for, which if exists, should be eliminated by shimming.



#### Installation of joined rails step 4

- Insert the key through the holes in the alignment tool and tighten the screws on the rail ends.
- For rails with 90° countersunk holes, tighten the remaining screws starting from the rail joint in the direction of the rail centre. For rails with cylindrical countersunk holes, first adjust the rail to an external reference, then proceed as described above.
- Remove the alignment tool from the rail.





The Easy Slide family of linear rails have a compact cross-section and low-friction movement.

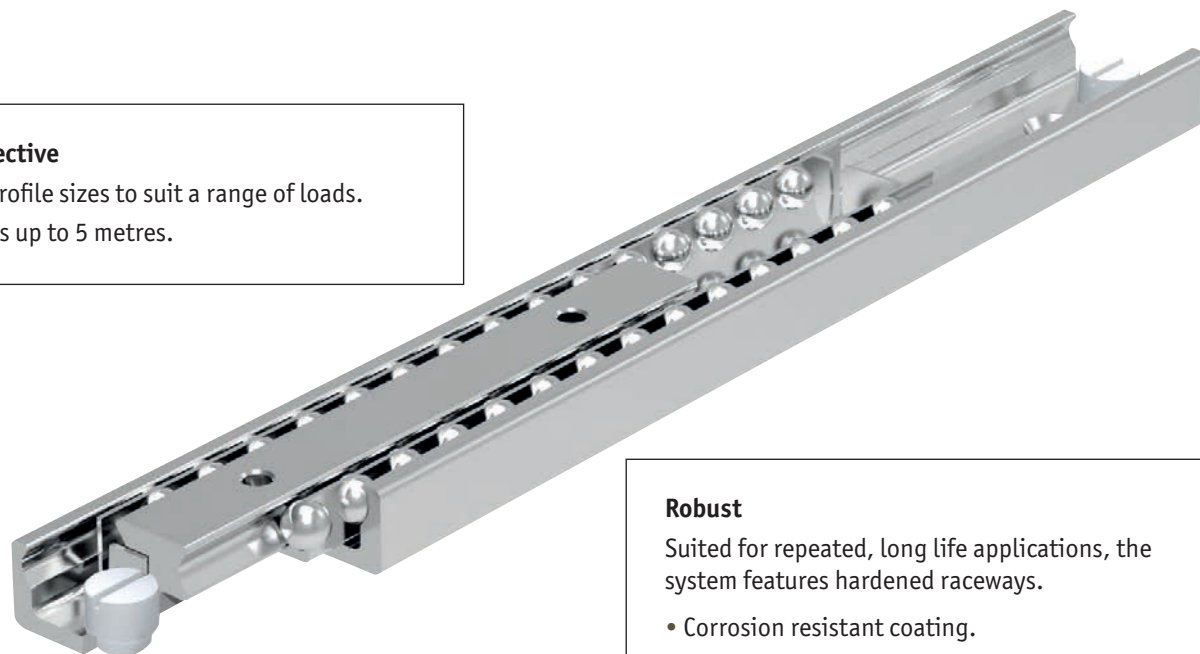
### Robust and long service life

Easy Slide's range of cross-sectional rail sizes allow for applications in which high load capacities can be applied, combined with a very long service life.

This is achieved through producing the guide rails and sliders from cold-drawn bearing steel, the ball cage from steel and the balls from hardened bearing steel. The raceways of the guide rails and sliders are induction hardened. The system can be provided with anti-corrosion coating and stainless steel cages and balls.

### Cost-effective

- 4 rail profile sizes to suit a range of loads.
- Lengths up to 5 metres.



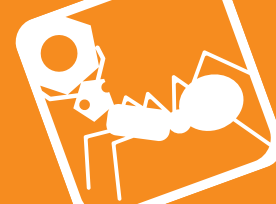
### Robust

Suited for repeated, long life applications, the system features hardened raceways.

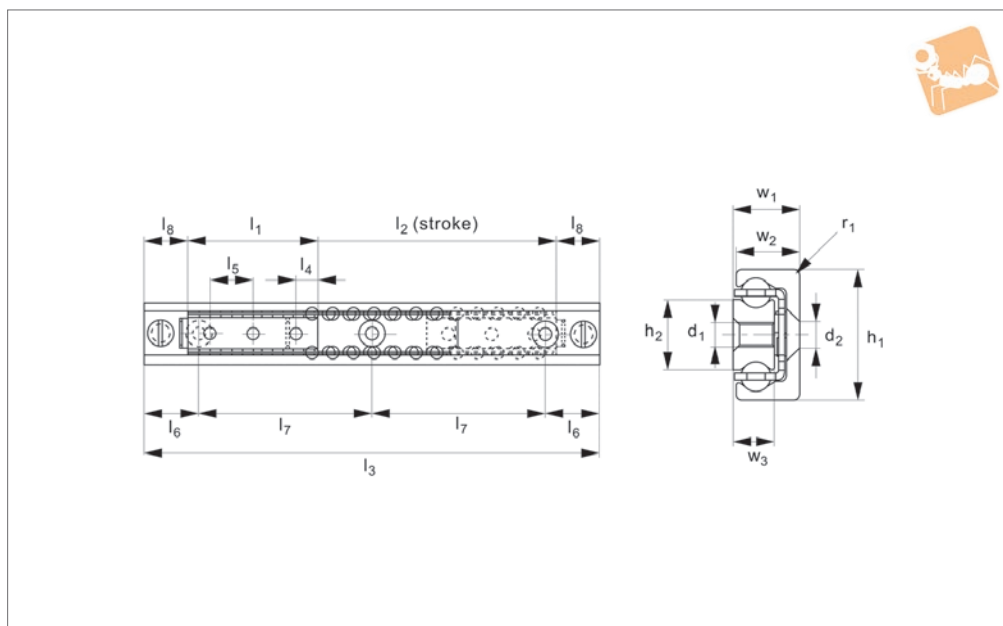
- Corrosion resistant coating.
- Stainless steel cage & ball option.

**Horizontal applications only**

Please note: For high acceleration/deceleration movement, cage creep may occur especially with long ball cage versions. Please see technical notes to minimise this.



## L1972.28



### Material

Cold drawn steel, zinc plated (excluding raceways). Induction hardened raceways. High precision, bearing steel balls with steel cages.

### Technical Notes

Smooth movement, with very little friction

(less than 0,01). Speeds up to 0,8 m/s. To ensure all fixing holes in the rail are accessible  $l_1$  must be  $< (l_3 / 2) - (2 \times l_8)$ . To ensure proper smooth movement the stroke,  $l_2$  must be  $< 7 \times l_1$ . Rail weight: 1,0 Kg/m.

### Tips

Must be mounted to a rigid structure. Stroke end stops must be fitted. Only to be used for horizontal movements.

Order No.	$l_1$	$l_3$	$l_2$ stroke	$h_1$	$w_1$	$d_1$	$d_2$ for	Load $C_{0ax}$ N max.	Load $C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1972.S28-060-0030-0130	60	130	30	28	13	M5	M5	2436	3480	18	25	37
L1972.S28-060-0110-0210	60	210	110	28	13	M5	M5	2436	3480	18	25	37
L1972.S28-060-0190-0290	60	290	190	28	13	M5	M5	2436	3480	18	25	37
L1972.S28-060-0270-0370	60	370	270	28	13	M5	M5	2436	3480	18	25	37
L1972.S28-060-0350-0450	60	450	350	28	13	M5	M5	2436	3480	18	25	37
L1972.S28-080-0090-0210	80	210	90	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-080-0170-0290	80	290	170	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-080-0250-0370	80	370	250	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-080-0330-0450	80	450	330	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-080-0410-0530	80	530	410	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-080-0490-0610	80	610	490	28	13	M5	M5	3248	4640	23	45	65
L1972.S28-130-0120-0290	130	290	120	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0200-0370	130	370	200	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0280-0450	130	450	280	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0360-0530	130	530	360	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0440-0610	130	610	440	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0520-0690	130	690	520	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0600-0770	130	770	600	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0680-0850	130	850	680	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0760-0930	130	930	760	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-130-0840-1010	130	1010	840	28	13	M5	M5	5278	7540	38	117	166
L1972.S28-210-0200-0450	210	450	200	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0280-0530	210	530	280	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0360-0610	210	610	360	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0440-0690	210	690	440	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0520-0770	210	770	520	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0600-0850	210	850	600	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0680-0930	210	930	680	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-0760-1010	210	1010	760	28	13	M5	M5	8526	12180	62	300	430





# Easy Slide - Size 28

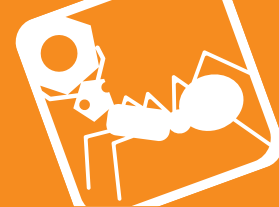


## Long Linear Rails

Order No.	$l_1$	$l_3$	$l_2$ stroke	$h_1$	$w_1$	$d_1$	$d_2$ for	Load $C_{0ax}$ N max.	Load $C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1972.S28-210-0920-1170	210	1170	920	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-210-1080-1330	210	1330	1080	28	13	M5	M5	8526	12180	62	300	430
L1972.S28-290-0280-0610	290	610	280	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0360-0690	290	690	360	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0440-0770	290	770	440	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0520-0850	290	850	520	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0600-0930	290	930	600	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0680-1010	290	1010	680	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-0840-1170	290	1170	840	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-1000-1330	290	1330	1000	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-290-1160-1490	290	1490	1160	28	13	M5	M5	11774	16820	83	570	815
L1972.S28-370-0360-0770	370	770	360	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-0450-0850	370	850	440	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-0520-0930	370	930	520	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-0600-1010	370	1010	600	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-0760-1170	370	1170	760	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-0920-1330	370	1330	920	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-370-1080-1490	370	1490	1080	28	13	M5	M5	15022	21460	106	930	1327
L1972.S28-450-0440-0930	450	930	440	28	13	M5	M5	18270	26100	130	1374	1960
L1972.S28-450-0520-1010	450	1010	520	28	13	M5	M5	18270	26100	130	1374	1960
L1972.S28-450-0680-1170	450	1170	680	28	13	M5	M5	18270	26100	130	1374	1960
L1972.S28-450-0840-1330	450	1330	840	28	13	M5	M5	18270	26100	130	1374	1960
L1972.S28-450-1000-1490	450	1490	1000	28	13	M5	M5	18270	26100	130	1374	1960
L1972.S28-450-1160-1650	450	1650	1160	28	13	M5	M5	18270	26100	130	1374	1960

Order No.	$l_4$	$l_5$	Holes/ slider	$l_6$	$l_7$	$l_8$	$h_2$	$w_2$	$w_3$	R
L1972.S28-060-0030-0130	10	20	3	25	80	20	15	12.25	7.5	1
L1972.S28-060-0110-0210	10	20	3	25	80	20	15	12.25	7.5	1
L1972.S28-060-0190-0290	10	20	3	25	80	20	15	12.25	7.5	1
L1972.S28-060-0270-0370	10	20	3	25	80	20	15	12.25	7.5	1
L1972.S28-060-0350-0450	10	20	3	25	80	20	15	12.25	7.5	1
L1972.S28-080-0090-0210	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-080-0170-0290	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-080-0250-0370	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-080-0330-0450	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-080-0410-0530	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-080-0490-0610	10	20	4	25	80	20	15	12.25	7.5	1
L1972.S28-130-0120-0290	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0200-0370	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0280-0450	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0360-0530	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0440-0610	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0520-0690	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0600-0770	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0680-0850	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-130-0760-0930	25	80	2	25	80	20	15	12.25	7.5	1

LONG LINEAR RAILS



LONG LINEAR RAILS

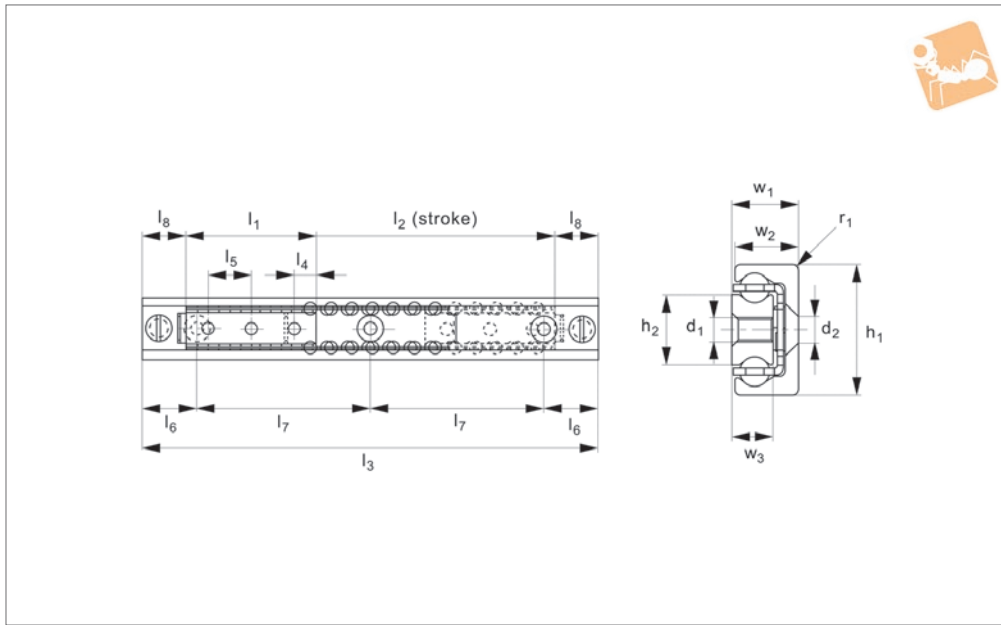
Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S28-130-0840-1010	25	80	2	25	80	20	15	12.25	7.5	1
L1972.S28-210-0200-0450	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0280-0530	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0360-0610	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0440-0690	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0520-0770	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0600-0850	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0680-0930	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0760-1010	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-0920-1170	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-210-1080-1330	25	80	3	25	80	20	15	12.25	7.5	1
L1972.S28-290-0280-0610	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0360-0690	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0440-0770	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0520-0850	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0600-0930	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0680-1010	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-0840-1170	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-1000-1330	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-290-1160-1490	25	80	4	25	80	20	15	12.25	7.5	1
L1972.S28-370-0360-0770	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-0450-0850	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-0520-0930	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-0600-1010	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-0760-1170	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-0920-1330	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-370-1080-1490	25	80	5	25	80	20	15	12.25	7.5	1
L1972.S28-450-0440-0930	25	80	6	25	80	20	15	12.25	7.5	1
L1972.S28-450-0520-1010	25	80	6	25	80	20	15	12.25	7.5	1
L1972.S28-450-0680-1170	25	80	6	25	80	20	15	12.25	7.5	1
L1972.S28-450-0840-1330	25	80	6	25	80	20	15	12.25	7.5	1
L1972.S28-450-1000-1490	25	80	6	25	80	20	15	12.25	7.5	1
L1972.S28-450-1160-1650	25	80	6	25	80	20	15	12.25	7.5	1



# Easy Slide- Size 35



## Long Linear Rails



### L1972.35

LONG LINEAR RAILS

#### Material

Cold drawn steel, zinc plated (excluding raceways). Induction hardened raceways. High precision, bearing steel balls with steel cages.

(less than 0,01). Speeds up to 0,8 m/s. To ensure all fixing holes in the rail are accessible  $l_1$  must be  $< (l_3 / 2) - (2 \times l_8)$ . To ensure proper smooth movement the stroke,  $l_2$  must be  $< x \times l_1$ . Rail weight: 1,8 Kg/m.

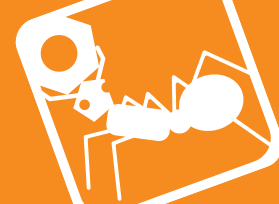
#### Tips

Must be mounted to a rigid structure. Stroke end stops must be fitted. Only to be used for horizontal movements.

#### Technical Notes

Smooth movement, with very little friction

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$w_1$	$d_1$	$d_2$ for	Load $C_{0ax}$ N max.	Load $C_{0rad}$ N max.	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1972.S35-130-0110-0290	130	110	290	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0190-0370	130	190	370	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0270-0450	130	270	450	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0350-0530	130	350	530	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0430-0610	130	430	610	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0510-0690	130	510	690	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0590-0770	130	590	770	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0670-0850	130	670	850	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0750-0930	130	750	930	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-130-0830-1010	130	830	1010	35	17	M6	M6	6825	9750	50	156	219
L1972.S35-210-0190-0450	210	190	450	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0270-0530	210	270	530	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0350-0610	210	350	610	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0430-0690	210	430	690	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0510-0770	210	510	770	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0590-0850	210	590	850	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0670-0930	210	670	930	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0750-1010	210	750	1010	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-0910-1170	210	910	1170	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-1070-1330	210	1070	1330	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-210-1230-1490	210	1230	1490	35	17	M6	M6	11025	15750	87	397	560
L1972.S35-290-0270-0610	290	270	610	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0350-0690	290	350	690	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0430-0770	290	430	770	35	17	M6	25	15225	21750	109	745	1086
L1972.S35-290-0510-0850	290	510	850	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0590-0930	290	590	930	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0670-1010	290	670	1010	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0830-1170	290	830	1170	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-0990-1330	290	990	1330	35	17	M6	M6	15225	21750	109	745	1086



LONG LINEAR RAILS

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	w <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub> for	Load C <sub>0 ax</sub> N max.	Load C <sub>0 rad</sub> N max.	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm
L1972.S35-290-1150-1490	290	1150	1490	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-290-1310-1650	290	1310	1650	35	17	M6	M6	15225	21750	109	745	1086
L1972.S35-370-0350-0770	370	350	770	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-0430-0850	370	430	850	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-0510-0930	370	510	930	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-0590-1010	370	590	1010	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-0750-1170	370	750	1170	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-0910-1330	370	910	1330	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-1070-1490	370	1070	1490	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-370-1230-1650	370	1230	1650	35	17	M6	M6	19425	27750	140	1206	1720
L1972.S35-450-0430-930	450	430	930	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-0510-1010	450	510	1010	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-0670-1170	450	670	1170	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-0830-1330	450	830	1330	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-0990-1490	450	990	1490	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-1150-1650	450	1150	1650	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-450-1310-1810	450	1310	1810	35	17	M6	M6	23625	33750	169	1783	2541
L1972.S35-530-0590-1170	530	590	1170	35	17	M6	M6	27825	39750	198.5	2469	3521
L1972.S35-530-0750-1330	530	750	1330	35	17	M6	M6	27825	39750	198.5	2469	3521
L1972.S35-530-0910-1490	530	910	1490	35	17	M6	M6	27825	39750	198.5	2469	3521
L1972.S35-530-1070-1650	530	1070	1650	35	17	M6	M6	27825	39750	198.5	2469	3521
L1972.S35-530-1230-1810	530	1230	1810	35	17	M6	M6	27825	39750	198.5	2469	3521
L1972.S35-610-0670-1330	610	670	1330	35	17	M6	M6	32025	45750	229	3268	4663
L1972.S35-610-0830-1490	610	830	1490	35	17	M6	M6	32025	45750	229	3268	4663
L1972.S35-610-0990-1650	610	990	1650	35	17	M6	M6	32025	45750	229	3268	4663
L1972.S35-610-1150-1810	610	1150	1810	35	17	M6	M6	32025	45750	229	3268	4663

Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S35-130-0110-0290	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0190-0370	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0270-0450	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0350-0530	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0430-0610	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0510-0690	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0590-0770	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0670-0850	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0750-0930	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-130-0830-1010	25	80	2	25	80	25	15.8	16	10	2
L1972.S35-210-0190-0450	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0270-0530	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0350-0610	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0430-0690	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0510-0770	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0590-0850	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0670-0930	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0750-1010	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-0910-1170	25	80	3	25	80	25	15.8	16	10	2



# Easy Slide- Size 35



## Long Linear Rails

Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S35-210-1070-1330	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-210-1230-1490	25	80	3	25	80	25	15.8	16	10	2
L1972.S35-290-0270-0610	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0350-0690	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0430-0770	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0510-0850	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0590-0930	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0670-1010	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0830-1170	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-0990-1330	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-1150-1490	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-290-1310-1650	25	80	4	25	80	25	15.8	16	10	2
L1972.S35-370-0350-0770	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-0430-0850	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-0510-0930	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-0590-1010	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-0750-1170	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-0910-1330	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-1070-1490	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-370-1230-1650	25	80	5	25	80	25	15.8	16	10	2
L1972.S35-450-0430-930	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-0510-1010	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-0670-1170	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-0830-1330	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-0990-1490	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-1150-1650	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-450-1310-1810	25	80	6	25	80	25	15.8	16	10	2
L1972.S35-530-0590-1170	25	80	7	25	80	25	15.8	16	10	2
L1972.S35-530-0750-1330	25	80	7	25	80	25	15.8	16	10	2
L1972.S35-530-0910-1490	25	80	7	25	80	25	15.8	16	10	2
L1972.S35-530-1070-1650	25	80	7	25	80	25	15.8	16	10	2
L1972.S35-530-1230-1810	25	80	7	25	80	25	15.8	16	10	2
L1972.S35-610-0670-1330	25	80	8	25	80	25	15.8	16	10	2
L1972.S35-610-0830-1490	25	80	8	25	80	25	15.8	16	10	2

LONG LINEAR RAILS



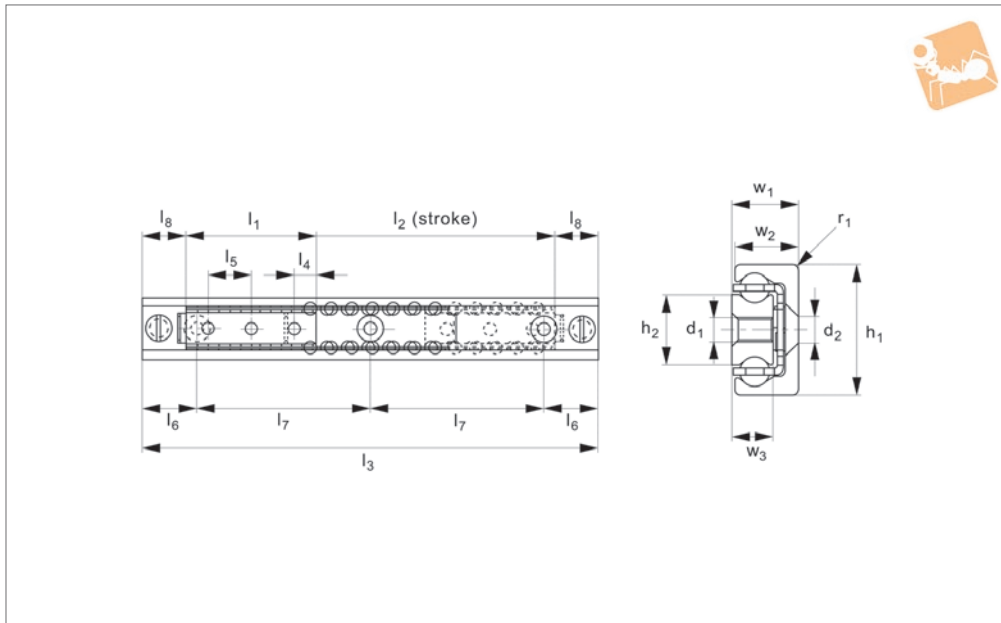
Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
<b>L1972.S35-610-0990-1650</b>	25	80	8	25	80	25	15.8	16	10	2
<b>L1972.S35-610-1150-1810</b>	25	80	8	25	80	25	15.8	16	10	2



# Easy Slide - Size 43



## Long Linear Rails



### L1972.43

LONG LINEAR RAILS

#### Material

Cold drawn steel, zinc plated (excluding raceways). Induction hardened raceways. High precision, bearing steel balls with steel cages.

(less than 0,01). Speeds up to 0,8 m/s. To ensure all fixing holes in the rail are accessible  $l_1$  must be  $< (l_3 / 2) - (2 \times l_8)$ . To ensure proper smooth movement the stroke,  $l_2$  must be  $< 7 \times l_1$ . Rail weight: 2,6 Kg/m.

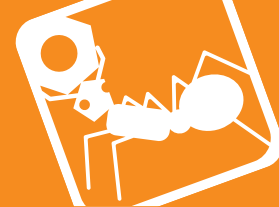
#### Tips

Must be mounted to a rigid structure. Stroke end stops must be fitted. Only to be used for horizontal movements.

#### Technical Notes

Smooth movement, with very little friction

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$w_1$	$d_1$	$d_2$ for	Load $C_{0ax}$ N max.	Load $C_{0rad}$ N max.	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L1972.S43-130-0110-0290	130	110	290	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0190-0370	130	190	370	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0270-0450	130	270	450	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0350-0530	130	350	530	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0430-0610	130	430	610	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0510-0690	130	510	690	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0590-0770	130	590	770	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0670-0850	130	670	850	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0750-0930	130	750	930	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-130-0830-1010	130	830	1010	43	22	M8	M8	9737	13910	99.5	215	301
L1972.S43-210-0190-0450	210	190	450	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0270-0530	210	270	530	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0350-0610	210	350	610	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0430-0690	210	430	690	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0510-0770	210	510	770	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0590-0850	210	590	850	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0670-0930	210	670	930	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0750-1010	210	750	1010	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-0910-1170	210	910	1170	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-1070-1330	210	1070	1330	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-1230-1490	210	1230	1490	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-210-1390-1650	210	1390	1650	43	22	M8	M8	15729	22470	157	552	786
L1972.S43-290-0270-0610	290	270	610	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0350-0690	290	350	690	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0430-0770	290	430	770	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0510-0850	290	510	850	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0590-0930	290	590	930	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0670-1010	290	670	1010	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-0830-1170	290	830	1170	43	22	M8	M8	21721	31030	217	1053	1500



LONG LINEAR RAILS

Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	h <sub>1</sub>	w <sub>1</sub>	d <sub>1</sub>	d <sub>2</sub> for	Load C <sub>0 ax</sub> N max.	Load C <sub>0 rad</sub> N max.	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm
L1972.S43-290-0990-1330	290	990	1330	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-1150-1490	290	1150	1490	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-1310-1650	290	1310	1650	43	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-290-1470-1810	290	1470	1810	25	22	M8	M8	21721	31030	217	1053	1500
L1972.S43-370-0350-0770	370	350	770	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-0430-0850	370	430	850	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-0510-0930	370	510	930	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-0590-1010	370	590	1010	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-0750-1170	370	750	1170	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-0910-1330	370	910	1330	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-1070-1490	370	1070	1490	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-1230-1650	370	1230	1650	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-370-1390-1810	370	1390	1810	43	22	M8	M8	27713	39590	275	1712	2441
L1972.S43-450-0430-0930	450	430	930	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-0510-1010	450	510	1010	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-0670-1170	450	670	1170	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-0830-1330	450	830	1330	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-0990-1490	450	990	1490	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-1150-1650	450	1150	1650	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-1310-1810	450	1310	1810	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-450-1470-1970	450	1470	1970	43	22	M8	M8	33705	48150	334.5	2531	3611
L1972.S43-530-0590-1170	530	590	1170	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-530-0750-1330	530	750	1330	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-530-0910-1490	530	910	1490	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-530-1070-1650	530	1070	1650	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-530-1230-1810	530	1230	1810	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-530-1390-1970	530	1390	1970	43	22	M8	M8	39697	56710	392	3511	5009
L1972.S43-610-0670-1330	610	670	1330	43	22	M8	M8	45689	65270	452	4650	6636
L1972.S43-610-0830-1490	610	830	1490	43	22	M8	M8	45689	65270	452	4650	6636
L1972.S43-610-0990-1650	610	990	1650	43	22	M8	M8	45689	65270	452	4650	6636
L1972.S43-610-1150-1810	610	1150	1810	43	22	M8	M8	45689	65270	452	4650	6636
L1972.S43-610-1310-1970	610	1310	1970	43	22	M8	M8	45689	65270	452	4650	6636

Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S43-130-0110-0290	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0190-0370	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0270-0450	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0350-0530	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0430-0610	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0510-0690	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0590-0770	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0670-0850	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0750-0930	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-130-0830-1010	25	80	2	25	80	25	23	21	13.5	2.5
L1972.S43-210-0190-0450	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0270-0530	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0350-0610	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0430-0690	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0510-0770	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0590-0850	25	80	3	25	80	25	23	21	13.5	2.5





# Easy Slide - Size 43



## Long Linear Rails

Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S43-210-0670-0930	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0750-1010	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-0910-1170	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-1070-1330	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-1230-1490	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-210-1390-1650	25	80	3	25	80	25	23	21	13.5	2.5
L1972.S43-290-0270-0610	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0350-0690	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0430-0770	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0510-0850	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0590-0930	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0670-1010	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0830-1170	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-0990-1330	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-1150-1490	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-1310-1650	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-290-1470-1810	25	80	4	25	80	25	23	21	13.5	2.5
L1972.S43-370-0350-0770	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-0430-0850	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-0510-0930	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-0590-1010	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-0750-1170	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-0910-1330	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-1070-1490	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-1230-1650	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-370-1390-1810	25	80	5	25	80	25	23	21	13.5	2.5
L1972.S43-450-0430-0930	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-0510-1010	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-0670-1170	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-0830-1330	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-0990-1490	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-1150-1650	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-1310-1810	25	80	6	25	80	25	23	21	13.5	2.5
L1972.S43-450-1470-1970	25	80	6	25	80	25	23	21	13.5	2.5

LONG LINEAR RAILS



LONG LINEAR RAILS

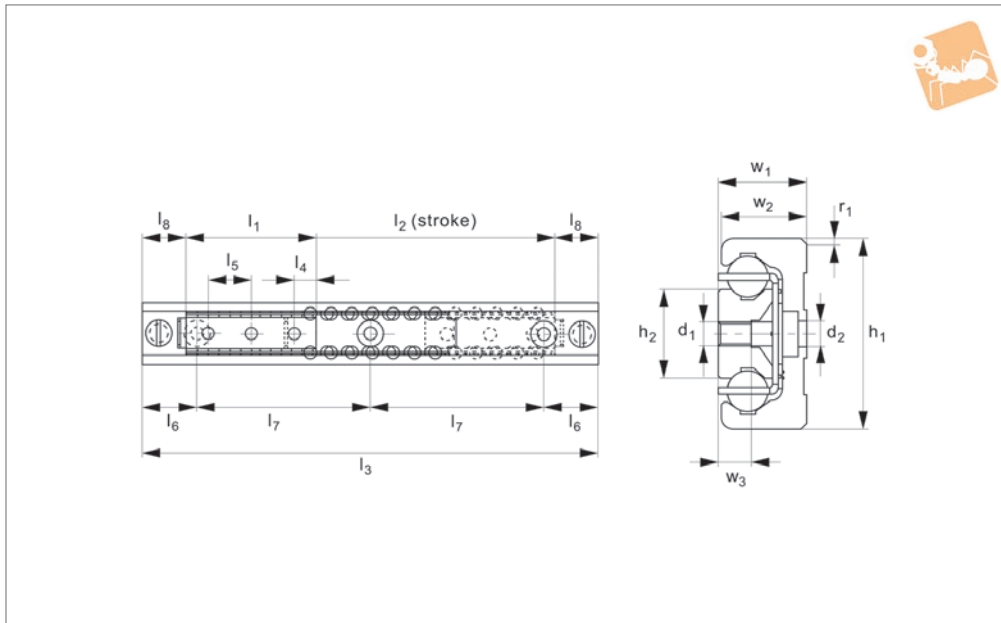
Order No.	l <sub>4</sub>	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.S43-530-0590-1170	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-530-0750-1330	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-530-0910-1490	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-530-1070-1650	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-530-1230-1810	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-530-1390-1970	25	80	7	25	80	25	23	21	13.5	2.5
L1972.S43-610-0670-1330	25	80	8	25	80	25	23	21	13.5	2.5
L1972.S43-610-0830-1490	25	80	8	25	80	25	23	21	13.5	2.5
L1972.S43-610-0990-1650	25	80	8	25	80	25	23	21	13.5	2.5
L1972.S43-610-1150-1810	25	80	8	25	80	25	23	21	13.5	2.5
L1972.S43-610-1310-1970	25	80	8	25	80	25	23	21	13.5	2.5



# Easy Slide - Size 63



Long Linear  
Rails



L1972.63

LONG LINEAR RAILS

### Material

Cold drawn steel, zinc plated (excluding raceways). Induction hardened raceways. High precision, bearing steel balls with steel cages.

accessible  $l_1$  must be  $< (l_3 / 2) - (2 \times l_8)$ . To ensure proper smooth movement the stroke,  $l_2$  must be  $< x l_1$ .

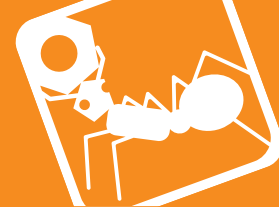
### Tips

- Must be mounted to a rigid structure.
- Stroke end stops must be fitted.
- Only to be used for horizontal movements.

### Technical Notes

To ensure all fixing holes in the rail are

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$w_1$	$d_1$	Load $C_{0\text{ax}}$ N max.	Load $C_{0\text{rad}}$ N max.	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	$l_4$
L1972.SN63-130-0400-0610	130	400	610	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-130-0480-0690	130	480	690	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-130-0560-0770	130	560	770	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-130-0640-0850	130	640	850	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-130-0720-0930	130	720	930	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-130-0800-1010	130	800	1010	63	29	M8	18200	26000	238,8	394	563	25
L1972.SN63-210-0320-0610	210	320	610	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0400-0690	210	400	690	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0480-0770	210	480	770	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0560-0850	210	560	850	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0640-0930	210	640	930	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0720-1010	210	720	1010	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-0880-1170	210	880	1170	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-1040-1330	210	1040	1330	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-1200-1490	210	1200	1490	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-210-1360-1650	210	1360	1650	63	29	M8	29400	42000	385,8	1029	1470	25
L1972.SN63-290-0240-0610	290	240	610	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0320-0690	290	320	690	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0400-0770	290	400	770	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0480-0850	290	480	850	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0560-0930	290	560	930	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0640-1010	290	640	1010	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0800-1170	290	800	1170	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-0960-1330	290	960	1330	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-1120-1490	290	1120	1490	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-290-1280-1650	290	1280	1650	63	29	M8	40600	58000	532,8	1962	2803	25
L1972.SN63-370-0320-0770	370	320	770	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-0400-0850	370	400	850	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-0480-0930	370	480	930	63	29	M8	51800	74000	679,8	3194	4563	25



LONG LINEAR RAILS

Order No.	$l_1$	$l_2$	$l_3$	$h_1$	$w_1$	$d_1$	Load $C_{0ax}$ N max.	Load $C_{0rad}$ N max.	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm	$l_4$
L1972.SN63-370-0560-1010	370	560	1010	63	29	M8	74000	74000	679,8	3194	4563	25
L1972.SN63-370-0720-1170	370	720	1170	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-0880-1330	370	880	1330	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-1040-1490	370	1040	1490	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-1200-1650	370	1200	1650	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-370-1360-1810	370	1360	1810	63	29	M8	51800	74000	679,8	3194	4563	25
L1972.SN63-450-0400-0930	450	400	930	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-0480-1010	450	480	1010	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-0640-1170	450	640	1170	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-0800-1330	450	800	1330	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-0960-1490	450	960	1490	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-1120-1650	450	1120	1650	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-450-1280-1810	450	1280	1810	63	29	M8	63000	90000	826,7	4725	6750	25
L1972.SN63-530-0560-1170	530	560	1170	63	29	M8	74200	106000	937,7	6554	9363	25
L1972.SN63-530-0720-1330	530	720	1330	63	29	M8	74200	106000	937,7	6554	9363	25
L1972.SN63-530-0880-1490	530	880	1490	63	29	M8	74200	106000	937,7	6554	9363	25
L1972.SN63-530-1040-1650	530	1040	1650	63	29	M8	74200	106000	937,7	6554	9363	25
L1972.SN63-530-1200-1810	530	1200	1810	63	29	M8	74200	106000	937,7	6554	9363	25
L1972.SN63-530-1360-1970	530	1360	1970	63	29	M8	74200	106000	937,7	6554	74200	25
L1972.SN63-610-0640-1330	610	640	1330	63	29	M8	85400	122000	1120,7	8682	12403	25
L1972.SN63-610-0800-1490	610	800	1490	63	29	M8	85400	122000	1120,7	8682	12403	25
L1972.SN63-610-0960-1650	610	960	1650	63	29	M8	85400	122000	1120,7	8682	12403	25
L1972.SN63-610-1120-1810	610	1120	1810	63	29	M8	85400	122000	1120,7	8682	12403	25
L1972.SN63-610-1280-1970	610	1280	1970	63	29	M8	85400	122000	1120,7	8682	12403	25

Order No.	$l_5$	Holes/ slider	$l_6$	$l_7$	$l_8$	$h_2$	$w_2$	$w_3$	R
L1972.SN63-130-0400-0610	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-130-0480-0690	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-130-0560-0770	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-130-0640-0850	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-130-0720-0930	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-130-0800-1010	80	2	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0320-0610	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0400-0690	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0480-0770	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0560-0850	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0640-0930	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0720-1010	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-0880-1170	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-1040-1330	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-1200-1490	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-210-1360-1650	80	3	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0240-0610	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0320-0690	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0400-0770	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0480-0850	80	4	25	80	40	29.3	28	10.5	2 x 45



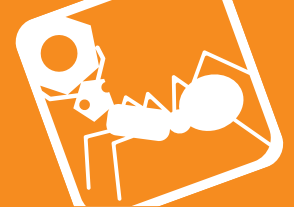
# Easy Slide - Size 63



## Long Linear Rails

Order No.	l <sub>5</sub>	Holes/ slider	l <sub>6</sub>	l <sub>7</sub>	l <sub>8</sub>	h <sub>2</sub>	w <sub>2</sub>	w <sub>3</sub>	R
L1972.SN63-290-0560-0930	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0640-1010	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0800-1170	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-0960-1330	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-1120-1490	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-290-1280-1650	80	4	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0320-0770	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0400-0850	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0480-0930	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0560-1010	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0720-1170	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-0880-1330	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-1040-1490	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-1200-1650	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-370-1360-1810	80	5	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-0400-0930	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-0480-1010	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-0640-1170	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-0800-1330	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-0960-1490	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-1120-1650	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-450-1280-1810	80	6	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-0560-1170	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-0720-1330	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-0880-1490	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-1040-1650	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-1200-1810	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-530-1360-1970	80	7	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-610-0640-1330	80	8	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-610-0800-1490	80	8	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-610-0960-1650	80	8	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-610-1120-1810	80	8	25	80	40	29.3	28	10.5	2 x 45
L1972.SN63-610-1280-1970	80	8	25	80	40	29.3	28	10.5	2 x 45

LONG LINEAR RAILS



### Specifications

- Available rail widths: 22, 28, 35, 43mm.
- Induction hardened raceways.
- Maximum rail length 1970mm.
- Rails and sliders made of cold-drawn steel.
- Balls made of hardened steel.
- Maximum operating speed 0,8 m/s.
- Temperature range -30°C to +140°C.
- Coefficient of friction ~ 0.01
- Electrolytic zinc-plating to ISO 2081; increased anti-corrosion protection and stainless steel balls on request.
- Linear accuracy 0,1mm/m stroke.
- For horizontal installation only.
- External end stops must be used.
- Fixing screws of class 10,9 must be used for all linear bearings.

### Applications



#### Food, drink & pharmaceuticals

Food handling conveyors  
pharmaceutical factories  
stainless display equipment



#### Special purpose & packaging machines

Precision positioning systems  
handling units • robotic systems  
cutting machines



#### Logistics solutions

Container extensions  
heavy duty extending systems  
sliding doors



#### Construction

Seating  
sliding panels



#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



#### Transport (rail)

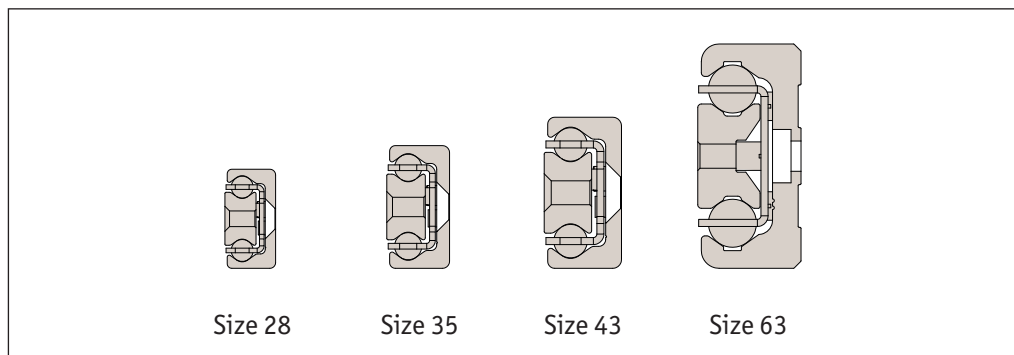
Seat adjustment  
sliding doors  
battery removal units



#### Medical technology

X-ray equipment  
dental chairs  
bed extensions

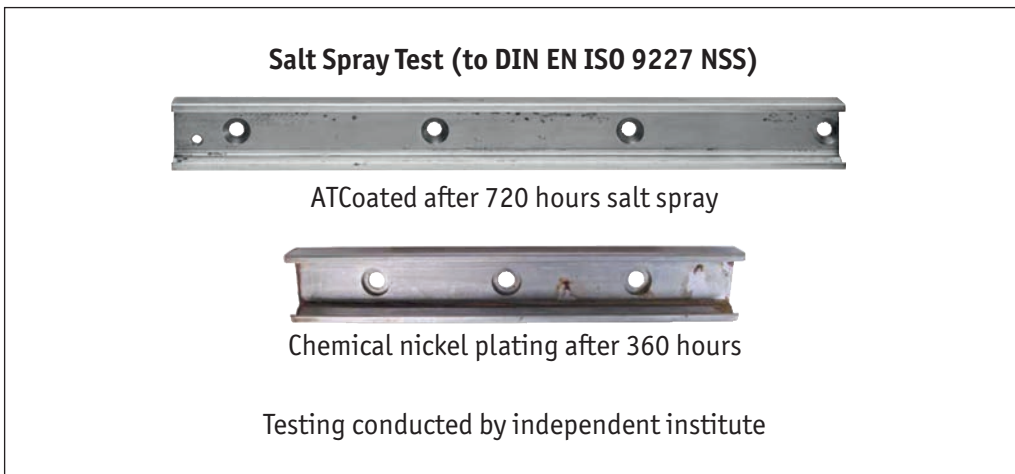
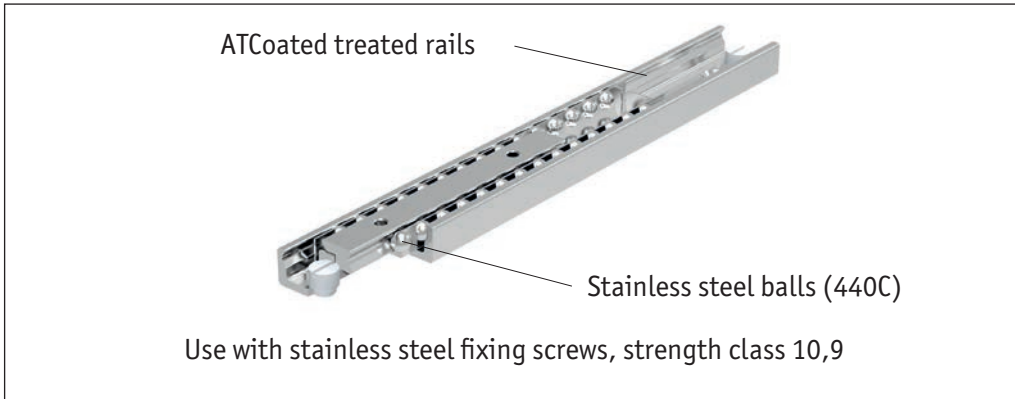
### Rail Sizes





### Anti-corrosion treatments

The telescopic slides have a standard electrolytic zinc plated coating (to ISO 2081). We offer a number of alternatives to increase the anti-corrosion protection including nickel plating. However, our preferred and most effective solution to inhibit corrosion is to apply a special corrosion resistant (ATCoat) plating to the rails and sliders and to combine this with stainless steel ball bearings. This coating is applied after the zinc plating process and is a special trivalent chromium passivation that is approximately 4 microns thick (and is free of Chromium VI). This applies a nano-particle coating and has extremely good results of 200 hours in salt spray tests before any signs of white rust.



The corrosion resistant alloy coating on the telescopic slides is a soft coating and will (over time) wear off the raceways (which are subject to loads from the ball bearings) – this can be seen sometimes by a thin line on the raceways.

However, lubricating the raceways with grease (as recommended) ensures, as far as possible, the good corrosion properties of the overall coating.

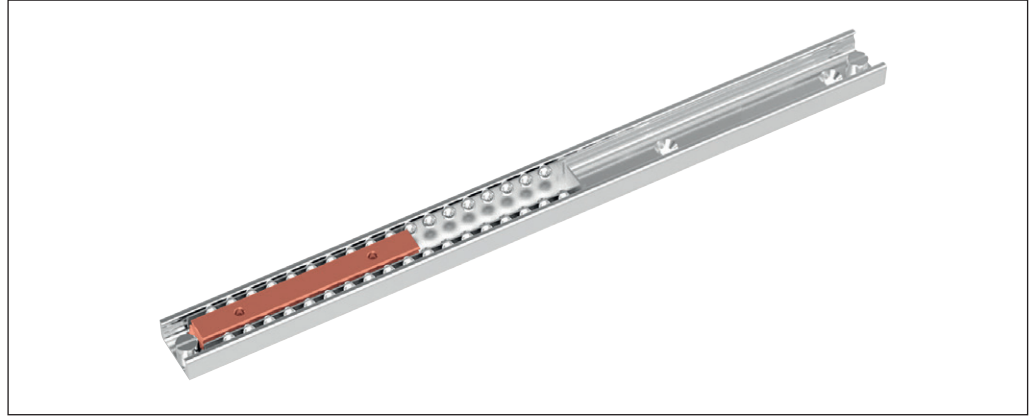
This coating is often re-applied to linear guides and telescopic pullouts in the food and chemical industries; where they can be exposed to corrosive or aggressive environments.

The ATCoat has received USDA approved and also EU approved No.1935/2004 for use in the food industry.



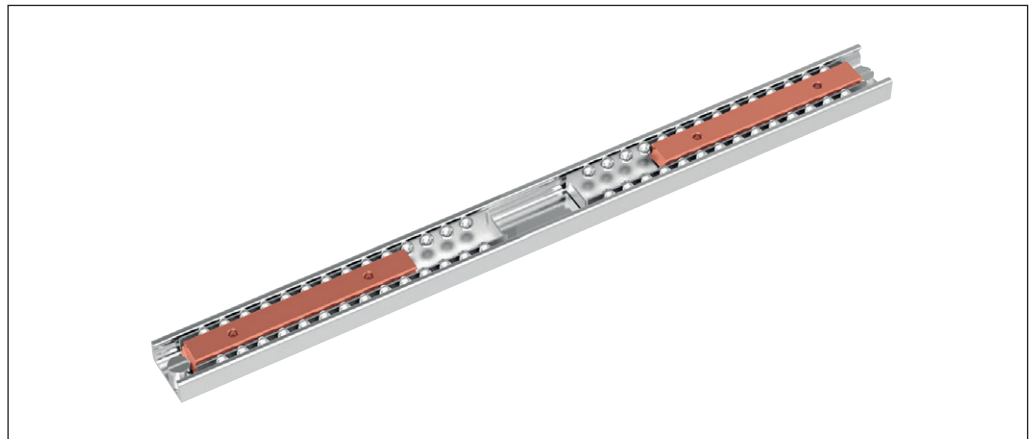
**Single sliders**

**L1972** - This linear bearing consists of a guide rail and a slider that runs within the ball cage in the guide rail. High load capacities, compact cross-sections and simple and easy mounting characterise the series. Slider lengths can vary here as well and then form a total unit, which implements the required stroke.



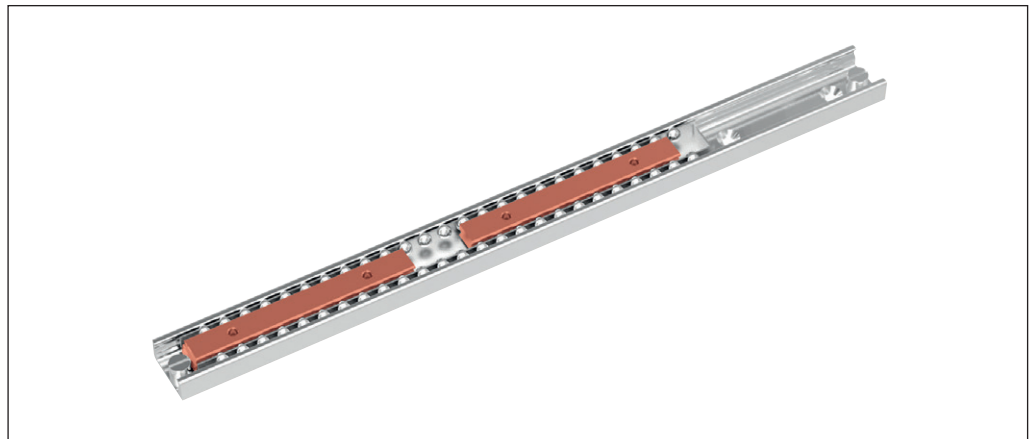
**Multiple independent sliders**

**L1972.MI** - Variant with several sliders, which each runs in its own ball cage, independently of each other, in the guide rail. Slider length and stroke for each slider can be different within one rail.



**Multiple synchronised sliders**

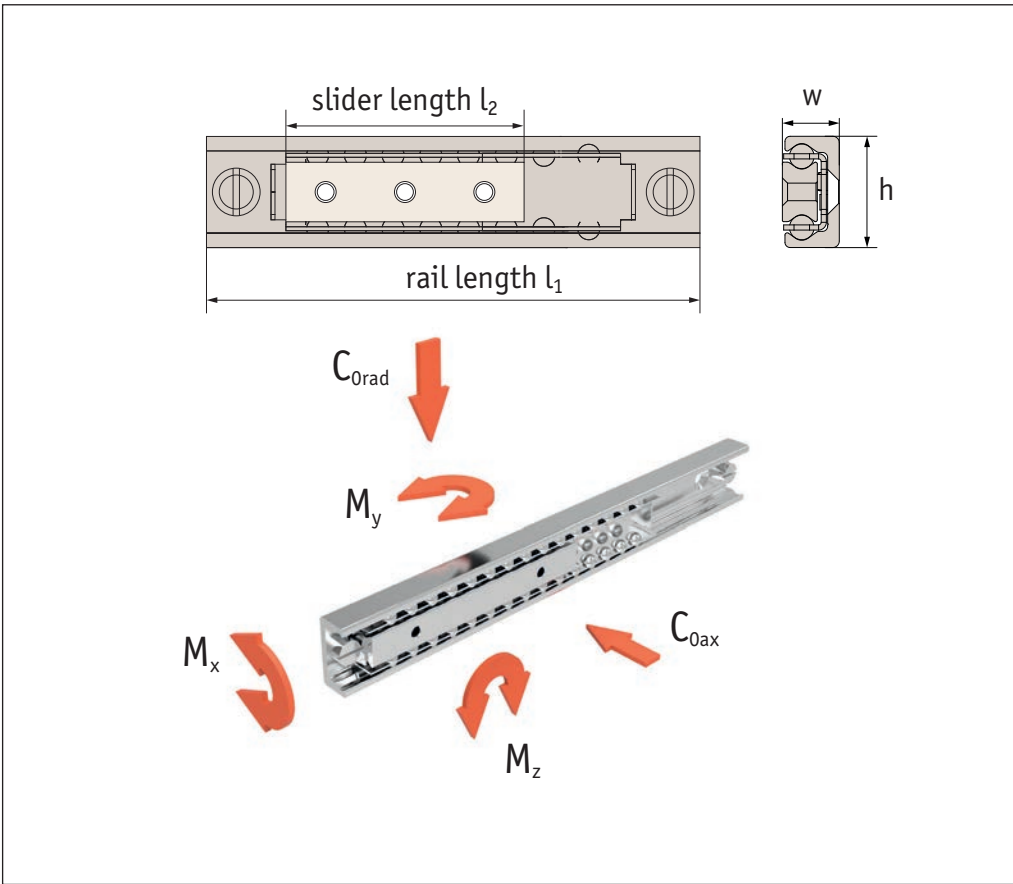
**L1972.MS** - Several sliders run in a common ball cage within the guide rails. The slider lengths can vary here as well and then form a total unit, which implements the required stroke.



Easy Slide Rails from Automation Components

LONG LINEAR RAILS





Easy Slide Rails from Automation Components

LONG LINEAR RAILS

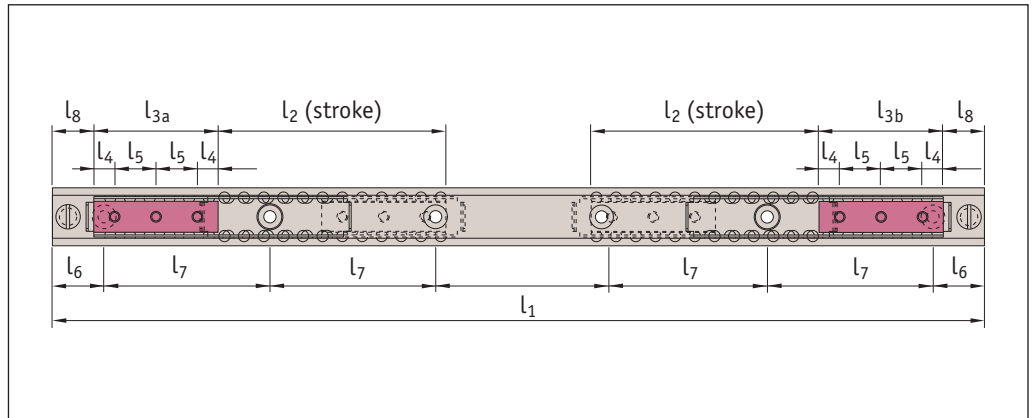
Rail Sizes h	Slider Length $l_2$	Width w	Maximum loads:				
			$C_{0rad}$ N	$C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
28	60	13	3480	2436	17,1	24	35
	80		4640	3248	22,7	43	62
	130		7540	5278	36,9	114	163
	210		12180	8526	59,7	298	426
	290		16820	11774	82,4	569	813
	370		21460	15022	105,1	926	1323
	450		26100	18270	127,9	1370	1958



Rail Sizes h	Slider Length L <sub>2</sub>	Width w	Maximum loads:				
			C <sub>0rad</sub> N	C <sub>0ax</sub> N	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm
35	130	17	9750	6825	47,2	148	211
	210		15750	11025	76,3	386	551
	290		21750	15225	105,3	736	1051
	370		27750	19425	134,4	1198	1711
	450		33750	23625	163,4	1772	2531
	530		39750	27825	192,5	2458	3511
	610		45750	32025	221,6	3256	4651
43	130	22	13910	9737	96,0	211	301
	210		22470	15729	155,1	551	786
	290		31030	21721	214,1	1050	1500
	370		39590	27713	273,2	1709	2441
	450		48150	33705	332,3	2528	3611
	530		56710	39697	391,4	3507	5009
	610		65270	45689	450,4	4645	6636

Easy Slide Rails from Automation Components

LONG LINEAR RAILS



### Technical Notes

Easy Slide with several independent sliders. The total load capacity is based on the number of sliders in the rail and their length.

The length and stroke of the individual sliders can be different.

### Tips

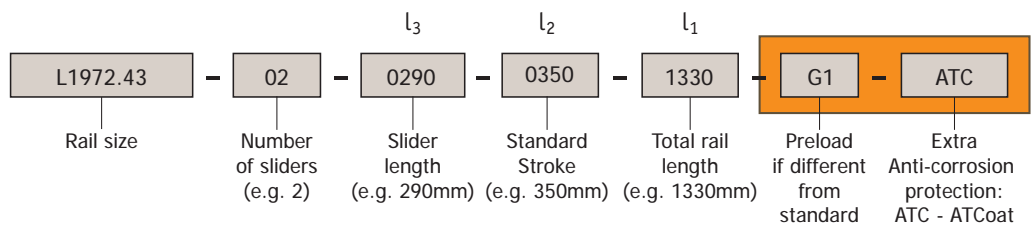
To ensure proper smooth movement, the stroke must be  $\leq 7 \times$  slider length.

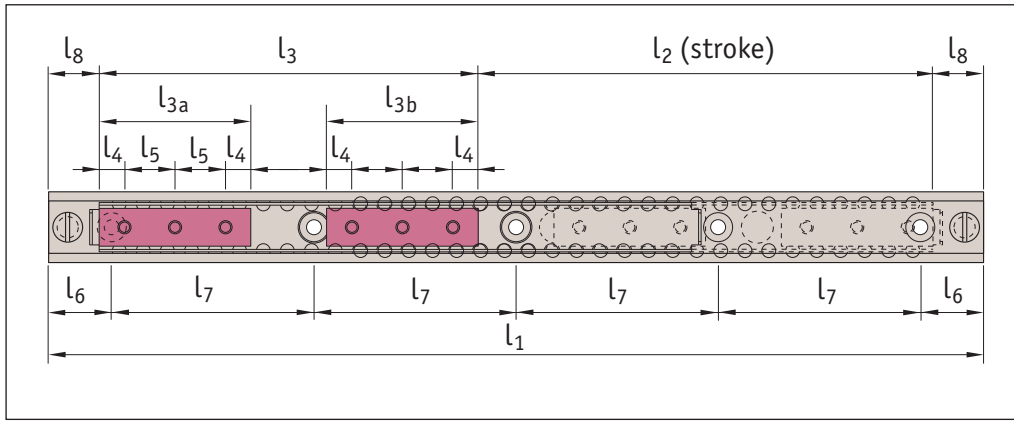
LONG LINEAR RAILS

For full rail sizing see individual product pages L1972.SN22, SN28, SN38, SN43, SN63.

$$\text{Rail Length } l_1 = [ 2 \times ( l_3 + l_2 ) + ( 2 \times l_8 ) ]$$

### Ordering Example





#### Technical Notes

Easy Slide with several independent sliders. The total load capacity is based on the number of sliders in the rail and their length.

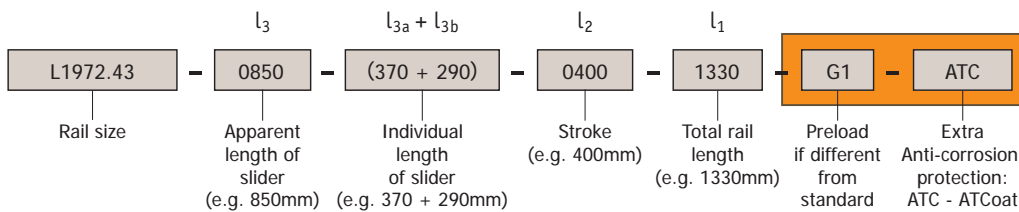
The length and stroke of the individual sliders can be different.

#### Tips

To ensure proper smooth movement, the stroke must be  $\leq 7 \times$  slider length.

For full rail sizing see individual product pages L1972.SN22, SN28, SN38, SN43, SN63.

#### Ordering Example





### Static load

The maximum static loads of the L1972 series are defined by the slider lengths. These load capacities are valid for a loading point of forces and moments in the centre of the slider. The load capacities are independent of the position of the sliders inside the rails.

The radial load capacity,  $C_{0rad}$ , axial load capacity,  $C_{0ax}$ , and moments loads  $M_x$ ,  $M_y$  and  $M_z$  indicate the maximum permissible values of the loads.

Higher loads adversely affect the running properties and the mechanical strength.

A safety factor,  $S_0$ , is used to check the static load, which takes into account the basic parameters of the application.

Conditions	Safety factor $S_0$
Neither shocks nor vibrations, smooth and low-frequency reverse; high assembly accuracy; no elastic deformations	1,0 - 1,5
Normal installation conditions	1,5 - 2,0
Shock and vibration, high-frequency reverse; significant elastic deformation	2,0 - 3,5

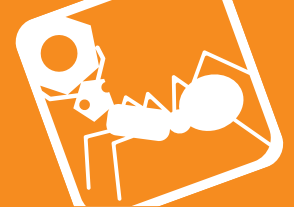
The ratio of the actual load to maximum permissible load may be as large as the reciprocal of the accepted safety factor,  $S_0$ , at most.

$$\frac{P_{0rad}}{C_{0rad}} \leq \frac{1}{S_0} \quad \left| \quad \frac{P_{0ax}}{C_{0ax}} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_1}{M_x} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_2}{M_y} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_3}{M_z} \leq \frac{1}{S_0} \right. \right. \right.$$

The formulae above apply for a single load case. If there are two or more of the described forces simultaneously, the following check must be made:

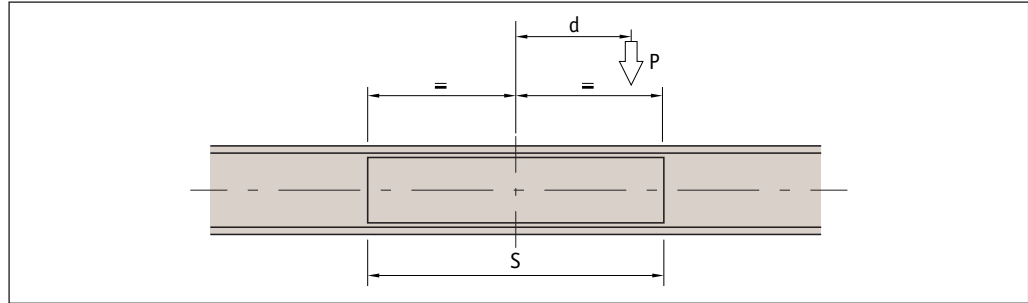
$$\frac{P_{0rad}}{C_{0rad}} + \frac{P_{0ax}}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \leq \frac{1}{S_0}$$

$P_{0rad}$  = effective radial load  
 $C_{0rad}$  = permissible radial load  
 $P_{0ax}$  = effective axial load  
 $C_{0ax}$  = permissible axial load  
 $M_1$  = effective moment in the X-direction  
 $M_x$  = permissible moment in the X-direction  
 $M_2$  = effective moment in the Y-direction  
 $M_y$  = permissible moment in the Y-direction  
 $M_3$  = effective moment in the Z-direction  
 $M_z$  = permissible moment in the Z-direction



**Off-centre load P of the slider**

For an off-centre load of the slider, the different load distribution on the balls must be accounted for with a reduction of the load capacity C. As shown, this reduction of the distance, d, from the loading point is dependent on the slider centre.



The value, q, is the position factor, the distance, d, is expressed in fractions of slider length S. The permissible load, P decreases as follows:

**For a radial load**

$$P = q \cdot C_{0rad}$$

**For an axial load**

$$P = q \cdot C_{0ax}$$

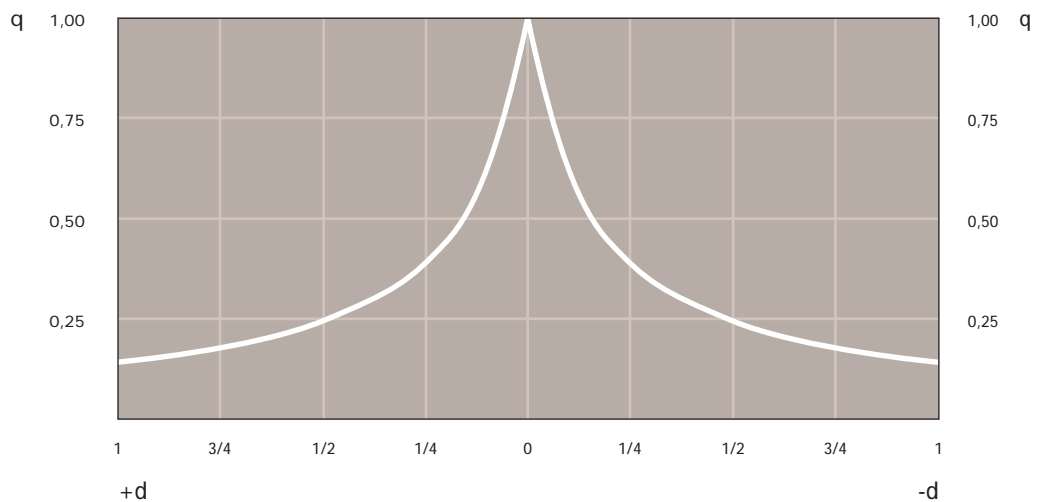
For the static load and the service life calculation,  $P_{0rad}$  and  $P_{0ax}$  must be replaced by the equivalent values calculated as follows, depending on whether the external load, P, acts:

**Radially**

$$P_{0rad} = \frac{P}{q}$$

**Axially**

$$P_{0ax} = \frac{P}{q}$$





### Service life

The service life of a linear bearing depends on several factors, such as effective load, operating speed, installation precision, impacts and vibrations, operating temperature, ambient conditions and lubrication. The service life is defined as the time span between initial operation and the first fatigue or wear indications on the raceways.

In practice, the end of the service life must be defined as the time of bearing decommissioning due to its destruction or extreme wear of a component.

This is taken into account by an application coefficient,  $f_i$  so the service life consists of:

$$L_{km} = 100 \cdot \left( \frac{C_{0rad}}{W} \cdot \frac{1}{f_i} \right)^3$$

$L_{km}$  = calculated service life (Km)

$W$  = equivalent load (N)

$C_{0rad}$  = load capacity (N)

$f_i$  = application coefficient (see below)

### Application coefficient $f_i$

Conditions	Application coefficient $f_i$
No impacts or vibrations, smooth and low-frequency direction change; clean operating conditions; low speeds (<0,5 m/s)	1,0 - 1,5
Slight vibrations, average speeds (0,5 - 0,7 m/s) and average frequency of direction change	1,5 - 2,0
Impacts and vibrations, high speeds (>0,7 m/s) and high-frequency direction change; very dirty environment	2,0 - 3,5

If the external load,  $P$ , is the same as the dynamic load capacity,  $C_{0rad}$  (which of course must never be exceeded), the service life at ideal operating conditions ( $f_i = 1$ ) amounts to 100Km.

For a single load  $P$ , the following applies:

$$W = P$$

If several external loads occur simultaneously, the equivalent load is calculated as follows:

$$W = P_{rad} + \left( \frac{P_{ax}}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \right) \cdot C_{0rad}$$

### Clearance and Preload

The SN series linear bearings are installed with no clearance as standard. For more information, please contact our Technical Department.

Preload classes		
Increased clearance	No clearance	Increased preload
$G_1$	Standard	$K_1$



**Coefficient of friction**

With correct lubrication and installation on level and rigid surfaces and sufficient parallelism for rail pairs, the friction value is less than or equal to 0,01. This value can vary depending on the installation situation.

**Linear accuracy**

With installation of the rails using all bolts on a perfectly plane support surface with the fixing holes in a straight line, the linear accuracy of the sliders to an external reference is as follows:

$$\boxed{\text{//}} = \frac{\sqrt{H}}{300} \text{ mm}$$

H = stroke

**Speed**

The linear bearings of the L1972 series can be used up to an operating speed of 0,8 m/s.

With high-frequency direction changes and the resulting high accelerations, as well as with long ball cages, there is a risk of cage creep (see instructions for use).

**Temperature**

The series can be used in ambient temperatures from -30°C to +170°C. A lithium lubricant for high operating temperatures is recommended for temperatures above +130°C.

**Anti-corrosion protection**

The L1972 series has a standard anti-corrosion protection (electrolytic zinc-plating to ISO 2081).

If increased anti-corrosion protection is required, the rails are available either with special coatings.

Numerous application-specific surface treatments are available upon request, e.g. as a nickel-plated design with FDA approval for use in the food industry. For more information, please contact our Technical Department.

**Lubrication**

Recommended lubrication intervals are heavily dependent upon the ambient conditions. Under normal conditions, lubrication is recommended after 100Km operational performance or after an operating period of 6 months.

In critical applications, the interval should be shorter. Please clean the raceways carefully before lubrication. Raceways and spaces of the ball cage are lubricated with a lithium lubricant of average consistency (roller bearing lubricant).

Different lubricants for special applications are available upon request, e.g. lubricant with FDA approval for use in the food industry.

For more information, please contact our Technical Department.

**Cage creep**

Under normal operating conditions, the cage moves in synchronisation with the carriage slider, but at half its speed; or to put it another way, the ball cage follows the relevant stroke, but travelling half the distance. In unfavourable operating conditions, e.g. fast-changing acceleration or heavy fluctuating strokes, it is not always possible to avoid cage slip from occurring. In this case, you should schedule a no-load stroke, if possible, in order to re-position the cage. If strokes fluctuate, you should also ensure adequate dimensioning of the drive that is used. You can use a friction coefficient of 0.1 for the relevant calculations.

**Important note**

Only to be used for horizontal movement.





### Fixing screws

The rails of the SN series in sizes 22 to 43mm are fixed with countersunk head screws to DIN 7991.

### Tightening torques of the standard fixing screws to be used

Rail sizes	Thread size	Property class	Tightening torque Nm
22	M4	10,9	4,3
28	M5		8,5
35	M6		14,6
43	M8		34,7

### Installation instructions

Internal stops are used to stop the unloaded slider and the ball cage, these are not designed to stop a moving, loaded slider. Please use external stops for a loaded system.

To achieve optimum running properties, high service life and rigidity, it is necessary to fix the linear bearings with all accessible holes onto a rigid and level surface.

### Instructions for use

For linear bearings of the L1972 series, the sliders are guided through a ball cage inside the rails. When the sliders run their course relative to the rails, the ball cage moves along for half the slider stroke. The stroke ends as soon as the slider reaches the end of the cage.

Normally the cage moves synchronously to the balls at half the speed of the slider. Any cage slip negatively affects the synchronous movement of the ball cage, causing it to reach the internal stops prematurely, this reduces the stroke. The stroke value can be normalised at any time by moving the slider to the stop in the stopped cage. This moving of the slider relative to the cage will have increased resistance, which is dependent on the working load.

The causes of "cage slip" can be installation accuracy, dynamics, and load changes. The effects can be minimised by observing the following advice:

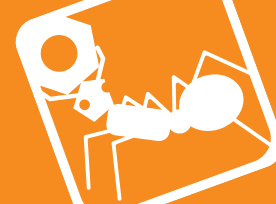
- The stroke should always remain constant and come as close as possible to the nominal stroke of the linear bearing.
- For applications with various strokes, make sure that the drive is sufficiently large enough to guarantee a movement of the slider relative to the cage; a coefficient of friction of 0,1 should be calculated for this.
- Another possibility is to include a maximum stroke without load into the working cycle in order to re-synchronise the slider and ball cage.

Parallelism errors or inaccuracies in the installation or in the mounting surfaces of mounted pairs can influence cage creep.

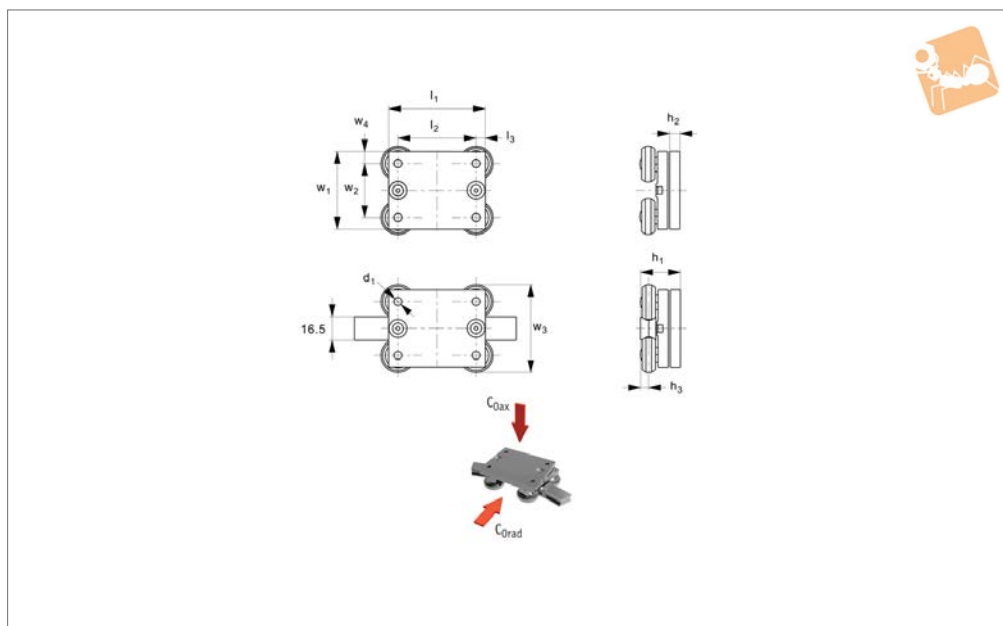
Series L1972 linear bearings should only be used for horizontal movement.

Easy Slide Rails from Automation Components

LONG LINEAR RAILS



**L1978.CR16**



**Material**

Slider body: Fe360. Roller 100Cr6. Roller pins: Lubricated for life.  
Finish: electrolytic zinc plated.

**Technical Notes**

Where moment loads are present use two

or more sliders. Constant (L1978.CRX16) and variable (L1978.VRX16) radii rails can be produced.  
Temperature range -30°C to +100°C.

**Tips**

All stainless steel available. Other coatings

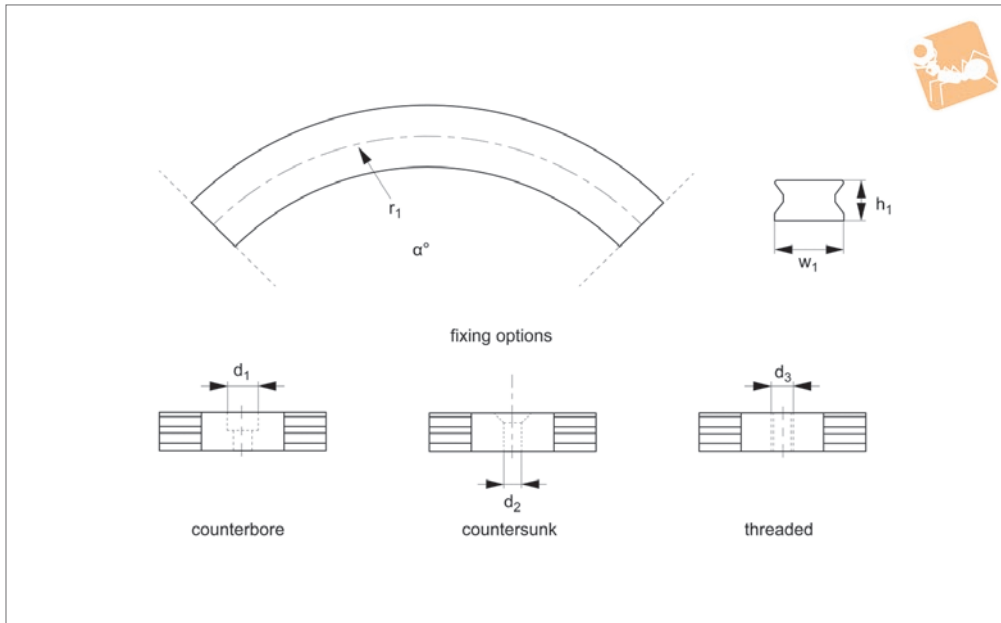
and finishes are also available.

Order No.	w <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.	Load C <sub>0 ax</sub> N max.	Weight kg
L1978.CR16-070	50	32.3	M5	10	5.7	70	50	10	30	60	10	570	400	0.45

# Constant Radius Rails

size 16

## Long Linear Rails



**L1978.CRX16**

LONG LINEAR RAILS

### Material

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

### Technical Notes

Standard radii are shown below but any radius (from  $r_1 > 120$  mm) can be produced.  
Advise angle required and fixing option

type.

Temperature range  $-30^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .  
Rail weight 1,2 Kg/m.

### Tips

Combine with curviline sliders L1978.CX16-070.  
Recommended hole pitch on rail is 80mm.

Rail tolerance  $\pm 0,5\text{mm}$ , angle tolerance  $\pm 1^{\circ}$ .

Recommended rail hole is counterbored (easy to install).

### Important Notes

**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
L1978.CRX16-0150-xx	16.5	10	150	tba	M5	M5	M6
L1978.CRX16-0200-xx	16.5	10	200	tba	M5	M5	M6
L1978.CRX16-0250-xx	16.5	10	250	tba	M5	M5	M6
L1978.CRX16-0300-xx	16.5	10	300	tba	M5	M5	M6
L1978.CRX16-0400-xx	16.5	10	400	tba	M5	M5	M6
L1978.CRX16-0500-xx	16.5	10	500	tba	M5	M5	M6
L1978.CRX16-0600-xx	16.5	10	600	tba	M5	M5	M6
L1978.CRX16-0700-xx	16.5	10	700	tba	M5	M5	M6
L1978.CRX16-0800-xx	16.5	10	800	tba	M5	M5	M6
L1978.CRX16-0900-xx	16.5	10	900	tba	M5	M5	M6
L1978.CRX16-1000-xx	16.5	10	1000	tba	M5	M5	M6



### Ordering Example

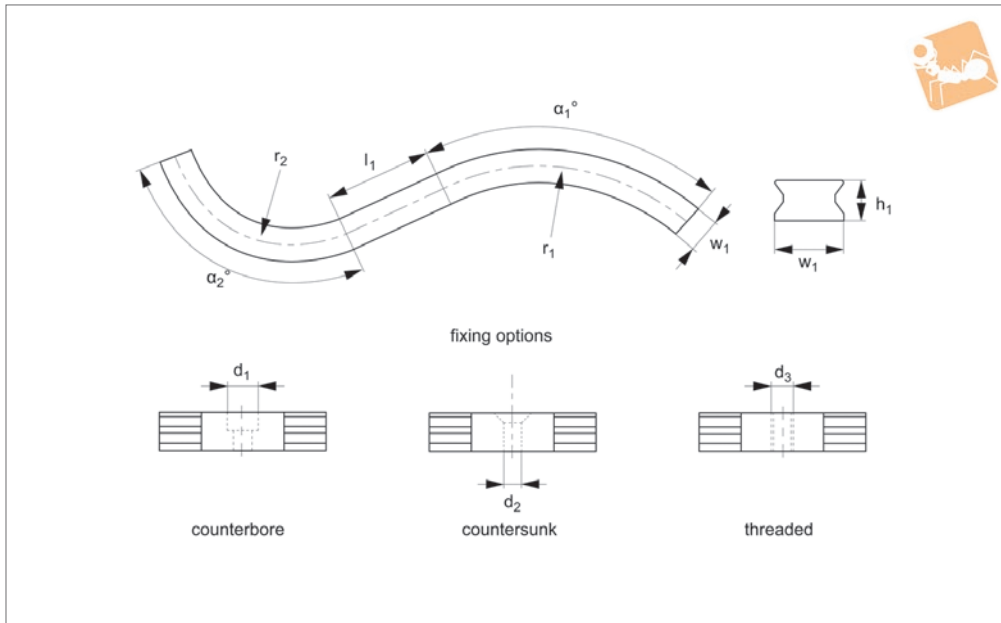
L1978 • CRX16 - 0200 - 060 - X

Product Number    Rail width    Radius: r (mm) >120    Angle:  $\alpha^\circ$     Fixing hole type:  
CB - Counterbored  
CS - Countersunk  
TR - Threaded

# Variable Radius Rails

size 16

## Long Linear Rails



**L1978.VRX16**

LONG LINEAR RAILS

### Material

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

### Technical Notes

Advise angle required and fixing option type.  
Temperature range  $-30^\circ\text{C}$  to  $+80^\circ\text{C}$ .

Rail weight 1,2 Kg/m.

### Tips

Combine with curviline sliders L1978.CX16-070.  
Recommended hole pitch on rail is 80mm.  
Rail tolerance  $\pm 0,5\text{mm}$ , angle tolerance  $\pm 1^\circ$ .

Recommended rail hole is counterbored (easy to install).

### Important Notes

**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$ & $r_2$	$\alpha_1$ & $\alpha_2$	$d_1$ for	$d_2$ for	$d_3$ for	$l_1$
L1978.VRX16-xxx-xx	16.5	10	tba	tba	M5	M5	M6	tba

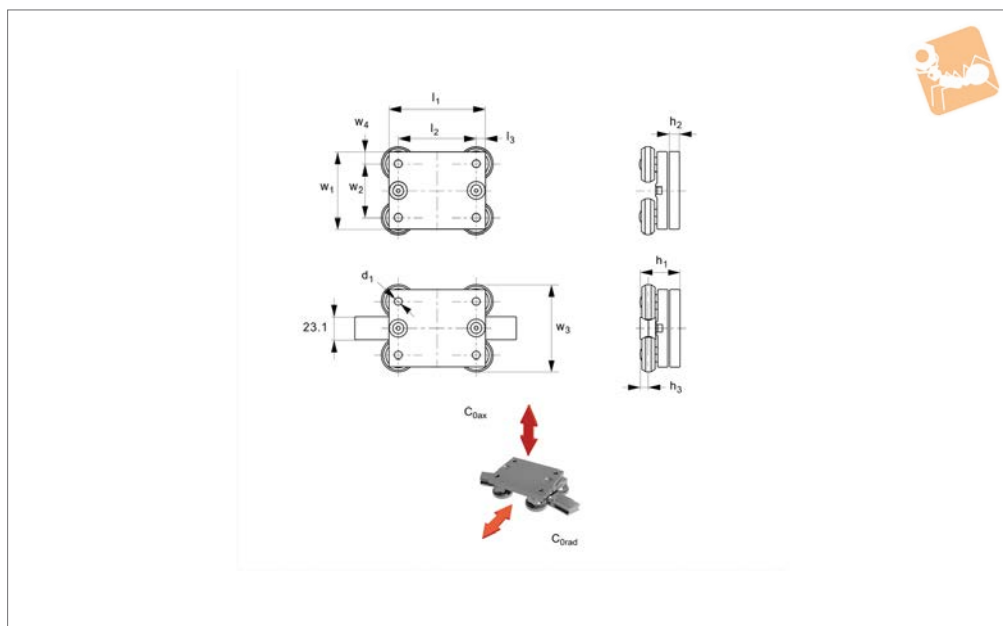
**Ordering Example**

L1978 . VRX16 - 0200 - 060 - 100 - 0400 - 090

Product Number    Rail width    Radius:  $r_1$  (mm)  $>120$     1<sup>st</sup> Angle: ( $\alpha_1^\circ$ )     $l$  ( $>70$  mm)    Radius:  $r_2$  (mm)  $>120$     2<sup>nd</sup> Angle: ( $\alpha_2^\circ$ )



**L1978.CR23**



**Material**

Slider body: Fe360. Roller 100Cr6. Roller pins: Lubricated for life.  
Finish: electrolytic zinc plated.

**Technical Notes**

Where moment loads are present use two

or more sliders.

Constant (L1978.CRX23) and variable (L1978.VRX23) radii rails can be produced.  
Temperature range -30°C to +100°C.

**Tips**

All stainless steel available. Other coatings

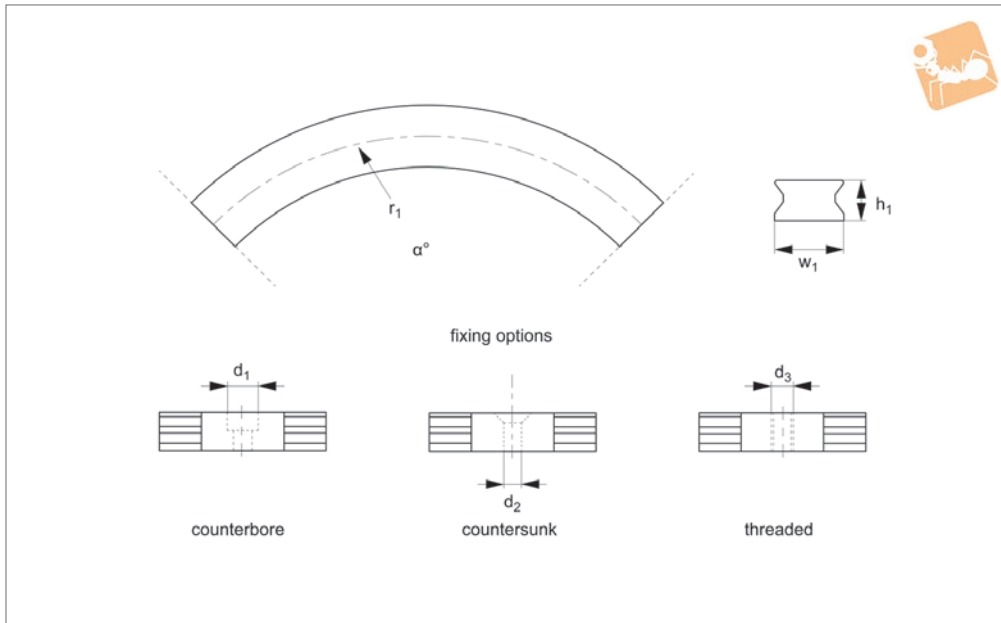
and finishes are also available.

Order No.	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	d	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.	Load C <sub>0 ax</sub> N max.	Weight kg
<b>L1978.CR23-100</b>	80	36.4	10	7.5	M8	100	80	10	55	89.5	12.5	1615	1130	1.10

# Constant Radius Rails

size 23

## Long Linear Rails



**L1978.CRX23**

LONG LINEAR RAILS

### Material

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

### Technical Notes

Standard radii are shown below but any radius (from  $r_1 > 120$  mm) can be produced. Advise angle required and fixing option

type.

Temperature range  $-30^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .  
Rail weight 2,2 Kg/m.

### Tips

Combine with curviline sliders L1978.CX23-100.  
Recommended hole pitch on rail is 80mm.

Rail tolerance  $\pm 0,5\text{mm}$ , angle tolerance  $\pm 1^{\circ}$ .

Recommended rail hole is counterbored (easy to install).

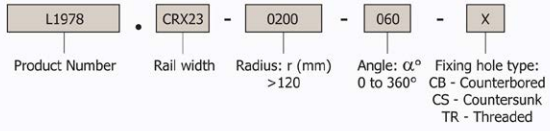
### Important Notes

**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
L1978.CRX23-0150-xx	23	13.5	150	tba	M6	M6	M8
L1978.CRX23-0200-xx	23	13.5	200	tba	M6	M6	M8
L1978.CRX23-0250-xx	23	13.5	250	tba	M6	M6	M8
L1978.CRX23-0300-xx	23	13.5	300	tba	M6	M6	M8
L1978.CRX23-0400-xx	23	13.5	400	tba	M6	M6	M8
L1978.CRX23-0500-xx	23	13.5	500	tba	M6	M6	M8
L1978.CRX23-0600-xx	23	13.5	600	tba	M6	M6	M8
L1978.CRX23-0700-xx	23	13.5	700	tba	M6	M6	M6
L1978.CRX23-0800-xx	23	13.5	800	tba	M6	M6	M8
L1978.CRX23-0900-xx	23	13.5	900	tba	M6	M6	M8
L1978.CRX23-1000-xx	23	13.5	1000	tba	M6	M6	M8



### Ordering Example

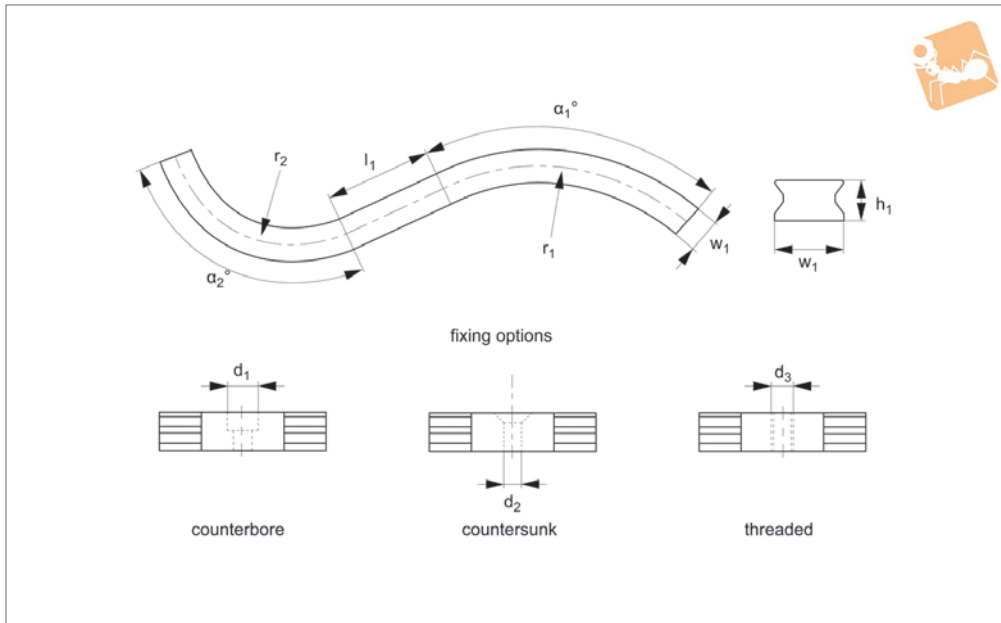




# Variable Radius Rails

size 23

## Long Linear Rails



**L1978.VRX23**

LONG LINEAR RAILS

### Material

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

### Technical Notes

Advise angles required and fixing option type.  
Temperature range  $-30^\circ\text{C}$  to  $+80^\circ\text{C}$ .

Rail weight 2,2 Kg/m.

### Tips

Combine with curviline carriages L1978.  
CX23-100.  
Recommended hole pitch on rail is 80mm.  
Rail tolerance  $\pm 0,5\text{mm}$ , angle tolerance  $\pm 1^\circ$ .

Recommended rail hole is counterbored (easy to install).

### Important Notes

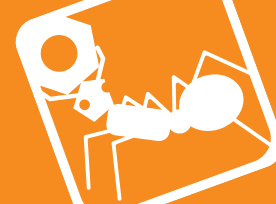
**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$ & $r_2$	$\alpha_1$ & $\alpha_2$	$d_1$ for	$d_2$ for	$d_3$ for	$l_1$
L1978.VRX23-xxx-xx	23	13.5	tba	tba	M6	M6	M8	tba

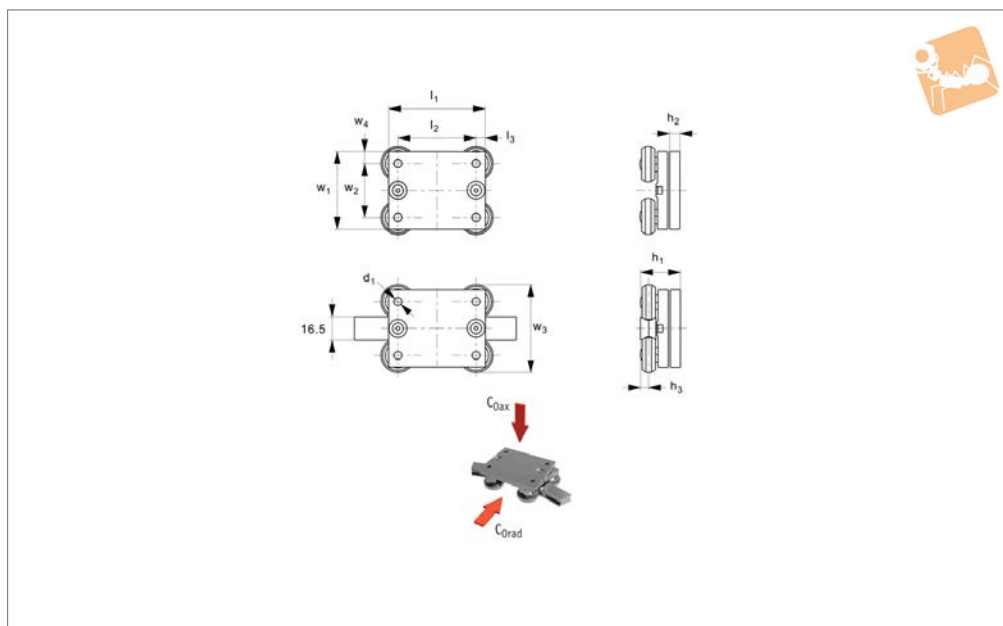
**Ordering Example**

L1978 . VRX23 - 0200 - 060 - 100 - 0400 - 090

Product Number    Rail width    Radius:  $r_1$  (mm)  $>120$     1<sup>st</sup> Angle: ( $\alpha_1^\circ$ )     $l$  ( $>70$  mm)    Radius:  $r_2$  (mm)  $>120$     2<sup>nd</sup> Angle: ( $\alpha_2^\circ$ )



L1979.CR16



**Material**

Slider body: AISI 316L. Roller AISI 440.

or more sliders.

Temperature range -30oC to +100oC.

Other coatings and finishes are also available.

**Technical Notes**

Where moment loads are present, use two

**Tips**

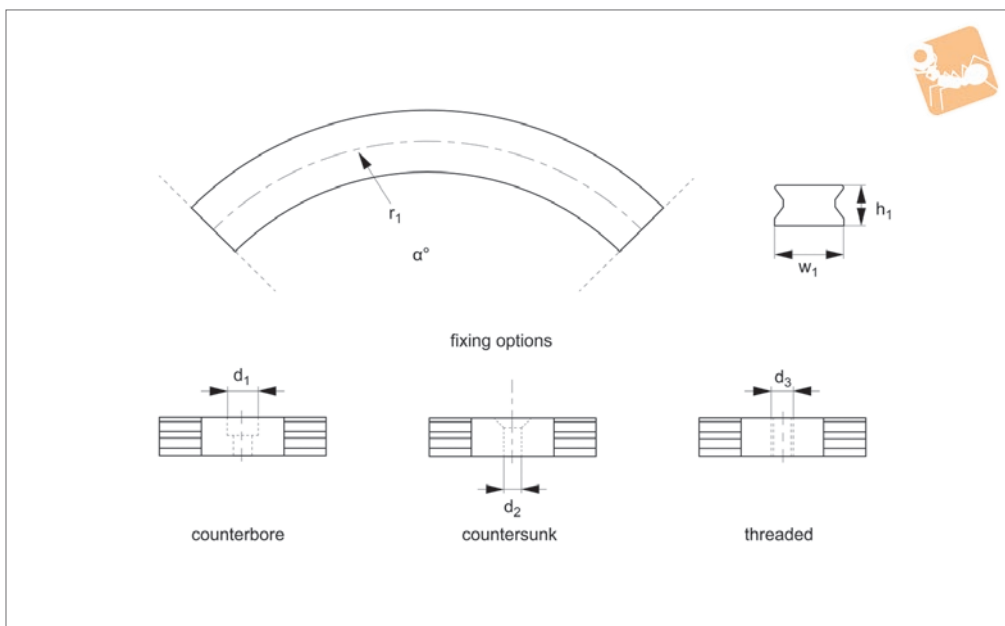
All stainless available.

Order No.	$w_1$	$h_1$	$d_1$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_2$	$w_3$	$w_4$	Load $C_{0rad}$ N max.	Load $C_{0ax}$ N max.	Weight kg
L1979.CR16-070	50	32.3	M5	10	5.7	70	50	10	30	60	10	570	400	0.45

# Constant Radius Rails

Stainless steel; size 16

## Long Linear Rails



**L1979.CRX16**

LONG LINEAR RAILS

### Material

Stainless steel rail AISI 316L.

Temperature range -30°C to +80°C.

Rail weight 1.2 Kg/m.

±1°.

Recommended rail hole is counterbored (easy to install).

### Technical Notes

Standard radii are shown below but any radius (from  $r_1 > 120\text{mm}$ ) can be produced. Advise angle required and fixing option type.

### Tips

Combine with curviline sliders (L1979.CR16-070). Recommended hole pitch on rail is 80mm. Rail tolerance ±0.5mm, angle tolerance

### Important Notes

**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
L1979.CR16-0150-xx	16.5	10	150	tba	M5	M5	M6
L1979.CR16-0200-xx	16.5	10	200	tba	M5	M5	M6
L1979.CR16-0250-xx	16.5	10	250	tba	M5	M5	M6
L1979.CR16-0300-xx	16.5	10	300	tba	M5	M5	M6
L1979.CR16-0400-xx	16.5	10	400	tba	M5	M5	M6
L1979.CR16-0500-xx	16.5	10	500	tba	M5	M5	M6
L1979.CR16-0600-xx	16.5	10	600	tba	M5	M5	M6
L1979.CR16-0700-xx	16.5	10	700	tba	M5	M5	M6
L1979.CR16-0800-xx	16.5	10	800	tba	M5	M5	M6
L1979.CR16-0900-xx	16.5	10	900	tba	M5	M5	M6
L1979.CR16-1000-xx	16.5	10	1000	tba	M5	M5	M6



### Ordering Example

L1979 • CRX16 - 0200 - 060 - X

Product Number    Rail width    Radius: r (mm) >120    Angle:  $\alpha^\circ$     Fixing hole type:  
CB - Counterbored  
CS - Countersunk  
TR - Threaded

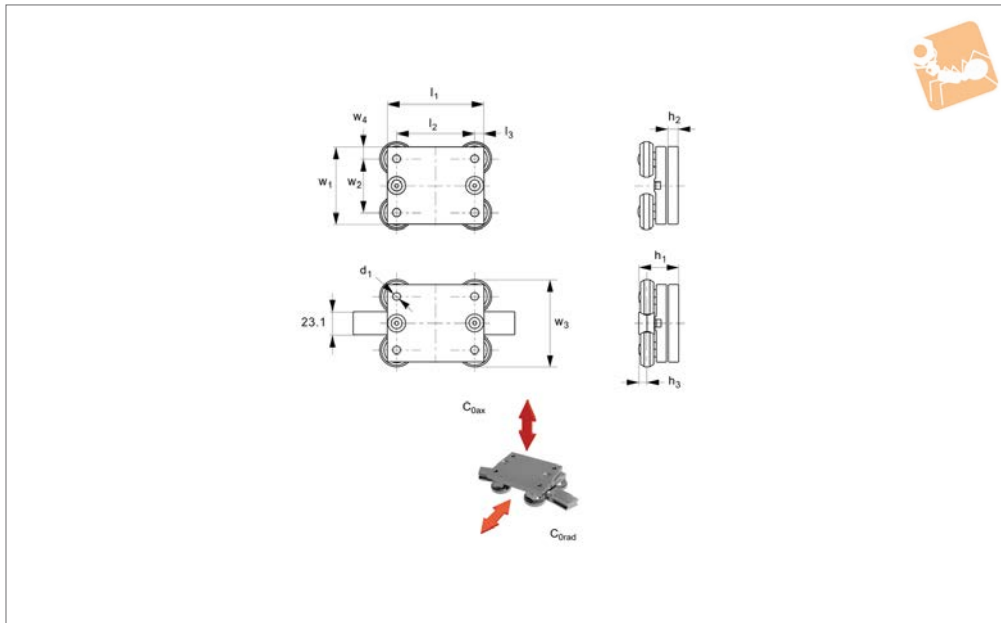


# Curviline Sliders

Stainless steel; size 23



# Long Linear Rails



# L1979.CR23

LONG LINEAR RAILS

**Material**

Slider body: AISI 316L. Roller AISI 440.

or more sliders.

Temperature range -30°C to +100°C.

Other coatings and finishes are also available.

**Technical Notes**

Where moment loads are present use two

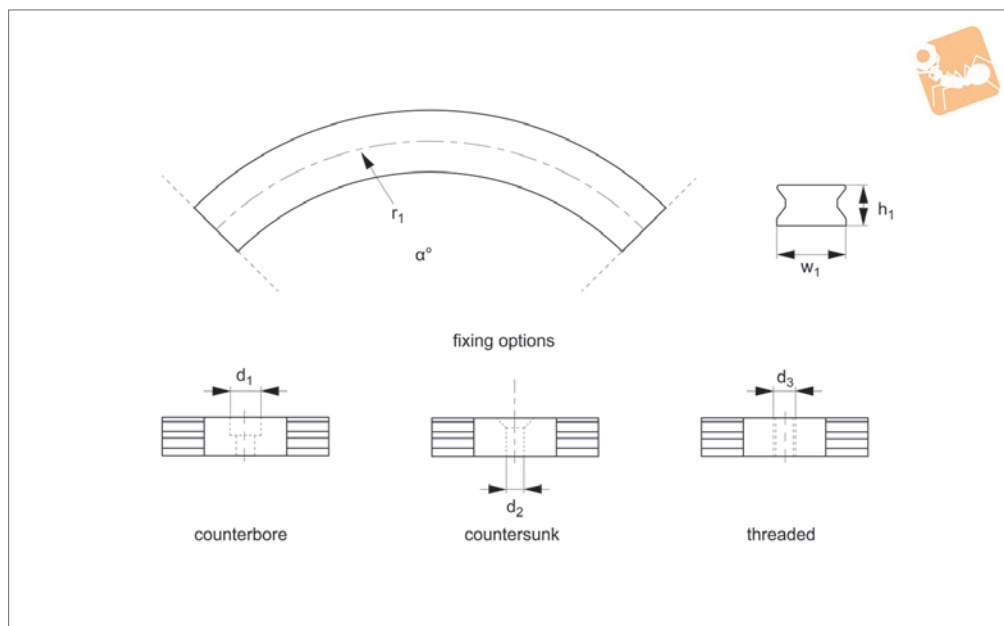
**Tips**

All stainless steel available.

Order No.	w <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.	Load C <sub>0 ax</sub> N max.	Weight kg
L1979.CR23-100	80	36.4	M8	10	7.5	100	80	10	55	89.5	12.5	1615	1130	1.10



## L1979.CR23



### Material

Stainless steel rail AISI 316L.

### Technical Notes

Standard radii are shown below, but any radius (from  $r_1 > 120\text{mm}$ ) can be produced. Advise angle required and fixing option type.

Temperature range  $-30^\circ\text{C}$  to  $+80^\circ\text{C}$ .

Rail weight  $1.2\text{Kg/m}$ .

### Tips

Combine with curviline sliders (L1979.CR23-100). Recommended hole pitch on rail is  $80\text{mm}$ . Rail tolerance  $\pm 0.5\text{mm}$  and angle tolerance

$\pm 1^\circ$ .

Recommended rail hole is counterbored (easy to install).

### Important Notes

**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
L1979.CR23-0150-xx	23	13.5	150	tba	M6	M6	M8
L1979.CR23-0200-xx	23	13.5	200	tba	M6	M6	M8
L1979.CR23-0250-xx	23	13.5	250	tba	M6	M6	M8
L1979.CR23-0300-xx	23	13.5	300	tba	M6	M6	M8
L1979.CR23-0400-xx	23	13.5	400	tba	M6	M6	M8
L1979.CR23-0500-xx	23	13.5	500	tba	M6	M6	M8
L1979.CR23-0600-xx	23	13.5	600	tba	M6	M6	M8
L1979.CR23-0700-xx	23	13.5	700	tba	M6	M6	M8
L1979.CR23-0800-xx	23	13.5	800	tba	M6	M6	M8
L1979.CR23-0900-xx	23	13.5	900	tba	M6	M6	M8
L1979.CR23-1000-xx	23	13.5	1000	tba	M6	M6	M8



# Constant Radius Rail

Stainless steel; size 23



## Long Linear Rails

### Ordering Example

L1979 • CRX23 - 0200 - 060 - X

Product Number    Rail width    Radius: r (mm) >120    Angle:  $\alpha^\circ$  0 to 360°    Fixing hole type:  
CB - Counterbored  
CS - Countersunk  
TR - Threaded



The Curviline rail system offers a cost-effective solution to curvi-linear applications.

**Flexibility when you need it**

Constant radius, variable radius are available in standard radii, non-standard radii to your drawings are also possible. Straight and curved sections in a single length can be supplied.

**Any radius**

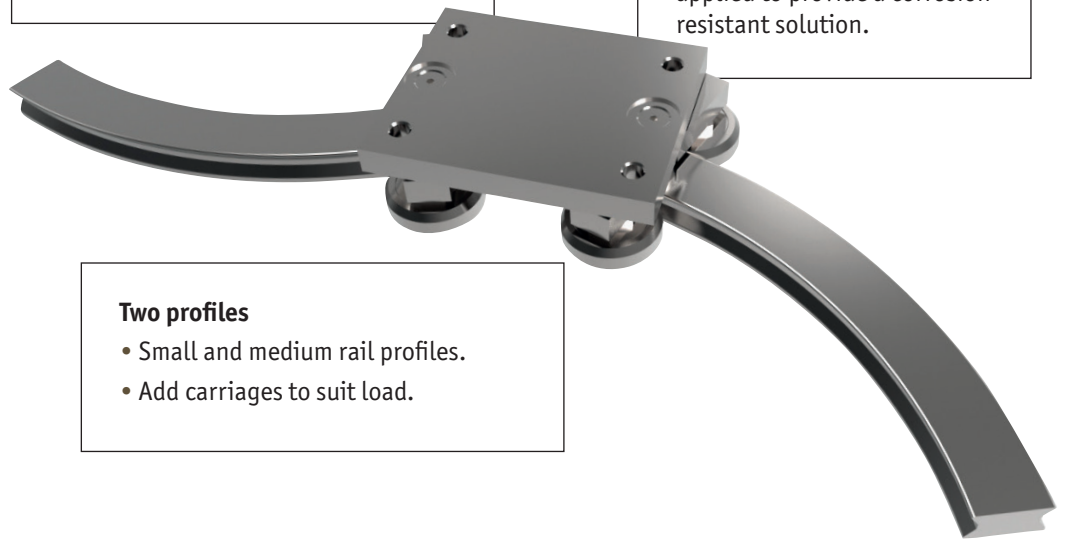
- From 120mm radius upwards.
- Standard and special radii.
- Angles up to 360°.

**Anti-corrosion**

Alloy coating or nickel plating of the rails and sliders can be applied to provide a corrosion resistant solution.

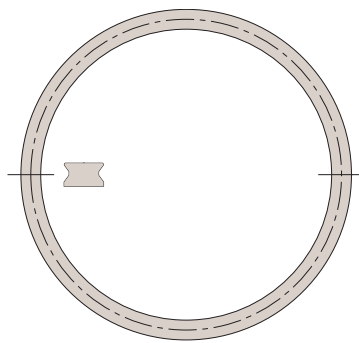
**Two profiles**

- Small and medium rail profiles.
- Add carriages to suit load.

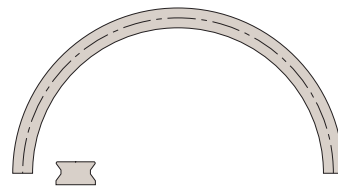


Curviline Rail from Automation Components

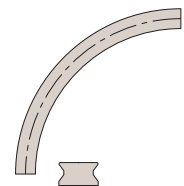
**Examples**



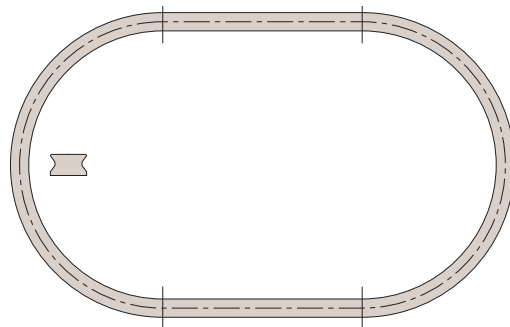
Circle



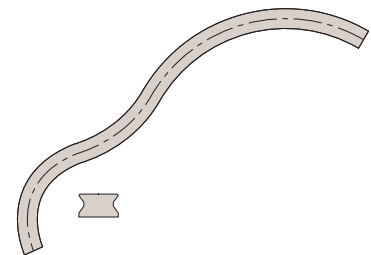
Semi-circle



Arcs



Ovals



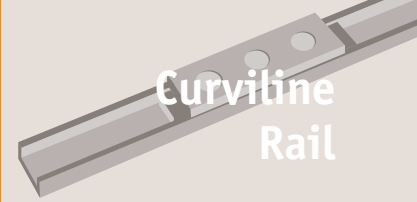
Complex rails with varied radii and angles





# Curviline Rail

## Specifications and applications



Curviline  
Rail

### Specifications

- Maximum speed 1,5 m/s.
- Maximum acceleration 2 m/s<sup>2</sup>.
- Maximum rail length 3600 mm.
- Two rail sizes 16,5 and 23,5 mm width.
- Minimum radius 120 mm.
- Recommended hole pitch 80 mm.
- Radius tolerance  $\pm 0,5$  mm ( $\pm 1^\circ$ ).
- Maximum radial load per slider 1615N.
- Temperature range -30°C to +80°C.
- Roller bearing seals 2Z (dust proof), lubricated for life.
- Rollers from 100Cr6, (stainless versions with rubber seals 2RS available on request).
- Sliders are preload adjustable.
- Not suitable for moment loads.
- Special coatings and finishes available on request.

### Applications



#### Sliding doors & windows

Internal sliding doors  
gates • roof lights  
display cases



#### Special purpose & packaging machines

Precision positioning systems  
handling units • robotic systems  
cutting machines



#### Safety guarding

Extending protective systems  
sliding gates  
automatic pick & place



#### Transport (naval)

Sliding hatches  
pull-out storage



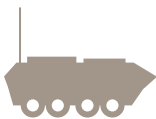
#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



#### Transport (rail)

Seat adjustment  
sliding doors  
battery removal units



#### Transport (military)

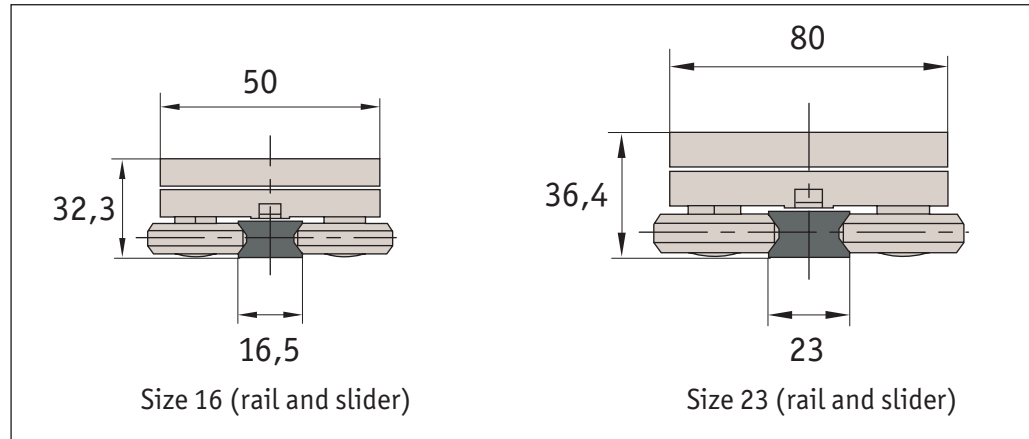
Sliding seats  
protective hatches  
stretcher extensions

Curviline Rail from Automation Components

LONG LINEAR RAILS

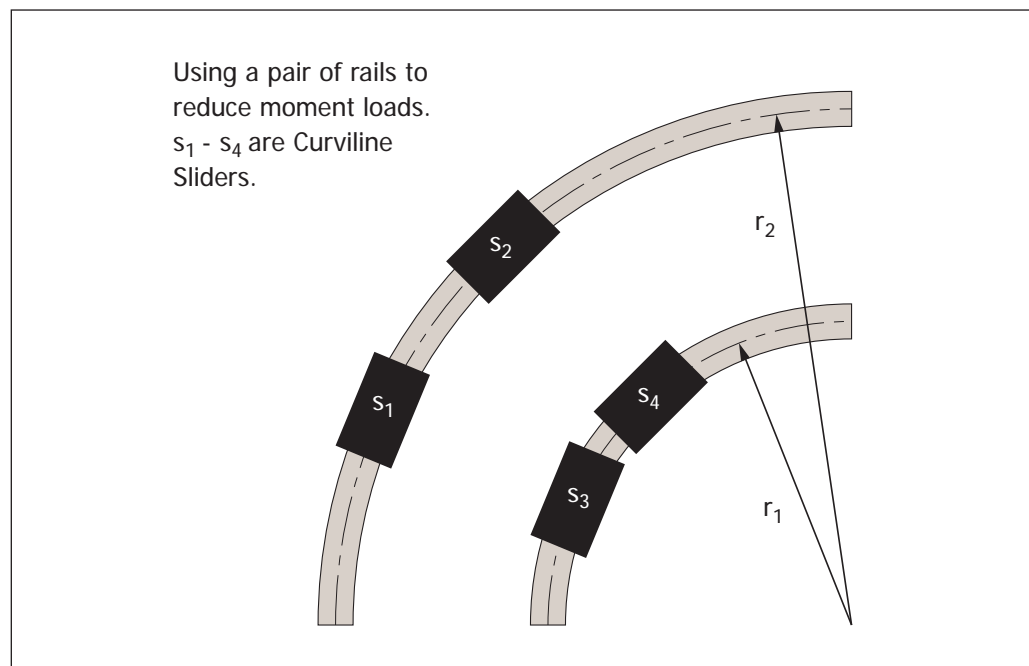
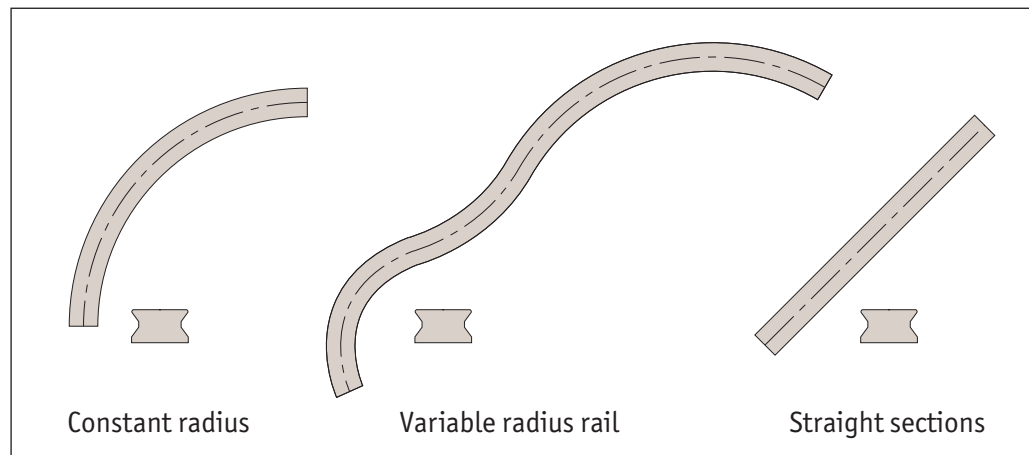


Rail sizes



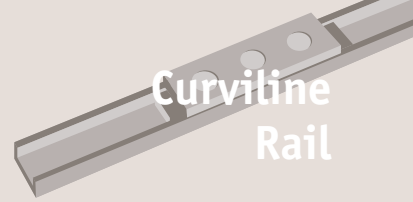
The sliders have eccentric rollers that are adjustable with the thin spanner that is supplied with them. This allows the preload of the system to be set as required – tight or free running.

Rail types



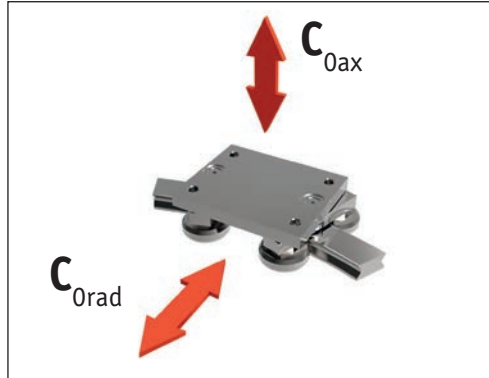
Curviline Rail from Automation Components

LONG LINEAR RAILS



# Curviline Rail from Automation Components

### Load capacities



Slider type	C <sub>Oax</sub> N	C <sub>Orad</sub> N
L1978.CX16-070	390	560
L1978.CX23-100	1110	1600

Note: Reduce any moment loads by utilising two or more sliders and/or rails.

### Constant radius

Ordering Example

L1978	•	CRX16	-	0200	-	060	-	X
Product Number		Rail width (16 or 23)		Radius: r (mm) 120 upwards		Angle: α° (0°-360°)		Fixing hole type: CB - Counterbored CS - Countersunk TR - Threaded

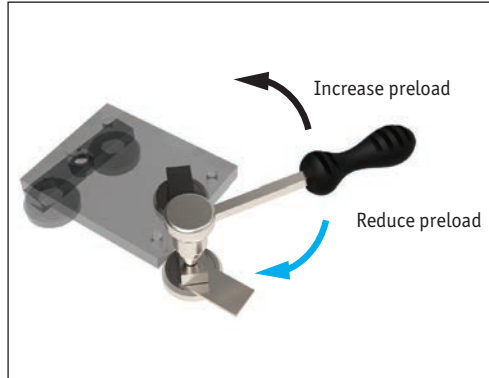
### Variable radius

Ordering Example

L1978	•	VRX16	-	0400	-	060	-	100	-	0200	-	090
Product Number		Rail width (16 or 23)		1 <sup>st</sup> Radius (mm) r <sub>1</sub> >120		1 <sup>st</sup> Angle: (α <sub>1</sub> °)		l <sub>1</sub> (>70 mm)		2 <sup>nd</sup> Radius (mm) r <sub>2</sub> >120		2 <sup>nd</sup> Angle: (α <sub>2</sub> °)



Setting the preload



Slider type	Tightening torque Nm
L1978.CX16-070	7
L1978.CX23-100	12

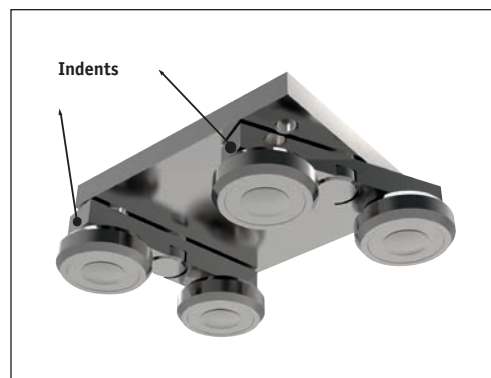
If the Curviline system is delivered as a system, the sliders are already set with no clearance. In this case fixing screws are secured with Loctite® at the factory.

If delivered separately, or if the sliders are to be installed in another track, the eccentric rollers must be re-adjusted.

Important: Loctite® must be applied to the roller fixing screws to prevent loosening.

- Wipe the raceways clean.
- Slightly loosen the fixing screws of the rollers. See below for details on how to identify the eccentric rollers.
- Position the slider(s) at the ends of the rail.
- Insert the flat spanner (provided) onto the hexagonal nut at the top of the roller.
- By turning the spanner clockwise the roller is pressed against the raceway and thus reduces the clearance. Please note that with increasing preload, the friction is also increased and thus the service life is reduced.
- Hold the roller with the spanner in the desired position and carefully tighten the fixing screw. The exact tightening torque will be checked later.
- Move the slider on the rail and check the preload over the entire length of the rail. It should move easily and the slider should have no play at any point of the rail.
- Now tighten the fixing screws to the specified tightening torque, whilst securing the roller bearing with the spanner. A special thread in the roller secures the set position.

Identify the eccentric/fixed rollers

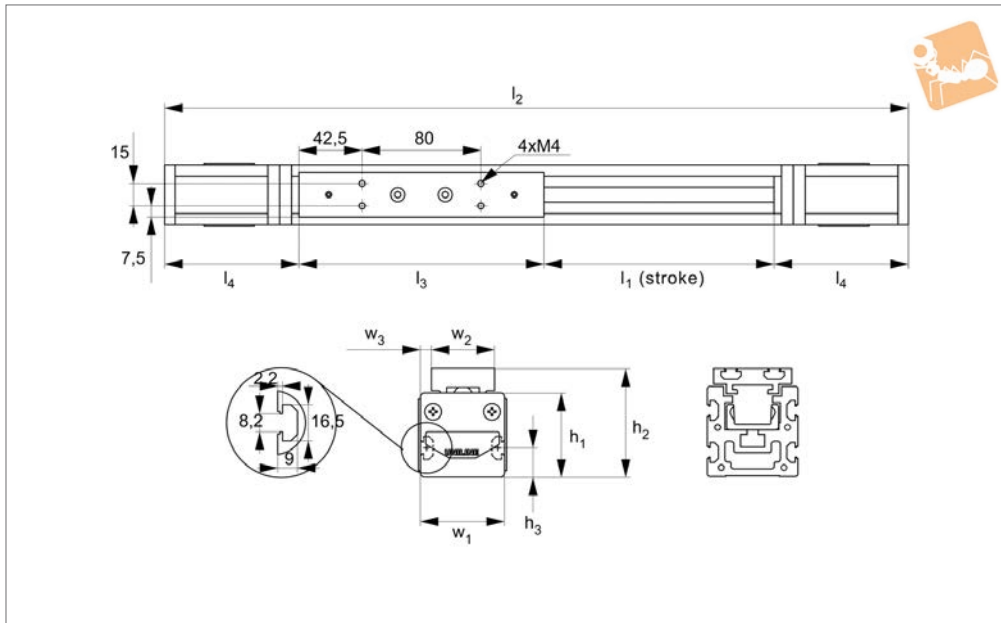
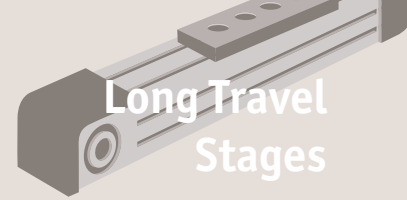


The fixed rollers are identified by an indentation on the roller mounts. The eccentric roller mounts have NO indents.



# Light Duty Belt Driven Unit

size 40



## L3001.A40

LONG TRAVEL STAGES

### Material

Special sliders on a single hardened steel rail, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 1,9 metres in a single section) for the A40 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

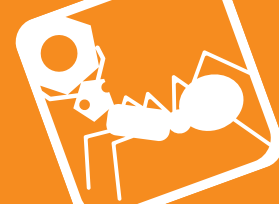
See technical pages for more information on belt specification, long carriages,

double carriages and motor connections. Can easily be combined to make an XY, XYZ or other set up gantry system.

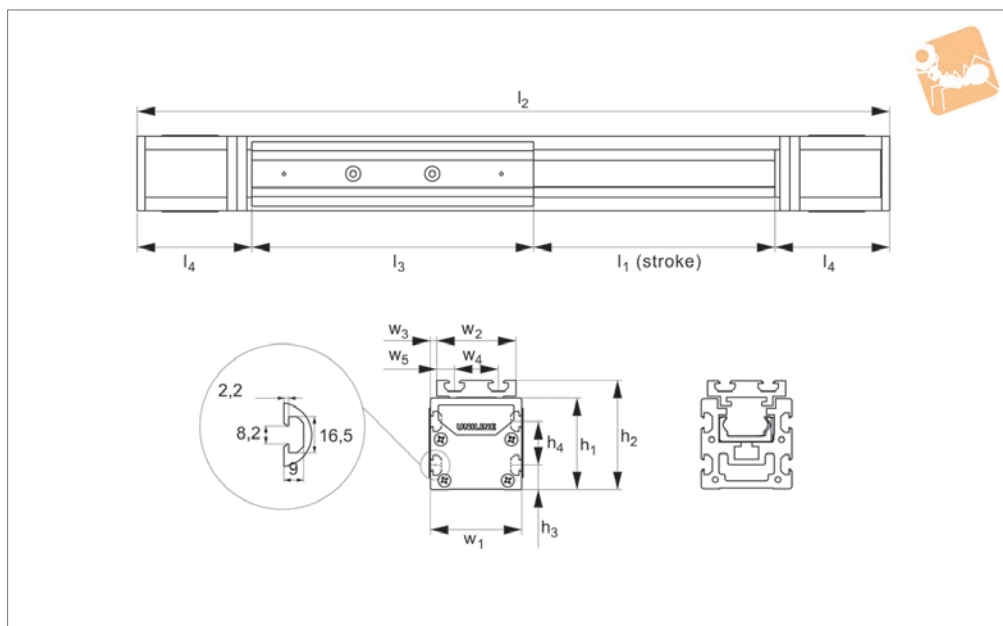
### Important Notes

For loads with low moment loads.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$ & $w_1$	$h_2$	$h_3$	$l_4$	$w_2$	$w_3$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3001.A40-0100	100	448	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0200	200	548	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0300	300	648	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0400	400	748	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0500	500	848	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0600	600	948	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0700	700	1048	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0800	800	1148	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-0900	900	1248	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1000	1000	1348	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1100	1100	1448	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1200	1200	1548	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1300	1300	1648	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1400	1400	1748	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1500	1500	1848	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1600	1600	1948	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1700	1700	2048	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1800	1800	2148	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1
L3001.A40-1900	1900	2248	165	40	51.5	14	91.5	30	5	300	820	2.8	5.6	13.1



## L3001.A55



### Material

Special sliders on a single hardened steel rail, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 3,0 metres in a single section) for the A55 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

See technical pages for more information on belt specification, long carriages,

double carriages and motor connections.

Can easily be combined to make an XY, XYZ or other set up gantry system.

### Important Notes

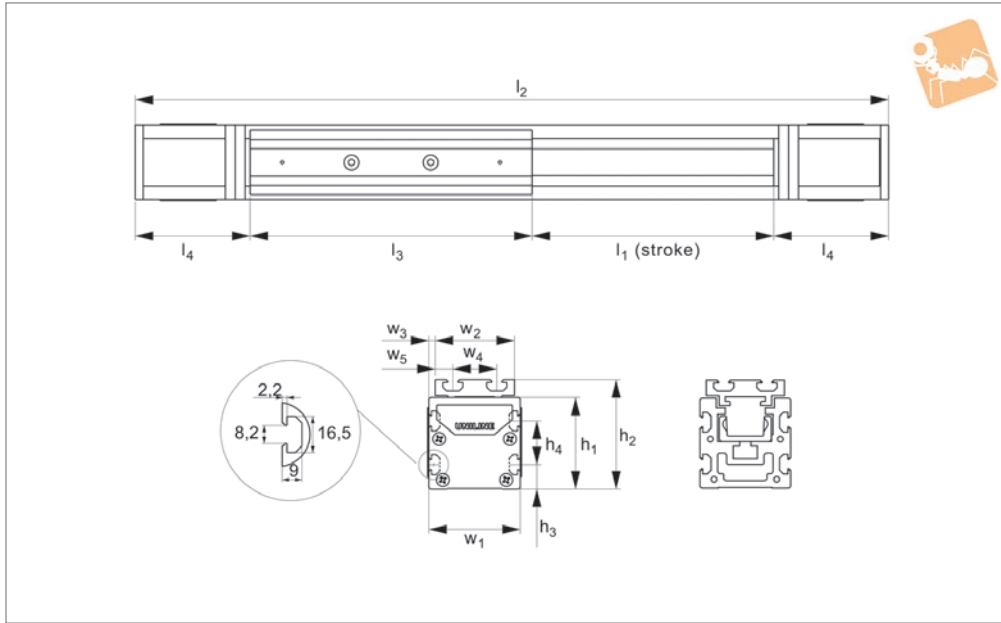
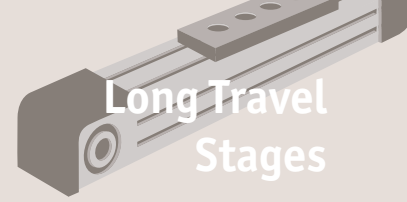
For loads with low moment loads.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$l_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3001.A55-0100	100	516	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0200	200	616	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0300	300	716	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0400	400	816	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0500	500	916	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0600	600	1016	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0700	700	1116	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0800	800	1216	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-0900	900	1316	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1000	1000	1416	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1100	1100	1516	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1200	1200	1616	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1300	1300	1716	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1400	1400	1816	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1500	1500	1916	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1600	1600	2016	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1700	1700	2116	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1800	1800	2216	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-1900	1900	2316	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2000	2000	2416	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2100	2100	2516	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2200	2200	2616	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2300	2300	2716	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2400	2400	2816	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2500	2500	2916	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2600	2600	3016	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2700	2700	3116	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2800	2800	3216	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-2900	2900	3316	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5
L3001.A55-3000	3000	3416	200	55	71	15	25	108	52	1.5	28	12	750	2175	11.5	21.7	54.5



# Heavy Duty Belt Driven Unit

size 75



## L3001.A75

LONG TRAVEL STAGES

### Material

Special sliders on a single hardened steel rail, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 3,4 metres in a single section) for the A75 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

See technical pages for more information on belt specification, long carriages,

double carriages and motor connections. Can easily be combined to make an XY, XYZ or other set up gantry system.

### Important Notes

For loads with low moment loads.

Order No.	$l_1$	$l_2$	$l_3$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$l_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3001.A75-0100	100	617	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0200	200	717	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0300	300	817	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0400	400	917	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0500	500	1017	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0600	600	1117	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0700	700	1217	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0800	800	1317	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-0900	900	1417	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1000	1000	1517	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1100	1100	1617	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1200	1200	1717	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1300	1300	1817	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1400	1400	1917	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1500	1500	2017	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1600	1600	2117	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1700	1700	2217	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1800	1800	2317	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-1900	1900	2417	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2000	2000	2517	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2100	2100	2617	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2200	2200	2717	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2300	2300	2817	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2400	2400	2917	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2500	2500	3017	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2600	2600	3117	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2700	2700	3217	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2800	2800	3317	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-2900	2900	3417	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
L3001.A75-3000	3000	3517	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209



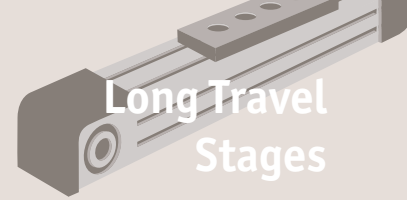
Order No.	$l_1$	$l_2$	$l_3$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$l_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{Oax}$ N	$C_{Orad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
<b>L3001.A75-3100</b>	3100	3617	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
<b>L3001.A75-3200</b>	3400	3917	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
<b>L3001.A75-3300</b>	3200	3717	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209
<b>L3001.A75-3400</b>	3300	3817	285	75	90	20	35	116	65	5	36	14.5	1855	5500	43.6	81.5	209



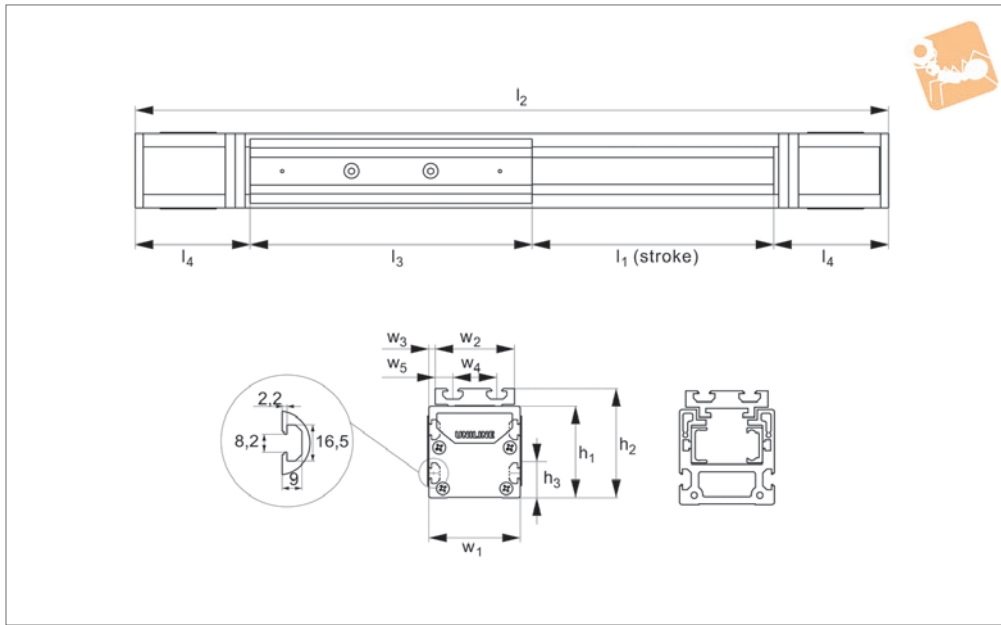


# Medium Duty Belt Driven Unit

size 55



Long Travel Stages



L3003.C55

LONG TRAVEL STAGES

### Material

Special sliders on a pair of hardened steel rails, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 1,9 metres in a single section) for the C55 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

See technical pages for more information on belt specification, long carriages,

double carriages and motor connections. Can easily be combined to make an XY, XYZ or other set up gantry system.

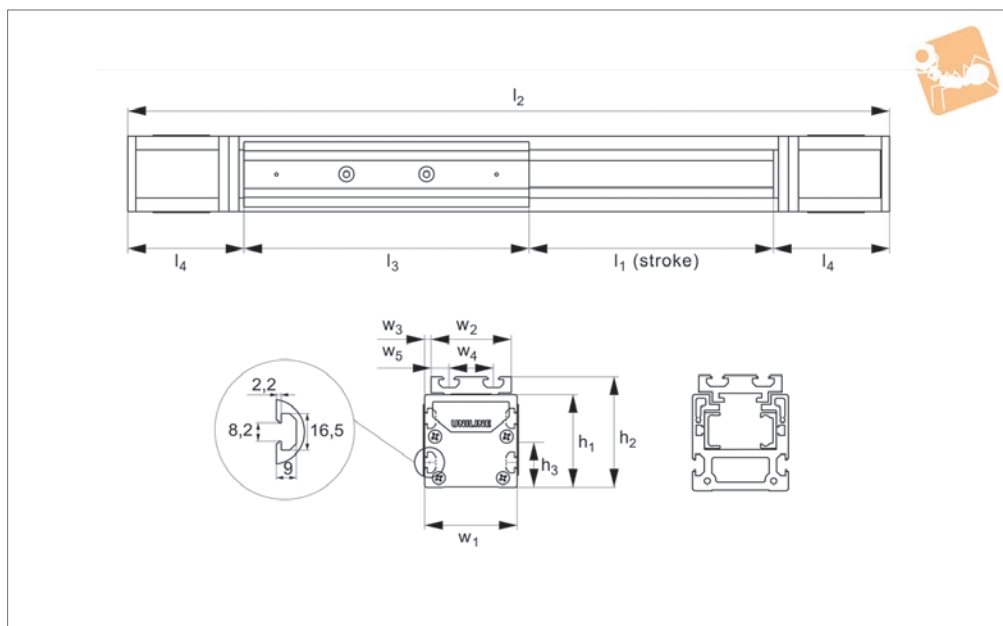
### Important Notes

For loads with significant  $M_y$  moment loads.

Order No.	$l_1$	$l_2$	$h_3$	$l_3$	$h_1$ & $w_1$	$h_2$	$l_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3003.C55-0100	100	516	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0200	200	616	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0300	300	716	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0400	400	816	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0500	500	916	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0600	600	1016	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0700	700	1116	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0800	800	1216	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-0900	900	1316	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1000	1000	1416	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1100	1100	1516	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1200	1200	1616	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1300	1300	1716	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1400	1400	1816	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1500	1500	1916	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1600	1600	2016	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1700	1700	2116	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7
L3003.C55-1800	1800	2216	15	200	55	71	108	52	1.5	28	12	1640	300	18.5	65.6	11.7



## L3003.C75



### Material

Special sliders on a pair of hardened steel rails, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 3,0 metres in a single section) for the C75 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

See technical pages for more information on belt specification, long carriages,

double carriages and motor connections.

Can easily be combined to make an XY, XYZ or other set up gantry system.

### Important Notes

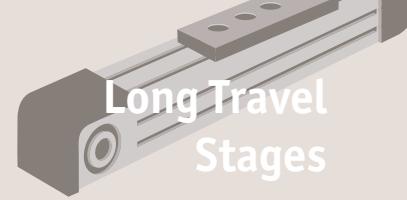
For loads with significant  $M_y$  moment loads.

Order No.	$l_1$	$l_2$	$h_3$	$l_3$	$h_1$ & $w_1$	$h_2$	$l_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{Oax}$ N	$C_{Orad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3003.C75-0100	100	617	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0200	200	717	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0300	300	817	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0400	400	917	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0500	500	1017	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0600	600	1117	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0700	700	1217	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0800	800	1317	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-0900	900	1417	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1000	1000	1517	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1100	1100	1617	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1200	1200	1717	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1300	1300	1817	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1400	1400	1917	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1500	1500	2017	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1600	1600	2117	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1700	1700	2217	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1800	1800	2317	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-1900	1900	2417	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2000	2000	2517	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2100	2100	2617	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2200	2200	2717	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2300	2300	2817	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2400	2400	2917	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2500	2500	3017	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2600	2600	3117	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2700	2700	3217	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2800	2800	3317	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-2900	2900	3417	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1
L3003.C75-3000	3000	3517	20	285	75	90	116	65	5	36	14.5	4350	750	85.2	217	36.1

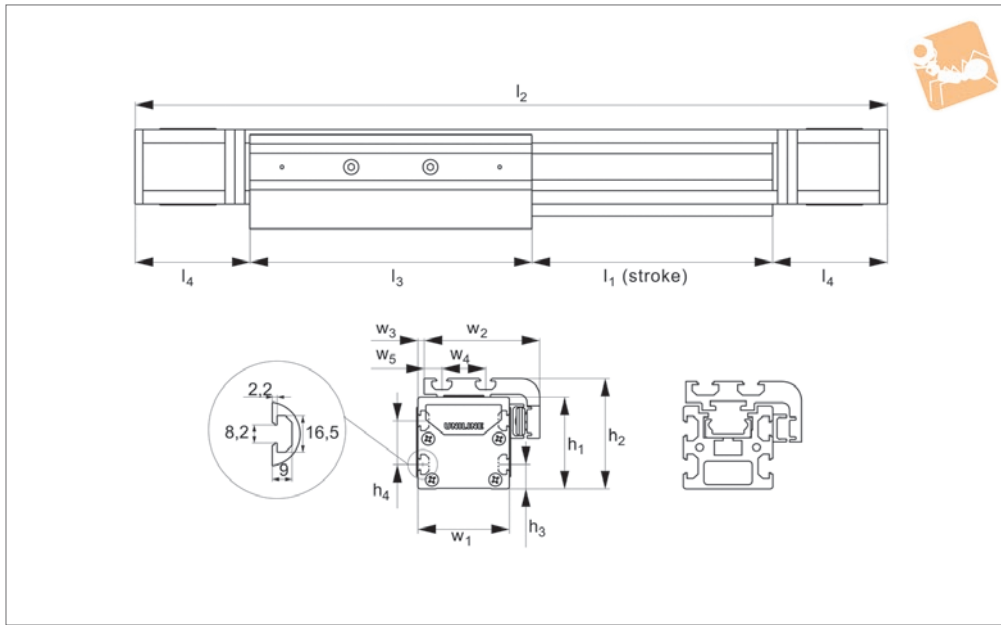


# Medium Duty Belt Driven Unit

size 55



Long Travel Stages



L3004.E55

LONG TRAVEL STAGES

### Material

Special sliders on a pair of hardened steel rails, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 3,0 metres in a single section) for the E55 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

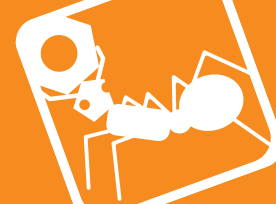
See technical pages for more information on belt specification, long carriages,

double carriages and motor connections. Can easily be combined to make an XY, XYZ or other set up gantry system.

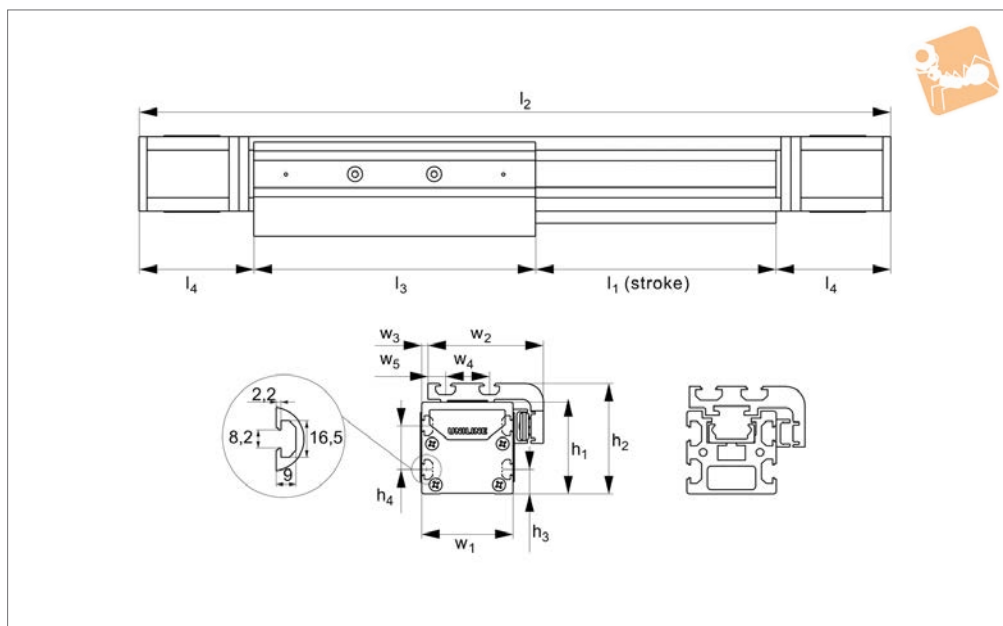
### Important Notes

For extra rigidity and where significant  $M_x$  moment loads are present.

Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3004.E55-0100	100	516	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0200	200	616	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0300	300	716	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0400	400	816	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0500	500	916	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0600	600	1016	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0700	700	1116	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0800	800	1216	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-0900	900	1316	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1000	1000	1416	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1100	1100	1516	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1200	1200	1616	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1300	1300	1716	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1400	1400	1816	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1500	1500	1916	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1600	1600	2016	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1700	1700	2116	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1800	1800	2216	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-1900	1900	2316	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2000	2000	2416	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2100	2100	2516	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2200	2200	2616	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2300	2300	2716	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2400	2400	2816	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2500	2500	2916	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2600	2600	3016	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2700	2700	3116	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2800	2800	3216	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-2900	2900	3316	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4
L3004.E55-3000	3000	3416	200	108	55	71	15	25	71	1.5	28	12	1500	2175	25.5	43.4	54.4



## L3004.E75



### Material

Special sliders on a pair of hardened steel rails, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 3,4 metres in a single section) for the E75 series. Longer strokes

available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

See technical pages for more information on belt specification, long carriages,

double carriages and motor connections.

Can easily be combined to make an XY, XYZ or other set up gantry system.

### Important Notes

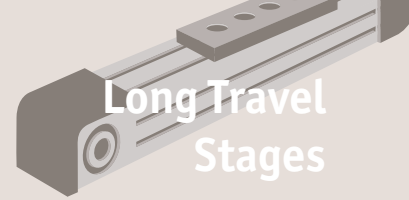
For extra rigidity and where significant  $M_x$  moment loads are present.

Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3004.E75-0100	100	617	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0200	200	717	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0300	300	817	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0400	400	917	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0500	500	1017	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0600	600	1117	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0700	700	1217	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0800	800	1317	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-0900	900	1417	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1000	1000	1517	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1100	1100	1617	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1200	1200	1717	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1300	1300	1817	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1400	1400	1917	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1500	1500	2017	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1600	1600	2117	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1700	1700	2217	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1800	1800	2317	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-1900	1900	2417	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2000	2000	2517	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2100	2100	2617	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2200	2200	2717	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2300	2300	2817	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2400	2400	2917	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2500	2500	3017	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2600	2600	3117	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2700	2700	3217	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2800	2800	3317	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-2900	2900	3417	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
L3004.E75-3000	3000	3517	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209



# Heavy Duty Belt Driven Unit

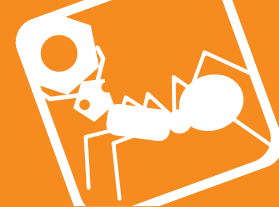
size 75



Long Travel  
Stages

Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$w_2$	$w_3$	$w_4$	$w_5$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
<b>L3004.E75-3100</b>	3100	3617	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
<b>L3004.E75-3200</b>	3200	3717	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
<b>L3004.E75-3300</b>	3300	3817	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209
<b>L3004.E75-3400</b>	3400	3917	285	116	75	90	20	35	135	5	36	14.5	3710	5500	85.5	163	209

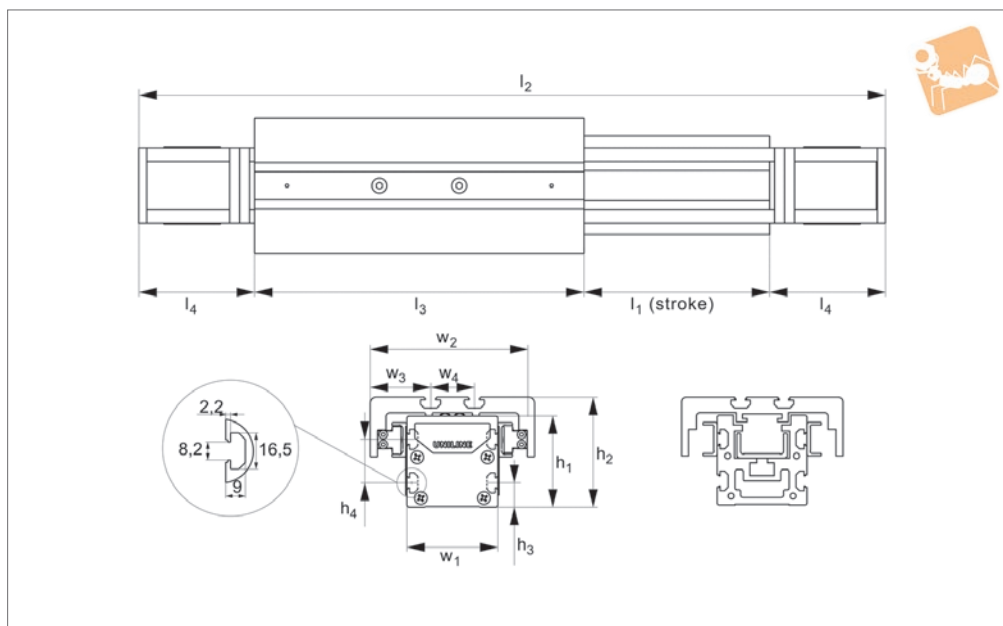
LONG TRAVEL STAGES



LONG TRAVEL STAGES



## L3004.ED75



### Material

Special sliders on three hardened steel rails, encased in an aluminium profile.

### Technical Notes

Any length overall stroke unit can be supplied (up to 2,9 metres in a single section) for the ED75 series. Longer

strokes available.

Longer carriages and double carriages are available which increase the load capacity of the units.

### Tips

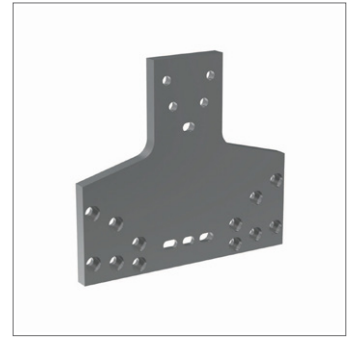
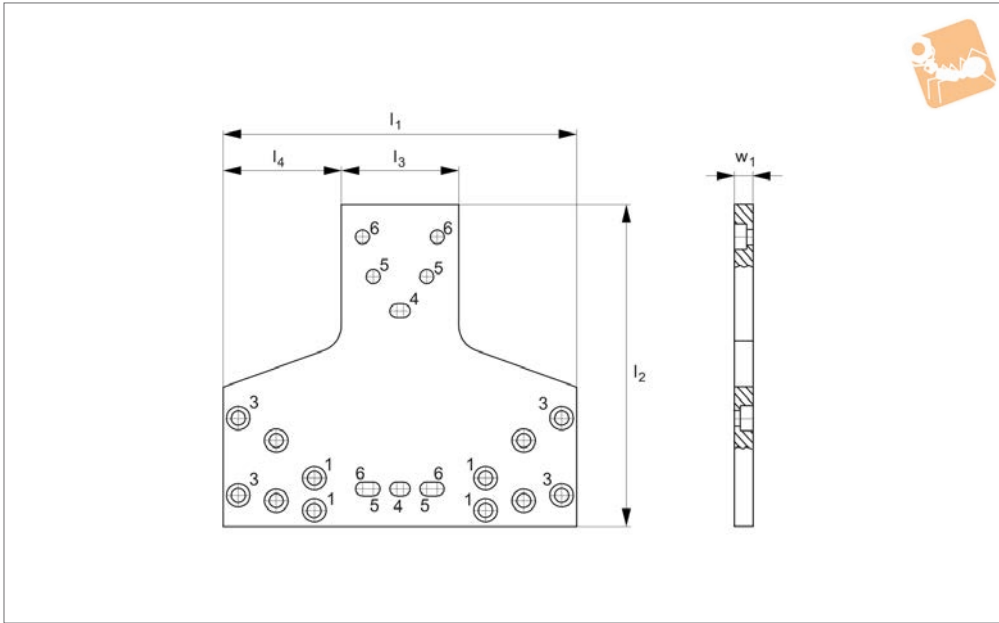
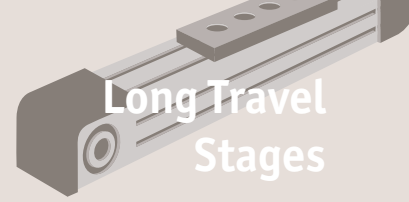
See technical pages for more information on belt specification, long carriages,

double carriages and motor connections. Can easily be combined to make an XY, XYZ or other set up gantry system.

### Important Notes

For extra rigidity and where significant moment loads are present.

Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$h_1$ & $w_1$	$h_2$	$h_3$	$h_4$	$w_2$	$w_3$	$w_4$	$C_{0ax}$ N	$C_{0rad}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
L3004.ED75-0100	100	662	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0200	200	762	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0300	300	862	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0400	400	962	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0500	500	1062	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0600	600	1162	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0700	700	1262	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0800	800	1362	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-0900	900	1462	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1000	1000	1562	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1100	1100	1662	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1200	1200	1762	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1300	1300	1862	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1400	1400	1962	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1500	1500	2062	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1600	1600	2162	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1700	1700	2262	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1800	1800	2362	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-1900	1900	2462	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2000	2000	2562	330	116	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2100	2100	2662	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2200	2200	2762	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2300	2300	2862	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2400	2400	2962	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2500	2500	3062	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2600	2600	3162	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2700	2700	3262	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2800	2800	3362	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-2900	2900	3462	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209
L3004.ED75-3000	3000	3562	330	160	75	90	20	35	135	49.5	36	8700	5500	400	868	209



L3001.APC1

LONG TRAVEL STAGES

**Material**

Aluminium.

**Technical Notes**

Allows two units to be mounted perpendicularly to one another. Supplied with T-

nuts and bolts.

**Tips**

Not suitable for L3004.E and L3004.ED units.  
Size 40 - use holes 1 for carriages and 4 for

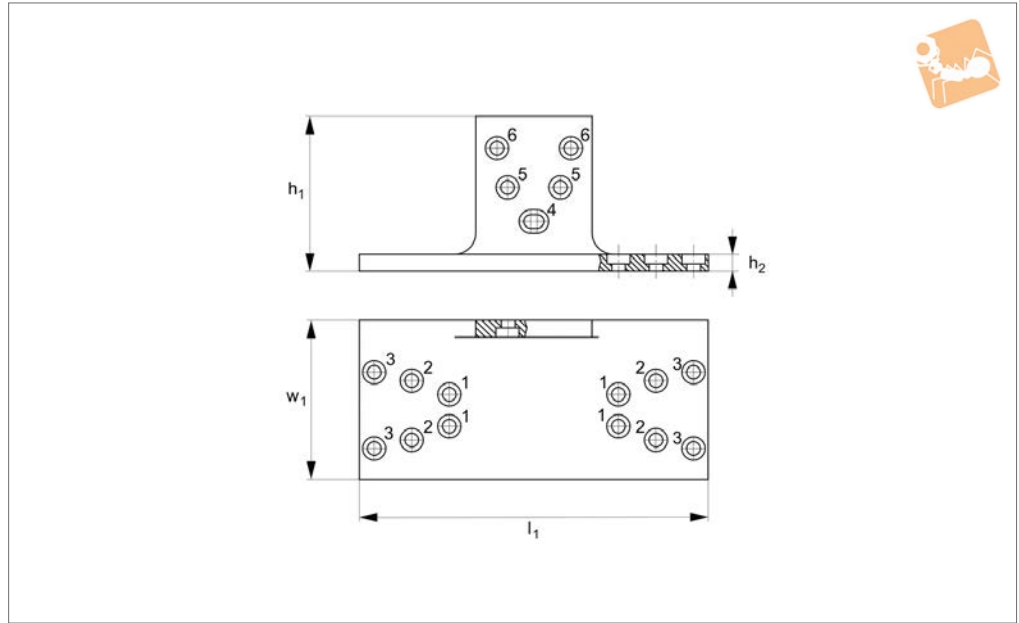
profile.

Size 55 - use holes 2 for carriages and 5 for profile.  
Size 40 - use holes 3 for carriages and 6 for profile.

Order No.	$l_1$	$l_2$	$l_3$	$l_4$	$w_1$
L3001.APC-1	165	150	55	55	8



**L3001.APC2**



**Material**  
Aluminium.

**Technical Notes**  
Allows two units to be mounted at right angles to one another. Supplied with T-nuts and bolts.

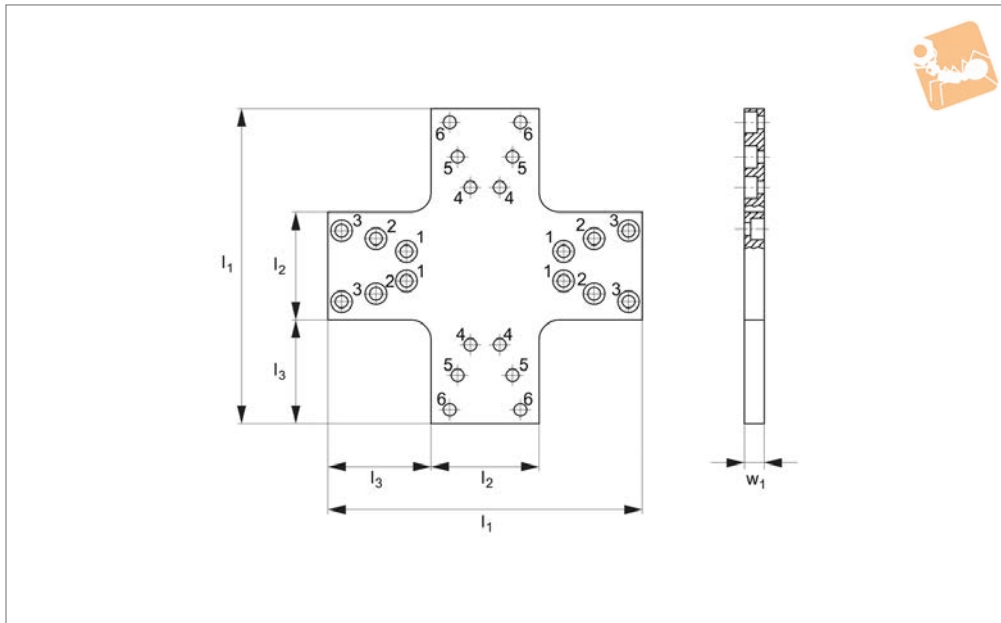
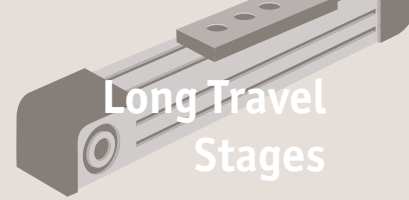
The trolley of one unit can be mounted to the side of the other.

**Tips**  
Not suitable for L3004.E and L3004.ED units.  
Size 40 - use holes 1 for carriages and 4 for

profile.  
Size 55 - use holes 2 for carriages and 5 for profile.  
Size 40 - use holes 3 for carriages and 6 for profile.

Order No.	$l_1$	$h_1$	$h_2$	$w_1$
L3001.APC-2	165	73	8	75





L3001.APC3

LONG TRAVEL STAGES

**Material**

Aluminium.

**Technical Notes**

Allows two units to be mounted perpendicularly to one another. Supplied with T-

nuts and bolts.

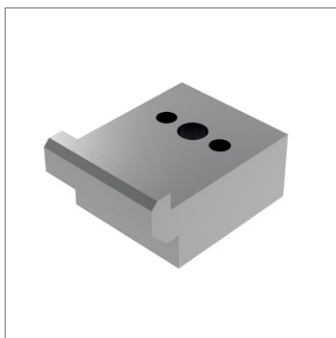
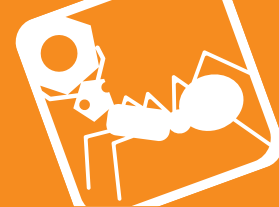
**Tips**

Size 40 - use holes 1 for carriages and 4 for profile.  
 Size 55 - use holes 2 for carriages and 5 for

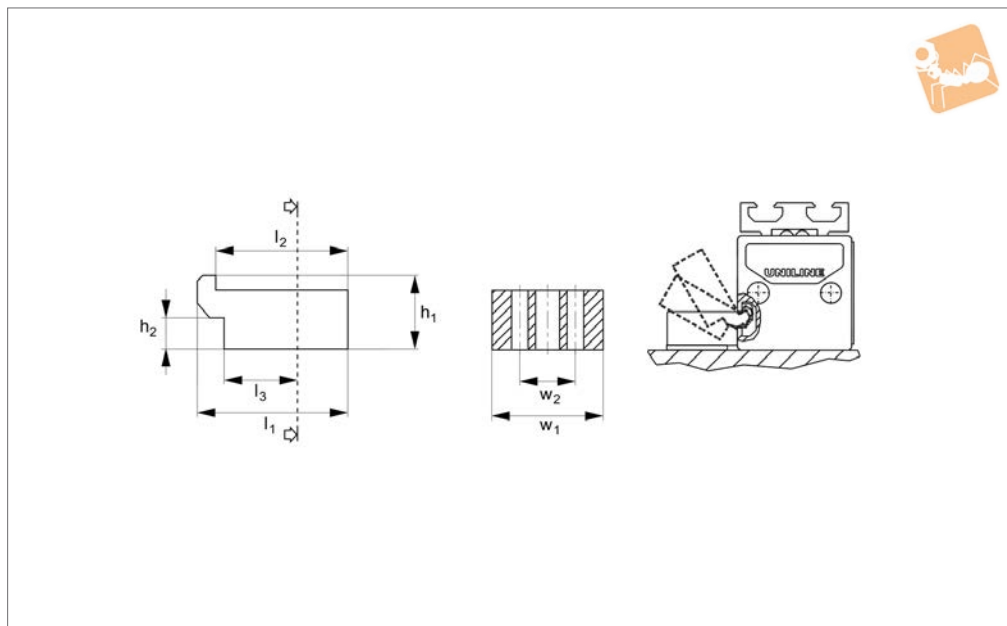
profile.

Size 40 - use holes 3 for carriages and 6 for profile.

Order No.	$l_1$	$l_2$	$l_3$	$w_1$
L3001.APC-3	160	55	52.5	10



**L3001.APF2**



**Material**  
Aluminium.

**Technical Notes**  
Used to bolt the Uniline units to a surface or to mount to units to one another with or

without an interface plate.  
The clamps fit in the T-slots of any of the units.

**Tips**  
Insert the lip of the clamp into the T slot of

the Uniline unit, position the clamp and if necessary shim to required height. Insert screws and tighten.  
Not suitable for L3001.A100 units.

Order No.	$l_1$	$h_1$	$h_2$	$l_2$	$l_3$	$w_1$	$w_2$
L3001.APF-2	40	20	8.5	35	20	50	15