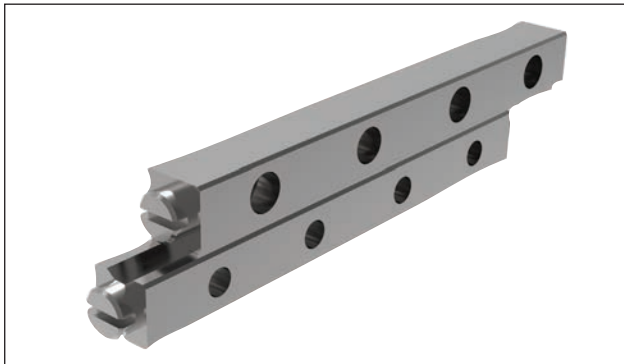


Standard cross roller rail sets

L1000 & L1001

- Seven rail profiles (Sizes 1-12)
- Lengths: 20mm to 1 metre
- L1000 standard rail set
- L1001 corrosion resistant rail sets



Deep groove and anti-creep rail sets

L1002 + L1003

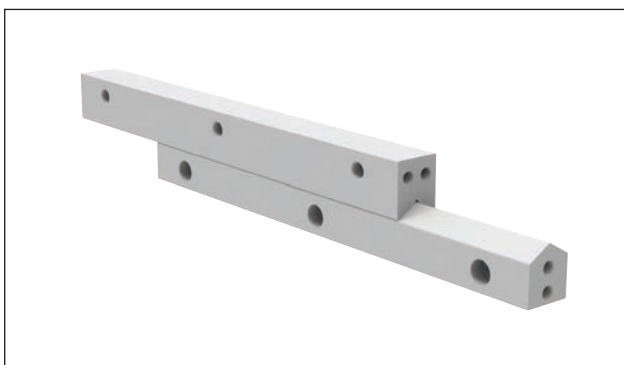
- 3 x load capacity of standard rail sets (due to deep V groove)
- Two rail profiles (Sizes 4 & 6)
- Lengths 50mm to 400mm
- Anti-creep versions for high acceleration applications



Needle roller rail sets

L1004

- Heavy load ratings and needle rollers are used
- Five rail profile size
- Lengths: 200mm to 1.2 metres



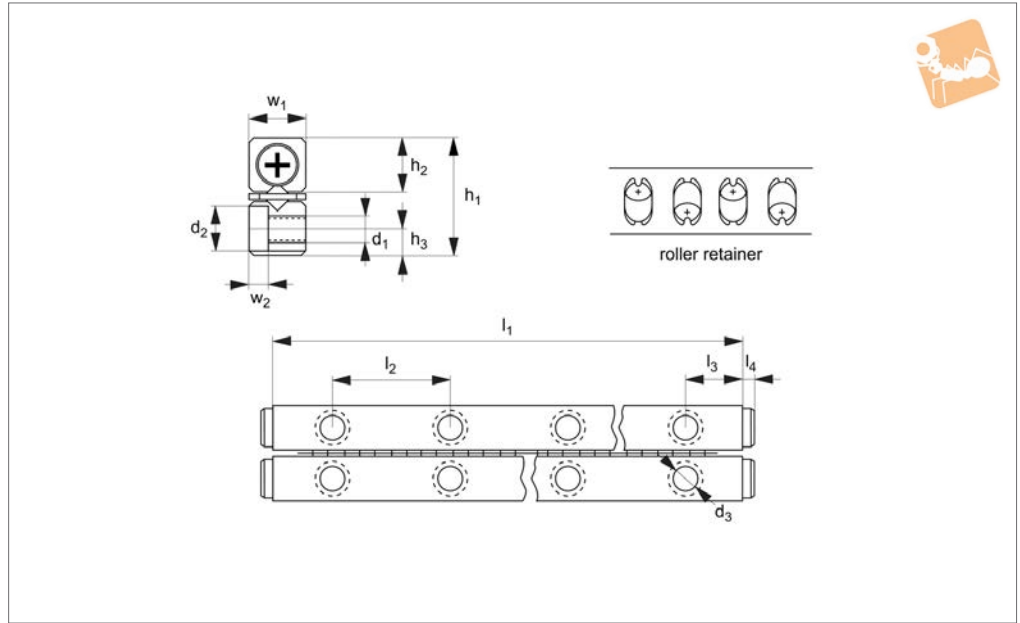
Anti-friction coated rail sets

L1005 & L1006

- Same profile as needle roller rails but contact face Teflon coated.
- Ideal for harsh, dirty conditions
- Vibration damping characteristics



L1000



Material

Alloy steel rail and roller (DIN 1.2842), through hardened to 60 ± 2 HRC.
Stainless steel roller retainer (AISI 304).

Technical Notes

Supplied in sets of 4 rails (with 2 roller cages and 8 end screws as standard). See table for number of rollers in each cage.

Crossed roller cages can be cut to length to alter stroke - but this affects load rating, please see technical pages.

Order No.	l_1	Stroke max.	w_1	d_1	d_2	d_3	h_1 +0 -0.3	h_2	h_3	l_2	l_3	l_4	w_2	No. of rollers	Dyn. load C kN max.	Static load C_0 kN max.	Weight kg
L1000.01-020	20	13	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	5	0,63	0,72	0,01
L1000.01-030	30	21	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	7	0,88	1,00	0,01
L1000.01-040	40	29	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	9	1,13	1,30	0,02
L1000.01-050	50	37	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	11	1,38	1,58	0,02
L1000.01-060	60	45	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	13	1,63	1,88	0,02
L1000.01-070	70	53	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	15	1,88	2,16	0,03
L1000.01-080	80	61	4	1,65	3,0	M 2	8,5	3,9	1,8	10	5	1,3	1,4	17	2,11	2,45	0,03
L1000.02-030	30	24	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	5	1,47	1,46	0,03
L1000.02-045	45	30	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	8	2,34	2,34	0,04
L1000.02-060	60	44	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	10	2,93	2,92	0,05
L1000.02-075	75	58	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	12	3,52	3,50	0,06
L1000.02-090	90	72	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	14	4,10	4,09	0,08
L1000.02-105	105	86	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	16	4,69	4,67	0,09
L1000.02-120	120	100	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	18	5,27	5,26	0,11
L1000.02-135	135	106	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	21	6,15	6,13	0,12
L1000.02-150	150	120	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	23	6,74	6,72	0,13
L1000.02-165	165	134	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	25	7,33	7,30	0,14
L1000.02-180	180	148	6	2,55	4,4	M 3	12	5,5	2,5	15	7,5	1,5	2,0	27	7,91	7,88	0,16
L1000.03-050	50	34	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	7	4,47	5,33	0,92
L1000.03-075	75	54	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	10	6,38	7,61	0,14
L1000.03-100	100	74	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	13	8,29	9,89	0,18
L1000.03-125	125	104	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	15	9,57	11,4	0,23
L1000.03-150	150	124	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	18	11,5	13,7	0,27
L1000.03-175	175	144	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	21	13,4	16,0	0,32
L1000.03-200	200	164	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	24	15,3	18,3	0,36
L1000.03-225	225	184	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	27	17,2	20,6	0,41
L1000.03-250	250	204	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	30	19,1	22,8	0,45
L1000.03-275	275	224	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	33	21,1	25,1	0,49
L1000.03-300	300	244	8	3,3	6,0	M 4	18	8,3	3,5	25	12,5	2,0	3,1	36	23,0	27,4	0,54
L1000.04-080	80	54	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	8	9,84	9,36	0,25
L1000.04-120	120	92	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	11	13,5	12,9	0,36
L1000.04-160	160	130	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	14	17,2	16,4	0,38



Crossed Roller Rail Sets

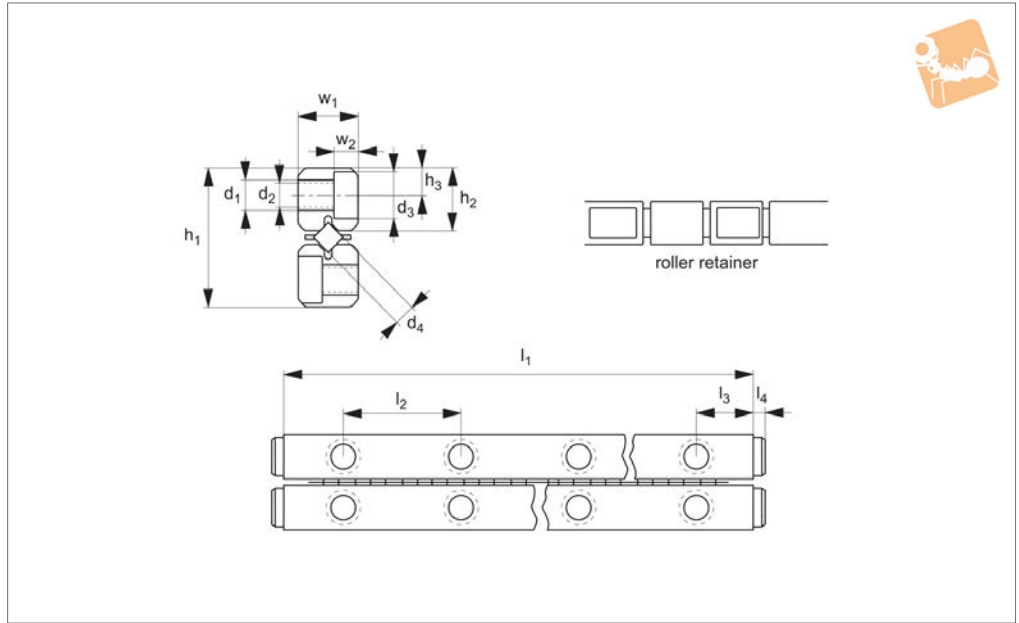
Linear Rail Sets

Order No.	l_1	Stroke max.	w_1	d_1	d_2	d_3	h_1 +0 -0.3	h_2	h_3	l_2	l_3	l_4	w_2	No. of rollers	Dyn. load C kN max.	Static load C_0 kN max.	Weight kg
L1000.04-200	200	154	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	18	22,1	21,1	0,60
L1000.04-240	240	192	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	21	25,8	24,6	0,71
L1000.04-280	280	230	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	24	29,5	28,1	0,83
L1000.04-320	320	254	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	28	34,4	32,8	0,95
L1000.04-360	360	292	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	31	38,1	36,3	1,06
L1000.04-400	400	330	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	34	41,8	39,8	1,18
L1000.04-440	440	354	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	38	46,7	44,5	1,40
L1000.04-480	480	392	11	4,3	7,5	M 5	22	10	4,5	40	20	2,0	4,1	41	50,4	48,0	1,41
L1000.06-100	100	80	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	7	18,0	18,4	0,58
L1000.06-150	150	108	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	11	28,3	29,0	0,87
L1000.06-200	200	154	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	14	36,0	36,9	1,16
L1000.06-250	250	200	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	17	43,7	44,7	1,44
L1000.06-300	300	246	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	20	51,4	52,6	1,73
L1000.06-350	350	274	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	24	61,7	63,2	2,01
L1000.06-400	400	320	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	27	69,4	71,1	2,30
L1000.06-450	450	366	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	30	77,1	79,0	2,59
L1000.06-500	500	412	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	33	84,8	86,9	2,87
L1000.06-550	550	458	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	36	92,5	94,8	3,16
L1000.06-600	600	486	15	5,3	9,5	M 6	31	14	6	50	25	2,0	5,2	40	103,0	105,0	2,55
L1000.09-200	200	158	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	9	64,7	65,5	2,54
L1000.09-300	300	246	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	13	93,5	94,6	3,78
L1000.09-400	400	306	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	18	129,0	131,0	5,02
L1000.09-500	500	394	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	22	158,0	160,0	6,27
L1000.09-600	600	482	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	26	187,0	189,0	7,51
L1000.09-700	700	570	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	30	216,0	218,0	9,26
L1000.09-800	800	658	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	34	245,0	247,0	9,83
L1000.09-900	900	746	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	38	273,0	276,0	11,05
L1000.09-1000	1000	805	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	43	309,0	311,0	12,20
L1000.09-1100	1100	894	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	47	337,0	341,0	13,50
L1000.09-1200	1200	982	22	6,8	10,5	M 8	44	20,2	9	100	50	3,5	5,2	51	366,0	371,0	14,70
L1000.12-200	200	160	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	7	103,0	92,3	4,23
L1000.12-300	300	216	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	11	162,0	145,0	6,32
L1000.12-400	400	308	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	14	206,0	185,0	8,39
L1000.12-500	500	400	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	17	250,0	224,0	10,49
L1000.12-600	600	492	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	20	294,0	264,0	12,520
L1000.12-700	700	548	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	24	353,0	317,0	15,47
L1000.12-800	800	640	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	27	397,0	356,0	17,66
L1000.12-900	900	732	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	30	441,0	396,0	18,52
L1000.12-1000	1000	824	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	33	485,0	435,0	20,40
L1000.12-1100	1100	916	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	36	529,0	474,0	22,60
L1000.12-1200	1200	972	28	8,5	13,5	M10	58	26,9	12	100	50	3,5	8,2	40	588,0	527,0	24,70

LINEAR RAIL SETS



L1002



Material

Alloy steel rail and roller (DIN 1.2842), through hardened to 60 ± 2 HRC. Cross rollers retained in delrin cage.

Technical Notes

Supplied in sets of 4 rails (with 2 roller

cages and 8 end screws as standard). See table for number of rollers in each cage. Crossed roller cages can be cut to length to alter stroke - but this affects load rating, please see technical pages.

Tips

This rail set type has improved load carrying capacity, typically 3x that of standard L1000 type sets (as they have a deeper V groove).

Order No.	l_1	Stroke max.	w_1	d_1	d_2	d_3	d_4	h_1	h_2	h_3	l_2	l_3	l_4	w_2	No. of rollers	Weight kg
L1002.04-050	50	40	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	4	0.06
L1002.04-075	75	62	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	6	0.09
L1002.04-100	100	81	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	9	0.13
L1002.04-125	125	102	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	11	0.16
L1002.04-150	150	121	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	13	0.19
L1002.04-175	175	143	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	16	0.20
L1002.04-200	200	161	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	18	0.23
L1002.04-225	225	183	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	20	0.25
L1002.04-250	250	201	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	23	0.28
L1002.04-275	275	223	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	25	0.31
L1002.04-300	300	242	9	4.5	M3	2.65	5.5	19	9	3.5	25	12.5	2.5	2.7	27	0.33
L1002.06-100	100	83	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	6	0.18
L1002.06-150	150	120	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	10	0.28
L1002.06-200	200	162	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	14	0.37
L1002.06-250	250	203	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	17	0.46
L1002.06-300	300	241	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	21	0.55
L1002.06-350	350	282	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	24	0.64
L1002.06-400	400	324	12	6.5	M4	3.30	7.0	25	12	5.0	25	12.5	3.0	3.2	28	0.74



Linear Cross Roller Rail Sets

Accuracy Overview

Linear Guideways



Our cross roller rail sets are of the highest quality.

- Close tolerance $\pm 5\mu$
- Speeds up to 50 m/min
- Temperature range -40°C to $+80^{\circ}\text{C}$ up to $+250^{\circ}\text{C}$ if applying a temperature factor
- Through hardened to 60 ± 2 HRC
- Acceleration up to 50 m/sec^2
- Typical 0.003 coefficient of friction dependent on mounting surface accuracy

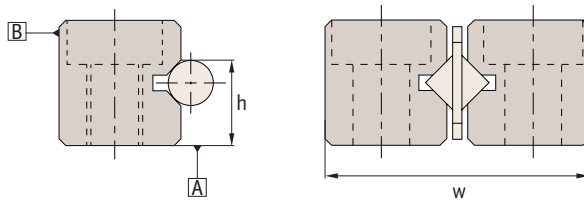
Expected life calculation:

$$\text{Life (Km)} L = (C/P)^{3.3} \times 1.15 \times 10^5 \text{m}$$

C = effective dynamic load (N)

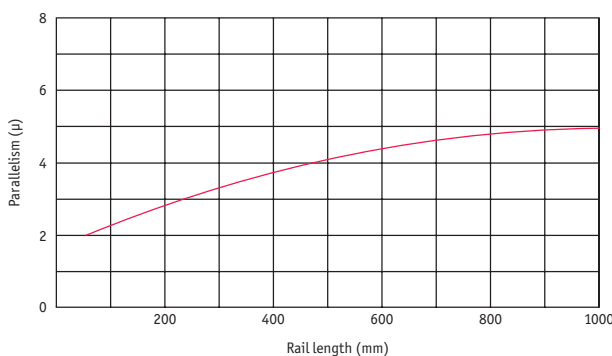
P = equivalent load (N)

Accuracy Specification:



Accuracy level	
Parallelism of rolling plane A&B	graph below
Allowable height tolerance (h)	$\pm 0,02$
Paired mutual height tolerance (h)	0,01
Allowable width tolerance (w)	$+0, -0,02$

Parallelism



Lubrication:

The units are lubricated with lithium soap lubricant. Relubricate if required.

Working life calculation:

$$L_h \text{ (hours)} = \frac{L \times 10^6}{2 \times L_s \times n \times 60}$$

L = Life (Km), see above

L_s = Stroke Length (mm)

n = Number of operations/min

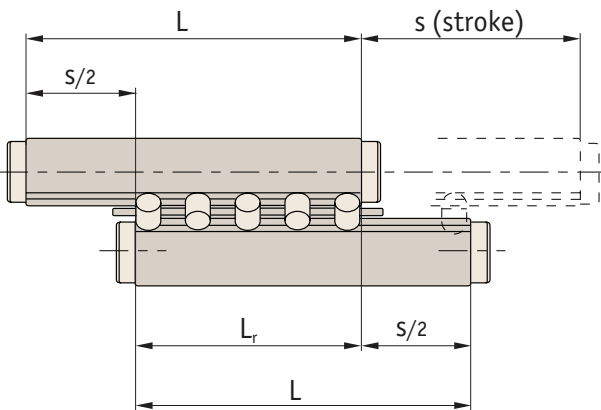
Straightness		
Length (mm)		Straightness (μ)
Above	Below	
0	50	2,0
50	100	2,0
100	160	3,0
160	310	3,0
310	510	4,0
510	600	4,0

(Ra 0,2 μm)



Load capacity depends on:

- Rail size
- Number of rollers in cage
- Load rating = number of rollers x load rating/roller
- Number of rollers (N_r) = cage length (L_c) / pitch p
- Cage length affects the stroke and travel of the system



Load calculations

Calculations of retainer length and number of rollers:

$$L_r = \frac{L - S}{2}$$

L_r = distance between two rollers in ends of retainer (mm)

L = rail length (mm)

S = stroke length (mm)

Worked example:

Assume L1000.09-400 with a stroke of 250mm:

Cage length = $400 - (250/2) = 275$ mm

Roller $\varnothing = 9$ mm with a pitch (see table) of 18mm:

Number of rollers = $275/18 = 15$

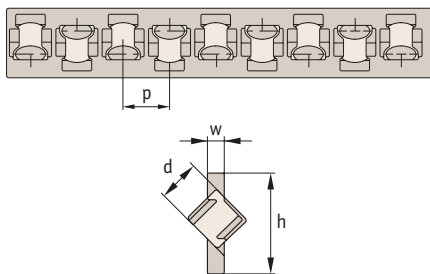
Load rating of system = load/roller* x no. of rollers

(a pair of rollers) = $2420\text{N} \times 15$

= 36,300N

*See product table for allowable load per roller.

Allowable load rating with a 3x safety factor compared to static load.



Plastic cage



L1008.###-PR-xxx

Plastic cage with steel rollers,
for horizontal and vertical use.

Steel cage



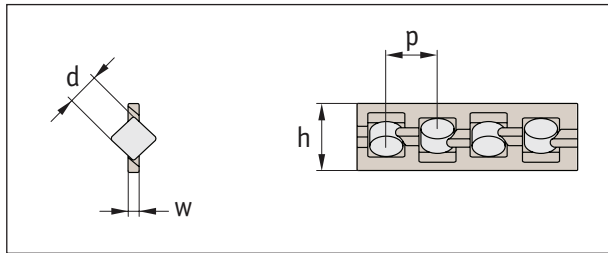
L1008.###-AA-xxx

Steel cage with steel rollers,
for horizontal use only.

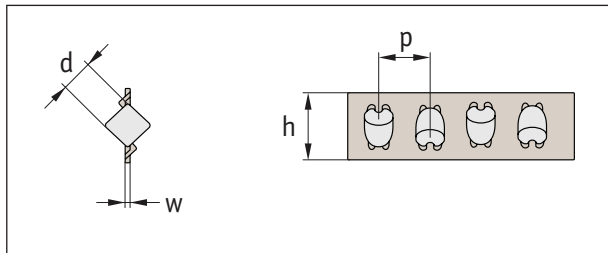
Order no.	d	p	h	w	Cage material
L1008.020-PR-xxx	2	3,9	5	0,75	Plastic - black
L1008.030-PR-xxx	3	5,0	7	1,00	Plastic - black
L1008.060-PR-xxx	6	8,5	14	2,00	Plastic - black
L1008.090-PR-xxx	9	14,0	20	3,00	Plastic - black
L1008.020-AA-xxx	2	4	5,5	0,80	Steel
L1008.030-AA-xxx	3	5	7,5	0,50	Steel
L1008.060-AA-xxx	6	12	14	0,80	Steel
L1008.090-AA-xxx	9	18	19,5	1,00	Steel
L1008.120-AA-xxx	12	22	25	1,20	Steel



Plastic cage (type PR)



Steel cage (type AA)

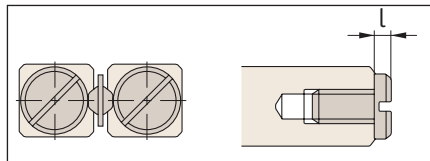


Roller load ratings (per roller)			
Rail size	Max. dynamic load C_0 N	Max. static load C N	Allowable* load N
1	125	144	48
2	290	290	95
3	630	760	250
4	1230	1170	390
6	2570	2630	870
9	7190	7270	2420
12	14700	13100	4300

The more rollers the greater the load capacity

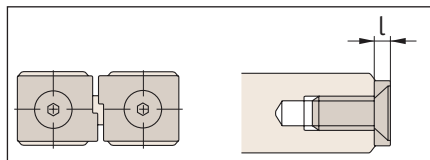
* Allowable load is 1/3 of max. static load/roller, to allow a safety factor in calculations of 3.

End pieces



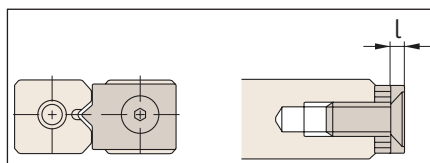
Type GA

- For horizontal applications, most used.



Type GB

- For horizontal or vertical applications.

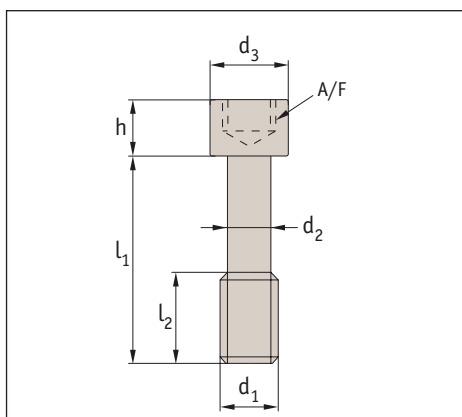


Type GC

- For horizontal or vertical applications.
- Mount on longer rail only.

Rail size	Type		
	GA l	GB l	GC l
1	1,5	-	-
2	2	3	-
3	2	2	3
6	3	3	5
9	3	4	6
12	3	5	8

End screws

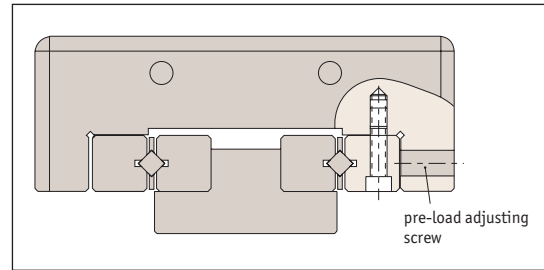


Rail	h	d ₁	d ₂	d ₃	l ₁	l ₂	A/F
3	3	M3	2,3	5	12	5	2,5
6	5	M5	3,9	8	20	8	4
9	6	M6	4,6	8,5	30	12	5
12	8	M8	6,25	11,3	40	17	6



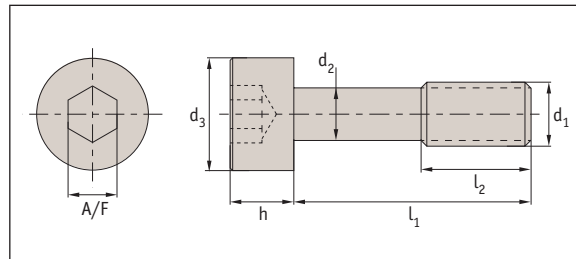
Recommended torque for pre-load screws

Rail size	Set screw size	Torque to Nm
1	M2	0,008
2	M3	0,012
3	M4	0,05
4	M4	0,08
6	M5	0,2
9	M6	0,4



Fixing screws

Rail size	d ₁	d ₂	d ₃	h	l ₁	l ₂	A/F	Torque to Nm
3	M3	2,3	5	3	12	5	2,5	1,0
4	M4	3,1	5,8	4	15	7	3	2,4
6	M5	3,9	8	5	20	8	4	4,8
9	M6	4,6	8,5	6	30	12	5	8,1
11	M8	6,25	11,3	8	40	17	6	19,7



Important notes:

Inaccurate assembly

Inaccurate assembly or machining of surfaces will lead to low accuracy and cage creep which affects system reliability and life.

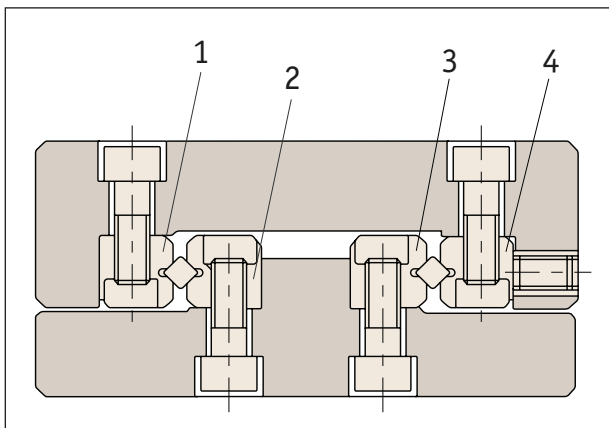
Cage creep

High speeds or off-set loads, high levels of vibration can cause cage creep.

End screws

These function to prevent the cage falling out. They are not designed as end stops. If this is required it should be designed into your system.

Ensure structure is rigid and machined accurately.



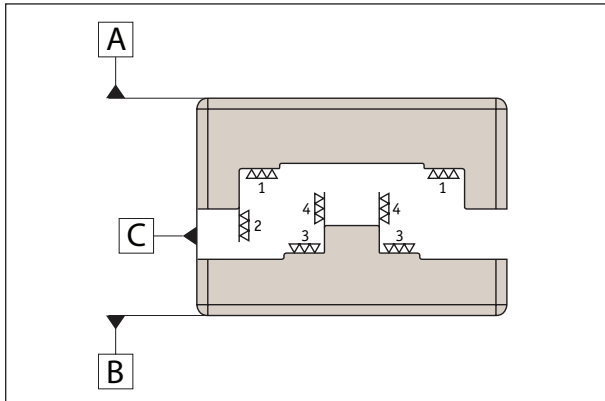
- Assemble rails 2 and 3
- Check for run-out and parallelism
- Install rails 3 and 4 without tightening screws
- Install cages and end pieces
- Slide the moving part to end of the travel to allow the centering of the cage
- Tighten the preload screws to eliminate clearance
- Tighten the retaining screws
- Ensure the extended end stops are hit before the cage hits the screws or end piece



Installation surfaces

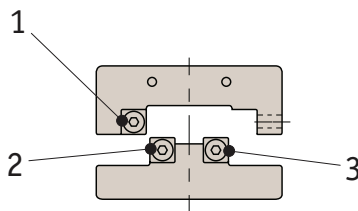
All burrs, dents, dust, etc. on the table and base need to be reduced.

Pre-load adjustment; too much preload can cause damage & reduced life. We recommend to use no or a small amount of pre-load.

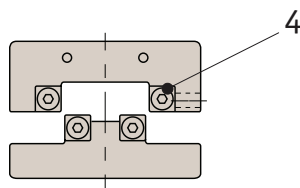


Assembly process

1. Apply a low viscosity oil on contact surface, fix rail (1, 2 & 3) lightly.



2. Temporarily fix the rail in adjusted side (4)



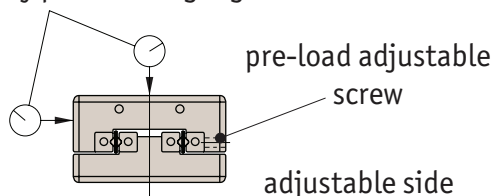
3. Disassemble end screw from one end, and carefully insert roller retainer to nearly the centre of the rail.

Replace the end screw.

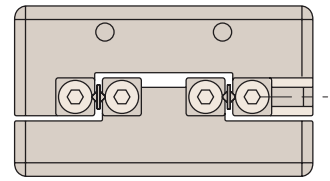
Slowly move table back and forth to the rail end, and adjust roller retainer position to rail centre.

4. Fix gauges both in centre and the side of the table.

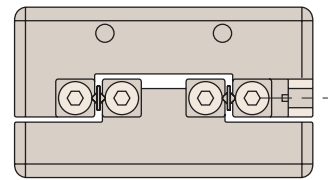
assembly position of gauge



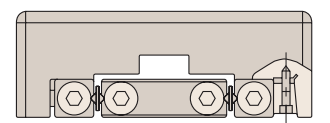
Adjusting screw



Clamp

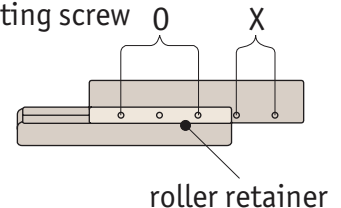


Taper block

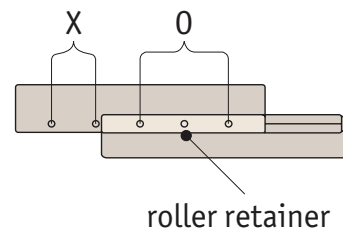


5. Move the table to one end and adjust pre-load screw slightly.

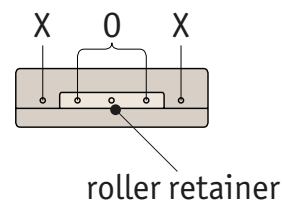
assembly position of pre-load adjusting screw



6. Move table to the other end and repeat.



7. Return the table back to centre and lock the pre-load adjusting screw slightly. Adjust the clearance of table to zero. For final adjustment of preload, set correct torque value with a torque wrench and prepare to lock the rail fixing screw.



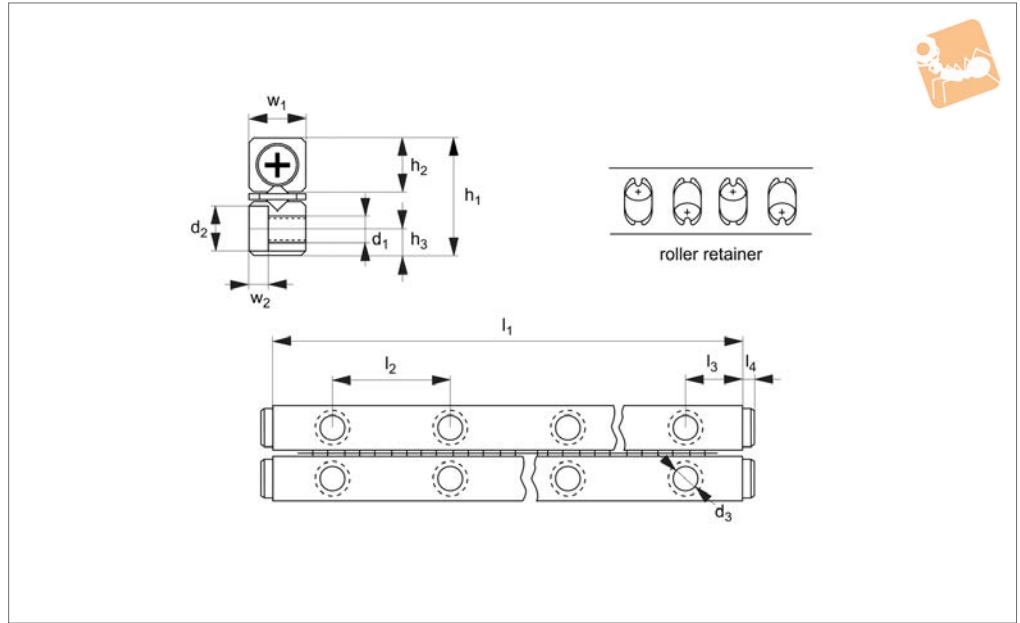
7. Finally securely lock the rail.

O : Loading on to pre-load adjusting screw

X : Loading off to pre-load adjusting screw



L1001



Material

Stainless steel rail and rollers (AISI 440C).
Hardness 60±2 HRC. Stainless steel roller
retainer (AISI 304).

Technical Notes

Supplied in sets of 4 rails (with 2 roller
cages and 8 end screws as standard). See
table for number of rollers in each cage.

Crossed roller cages can be cut to length to
alter stroke - but this affects load rating,
please see technical pages.

Order No.	l_1	Stroke max.	w_1	h_1 +0 -0.3	h_2	h_3	l_2	l_3	l_4	No. of rollers	Dyn. load C kN max.	Static load C_0 kN max.	d_1	d_2	d_3	w_2	Weight kg
L1001.01-020	20	13	4	8,5	3,9	1,8	10	5	1,3	5	0,63	0,72	1,65	3,0	M 2	1,4	0,01
L1001.01-030	30	21	4	8,5	3,9	1,8	10	5	1,3	7	0,88	1,01	1,65	3,0	M 2	1,4	0,01
L1001.01-040	40	29	4	8,5	3,9	1,8	10	5	1,3	9	1,13	1,30	1,65	3,0	M 2	1,4	0,02
L1001.01-050	50	37	4	8,5	3,9	1,8	10	5	1,3	11	1,38	1,58	1,65	3,0	M 2	1,4	0,02
L1001.01-060	60	45	4	8,5	3,9	1,8	10	5	1,3	13	1,63	1,88	1,65	3,0	M 2	1,4	0,03
L1001.01-070	70	53	4	8,5	3,9	1,8	10	5	1,3	15	1,88	2,16	1,65	3,0	M 2	1,4	0,03
L1001.01-080	80	61	4	8,5	3,9	1,8	10	5	1,3	17	2,13	2,45	1,65	3,0	M 2	1,4	0,03
L1001.02-030	30	24	6	12	5,5	2,5	15	7,5	1,5	5	1,47	1,46	2,55	4,4	M 3	2,0	0,03
L1001.02-045	45	30	6	12	5,5	2,5	15	7,5	1,5	8	2,34	2,34	2,55	4,4	M 3	2,0	0,04
L1001.02-060	60	44	6	12	5,5	2,5	15	7,5	1,5	10	2,93	2,92	2,55	4,4	M 3	2,0	0,06
L1001.02-075	75	58	6	12	5,5	2,5	15	7,5	1,5	12	3,52	3,50	2,55	4,4	M 3	2,0	0,07
L1001.02-090	90	72	6	12	5,5	2,5	15	7,5	1,5	14	4,10	4,09	2,55	4,4	M 3	2,0	0,08
L1001.02-105	105	86	6	12	5,5	2,5	15	7,5	1,5	16	2,50	4,34	2,55	4,0	M 3	2,0	0,10
L1001.02-120	120	100	6	12	5,5	2,5	15	7,5	1,5	18	5,27	5,26	2,55	4,4	M 3	2,0	0,11
L1001.02-135	135	106	6	12	5,5	2,5	15	7,5	1,5	21	6,15	6,13	2,55	4,4	M 3	2,0	0,13
L1001.02-150	150	120	6	12	5,5	2,5	15	7,5	1,5	23	6,74	6,72	2,55	4,4	M 3	2,0	0,14
L1001.02-165	165	134	6	12	5,5	2,5	15	7,5	1,5	25	7,33	7,30	2,55	4,4	M 3	2,0	0,15
L1001.02-180	180	148	6	12	5,5	2,5	15	7,5	1,5	27	7,91	7,88	2,55	4,4	M 3	2,0	0,17
L1001.03-050	50	34	8	18	8,3	3,5	25	12,5	2,0	7	4,47	5,33	3,3	6,0	M 4	3,1	0,10
L1001.03-075	75	54	8	18	8,3	3,5	25	12,5	2,0	10	6,38	7,61	3,3	6,0	M 4	3,1	0,15
L1001.03-100	100	74	8	18	8,3	3,5	25	12,5	2,0	13	8,29	9,89	3,3	6,0	M 4	3,1	0,20
L1001.03-125	125	104	8	18	8,3	3,5	25	12,5	2,0	15	9,57	11,4	3,3	6,0	M 4	3,1	0,24
L1001.03-150	150	124	8	18	8,3	3,5	25	12,5	2,0	18	11,5	13,7	3,3	6,0	M 4	3,1	0,29
L1001.03-175	175	144	8	18	8,3	3,5	25	12,5	2,0	21	13,4	16,0	3,3	6,0	M 4	3,1	0,34
L1001.03-200	200	164	8	18	8,3	3,5	25	12,5	2,0	24	15,3	18,3	3,3	6,0	M 4	3,1	0,38
L1001.03-225	225	184	8	18	8,3	3,5	25	12,5	2,0	27	17,2	20,6	3,3	6,0	M 4	3,1	0,43
L1001.03-250	250	204	8	18	8,3	3,5	25	12,5	2,0	30	19,1	22,8	3,3	6,0	M 4	3,1	0,48
L1001.03-275	275	224	8	18	8,3	3,5	25	12,5	2,0	33	21,1	25,1	3,3	6,0	M 4	3,1	0,53
L1001.03-300	300	244	8	18	8,3	3,5	25	12,5	2,0	36	23,0	27,4	3,3	6,0	M 4	3,1	0,57
L1001.04-080	80	54	11	22	10	4,5	40	20	2,0	8	9,84	9,36	4,3	7,5	M 5	4,1	0,26
L1001.04-120	120	92	11	22	10	4,5	40	20	2,0	11	13,5	12,9	4,3	7,5	M 5	4,1	0,39
L1001.04-160	160	130	11	22	10	4,5	40	20	2,0	14	17,2	16,4	4,3	7,5	M 5	4,1	0,51
L1001.04-200	200	154	11	22	10	4,5	40	20	2,0	18	22,1	21,1	4,3	7,5	M 5	4,1	0,64



Stainless Crossed Roller Rail Sets

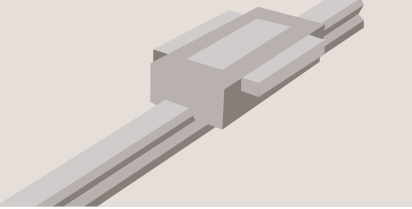
corrosion resistant

Linear Rail Sets



Order No.	l ₁	Stroke max.	w ₁	h ₁ +0 -0.3	h ₂	h ₃	l ₂	l ₃	l ₄	No. of rollers	Dyn. load C kN max.	Static load C ₀ kN max.	d ₁	d ₂	d ₃	w ₂	Weight kg
L1001.04-240	240	192	11	22	10	4,5	40	20	2,0	21	25,8	24,6	4,3	7,5	M 5	4,1	0,76
L1001.04-280	280	230	11	22	10	4,5	40	20	2,0	24	29,5	28,1	4,3	7,5	M 5	4,1	0,89
L1001.04-320	320	254	11	22	10	4,5	40	20	2,0	28	34,4	32,8	4,3	7,5	M 5	4,1	1,01
L1001.04-360	360	292	11	22	10	4,5	40	20	2,0	31	38,1	36,3	4,3	7,5	M 5	4,1	1,14
L1001.04-400	400	330	11	22	10	4,5	40	20	2,0	34	41,8	39,8	4,3	7,5	M 5	4,1	1,27
L1001.04-440	440	354	11	22	10	4,5	40	20	2,0	38	46,7	44,5	4,3	7,5	M 5	4,1	1,39
L1001.04-480	480	392	11	22	10	4,5	40	20	2,0	41	50,4	48,0	4,3	7,5	M 5	4,1	1,51
L1001.06-100	100	80	15	31	14	6	50	25	2,0	7	18,0	18,4	5,3	9,5	M 6	5,2	9,62
L1001.06-150	150	108	15	31	14	6	50	25	2,0	11	28,3	29,0	5,3	9,5	M 6	5,2	0,93
L1001.06-200	200	154	15	31	14	6	50	25	2,0	14	36,0	36,9	5,3	9,5	M 6	5,2	1,24
L1001.06-250	250	200	15	31	14	6	50	25	2,0	17	43,7	44,8	5,3	9,5	M 6	5,2	1,55
L1001.06-300	300	246	15	31	14	6	50	25	2,0	20	51,4	52,6	5,3	9,5	M 6	5,2	1,85
L1001.06-350	350	274	15	31	14	6	50	25	2,0	24	61,7	63,2	5,3	9,5	M 6	5,2	2,16
L1001.06-400	400	320	15	31	14	6	50	25	2,0	27	69,4	71,1	5,3	9,5	M 6	5,2	2,47
L1001.06-450	450	366	15	31	14	6	50	25	2,0	30	77,1	79,0	5,3	9,5	M 6	5,2	2,77
L1001.06-500	500	412	15	31	14	6	50	25	2,0	33	84,8	86,9	5,3	9,5	M 6	5,2	3,08
L1001.06-550	550	458	15	31	14	6	50	25	2,0	36	92,5	94,8	5,3	9,5	M 6	5,2	3,38
L1001.06-600	600	486	15	31	14	6	50	25	2,0	40	103,0	105,0	5,3	9,5	M 6	5,2	3,69

LINEAR RAIL SETS

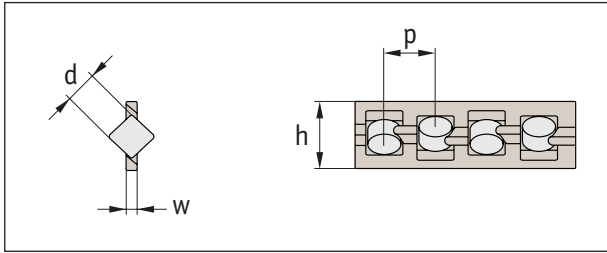


Linear Rail Sets

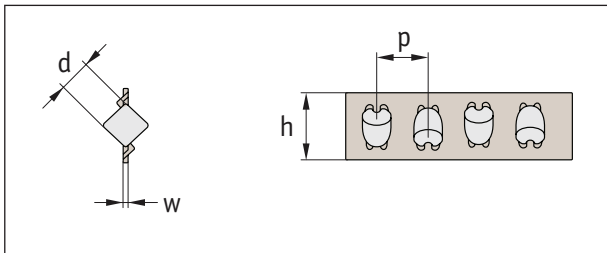
Roller elements & end pieces



Plastic cage (type PR)



Steel cage (type AA)

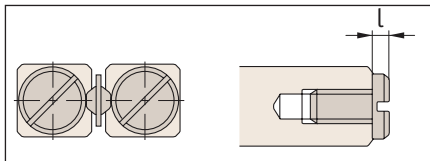


Roller load ratings (per roller)			
Rail size	Max. dynamic load C_0 N	Max. static load C N	Allowable* load N
1	125	144	48
2	290	290	95
3	630	760	250
4	1230	1170	390
6	2570	2630	870
9	7190	7270	2420
12	14700	13100	4300

The more rollers the greater the load capacity

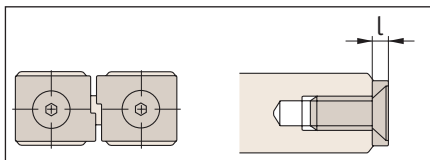
* Allowable load is 1/3 of max. static load/roller, to allow a safety factor in calculations of 3.

End pieces



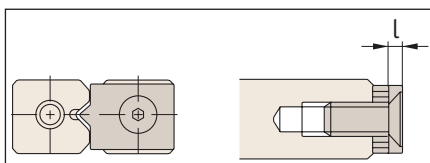
Type GA

- For horizontal applications, most used.



Type GB

- For horizontal or vertical applications.

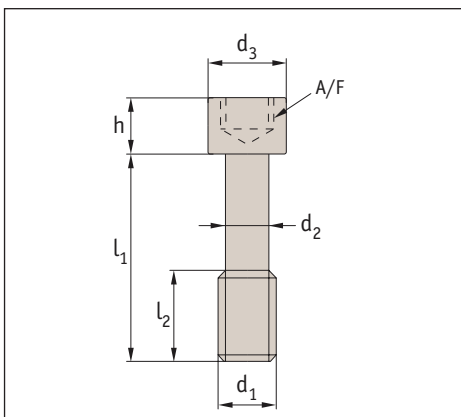


Type GC

- For horizontal or vertical applications.
- Mount on longer rail only.

Rail size	Type		
	GA l	GB l	GC l
1	1,5	-	-
2	2	3	-
3	2	2	3
6	3	3	5
9	3	4	6
12	3	5	8

End screws



Rail	h	d ₁	d ₂	d ₃	l ₁	l ₂	A/F
3	3	M3	2,3	5	12	5	2,5
6	5	M5	3,9	8	20	8	4
9	6	M6	4,6	8,5	30	12	5
12	8	M8	6,25	11,3	40	17	6

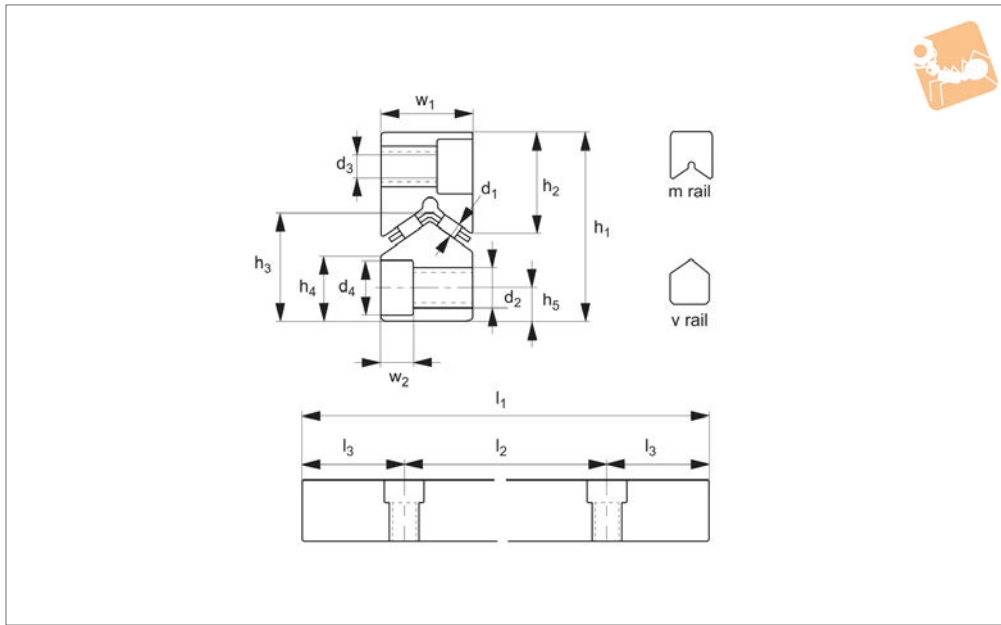


Needle Roller Rail Sets - M rail

high load capacity



Linear Rail Sets



L1004.M

LINEAR RAIL SETS

Material

Hardened steel alloy (DIN 1.2842), hardness 60 ± 2 HRC.

Technical Notes

Normally supplied in a set of 4 (two M and two V) with needle rollers in aluminium cage - **(cage length required needs to be**

specified), with GM end stops.

M and V type rails do not need to be of same length.

Tips

For specific length needle roller cages (aluminium HW type normally used) and end stops please see technical pages.

Needle roller rails have a higher load rating than cross roller rails (L1000). The length of the cage affects both the stroke of the rail and its load carrying capacity see technical pages.

Order No.	Rail type	h_1 $+0 -0.3$	w_1	l_1	l_2	l_3	h_2	h_3	h_4	h_5	w_2	d_1	d_2	d_3	d_4	Weight kg
L1004.M22-0200	M	44	22	200	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	0.69
L1004.M22-0300	M	44	22	300	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.02
L1004.M22-0400	M	44	22	400	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.36
L1004.M22-0500	M	44	22	500	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.69
L1004.M22-0600	M	44	22	600	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.03
L1004.M22-0700	M	44	22	700	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.36
L1004.M22-0800	M	44	22	800	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.70
L1004.M22-0900	M	44	22	900	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.03
L1004.M22-1000	M	44	22	1000	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.37
L1004.M22-1100	M	44	22	1100	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.70
L1004.M22-1200	M	44	22	1200	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	4.04
L1004.M25-0200	M	52	25	200	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	0.90
L1004.M25-0300	M	52	25	300	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	1.37
L1004.M25-0400	M	52	25	400	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	1.83
L1004.M25-0500	M	52	25	500	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	2.30
L1004.M25-0600	M	52	25	600	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	2.76
L1004.M25-0700	M	52	25	700	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	3.23
L1004.M25-0800	M	52	25	800	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	3.69
L1004.M25-0900	M	52	25	900	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	4.16
L1004.M25-1000	M	52	25	1000	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	4.62
L1004.M25-1100	M	52	25	1100	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	5.09
L1004.M25-1200	M	52	25	1200	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	5.55
L1004.M30-0300	M	62	30	300	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	1.91
L1004.M30-0400	M	62	30	400	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	2.54
L1004.M30-0500	M	62	30	500	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	3.18
L1004.M30-0600	M	62	30	600	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	3.81
L1004.M30-0700	M	62	30	700	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	4.45
L1004.M30-0800	M	62	30	800	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	5.08
L1004.M30-0900	M	62	30	900	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	5.72
L1004.M30-1000	M	62	30	1000	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	6.35



Order No.	Rail type	h_1 +0 -0.3	w_1	l_1	l_2	l_3	h_2	h_3	h_4	h_5	w_2	d_1	d_2	d_3	d_4	Weight kg
L1004.M30-1100	M	62	30	1100	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	6.99
L1004.M30-1200	M	62	30	1200	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	7.62
L1004.M35-0400	M	74	35	400	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	3.66
L1004.M35-0500	M	74	35	500	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	4.58
L1004.M35-0600	M	74	35	600	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	5.49
L1004.M35-0700	M	74	35	700	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	6.41
L1004.M35-0800	M	74	35	800	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	7.32
L1004.M35-0900	M	74	35	900	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	8.24
L1004.M35-1000	M	74	35	1000	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	9.15
L1004.M35-1100	M	74	35	1100	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	10.07
L1004.M35-1200	M	74	35	1200	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	10.98
L1004.M45-0500	M	78	45	500	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	6.17
L1004.M45-0600	M	78	45	600	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	7.41
L1004.M45-0700	M	78	45	700	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	8.65
L1004.M45-0800	M	78	45	800	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	9.89
L1004.M45-0900	M	78	45	900	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	11.13
L1004.M45-1000	M	78	45	1000	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	12.37
L1004.M45-1100	M	78	45	1100	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	13.61
L1004.M45-1200	M	78	45	1200	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	14.85



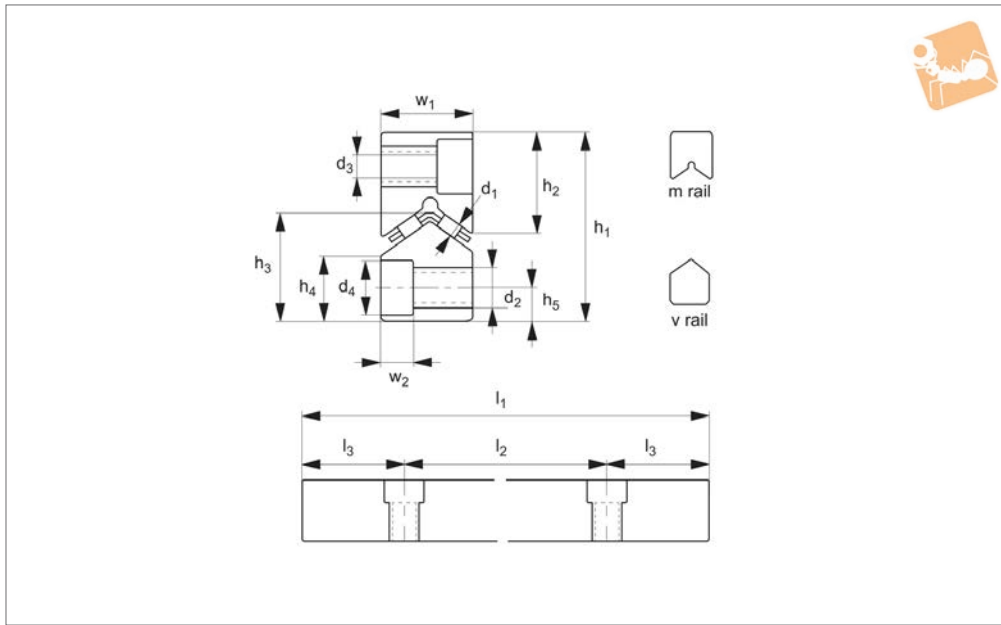


Needle Roller Rail Sets - V rail

high load capacity



Linear Rail Sets



L1004.V

LINEAR RAIL SETS

Material

Hardened steel alloy (DIN 1.2842), hardness 60±2 HRC.

Technical Notes

Normally supplied in a set of 4 (two M and two V) with needle rollers in aluminium cage - **(cage length required needs to be**

specified), with GM end stops.

M and V type rails do not need to be of same length.

Tips

For specific length needle roller cages (aluminium HW type normally used) and end stops please see technical pages.

Needle roller rails have a higher load rating than cross roller rails (L1000). The length of the cage affects both the stroke of the rail and it's load carrying capacity see technical pages.

Order No.	Rail type	h_1 +0 -0.3	w_1	l_1	l_2	l_3	h_2	h_3	h_4	h_5	w_2	d_1	d_2	d_3	d_4	Weight kg
L1004.V22-0200	V	44	22	200	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	0.70
L1004.V22-0300	V	44	22	300	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.03
L1004.V22-0400	V	44	22	400	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.37
L1004.V22-0500	V	44	22	500	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	1.70
L1004.V22-0600	V	44	22	600	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.04
L1004.V22-0700	V	44	22	700	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.37
L1004.V22-0800	V	44	22	800	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	2.71
L1004.V22-0900	V	44	22	900	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.04
L1004.V22-1000	V	44	22	1000	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.38
L1004.V22-1100	V	44	22	1100	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	3.71
L1004.V22-1200	V	44	22	1200	100	50	24	24.5	15	9	6.2	2	M 8	6.8	10.5	4.05
L1004.V25-0200	V	52	25	200	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	0.90
L1004.V25-0300	V	52	25	300	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	1.35
L1004.V25-0400	V	52	25	400	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	1.80
L1004.V25-0500	V	52	25	500	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	2.25
L1004.V25-0600	V	52	25	600	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	2.70
L1004.V25-0700	V	52	25	700	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	3.15
L1004.V25-0800	V	52	25	800	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	3.60
L1004.V25-0900	V	52	25	900	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	4.05
L1004.V25-1000	V	52	25	1000	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	4.50
L1004.V25-1100	V	52	25	1100	100	50	28	29	18	10	8.2	2	M10	8.5	13.5	4.95
L1004.V25-1200	V	52	25	1200	100	50	28	28	18	10	8.2	2	M10	8.5	13.5	5.40
L1004.V30-0300	V	62	30	300	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	1.97
L1004.V30-0400	V	62	30	400	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	2.62
L1004.V30-0500	V	62	30	500	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	3.28
L1004.V30-0600	V	62	30	600	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	3.93
L1004.V30-0700	V	62	30	700	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	4.59
L1004.V30-0800	V	62	30	800	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	5.24
L1004.V30-0900	V	62	30	900	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	6.00
L1004.V30-1000	V	62	30	1000	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	6.65



LINEAR RAIL SETS

Order No.	Rail type	h_1 +0 -0.3	w_1	l_1	l_2	l_3	h_2	h_3	h_4	h_5	w_2	d_1	d_2	d_3	d_4	Weight kg
L1004.V30-1100	V	62	30	1100	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	7.21
L1004.V30-1200	V	62	30	1200	100	50	34	35	22	12	10.2	2.5	M12	10.5	16.5	7.86
L1004.V35-0400	V	74	35	400	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	3.46
L1004.V35-0500	V	74	35	500	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	4.33
L1004.V35-0600	V	74	35	600	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	5.19
L1004.V35-0700	V	74	35	700	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	6.06
L1004.V35-0800	V	74	35	800	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	6.92
L1004.V35-0900	V	74	35	900	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	7.79
L1004.V35-1000	V	74	35	1000	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	8.65
L1004.V35-1100	V	74	35	1100	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	9.52
L1004.V35-1200	V	74	35	1200	100	50	42.5	40	25	14	12.2	3	M14	12.5	18.5	1.04
L1004.V45-0500	V	78	45	500	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	6.10
L1004.V45-0600	V	78	45	600	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	7.32
L1004.V45-0700	V	78	45	700	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	8.54
L1004.V45-0800	V	78	45	800	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	9.76
L1004.V45-0900	V	78	45	900	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	10.98
L1004.V45-1000	V	78	45	1000	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	12.20
L1004.V45-1100	V	78	45	1100	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	13.42
L1004.V45-1200	V	78	45	1200	100	50	45	45	25	14	12.2	3.5	M14	12.5	18.5	14.64



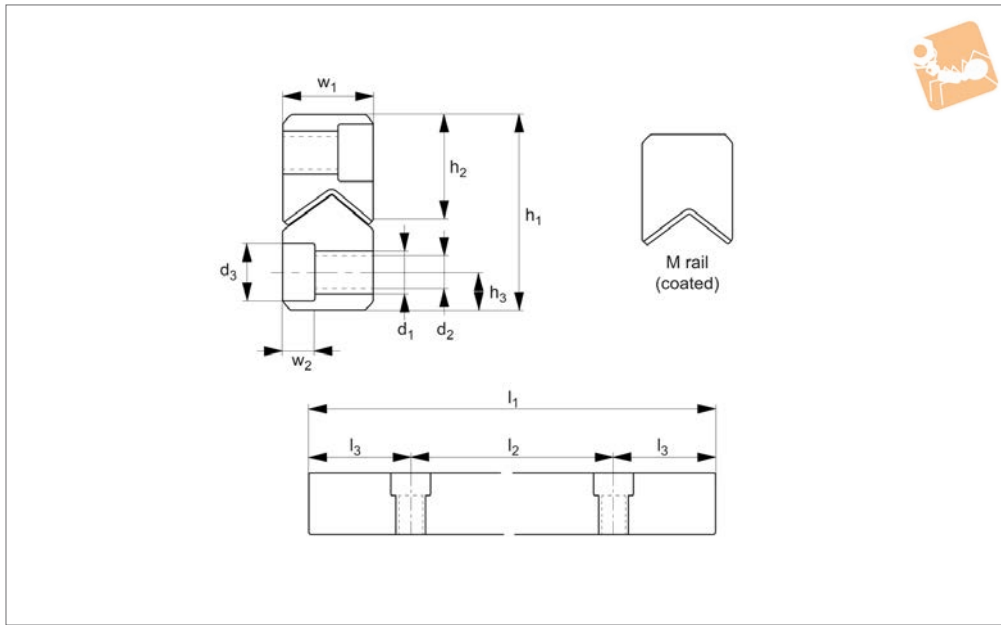


Anti-friction Coated M Rail

medium load capacity



Linear Rail Sets



L1005.M

LINEAR RAIL SETS

Material

Hardened steel alloy (DIN 1,2842), coated with anti-friction material (Zedex 100).

Technical Notes

These are similar in size to the L1000 rails but are primarily used as dirt-proof units,

to reduce system vibration and improve rigidity.

Working temperature must be less than 50°C.

Load capacity per unit (cm²) = 4500N (dynamic), 7500N (static).

For total load capacity take width of bearing surface (in cm) x length (in cm) x load capacity (above).

Tips

Use with V rail L1005.V.

Order No.	Rail type	l ₁	h ₁ +0 -0.3	w ₁	l ₂	l ₃	d ₁	h ₂	h ₃	w ₂	d ₂	d ₃	Bearing surface width cm	Weight kg
L1005.M03-0050	M	50	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.02
L1005.M03-0075	M	75	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.03
L1005.M03-0100	M	100	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.04
L1005.M03-0125	M	125	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.05
L1005.M03-0150	M	150	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.06
L1005.M03-0175	M	175	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.07
L1005.M03-0200	M	200	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.09
L1005.M03-0225	M	225	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.10
L1005.M03-0250	M	250	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.11
L1005.M03-0275	M	275	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.12
L1005.M03-0300	M	300	18	8	25	12.5	M 4	9	3.5	3.1	3.3	6	0.3	0.13
L1005.M06-0100	M	100	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.15
L1005.M06-0150	M	150	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.22
L1005.M06-0200	M	200	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.29
L1005.M06-0250	M	250	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.36
L1005.M06-0300	M	300	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.44
L1005.M06-0350	M	350	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.51
L1005.M06-0400	M	400	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.58
L1005.M06-0450	M	450	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.65
L1005.M06-0500	M	500	31	15	50	25.0	M 6	16	6.0	5.2	5.3	10	0.6	0.73
L1005.M09-0200	M	200	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	0.64
L1005.M09-0300	M	300	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	0.96
L1005.M09-0400	M	400	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	1.27
L1005.M09-0500	M	500	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	1.59
L1005.M09-0600	M	600	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	1.90
L1005.M09-0700	M	700	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	2.22
L1005.M09-0800	M	800	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	2.53
L1005.M09-0900	M	900	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	2.85
L1005.M09-1000	M	1000	44	22	100	50.0	M 8	24	9.0	6.2	6.8	11	1.2	3.16
L1005.M12-0200	M	200	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	1.13
L1005.M12-0300	M	300	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	1.69



Order No.	Rail type	l_1	h_1 +0 -0.3	w_1	l_2	l_3	d_1	h_2	h_3	w_2	d_2	d_3	Bearing surface width cm	Weight kg
L1005.M12-0400	M	400	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	2.25
L1005.M12-0500	M	500	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	2.81
L1005.M12-0600	M	600	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	3.37
L1005.M12-0700	M	700	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	3.93
L1005.M12-0800	M	800	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	4.49
L1005.M12-0900	M	900	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	5.05
L1005.M12-1000	M	1000	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	5.61
L1005.M12-1100	M	1100	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	6.18
L1005.M12-1200	M	1200	58	28	100	50.0	M10	33	12.0	8.2	8.5	15	1.6	6.74



Load Capacity Example

Product Number : L100J-300

Given: Bearing surface width (table)
Length 300mm (30cm)

Load Rating / cm^2 (Data sheet)

Dynamic Load (N) : $0.6 \times 30 \times 4500 = 81.000\text{N}$
= 81kN

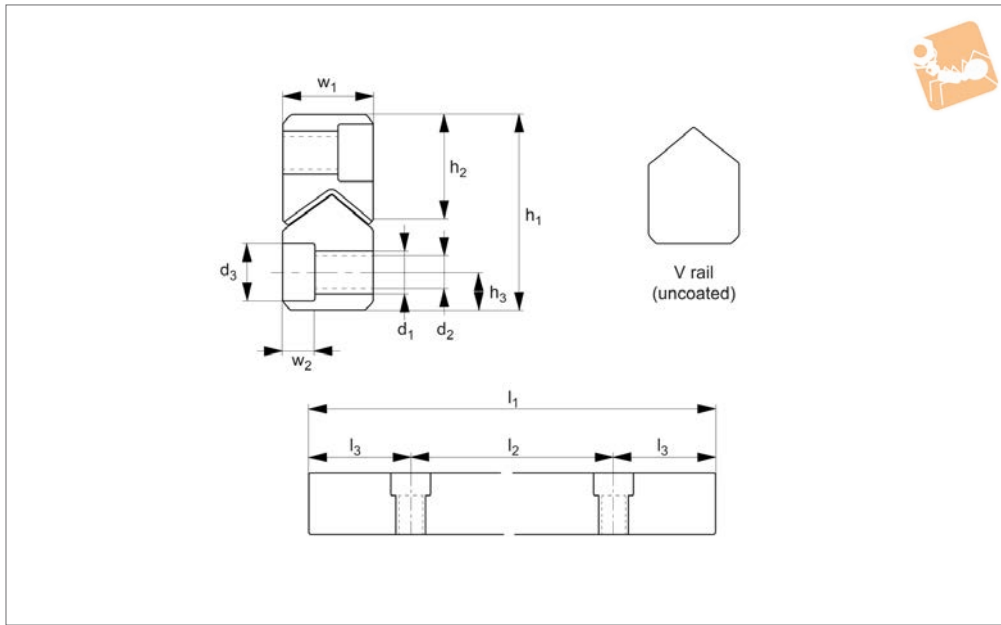
Static Load (kN) : $0.6 \times 30 \times 7500 = 135.000\text{N}$
= 135kN



Anti-friction Coated Rail Set

V rail - uncoated

Linear Rail Sets



L1005.V

LINEAR RAIL SETS

Material

Alloy steel rail and roller (DIN 1.2842), through hardened to 60±2 HRC.

Technical Notes

These are similar in size to the L1000 rails but are primarily used as dirt-proof units,

to reduce system vibration and improve rigidity.

Working temperature must be less than 50°C.

Load capacity per unit (cm²) = 4500N (dynamic), 7500N (static).

For total load capacity take width of bearing surface (in cm) x length (in cm) x load capacity (above).

Tips

Use with V rail L1005.M.

Order No.	Rail type	l ₁	h ₁ +0 -0.3	w ₁	l ₂	l ₃	d ₁	h ₂	h ₃	w ₂	d ₂	d ₃	Bearing surface width cm	Weight kg
L1005.V03-0050	V	50	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.03
L1005.V03-0075	V	75	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.04
L1005.V03-0100	V	100	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.05
L1005.V03-0125	V	125	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.06
L1005.V03-0150	V	150	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.08
L1005.V03-0175	V	175	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.09
L1005.V03-0200	V	200	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.10
L1005.V03-0225	V	225	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.12
L1005.V03-0250	V	250	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.13
L1005.V03-0275	V	275	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.14
L1005.V03-0300	V	300	18	8	25	12.5	M 4	10.8	3.5	3.1	3.3	6	0.3	0.16
L1005.V06-0100	V	100	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.18
L1005.V06-0150	V	150	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.26
L1005.V06-0200	V	200	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.35
L1005.V06-0250	V	250	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.44
L1005.V06-0300	V	300	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.53
L1005.V06-0350	V	350	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.61
L1005.V06-0400	V	400	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.70
L1005.V06-0450	V	450	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.79
L1005.V06-0500	V	500	31	15	50	25.0	M 6	19.3	6.0	5.2	5.3	10	0.6	0.88
L1005.V09-0200	V	200	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	0.64
L1005.V09-0300	V	300	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	0.96
L1005.V09-0400	V	400	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	1.27
L1005.V09-0500	V	500	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	1.59
L1005.V09-0600	V	600	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	1.90
L1005.V09-0700	V	700	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	2.22
L1005.V09-0800	V	800	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	2.53
L1005.V09-0900	V	900	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	2.85
L1005.V09-1000	V	1000	44	22	100	50.0	M 8	28.0	9.0	6.2	6.8	11	1.2	3.16
L1005.V12-0200	V	200	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	1.13
L1005.V12-0300	V	300	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	1.69



Order No.	Rail type	l ₁	h ₁ +0 -0.3	w ₁	l ₂	l ₃	d ₁	h ₂	h ₃	w ₂	d ₂	d ₃	Bearing surface width cm	Weight kg
L1005.V12-0400	V	400	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	2.25
L1005.V12-0500	V	500	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	2.81
L1005.V12-0600	V	600	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	3.37
L1005.V12-0700	V	700	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	3.93
L1005.V12-0800	V	800	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	4.49
L1005.V12-0900	V	900	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	5.05
L1005.V12-1000	V	1000	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	5.61
L1005.V12-1100	V	1100	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	6.18
L1005.V12-1200	V	1200	58	28	100	50.0	M10	35.5	12.0	8.2	8.5	15	1.6	6.74



Load Capacity Example

Product Number : L100J-300

Given: Bearing surface width (table)
Length 300mm (30cm)

Load Rating / cm² (Data sheet)

Dynamic Load (N) : 0.6 x 30 x4500 = 81.000N
= 81kN

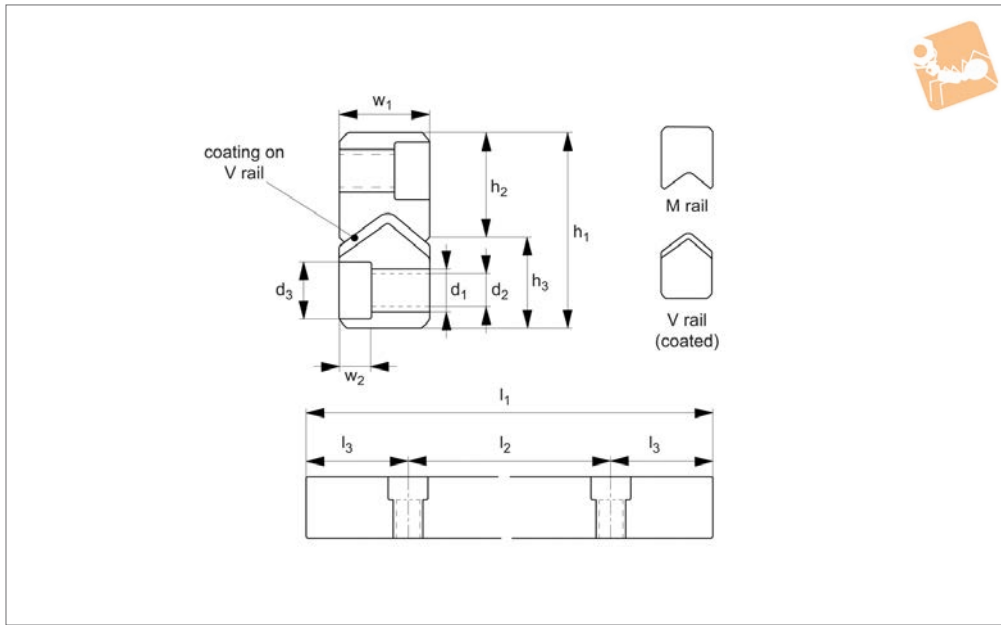
Static Load (kN) : 0.6 x 30 x7500 = 135.000N
= 135kN



Anti-friction Coated V Rail

high load capacity

Linear Rail Sets



L1006.V

LINEAR RAIL SETS

Material

Hardened steel alloy (DIN 1,2842), coated with anti-friction material (Zedex 100).

Technical Notes

These are similar in size to the L1004 rails but are primarily used as dirt-proof units:- to reduce any system vibration and

improve rigidity.

Working temperature must be less than 50°C.

Load capacity per unit (cm²) = 4500N (dynamic), 7500N (static).

For total load capacity take width of bearing surface (in cm) x length (in cm)

x load capacity (above).

Tips

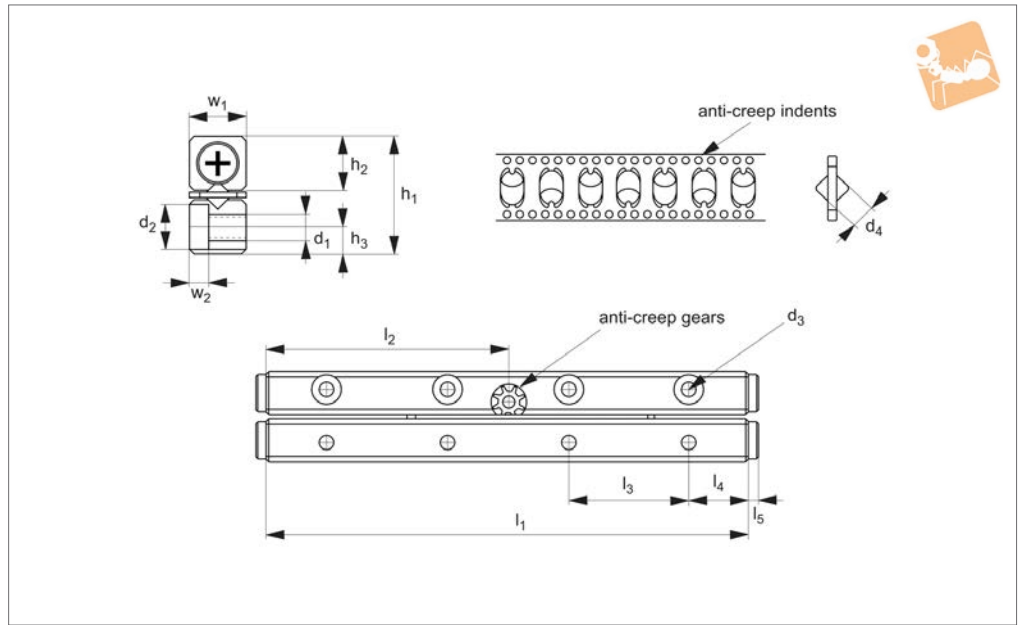
Select the anti-friction coated rail and combine with any length of standard L1004.M type rail.

Used where speed is relatively low (20m/minute max.).

Order No.	Rail size	l ₁	h ₁ +0 -0.3	w ₁	l ₂	l ₃	d ₁	h ₂	h ₃	w ₂	d ₂	d ₃	Bearing surface width cm	Weight kg
L1006.V22-0200	22	200	44	22	100	50	M 8	24	9	6.2	6.8	10.5	1.05	0.70
L1006.V22-0300	22	300	44	22	100	50	M 8	24	9	6.2	6.8	10.5	1.05	1.03
L1006.V22-0400	22	400	44	22	100	50	M 8	24	9	6.2	6.8	10.5	1.05	1.34
L1006.V22-0500	22	500	44	22	100	50	M 8	24	9	6.2	6.8	10.5	1.05	1.70
L1006.V22-0600	22	600	44	22	100	50	M 8	24	9	6.2	6.8	10.5	1.05	2.04
L1006.V25-0200	25	200	52	25	100	50	M10	28	10	8.2	8.5	13.5	1.15	0.90
L1006.V25-0300	25	300	52	25	100	50	M10	28	10	8.2	8.5	13.5	1.15	1.35
L1006.V25-0400	25	400	52	25	100	50	M10	28	10	8.2	8.5	13.5	1.15	1.80
L1006.V25-0500	25	500	52	25	100	50	M10	28	10	8.2	8.5	13.5	1.15	2.25
L1006.V25-0600	25	600	52	25	100	50	M10	28	10	8.2	8.5	13.5	1.15	2.70
L1006.V30-0300	30	300	62	30	100	50	M12	34	12	10.2	10.5	16.5	1.50	1.97
L1006.V30-0400	30	400	62	30	100	50	M12	34	12	10.2	10.5	16.5	1.50	2.62
L1006.V30-0500	30	500	62	30	100	50	M12	34	12	10.2	10.5	16.5	1.50	3.28
L1006.V30-0600	30	600	62	30	100	50	M12	34	12	10.2	10.5	16.5	1.50	3.93
L1006.V35-0400	35	400	74	35	100	50	M14	42.5	14	12.2	12.5	18.5	1.75	3.46
L1006.V35-0500	35	500	74	35	100	50	M14	42.5	14	12.2	12.5	18.5	1.75	4.33
L1006.V35-0600	35	600	74	35	100	50	M14	42.5	14	12.2	12.5	18.5	1.75	5.19
L1006.V45-0600	45	600	78	45	100	50	M14	45	14	12.2	12.5	18.5	2.45	7.32
L1006.V45-0500	45	500	78	45	100	50	M14	45	14	12.2	12.5	18.5	2.45	6.10



L1003



Material

Stainless steel rail and rollers (AISI 440C), Ni plated apart from V groove. Hardness 60±2 HRC. Stainless steel rollers in brass retainer with special anti-creep mechanism (stainless 304).

Technical Notes

Supplied in sets of 4 rails (with 2 roller cages and 8 end screws as standard). See table for number of rollers in each cage and technical pages for load calculations (based on number of rollers).

Tips

These rail sets are designed for high acceleration applications, or systems with significant moment loads.

Order No.	l_1	Stroke max.	h_1	w_1	l_2	l_3	h_2	h_3	w_2	d_1	d_2	d_3	d_4	l_4	l_5	No. of rollers	Weight kg
L1003.02-030	30	22	12	6	15	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	5	0.03
L1003.02-045	45	18	12	6	15	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	9	0.04
L1003.02-060	60	40	12	6	30	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	10	0.06
L1003.02-075	75	52	12	6	30	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	12	0.07
L1003.02-090	90	74	12	6	45	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	13	0.08
L1003.02-105	105	78	12	6	45	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	16	0.10
L1003.02-120	120	100	12	6	60	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	17	0.11
L1003.02-135	135	106	12	6	60	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	20	0.12
L1003.02-150	150	127	12	6	75	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	21	0.14
L1003.02-165	165	140	12	6	75	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	23	0.15
L1003.02-180	180	144	12	6	90	15	55	2.5	2	2.6	4.4	M3	Ø2	7.5	1.5	26	0.16
L1003.03-050	50	34	18	8	25	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	8	0.10
L1003.03-075	75	50	18	8	30	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	12	0.15
L1003.03-100	100	76	18	8	50	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	15	0.19
L1003.03-125	125	100	18	8	55	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	18	0.24
L1003.03-150	150	125	18	8	75	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	21	0.29
L1003.03-175	175	150	18	8	80	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	24	0.34
L1003.03-200	200	166	18	8	100	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	28	0.38
L1003.03-225	225	182	18	8	105	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	32	0.43
L1003.03-250	250	208	18	8	125	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	35	0.48
L1003.03-275	275	216	18	8	130	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	40	0.52
L1003.03-300	300	248	18	8	150	25	8.3	3.5	3.1	3.3	6	M4	Ø3	12.5	2	42	0.57
L1003.04-080	80	62	22	11	40	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	8	0.26
L1003.04-120	120	92	22	11	50	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	12	0.39
L1003.04-160	160	134	22	11	80	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	15	0.51
L1003.04-200	200	164	22	11	90	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	19	0.63
L1003.04-240	240	194	22	11	120	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	23	0.76
L1003.04-280	280	236	22	11	130	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	26	0.88
L1003.04-320	320	252	22	11	160	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	31	1.01
L1003.04-360	360	308	22	11	170	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	33	1.14
L1003.04-400	400	338	22	11	200	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	37	1.26
L1003.04-440	440	355	22	11	210	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	42	1.39



Anti-Creep Crossed Roller Rail Sets

corrosion resistant

Linear Rail Sets

Order No.	l ₁	Stroke max.	h ₁	w ₁	l ₂	l ₃	h ₂	h ₃	w ₂	d ₁	d ₂	d ₃	d ₄	l ₄	l ₅	No. of rollers	Weight kg
L1003.04-480	480	396	22	11	240	40	10	4.5	4.1	4.3	7.5	M5	Ø4	20	2	45	1.51
L1003.06-100	10	86	31	14	50	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	7	0.62
L1003.06-150	150	118	31	14	65	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	11	0.93
L1003.06-200	200	168	31	14	80	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	14	1.24
L1003.06-250	250	212	31	14	115	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	17	1.55
L1003.06-300	300	260	31	14	120	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	20	1.85
L1003.06-350	350	292	31	14	165	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	24	2.17
L1003.06-400	400	340	31	14	160	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	27	2.46
L1003.06-450	450	388	31	14	215	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	30	2.77
L1003.06-500	500	436	31	14	200	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	33	3.08
L1003.06-550	550	484	31	14	265	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	36	3.38
L1003.06-600	600	516	31	14	300	50	14	6	5.2	5.3	9.5	M6	Ø6	25	2	40	3.69

Cage creep can occur due to especially high acceleration and deceleration forces, system vibration, uneven loading or with high moment loads. Our anti-creep rail sets have a special cage which is linked to an anti-creep gear which runs up and down in the mating indents on the roller cage system. It is a sturdy, all metal design, allowing accelerations up to 15G and is integrated into the rail system.

Rail size	Max. dynamic load/roller N	Max. static load/roller N	Max. allowable load/roller N
L1003.02	290	290	95
L1003.03	630	760	250
L1003.04	1230	1170	390
L1003.06	2550	2630	875

- Max. allowable load is 1/3 of max. static load to give a 3 x safety factor.