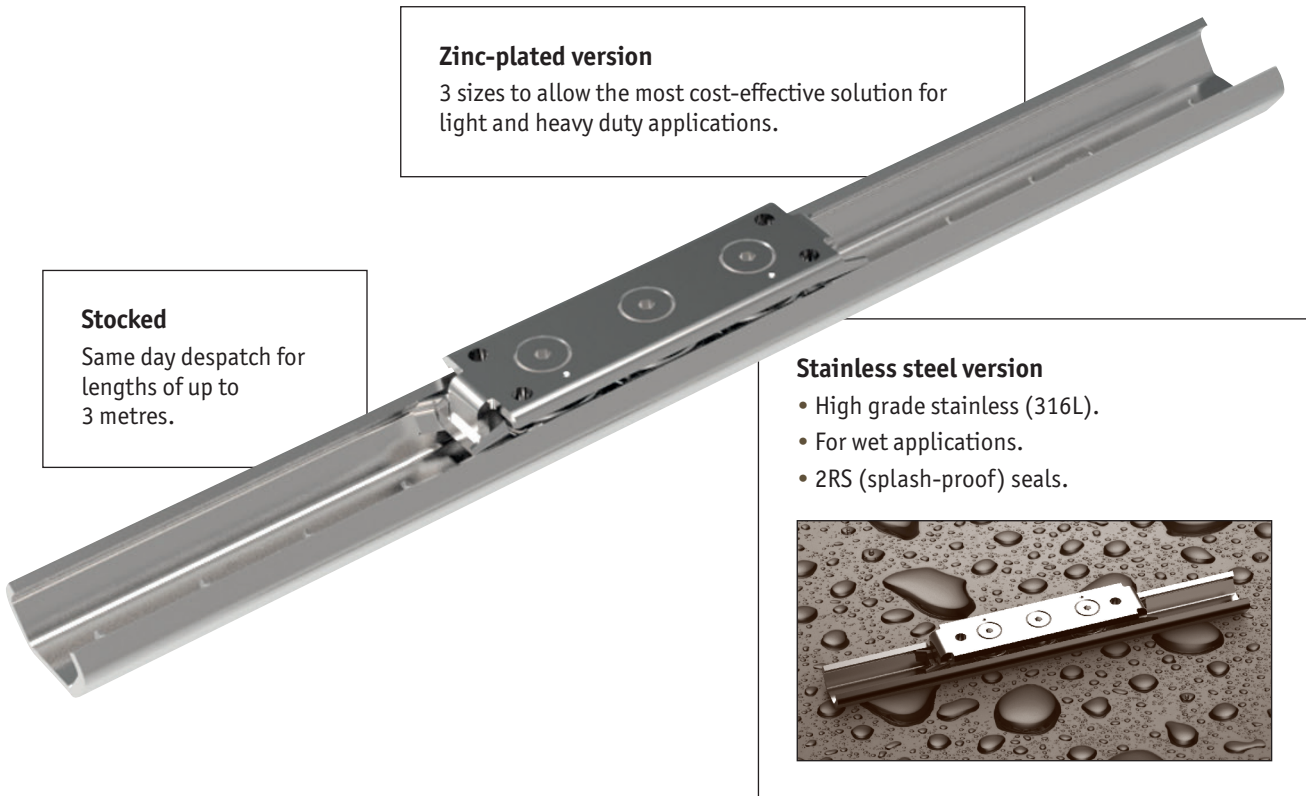


The X rail system is a highly cost-effective product made of zinc plated steel (L1970), the stainless steel version (L1971) has a high level of corrosion resistance.

### 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.

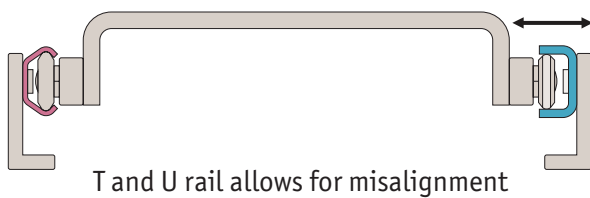


**Zinc-plated version**  
3 sizes to allow the most cost-effective solution for light and heavy duty applications.

**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.



T and U rail allows for misalignment

### Flexibility in set-up

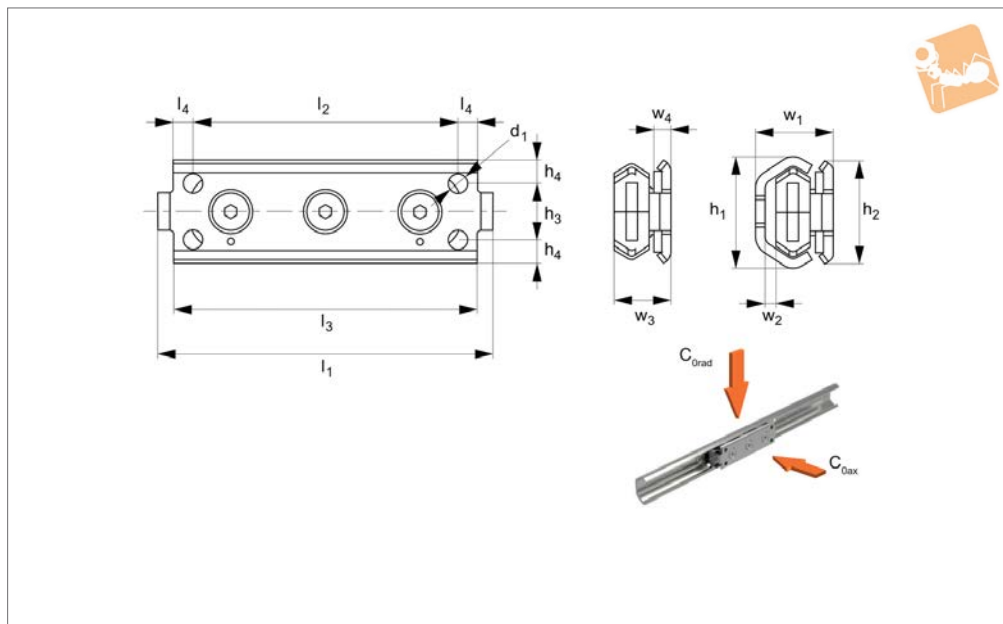
X rail allows the sliders one rail to remain fixed in place but allows some lateral movement of the sliders in the other rail to adapt to any misalignment.



Using two T rails good set-up accuracy is required



## L1970.LP



### 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

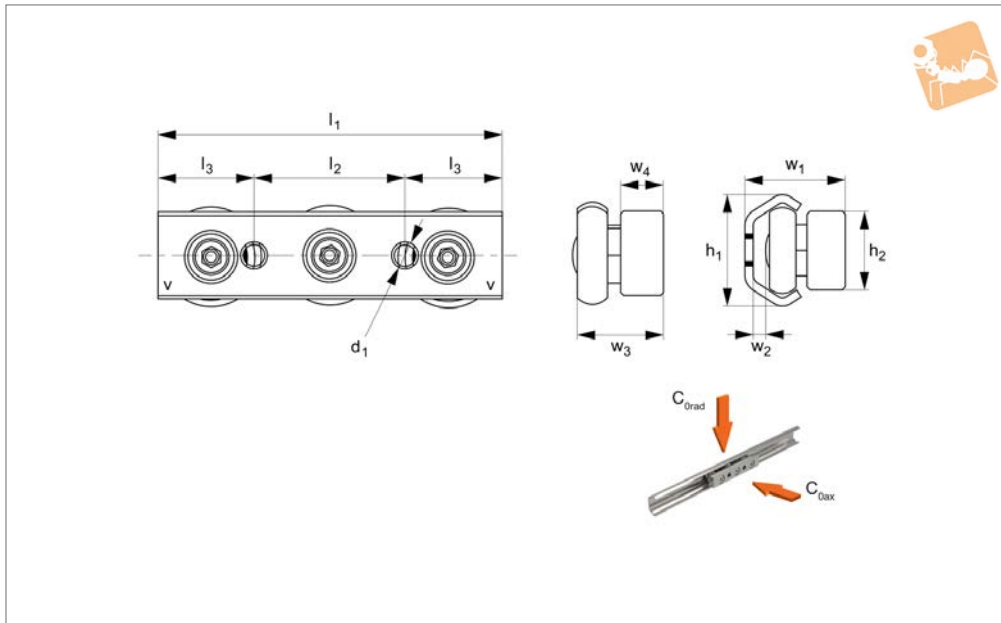
Order No.	$l_3$	$l_4$	$d_1$	$w_1$	$w_2$	$w_3$	$w_4$	Load $C_{0\text{ax}}$ N max.	Load $C_{0\text{rad}}$ N max.
L1970.20T-080	71	10	M5	16	2.5	11.5	5.5	185	326
L1970.30T-088	80	5	M5	20.5	3.5	15	4.5	435	870
L1970.45T-150	135	7.5	M6	31	5	22	4	935	1740



# Solid Body Steel Sliders for T rail (master)



## Long Linear Rails



## L1970.SBT

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.

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.

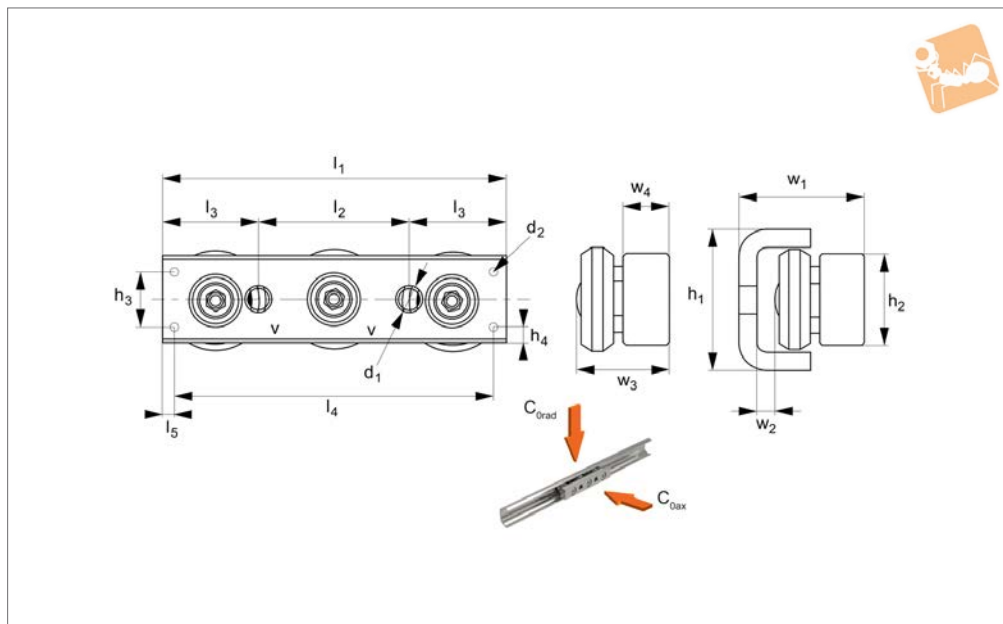
Order No.	Size	$h_1$	$h_2$	$h_3$	$h_4$	$l_1$	$l_2$	Weight kg
L1970.20T-060	20	19.2	10	-	-	60	20	0.04
L1970.26T-080	26	26.1	25	-	12.5	80	30	0.10
L1970.30T-080	30	29.5	20	-	-	80	35	0.17
L1970.40T-135	40	39.5	35	23	6.0	135	-	0.45
L1970.45T-120	45	46.4	25	-	-	120	55	0.47

Order No.	$l_3$	$l_4$	$d_1$	$d_2$	$w_1$	$w_2$	$w_3$	$w_4$	Load $C_{0ax}$ N max.	Load $C_{0rad}$ 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



**L1970.SBU**



**Material**

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

**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 <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
L1970.30U-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

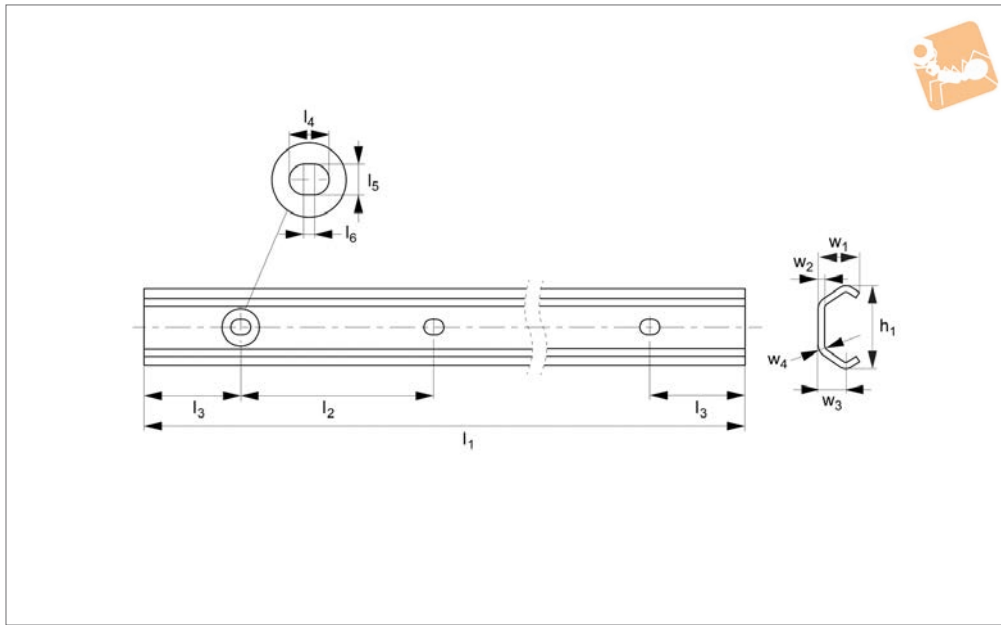
Order No.	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	d <sub>1</sub>	d <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.
L1970.30U-080	22.5	-	-	M6	-	27,95 ± 1,00	3.5	19.2	10	870
L1970.40U-135	-	120	7.5	-	M 6	29,95 ± 1.60	-	-	6	1600
L1970.45U-120	32.5	-	-	M8	-	37,25 ± 1,75	5	25.5	12	1740





# Steel X Rail T rail (master)

# Long Linear Rails



## L1970.T

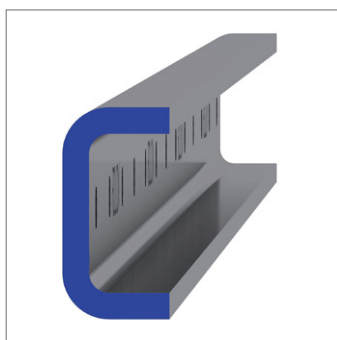
LONG LINEAR RAILS

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

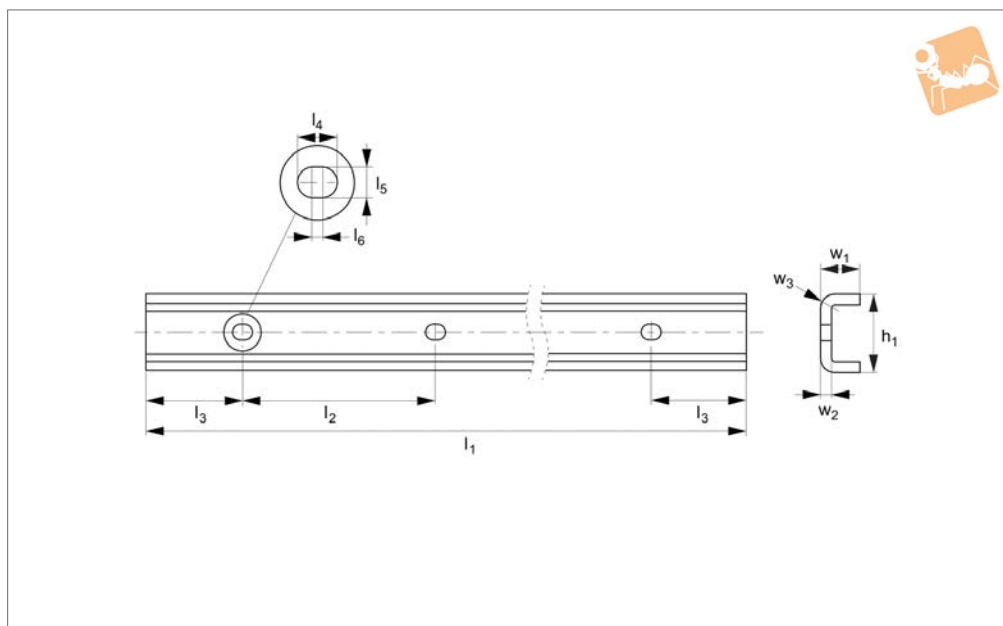
7380) or Torx screws (see part no. L1970.S).

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

Order No.	Rail size	For screw	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	$w_4$	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



**L1970.U**



**Material**

Steel (BS1449-HR1), zinc plated.

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

**Technical Notes**

Use hex. socket oval head screws (ISO

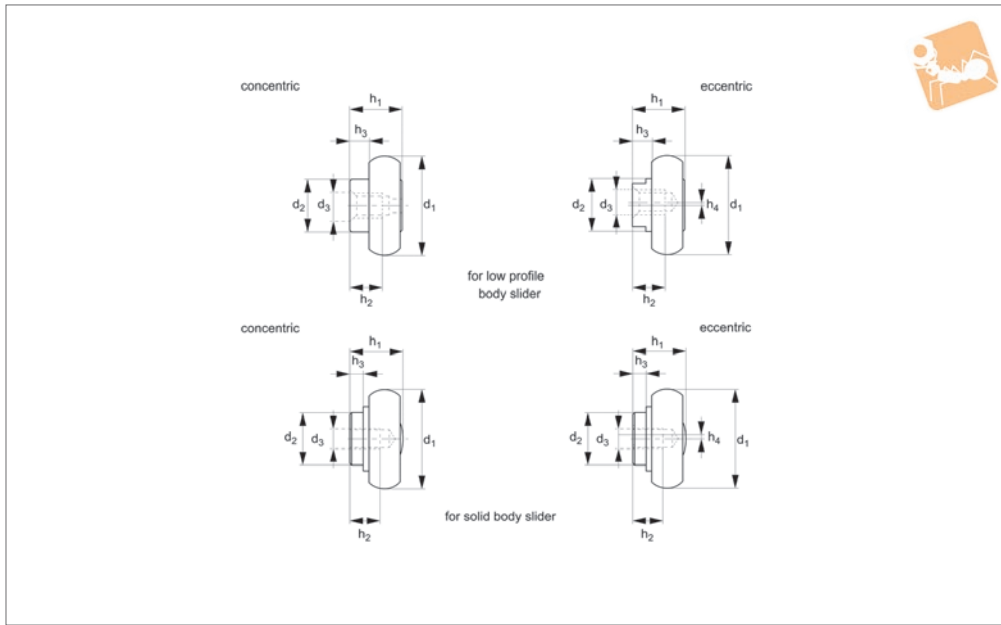
Order No.	Rail size	For screw	$h_1$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$w_1$	$w_2$	$w_3$	Weight kg
L1970.30U-1040	30	M5	31.8	1040	80	40	8.4	6.4	2	16	4	7	1.4
L1970.30U-2080	30	M5	31.8	2080	80	40	8.4	6.4	2	16	4	7	2.8
L1970.30U-3120	30	M5	31.8	3120	80	40	8.4	6.4	2	16	4	7	4.2
L1970.40U-1040	40	M8	38.5	1040	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



# Steel Replacement Rollers for T version steel X rail



Long Linear  
Rails



**L1970.CRT**

LONG LINEAR RAILS

### Material

Rollers with metal seals (2Z).

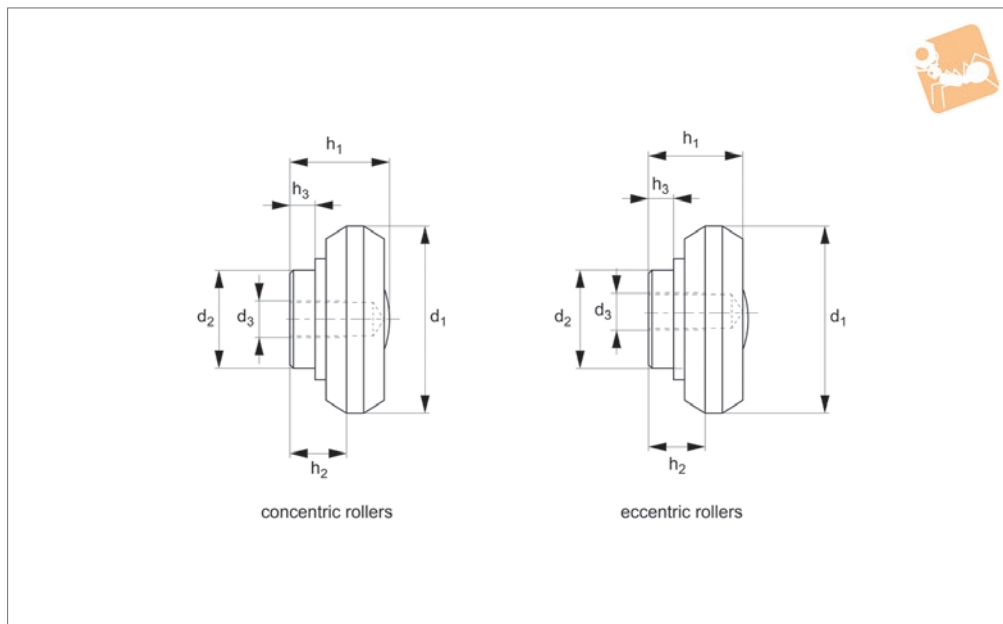
### Technical Notes

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



**L1970.CRU**



**Material**

Rollers with metal seals (2Z).

**Technical Notes**

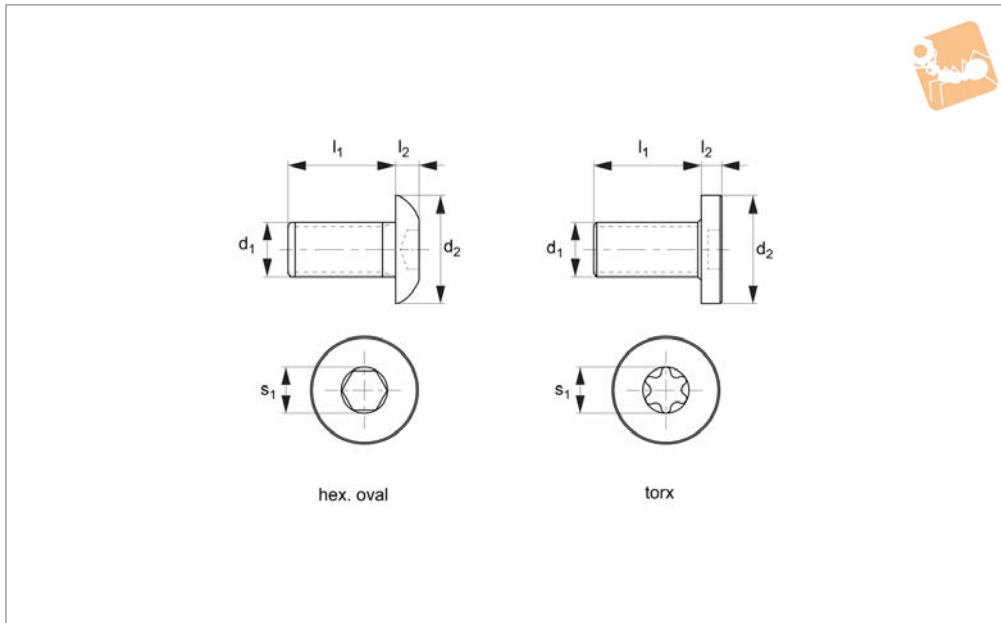
For use with X rail steel sliders in U type rail.

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



# Fixing screws for steel X rail

## Long Linear Rails



**L1970.S**

LONG LINEAR RAILS

**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



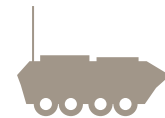
#### Transport (rail)

Seat adjustment  
sliding doors  
battery removal units



#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



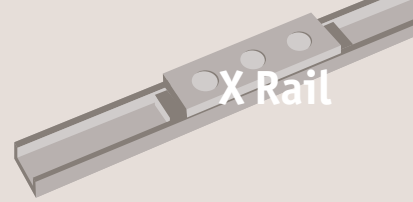
#### Transport (military)

Sliding seats  
protective hatches  
stretcher extensions



#### Water & waste

Sliding protective hatches  
wash down applications  
water tank doors



### L1970 Zinc-plated steel version

#### Solid body slider



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

#### Low profile slider

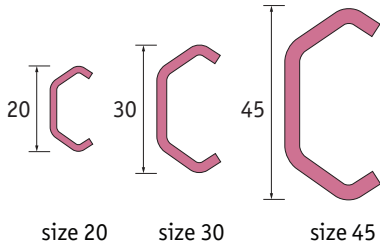


L1970.CES  
(2Z dust proof seals)



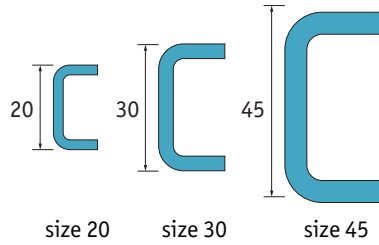
Zinc-Plated Steel

#### T Rail (master)



L1970.TES

#### U Rail (slave)



L1970.UES



Zinc-Plated Steel

### L1971 Stainless Steel version

#### Solid body



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

#### Low profile slider

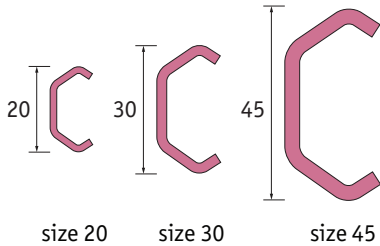


L1971.CEX  
(2RS splash proof seals)



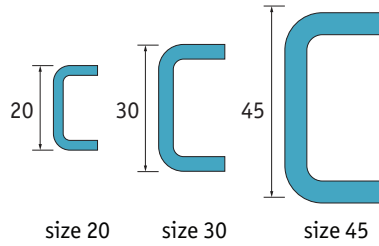
Stainless Steel

#### T Rail (master)



size 20    size 30    size 45

#### U Rail (slave)



size 20    size 30    size 45

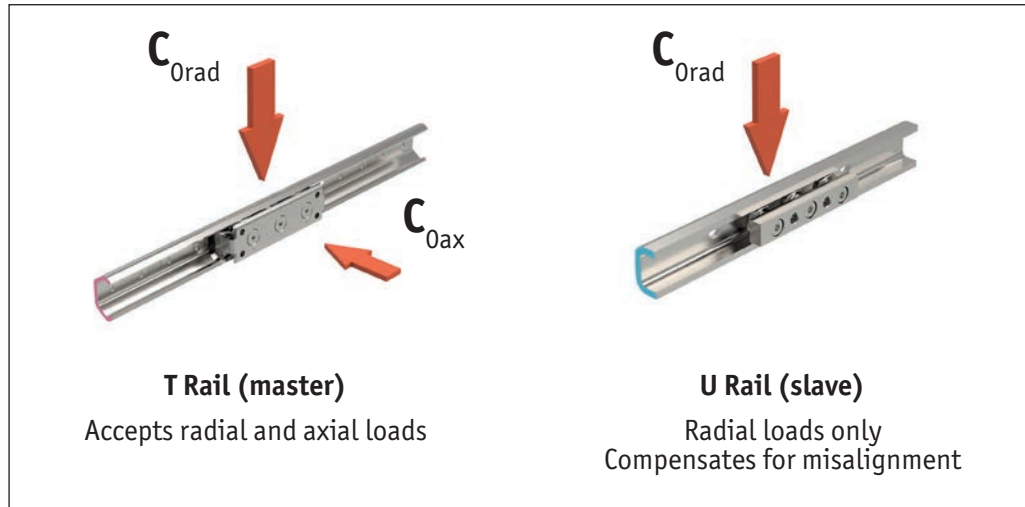


Stainless Steel





## 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.

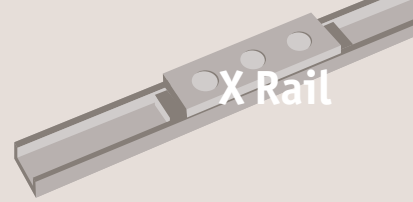
- There are three different rail and slider sizes: 20, 30 and 45.
- The load that is being carried and its shape needs to be considered. The X rail system is not really suited for moment loads. If moment loads exist then two or more rails/sliders should be used to offset this. Typically 2, 4 or more 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.



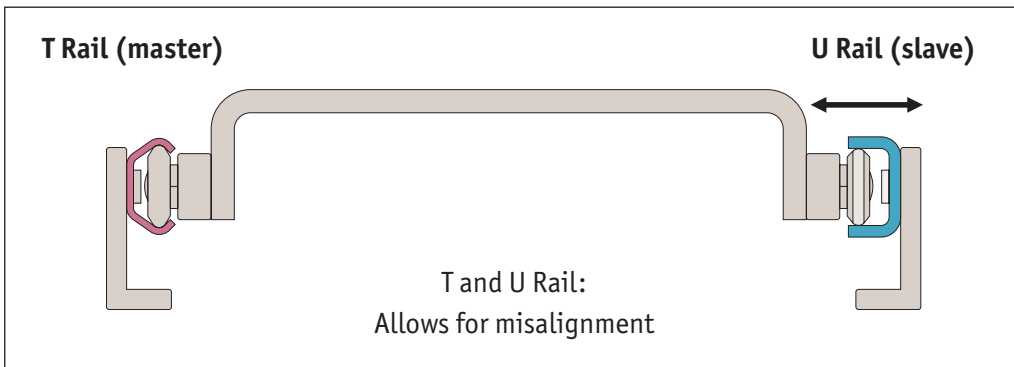
### T rails (master) and U rails (slave)

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.

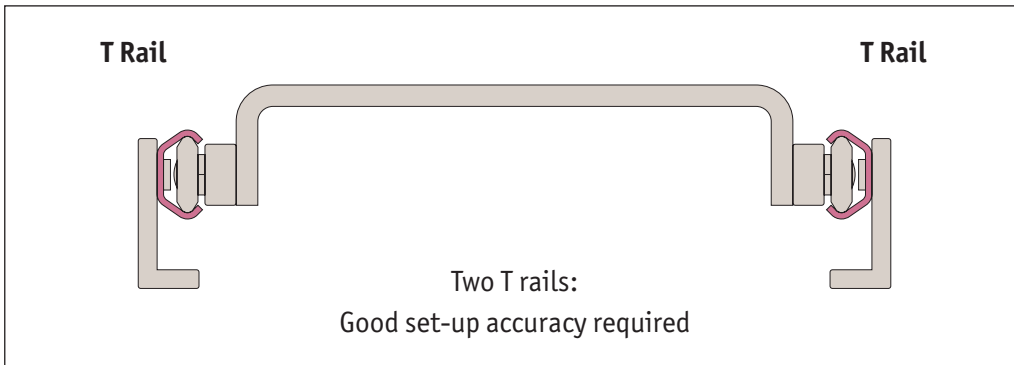
U rails have flat parallel raceways that allow free lateral movement of the sliders. The maximum lateral movement for each size rail is shown in the table that follows.

### T and U rails



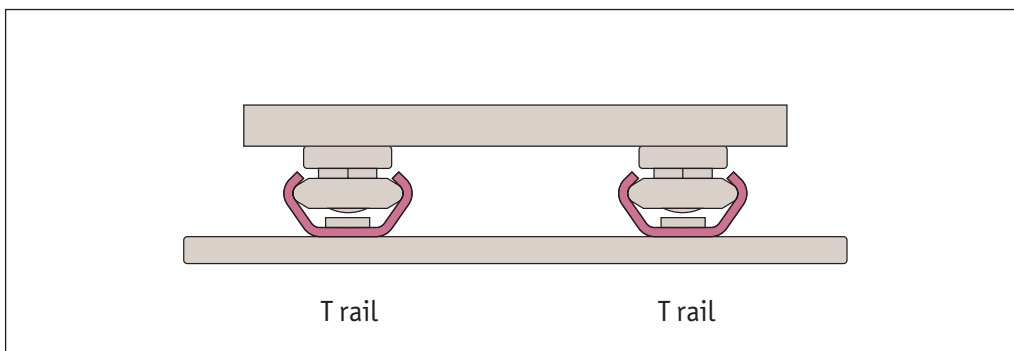
### T and T rails

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.



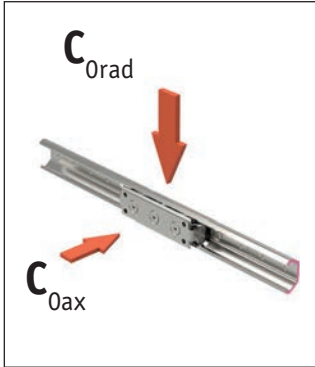
It is however also acceptable (but not the preferred method), to use the rails as below but the alignment accuracy needed is slightly greater and in this set up only T type rails can be used. In this instance we recommend the use of solid body sliders L1970.CEST (steel) or L1971.CEXT (stainless) rather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



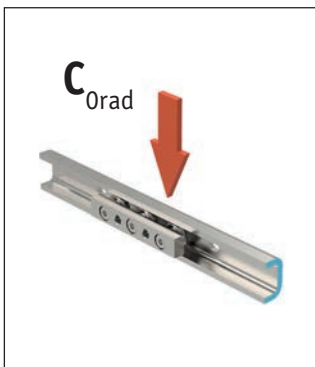


### L1970 and L1971 slider load ratings for T rails



Part no.	Material	Body	C <sub>Orad</sub> N	C <sub>Oax</sub> 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 <sub>Orad</sub> N	C <sub>Oax</sub> 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

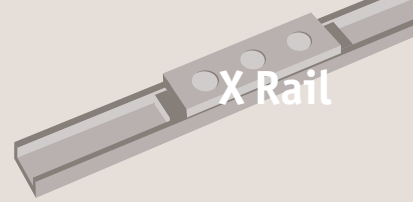
The radial load that the sliders can take is significantly higher than the axial load, so where possible the rails should be set up with the sliders taking the loads in this plane.

U rail sliders cannot accept axial loads

**Recommended**

**Non-preferred**

Radial load rating is typically 2 x axial load rating



### 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.

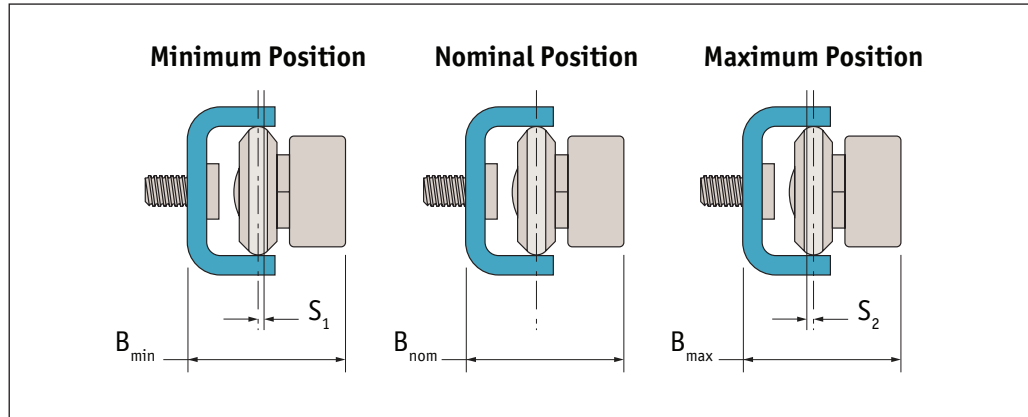
<p><b>Step 1: Find the part you need</b></p> <p>Find the part or enter the Automotion part number into the search bar.</p>																			
<p><b>Step 2: Choose the CAD option</b></p> <p>Click on the CAD button below the product window to the right of the drawing.</p>																			
<p><b>Step 3: Download your format</b></p> <p>Choose the the format you require, and download it to your computer.</p>	<table border="1"> <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> </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  $S_2$ .

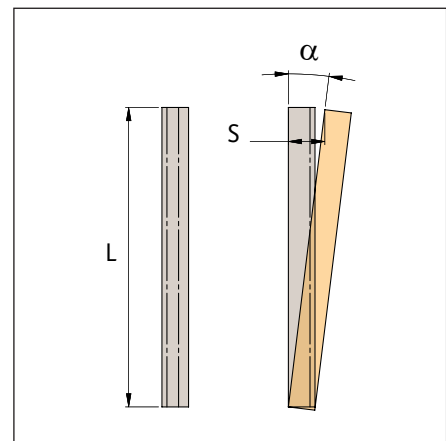


U rail size	$S_1$	$S_2$	$B_{min}$	$B_{nom}$	$B_{max}$
20	0,60	0,60	17,65	18,25	18,85
30	1,00	1,00	26,95	27,95	28,95
45	1,75	1,75	35,50	37,25	39,00

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

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

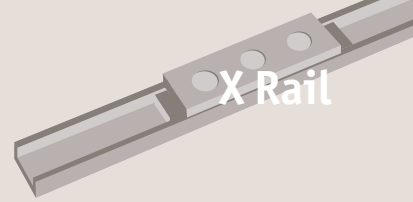
$S^*$  = sum of  $S_1$  and  $S_2$   
 $L$  = length of the rail



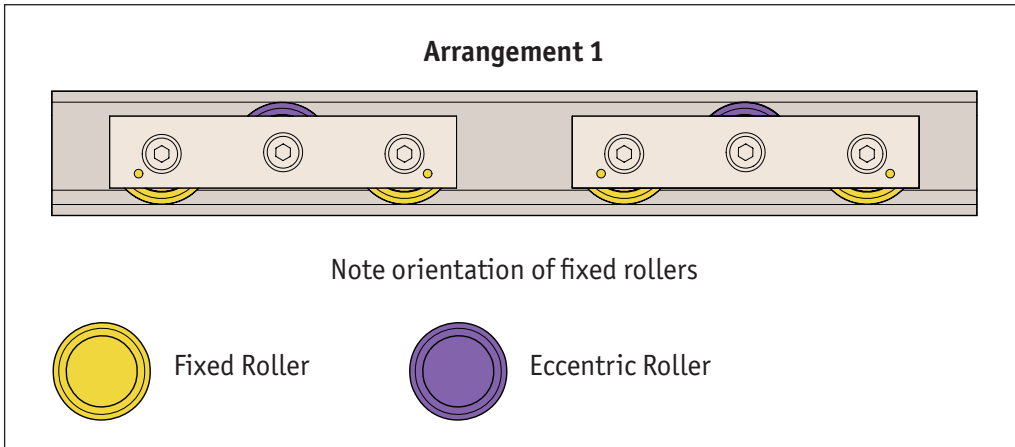
Size	Rail length	Offset $S^*$	Angle $\alpha$ °
20	3120	1,2	0,022
30	3120	2,0	0,037
45	3120	3,5	0,064

X Rail from Automation Components

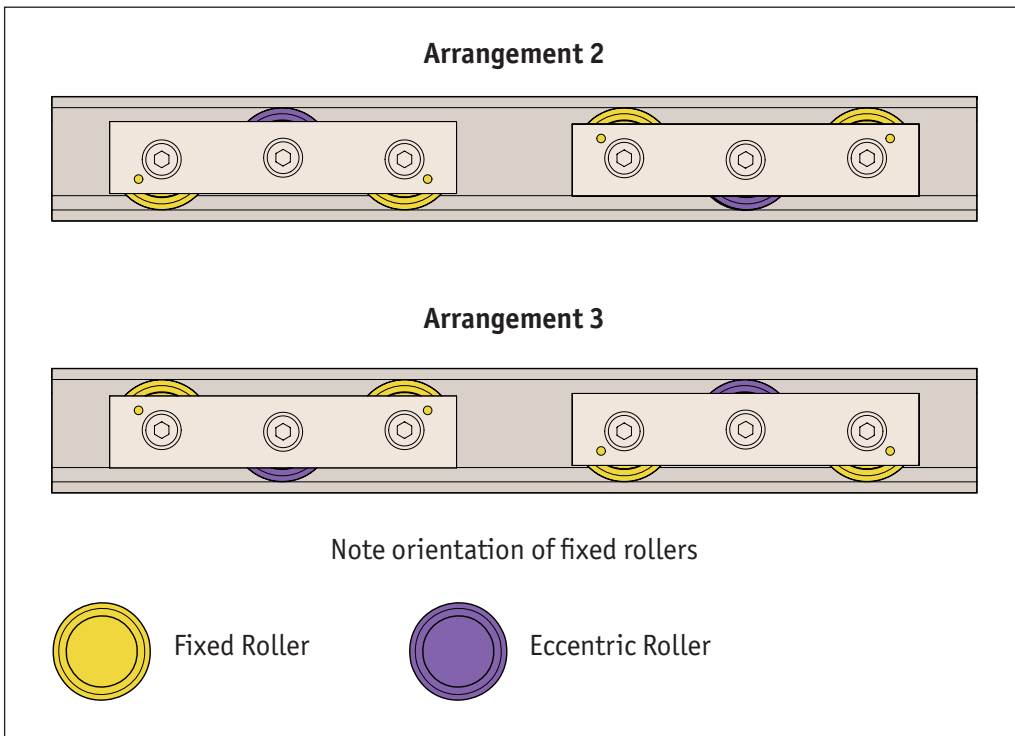
LONG LINEAR RAILS



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:

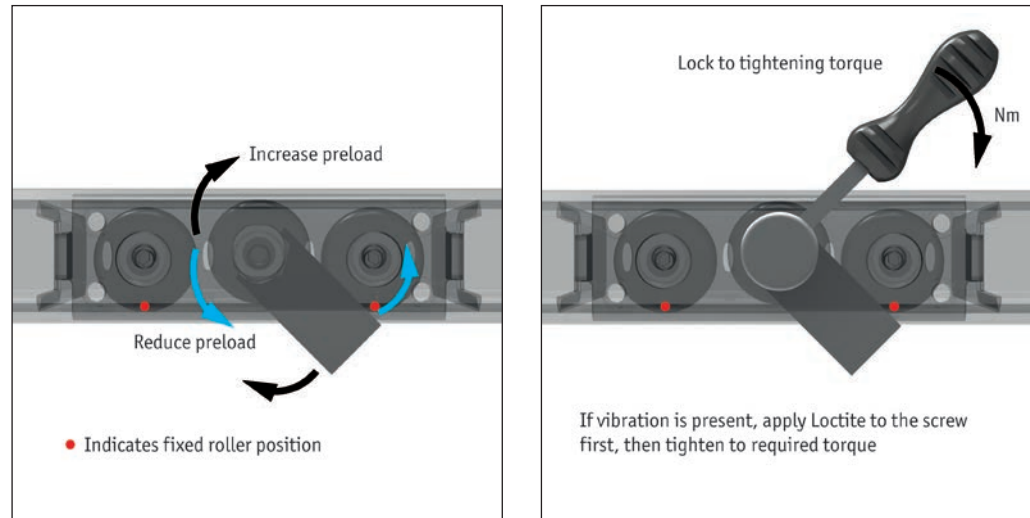




### Adjusting the sliders

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

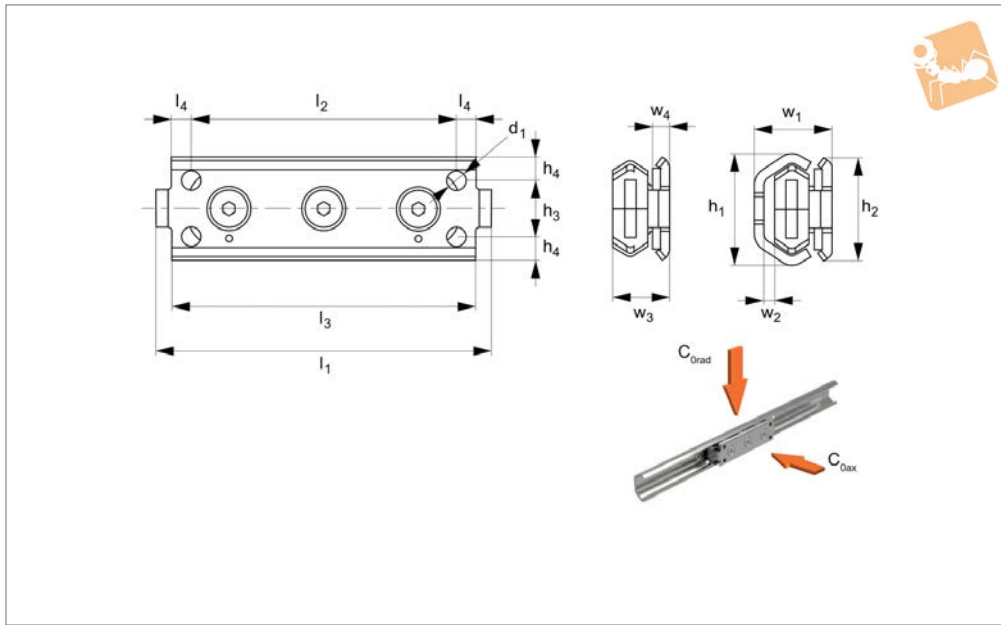




# Low Profile Stainless Sliders for T rail (master)



Long Linear  
Rails



**L1971.LP**

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.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.

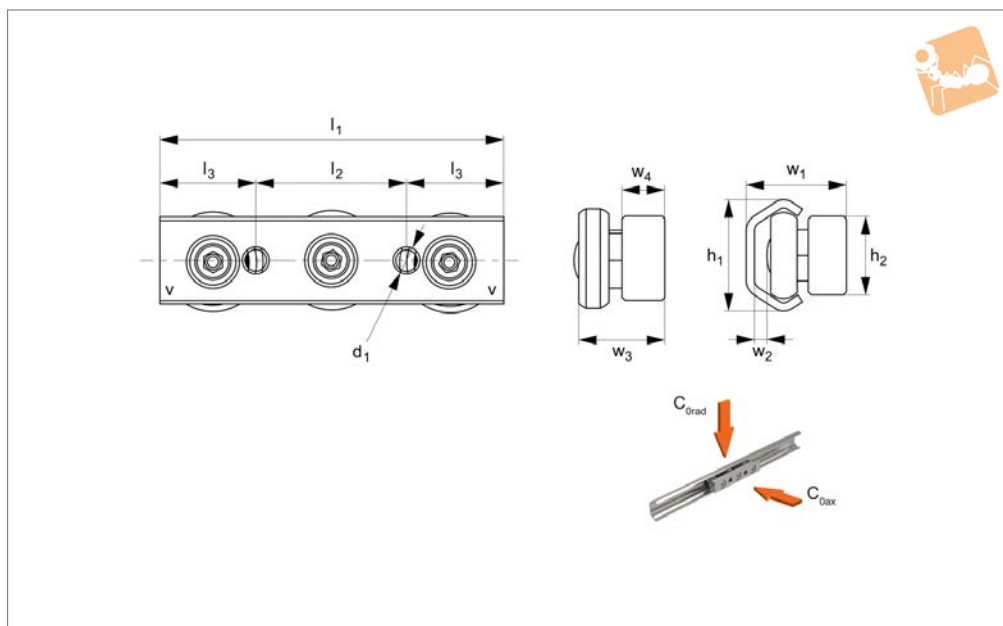
Order No.	Size	d <sub>1</sub>	l <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l <sub>2</sub>	Weight kg
L1971.20T-080	20	M5	80	19.2	18	-	9.0	60	0.05
L1971.30T-088	30	M5	88	29.5	27	15	6.0	70	0.12
L1971.45T-150	45	M6	150	46.4	40	23	8.5	120	0.47

Order No.	l <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-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



**L1971.SBT**



**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

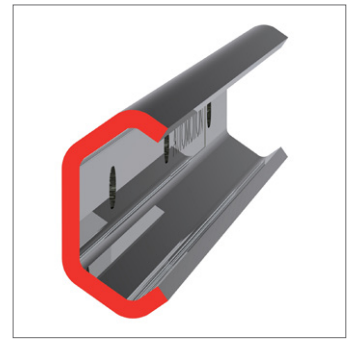
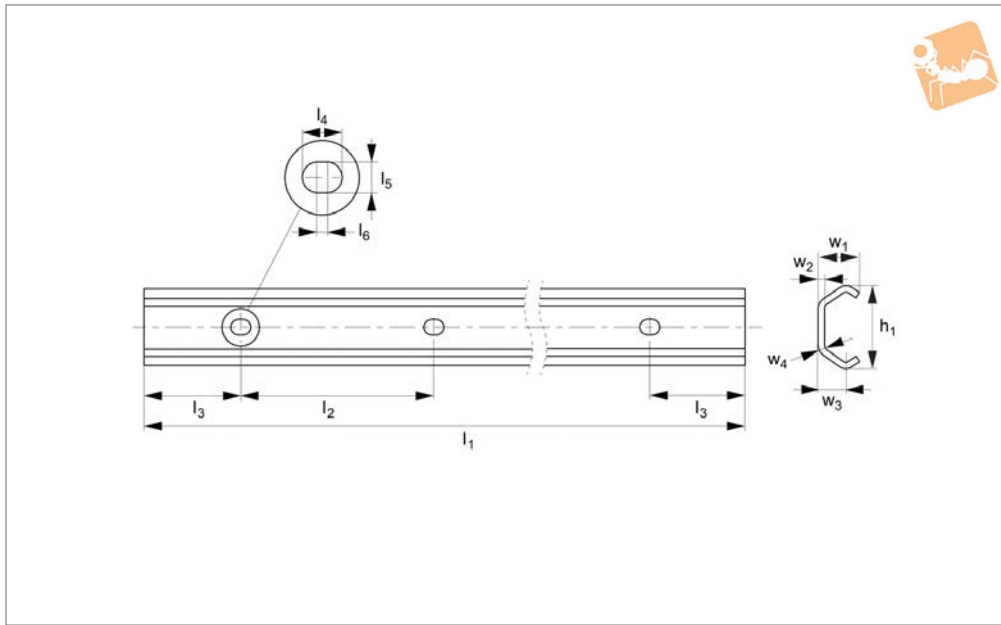


# Stainless X Rail

## T rail (master)



# Long Linear Rails



## L1971.T

LONG LINEAR RAILS

### 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.

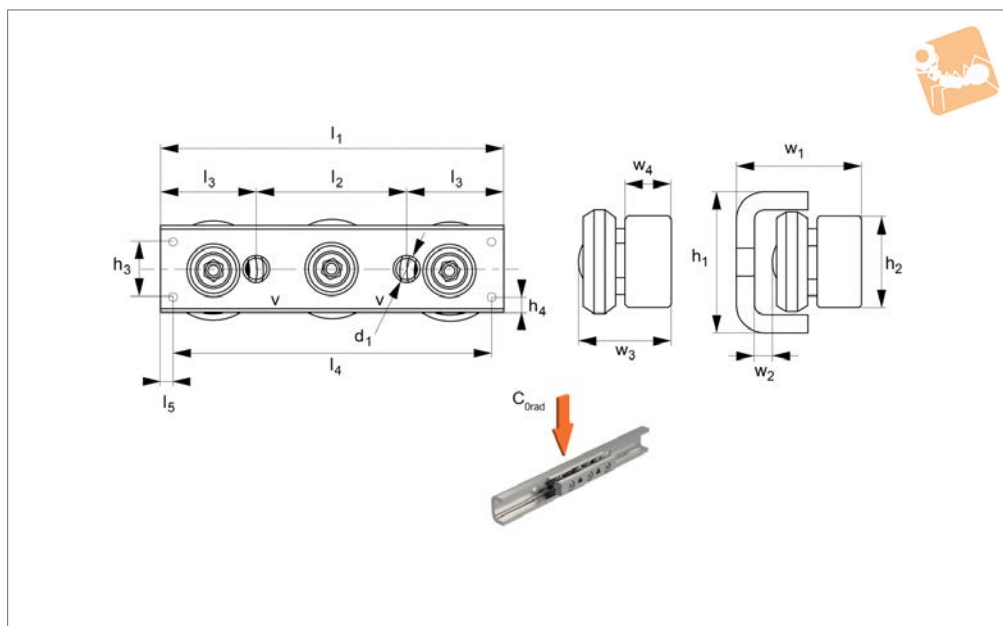
### Tips

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



**L1971.SBU**



**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

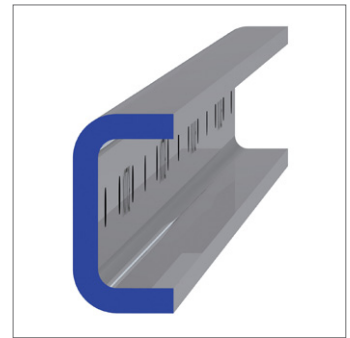
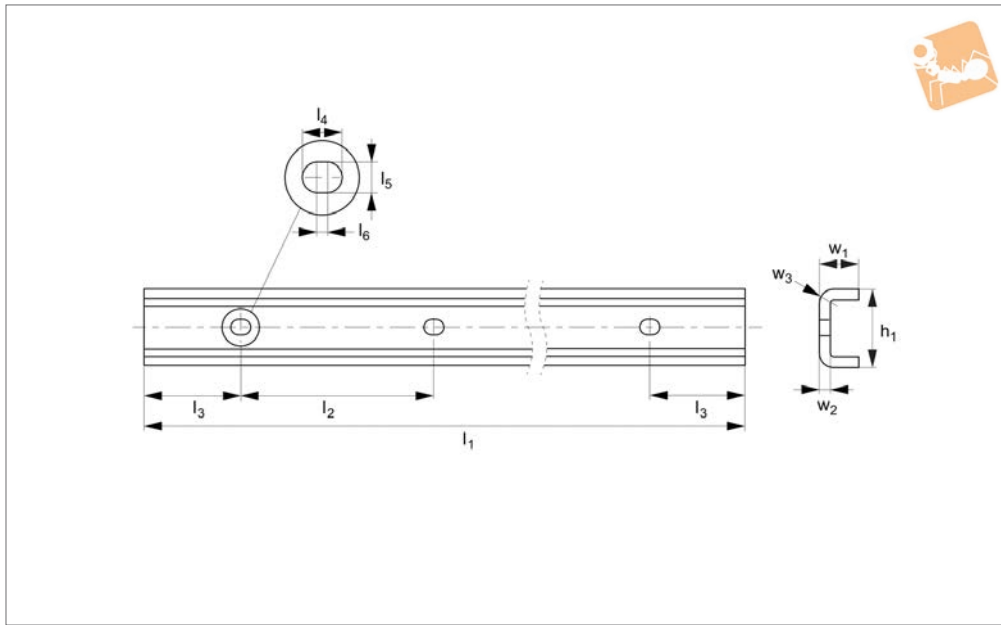


# Stainless X Rail

## U rail (slave)



# Long Linear Rails



## L1971.U

LONG LINEAR RAILS

### Material

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

### Technical Notes

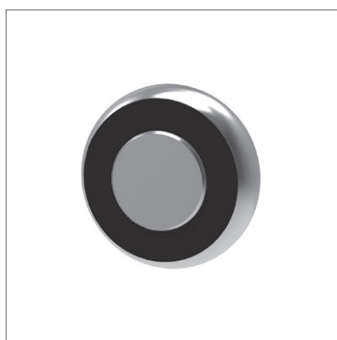
X rail is for light duty loads, select number

of carriages to suit.

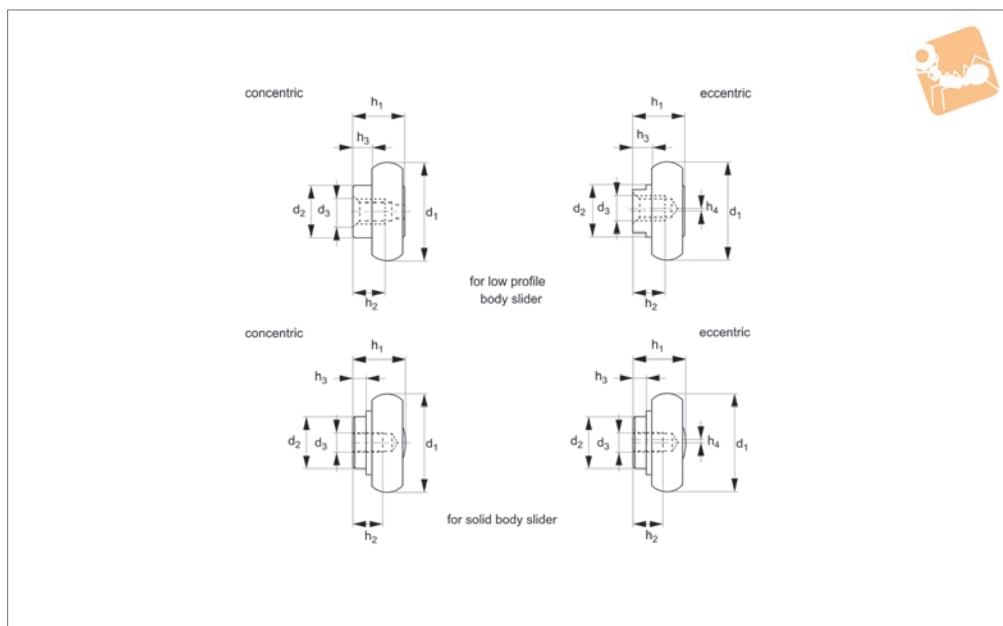
### Tips

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



## L1971.CRT



### 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.

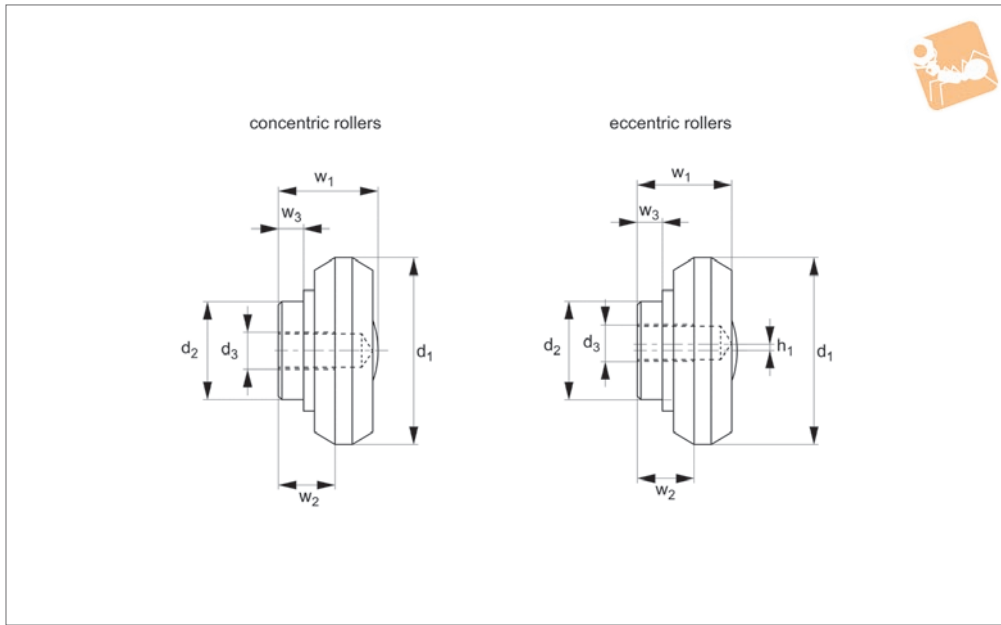
Order No.	For slider type	Type	Body	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight g
L1971.CRPNX20	L1971.20T-080	Concentric	Low prof.	14.0	8	M4	8.5	6	4.0	-	6
L1971.CRPA20	L1971.20T-080	Eccentric	Low prof.	14.0	8	M4	8.5	6	4.0	0.5	6
L1971.CRPNX30	L1971.30T-088	Concentric	Low prof.	22.8	12	M5	12.0	7	4.5	-	20
L1971.CRPA30	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.CRPA45	L1971.45T-150	Eccentric	Low prof.	35.6	16	M6	18.0	12	6.0	0.8	68
L1971.CRN20	L1971.20T-060	Concentric	Solid	14.0	6	M4	8.7	6	1.8	-	6
L1971.CRA20	L1971.20T-060	Eccentric	Solid	14.0	6	M4	8.7	6	1.8	0.5	6
L1971.CRN30	L1971.30T-080	Concentric	Solid	22.8	10	M5	14.0	9	3.8	-	22
L1971.CRA30	L1971.30T-080	Eccentric	Solid	22.8	10	M5	14.0	9	3.8	0.6	22
L1971.CRN45	L1971.45T-120	Concentric	Solid	35.6	12	M6	20.5	14.5	4.5	-	70
L1971.CRA45	L1971.45T-120	Eccentric	Solid	35.6	12	M6	20.5	14.5	4.5	0.8	70



# Stainless Replacement Rollers for U version stainless X rail



Long Linear  
Rails



**L1971.CRU**

LONG LINEAR RAILS

### Material

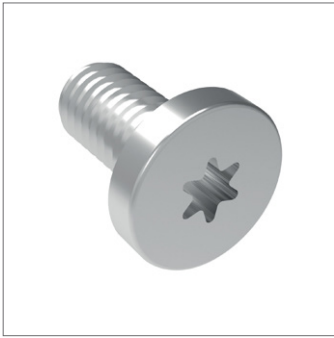
Rollers stainless steel (AISI 440C) with water resistant rubber seals (2RS).

### Technical Notes

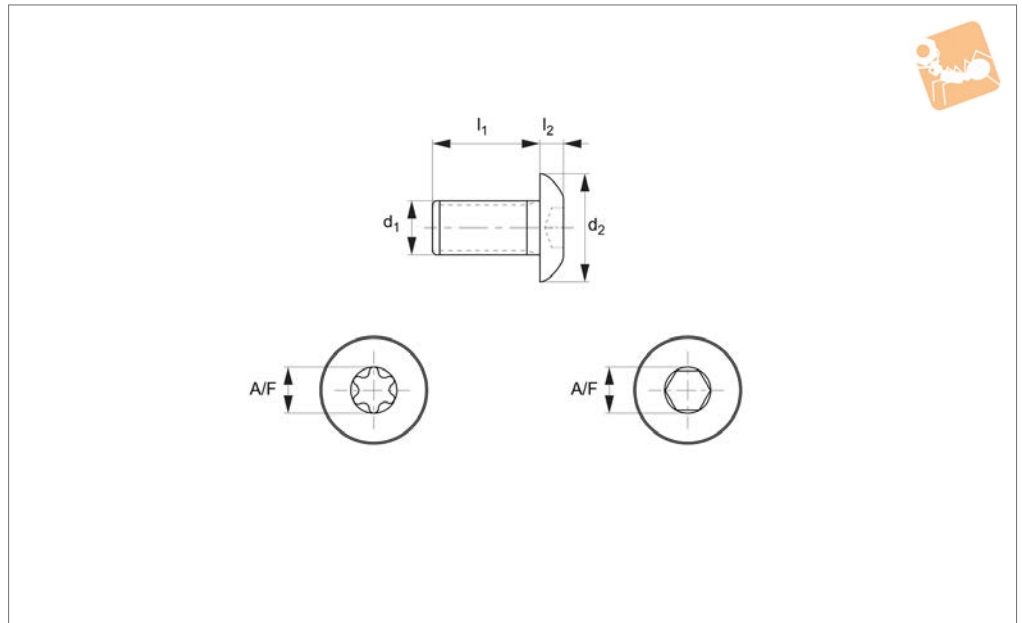
For use with X rail stainless steel sliders in U type stainless steel rail.

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





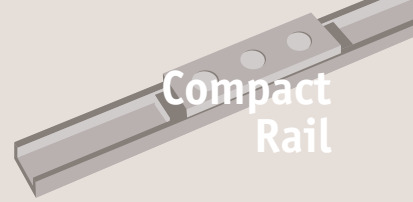
### L1971.S



#### 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

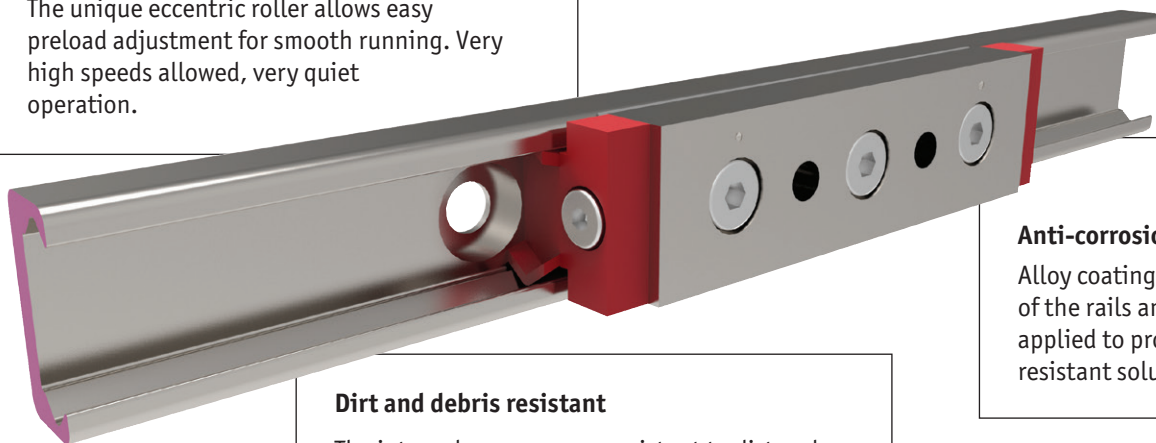
The rails are easy to set up and can adjust for some misalignment of the structure on which it is being used. The compact rail system achieves this by using a master (T type) rail, and a slave (U type) rail. This allows the sliders in the T rail to remain fixed in place but allows lateral movement of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

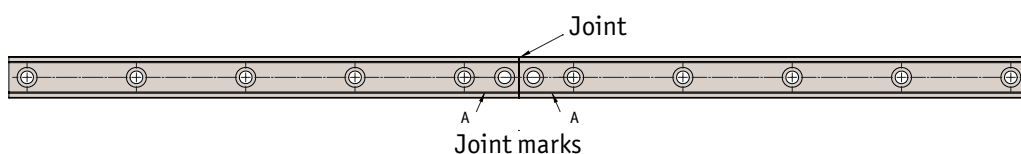
Alloy coating or nickel plating of the rails and sliders can be applied to provide a corrosion resistant solution.

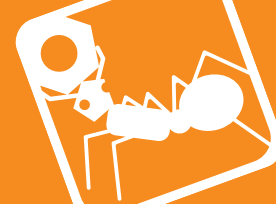
### Dirt and debris resistant

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).

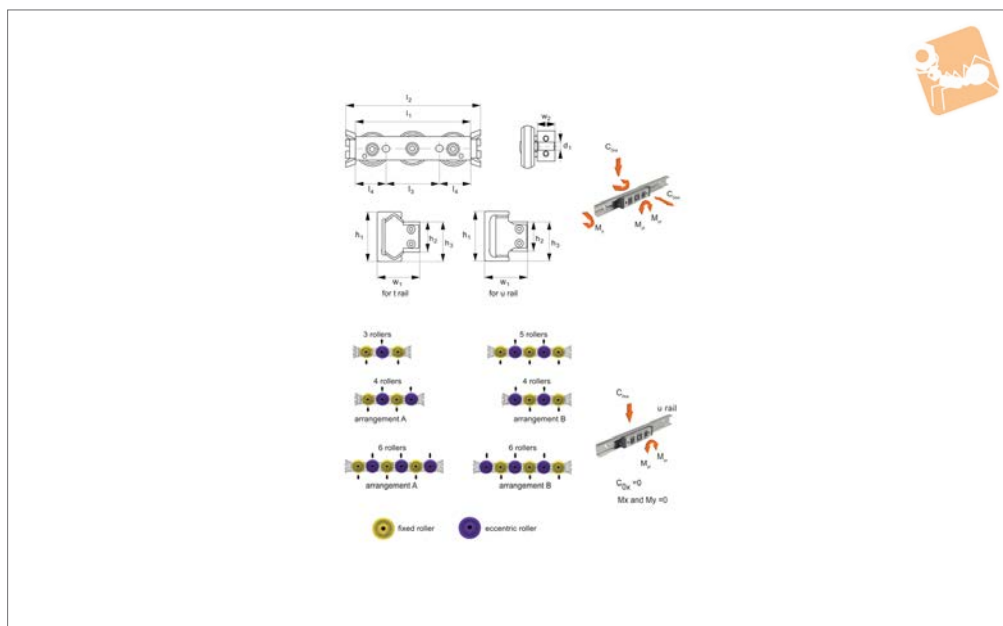
### Unlimited rail lengths

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.





## L1918.CS



### 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>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.
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



# Light Duty Sliders - Size 18

no side seal - front fixing



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.
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

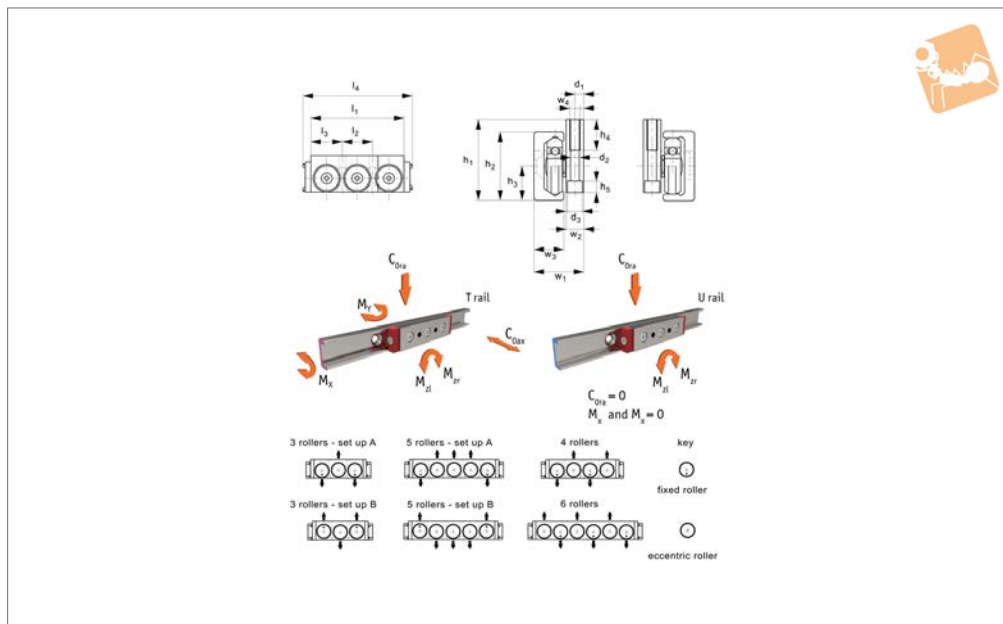
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1918.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 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>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.
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



# Light Duty Sliders, size 18

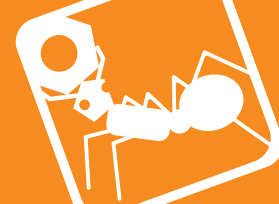
side seal, with wipers



## 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.
L1918.18CR-080-UA	0	8.3	24.9	17.4	8	8.3	4	1540	0	825
L1918.18CR-080-TB	7.1	24.9	8.3	17.4	8	8.3	4	1540	310	825
L1918.18CR-080-UB	0	24.9	8.3	17.4	8	8.3	4	1540	0	825
L1918.18CR-100-TA	9.5	24.9	24.9	17.4	8	8.3	4	1832	365	978
L1918.18CR-100-UA	0	24.9	24.9	17.4	8	8.3	4	1832	0	978
L1918.18CR-100-TB	9.5	24.9	24.9	17.4	8	8.3	4	1832	365	978
L1918.18CR-100-UB	0	24.9	24.9	17.4	8	8.3	4	1832	0	978
L1918.18CR-120-TA	11.9	24.9	41.2	17.4	8	8.3	4	1832	442	978
L1918.18CR-120-UA	0	24.9	41.2	17.4	8	8.3	4	1832	0	978
L1918.18CR-120-TB	11.9	41.2	24.9	17.4	8	8.3	4	1832	442	978
L1918.18CR-120-UB	0	41.2	24.9	17.4	8	8.3	4	1832	0	978

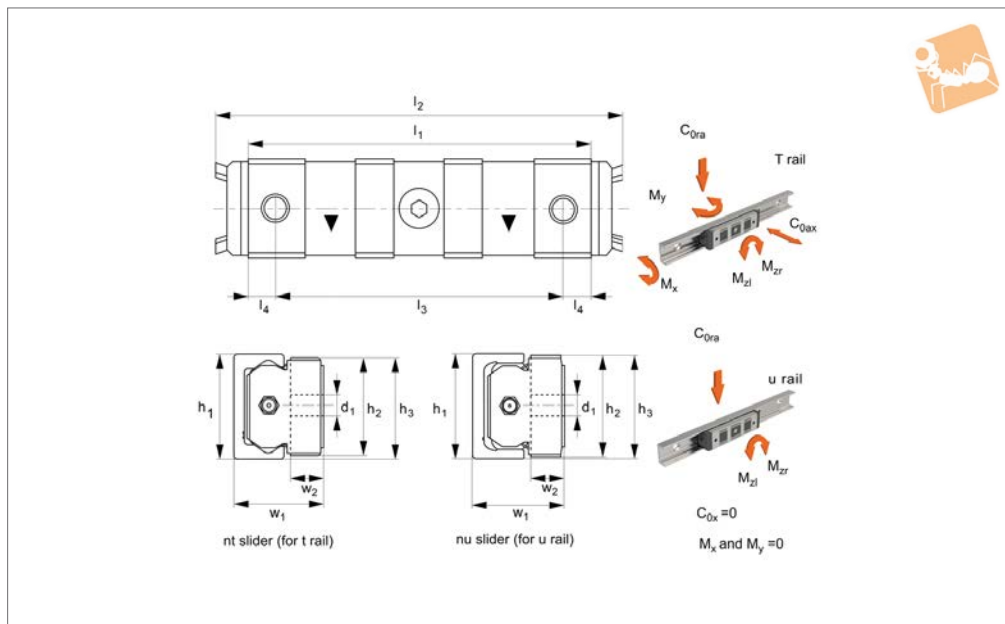
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1918.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 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>zd</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



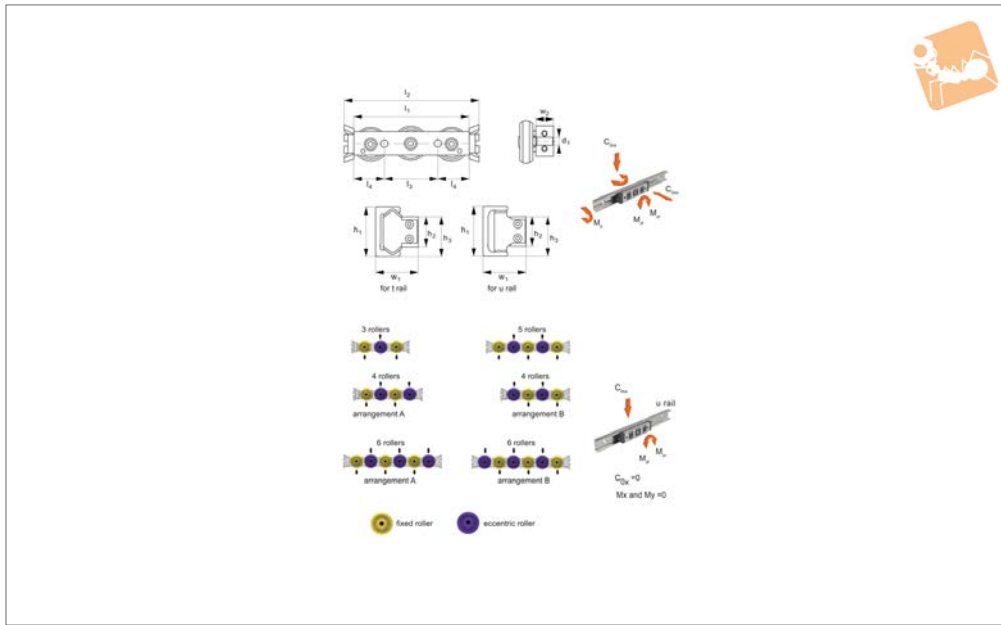


# Light Duty Sliders - Size 18

no side seal - front fixing



Long Linear  
Rails



**L1918.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.

### 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>	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.CSW18-060-2ZT	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



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>	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

LONG LINEAR RAILS

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

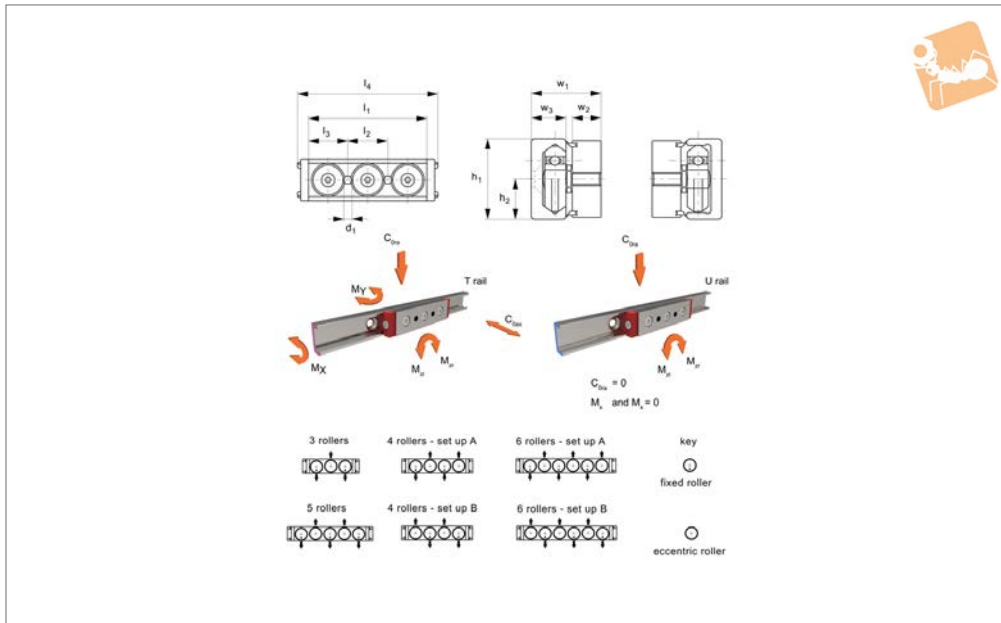


# Light Duty Sliders, size 18

side seal, with wipers



## Long Linear Rails



### L1918.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).

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>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.
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



Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0 ax}$ N max.	Static load $C_{0 rad}$ 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

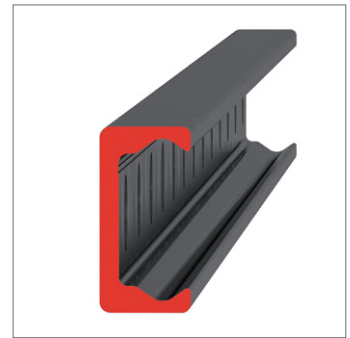
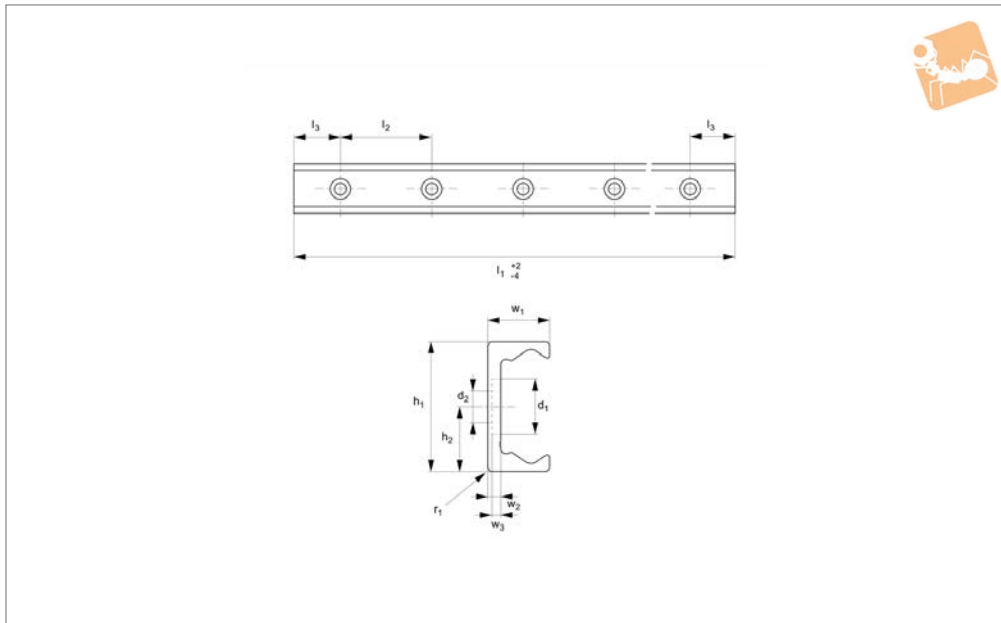


# Light Duty T Rail

counterbored holes



## Long Linear Rails



### L1918.18T-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: 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

# Long Linear Rails

## Light Duty T Rail counterbored holes



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>L1918.18T-2640-C</b>	9.5	M4	18	9	2640	80	40	1.5	8.25	2.8	2
<b>L1918.18T-2720-C</b>	9.5	M4	18	9	2720	80	40	1.5	8.25	2.8	2
<b>L1918.18T-2800-C</b>	9.5	M4	18	9	2800	80	40	1.5	8.25	2.8	2
<b>L1918.18T-2880-C</b>	9.5	M4	18	9	2880	80	40	1.5	8.25	2.8	2
<b>L1918.18T-2960-C</b>	9.5	M4	18	9	2960	80	40	1.5	8.25	2.8	2
<b>L1918.18T-3040-C</b>	9.5	M4	18	9	3040	80	40	1.5	8.25	2.8	2

LONG LINEAR RAILS

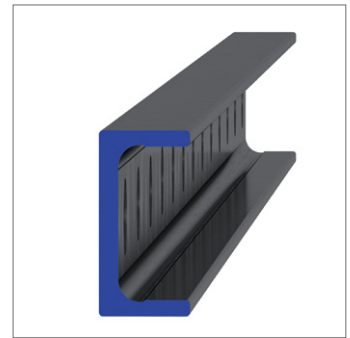
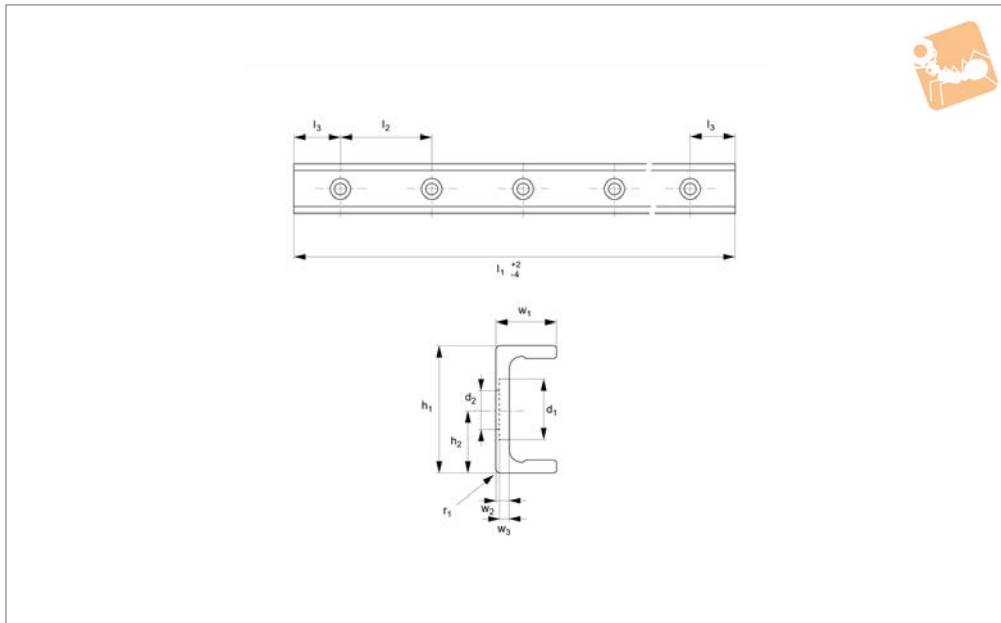


# Light Duty U Rail

counterbored holes



# Long Linear Rails



## L1918.18U-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: 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

# Long Linear Rails

## Light Duty U Rail counterbored holes



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

LONG LINEAR RAILS



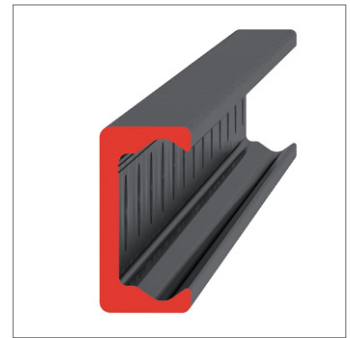
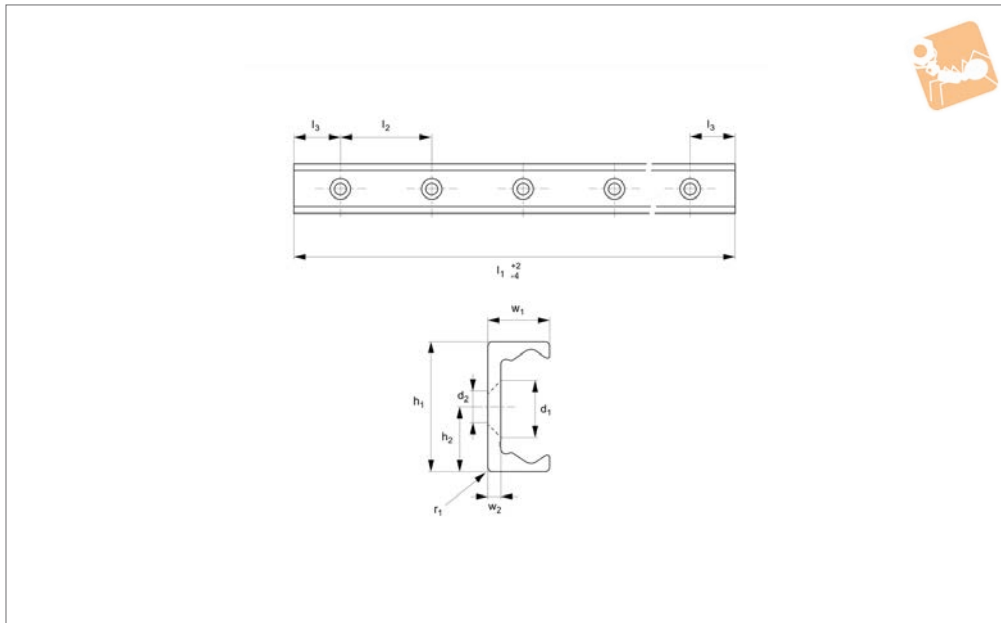


# Light Duty T Rail

countersunk holes



# Long Linear Rails



## L1918.18T-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: 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

# Long Linear Rails

## Light Duty T Rail countersunk holes



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>
<b>L1918.18T-2640-V</b>	M4	18	9	2640	80	40	1.5	8.25	2.8
<b>L1918.18T-2720-V</b>	M4	18	9	2720	80	40	1.5	8.25	2.8
<b>L1918.18T-2800-V</b>	M4	18	9	2800	80	40	1.5	8.25	2.8
<b>L1918.18T-2880-V</b>	M4	18	9	2880	80	40	1.5	8.25	2.8
<b>L1918.18T-2960-V</b>	M4	18	9	2960	80	40	1.5	8.25	2.8
<b>L1918.18T-3040-V</b>	M4	18	9	3040	80	40	1.5	8.25	2.8

LONG LINEAR RAILS

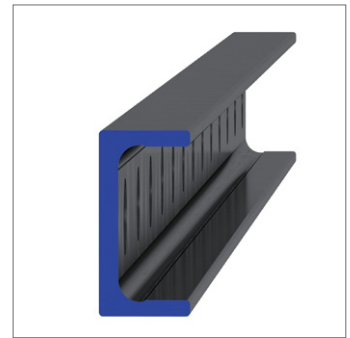
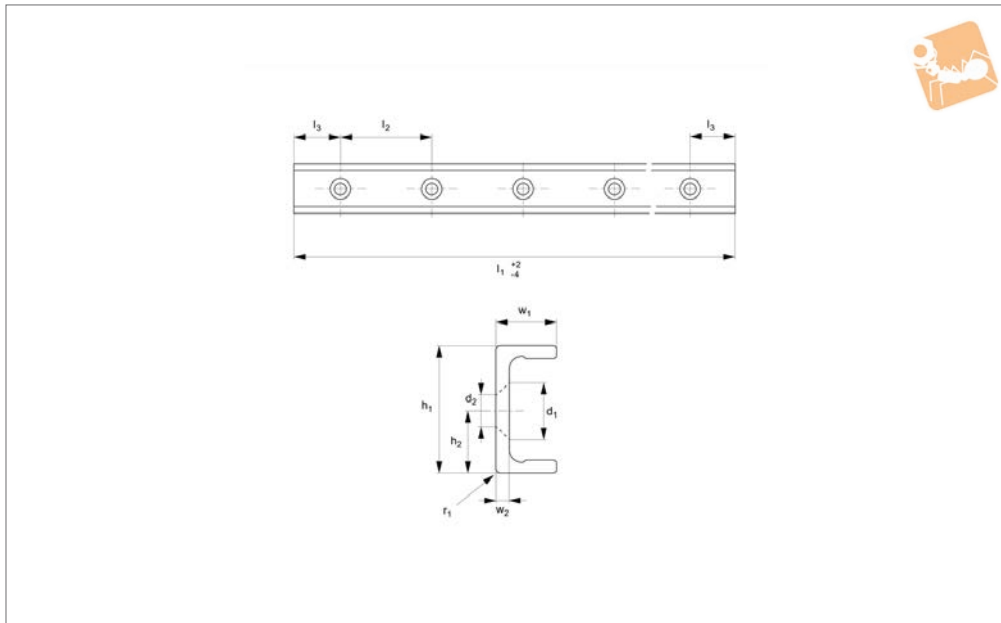


# Light Duty U Rail

countersunk holes



# Long Linear Rails



## L1918.18U-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: 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

# Long Linear Rails

## Light Duty U Rail countersunk holes



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>
<b>L1918.18U-2640-V</b>	M4	18	9	2640	80	40	1	8.25	2.6
<b>L1918.18U-2720-V</b>	M4	18	9	2720	80	40	1	8.25	2.6
<b>L1918.18U-2800-V</b>	M4	18	9	2800	80	40	1	8.25	2.6
<b>L1918.18U-2880-V</b>	M4	18	9	2880	80	40	1	8.25	2.6
<b>L1918.18U-2960-V</b>	M4	18	9	2960	80	40	1	8.25	2.6
<b>L1918.18U-3040-V</b>	M4	18	9	3040	80	40	1	8.25	2.6

LONG LINEAR RAILS

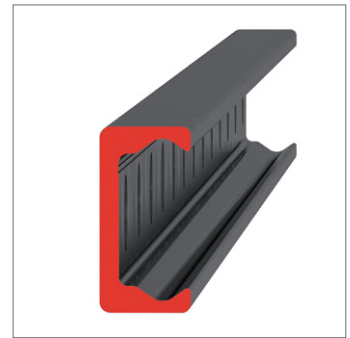
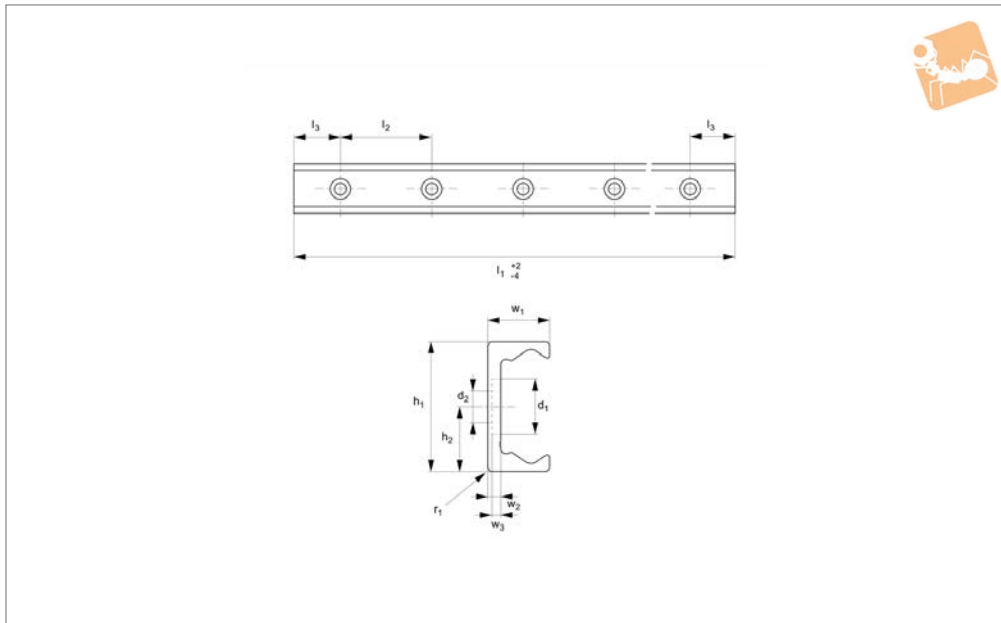


# Light Duty T Rail

counterbored holes



# Long Linear Rails



## L1918.TLC18

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).

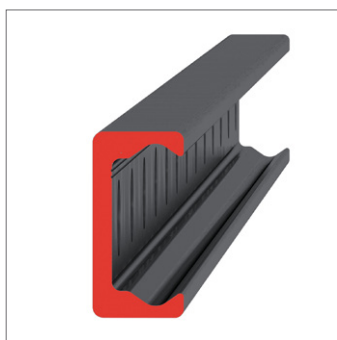
This is the counterbored rail type (most popular), which is usually used with a corresponding ULC rail.  
Special low profile Torx head screws provided free of charge.

Weight: 0,55 Kg/m.

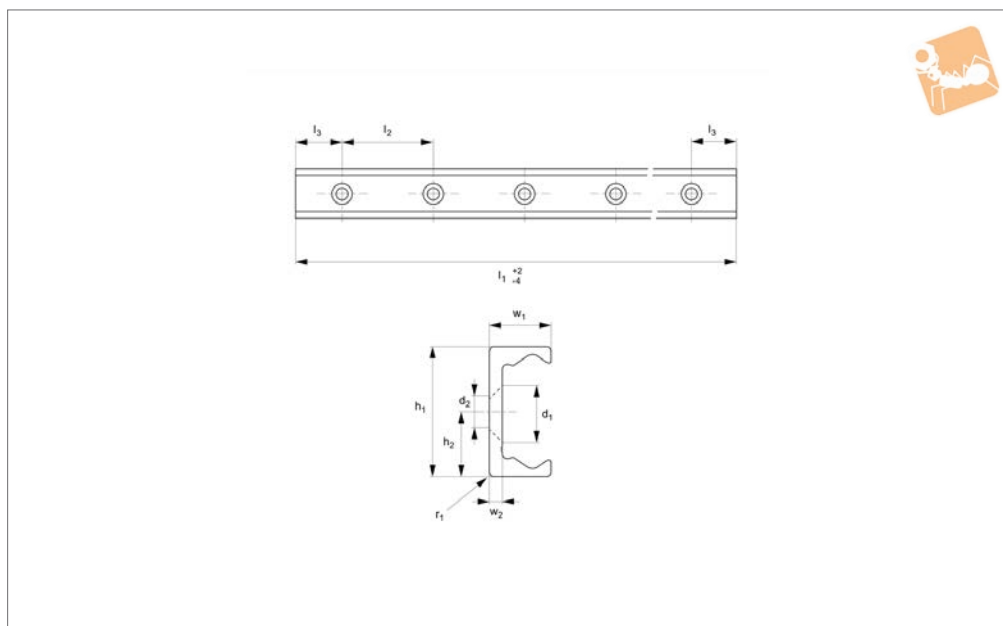
### Tips

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



## L1918.TLV18



### 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

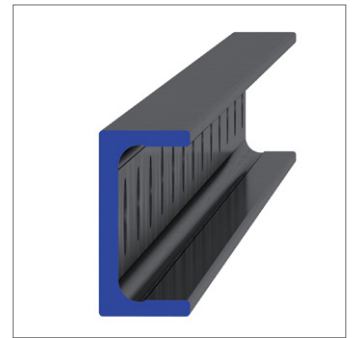
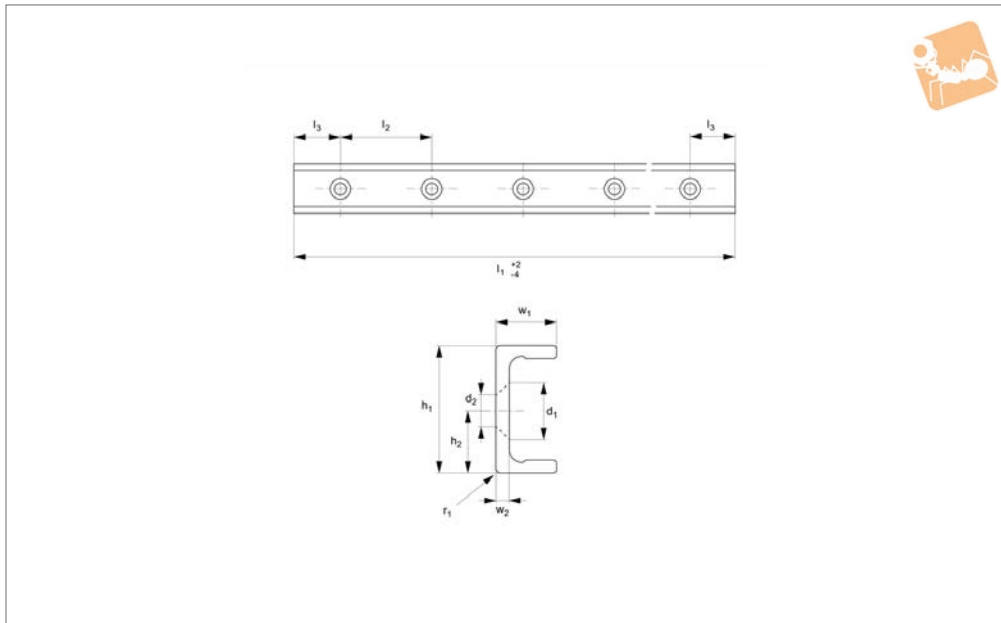


# Light Duty U Rail

countersunk holes



# Long Linear Rails



## L1918.ULV18

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.

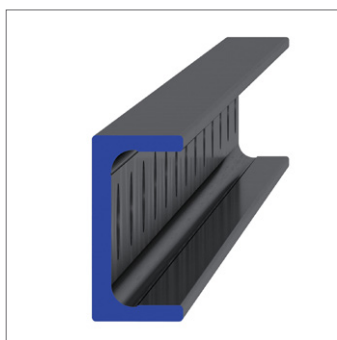
For fixing use countersunk DIN 7991 screws.

Weight: 0,55 Kg/m.

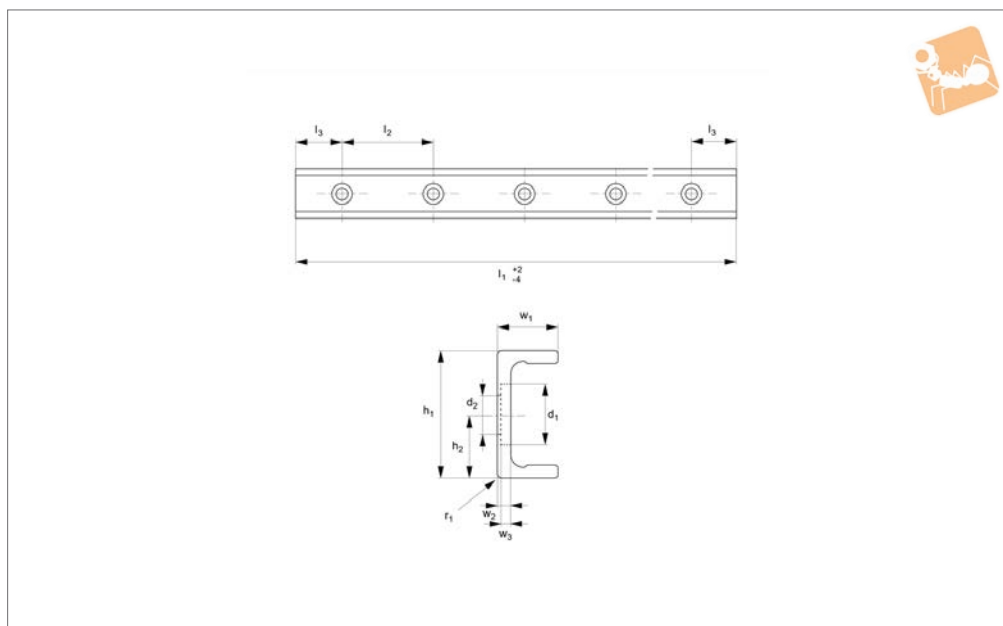
### Tips

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



### L1918.ULC18



#### 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



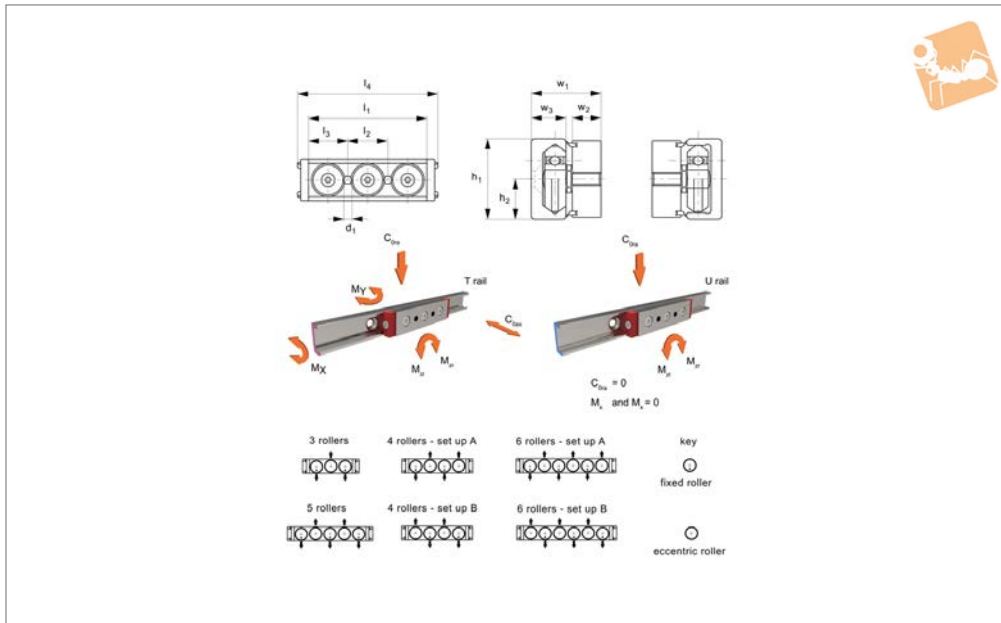


# Medium Duty Sliders, size 28

side seal, front fixing, with wiper



Long Linear  
Rails



**L1928.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 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>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.
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



Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0 ax.}$ N max.	Static load $C_{0 rad.}$ 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

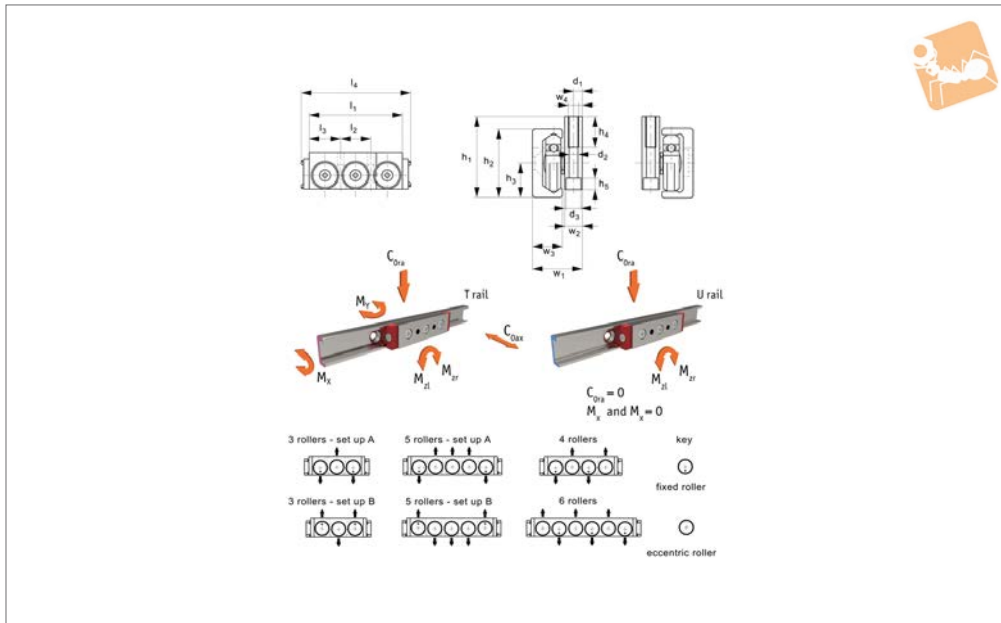


# Medium Duty Sliders, size 28

no side seal, side fixing, with wiper



Long Linear  
Rails



**L1928.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 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>zl</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



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>L1928.28CR-100-UA</b>	0	28.0	84.1	24.1	10	12.3	5	4345	0	2213
<b>L1928.28CR-100-TB</b>	22.3	84.1	28.0	24.1	10	12.3	5	4345	765	2213
<b>L1928.28CR-100-UB</b>	0	84.1	28.0	24.1	10	12.3	5	4345	0	2213
<b>L1928.28CR-125-TA</b>	30.0	84.1	84.1	24.1	10	12.3	5	5160	919	2630
<b>L1928.28CR-125-UA</b>	0	84.1	84.1	24.1	10	12.3	5	5160	0	2630
<b>L1928.28CR-125-TB</b>	30.0	84.1	84.1	24.1	10	12.3	5	5160	919	2630
<b>L1928.28CR-125-UB</b>	0	84.1	84.1	24.1	10	12.3	5	5160	0	2630
<b>L1928.28CR-150-TA</b>	37.3	84.1	140.0	24.1	10	12.3	5	5160	1102	2630
<b>L1928.28CR-150-UA</b>	0	84.1	140.0	24.1	10	12.3	5	5160	0	2630
<b>L1928.28CR-150-TB</b>	37.3	140.0	84.1	24.1	10	12.3	5	5160	1102	2630
<b>L1928.28CR-150-UB</b>	0	140.0	84.1	24.1	10	12.3	5	5160	0	2630

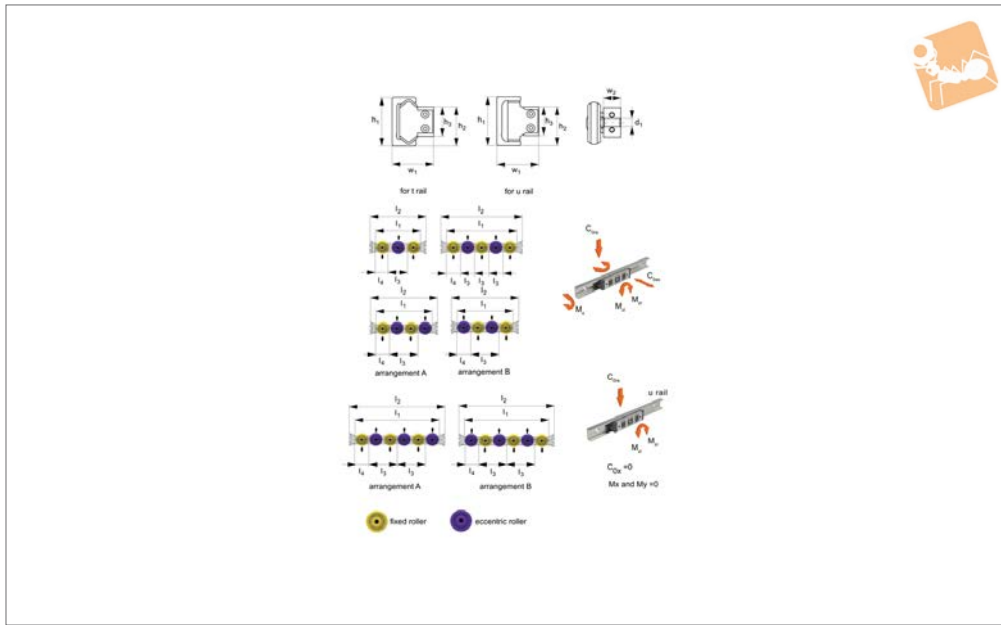


# Medium Duty Sliders, size 28

no side seal, front fixing



Long Linear  
Rails



**L1928.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) 0.003.  
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>0ax</sub> N	C <sub>0rad</sub> N	d <sub>1</sub>	+0.25 -0.10	h <sub>1</sub>	+0 -0.10	h <sub>2</sub>	+0.05 -0.35	h <sub>3</sub>	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			



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>	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

LONG LINEAR RAILS

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>
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

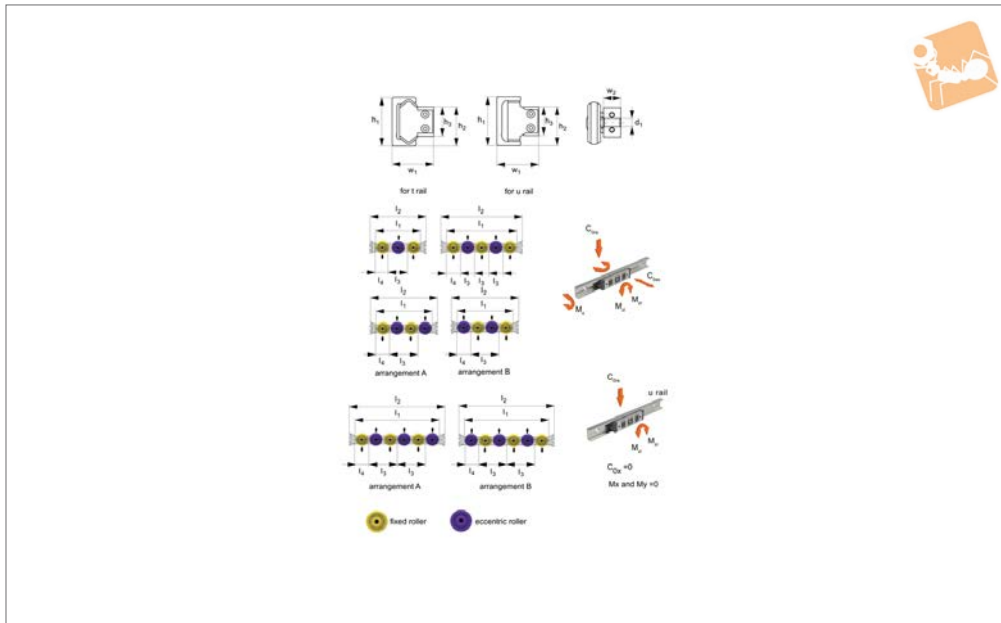


# Medium Duty Sliders - Size 28

no side seal - front fixing - with wiper



Long Linear  
Rails



**L1928.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) 0.003.

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



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.	Arrangement type	Static load C <sub>0 rad.</sub> 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



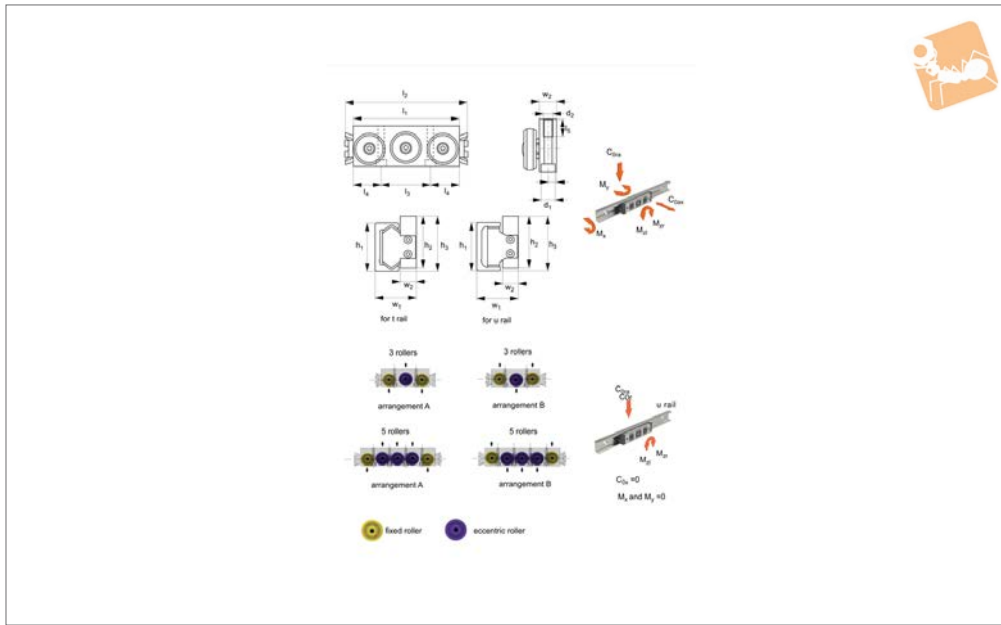


# Medium Duty Sliders - size 28

no side seal - top fixing



Long Linear  
Rails



**L1928.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) 0.003.  
Quiet and fast (up to 5 m/s).

### Technical Notes

To be used with compact rail size 18.

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> 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



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> 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

LONG LINEAR RAILS

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

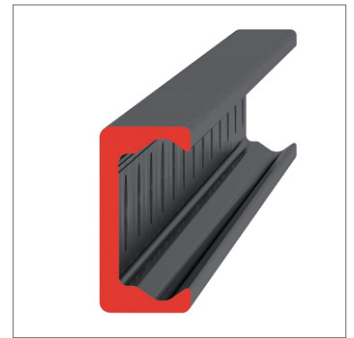
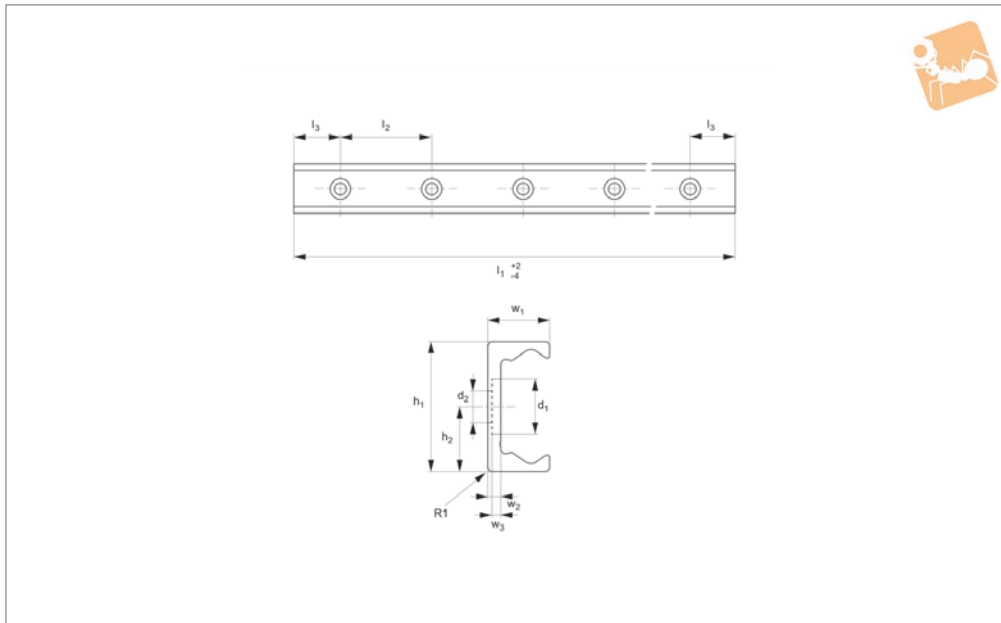


# Medium Duty T Rail

counterbored holes



Long Linear  
Rails



**L1928.TLC28**

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: 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

# Long Linear Rails

## Medium Duty T Rail counterbored holes



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

LONG LINEAR RAILS

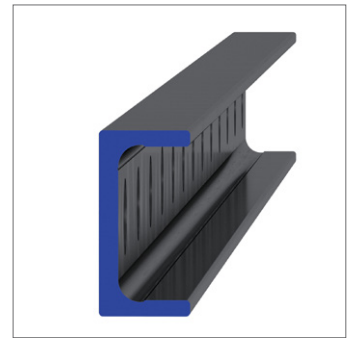
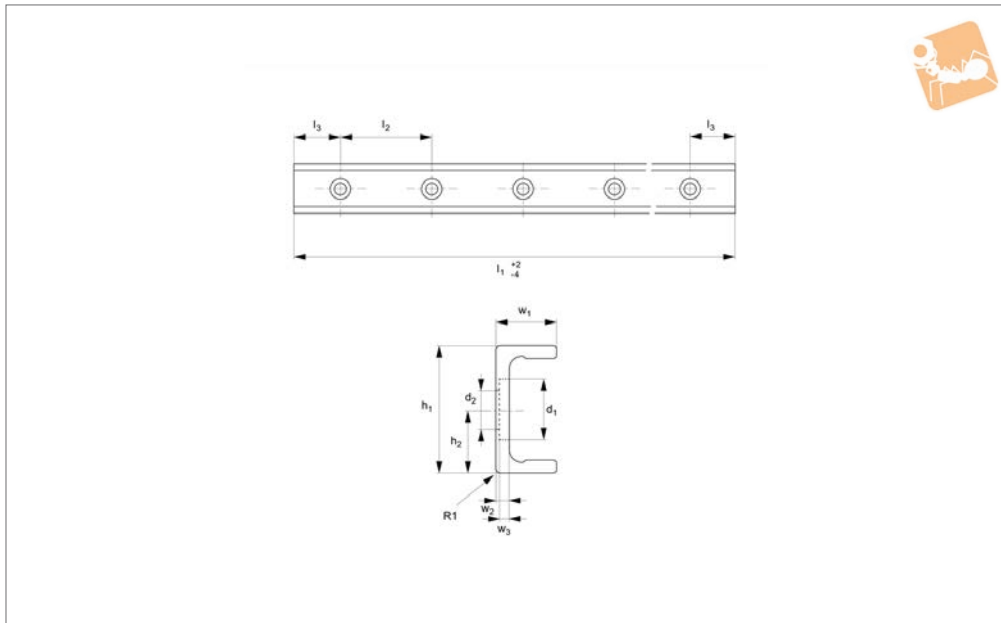


# Medium Duty U Rail

counterbored holes



## Long Linear Rails



## L1928.ULC28

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: 1,0 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



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

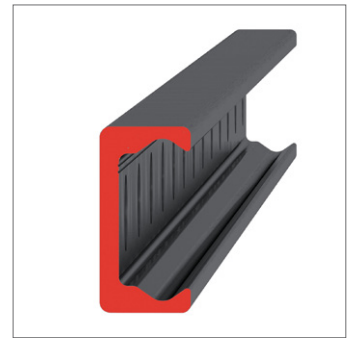
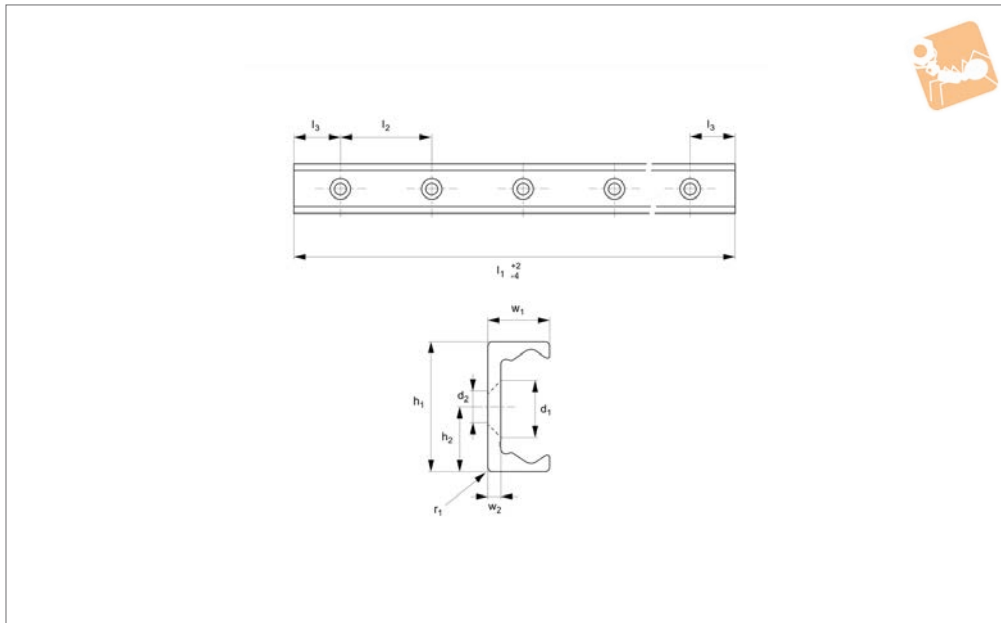


# Medium Duty T Rail

countersunk holes



# Long Linear Rails



## L1928.TLV28

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 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



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.TLV28-2720	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



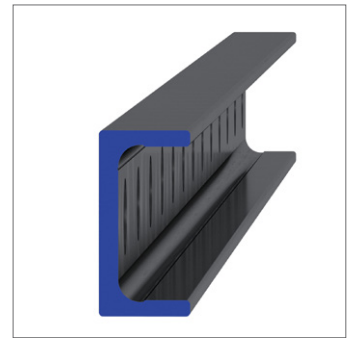
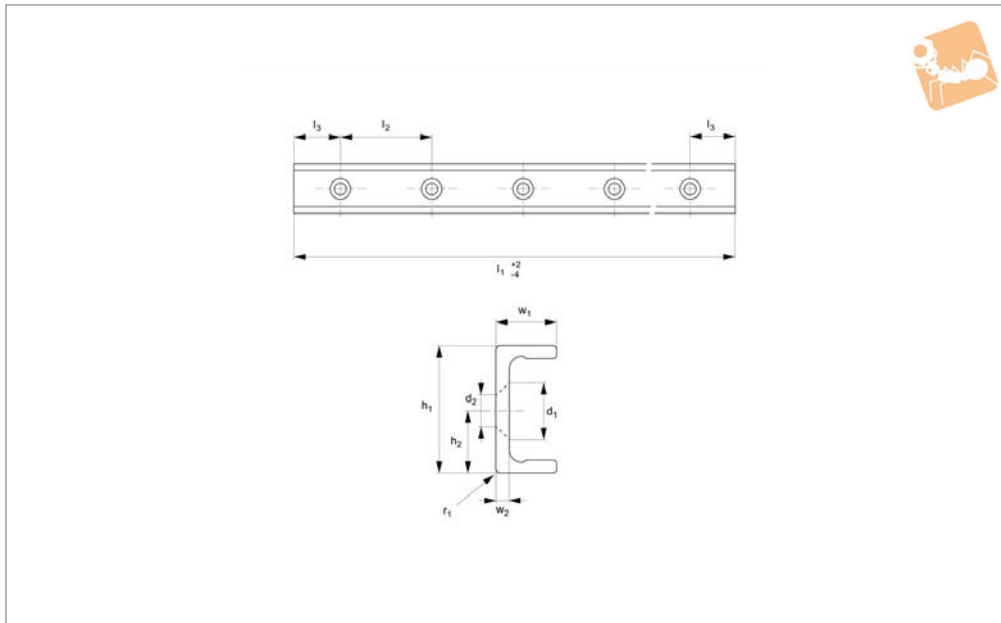


# Medium Duty U Rail

countersunk holes



## Long Linear Rails



## L1928.ULV28

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: 1,0 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



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

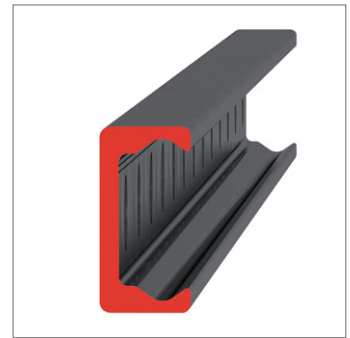
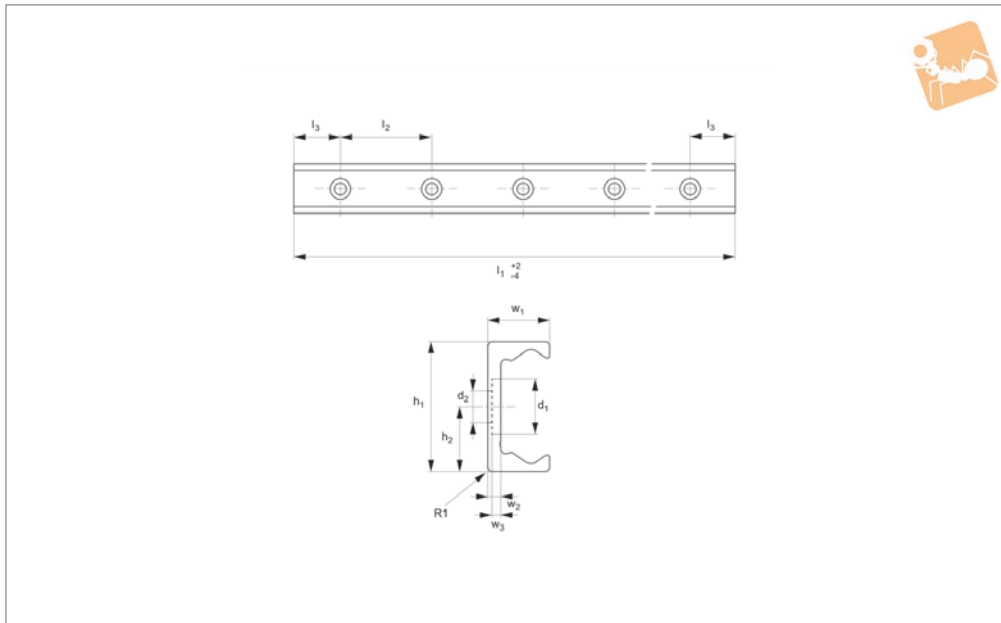


# Medium Duty T Rail

counterbored holes



## Long Linear Rails



### L1928.28T-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: 1,0 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



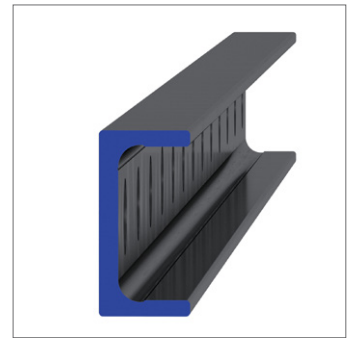
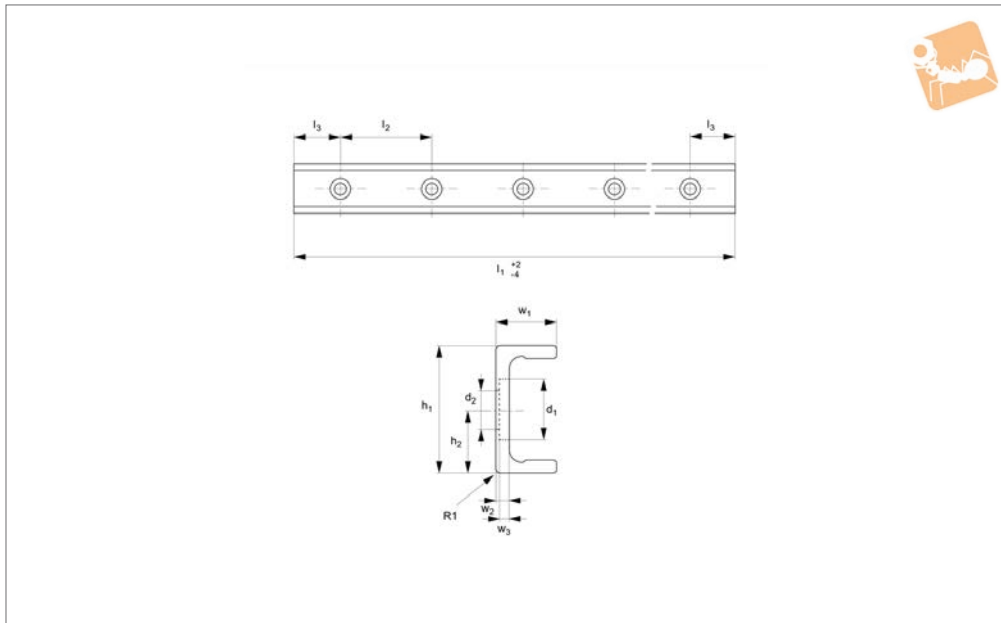
Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1928.28T-2720-C	11	M5	28	14	2720	80	40	12.3	3	2
L1928.28T-2800-C	11	M5	28	14	2800	80	40	12.3	3	2
L1928.28T-2880-C	11	M5	28	14	2880	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



# Medium Duty U Rail

counterbored holes

## Long Linear Rails



## L1928.28U-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: 1,0 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



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

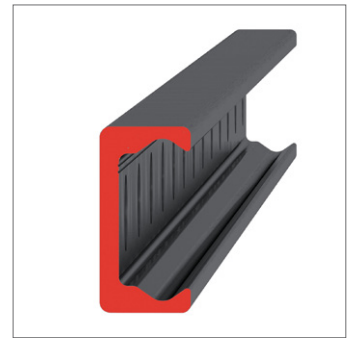
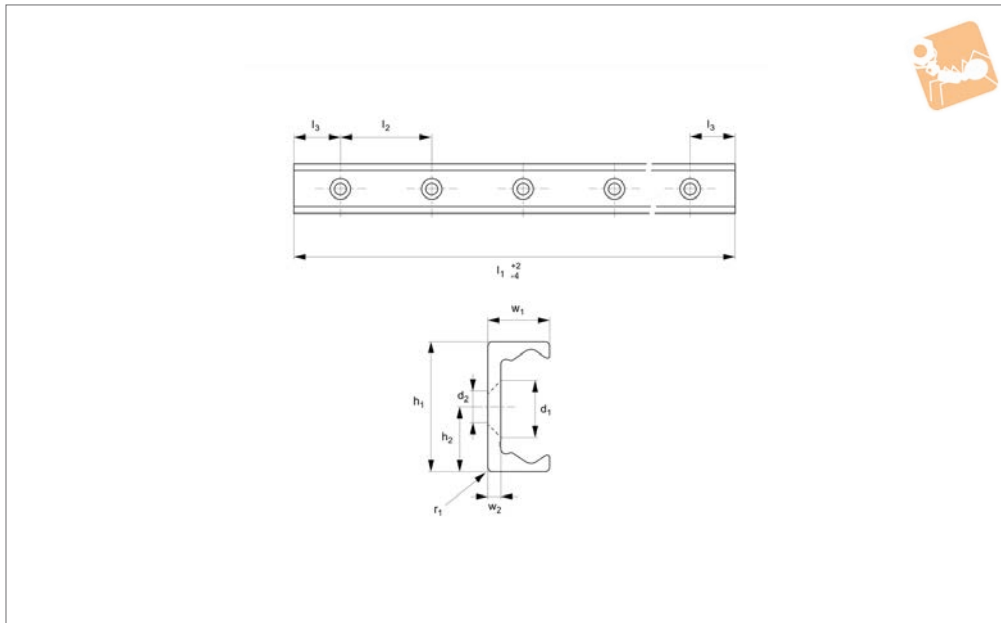


# Medium Duty T Rail

countersunk holes



## Long Linear Rails



### L1928.28T-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 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.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	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



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-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



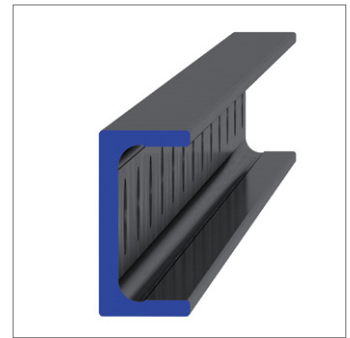
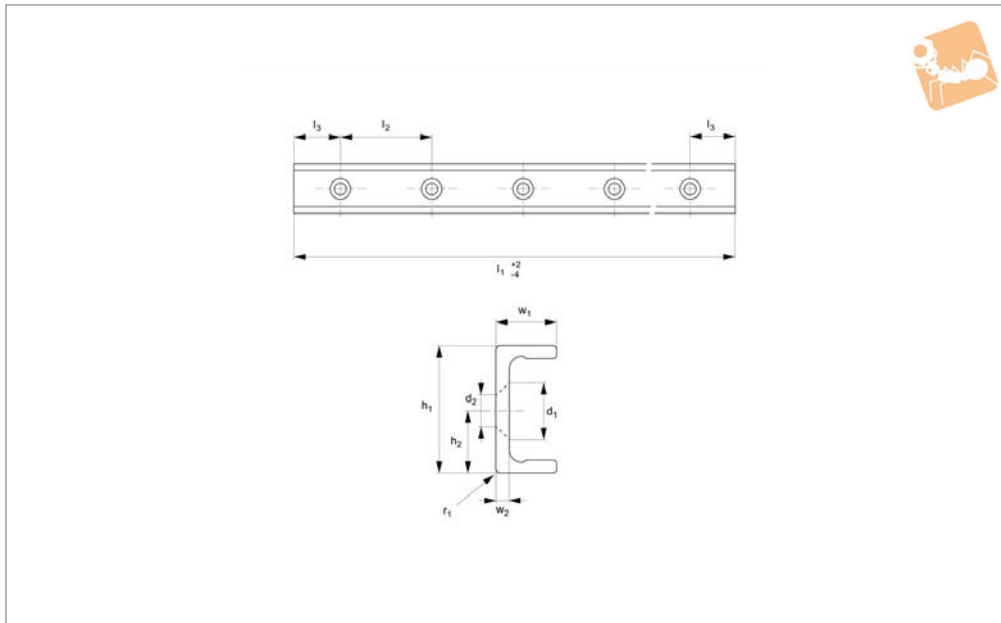


# Medium Duty U Rail

countersunk holes



## Long Linear Rails



### L1928.28U-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: 1,0 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



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
L1928.28U-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

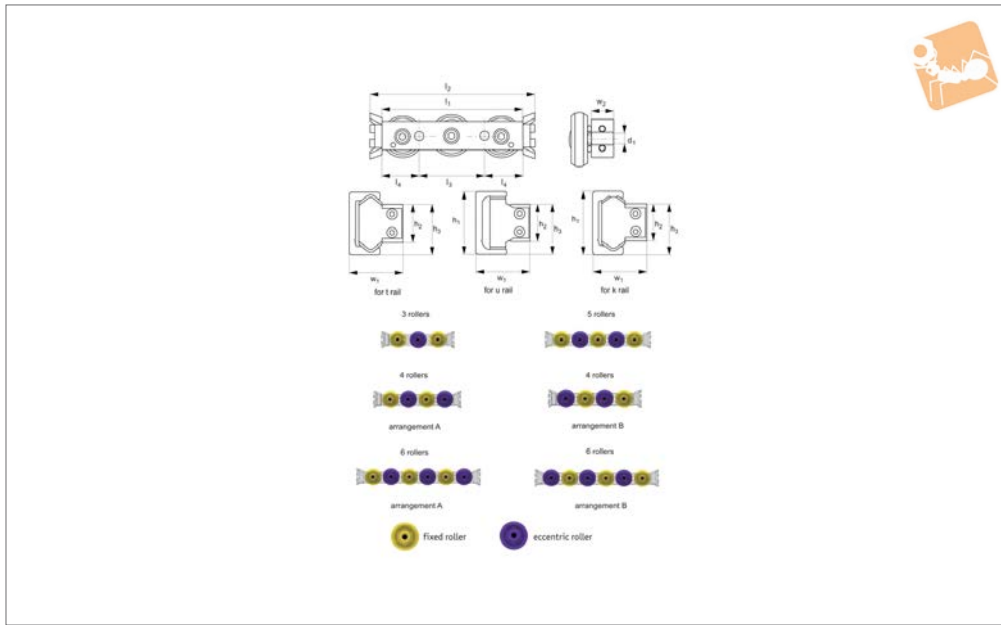


# Medium Duty Sliders, size 35

no side seal, front fixing



Long Linear  
Rails



L1935.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).

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

### Tips

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

### Technical Notes

To be used with compact rail size 35.

Order No.	For rail type	No. of rollers	Seal type	C N	$C_{Oax}$ N	$C_{Orad}$ N	$d_1$	$h_1$ +0.35 -0.10	$h_2$ +0.05 -0.15	$h_3$ +0.10 -0.30	$l_1$	$l_2$	$l_3$	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	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	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	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	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	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	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	0	351 0	M6	35	19.9	27.85	100	120	45	0.27



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>	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	804	122	351	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSUA	U	4	Rubber	804	0	351	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSTB	T	4	Rubber	804	122	351	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-120-2RSUB	U	4	Rubber	804	0	351	M6	35	19.9	27.85	120	140	60	0.33
L1935.CSW35-150-2RST	T	5	Rubber	956	146	418	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-150-2RSU	U	5	Rubber	956	0	418	M6	35	19.9	27.85	150	170	30	0.41
L1935.CSW35-180-2RSTA	T	6	Rubber	956	178	418	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RSUA	U	6	Rubber	956	0	418	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RST	T	6	Rubber	956	178	418	M6	35	19.9	27.85	180	200	60	0.49
L1935.CSW35-180-2RSUB	U	6	Rubber	956	0	418	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>zl</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



## Medium Duty Sliders, size 35

no side seal, front fixing

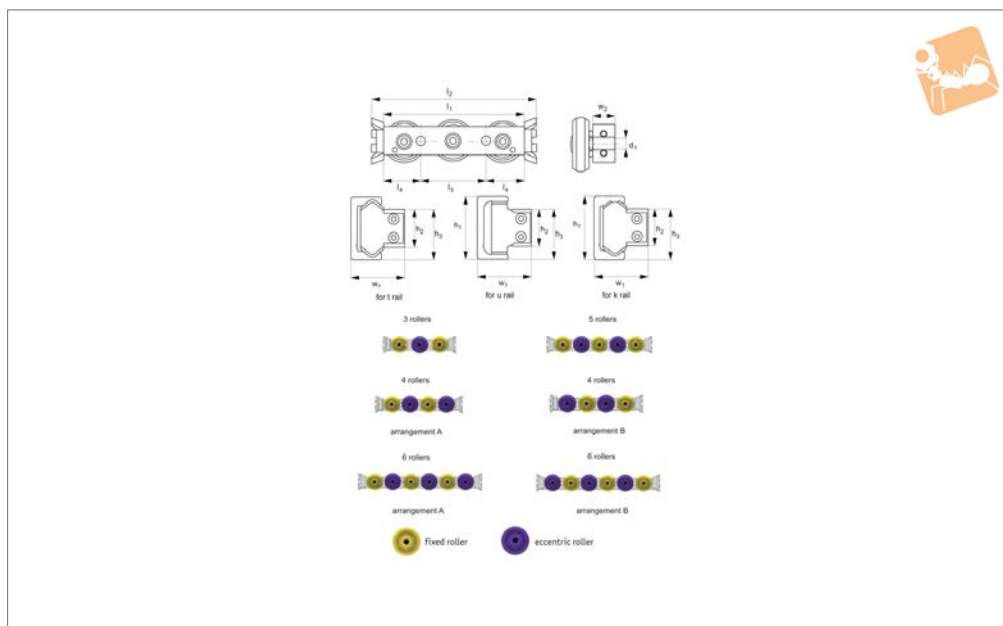


## Long Linear Rails

Order No.	$l_4$	$M_x$ 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



## L1935.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).

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	Weight 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



# Medium Duty Sliders, size 35

no side seal, front fixing, with wiper



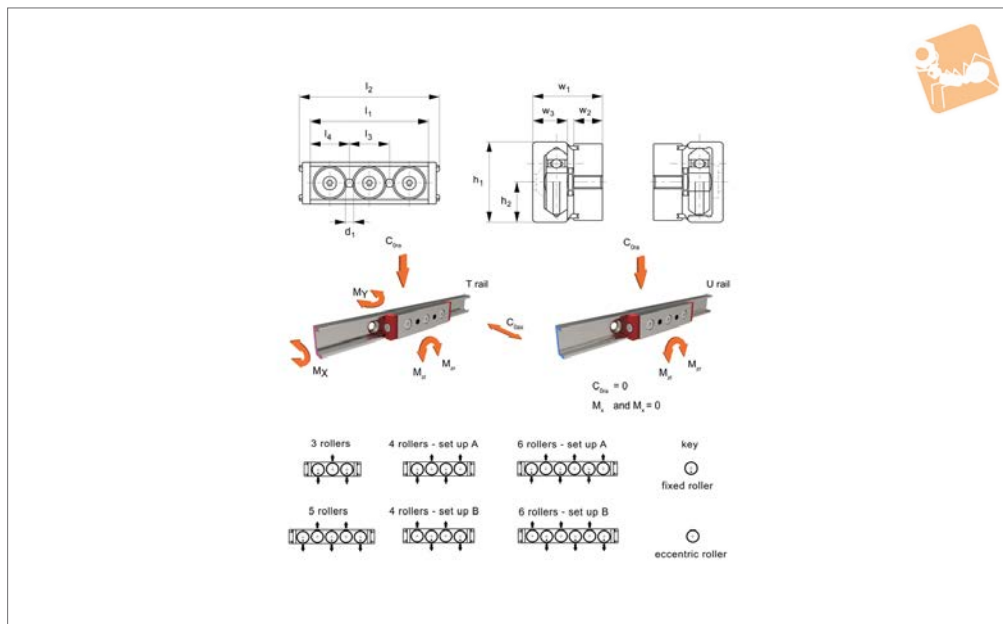
Long Linear  
Rails

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

LONG LINEAR RAILS



## L1935.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 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





## Medium Duty Sliders, size 35

side seal, front fixing, with wiper



## Long Linear Rails

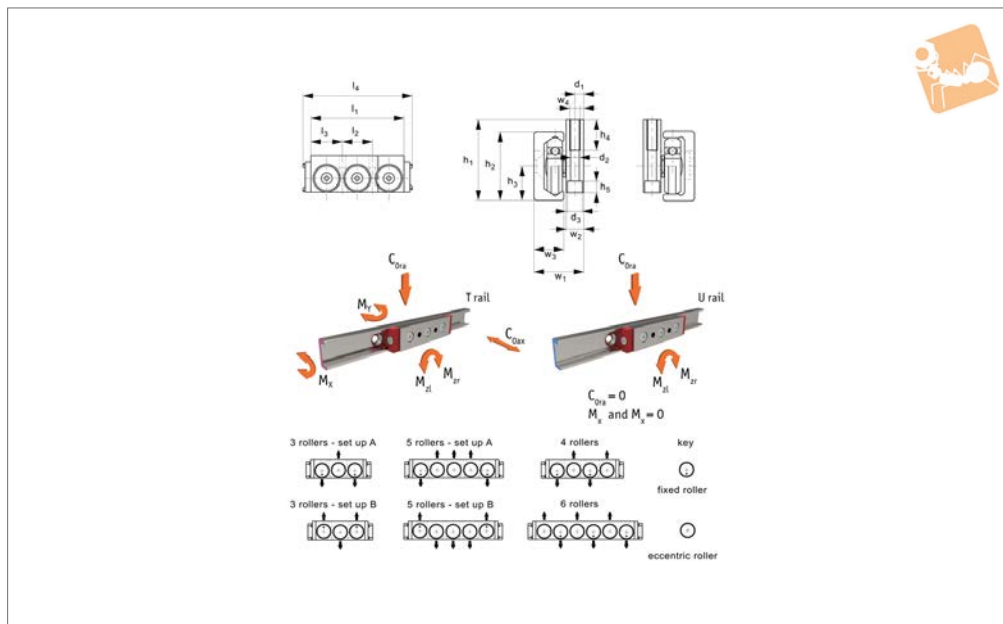
Order No.	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$	$w_3$	Dyn. load C N max.	Static load $C_{0ax}$ N max.	Static load $C_{0rad}$ N max.
<b>L1935.35CL-180-UA</b>	161.2	268.6	30	16.5	12	9756	0	4260
<b>L1935.35CL-180-TB</b>	268.6	161.2	30	16.5	12	9756	1810	4260
<b>L1935.35CL-180-UB</b>	268.6	161.2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



LONG LINEAR RAILS



## L1935.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 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>ztl</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



## Medium Duty Sliders, size 35

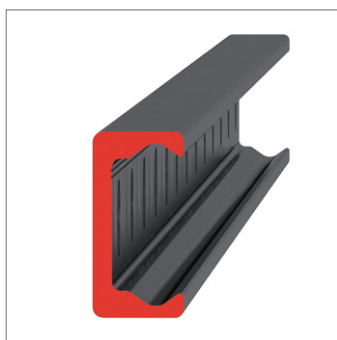
no side seal, side fixing, with wiper



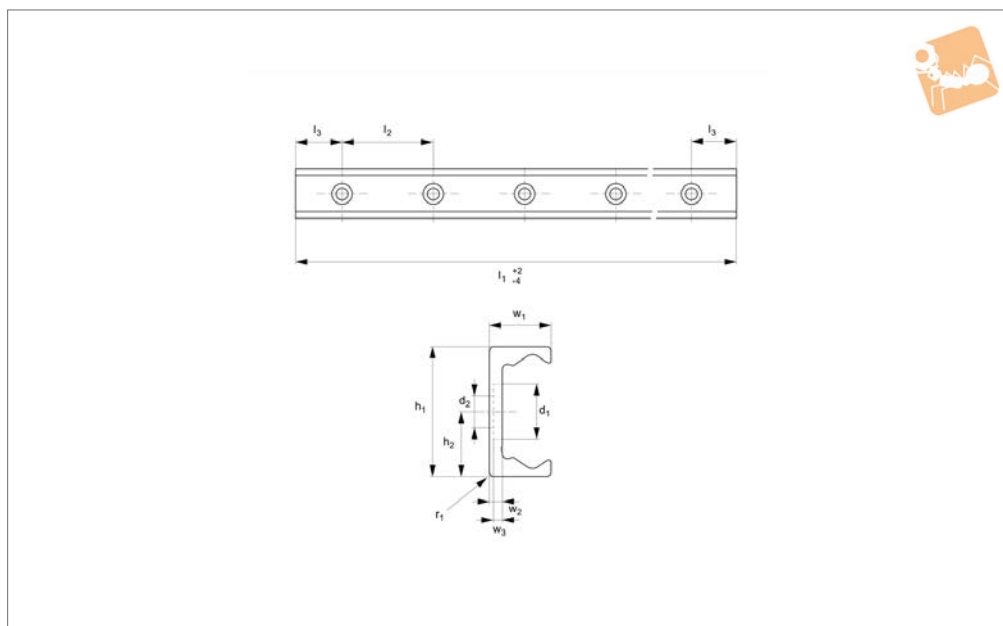
Long Linear  
Rails

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 $C_{0 ax}$ N max.	Static load $C_{0 rad}$ 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

LONG LINEAR RAILS



## L1935.TLC35



### 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: 1,7 Kg/m.

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

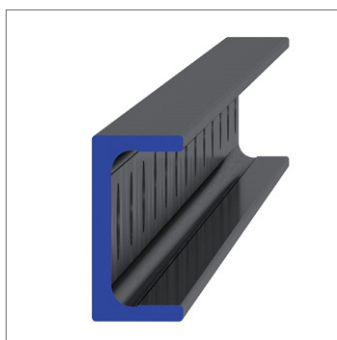


## Medium Duty T Rail counterbored holes

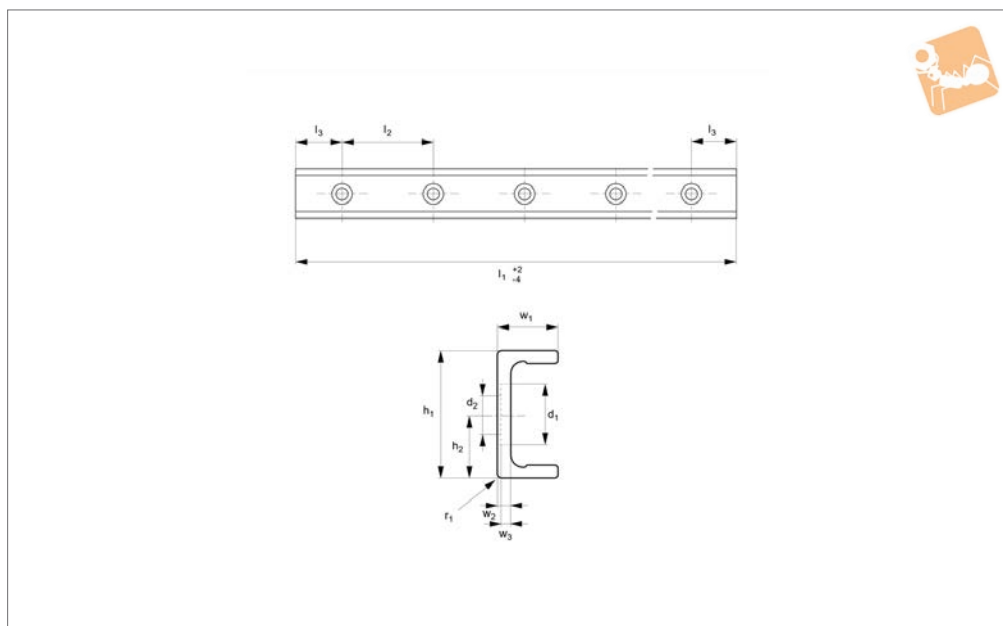


## Long Linear Rails

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>	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



## L1935.ULC35



### 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

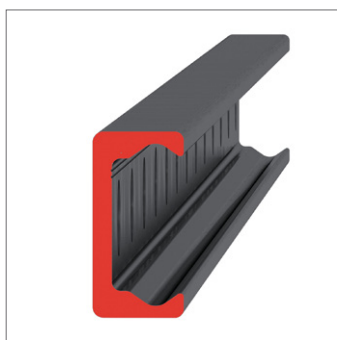


## Medium Duty U Rail counterbored holes

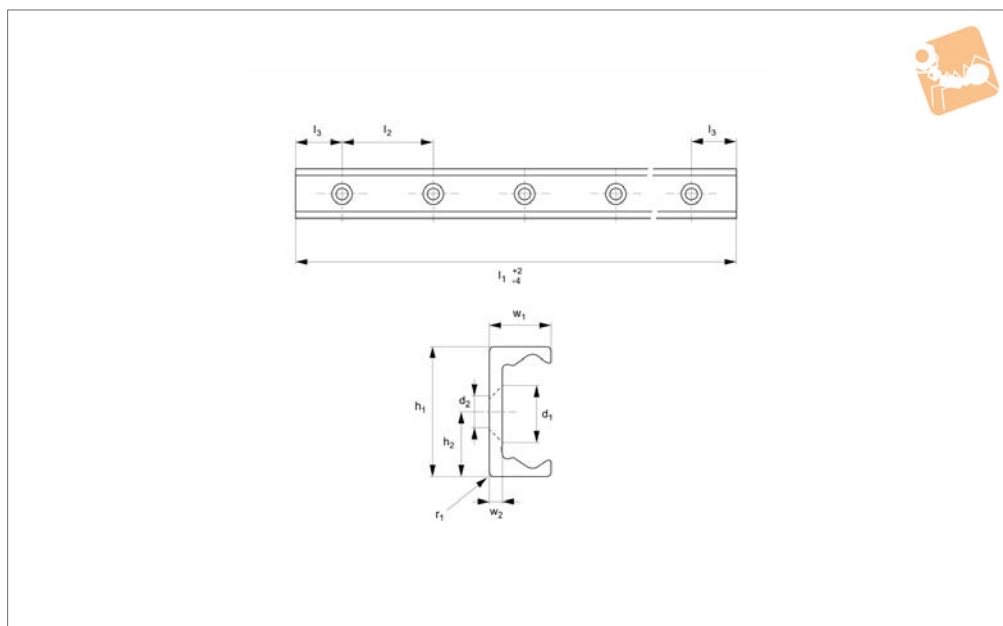


## Long Linear Rails

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>
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



## L1935.TLV35



### 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



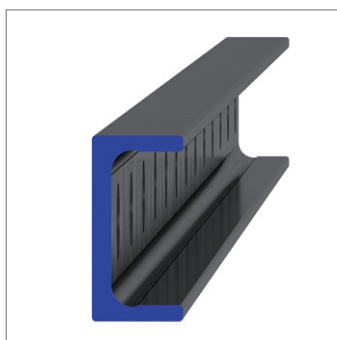


## Medium Duty T Rail countersunk holes

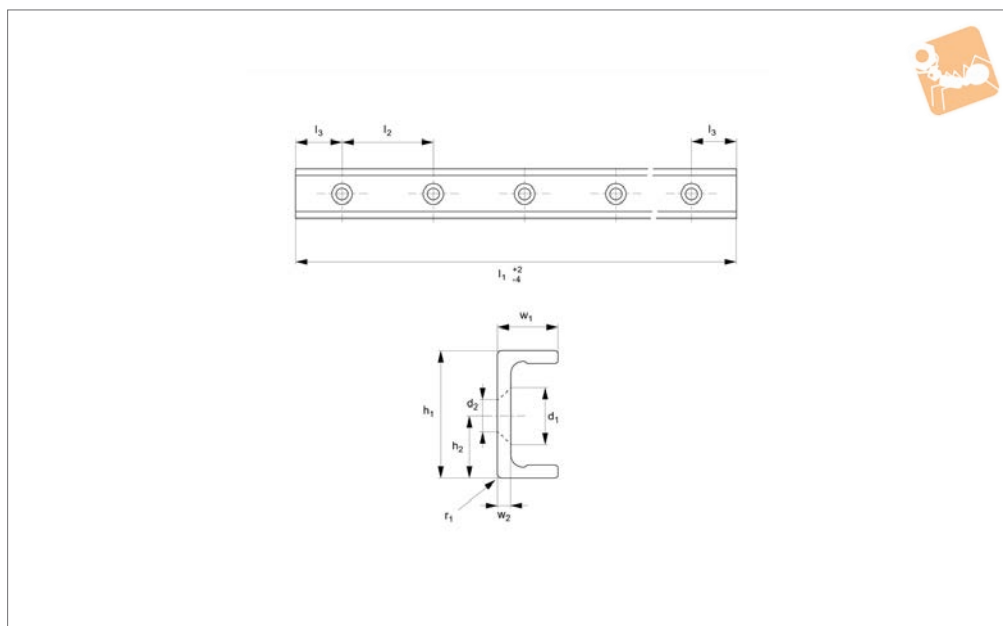


## Long Linear Rails

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>
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



## L1935.ULV35



### 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

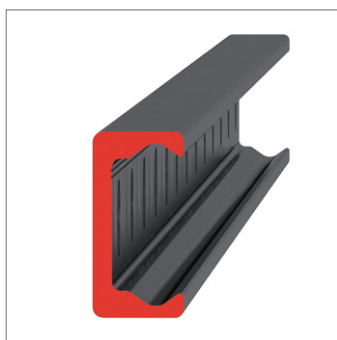


## Medium Duty U Rail countersunk holes

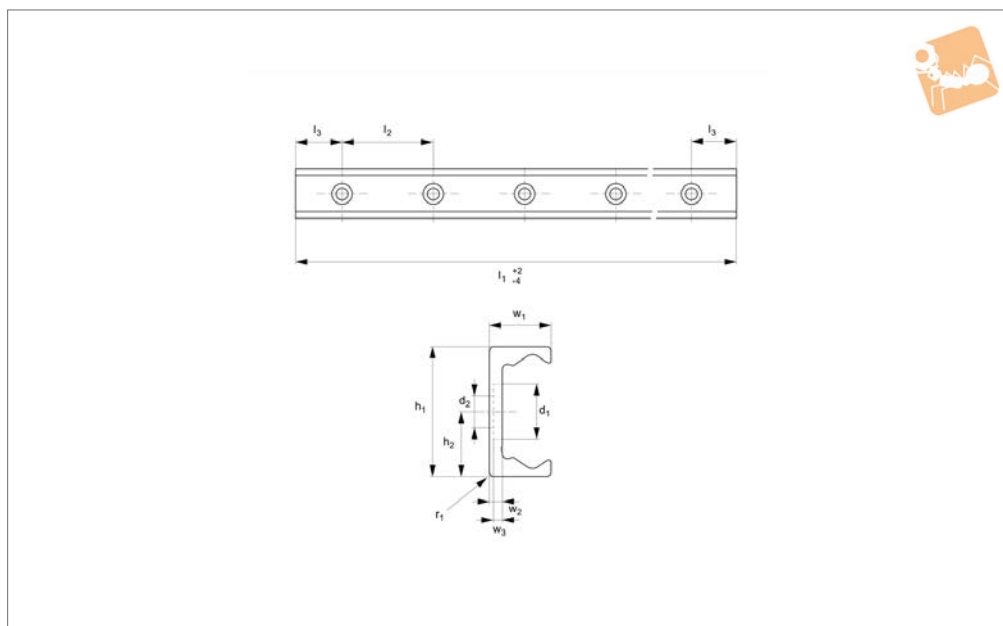


## Long Linear Rails

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



## L1935.35T-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: 1,7 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



# Medium Duty T Rail

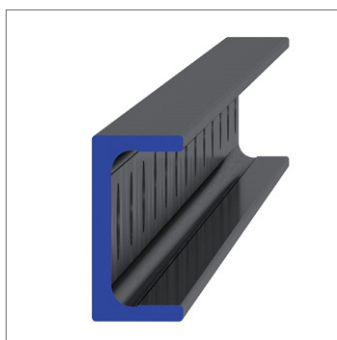
counterbored holes



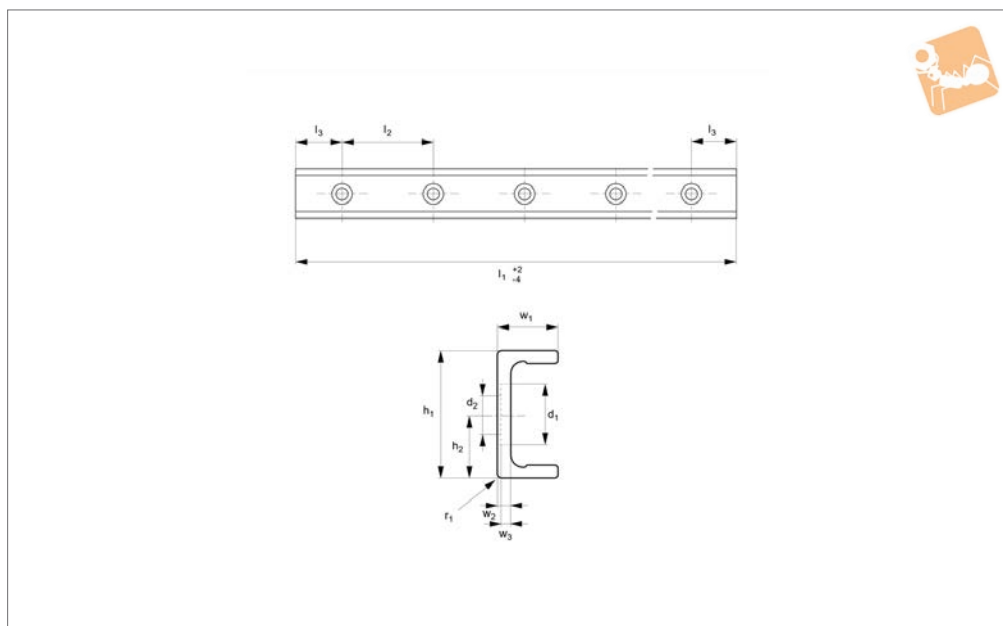
## Long Linear Rails

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>	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

LONG LINEAR RAILS



## L1935.35U-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: 1,7 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



# Medium Duty U Rail

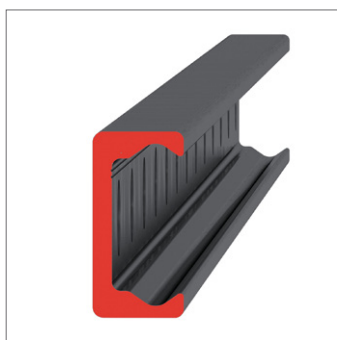
counterbored holes



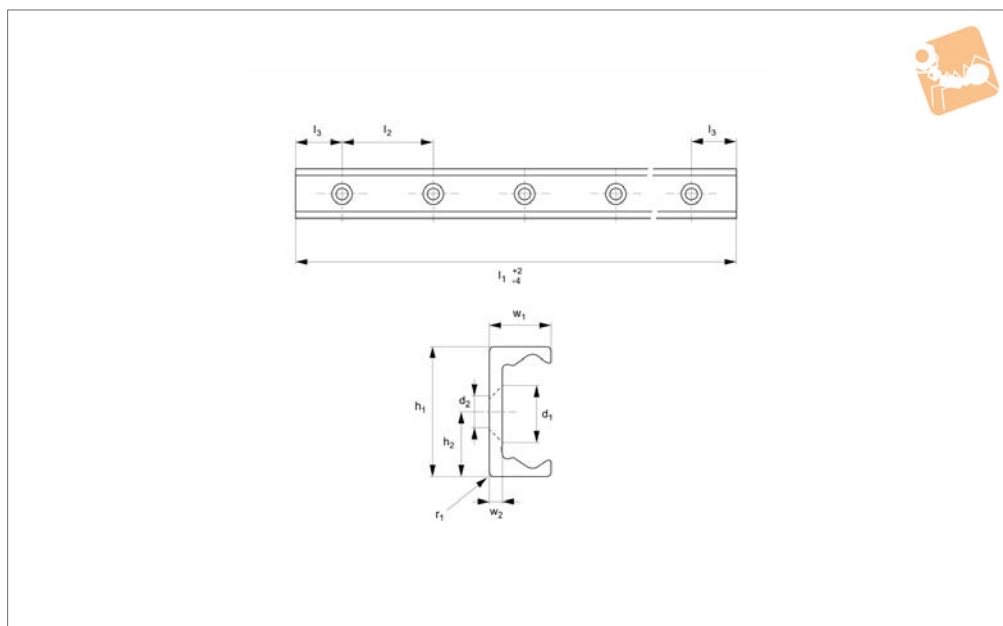
## Long Linear Rails

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>	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

LONG LINEAR RAILS



## L1935.35T-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: 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>
L1935.35T-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





# Medium Duty T Rail

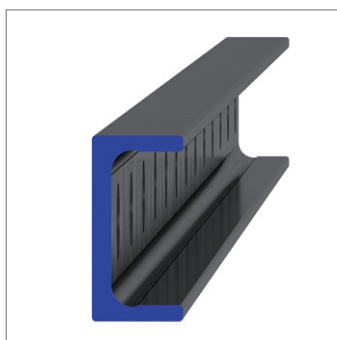
countersunk holes



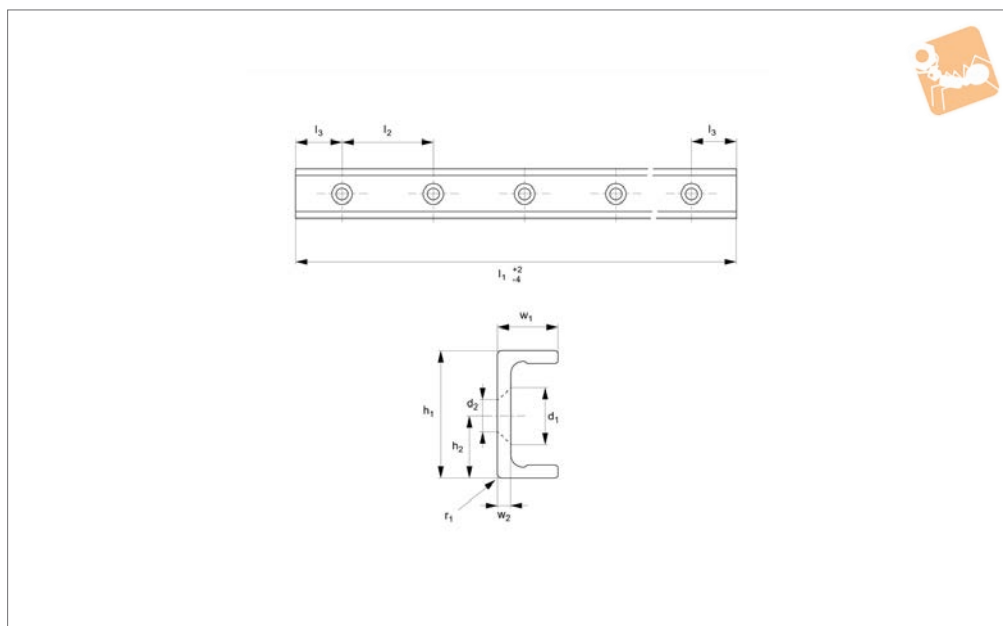
## Long Linear Rails

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>
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

LONG LINEAR RAILS



## L1935.35U-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: 1,7 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



## Medium Duty U Rail countersunk holes

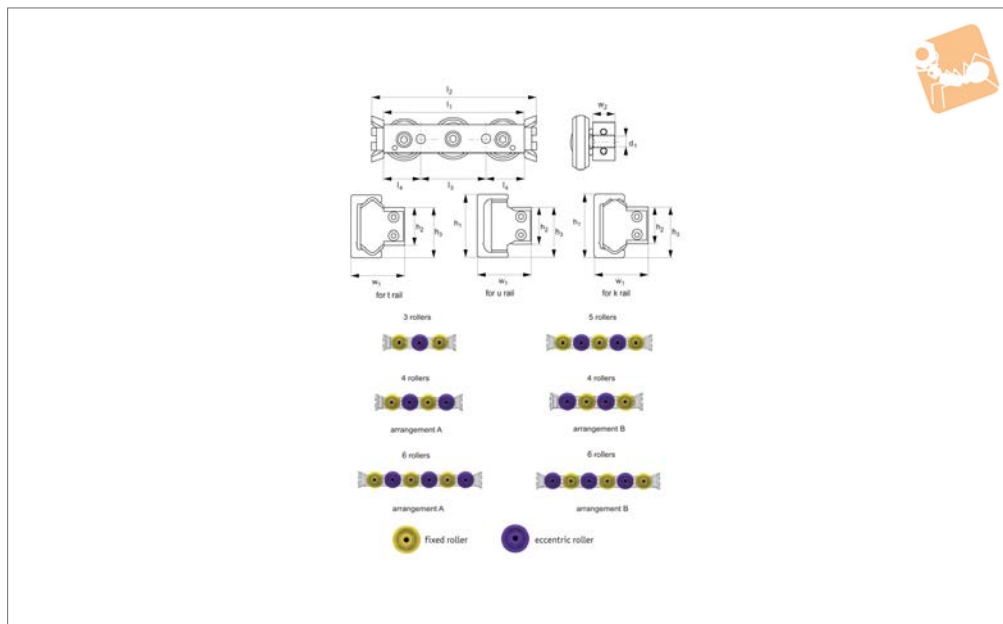


## Long Linear Rails

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>
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



## L1943.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) 0.005. 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	313.5	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



# Heavy Duty Sliders - Size 43

no side seal - front fixing - with wiper



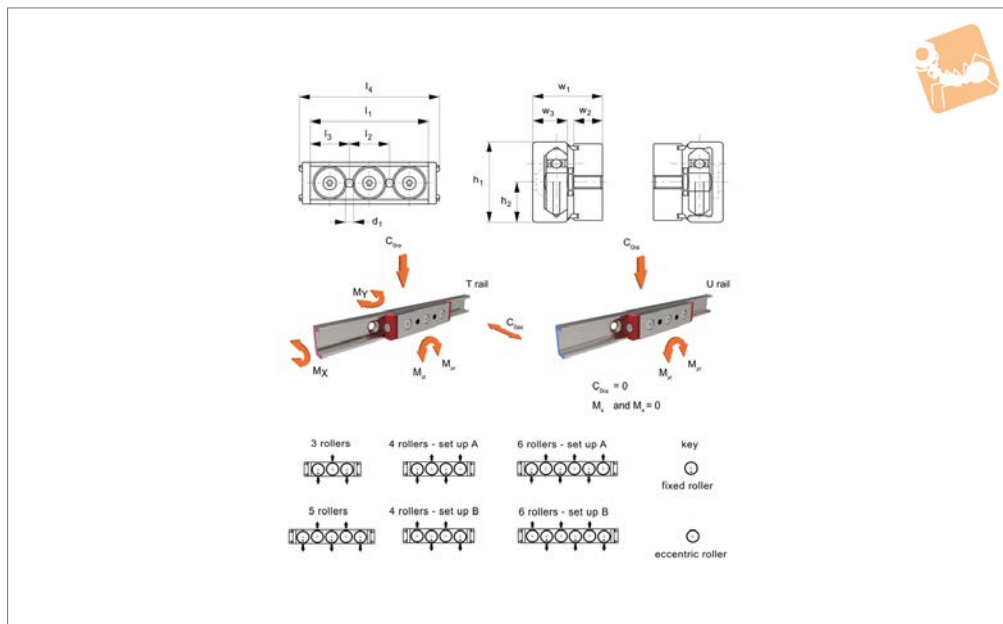
Long Linear  
Rails

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.
L1943.43CS-190-2RST	35	43.6	108.6	313.5	313.5	37	14.5	14675	2215	-	6540
L1943.43CS-190-2RSU	35	0	0	313.5	313.5	37	14.5	14675	0	-	6540
L1943.43CS-230-2RSTA	35	52	135.8	313.5	522.5	37	14.5	14675	2645	A	6540
L1943.43CS-230-2RSUA	35	0	0	313.5	522.5	37	14.5	14675	0	A	6540
L1943.43CS-230-2RSTB	35	52	135.8	522.5	313.5	37	14.5	14675	2645	B	6540
L1943.43CS-230-2RSUB	35	0	0	522.5	313.5	37	14.5	14675	0	B	6540

LONG LINEAR RAILS



## L1943.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 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



## Heavy Duty Sliders - Size 43

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 $C_{0\ ax.}$ N max.	Set up type	Static load $C_{0\ rad.}$ 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

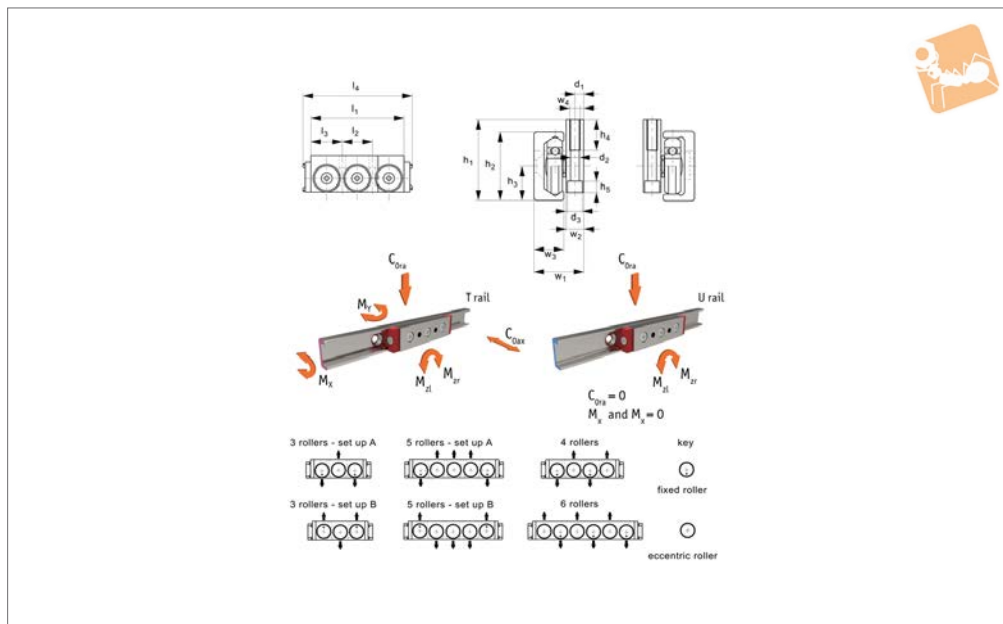
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1943.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 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 N 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





# Heavy Duty Sliders, size 43

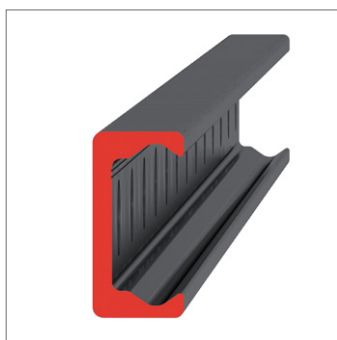
no side seal, side fixing, with wiper



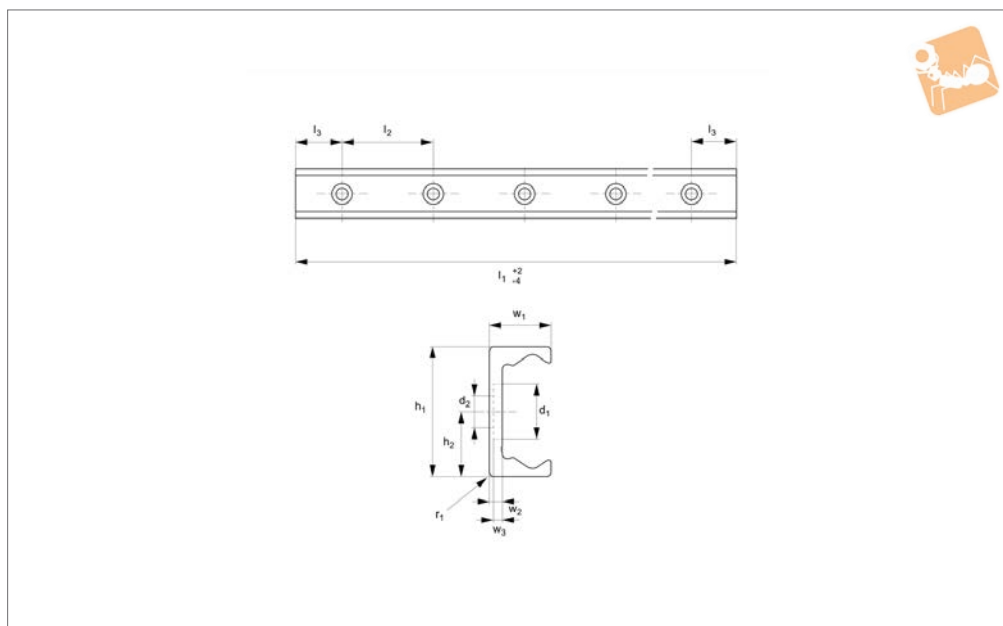
Long Linear  
Rails

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.
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

LONG LINEAR RAILS



## L1943.43T-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: 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

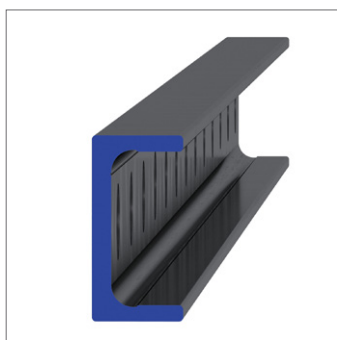


## Heavy Duty T Rail counterbored holes

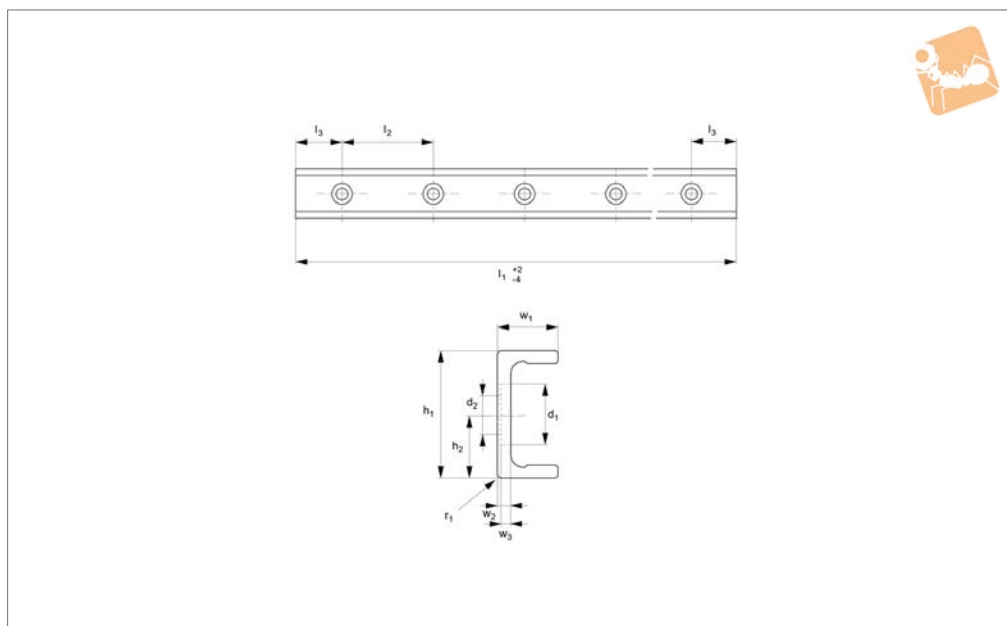


## Long Linear Rails

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>
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



## L1943.43U-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: 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



# Heavy Duty U Rail

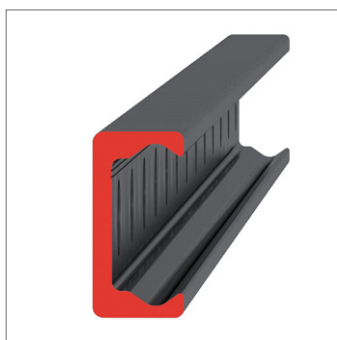
counterbored holes



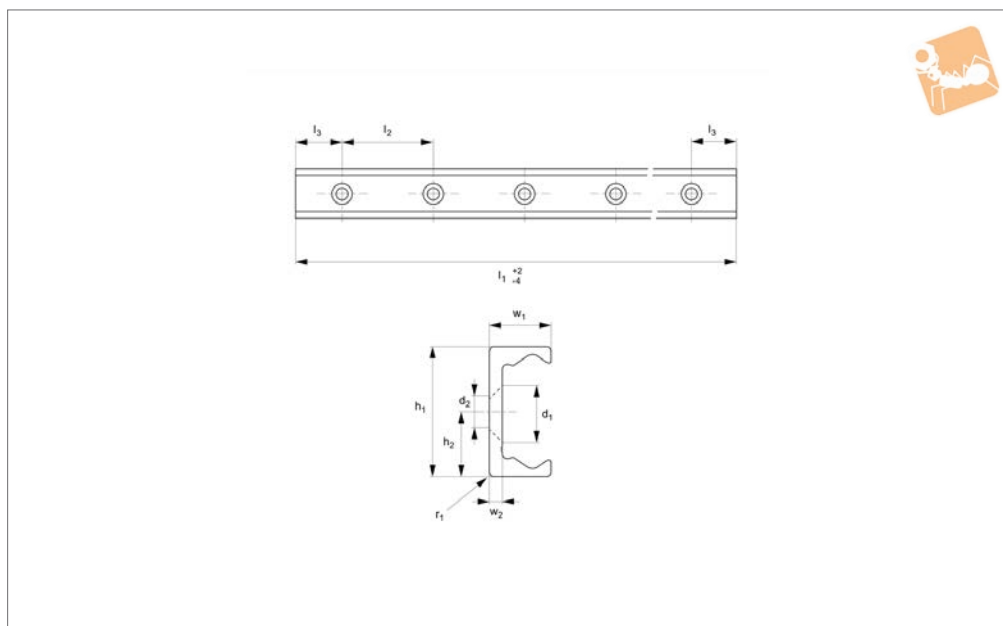
## Long Linear Rails

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>
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

LONG LINEAR RAILS



## L1943.43T-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: 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

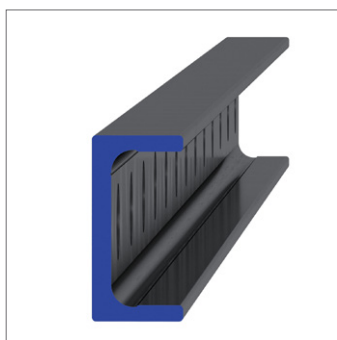


## Heavy Duty T Rail countersunk holes

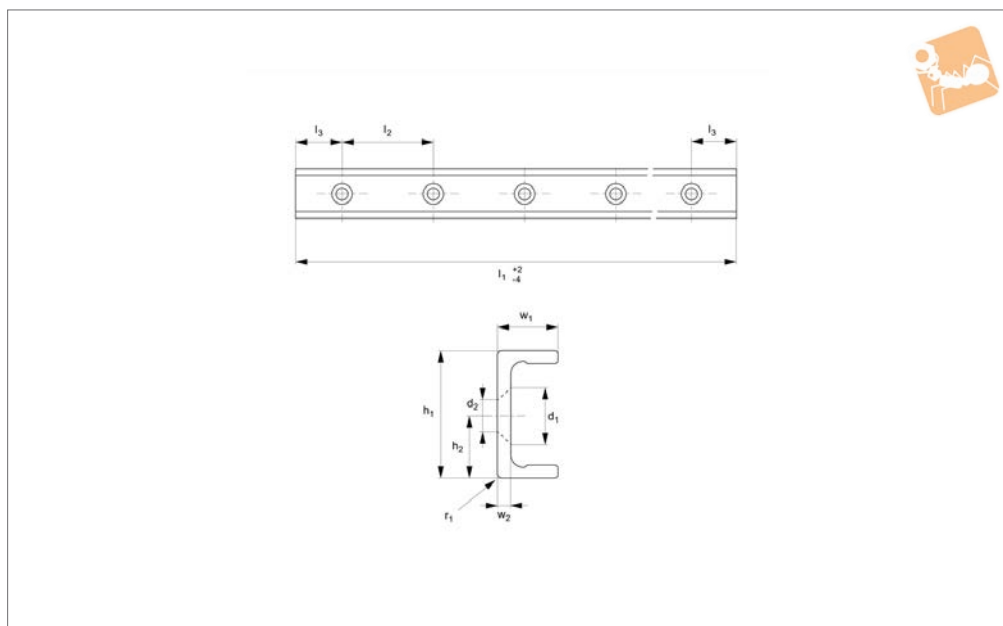


## Long Linear Rails

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 <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



## L1943.43U-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: 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



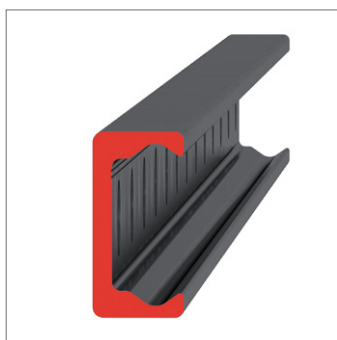


## Heavy Duty U Rail countersunk holes

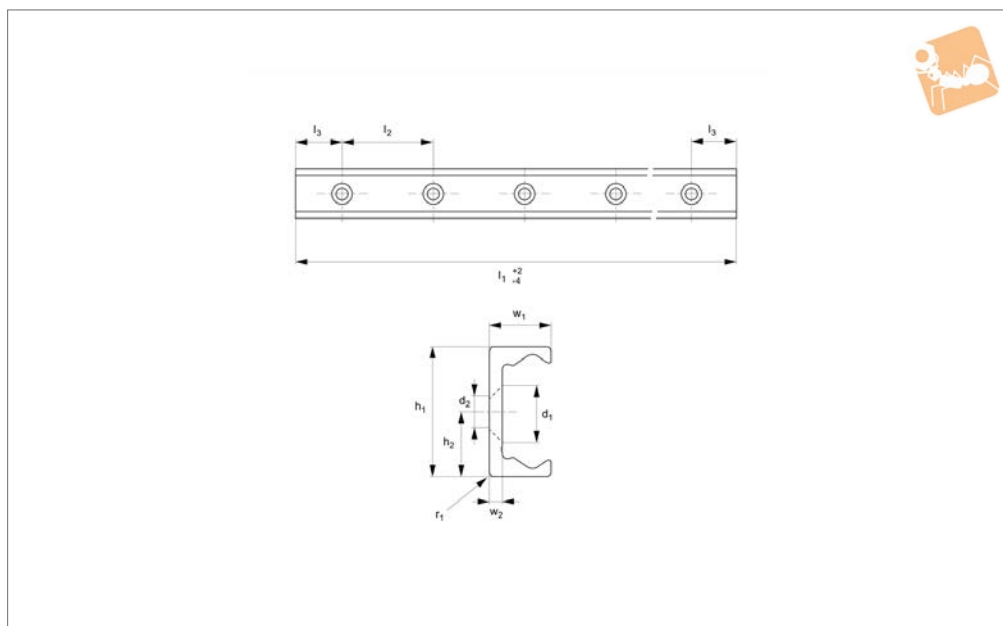


## Long Linear Rails

Order No.	$h_1$	$h_2$	$l_1$	$l_2$	$l_3$	$r_1$	$w_1$	$w_2$	d for screws
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



## L1943.TLV43



### 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

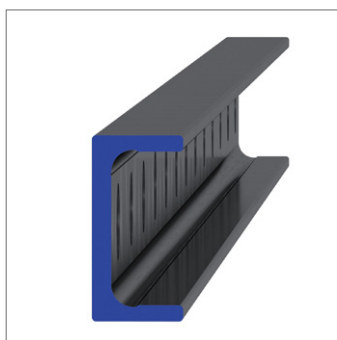


## Heavy Duty T Rail countersunk holes

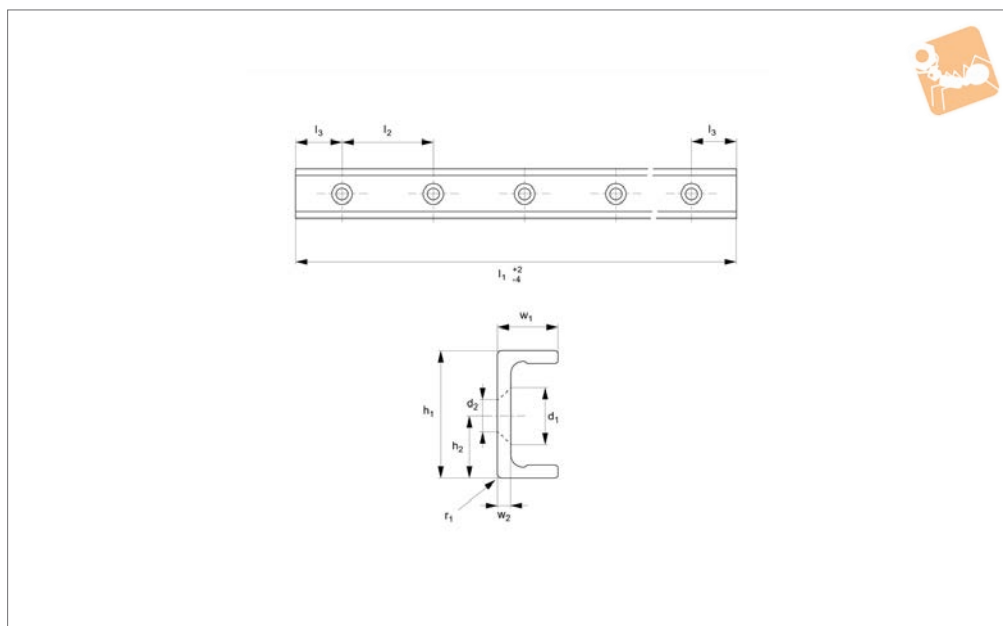


## Long Linear Rails

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.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



## L1943.ULV43



### 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

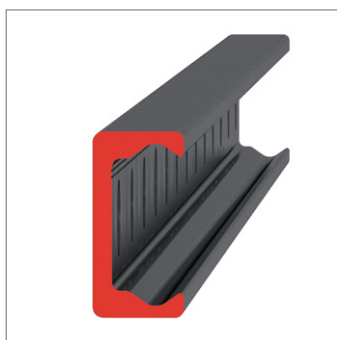


## Heavy Duty U Rail countersunk holes

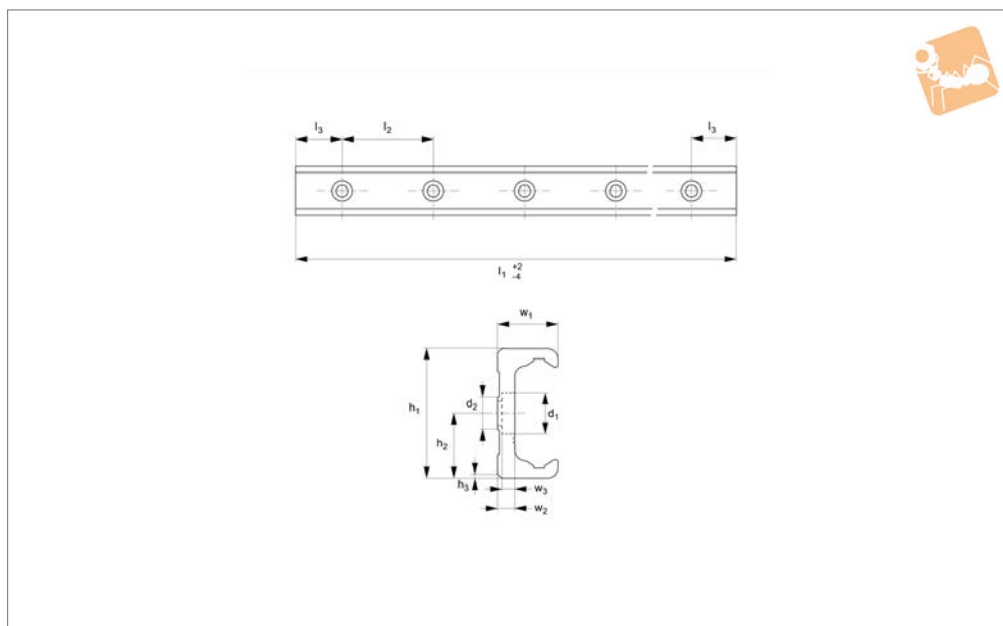


## Long Linear Rails

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



### L1963.TLC63



#### 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



# Very Heavy Duty T Rail

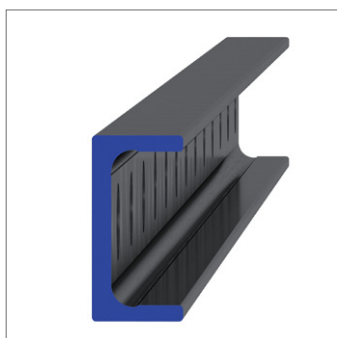
counterbored holes



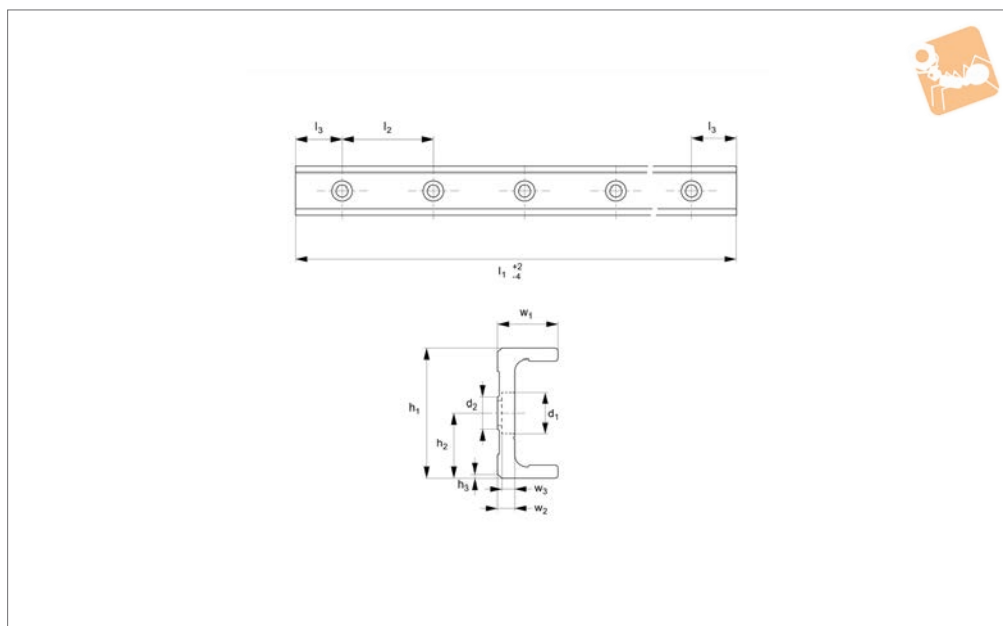
Long Linear  
Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	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

LONG LINEAR RAILS



## L1963.ULC63



### 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



# Very Heavy Duty U Rail

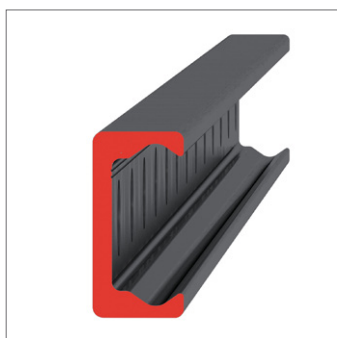
counterbored holes

## Long Linear Rails

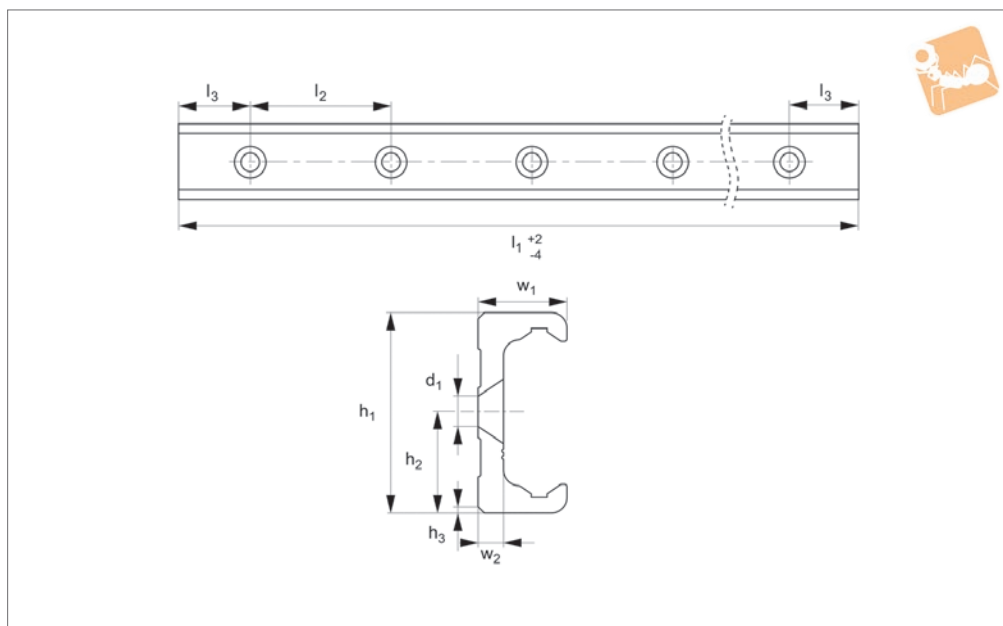


Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>
L1963.ULC63-2880	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.ULC63-2960	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
L1963.ULC63-3040	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.ULC63-3120	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.ULC63-3200	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.ULC63-3280	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.ULC63-3360	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.ULC63-3440	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.ULC63-3520	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.ULC63-3600	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.ULC63-3680	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.ULC63-3760	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.ULC63-3840	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.ULC63-3920	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.ULC63-4000	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.ULC63-4080	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

LONG LINEAR RAILS



## L1963.TLV63



### 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

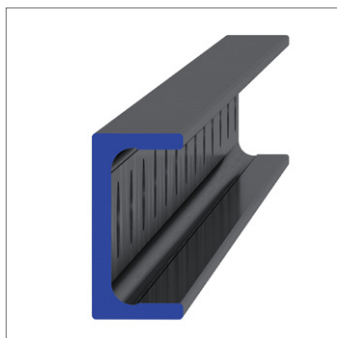


## Very Heavy Duty T Rail countersunk holes

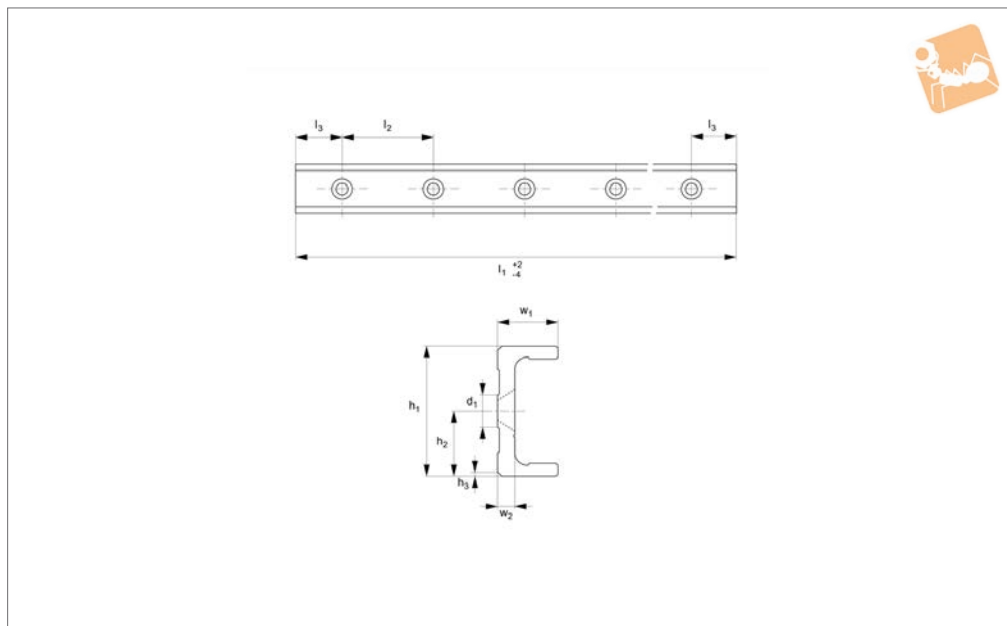


## Long Linear Rails

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.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



## L1963.ULV63



### 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

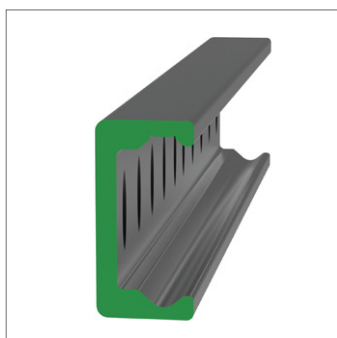


## Very Heavy Duty U Rail countersunk holes

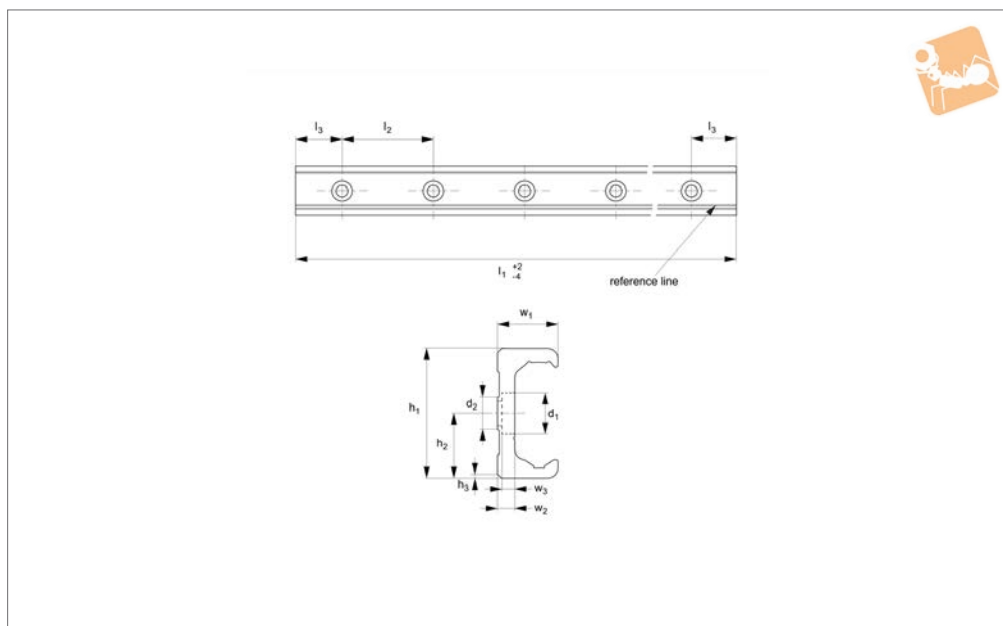


## Long Linear Rails

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



## L1963.KLC63



### 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



# Very Heavy Duty K 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>	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

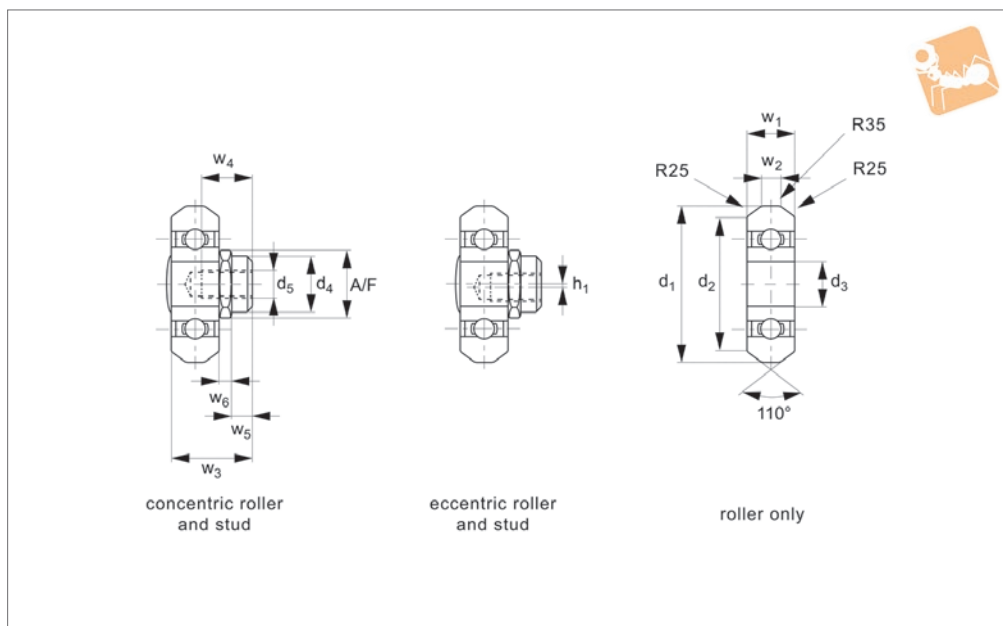
LONG LINEAR RAILS



LONG LINEAR RAILS



**L1900.CB**



**Material**

Steel (100Cr6) rollers with 2RS seals (splashproof). 2Z seals (for dust protection) available on request.

Lubricated for life.

**Technical Notes**

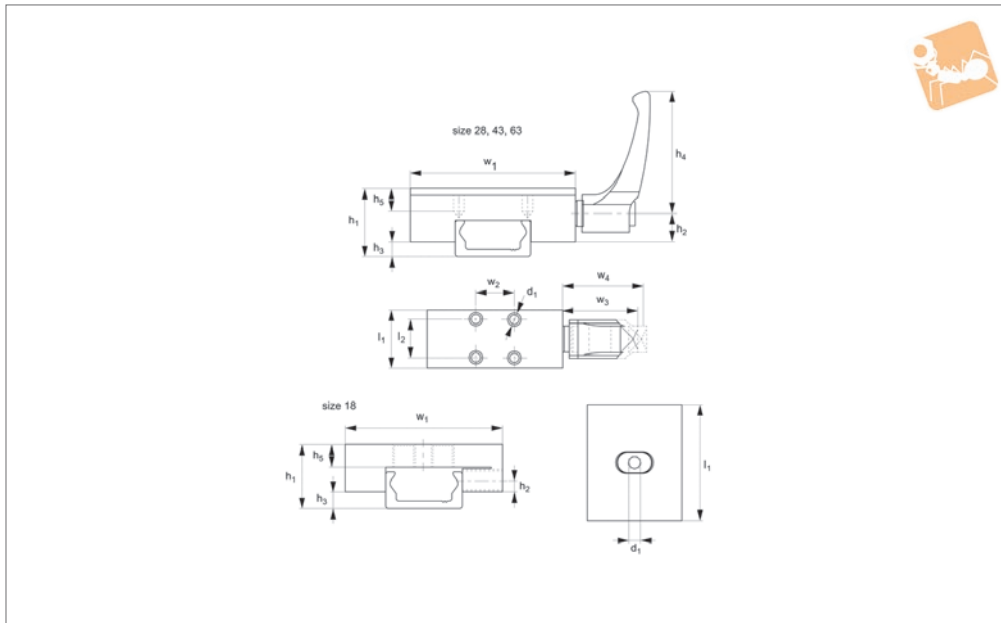
To choose the correct replacement roller

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**

LONG LINEAR RAILS

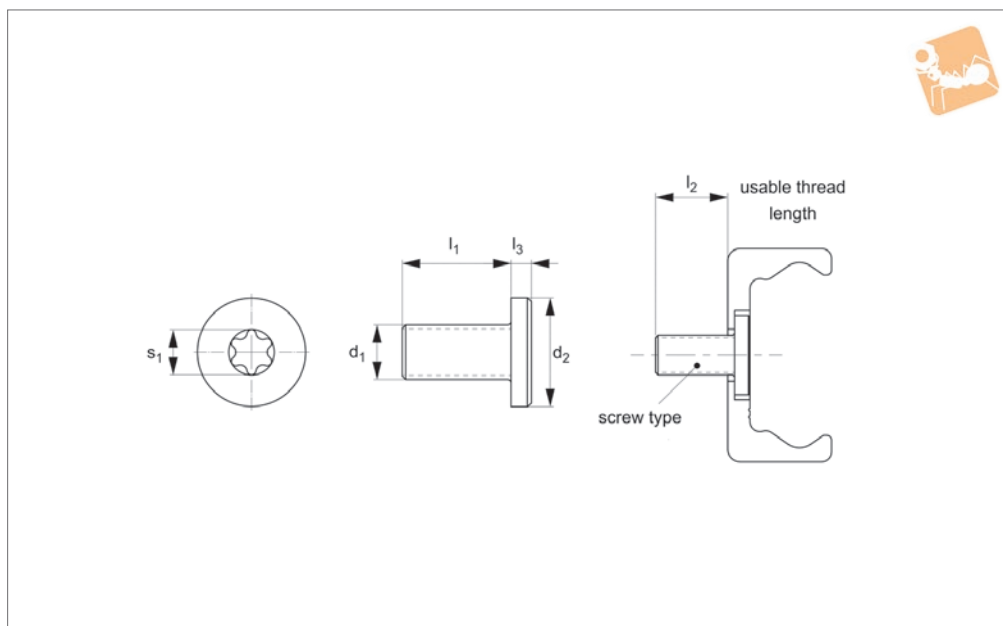
**Important Notes**

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
L1918.CL18	18	M5	15	3.2	3	-	6	43	-	35	-	-	-	150	0.5
L1928.CL28	28	M5	24	17	5	64	6	24	15	68	33.5	38.5	41.5	1200	7
L1943.CL43	43	M8	37	28.5	8	78	12	39	22	105	41.5	46.5	50.5	2000	15
L1963.CL63	63	M8	50.5	35	9.5	80	12	44	26	138	41.5	54.5	59.5	2000	15



## L1900.S



### 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

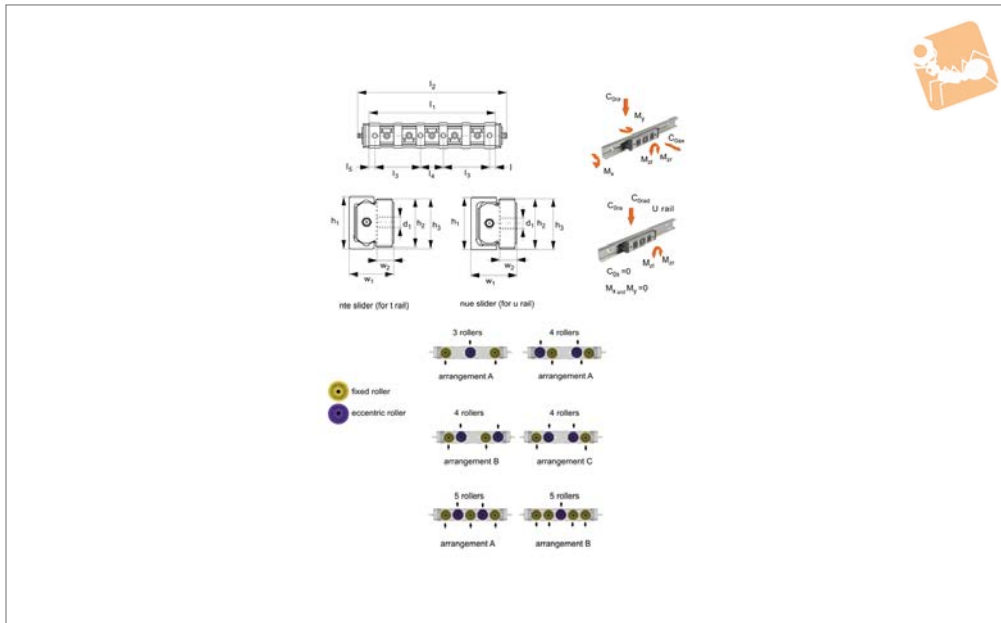


# Medium Duty Sliders, size 28

cast body, long



Long Linear  
Rails



**L1928.NL**

LONG LINEAR RAILS

### Material

Die cast aluminium body, chemically nickel plated.  
Steel rollers (100Cr6) with metal seals (Z2).  
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



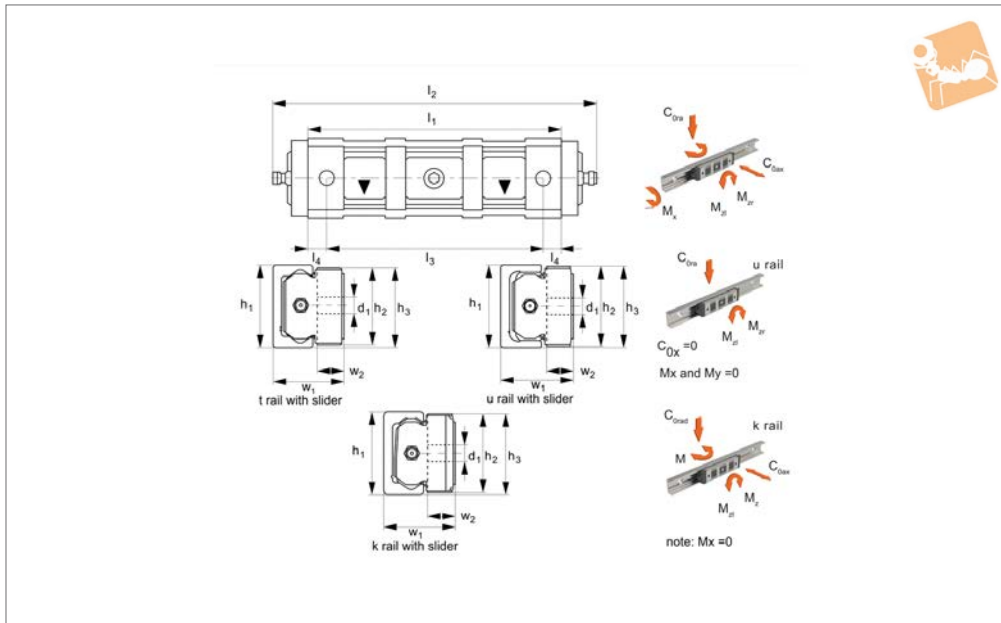
Order No.	$l_s$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ +0.25 -0.10	$w_2$
L1928.NTE28L-4B	5	11.5	29	108.5	54.4	24	9
L1928.NTE28L-4C	5	11.5	29	81.7	81.7	24	9
L1928.NTE28L-5A	5	11.5	29	54.4	54.4	24	9
L1928.NTE28L-5B	5	6.2	29	54.4	54.4	24	9
L1928.NUE28L-3A	5	0	0	54.4	54.4	24	9
L1928.NUE28L-4A	5	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



# Heavy Duty Sliders, size 43 standard



Long Linear  
Rails



**L1943.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 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

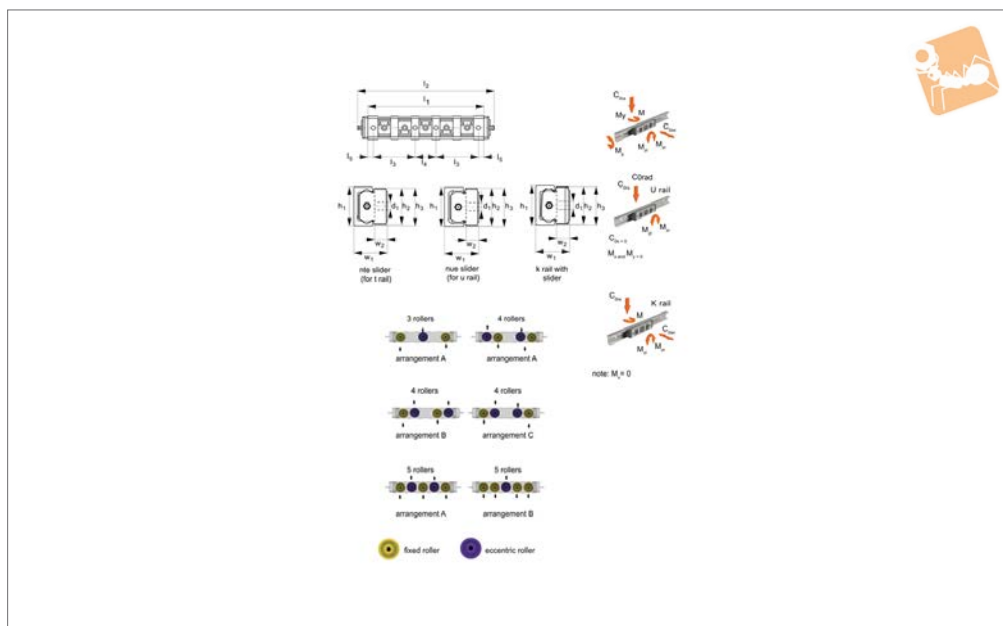
Order No.	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	w <sub>1</sub> +0.25 -0.10	w <sub>2</sub>
L1943.NTE43	10	23.6	60	104.5	37	13.7
L1943.NUE43	10	0	0	104.5	37	13.7
L1943.NKE43	10	0	50.4	96.9	37	13.7



LONG LINEAR RAILS



## L1943.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 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>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.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



# Heavy Duty Sliders - Size 43

standard - long



Long Linear  
Rails

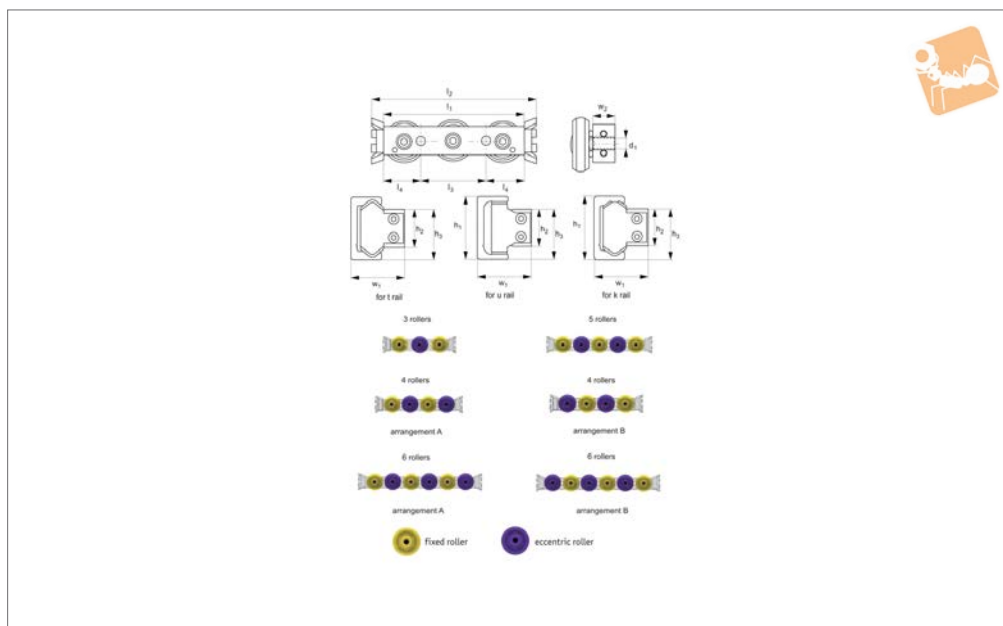
Order No.	For rail type	No. of rollers	C N	C <sub>Oax</sub> N	C <sub>Orad</sub> N	d <sub>1</sub>	h <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0 -0.30	h <sub>3</sub> +0.20 -0.30	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	Weight kg
L1943.NKE43L-4C	K	4	1228 0	132 0	510 0	M 8	43	41	42.7	208	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>zl</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

LONG LINEAR RAILS



## L1943.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) 0.005.  
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	$C_{0ax}$ N	$C_{0rad}$ N	$d_1$	$+0.35 -0.10$	$+0 -0.15$	$+0.10 -0.30$	$l_1$	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





# Heavy Duty Sliders - Size 43

no side seal - front fixing



Long Linear  
Rails

Order No.	For rail type	Seal type	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 -0.15	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

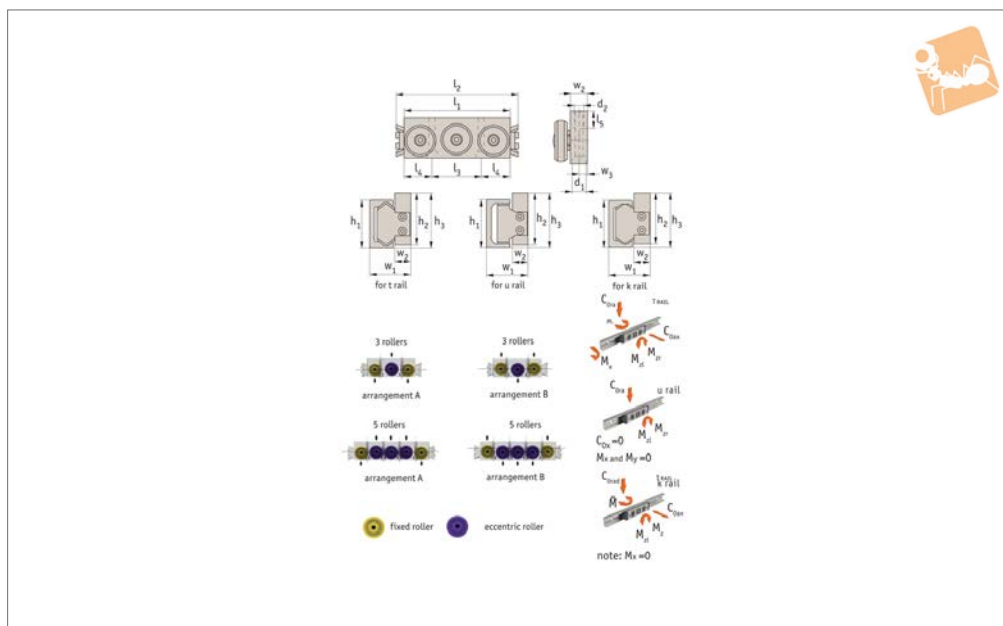
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1943.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) 0.005.  
Quiet and fast (up to 7 m/s).

### Technical Notes

To be used with compact rail size 43.

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>ztl</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



# Heavy Duty Sliders - Size 43

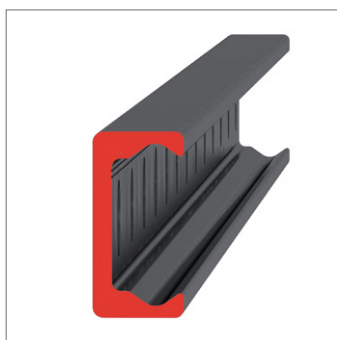
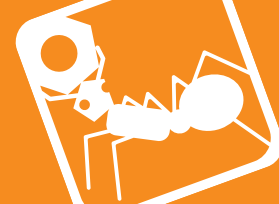
no side seal - top fixing



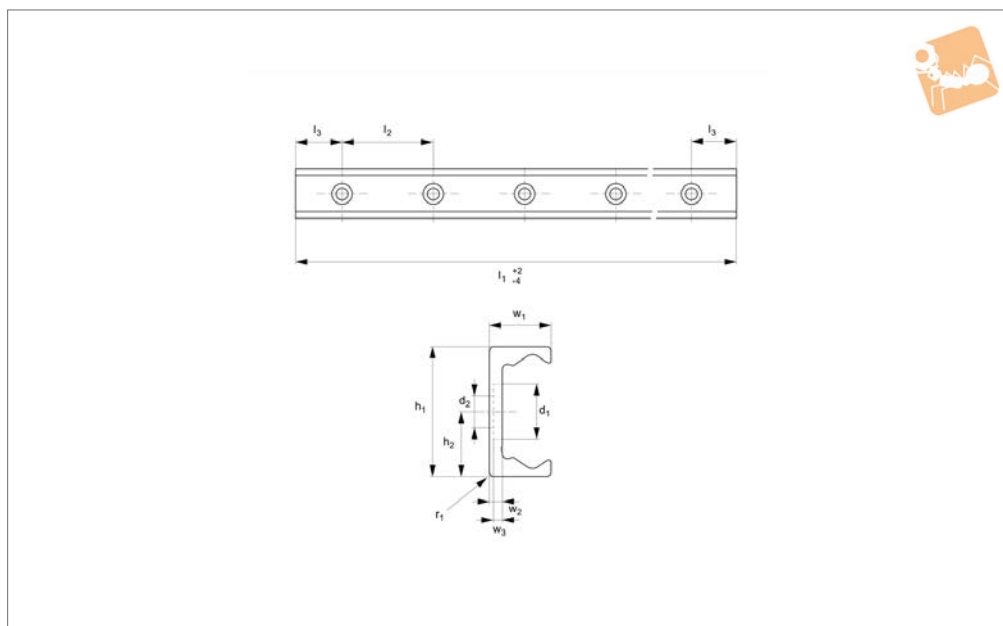
Long Linear  
Rails

Order No.	$h_3$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.20$	$w_2$	$w_3$	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

LONG LINEAR RAILS



## L1943.TLC43



### 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



# Heavy Duty T Rail

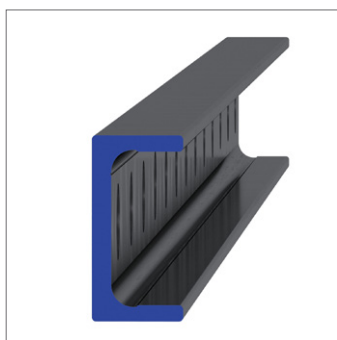
counterbored holes



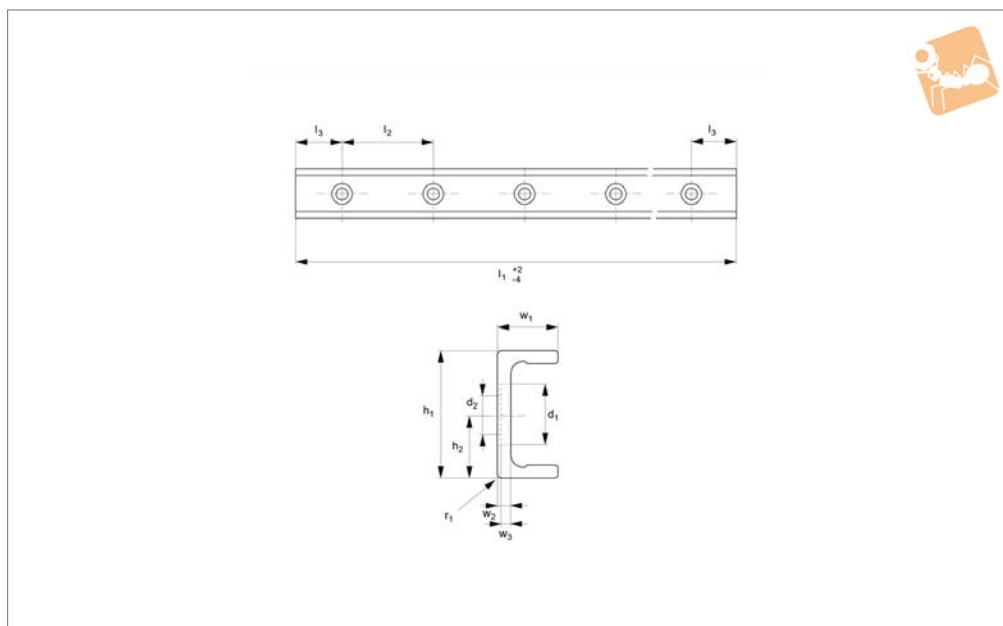
## Long Linear Rails

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>
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

LONG LINEAR RAILS



## L1943.ULC43



### 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



# Heavy Duty U Rail

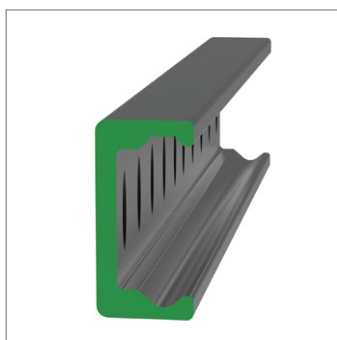
counterbored holes



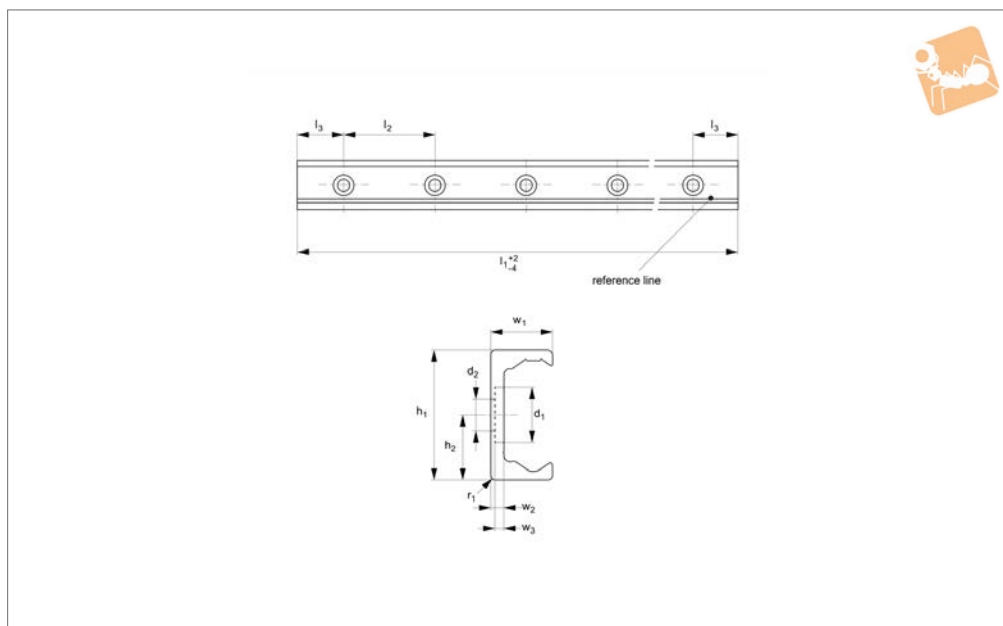
## Long Linear Rails

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	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

LONG LINEAR RAILS



## L1943.KLC43



### 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



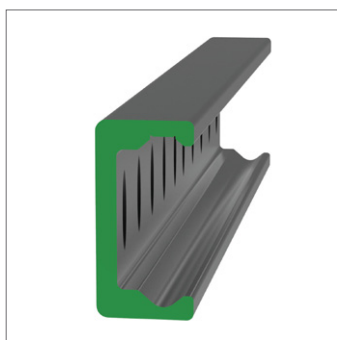


## Heavy Duty K Rail counterbored holes

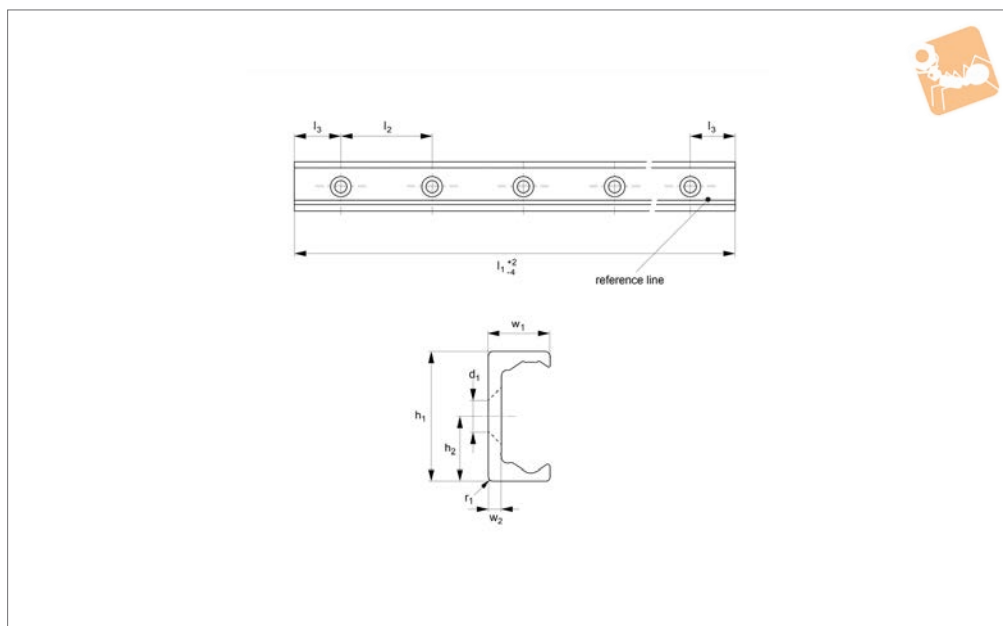


## Long Linear Rails

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	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



## L1943.KLV43



### 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



# Heavy Duty K Rail

countersunk holes



## 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.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

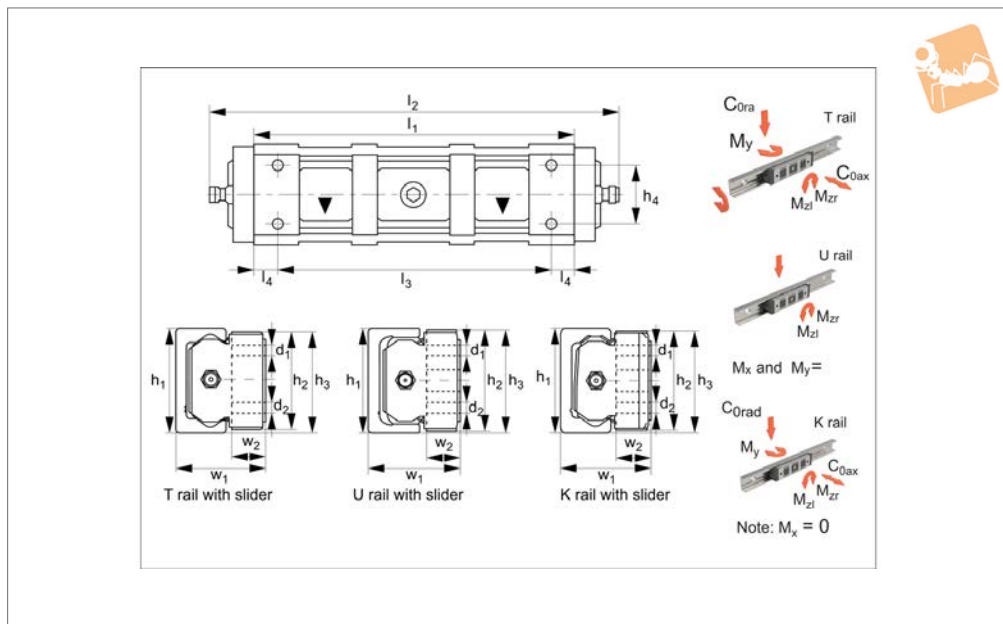
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1963.N



### 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 <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> +0.10 -0.20	h <sub>3</sub> +0 -0.50	h <sub>4</sub>	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

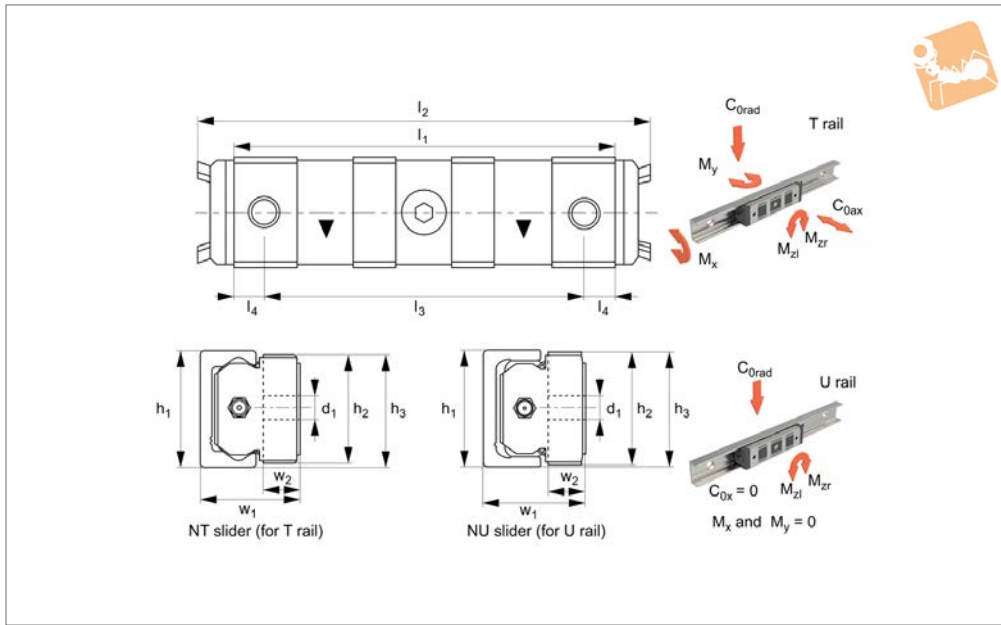
Order No.	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> Nm	w <sub>1</sub> +0.25 -0.10	w <sub>2</sub>
L1963.NTE63	188	225	168	10	125	271	367	50.5	20.2
L1963.NUE63	188	225	168	10	0	0	367	50.5	20.2
L1963.NKE63	188	225	168	10	0	235	335	50.5	20.2



# Medium Duty Sliders, size 28 cast body



Long Linear  
Rails



**L1928.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 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.

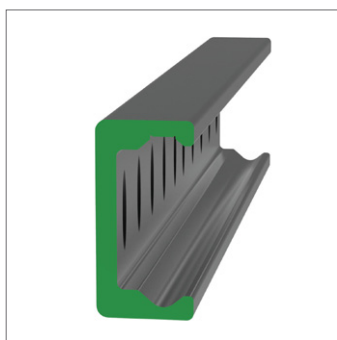
### Tips

Easy to install (the middle roller is eccentric allowing for adjustable preload).  
Quiet and fast (up to 5 m/s).

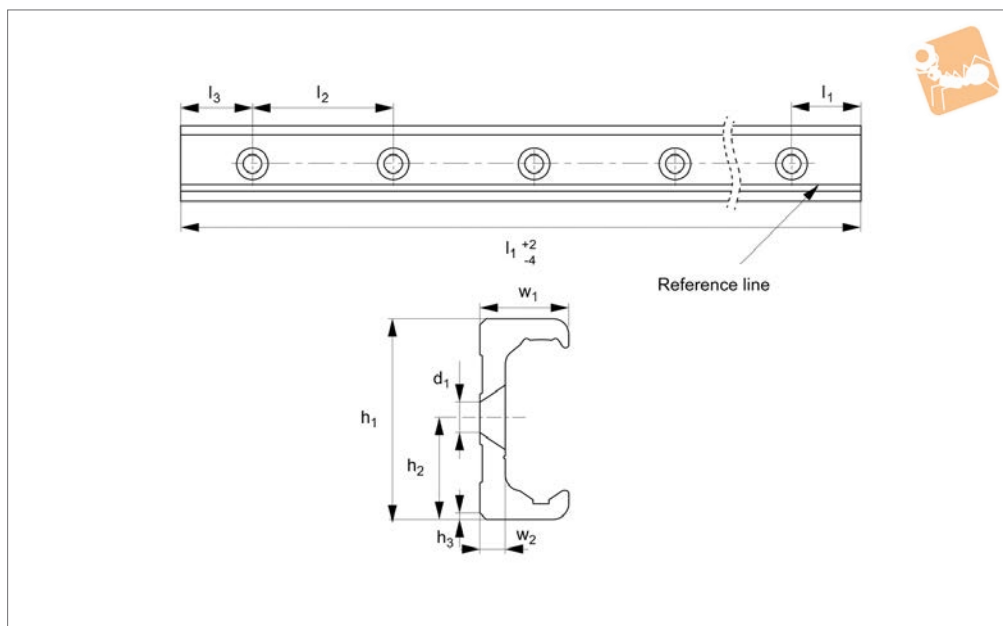
Order No.	For rail type	No. of rollers	C N	$C_{0ax}$ N	$C_{0rad}$ N	$d_1$	$h_1$ +0.25 -0.10	$h_2$ +0 -0.20	$h_3$ +0.15 -0.35	$l_1$	$l_2$	$l_3$	Weight kg
L1928.NTE28	T	3	4260	640	2170	M5	28	26.5	28	88	124	78	0.115
L1928.NUE28	U	3	4260	0	2170	M5	28	26.5	28	88	124	78	0.115

Order No.	$l_4$	$M_x$ Nm	$M_y$ Nm	$M_{zr}$ Nm	$M_{zl}$ Nm	$w_1$ $\pm 0.15$	$w_2$
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



## L1963.KLV63



### 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 <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.KLV63-0400	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



## Very Heavy Duty K Rail countersunk holes



## 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.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



# Long Linear Rails

## Very Heavy Sliders, size 63

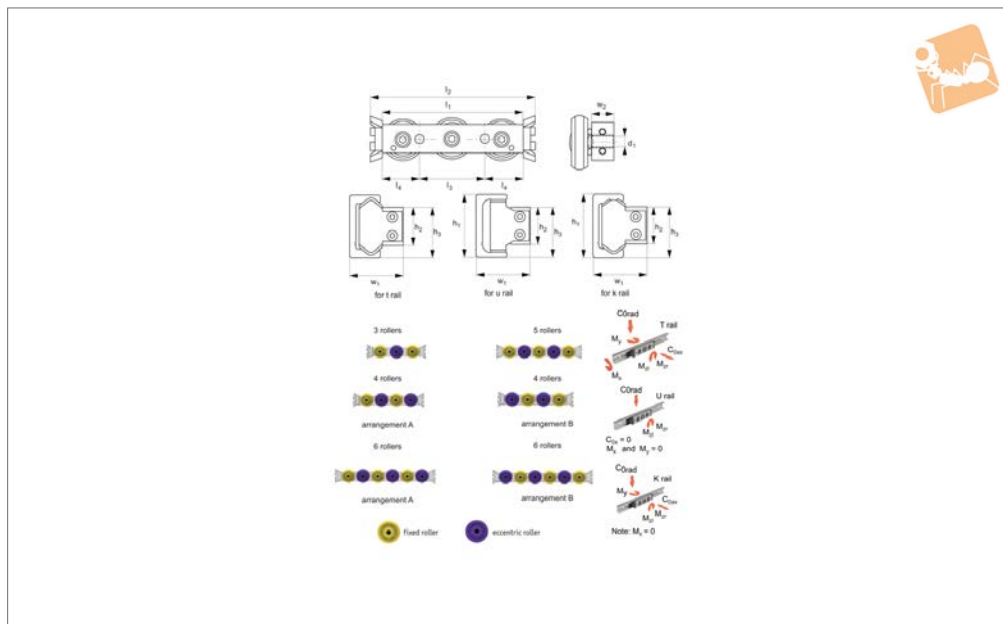
no side seal, front fixing, with wiper



LONG LINEAR RAILS



### L1963.CS



#### Material

Zinc plated steel body.  
Steel rollers (100Cr6) with a special combined metal and rubber seal (ZZR).

#### 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 <sub>1</sub> +0.35 -0.10	h <sub>2</sub> +0.5 -0	h <sub>3</sub> +0.15 -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	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 <sub>zr</sub> Nm	M <sub>zl</sub> Nm	w <sub>1</sub> ±0.15	w <sub>2</sub>	Dyn. load C <sub>N</sub> N max.	Static load C <sub>0 ax.</sub> N max.	Static load C <sub>0 rad.</sub> 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





## Very Heavy Sliders, size 63

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.	Static load $C_{0 rad}$ 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

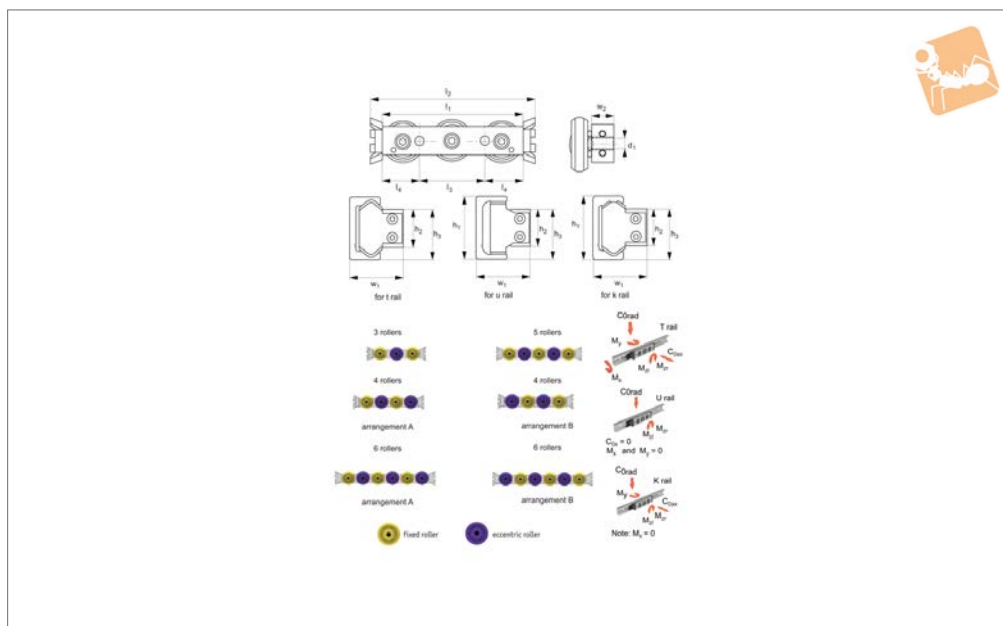
LONG LINEAR RAILS



LONG LINEAR RAILS



### L1963.CSW



#### 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>z1</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



# Very Heavy Sliders - Size 63

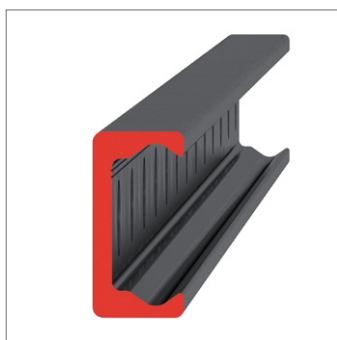
no side seal - front fixing - with wiper



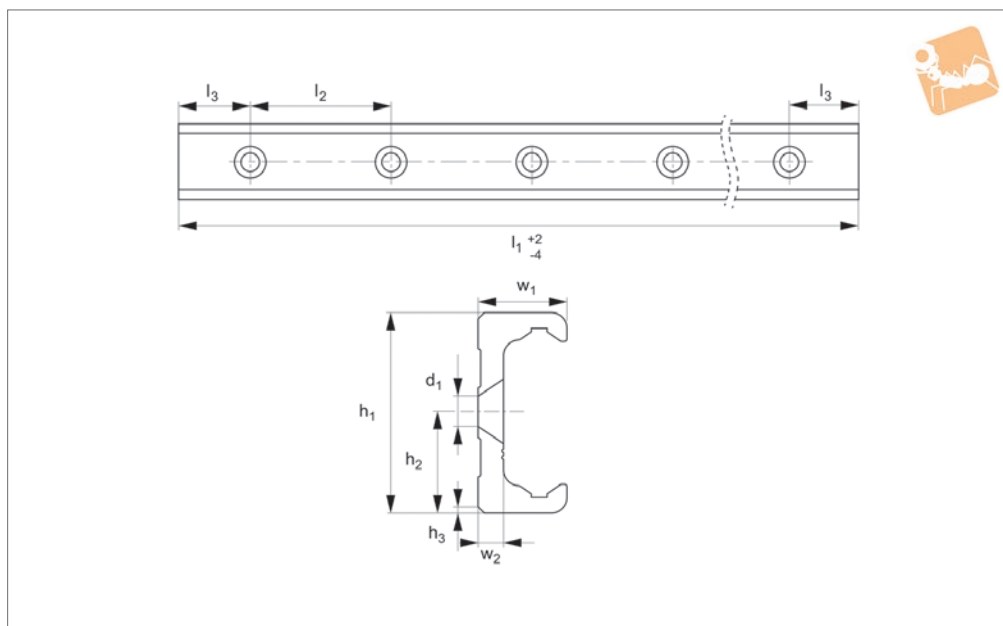
## Long Linear Rails

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 $C_{0ax}$ N max.	Arrangement type	Static load $C_{0rad}$ 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

LONG LINEAR RAILS



### L1963.63T-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 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

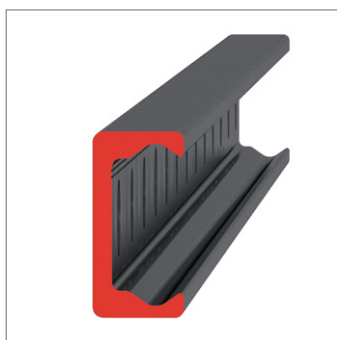


## Very Heavy Duty T Rail countersunk holes

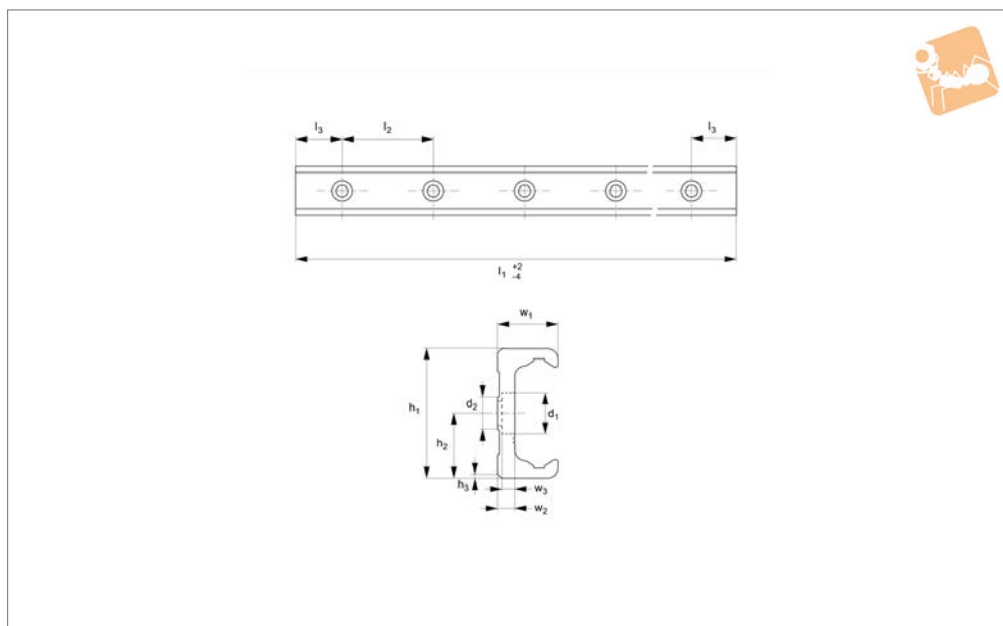


## Long Linear Rails

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>
L1963.63T-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



### L1963.63T-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 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



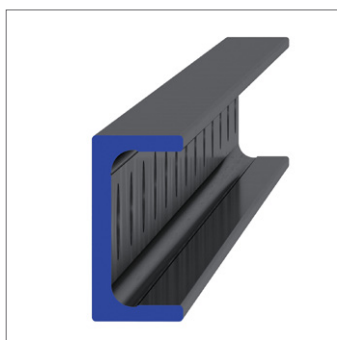
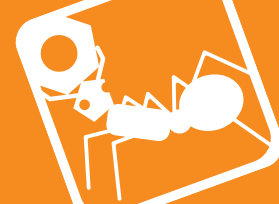
## Very Heavy Duty T Rail counterbored holes



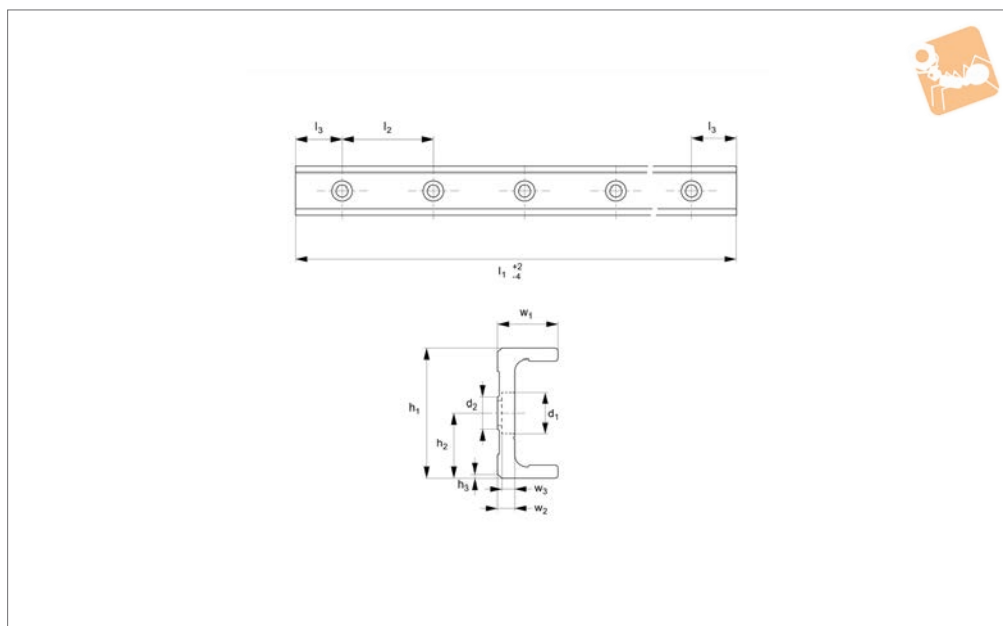
Long Linear  
Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	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-3040-C	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.63T-3120-C	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.63T-3200-C	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.63T-3280-C	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.63T-3360-C	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.63T-3440-C	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.63T-3520-C	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.63T-3600-C	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.63T-3680-C	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.63T-3760-C	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.63T-3840-C	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.63T-3920-C	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.63T-4000-C	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.63T-4080-C	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

LONG LINEAR RAILS



## L1963.63U-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 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





# Very Heavy Duty U Rail

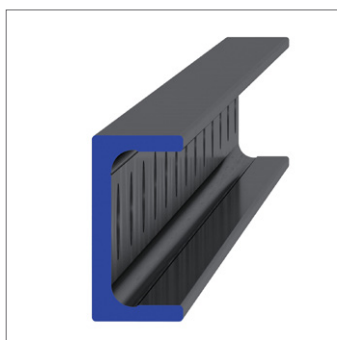
counterbored holes



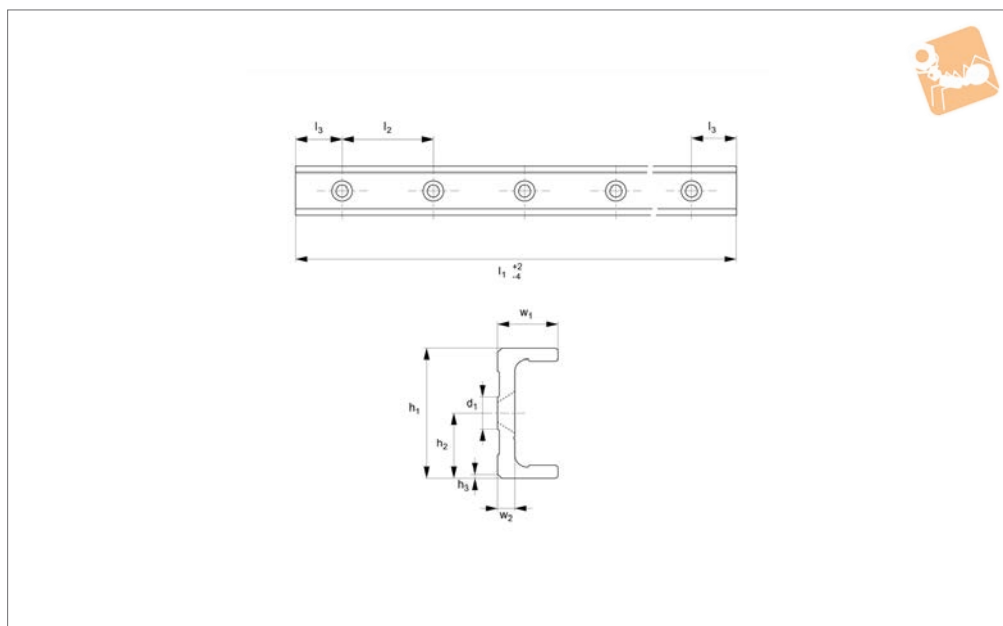
## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	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-2880-C	15	M8	63	31.5	2x45°	2880	80	40	28	8	5.2
L1963.63U-2960-C	15	M8	63	31.5	2x45°	2960	80	40	28	8	5.2
L1963.63U-3040-C	15	M8	63	31.5	2x45°	3040	80	40	28	8	5.2
L1963.63U-3120-C	15	M8	63	31.5	2x45°	3120	80	40	28	8	5.2
L1963.63U-3200-C	15	M8	63	31.5	2x45°	3200	80	40	28	8	5.2
L1963.63U-3280-C	15	M8	63	31.5	2x45°	3280	80	40	28	8	5.2
L1963.63U-3360-C	15	M8	63	31.5	2x45°	3360	80	40	28	8	5.2
L1963.63U-3440-C	15	M8	63	31.5	2x45°	3440	80	40	28	8	5.2
L1963.63U-3520-C	15	M8	63	31.5	2x45°	3520	80	40	28	8	5.2
L1963.63U-3600-C	15	M8	63	31.5	2x45°	3600	80	40	28	8	5.2
L1963.63U-3680-C	15	M8	63	31.5	2x45°	3680	80	40	28	8	5.2
L1963.63U-3760-C	15	M8	63	31.5	2x45°	3760	80	40	28	8	5.2
L1963.63U-3840-C	15	M8	63	31.5	2x45°	3840	80	40	28	8	5.2
L1963.63U-3920-C	15	M8	63	31.5	2x45°	3920	80	40	28	8	5.2
L1963.63U-4000-C	15	M8	63	31.5	2x45°	4000	80	40	28	8	5.2
L1963.63U-4080-C	15	M8	63	31.5	2x45°	4080	80	40	28	8	5.2

LONG LINEAR RAILS



## L1963.63U-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 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



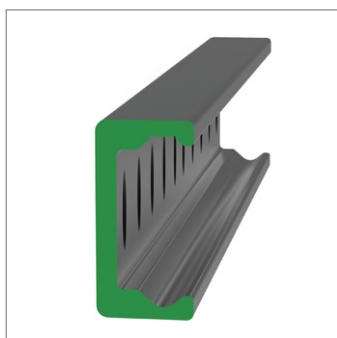
## Very Heavy Duty U Rail countersunk holes



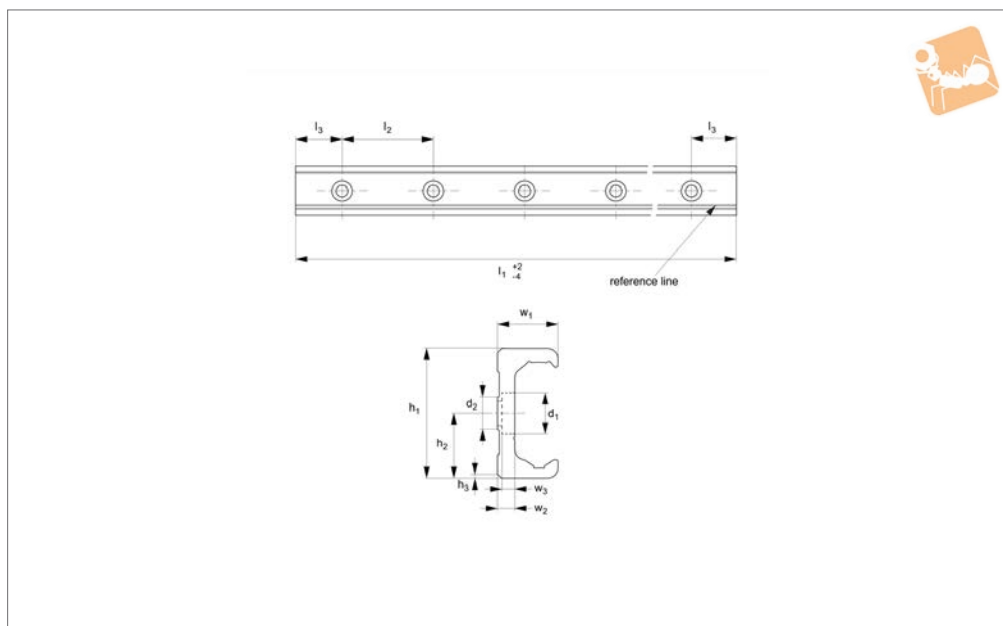
## Long Linear Rails

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

LONG LINEAR RAILS



## L1963.63K-C



### 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



# Very Heavy Duty K Rail

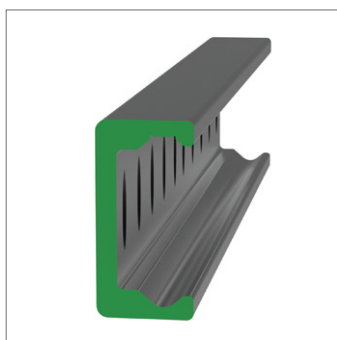
counterbored holes



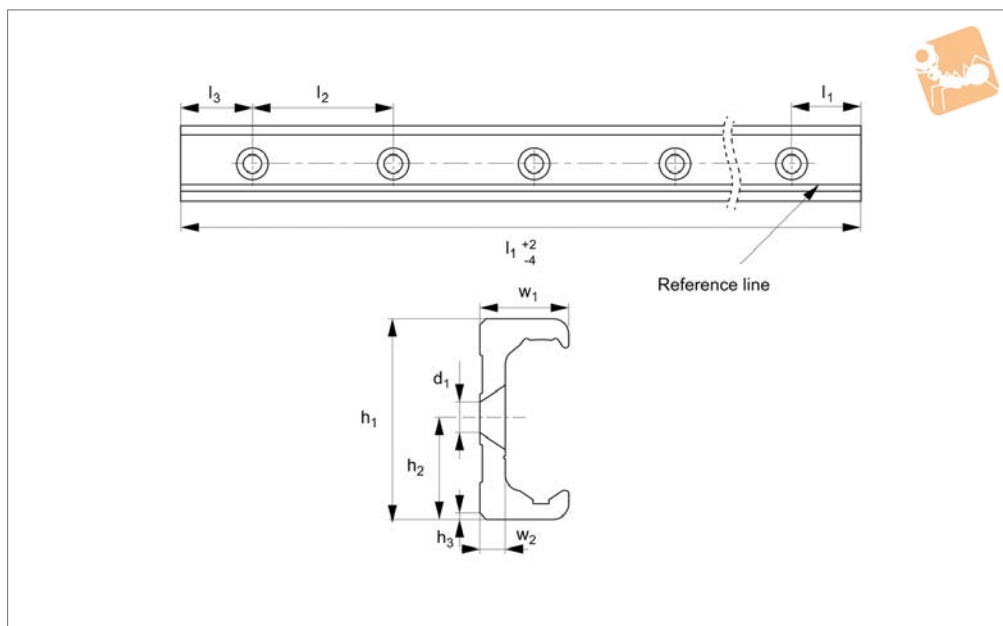
## Long Linear Rails

Order No.	d <sub>1</sub>	d <sub>2</sub> for screws	h <sub>1</sub>	h <sub>2</sub>	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

LONG LINEAR RAILS



### L1963.63K-V



#### 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 <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-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



## Very Heavy Duty K Rail countersunk holes



## Long Linear Rails

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

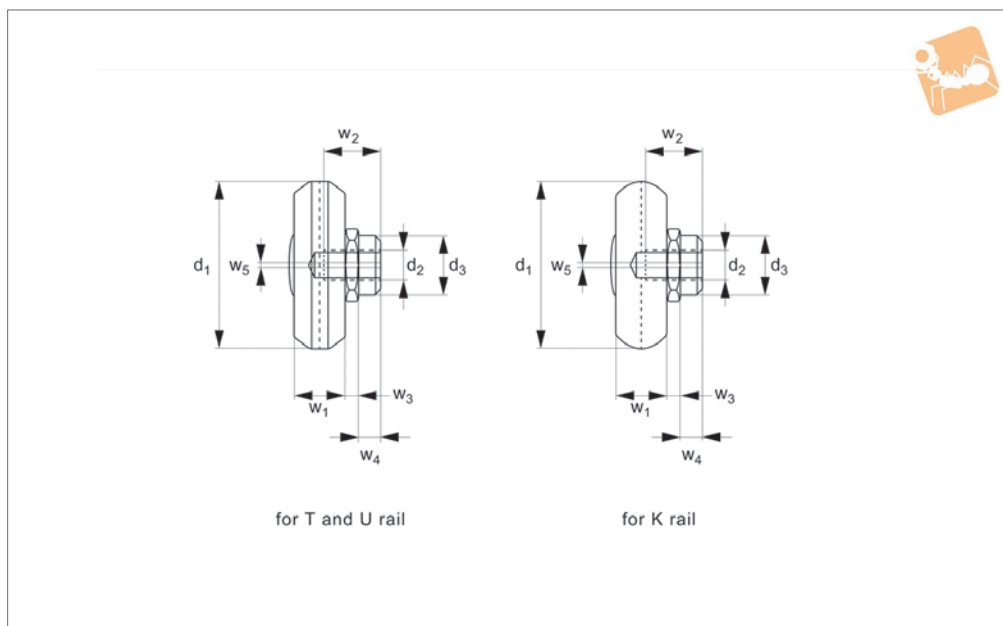
LONG LINEAR RAILS



LONG LINEAR RAILS



**L1900.CPN**



**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.

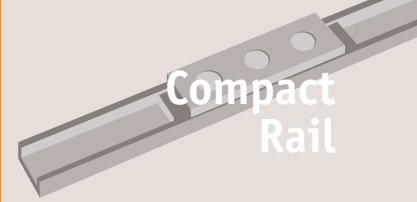
Order No.	For rail type	For rail size	Seal type	Roller type	C N	C <sub>0rad</sub> N	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>
L1918.CPN18-2Z	T and U	18	Metal	Concentric	765	410	14	M4	6	4	5.5	1.55	1.8	-
L1918.CPA18-2Z	T and 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





# Compact Rails

## Specifications and applications



Compact Rail

### 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



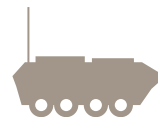
#### Transport (rail)

Seat adjustment  
sliding doors  
battery removal units



#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels

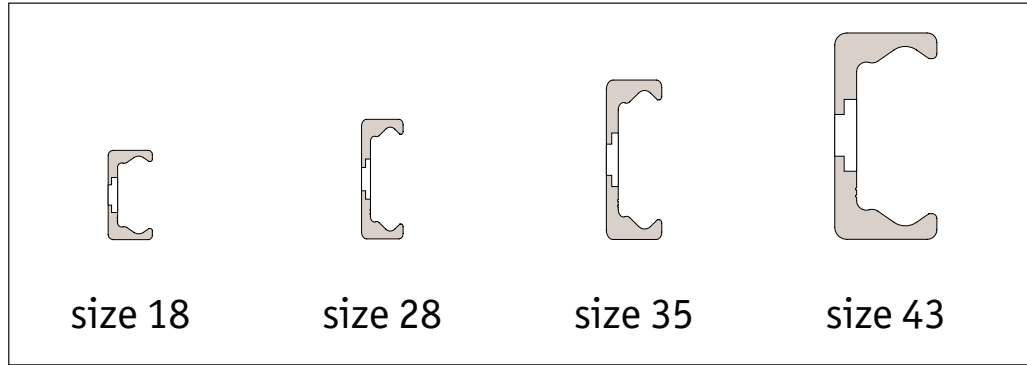


#### Transport (military)

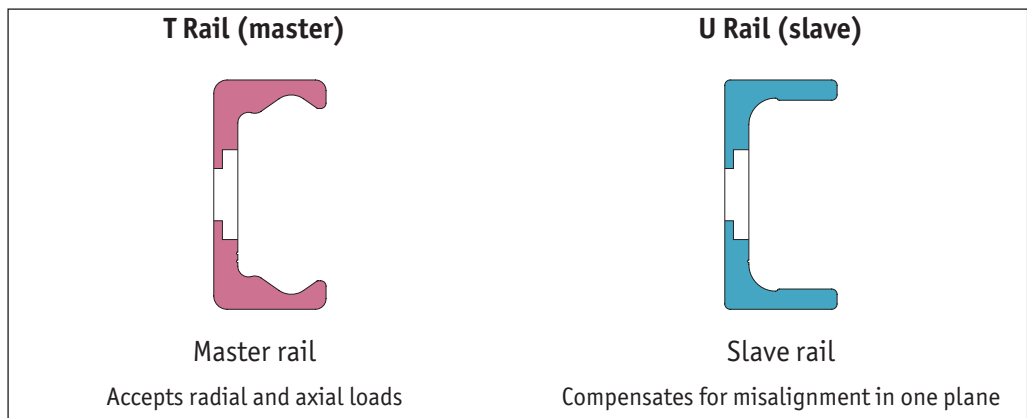
Sliding seats  
protective hatches  
stretcher extensions



Rail sizes



Rail types

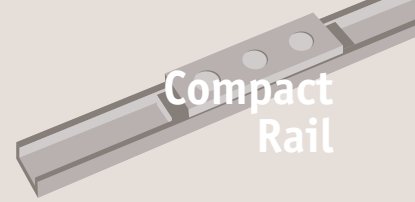


Sliders

<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>	

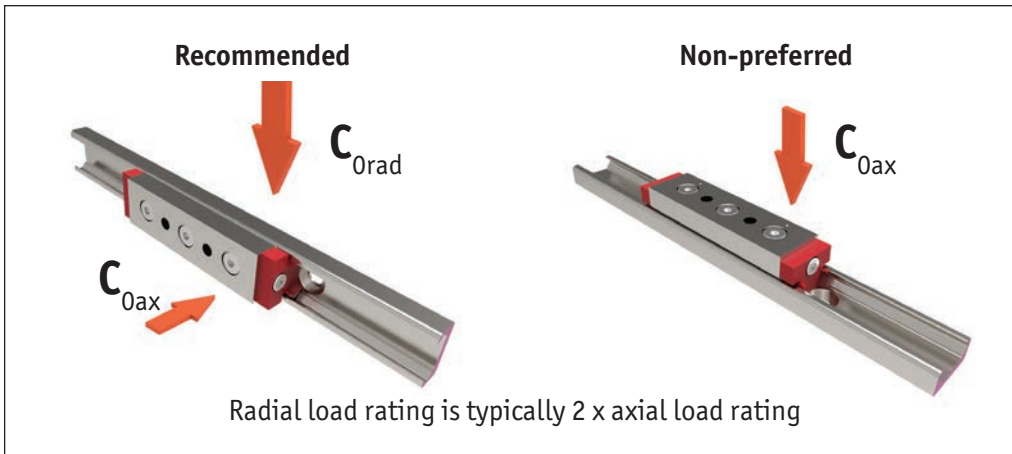
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### Orientation of rails

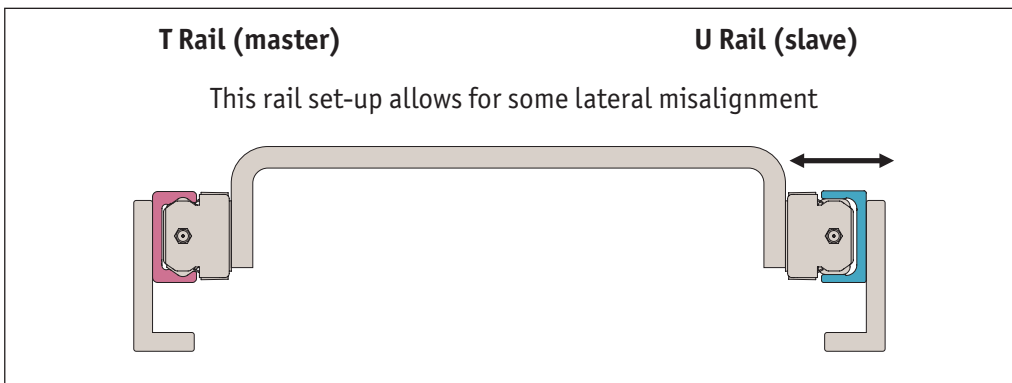
The radial load that the sliders can take is significantly higher than the axial load, so where possible the rails should be set up with the sliders taking the loads in this plane.



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.

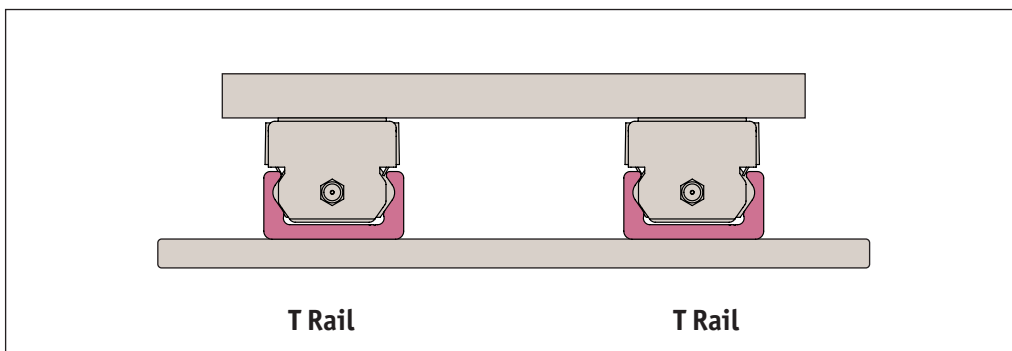
U rails have flat, parallel raceways that allow free lateral movement of the sliders. The maximum lateral movement for each size is shown in later tables.



### 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?

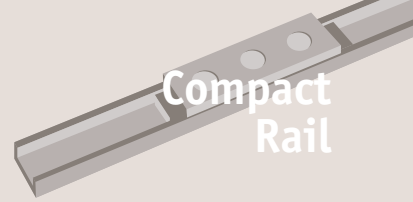
- In general we hold all the rail in stock as well as most the most popular C series sliders.

#### 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

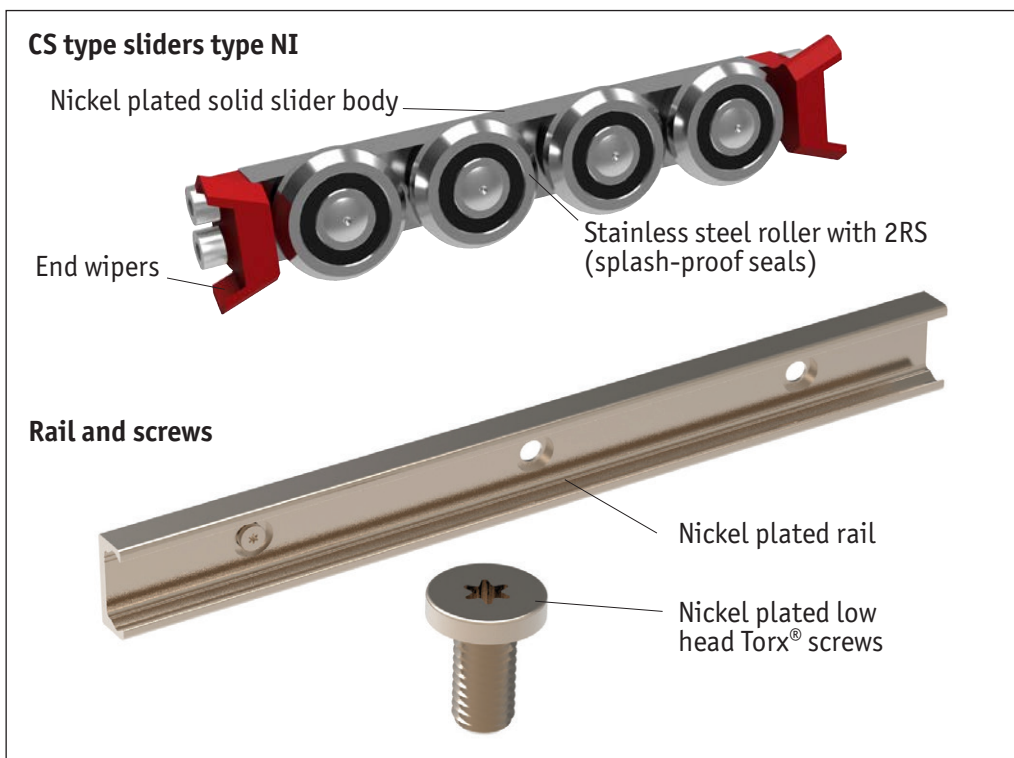
The compact rail systems have the following protective coatings as standard:

- 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



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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

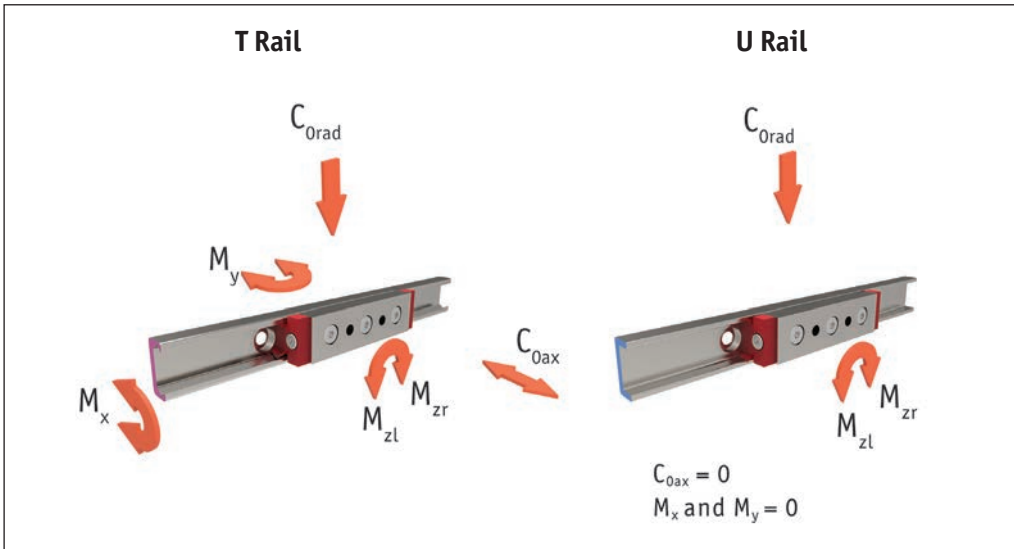
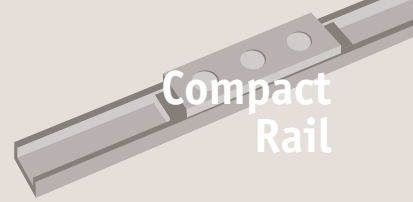
- Thinking about the physical dimension of the load will give an indication of how far apart the sliders should be positioned in the rails. This, and the distance apart that the rails and the sliders are positioned, affect the moment loads that the sliders experience.
- The above factors will give a 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.



Part no.	No. of rollers	Load capacities and moments						
		Max. dyn. CN	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>								
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

#### Important note

The load rating of the sliders tables apply to the use of the sliders in the T (master) rail.

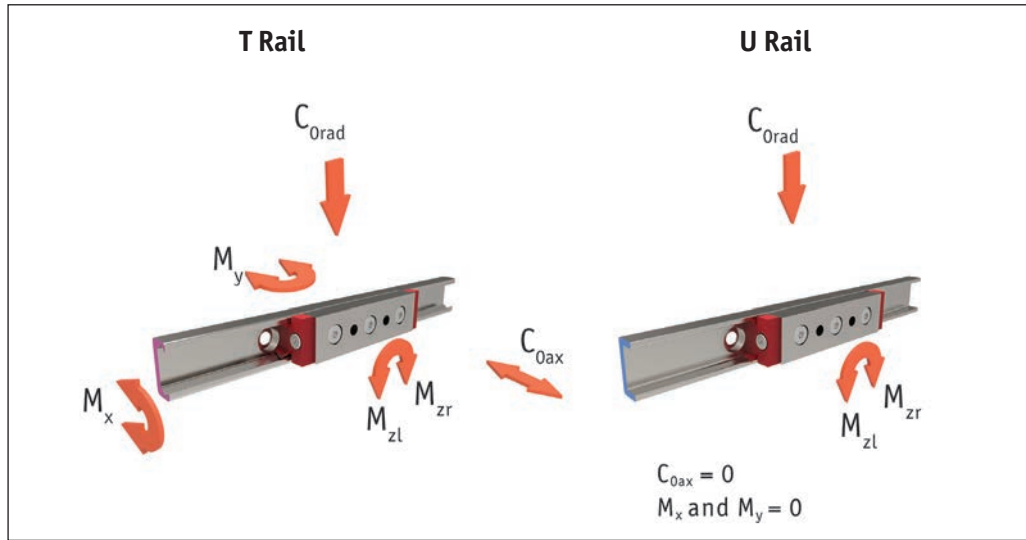
For sliders in U rails:

$$C_{0ax} = 0$$

$$M_x = 0$$

$$M_y = 0$$





LONG LINEAR RAILS

#### Important note

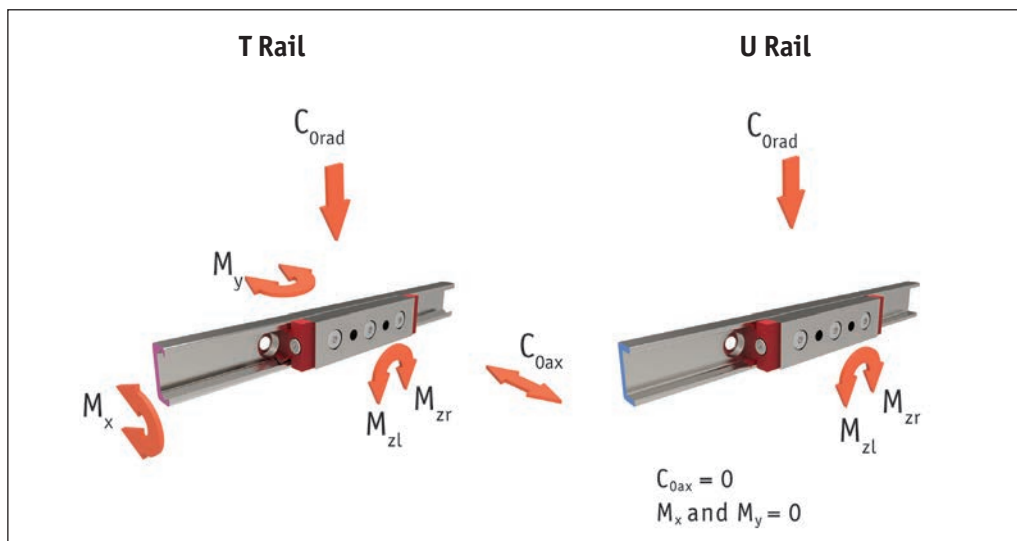
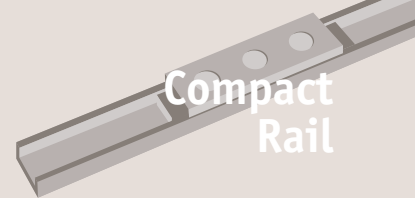
The value of the C sliders in the tables apply to the use of the sliders in the T (master) rail.

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>								
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





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>

**Side seal, front fixing**

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

**Side seal, top fixing**

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

**No side seal, front fixing**

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

**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<sub>0ax</sub> = 0  
M<sub>x</sub> = 0  
M<sub>y</sub> = 0



## Representation of slider arrangement for various load cases

### Arrangement 1

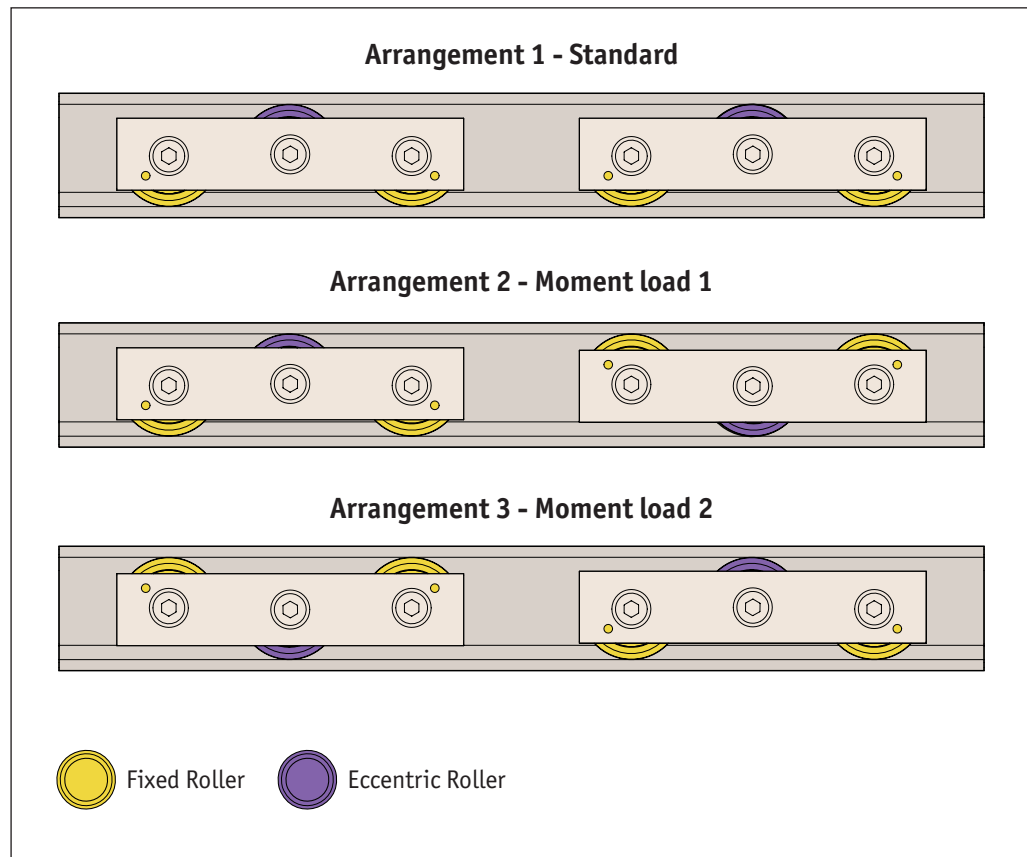
- Standard arrangement if no other information is given. This arrangement is recommended if the load point is located within the two outside points of the sliders.

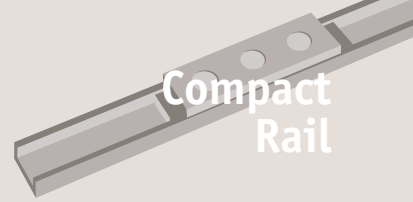
### Arrangement 2

- 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.

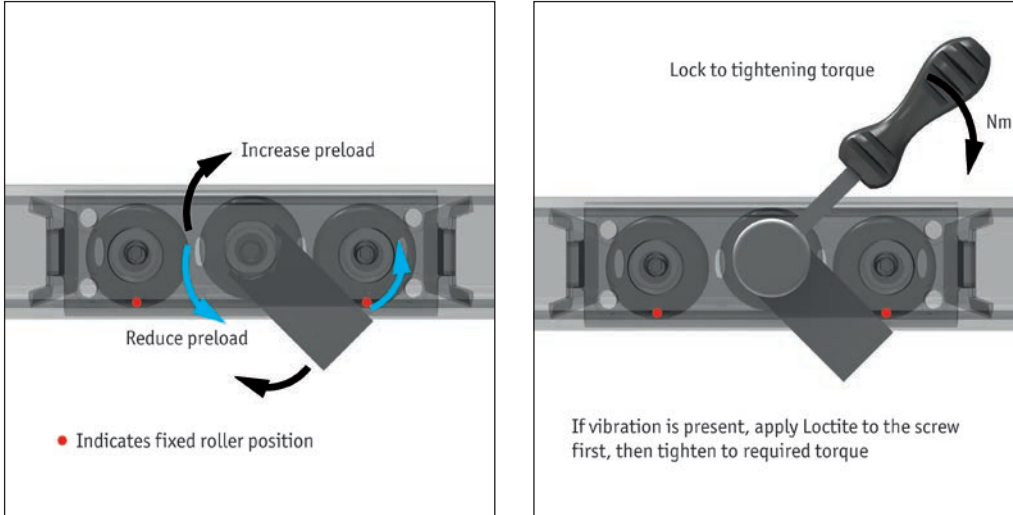




### Adjusting the sliders

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.

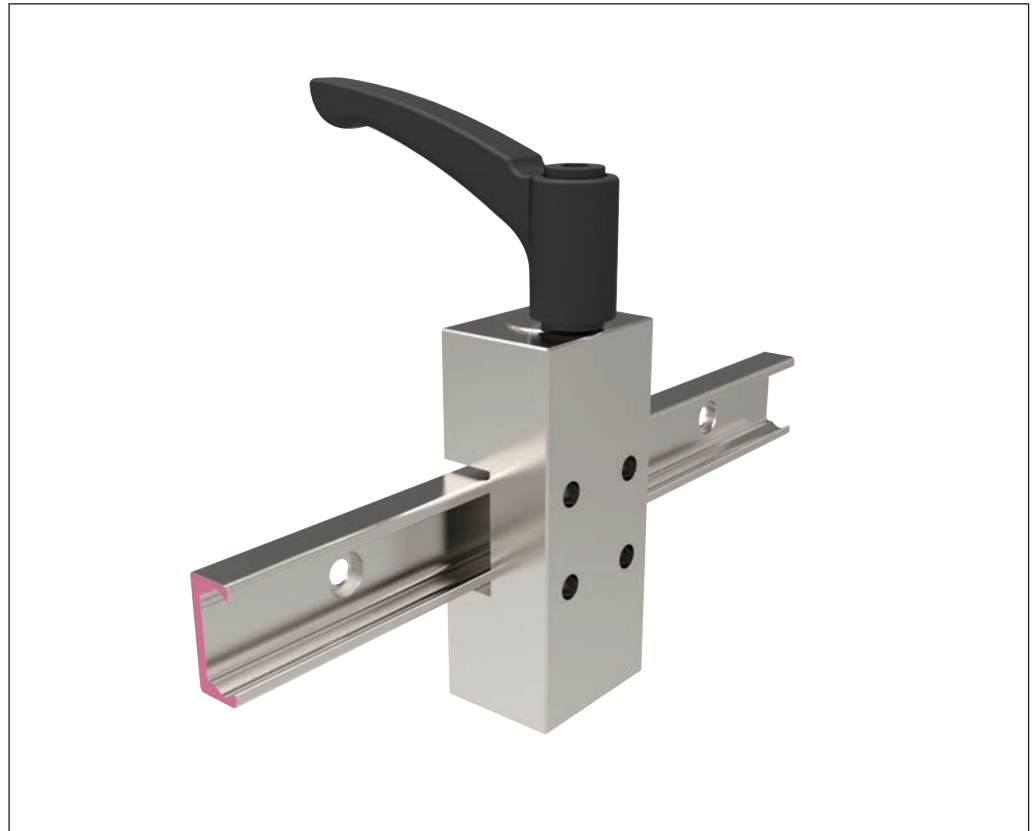
Size	Tightening torque Nm
18	3
28	7
35	12
43	12

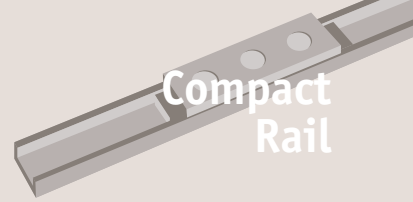
**Manual rail clamps**

- 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.

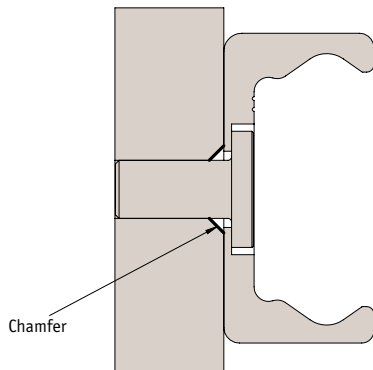
**Applications**

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





Example for fixing with Torx® screws (custom design)

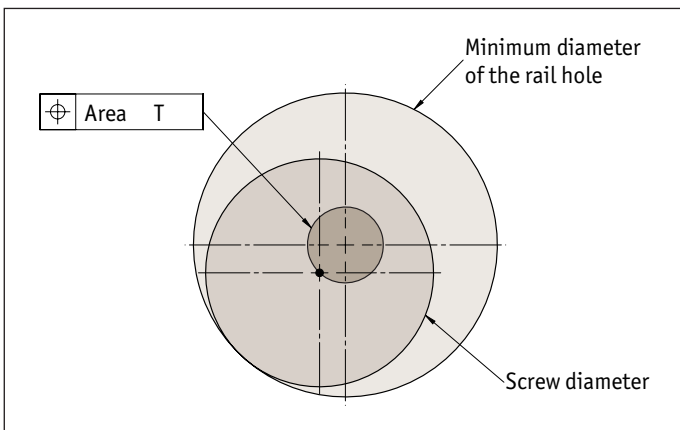


Size	Chamfer
18	0,5 x 45°
28	0,6 x 45°
35	0,5 x 45°
43	1,0 x 45°

### 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.

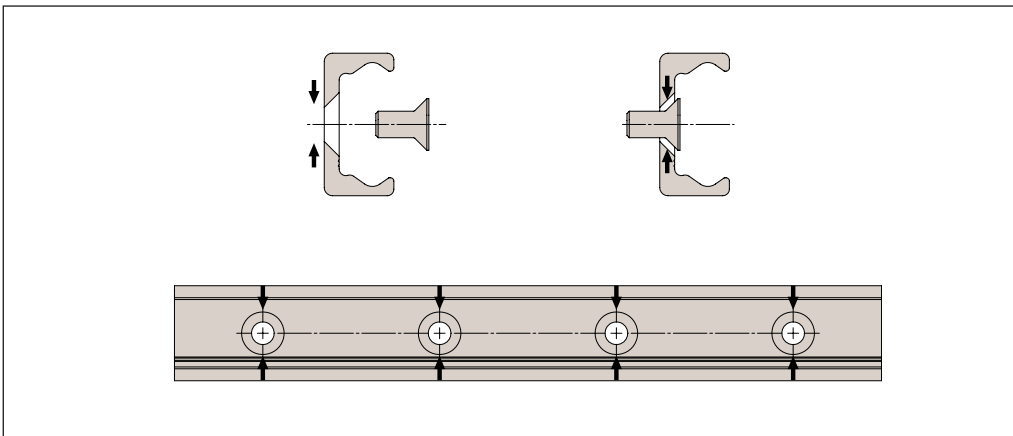
The area T is the diameter of the possible offset, in which the screw centre point can move during the alignment. The minimum chamfers on the fixing threads are listed in the table above.



Rail size	Area T
18	∅ 0,4
28	∅ 0,8
35	∅ 1,0
43	∅ 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.



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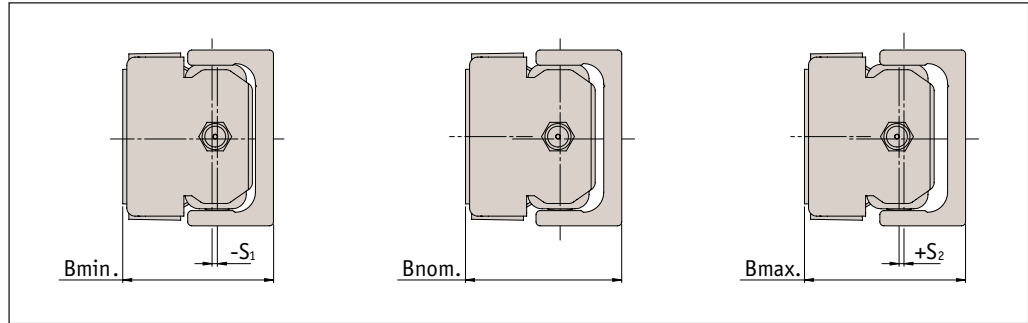


**T and U system maximum offset**

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.

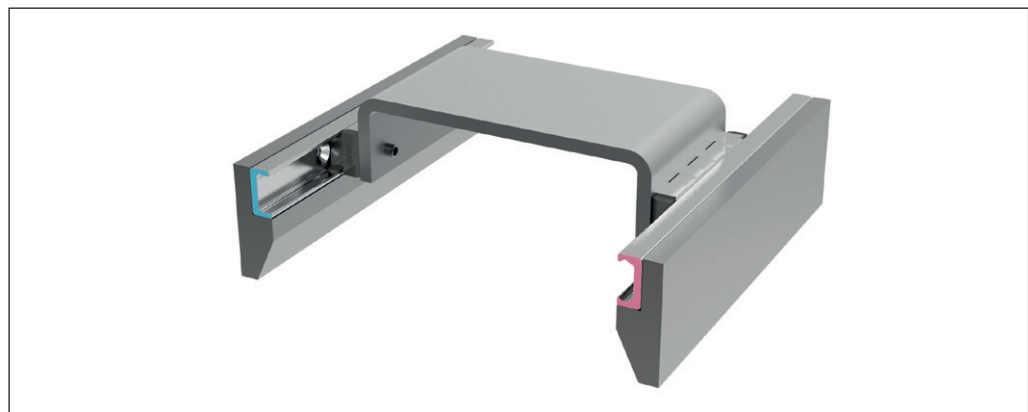


Slider type	$S_1$	$S_2$	$B_{min}$	$B_{nom}$	$B_{max}$
L1918.18CL/CS	0,3	1,1	14,7	15,0	16,1
L1918.18CR	0,3	1,1	14,7	15,0	16,1
L1928.28CL/CS	0,6	1,3	23,3	23,9	25,2
L1928.28CR	0,6	1,3	23,3	23,9	25,2
L1935.35CL/CS	1,3	2,7	28,8	30,1	32,8
L1935.35CR	1,3	2,7	28,8	30,1	32,8
L1943.43CL/CS	1,4	2,5	35,6	37,0	39,5
L1943.43CR	1,4	2,5	35,9	37,3	39,8

All values in mm.

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

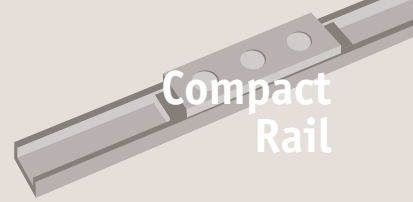
It is often the case that two T rails are used in the system design but where there are substantial alignment issues it is better to use a T (master) rail and a U (slave) rail as below.



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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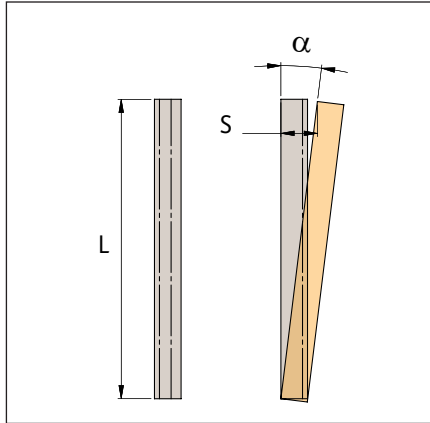
The application example in the following drawing shows that the T and U system implements a problem-free function of the slider even with an angled offset in the mounting surfaces.

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.



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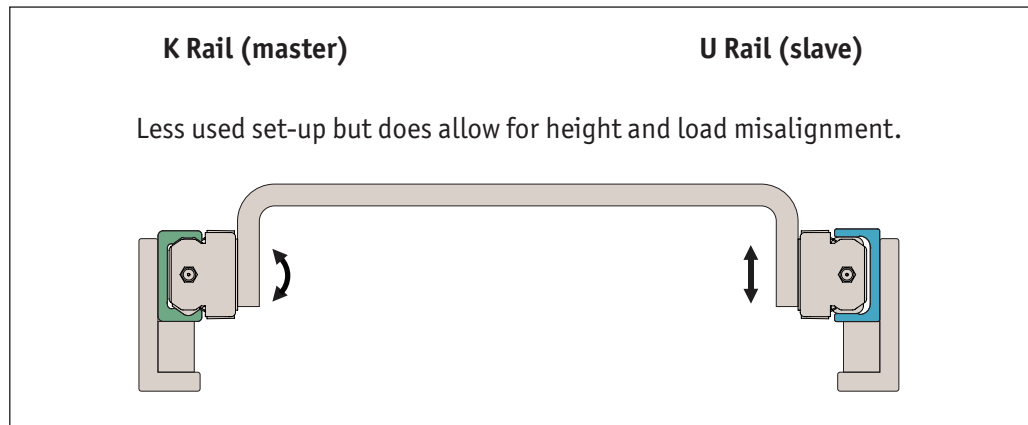


### K and U System Tolerance Compensation

#### Deviations in Parallelism in Two Planes

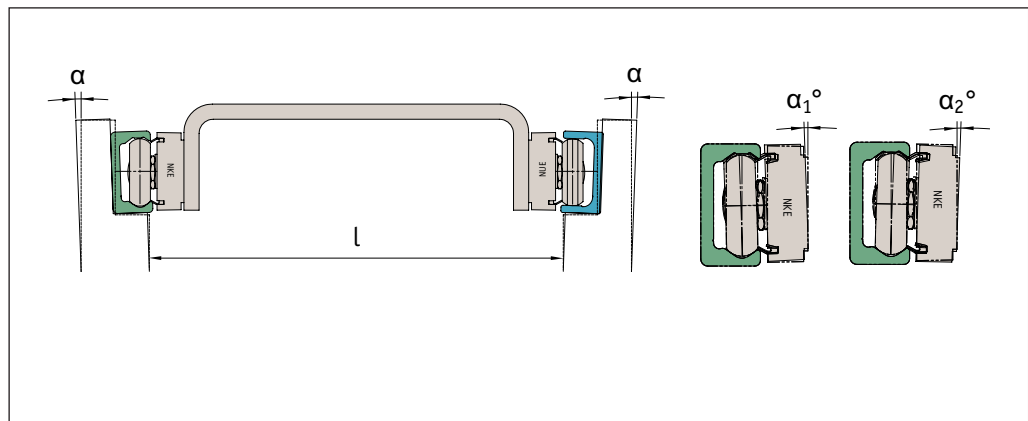
The K and U system, like the T and U system, can compensate for axial deviations in parallelism. Additionally, the K and U system has the option of rotating the slider in the rail, which will compensate for other deviations in parallelism, e.g. height offset.

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.



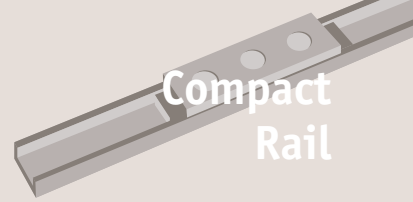
K rails and sliders are available in both sizes 43 and 63. The NKE slider may only be used in K rails. The maximum allowable rotation angle of the NKE and NUE sliders are shown in the table.  $\alpha_1$  is the maximum rotation angle counterclockwise,  $\alpha_2$  is clockwise.

Slider Type	$\alpha_1^\circ$	$\alpha_2^\circ$
L1943.NKE43	2	2
L1943.NUE43		
L1943.NKE63	1	1
L1943.NUE63		



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.

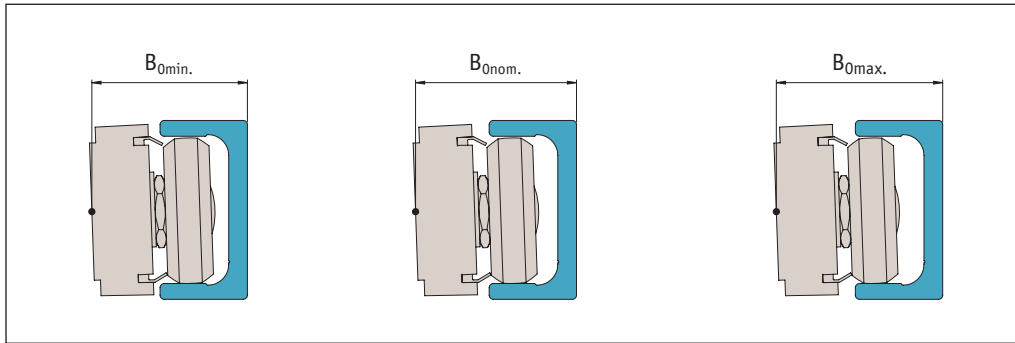




### K and U System Maximum Offset

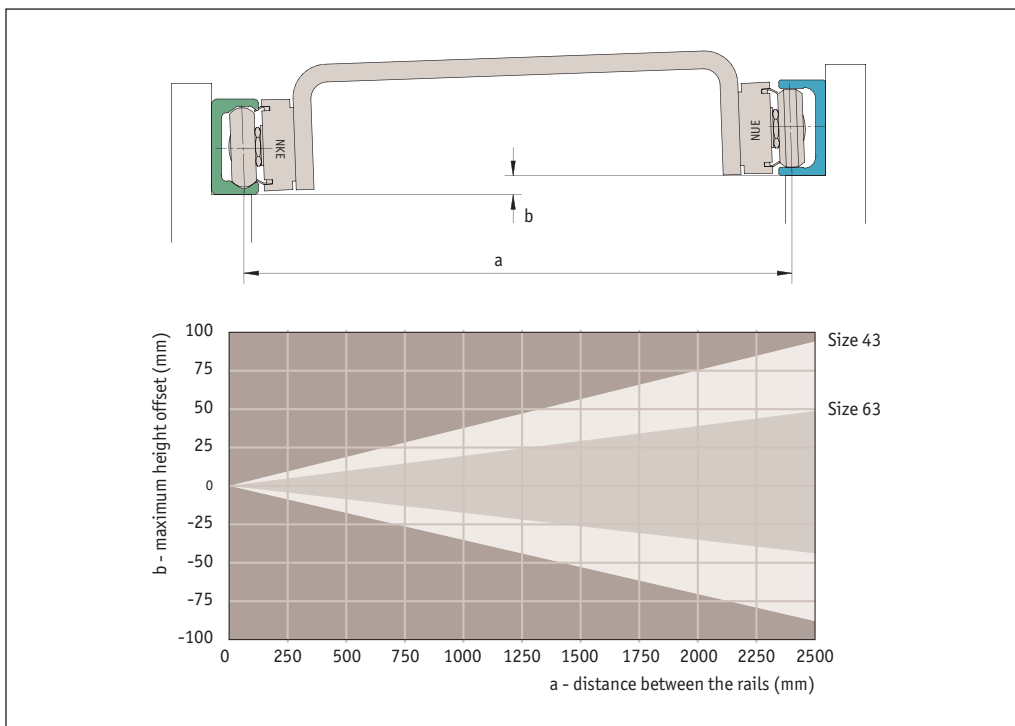
It must be noted that the slider in the U rail will turn during the movement and rotation of the slider in the K rail to allow an axial offset. During the combined effect of these movements, you must not exceed the maximum values (see table below). If a maximum rotated NUE slider is observed ( $2^\circ$  for size 43 and  $1^\circ$  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.



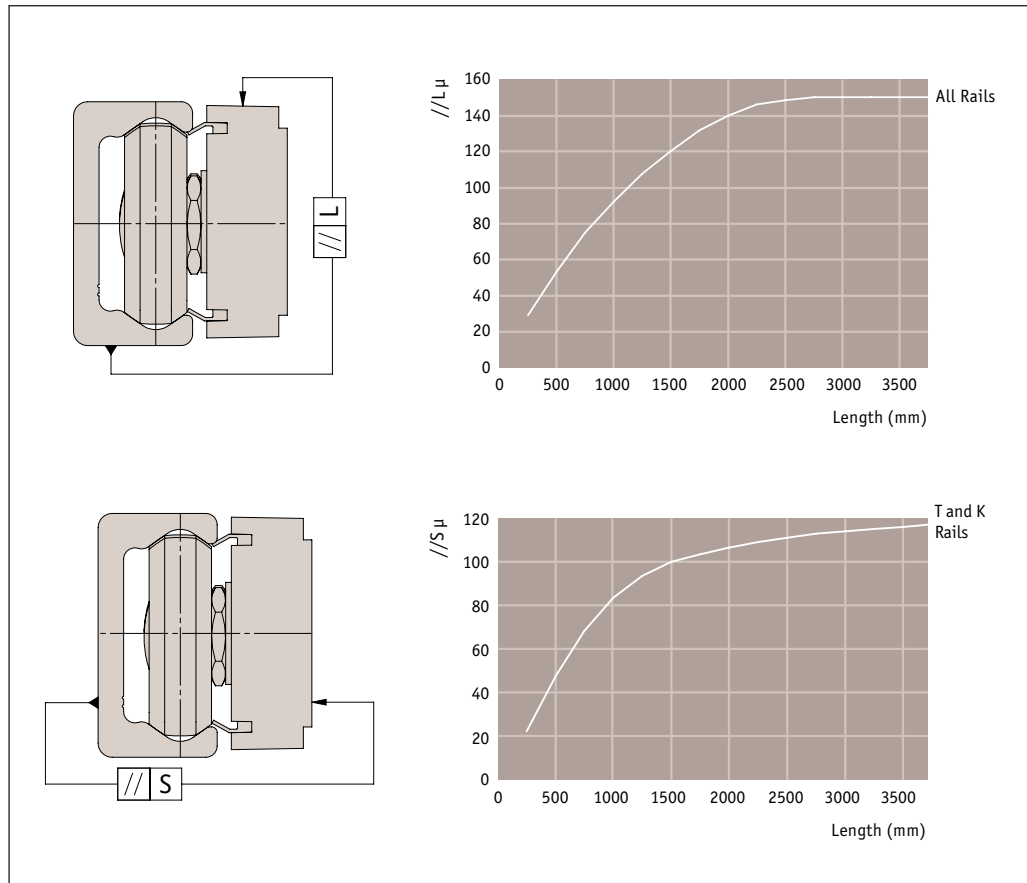
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**Linear accuracy**

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.

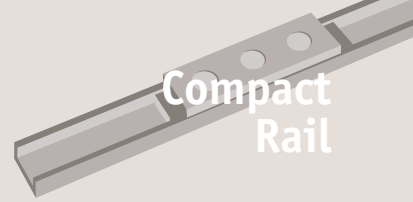


Deviation of accuracy with two 3 roller sliders in one rail

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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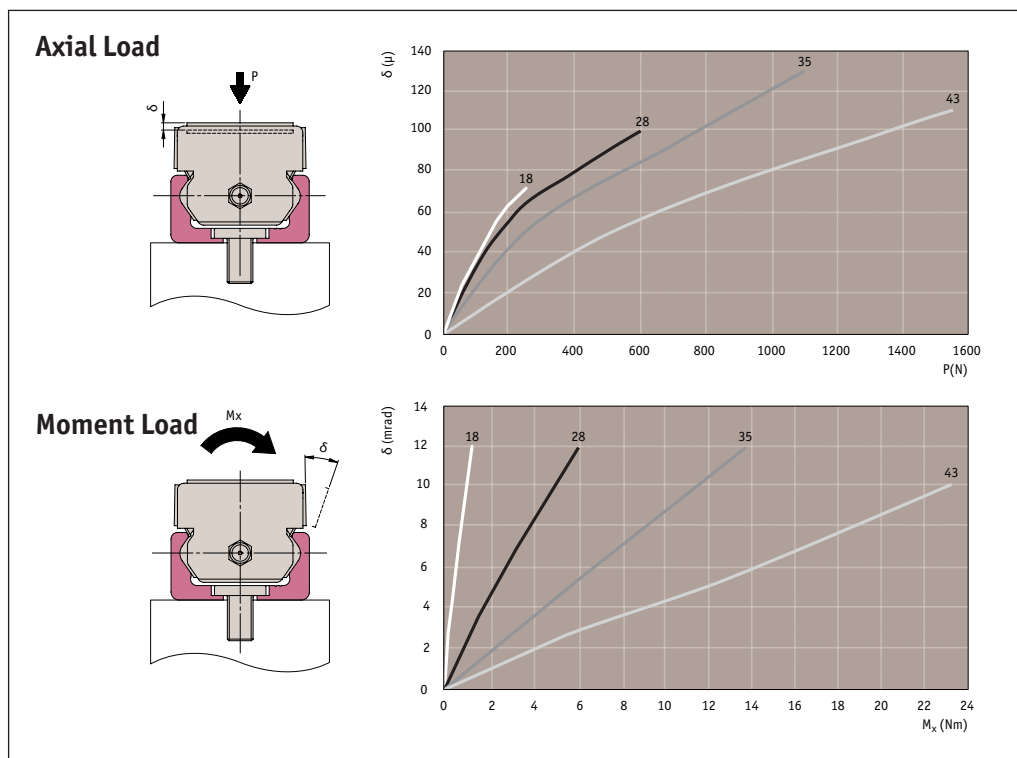
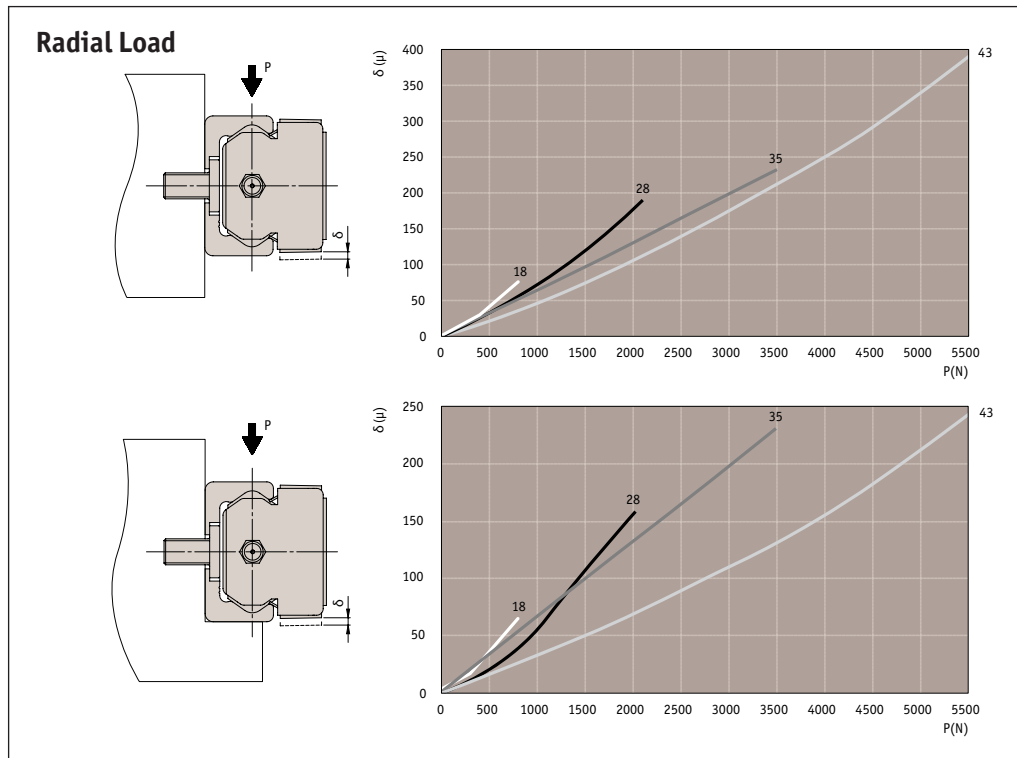


### Total deformation

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



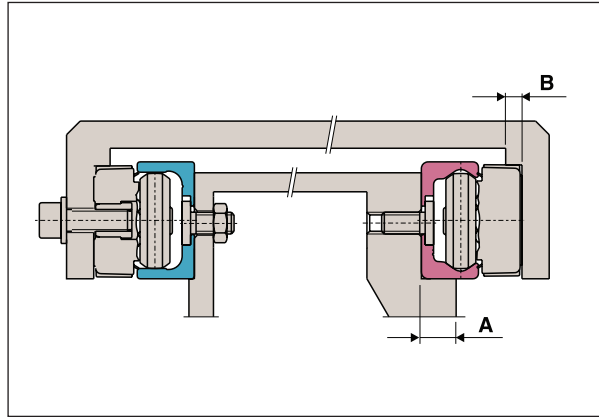
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**Supported sides**

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

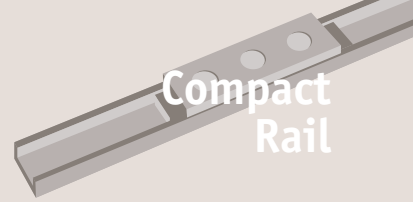
**U rail offset**

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 $M_z$

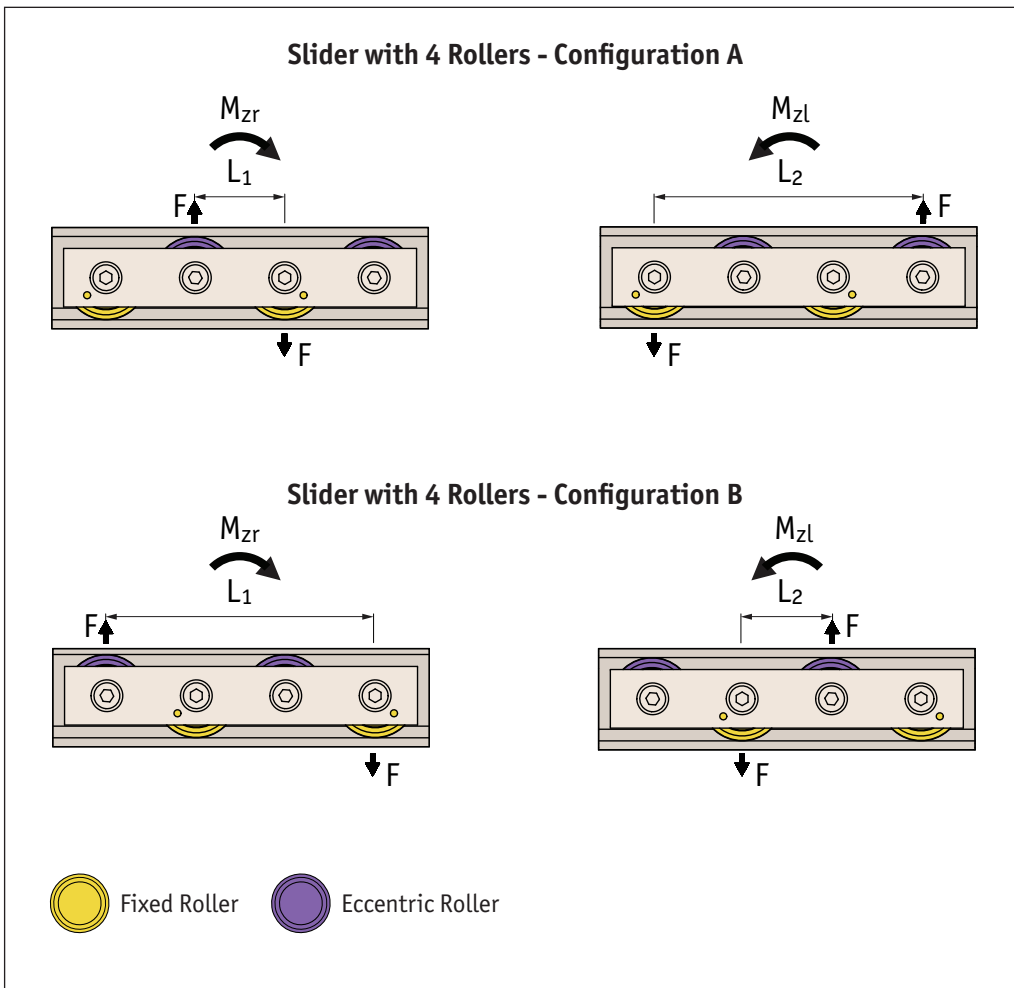
#### Individual slider under load moment $M_z$

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.

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**Two sliders under  $M_z$  moment loads**

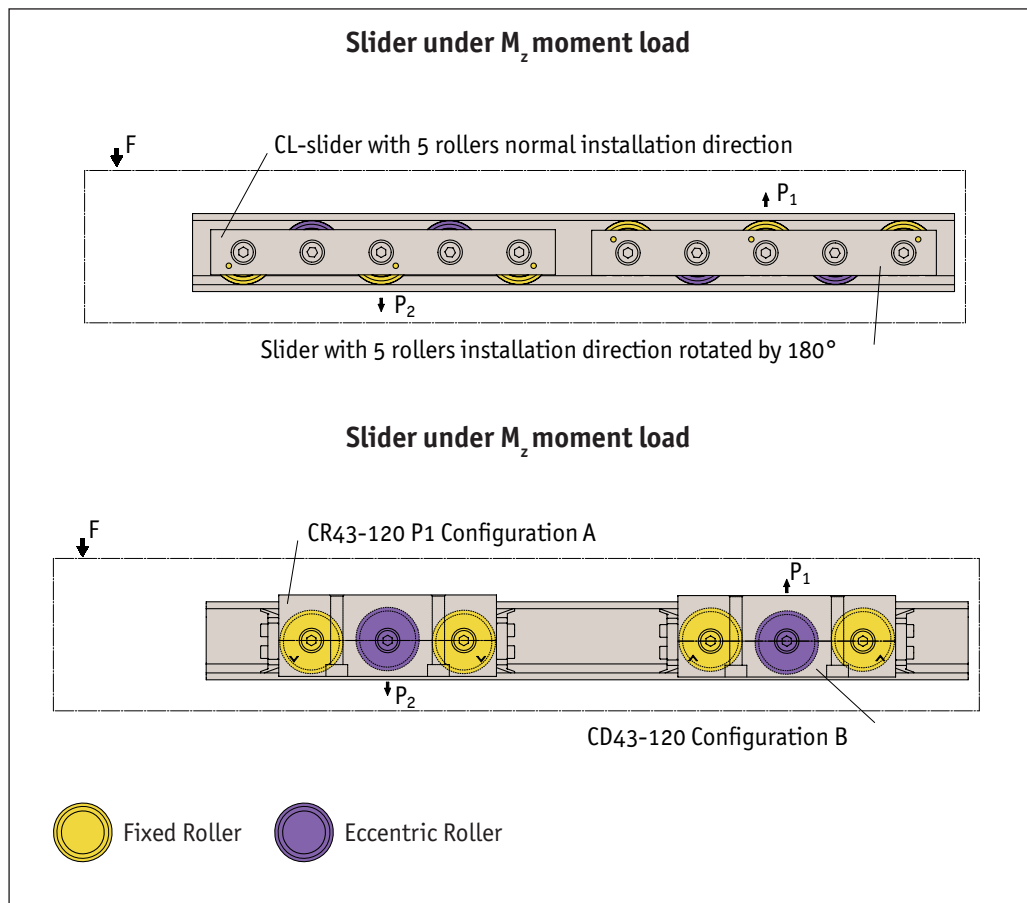
If an overhanging load acts in an application with two sliders per rail and thus causes an  $M_z$  moment in one direction, there are differing support reactions with the two sliders.

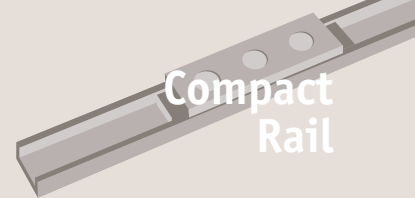
For this reason, an optimal arrangement of different slider configurations to reach the maximum load capacity must be applied.

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).





### 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

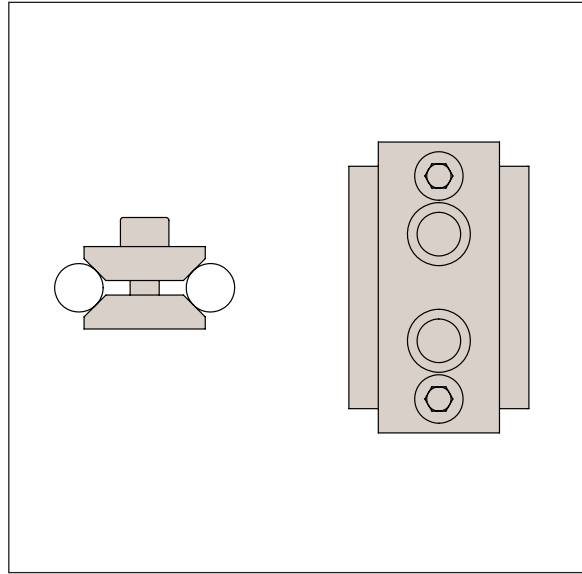
### Lubrication when using C sliders

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

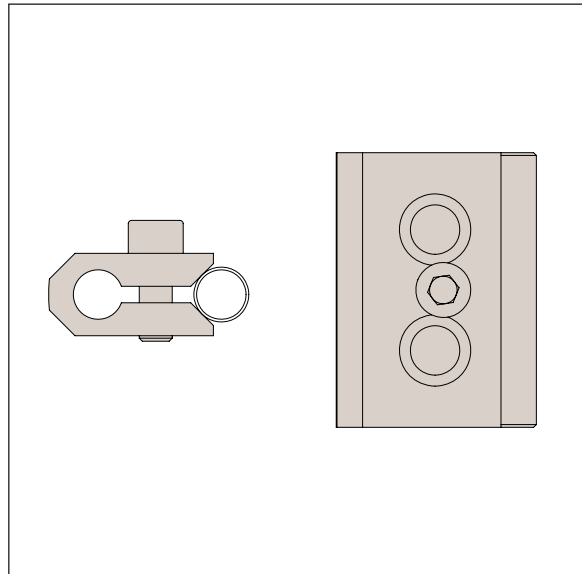


Alignment fixture AT (for T and U rail)



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)

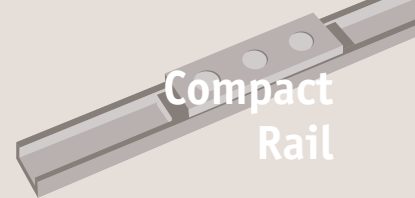


Rail size	Alignment fixture
L1943.AK43	AK 43

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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	0,1
		63	

\* Measured on the largest interior dimension between the raceways.

**External preload**

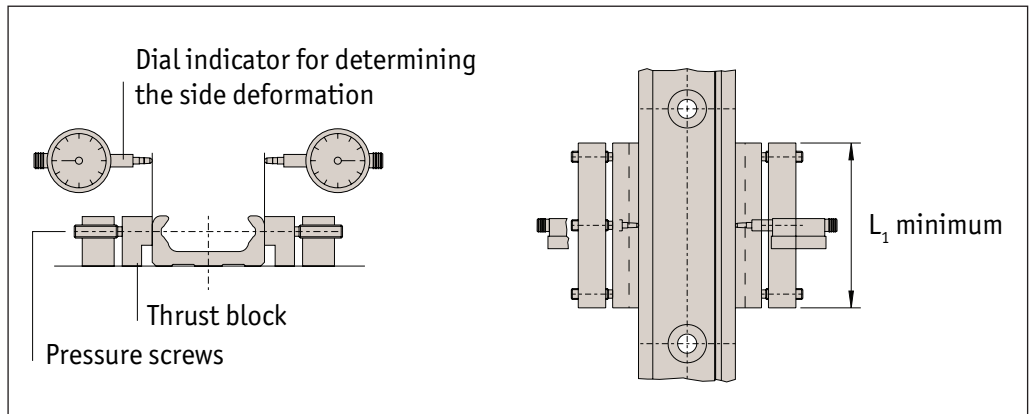
The unique design of the Compact Rail product family enables the application of a partial external preload on selected locations along the entire rail.

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.

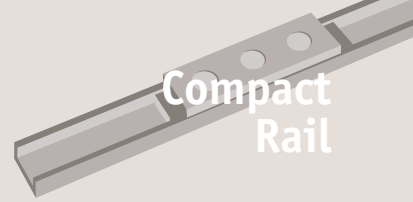
The amount of the externally applied preload is determined using two dial indicators to measure the deformation of the rail sides. These are deformed by thrust blocks with pressure screws. The external preload must be initially applied when the slider is not directly located in the pressure zone.

Rail size	$L_1$
18	40
28	55
35	75
43	80



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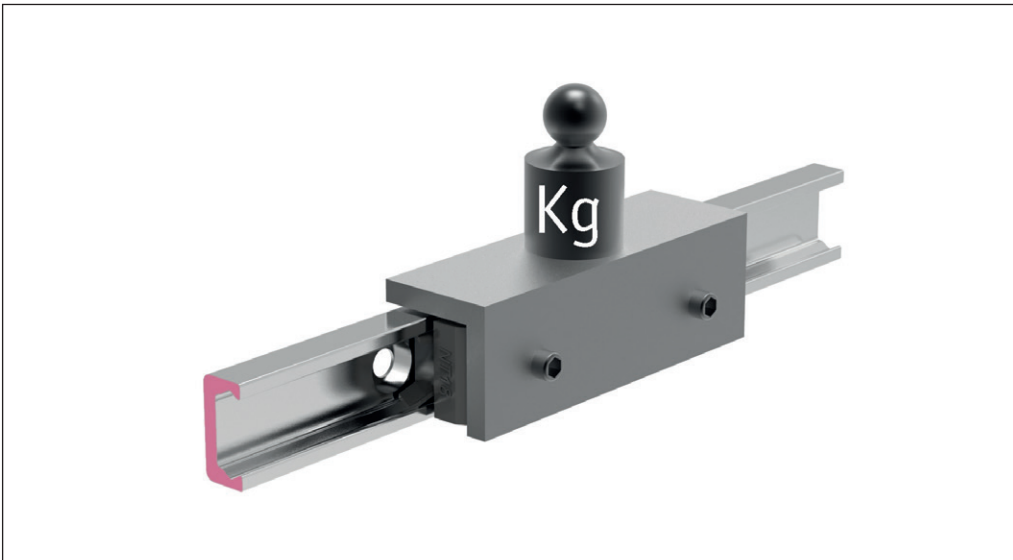
### Drive force

#### 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.

**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:

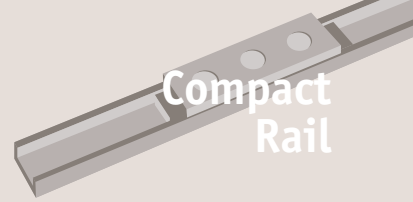
If an NTE43 slider is used with a radial load of 100 Kg, the result is  $\mu = 0,005$  (from table); and from the formula the following is calculated:

$$\mu_s = \frac{\ln(100000)}{0,15 \cdot 100000} = 0,00076$$

$$\mu_w = \frac{\ln(100000)}{0,06 \cdot 100000} = 0,0019$$

Therefore the minimum driving force for this example:

$$F = (0,005 + 0,0019 + 0,00076) \cdot 100 \cdot 9,81 = 7,51 \text{ N}$$



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.

$\frac{P_{0rad}}{C_{0rad}} \leq \frac{1}{S_0}$	$\frac{P_{0ax}}{C_{0ax}} \leq \frac{1}{S_0}$	$\frac{M_1}{M_x} \leq \frac{1}{S_0}$	$\frac{M_2}{M_y} \leq \frac{1}{S_0}$	$\frac{M_3}{M_z} \leq \frac{1}{S_0}$
--	--	--------------------------------------	--------------------------------------	--------------------------------------

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.

Compact Rail from Automotion Components

LONG LINEAR RAILS



Calculation formulae

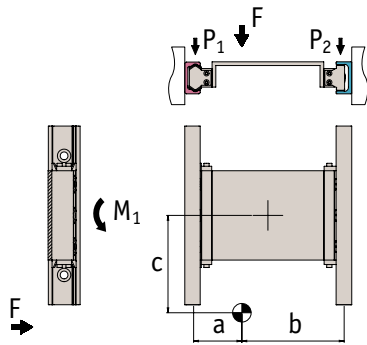
Example formulae for determining the forces on the most heavily loaded slider

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

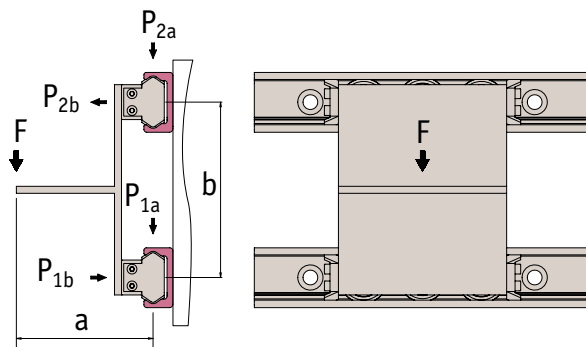


Slider load

$$P_1 = F \cdot \frac{b}{a+b}$$

in addition each slider is loaded by a moment:

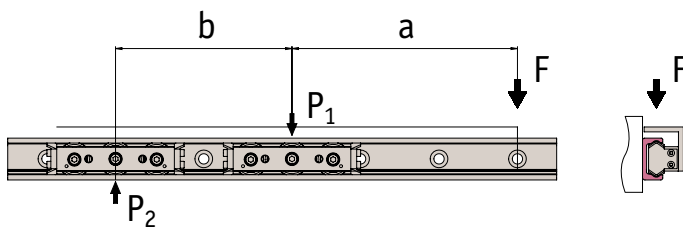
$$M_1 = \frac{F}{2} \cdot c$$



Slider load

$$P_{1a} \approx P_{2a} = \frac{F}{2}$$

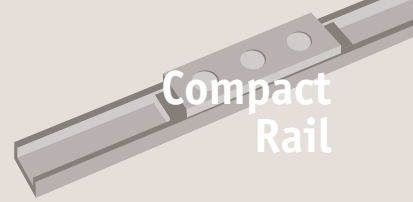
$$P_{2b} \approx P_{1b} = F \cdot \frac{a}{b}$$



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: It is defined that slider number 4 is always located closest to the point where the force is applied.

### Vertical movement

Static test

**Slider load**

$$P_{2a} \approx P_{1b} = F \cdot \frac{a}{b}$$

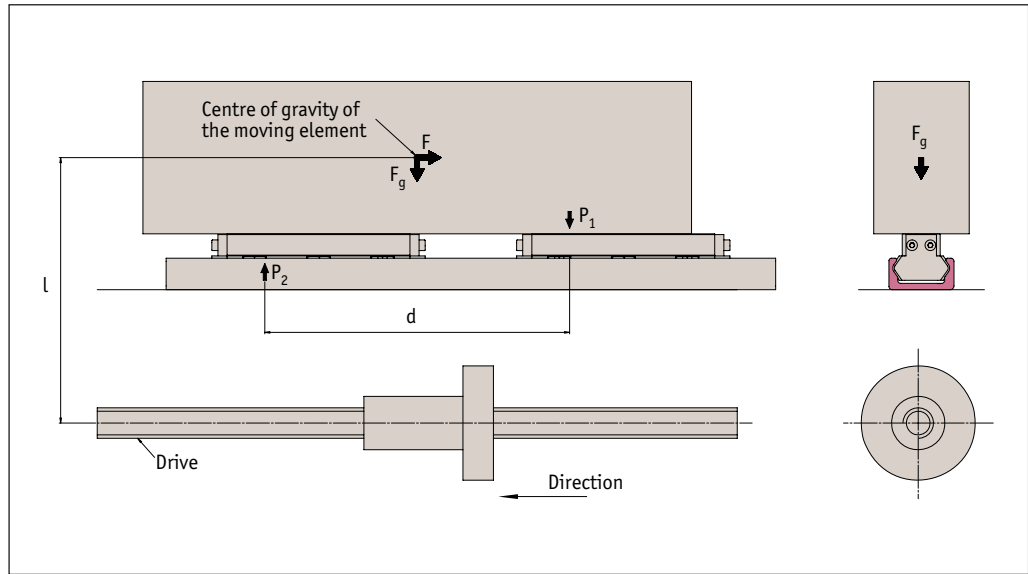
### Horizontal movement

Static test

**Slider load**

$$P_1 = F$$

$$M_2 = F \cdot a$$



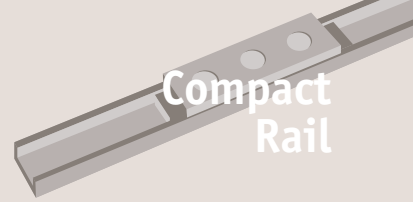
**Horizontal movement**

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
- $C$  = dynamic load capacity in N
- $P$  = effective equivalent load in N
- $f_c$  = contact factor
- $f_i$  = application coefficient
- $f_h$  = 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:

$$P_1 = P_r + \left( \frac{P_a}{C_{0ax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \right) \cdot C_{0rad}$$

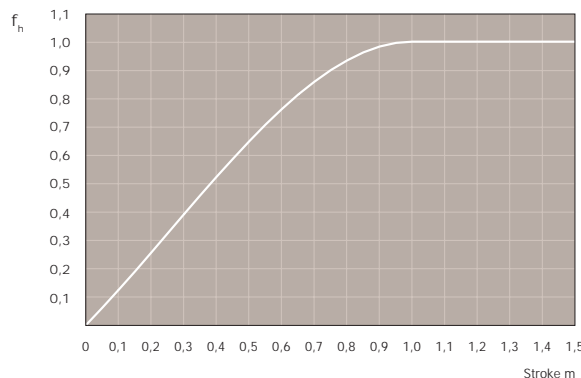
Here the external loads are assumed as constant in time. Brief loads, which do not exceed the maximum load capacities, do not have any relevant effect on the service life and can therefore be discounted. The contact factor  $f_c$  refers to applications in which several sliders pass the same rail section. 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**

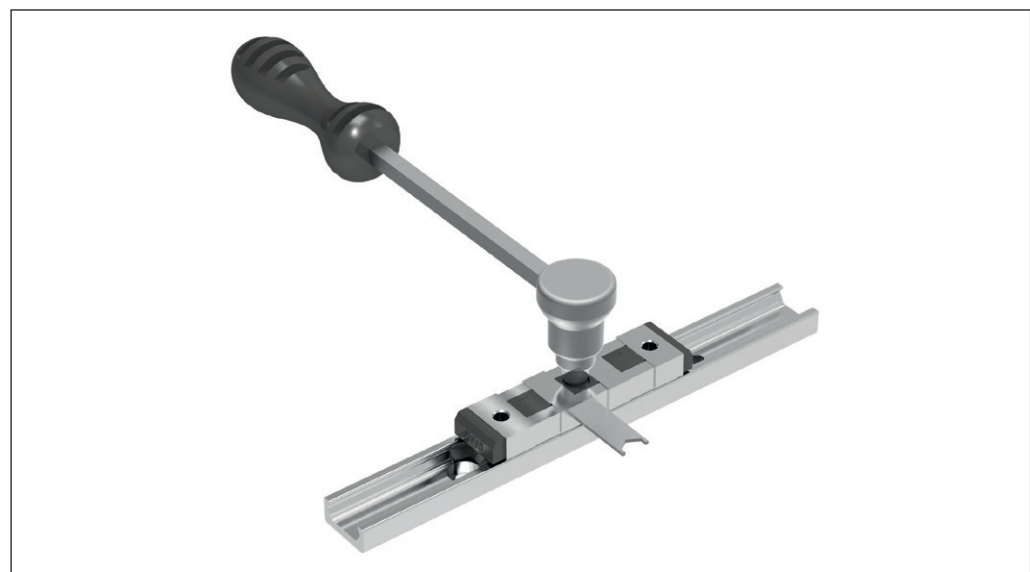
The slides have three or more large roller bearings. In the case of a standard three roller bearing slider, the two at either end are fixed and the direction of these fixed positions is marked on the sliders with a dot or an arrow. Insert the sliders in the rails with the fixed rollers set to take the 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.

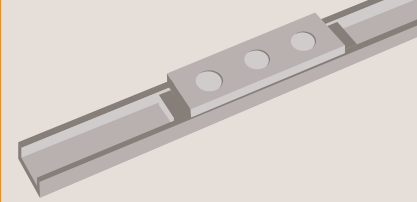
Slider size	Tightening torque Nm
18	3
28	7
35	12
43	12





# Technical Information

## Installing a Single Rail

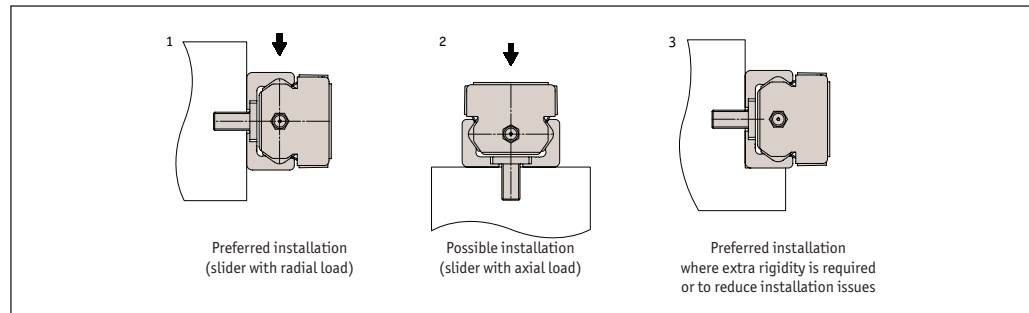


Compact Rail from Automation Components

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.

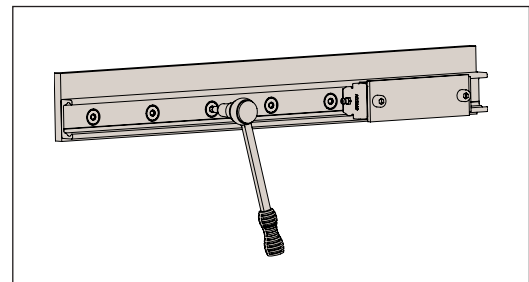
This reduces the deformation of the rail sides and the load on the screws. The installation of a rail with countersunk holes requires an external reference for alignment. This reference can also be used as a rail support if required. All information in this section on alignment of the rails, refers to rails with cylindrical countersunk holes. Rails with countersunk holes self-align using the specified fixing hole pattern.



### Rail Installation Without Support

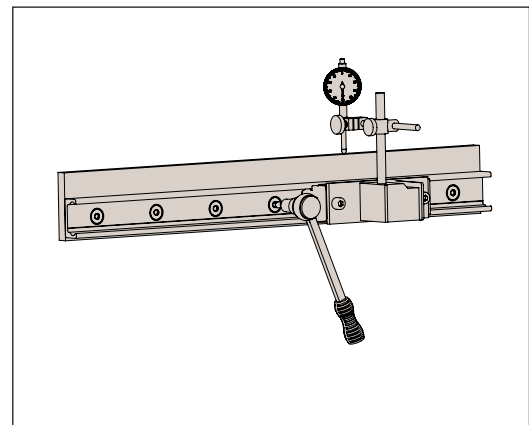
#### Rail Installation 1

- 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.



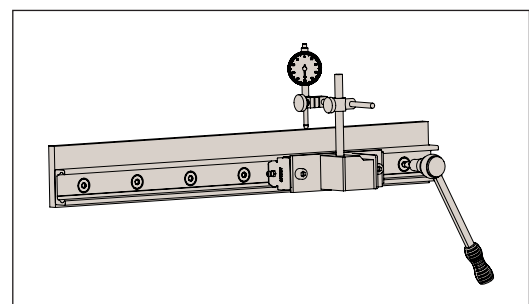
#### Rail Installation 2

- 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.



ST116 LINEAR RAILS

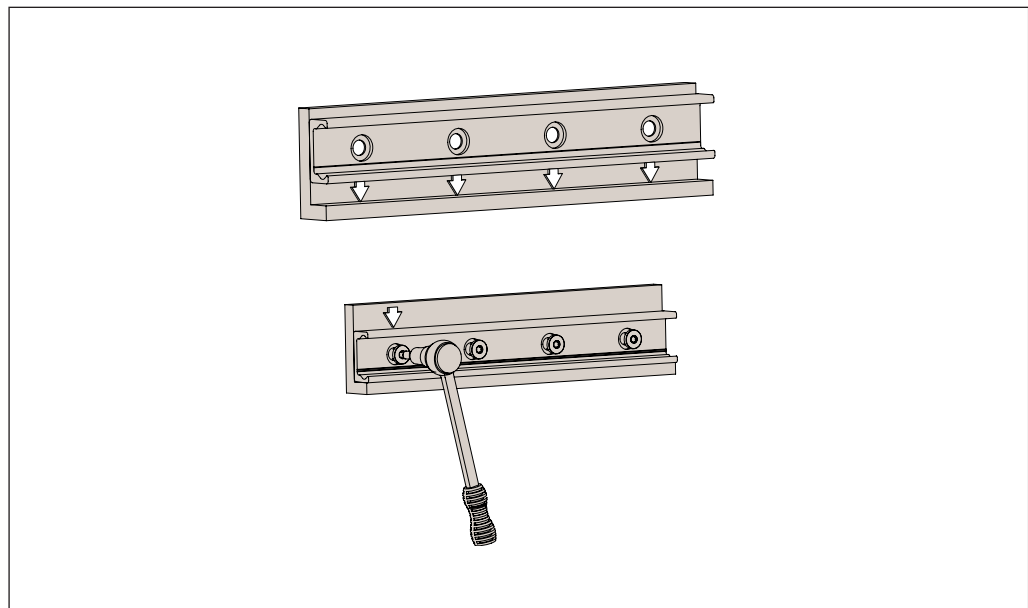
ov-compact-rails-installing-single-rail-lnh-Updated-28-03-2023

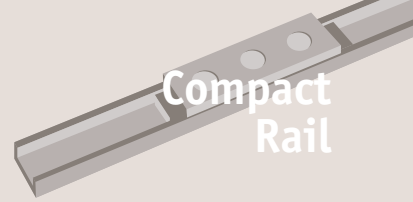


### Rail installation with reference surface as support

- 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.

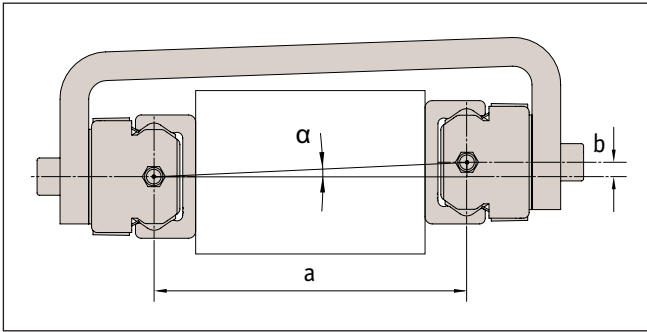
Screw type	Rail size	Tightening torque Nm
M4	18	3
M5	28	9
M6	35	12
M8	43	22





### 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°)

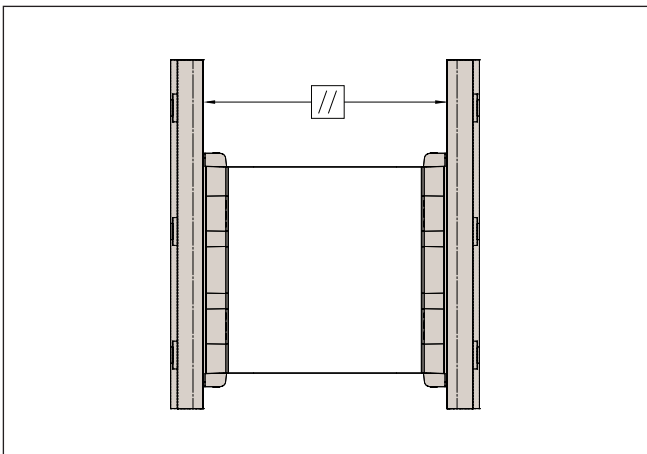
Example:

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.

Compact Rail from Automation Components

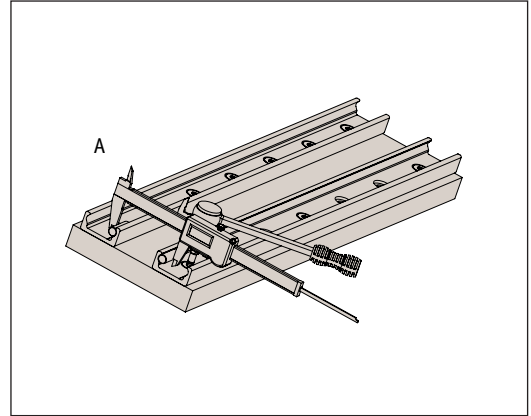
LONG LINEAR RAILS



### Flat, parallel installation of two T rails

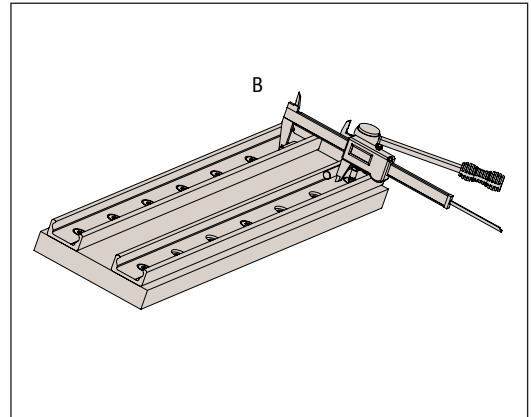
#### Parallel installation 1

- 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.



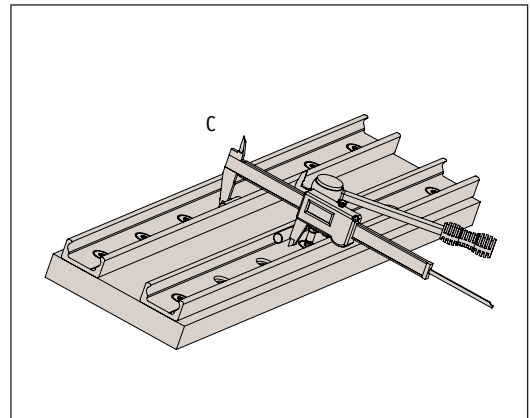
#### Parallel installation 2

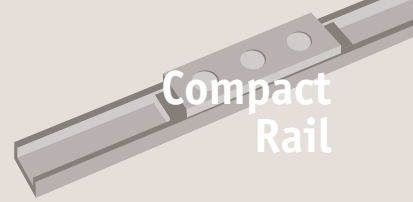
- Fasten the rail in Position B so that the distance between the raceways does not exceed the measured values in Position A while maintaining the tolerances for parallel installation.



#### 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.



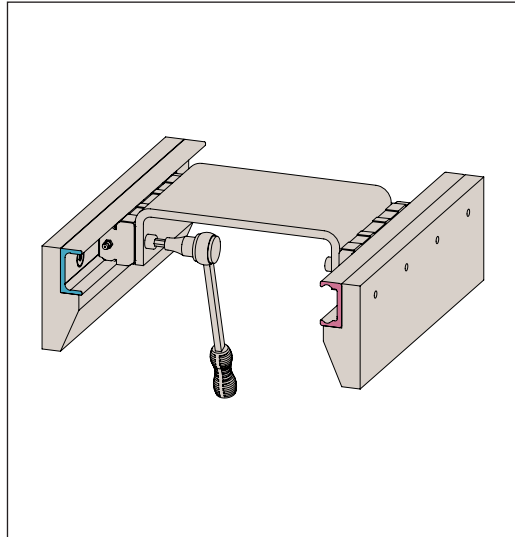


### Installation of the T and U systems

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.

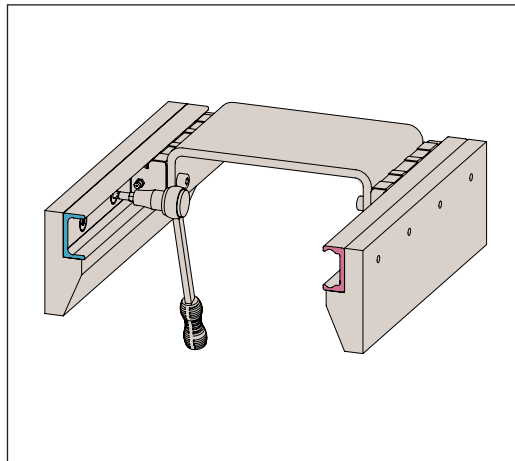
#### Installation step 1

- 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.



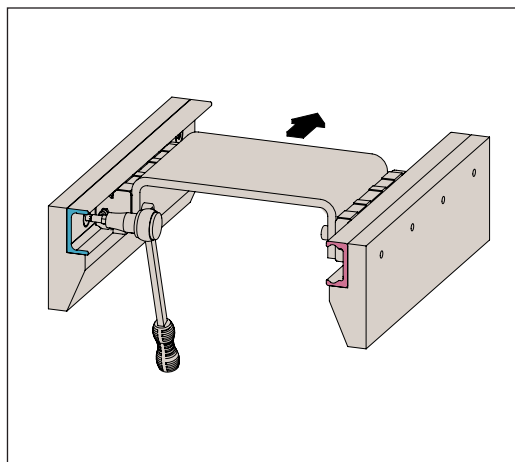
#### Installation step 2

- 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.

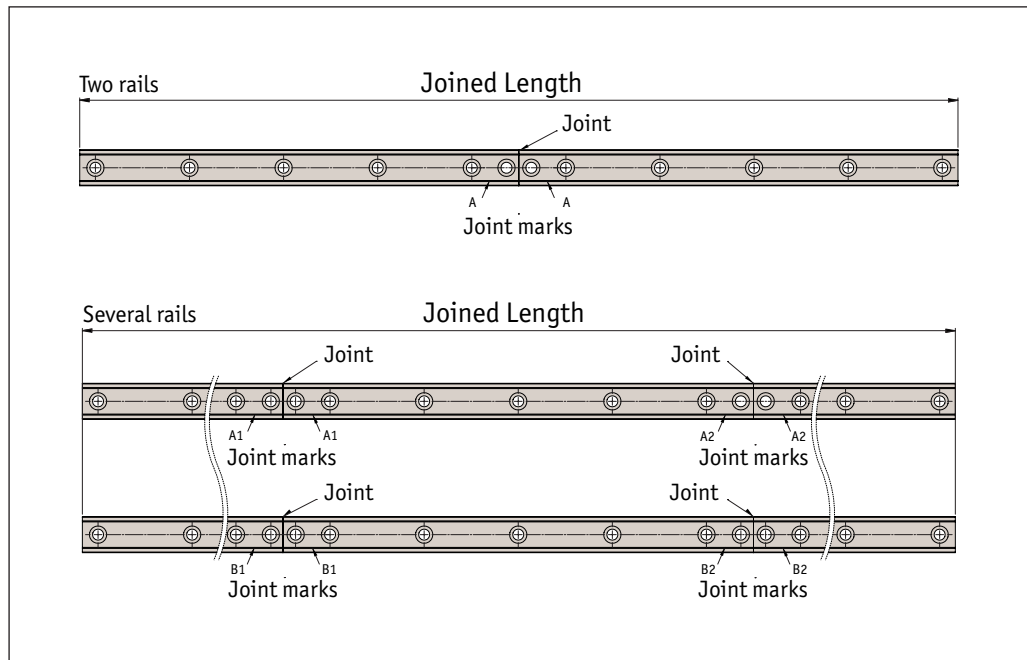


Compact Rail from Automation Components

LONG LINEAR RAILS



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.

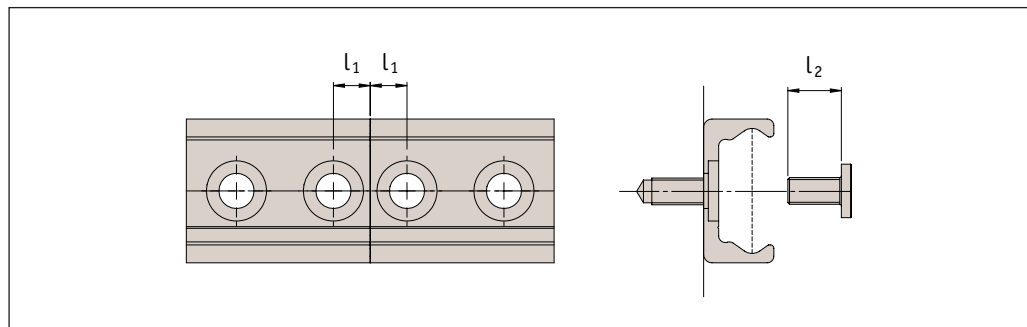


**General information**

Each rail has a one piece maximum length. Longer lengths are achieved by joining two or more rails together (joined rails).

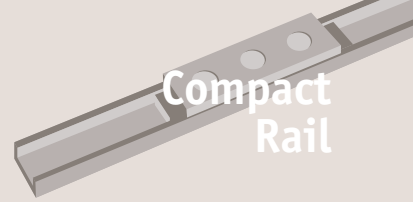
We then machine the rail ends at a right angle to the end face and mark them.

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



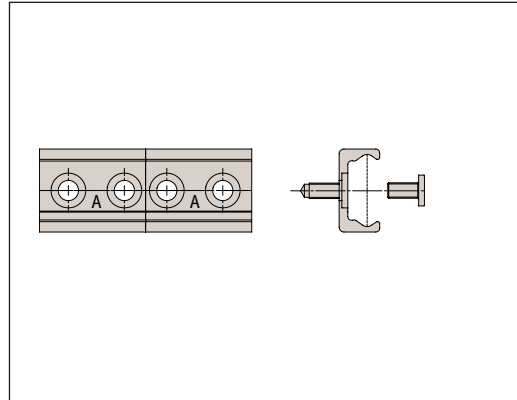


### Installation of joined rails

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:

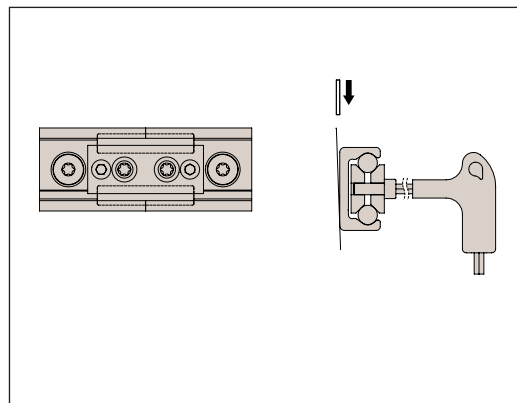
#### Installation of joined rails step 1

- 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.



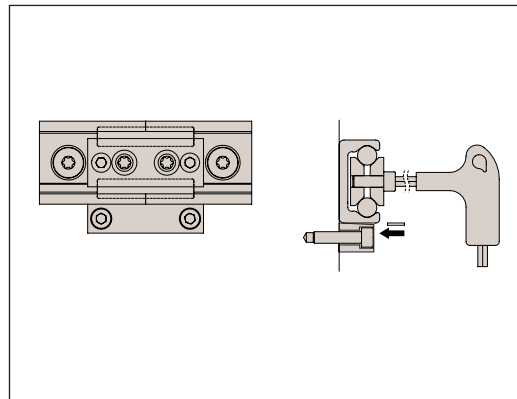
#### Installation of joined rails step 2

- 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.



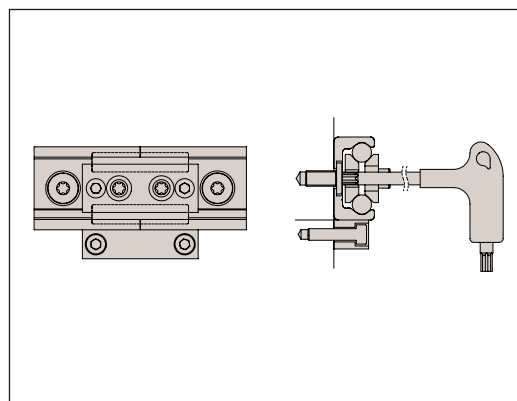
#### Installation of joined rails step 3

- 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.



Compact Rail from Automotion Components

LONG LINEAR RAILS



The Easy Slide family of linear rails have a compact cross-section and low-friction movement.

#### Robust and long service life

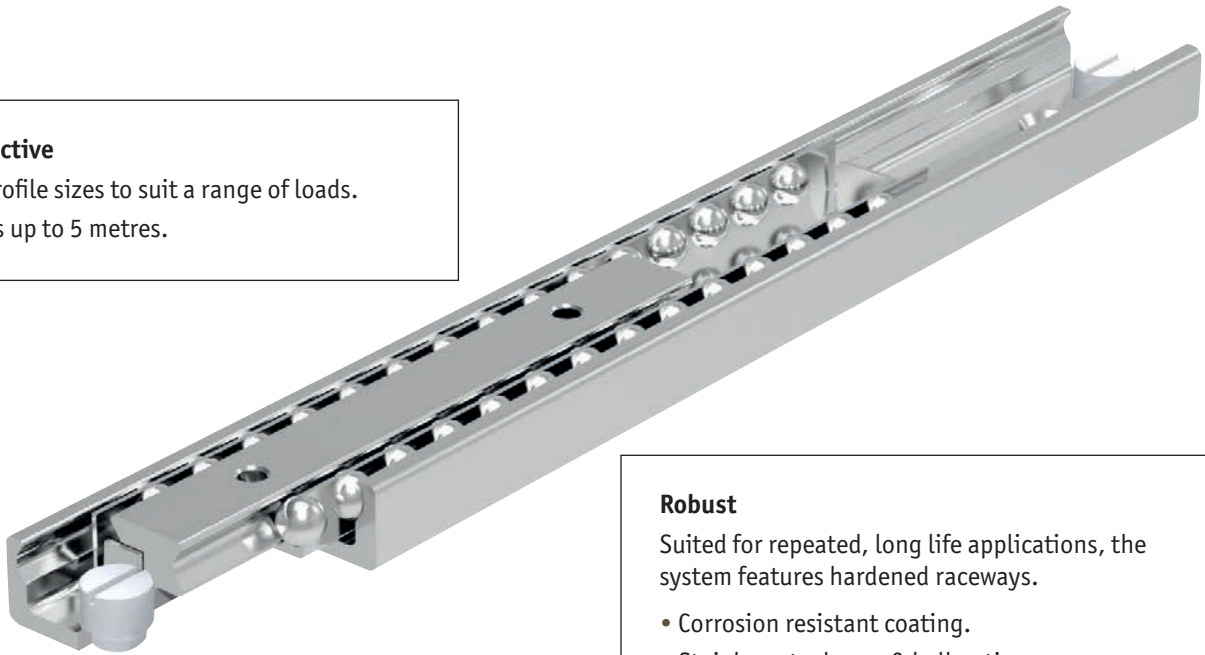
Easy Slide's range of cross-sectional rail sizes allow for applications in which high load capacities can be applied, combined with a very long service life.

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.

LONG LINEAR RAILS

#### 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.

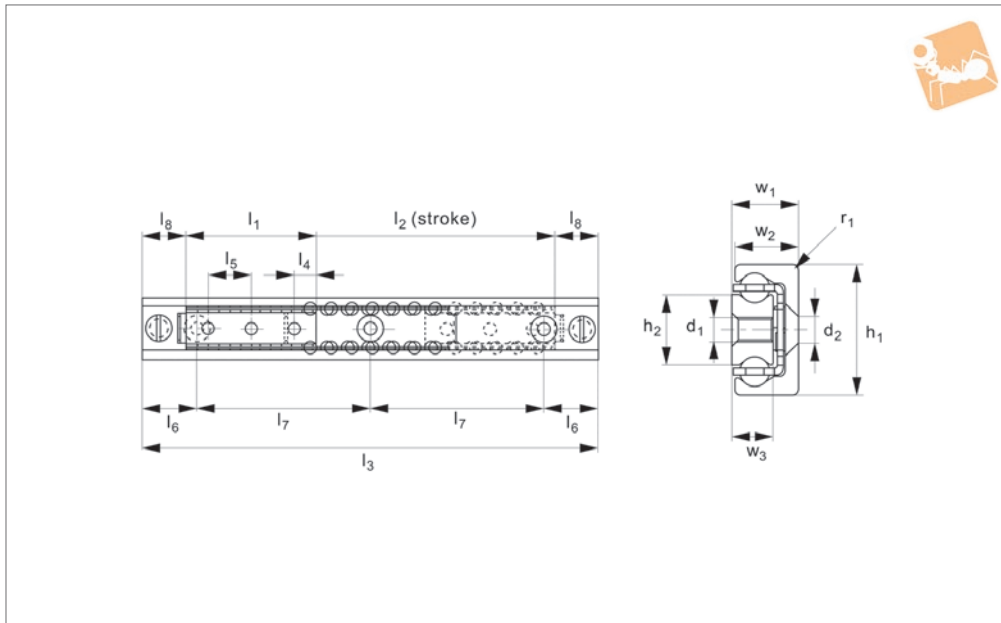
**Horizontal applications only**

Please note: For high acceleration/deceleration movement, cage creep may occur especially with long ball cage versions. Please see technical notes to minimise this.



# Easy Slide - Size 28

# Long Linear Rails



## L1972.28

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: 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.

### Technical Notes

Smooth movement, with very little friction

Order No.	$l_1$	$l_3$	$l_2$ stroke	$h_1$	$w_1$	$d_1$	$d_2$ for	Load $C_{0\text{ax}}$ N max.	Load $C_{0\text{rad}}$ 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



LONG LINEAR RAILS

Order No.	l <sub>1</sub>	l <sub>3</sub>	l <sub>2</sub> stroke	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	M <sub>x</sub> Nm	M <sub>y</sub> Nm	M <sub>z</sub> 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 <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.S28-060-0030-0130	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



# Easy Slide - Size 28



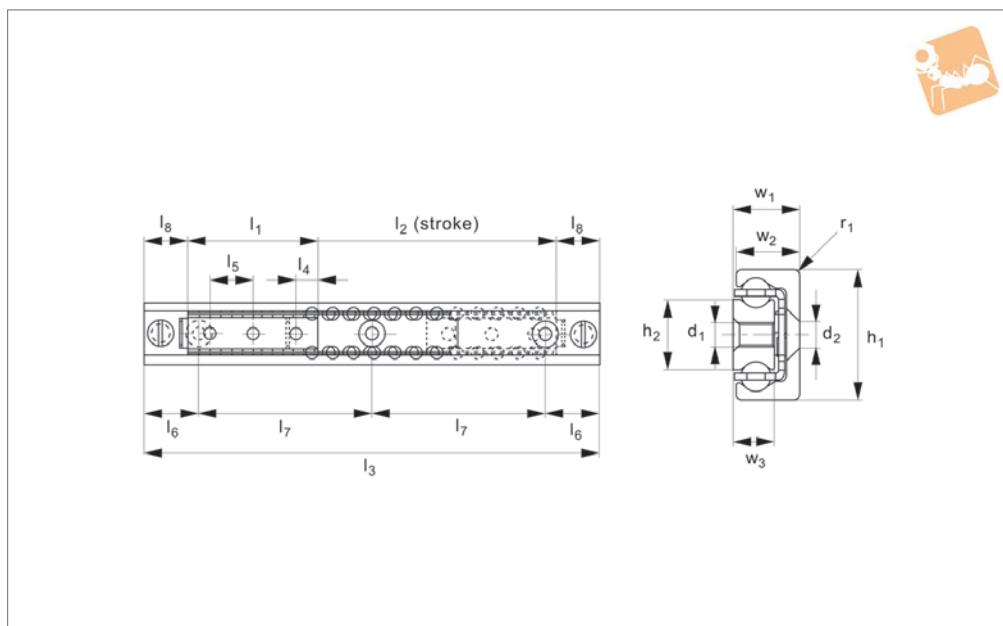
## Long Linear Rails

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

LONG LINEAR RAILS



## L1972.35



### 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

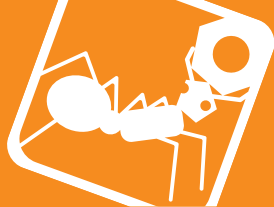
Must be mounted to a rigid structure. Stroke end stops must be fitted. Only to be used for horizontal movements.

### 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 $C_{0\text{ax}}$ N max.	Load $C_{0\text{rad}}$ 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





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.S35-290-1150-1490	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.	$l_4$	$l_5$	Holes/ slider	$l_6$	$l_7$	$l_8$	$h_2$	$w_2$	$w_3$	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

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.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





## Easy Slide- Size 35



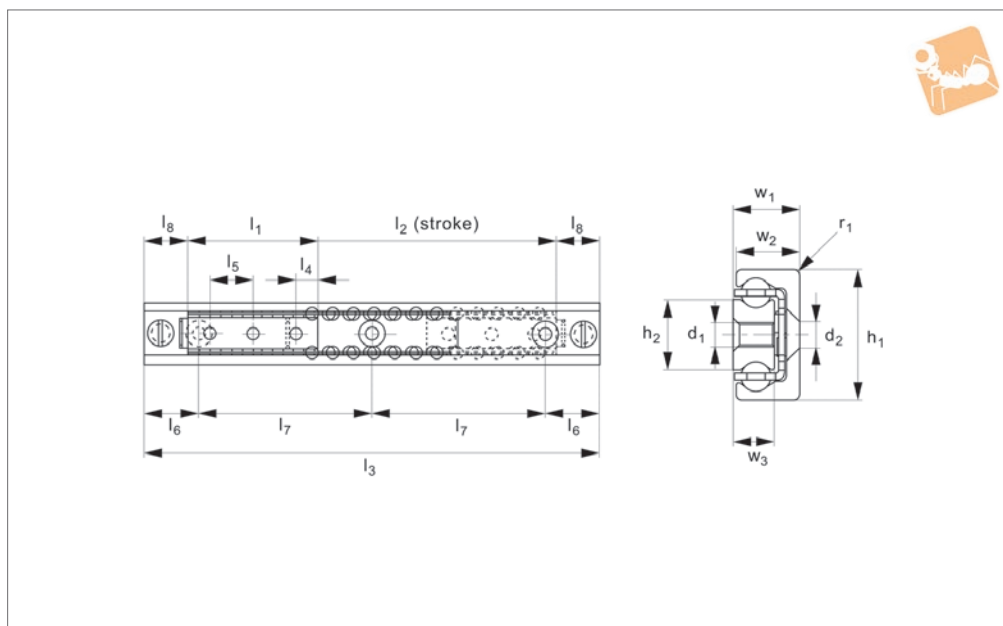
Long Linear  
Rails

Order No.	$l_4$	$l_5$	Holes/ slider	$l_6$	$l_7$	$l_8$	$h_2$	$w_2$	$w_3$	R
L1972.S35-610-0990-1650	25	80	8	25	80	25	15.8	16	10	2
L1972.S35-610-1150-1810	25	80	8	25	80	25	15.8	16	10	2

LONG LINEAR RAILS



## L1972.43



### 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 $C_{0\ ax}$ N max.	Load $C_{0\ rad}$ 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



# Easy Slide - Size 43

## Long Linear Rails



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.S43-290-0990-1330	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.	$l_4$	$l_5$	Holes/ slider	$l_6$	$l_7$	$l_8$	$h_2$	$w_2$	$w_3$	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

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.S43-210-0670-0930	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



# Easy Slide - Size 43



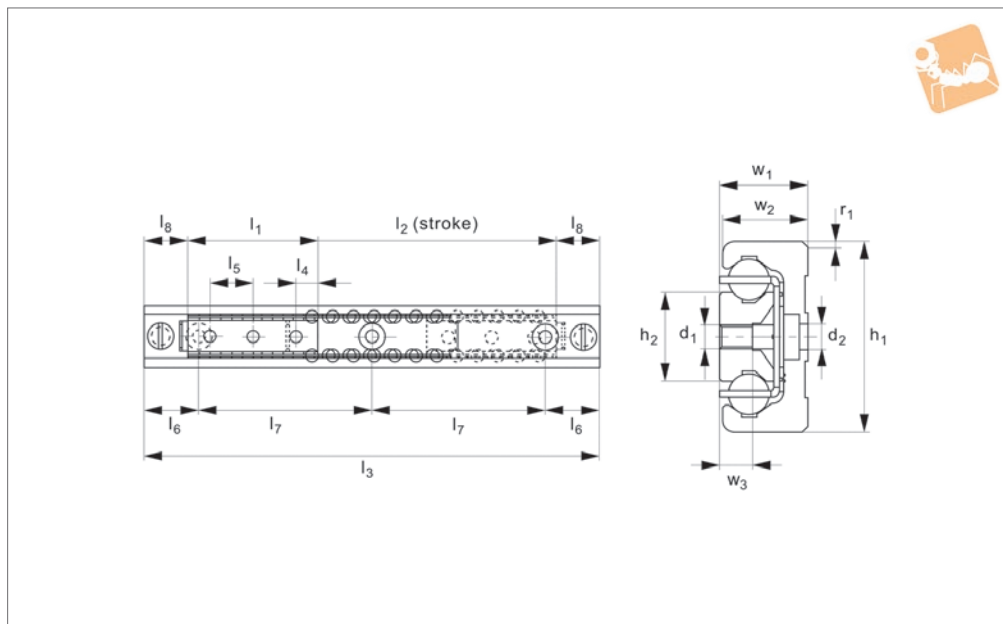
## Long Linear Rails

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.S43-530-0590-1170	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

LONG LINEAR RAILS



## L1972.63



### 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



# Easy Slide - Size 63

## 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	9363	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

LONG LINEAR RAILS





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





# Easy SLide Rails

## Specifications & applications



# Easy Slide Rails

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)

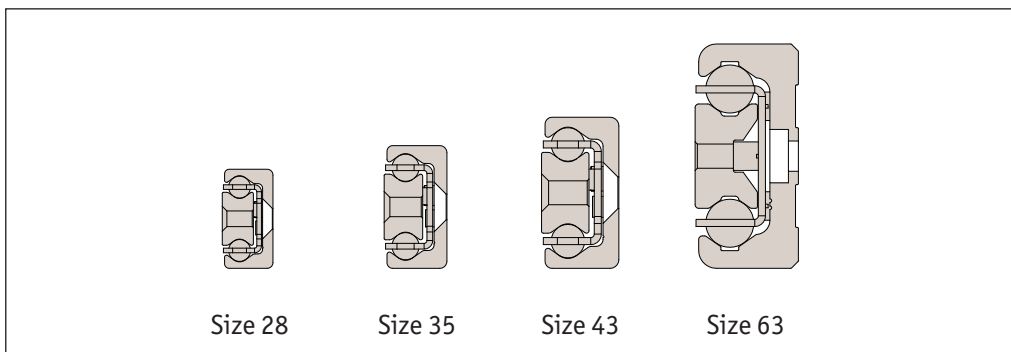
Seat adjustment  
sliding doors  
battery removal units



#### Medical technology

X-ray equipment  
dental chairs  
bed extensions

### Rail Sizes



ov-easy-slide-specifications-&-applications-rnh-Updated-15-03-2023



**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.

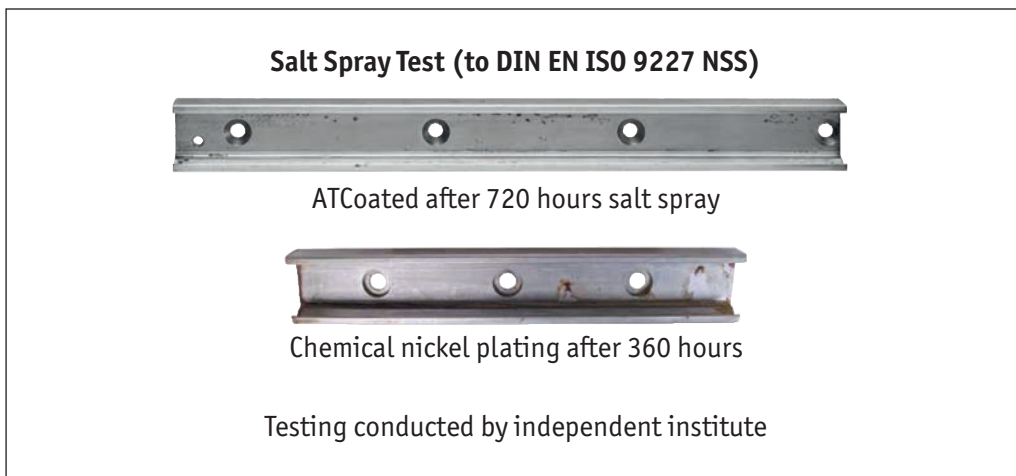
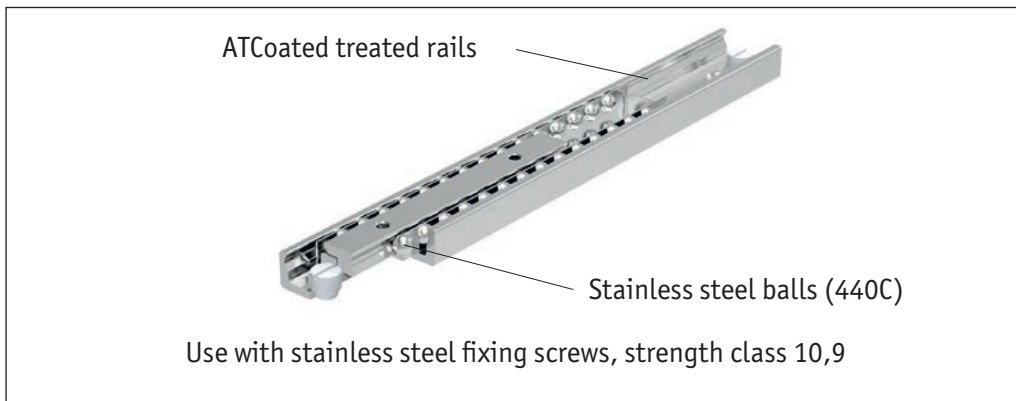
However, our preferred and most effective solution to inhibit corrosion is to apply a special corrosion resistant (ATCoat) plating to the rails and sliders and to combine this with stainless steel ball bearings.

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.

Easy Slide Rails from Automation Components

LONG LINEAR RAILS



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.

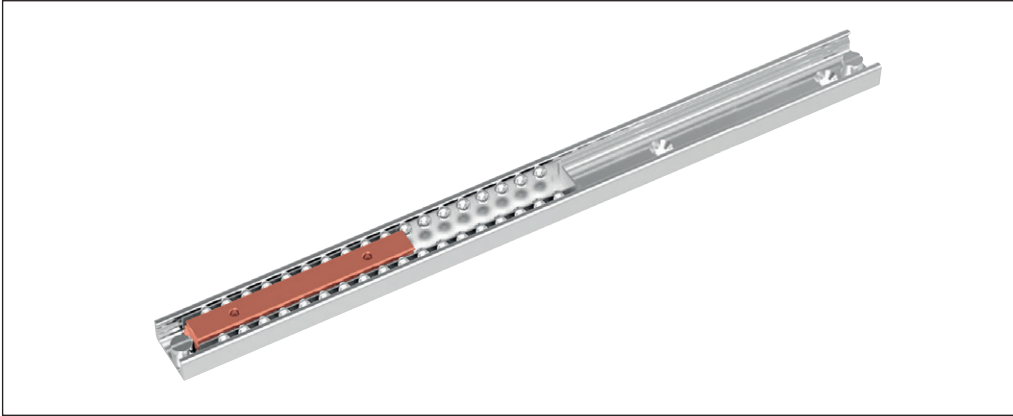
This coating is often re-applied to linear guides and telescopic pullouts in the food and chemical industries; where they can be exposed to corrosive or aggressive environments.

The ATCoat has received USDA approved and also EU approved No.1935/2004 for use in the food industry.



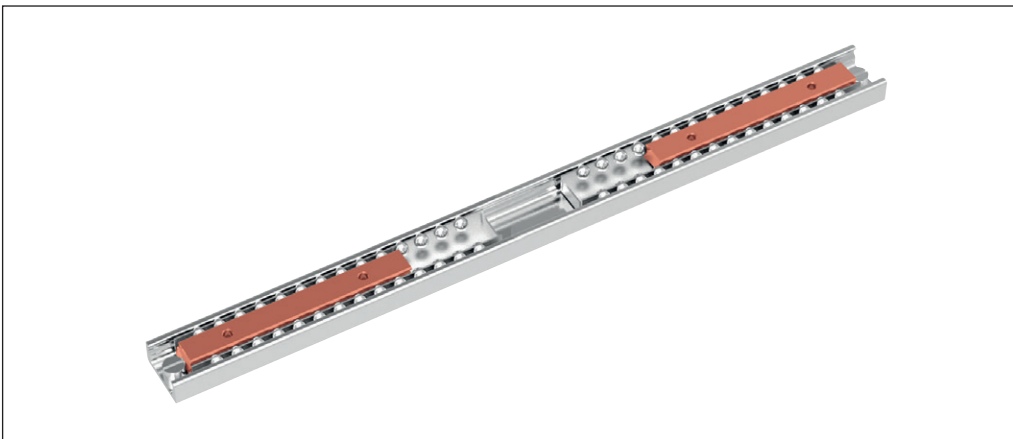
### Single sliders

**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.



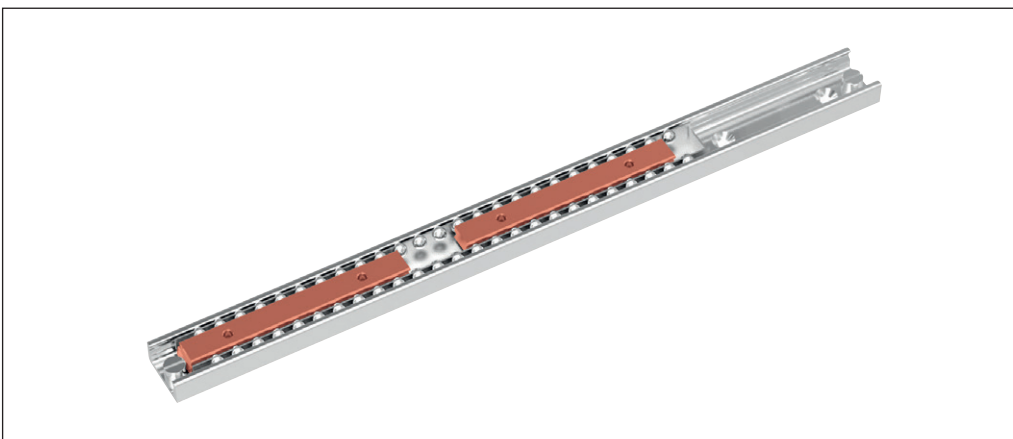
### Multiple independent sliders

**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.



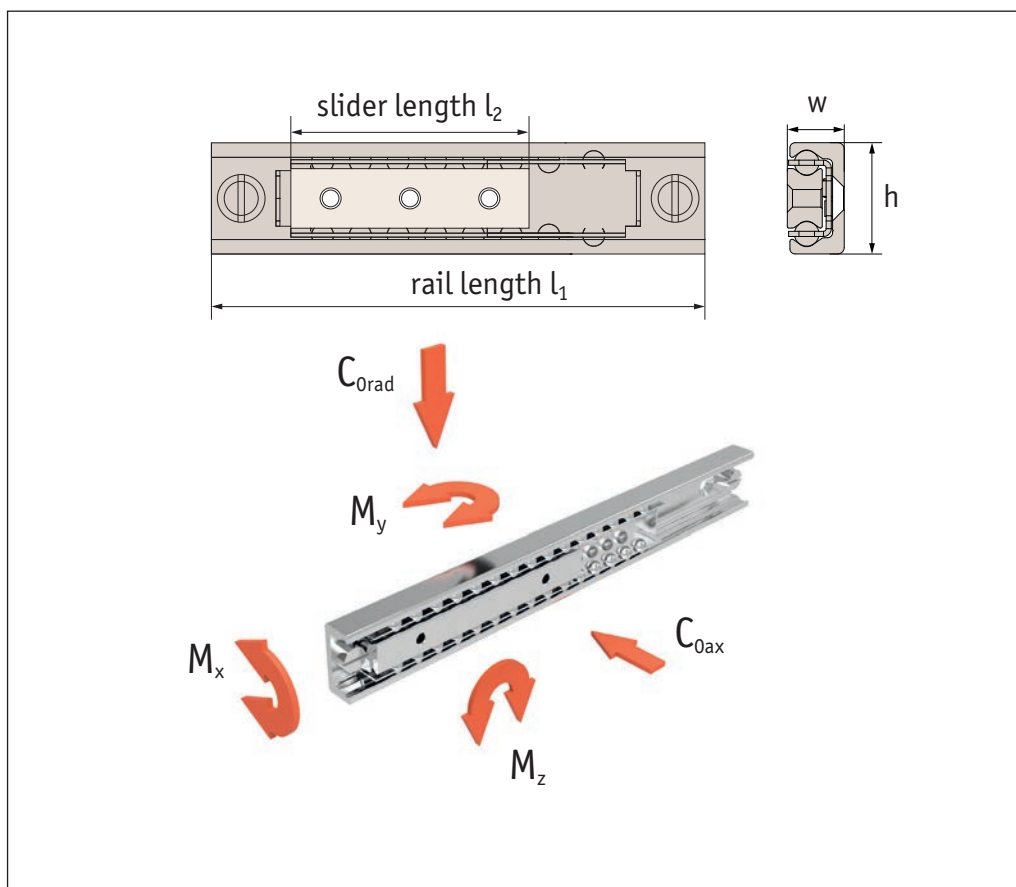
### Multiple synchronised sliders

**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

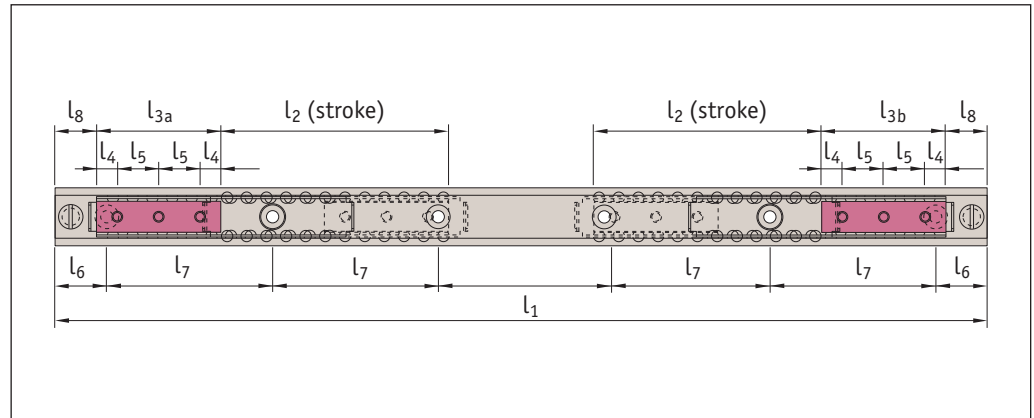
Rail Sizes h	Slider Length $l_2$	Width w	Maximum loads:				
			$C_{0rad}$ N	$C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ Nm
28	60	13	3480	2436	17,1	24	35
	80		4640	3248	22,7	43	62
	130		7540	5278	36,9	114	163
	210		12180	8526	59,7	298	426
	290		16820	11774	82,4	569	813
	370		21460	15022	105,1	926	1323
	450		26100	18270	127,9	1370	1958



Rail Sizes h	Slider Length $l_2$	Width w	Maximum loads:				
			$C_{0rad}$ N	$C_{0ax}$ N	$M_x$ Nm	$M_y$ Nm	$M_z$ 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 slides in the rail and their length.

The length and stroke of the individual sliders can be different.

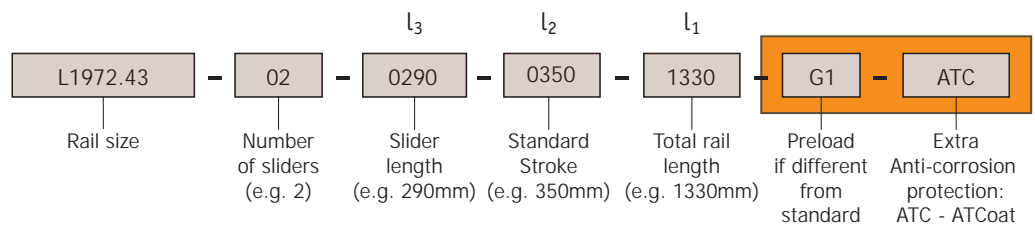
#### Tips

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.

$$\text{Rail Length } l_1 = [ 2 \times ( l_3 + l_2 ) + ( 2 \times l_8 ) ]$$

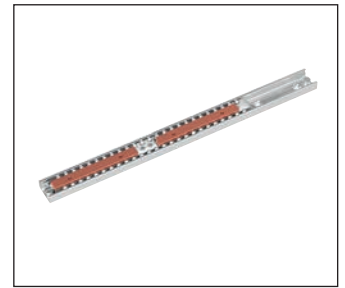
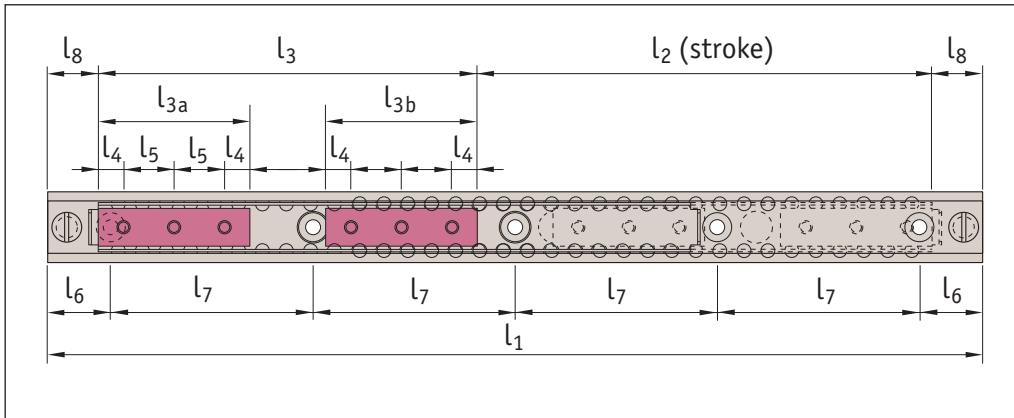
#### Ordering Example



# Technical Information

Multiple synchronized sliders

## Easy Slide Rails



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.

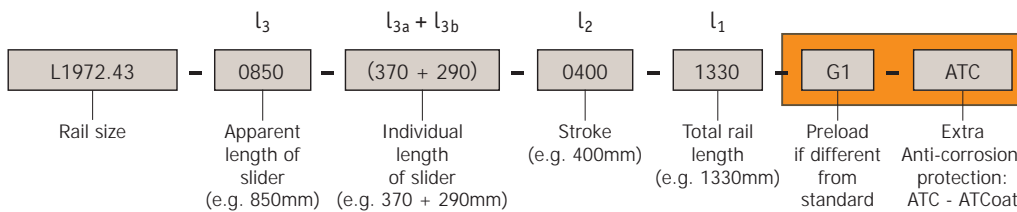
The length and stroke of the individual sliders can be different.

### Tips

To ensure proper smooth movement, the stroke must be  $\leq 7 \times$  slider length.

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.

$$\frac{P_{Orad}}{C_{Orad}} \leq \frac{1}{S_0} \quad \left| \quad \frac{P_{Oax}}{C_{Oax}} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_1}{M_x} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_2}{M_y} \leq \frac{1}{S_0} \quad \left| \quad \frac{M_3}{M_z} \leq \frac{1}{S_0} \right. \right. \right.$$

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:

$$\frac{P_{Orad}}{C_{Orad}} + \frac{P_{Oax}}{C_{Oax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \leq \frac{1}{S_0}$$

$P_{Orad}$  = effective radial load  
 $C_{Orad}$  = permissible radial load  
 $P_{Oax}$  = effective axial load  
 $C_{Oax}$  = 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

Easy Slide Rails from Automation Components

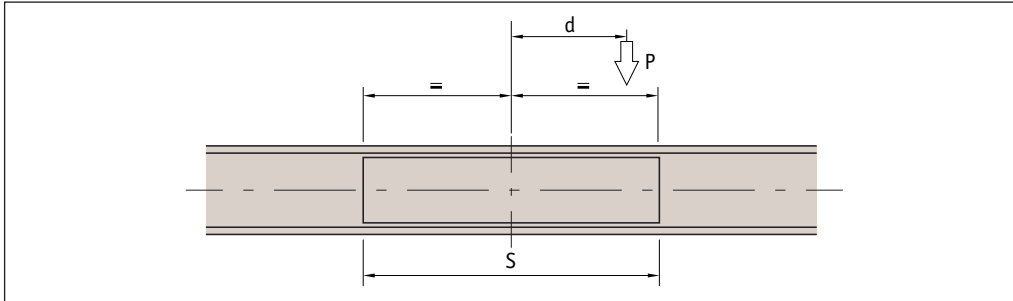
LONG LINEAR RAILS





### 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

$$P = q \cdot C_{0ax}$$

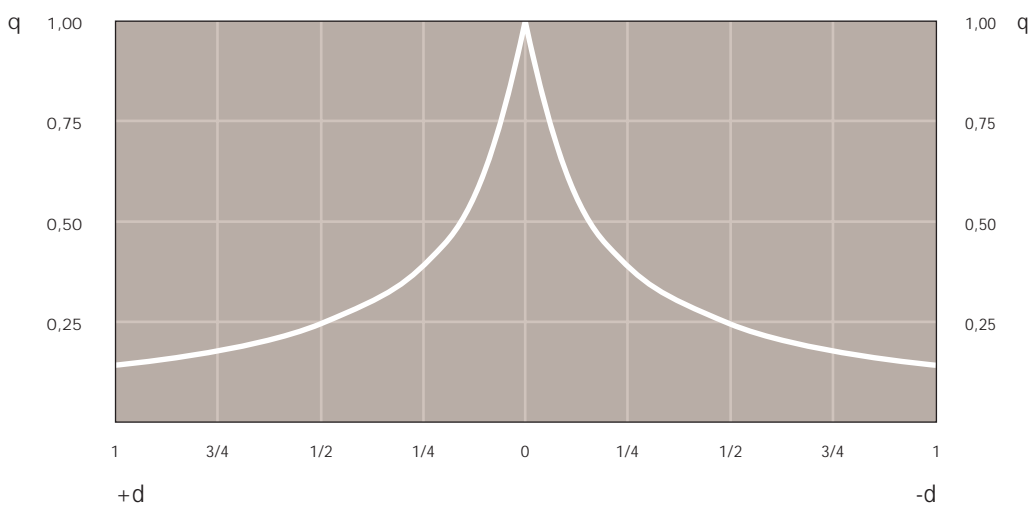
For the static load and the service life calculation,  $P_{0rad}$  and  $P_{0ax}$  must be replaced by the equivalent values calculated as follows, depending on whether the external load, P, acts:

#### Radially

$$P_{0rad} = \frac{P}{q}$$

#### Axially

$$P_{0ax} = \frac{P}{q}$$



Easy Slide Rails from Automation Components



**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:

$$L_{km} = 100 \cdot \left( \frac{C_{Orad}}{W} \cdot \frac{1}{f_i} \right)^3$$

$L_{km}$  = calculated service life (Km)       $W$  = equivalent load (N)  
 $C_{Orad}$  = 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,  $C_{Orad}$  (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:

$$W = P_{rad} + \left( \frac{P_{ax}}{C_{Oax}} + \frac{M_1}{M_x} + \frac{M_2}{M_y} + \frac{M_3}{M_z} \right) \cdot C_{Orad}$$

**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	$K_1$

Easy Slide Rails from Automation Components

LONG LINEAR RAILS



### 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:

$$\left[ \begin{array}{|c|} \hline // \\ \hline \end{array} \right] = \frac{\sqrt{H}}{300} \text{ mm}$$

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.

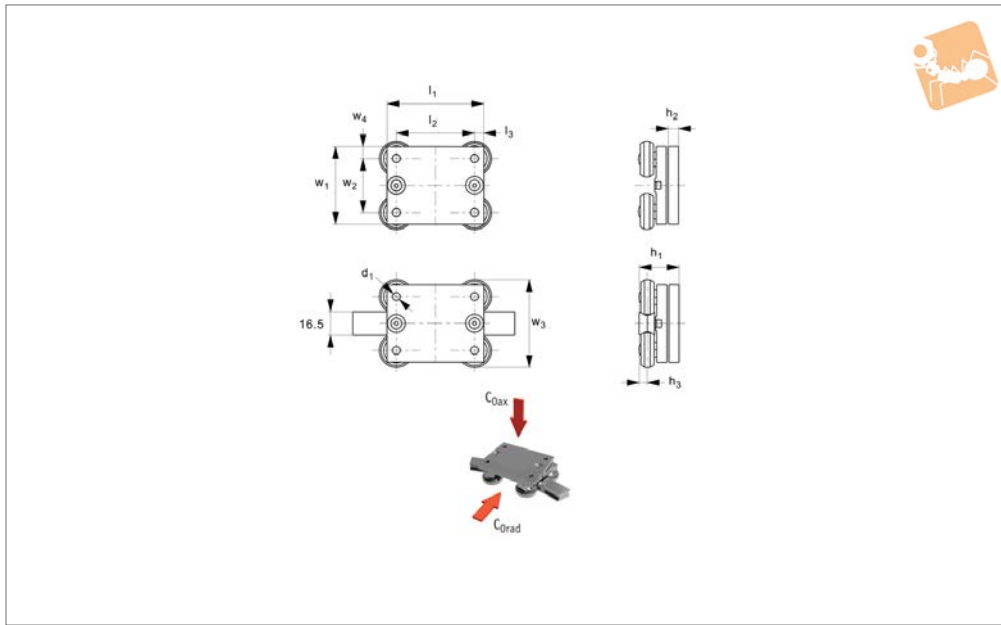
Series L1972 linear bearings should only be used for horizontal movement.



# Curviline Sliders size 16



## Long Linear Rails



### L1978.CR16

LONG LINEAR RAILS

#### Material

Slider body: Fe360. Roller 100Cr6. Roller pins: Lubricated for life.  
Finish: electrolytic zinc plated.

or more sliders. Constant (L1978.CRX16) and variable (L1978.VRX16) radii rails can be produced.  
Temperature range -30°C to +100°C.

and finishes are also available.

#### Technical Notes

Where moment loads are present use two

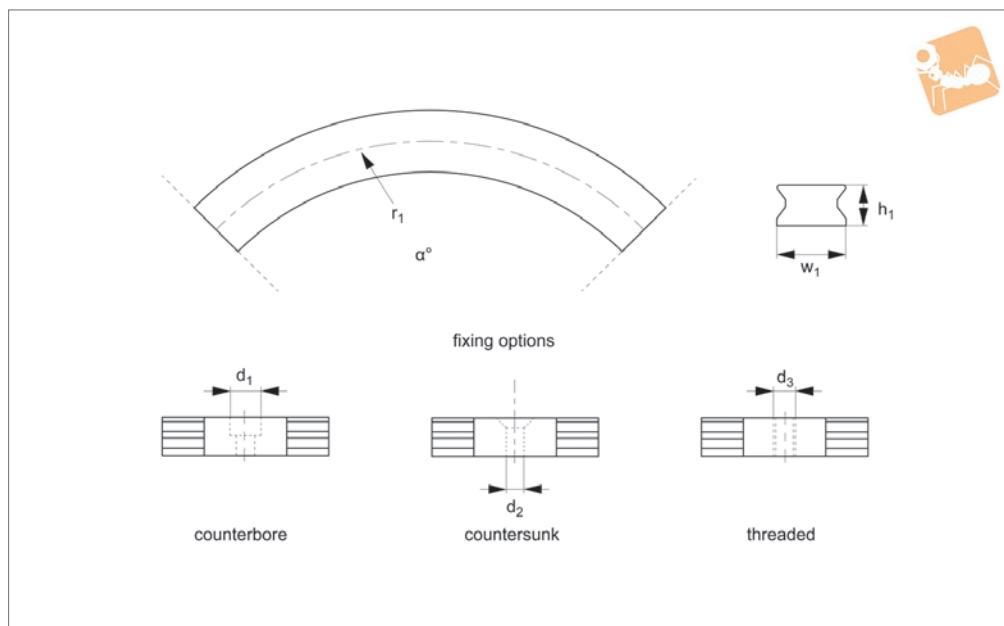
#### Tips

All stainless steel available. Other coatings

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



## L1978.CR16



### 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 curvilinear sliders L1978.CX16-070.  
Recommended hole pitch on rail is 80mm.

Rail tolerance  $\pm 0,5$ 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.CR16-0150-xx	16.5	10	150	tba	M5	M5	M6
L1978.CR16-0200-xx	16.5	10	200	tba	M5	M5	M6
L1978.CR16-0250-xx	16.5	10	250	tba	M5	M5	M6
L1978.CR16-0300-xx	16.5	10	300	tba	M5	M5	M6
L1978.CR16-0400-xx	16.5	10	400	tba	M5	M5	M6
L1978.CR16-0500-xx	16.5	10	500	tba	M5	M5	M6
L1978.CR16-0600-xx	16.5	10	600	tba	M5	M5	M6
L1978.CR16-0700-xx	16.5	10	700	tba	M5	M5	M6
L1978.CR16-0800-xx	16.5	10	800	tba	M5	M5	M6
L1978.CR16-0900-xx	16.5	10	900	tba	M5	M5	M6
L1978.CR16-1000-xx	16.5	10	1000	tba	M5	M5	M6

# Constant Radius Rails

size 16

# Long Linear Rails



### 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

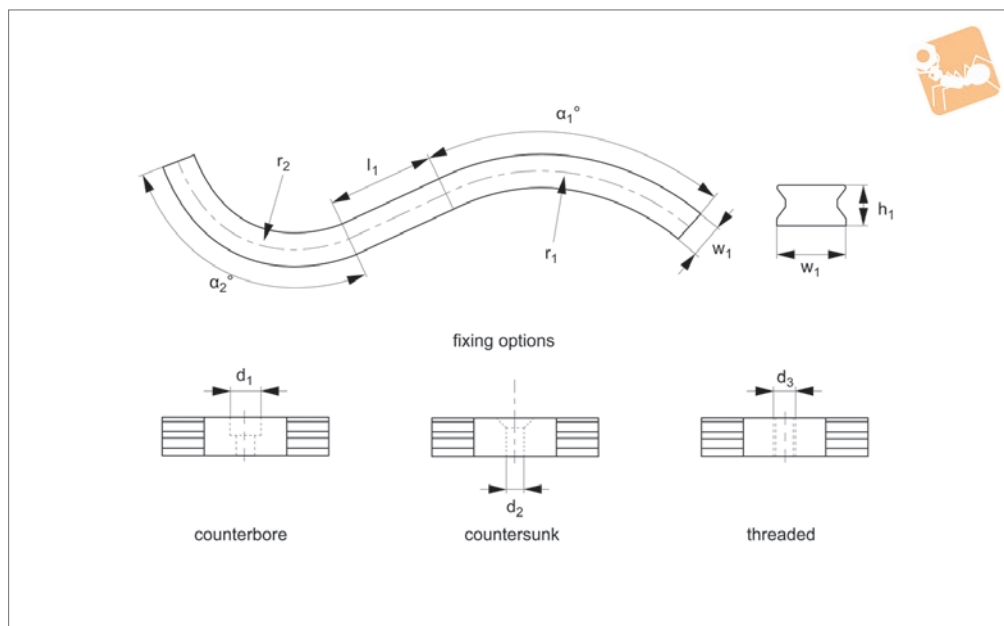
LONG LINEAR RAILS



LONG LINEAR RAILS



## L1978.VRX16



### Material

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

### Technical Notes

Advise angle required and fixing option type.  
Temperature range -30°C to +80°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: ( $\alpha_1$ )		$l$ (>70 mm)		Radius: $r_2$ (mm) >120		2 <sup>nd</sup> Angle: ( $\alpha_2$ )

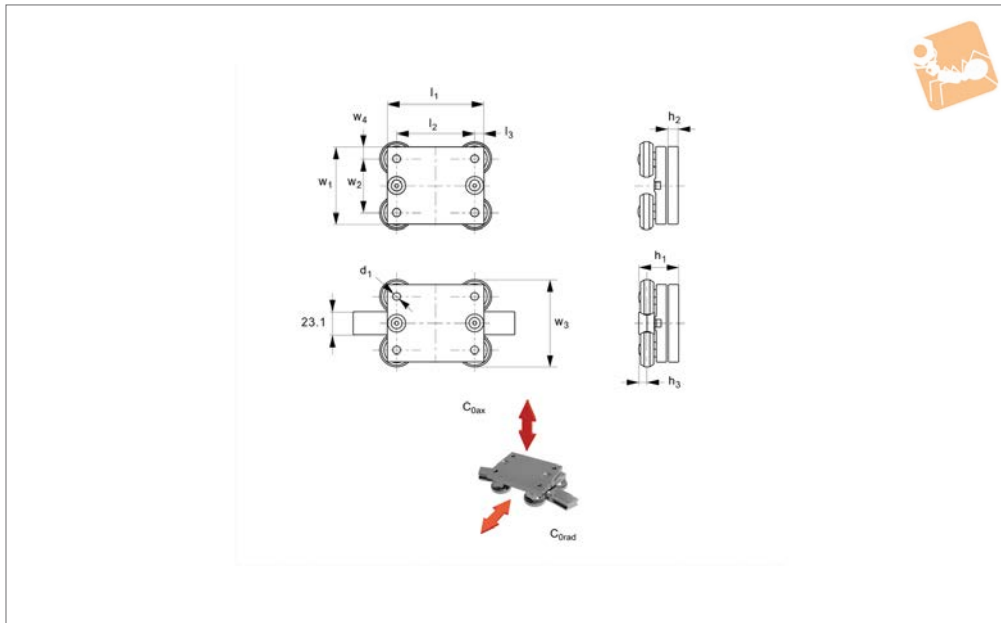




# Curviline Sliders size 23



## Long Linear Rails



### L1978.CR23

LONG LINEAR RAILS

#### Material

Slider body: Fe360. Roller 100Cr6. Roller pins: Lubricated for life.  
Finish: electrolytic zinc plated.

or more sliders.

Constant (L1978.CRX23) and variable (L1978.VRX23) radii rails can be produced.  
Temperature range -30°C to +100°C.

and finishes are also available.

#### Technical Notes

Where moment loads are present use two

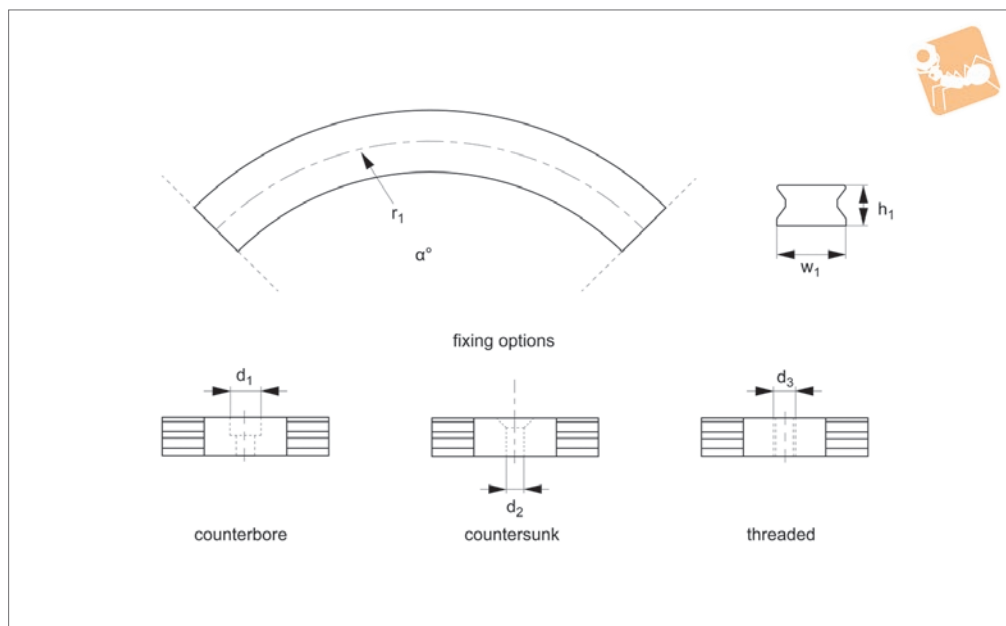
#### Tips

All stainless steel available. Other coatings

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
L1978.CR23-100	80	36.4	10	7.5	M8	100	80	10	55	89.5	12.5	1615	1130	1.10



## L1978.CR23



### 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 curvilinear sliders L1978.CX23-100.  
Recommended hole pitch on rail is 80mm.

Rail tolerance  $\pm 0,5$ 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.CR23-0150-xx	23	13.5	150	tba	M6	M6	M8
L1978.CR23-0200-xx	23	13.5	200	tba	M6	M6	M8
L1978.CR23-0250-xx	23	13.5	250	tba	M6	M6	M8
L1978.CR23-0300-xx	23	13.5	300	tba	M6	M6	M8
L1978.CR23-0400-xx	23	13.5	400	tba	M6	M6	M8
L1978.CR23-0500-xx	23	13.5	500	tba	M6	M6	M8
L1978.CR23-0600-xx	23	13.5	600	tba	M6	M6	M8
L1978.CR23-0700-xx	23	13.5	700	tba	M6	M6	M6
L1978.CR23-0800-xx	23	13.5	800	tba	M6	M6	M8
L1978.CR23-0900-xx	23	13.5	900	tba	M6	M6	M8
L1978.CR23-1000-xx	23	13.5	1000	tba	M6	M6	M8



### Ordering Example

L1978 • CRX23 - 0200 - 060 - X

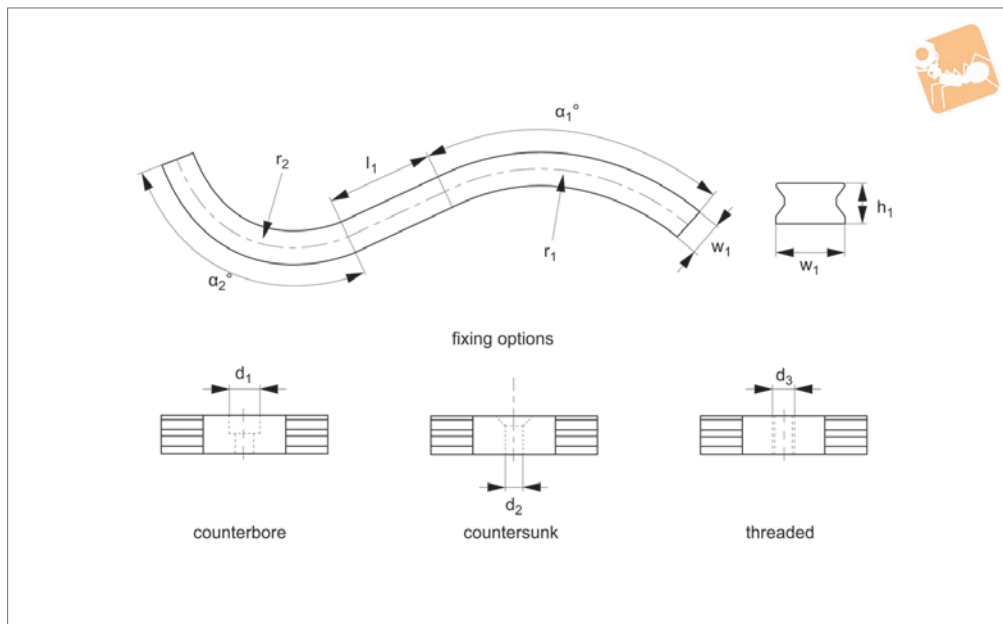
Product Number    Rail width    Radius: r (mm) >120    Angle:  $\alpha^\circ$  0 to 360°    Fixing hole type:  
CB - Counterbored  
CS - Countersunk  
TR - Threaded



LONG LINEAR RAILS



**L1978.VRX23**



**Material**

Steel rail (C43), electrolytic zinc plated.  
All stainless steel on request.

**Technical Notes**

Advise angles required and fixing option type.  
Temperature range -30°C to +80°C.

Rail weight 2,2 Kg/m.

**Tips**

Combine with curviline carriages L1978.  
CX23-100.  
Recommended hole pitch on rail is 80mm.  
Rail tolerance ± 0,5mm, angle tolerance ± 1°.

Recommended rail hole is counterbored (easy to install).

**Important Notes**

**Not to be used in high-cycle applications.**

Order No.	w <sub>1</sub>	h <sub>1</sub>	r <sub>1</sub> & r <sub>2</sub>	α <sub>1</sub> & α <sub>2</sub>	d <sub>1</sub> for	d <sub>2</sub> for	d <sub>3</sub> for	l <sub>1</sub>
<b>L1978.VRX23-xxx-xx</b>	23	13.5	tba	tba	M6	M6	M8	tba

**Ordering Example**

L1978 • VRX23 - 0200 - 060 - 100 - 0400 - 090

Product Number    Rail width    Radius: r<sub>1</sub> (mm) >120    1<sup>st</sup> Angle: (α<sub>1</sub>°)    l (>70 mm)    Radius: r<sub>2</sub> (mm) >120    2<sup>nd</sup> Angle: (α<sub>2</sub>°)

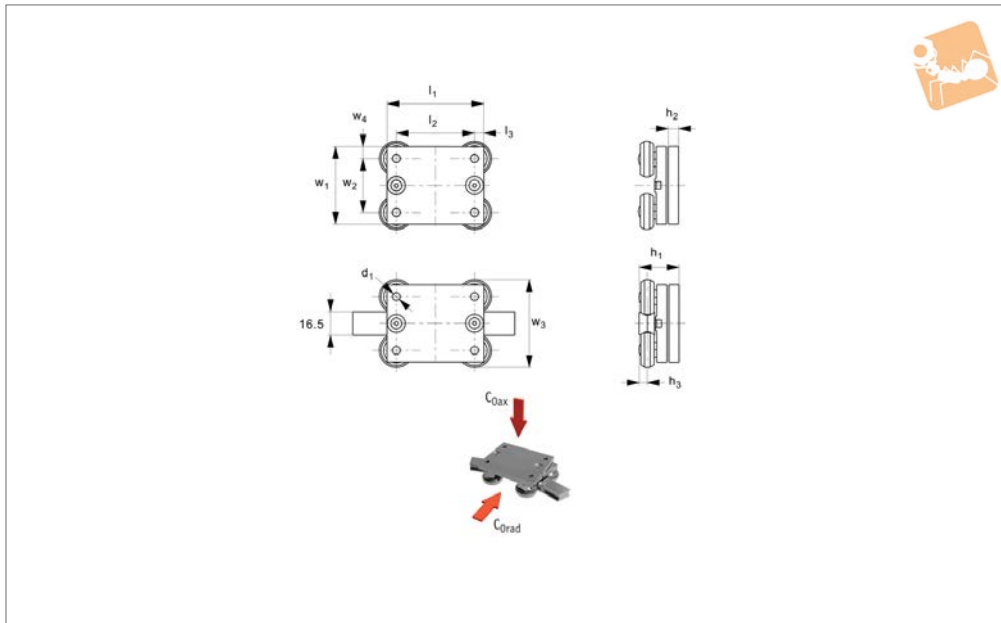


# Curviline Sliders

Stainless steel; size 16



## Long Linear Rails



## L1979.CR16

LONG LINEAR RAILS

### 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

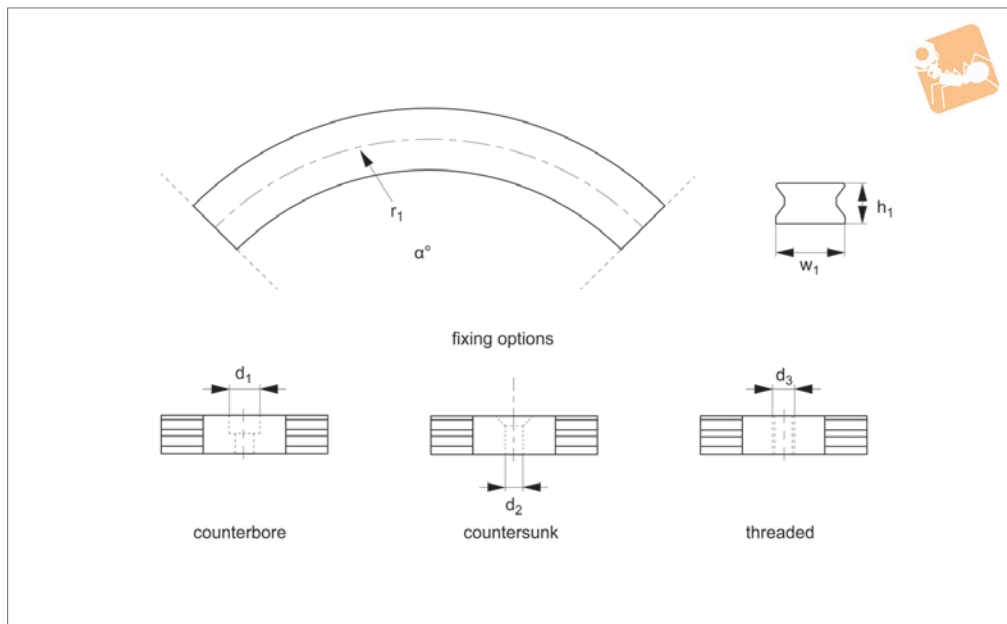
### Tips

All stainless available.

Order No.	w <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.CR16-070	50	32.3	M5	10	5.7	70	50	10	30	60	10	570	400	0.45



## L1979.CR16



### 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 Kg/m.

### Tips

Combine with curviline sliders (L1979.CR16-070). 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

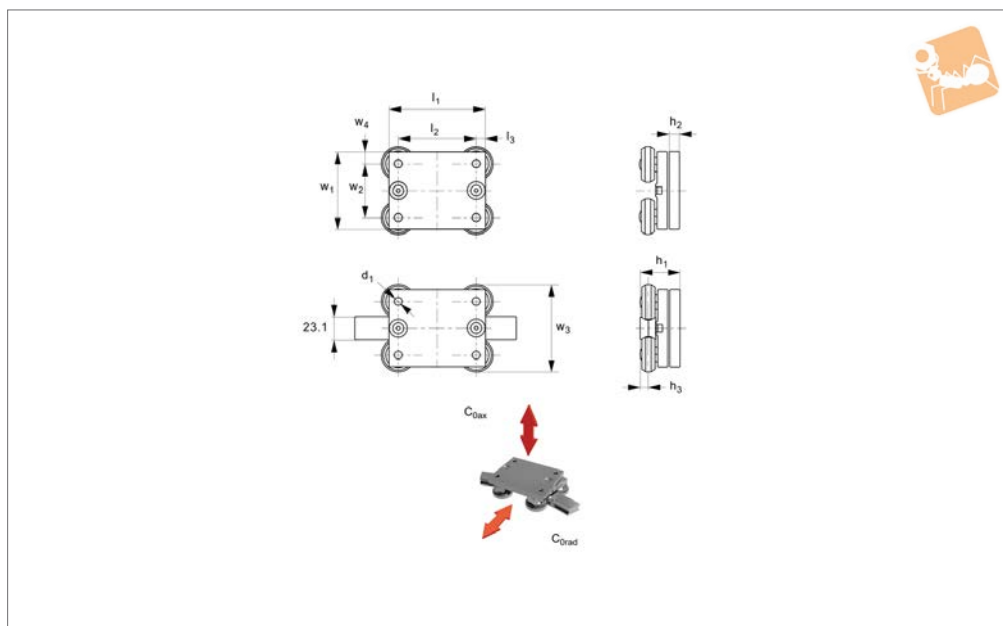
**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
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





**L1979.CR23**



**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.

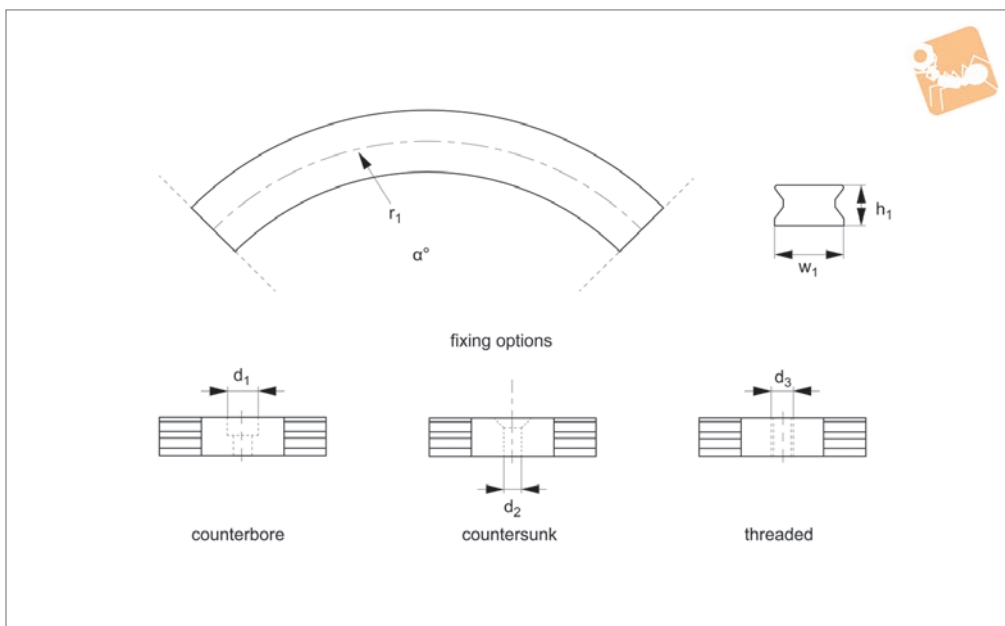
Order No.	w <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	Load C <sub>0 rad</sub> N max.	Load C <sub>0 ax</sub> N max.	Weight kg
<b>L1979.CR23-100</b>	80	36.4	M8	10	7.5	100	80	10	55	89.5	12.5	1615	1130	1.10



# Constant Radius Rail

Stainless steel; size 23

Long Linear  
Rails



**L1979.CR23**

LONG LINEAR RAILS

### Material

Stainless steel rail AISI 316L.

Temperature range -30°C to +80°C.

Rail weight 1.2Kg/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.CR23-100). Recommended hole pitch on rail is 80mm. Rail tolerance ±0.5mm and angle tolerance

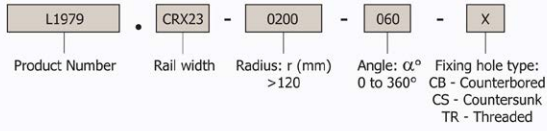
### Important Notes

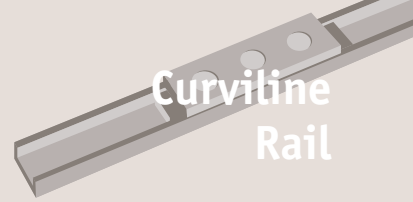
**Not to be used in high-cycle applications.**

Order No.	$w_1$	$h_1$	$r_1$	$\alpha$	$d_1$ for	$d_2$ for	$d_3$ for
L1979.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



### Ordering Example





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

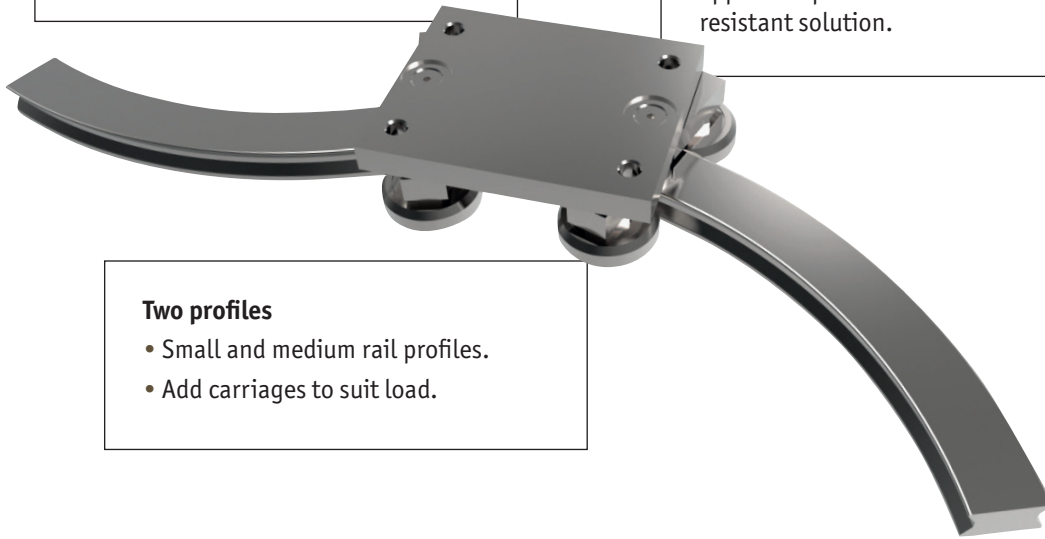
- From 120mm radius upwards.
- Standard and special radii.
- Angles up to 360°.

#### Anti-corrosion

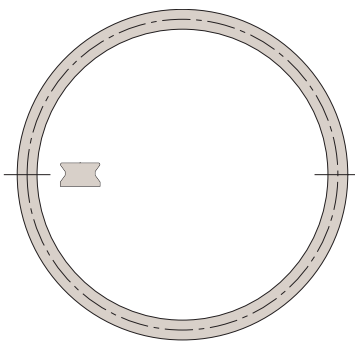
Alloy coating or nickel plating of the rails and sliders can be applied to provide a corrosion resistant solution.

#### Two profiles

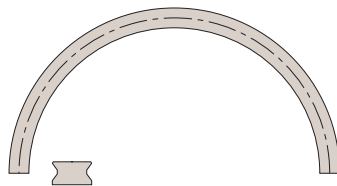
- Small and medium rail profiles.
- Add carriages to suit load.



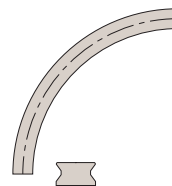
### Examples



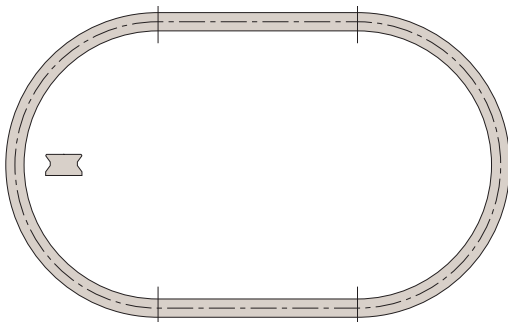
Circle



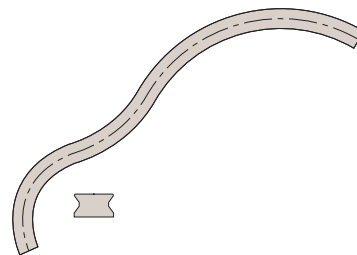
Semi-circle



Arcs



Ovals



Complex rails with varied radii and angles

# Curviline Rail from Automotion Components

LONG LINEAR RAILS



### 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



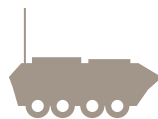
#### Transport (automotive)

Ambulance sliding systems  
fire fighting vehicles  
sliding panels



#### Transport (rail)

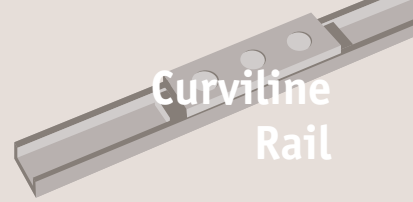
Seat adjustment  
sliding doors  
battery removal units



#### Transport (military)

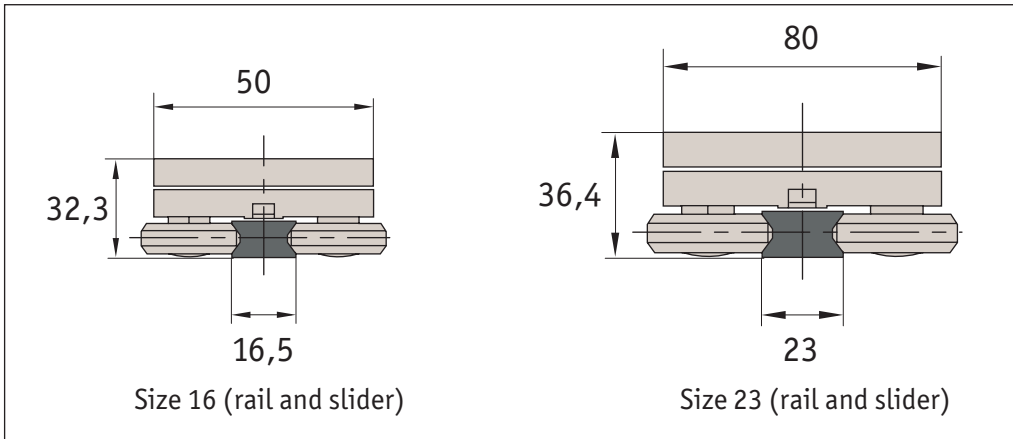
Sliding seats  
protective hatches  
stretcher extensions

Curviline Rail from Automation Components



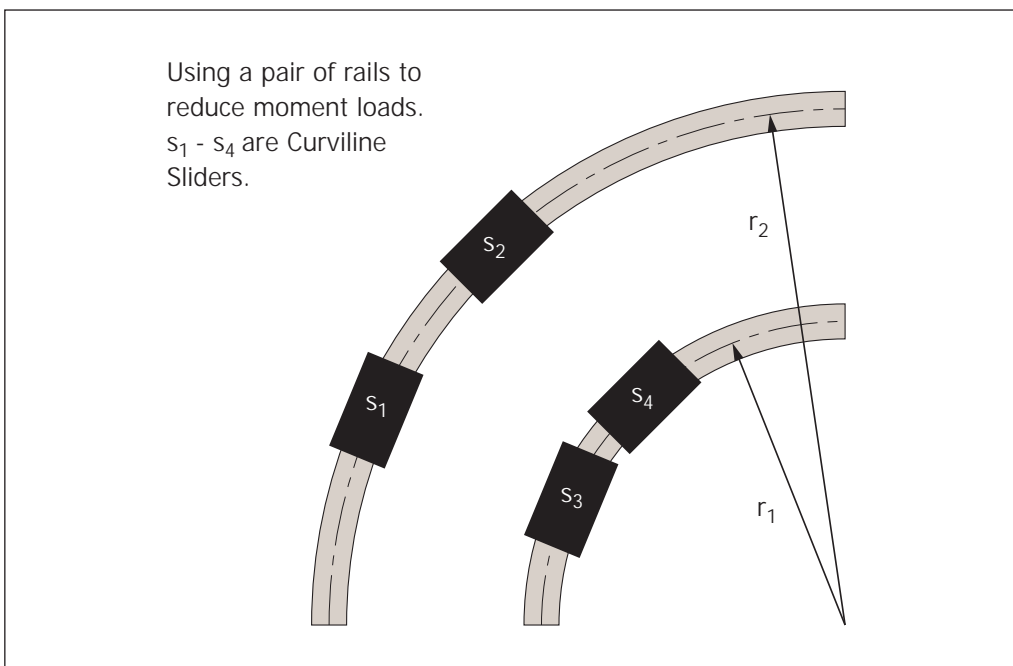
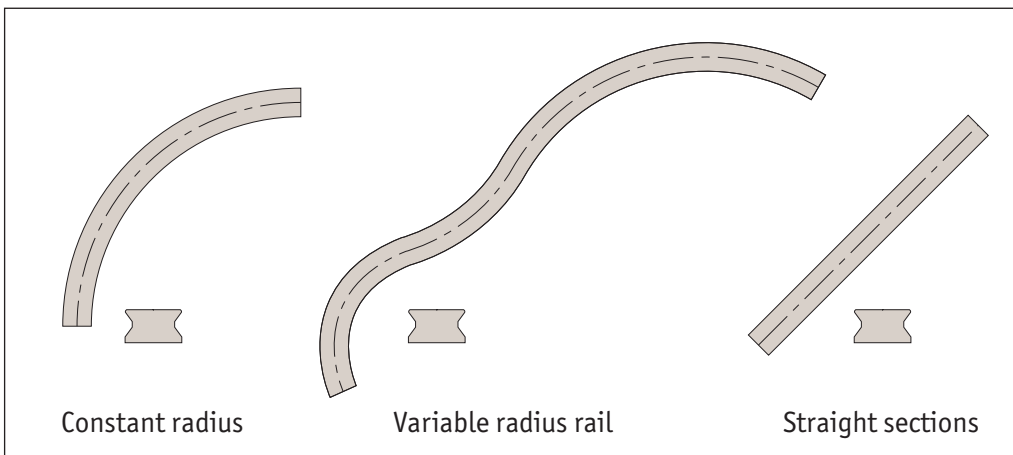
# Curviline Rail from Automation Components

### Rail sizes



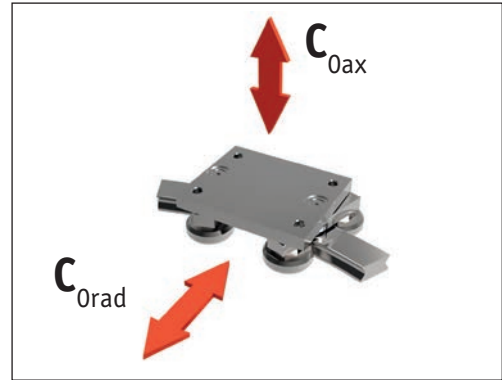
The sliders have eccentric rollers that are adjustable with the thin spanner that is supplied with them. This allows the preload of the system to be set as required – tight or free running.

### Rail types





Load capacities



Slider type	$C_{0ax}$ N	$C_{0rad}$ 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: $\alpha^\circ$ (0°-360°)		Fixing hole type: CB - Counterbored CS - Countersunk TR - Threaded

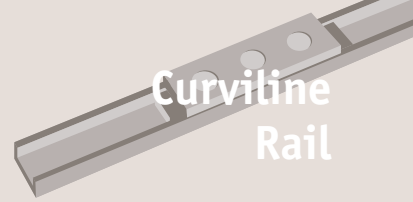
Variable radius

Ordering Example

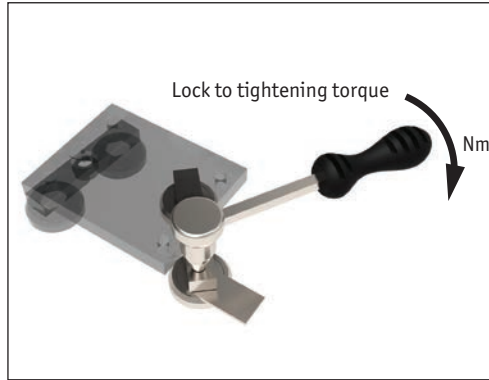
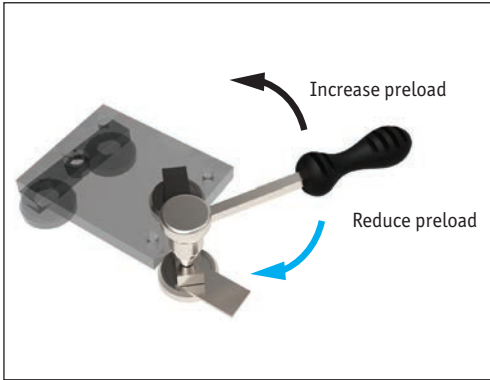
L1978	•	VRX16	-	0400	-	060	-	100	-	0200	-	090
Product Number		Rail width (16 or 23)		1 <sup>st</sup> Radius (mm) $r_1 > 120$		1 <sup>st</sup> Angle: ( $\alpha_1^\circ$ )		1 <sub>1</sub> (>70 mm)		2 <sup>nd</sup> Radius (mm) $r_2 > 120$		2 <sup>nd</sup> Angle: ( $\alpha_2^\circ$ )

Curviline Rail from Automation Components

LONG LINEAR RAILS



### Setting the preload



Slider type	Tightening torque Nm
L1978.CX16-070	7
L1978.CX23-100	12

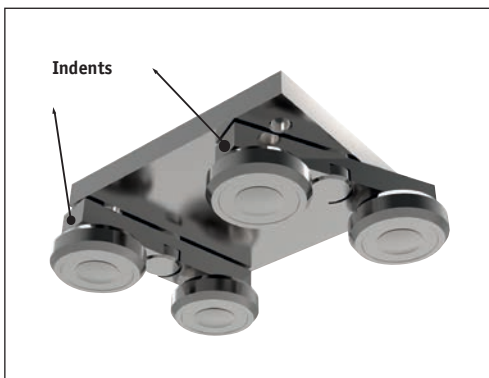
If the Curviline system is delivered as a system, the sliders are already set with no clearance. In this case fixing screws are secured with Loctite® at the factory.

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.

Curviline Rail from Automation Components

LONG LINEAR RAILS