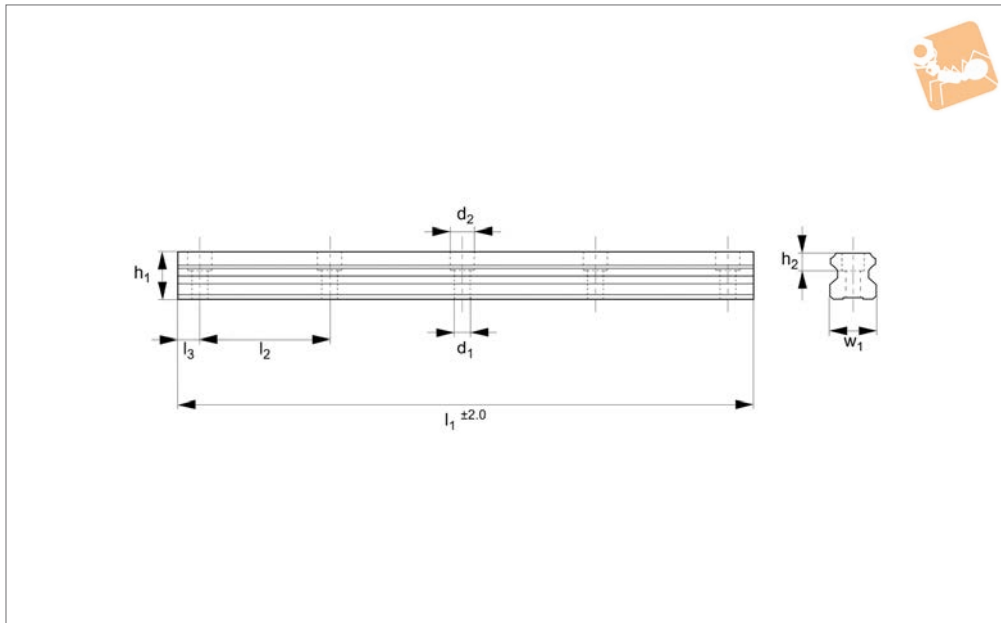




# 15mm Linear Guide Rail

standard

Linear Guide-ways



**L1016.15**

LINEAR GUIDEWAYS

**Material**

Hardened and ground steel (typically 60 HRC).

part nos. L1016.F (flanged) and L1016.U (unflanged).  
Other rail lengths on request.  
Weight: 1,4 Kg/m.

**Tips**

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

**Technical Notes**

For carriages to suit the required load see

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



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

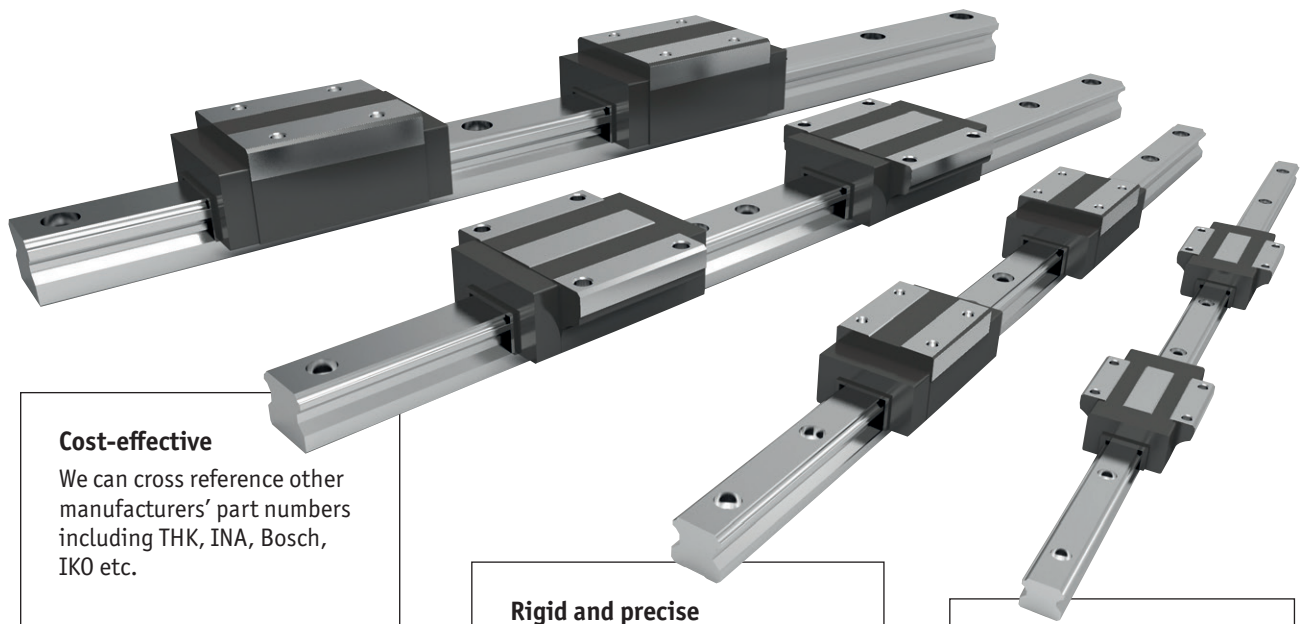


### L1016 Linear guideways

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

### Precision high load rails

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



#### Cost-effective

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

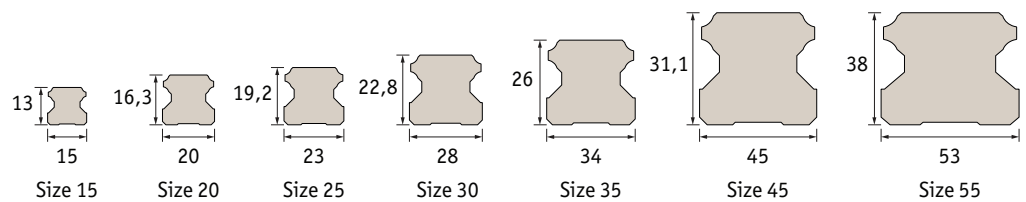
#### Rigid and precise

- High load rating.
- High moment load capacity.

#### Stocked

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

### Rail sizes





### Load capacities – explained

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

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

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

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

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

### Straightness of rails

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

### What lengths can be provided?

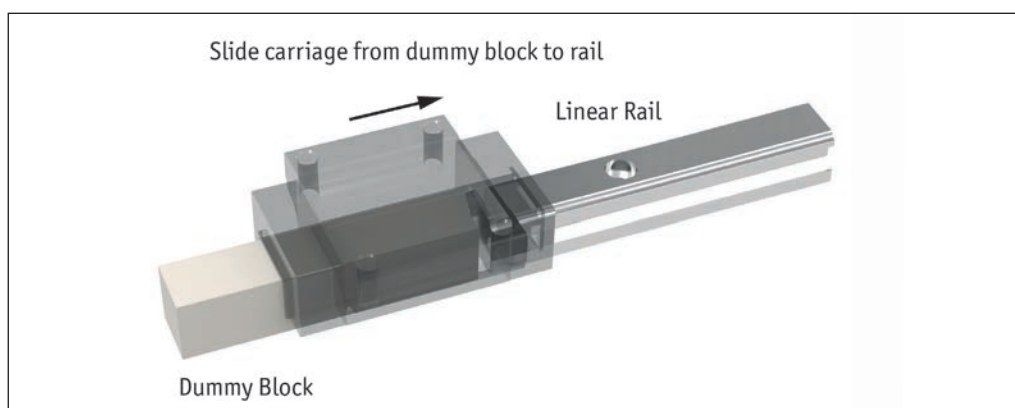
- We have standard rail lengths. These are based on the hole pitch of the rails and end machining to provide an equidistant length to the first and last hole centre.
- However we can cut the rail (from stock) to any length required – we just need to know the distance required to the first hole.
- In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

### Installation

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

### Mounting the carriages to the rails

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

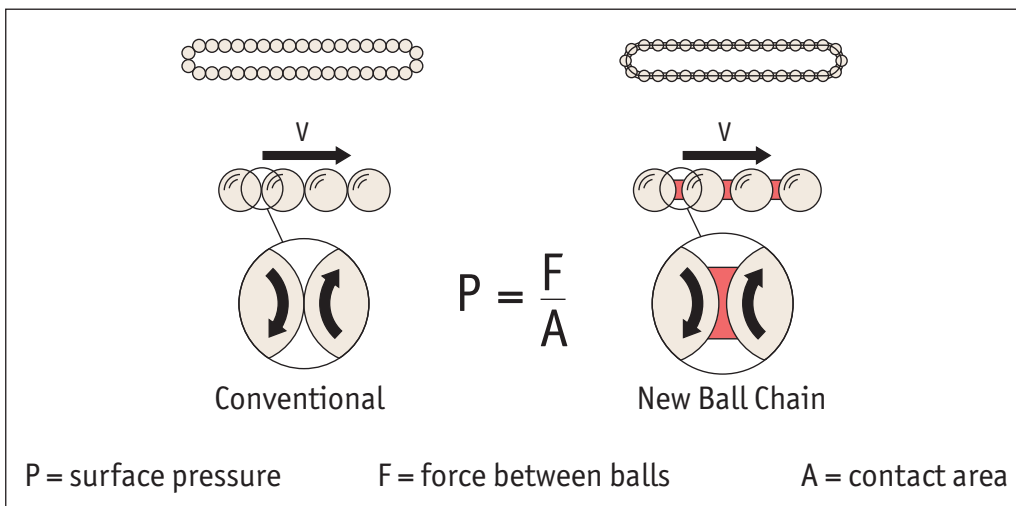




**New ball chain technology**

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

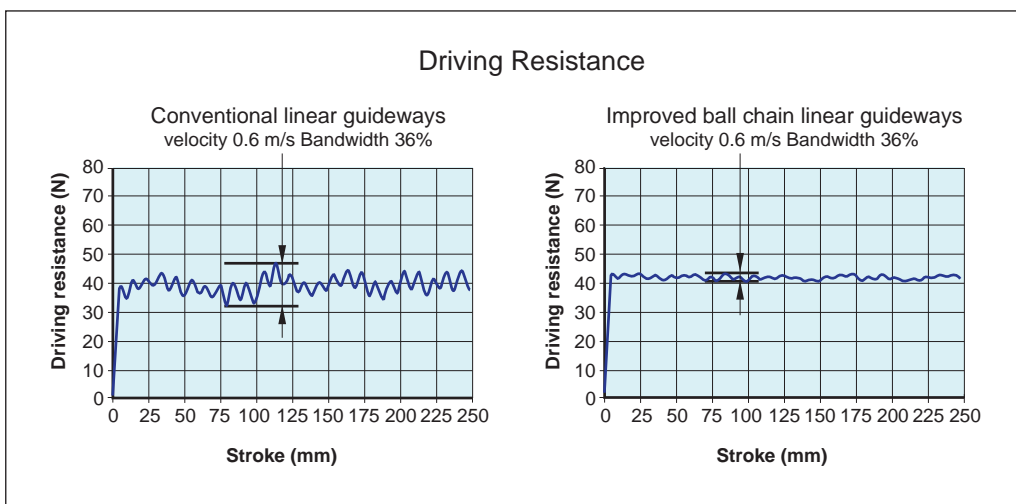
- Higher maximum velocity.
- Lower heat generation
- Lower noise generation.
- Very smooth running.
- Optimised lubrication system
- Even load distribution
- Longer service life



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

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

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



Linear Guideways from Automation Components

LINEAR GUIDEWAYS