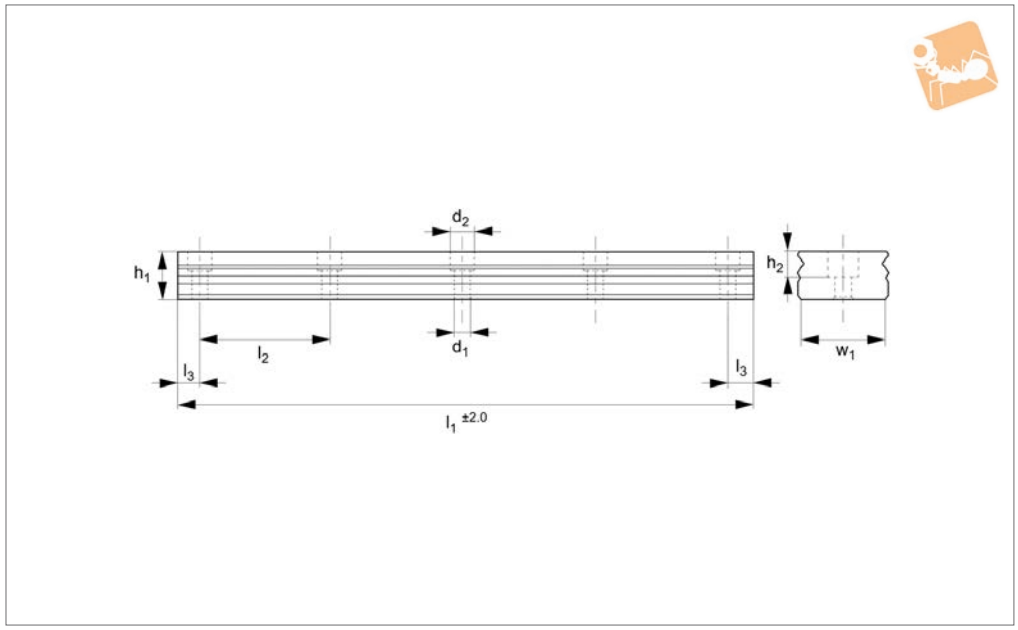


L1012.10

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

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

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

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

10mm Miniature Linear Rail

wide version

Order No.	l_1	l_2	l_3	h_1	h_2	d_1	d_2	For screws	w_1	Weight kg
L1012.10-0735	735	20	7.5	4	1.6	3	5.5	M2,5	10	220.5
L1012.10-0755	755	20	7.5	4	1.6	3	5.5	M2,5	10	226.5
L1012.10-0775	775	20	7.5	4	1.6	3	5.5	M2,5	10	232.5
L1012.10-0795	795	20	7.5	4	1.6	3	5.5	M2,5	10	238.5
L1012.10-0815	815	20	7.5	4	1.6	3	5.5	M2,5	10	244.5
L1012.10-0835	835	20	7.5	4	1.6	3	5.5	M2,5	10	250.5
L1012.10-0855	855	20	7.5	4	1.6	3	5.5	M2,5	10	256.5
L1012.10-0875	875	20	7.5	4	1.6	3	5.5	M2,5	10	262.5
L1012.10-0895	895	20	7.5	4	1.6	3	5.5	M2,5	10	268.5
L1012.10-0915	915	20	7.5	4	1.6	3	5.5	M2,5	10	274.5
L1012.10-0935	935	20	7.5	4	1.6	3	5.5	M2,5	10	280.5
L1012.10-0955	955	20	7.5	4	1.6	3	5.5	M2,5	10	286.5
L1012.10-0975	975	20	7.5	4	1.6	3	5.5	M2,5	10	292.5
L1012.10-0995	995	20	7.5	4	1.6	3	5.5	M2,5	10	298.5

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

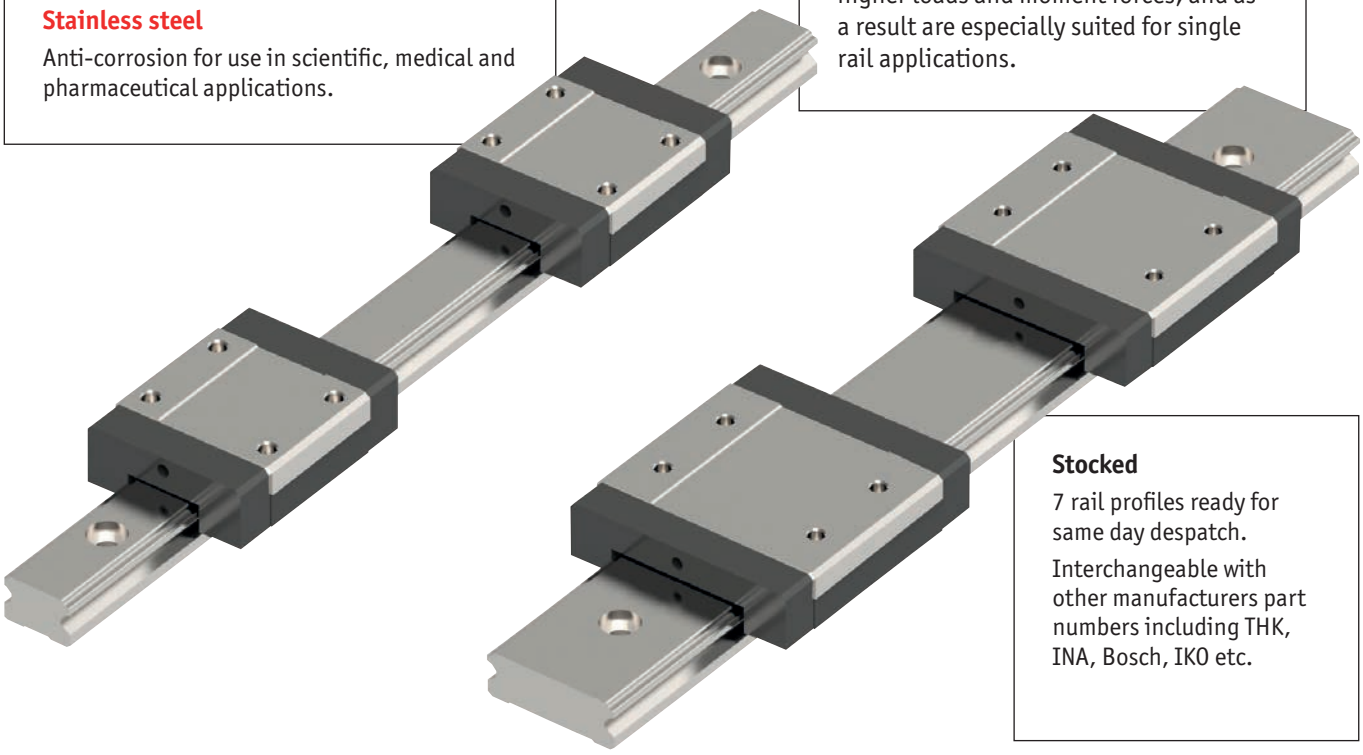
Precise and stainless

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

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

Standard and wide versions
Our standard width is a compact, high performance rail in six sizes.

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

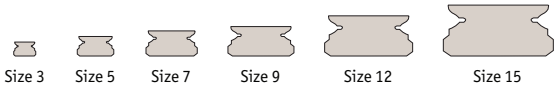


Stocked
7 rail profiles ready for same day despatch.

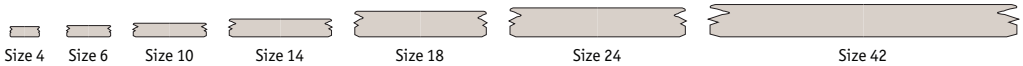
Interchangeable with other manufacturers part numbers including THK, INA, Bosch, IKO etc.

Rail sizes

L1010 Standard Version



L1012 Wide Version



Miniature Linear Guideways

FAQs

Load capacities – explained

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

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

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

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

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

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

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

Straightness of rails

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

What lengths can be provided?

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

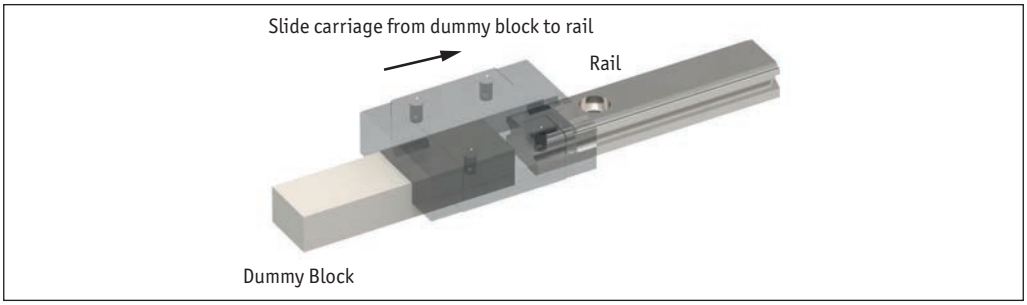
Installation

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

Mounting the carriages to the rails

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

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



Precision

	Dimensions	µ
h_1	Height tolerance h_1	±40
h_1	Permissible height difference of different carriages at the same position on the rail	25
W_4	Width tolerance w_4	±40
W_4	Permissible width difference of different carriages at the same position on the rail	30

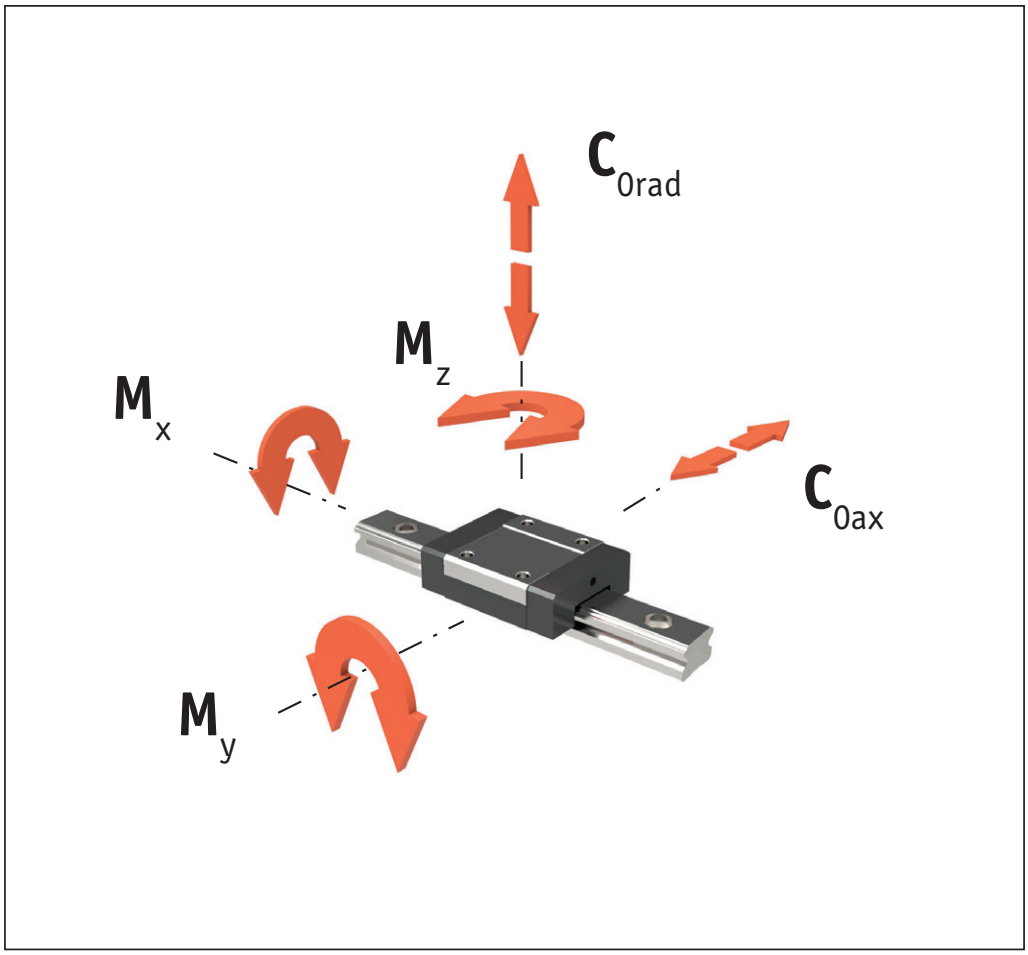
Running accuracy

Preload

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

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

L1010 - Standard width



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