

# Technical data for carriage rails

## Off-centre forces

The following recommendations should be followed for the successful use of maintenance-free DryLin® linear bearings.

A higher coefficient of friction compared to roller guides results in higher drive forces. The largest possible gap between bearings on a rail and lowest possible torque stress through drive and mass have a positive effect on the running and wear properties of the guide.

## Quiet running

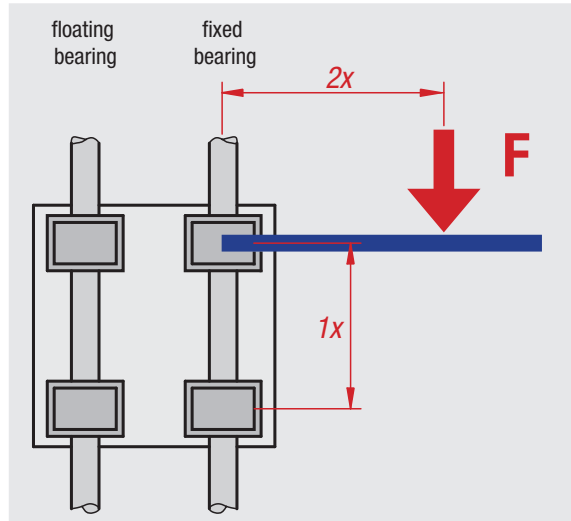
Plastic bearings which run on ground shafts or profiled rails are almost silent. Contrary to conventional ball-bearing guides, the noise level does not increase as the speed increases.

## Design notes:

When using systems with two parallel rails, one side must be installed as a floating bearing. For every mounted position, whether horizontal, vertical or lateral, there is the correct fixed-floating bearing solution. This method of installation prevents difficulty of access or jamming of the guide where there are differences in the parallelism between the rails.

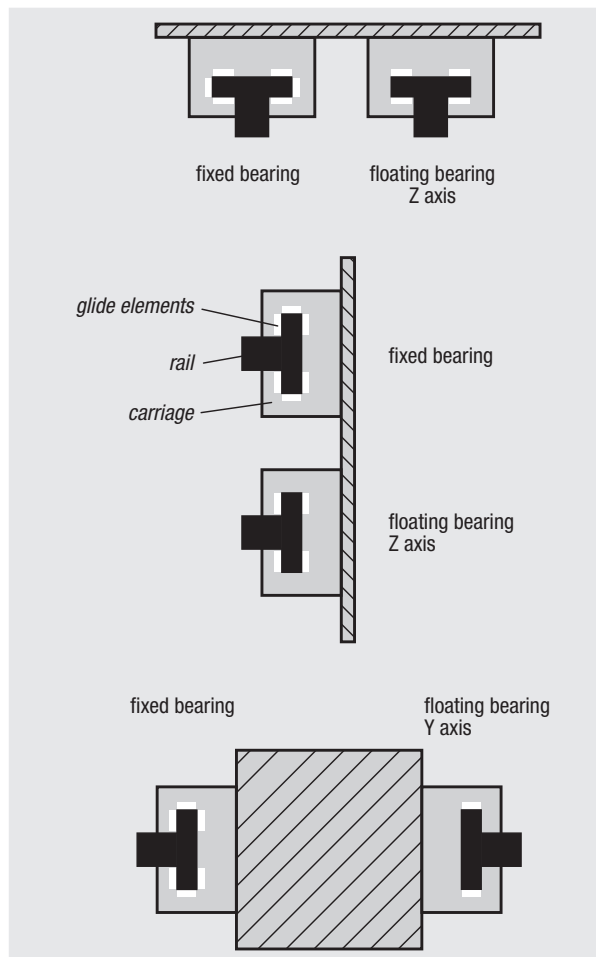
The floating bearing is made by removing the static overdefined glide elements. This creates an additional degree of freedom on one rail to compensate for possible errors in parallelism.

In a fixed-floating bearing installation, errors in parallelism between the mounted rails can be compensated up to a maximum of 0.5 mm. When installing, ensure that the floating bearing has an equal amount of play in both directions. You can see the layout of the fixed-floating bearing system in the adjacent diagrams. To avoid warping in the system, the base surface for the rails and carriage should be flat and even (e.g. milled surface). Small amounts of unevenness on the base surface can be compensated for by up to 0.5 mm by allowing for more play between carriage and rail. Adjusting the amount of play is only effective when the system is unloaded.



## The 2:1 rule

If the 2:1 rule is not followed when using linear glide bearings, uneven movements may occur or the system may even jam. Help can often be provided by relatively simple alterations. The principle does not depend on the load or the drive force, it is a product of friction and always relates to the fixed bearing. The further away the drive is from the guide bearing, the greater will be the wear and the drive force required. If the distance between the driving force and the fixed bearing is more than double the distance between the bearings (2:1 rule), the guide will, in theory, jam by an adhesion friction value of 0.25.



Horizontal variant with the floating bearing in the z axis

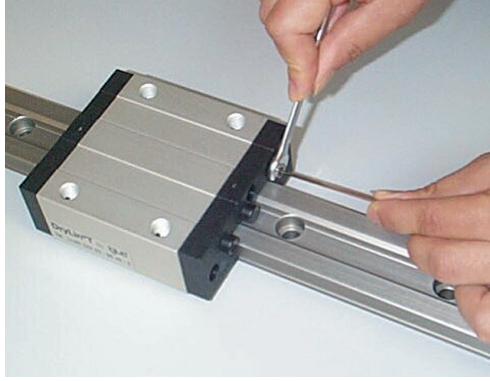
Lateral variant with the floating bearing in the z axis

Horizontal variant with lateral positioned carriages and floating bearing in the y axis

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## DryLin® T - play adjustment

DryLin® linear guide rails always require a minimum amount of play between the slide and rail. They are supplied ready to use with the play pre-set. If you have special requirements please state whether you require a particularly small or particularly large amount of play. The play in the bearing of the guide slides can be re-adjusted later if necessary. This should always be carried out while unloaded.



1. Loosen the locknuts after removing the protective caps.

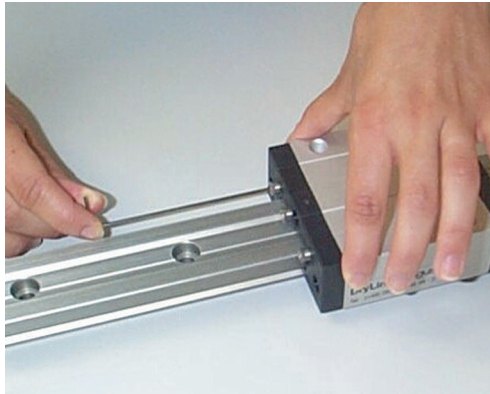
Spanner size:

5 mm for 21200-15..

5 mm for 21200-20..

7 mm for 21200-25..

7 mm for 21200-30..



2. Re-adjust the bearing play for the three guide points with a hex key.

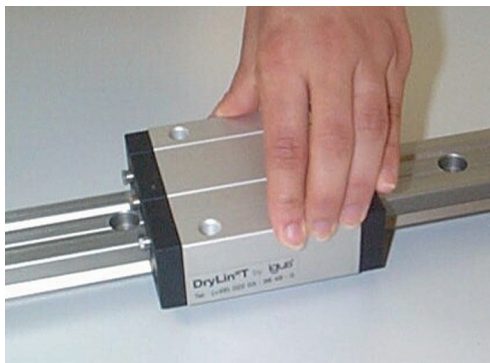
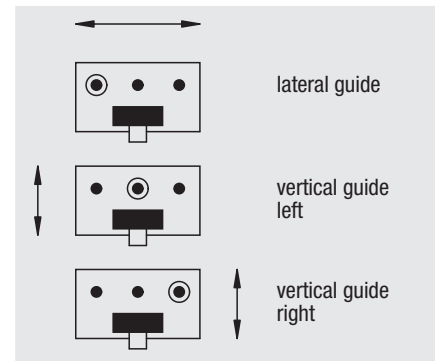
Socket size:

1.5 mm for 21200-15..

1.5 mm for 21200-20..

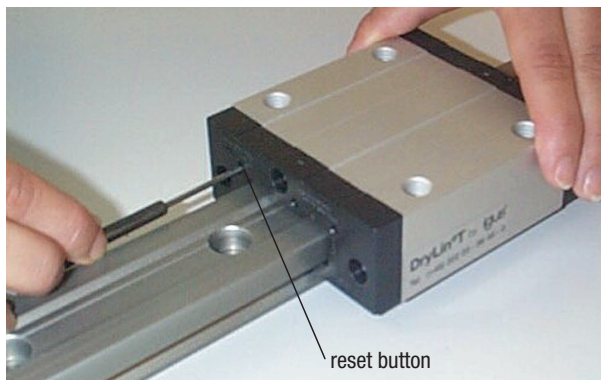
2.0 mm for 21200-25..

2.0 mm for 21200-30..



3. Check the play in the guide slides after adjustment.

If it is sufficient, tighten the locknuts and replace the protective caps.



4. If too little play has been set so that the rail jams, it is not sufficient to just reset the cap screw. After resetting the screw, press the reset button on the side opposite the screw to release the slide elements.

For this, use the following sized pins:

2.5 mm for 21200-15..

2.5 mm for 21200-20..

3.0 mm for 21200-25..

3.0 mm for 21200-30..