norelem

GUIDE RAILS
SERVICE INSTRUCTIONS

THE **BIG GREEN** BOOK

Summary

1. Introduction

A wide range of guide rails for high-precision movement

norelem guide rails have many uses. Whether for metrology equipment construction, or in the optical industry, or for maintenance, milling or even the creation of special machinery, norelem guide rails provide you with a versatile, qualitative and high-precision solution that can be adapted to all your needs.

2. Overview of the norelem range

21010

Guide rail with dovetail mount

with micrometric adjustment screw

21060

Guide rail with dovetail mount

21061

Guide rail with dovetail mount

with end plates

21062

Guide rail with dovetail mount

with micrometric adjustment screw

21064

High-precision guide rail

roller-mounted

21068

Roller-mounted high-precision guide rail

with end plates

21070

Roller-mounted high-precision guide rail

with micrometric adjustment screw

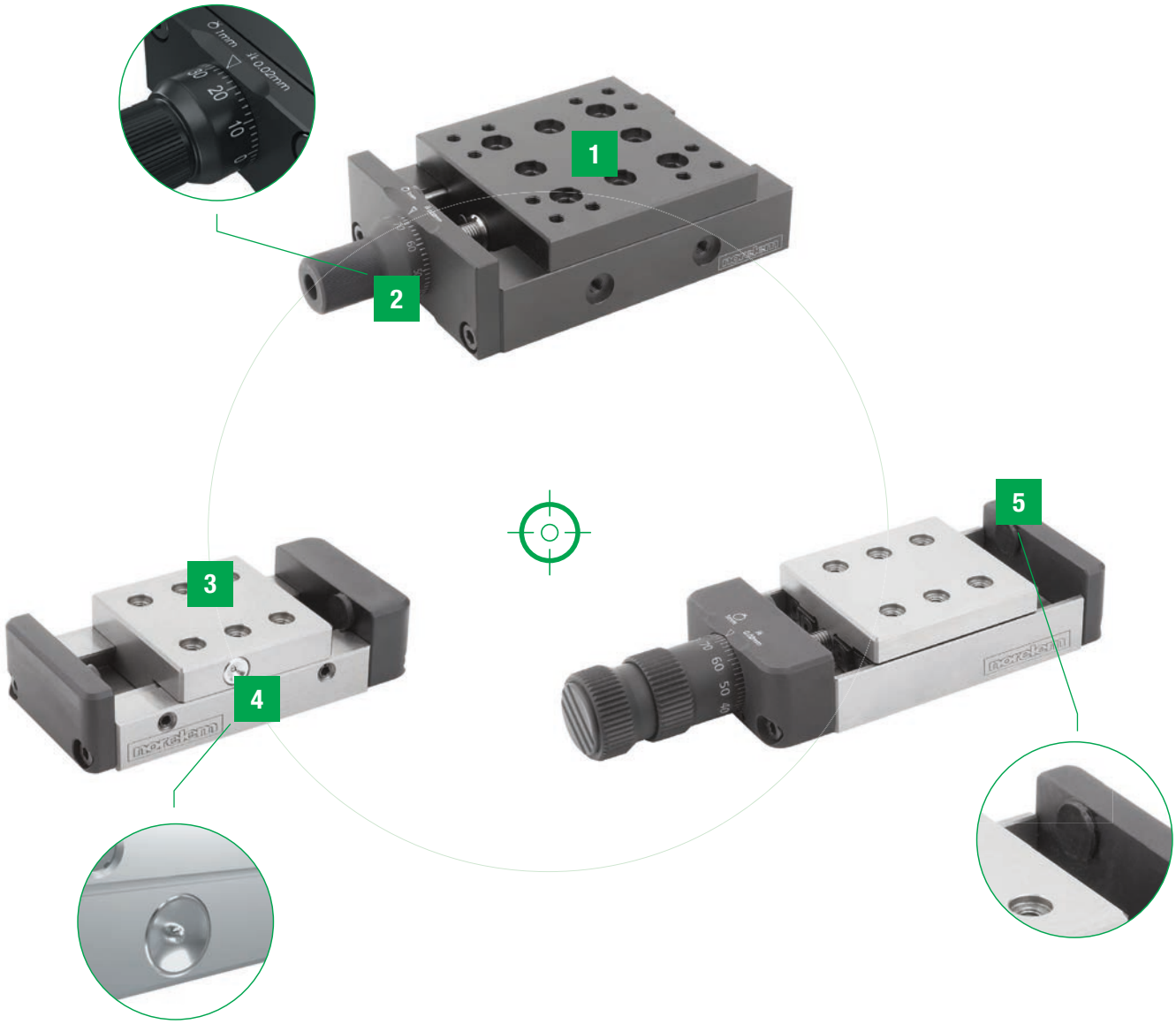
3. Safety regulations and security notice

⚠ Attention - please pay attention to the following points:

- Avoid impact to maintain micrometric accuracy
- Always comply with the applicable accident prevention guidelines and general technical rules when handling, cleaning and using rails with accessories
- Do not exceed the recommended load bearing capacities specified in the table
- When disassembling the rails, be sure to re-adjust the clearance

4. Using the guide rails

4.1 Bill of materials



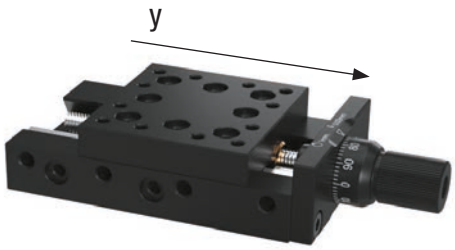
1	Integrated modular grid	3	Planed faces	5	End plate
2	Micrometric adjustment screw	4	Grease nipple		

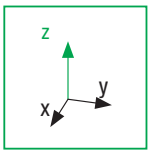
4.2 Using and connecting accessories

Illustration of movement along the X, Y and Z axes, with a total of three rails

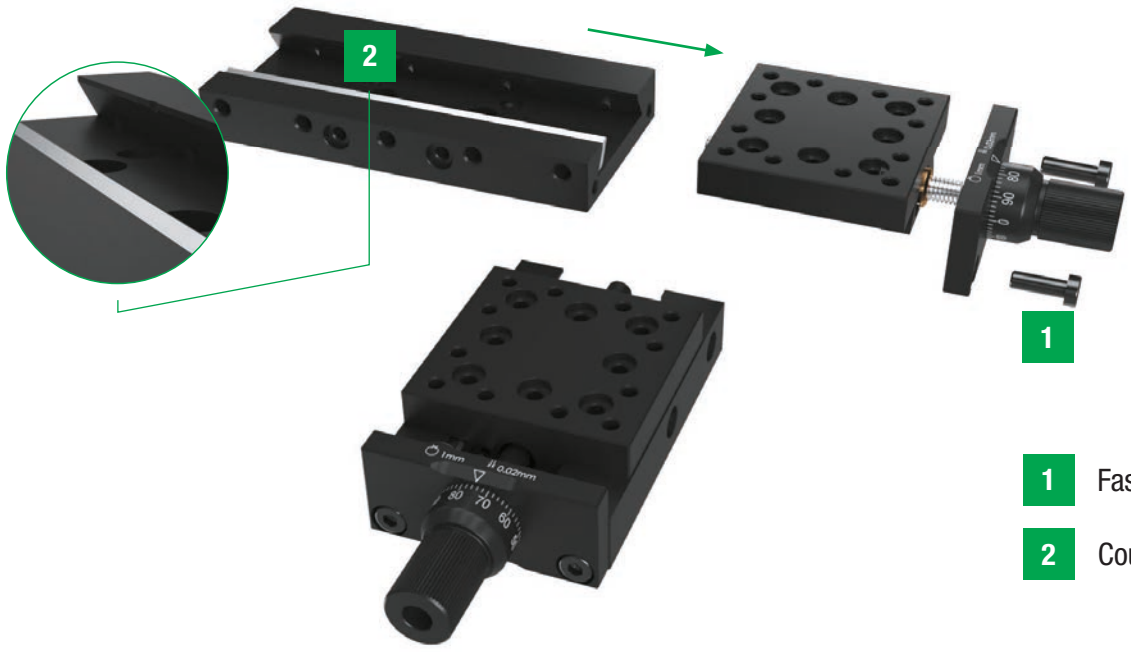
1 | Movement rail, following the X axis.

2 | The movement rail following the Y axis is positioned above the first rail.





3 | To assemble the two rails, unscrew the two fastening screws of rail Y, and move the slide back to reveal the counterbores.

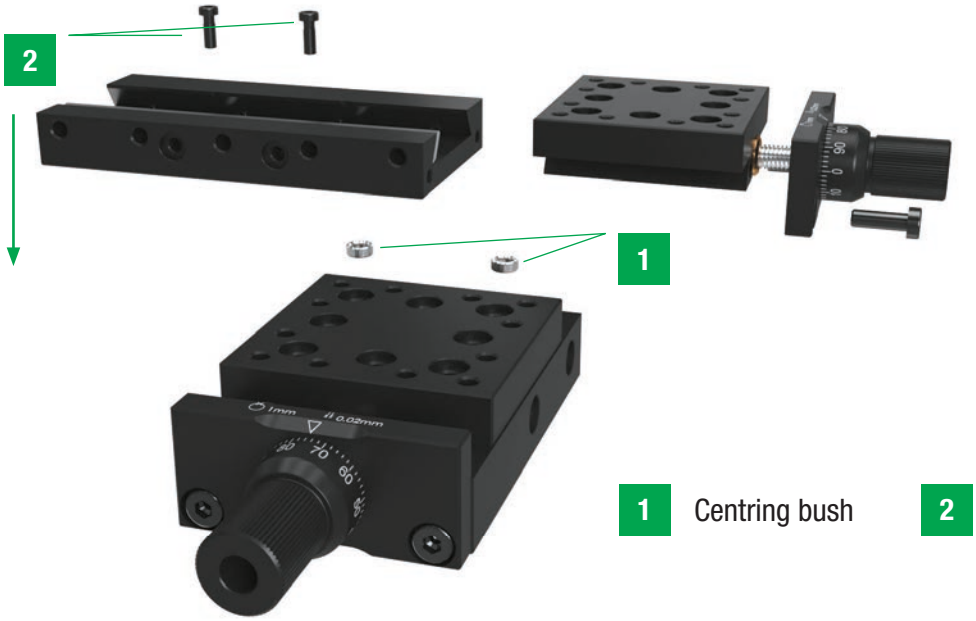


1 Fastening screw

2 Counterbores visible

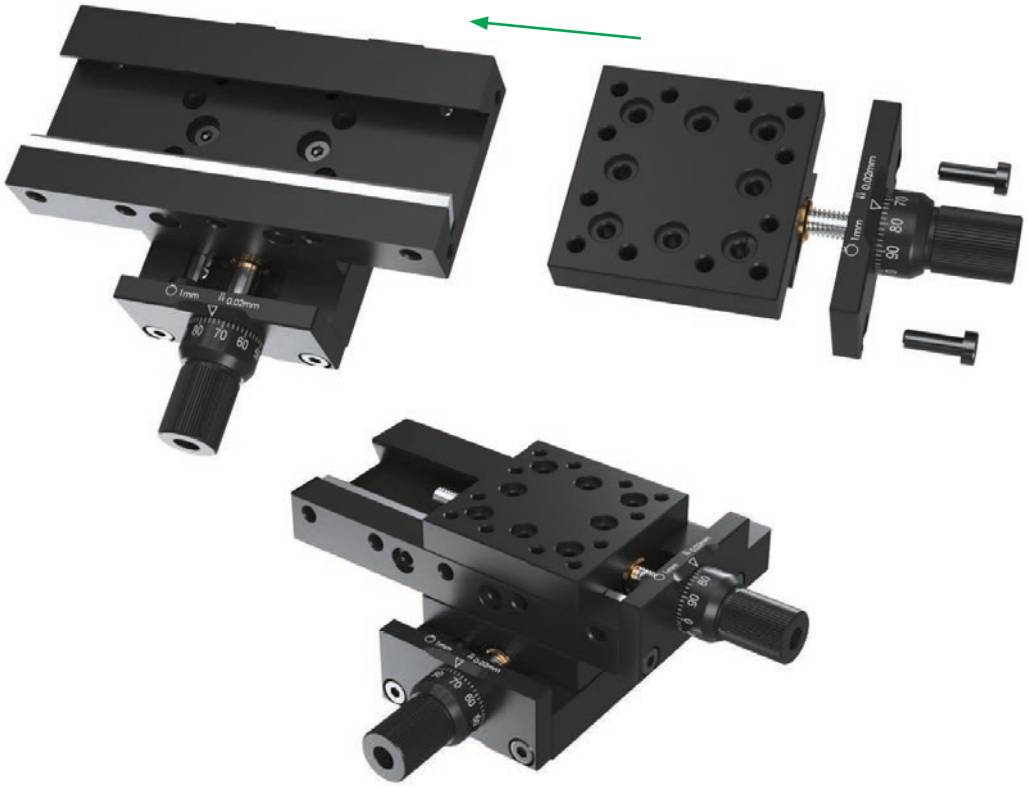
4.2 Using and connecting accessories

4 | Insert the centring bushes in the through holes of the modular grid to achieve precise positioning
Fix the two rails using a fastening screw.



1 Centring bush **2** Fastening screw

5 | Restore the rail along the Y axis to its original state.
Remember to re-adjust the clearance if necessary.

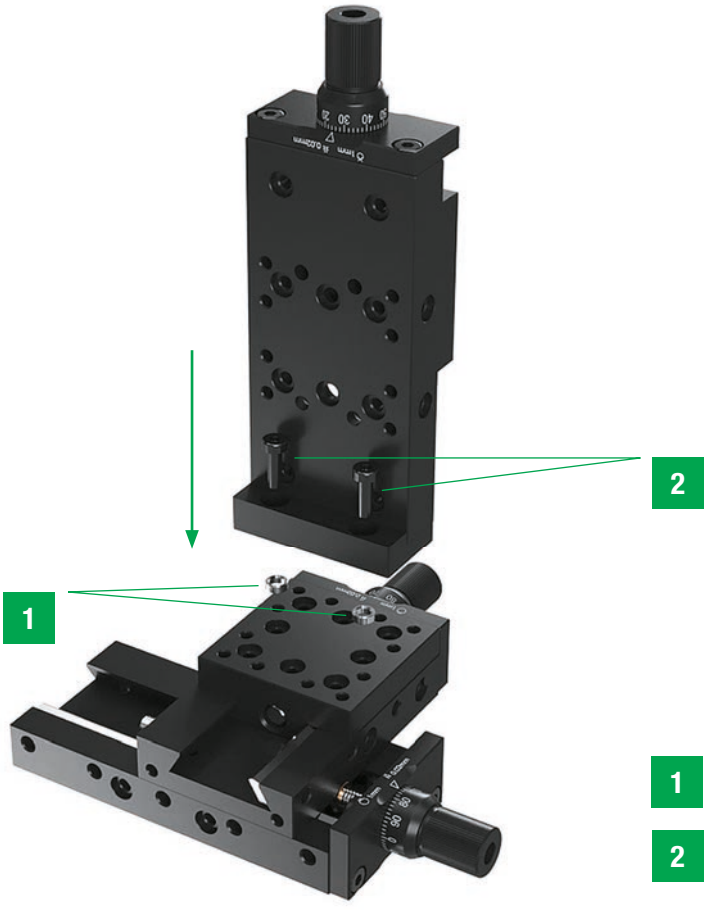


4.2 Using and connecting accessories

6 | Attach a mounting bracket to the rail to create a Z axis.

1 Mounting bracket

7 | Perform the same operations as described in Step 4 to attach the Z axis to the X and Y axes.

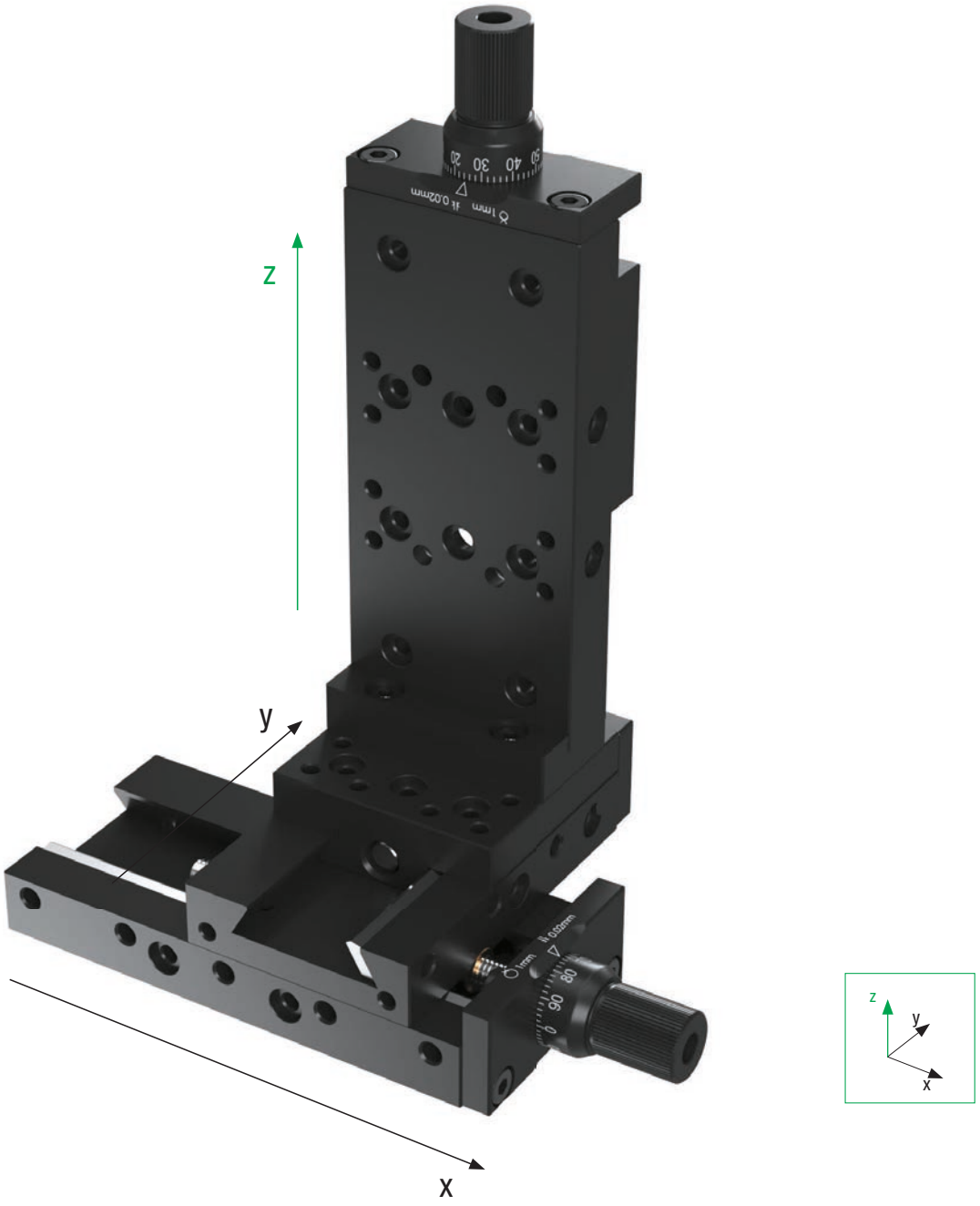


1 Centring bush

2 Fastening screw

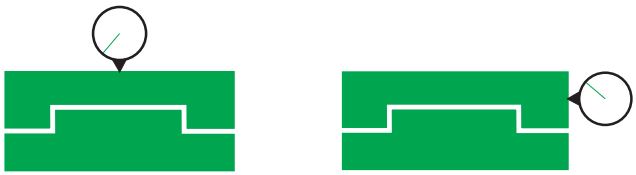
4.2 Using and connecting accessories

8 | Example of a displacement assembly on the X, Y and Z axes.



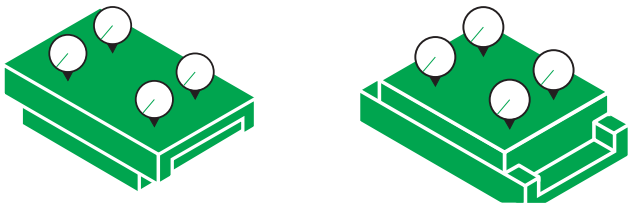
4.3 Geometric tolerances

Movement tolerances, measured across the entire travel path



a b

Parallelism in the central position



c d

Guide rail with dovetail mount, cast iron:

Length of the slide in mm	Deviations in µm			
	a	b	c	d
L<100	8	10	20	20
100<L<200	12	15	25	25
200<L	18	22	35	25

Guide rail with dovetail mount, aluminium

Length of the slide in mm	Deviations in µm			
	a	b	c	d
L<100	12	15	30	30
100<L<200	18	22	37	37
200<L	27	33	52	37

Roller-mounted high-precision guide rail, cast iron

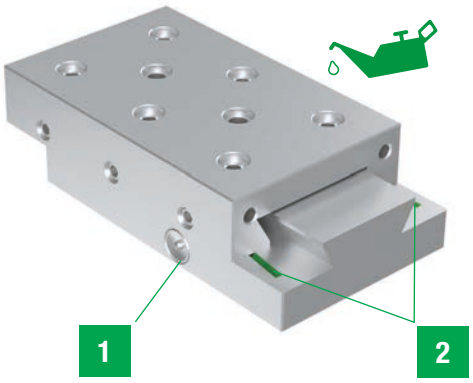
Length of the slide in mm	Deviations in µm			
	a	b	c	d
L<100	4	4	15	15
100<L<200	4	6	20	20
200<L	5	8	30	20

5.1 Lubrication

Lubricating norelem guide rails ensures protection against corrosion, and reduces wear. Depending on stresses and the environmental conditions, the first lubrication can be effective for several years. However, be careful not to leave a rail without corrosion protection if the lubrication disappears.

It is important to avoid the ingress of cutting oil or spray emulsion, as this can dilute the lubricant, and cause it to spread. In addition, these emulsions tend to become sticky when drying. Lubricants containing solid additives must also be avoided.

Grey cast iron dovetail guide rails play a key role in sliding guide systems, and may require periodic lubrication. Lubrication grooves, which are fuelled by one or more grease nipples, are provided for this purpose. The grease nipples are fuelled by a special slideway lubricant - Mobil Vactra No. 2 (original).



1 Grease nipple

2 Lubrication grooves

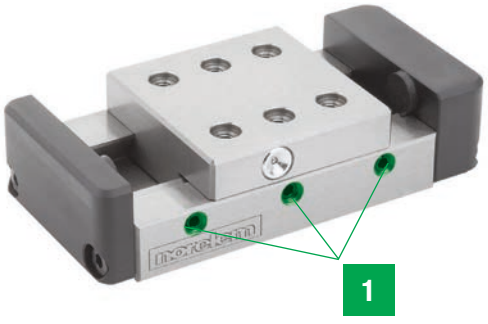
5.2 Adjusting the slide guide

After a certain period of use, or after reassembly of the norelem guide rails, it may be necessary to adjust the slide guide.

In the case of both dovetail guide rails and roller bearing rails, the slide guide is adjusted using the setscrews on the side of the rail. The adjustment must be carried out from the centre of the rail, in a homogeneous manner, alternating from right to left.

For roller-mounted guide rails, the adjustment of the slide guide (in the absence of a clearance) will be more refined if we compensate for the weight of the elements of the carriage by lifting them. The fastening screws of the rails must not be loosened.

Attention: Only adjust the screws when the carriage is positioned opposite the screw to be adjusted.



1 Setscrew

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Green Means Go. Find it. Get it. Go.

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- Fast and simple implemention of your ideas with our free CAD-data.

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