



Supplementary instructions Alu-Line Heavy / Heavy Gantry

Reinforced Precision

To increase stability, the machines of the Alu-Line series Heavy and Heavy Gantry are characterized by a few deviations from the normal version. These additional instructions describe the special features of assembly if they deviate from the instructions for the normal version.

In detail, this concerns the following points:

- Fixed and floating bearing X-axis
- Spindle nut X axis
- reference switch
- High Z axis
- Doubling of the portal cheeks

Fixed and floating bearing X-axis

In contrast to the standard design, the end plates for screwing the bearing units have through holes instead of cut threads.

When pre-assembling the X-spindle(s), mount the bearing units with the countersinks facing outwards. The countersinks are not required and are fitted flush against the face plate.

- Use four cylinder head screws M6 x 60 (fixed bearing side) or M6 x 45 (loose bearing) with washers and nuts for the screw connection. See Figures 1 to 4.



Attention!

The changed orientation of the bearing units must be taken into account **when pre-assembling** the ball screw(s) for the X-axis!

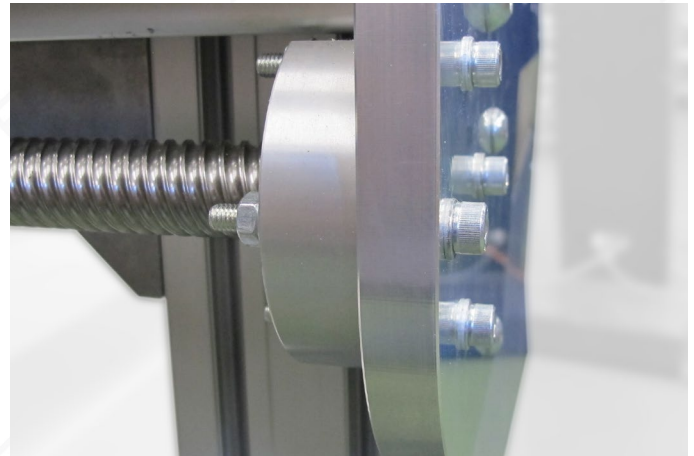


Fig. 1: Floating bearing of an external spindle

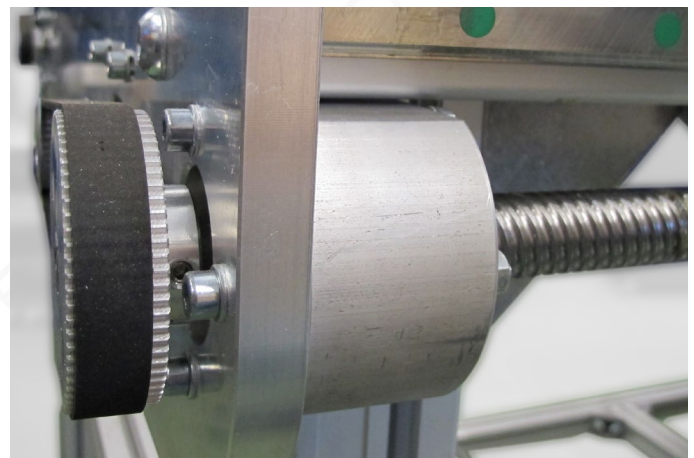


Fig. 2: Fixed bearing of an external spindle



Fig. 3: Fixed bearing center spindle inside

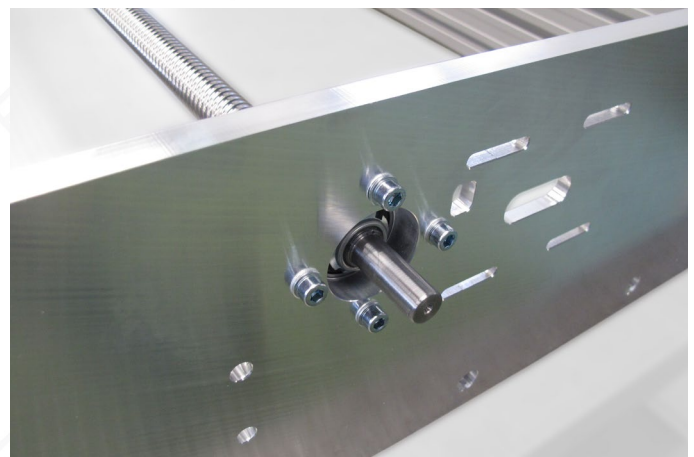


Fig. 4: Fixed bearing center spindle outside

Spindle nut X-axis Heavy

(Center spindle)

For a center spindle machine, proceed as follows:

- Screw the recirculating ball nut to the flange plate using four cylinder head screws M6 x 60.
- Use six cylinder head screws M6 x 16 and slot 8 hammer nuts to mount the flange plate on the beam.

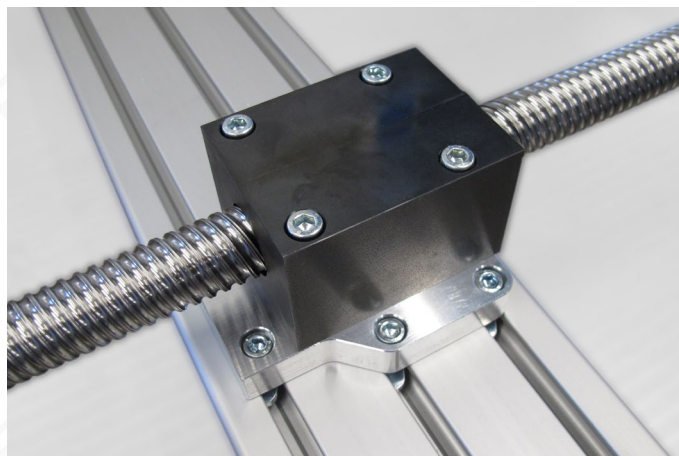


Fig. 5: Center spindle with ball nut and flange plate

Spindle nuts X axis Gantry and heavy gantry

(Outer spindles)

In the gantry version, the spindle nuts are screwed directly onto the portal cheeks from the inside.

- Screw the recirculating ball nut for the left side onto the spindle in the opposite direction to that for the right side. See main instructions p. 7.
- Screw the clamping blocks to the portal cheeks with four cylinder head screws M6 x 60 each.

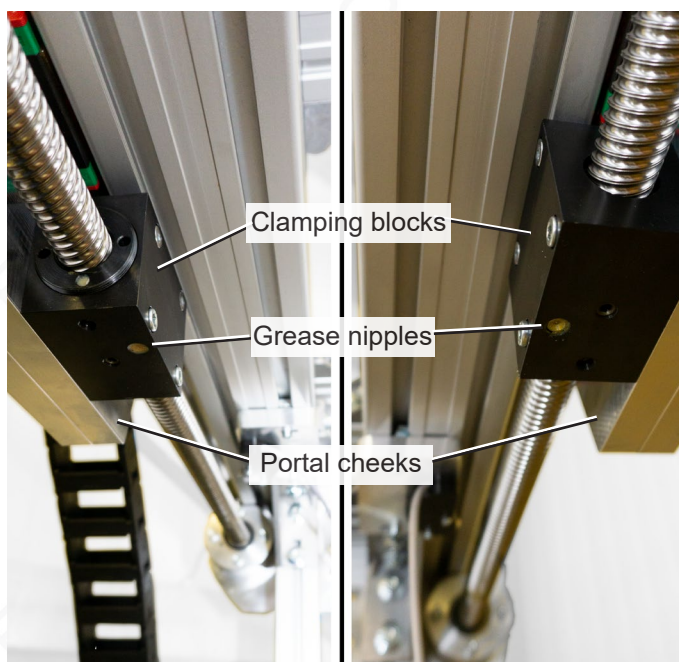


Fig. 6: Left and right outer spindles of a gantry machine photographed from below. Spindle nuts mounted in opposite directions so that both grease nipples point downwards.

Reference switch X-axis Heavy

(Center spindle)

On a center spindle machine, place the reference switch as follows:

- Mount the switch to the backing plate using two M3 x 16 screws (M3 x 20 if using a switch housing) and washers.
- To be triggered by the beam, mount the equipped plate with two screws M5 x 16, washers and hammer nuts M5 slot 10, as shown in Fig. 7.



Fig. 7: Triggering of the reference switch by the beam

X axis reference switch Heavy Gantry

(Outer spindles)

To detect the precise parallel movement of both sides, the gantry machines have two reference switches for the X-axis. To install these switches, proceed as follows:

- Mount the switches to the support plates using two M3 x 16 screws (M3 x 20 if using switch housings) and washers each.
- To release by the portal walls, mount the fitted plates under the side profiles with two M5 x 25 screws, washers and M5 slot 10 hammer nuts, as shown in Fig. 8.

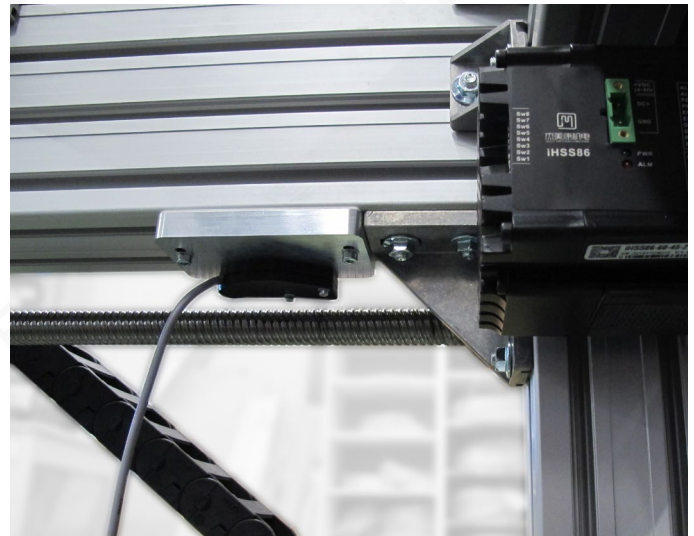


Fig. 8: Reference switch, gantry version

High Z axis

Installation essentially follows the description on pages 17 to 19 of the kit instructions. Only 11 instead of 8 M5 x 20 screws are used on each side to mount the side panels.

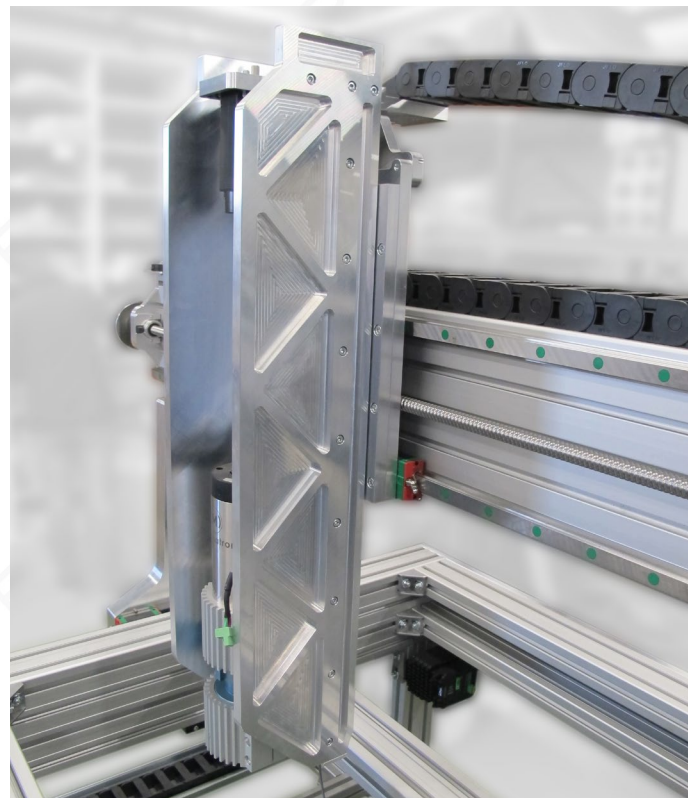


Fig. 8: High Z axis

Assembly of the second guide rail

- First assemble the upper guide rail as described in the main instructions. The upper stop milling is marked on the edge of the longitudinal profile with a semicircular mark (see Fig. 9). The edge of the rail must be in full contact with the milled stop edge of the aluminum profile (Fig. 10).
- The second guide rail is mounted in the lower cutout of the profile. Only moderately finger-tighten the screws at the ends and in the middle of the rail.

The lower guide rail can only be aligned and tightened after the portal has been installed. To do this, proceed as follows:

- Loosen the fixing screws in the middle and at the ends of the lower guide rail.
- Slide the portal to the rear stop and then forward again in sections, from screw to screw.
- Tighten the lower guide rail mounting screws one at a time as they appear behind the lower guide block. Tightening torque: 6 Nm.
- Finally, slide the portal back a little to be able to tighten the screw at the front end of the rail.
- Now loosen the fastening screws of the lower guide carriage.
- Check that the lower guide carriage is running without tension by pushing the portal back and forth several times.
- Retighten the lower carriage mounting bolts. Tightening torque: 6 Nm.



Fig. 9: Marking of the upper stop milling

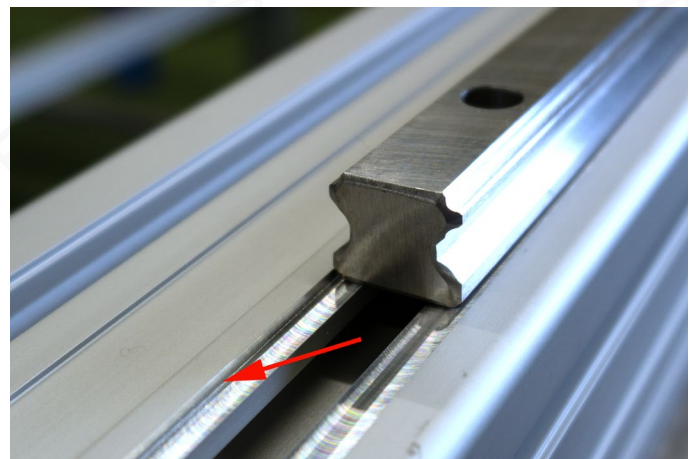


Fig. 10: Milled stop edge for the top rail

Doubling of the portal cheeks

Additional stability is achieved by doubling the portal cheeks. To do this, a second sheet of the same thickness is simply screwed on from the outside for a portal height of 320 mm, and a third for 420 mm.

- Mount the doubling of the portal walls with 18 screws M6 x 20 per side.



Fig. 11: Portal cheek before ...

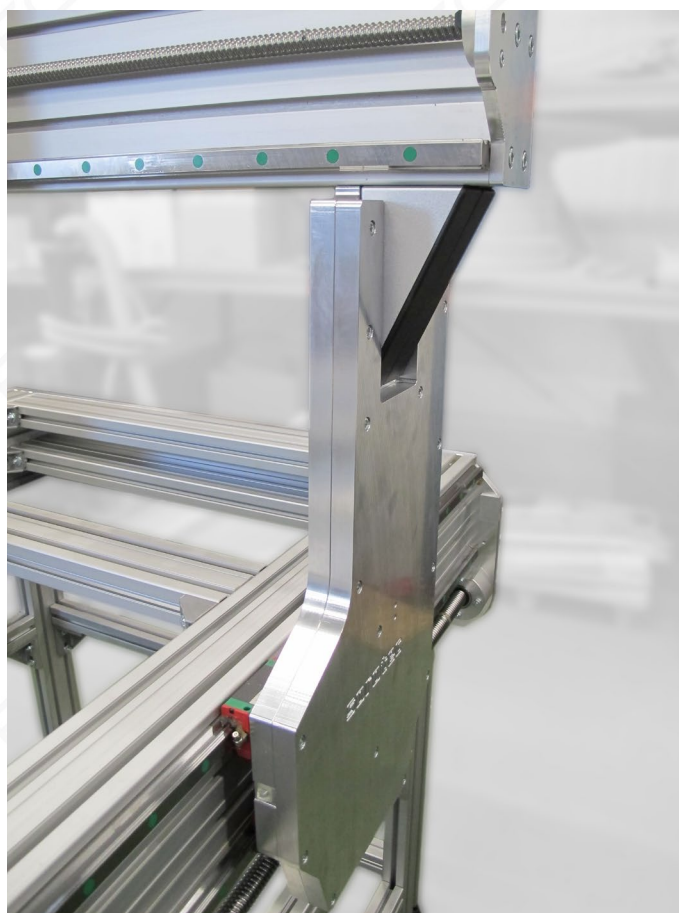


Fig. 12: ... and after doubling up.