



# R0000088E Stage 1 Spindle assemble

Build instructions for stage one assembly of spindle heads

 Difficulty **Medium**

 Duration **3 hour(s)**

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Comments

## Introduction

### Tools Required

Standard hex key set

5mm hex drill bit

Drill Driver

Ball pien hammer

Nylon block

0.05 Feeler gauge

### Parts Required

B0000045 linear rail x 8

B0000044 linear railx 4

B0000173 blanking caps x 68

B0000046 bearing x 24

D0007816 nipple extension x 12

B0000233 grease nipple metric fine x 24

D0007724 double slide base x 4

D0007725 single slide base x 4

## Step 1 - Unless otherwise stated

Use Loctite 243

Mark bolts as finalised with pen mark



## Step 2 - Fit Linear rails

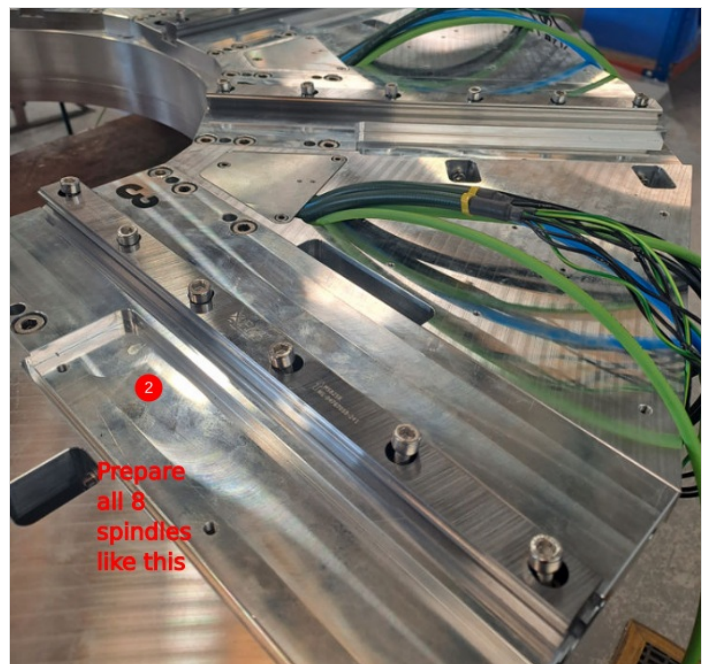
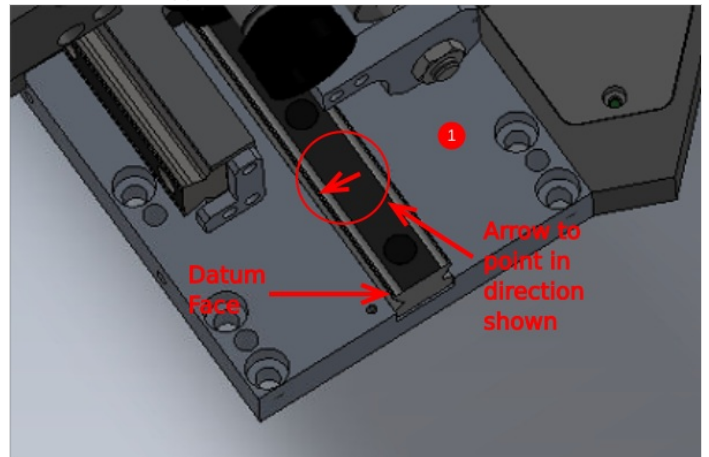
Linear rail B0000045 needs fitting to each spindle base

**!** ..Linear rails have a datum face indication. Attention must be paid for correct orientation

1 Orientation of Datum face is as shown

Ensure all linear rails and machined grooves in spindle plates are free from debris. Use compressed air.

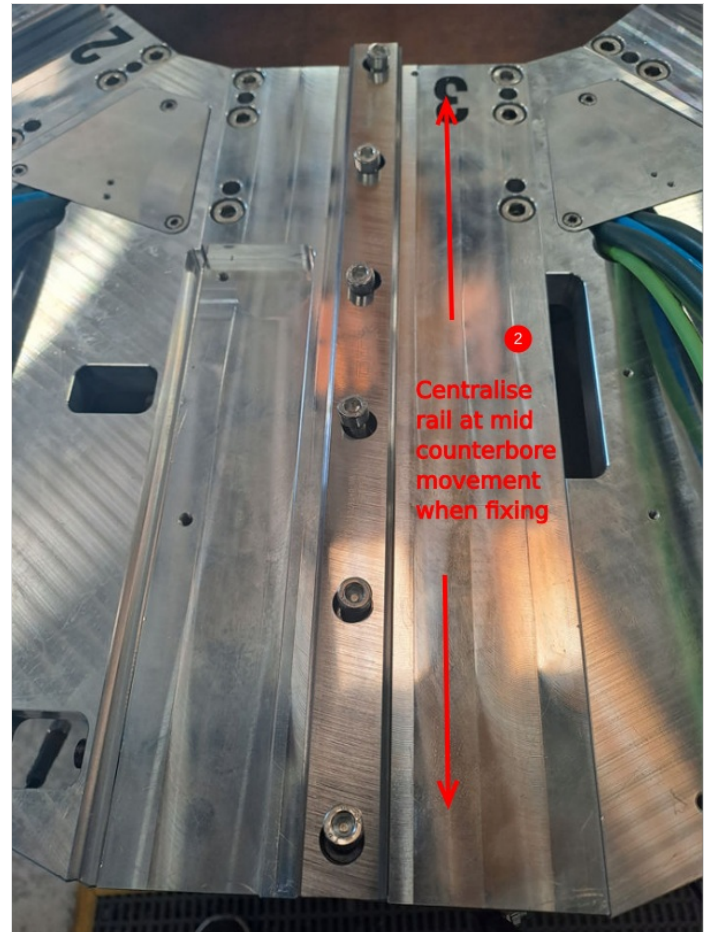
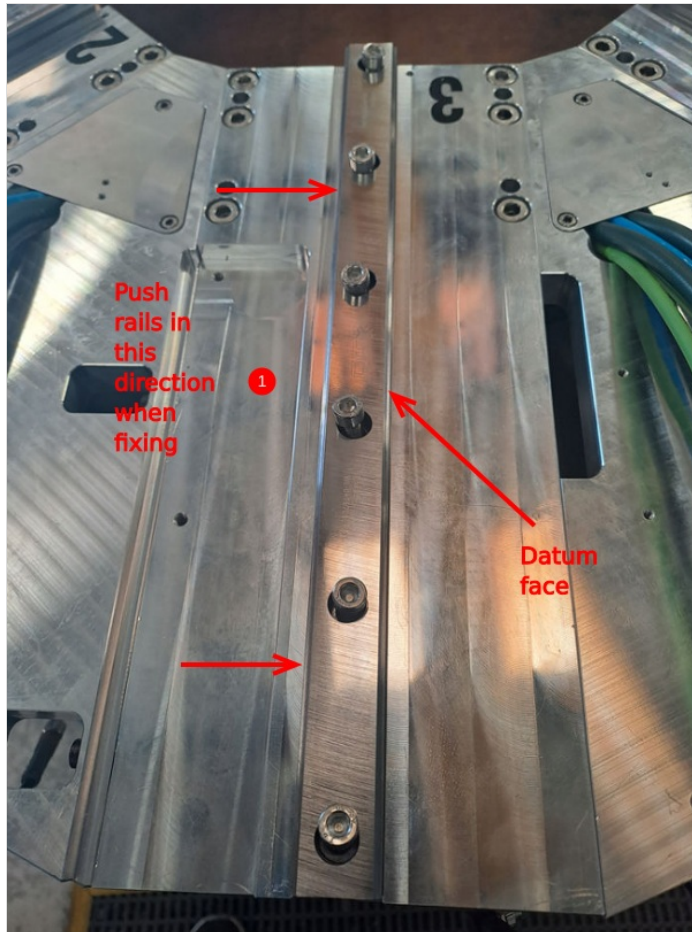
2 Insert linear rail into each spindle base and drop in m6 x 20 socket caps with adhesive applied into all rail counterbores, do not screw in



## Step 3 - Position and finalise rails

When finalising rails , the following should be observed

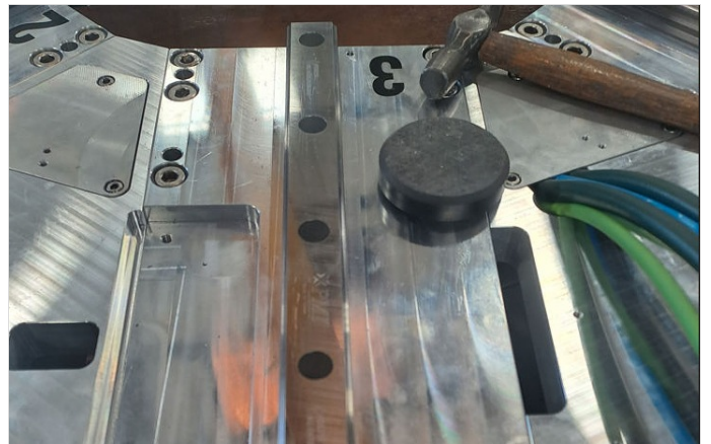
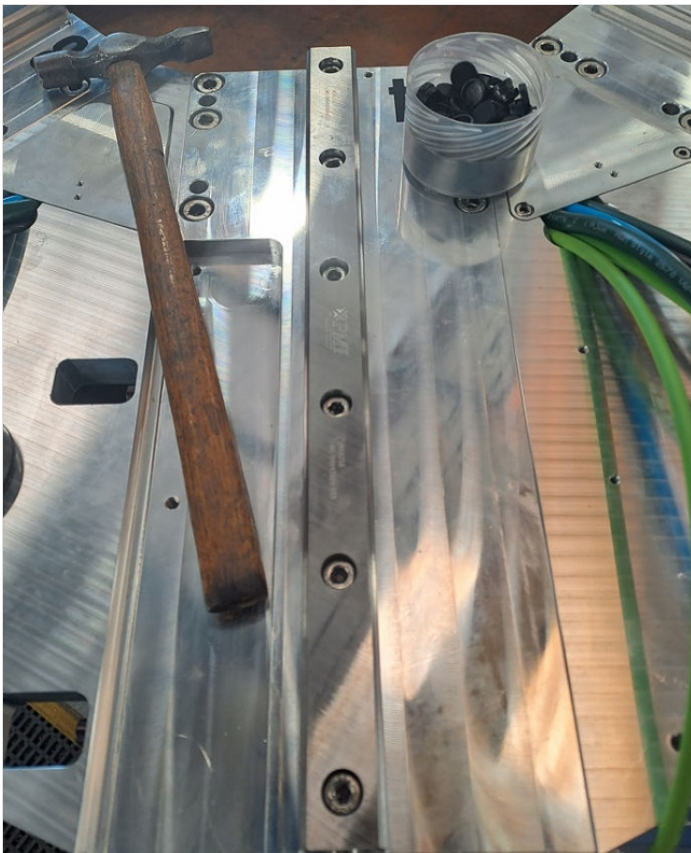
- 1 Rails should be pushed against this face when fixing, to ensure consistent positioning between spindles
- 2 Rails should be centralised in this direction , due to the clearance in the counterbores
- 3 Use a drill driver @ 15 torque and 5mm hex bit to drive in m6 cap heads on all spindles
- 4 Use hex key to apply final tension to m6 bolts on all spindles



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## Step 4 - Fit Blanking caps B0000173

Fit blanking caps to all rails fitted . It is vital rail caps are fitted flush to allow bearing seals to work correctly.  
Use a nylon block as a dolly to ensure caps are driven in flush but no damage is possible to linear rail.

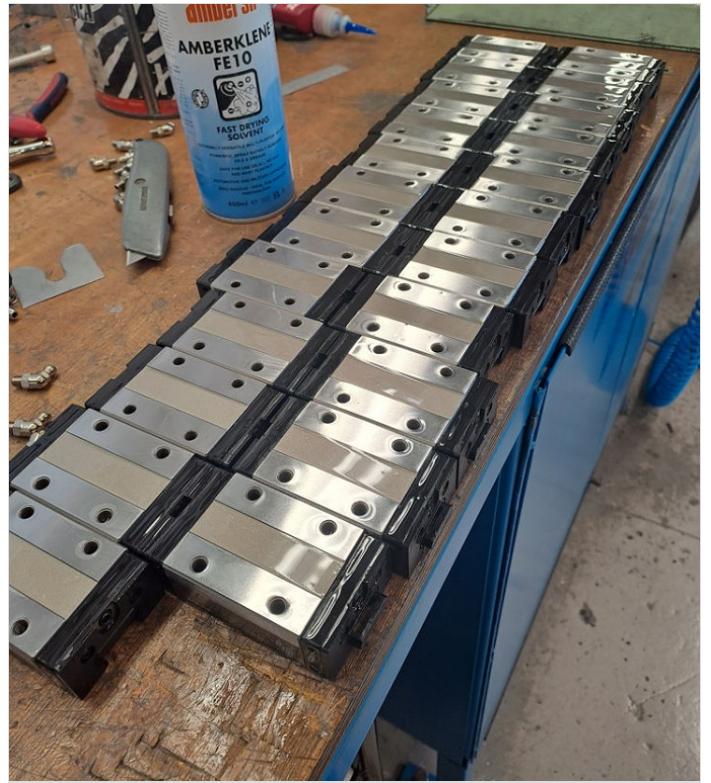




## Step 5 - Prepare bearing blocks

Bearing blocks B0000046 must be prepared for installation. They must be de greased to ensure loctite 243 activates correctly

- 1 Lay out all 24 bearing blocks as shown and use Fe10 solvent and spray entire top face of lined up bearings, ensuring solvent floods into top facing m6 holes.
- 2 use compressed air to remove solvent from bearing blocks and tapped holes.
- 3 Wipe remaining solvent from bearing with clean rag



## Step 6 - Position bearing blocks onto rails

1 Datum faces of bearings must be observed and installed correctly  
Bearing will only have one side that has a machined datum face. It is vital this is orientated correctly when adding bearings to the linear rails

2 Fit 16 bearing to rails as shown

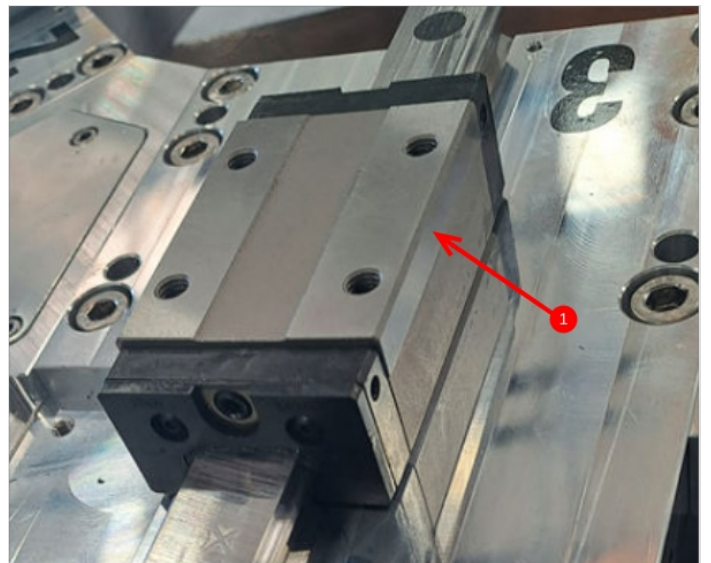
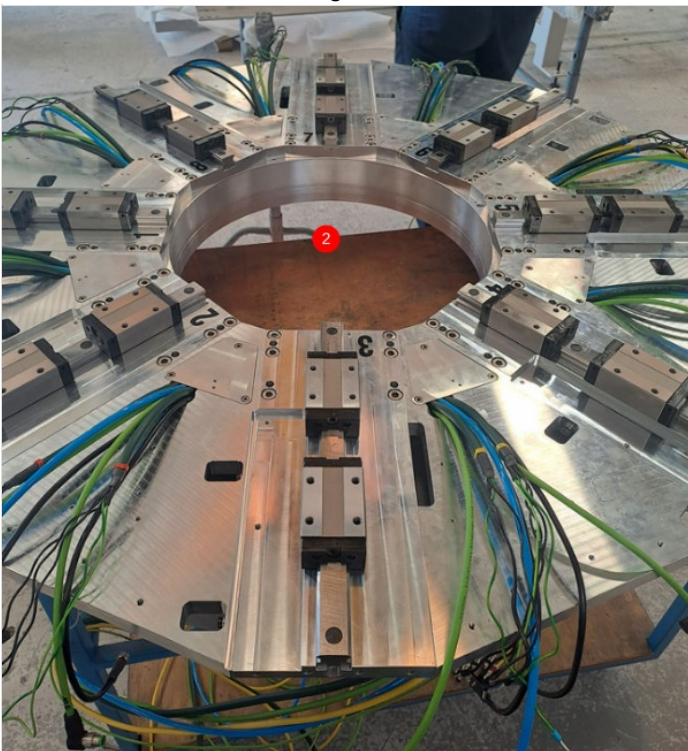
3 Adjust bearing seals to suit rail. release tension on indicated 2 bolts until end plastic section can move

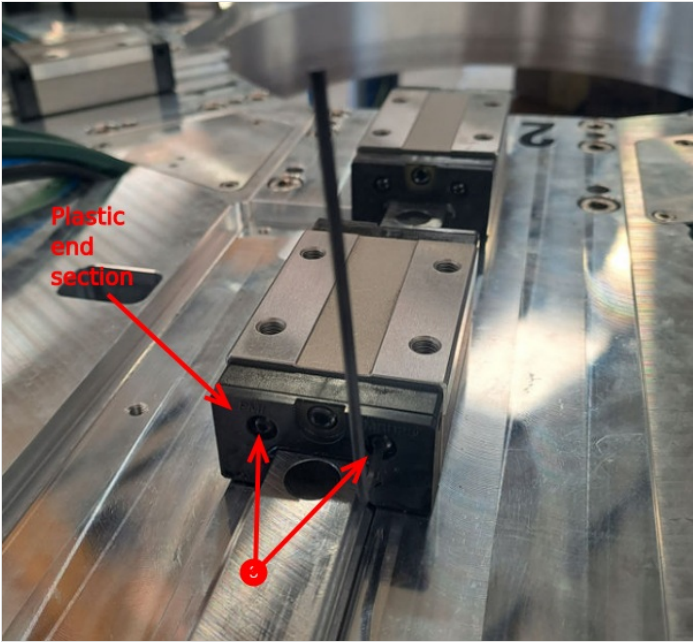
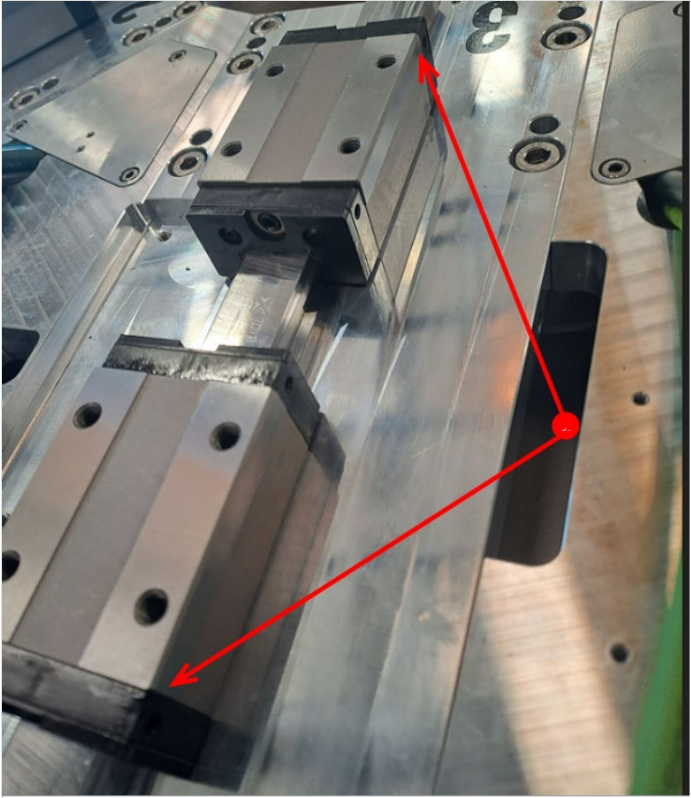
4 Move bearing up and down on rail

5 Re tension 2 bolts

6 Repeat on other end of bearing

This should be done to all bearings fitted

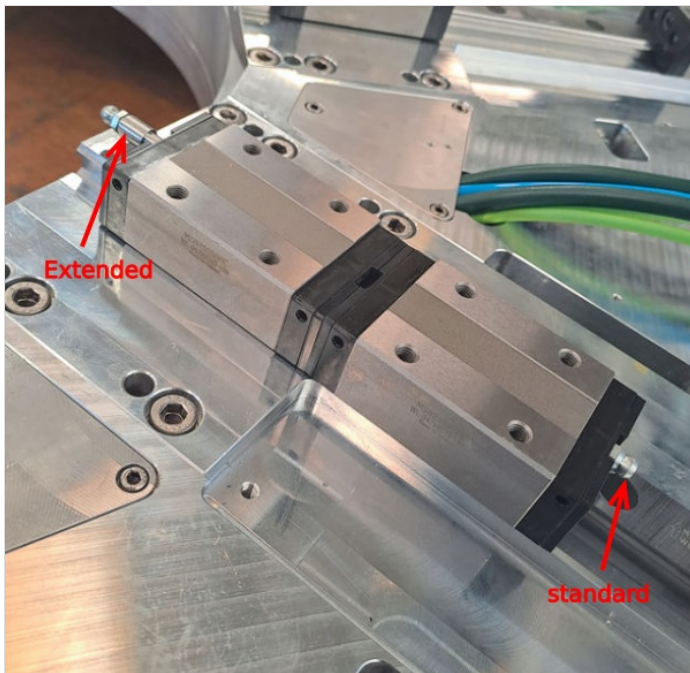
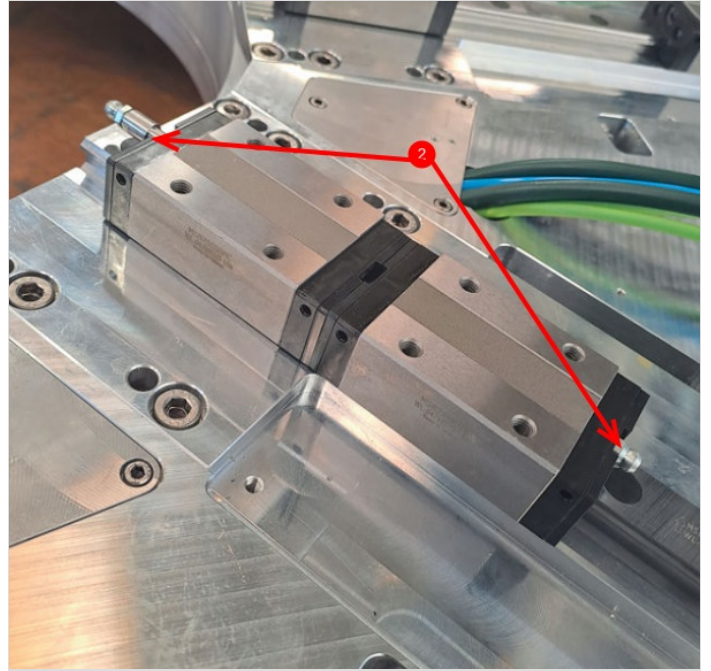






## Step 7 - Fit greasing points

- 1 Fit 12 off B0000223 m6 x 0.75 grease nipples to D0007816 as shown
- 2 Remove grub screws from greasing point at indicated points
- 3 Fit one extended grease nipple and one standard nipple as shown to all 8 spindles



## Step 8 - Fit 2nd linear rails

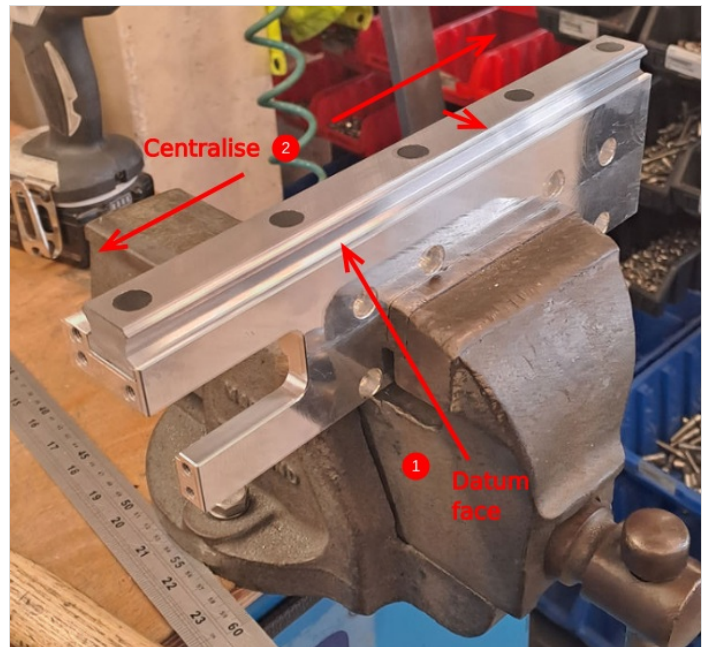
4 off

Fit linear rail B0000044 to double slide base D0007724 with m6 x 20 socket caps

1 ensure rail datum is orientated correctly

2 ensure linear rail is centralised

3 Add b0000173 caps once finalised

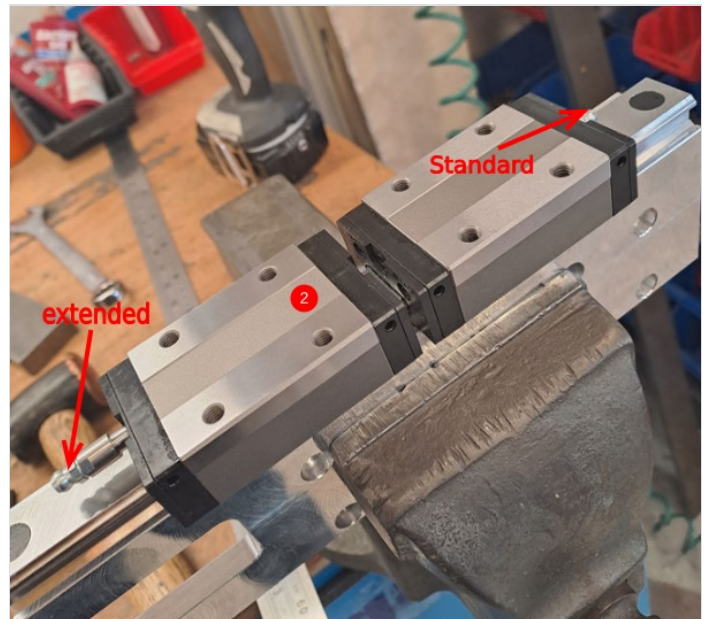
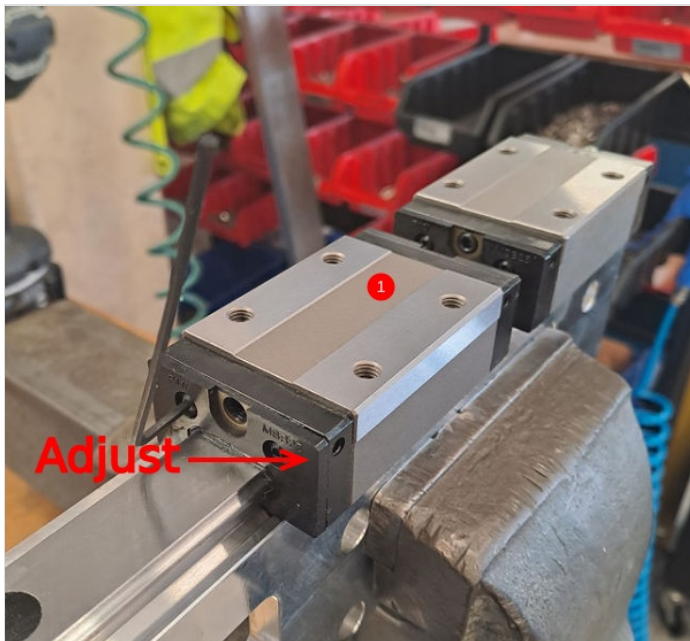


## Step 9 - Adjust bearings and add grease points

4 off

1 Follow 5.3 for adjustment details

2 Fit grease nipples to bearing blocks as shown





## Step 10 - Fit single slide base

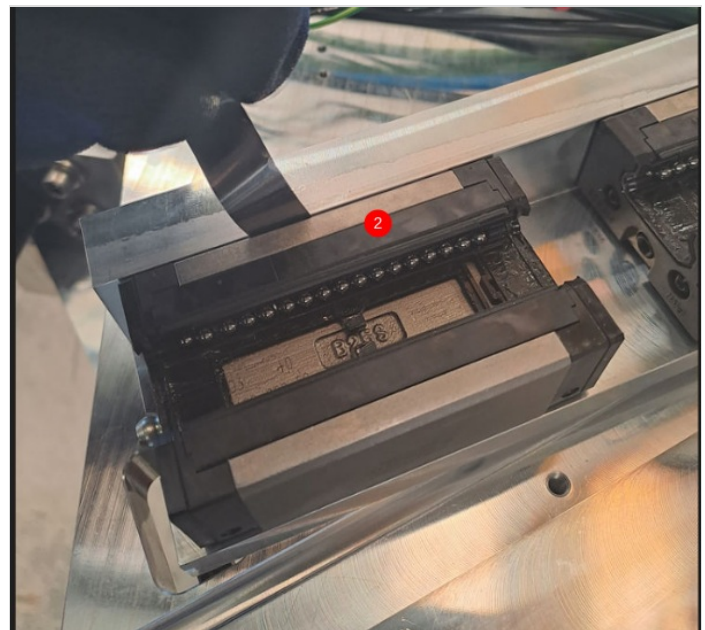
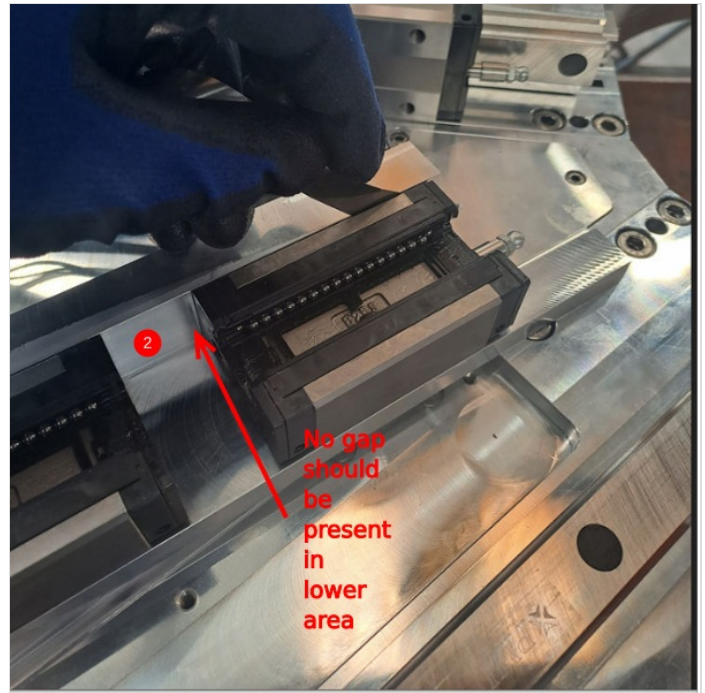
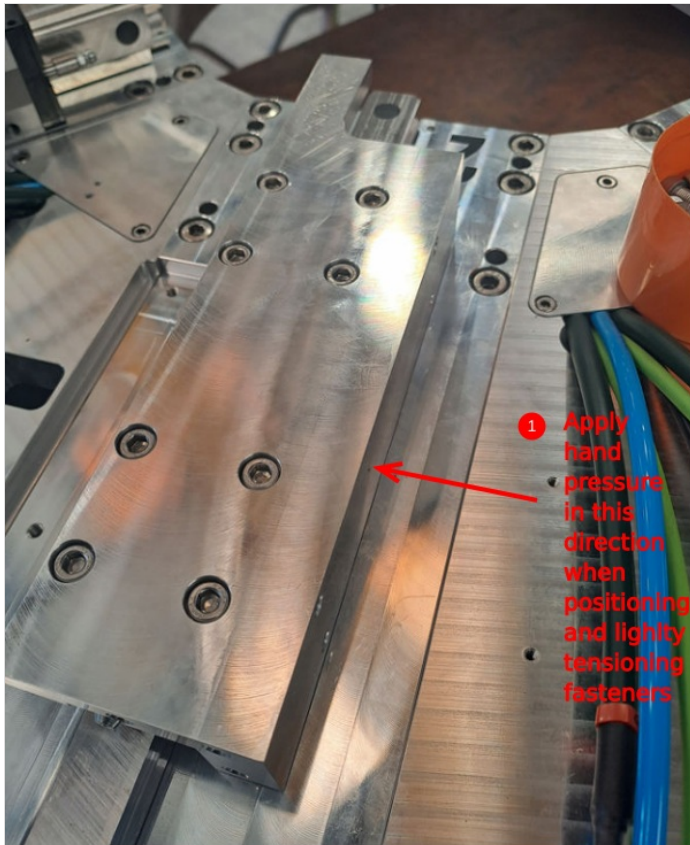
Fit D0007725 to spindles 2,4,6 and 8

Use 8 off m6 x 12 socket cap per spindle

1 Place slide base on bearings , add bolts with drill driver torque 5 whilst lightly applying force by hand in the direction shown

2 Carefully remove slide base and use feeler gauge to check damage face of bearing is hard up against datum face of slide block . If a gap is present, disassemble , check parts and rebuild

3 Once checked and passed, carefully refit slide base to linear rail and apply final tension to 8 off m6 cap heads



## Step 11 - Fit double slide base

Repeat previous step but use pre build D0007724 assemblies and fit to spindles 1,3,5 and 7

