R0000971E Bench Assemble R Axis Gearbox

Assembly instructions for R axis gearbox

Difficulty **Hard** | Duration **2 hour(s)**

Contents

Introduction

Tools Required

Standard hex key set
Standard spanner set
Tensioning jig
Standard HSS drill set
300mm rule

Parts Required

B0000062 Circlip 20mm External x 2
B0000092 Belt: Toothed 640-8MGT 20 (R Axis) (KEVLAR) x 1
B0000095 Bearing NR6004 2RS with snap ring (NSK) x 2
C0001211 Gearbox NP035s 5:1 x 1
D0000268 Rotary Drive Tooth Pulley x 1
D0001286B-2MOD Welded Ring Pinion Gear 2MOD (for 8mm key) x 1
D0006058 Gearbox Plate x 1
D0006060 Spigot Cap x 1
D0007849 Servo gearbox cap x 1
D0008585B Rotary Ring Drive Pulley (for 8mm key) x 1
D0015801 Feather Key 8mm x 8mm x 22mm x 1

Step 1 - Unless otherwise stated

Use Loctite 243 on all fasteners

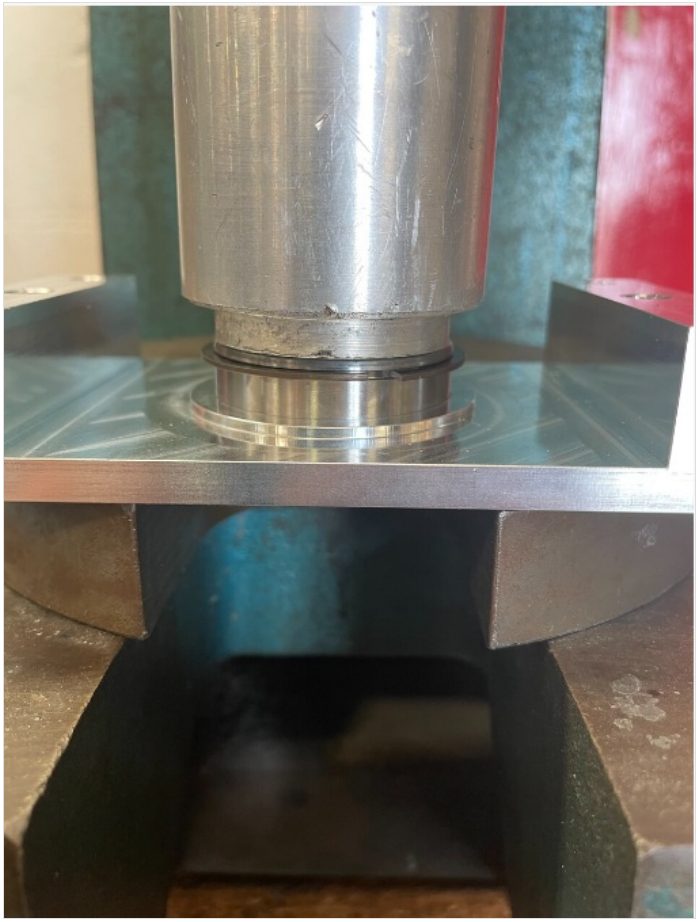
Use Loctite 572 on all threaded pneumatic connection

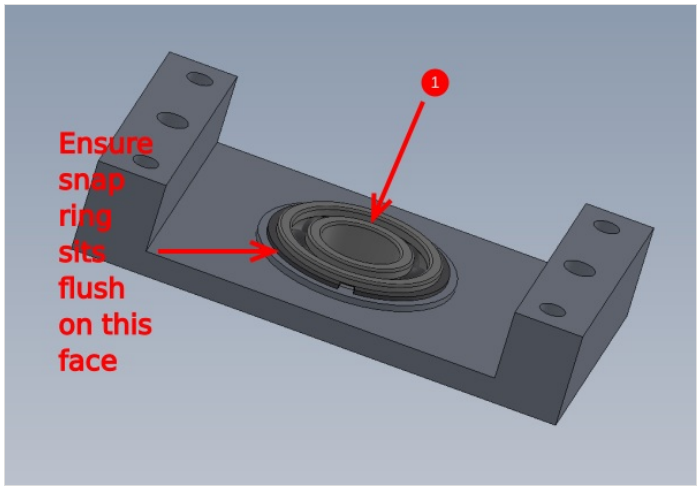
Pen mark all fasteners to show finalised

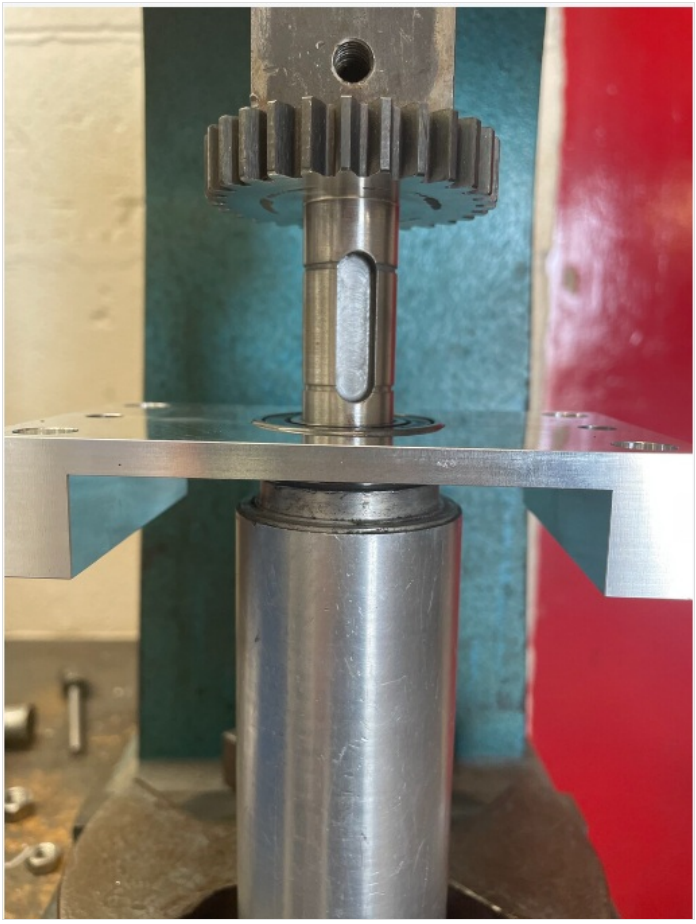
Step 2 - Assemble drive spigot

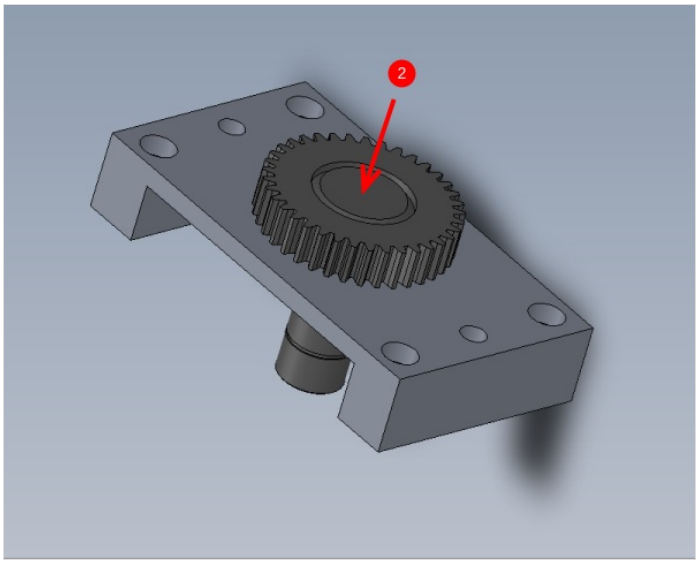
1 Press B0000095 Bearing into D0006060 Spigot Cap so snap ring sits flush

2 Fit D0001286B-2MOD Welded Ring Pinion Gear 2MOD as shown Use jig to ensure bearing is not moved from location. Push through until circlip groove is in correct place
Check to ensure drive pinion does not contact bearing face as shown





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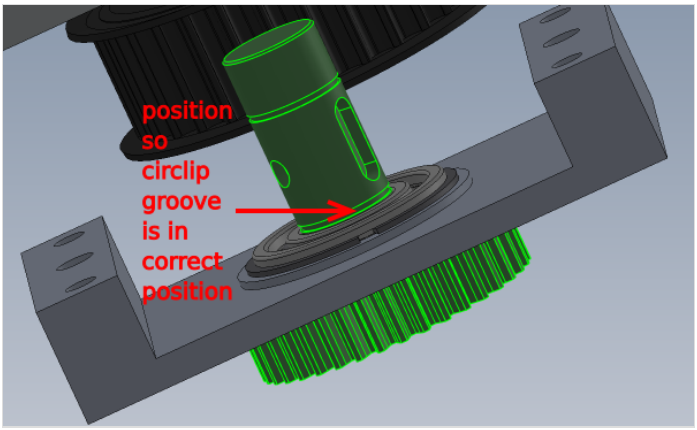
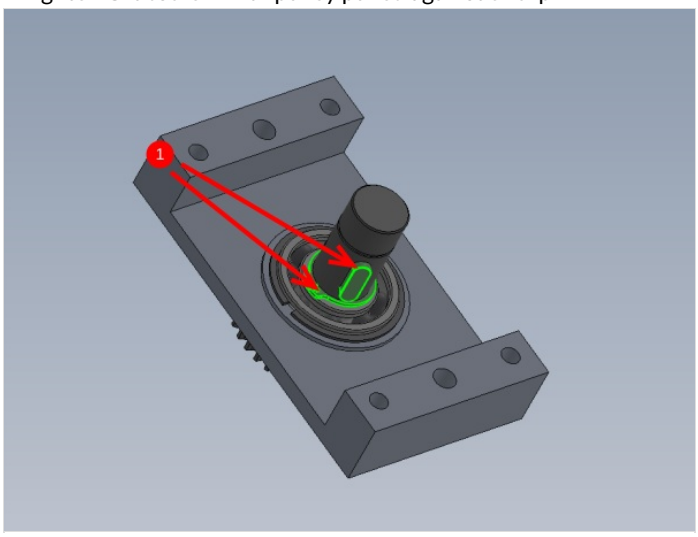

position
so
circlip
groove
is in
correct
position

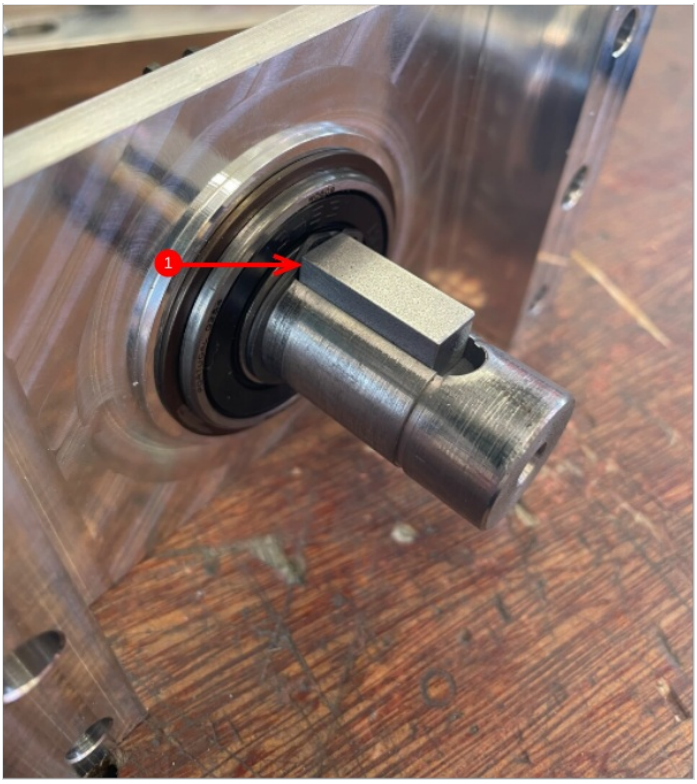
Step 3 - fit key and pulley

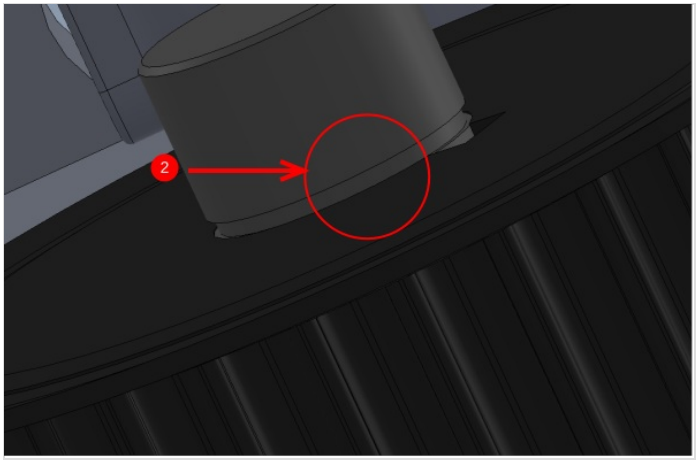
1 Fit Circlip 20mm and D0015801 Feather Key 8mm x 8mm x 22mm as shown

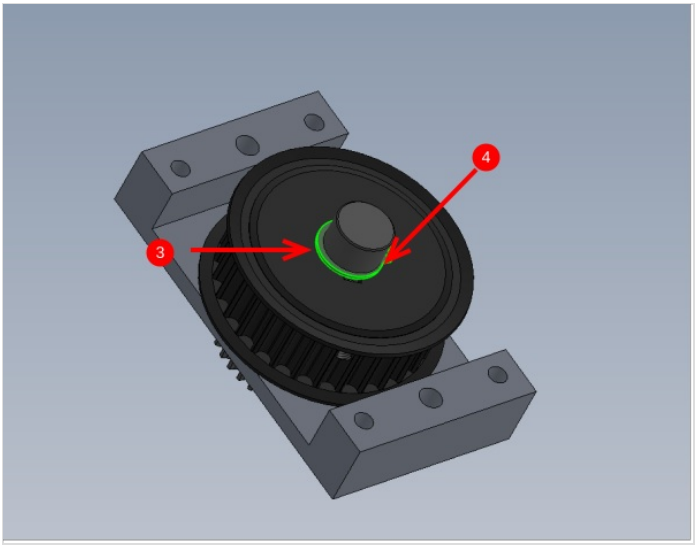
2 Fit D0008585B Rotary Ring Drive Pulley as shown . Only press down until circlip groove is present
3 Fit 20mm external circlip

4 Tighten Grubscrew with pulley pulled against circlip









Step 4 - Attach to gearbox plate

1 Fit B0000095 bearing to D0006058 plate as shown . Note circlip on bearing to be on indicated face
2 Attach B0000092 Belt: Toothed 640-8MGT 20 as shown

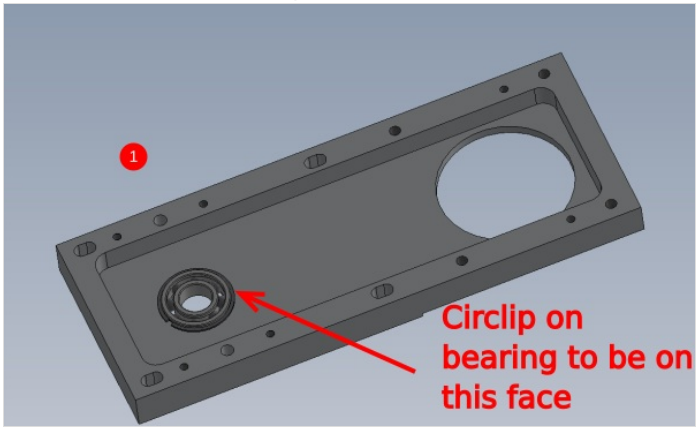
3 Press pinion assembly onto gearbox plate

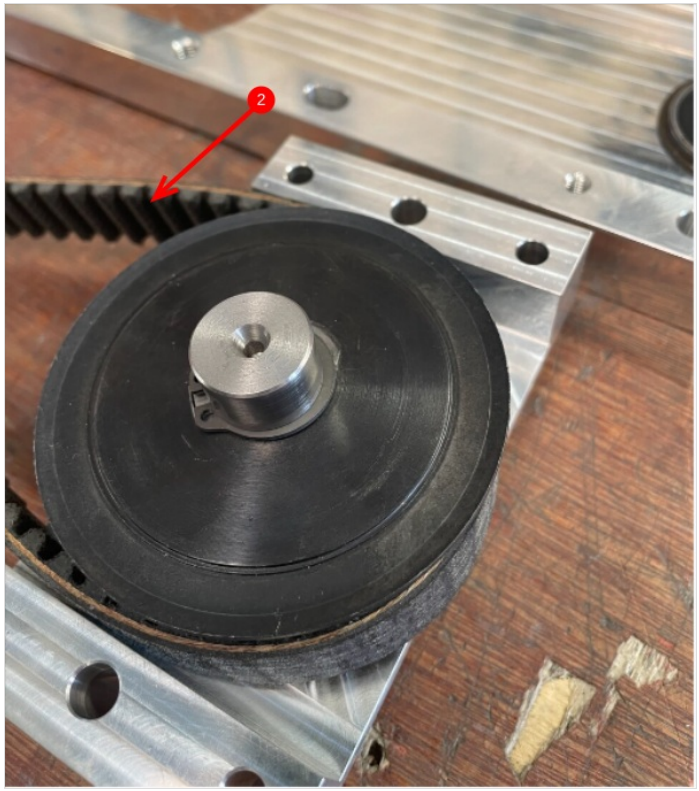
> ...Do not force past contact point indicated. This can cause distortion on pinion assembly

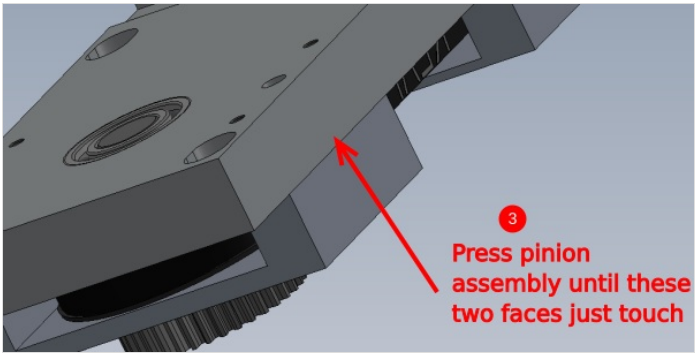
4 Secure lightly with 4 off M6 x 35 socket caps

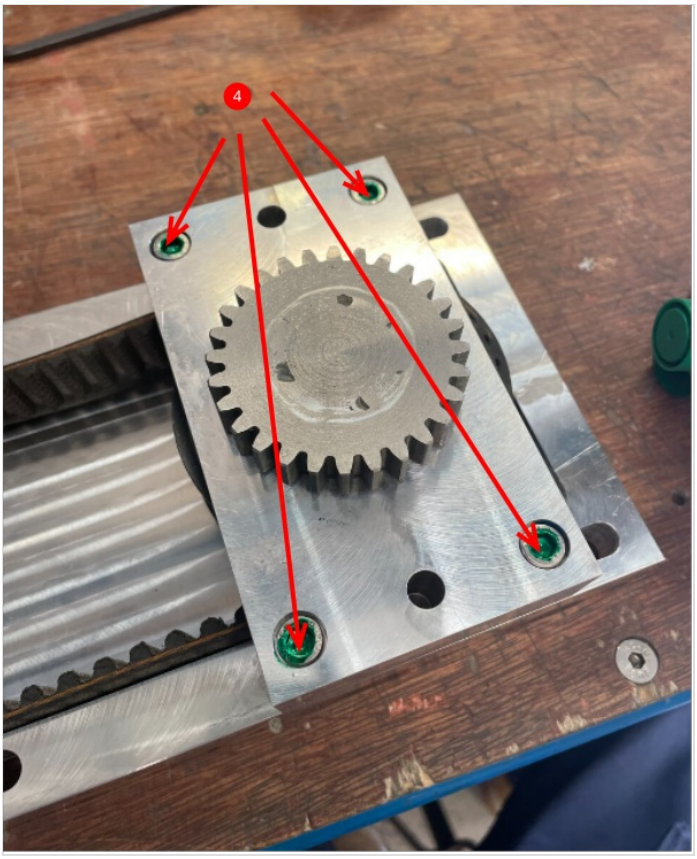
5 Add 2 off 8mm x 50mm dowels into indicated holes . Ream if holes are tight

6 Finalise 4 off M6 socket caps









Step 5 - Gear box bung supplied with gearbox C0001211

...Ensure plastic bung issued with gearbox remains with gearbox at all times for later fitting

Step 6 - Check pulley fitment

Check D0000268 Rotary Drive Tooth Pulley fits onto C0001211 Gearbox

If pulley fits move to step 6, if it does not fit follow these steps

1 Remove key from gearbox shaft

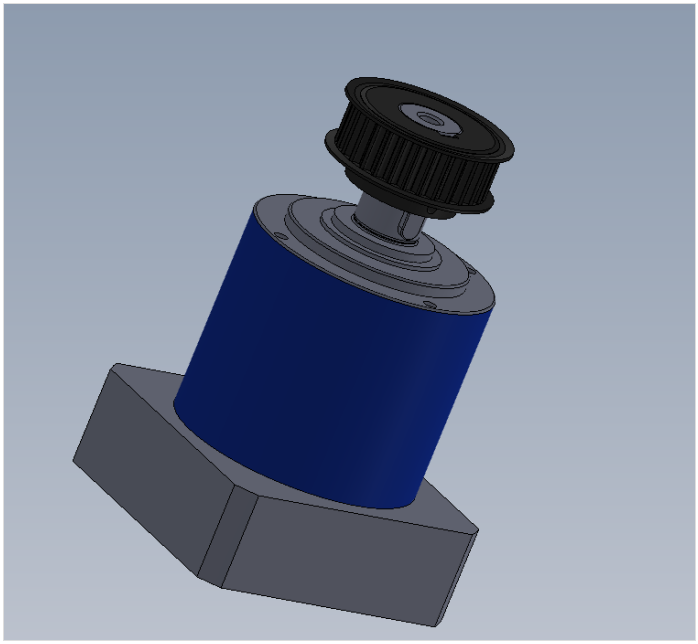
> ...Take care not to damage shaft or keyway . Try clamping keyway in a vice to remove from shaft

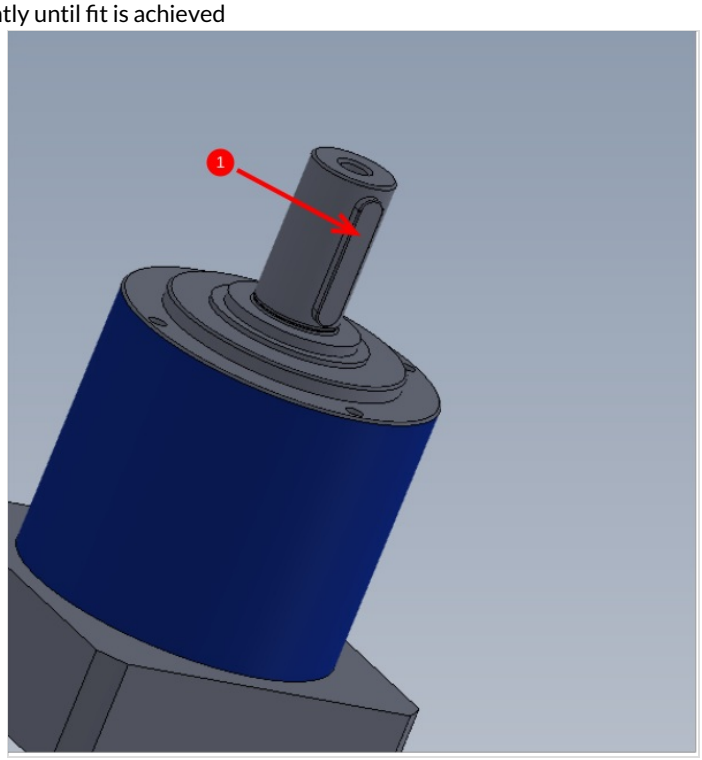
2 Test pulley again for fitment.

- If the pulley still does not fit, polish inner face of pulley until fitment is achieved
- if the pulley does fit when the key is removed , move to next step

3 Refit key

4 Test pulley , if the pulley still doesn't fit correctly dress keyway slot gently until fit is achieved



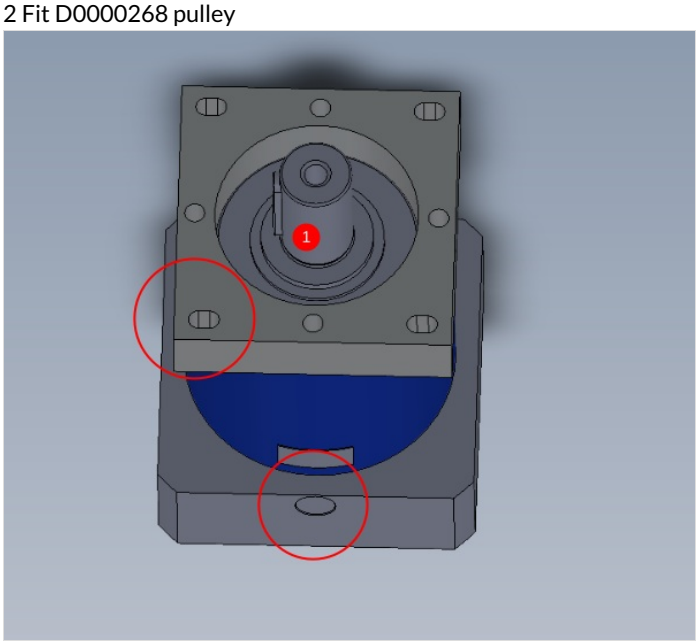


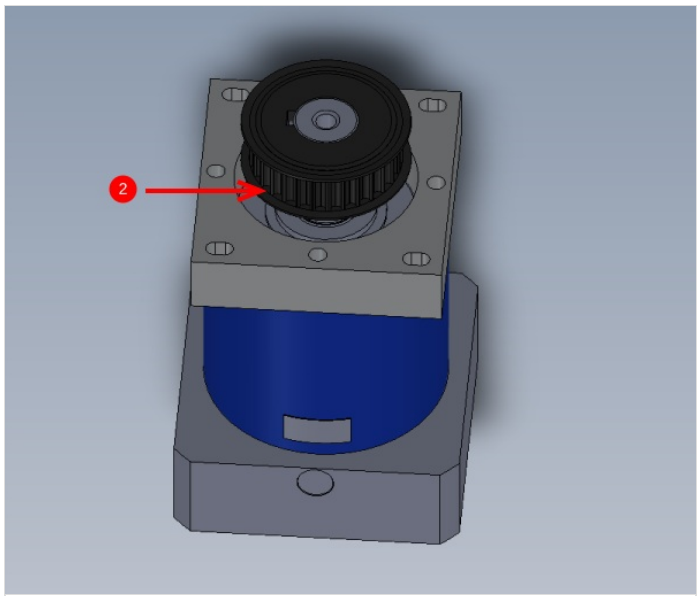
Step 7 - Fit Servo gearbox cap

1 Fit D0007849 Servo gearbox cap as shown. No adhesive on the 4 off M8 x 35 socket caps

Orientate as shown

2 Fit D0000268 pulley



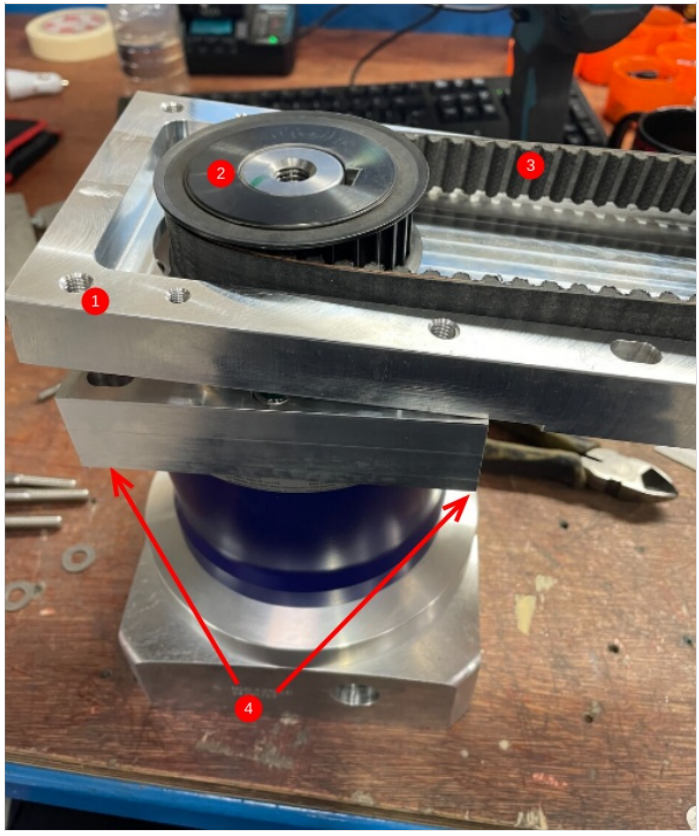


Step 8 - Couple and align gearbox and pinion assembly

Insert part1 through part 2

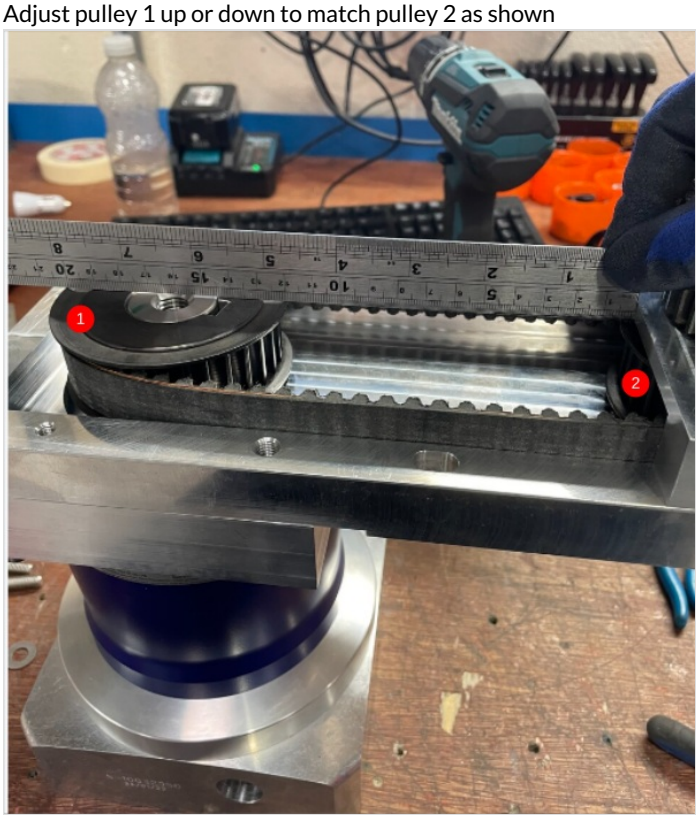
Hook over belt (3)

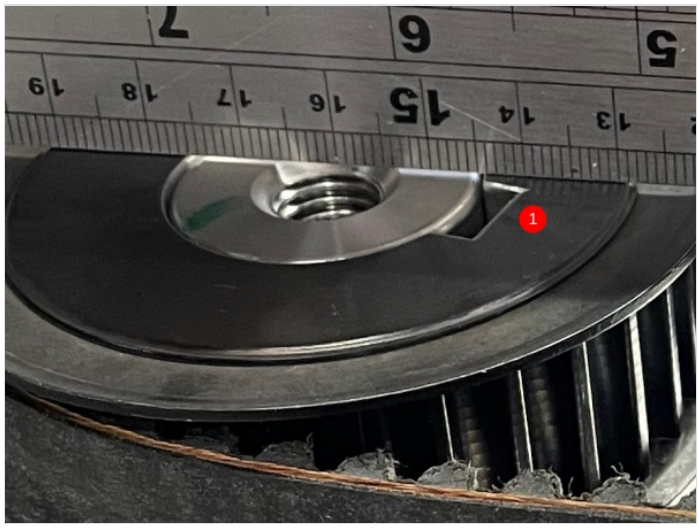
insert 4 off m8 x 50 with a form washers a pull to face lightly

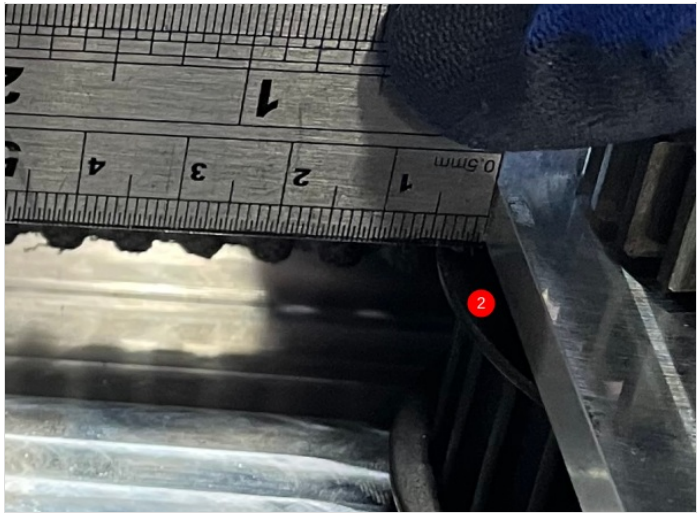


Step 9 - Align pulleys

Adjust pulley 1 up or down to match pulley 2 as shown







Step 10 - Remove pulley assembly

Reverse steps to remove assembly 1

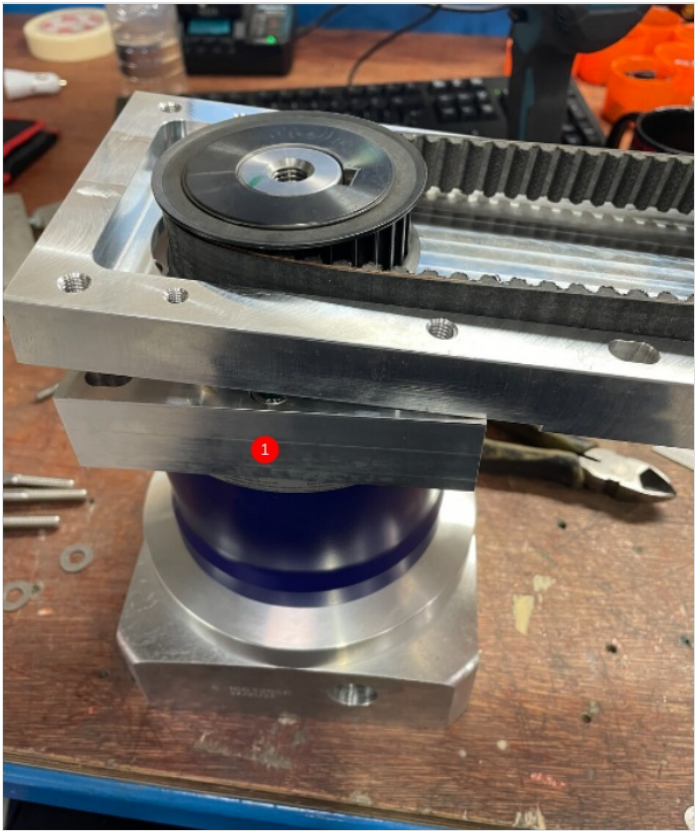
Remove part 2

> ...Ensure pulley retains its position through these steps

Tighten grubscrew to leave witness mark , Remove pulley and drill 5mm dimple at indicated point

Use M6 x 10 kcp grubscrew to lock pulley in final position

Rebuild parts to get to 3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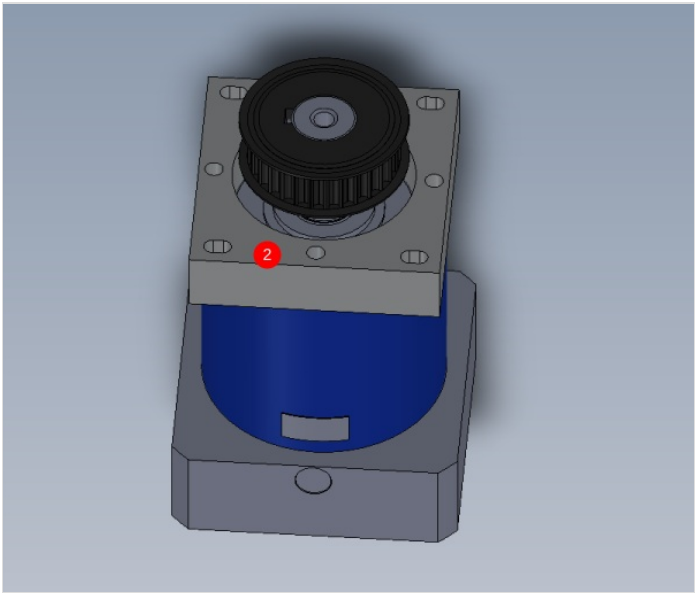
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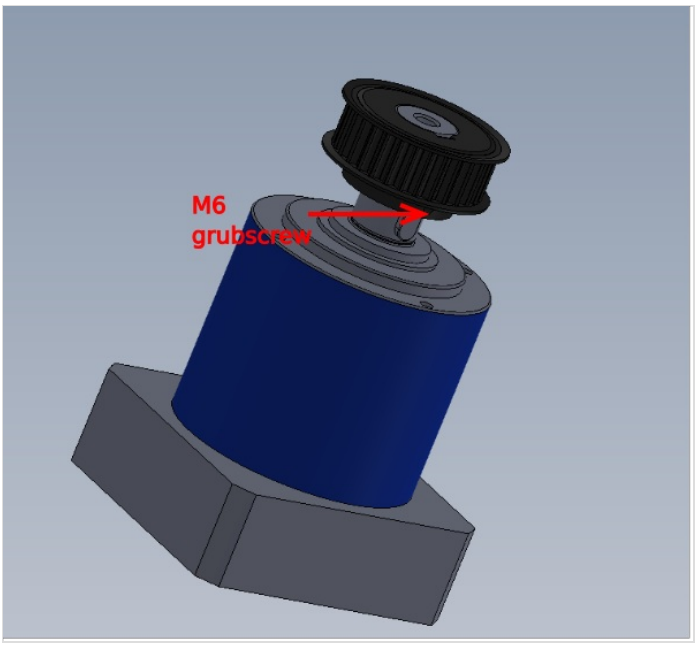
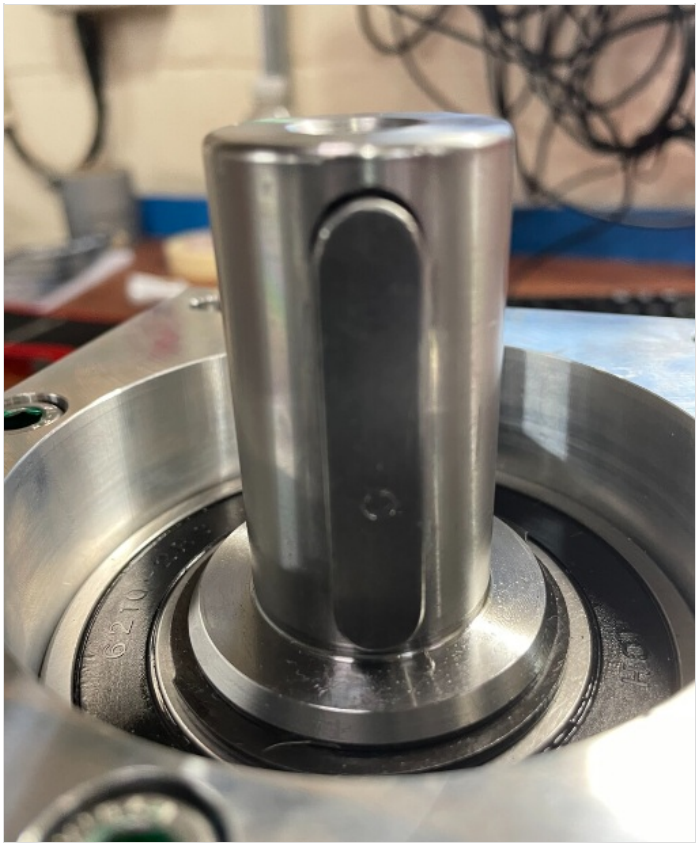

M6
grubscrew



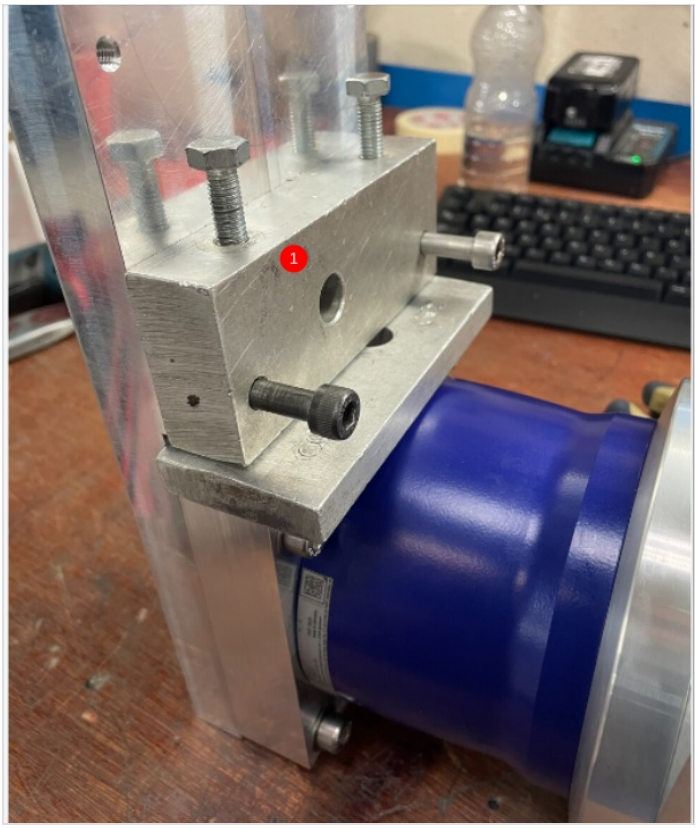
Step 11 - Tension belt

1 Attach tensioning jig as shown

2 Apply tension to belt , spreading tension over two bolts indicated . Maintain parallel on these faces as adjusting

Set belt tension to 5mm deflection (Drum Tight)


1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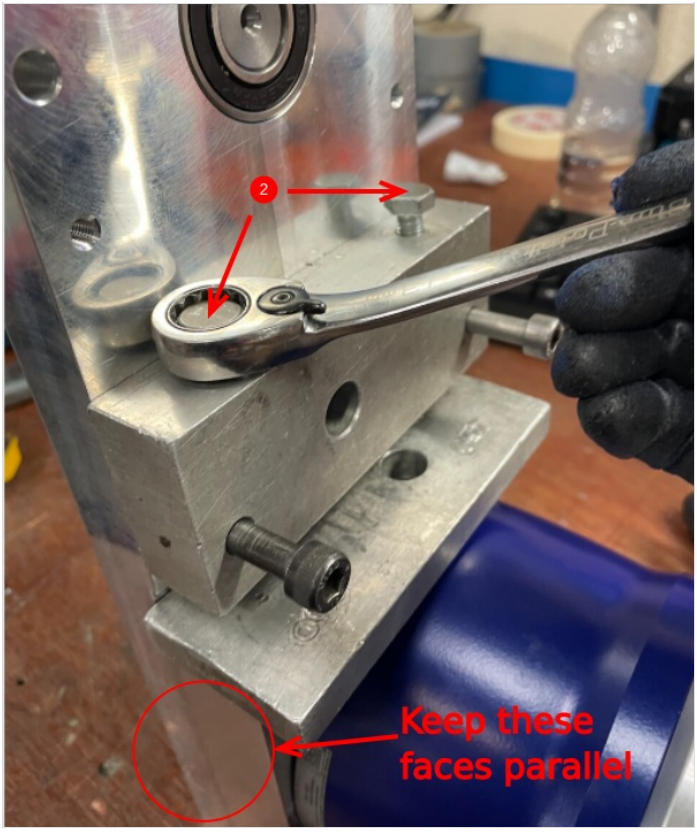
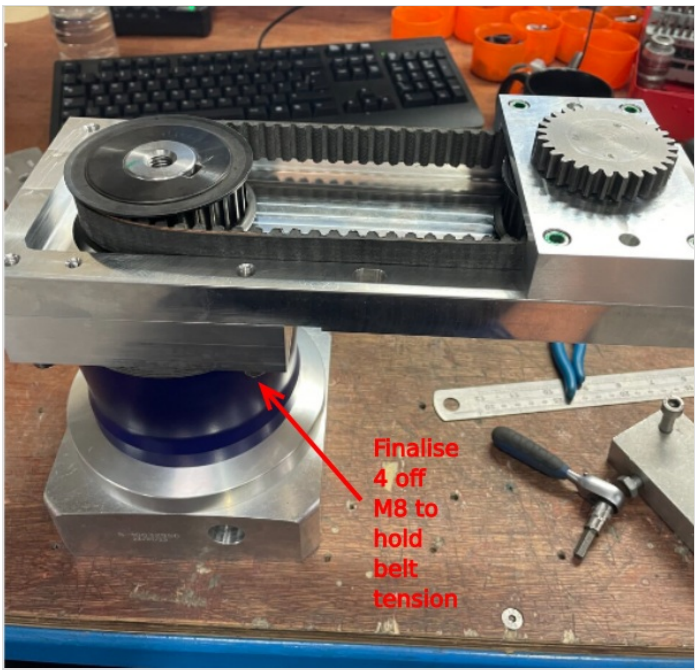

2
Keep these
faces parallel


5mm
deflection
Ansell
EN388

Step 12 - finalise position

finalise 4 off m8 socket caps to hold tension

Remove setting jig plates



Step 13 - Quality check

Quality check required on belt tension