

# R0000963E Bench Assemble Z axis Components

Bench assembly instructions for z axis components

 Difficulty **Medium**

 Duration **3 hour(s)**

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Comments

## Introduction

### Tools Required

Standard hex key set  
Standard spanner set  
Emery tape  
Standard HSS drill set  
Hand reamer  
Standard tap set

### Part Required

B0000086 Ball Bearing 15 D 32 D 9 Long + seals x 4  
B0000139 Double Angular Bearing 20 D 47 D 20.6 Long + seals x 2  
B0000351 Bearing 40mm O/D 17mm I/D 17.5mm Wide x 2  
C0001122K Servo Motor: Beckhoff AM8032-1E10 (Keyed) x 1  
D0001926 Servo Drive Coupling M20 (Ø14mm) Beckhoff x 1  
D0006501 Z Leadscrew Sleeve x 2  
D0007629 Cylinder rod Extension x 4  
D0007732 Sprocket Idler Shaft x 2  
D0007733 Sprocket Mounting Block x 2  
D0008090 Retaining Collar x 1  
H0007715 Z Sprocket 33 Teeth 3/8" pitch x 2  
H0007790 Leadscrew Z(Includes Re-balling) x 2  
P0000007 Straight Adaptor 6mm - 1/8 BSP tapered thread x 2

P0000010 Elbow Adaptor 6mm - 1/8 BSPT (Taper thread) x 2  
P0000023 Fitting: Hex Nipple 1/8 BSP x 2  
P0000024 Fitting: Hex Nipple 1/4 BSP x 2  
P0000026 Silencer 1/4 BSP x 4  
P0000051 Fitting: Straight Adaptor 6mm - 1/4 BSPT x 4  
P0000140 Fitting: Quick Exhaust Valve 1/8" x 2  
P0000145 Tee-Equal 1/4BSP Galvanised x 2  
P0000200 Elbow Adaptor 6mm - M5 x 2  
P0000229 Pneumax VDMA 40 x 300 Magnetic x 4  
P0001038 Fitting: SMC 1/8" BSP to Ø6mm Elbow White x 4  
P0001174 Fitting: Pilot Check Valve 1/4" (Flow & ZX) x 2

## 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

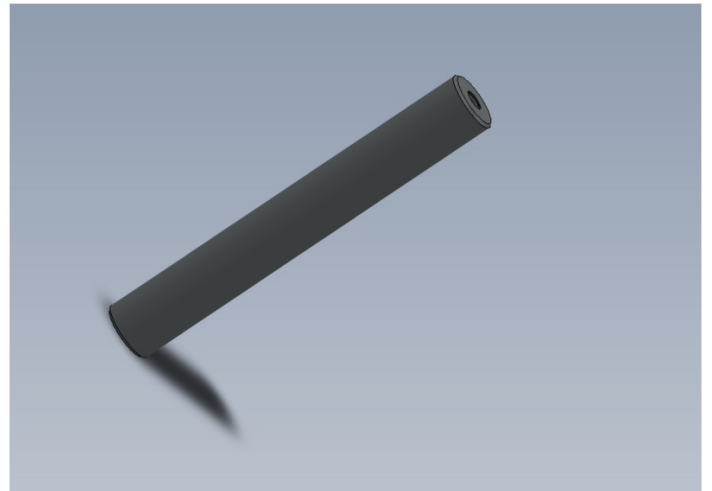


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## Step 2 - Clean Threads

4 off

D0007629. Clean M8 x 1.25 and M12 x 1.25 threads to remove debris

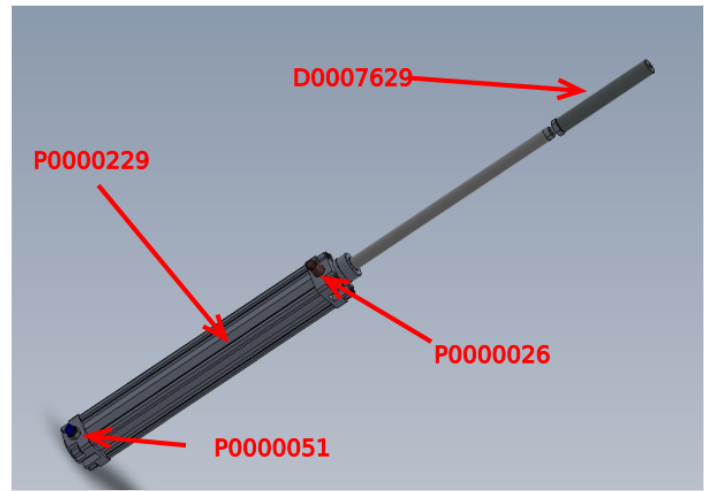


## Step 3 - Assemble support cylinder

1

2 off

Assemble P0000229 cylinder as shown



## Step 4 - Assemble support cylinder 2

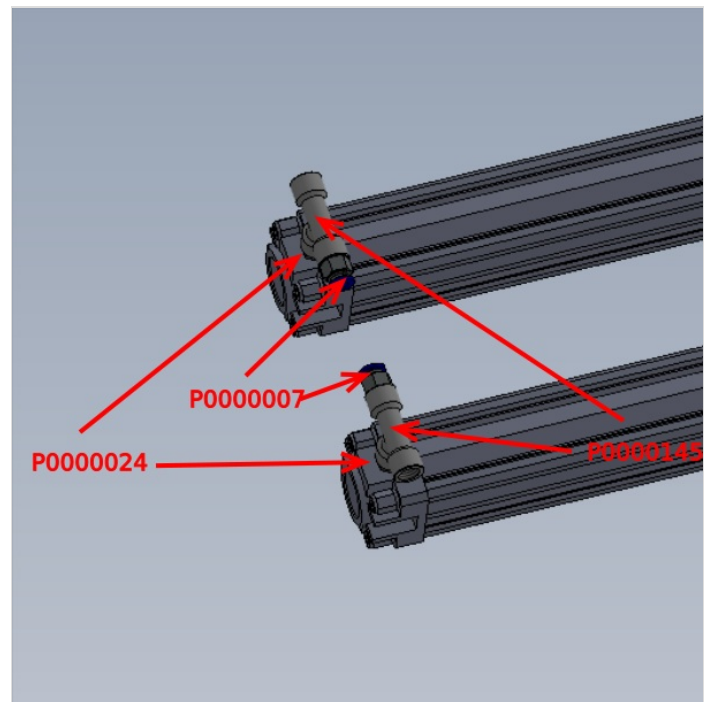
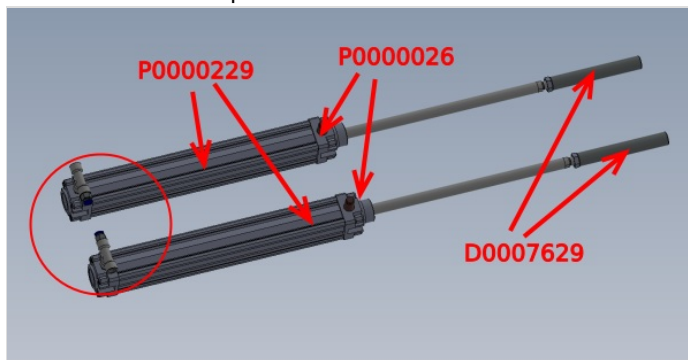
Assemble a pair of cylinder assemblies as shown

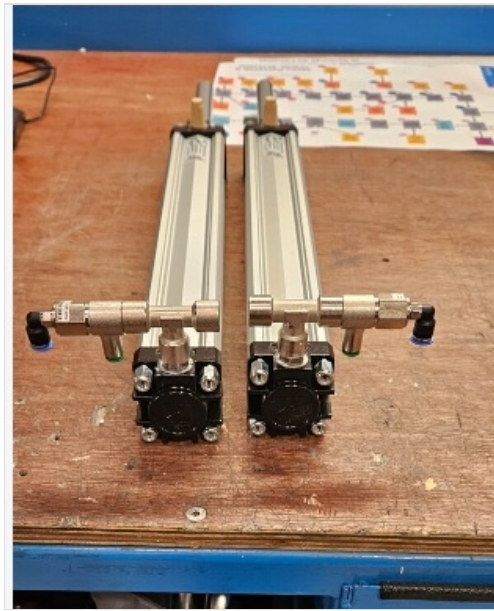
P0001038 Fitting: SMC 1/8" BSP to Ø6mm Elbow White x 4

P0001174 Fitting: Pilot Check Valve 1/4" (Flow & ZX) x 2

P0000140 Fitting: Quick Exhaust Valve 1/8" x 2

P0000200 Elbow Adaptor 6mm - M5 x 2





## Step 5 - Assemble tensioners

2 off

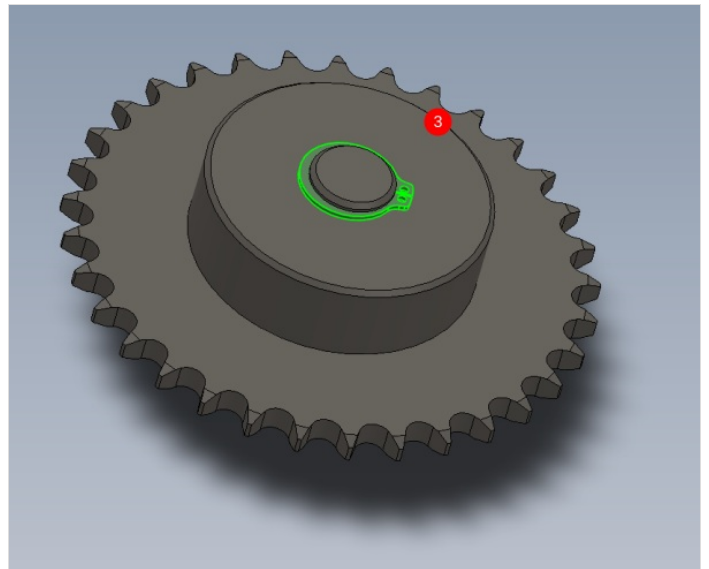
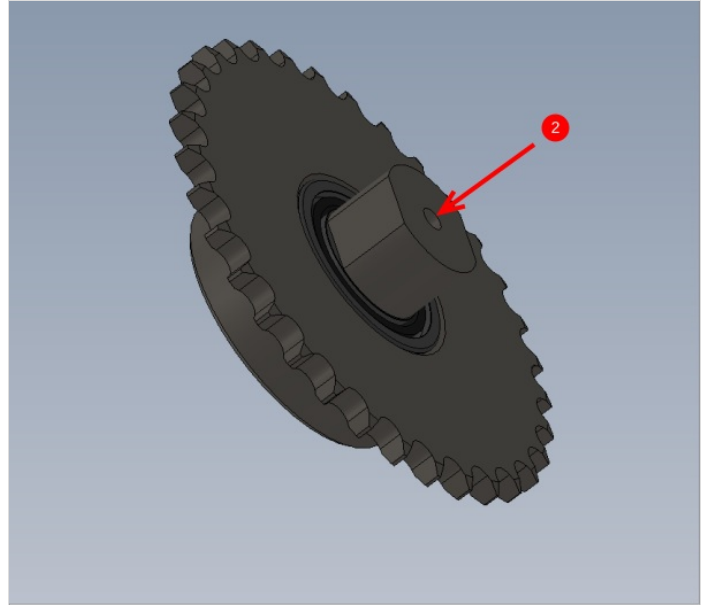
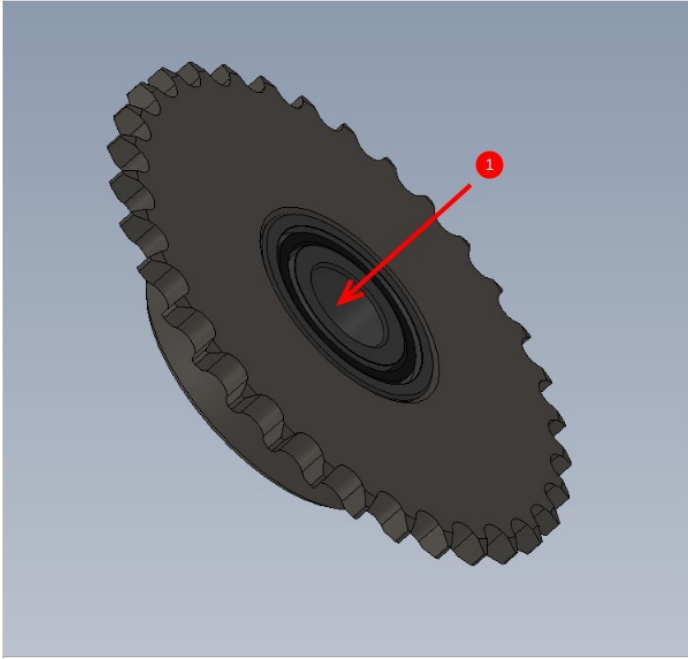
1 Press B0000351 Bearing 40mm O/D 17mm I/D 17.5mm Wide into H0007715 Z Sprocket 33 Teeth 3/8" pitch . Observe fit, if loose solvent to degrease and apply bearing fit. If tight inspect drawing and check bore size

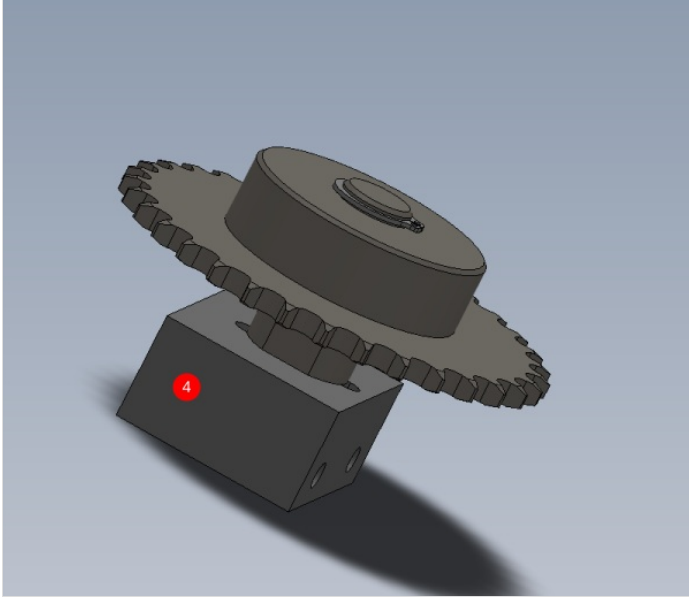
2 Press in D0007732 Sprocket Idler Shaft , again observing fit as above

3 Fit 16mm external circlip

4 Attach D0007733 Sprocket Mounting Block using M6 x 40 socket cap and heavy M6 washer (do not apply adhesive to this bolt )

5 Add M6 x 30 grubscrew and M6 standard nut to indicated face (picture required)

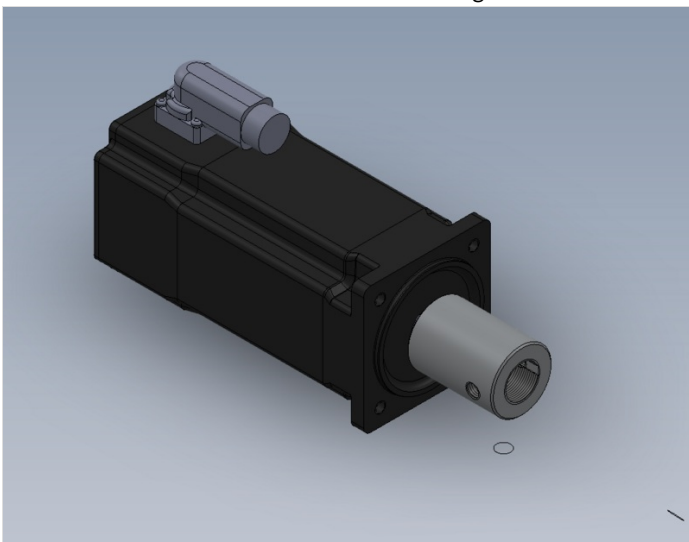




## Step 6 - Check fit of D0001926

Ensure D0001926 Servo Drive Coupling M20 (Ø14mm) Beckhoff x 1 fits onto C0001122K Servo Motor: Beckhoff AM8032-1E10 (Keyed) x 1  
Fit should be a snug slide fit


Part can be reamed with hand reamer if fit is tight



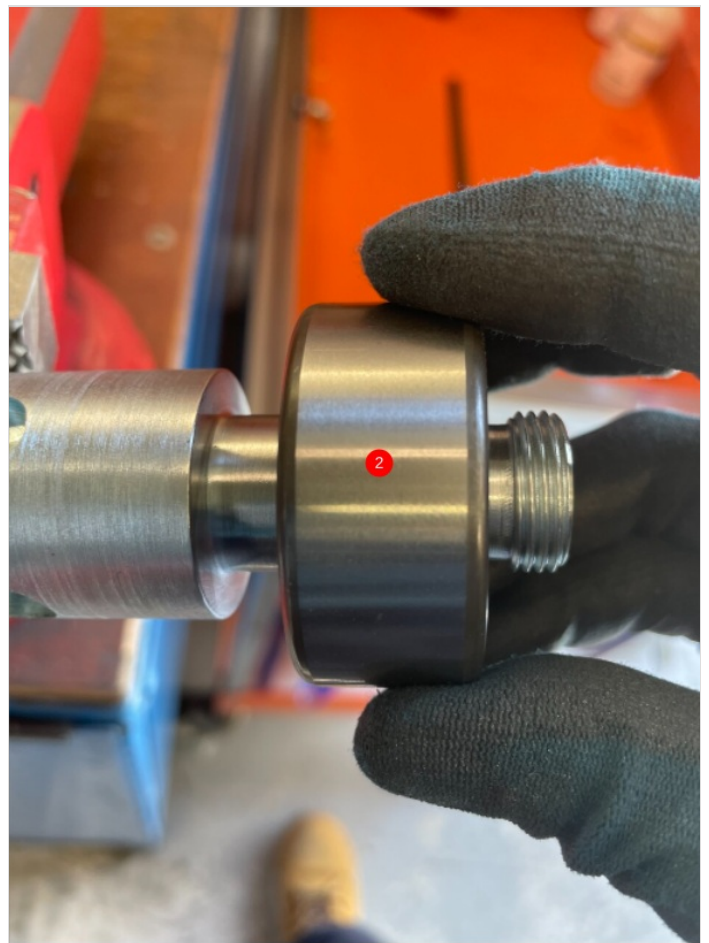
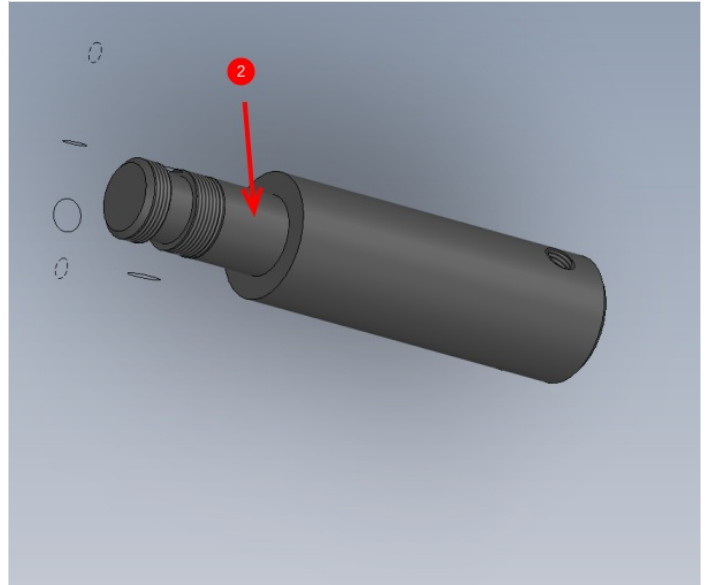
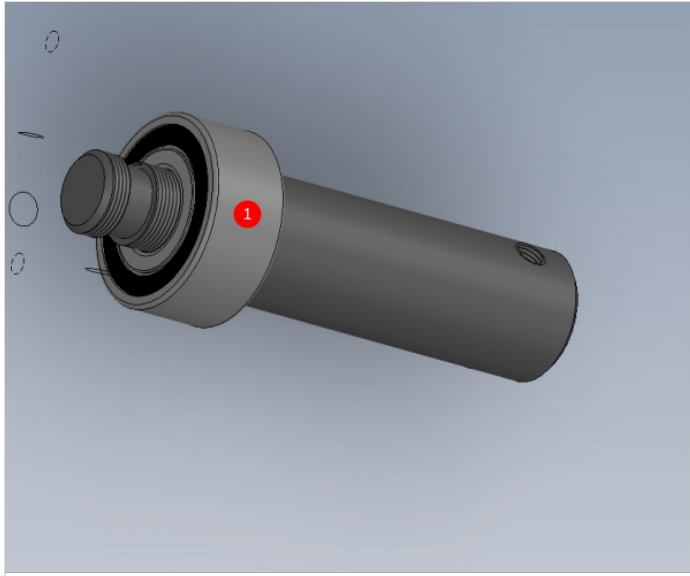
## Step 7 - Fit bearing

2 off

1 Check and adjust fit of B0000139 Double Angular Bearing 20 D 47 D 20.6 Long + seals onto D0006501 Y Leadscrew Sleeve

 ...Only polish a small amount at a time , to ensure to correct amount is taken of the sleeve


2 Fit should be a smooth press fit onto sleeve. Indicated face can be polished down with fine emery to obtain desired fit



## Step 8 - Tension drive coupling

1 Add m8 socket caps as shown to hold assembly in vice

2 Use 2 off m8 long socket caps and Standard M8 nuts and lock onto drive coupling .

 ...Ensure end of socket cap doesn't touch inner part as rotation is required to tension

Tension using long M8s as leverage



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## Step 9 - Finalise drive coupling

1 off

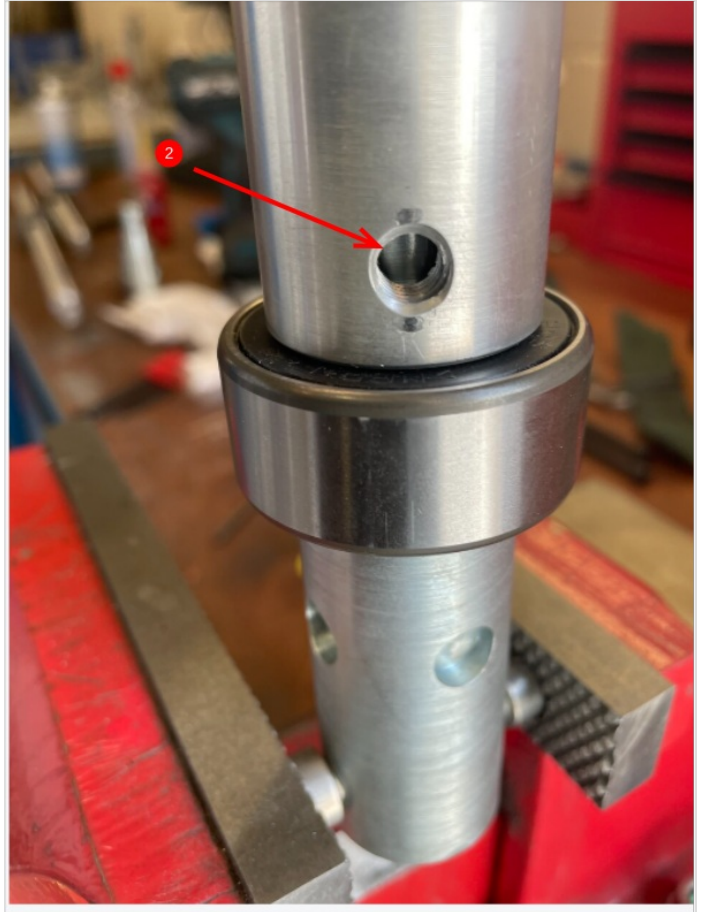
1 Remove 1 off Long M8 socket cap and tension an M8 x 12 kcp grub screw into the hole (do not add adhesive )

2 Remove second Long M8 socket cap and dimple inner shaft using 6.8mm drill

Clean with compressed air and add M8x 8 kcp with adhesive and tension

3 Remove m8 x 12 kcp grub screw and repeat above step









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## Step 10 - Finalise idler coupling

1 off

Use the same steps above to assemble idler drive coupling as shown using D0008090 Retaining Collar x 1

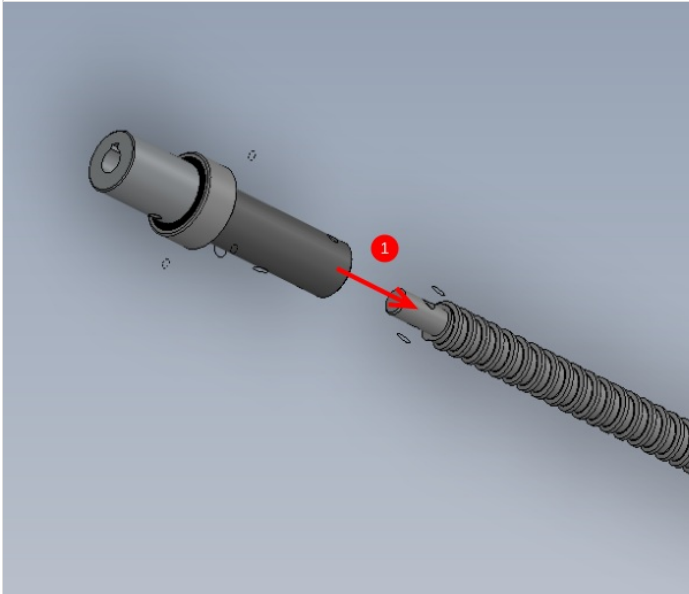


## Step 11 - Check fit of leadscrew to coupling

2 off

1 Check fit of coupling to leadscrew H0007790 Leadscrew

2 Use reamer / Emery tape if fit is tight



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## Step 12 - Check bearing fit

1 Check bearing B0000086 Ball Bearing 15 D 32 D 9 Long + seals fit is acceptable on leadscrew H0007789

2 Adjust with emery tape if fit is tight



