R0015314 Fit Z Axis Drive components

Assembly and setting details for final Z axis component installation

Difficulty **Very Hard** | Duration **3 hour(s)**

Contents

Introduction

Tools Required

Standard hex key set
Standard spanner set
Engineers level 300mm
5mm Carbide drill
150m verniers

Parts Required

A0001069 Energy Chain Series B15.050 (48mm radius) Openable x 2
A0001070 Igus Mounting Br Set for A0001069 Non-Pivot x 2
B0000344 Circlip 15mm External x 2
B0000400 Circlip 17mm External x 2
D0001249 Z Axis Chain Offset Plate x 1
D0001271 Z Axis Chain Mounting Plate x 1
D0001927 Intermediate Housing (AM3032) x 1
D0006498 Z Housing Cap x 2
D0007453 Double Cylinder Bracket OH (D8106) x 1
D0007610 Chain Slide x 1
D0007795 Nut Housing x 1
D0007796 Nut Housing - Mirror x 1
D0007858 Kit: Z Axis Drive Chain ZX + Micro x 1
D0008106 Double Cylinder Bracket (D7453) x 1
H0007714 Z Spocket 20 teeth x 2
R0000963E Bench Assemble Z axis Components x 1
M0001265 blanking bung 17mm x 1

Step 1 - Unless otherwise stated

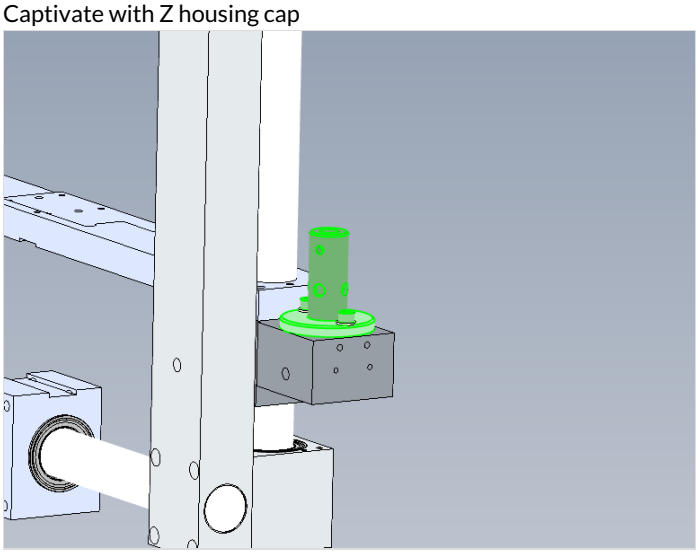
Use Loctite 243 on all fasteners
Use Loctite 572 on all threaded pneumatic connection
Pen mark all fasteners to show finalised

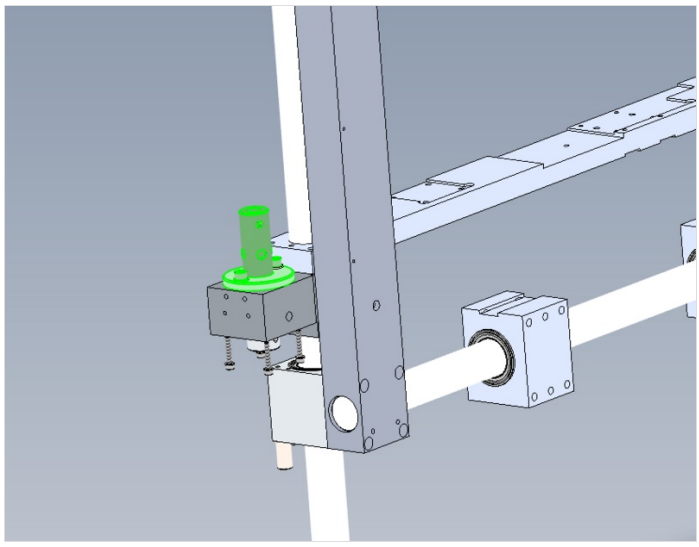
Step 2 - Attach leadscrew sleeves

Fit pre assembled leadscrew sleeves to front and rear Z axis

Bearing fit and solvent if bearing fit is loose

Captivate with Z housing cap



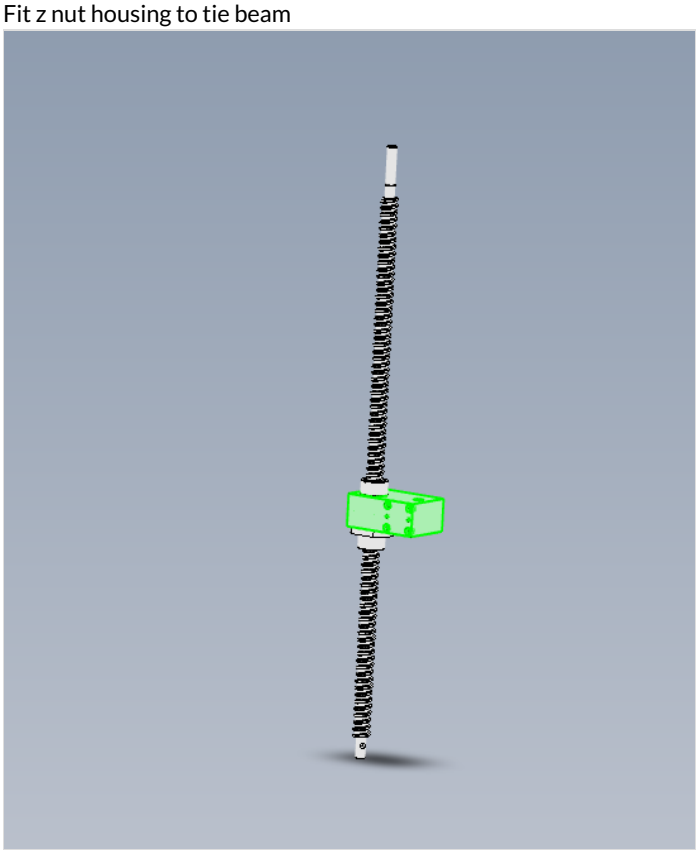


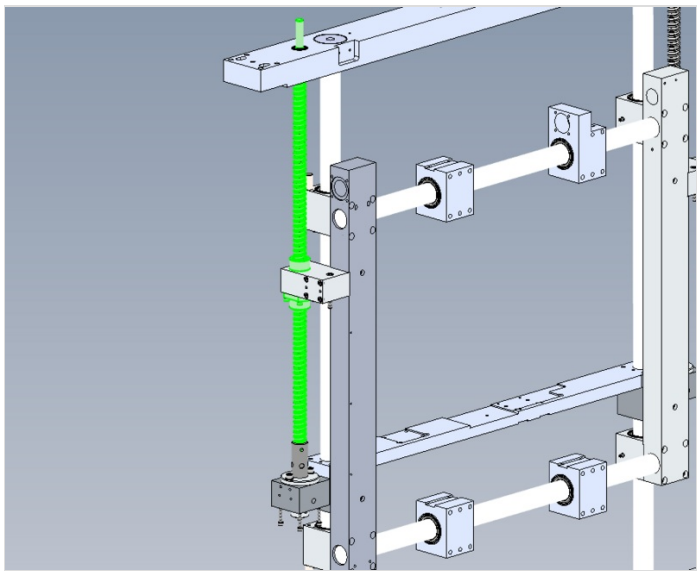
Step 3 - Fit front leadscrew

Slide onto leadscrew nut Z nut housing

Insert into frame leadscrew

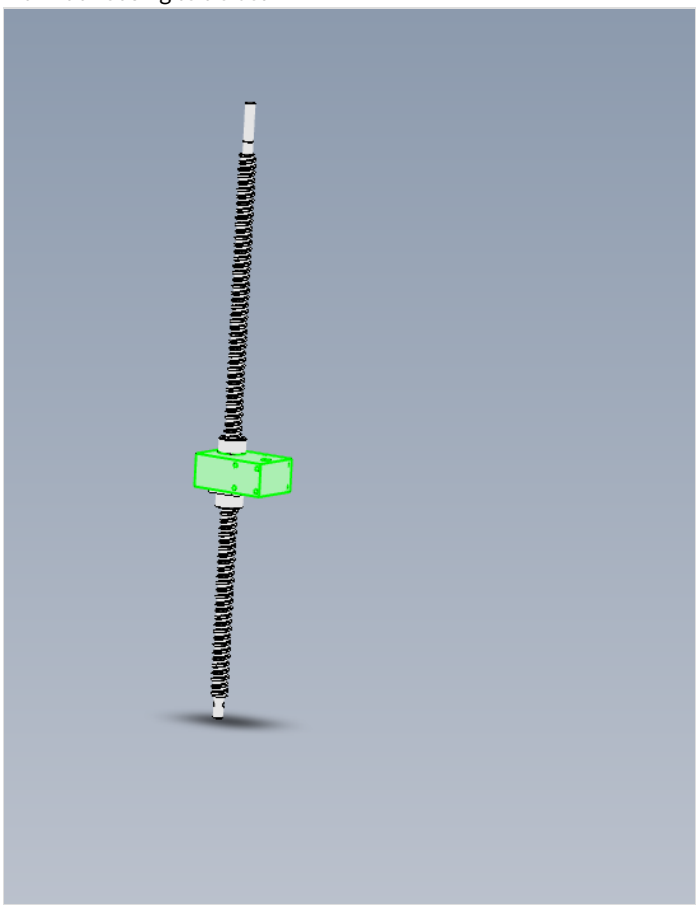
Fit z nut housing to tie beam

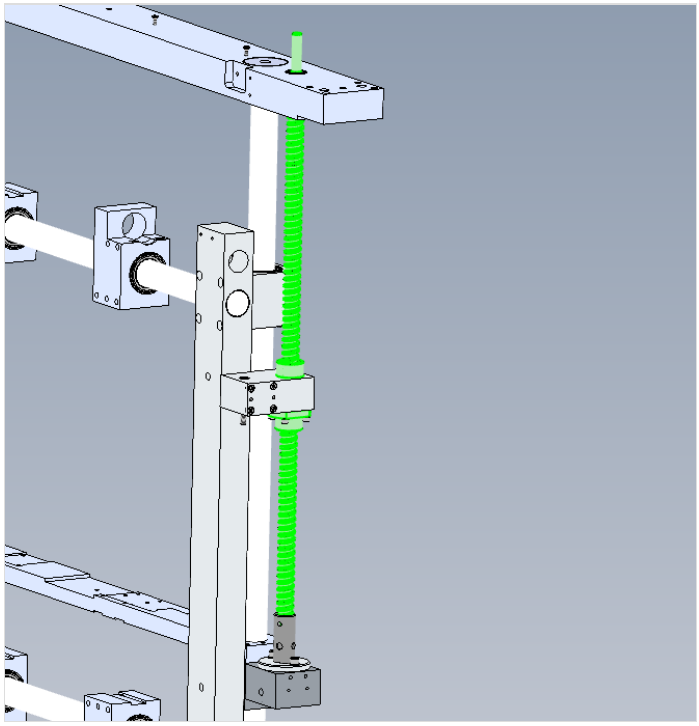




Step 4 - Fit rear leadscrew

Slide onto leadscrew nut Z nut housing
Insert into frame leadscrew
Fit z nut housing to tie beam

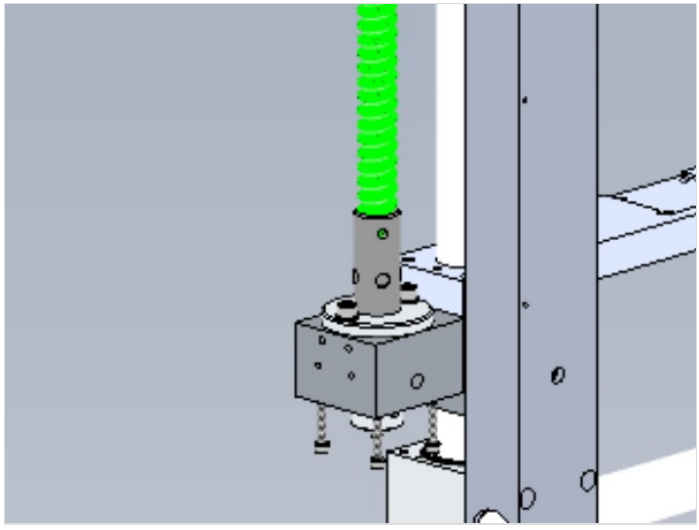




Step 5 - Fix Z axis leadscrews to sleeve

Align dimples and fix with M8 x 12 kcp grubscrews

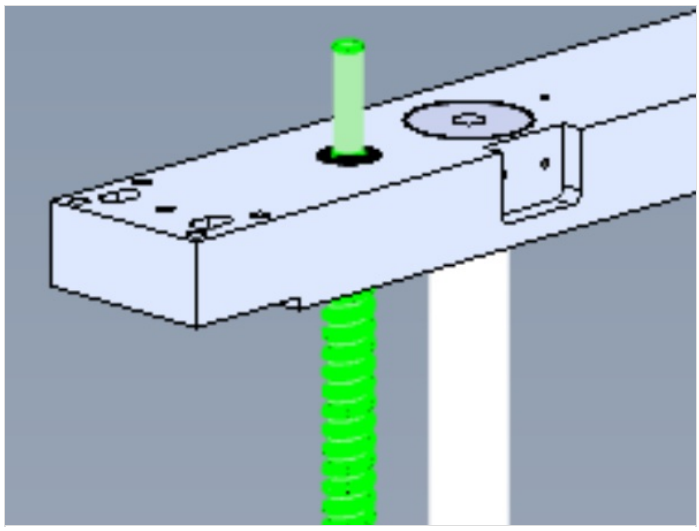
Repeat other side



Step 6 - Fit top bearings to leadscrews

Fit 2 off bearings to top of each leadscrew. Use bearing and solvent if loose .

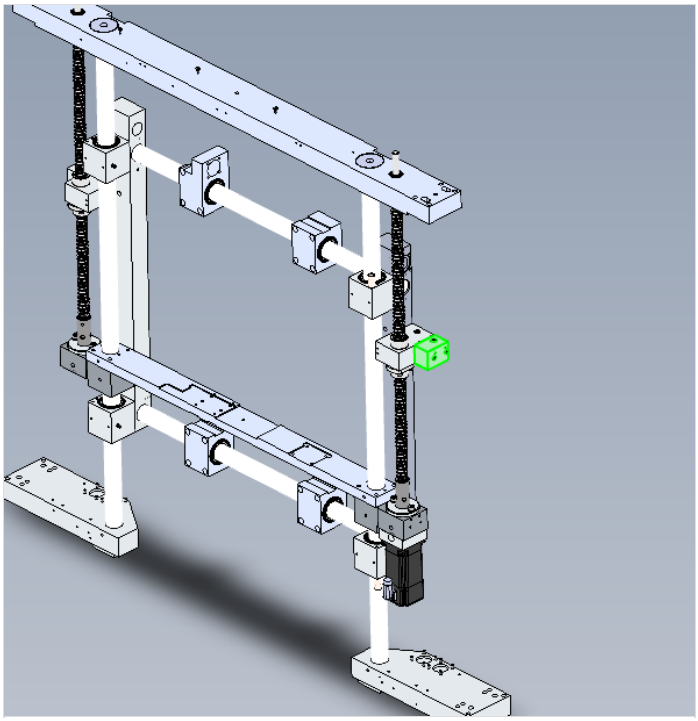
Captivate with circlip

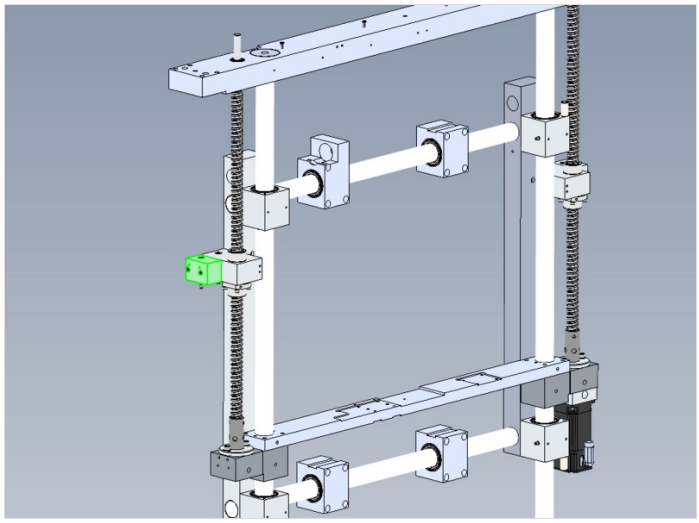


Step 7 - Fit double cylinder brackets

Fit double cylinder mounts

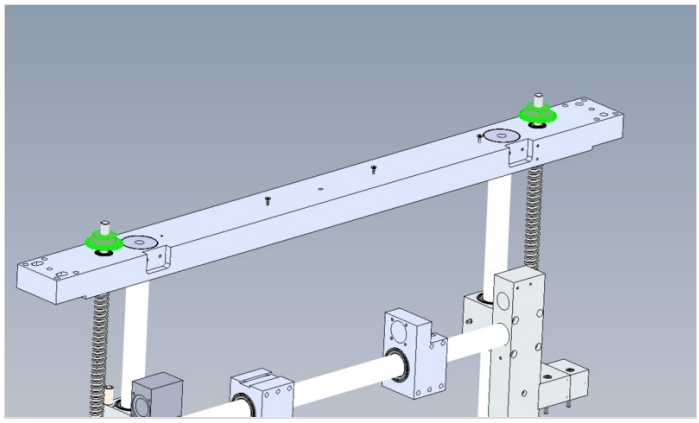
Ensure blocks are fitted flush





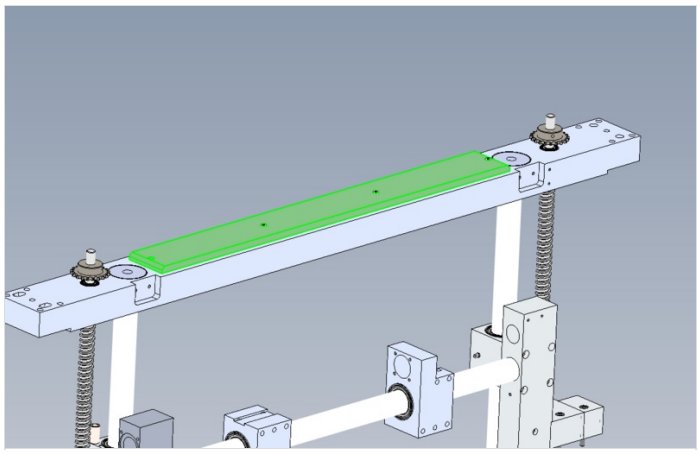
Step 8 - Loose fit sprockets

Attach sprockets to leadscrews . Do not finalise fasteners



Step 9 - Fit chain slide

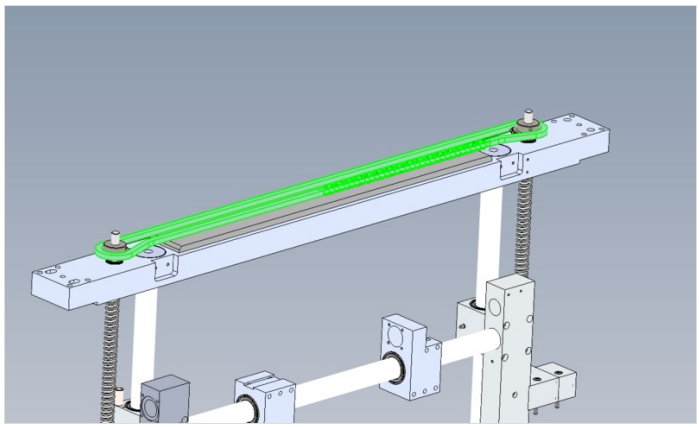
Fit chain slide to top bar



Step 10 - Attach z axis chain

Attach Z axis chain around sprockets

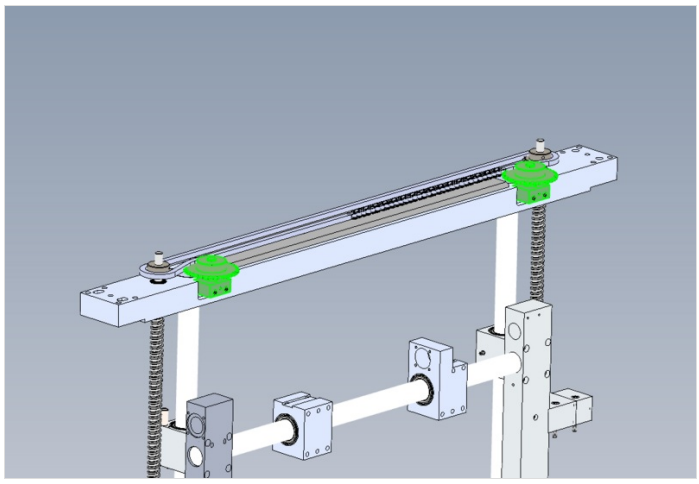
Ensure chain join clips are facing upwards



Step 11 - Attach chain tensioners

Attach chain tensioners to top bar

Ensure mounting at highest point up (clearance in fixing holes)

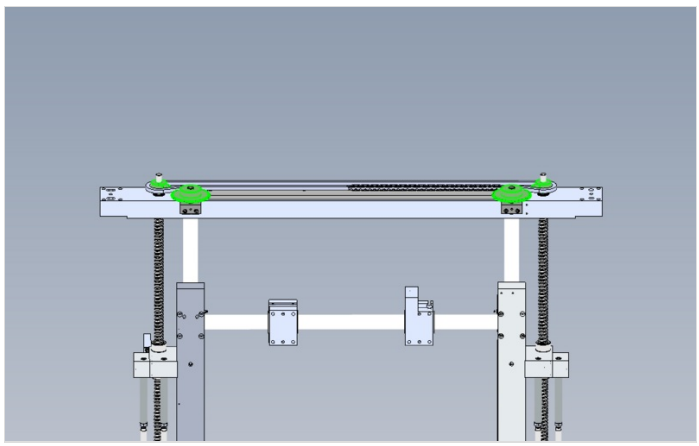


Step 12 - Adjust sprocket height

Measure height of tensioner sprockets from top bar and set drive sprockets to same measurement

Use verniers

Apply final tension to driven side (side with servo motor mounting point)

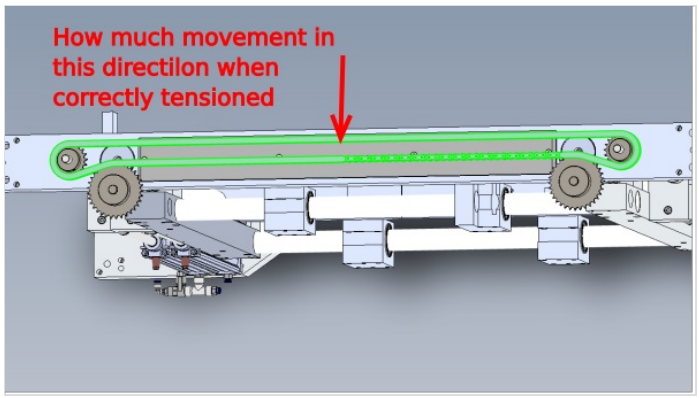


Step 13 - Tension chain

Tension chain by using adjusting grubscrew on tensioners

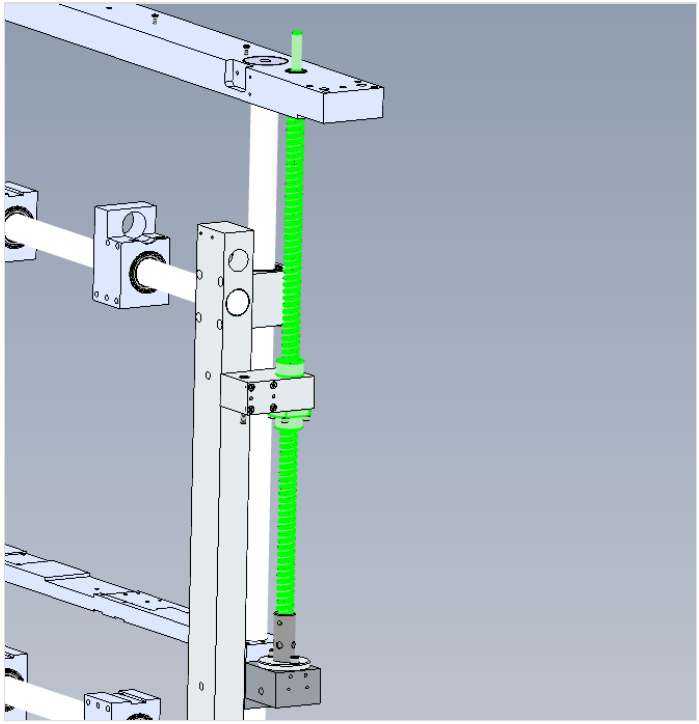
Set chain tension to remove slack

Sam, Can you measure the amount of chain flex once set correctly please



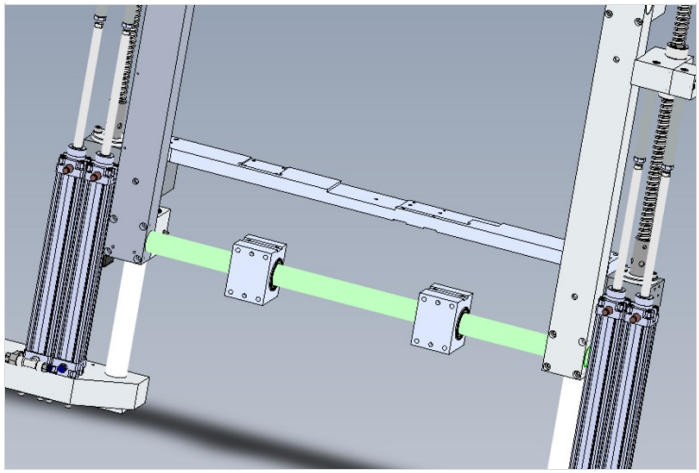
Step 14 - Remove slave side support

Remove slave side bearing support



Step 15 - Fit level to y axis shaft

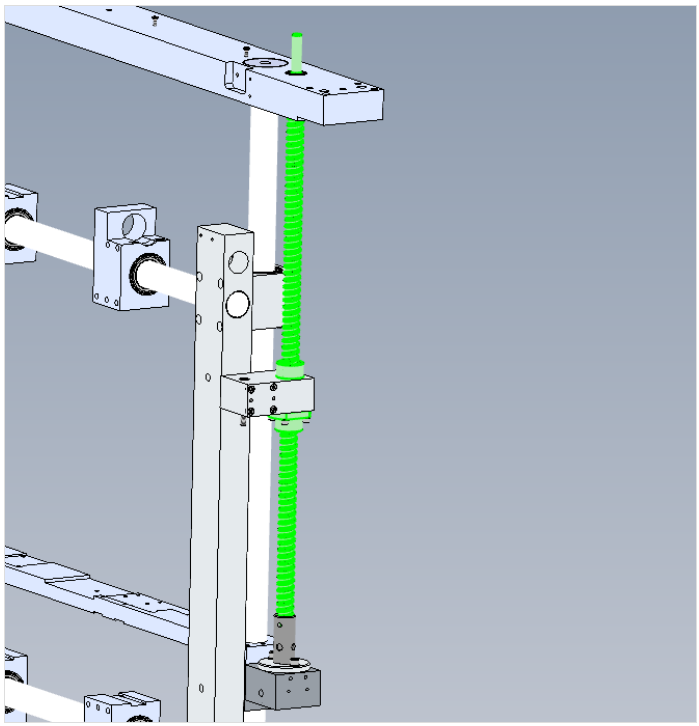
Fit engineers level to Y axis shaft



Step 16 - Adjust slave side

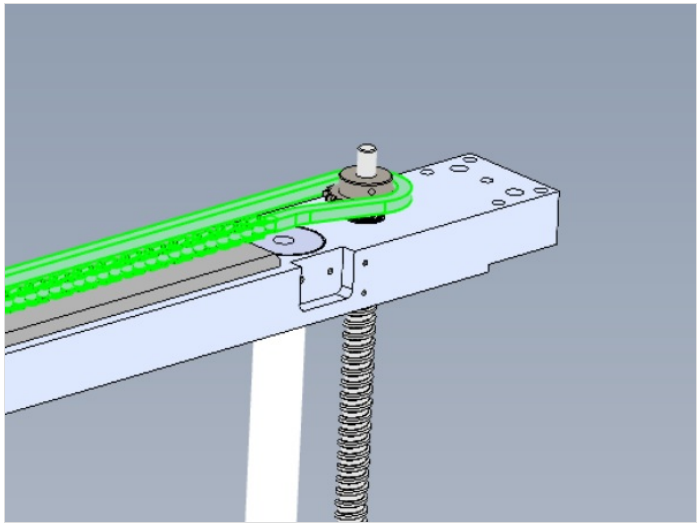
Adjust slave side relationship between sprocket and leadscrew by rotating leadscrew with sprocket fixings loose

Adjust to bring shaft level



Step 17 - Tension sprocket

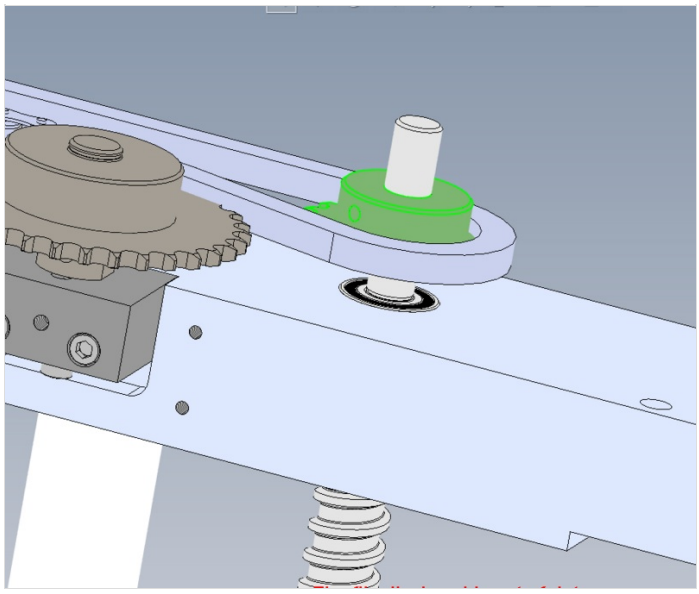
Check sprocket height is still correct then apply final tension to fixings in sprocket



Step 18 - Drill leadscrews

individually remove fixing grubscrews, dimple leadscrew through sprocket with 5mm carbide drill, clean swarf, apply adhesive and refit grubscrew

Repeat for all 4 fixing grubscrews in sprockets



Step 19 - Check Z axis movement

Remove 2nd axis support and allow Z axis to move to bottom of movement

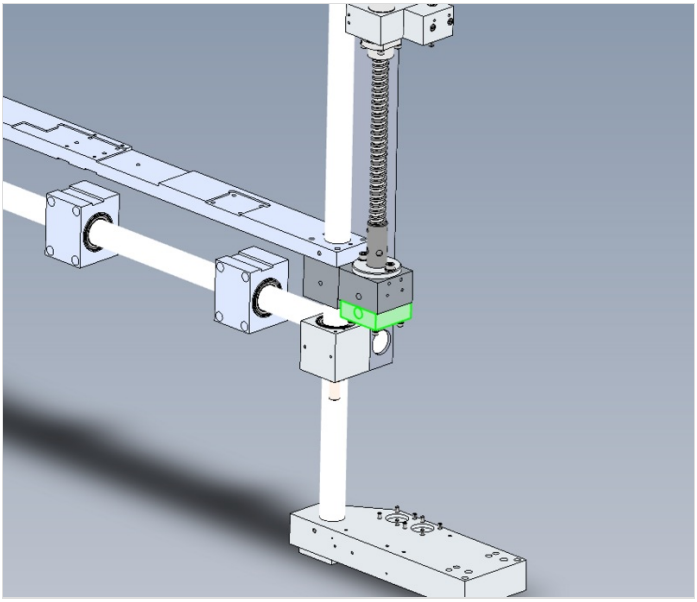
Wind by hand to top travel by rotating leadscrew, then again to bottom
Movement should be smooth and consistent with no tight spots

Step 20 - Fit servo mount block

Fit servo mount block to driven side

Ensure access hole is facing rear

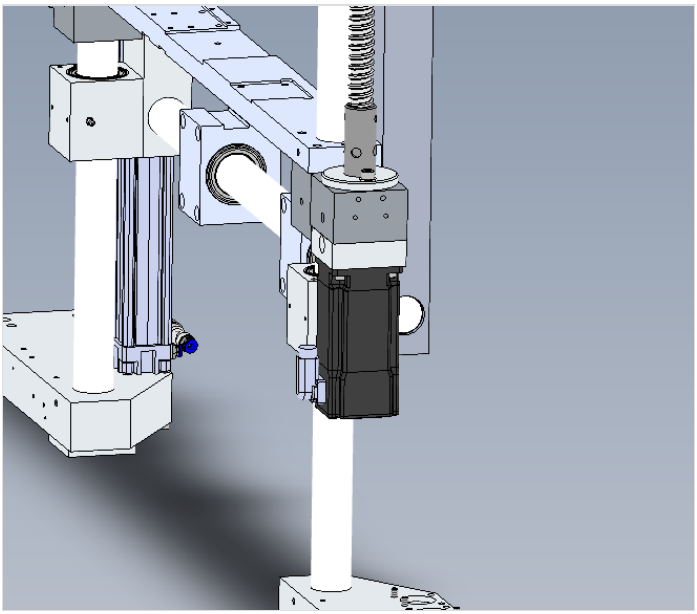
Dry fit fasteners, apply light tension



Step 21 - Attach servo motor

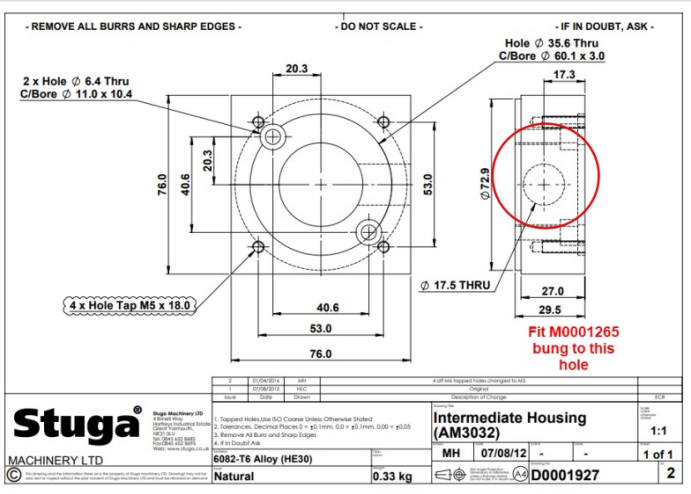
Attach servo motor

Ensure motor is orientated correctly , and servo plug is facing the correct way
Trial fit motor, ensure motor fits into servo mount block easily.
Adjust position of servo mount block if interference is evident
Once fit is acceptable, finalise fasteners in servo mount block and final fix servo motor in position with bolts
Add locking grubscrew to keyway on motor



Step 22 - Fit blanking plug to access hole

Fit M0001265 blanking plug to access hole once servo motor is fitted

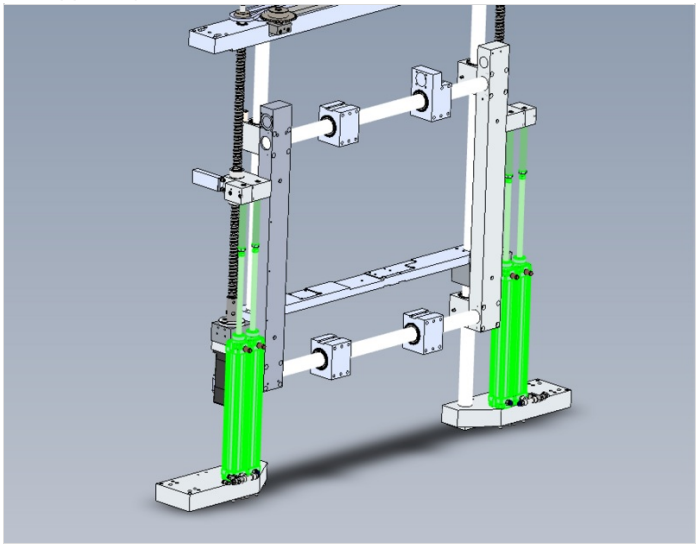


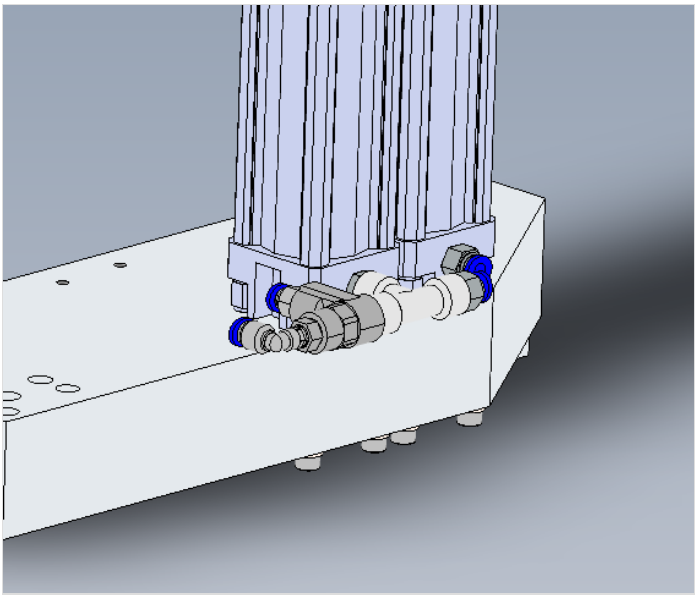
Step 23 - Check rotation of leadscrew

Check rotation of leadscrew hasn't been compromised by fitting of servo motor

Step 24 - Fit support cylinders

Fit support cylinders



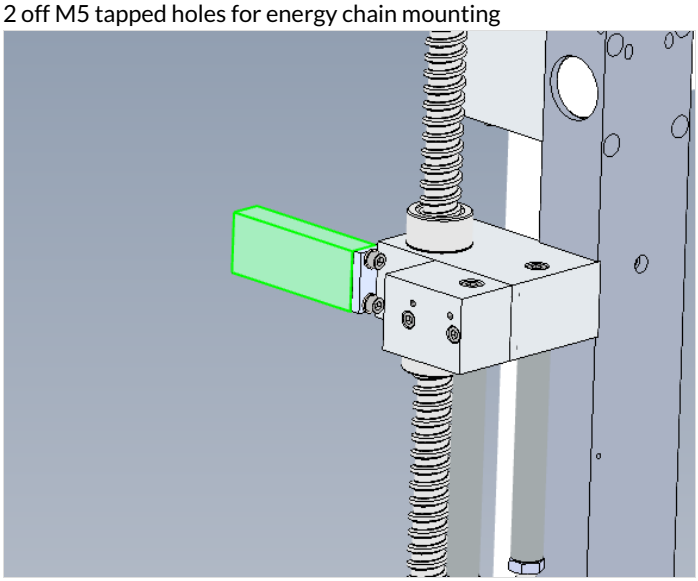


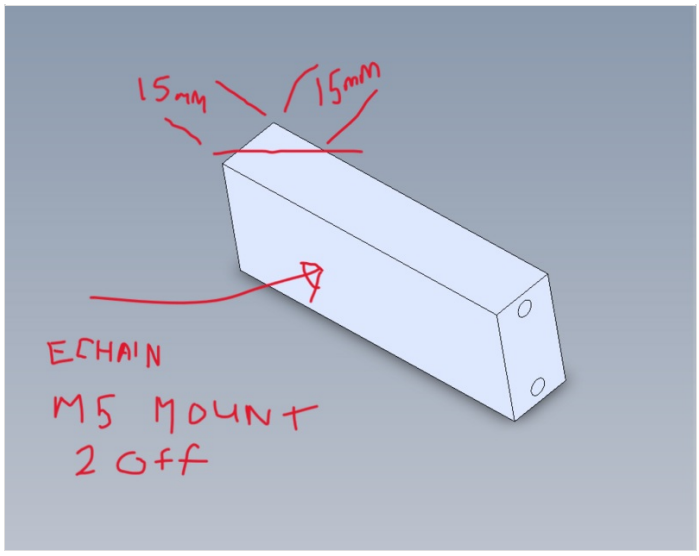
Step 25 - ecr raised for Z axis chain mounting block

D0001271 requires drilling to suit energy chain mounting bracket

Also requires 45 degree cut off to clear v notching

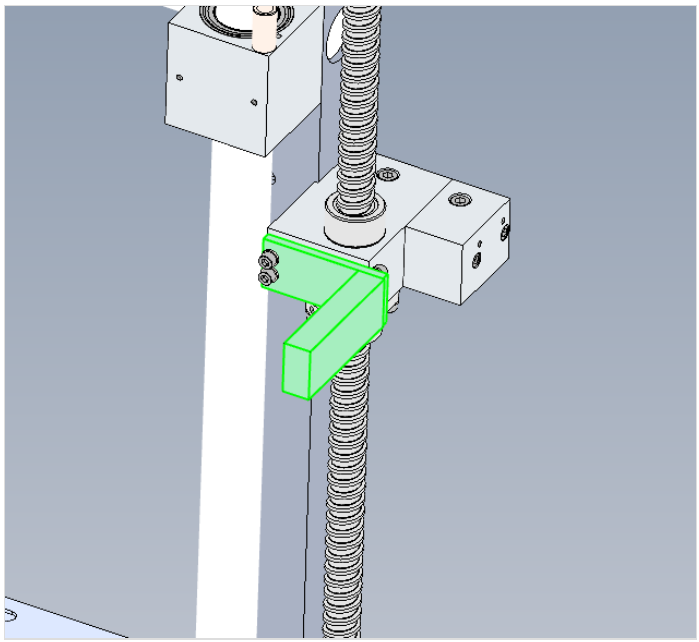
2 off M5 tapped holes for energy chain mounting





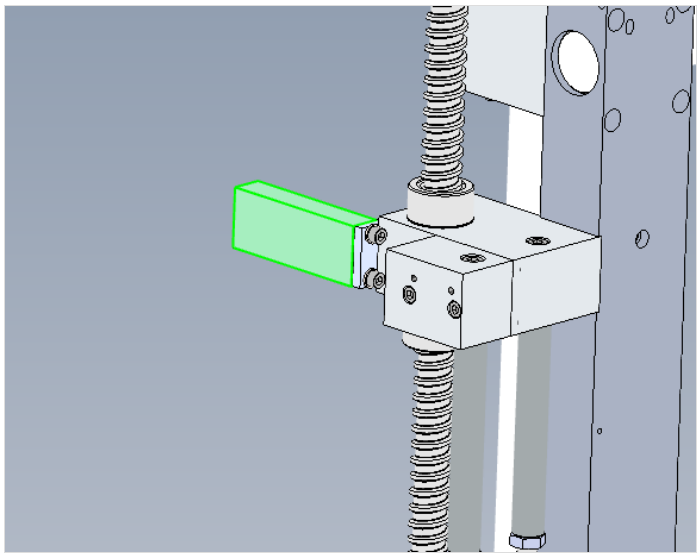
Step 26 - Fit energy chain mounting point

Fit energy chain mounting point



Step 27 - Assemble energy chain

Assemble energy chain at 24 links long plus brackets



Step 28 - Attach energy chain

Use button heads to attach energy chain at both points