R0015317 Install Rotary Ring

Installation procedure for rotary ring into mainframe

Difficulty **Hard** Duration **4 hour(s)**

Contents

Introduction

Tools Required

Standard Hex Key set
Standard spanner set
Lifting Strop
Overhead crane operation
Torque wrench
Soft hammer
Ring lubrication oil

Parts Required

A0000309 Domed Blanking Plug 19mm x 3
C0001123 Servo Motor: Beckhoff AM8062 18Nm 3000rpm x 1
D0000263 Stop Y Central x 1
D0002990E Strike Post ZX4 Mk5 x 1
D0002991 Switch carrier x 1
D0006061 Timing Belt cap x 1
D0007861 Y axis hard stop x 2
D0010756 Proximity Switch Mounting Block Reduced Size x 2
D0010894 Ethercat Cover ZX3/ZX4 x 1
D0015542 R Axis Motor Connector Cover x 1
E0000336 Sensor: M8; 2mm, PNP N/O, M8 conn x 2
H0007995 Rotary base cover plate x 2
M0000451 Plug and Elbow x 2
R0000971E Bench Assemble R Axis Gearbox
R0010260 Bench Assemble Tool Break Sensor
R0015138 Machining Head ZX4 Mk5 (Quad Plunge)

Step 1 - Unless otherwise stated

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

Step 2 - Safe operation

Installation of rotary ring requires the use of the overhead crane

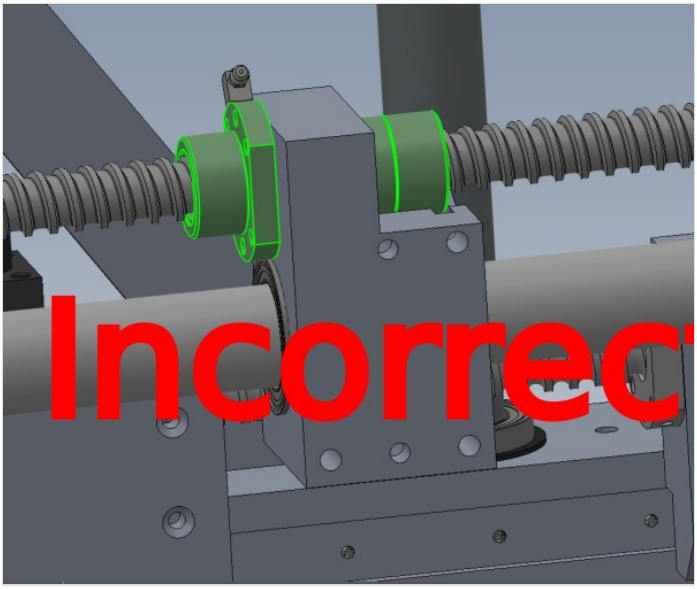
Please ensure all safety requirements are met, and all employees are confident with the operation and installation progress before commencing work details

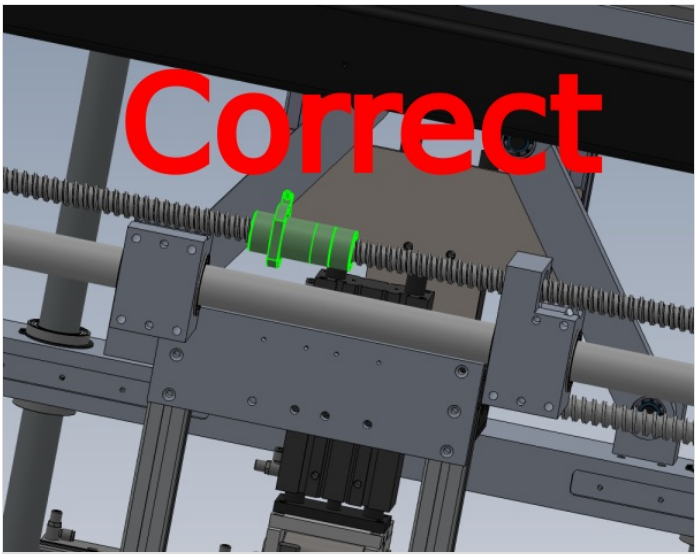
Step 3 - Pre installation checks

Check z support bars are installed

Y axis leadscrew nut is not positioned in y axis bearing housing

Location dowels are fitted to Y axis bearing blocks

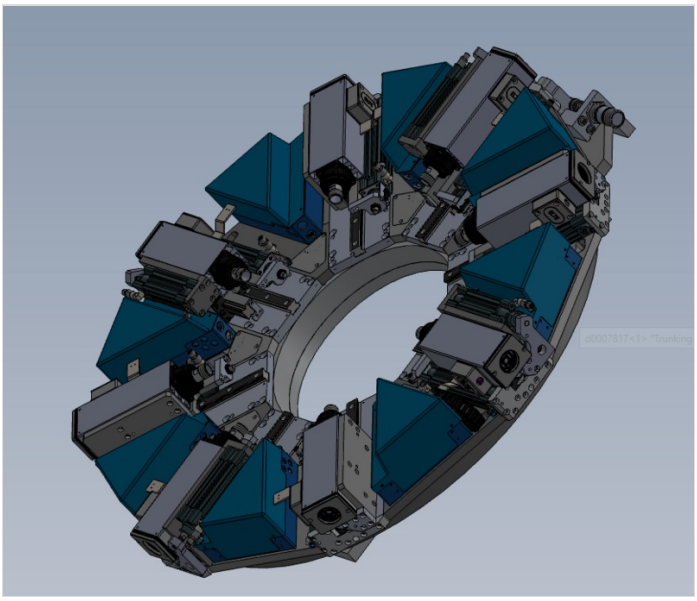




Step 4 - Fit Lifting strop to rotary ring

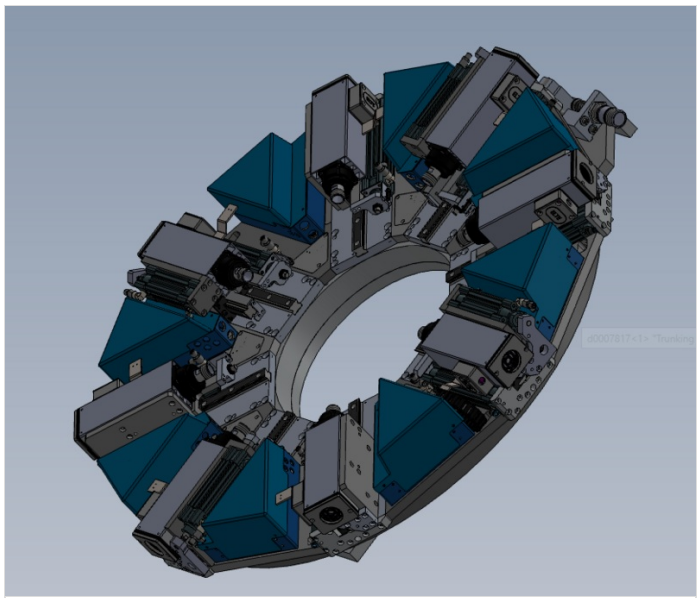
Fit and position lifting strop onto rotary ring

Ensure strop is positioned correctly between spindles



Step 5 - Lift and position ring

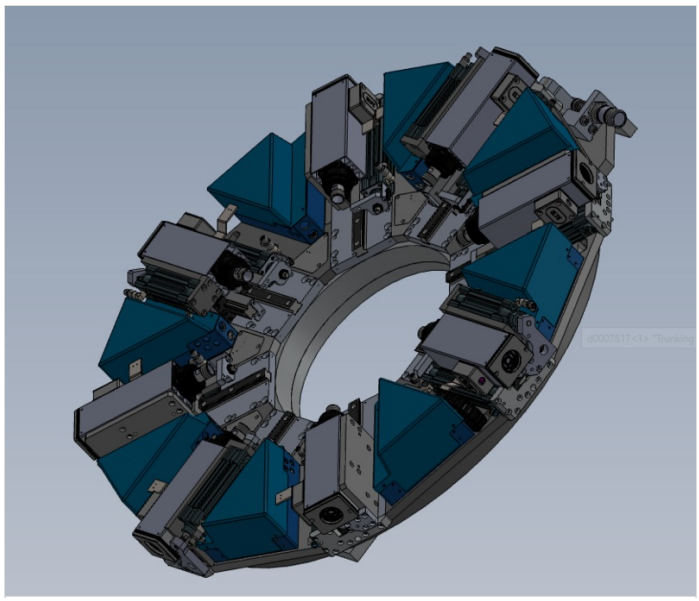
Use overhead crane to lift rotary ring assembly to align over the top of the machine centre main frame



Step 6 - Lower to correct position

Slowly lower to correct position within machine centre assembly

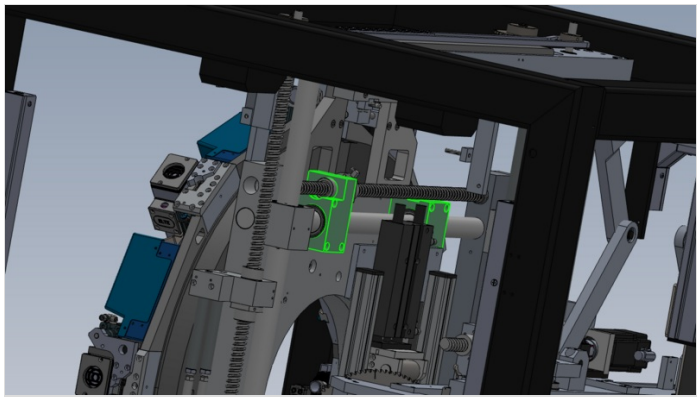
Height setting is governed by bearing block alignment to back plate of rotary ring



Step 7 - Final Fix top bearing blocks

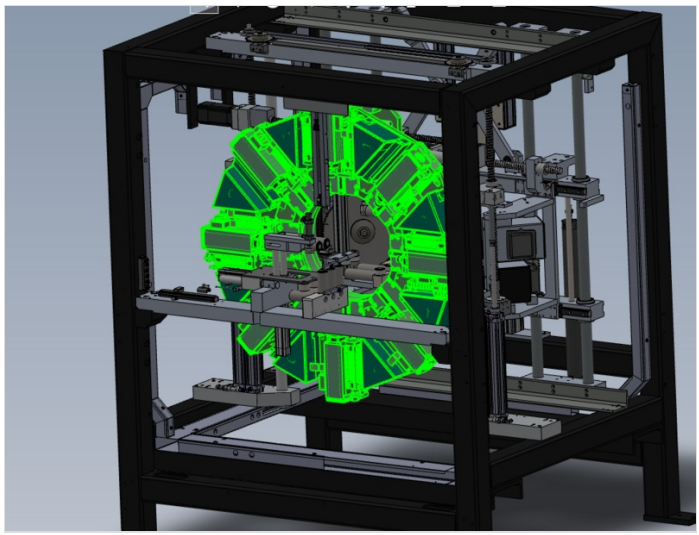
Use M8 sockets to Finalise fixing between bearing blocks and rotary ring back plate

Finalise Fasteners



Step 8 - Release weight

The lifting strop can now be released and removed from the rotary ring

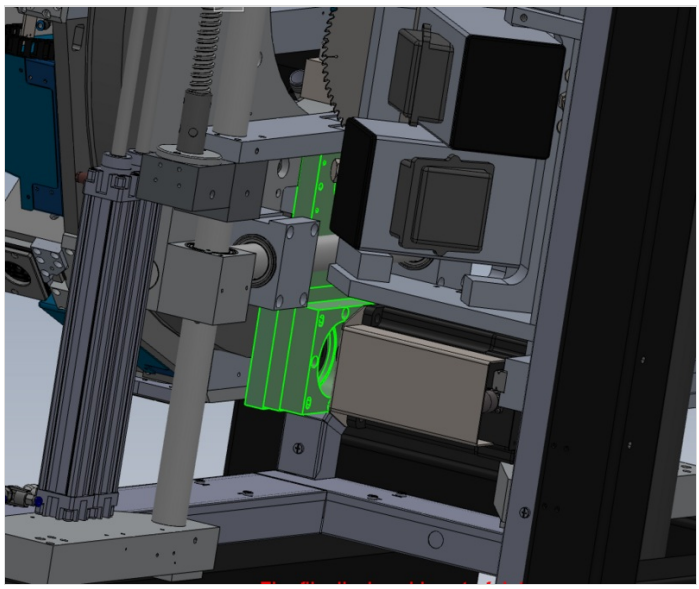


Step 9 - Fix R axis gearbox and cable

The lower section of the rotary rotary ring will require moving forward to enable r axis gearbox assembly to be fitted

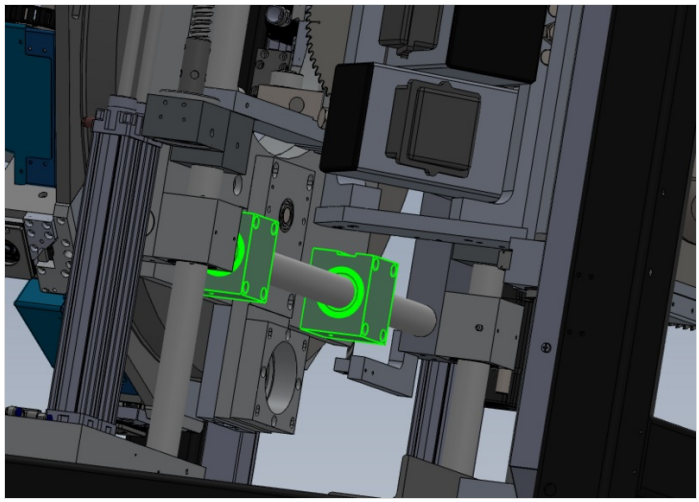
Position Gearbox in place , along with R axis servo control cable

Light fix R axis gearbox in position



Step 10 - Finalise bottom bearing blocks

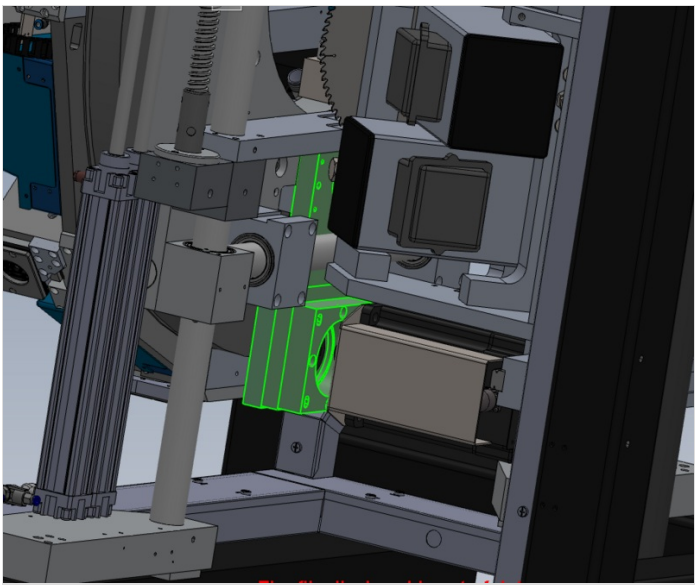
Align and finalise bottom bearing blocks to rotary ring back plate



Step 11 - Set R axis gearbox backlash

Set back lash on gearbox by hand

Push gearbox up towards centre of ring by hand and tighten holding fasteners



Step 12 - Check R axis Backlash

Quality check for correct backlash between drive gears , requires 2 people

To complete this

Lock gearbox using 8mm hex key positioned in friction coupling of gearbox through access hole

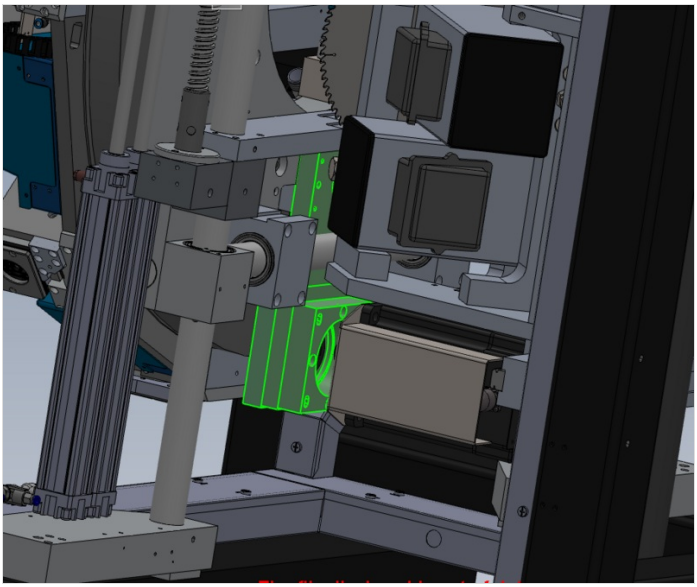
Ensure gearbox is held in a fixed position

Rock rotary ring to check for presence of backlash. No backlash should be present , only minimal belt flex should be observed

Check backlash in 4 points equally spaced around rotary ring rotation

Step 13 - Finalise R axis gearbox

Finalise all fasteners on r axis gearbox assembly

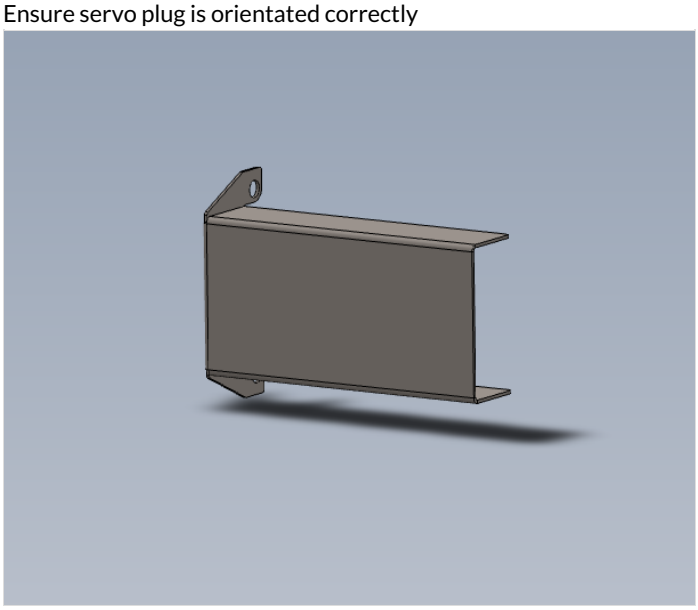


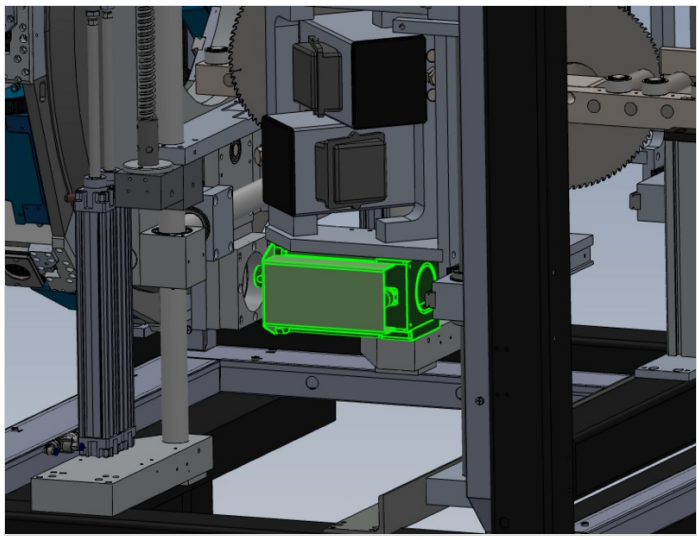
Step 14 - Fit R axis servo motor

Add M0000031 edging strip to servo motor protection plate

Fit servo motor in conjuction with protection plate and ensuring servo connection cable is connected

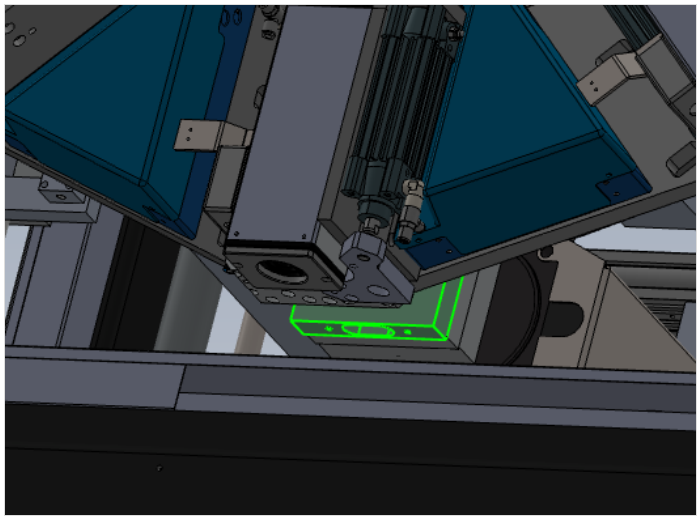
Ensure servo plug is orientated correctly





Step 15 - Fit R axis gear box timing cover

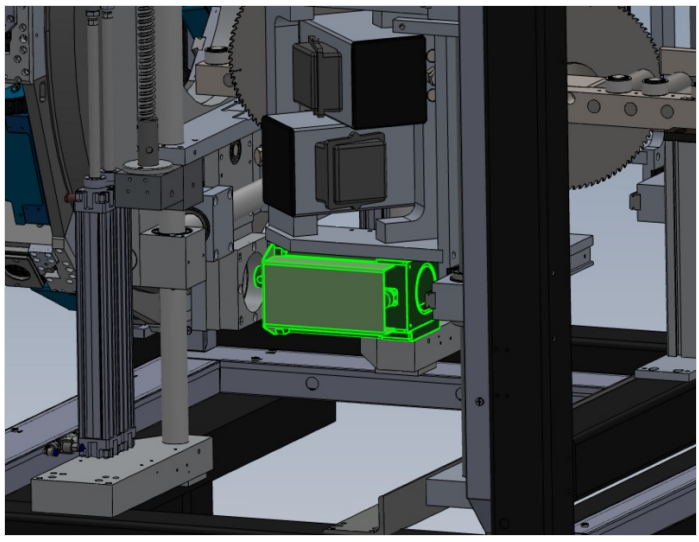
Fit timing cover



Step 16 - Set friction coupling

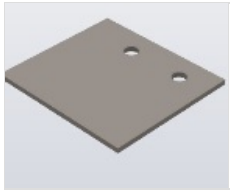
Use torque wrench to set correct torque on r axis gearbox friction coupling

Fit gearbox blanking plug



Step 17 - Fit access plates

Fit 2 off access plates



Step 18 - Fit oil pots

Fit oil pots

Add ring oil

Add pot caps

Step 19 - Fit ring bungs

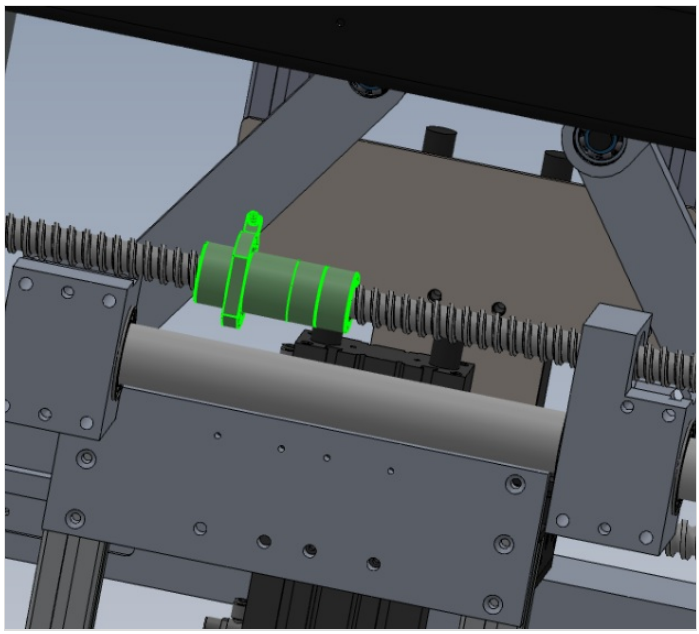
Fit 3 off ring bungs

Step 20 - Fit Y axis hard stops

Fit 2 off Y axis hard stops

Step 21 - Finalise Y axis leadscrew

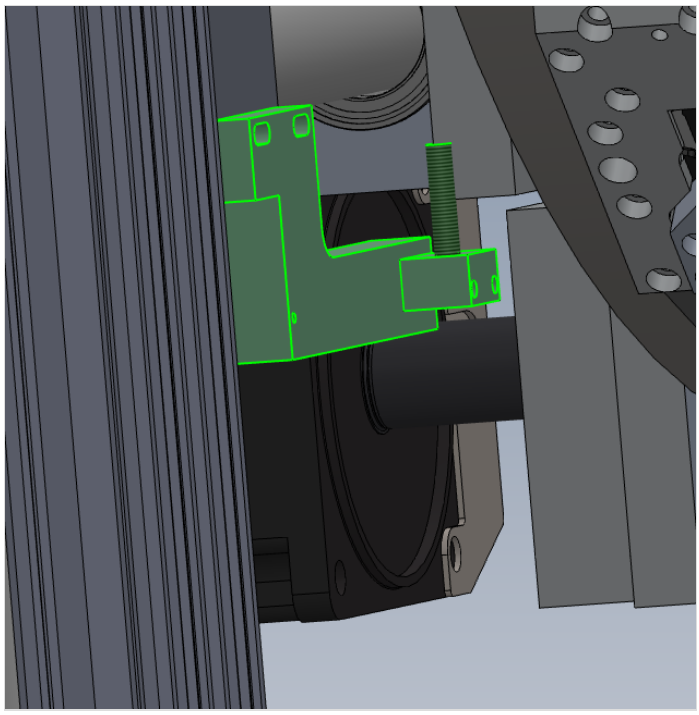
add and finalise Y axis leadscrew nut position



Step 22 - Fit Y axis Datum switch assembly

Fit Y axis datum bracket, block and sensor

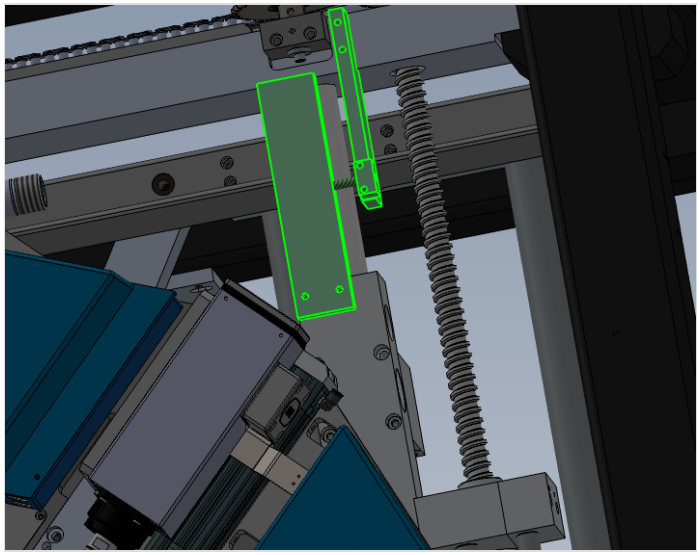
Set sensor position to ensure minimal gap is present (-1mm) along full movement of travel . double check that no contact is made by sensor at any point of travel



Step 23 - Fit Z axis datum block assembly

Fit Z axis datum block assembly

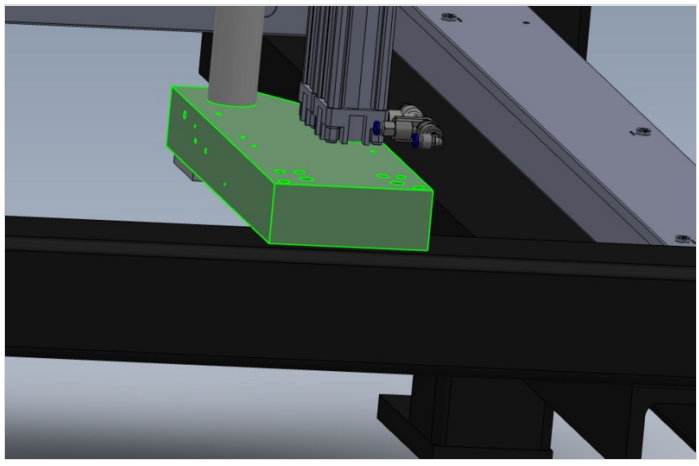
Set sensor position to ensure minimal gap is present (-1mm) along full movement of travel . double check that no contact is made by sensor at any point of travel



Step 24 - Fit ethercat cover

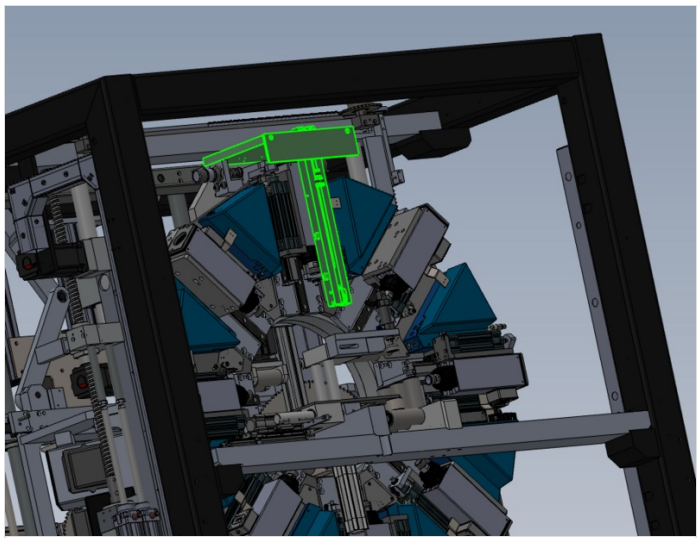
Fit ethercat cover

Dry fit temporary



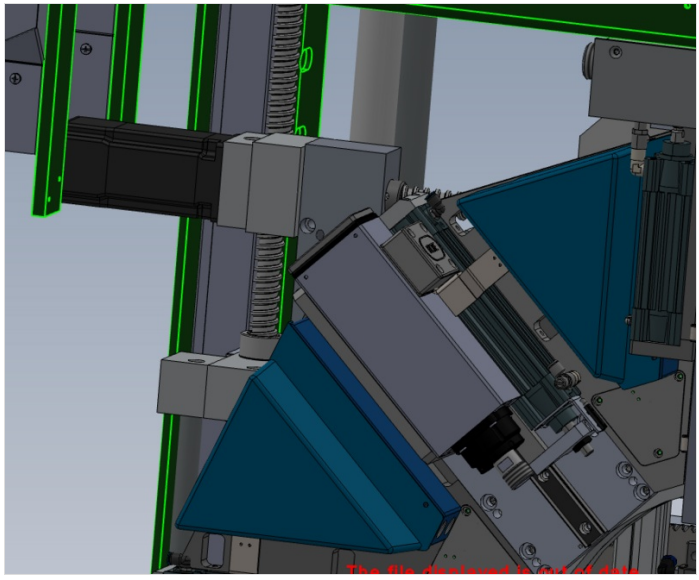
Step 25 - Fit tool break assembly

Fit tool break assembly



Step 26 - Connect Energy chain

Connect energy chain to rotary ring



Step 27 - Quality check

Quality check all fasteners are finalised