R0015060 Bench Assemble Flapper Beam

Bench assembly details for sensor rail

Difficulty **Medium** Duration **3 hour(s)**

Contents

Introduction

Tools Required

Standard hex key set
Tape measure
Steel rule
Engineers square

Parts Required

B0001099 Bush flange 10 i/d 12 o/d x 14
C0001018 EP2338-0001 EtherCAT Box 8 Configurable IO x 1
D0010167 Ethercat Mount Plate x 1
D0015353 Sensor Flapper Pivot x 8
D0015355 Sensor Flapper Plate (312) x 6
D0015357 Sensor Flapper Plate (270) x 1
D0015363 Sensor Flapper Support Transfer x 1
E0000336L Sensor: M8; 4mm, PNP N/O, M8 conn x 7
F0000537 dowel pin 10 x 40 x 8
M0001016 Angle 74 x 38 x 2
M0001209 Bracket m8 proximity sensor bracket 90 deg x 7

Fastener list

M5 x 6 Grubscrew kcp 8 off
10mm x 40 dowel 8 off
M6 x 20 socket cap 8 off
M5 D nut 14 off
M6 D nut 10 off
M8 D nuts 8 off
M5 A form washer 7 off
M5 x 10 socket cap 7 off
M5 x 10 button socket 7 off
M3 x 20 panhead 2 off
M6 x 16 socket cap 2 off
M6 A form washer 2 off
M8 x 20 socket cap 8 off
M8 heavy motor plate washer 8 off
Cable tie bases 7 off

Step 1 - Unless otherwise stated

Use Loctite 243 on all fasteners
Use Loctite 570 on all threaded pneumatic connections
Pen mark all bolts when finalised

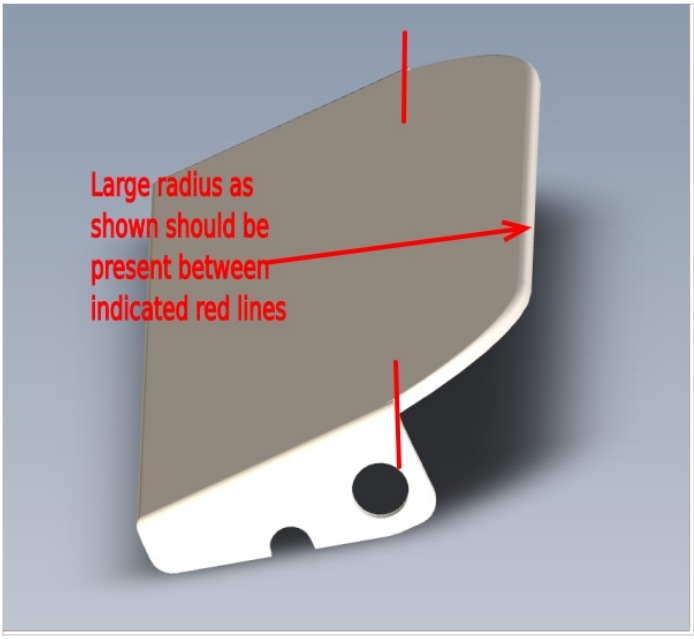
Step 2 - Quality check

Check components

Remove protective film from sensor flappers

D0015355 Sensor Flapper Plate (312) x 6
D0015357 Sensor Flapper Plate (270) x 1

1 Ensure indicated have a radius on the indicated faces and are smooth and burr free
2 Ensure apex is flattened off, use linisher if required. This step is required to enable correction function of paddles

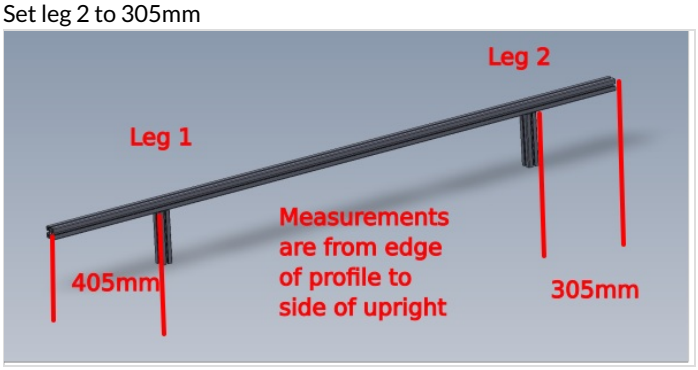


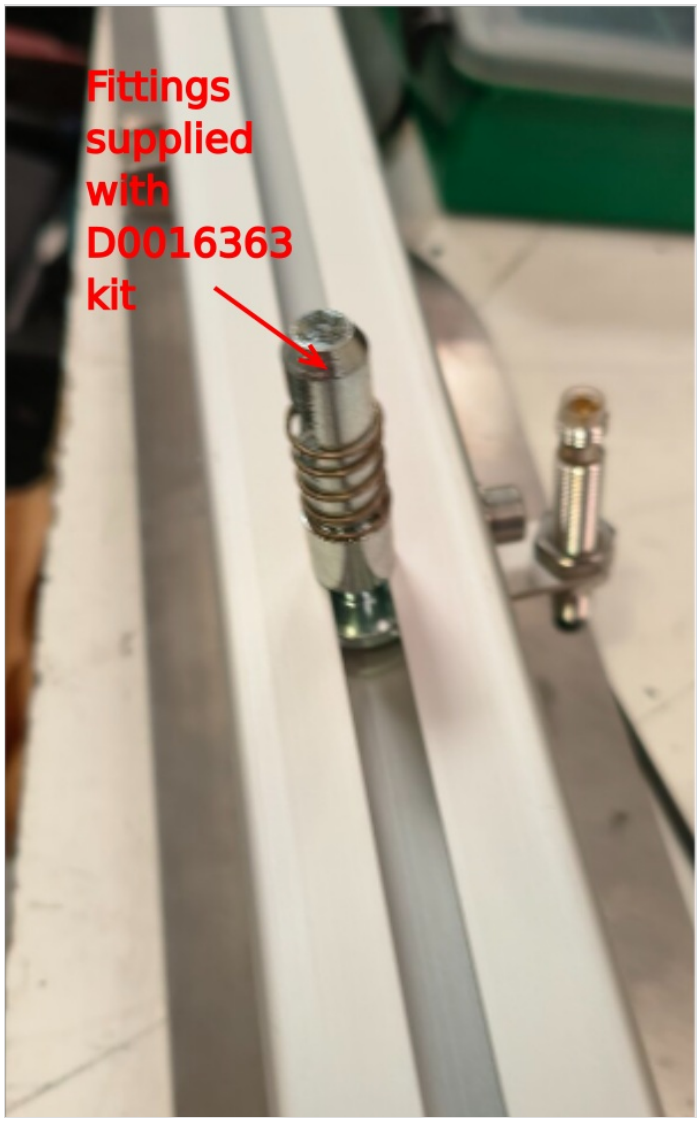
Step 3 - Assemble Maytec frame

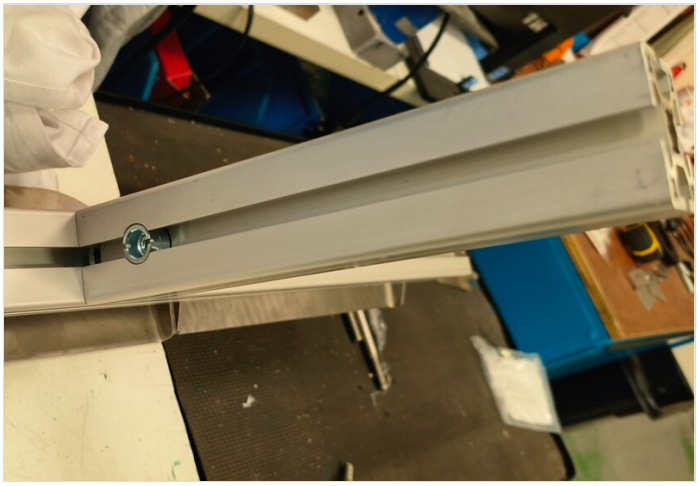
Assemble frame as shown, using fittings supplied with D0015363 Maytec frame kit

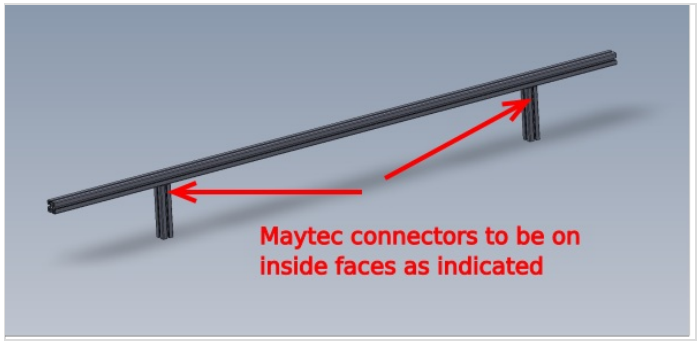
Set leg 1 to 405mm

Set leg 2 to 305mm



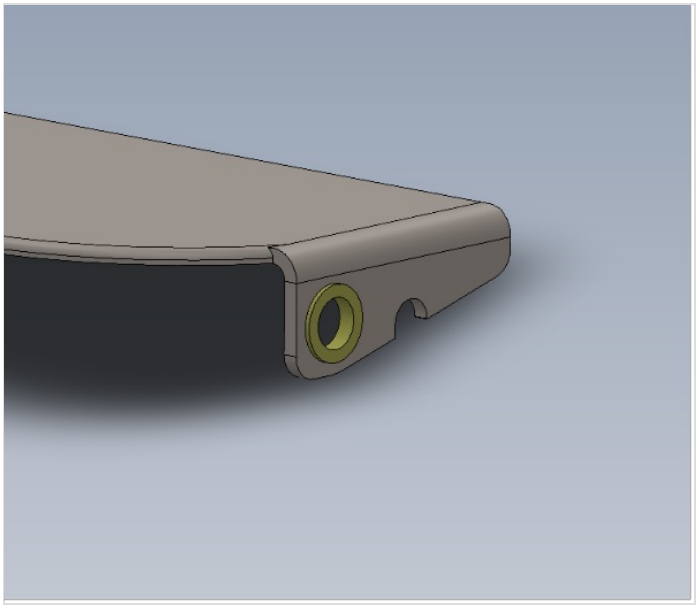






Step 4 - Fit bushes

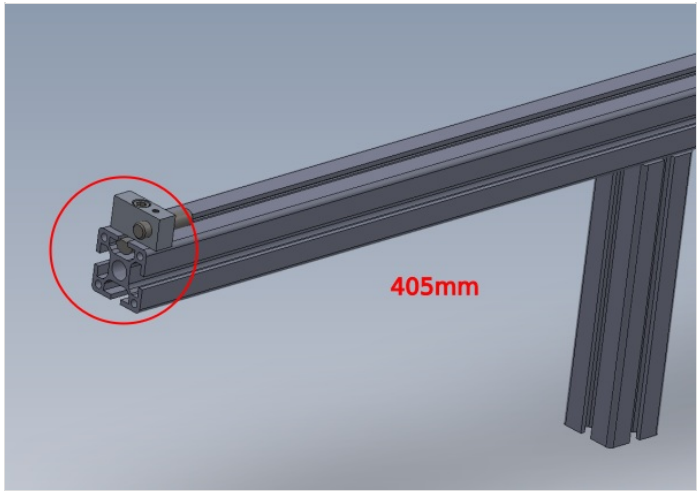
Use vice to Fit B0001099 Bush flange 10 i/d 12 o/d x 14 into D0015355 Sensor Flapper Plate (312) x 6 and D0015357 Sensor Flapper Plate (270) x 1 as shown



Step 5 - Fit 1st Pivot

Fit 1st D0015353 Sensor Flapper Pivot as shown setting D nut flush with end of mounting bar.

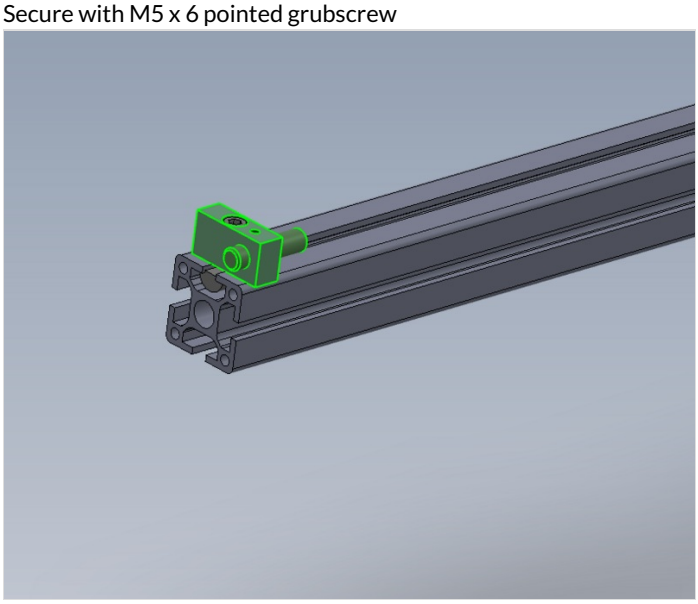
Fix with F0000299 m6 d nut and M6 x 20 socket cap

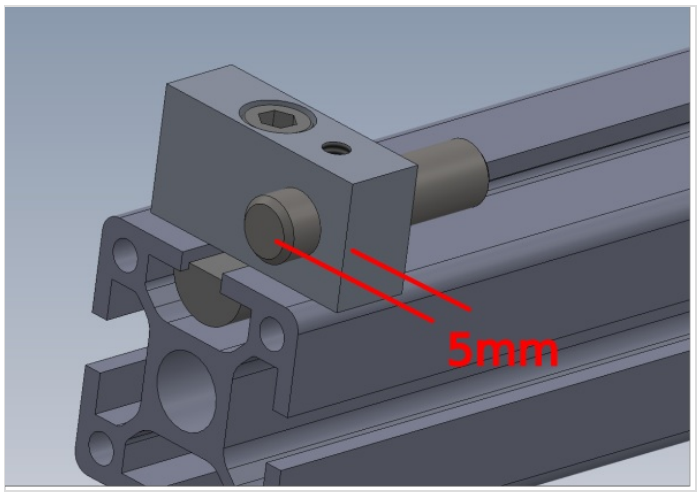


Step 6 - Add dowel

Fit F0000537 dowel pin 10 x 40 as shown, leaving 5mm of protrusion

Secure with M5 x 6 pointed grubscrew

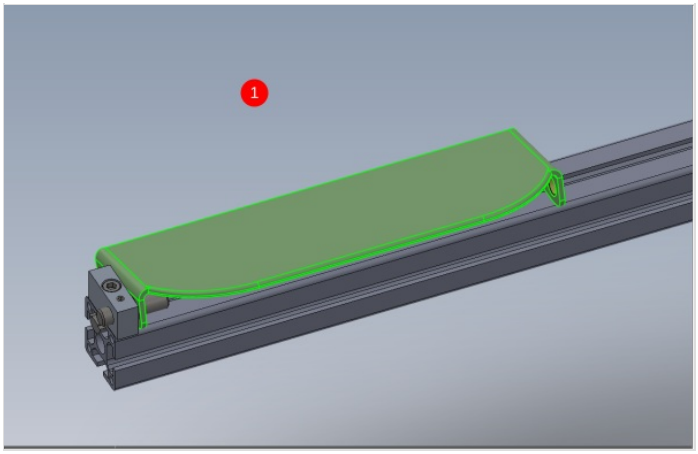


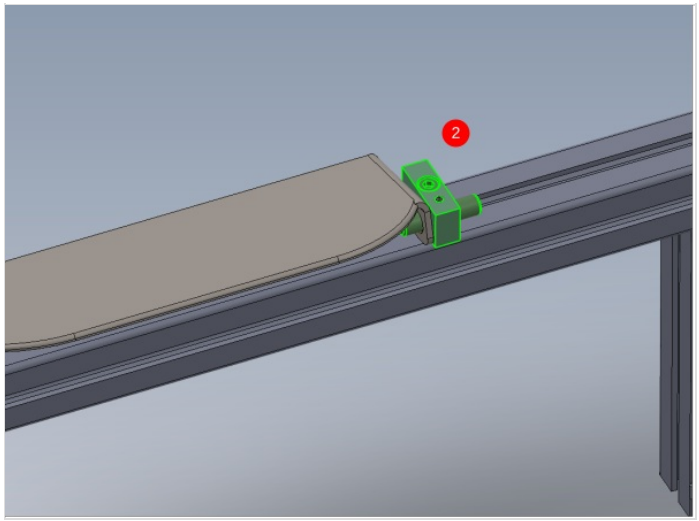


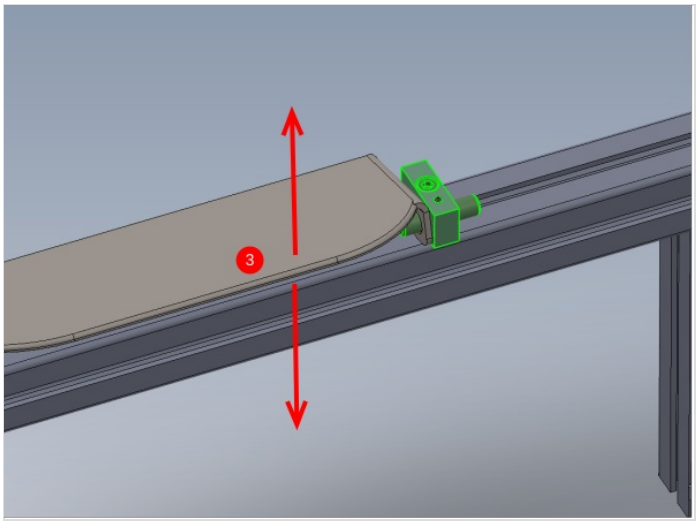
Step 7 - Fit 1st plate

1 Position as shown smaller D0015357 Sensor Flapper Plate

2 Captivate with pivot block and dowel as shown, using same fixings as previous pivot block . Ensure dowel sits central in pivot block.
3 Ensure sensor plate is free to move in the direction shown when fitted.
Sensor flapper should fall and return to its original position under its own weight.
Leave as minimal gap as possible between pivot blocks and sensor plate
Ensure sensor plate drops back under its own weight



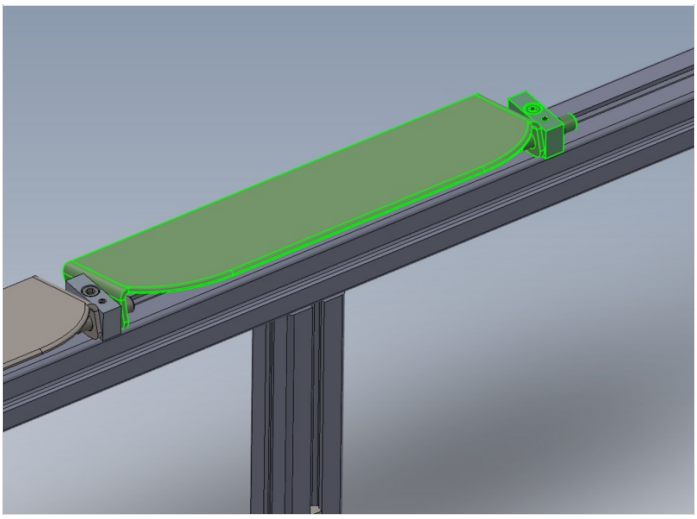




Step 8 - Fit 2nd plate

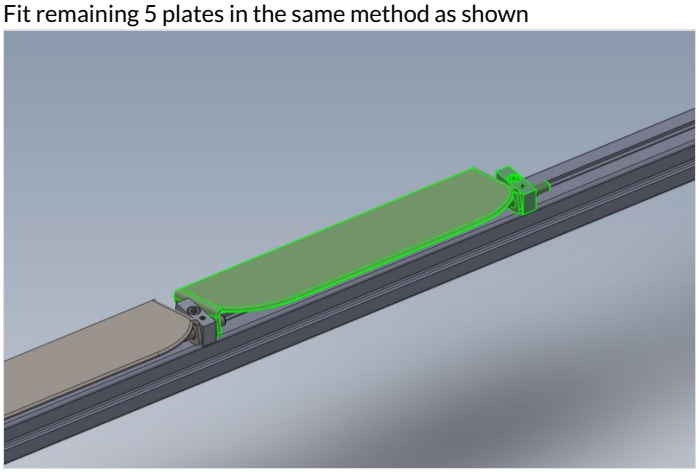
Fit D0015355 Sensor Flapper Plate (312) and fix with same method as previous steps

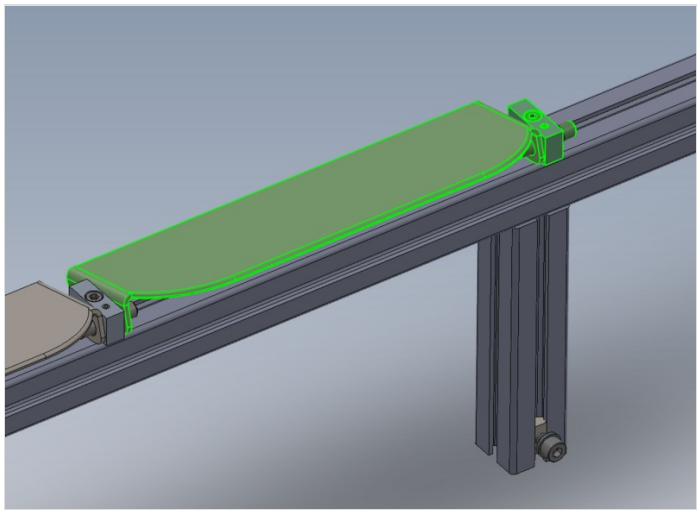
> ...Ensure mounting blocks are fitted square to enable correct operation of flapper plates

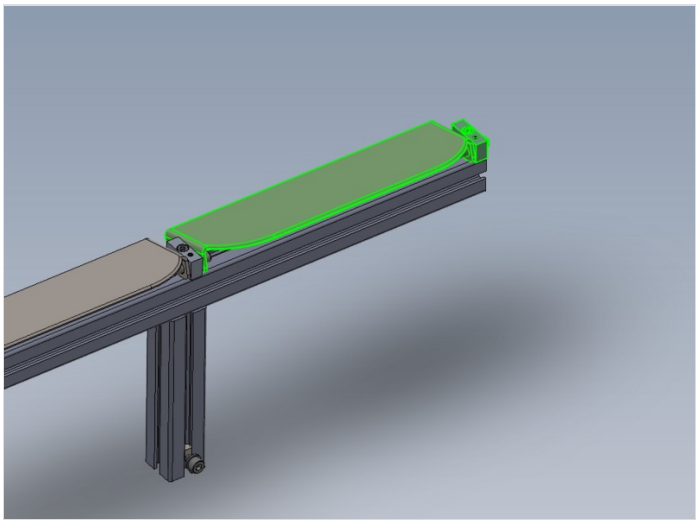


Step 9 - Repeat for remaining plates

Fit remaining 5 plates in the same method as shown







Step 10 - Fit sensors

Ensure sensors are fitted to the correct side of the sensor paddles. Sensors should be fitted to the radius side as shown
1 Fit 7 off M0001209 Bracket m8 proximity sensor bracket 90 deg. Position each bracket centrally beneath each sensor plate and orientate as shown

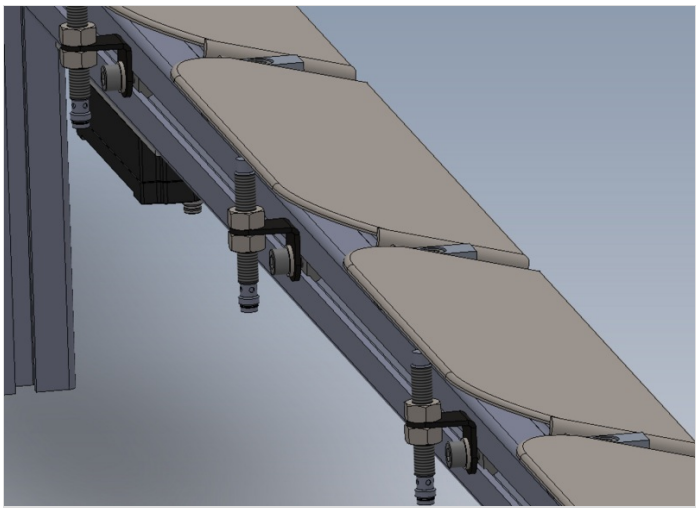
Use M5 fat D nut, M5 x 10 socket cap and A form washer to secure

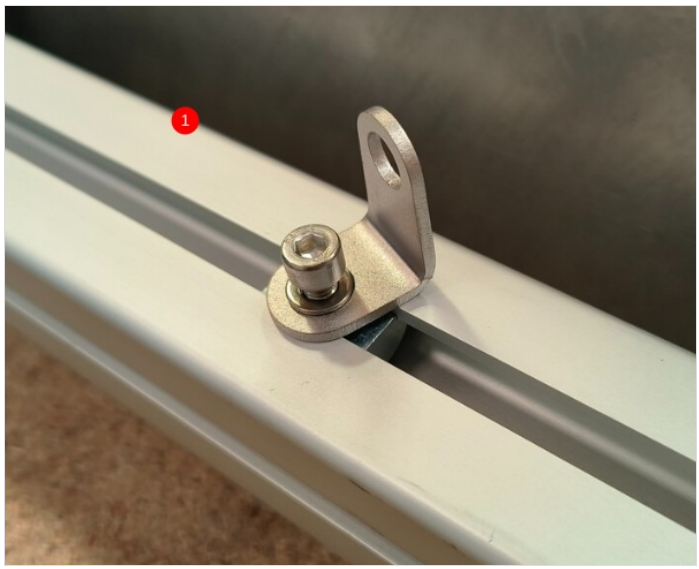
2 Fit 7 off E0000336L Sensor: M8; 4mm, PNP N/O, M8 conn as shown .

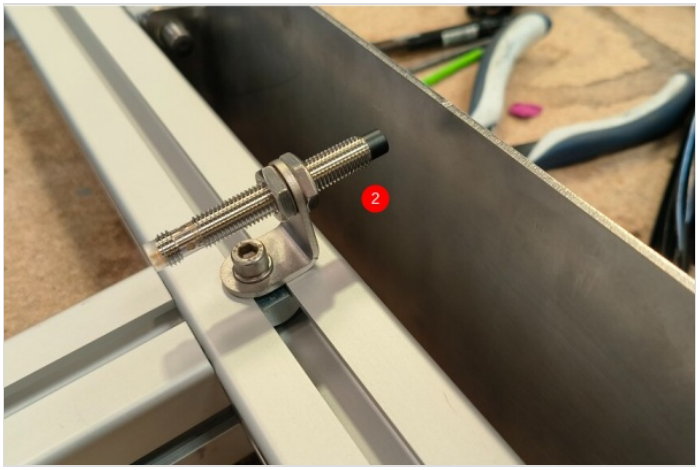
3 Set sensor gap to 5mm

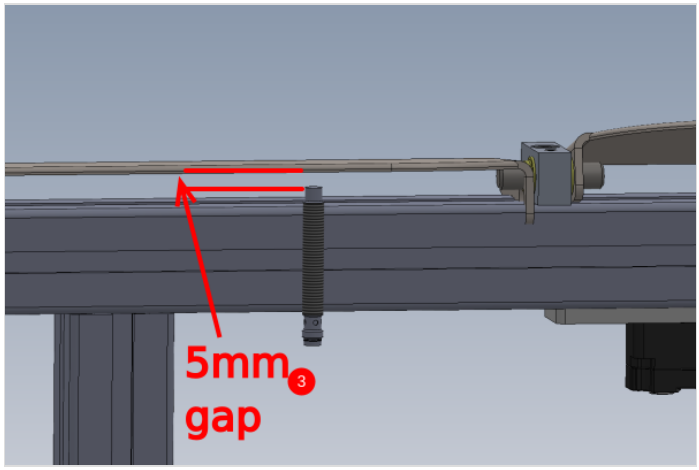
With the sensor plate fully depressed in the direction shown, set sensor so 5mm gap is present

4 Secure 2 off lock nuts on sensor. Caution do not over tension, as this can lead to damage to sensor !





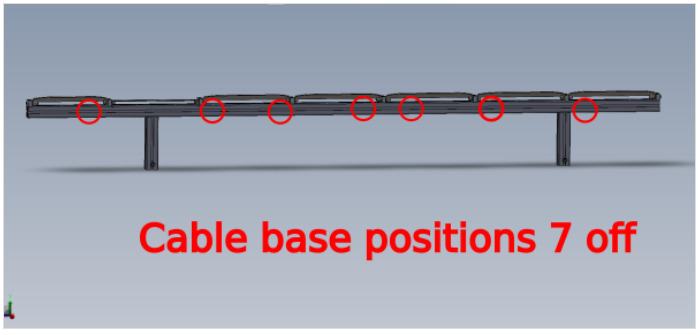




Step 11 - Fit tie bases

Fit Cable tie bases using M5 x 10 button sockets an M5 fat D nuts at the positions shown

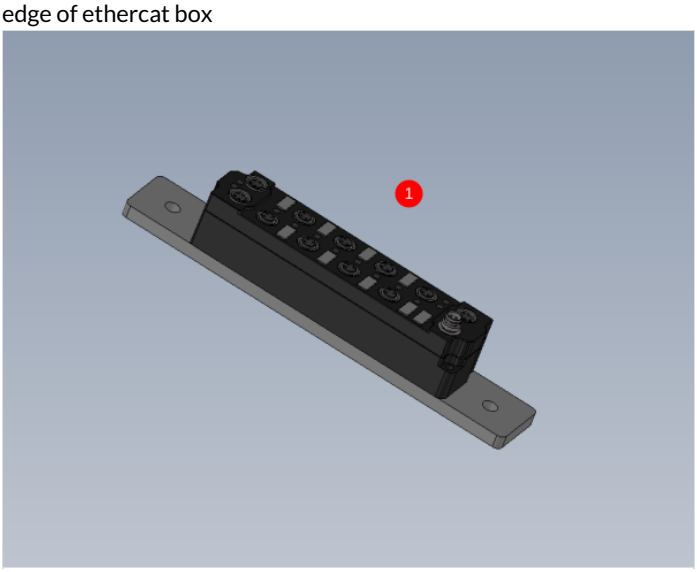
(cables shown are fitted at a later stage)

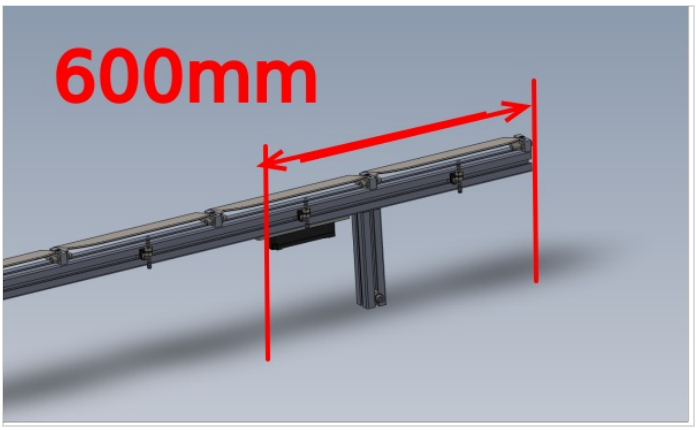


Step 12 - Assemble and mount Ethercat box

1 Assemble C0001018 EP2338-0001 EtherCAT Box 8 Configurable IO onto D0010167 Ethercat Mount Plate x 1 as shown using M3 x 20 pan head fasteners

2 Fit to assembly Using 2 off M6 fat D nuts , M6 x 16 socket caps and A form washers at the position shown of 600mm from indicated face to edge of ethercat box

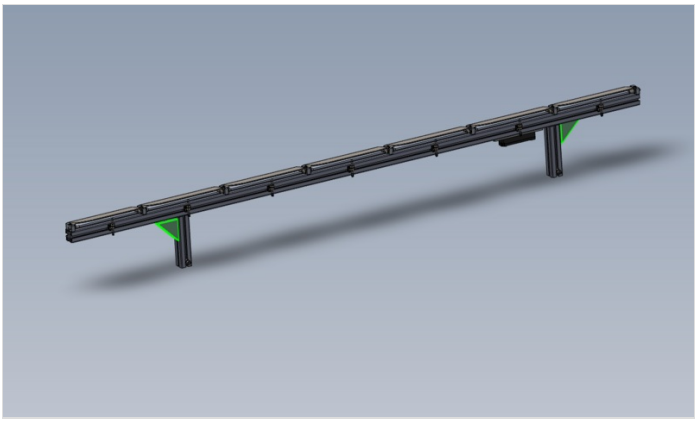




Step 13 - Fit support angles

Fit 2 off M0001016 Angle 74 x 38 as shown

Fasten with M8 Fat D nut, M8 x 20 socket cap and Heavy M8 motor plate washers



Step 14 - Quality check

Ensure all fasteners are double checked for correct tension, adhesive and identification to show finalised