

R0015279 Align Backfences

Procedure for correct alignment of module E back fences and channel bar

 Difficulty **Hard**

 Duration **5 hour(s)**

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Comments

Introduction

Tools Required

Standard hex key set

Standard spanner set

Wire Line setting equipment

600mm rule

Workshop Gripper setting jig

2 meter straight edge

Parts Required

Fitted and Levelled roller bed assemblies

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 - Quality check

It is vital that the backfences are square to the rollers on the roller table assemblies.

If backfences are not square, varying readings will be encountered when setting back fence alignment

To check

Make sure backfence is secured to roller bed assembly

Use gripper setting jig and place on blue rollers, and push up to back fence

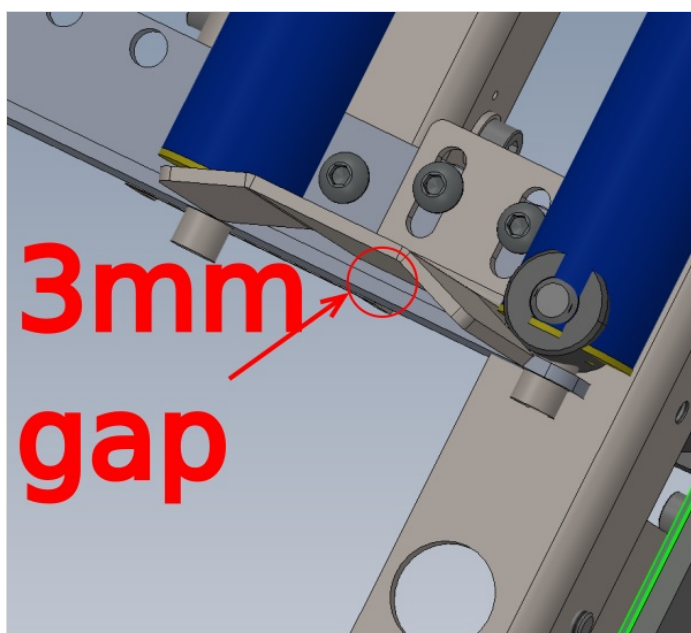
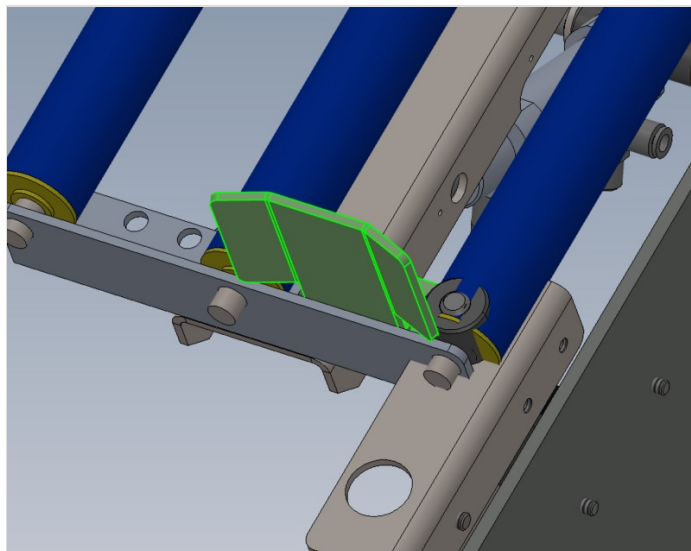
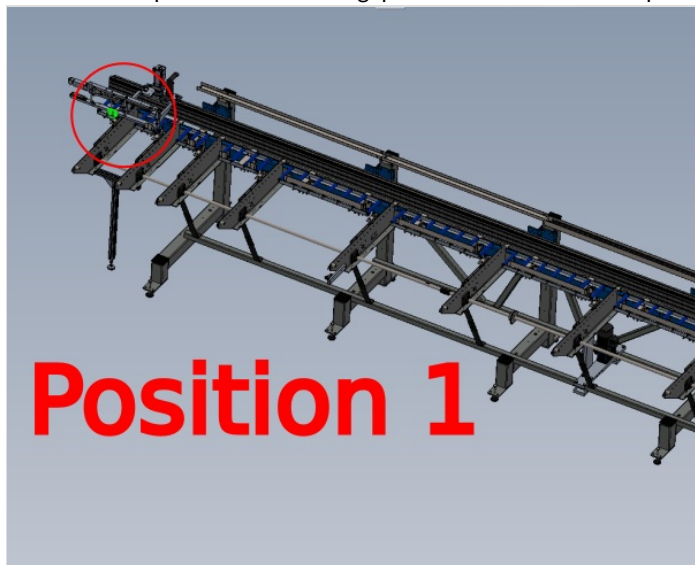
Backfence should be touching jig at top and bottom point. If not, back fence can be manipulated by hand to ensure it sits in a square position in relation to the setting jig.

This check **MUST** be done before backfence alignment



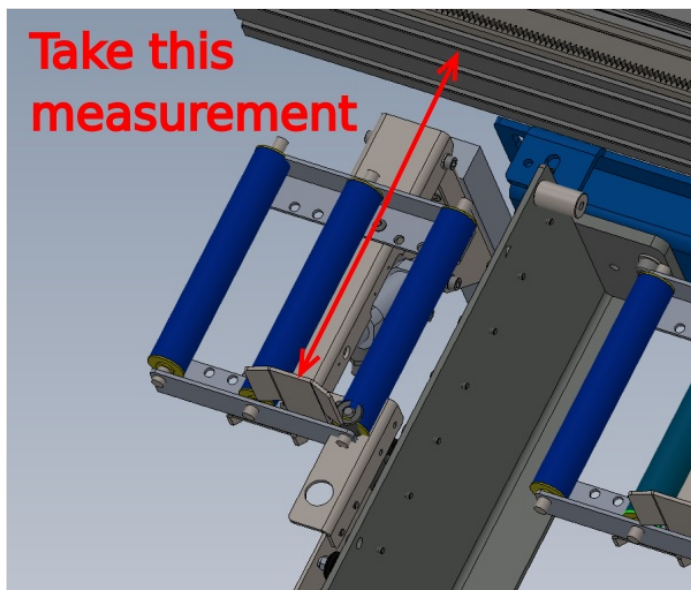
Step 3 - Set position 1

Set backfence position 1 to have a gap of 3mm at the indicated point



Step 4 - Measure Position 1

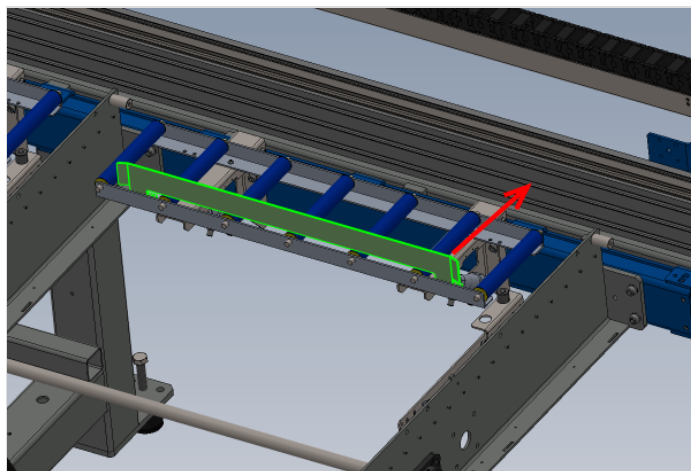
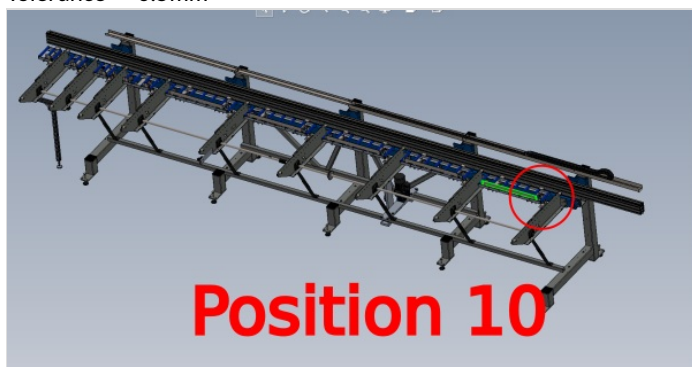
Take measurement at indicated point



Step 5 - Set position 10

Set position 10 to measure taken in previous step from position 1

Tolerance $\pm 0.5\text{mm}$



Step 6 - Add wire line to backfences

Fit wire line to backfences to span all



Step 7 - Ensure only positions 1 and 10 are contacting

Ensure all positions of backfences except 1 and 10 are not touching wire line



Step 8 - Adjust each backfence

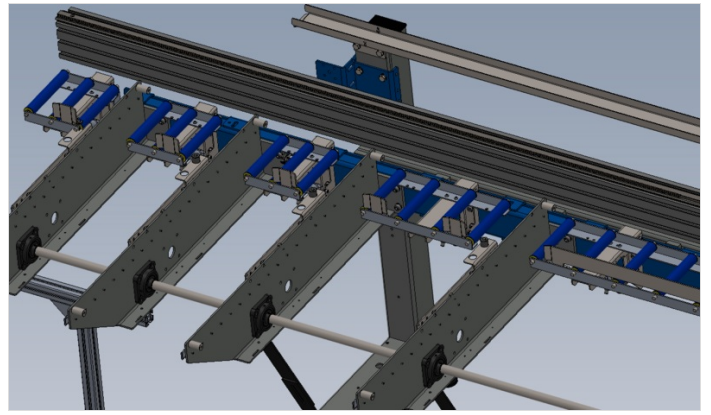
Individually adjust each backfence to be less than 0.5mm from wireline but not touching



Step 9 - Finalise alignment

The first 2 meter section of backfences from position 1 should now be fine tuned with a 2 meter straight edge

Position 2 meter straight edge against indicated points



Step 10 - Quality /alignment check

Use steel rule to measure each backfence position from hepco rail

Measurement taken in step 3 should be indicated at all backfences if set correctly.

Tolerance $\pm 0.5\text{mm}$



Step 11 - Back fence height quality check

Backfence height needs to be checked in the roller lowered position.

To do this

- 1 Remove air from cylinders to allow rollers to drop
- 2 Use 2 meter straight edge to span between transfer arms
- 3 drag straight edge over backfences, straight edge should not touch backfence at any point

4 Check this on all roller beds on module E



Step 12 - Gripper position setting

Gripper position requires setting now that back fences are aligned

The following steps should be followed for correct alignment



Step 13 - Use setting jig

Ensure setting jig is set against position 1 backfences

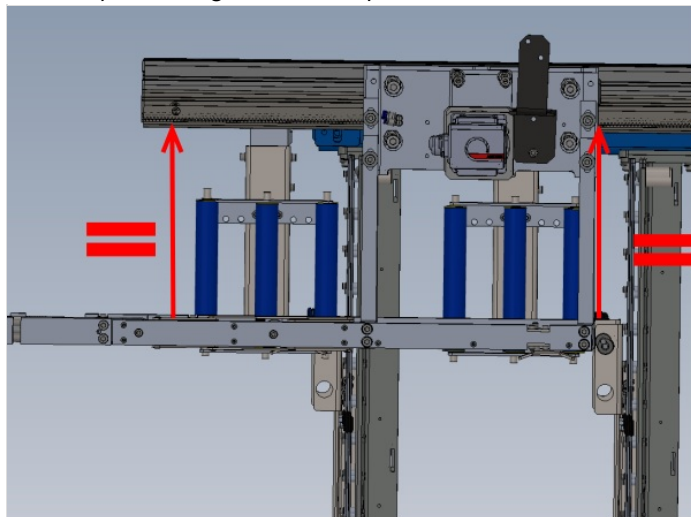
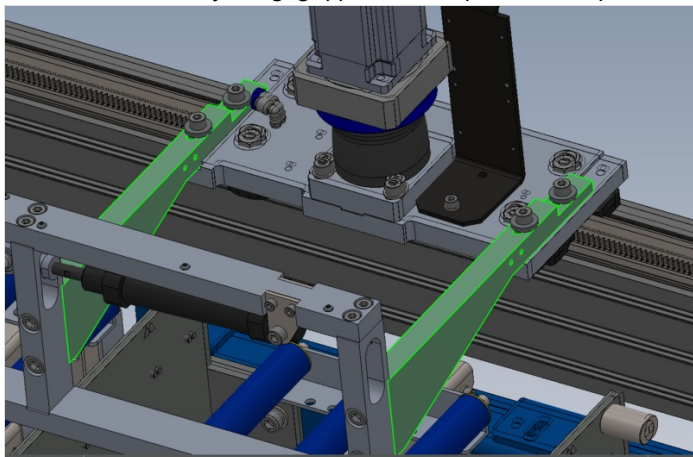
Ensure setting jig is orientated correctly , correct offset of holes towards backfence



Step 14 - Adjust gripper

Adjust gripper on mounting arms to align gripper teeth with setting jig

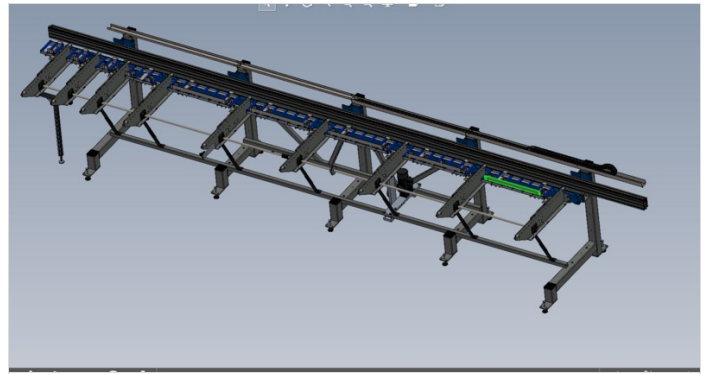
Ensure that when adjusting , gripper remains parallel to hepcos beam . Check this by measuring the indicated points



Step 15 - Check all positions

Once gripper position is set at position 1, it should be checked at all backfences for consistency

Report any discrepancy to supervisor



Step 16 - Finalise all fasteners

Double check all fasteners used for adjustment have loctite 243, final tension applied and pen marked

Supervisor sign off required at this stage



Step 17 - Fit channel bars

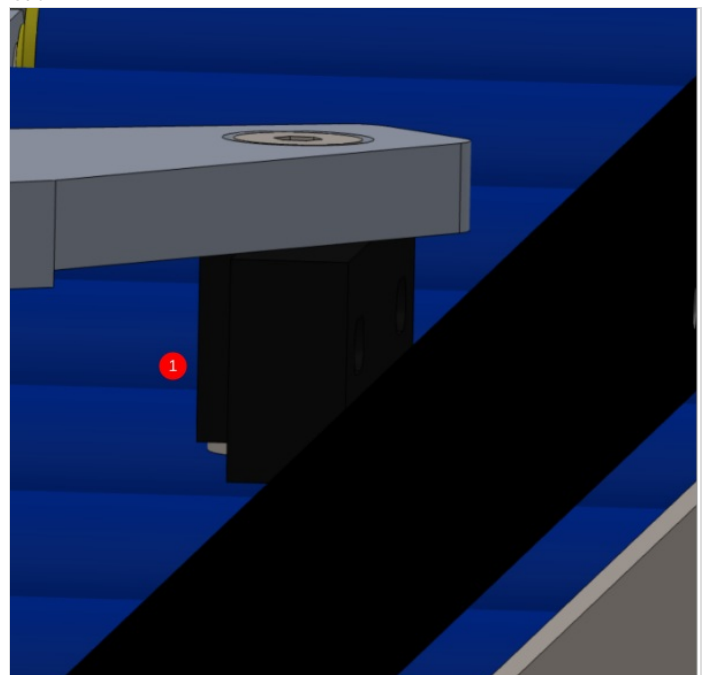
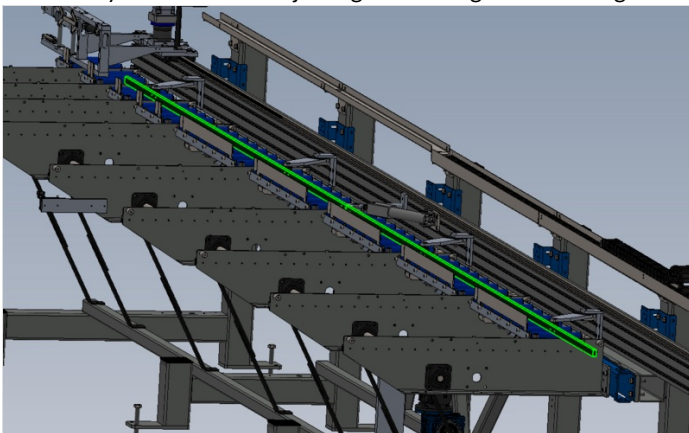
Fit Black take up pads D0008288 and D0015742

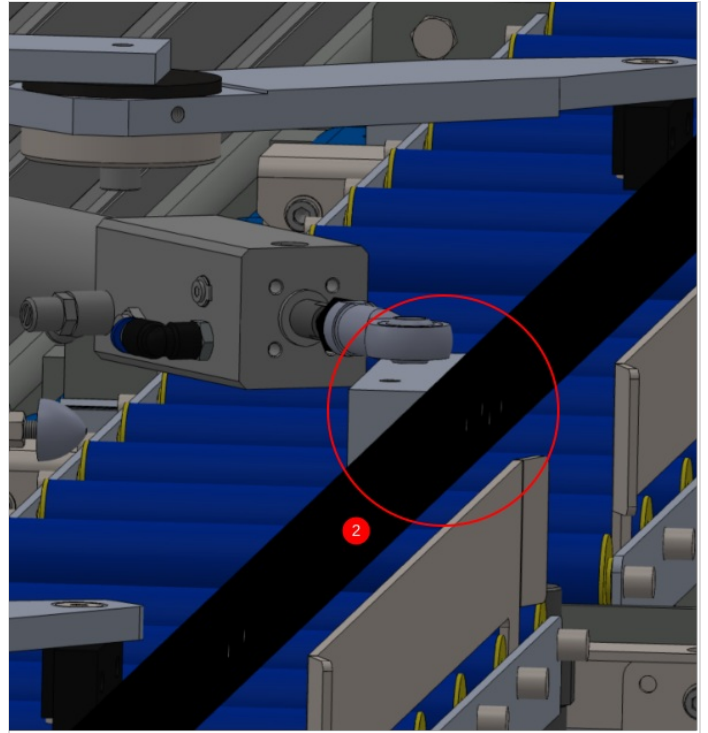
1 Secure black nylon pads to channel bars using M6 x 25 socket caps and M6 x 20 washers

2 Connect channel bars using joiner plate and 4 off M6 x 30 socket caps

3 Check 2 off B0001106 bushes are fitted as shown .

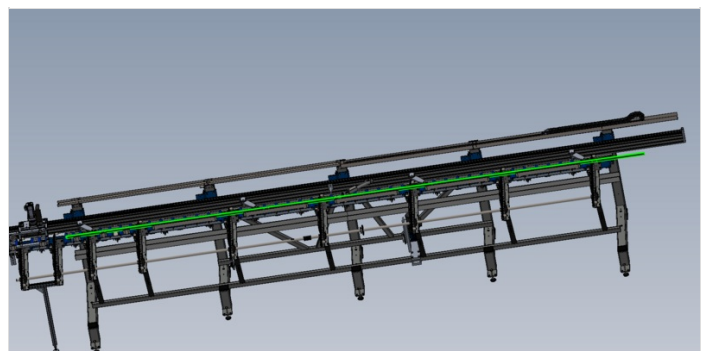
4 Secure cylinder rod end to joining block using M8 x 25 flanged button head





Step 18 - Set channel Bar position

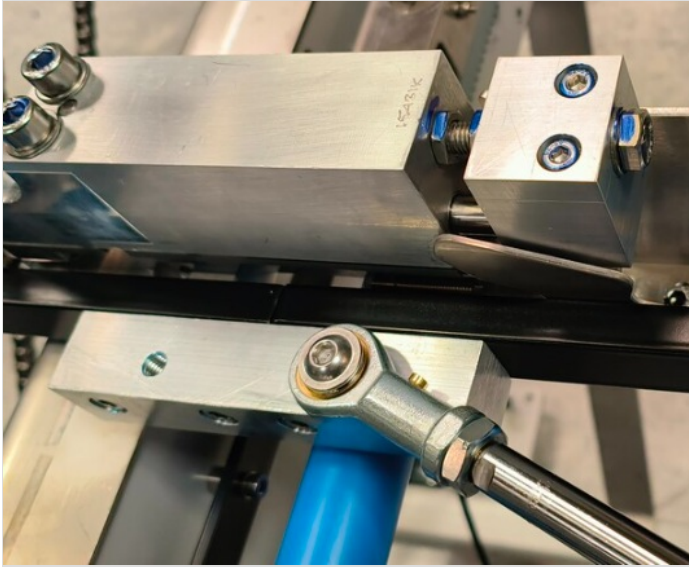
Channel bar positions now need to be set relative to new gripper position



Step 19 - Position gripper

Position gripper in front cylinder assembly for channel bar

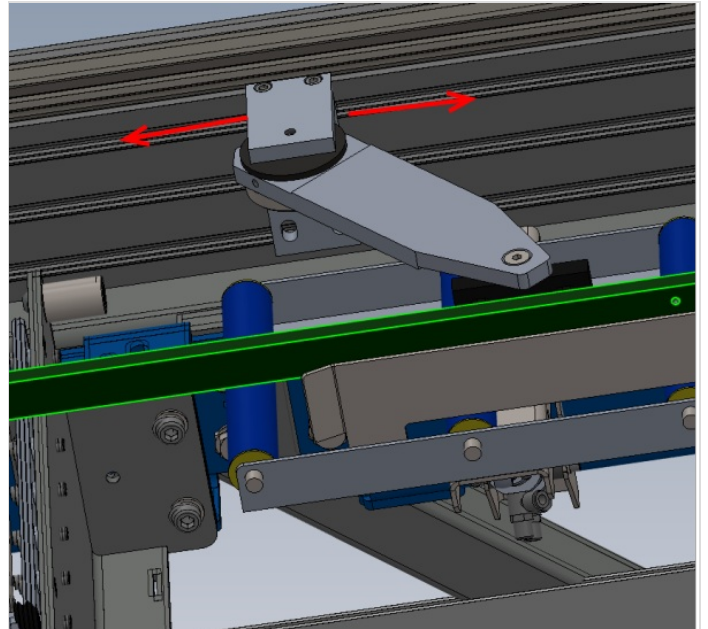
Adjust base of cylinder so that there is a 3mm gap present between gripper and channel bar, when cylinder is fully extended



Step 20 - Adjust each swivel assembly


Move gripper to each swivel assembly and adjust base to ensure 3mm gap when cylinder is fully extended

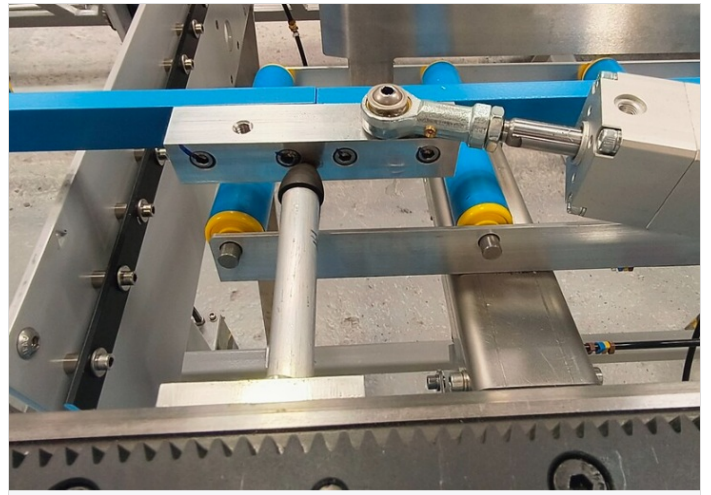
Repeat setting process for all swivel arms (4 off in total)



Step 21 - Adjust bump stop

Adjust bump stop so it makes correctly when cylinder is retracted

 ...Ensure the bump stop strikes in the position shown on the connection block in the photo

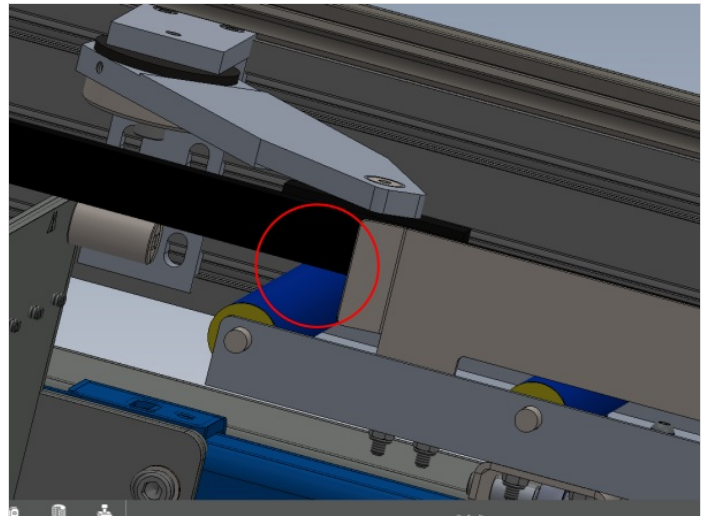


Step 22 - Set height of channel bar

Channel bar should be checked at all swivel points for the correct height setting

Adjust height of assemblies to set indicated height to 3-4mm

Ensure all measurements are consistent at adjustable points



Step 23 - Check clearance

Fully extend channel cylinder

Move gripper along entire axis

3mm gap between channel bar and gripper should remain consistent at all points

Supervisor sign off required at this point



Step 24 - Fastener check

Check that all fasteners are correctly tensioned, have had Loctite 243 applied and are pen marked

