ZX5 Installation Procedure 2023 Part 2

Key Steps for mechanical installation of ZX5

Difficulty **Very Hard** | Duration **1 minute(s)**

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Step 27 - Machine Guarding
Comments

Introduction

Key data for installation of ZX5

Dokit to generate consistency of installation

Quality checks for installation

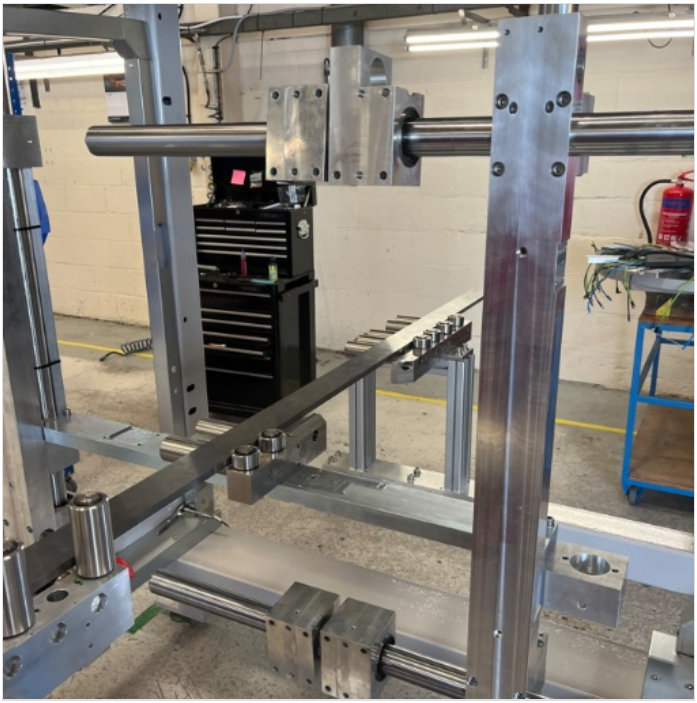
Manufacturing data supply

Step 1 - Check roller alignment

Check X axis alignment of horiczontal and vertical rollers using 2 meter straight edge and feeler gauges

Any discrepancy must be reported and rectified if present

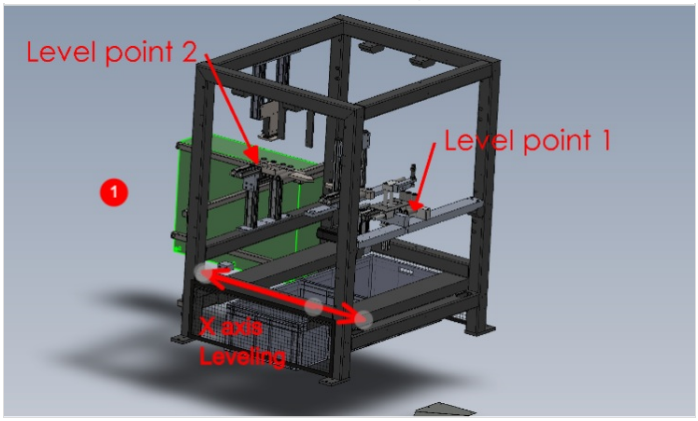
Tolerance 0.002" / 0.05mm
[1]R0015311 Install and Align Datum rollers

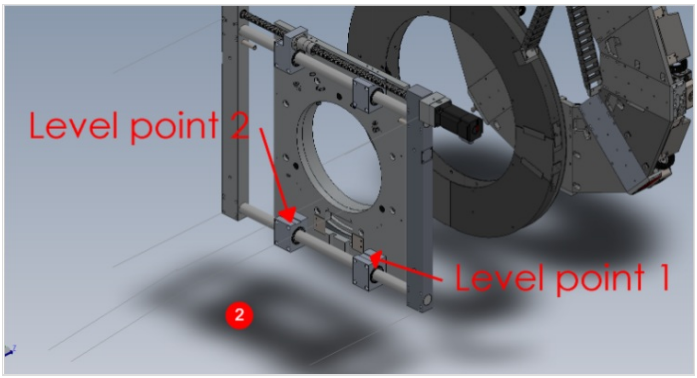


Step 2 - Multi head levelling points

1. x axis machine levelling. use a 2 meter straight edge between the indicated points and an engineers level on top to level this axis
2. Y axis levelling. Use an engineers level to straddle the 2 indicated points to level the y axis of the machine

R0015311 Install and Align Datum rollers
R0002913E Install and Align Rotary head Subframe
R0002913E Install and Align Rotary head Subframe PART 2
R0015046 Bench Assemble Infeed Clamps





Step 3 - Alignment of Machining center to outfeed table

Machining center is aligned to the outfeed using the following

Grip pin setting jig
Laser level
2 meter straight edge

X axis position is determined by hepco rail travel at full extent and center clamp bar within machining center. The gap here should be approximately 75mm.

Y axis position is determined by the grip pin jig and the machining center backfence rollers. The grip pin jig must be used at 2 points for correct alignment . Infeed datum rollers and v notch datum rollers.
Ensure gripper pins fall freely and centrally into alignment jig when setting.
Only move Machining centre to adjust this position

Height is determined by the datum horizontal rollers in the machining center and the blue rollers on the outfeed table. Out feed rollers and platform should be less than 1mm below the Machining centre rollers

1. position machining center roughly in place on the end of the outfeed table
2. level using previous step
3. once the module has been levelled, final levelling of the outfeed x axis can be done , as it uses the machining center as a datum to hold the laser level

> ...Levels must be extremely accurate in the machining center +- 1 division for this step to be accurate

Place laser level in the rear datum roller section of the machining center
Position gripper carriage as close to the laser level as possible
Mark a horizontal line of the carriage plate as a height datum

Move the carriage to above the next section of frame feet and adjust the pair of jacking bolts to adjust line to be on laser level mark
Repeat this step above every pair of frame legs where jacking bolts are

> ...Make sure frame bolts are accurately rotated when adjusting as pairs. If this isn't done, y axis level will be lost and unnecessary strain will be added to frame sections

These steps will ensure the outfeed is now set on a dead flat plain

4. Use the pin jig to adjust the position of the machining center to allow the gripper pins to align with the jig at all points along the back fence rollers. hepco beam should also be moved from in to the out position also to double check this jig setting
5. Use laser against machining center rollers to cast a laser line along the outfeed. Pull the gripper as close as possible to the laser, and mark a vertical line on the gripper where the laser dot falls. Move the gripper to the end of the hepco rail and check if the laser stop still aligns on the vertical line previously marked . If it doesn't , grip pin alignment will need re checking as it is crucial that both of these areas are correct
6 final height adjustment is set by using a 2 meter straight edge through the machining center rollers to the first set of rollers on the outfeed table. Machining center can be adjusted up or down to bring these rollers all onto the same height plain (-1mm maximum)

R0015028D ZX5 Hepco Beam Alignment Module C
R0015028D ZX5 Hepco Beam Alignment Module C part 2

Step 4 - Finalise Module C outfeed table alignment

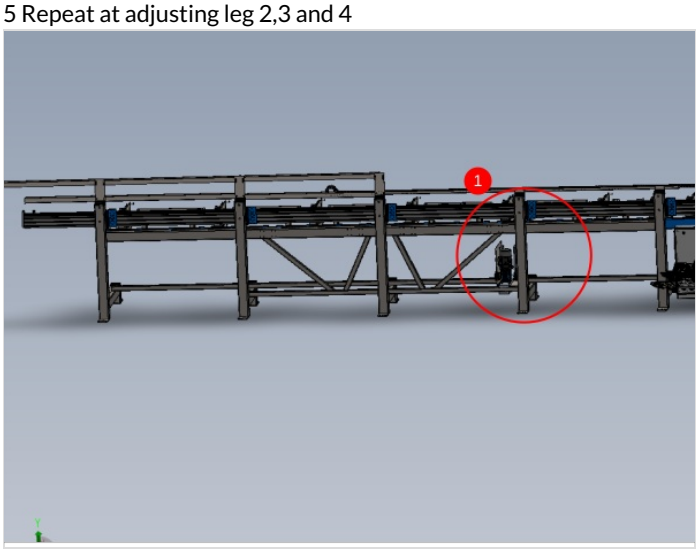
1 Place laser base on machining centre rear vertical rollers and cast beam along outfeed frame.

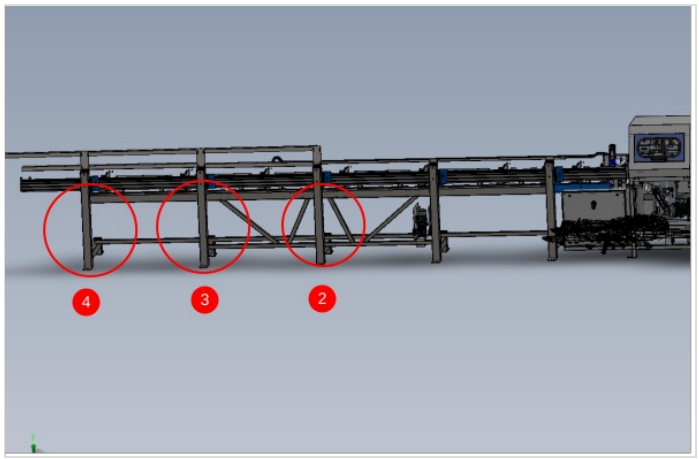
2 Move gripper to be directly in front of laser and mark a vertical line to match laser dot

3 Rotate laser so base is on horizontal rollers and mark horizontal line onto gripper

4 Move gripper to indicated adjusting leg and using the 2 off floor jacking bolts to align laser dot to horizontal mark on gripper.

5 Repeat at adjusting leg 2,3 and 4



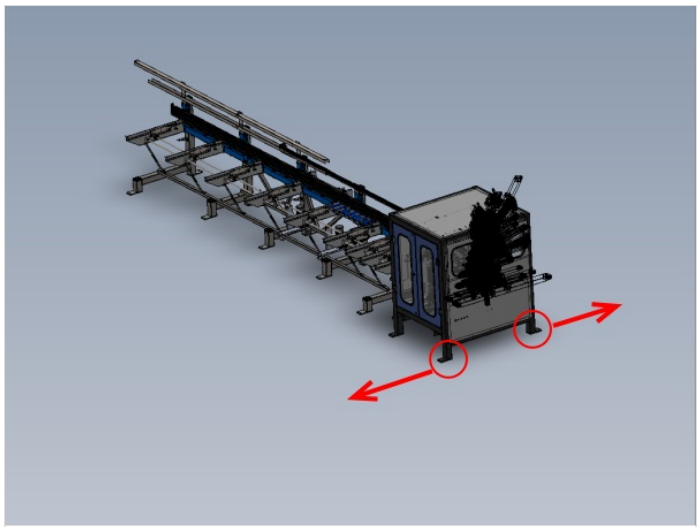


Step 5 - Module B adjustment

Rotate laser level in module B so base is against back fence rollers

Cast beam onto vertical pen mark on gripper

Adjust machining centre in directions and points shown to correct laser mark if required



Step 6 - Recheck all settings once final adjustment has been made

Recheck all settings requested , As any adjustments can alter previously set positions

Check machine level
Grip pin positions

Once laser alignment has been set

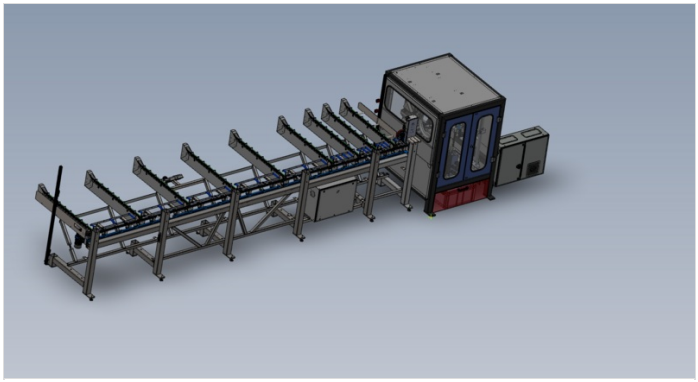
Step 7 - Position Module A Infeed Table

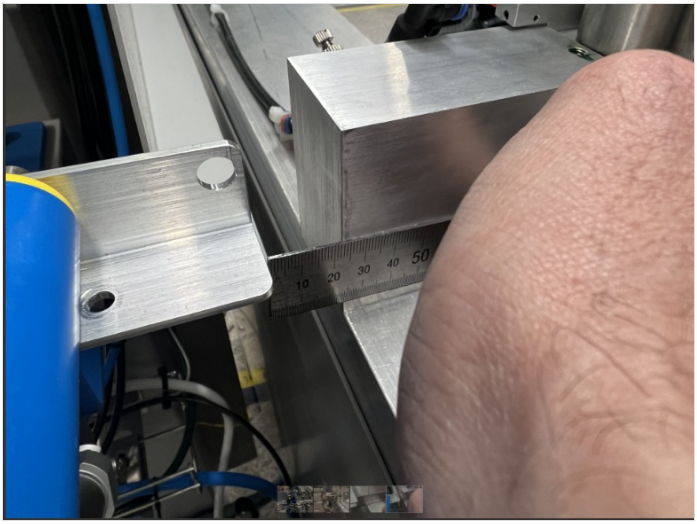
Position Module A infeed table in front of Module B machining centre

Use Back fence of module A and Module B as y axis alignment point

Position X axis of Module A frame close to B as shown, approximately 23mm from roller assembly to module B clamp assembly

Do not finalise alignment yet, use as rough position markers

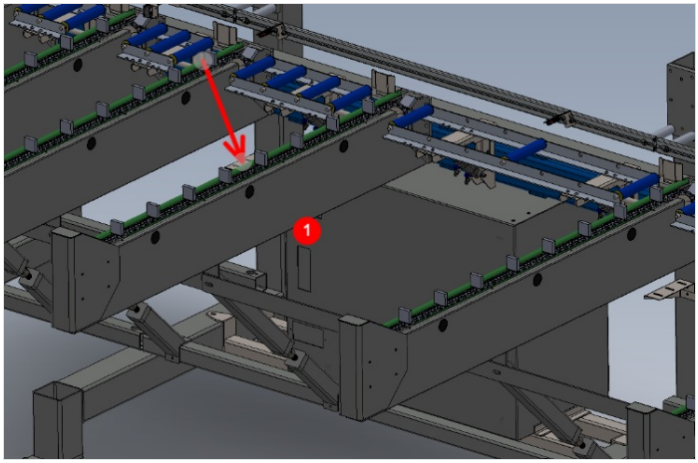


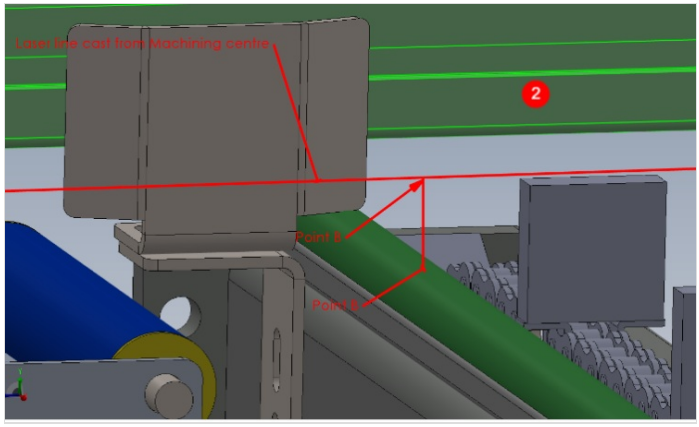


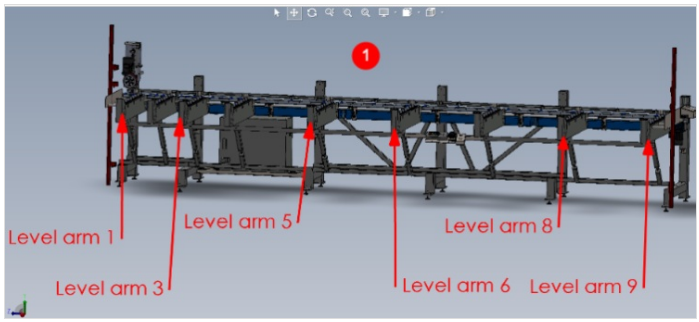
Step 8 - Machining centre Infeed levelling

Y axis of machining centre infeed . This is done on the indicated face of the arms using a level . Only level the indicated arms as these are the only ones controllable by the jacking feet positions
#Use a laser level placed on the levelled machining centre infeed rollers, and cast a laser line along the length of the infeed table. Ensure the beam is positioned so a reading can be taken from each circled point on the frame. Take a measurement from the first circled point with a steel rule of the indicated area. Replicate this measurement at all points indicated along the frame by Adjusting the legs in pairs to raise or lower the appropriate arm

This will ensure the frame is level and flat







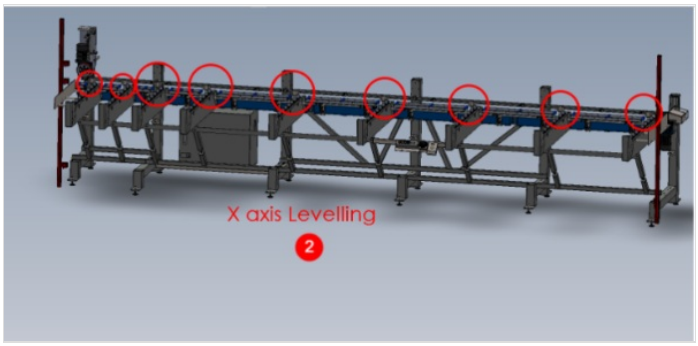
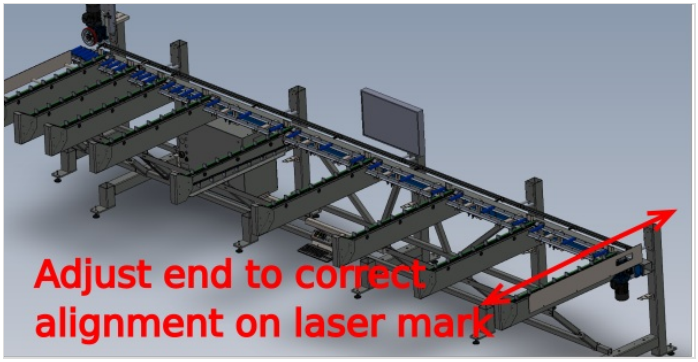


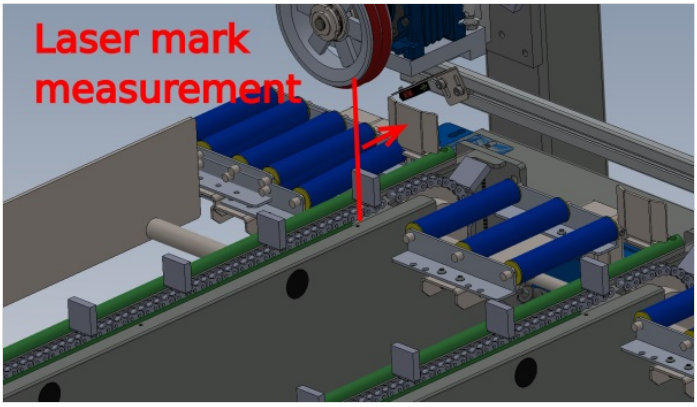
Photo Required

Step 9 - Finalise alignment

Height of module A is determined by load rollers.
Blue load rollers should be -1mm below Module B load rollers . Adjust All jacking points on module A the same amount to lift or lower the frame to match module B.

Y axis alignment is achieved by using laser .
1 Adjust Module A so backfence is behind Module B vertical roller by 1mm maximum
2 Position laser against back fence of module B and cast across Module A frame in front of backfences. Take measurement from first backfence
2 Adjust end of frame to achieve the same laser measurement as taken at first backfence
3 Recheck backfence alignment to module B, and repeat and adjust until all criteria is correct



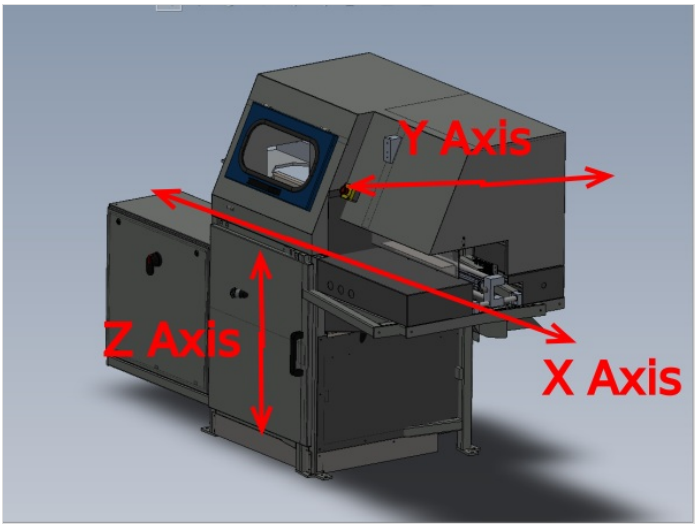


Step 10 - Module F Saw Alignment points

X axis position is determined by gripper travel

Y axis position is determined back fences

Z axis is determined by cut table to infeed roller height

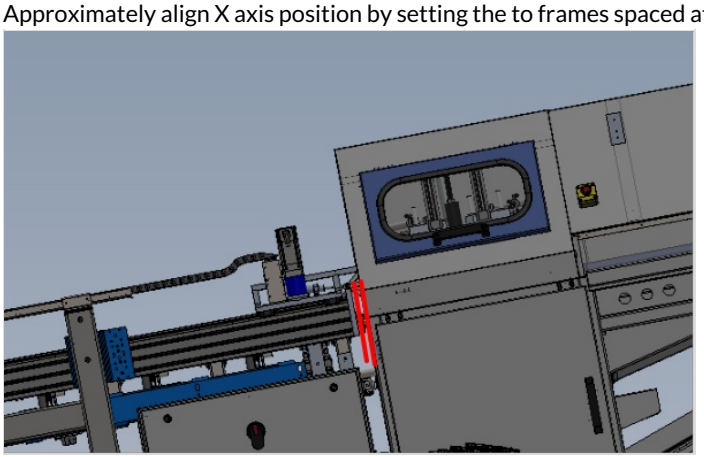


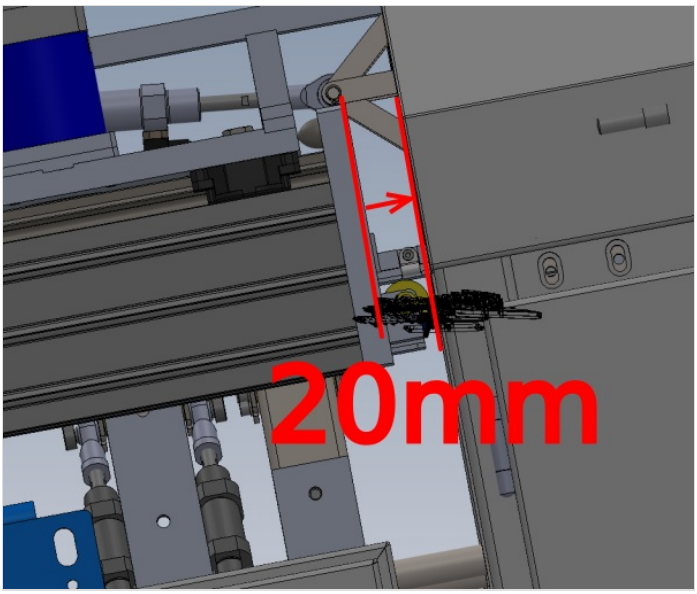
Step 11 - Position Module F

Position module F at end of Module E infeed frame

Approximately Align Saw roller back fences to Saw infeed back fences

Approximately align X axis position by setting the to frames spaced at the distance shown of 20mm



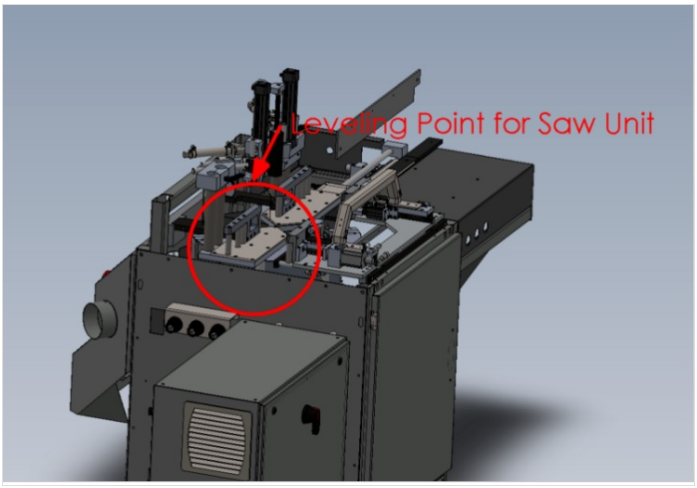


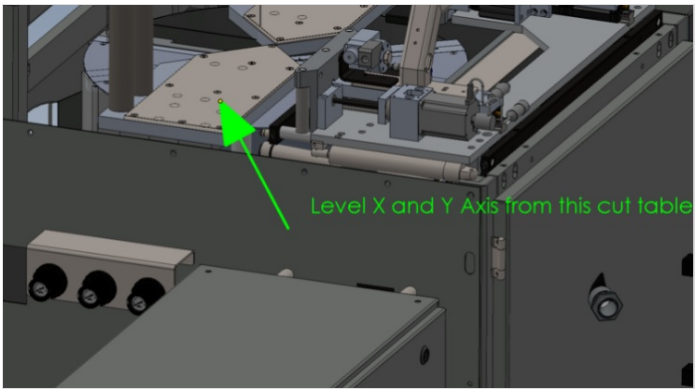
Step 12 - Level Module F

Use the indicated points to level the frame.

Use cut table indicated as levelling point

Level Y and X Axis of saw



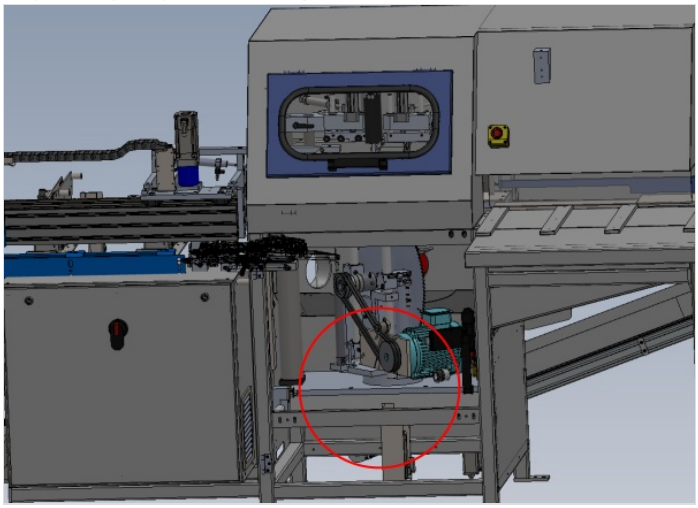


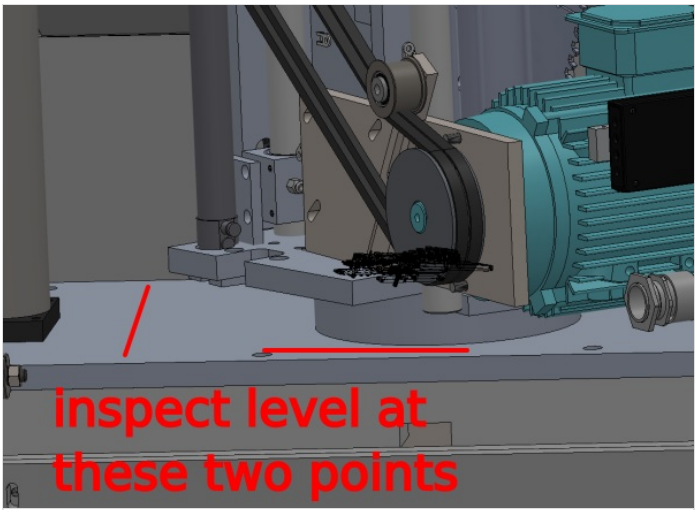
Step 13 - Quality check

It is vital to confirm Cut tables are in the correct position once levelled, and that movement has occurred during transport

To do this the base of the saw turn table must be checked for level. These readings must read exactly the same as the levelled cut table in the previous step

Any discrepancy should be reported





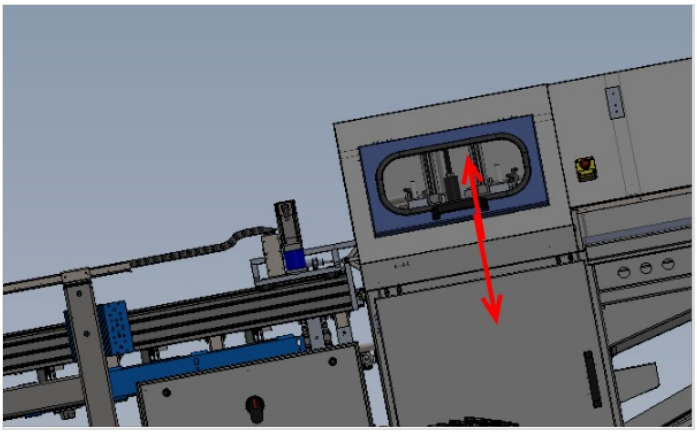
Step 14 - Saw Height Adjustment

Saw module should be raised or lowered to align with blue load rollers on saw infeed table

Saw module should sit above blue rollers by no more than 1mm

Ensure levels previously set are not compromised when adjusting height

Double check levels are still correct once height has been adjusted
R0000571 Fit and Level Cut Tables , Finalise Eject
R0015330 Fit 1st stage Ejector and Level Base



Step 15 - Laser alignment of Saw to Saw infeed height

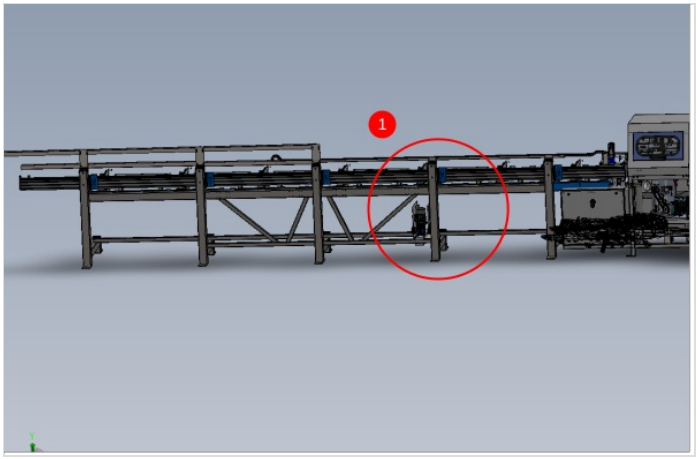
1 Position base of laser against back fence rollers and cast beam towards gripper

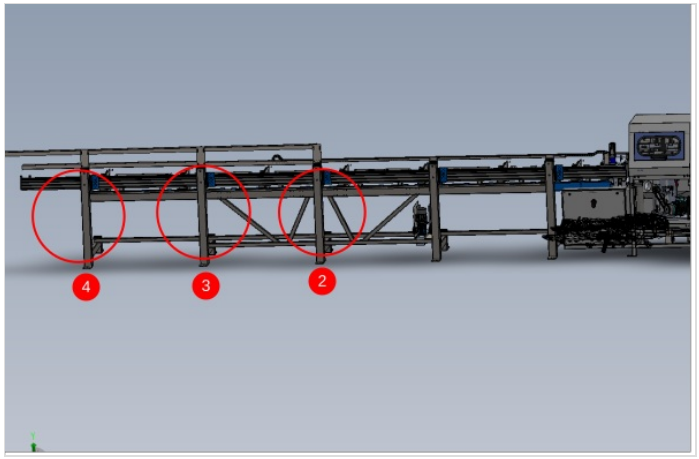
2 Position Gripper directly Infront of laser and mark vertical line on gripper to match laser dot

3 Rotate laser so base is on cut table and mark a horizontal line on the gripper to match the laser dot

3 Move Gripper to point one indicated , and inspect horizontal line to laser dot . Any discrepancy can be adjusted by the 2 off adjusting floor bolts directly below

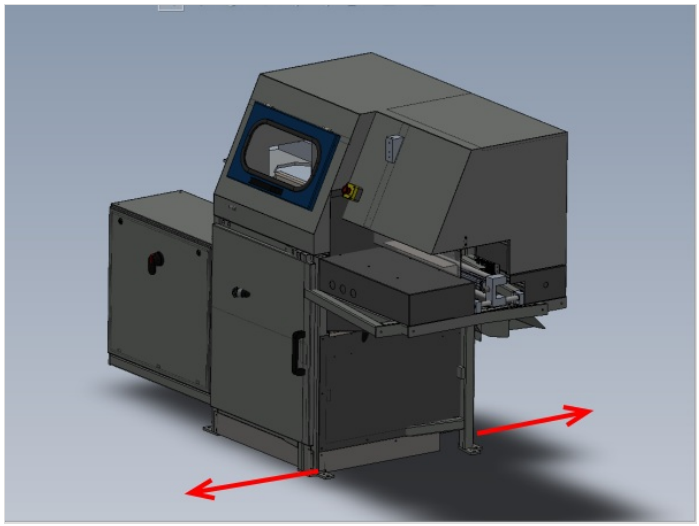
4 Repeat this step and indicated points 2,3 and 4





Step 16 - Adjust alignment Saw module

Rotate the laser so the base is against the rear roller fence, and ensure the gripper is at its furthest point of travel away from the saw . Project the laser to the gripper. Adjust Saw module in directions shown to align the laser to the vertical mark on gripper



Step 17 - Check laser alignment

With the laser still casting along the infeed table, slowly return the gripper along the axis and inspect the laser dot in relation to lines added to gripper. Discrepancy should be less than 4mm on both axis

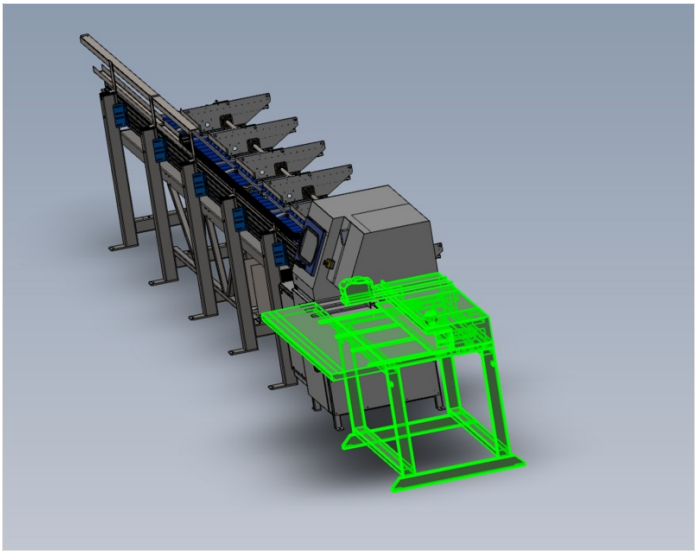
Step 18 - Quality Check

All settings should be double checked once final adjustments have been made

Machine level
Laser alignment
Grip pin positions
Back fence alignments

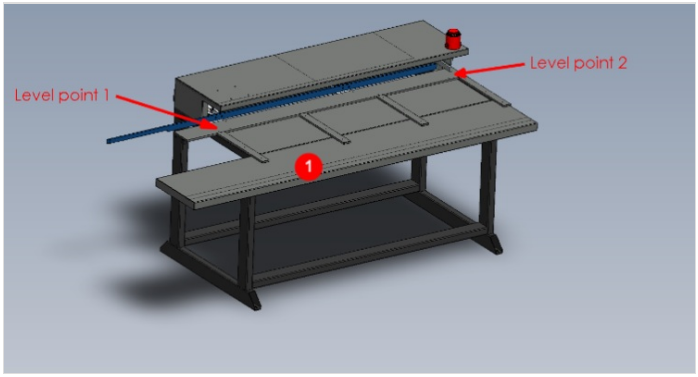
Step 19 - Position saw outfeed table

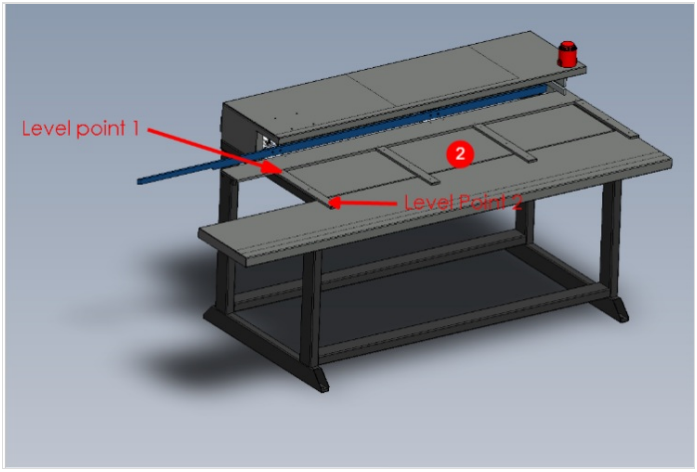
Approximately position saw out feed table against saw module



Step 20 - Saw Outfeed table leveling

1. X axis of module is levelled from the two indicated points . Use a 2 meter straight edge between these points and an engineers level on top
2. y axis is levelled from these two indicated points . an engineers level rested on this face is sufficient for levelling





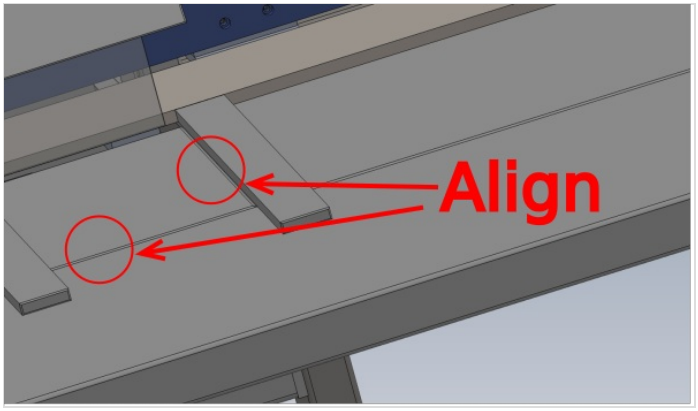
Step 21 - Saw outfeed height adjustment and Y axis position

Adjust height of saw outfeed table to align faces

Check that eject table cylinder can freely move beneath frame on full range of travel

Check that Blue push bar is behind Saw rear fence rollers

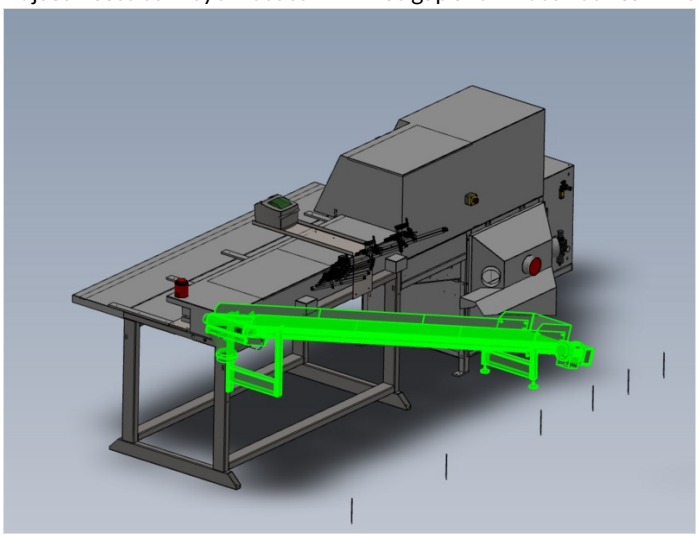
Fix frames together with M10 set bolts and washers

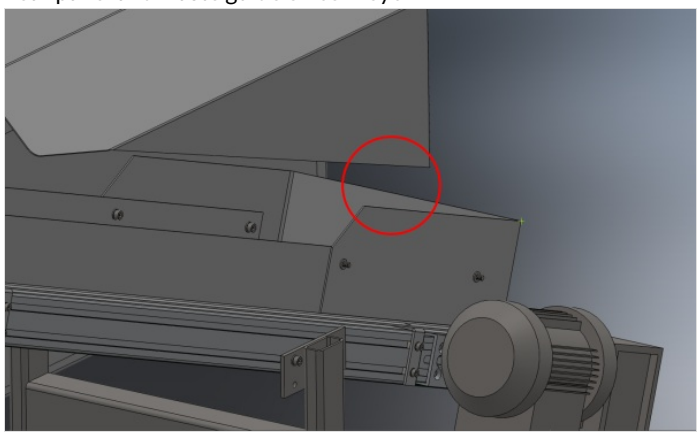


Step 22 - Fit Swarf conveyor

Fit waste conveyor to out feed frame using 2 off M8 socket caps

Adjust waste conveyor feet to minimise gap shown between saw module rear panel and waste guide on conveyor

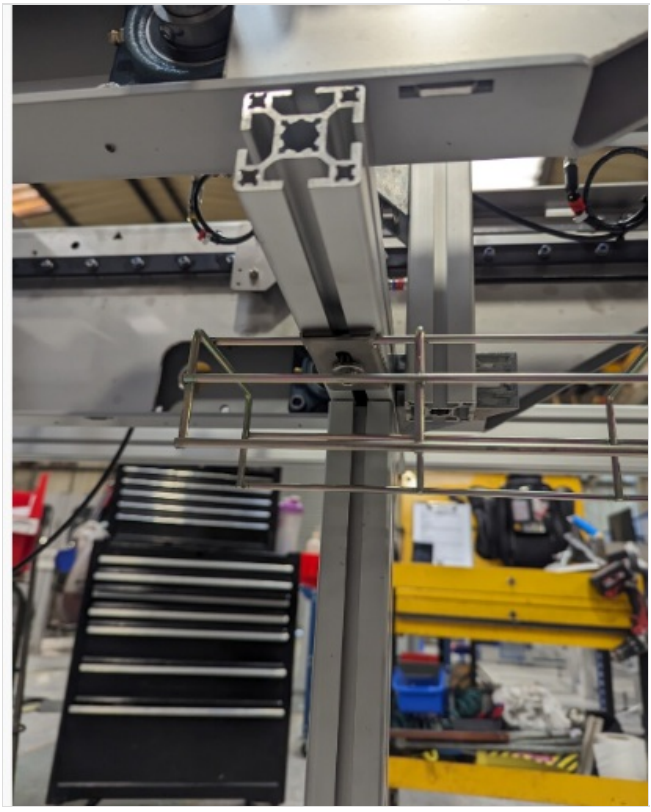


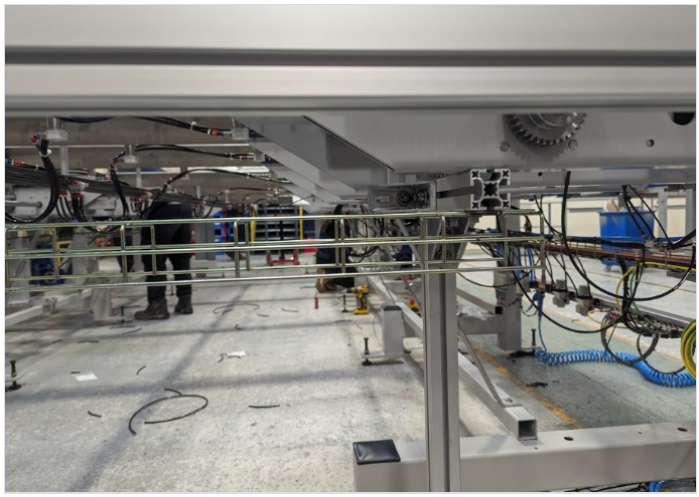


Step 23 - Install Cable transfer basket

Install cable transfer basket as shown

R0015294 Fitment of wire basket and feed pipes

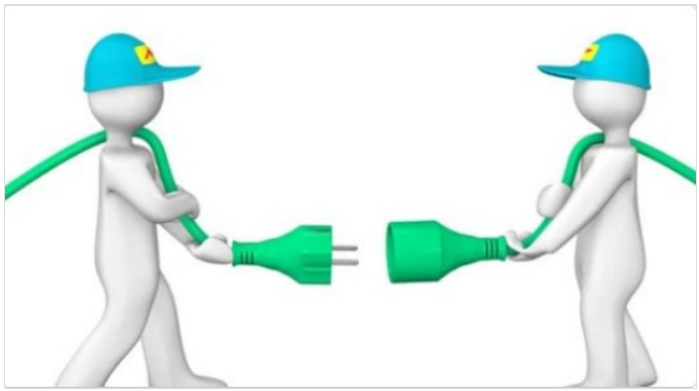




Step 24 - Pneumatic /electrical connections

Perform electrical / pneumatic connections

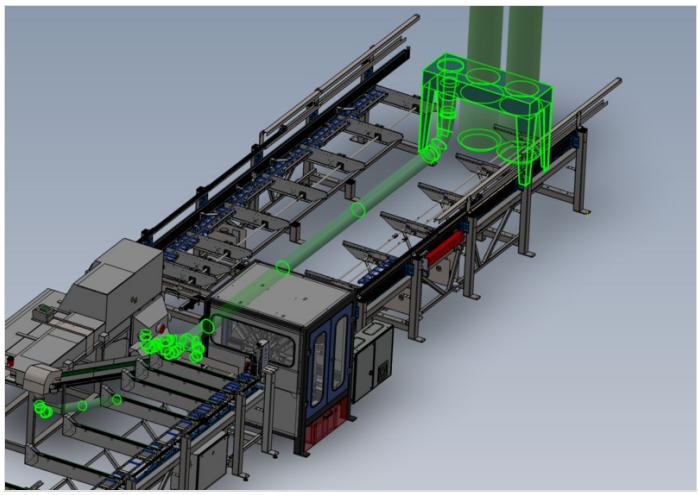
Installation Guide - ZX5 Electrical
ZX5 Installation Procedure 2023 Pneumatic connections



Step 25 - Position Extraction unit and pipe work

Position all extraction components as shown

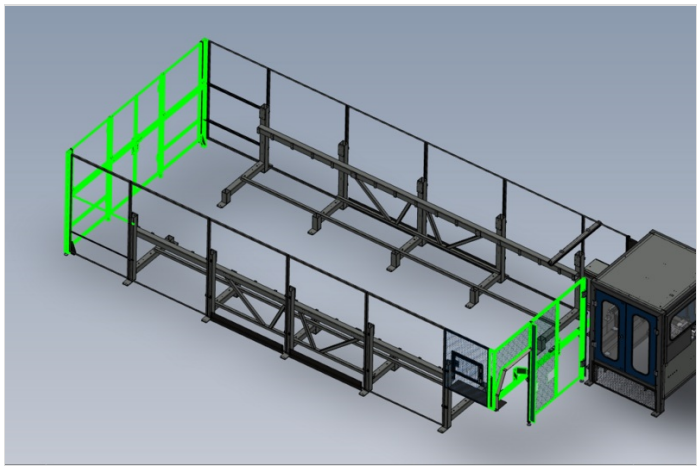
R0015350 Fit Rigid Ducting
R0015348 Fit Flexible Ducting



Step 26 - Install front and rear Fence assemblies

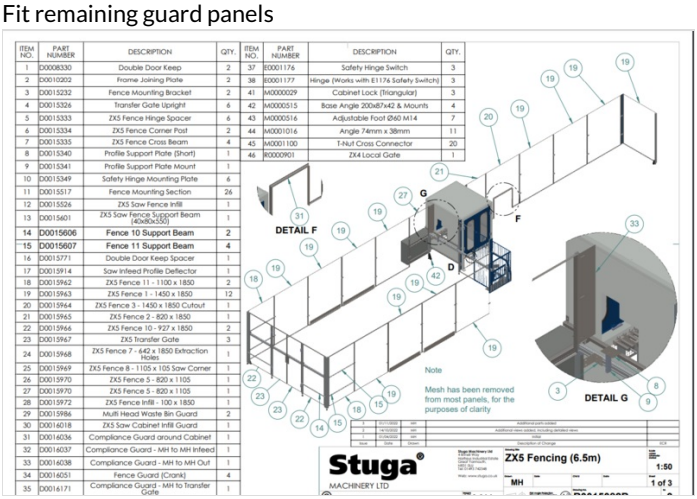
Install transfer front and rear beam assemblies

R0015352 Mount Buffer Beams
R0015091 Mount Outfeed Beam Sensor



Step 27 - Machine Guarding

Fit remaining guard panels



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	D0008330	Double Door Keep	2
2	D0010202	Frame Joining Plate	2
3	D0015232	Fence Mounting Bracket	2
4	D0015326	Transfer Gate Upright	6
5	D0015333	ZX5 Fence Hinge Spacer	6
6	D0015334	ZX5 Fence Corner Post	2
7	D0015335	ZX5 Fence Cross Beam	4
8	D0015340	Profile Support Plate (Short)	1
9	D0015341	Profile Support Plate Mount	1
10	D0015349	Safety Hinge Mounting Plate	6
11	D0015517	Fence Mounting Section	26
12	D0015526	ZX5 Saw Fence Infill	1
13	D0015601	ZX5 Saw Fence Support Beam (40x80x350)	1
14	D0015606	Fence 10 Support Beam	2
15	D0015607	Fence 11 Support Beam	4
16	D0015771	Double Door Keep Spacer	1
17	D0015914	Saw Infeed Profile Deflector	1
18	D0015962	ZX5 Fence 11 - 1100 x 1850	2
19	D0015963	ZX5 Fence 1 - 1450 x 1850	12
20	D0015964	ZX5 Fence 3 - 1450 x 1850 Cutout	1
21	D0015965	ZX5 Fence 2 - 820 x 1850	1
22	D0015966	ZX5 Fence 10 - 927 x 1850	2
23	D0015967	ZX5 Transfer Gate	3
24	D0015968	ZX5 Fence 7 - 642 x 1850 Extraction Holes	1
25	D0015969	ZX5 Fence 8 - 1105 x 105 Saw Corner	1
26	D0015970	ZX5 Fence 5 - 820 x 1105	1
27	D0015970	ZX5 Fence 5 - 820 x 1105	1
28	D0015972	ZX5 Fence Infill - 100 x 1850	1
29	D0015986	Multi Head Waste Bin Guard	2
30	D0016018	ZX5 Saw Cabinet Infill Guard	1
31	D0016036	Compliance Guard around Cabinet	1
32	D0016037	Compliance Guard - MH to MH Infeed	1
33	D0016038	Compliance Guard - MH to MH Out	1
34	D0016051	Fence Guard (Crank)	4
35	D0016171	Compliance Guard - MH to Transfer Gate	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
37	E0001176	Safety Hinge Switch	3
38	E0001177	Hinge (Works with E1176 Safety Switch)	3
41	M0000029	Cabinet Lock (Triangular)	3
42	M0000515	Base Angle 200x87x42 & Mounts	4
43	M0000516	Adjustable Foot Ø60 M14	7
44	M0001016	Angle 74mm x 38mm	11
45	M0001100	T-Nut Cross Connector	20
46	R0000901	ZX4 Local Gate	1