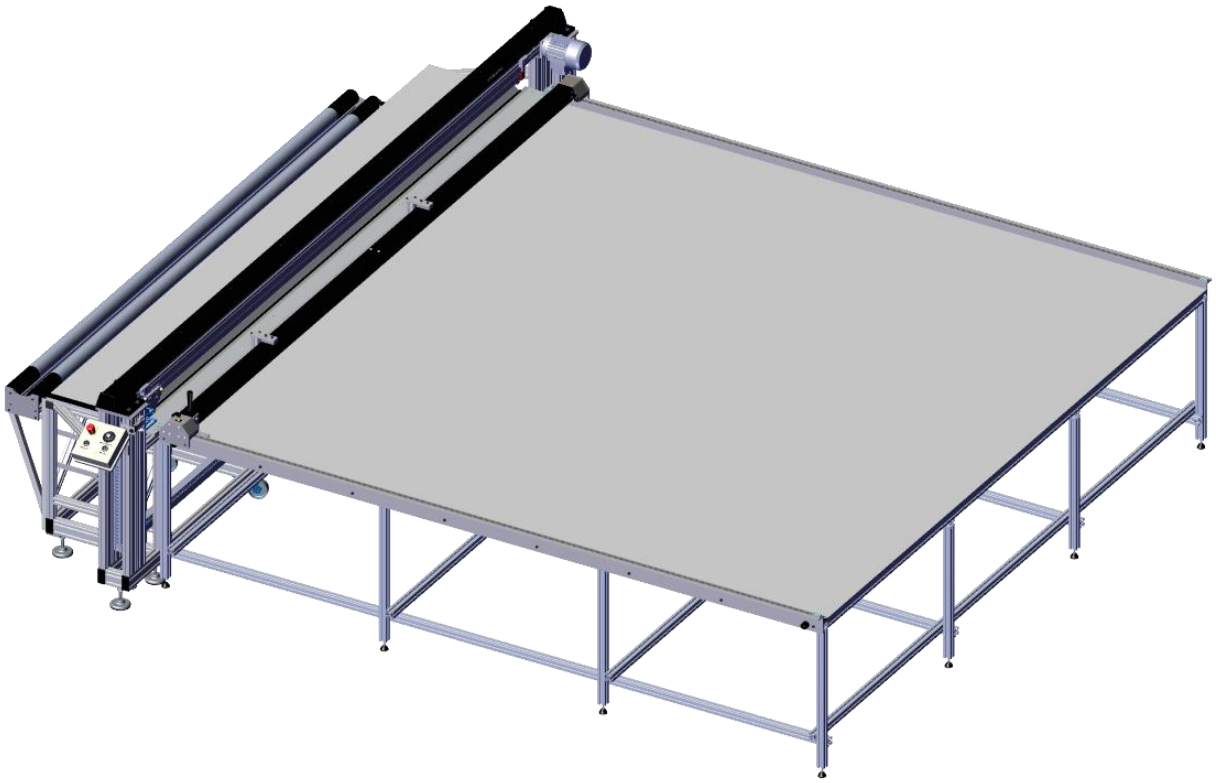
3200 SERIES CUTTING TABLE

OPERATIONS MANUAL

September 2013



ACMEDA ENGINEERING

CONTENTS

September 2013

SECTION 1 – MACHINE OVERVIEW

INTENDED PURPOSE

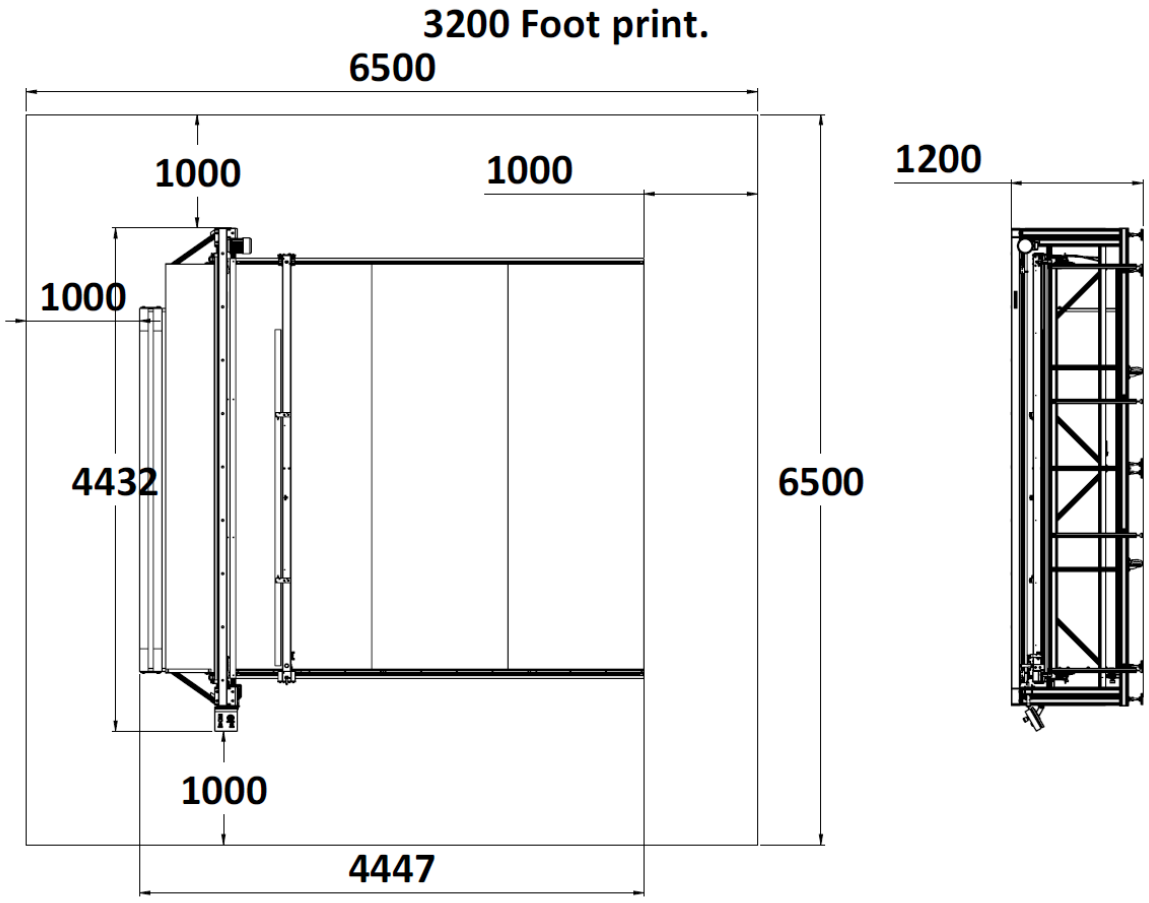
This product is designed and constructed with an intention to enhance the productivity gains through quicker and high quality production of the windows furnishing or similar materials with reduced stress on the production operators. It is intended that any industry standard fabric could be cut to the desired size with highest possible accuracy. With recommended maintenance program the machine should last longer. The design and construction is aimed for safe and easy operation. Every possible care has been considered and adopted in design and construction of this product. However safety also greatly relies on the operators and owners. It is expected that the operator is trained properly to gain a thorough understanding of the machine controls and process to achieve the productivity goals with complete focus on safety. It is ultimately responsibility of the owners to ensure and assess the training requirements to carry out the operations safely.

GENERAL DESCRIPTION

3200 Series Cutting Table is a new addition to the ACMEDA Cutting table's product group. The components of this machine are classified into 3 groups;

1. Mechanical elements
2. Pneumatic elements
3. Electrical/electronic elements.

This machine has a table, with aluminium frame to support the fabric; it has fabric cutting unit, Free spinning rollers to support material and a manually operated back stop.
It has a control box attached to the machine which allows easy operation of the machine. There is an emergency stop at convenient location to stop the machine and make it safe in the event of any unforeseen circumstance.
Overall machine sizes are approximately: 4.5m (Long) x 4.5m (Width) x 1.2m (high) refer to **Error! Reference source not found.**.
Machine runs mainly on electrical power, pneumatics is used for lowering the back stop and clamping the material.



GENERAL OPERATION DETAILS

Basic typical cutting operation cycle involves,

- Lowering the clamp.
- Initiating the cut by constantly holding the arrow button forward or reverse depending upon the requirement.
- On completion of cut lift the clamp.
- Reposition the fabric if additional trimming is required or start with next and repeat the above steps.

PART A – SAFETY FEATURES

Machine has been designed and constructed with safety features,

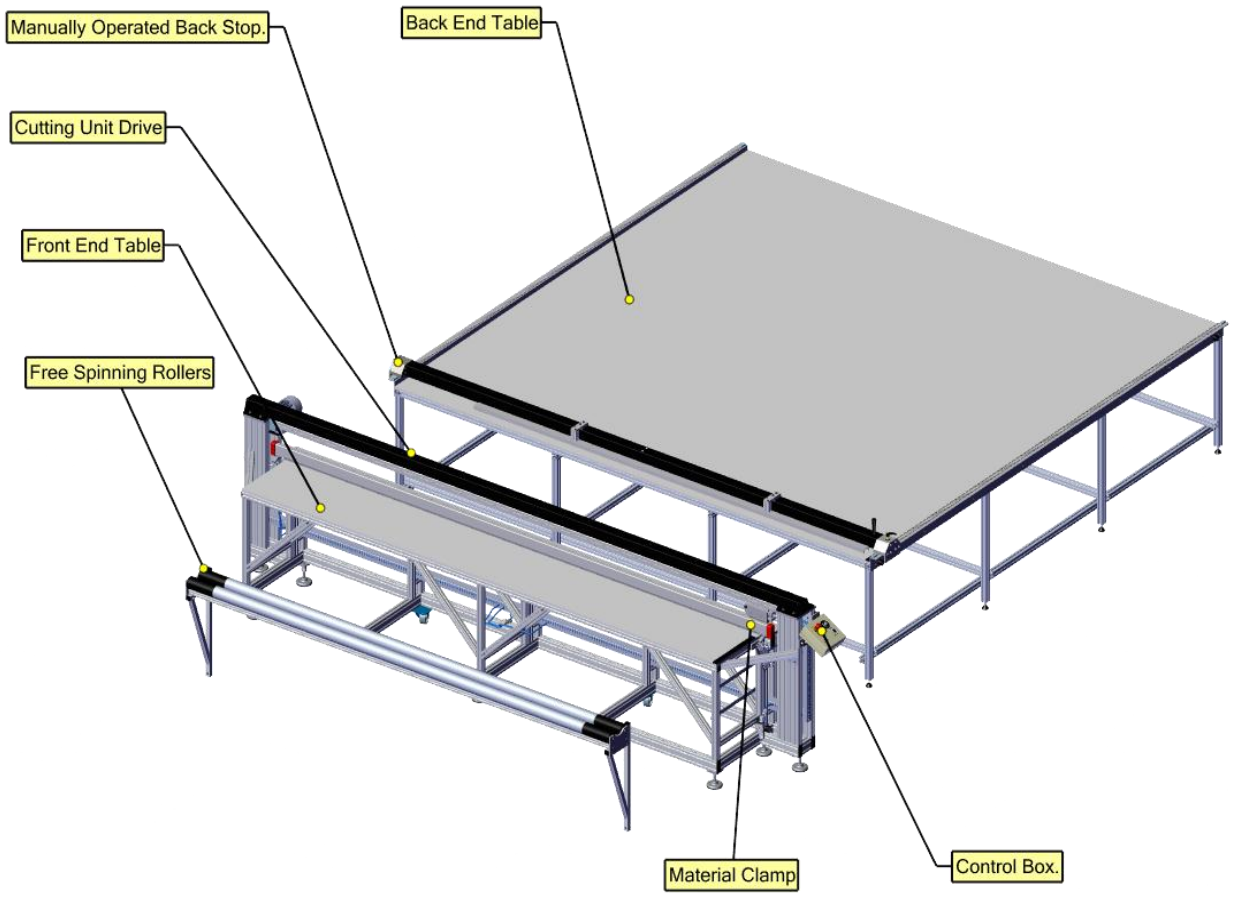
- Emergency stop
- Limit switches to limit the travel of the cutter head.
- Designed to be operated by one person only.
- Logically controlled start up,
  - ✓ The cutting cycle does not start with the clamp in lifted position.

PART B – TECHNICAL SPECIFICATIONS

ELECTRICAL POWER REQUIREMENT	• 240v-50/60Hz. 15 Amp • Recommended to have "D" Curve type Circuit breakers at the mains power board.
AIR PRESSURE REQUIREMENTS	• Compressor – 15 CFM (MIN) with FAD (Free Air Delivery) of 11 or greater • Air pressure must not drop below 450 kPa • Main Pressure (Regulator)Set at - 450 kPa or 65 psi
MACHINE BUILDING STANDARDS	• Australian Standards AS 4024-2006 / CE Certified
SAFETY FEATURES	• Emergency Stop • All External wiring and switches are 24v (Low Voltage) • Fully enclosed Drive Belts
CONSTRUCTION TYPE	• Aluminium construction - Main Table and Front End Unit • All steel parts are Nickel Plated and or Powder coated finish
CUTTING CAPACITY / TYPE	• Crush Cutting (Standard with Machine) - Normal salvage cut in production 10mm. • cut achievable 15mm – (Can achieve smaller cut but is material / orientation dependent)
OVERALL DIMENSIONS	• Length: 4500mm • Width: 4500mm • Height: 1200mm • Table Working Height: 890mm ± 15mm

PART C – MACHINE DETAILS

Machine Main Elements:	Machine's main elements are as listed below (Refer below image) • Back End Table. • Front end table. • Material clamp. • Cutter Unit Drive. • Free Spinning Rollers. • Manually Operated Back Stop. • Control box.
Back End Table:	Supports fabric while cutting before and also after separation from the roller. It is flat and has a smooth top for easy sliding of the fabric.
Front End Table:	Supports the fabric from the roll before cutting. It is flat and has smooth top for easy sliding of the fabric.
Material Clamp:	Operates by a selective switch which allows the clamp to move up (to release material) or down (to clamp the material).
Cutter Unit Drive:	Controlled by the push buttons on the control box, Arrows indicate the direction of movement forward or reverse, to keep cutting one of the buttons must be kept pushed in and as long as it held pushed in the unit keeps moving until it reaches the limits. The movement will not start if the material clamp is in up (material released) position.
Free spinning rollers:	Free spinning material rollers support and hold the material rolls
Manually Operated Back Stop:	It allows for quick easy and accurate dimensional control
Control Box:	Has operator controls on it, including emergency stop.



SECTION 2 – INSTALLATION/ SET UP

PART A – FRONT END INSTALLATION

PRE REQUISITES (BEFORE YOU BEGIN)

- Ensure that adequate floor space (Recommended 6mx6m) is allocated for the machine, surrounding is cleaned; floor is rigid, flat and levelled within a maximum variation of 30mm in total.
- A close by working 240 V AC Power point (socket with a switch) is dedicated for the operations of this machine.
- An airline connection must be available for exclusive use of this machine.
- There should be a predetermined plan to position and orient the machine.

TOOLS REQUIRED

- 13mm Spanner (for adjusting the Jack) Open ended.
- Adjustable Wrench (opening up to 24mm).
- Levelling device (spirit level) (Laser levelling device is preferred)
- A set of T handle hexagon keys.
- Tape measure.
- Metal Rule
- Stringline, dowels (x3) & M8 screws and nuts (x2)
- Block of chipboard
- Power Driver (cordless drill) + Phillips No.2 bit
- Soft Hammer
-

HUMAN RESOURCES

Machine installation requires at least 2 persons, will need 4 persons for lifting the boards;

Boards are heavy weigh ~60kgs, therefore will require four persons to lift them!

They should be physically fit and must have a good understanding of mechanical / machine assemblies.

It is strongly recommended that at least one should have mechanical trade qualification and experience.

They should have basic knowledge about pneumatics and Electrical/electronics.

INSTALLATION SEQUENCE

Installation must be done in the following sequence,

- Setting up of 'front end assembly with the free spinning rollers'.
- Assembling and setting up of the Back end table frame.
- Assembling and setting up of Manual Back Stop.
- Fitting the boards on the back end table.
- Assembly and setting of the Squaring Edge.

FRONT END INSTALLATION PROCEDURE

1. Position and orient the front end assembly with free spinning rollers to suit your pre-determined layout plan. The right hand side of the machine is where the control box is located.
2. Using the adjustable spanner, undo all the lock nuts on the levelling jacks – in the order specified (Refer Fig 1). Lower the jack as close as possible to the floor yet not touching the floor.
3. Measure from the floor to the table top on the right and left hand sides of the front end assembly.
   If left is the highest measurement set left side of table to 890mm.
   If right is the highest measurement set right side of table to 890mm.
   The levelling jacks at the highest side should now be adjusted to suit this height.
4. Place a spirit level on the middle of the table, now move to opposite side and raise table evenly until spirit level is correct.
5. Use the 13mm spanner and level jacks so that they completely touch the floor, at 890mm high. Ensure jacks make contact to the floor and level (with alternating half clockwise turns) each jack to ensure even pressure is applied.
6. Recheck the levelling and height of the front end assembly.

⚠ **Ensure that the wheels are lifted up and must not be touching the floor!**

7. If the correct level and height has been achieved, lock all the lock nuts on the levelling jacks using an adjustable spanner.
8. Recheck the level of the front end assembly to ensure that the levelling has not been altered.

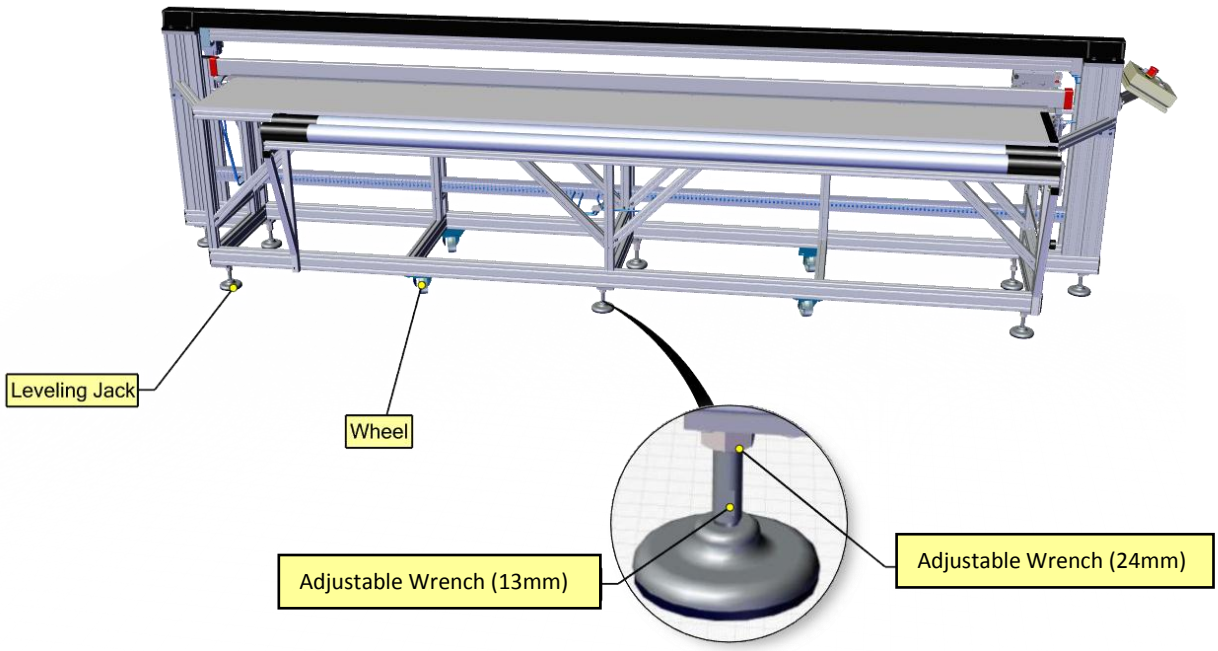


FIG 1.

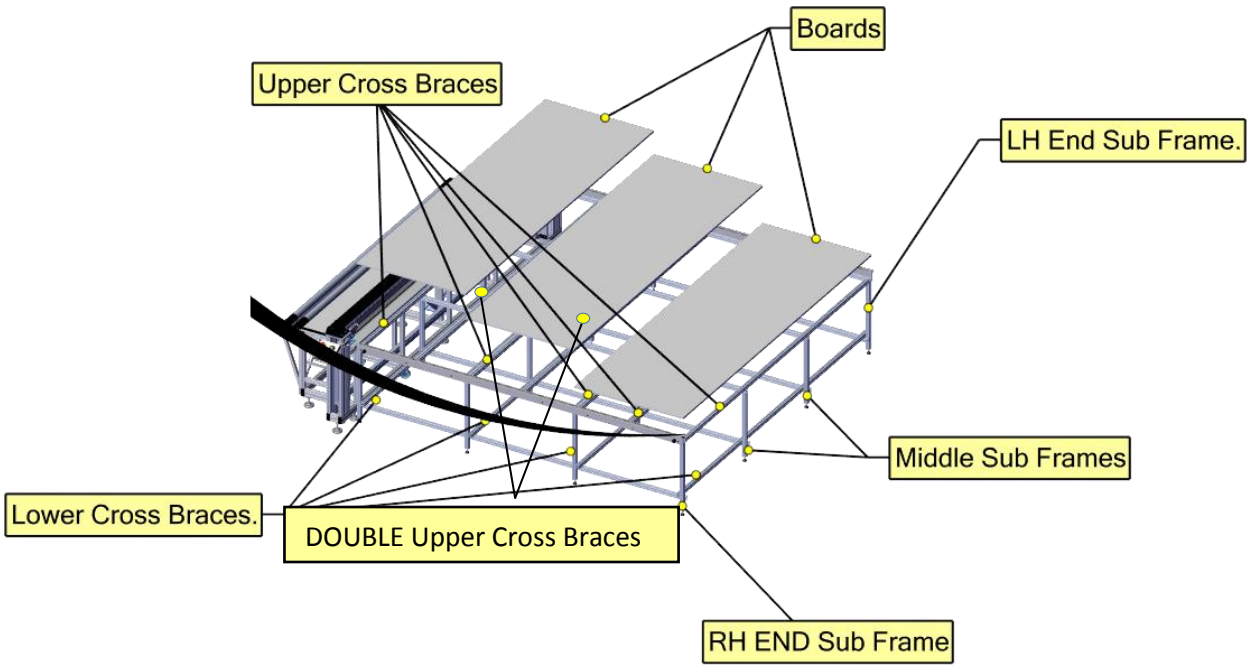
PART B – BACK END TABLE FRAME

BACK END TABLE FRAME OVERVIEW

Back end table is flat packed consisting of the following;

- 1 x RH End Sub Frame
- 1 x LH End Sub Frame
- 2 x Middle Frames
- 4 x Lower Cross Braces
- 5 x Upper Cross Braces
- 2 x Double Upper Cross Braces

All Frames & Cross Braces feature identification marks for easy referencing and location assistance.



STEP 1 – ATTACH RIGHT HAND END SUB FRAME

I. Roughly position the right hand sub frame (A) so that it can be secured to the front end assembly (you will require a second person). The cross brace should be facing inwards.

II. Line up the right hand sub frame with the front end assembly in the location where the relevant markers (A) are matching.

III. Insert two T nuts into the vertical groove on the right hand sub frame closest to the front end assembly (Align T Nuts with pre-positioned plates on the front end assembly)

IV. Place two counter sunk M8/12 bolts into the pre-positioned plates.

V. Loosely secure the bolts using the 6mm T handle hexagon key. Do not fully tighten the bolts at this stage.

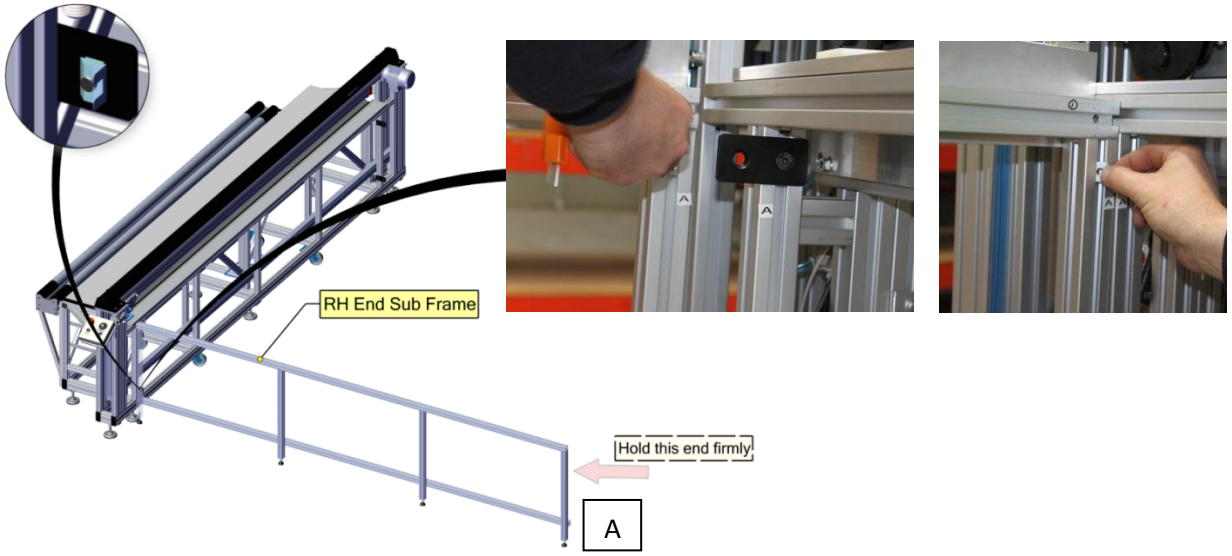
VI. Place the sprit level on the middle of the right hand sub frame to check that the right hand sub-frame is level. Make any necessary adjustments to the levelling feet on the right hand sub-frame.

VII. If the right hand sub-frame is level, place the table top alignment block on the right hand sub-frame right up against the front end assembly. If this is not level, lift the sub frame evenly (on front and back ends) & adjust by the measurement the alignment block is out.

VIII. Use the metal ruler to ensure that the table top alignment block is level with the front end assembly. (adjust levelling feet until ideal level is achieved)

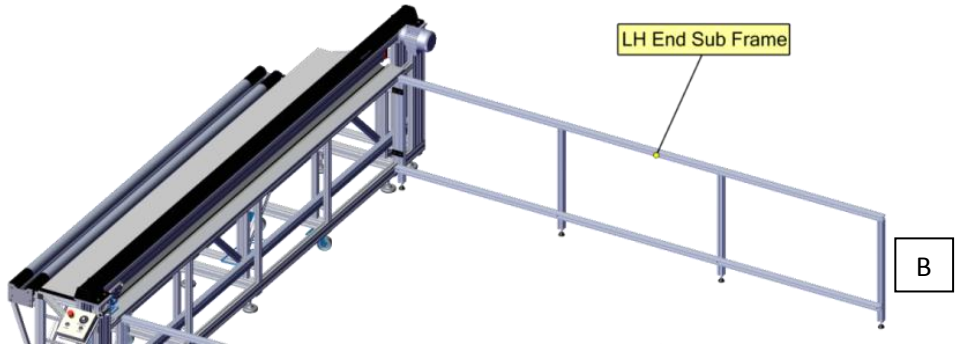
IX. Fully tighten the bolt in the plate attached to the front assembly. This will secure the right hand sub-frame to the front end assembly.

FIG.2



STEP 2 – ATTACH LEFT HAND END SUB FRAME

Repeat above sequence of steps to secure the left hand sub-frame to the front end assembly.
The left hand sub frame is identified with markers B.



STEP 3 – INSERT UPPER CROSS BRACE

I. Identify the upper cross brace (C) to be secured first into position outlined below.

II. Loosen the screws on both sides of the upper cross brace. Do not loosen them too much and do not fully remove them.

III. Insert into RH and LH sub frames as outlined in Fig 3. Ensure head of screw does not touch inner groove as it will not slide.

IV. Slide the upper cross brace right up to the front end assembly and line up the relevant markers.

V. To secure the upper cross brace to the right hand sub-frame, first tighten bolt using hand strength only, check level of aluminium with ruler and tap with soft hammer until level, then insert a hexagon key through the hole on the outer edge of the right hand sub-frame and fully tighten the screw which is attached to the upper cross brace (C) using extra force. (Ref Fig 4)

VI. Repeat this step to secure the left hand sub-frame to the upper cross brace.

FIG.3

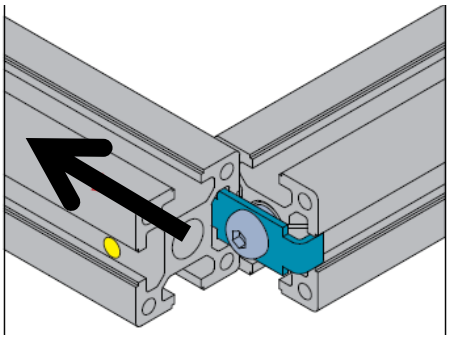
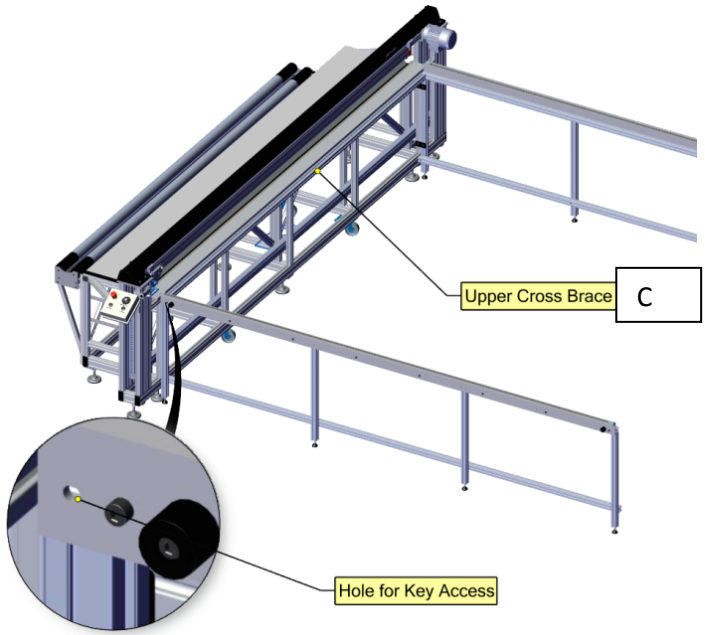


FIG 4



STEP 4 – INSERT MIDDLE FRAMES

I. Position the middle sub-frame (D) under the upper cross bar, ensuring (D) markers are aligned. (Refer Fig 5). (you will require a second person)

II. Insert a T nut into the marked location at top front end of sub-frame. (near marking D on sub frame).

III. Slide a washer into the groove of the upper cross brace (C), so that it sits over the pre-drilled hole. Place a bolt through the washer and screw into T nut, then secure with a T handle hexagon key. (Refer Fig 6).

IV. Place the sprit level in the middle of the middle sub-frame to ensure the middle sub-frame is level. Make the necessary adjustments to the feet to ensure that the middle sub-frame is level.

V. Repeat above steps for middle sub frame (E), using (E) identification markers.

FIG 5

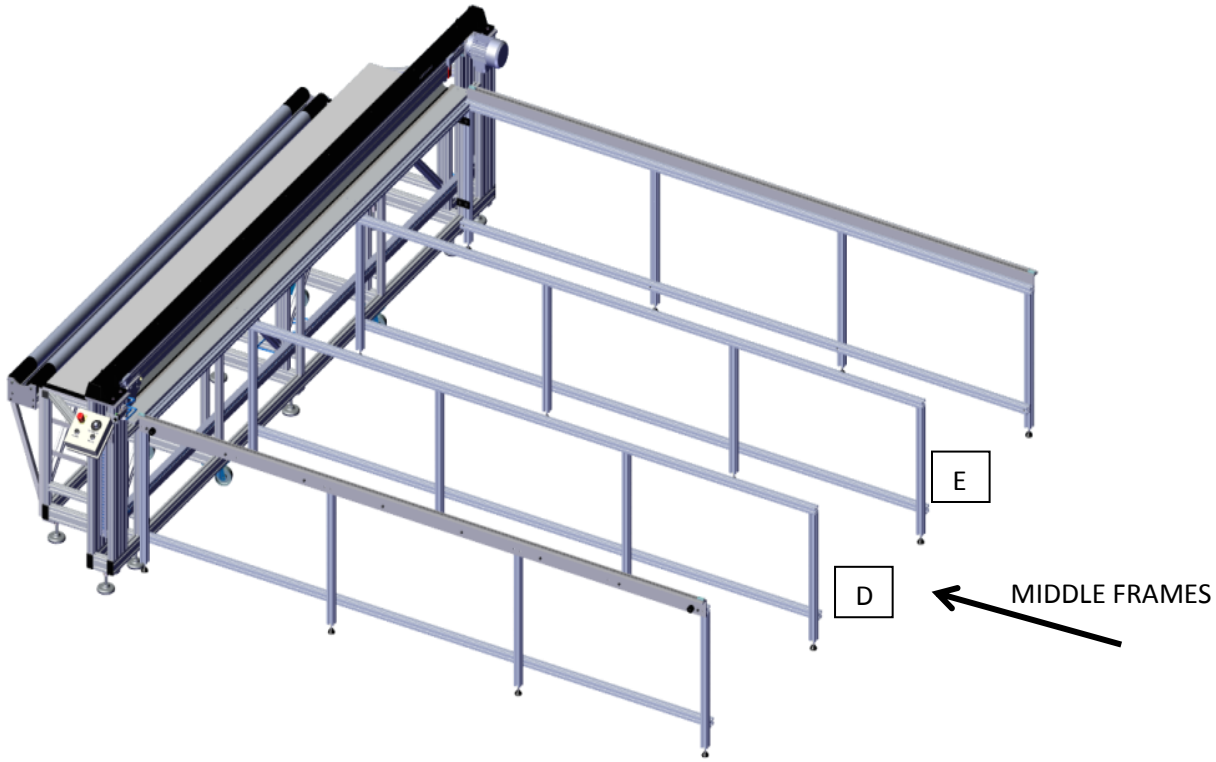
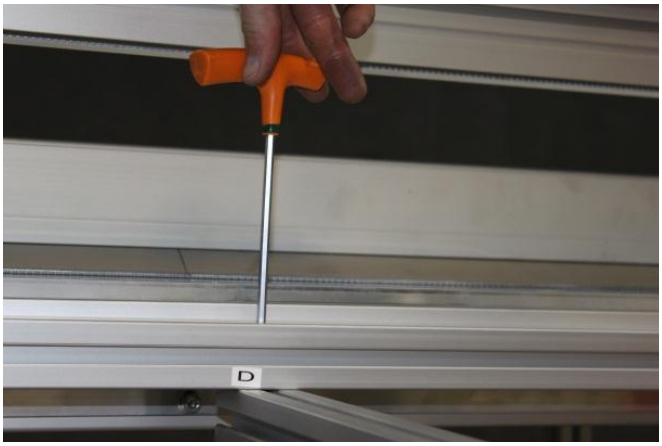


FIG 6



STEP 5 – INSERT UPPER & LOWER BRACES

I. Place the first lower cross brace (1), into position (Ref Fig 8) and follow “Lower Cross Brace Installation” steps 1-4. Ensure to follow (1) markings.

Place the table top alignment block on the upper cross brace where the middle sub-frame is positioned. Use the metal ruler to ensure that the front end assembly and the table top alignment block are level.(Refer Fig 7) (adjust levelling feet until ideal level is achieved)

II. Slide in the first upper cross brace (F), into position (Ref Fig 8) and follow “Upper Cross Brace Installation” steps 1-7. Ensure to follow (F) markings

III. Slide in upper cross brace (G). Please note: This is a double upper cross brace which sits over the adjustable feet therefore additional T nuts, washers and screws are required to secure it to the sub-frames. Ensure to follow (G) markings

IV. Place lower cross brace (2) into position and follow “Lower Cross Brace Installation” steps 1-4. Ensure to follow (2) markings.

V. Slide in upper cross brace (H), into position (Ref Fig 8) and follow “Upper Cross Brace Installation” steps 1-7. Ensure to follow (H) markings

VI. Slide in upper cross brace (I). Please note: This is a double upper cross brace which sits over the adjustable feet therefore additional T nuts, washers and screws are required to secure it to the sub-frames. Ensure to follow (I) markings

VII. Place lower cross brace (3) into position and follow “Lower Cross Brace Installation” steps 1-4. Ensure to follow (3) markings.

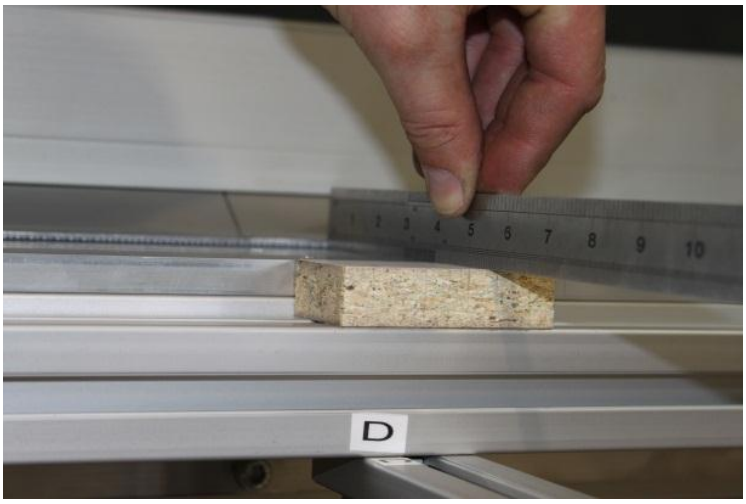
VIII. Slide in upper cross brace (J), into position (Ref Fig 8) and follow “Upper Cross Brace Installation” steps 1-7. Ensure to follow (J) markings

IX. Slide in upper cross brace (K), into position (Ref Fig 8) and follow “Upper Cross Brace Installation” steps 1-7. Ensure to follow (K) markings

X. Place lower cross brace (4) into position and follow “Lower Cross Brace Installation” steps 1-4. Ensure to follow (4) markings.

Ensure all fixing points are securly tightened before proceeding.

FIG 7



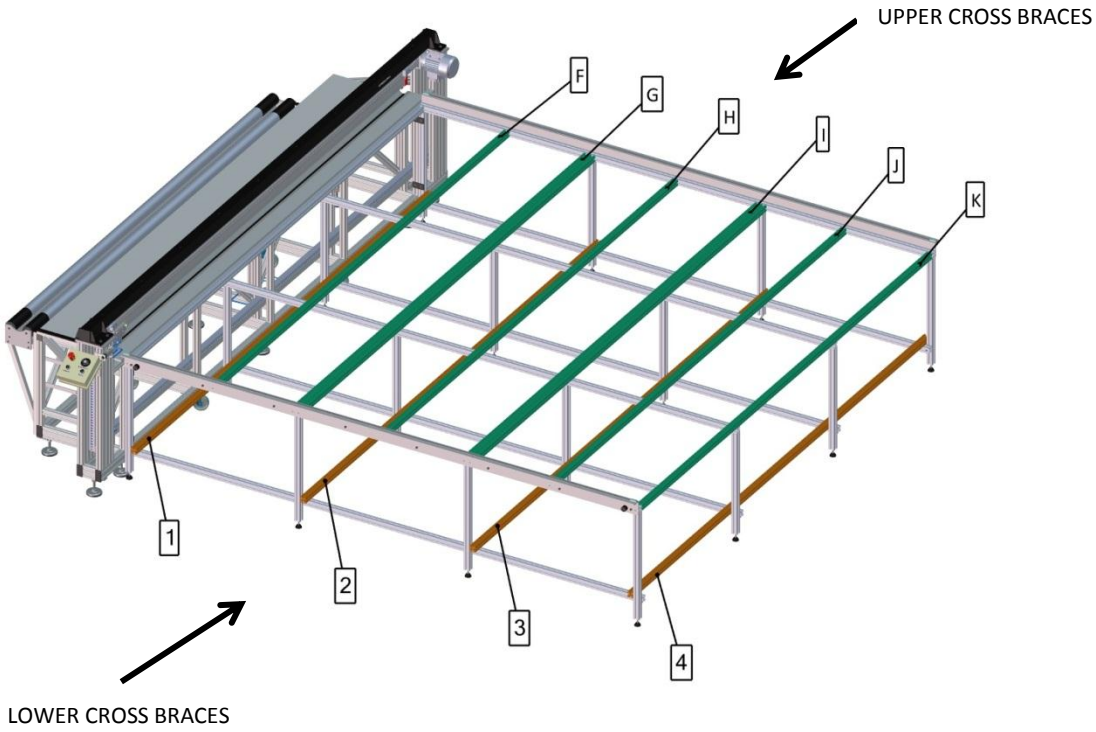
LOWER CROSS BRACE INSTALLATION

1. Insert T nuts into the marked vertical grooves of the right hand, middle and left hand sub-frames.
2. Position the lower cross brace so that the marker on the top face aligns with the marker on the right hand sub-frame.
3. Slide in a washer and then bolt into the pre-drilled holes on the front face of the lower cross brace and use the T handle hexagon key to secure the bolt, washer and T nut.
4. Repeat these steps for the remaining holes on the front face of the lower cross brace.

UPPER CROSS BRACE INSTALLATION

1. Loosen the screws on both sides of the upper cross brace. Do not loosen them too much and do not fully remove them.
2. Insert the T nuts into the top facing groove of the upper cross brace where the brace intersects with the middle sub-frames.
3. Position the upper cross brace so the screw and plates line up with the openings on the right hand and left hand sub frames and slide it towards the front end into position (Refer Fig 8). Ensure the screws do not touch the inner surface of the vertical groove as it will not slide.
4. Line up the upper cross brace with the relevant markers on the right hand sub-frame.
5. For the two middle bolts, slide a washer into the groove of the top face on the upper cross brace, so that it sits over the pre-drilled hole. Place a bolt through the washer and T nut and secure with a T handle hexagon key.
6. To secure the upper cross brace to the right hand sub-frame, insert a T handle hexagon key through the hole on the outer edge of the right hand sub-frame, hand tighten and level with metal ruler (use soft hammer to adjust level) then fully tighten the screw which is attached to the upper cross brace. (Ref Fig 4)
7. Repeat this step to secure the upper cross brace to the left hand sub-frame.

FIG 8



STEP 6 – CHECK AND ENSURE THAT THE FRAME IS SQUARE & LEVEL

Now that the back end table frame has been established, it must be checked for squareness and levelling.

I. Ensure the frame is square by using a tape measure to measure the frame from one end to the opposite end on the diagonal. Have one person hold end of tape measure into corner where sub frame meets front and the other person reads the measurement where edge angle meets the sub frame. The points from which to measure should be the outer corner of the upper cross braces where they intersect with the right and left hand sub-frames. Repeat this on the other side of the frame.

   If measurements are not equal move table gently towards the shorter measurement by half the distance of the difference.

II. Ensure the frame is levelled by using the spirit or laser level.

III. If required, make any further adjustments to the feet on the table frame to achieve an even level. (Ref Fig 10)

IV. If you are satisfied that the table frame is level, tighten the lock nuts on the adjustable feet using the 13mm spanner.

FIG.9

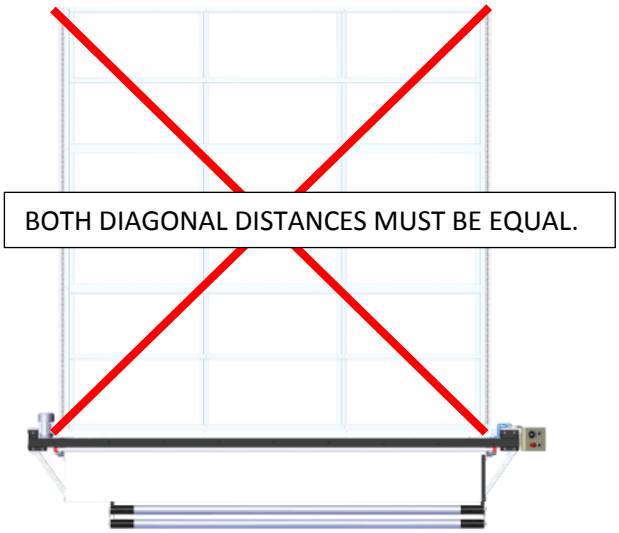
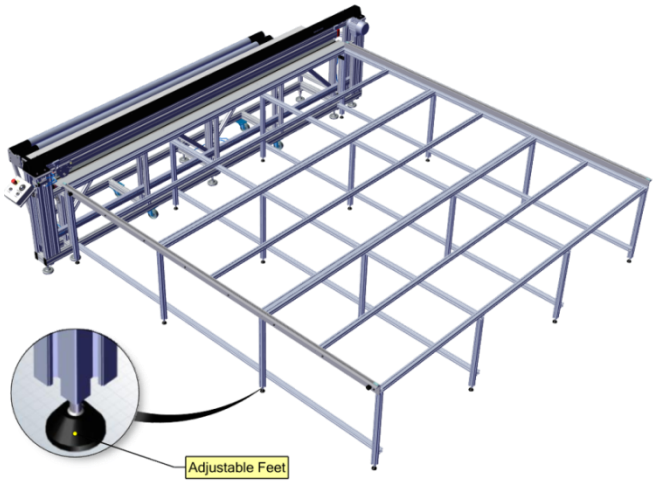
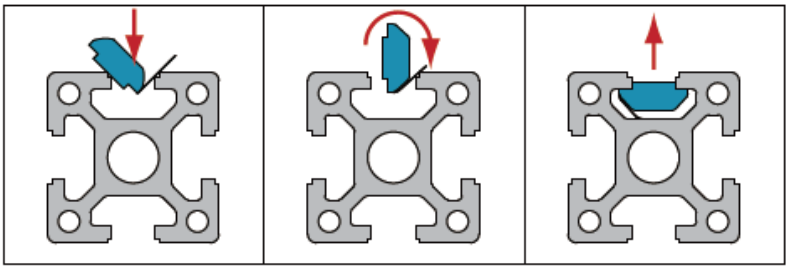


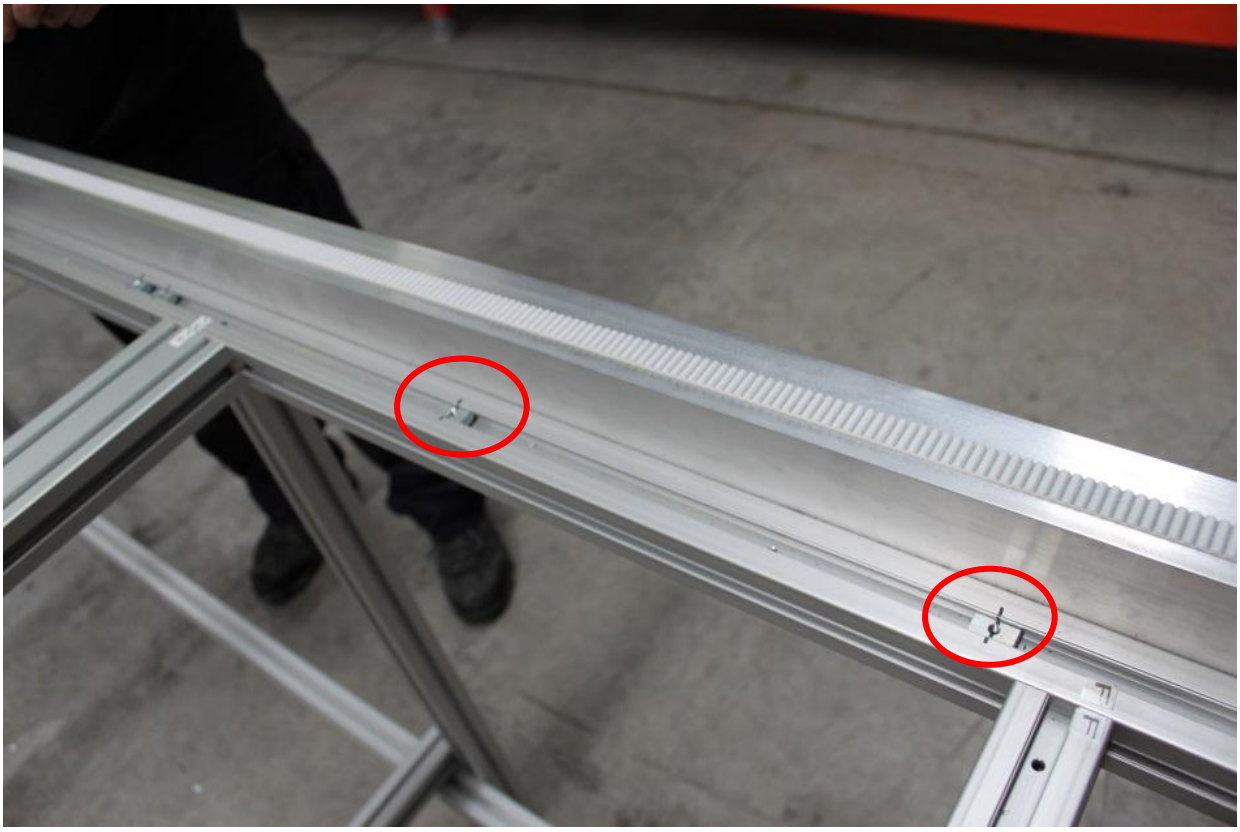
FIG.10



STEP 9 – PREPARE RIGHT HAND SUB FRAME FOR SQUARE EDGE

Prepare the right hand sub frame for installation of the squaring edge, by inserting the T nuts into the top facing groove of the right hand sub frame at the specified locations.





PART C – MANUAL BACK STOP SET UP

STEP 1 - PLACE MANUAL BACK STOP ASSEMBLY ONTO BACK END TABLE FRAME

I. Safely pick up the manual back stop assembly and place it softly onto the back end table frame (two people are required). The side with the controls should be placed on the right hand side of the back end table frame.

Back stop assembly is heavy and will require two persons to lift it!

II. Align backstop caps with blocks at end of rails.

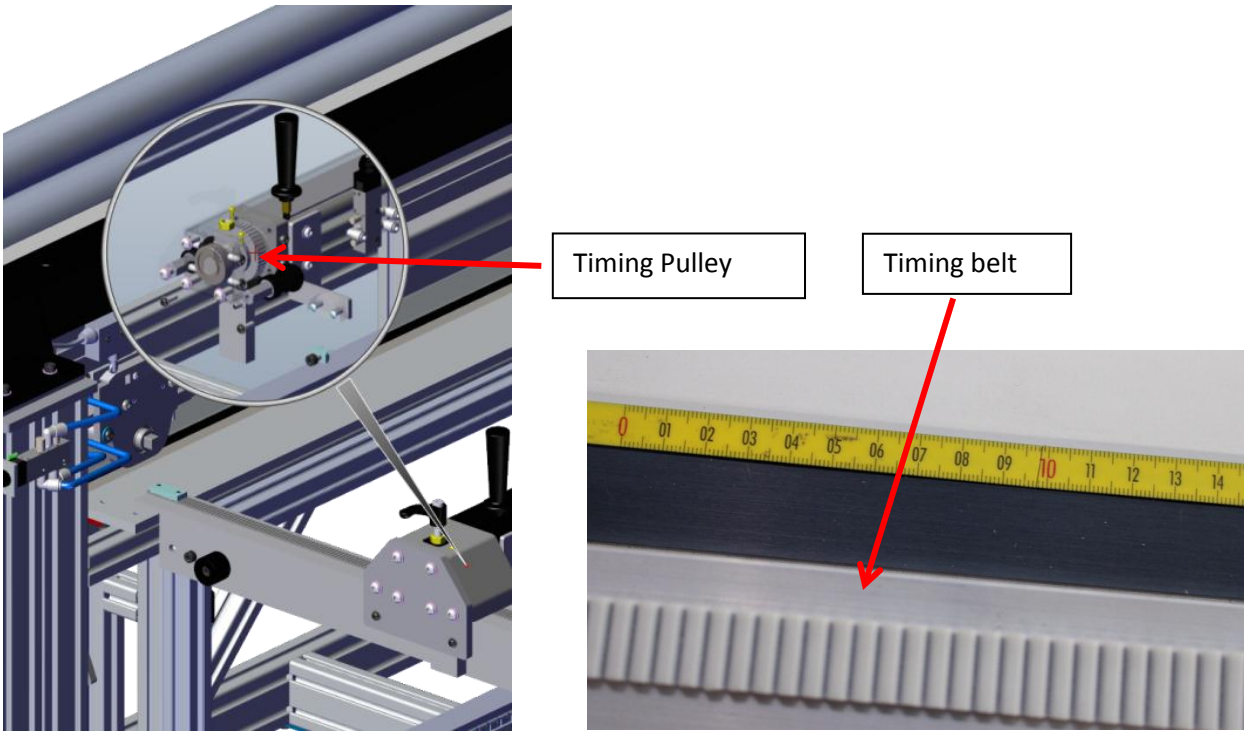
III. Ensure that the timing pulley aligns with the timing belt by using a metal ruler to check the distance from the back edge of the manual back stop assembly to the farthest edge of the back end table frame. Repeat this on the opposite end of the manual back stop. If the measurements are not the same, then the timing pulley may not be correctly aligned with the timing belt. (Refer Fig 11)

IV. If the backstop is not square, you will need to lift one end of the manual back stop assembly and place it onto the same groove on the timing belt as the other end.

V. Re-measure the distances between the back edge of the manual back stop assembly and the farthest edge of the back end table frame.

VI. Repeat these steps until an equal distance has been achieved.

FIG.11



STEP 3 – ATTACH BOTTOM ROLLER ASSEMBLY TO MANUAL BACK STOP

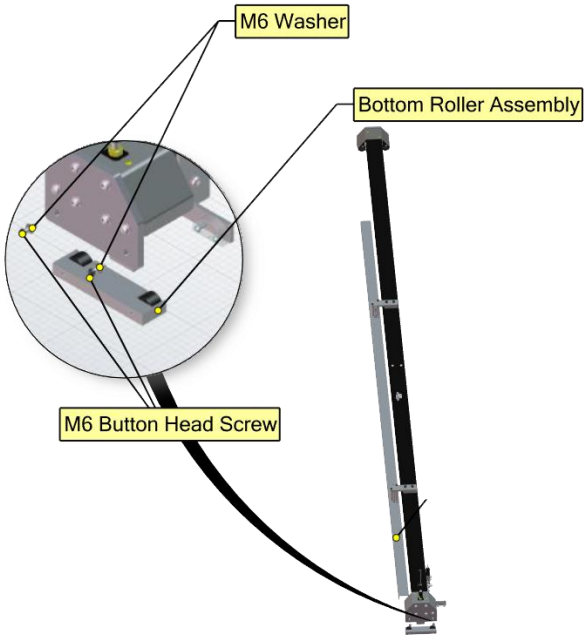
I. Starting on the right hand side, place the bottom roller assembly underneath the outer edge of the manual back stop assembly. It should sit on the outer side of the right hand sub frame with the rollers facing upwards.

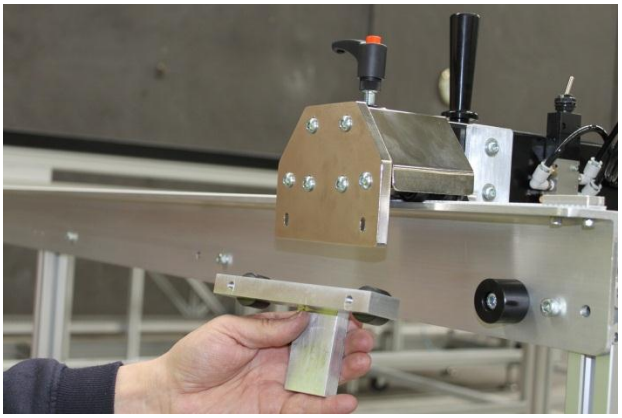
II. Line up the pre-drilled holes on the bottom roller assembly with the pre-drilled holes on the manual back stop assembly. Place an M6 washer over one of the holes on the outer face of the manual back stop assembly and insert an M6 button head screw into the hole. Loosely secure with a T handle hexagon key. Repeat this step with the second washer and screw.

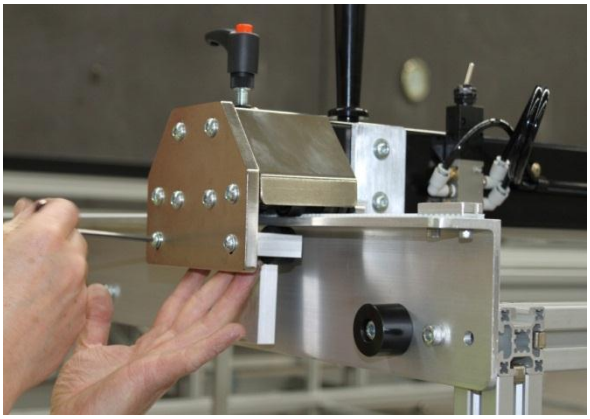
III. Repeat this sequence to attach the bottom roller assembly on the left hand side of the manual back stop assembly.

IV. To ensure that the manual back stop is moving smoothly, gently push the manual back stop towards the front end assembly until the bar on the bottom roller assemblies reaches the stoppers on the sub frames. The distance should be the same on both sides.

V. Lift up bottom roller assembly and apply very light pressure with fingers, then fully tighten the screws on the bottom roller assemblies to secure them to the manual backstop.







STEP 4 – CONNECT AIR

I. Move backstop to half way point of table top.

II. Take the black curly hose, attach one end to the connector at the bottom left of the manual back stop, and the other end to the connection on the top face of the plate attached to the lower section of the left hand sub frame. (Refer Fig 13)

III. Remove the cable ties which secure the blue hose to the front end assembly.

IV. Place the blue hose into the top facing groove (underneath the cross braces) on the lower section of the left hand sub frame. Ensure that there are no kinks in the hose.

V. Attach the blue hose to the connection on the underside of the plate on the lower section of the left hand sub frame. (Refer Fig 14)

VI. At the control side of the machine, connect the air. Ensure the main pressure regulator is at 450 kpa. (Refer technical specifications in Machine Overview) Refer Fig 16

VII. Check that the manual back stop squaring edge is operating correctly. Use the toggle switch on the control side of the manual back stop to lift and lower the manual back stop squaring edge. (Refer Fig 15)
Ensure the manual back stop squaring edge is left in the 'UP' position before proceeding.

FIG 13.

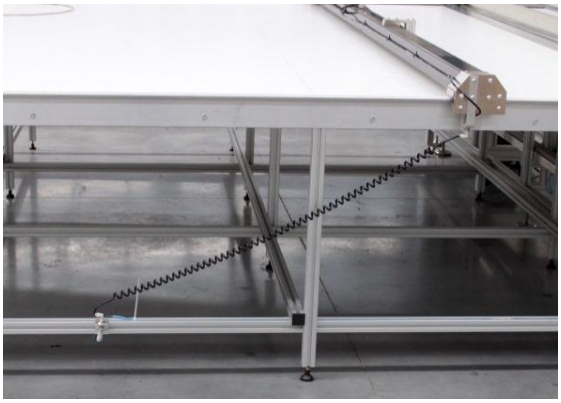


FIG 14.

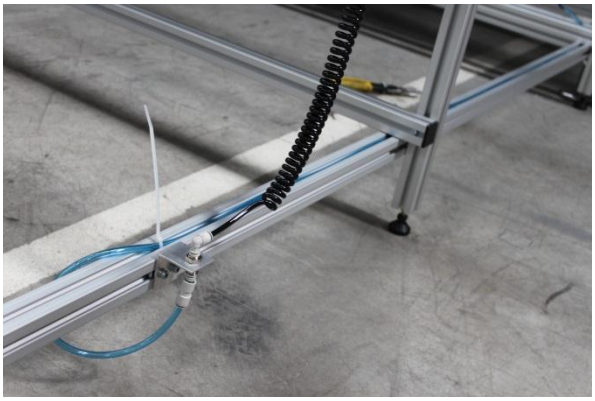


FIG 15.

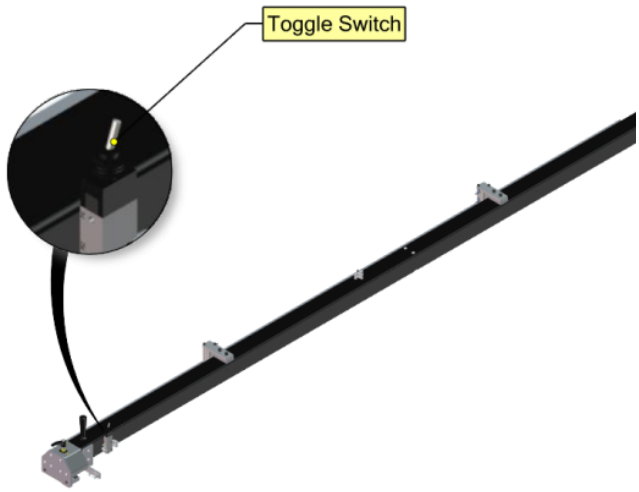
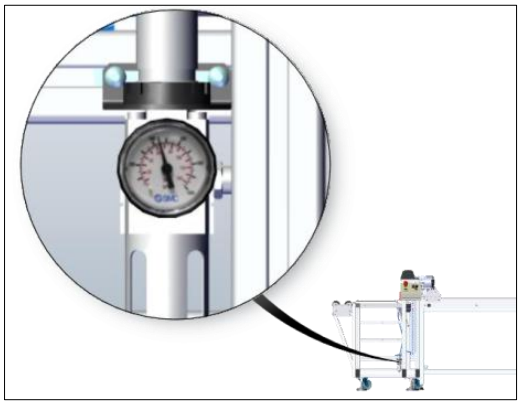


FIG 16

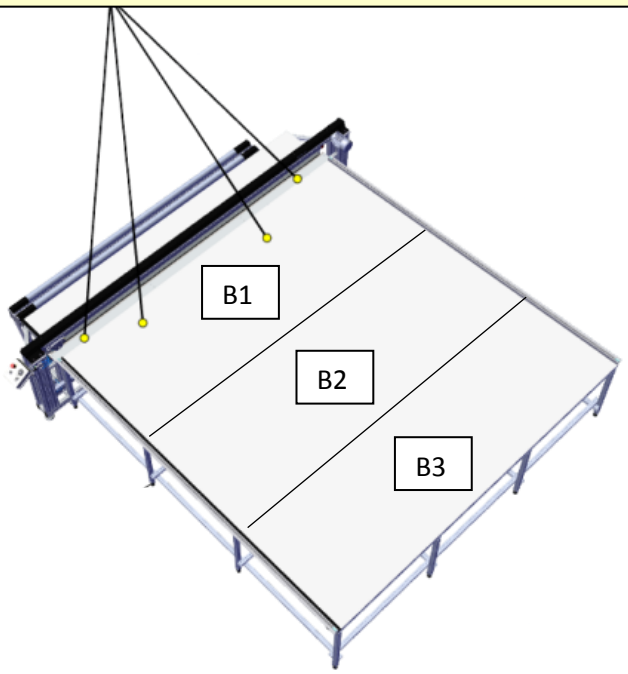


PART D – BOARDS ASSEMBLY

1. Move the manual back stop to the very back end of the table frame.
2. The first board to be inserted should be the one that sits closest to the front end assembly (B1). The boards are marked in the correct order that they should be placed. (Refer Fig 17) Four people will be required to lift and place the first board onto the table frame.
3. The board should be supported from underneath and gently lowered onto the table frame. Make sure that the board is pushed as close as possible to the front end assembly.
4. Place the second board (B2) onto table, then move backstop to front and insert last board (B3). Ensure that there are no gaps between the boards.
5. Before proceeding, ensure that the T nuts placed within the top-facing groove of the right hand & left hand sub frames are directly below the pre-drilled holes in the table boards. A hexagon key can be used to gently shuffle the T nuts into the correct position.
6. Check that the back end table top surface is level and square by using the spirit level and re-checking the diagonal measurements.

FIG 17

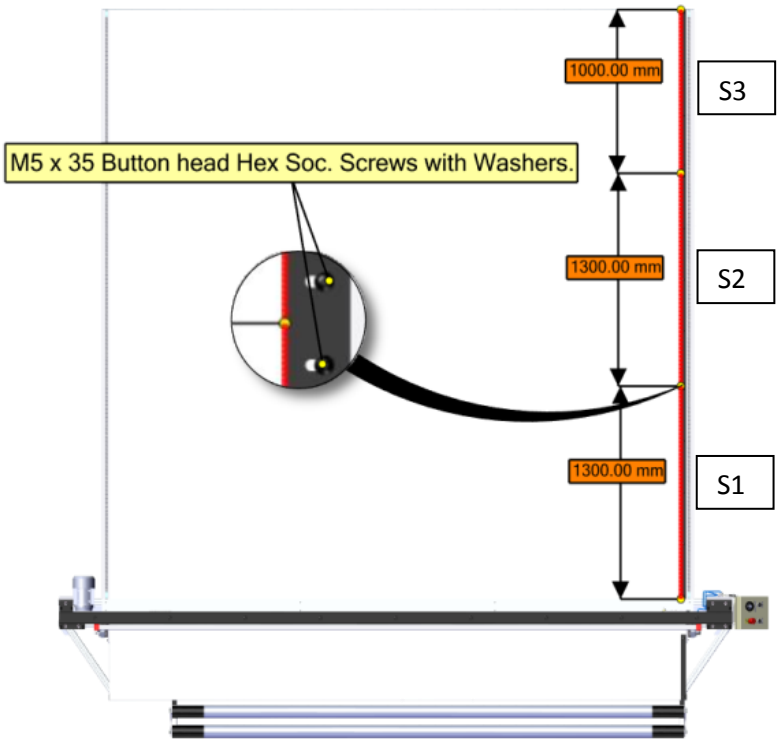
FRONT END SURFACE AND TABLE TOP SURFACE MUST LINE UP AND BE LEVEL.



PART E – OPERATOR SIDE SQUARING EDGE ASSEMBLY

1. There are three operator side squaring edge sections which make up the full length of the cutting table (identified with S1, S2 & S3 markings) Refer Fig 18.
2. Place the first squaring edge section (S1) so that the marker on the underside of the squaring edge section matches up with the marker on the top of the table (S1).
3. Position the squaring edge section, to ensure that it sits as close as possible to the front edge of the first board and the edge of the front end assembly. Ensure all bolts align.
4. Ensure the squaring edge measures 4mm away from the right hand sub frame. A hexagon key can be inserted between the squaring edge section and the right hand sub-frame to maintain the 4mm distance.
5. Lightly secure all fixings points of the squaring edge to the table board using a T handle hexagon key. Starting at the top end of the first squaring edge section, insert a washer & M5 button head screw into the pre-drilled hole.
6. If you are satisfied with the position of the first squaring edge, repeat the steps to loosely secure the second (S2) and third (S3) squaring edges to the table boards. Make sure that there are no gaps between each piece.
7. Set up a string line to ensure that the full squaring edge is as straight as possible.
8. If the squaring edge is straight, insert the remaining middle screws to fully secure the squaring edge sections to the table boards.
9. Screw down all white boards (B1, B2 & B3) using a power drill & supplied wood screws to underside of table.
10. Insert cover caps onto all exposed end of frames.

FIG 18



PART F – CUTTING TRIALS

Cutting trials must be performed to fine tune the machine settings, ensure the following before you begin;

1. Air is connected make sure that the minimum Air pressure is 450 kPa indicated on the pressure gauge
2. Power is connected and turned on
3. Emergency stop is released (turn knob clockwise to release).

INITIAL TEST CUT

4. Load the material roll (to be cut) on to the free spinning rollers.
5. Using the toggle switch on the front end assembly lift the material clamp UP. (If it is not already up)
6. Slide the material from the roll onto the front end table top and align the fabric edge to the squaring edge on the front end table. Drag the fabric under the clamp and onto the back end table ensuring that there is at least 10mm of fabric sitting beyond the cutting blade.
7. Using the toggle switch on the front end assembly clamp the material DOWN.
8. On the control box, press and hold the forward arrow button to perform the cut. Release the forward arrow button when the cut has been completed.
9. Lift the clamp UP and remove the cut material
   If the cutting blade is operating successfully, you can move to the next stage of the cutting trial.

TEST MATERIAL SQUARENESS

1. Move the back stop to the desired position and lock it in place by lightly tightening (do not use excessive force) the handle on the outer edge of the manual back stop.
2. Slide the material from the roll, drag it across the front end table, under the material clamp and onto the back end table about 50mm past clamp.
3. Ensure the material is smooth, flat and aligned with main square edge, then lower the material clamp on the front end assembly.
4. On the control box, press and hold the reverse arrow button to perform the cut. The cutter will disable automatically when it reaches the control box. Release the reverse arrow button.
5. Lift the material clamp up and move fabric on the roll away.
6. Rotate cut piece of fabric 90 degrees anticlockwise.
7. Unlock the manual back stop and move it to the correct measurement for the width of the material. Lock the manual back stop in place.
8. Align the material with the main squaring edge and allow 30-40mm of fabric to go under the back stop squaring edge.
9. Lower the material clamp.
10. Hold the forward arrow button on the control box to perform the cut. Release the forward arrow button when the cut has been completed.
11. Lift the material clamp and remove salvage, then rotate 180 degrees anticlockwise.
12. Lower the backstop squaring edge and align fabric to it. Ensure you do not use the main squaring edge line at this point.
13. Lower material clamp and press reverse cut.
14. Lift up back stop squaring edge, raise material clamp and remove salvage.
15. Unclamp backstop and move to required length position. Lock this position and leave square edge up.
16. Rotate fabric 90 degrees anticlockwise.
17. Align fabric to main square edge and position fabric under the backstop approx. 20-30mm.

18. Lower material clamp and forward cut.
19. Raise material clamp and remove salvage.
20. Rotate fabric 180 degrees anticlockwise and lower backstop squaring edge.
21. Align fabric with both main and backstop squaring edges.
22. Lower material clamp and reverse cut.
23. Release backstop squaring edge and move out of working area.
24. Release material clamp and remove salvage.
25. Check the squareness of the material by folding over the fabric so that the corners meet each other.
26. If the fabric is square, the measurements are correct and the quality of the cut is suitable, you can proceed with normal operation.

SECTION 3 – OPERATION

Prior to commencing operation, you must ensure the following;

- Power for the machine is turned on
- Emergency released
- Air is connected
- Air gauge shows minimum required pressure (refer technical specifications)
- Ensure that the machine is cleaned before and after the Working Shift.

GENERAL OPERATING PROCEDURE

1. Lift the material clamp on the front end assembly up (using the toggle switch)
2. Slide the material under the clamp allowing for initial salvage.
3. Clamp the material by lowering the material clamp on the front end assembly down, using toggle switch.
4. (If blade is in extreme left position) Use the forward arrow push button and hold it pressed in until the cutting is complete
5. Release the push button once the cutting is complete
6. Lift the material clamp on the front end assembly up (use toggle switch)
7. Slide material over the back end table up to the pre-set back stop straight edge.
8. Clamp material (Step 3)
9. Use opposite direction arrow and hold the push button until the cut is complete.
10. Lift up the clamp (Step 6)
11. Repeat the cycles to achieve the required sizes and to produce the trimmed fabric to your requirements.

⚠ Important: Before commencing cutting, ALWAYS line up the fabric edge with the squaring edge on the back end table and or front end table if fabric is from the roll.

SECTION 4 – TROUBLESHOOTING

No.	PROBLEM FACED	REQUIRED ACTIONS	
1	Machine does not start	Check Material Clamp	Select 'down' on the selective Switch.
		Check the power connection	Ensure that there is power supply and is turned on.
		Check the air connection	Ensure pressurized air is flowing correctly.
		Check the emergency stop	Ensure the emergency stop is released
2	Clamps do not Clamp or unclamp	Check the air pressure and connections to the pneumatic cylinders located on either side of Material clamp.	Ensure that there is enough pressure and the connection is leak proof.
		Check the clamping pad on the clamp	If worn out may require replacement contact ACMEDA.
3	Squaring edge on back stop does not move up or down.	Check the air pressure, connectors and the cylinders	Ensure that the connectors are in position and there is air pressure and cylinders are OK.
4	Cutting quality is poor	Check the blade is damaged or worn out	If blade is worn out or damaged, it will require a replacement or a regrind check with Acmeda.
		Check the Cut base if there is a groove or damage it may need replacement	Contact ACMEDA with the details.
5	Cutting is intermittently poor	Check clamping at the area where the cutting is poor. Use a small piece of fabric put it under the clamp at that particular area and clamp it and try pulling the fabric to see if clamping is good or not.	If Clamping is not holding the fabric at that particular area, check the Rubber padding for any wear, if Rubber pad is intact the clamp will need a little tweaking so that the clamp holds the fabric correctly.
6	Material cut is out of square	Re-check cutting trial procedure.	If cut is still not square, contact your Acmeda representative.

SECTION 5 – MAINTENANCE

PART A – OPERATING CARE

A large responsibility of the safer and successful operation depends upon the owner and the operators, following are some of the guidelines about caring for the machine to ensure safer and trouble free operation,

1. Ensure that the operator is fully trained and is aware of the functions and limitations of the machine
2. Ensure that the machine and operating area is always maintained clean and any unwanted material is immediately removed from the machine.
3. Do not drop the material from any height onto the table, this will cause destabilization problems and machine may fail to perform to the expectations and may incur expensive servicing.
4. Do not leave the material roll up tube on the table; it can become an obstruction for Backstop movement.
5. Do not stack any material under the tables as this may turn into a hazard and lead to the risk of tripping and falling.
6. Ensure that the cutter is properly cleaned and maintained without any marks or indents.
7. Cutters and cutter head must be regularly checked to ensure smoother quicker cutting operation. In case if the cutter is worn or has developed any indentations or similar marks, it needs to be either replaced or re-sharpened, if this is the case, using the spare parts listed at the annex please contact ACMEDA.
8. Checking all the safety functions and ensuring that the safety functions are working well will ensure a very safe operation.
9. Regular maintenance is recommended to be done once every year.

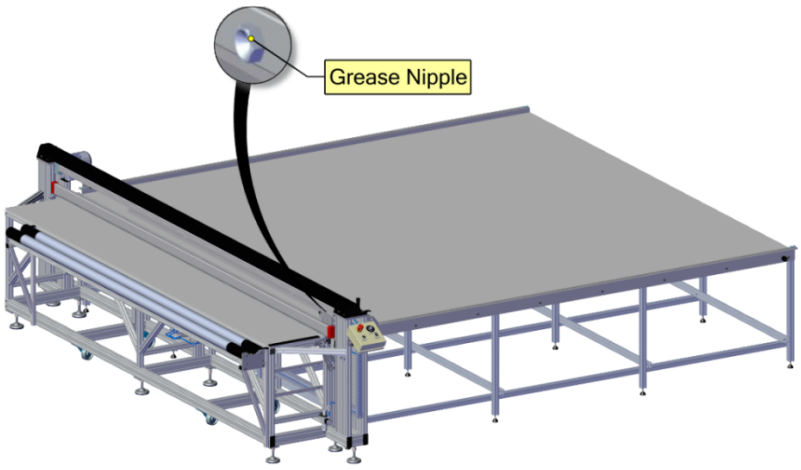
PART B – SERVICING

Ensure that the machine and machine surroundings are clean.

1. Check the levelling of the Front End Assembly and Back End Assembly.
2. Remove the Cutter Head and check the movement of the linear drive.
3. Using the pneumatic air nozzle blow the dust out of the linear drive.
4. Check for the belt wear if the belt is worn out, it will need a replacement, in which case follow the procedure to replace the Belt for Drive.
5. Using the grease gun grease the linear drive at the grease nipple, light greasing should be adequate, do not put too much grease. Refer below for grease nipple location.

Recommended Grease Specifications:

Kluberplex BEM 34-132 is used in our drives, it is strongly recommended to use the same grease.
Material safety Data Sheet is attached at the appendix.



PART C – REPLACEMENT PARTS

BLADE REPLACEMNET PARTS

One of the main parts that will require replacement is the blade, blade forms one of the parts of the cutting head. Cutting head is attached to the linear drive. (Refer Fig 20)
To order spare parts Refer Fig 21 to identify part and code numbers.

FIG 20.

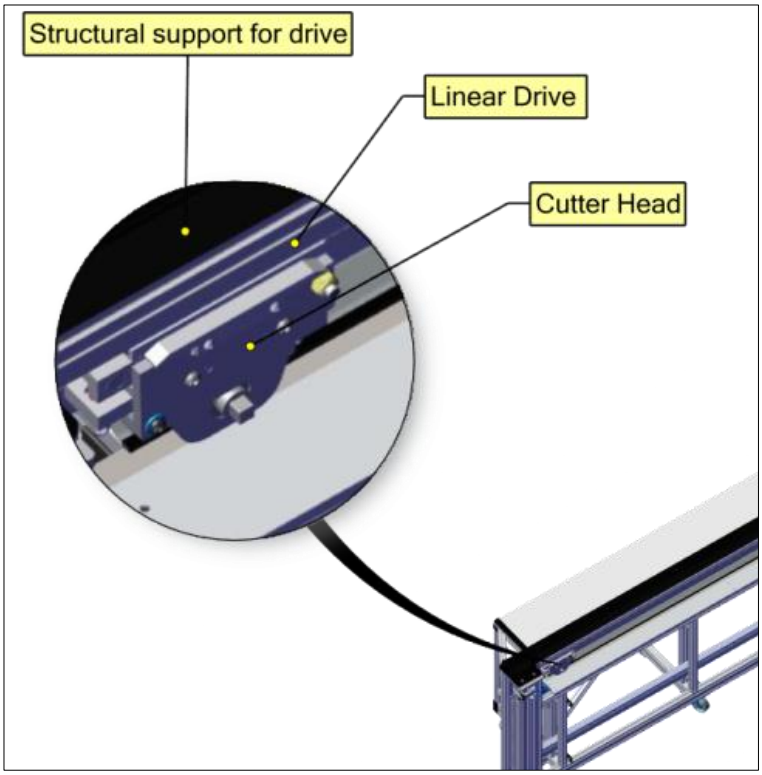
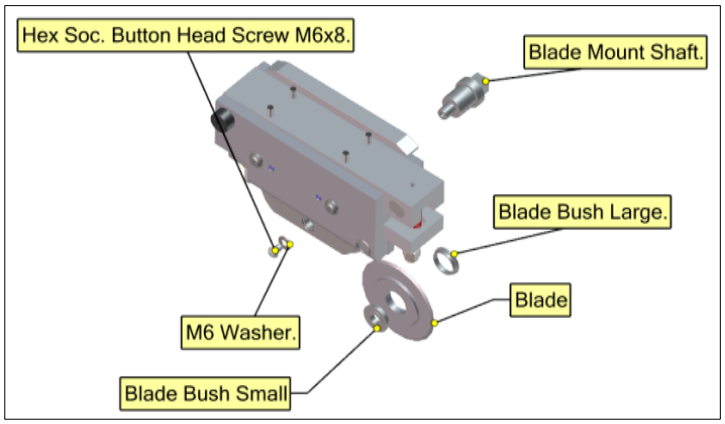


FIG 21.



DESCRIPTION	PART NUMBER
Hex. Soc. Head Screw M6 x 8	TM92-BHZP-0M6008
Blade Mount Shaft	TM91-CT36-201640
Blade Bush Small	TM91-CT36-052510
Blade Bush Large	TM91-CT36-052520
Blade	TM91-CT36-062278

DRIVE UNIT REPLACMENT PARTS

FIG 22.

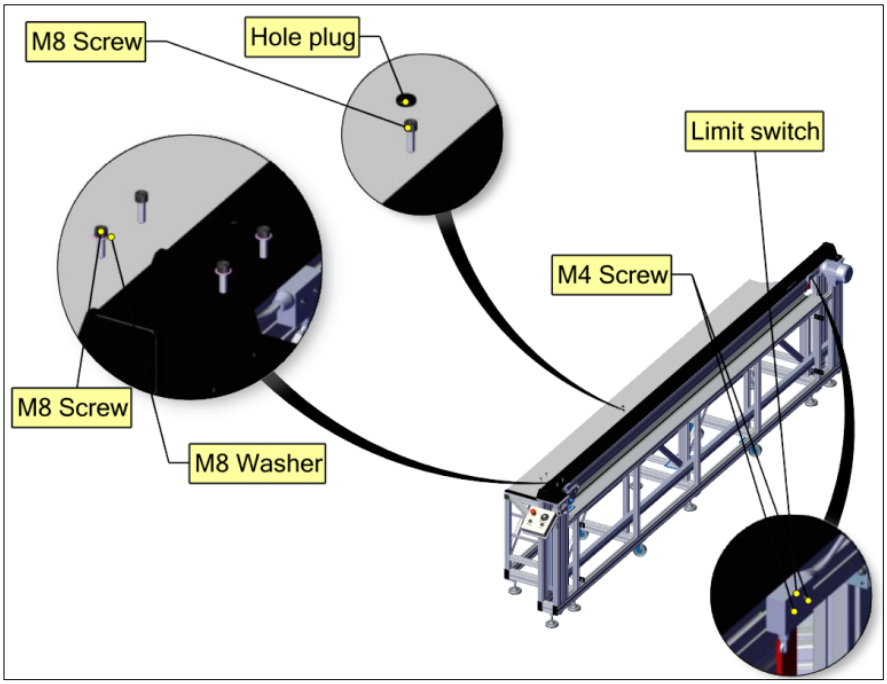
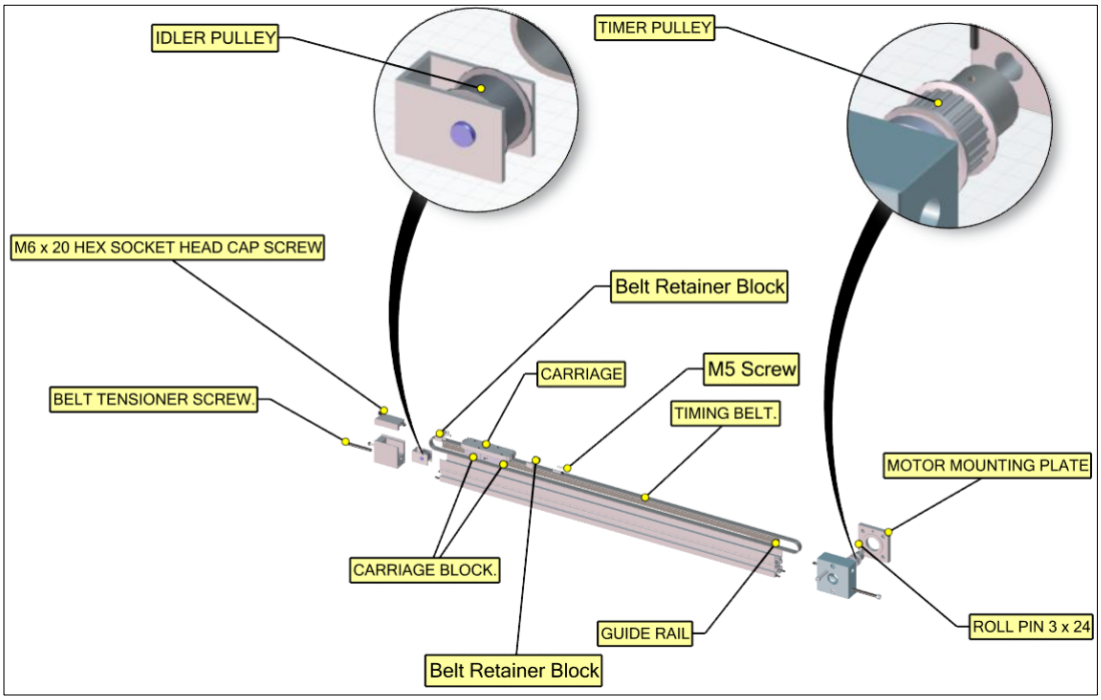


FIG 23.



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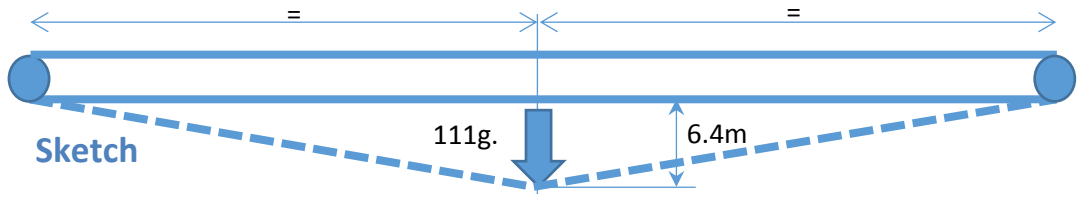
DESCRIPTION	PART NUMBER
LIMIT SWITCH	TM94-ELEC-TZ7311
HOLE PLUG	TM93-9058-00CBG4
TIMING BELT	TM94-4200-16AT5M (8m
ROLL PIN	TM92-RPIN-003024
CARRIAGE BLOCK	TM93-BLOC-MSA15S
BELT RETAINER BLOCK	TM91-LDRV-081235

BELT REPLACMENT PROCEDURE

If the belt has to be replaced following procedure must be followed,

1. Pre arrange a position to put the complete drive assembly with the structure (Ideally on two timber blocks with a rag on the front end table).
2. Undo M4 screws on the limit switch and remove the switch, do it for both limit switches.
3. Undo M8 screws and remove screws with washers at both ends of the structure. (Before removing the screws it will be ideal to mark the position of the structure so that it can be located exactly in the same position).
4. Two persons should lift up the drive assembly and drop it onto the pre-set location.
5. Using a small plastic or soft tool remove the Hole plugs (Refer Fig 22**Error! Reference source not found.**) and using long hex key remove the M8 screws (there are 7 screws) care must be taken not to drop the drive.
6. Next the belt retainer blocks must be removed by undoing the M5 screws.
7. Now the belt will be free to be pulled from one end, however to replace with the new belt, it is important to remove the pulley sub-assemblies at both the ends, (idle pulley sub-assembly and the timing pulley sub assembly, they are located on the roll pins)
8. Push the belt through the timing pulley assembly and ensure that the timing pulley matches correctly with the timing pulley, slide the belt through the profile extrusion pull it from the other end insert into the idler pulley assembly and drag the belt out. (Belt provided is longer than actual length)
9. On one side line up the belt with the groves on the block and assemble the belt retainer block and tighten the screws.
10. On the idler end, there is a tensioner screw; this screw as it gets tightened will increase the tension in the belt, engage this screw and ensure this screw is not tightened. Keep the belt to the slackest position.
11. Now drag the belt and assemble the belt retainer block try and put initial tension on the belt.
12. Belt tension can be tested after completing assembly reverse the unit so the belt is facing downwards and at 111grams of load at exactly in the middle (Between the pulleys) the belt should deflect by 6.4mm.
13. Ensure that the belt tension is adequate (inadequate tension will result in poor cutting). If necessary further adjust the tension using the tensioner screw.

FIG. 24



BLADE REPLACMENT PROCEDURE

1. Shut down the power & remove power cord.
2. Ensure the Air is available and clamp is in lifted condition making sure that the air supply will not be cut off accidentally.
3. Using 13mm Ratchet spanner tighten the Nut to compress the spring, keep tightening up until spring is fully compressed
4. Next hold on 13mm square as shown on Fig 25.
5. Undo M6 screw using 4mm T Handle Hex Key and remove the screw and the washer with the screw.
6. Pull out the pin.
7. The blade must drop with the bushes, just roll out the blade towards the end until it is free to remove. Unit must be at home position for blade to be removed.
8. Remove the bushes from the Blade
9. Re insert the bushes into new blade, ensure bushes are fully pressed in.
10. Slide the Blade with the bushes back into the cutting head (Orientation is critical, the small bore bush must be towards the screw side or else the shaft cannot be inserted)
11. Insert the shaft (Slight juggle or lift on blade may be required to align the blade bush bore with the shaft once aligned shaft will slide in easily)
12. Ensure that the shaft is fully in, put the screw (With washer)
13. Hold the shaft end with the 13mm Spanner and tighten the screw fully.
14. Using the 13mm Ratchet spanner, release the spring fully.

FIG. 25

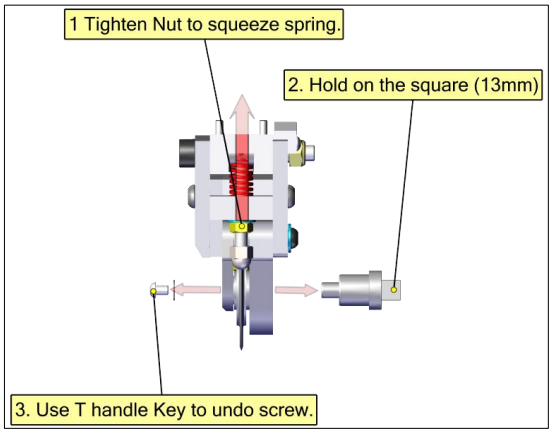


FIG. 26

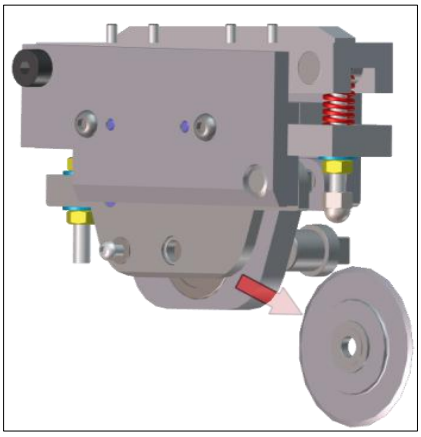


FIG. 27

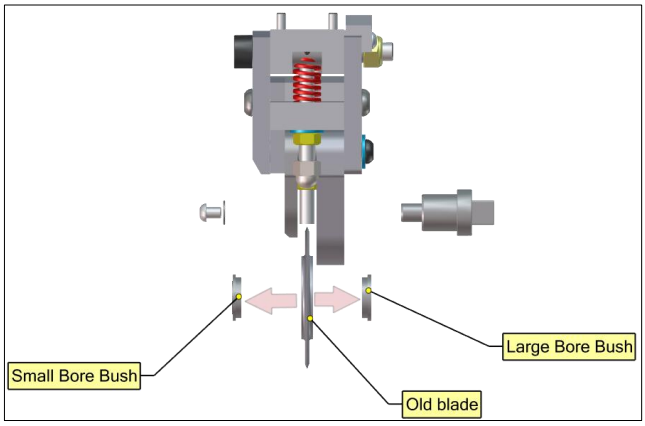
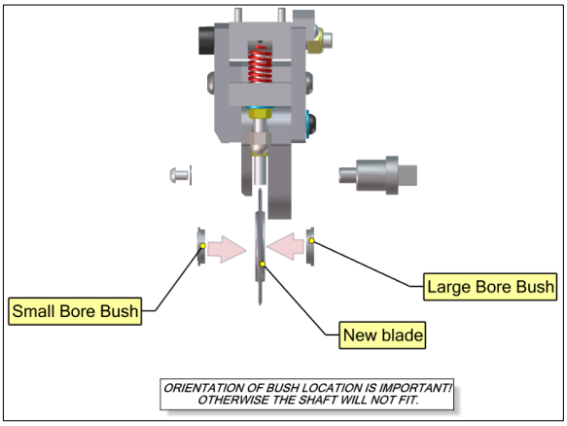
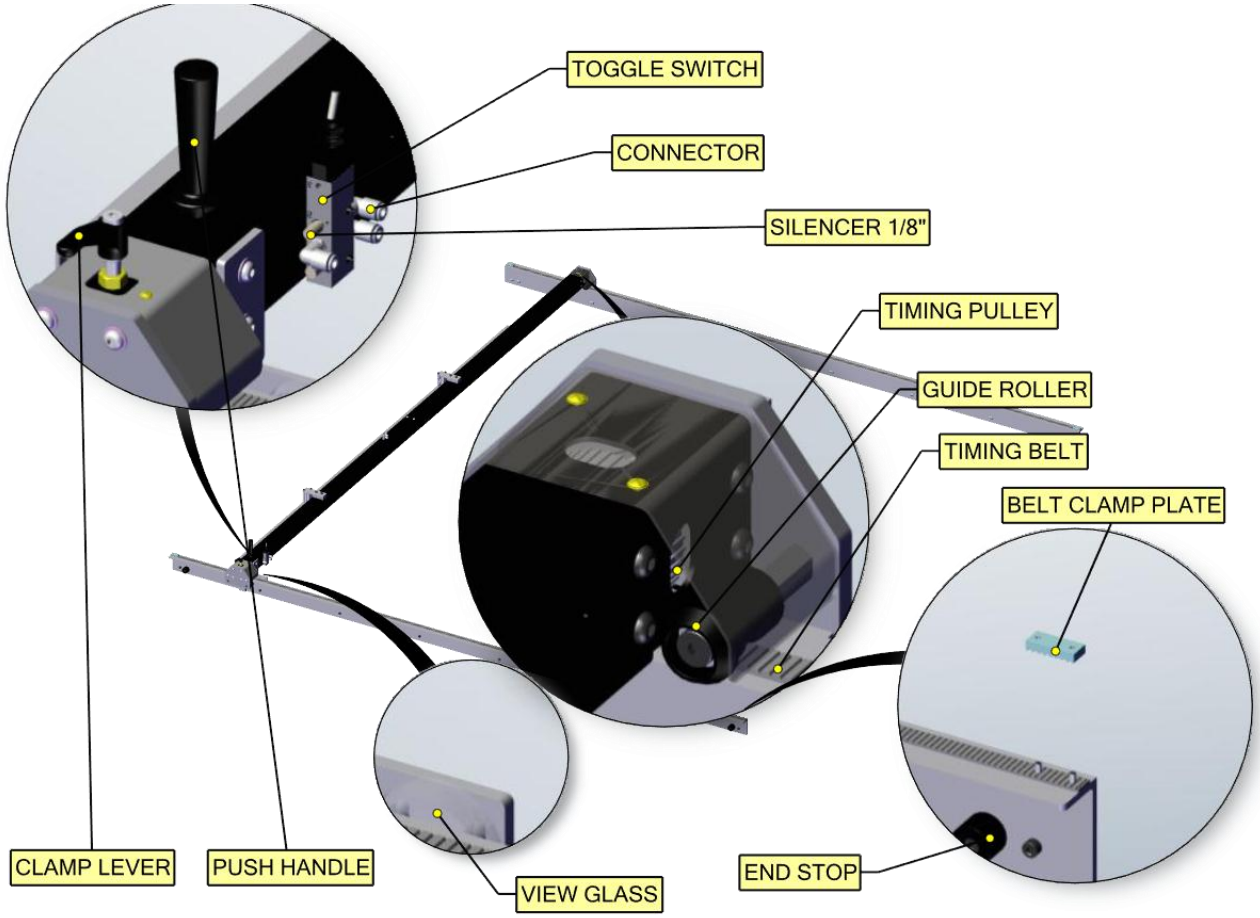


FIG. 28



MANUAL BACK STOP REPLACEMENT PARTS

FIG. 29



DESCRIPTION	PART NUMBER
TOGGLE SWITCH	TM94-FM01-SMC003
CONNECTOR	TM94-KQ2L-601SX2
SILENCER 1/8”	TM94-3900-SMC010
TIMING PULLEY	TM91-FLMS-027AT5
GUIDE ROLLER	TM91-FLMS-003086
TIMING BELT	TM91-CT36-FLMSAT
BELT CLAMP PLATE	TM91-FLMS-016AT5
END STOP	TM91-CT36-FLMS34
VIEW GLASS	TM93-3900-008020
PUSH HANDLE	TM93-FLMS-020311
CLAMP LEVER	TM93-ELSA-0M1040

SECTION 6 – REFERENCES

Following standards, Acts, directives have been referenced during design and manufacturing of this product,

1. AS 4024-2006
2. EU Directive 2006/42/EC
3. Occupational Health and safety regulations 2007 (Australian Act).

Supplies from following companies have been used in building this product.

- KLUBER LUBRICATION
- PIES LINEAR AND ROTARY MOTION CONTROL
- (LENZE) FCR MOTION TECHNOLOGY.
- SMC PNEUMATICS (AUSTRALIA) PTY LTD.

Klüberplex® BEM 34-132
Safety Data Sheet

1.1 Product name: Klüberplex BEM 34-132
Code-No.: 017 141
25.06.1999

1.2 Klüber Lubrication München KG
Geisenhausenerstraße 7
D-81379 München
Tel. ++49 - 89 78 76 - 0 telephone exchange
Fax: ++49 - 89 78 76 - 333

Emergency telephone no.:
++49 - 89 7876 - 0

2. Composition / information on ingredients
Chemical characterization (preparation): Synthetic hydrocarbon oil, mineral oil, special calcium soap, polyurea
Additional information: No hazardous ingredients

3. Hazards identification
No particular hazards known

4. First aid measures
After inhalation: Not applicable
After contact with skin: Wash off with soap and plenty of water
After contact with eyes: Rinse with plenty of water
After ingestion: Do not induce vomiting. Obtain medical attention
Advice to doctor: Treat symptomatically

5. Fire-fighting measures
Suitable extinguishing media: Water spray, foam, dry powder, carbon dioxide (CO_2)
Unsuitable extinguishing media: High volume water jet
Special Hazards: In case of fire the following can be released: Carbon monoxide, hydrocarbons
Special protective equipment for firefighters: Standard procedure for chemical fires
Additional information: Water mist may be used to cool closed containers. In the event of fire and/or explosion do not breathe fumes

6. Accidental release measures
Personal precautions: Not required
Environmental precautions: Do not flush into surface water or sanitary sewer system
Methods for cleaning up / taking up: Use mechanical handling equipment. Dispose of absorbed material in accordance with the regulations
Additional information: None

7. Handling and storage
Advice on safe handling: No special handling advice required
Advice on protection against fire and explosion: No special precautions required
Requirements on storage rooms and vessels: No special storage conditions required
Incompatible materials: Incompatible with oxidizing agents. Do not store together with food
Further information on storage conditions: Store at room temperature in the original container

8. Exposure controls / personal protection
Additional advice on system design: Not applicable
Ingredients and specific control parameters: None
Respiratory protection: No special protective equipment required
Hand protection: No special protective equipment required
Eye protection: No special protective equipment required
Body protection: No special protective equipment required
Other protection measures: No special protective equipment required
General protection and hygiene measures: Avoid prolonged and/or repeated contact with skin. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream

9. Physical and chemical properties

Form	paste
Colour	light brown
Odour	characteristic
Drop point	> 220 °C, DIN ISO 2176
Flash point	> 200 °C (base oil)
Flammability	not applicable
Ignition temperature	not applicable
Autoflammability	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure-first	not applicable
Density	approx. 0.9 g/cm^3, 20 °C
Water solubility	insoluble
pH value	not applicable
Kinematic viscosity	not applicable
Further information	none

10. Stability and reactivity
Conditions to avoid: None
Materials to avoid: Strong oxidizing agents
Hazardous decomposition products: None under normal use
Additional information: None

11. Toxicological information
The toxicological data has been taken from products of similar composition
Acute toxicity: LD_{50}/oral/rat = > 2 g/kg (literature data)
Chronic toxicity: None
Human experience: Prolonged skin contact may cause skin irritation and/or dermatitis

12. Ecological information
Information on elimination (persistence and degradability): Product is insoluble in water. May be separated out mechanically in purification plants
Behaviour in environmental compartments: Ecological injuries are not known or expected under normal use
Ecotoxic effects: Aquatic toxicity is unlikely due to low solubility
Additional information: Should not be released into the environment

13. Advice on Disposal
Disposal: Can be incinerated, when in compliance with local, state and federal regulations
Dispose of contaminated packaging and recommended cleaning: Offer rinsed packaging material to local recycling facilities

14. Transport information

GGVS / GGVE:	not applicable
ADN / ADNR:	not applicable
IMDG-Code:	not applicable
ICAO / IATA-DGR:	not applicable

Further information: Not classified as dangerous in the meaning of transport regulations

15. Regulatory information
Labelling according to EU-guidelines: The product does not require a hazard warning label in accordance with EC-directives/German regulations on dangerous substances
National regulations

16. Other information
Issue-department of Safety Data Sheet: Chemical Documentation, Tel.: ++49 - 89 7876 - 564

Klüber Lubrication München KG
Postfach 70 10 47, D-81310 München
Tel. (0 89) 78 76-0, Telefax (0 89) 78 76-333

ACMEDA ENGINEERING

ACMEDA
(ENGINEERING)

110 Northcorp Boulevard
Broadmeadows VIC 3047.
Phone: 03 9355 0100
Fax: 03 9355 0110

Risk Assessment Report For 3200 Series Cutting Table

Introduction:-

Due to market demand and an opportunity to introduce a low cost entry level product, in line with ACMEDA's continuous improvement plan to expand the product range, a new product has been developed and introduced into the market. As part of the new product development procedure risk assessment was performed iteratively within ACMEDA, to ensure that the product complies with the design intent and Australian Standard, AS4024. With the objective of minimizing the risks and make the product safer to operate, risk analysis was conducted using FMEA technique, evaluating every critical component/sub-assemblies and overall assembly, to prevent the failures and to minimize the risks.

Risk evaluation is performed to comply with the Australian Standard, AS 4024-2006. A team consisting of experienced Technicians, Engineer, Engineering Manager and customer/operator has been selected in identifying the hazards and evaluating the risks. This report is based on the final outcome of the risk analysis.

Risk Analysis Process:

Risk analysis was conducted based on (AS 4024), within the guidance of predefined limits and intended purpose of the product. A team was selected, prepared to perform the risk analysis. The team consists of an Engineer (leading the process of the Risk Analysis), Technicians involved in the construction of the product, Engineering Manager (Defining the limits and intended purpose of the product) Customer End user, to provide with the valuable suggestions and incidence experiences from the past. Acmeda's past history was also considered during the process of the Risk Analysis.

The process of Risk analysis was done under following steps, within the guidelines of AS 4024.

1. Identification of hazards
2. Identification of risks based on each Hazard on each of the critical components.
3. Each risk was evaluated with a severity of Occurrence, control measures and the probability of occurrence.
4. Risk was evaluated by computing a risk priority number for each associated risk.
5. A matrix was used to determine to evaluate the level of residual risks.
6. Where the risks were not in the safest zone, appropriate actions have been taken to put controls so that the RPN is in the lowest possible level.

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Following Assumptions were made during the assessment:

1. Operator is physically and mentally fit with an average build.
2. Operator is fully trained to operate the machinery in accordance with ACMEDA's recommendations.
3. Machine is installed within the guidelines and recommendations of ACMEDA.
4. It is assumed that the Industry standard safety measures are in place.
5. It is assumed that the machine is not deliberately misused.

Result of Final Risk Analysis:-

Following table displays the final result of the Risk Analysis Which indicates that the risk levels are at minimal level. The Result is assessed to ensure the product complies with AS 4024-2006 and the safety category is class 1.

TABLE 1

ITEM No.	DESCRIPTION	CODE	HIGHEST RPN	RISK RANK	Comments
1	Manual Back Stop Assembly	TM10-CT36-FLMS36	4	Low	Complies
1.1	Belt and Angle Assembly (RH-Operator Side)	TM10-CT36-FLMS51	4	Low	Complies
1.2	Belt and Angle Assembly (LH Motor Side)	TM10-CT36-FLMS50	4	Low	Complies
1.3	Back Stop Cross Bar Assembly	TM10-CT36-FLMS75	4	Low	Complies
1.3.1	Drive Shaft	TM10-CT36-FLMS21	2	Low	Complies
1.3.2	Cross bar with Nutserts	TM10-CT36-FLMSNT	4	Low	Complies
1.3.3	Roller Assembly	TM91-CT36-FLMS55	4	Low	Complies
1.3.4	View Lens Assembly.	TM10-FLMS-650100	2	Low	Complies
1.3.5	Handle (Push/Pull)	TM93-FLMS-020311	2	Low	Complies
1.3.6	Clamp Lever (Ergo Style Handle –Elesa)	TM93-ELSA-0M1040	2	Low	Complies
2	Front End	TM10-CT36-618360	8	Low	Complies
2.1	Front End Table Frame	TM10-LB40-000498	4	Low	Complies
2.2	Drive Support Bridge	TM10-CT36-075200	8	Low	Complies
2.2.1	Drive Support Weldment	TM10-CT36-075160	4	Low	Complies
2.2.2	Drive Support Frame RHS	TM10-CT36-000500	4	Low	Complies
2.2.3	Drive Support Frame LHS	TM10-CT36-000501	4	Low	Complies
2.2.4	Linear Drive CT-3600	TM10-CT36-LDRV36	4	Low	Complies
2.3	Base Frame 3600 x 618	TM10-CT36-BF3600	4	Low	Complies
2.4	Horizontal Clamp Assembly	TM10-CT36-HB3705	4	Low	Complies
2.5	WHMR 18mm thick 493x3600 Board	TM93-CT36-183600	8	Low	Complies
2.6	Duct support angle assembly	TM10-CT36-040403	4	Low	Complies
2.7	Complete Cutting Unit Assembly	TM10-CT36-040170	4	Low	Complies
3.0	Material Rollers Assembly	TM10-CT36-MR3200	2	Low	Complies

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4.0	CT-36 Electricals	TM10-CT36-NAW001	8	Low	Complies
5.0	CT 36- Pneumatic Circuit	TM10-CT36-SMC001	4	Low	Complies

Conclusion:-

The Risk Analysis evaluation confirms that the product complies with the targeted requirements of Standards and [1]meets Safety Category 1 (Determined as per AS-4024 – 1501 Appendix C).

REFERENCES:

- AUSTRALIAN STANDARD – AS 4024-2006.
- PREVIOUS RISK ASSESSMENTS FOR SERIES 4200, 3900 AND 200 SERIES HOIST.

APPENDIX

With reference to AS4024.1501-2006 (Appendix C Guidance for selection of categories)

The Standard defines the behavior of the safety related parts in the event of a failure:

[1] Refer APPENDIX.

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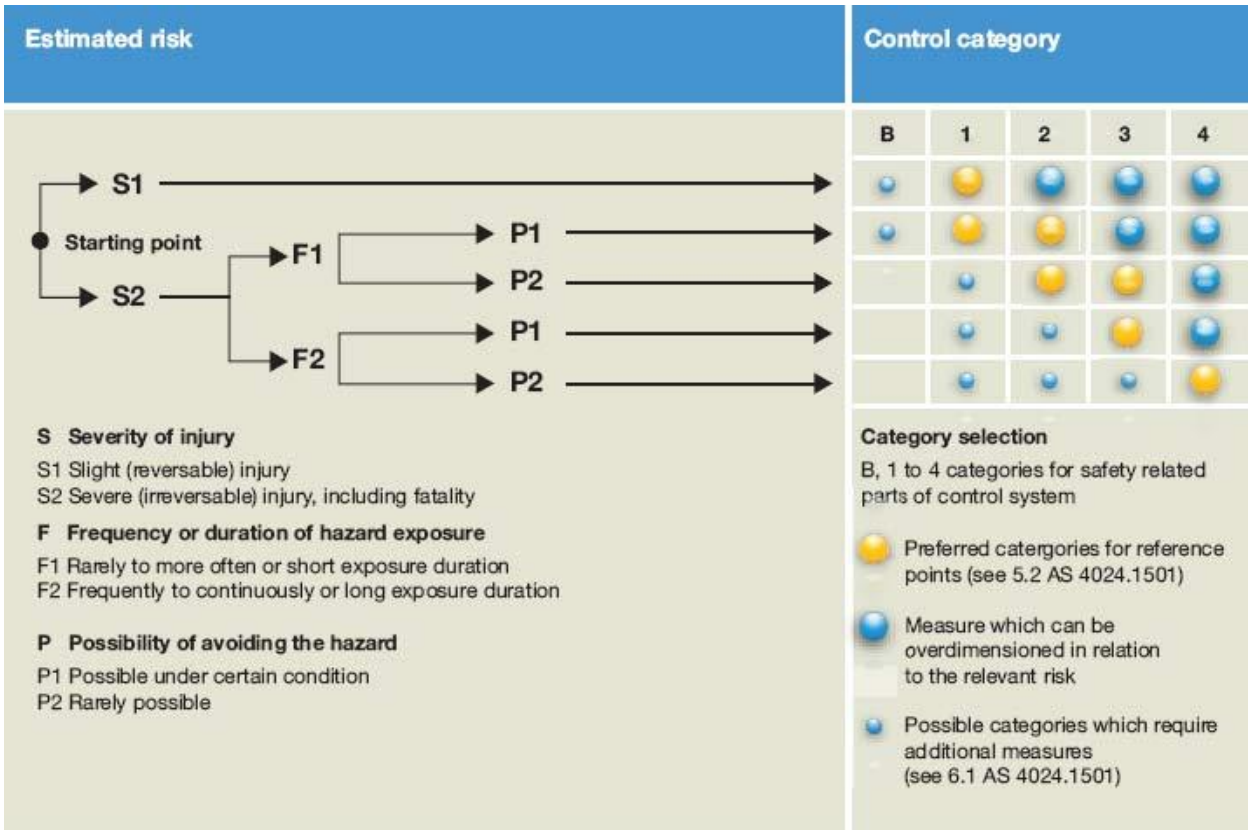

The severity of Injury in 3200 series machine could be a possible minor injury which could heal (Reversible). However death or amputation is possible severities, due to certain unexpected conditions and simultaneous failure of several safety functions this leads to S2. However the frequency of such failure is very rare hence F1, possibility of avoiding the hazard possible under specific conditions, P1 this leads to a Safety category of 1. The machine Complies with Safety Category 1.
Referring to AS 4024.1501-2006 Table-1, states following requirements for safety category 1,

- Mandatory compliance with Category B
- Well tried out components used in similar applications,

The machine meets these requirements hence it is safety category 1.