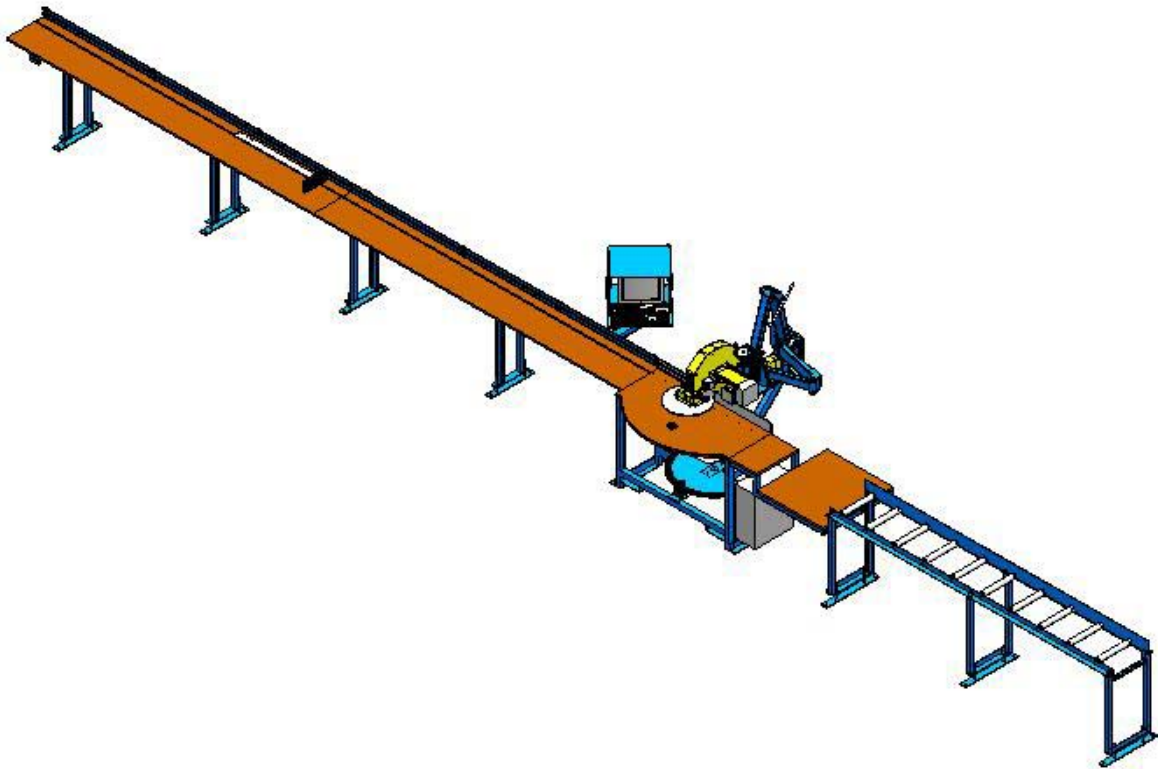


OPERATION & MAINTENANCE MANUAL



CSS Spida Saw



WARNING

This machine **must only** be used by personnel who have been properly instructed in all aspects of the machine's safe operation.

Operators **must** also wear the recommended personal protective clothing and have thoroughly read and understood this manual.

SERIAL PLATES

All enquiries should be directed to:

SPIDA Machinery 2000 Ltd

Australia free phone 1800 146 110

America free phone 1888 262 9476

NZ free phone 0800 SPIDAS or +64 7 343 7915.

Below is a copy of the serial plate displayed on the back of the machine





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DISTRIBUTOR & REPAIRER CONTACTS

Agent/Distributor

Company Name:

Address:

Contact Person:

Ph: Fax:

Mobile: Email:

Automation repairs

Company Name:

Address:

Contact Person:

Ph: Fax:

Mobile: Email:

Mechanical repairs

Company Name:

Address:

Contact Person:

Ph: Fax:

Mobile: Email:



1.0 OVERVIEW

The CSS Spida Saw is designed to accurately measure timber components, or other materials, up to 6000mm in length. It will also provide automated angle setup for these components.

The CSS Spida Saw test procedures must be performed at installation and after any maintenance, adjustment, repair, or modification to the machine. The test procedure is available on request.

Only qualified personnel must install and test the CSS Spida Saw.

Do not perform any tests or repairs other than those outlined in the manual.

The Operator must also regularly perform (at least every three months but more often if used continuously) the recommended maintenance procedures.

All electrical wiring must be set so as not to allow its movement through the cutting area of adjacent machinery.

All Operators should read this manual before operating the CSS Spida Saw to ensure they are thoroughly familiar with the proper operation of the CSS Spida Saw controls, features, capabilities and limitations.

This manual offers many safety tips, but its purpose is not to provide instruction in all the skills and techniques required to manufacture timber components safely.

Due to improvements in design and performance during production, in some cases there may be minor discrepancies between the actual machine and the illustrations and text in this manual.

2.0 SPECIFICATIONS

- OVERALL LENGTH (may vary)	10700mm
- OVERALL WIDTH	1340mm
- OVERALL HEIGHT	1650mm
- WORKING LENGHT	6100mm
- WORKING WIDTH	395mm
- WORKING HEIGHT	860mm
- FENCE HEIGHT	115mm
- LENGTH OF CUT	600mm
- DEPTH OF CUT	150mm
- RADIAL ANGLES	9° - 171°
- SAW BLADE	450mm Dia
- SAW ARBOR	35mm Dia
- ARBOR MOTOR	4kW (5.5hp) 9.2 amp, full load current 2890 RPM 3PH / 400V / 50HZ
- WEIGHT	900 Kg
- OPERATIONAL NOISE	92.8 dB free running 98.1dB working
- TIMBER FEED	Left or Right
- POWER REQUIREMENT	25 Amp 480V 3 Phase

3.0 INSTALLATION

3.1 HANDLING & TRANSPORT

- I. Always bubble wrap the electrical components
- II. Box all additional parts and secure with the machine
- III. Using a single fork truck, lift the machine package underneath using the forklift spaces provided
- IV. Once on the truck, tightly strap the machine, but not over arm assembly.
- V. Do Not place any loads on top of the machine
- VI. The machine should be kept free from road grime and rain, and should be covered at all times when being transported

3.2 INSTALLATION

- I. It is advisable to forklift the machine package as close to the final assembly point as possible to reduce manual lifting
- II. The final operating position of the machine must be free from any rubbish or impediments
- III. There must be good lighting in the installation area to allow proper positioning of the machine
- IV. The ground on which the machine rests must not vary by more than 30mm over a 12m x 2m area
- V. Electrical commissioning to be to local standards and be performed by a qualified electrician

4.0 SAFETY

This CSS Spida Saw is built for the purpose of providing an automated and accurate method of measuring and cutting timber components up to six meters in length.

The CSS Spida Saw must only be used for the purpose specified above and must be set up, maintained and operated in accordance with the instructions contained in this manual and the best standards of industrial machinery practice.

This CSS Spida Saw will perform better and have a longer life if it is operated with care and given regular maintenance and inspections.

PROTECTIVE SAFETY CLOTHING AND EQUIPMENT MUST BE WORN; INCLUDING:

- Eyewear
- Hearing protection
- Respirator or Dust mask
- Protective Clothing



The CSS Spida Saw must only be operated by personnel who have been properly instructed in all aspects of the CSS Spida Saws safe operation.

Each member of the factory personnel shall be instructed in the safe use of the CSS Spida Saw using this manual as a guideline and shall sign a copy of this manual to indicate that he or she has been instructed in the safe operation of the CSS Spida Saw and have thoroughly read and understood this Manual and any other additional information that has been supplied.

A copy of this manual will be placed in the personnel file of each employee that receives instruction on the CSS Spida Saw.

A second copy will be made available to each employee for his or her reference.

This manual is intended as a guide for safe operation of the CSS Spida Saw by the operator. The operator should not consider this manual as all-inclusive.

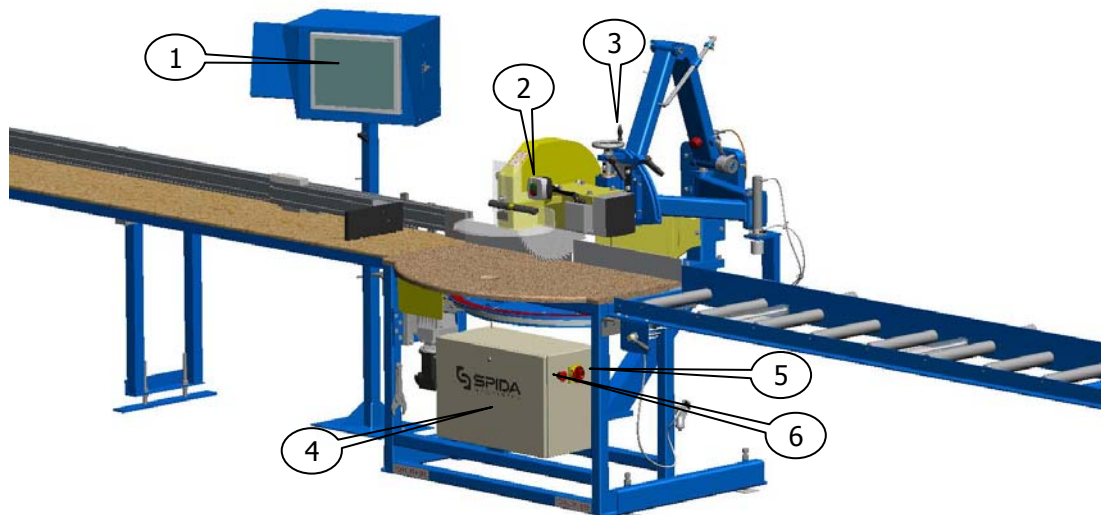
Should you have any questions on the CSS Spida Saw contact SPIDA Machinery 2000 Ltd.



WARNING! Do not operate the CSS Spida Saw without having received the proper instruction in operation and safety from this manual.

5.0 OPERATING CONTROLS

Before attempting to operate the CSS Spida Saw, familiarise yourself with the location and function of each control.

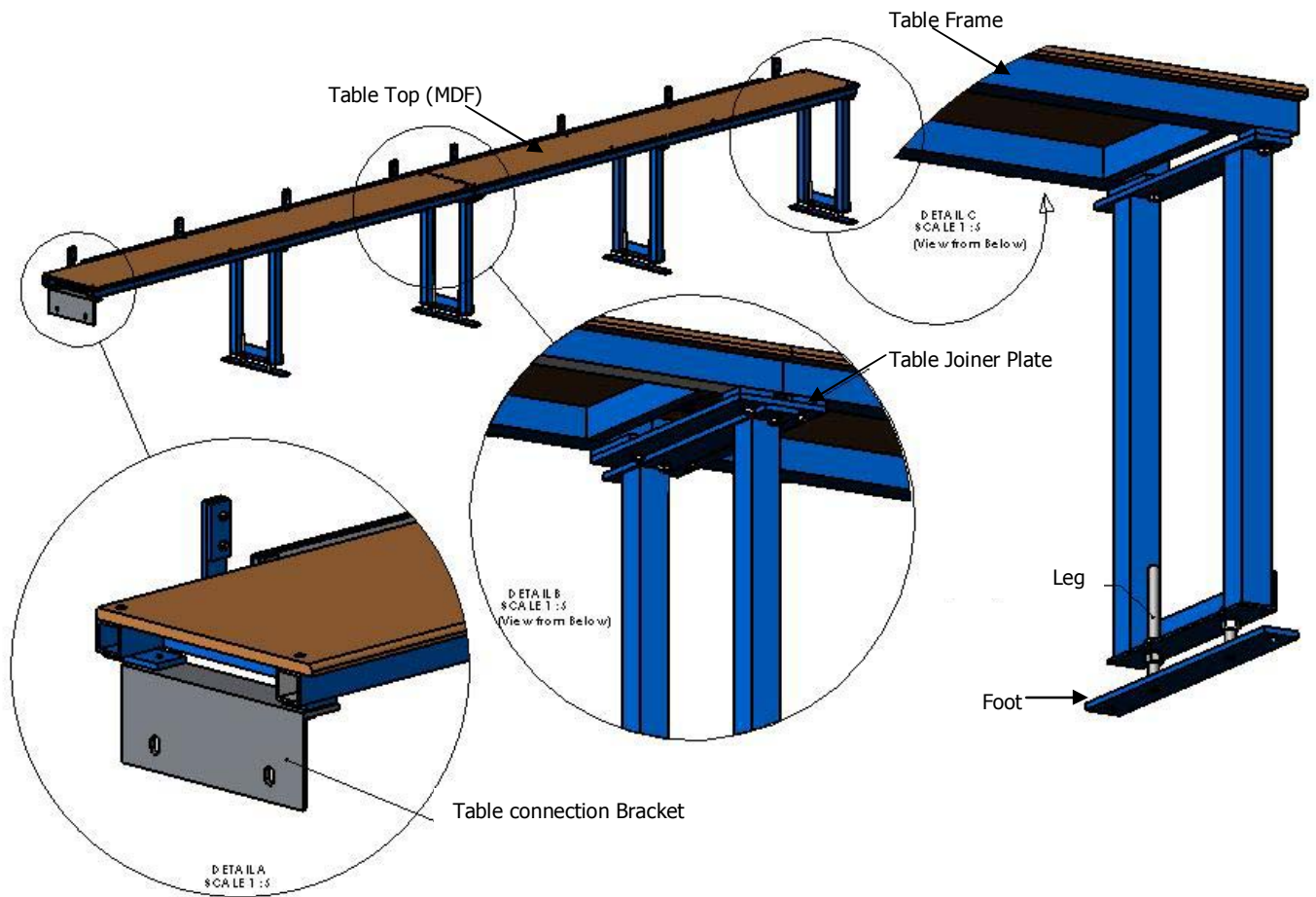


1. Operator Input Touch Screen
2. Saw on/off button
3. Saw Blade Height Adjustment
4. Main Electrical Box
5. Main Electrical Box isolation Switch
6. Emergency stop

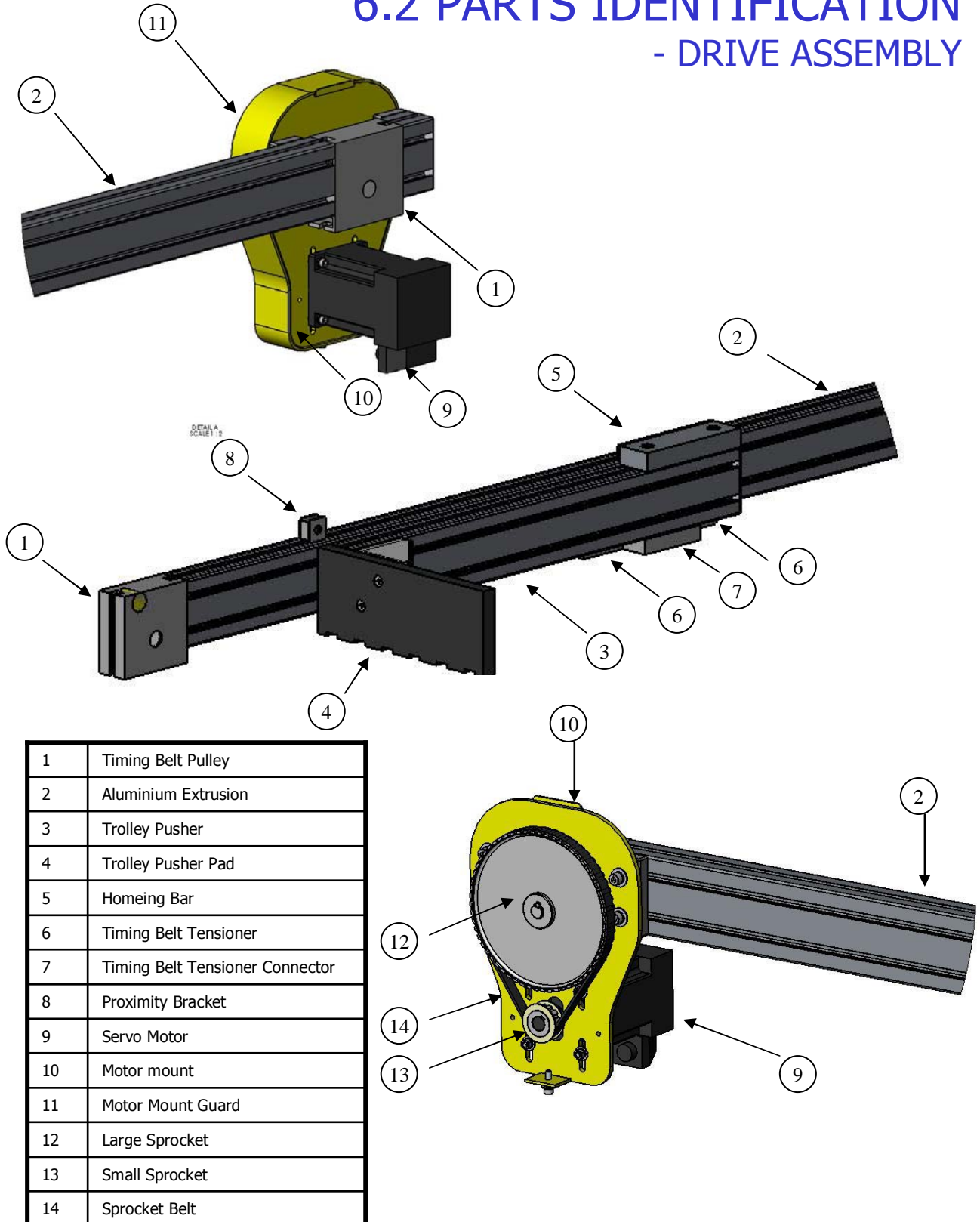


WARNING! The Emergency Stop Button will disable the machine indefinitely unless the problem is addressed.

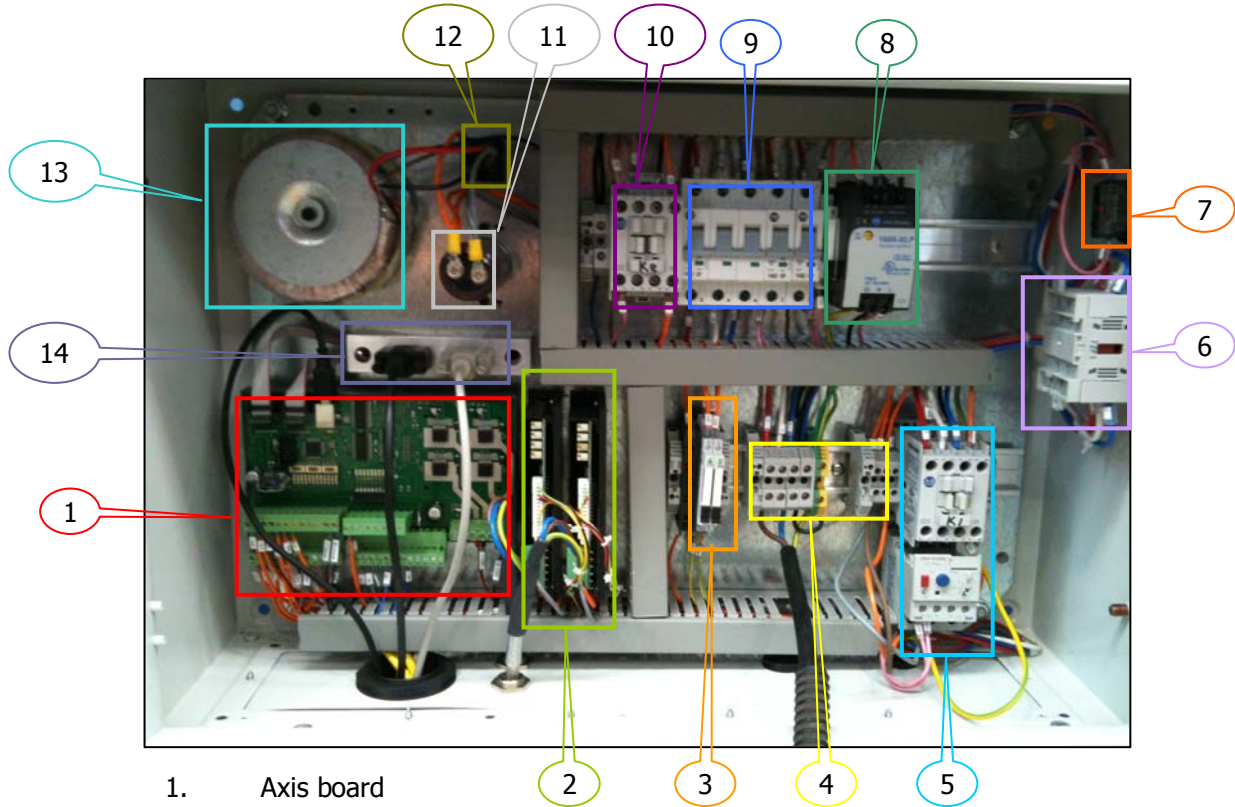
6.1 PARTS IDENTIFICATION - TABLE ASSEMBLY



6.2 PARTS IDENTIFICATION - DRIVE ASSEMBLY



6.4 PARTS IDENTIFICATION - CONTROL CABINET



1. Axis board
2. Amplifier Cards
3. Interposing isolating relays
4. Terminals
5. Contactor & Overload – Saw
6. Main Isolation Switch
7. Emergency Stop
8. DC power supply
9. MCB – Mechanical Circuit Breakers
10. Main Contactor
11. Capacitor
12. DC Converter
13. Transformer
14. Encoder Leads



6.5 PARTS IDENTIFICATION

- SAW

7.1 MAINTENANCE - CHANGE PULLEY BELT

1. Power off the saw and ensure any lock out procedures are in place.
2. Remove the Guard by undoing the screw on the bottom of the Guard.



3. Loosen the four nuts holding the motor on.
4. Push the motor up vertically which will move the small pulley toward the large pulley. This will loosen the belt and enable it to be removed.
5. With the motor up, replace the belt.
6. Pull the motor back down until the belt is tensioned and tighten the four nuts.
7. Refit the Guard and tighten the bottom screw.



7.2 MAINTENANCE - SET PROXIMITY POSITION

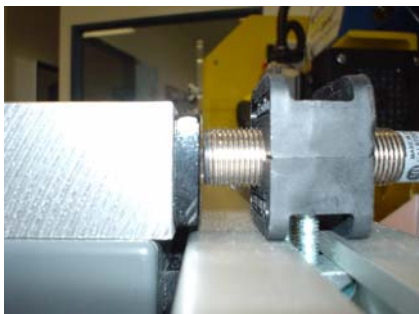
This maintenance item needs to be conducted whenever a sensor, lead or bracket is replaced.



1. Power off the saw.
2. Push the trolley to the minimum position (closest to the saw).



3. Loosen the Proximity Bracket cap screws.
4. Position the Proximity Sensor to the rear of the homing bar as per picture.



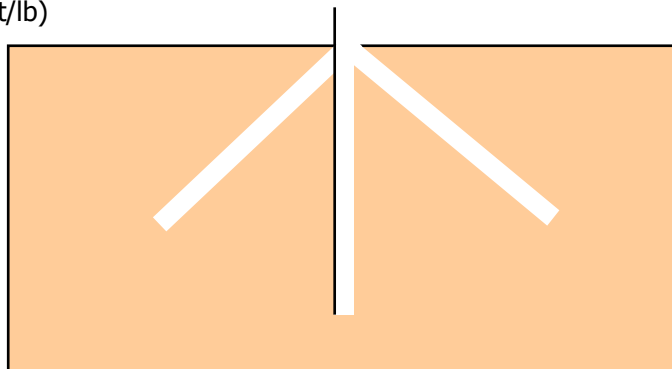
5. Tighten the Proximity Bracket cap screws.
6. Ensure there is 1.5 – 2.5 mm gap between the Proximity Sensor and the homing bar.

7.3 MAINTENANCE - ACCURACY OF ANGLE

To obtain the optimum cutting accuracy it is necessary to check that both the blade line of travel and the front face of the fence are directly over the centre of rotation

To check this, perform the following:

1. Check that the blade is square to the fence and in a vertical plane (90 °)
2. Place an off cut of timber on the table ensuring it is against the fence (clamp if desired).
3. With the radial degree setting at 90 ° cut the timber part way through.
4. Without moving the timber reset the angle to 45 ° to the left and make a second cut part way through.
5. Reset the angle to 45 ° to the right and make a third cut part way through.
6. Check the alignment of the outfeed side of the cuts. The points of intersection should all be at the same point at the rear face of the timber.
7. If the point of intersection is not at the same point on all the cuts, adjustment can be made at the arm assembly mounting plate. Loosen the four cap screws on the rear mounting plate where the arm assembly mounts to the pivot arm column, the holes are slotted for adjustment.
8. Only make minor adjustments at a time, and make sure cap screws are tightened before rechecking. (65 ft/lb)



Shows a saw set up for Left-Hand Outfeed Blade is always on the right of the black line

NOTE

Saws with right hand outfeed, check right side of saw cut.

Saws with left hand outfeed, check left side of saw cut

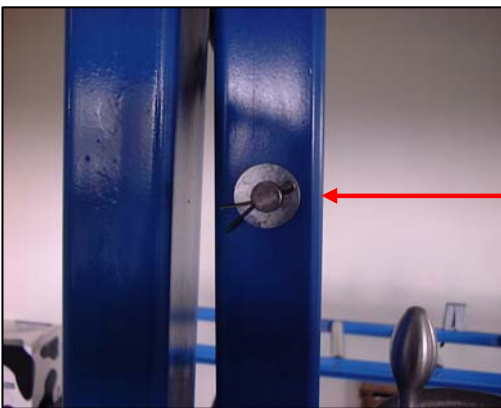
NOTE

If the intersection point is to the left adjust the arm assembly to the left

If the intersection point is to the right adjust the arm assembly to the right

7.4 MAINTENANCE - GREASE STROKE LIMITER ASSEMBLY

To aid in the smooth operation of the arm action it is necessary to grease the stroke limiter shaft. To do this, follow the steps below.



Remove the split pin & washer from the left-hand side of the vertical arm.

Pull out the Stroke Limiter Assembly from the right-hand side of the vertical arm.



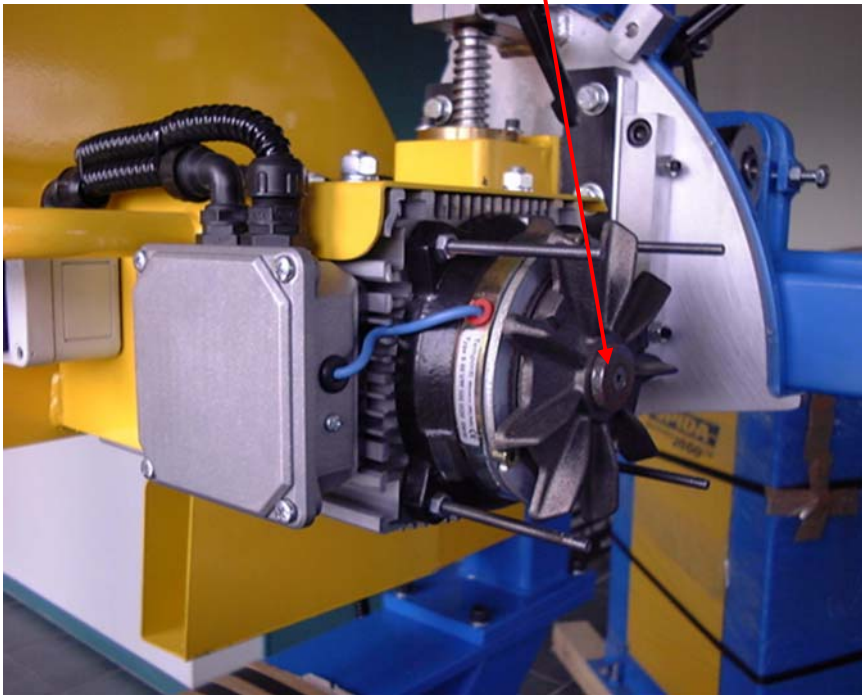
Grease the shaft & pin with General purpose grease

Replace the Stroke Limiter Assembly

Replace the washer and Insert the split pin into the Stroke limiter Assembly

7.5 MAINTENANCE - MOTOR BRAKE ASSEMBLY

The magnetic friction brake can be adjusted by setting the correct clearance between the friction plate and the coil using the cap screw located in the centre of the brake shaft



NOTE for the brake to function efficiently, the gap between the brake pad and plate should be set between 8 - 10 thou, approximately 5/8th of a turn.

7.6 MAINTENANCE - SCHEDULE

CHECK	DAY	WEEK	MONTH	½ YEAR
EMERGENCY STOPS	X			
RADIAL BRAKE	X			
GUARDS ARE IN PLACE	X			
DUST CHUTE CLEAR	X			
LOCKING CLAMPS TIGHT	X			
CLEAN SAW OF ANY BUILD UP	X			
NOISES OR VIBRATIONS	X			
CLEAN ALUMINIUM EXTRUSION SLOTS	X			
AIR SUPPLY PRESSURE		X		
PNEUMATIC FILTER		X		
CHECK DRIVE BELT TENSION		X		
CHECK LENGTH AND ANGLE ACCURACY		X		
GREASE ADJUSTING THREADS			X	
GREASE HEIGHT ADJUSTMENT			X	
CHECK FOR LOOSE BOLTS			X	
GREASE ARM BEARINGS				X
FLOOR BOLTS FOR TIGHTNESS				X



Failure to perform these checks everyday before you start cutting may result in serious damage or a severe accident. Prior to operating the machine make sure that the machine is bolted down on a level floor and the drive motor is rotating in the correct direction (spindle rotation is to be in a clockwise direction when viewed on the front of the tailstock).

WARNING! Electrical power supply must be isolated from machinery and appropriate danger tagging in places whenever any maintenance is being performed on machinery. Any defects, which are found on inspection, should be rectified immediately and reported to the supervisor for appropriate action.

8.0 SAFE OPERATING PROCEDURE

POTENTIAL HAZARDS	SAFE WORK PROCEDURE
Safety	Ask questions if you have any doubts about doing the work safely. Check and adjust all safety devices daily.
Poor Guarding	Ensure all guards are fitted correctly and are adequately guarding blade, nip points and moving parts. Make sure guards are in position and in good working order. Do not operate machine without guards.
Poor Housekeeping	Inspect Saw, Bench and surrounding areas for obstructions and defects. Remove built-up sawdust from around machine, electrical leads and power points.
Electrical faults	Inspect electrical leads for damage
Incorrect or damaged saw blade	Check saw blade for cracks, warping or broken teeth. Do not use cracked or dull blades. Only use saw blades designed for the material being cut. Only use saw blades rated at or above the speed of the saw arbour.
Wood Dust	Ensure dust extractor system is attached and operating effectively
Incorrect machine settings	Ensure all machine settings are correct. Ensure that saw automatically returns to "rest" position and stays in "rest" position once cut has been made.
Material Handling	Ensure that timber will not be in contact with saw blade during start up or before commencing cut. Have material handling devices in place.
Inoperable Safety switches	Check that start stop and emergency stop buttons operate effectively
Incorrect Accessories	Use only the accessories designed for each specific saw and application
Foreign Objects	Check that foreign objects and maintenance tools etc are removed from the machine before turning on power.



WARNING! This machine must only be operated by personnel who have been properly instructed in all aspects of the machine's safe operation. They must also be wearing the recommended protective clothing and have thoroughly read and understood this operation and service manual.

8.0 SAFE OPERATING PROCEDURE

GENERAL

POTENTIAL HAZARDS	SAFE WORK PROCEDURE
Clothing	Do not wear loose clothing, work gloves, neckties, rings, bracelets or other jewellery that can become entangled with moving parts
Protective equipment	Always wear correct personal protective equipment including: Hearing protection, safety glasses, safety footwear
Slips, trips and falls	Avoid awkward operations and hand positions where a sudden slip could cause your hand or part of your body to move into the cutting line of the blade. Electric power cords should be above head level or in the floor in such a way that they are not trip hazards. Floor areas should be level and non-slip. Clean up any spill immediately
Workplace	Use good lighting so that the work piece, cutting blades and machine controls can be seen clearly. Position or shade light sources so they do not shine in the operators eyes or cause glare and reflections. Ensure that the floor space around the equipment is sufficient to allow the operator to process his work without bumping into other staff or equipment. Keep the work area free of clutter, clean, well swept and well lit.
Cutting technique	Do not remove your hand from the operator handle unless the cutting head is behind the fence. Use the back guide fence or other device to keep the work piece from moving. Make sure when cutting that your off cut is on the outside of the blade to avoid the piece being pulled into the blade. Do not place body parts in cutting line.
Housekeeping	Clean built up sawdust from around the machine, electrical leads and power points.
Manual Handling injures	Do not remove sawdust or cuttings from the cutting head by hand while a machine is running. Use a stick or brush when the machine has stopped moving. Operators should use correct lifting techniques (lift with legs not back) at all times to avoid manual handling injures.
Hand pulled into saw	Gloves should not be worn and rings should be removed as they can get caught and pull operators hands into the saw
Defects	Report all defects to the supervisor



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8.0 SAFE OPERATING PROCEDURE

OPERATION

POTENTIAL HAZARDS	SAFE WORK PROCEDURE
Personal Protection	Wear safety glasses or a face shield. Wear hearing protection that is suitable for the level and frequency of the noise you are exposed to in the work area. Wear dust masks when required. Do not wear gloves when operating this machine.
Machine Guarding	Front Guards should be adjusted to 20mm above the thickness of the timber being cut, or as low as practically possible to the fence, which ever is the lower. Make sure all guards are fastened in position.
Material Defects	Inspect stock for nails or other foreign materials before cutting. Use only material designed for the machine.
Operator Technique	Stand on the handle side when cross cutting. Pull the cutting head with the hand nearest the handle and hold the timber with the other hand. Make sure that the hand holding the timber is never inline with the saw blade. Do not remove stock from the saw table until the blade has been returned to its home position (behind the fence). Return the saw to its home position after every cut. Make sure off cuts are on the "outside" of the blade this will ensure that they don't get pulled backward into the blade minimising jamming.
Lacerations from blade contact	Never place hands, arms or any part of the body across the cutting path of the saw. Do not operate cross handed
Hit by projectiles	Saw must be switched off and blade completely stopped before attempting to clear blockages or timber jams. Any small off cut should be removed using a push stick which has been properly constructed.
Waste disposal	Waste and off cuts should be disposed of in an appropriate manner.
Unattended Saw	Don not leave a running saw unattended – leave only after the saw has been turned off and has come to a complete stop.
Stroke Limiter Stop	The Stoke limiter must be adjusted and locked so as not to allow the blade to travel closer than 50mm to the front edge of the bench.



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8.0 SAFE OPERATING PROCEDURE

MAINTENANCE

POTENTIAL HAZARDS	SAFE WORK PROCEDURE
Cleaning and maintenance preparation	Turn the power off on the main isolator and use the hole in the switch to lock the switch off before discussing, inspecting, changing, cleaning, adjusting or repairing a blade or a machine. Also turn the power off when discussing the work. Do not use compressed air to remove sawdust etc from machines or clothing.
Stop / Start Buttons	Make sure that Start and Stop buttons are in good working condition and within easy convenient reach of an operator. Start buttons should be protected so that accidental contact will not start the machine.
Saw Blades	Ensure all cutting blades are clean, sharp and in good working order so they will cut freely. Ensure that any new blade is the correct size (diameter, number of teeth, arbour size), fitted correctly and rotating the right direction. Inspect new saw blades for damage before use. Always wear gloves when handling blades to avoid cuts.
Incorrect electrical isolation of machine	Machine must be switched off and locked out (electrically isolated) before maintenance, cleaning or blade changes. Blade must be stationary.
Incorrect tools	Use Correct tools for the job to minimise personal injury and damage to the machine
Stalled Blade	Turn power off before attempting to free a stalled blade
Blade projection	The saw must have a positive stop to prevent the blade from travelling beyond the front of the bench.
Defective / Broken return spring	The saw must have an effective return spring which will return the saw automatically to the back of the table when released at any point of travel. This device must also restrict the saw from rebounding after returning home.
Guarding	Ensure Guards are fitted correctly, adjusted and in good working order.



WARNING! This machine must only be operated by personnel who have been properly instructed in all aspects of the machine's safe operation. They must also be wearing the recommended protective clothing and have thoroughly read and understood this operation and service manual.

11.0 FORESEABLE MISUSE

Through experience, SPIDA’s technical staff have listed (in order of occurrence) the most common misuses of the machinery by operators, the symptoms that result and the rectification required to address the misuse and return the machine to optimal working order.

MISUSE	SYMPTOM	RECTIFICATION REQUIRED
Lack of regular calibration	‘Creeping’ Measurements	Check measurements daily, Calibrate if required.
Lack of cleaning	Inconsistent measurement, motor tripping out	Clean saw, especially extrusion tracks, belt on the table and belt under the saw.
Sharp objects on the touch screen	Touch panel becoming hard to use and possible dead stops	Use your finger or a suitable touch pen on the screen

Any other misuse and resultant damage of the machine is deemed non-foreseeable as its occurrence is not consistent.



WARRANTY

Spida Machinery (2000) Limited, a duly incorporated company having its registered office at 1180 Lake Road, Rotorua, New Zealand ("Spida") warrants the machinery/equipment described below for a period of 12 months only from the date specified below subject to the following conditions:

1. This warranty is only enforceable by the initial purchaser of the machinery/equipment.
2. This warranty only covers defective workmanship and materials.
3. Spida extends the original manufacturer's warranty to Spida on all items purchased by Spida and used on this machinery/equipment including motors, saw blades and air cylinders or other such purchased items but does not add any further warranty to those items.
4. This warranty only applies if:
 - a) The attached copy of this warranty is signed by the initial purchaser and returned to Spida (PO Box 6273, Rotorua, New Zealand) within 14 days of the date specified below;
 - b) The machinery/equipment is installed by Spida or its authorised installer;
 - c) Regular routine maintenance has been carried out on the machinery/equipment in accordance with the instructions set out in this training manual and the machinery/equipment is properly housed and sheltered;
 - d) The machinery/equipment is operated by competent personnel in accordance with the operating instructions set out in this training manual and not otherwise;
 - e) The machinery/equipment has not been subjected to alterations or repairs or dismantling without prior written approval of Spida. Any parts returned to Spida either for repair or consideration of a warranty claim consequent to an authorisation to dismantle must be prepaid;
 - f) Spida has been notified immediately of any defect or potential warranty claim and will not extend to damage caused by use after failure or potential failure is noticed;
5. Spida may, at its option, either repair or replace the defective part upon inspection at the site of the machinery/equipment where originally installed. The warranty does not cover the cost of freight, labour or travelling for the removal or replacement of the defective parts.
6. This warranty does not apply to any deterioration due to average wear and tear or normal use and exposure.
7. In all warranty matters, including any question of whether this warranty applies to any claim, the decision of Spida is final.

This warranty is the only warranty made by Spida as the manufacturer and is expressly in lieu of and excludes all other warranties, conditions, representations and terms expressed or implied, statutory or otherwise, except any implied by law and which by law can not be excluded.

Neither Spida nor its agents or servants will be liable in any way for any consequential loss, damage or injury including any loss of use, profits or contracts.

The law applicable to this warranty shall be the law of New Zealand and the parties hereto submit to the exclusive jurisdiction of the Courts of New Zealand.



WARRANTY

Machinery/Equipment

The item bearing the following serial plate:

Date of Shipment:

Signed by:

Name:

on behalf of SPIDA Machinery (2000) Limited

Position:

Acceptance of Warranty

I acknowledge and accept the contents of this warranty.

Signed by:

Name:

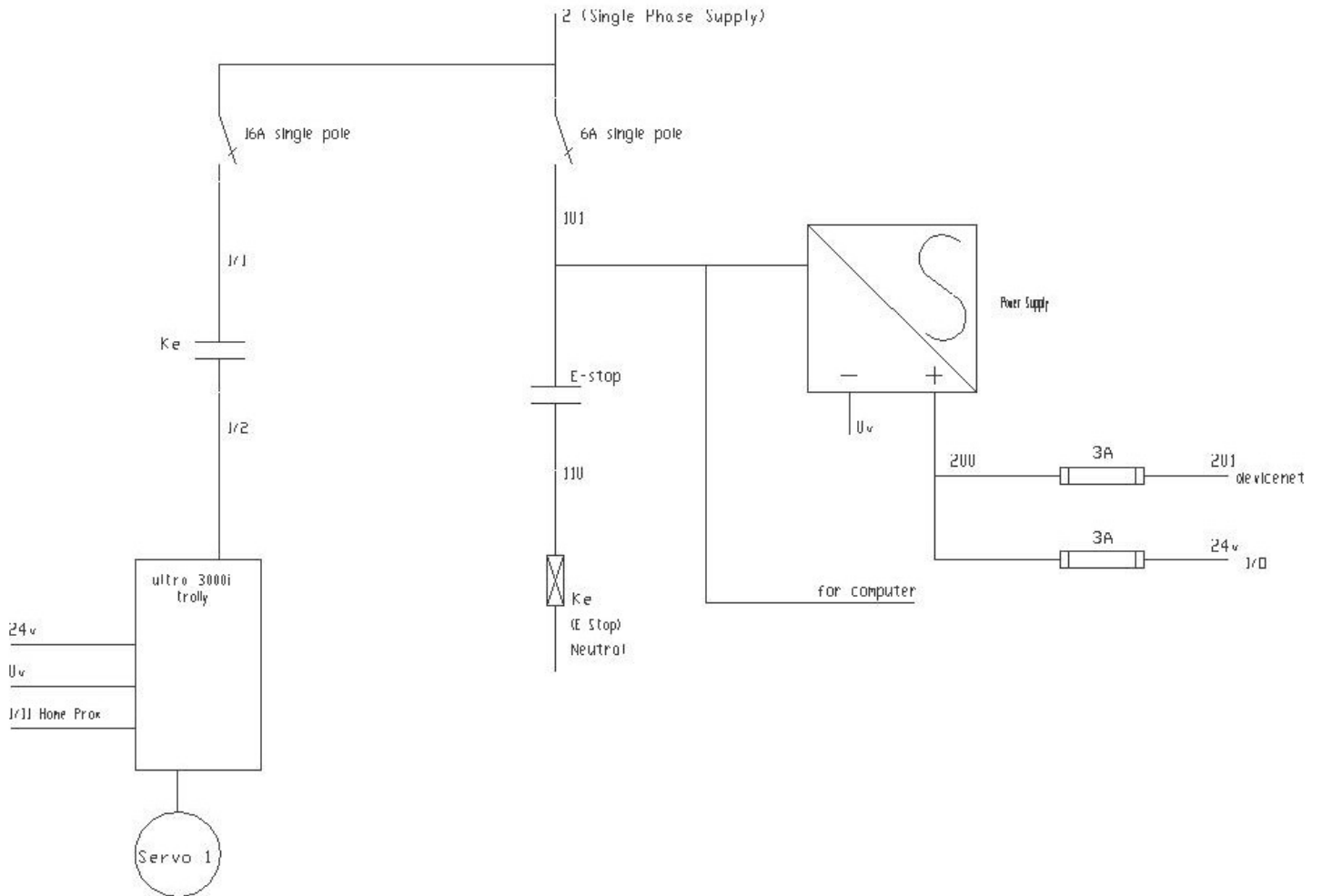
on behalf of the initial purchaser

Company:

Position:

Date:

ELECTICAL DRAWINGS





TRAINING CERTIFICATE

Instructor:

Company:

Position:

I declare that:

- I have trained the person named below ("the trainee") in the safe operation of the machinery/equipment detailed in this training manual.
- The trainee has demonstrated an understanding of the safe operation of the machinery/equipment.
- The trainee has indicated that he/she has read and understood this training manual.

Signed:

Date:

Trainee:

Company:

Position:

I declare that:

- I have received instruction from the person named above ("the instructor") for the safe operation of the machinery/equipment detailed in this training manual.
- All information in this training manual was demonstrated and explained by the instructor.
- I have thoroughly read and understand this training manual.

Signed:

Date:

Witnessed by

Name:

Company:

Position:

Signed:

Date: