



TA450
TILT ARBOR SAWBENCH
OPERATION AND MAINTENANCE
INSTRUCTIONS



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MACHINE SERIAL NO. TA450



EC Declaration of Conformity
In accordance with BS EN ISO/IEC 17050-1:2004

The equipment which accompanies this declaration has been designed and manufactured in compliance with all essential requirements of the following EU Directive(s):-

2006/42/EC Machinery Directive

2004/108/EC Electromagnetic Compatibility Directive

EN ISO 12100-1:2003+A1:2009 Safety of Machinery. Basic Concepts, General Principles of Design. Basic Terminology, Methodology.

EN ISO 12100-2:2003+A1:2009 Safety of Machinery. Basic Concepts, General Principles for Design. Technical Principles.

EN 1870-1:2007+A1:2009 Part 1: Safety of Woodworking Machines - Circular Saw Benches (with and without sliding table), Dimension Saws and Building Site Saws.

MANUFACTURER'S NAME AND ADDRESS:

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PRODUCT DESCRIPTION & TYPE

Tilt Arbor Sawbench Model TA450

AUTHORISED SIGNATORY

A handwritten signature in black ink, appearing to read "G Sedgwick", is written over a light blue rectangular stamp.

G. Sedgwick
Managing Director
M. Sedgwick & Co. Ltd, Oct 2012



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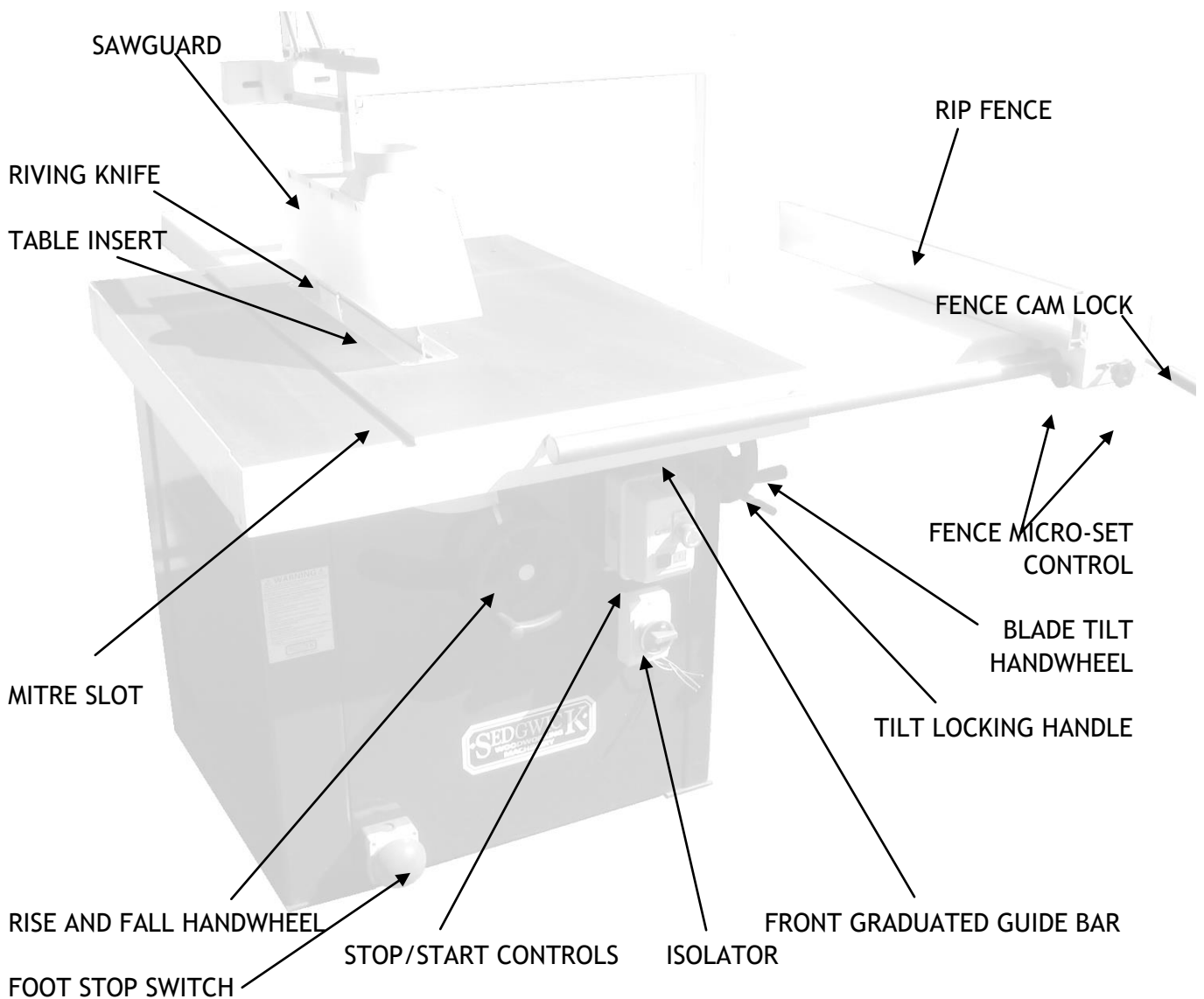
Introduction

This Instruction Manual is designed for you in accordance with The Supply of Machinery (Safety) Regulations 1992, and the Supply of Machinery (Safety) (Amended) Regulations 1994, which implement the European Machinery Directive 89/392/EEC. We strongly recommend that in order to ensure good safe working practice you read it carefully prior to commencing either installation or operation of the machine. Your supplier will be pleased to provide any further advice or assistance that you might require.

1.0 Design and Purpose

The Sedgwick Tilting Arbor Sawbench is a hand fed circular rip saw designed to re-saw timber and other analogous materials. These operations include Deep Ripping, Angle Ripping, Bevelling, Cross Cutting, Mitring, Compound Angling, and Panel Cutting.

1.1 Illustration



1.2 Machine Specification

	TA450
SAW BLADE DIAMETER	450mm
SAW BLADE BORE	30mm
SAW BLADE PROJECTION	155mm
	@ 90 ⁰
	@ 45 ⁰
SPINDLE SPEED	3000rpm
3ph MOTOR RATING	5.5Kw (S1)
SIZE OF TABLE	1125mm
LENGTH	1000mm
WIDTH	
HEIGHT OF TABLE	855mm
DISTANCE SAW TO FENCE	915mm
FENCE WITH MICRO ADJUSTMENT	825x75mm
DUST EXTRACTION OUTLET MACHINE	150mm
SAWGUARD	100mm
TOTAL AIR VOLUME REQUIRED	1445CMH

620mm CROSS CUT TABLE **OPTIONAL**

TABLE SIZE	LENGTH	600mm
	WIDTH	350mm
DISTANCE SAW TO MITRE FENCE		620mm

1220mm PANEL SIZING TABLE **OPTIONAL**

TABLE SIZE	LENGTH	950mm
	WIDTH	1000mm
DISTANCE SAW TO MITRE FENCE		1220mm

RIGHT HAND EXTENSION TABLE **OPTIONAL**

TABLE SIZE	LENGTH	800mm
	WIDTH	700mm
DISTANCE SAW TO MITRE FENCE		1220mm

REAR TAKE OFF TABLE **OPTIONAL**

TABLE SIZE	LENGTH	800mm
	WIDTH	700mm

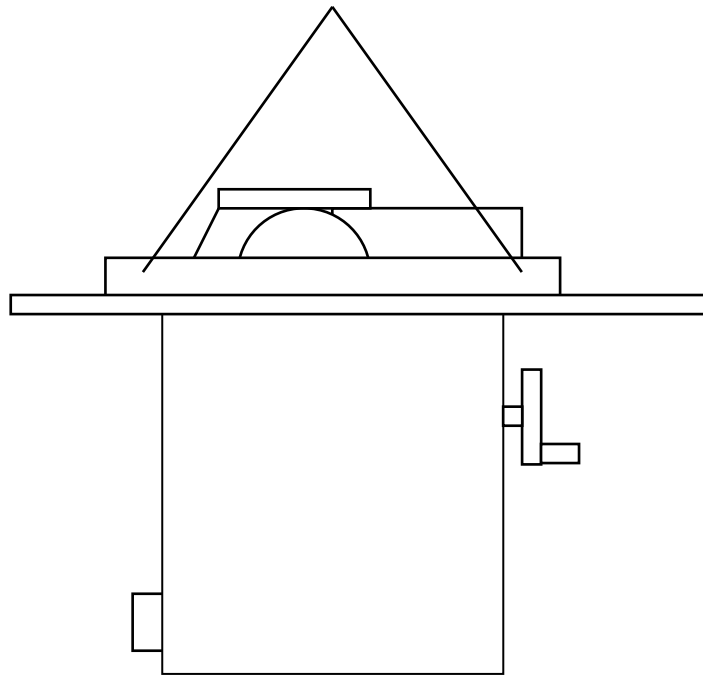
1.3 Shipping Details

	TA450
DIMENSIONS (machine only) L x W x H	1300x1400x1250mm
GROSS WEIGHT	468 kg
DIMENSIONS(c/w 1220mm Panel Table)	1600x1400x1350mm
DIMENSIONS (Support Bar)	2720x250x200mm
GROSS WEIGHT	535 kg

The following section offers a guide to transporting, assembling, and installing the machine. These are all skills that should not be attempted by those who have not received relevant training.

2.0 Machine Handling

Always use a sling within the safe working load of the machine weight. Machine weights are provided above. Sling underneath either side of the machine table, ensuring that you do not catch the starter etc. Take care not to lift the machine by the slide bar on the left-hand side of the machine table (if fitted) as damage to this will inhibit the movement of the sliding table. Do not walk or stand under the machine during lifting.



Remove the protective rust preventative using turpentine or paraffin. Do not use any solvent, petrol or gas oil, which might dull the paint or oxidise the paint-work. Lightly oil cleaned surfaces to prevent rusting.

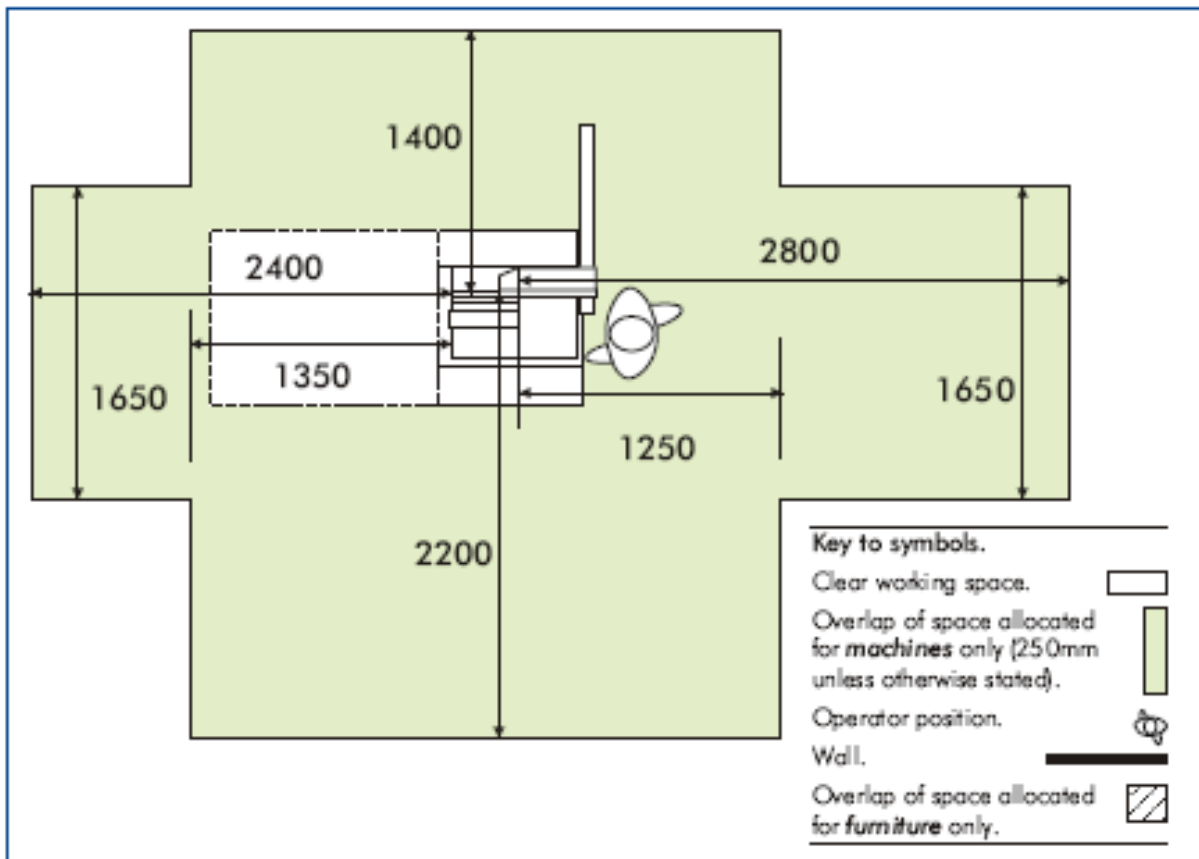
2.1 Positioning

First ensure that there is ample power supply available, together with good lighting and ventilation.

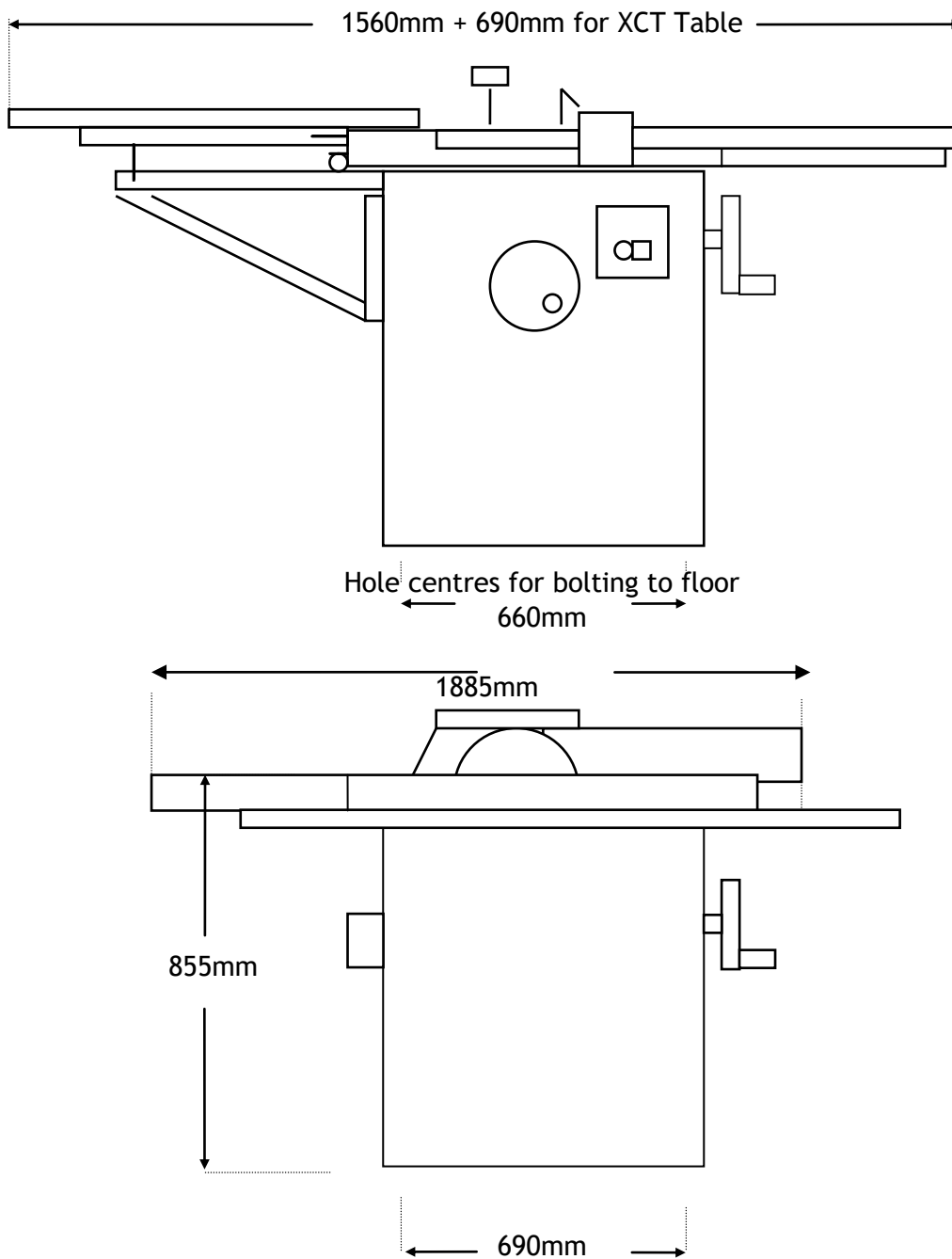
Second ensure that there is sufficient unobstructed space around the machine to enable the work being done at it to be done without risk of injury to persons employed.

The chosen floor space should be in good and level condition to enable the machine to be anchored at four points. Holes for M10 foundation bolts (not supplied) are provided at either corner of the inside of the fabricated body. Remove the machine's side guard, score marks through these holes, drag the machine out of the way, and drill the necessary holes and insert fixing plugs. Finally, make sure that the saw is not rocking. Pack under the feet of the base if it is. This will keep the saw from rocking and generating vibration during the cut.

Safe Working Distances



2.2 TA450 Foundation Drawing



A number of machine elements will be disassembled from the machine for packaging and transit purposes. These parts should be installed as follows:

2.3 RH Table Extension Installation

Fasten one of the two small fabricated tables to the right hand edge of the Machine Table using the bolts & levelling screws provided.

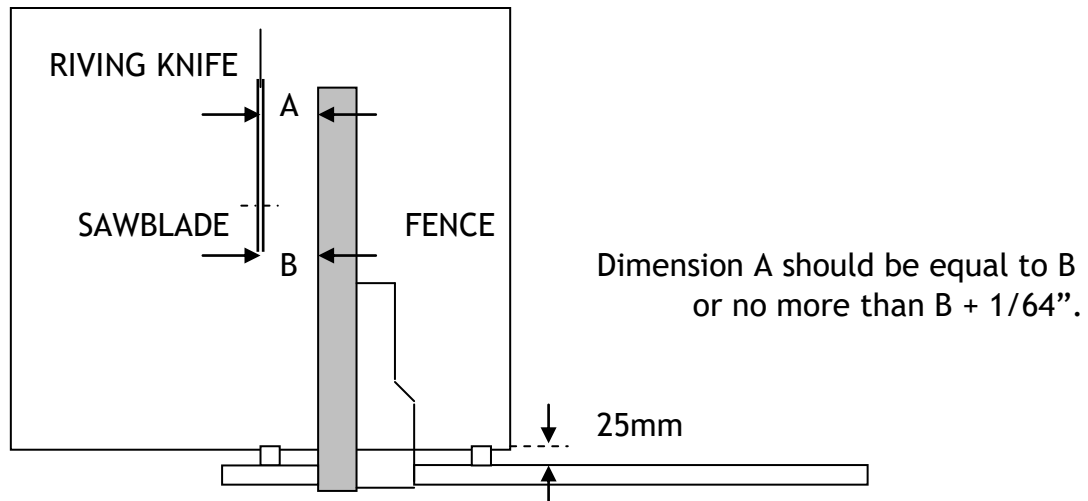
2.4 Rear Table Extension Installation

Fasten the remaining small fabricated table to the rear edge of the Machine Table.

2.5 Parallel Fence Installation

Fasten the Fence Slide Rail to the front edge of the Machine Table, allowing a gap of 25mm between them so as to prevent the fence casting catching on the fixing studs. Slide the Fence Shaft Bracket onto the Rail and check the linearity and perpendicular position of the blade relative to the blade.

To reduce the potential for kickback the rip fence should be set so that it is slightly farther (about 1/64 in.) from the back of the blade than from the front, so that the rear teeth just miss the stock being cut. Adjustment is made using the locking bolts at the back of the fence rail



Finally fasten the tail end of the rail to the fabricated RH table, and ensure that the bracket slides nicely along the full length of its travel. When adjusting the position fore and aft of the rip fence set the extrusion so that it sits slightly above the table when clamped up against the fence casting. This will ensure that the nylon roller underneath the casting remains in contact with the table.

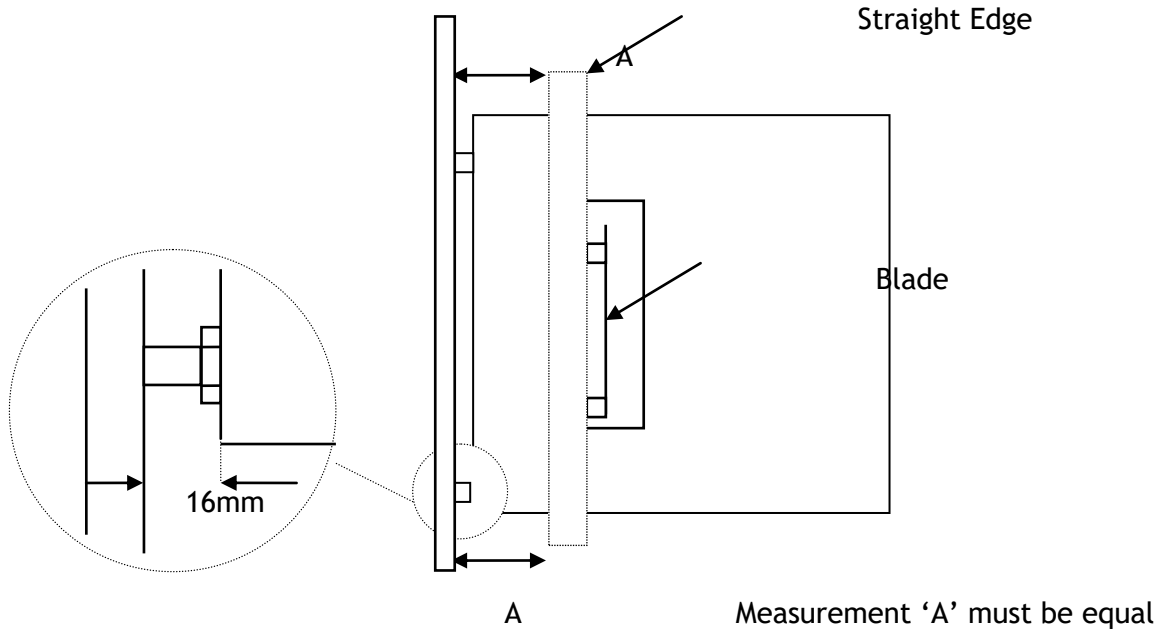
2.6 Overhead Saw Guard Installation

Fasten the main arm to the rear of the machine stand. Fit the hood onto the arm. Raise or lower the hood by means of the handle.

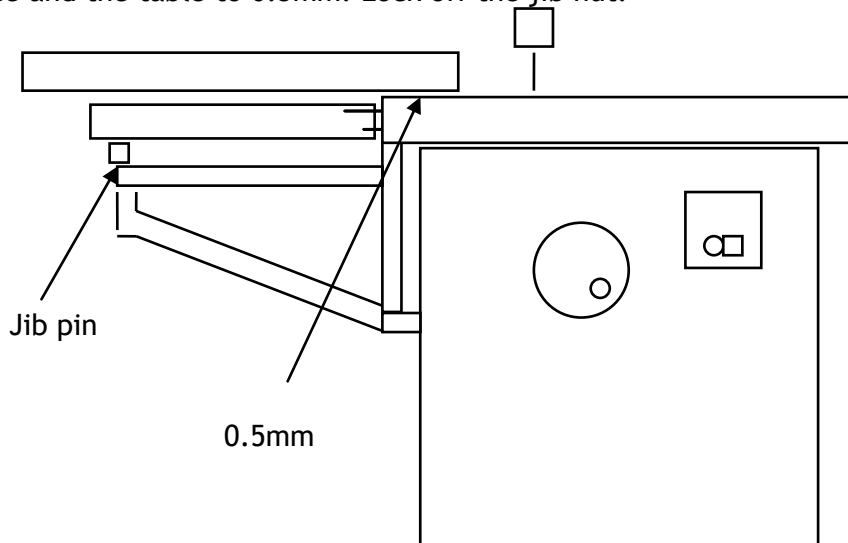
2.7 Optional 620mm Cross Cut Table Setting & Installation

If the cross cut table is not set parallel to the saw blade this causes heeling; that is, the blade is not parallel to the saw cut. Heeling is hard on the blade and can cause excess vibration. Start by checking that the cross cut shaft is level to the top of the table. The holes that are used to fasten the bar to the table are oversize and the bar can therefore be adjusted to suit. Next check that the shaft is parallel to the blade. To do this, simply follow these directions:

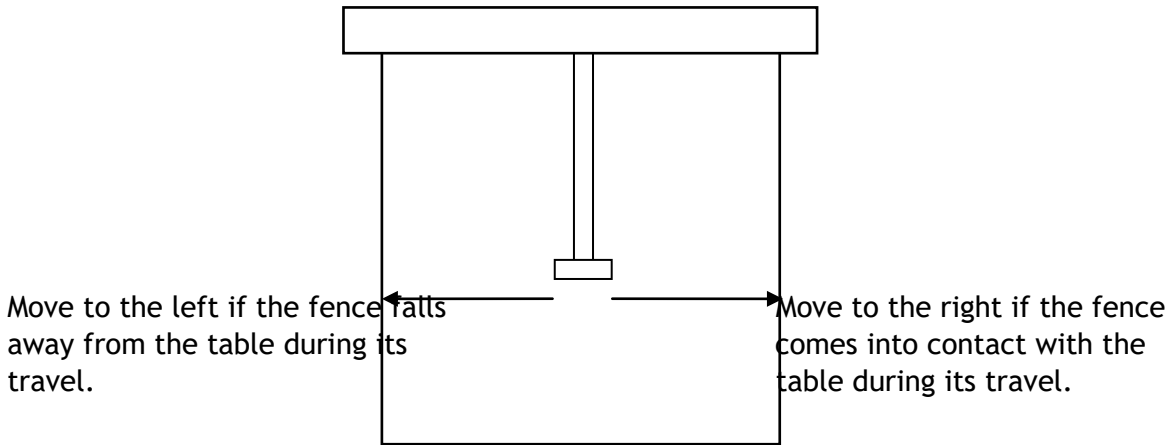
With the rolling table removed, place two spacers of equal thickness (about 25mm) against the front and rear of the blade (as below). Place a straight edge up to the spacers and take a measurement from the front edge of the bar to the straight edge. This should have been set at 16mm. Adjust the far end of the bar until it too measures 16mm.



Next roll the table onto the bar and position on the jib.
 With table in its foremost position roll it forward until the cross cut fence is just over the front of the machine table. Using the adjustable jib pin (illustrated below) set the gap between the fence and the table to 0.5mm. Lock off the jib nut.



Roll the table through its full travel, checking that the gap remains the same all the way along the table. If the gap varies from one end to the other loosen the jib support bracket and adjust it either leftwards or rightwards. It is important that the bracket is re-tightened once adjustments have been made (24mm spanner required).



After the table has been lined up square the crosscut fence to the blade and re-set the 90° stop if necessary.

Looseness or slop between the table rollers and bar can also affect crosscut accuracy. Ensure that there is no sideways play in the two hardened rollers, and tension the bottom bearing on its adjustable strap to suit. Do not over-tighten, as this will impair the movement of the table and cause excess wear on the slide rail.

2.8 Optional 1220mm Panel Sizing Table Setting & Installation

On removing the protective packaging the Panel Sizing Table should be lifted off its supporting blocks and placed on the floor.

Next remove the tape securing the two table support jibs to the rolling table shaft, and check that both jibs run freely. Clean the protective oil from the rolling table shaft and remove the two slide bearings from the pins located at the end of either jib (note: the slide bearings will later have to be replaced onto the correct jib, do not get them mixed up).

Using a 6mm allen key remove the table stop screw located on the underside of the operating end of the rolling table shaft. Lift the Panel Sizing Table and roll it completely onto the shaft. With one person holding the weight of the table, the other person should slide the jib bearings onto the two shafts located on the underside of the rolling table. Swing the jibs into position and lower the two slide bearings onto the jib pins. Refit the table stop screw. Lightly oil all moving parts. Finally, undo the two shaft locking knobs and slide the shaft forwards from the operating end until it stops. This is now in the full 1220mm capacity position. Re-tighten the locking knobs and check that the table runs smoothly along its full travel.

The Panel Sizing Table has been factory fit and tested, however if any problems are encountered with smooth and accurate operation of the unit the following checks should be undertaken:

Problem	Action
Table does not run smoothly along its travel	Check that all slides and shafts are free from debris i.e. resin build up (lightly oil). Check roller tension.
Table does not cut a square edge	Check that the cross cut fence is set at 90° to the sawblade. Adjust the stop to suit.
Table does not sit level from front to back	Using a 3mm allen key adjust the far roller to suit.
Table does not sit level from right to left	Adjust jib pivot pins to suit

3.0 Connection to a Dust Extraction System

All employers are duty bound under the Factories Act 1961, The Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 1988 to control wood dust in the workplace.

Wherever possible this should be achieved by measures other than the provision of personal protective equipment.

To effectively exhaust these machines they should be connected to a dust extraction unit with a minimum air volume of 1445 Cubic Metres per Hour at 20m/sec. A 150mm-dia outlet is located at the rear of the machine base. Provision is also made for extraction from above the sawguard. Always switch the dust extraction system on before switching on the machine.

4.0 Electrical Installation

Electrical wiring should be carried out by a competent electrician, following the directions given below.

- The motor, starter, and isolator have been wired in at the factory and tested before despatch. All that is required is to connect the power supply to the isolator.
- Check that the supply details on the motor nameplate correspond with the site supply.
- It is important that the correct cable size is used to avoid a voltage drop at the motor terminals. If the motor is operated on a voltage outside, plus or minus 6% of the spot voltage, then premature failure will occur.
- Do not wire single-phase machines into a 13 amp plug socket.
- It is important to check rotation of the sawblade which should be clockwise when viewed from the left of the machine.

Should you encounter problems on start up please refer to the trouble shooting checklist provided in the Maintenance Instructions.

5.0 Switch Gear



5.1 The Padlockable Isolator

With this switch in the OFF position the machine is effectively isolated from the supply to allow personnel safe access for maintenance or repair work and to prevent dangerous restarts. In order to prevent unauthorised use of the machine the switch can also be secured in the OFF position using a padlock.

To operate the machine first turn the isolator to the ON position.

5.2 Start / Stop Buttons

The motor is then started by pushing the green (power on) button on the starter panel, and stopped using the red (power off) button. The mushroom headed lock-off stop switch, once pressed will remain locked in the off position. To restart the machine it is necessary to release the off button by twisting it in a clockwise direction.

5.3 Circuit Protection

In case of a mains failure the starter is fitted with no volt release protection and will not restart without being switched on again. The starter is also fitted with an overload protection device. An electrical overload occurs where an electric motor is subjected to a greater load than it was designed for. This can be caused by short circuit, by incorrect installation, or by misuse

(including poor machine maintenance). The inbuilt breaker will therefore help prevent damage to the motor should such a situation occur. The motor cannot be restarted until the breaker has reset itself.

5.4 Emergency Foot Operated Latching Stop Switch

This switch is provided for use in emergency situations only. We do not recommend that it is used in lieu of the stop switch on the front of the starter panel. The foot switch, once pressed will remain locked in the off position. To restart the machine it is necessary to release the switch by pulling it towards you.



6.0 Machine Setting

Details on the correct setting of the guard, fence and riving knife, together with the use of the necessary safety devices, are detailed in the following sections of this manual. Prior to these operations however the following checks should be carried out:

1. The machine is isolated.
2. The saw is not cracked or distorted.
3. The saw collar is clean and in good condition.
4. The sawblade is mounted correctly for clockwise rotation when viewed from left-hand side of machine.
5. The gap plate is correctly positioned.
6. The saw runs free (check by slowly turning it by hand).
7. The sawguard and riving knife are secure.
8. The timber is free of grit, nails or other foreign bodies.
9. The table is free of spanners, rules etc., and that all tools are returned to their rightful place.

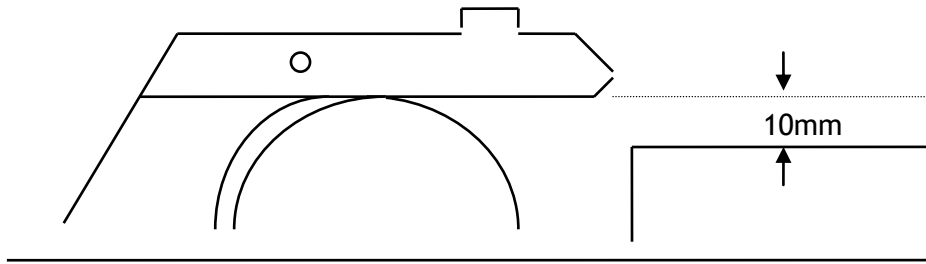
ENSURE THAT ALL STOCK IS CLEAR OF THE BLADE BEFORE START-UP

ENSURE THAT THE SAWBLADE HAS REACHED FULL SPEED BEFORE PRESENTING THE WORKPIECE TO IT. IT IS ESSENTIAL THAT THE MACHINE IS SWITCHED OFF WHEN LEFT UNATTENDED.

6.1 The Spindle Rise and Fall

The height of the saw spindle is adjusted using the rise and fall handwheel at the front of the machine.

The blade should be set so that the distance between the bottom edge of the sawguard and the top of the timber being cut does not exceed 10mm. In this position you should aim to have 3-5 of the blade's teeth in the wood during the cut. This will minimise the amount of friction and enable you to maximise feed speed. Clearly, the thicker the stock the more teeth there are in the wood. This increases friction, reduces feed speed, and taxes the saw motor. The solution is to replace the blade with a coarser one. Avoid the temptation to raise the blade to full height. While the number of teeth in the wood decreases, the footprint of the blade in the wood is much greater. This increases the chance of kick-back. There is also a much greater chance of injury with the blade at full height.

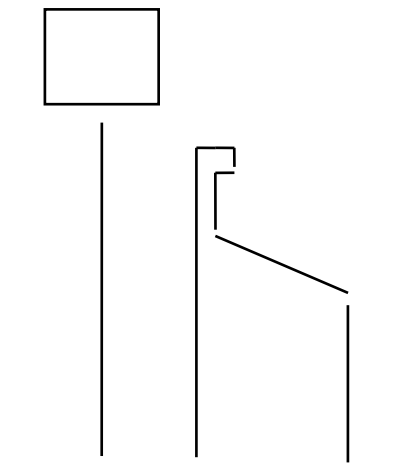


6.2 Tilting the Spindle

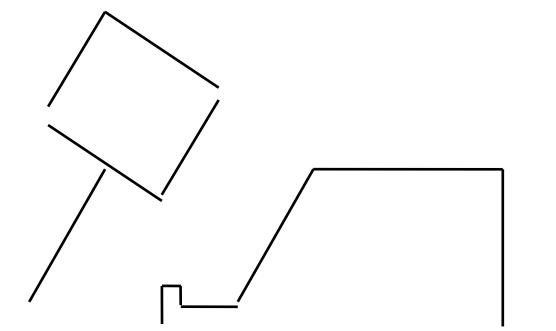
The motor and motor bracket tilt on a quadrant of 45° from the vertical, by means of the handwheel positioned to the side of the machine. The graduated protractor scale at the front of the saw indicates the angle at which it is set. A locking lever is positioned at right angles to the tilt handwheel for locking / unlocking the screw. **Do not attempt to tilt the sawblade with the lock engaged.**

6.3 The Rip Fence

The function of the saw fence is to act as a guide and support to the timber. It can be adjusted fore and aft to suit the operation being carried out. When ripping, the front edge of the fence should be in line with the root of the teeth of the sawblade. When crosscutting, the maximum possible length of fence should lie on the machine table. To adjust, simply release the two clamping levers at the back of the fence. Note: the fence casting is eased along its travel by means of a nylon roller. To ensure that the roller remains in contact with the machine table in all fence positions, the fence extrusion should be set slightly higher than the table itself. When sawing thin pieces of timber ensure that the two positional fence is adjusted to suit:



High position for deep work



Low position for shallow or angled cutting

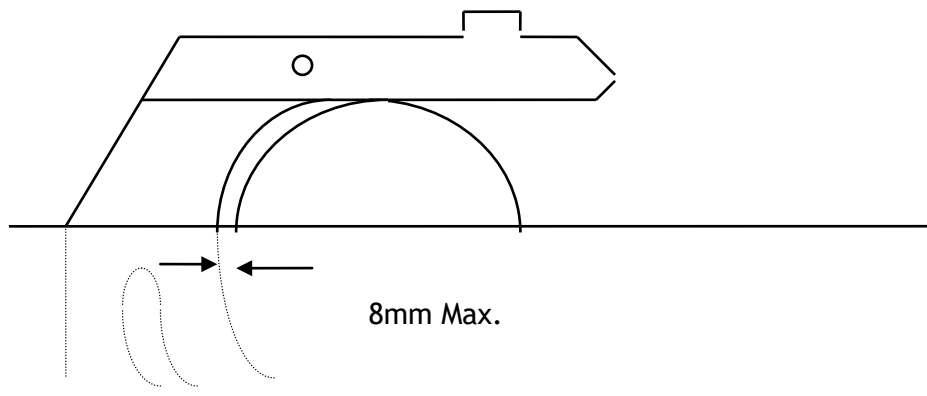
6.4 The Rip Fence Fine Adjuster

For approximate setting of the width of cut the table rule can be used, located on the fence support bar, although the accuracy of this will depend on the sawblade being used. The most reliable method for setting the width of cut is to measure from the fence to the inside edge of the tooth. This takes account of different amounts of set on the saw teeth of other saws. To

take account of any wobble on the saw, a trial cut should be made and measured with a steel rule; then adjustments may need to be made using the fine adjustment screw. The guards should be in place for the trial cut. Ensure that the machine is switched off before making any adjustments.

6.5 The Riving Knife or Splitter

The riving knife should be adjusted so that at table level the distance between the front of the knife and the saw teeth does not exceed 8mm and its arc follows that of the sawblade. Its height should be adjusted so that the bottom of the sawguard covers the teeth of the sawblade. The sawguard must be adjusted so that it is parallel with the machine table using the sawguard horizontal adjustment.



6.7 Pushsticks

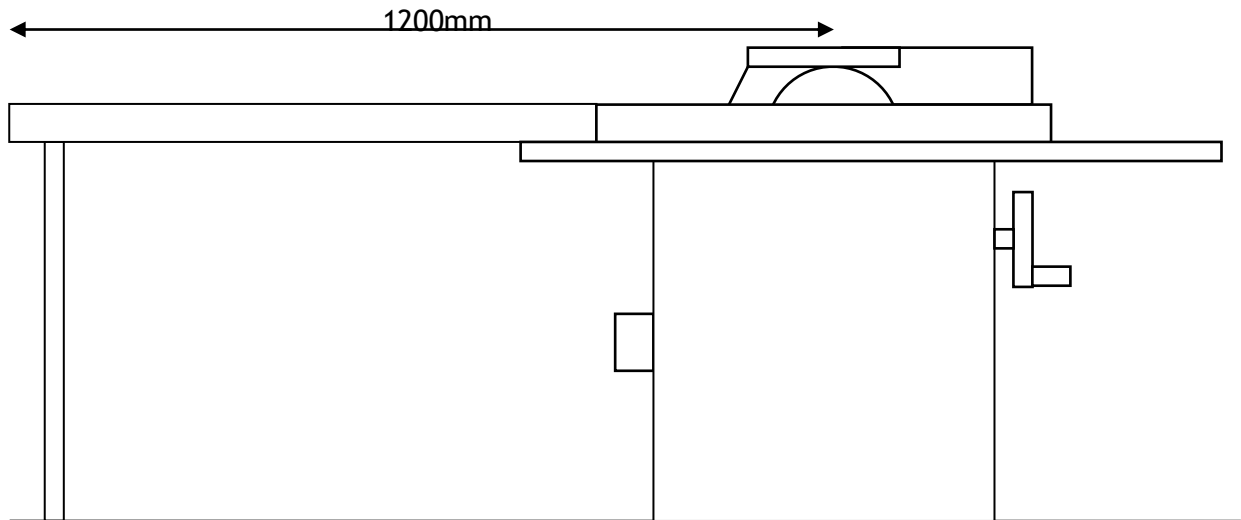
Pushsticks (provided as standard with this machine) should always be used when making any cut less than 300mm in length or when feeding the last 300mm of a longer cut, to avoid working with hands close to the sawblade. The leading hand should never be closer than is necessary to the front of the saw and hands should never be in line with the saw blade. When a pushstick is used, the left hand should be moved to a position along the plate of the saw, so that in the event of an unexpected movement of the workpiece, the fingers will not be thrown against the teeth.

A pushstick should always be used to remove the cut piece from between the saw and fence, unless the width of the cut piece exceeds 150mm.

A pushblock should be used when cutting small workpieces or in circumstances where it is necessary to push the workpiece against the fence.

6.8 The Rear Extension Table

If an assistant is employed at the rear of the machine to remove cut pieces the table should be extended so the distance between the saw blade spindle and the rear edge of the table is at least 1200mm. The assistant should always remain at the outfeed end of the extension table and should not lean forward and put his hands near to the saw teeth.



6.9 Blade Changing

Saws should be regularly examined to check that the plate is free from cracks and is true, that the tips are firmly held in position and damage free. The teeth should be sharpened the moment they become dull. The Grinding of TCT Sawblades requires specialised equipment. This creates a tendency to retain the blade in the saw long after initial dulling takes place. This is a false economy.

To remove the sawblade first isolate the machine, then remove the gap plate. Loosen screw 'A' on the sawguard and tilt the front of the guard upward to expose the blade. Use the Saw Spanner provided to loosen and remove the securing nut. Note the direction of the thread, left hand. Finally remove the loose saw collar and blade. The use of a wire hook for transferring the saw to the tool room reduces the risk of cut fingers and damaged saw teeth (if the blade is dropped when carrying it by hand).

To replace the blade clean both saw collars, ensure that the sawblade being fitted is clean and sharp, and place onto the spindle ensuring that the direction of rotation is correct.

Replace the loose saw collar and saw nut and tighten.

7.0 Blade Selection

The machine's designation (e.g. TA450) indicates maximum sawblade diameter in mm. Spindle speed is set accordingly, and we do not recommend the use of smaller diameter sawblades, which require a much faster running speed. When using a smaller diameter sawblade be sure that its rpm rating is correct for the saw. The blade's peripheral speed will decrease. This means that feed speed (speed at which stock goes through the blade) will also decrease. This could mean increased friction and burning. Smaller diameter blades should have fewer teeth

than the larger diameter blade that has been removed. Do not attempt to use a blade that is less than 315mm dia on the TA450.

All blades will require a 30mm bore and a 14mm pinhole (25mm from centre to centre).

Selecting the correct blade for each operation is an essential link in the sawing process. **Your guarantee will be invalidated if you do not select the correct cutting tools.**

The sawblade supplied with the machine is a 42 tooth tungsten carbide tipped anti-kick back blade, with alternate top bevel and raker teeth to give a good finish for both ripping and crosscutting applications. Its anti-kick back feature limits the size of bite any tooth can take, and therefore the grip that the saw has on the wood, giving the operator better control of the stock. It does however make the blade unsuitable for deep ripping. When cutting material in excess of 76mm, use a blade which is expressly designed for this purpose. Misuse will put undue load on the motor, which could cause long-term damage to the motor windings.

Tungsten Carbide Tipped sawblades will stay sharp for much longer than conventional saws, and will produce a much higher quality of cut. The following table gives examples of the type of TCT blades available, and their applications:

Type	Description	No. Teeth
<i>Softwood Rip</i>	For rough ripping of softwoods and green hardwoods Large gullet space for chip clearance and rapid cutting with grain	34
<i>Universal Rip</i>	Ripsawing of both hardwood and softwood and occasional rough crosscutting. 20 ⁰ tooth angle, 10 ⁰ alternate bevel.	42
<i>Combination Rip & Crosscut</i>	General Purpose Blade providing a good finish for both ripping and crosscutting applications. 10 ⁰ tooth angle, 10 ⁰ alternate bevel.	66
<i>Trimming</i>	Accurate sizing and trimming of timber, plywoods and particle boards, veneers and soft plastics. 10 ⁰ tooth angle, triple chip.	108

Courtesy of Atkinson Walker

For maximum efficiency, always use the coarsest blade that produces adequate results.

7.1 Blade Maintenance

A dull, badly set or badly ground blade will cause slow, inefficient cutting. It will also increase the effort required for feeding and possibly overload the saw motor. It is good practice to have a second set of sharp blades available for when dull ones are away for sharpening (for saw sharpening services look under 'SAW SHARPENING & REPAIRS' in the Yellow Pages). Deposits of gum or resin near the saw teeth tend to cause a saw to stall or the timber to stick. This gum can be best removed with trichlorethylene, kerosene or turpentine. The most common method for cleaning off resin is to use a brush and scrape. A wooden scraper will avoid unnecessary scratching of the sawblade surface. **Never try to clean a running blade.**

8.0 Limitations of Use and Safe Working Practises

Training and instruction is a central requirement of the Provision of Use of Work Equipment Regulations 1998 (PUWER). No hand-fed circular saw can be operated by any person under the age of 18 without them having first completed an approved course of training. The regulation does realise that young persons may need to operate one of these machines as part of a course, and such use is permitted provided that it is carried out under the supervision of a person who has thorough knowledge and experience of the machine and of its safeguarding requirements.

It is essential that all operators of circular saws are adequately trained in the use, adjustment and operation of the machine, this covers in particular:

- The dangers associated with the operation of the machine;
- The principles of machine operation, correct use and adjustment of the fence, blade and safeguards;
- The correct selection of sawblade for each operation;
- The safe handling of the workpiece when cutting;
- The position of the hands relative to the blade and the safe stacking of workpieces before and after cutting.

Persons who install this machine for use at work have a duty under the Health and Safety at Work Act 1974 to ensure, as far as is reasonably practicable, that nothing about the way in which it is installed makes it unsafe or a risk to health at any time during setting, use, cleaning, and maintenance. This includes such aspects as correct assembly, electrical installation, construction of enclosures, and the fitting of guards and ventilation equipment. When installing this machine consideration must be given to the provision of adequate lighting and working space.

Repairs and maintenance must only be undertaken by competent technicians. Ensure that all power supplies are isolated before maintenance work begins. Instructions for routine maintenance work are included in this manual.

The machine is designed to be operated by only one person. If an assistant is employed to remove cut pieces a table extension must be fitted to the rear of the machine as detailed above.

No circular sawing machine is to be used for the crosscutting of logs and branches. These operations relate mainly to the production of firewood and the practice of feeding the wood by hand to a conventional sawbench is not permitted.

The use of a circular saw for the cutting of any rebate, tenon, or groove is prohibited, unless the part of the blade above the table is effectively guarded. When it is not practicable to carry out these operations with the riving knife and top guard in position, suitable alternative guards and fixtures will be necessary.

8.1 Warning of Residual Risks

In spite of the fact that all practical measures have been taken to ensure the safety of this machine, its safe use finally depends upon the operator's careful handling. Provided that the operator adheres to his training and follows the instructions in this manual, the likelihood of an accident is very low.

8.2 Warning Labels

The warning label fixed to the machine gives the following advice. Please ensure that all operators read it carefully.

Ensure that you fully understand the manufacturer's instruction manual and have received sufficient training in the use of this machine and the particular safety precautions to be observed.

BEFORE OPERATING THIS MACHINE ENSURE THAT:

1. All guards and fences are securely fitted and correctly set in accordance with the current regulations.
2. Tooling is of the correct type, sharpness and direction of cut and is securely fastened.
3. Correct spindle speed and feed is selected (for the cutter equipment) where appropriate.
4. Loose clothing is either removed or fastened and jewellery removed.
5. Suitable jigs and push sticks are available for use where appropriate.
6. The working area is well lit, clean and unobstructed.
7. Extraction equipment where appropriate is switched on, properly adjusted and working efficiently.

DURING MACHINING:

1. Wear suitable protective equipment where necessary, e.g. goggles, ear defenders and dust mask.
2. Ensure all moving parts of the machine are stationary before setting, cleaning or making any adjustments.
3. Ensure all power sources are isolated before any maintenance work commences.

8.3 Noise

Noise levels can vary widely from machine to machine depending on conditions of use. Persons exposed to high noise levels, even for a short time, may experience temporary partial hearing loss and continuous exposure to high levels can result in permanent hearing damage. The Woodworking Machines Regulations require employers to take reasonably practicable measures to reduce noise levels where any person is likely to be exposed to a continuous equivalent noise level of 90 dB(A) or more over an 8 hour working day. Additionally, suitable ear protectors must be provided, maintained and worn.

Machines identified as generating unhealthy noise levels should be appropriately marked with a warning of the need to wear hearing protection and it may be necessary to designate particular areas of the workplace as 'Ear Protection Zones'. Suitable warning signs are specified in the Safety Signs Regulations Act 1995. It may be necessary to construct a suitable enclosure, for which professional advice should be sought.

Further information and references to practical guidance are contained in free leaflets available from The Health & Safety Executive.

Using correctly designed extraction hoods and a compatible system the compound effect on this machine was to increase the readings by 1dB(A).

The following noise levels were recorded at a distance of one metre from the machine (operator side) with a 24 tooth anti kick sawblade fitted, using varying feed rates and depths of cut.

TIMBER	DEPTH OF CUT	NOISE LEVEL dB(A) @ 1M
None	No load	80
Softwood	20mm	85
Softwood	38mm	87
Softwood	75mm	88
Hardwood	20mm	86
Hardwood	38mm	88
Hardwood	75mm	89

The figures quoted for noise are emission levels and not necessarily safe working levels. Whilst there is a correlation between emission levels and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure to the work force include the duration of exposure, the characteristics of the workroom, the other sources of dust and noise, etc., i.e. the number of machines and other adjacent processes. Also the permissible exposure levels can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.

The list below outlines some of the variables which directly affect the noise level of the machines:

VARIABLE	RELEVANT FACTOR	EFFECT
Timber	Species	Hard stiff timber can mean more noise (approx. 2dB(A) difference when cutting oak and pine) & more transmitted noise.
	Width	Wide work pieces radiate noise over a greater area increasing the noise level.
	Thickness	Thin workpieces generally vibrate more increasing the noise level.
	Length	Long workpieces transmit noise away from the cutting area towards the operator.
Tooling	Width of Blade	This affects the windage noise and increases roughly in proportion to the width of cut.
	Blade Sharpness	Dull and worn blades exert more force on the timber thus creating more noise.
	Balance	Out of balance blades mean vibration and changes in cutting conditions, resulting in increased noise levels.
Extraction	Air Velocity/ System Design	Resonant conditions can lead to high noise levels, excessive turbulence and chip impact can increase noise levels substantially

9.0 Maintenance Instructions

9.1 Cleaning and Lubrication

Keep the table clean and protected. Coating the cast iron with beeswax will reduce friction between the table and work-piece and inhibit corrosion. Avoid products that contain silicone, anti-slip additives, or abrasives. Avoid contact with anything moist. Don't set drinks on the tabletop, or leave green wood on it. These will leave permanent marks. Any surface rust can be removed with auto rubbing compound and a wool bonnet. Work slowly and carefully; use the rubbing compound liberally. If the saw is to be stored for any length of time, lightly oil any surface that may rust before storing. The oil can be removed later with mineral spirits or other solvent.

Always check that the table insert is correctly seated on the keeper plates when carrying out maintenance, or when changing blade. The insert should sit level with the tabletop without any rock in it. Too high at the front and timber will catch on the front edge of the insert before entering the blade, too low at the back and timber is in danger of catching on the inside lip of the table and being kicked back by the saw blade. The underside of the table has been precision machined, negating the need for adjusting screws. Should the insert not sit properly after a thorough clean it may have become twisted and should be replaced. Similarly, replace the four screws preventing the insert from lifting as necessary.

Clean the inside of the saw shroud regularly. A build-up of dust or chips around the motor and controls can cause motor failure and will impair movement of the rise & fall and tilt controls.

When lubricating the control mechanisms first check them for sawdust accumulation. Use a pitch remover and a wire brush to remove any build-up. Once clean, lubricate moving parts using a lubricant that does not pick up a lot of sawdust. Powdered graphite, hard wax or white lithium sprays are ideal. Do not use an oil-based product. These will collect sawdust and congeal into a gummy substance, making working parts hard to operate. Drive belts will also deteriorate if they come into contact with oil.

9.4 Riving Knife Maintenance

An improperly set riving knife can affect both ripping and crosscutting accuracy. The riving knife is supposed to go through the kerf to keep the parts separated. This reduces the strain on the blade. If the riving knife is not correctly aligned with the blade it may push the work away from a straight line, or worse still cause the work to hit the riving knife when fed through. Alignment of the riving knife to the back of the blade is factory set, and cannot be adjusted. Check therefore that the kerf of the blade is greater than the width of the riving knife by placing a steel rule alongside each of the riving sides. The rule should be clear of the plate of the saw but should catch on the teeth. Check also that both sides of the riving knife are square to the table using a 6" square, and that it isn't bent. Straighten a bent riving knife using a hammer. If the riving knife is out of square gently twist the knife by placing pressure on one side or other of the sawguard.

A narrow kerf sawblade will have to be used with a narrower plate riving knife. Again, ensure that the replacement knife is narrower than the saw kerf, but thicker than the plate of the saw. Always check alignment of the saw blade to the riving knife when changing blades.

If a blade continues to vibrate after having carried out all of the above checks check that the blade itself is not warped, dull, or has too thin a rim. Check for warp with a dial indicator or pencil. Disconnect the saw and place the point of the pencil against the blade. Slowly turn the blade while watching the pencil point. If the blade moves the pencil, or a gap appears between the blade and the pencil then the blade is warped. Try again with a true blade. If the problem persists check the saw spindle for wear, burrs and any play in the bearings that the arbor rides in.

9.5 Saw Spindle Maintenance

First check the fixed and loose saw collars to be certain that there are no high spots along the side that contacts the blade. Any high spots can cause the blade to vibrate in the saw kerf. Remove any high spots with a fine-cut file. Similarly inspect the arbor threads for dirt, burrs or raised nicks.

The main spindle bearings are sealed for life and require no lubrication. To check their condition, turn the arbor by hand while feeling for any roughness. Grasp the arbor and gently pull up and down to check for any play. Roughness or slack in the bearings means that they need to be replaced.

9.6 Belt Tensioning

- The TA450 is driven via three SPZ710 vee belts.

IN ORDER TO ENSURE THE CORRECT SPINDLE STOPPING TIME (I.E. < 10 SECS) IT IS VITAL THAT THESE ARE CORRECTLY TENSIONED AND REGULARLY CHECKED FOR WEAR.

Insufficient tension results in longer stopping times, belt slippage, loss of power (leading to motor failure), vibration, whip, excessive noise, and accelerated wear of the belt and pulley sheaves. Excessive tension stretches the belts, causes heat build up that accelerates deterioration and places unnecessary strain on the bearings. A properly tensioned belt will feel alive and vibrate when struck. If in doubt then the general rule is that belts should flex about 1/32 inch for every inch of span between the centres of the pulley.

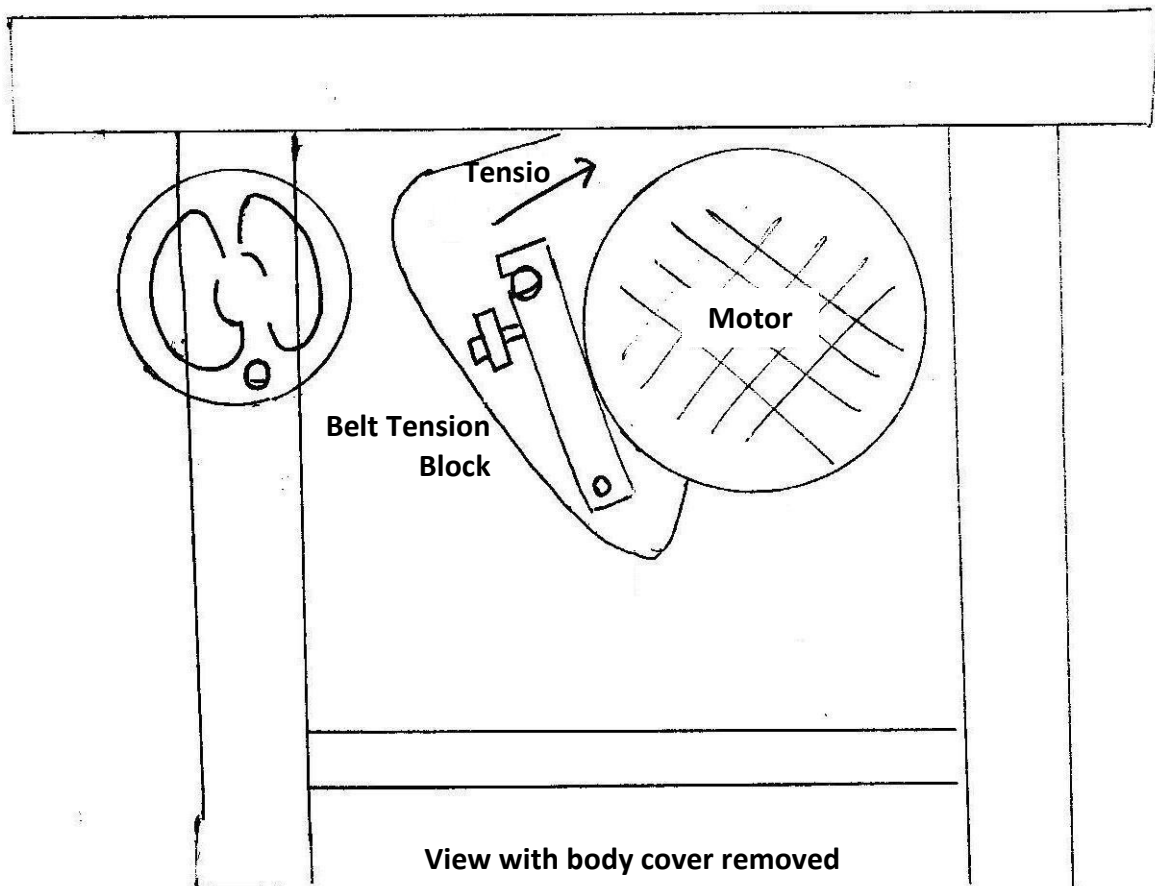
When the belts begin to show signs of wear replace them as a set, even if only one is worn; otherwise the newest belt will carry more of the load. Uneven loading results in premature wear and vibration in the saw. Frayed belts will also cause vibration.

Belt tensioning is performed as follows:

Tools Required: 13mm & 19mm S/E Spanners (both supplied)

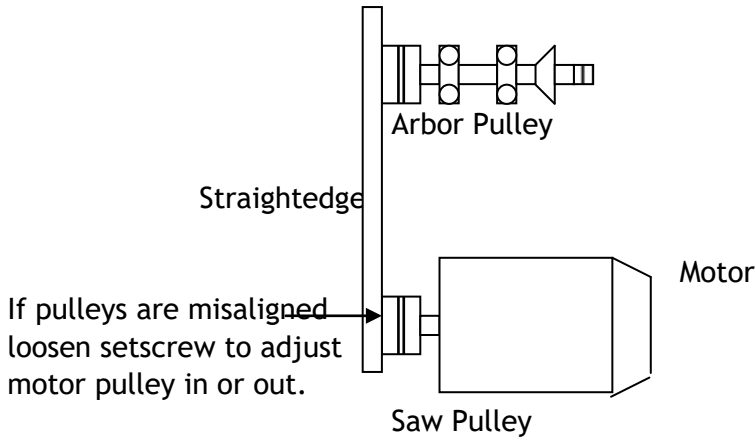
Loosen the uppermost of the Motor Mounting Bolts by approx. ¼ of a turn & re-tension by means of the Belt Tension Block Jacking Screw.

In order to remove the drive belts the motor will need to be fully retracting against the tension block & the replacement belts tensioned as above.



9.7 Pulley Alignment

Excessive belt wear, vibration and noise may be the cause of poorly aligned or loose pulleys. Check alignment by placing a straight edge across the faces of the two pulleys. If necessary adjust the motor pulley by loosening the allen screw locking the pulley onto the shaft. If you cannot get the pulleys to align it may be because the shafts are not in line. Loosen the motor mounting bolts and shift the motor until you get the required results. Position the pulley as near as possible to the motor bearing. If it is set too far along the motor shaft it will put unnecessary strain on the shaft and bearings.



9.8 Rip Fence Alignment

Burning on the waste side of stock and/or the workpiece binding between the rip fence and the back of the saw, are both indicative of the rip fence being out of square to the blade. Check by placing a piece of 3/4" stock at the front and another piece at the rear of the near side of the sawblade. Slide the rip fence up against these to determine alignment. If necessary adjust the fence using the locking bolts at the back of the fence rail. So as to prevent the fence casting catching on the fixing studs a distance of 25mm from the fence bar to the table is required. Alternatively the rip fence extrusion may have been bent. Check by placing a straight edge along its length. Either replace it, or add an auxiliary wood fence and shim it to even out any imperfections.

10.0 Electrical Information

M/c ref.	Supply	Motor ref.	Kw	Starter ref.	Rated Current	Starting Current	Required fuse size	Cable size
TA450-3/b	400-3-50	AMHES132M BA2	5.5 IE2	3SE0018	11.5A	69A	25A/ph	4.0mm

10.1 Electric Motors: Trouble Shooting Checklist

Symptom

Machine does not start at all.

Check

Isolator is switched to ON and all STOP buttons are out.
 Overload button is reset.
 Starter coil/contactor is operational.
 There are no loose connections.
 There are no fuses blown.
 Supply is reaching the starter.
 Supply is reaching the motor.
 Voltage between the phases at starter and motor.

Motor runs but trips.

Overload setting in starter.
 Current drawn without load applied.
 Current drawn under load.
 Supply voltage without load and on moment of switch on.
 Allowed variation plus/minus 6%.
 Supply voltage under load.
 Supply voltage with motor off.
 Supply to all three phases at isolator, starter and at motor.
 Note that it is possible for 3 phase machines to operate with only 2 phases of the supply. This is known as single phasing.
 Check all fuses.

Motor attempts to start then trips.

The machine is not jammed, and the spindle is free to rotate.
 Winding resistance of each motor phase (values should all balance).
 Insulation resistance between windings and earth.
 The correct cable size has been used to install the machine (long runs of cable can cause voltage drop).

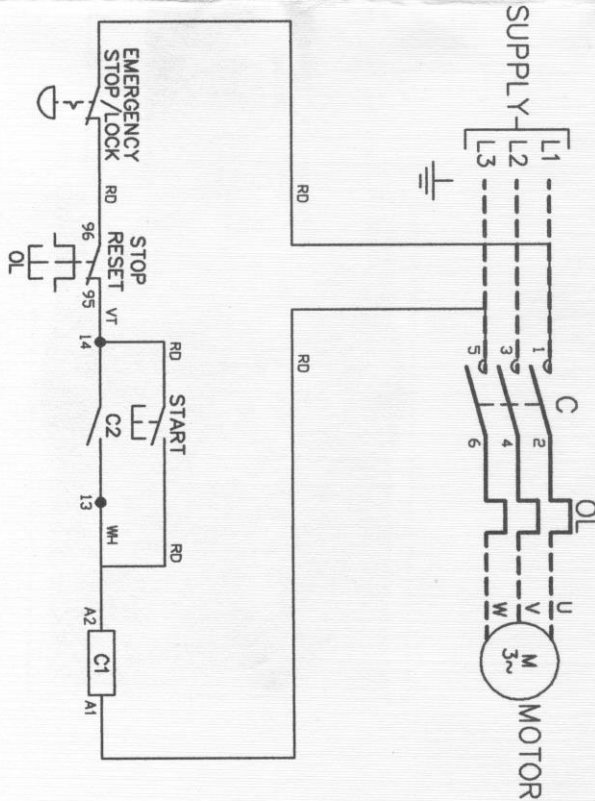
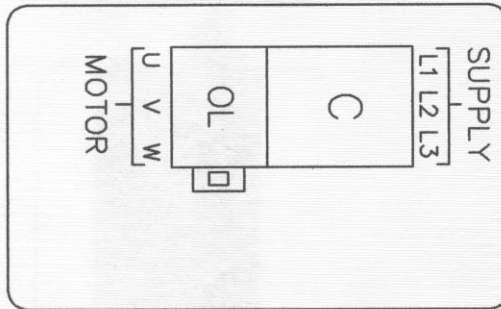
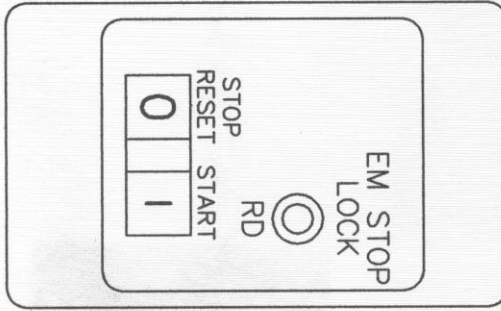
TA450 - Three Phase Wiring Diagram

TITLE C.D. FOR SPECIAL CONTROLLER.

DRG No **A4/ DZ1369/LK-REV1**

All mains wiring BLACK
 All a.c. control wiring RED
 All d.c. control wiring BLUE
 As EN60204 Part 1.
 Unless otherwise stated.

ISO 9001, QUALITY IS YOUR RESPONSIBILITY. IF IN DOUBT ASK.



TITLE C.D. FOR SPECIAL CONTROLLER.

CURRENT REVISION No.

ALT CKD DATE



Crompton Controls
 Monckton Road, Watnfield
 West Yorkshire WF2 7AL
 Tel: (0924) 366251 Fax: (0924) 367274

RECORDED ISSUE No.

DRN **Mk** CKD **Mk** APPD **Mk**
 DATE **20/9/02** SCALE

DRAWING NUMBER

A4/ DZ1369/LK-REV1

11.0 TA450 Parts List

MACHINE IDENTIFICATION: Your Machine has an individual serial number stamped on the top face of the machine table. This number can also be found on the front cover of this manual. Always quote your machine serial number when applying for spare parts etc.

Part No.	Part Description	No. per Mach
Body Assembly		
TA450-501	Body	One
TA450-501a	Body Boss 20mm	One
TA450-501b	Body Boss M12	One
TA450-502	Body Cover	One
	Rear Slot Cover	One
TA315-122	Table Extension	Two
	Extraction Shroud	One
Table Assembly		
TA450-505	Table	One
TA450-506	Gap Plate Keeper	Two
TA450-507	Gap Plate	One
Cradle Assembly		
TA450-510	Cradle Pivot Bracket	Two
TA450-511	Cradle	One
TA450-512a	Cradle Support	One
TA450-512b	Cradle Support Bracket	Two
TA450-513	Cradle Cover Plate	One
TA450-514	Cradle Support Plate	One
Spindle Assembly		
TA450-1001	Cradle Plate	One
TA450-521	Cradle Pivot Shaft	One
TA450-522	Cradle Pivot Collar	One
TA450-523	Saw Spindle	One
TA450-524	Spindle Bearing Spacer	One
TA450-525	Spindle Pulley	One
TA450-526	Spindle Washer	One
TA450-527	Saw Collar	One
TA450-528	Saw Spindle Nut	One
TA450-529	Bearing Housing	One
Riving Knife		
TA450-1004	Riving Knife Bracket	One
TA450-531	Riving Knife Comp Link	One
TA450-532	Riving Knife Mounting	One
TA450-533	Riving Knife Clamp	One
TA450-1070	Riving Knife	One
TA450-535	Riving Knife Bracket Spacer	One
Motor Assembly		
TA450-540	Motor Mounting	One
TA450-541	Motor Pulley	One
TA450-542	Belt Tension Block	One
Rise & Fall Assembly		
TA450-545	Rise & Fall Bracket	One

TA450-546	Rise & Fall Nut	One
TA450-547	Rise & Fall Screw	One
TA450-548	Rise & Fall Handwheel Shaft	One
	Handwheel Dia 200 + Hndl	One
Tilt Assembly		
TA450-550	Tilt Nut	One
TA450-551	Tilt Screw	One
TA450-552	Tilt Handwheel Shaft	One
	Handwheel Dia 200 + Hndl	One
Fence Assembly		
TA450-560	Fence Shaft	One
	0-915mm S/A Rule	One
TA450-1063	Fence Shaft Bracket	One
TA450-562	Fence Locking Lever	One
	N12 Knock On Handle	One
TA450-1064	Fence Adjusting Bracket	One
TA450-565	Fence Adjusting Screw	One
	Knurled Knob Dia 40	One
TA450-566	Fence Clamp	One
	M12 Locking Levers	Two
TA450-567	Fence	One
Sawguard Mounting		
TA450-570	Sawguard Mounting Arm	One
TA450-571	Sawguard Mnt Bkt Horizontal	One
TA450-572	Sawguard Mnt Bkt Vertical	One
TA450-573	Sawguard Mounting Arm	Two
Sawguard Assembly		
TA450-1071	Sawguard	One
TA450-591	5mm Polycarb Hinged Visors	One
TA450-580	Sawguard Top	One
TA450-581	Polycarb Sawguard (4 Glued Sides)	One
TA450-582	Sawguard Top Bracket	One