STARTRITE®

352SB, 401E, 401S, 440R, 581S & 681S

Woodworking Bandsaws

IMPORTANT
For your safety read instructions carefully before assembling or using this product. Save this manual for future reference.

352SB 401E 401S 440R 581S 681S

A.L.T. SAWS AND SPARES LTD

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Always wear safety glasses when using woodworking equipment.

Always read the instructions provided before using woodworking equipment.

QUALITY BANDSAW BLADES

TO SUIT THE

352SB / 401E/ 401S / 440R

581S / 681S

MODELS

ORDER LINE- 01634 850833

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A.L.T. SAWS AND SPARES LTD

Contents

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2. Health & Safety Guidance

READ ALL THE INSTRUCTIONS IN THIS MANUAL CAREFULLY BEFORE ASSEMBLY, INSTALLATION AND USE OF THIS PRODUCT. KEEP THESE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE.

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury.

SAFE OPERATION

1. Eye Protection.
The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Always wear safety glasses or other suitable eye protection. Wear safety glasses at all times. Everyday glasses only have impact resistant lenses. They are not safety glasses which give additional lateral protection.

2. Keep work area clear.
Cluttered areas and benches invite accidents and injuries.

3. Consider work area environment.
Do not expose the machine to rain or damp conditions.
- Keep the work area well lit.
- Do not use the machine in explosive environments eg. in the presence of flammable liquids, gases or dust.

4. Guard against electric shock.
Avoid body contact with earthed or grounded surfaces such as pipes and radiators. There is an increased risk of electric shock if your body is earthed or grounded.

5. Keep other persons away (and pets).
Do not let persons, especially children, not involved in the work, touch the machine, or extension cord (if used) and keep visitors away from the work area.

6. Store idle tools.
When not in use, tools should be stored in a dry, locked- up place, out of reach of children. Do not allow persons unfamiliar with the tool or these instructions to operate the tool.

7. Do not force the machine.
It will do the job better and work more safely if operated at the speed at which it was intended.

8. Use the right tool.
- Do not force small tools to do the job of a heavy-duty tool.
- Do not use tools for purposes other than those for which they were intended.

9. Dress properly.
- Non-slip footwear is recommended.
- Do not wear loose clothing, neckties or jewellery; they can be caught in moving parts.
- Roll up long sleeves above the elbow.
- Wear protective hair covering to contain long hair.

10. Use protective equipment.
- Use safety glasses. (See note 1. above)
- Use face or dust shield if cutting operation creates dust.
- Use ear plugs or ear defenders when the machine is in use

11. Connect dust extraction equipment.

12. Do not abuse the cord.
Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges. Do not use the cord for carrying the tool.

13. Do not overreach.
Keep proper footing and balance at all times.

14. Secure work.
Ensure that your work piece is properly held before starting to cut.

15. Maintain tools with care.
- Follow instructions for lubrication and changing accessories.
- Inspect electric cords periodically and, if damaged, have them repaired by an authorized service facility or qualified electrician.
- The mains plug fitted to the machine should always match the outlet. Do not modify the plug in any way. If a replacement plug is required it should be fitted by a competent person.
- Inspect extension cords (if used) periodically and replace if damaged. Always use properly rated extension cord with a minimum core cross section of 2.5mm^2 and a maximum length of 3 metres.

16. Keep Cutting Tools Sharp and Clean
Properly maintained cutting tools are easier to contol and less likely to bind.

17. Disconnect Machine.
When not in use, before servicing, changing blades etc. disconnect the machine from the power supply.

18. Never leave machine running unattended.
Turn power off, do not leave machine until it comes to a complete stop.

19. Remove adjusting keys and wrenches.
ENSURE that all adjusting wrenches and keys are removed before switching the machine 'ON'.

20. Avoid unintentional starting.
Ensure the switch is in the "STOP" position before turning on the power from the main electricity supply. This means the machine will not automatically start up after say a power cut, unless you first reset the start switch.

21. Out-door Extension Leads.
Your machine should not be used outdoors.

22. Damp Conditions.
If operating a power tool in damp conditions is unavoidable, a residual current device (RCD) protected supply must be used to reduce the risk of electric shock.

23. Stay alert.
Watch what you are doing, use common sense and do not use the machine when you are tired or under the influence of drugs, alcohol or medication.

24. Check for damaged parts.
- Before use of the machine, it should be carefully checked to determine that it will operate properly and perform its intended function.
- Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation.
- A guard or other part that is damaged should be properly repaired or replaced by a qualified person unless otherwise indicated in this instruction manual. Have defective switches replaced by a qualified person.
- Do not use the machine if the switch does not turn on and off.

25. Warning!
- The use of any accessory or attachment, other than those recommended in this instruction manual, or recommended by our Company may present a risk of personal injury.

26. Have your machine repaired by a qualified person.
- This electric machine complies with the relevant safety rules. Only qualified persons using original spare parts should carry out repairs. Failure to do this may result in considerable danger to the user.

Maintenance and Servicing.
This machine requires very little maintenance. This manual gives clear instructions on installation, set up and operation.
Read these instructions carefully. Remember always to switch off and unplug from the main electricity supply before carrying out any setting up or maintenance operations.

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3. Additional Safety Instructions For Bandsaws

SAFETY IS A COMBINATION OF OPERATOR COMMON SENSE AND ALERTNESS AT ALL TIMES WHEN THE BANDSAW IS BEING USED.

WARNING: FOR YOUR OWN SAFETY, DO NOT ATTEMPT TO OPERATE YOUR BANDSAW UNTIL IT IS COMPLETELY ASSEMBLED AND INSTALLED ACCORDING TO THE INSTRUCTIONS.

SAFE OPERATION

1. The bandsaw should be bolted to the floor where possible.

2. If you are not thoroughly familiar with the operation of bandsaws, obtain advice from your supervisor, instructor, or other qualified person or contact your retailer for information on training courses. Do not use this machine until adequate training has been taken.

3. Never turn the machine 'ON' before clearing the table of all objects (tools, scrap pieces etc.)

4. Ensure that:
(i) the voltage of the machine corresponds to the mains voltage.
(ii) To use an earthed power source (wall socket).
(iii) The cord and plug are in good condition, i.e. not frayed or damaged.
(iv) No saw teeth are missing and the blade is not cracked or split. Otherwise replace blade.
(v) The blade is properly tensioned and aligned.

5. Never start the machine with the saw blade pressed against the workpiece.

6. Never apply sideways pressure on the blade as this may cause the blade to break.

7. Care must be taken when cutting wood with knots, nails or cracks in it and / or dirt on it, as these can cause the blade to get stuck.

8. Never leave the machine running unattended.

9. Ensure the teeth of the blade are pointing downwards.

10. Do not use saw blades which are damaged or deformed.

11. Replace the table insert when it is worn.

12. When cutting round timber use a suitable device to prevent twisting of the workpiece. **See section 10 Fig. 10.3.**

13. DO NOT operate the machine when the door or the blade guard is not closed.

14. Adjust the guard as close as possible to the workpiece being cut.

15. Ensure the selection of the saw blade and speed are suitable for the material to be cut. For most wood cutting applications the fastest of the two speeds should be used. **See section 8.**

16. If the mains lead is damaged, it must only be replaced by a qualified electrician.

17. Never use a long extension cable.

18. WARNING LABELS – It is important that labels bearing Health & Safety Warnings are not removed or painted over. New labels are available from Customer Services.

19. MECHANICAL SAFETY – The security of all clamps and work holding devices should be checked before switching on.

20. WOOD DUST – The fine particles of dust produced in cutting operations are a potential health risk. Some imported hardwoods do give off highly irritant dust which causes a burning sensation. We strongly recommend the use of a dust collector and dust mask/visor. Our Customer Services Department will be happy to advise you on the correct unit for your needs.

21. Recommended protective clothing:
(i) Gloves for moving work material and when carrying out the blade changes;
(ii) Non-slip shoes;
(iii) Protective eye glasses.

22. This machine falls under the scope of the 'Health & Safety at Work etc. Act 1974', and the 'Provision & Use of Work Equipment Regulations 1998'. We recommend that you study and follow these regulations. Further guidance can be found in the Safe Use of Narrow Bandsaws and the Safe Use of Woodworking Machinery code of practice booklet (L114) published by Health & Safety Executive and available by visiting http://www.hse.gov.uk/pubns/wis31.htm.

WARNING: Do not allow familiarity (gained from frequent use of your machine) to cause complacency. Always remember that a careless fraction of a second is sufficient to inflict severe injury.

NOISE EMISSION

The measurements of noise, in the working position and during operation, were carried out under the standard ISO 7960 annex "J":

Instantaneous acoustic pressure **<130.0 dB**

The value of the noise level indicated is an emission level and doesn't necessarily represent safe working levels.
Although there is a relationship between emission levels and exposure levels, it isn't precise enough to use in a way to determine whether it is necessary, or not, to implement further precautions. The factors that determine the true exposure level to operators are: the amount of exposure time, the characteristics of the working environment, other sources of dust and noise etc..
The permitted exposure level limits vary from country to country. this information allows the machine user to better evaluate the dangers and risks.

PRESCRIBED USE OF THE MACHINE

The machine was designed for cutting solid wood, wood derivates, materials similar to cork, hard rubber and hard plastic materials using suitable blades.

THESE MACHINES MUST NOT BE USED TO CUT OTHER MATERIALS
THESE MACHINES MUST NOT BE USED TO CUT METALS.

ATTENTION Bandsaws still present risks that cannot be eliminated by the manufacturer. Therefore the user must be aware that wood working machines are dangerous if not used with care and all safety precautions adhered to.
We recommend you to study the information given in HSE document: "Safety in the use of narrow bandsaws"

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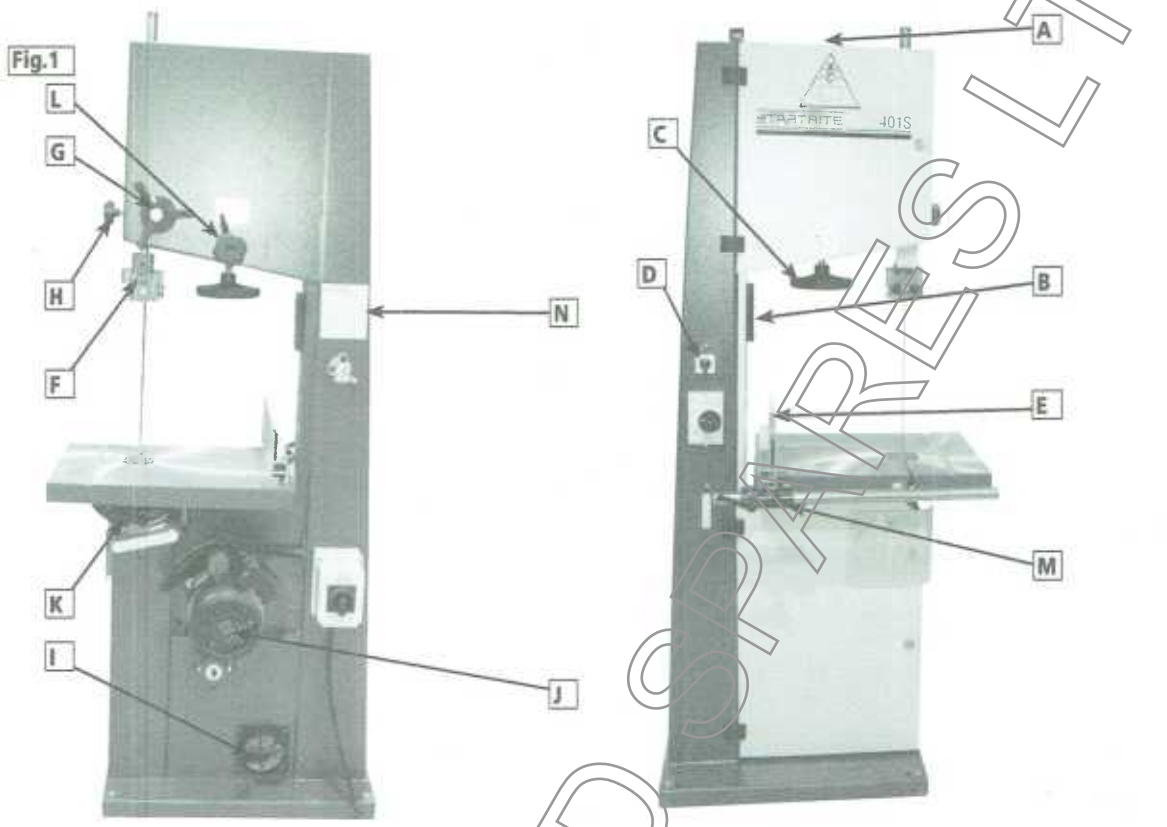
5. Getting To Know Your Bandsaw

Fig.1



A	Lifting Ring	H	Rise & Fall Lock Knob
B	Tension Indicator Window	I	Dust Extraction Port (Size and location may vary)
C	Blade Tension wheel	J	Motor
D	Switch Unit (Actual type and function may vary)	K	Table Tilting Knob
E	Rip Fence Assembly	L	Blade Tracking Knob
F	Blade Guides (upper)	M	Rip Fence Rail
G	Rise & Fall Handwheel	N	Motor Rating Plate (Location may vary)

Note: The machine shown above is for illustration only. Some features may differ between the various models. The location of some of the items detailed above may also vary slightly depending on the model, size and capacity of the machine.

Please take some time to familiarise yourself with all of the features and controls of your machine before attempting to use it.

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6. Specification

6.1 MACHINE IDENTIFICATION

There is a metallic identification plate fixed to the machine, containing the manufacturer's data, year of construction, serial number and blade data. Please locate this on the machine for further reference. When ordering spare parts, always quote the model and serial number to ensure that you receive the correct compatible parts.

6.2 CE CERTIFICATE

Certification of " CE " conformity issued by : I.N.R.S. , Av. de Bourgogne B.P. 27 , VANDOEUVRE CEDEX, FRANCE

6.3 TECHNICAL SPECIFICATION

	352SB*	401E	401S	440R	581S	681S	781S	941S
Bandwheels Dia. mm	400	400	400	440	600	700	800	940
Bandwheels Speed RPM	900	900	900	800	750	720	640	590
Motor Power HP	1 1/2 (1 phase)	2 (1 phase)	2 (1 phase)	3 (1 phase)	3 (1 phase)	3 (1 phase)	5 1/2 (3 phase)	10 (standard)
	1 1/2 (3 phase)	2 (3 phase)	2 (3 phase)	5 (3 phase)	4 (3 phase)	4 (3 phase)		15 (optional)
Cutting Depth mm	270	300	300	400	400	400	450	600
Cutting Width mm	390	390	390	425	580	680	780	920
Table Size mm	400x500	400x500	400x500	500x640	600x830	700x970	750x1100	820x1300
Table Tilt	0-20°	0-20°	0-20°	0-20°	0-20°	0-20°	0-20°	0-20°
Blade Length (Min)	3560mm / 141"	3785mm/149"	3785mm / 149"	4060mm / 160"	4520mm / 178"	4990mm /196 1/2"	5630mm / 222"	6590mm / 260"
Blade Length (Max)	3640mm / 143"	3835mm/151"	3835mm / 151"	4170mm / 164"	4600mm / 181"	5040mm /198 1/2"	5700mm / 224"	6710mm / 264"
Blade Width mm	6 - 30	6 - 30	6 - 30	6 - 50	6 - 35	6 - 40	6 - 45	6 - 50
Machine Dimensions cm	77x52x179	77x52x179	77x52x179	85x59x197	100x79x200	118x80x220	128x85x245	155x92x286
Packing Dimensions cm	189x53x84	189x53x84	189x53x84	199x53x84	210x55x107	230x60x120	255x65x125	298x67x150
Nett Weight kg	145	148	148	236	280	330	510	860

352SB* Additional features and educational safety system

Please note: the ceramic guide system is available on all bandsaws as on optional extra.

- Ceramic blade guide system
- Two speed motor (3 phase model only)
- Kickstop
- Lockable isolator
- Lockable keyswitch

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7. Fitting Optional Wheel Kit, Transporting & Positioning

7.1 Fitting the optional wheel kit

NOTE: Only certain models can accept the optional wheelkit. Please check with our customer support team if in doubt about the compatibility with your machine.

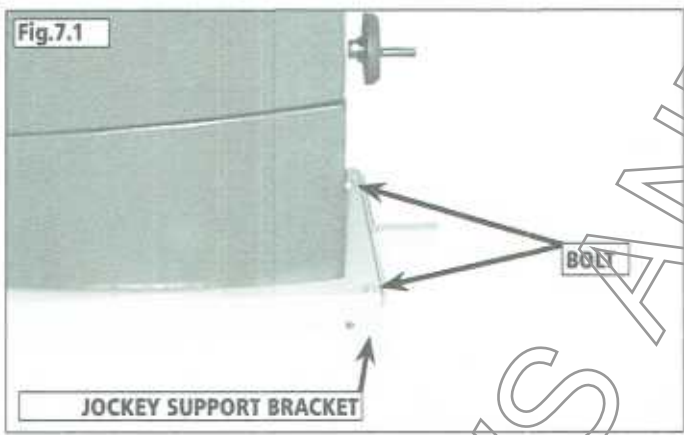
CAUTION! The machine is heavy. Additional help or a suitable lifting device or support will be required for fitting wheels.

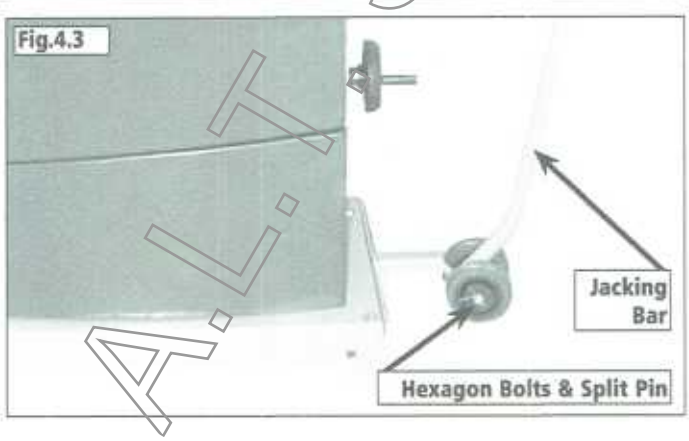
The jockey support bracket is held in place by 2 hexagon bolts. The jockey support bracket also levels the machine after the rear wheels have been fitted.

- First lift up the front (table end) of the machine with a suitable lifting device. Now fit the jockey support bracket to the base, bolt the bracket through the pre-drilled hole at either end of the base and fully tighten. **(See Fig.7.1)**
- Again using a suitable support, lift the rear (spine end) of the machine up and slide the axle through the base. Fit a wheel to either end of the axle and secure them with a washer each side of the wheel and split pin. **(See Fig.7.2)**

7.2 Using The Jacking Bar

The wheel kit is now fitted. Attach the wheels to the jacking bar using the hexagon bolts and split pin, this jacking bar is now used to lift and manoeuvre the front of the machine. **(See Fig.7.3). CAUTION! This wheel kit is only to be used on a level surface.**





7.3 Moving the machine

The machine can be lifted using a fork-lift truck, placing the forks under the feet or by using a "SLING", with a lifting capability of 2000kg. Damage caused by incorrect handling, transportation or installation may invalidate the guarantee. Consequently if in doubt about the safe handling or installation of the machine obtain the services of a competent technician,

When transporting this machine do not strap across the table or over the top of the machines **(See Fig 7.3a and 7.3b).**
Always locate retaining straps over the lower wheel box beneath the table **(Fig 7.3c).**

Fig 7.3a

Fig 7.3b

Fig 7.3c

When moving and positioning this machine do not hold the table and drag it, always hold the spine or lower wheel box **(See Fig 7.4a and 7.4b).**
If moving long distances position the machine on a trolley before moving **(See Fig 7.4c).**

Fig 7.4a

Fig 7.4b

Fig 7.4c

7.4 Positioning the machine

For a correct and rational organisation of the work area :

- Install the machine in an area that will not amplify vibration or noise
- Verify that the work area is adequately illuminated.
- When placed between other machinery there should be a space of at least 80 cm. It is necessary to anticipate sufficient space for cutting long work pieces traversly and for the fitting of rollers or other types of support,in front and at the rear of the table.
- The bases of the machines are provided with four threaded holes for levelling, the screws are provided with the machine.

There are also four holes for fixing the machine to the floor. When fixing to the floor it is recommended not to over tighten the fixtures to avoid increasing vibration.It is also advisable to place anti-vibration materials between the floor and the feet of the machine.

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8. Bandsaw Blade Set Up

ATTENTION!
DISCONNECT THE ELECTRICAL SUPPLY
BEFORE EVERY ADJUSTMENT

ATTENTION!
IN CASES OF BLADE BREAKAGE WAIT UNTIL
THE UPPER BANDWHEEL HAS COMPLETELY STOPPED
BEFORE OPENING THE DOOR.

CHOICE AND MAINTENANCE OF BLADES

The table below defines the blade length and maximum width, depending on the type of the machine.
Selection of width and type of tooth depends upon the materials to be cut and the type of operation, narrow blades are suitable for cutting curved lines, profiles etc.., wide blades are best for straight cutting.

It is advisable to use finer teeth for hard woods or thin material and coarser teeth for softwoods or deep material. In every case, the distance between each tooth should be sufficient to clear the sawdust produced during the cutting operation. If the clearance is not correct this can cause overheating and jamming of the blade, causing subsequent breakage.

Do not use flawed or deformed blades.
It is highly recommended that the blade be changed regularly. Use a specialised saw doctor for welding, sharpening and re-setting blades. The use of high quality blades is also recommended.

Causes of blade breakage:

- Excessive blade thickness in relation to the bandwheel size.
- Defective welding
- Incorrect tension, particularly if the blade is over tensioned the tension spring no longer fulfils its function
- Overloading the blade caused by using a badly ground or badly set blade, or by not slackening the tension
- After use it is recommended to slacken the tension, especially overnight, (placing a visible notice of this operation on the machine). Re-tension before next operation.
- Misalignment of the bandwheels due to unauthorized intervention of the regulating screws of the lower bandwheel.
- Irregularity of bandwheels surface, e.g an accumulation of sawdust whilst cutting resinous materials.

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Blade Length (Max)	3640mm / 143"	3835mm / 151"	3835mm / 151"	4170mm / 164"	4600mm / 181"	5040mm /198 1/2"	5700mm / 224"	6710mm / 264"
Blade Width mm	6 - 30	6 - 30	6 - 30	6 - 50	6 - 35	6 - 40	6 - 45	6 - 50

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8. Bandsaw Blade Set Up - cont.

IMPORTANT
Before making any adjustments to the machine, make sure that it has been disconnected from the electricity supply and that the blade has completely stopped.

8.1 Blade mounting and adjustment

When mounting the blade it is necessary to release the motor brake that prevents manual rotation of bandwheels. To release the brake, while machine is stopped, move the brake release selector **(Fig.9.2 & Fig.9.3 section 9)** turning it toward the release symbol.

1. On Star-Delta starter machine turn switch "M" to position "0" then turn switch "T" to position "F" (**Fig.9.3**).

2. To mount blade first open the panel of the top blade guard **Fig.8.1** and remove, (if fitted) the table insert **Fig.8.2**.

3. Place the blade onto the bandwheel checking the teeth are in a correct position, and tighten the tension using the handwheel "V", **Fig.8.3**. The correct tension value is indicated on the dynamometer fitted to the machine, the indicated value corresponds to the width of the blade. (e.g. for blade width 25mm tighten until no. 25 appears on the indicator).

4. Turn the bandwheels manually, checking that the blade does not interfere with any fixed parts and that the blade is placed correctly on the bandwheels. The points of the teeth should slightly protrude over the edge of the bandwheels.

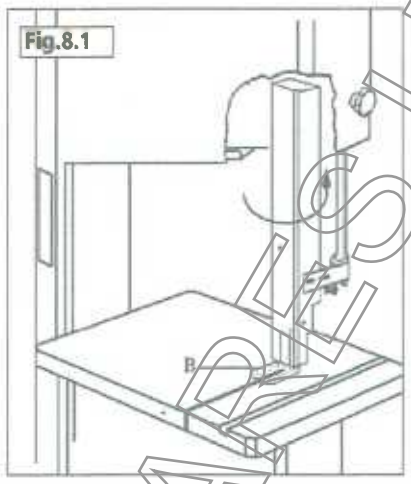
5. To adjust the blade position on the bandwheels slacken the locking lever "C", **Fig.8.3**. and then move the knob "D", **Fig.8.3.** moving it in a clockwise direction the blade will move inwards, anticlockwise the blade move further out; a quarter of a turn is sufficient to produce a noticable displacement.

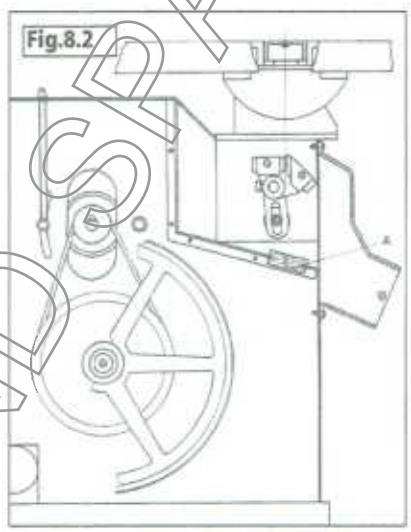
6. After several rotations of the band wheel and if the blade is positioned correctly tighten the locking lever.

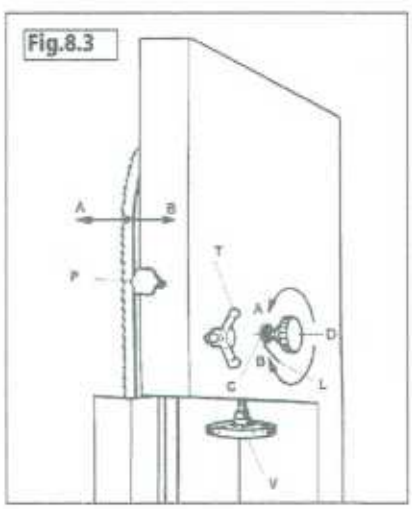
7. At this point close the movable panel of the top blade guide, re-position the lower wooden insert, (if fitted), and close the bandwheel access doors.

8. Move the brake selector back to the locking position .

IMPORTANT NOTE :
After use we recommend slackening the blade tension, and to display a visible sign on the machine advising of this procedure. Remember to check and re-tension before use. This operation prevents damage to the bandwheel tyres.







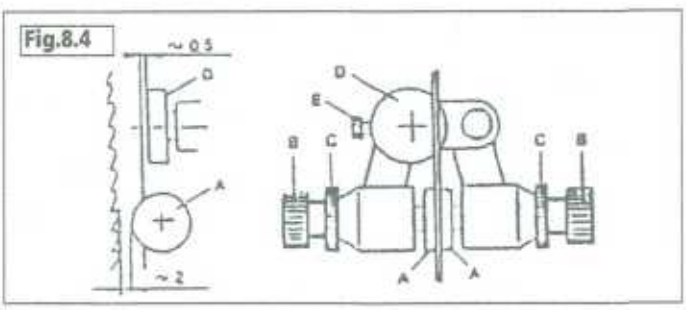
8.2 Setting the blade guides

ROLLER BEARINGS BLADE GUIDE
The upper blade guide should be positioned as close as possible to the workpiece (5-10mm)

1. To adjust the height release the locking knob "P", **Fig.8.3**. and turn the handwheel "T", **Fig.8.3.** up or down once the correct position is obtained, then lock the knob. This operation must always be carried out while the machine is stopped.

2. The side rollers "A", **Fig.8.4**. should lightly touch the blade, to prevent vibration during operation and ensure correct direction of cutting. The positioning of these rollers is controlled by screw "B", once they have been adjusted, tighten ring "C"; they should be 2 mm behind the teeth of the blade.The thrust roller "D" prevents excessive backward movement of the blade whilst in operation and should be 1-2 mm from the back of the blade: this can be adjusted by screw "E".

LOWER BLADE GUIDE
• In the case of a roller bearing guide the same instructions as for the upper blade guide are applicable.



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8. Bandsaw Blade Set Up - cont.

• Fixed blade guide consists of a support with two wooden inserts, fixed by screws, (**Fig.8.5**) the inserts should lightly touch the blade to reduce vibrations and ensure direction of cutting,

OPTIONAL CERAMIC GUIDES (STANDARD ON 352SB)
A revolutionary blade guide system (several patents pending) that is designed to give many years of superior high quality band sawing. Unlike other blade guide systems which support the sides of the blade and then support the rear of the blade, either above or below these sides guides. The ceramic guides supports the blade on the sides above and below the rear blade guide, thus eliminating all blade twist, the ceramic guide gives the blade unsurpassed stability.

Ceramic guide blocks are used instead of conventional materials for both side and rear thrust support. This enables the guides to run tight against the blade on all sides without heat build up giving a blade stability that has never been achievable before.

Fig.8.5

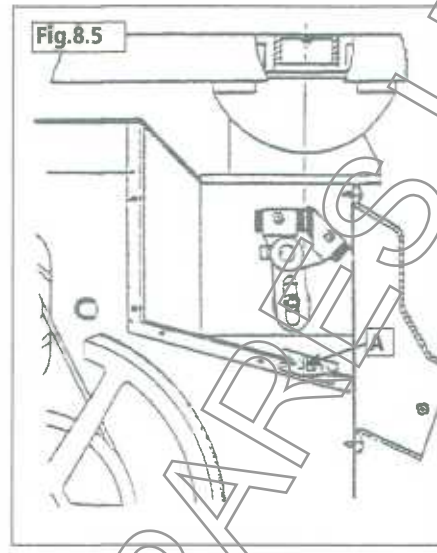
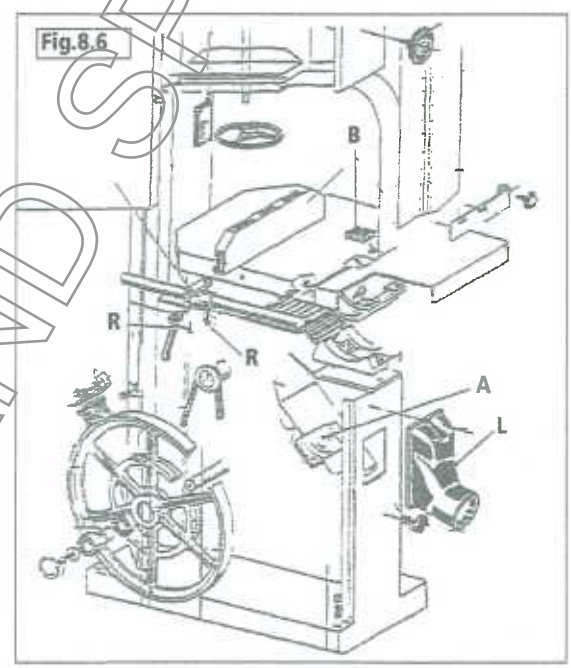


Fig.8.6



8.3 Table insert for dust extraction

The machines are equipped with a removable plastic insert on the work-table, **Fig.8.6**, pos "B", the relieved holes of the insert improve dust extraction. By adjusting the 4 screws at the bottom of the opening of the work-table it is possible to change the height of the insert in relation to the work surface.

Models with fly-wheels up to 600 mm diameter have one extraction outlet, models with larger diameters have a second outlet fitted on the base, under the work-table (**Fig.8.6**, pos "L").

It is recommended that the insert "A" be replaced when the blade cutting clearance widens, this will maintain maximum efficiency of dust extraction.

8.4 Cutting direction and parallelism

If the cut is not perfectly parallel when using the parallel rip fence the possible causes are:

• Incorrect grinding and setting of the blade

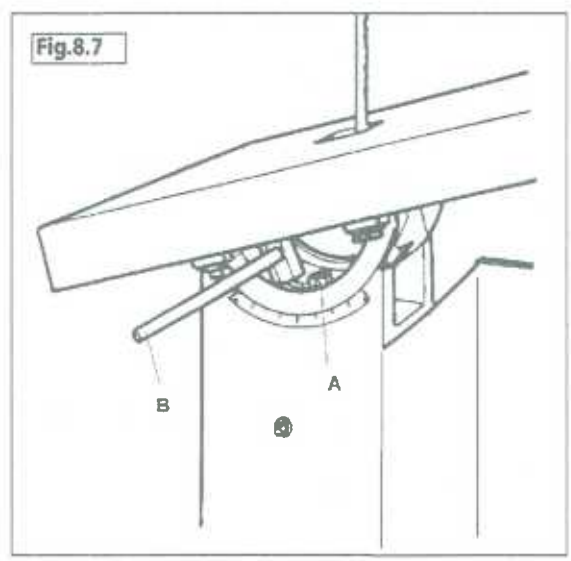
• Insufficient blade tension

• Incorrect setting of the parallel rip fence in respect of the blade; to adjust the parallelism of the guide, slacken, without removing, the 2 screws " R ", Fig.8.6, adjust the guide position and re-tighten, firmly, the 2 screws.

8.5 Tilting the work table

The table can be tilted to a maximum of 20°. To incline it, loosen off the locking ratchet handle **Fig.8.7** position B. Use the box spanner provided to turn rack and pinion mechanism **Fig.8.7** position A. Turn until table is at required angle.

Fig.8.7



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9. Connection Of The Electricity Supply

Electrical installation should be carried out by competent, qualified personnel.

The mains connection should be made using the terminal box as shown in **Fig.9.1** position. E, located on the rear of the machine body.

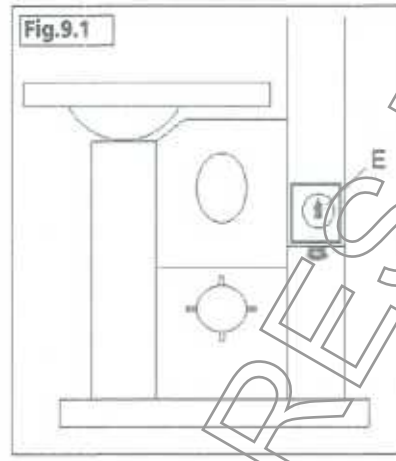
Ensure that the mains supply corresponds with that of the machine, use cables of a section suitable for the power of the motor. For a supply tension of 400 V the minimum section recommended is 2.5mm, including the earth wire.

For a mains supply of 230 V or a power rating greater than 15 A it will be necessary to increase the section of the connecting cables.

Connect the phase wires to the terminals R- S - T (L1 - L2 - L3) and the earth wire to the earth terminal.

On initial start-up check the direction of rotation, if it is incorrect then invert the two phase wires (for machines with 3 phase supply). Direction of rotation of machines with single-phase supply is pre-determined during production .

On completion of the installation check that the terminal box is closed correctly and that the plug points are locked.



For 401E only

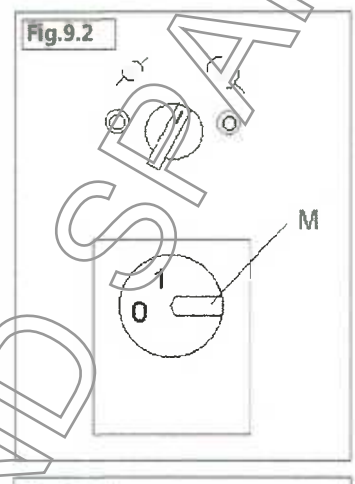
Electrical installation should be carried out by competent, qualified personnel.

There is a socket on the machine, blue for single phase and red for three phase.

Check with a qualified electrician as to the minimum section of cable required. Long runs of too smaller section can give a voltage drop and may damage the motor.

Ensure that the mains supply corresponds with that of the machine.

For three phase machines direction of rotation should be checked on initial start up and before any blade is fitted. If incorrect then invent two phases on the connecting cable.

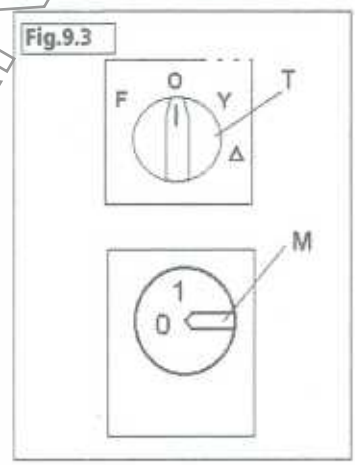


Starting the machine:

For models 352SB, 401E, 401S, 440R, 581S, 681S, 781S:
Turn the isolator switch located at the rear of the machines **Fig.9.1** position E, to position "1", the white indicator light on the front panel shows that there is electrical power: turn the starter switch "M" to position "1" to start-up the machine **Fig 9.2.**

To stop the machine press the stop button. Ensure before start uo the brake switch is in the on position (the machine will not start with brake in the off postion)

PLEASE NOTE: 352SB 3 phase (2 speed) model the speed selector switch must be set at zero to switch the machine on. It is then started by turning the speed selection switch to speed 1 or 2.



For the model 941S:

Turn isolator switch "E" Fig.8.1 located at the rear of the machine to position "1", the white indicator light on the front panel shows that there is electrical power. Turn switch "M" into position "1". Now turn and hold switch "T" **Fig.9.3** to position "Y" until the machine reaches normal running speed, then turn to position "Δ". Average time to reach normal speed: 4-8 seconds. To switch off, turn Switch "T" back to "O".

In case of emergency shut-off or power failure, it is necessary to turn the starter control (switch "T") back to "O" and repeat the start-up procedure.

IMPORTANT: machines will not start with the doors open and will automatically stop if doors are opened during operation.

NOTE: Where the machine is fitted with a brake release switch, the machine will only start if the brake release switch is in the 'On' position as the brake must be applied for the machine to work normally. The break release is designed to help allow the bandwheels to rotate freely when tracking and tensioning the blade.

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10. Cutting Practice

Safety devices and guards
The upward portion of the blade is fully protected inside the machine column.

The down ward portion of the blade is protected by a fixed guard, integral with the blade-guide which is adjustable for height depending on the thickness of material to be cut.

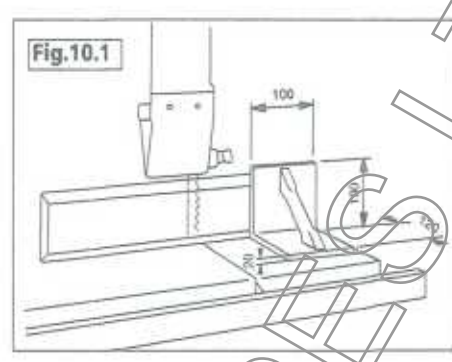
10.1 Face cutting
Use a square for safe guiding of the work during face cutting **Fig.10.1.**

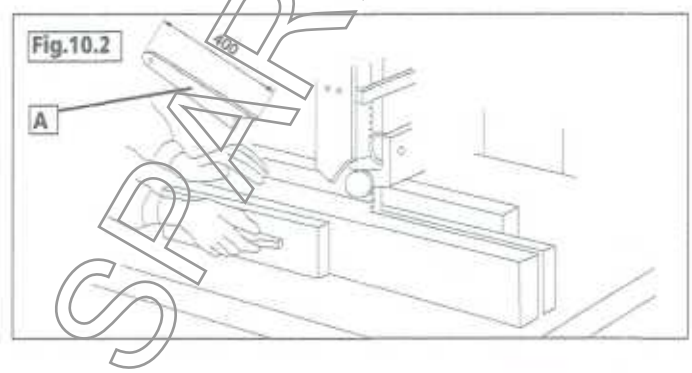
10.2 Cutting short pieces
Use pushing devices for cutting of short pieces.
The pushing device type A is recommended for narrow pieces **Fig.10.2.**

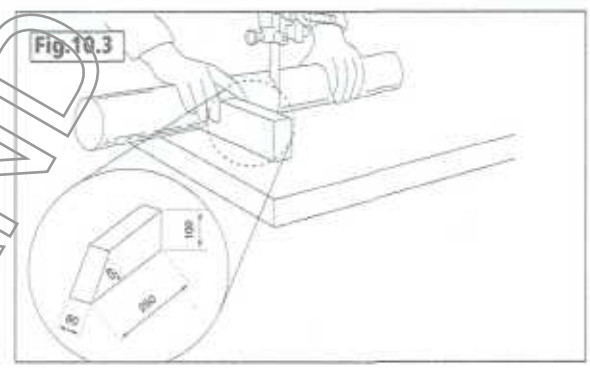
10.3 Cutting of round pieces
Use a wedge rest to prevent rotation of round parts during cutting **Fig.10.3**.

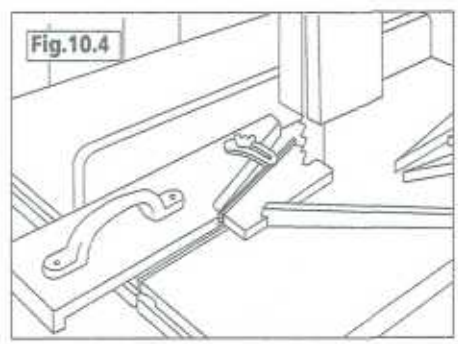
10.4 Wedge cutting
Pushing device for wedge cutting **Fig.10.4.**

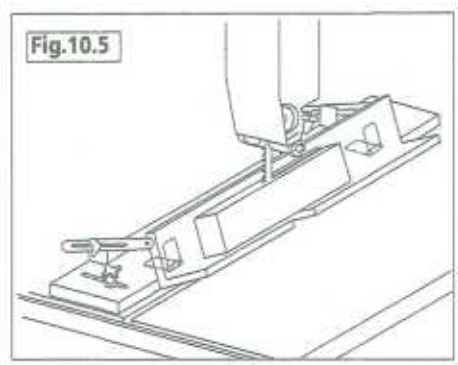
10.5 Cutting of wedge-shaped lengths
Equipment for cutting wedge-shaped lengths **Fig.10.5.**











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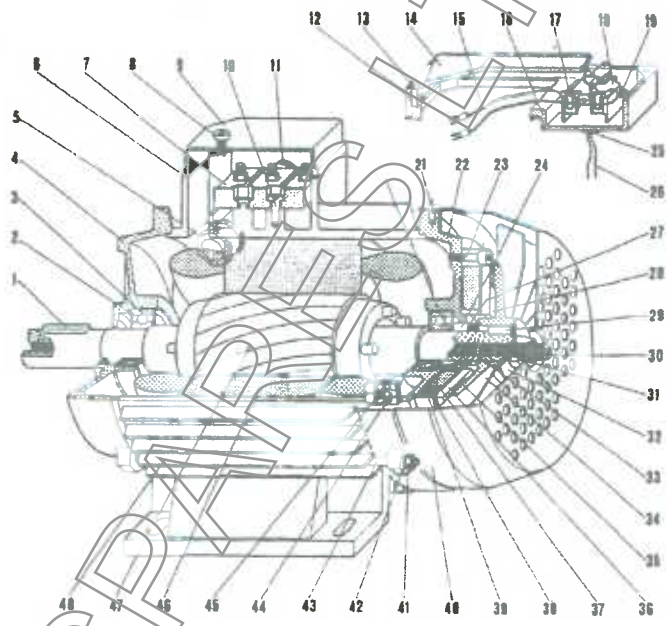
11. Braking System

The 401E has a DC breaking system, all other machines in the range are equipped with an electro-magnetic brake that ensures the stopping of all moving parts within 10 seconds,

The brake pads of the braking system are subject to wear, it is recommended that they are checked regularly and replaced when necessary, to maintain the braking time within regulations fixed by the CE norms.



11.1 Maintenance and adjustment of the braking system

REPLACING THE BRAKE LININGS

1. Remove the fan cover (40) and unscrew the self-locking nut (31), pull out thecooling and braking fan (34) On the mobile anchor (28) of the brake you will find the lining.

2. Pull the old lining off and, with clean hands, glue the new one on. To re-assembly the parts, please follow directions in reversed order and type of operations.

BRAKE UNIT REPLACEMENT

1. Take the fan cover (40) off and unscrew the self locking nut (31) pull out the cooling and braking fan (34), the thrust linings (24) and the thrust spring (27).

2. At this point, you should isolate the rectifier diode by disconnecting the cables (the diode can be found either in position (44) or in the terminal box position 18).

3. Unscrew the 3 allen screws (23), change the brake unit and repeat the operations in reverse to fit the other parts.

ADJUSTMENT OF THE BRAKING AIR-GAP

The machine will stop between 6 and 10 seconds maximum. By turning the self locking nut of the brake control (31) it is possible to vary the braking time from 6 to 10 seconds. It is extremely important that after this operation a gap of 0.5 mm remains between the mobile anchor and the brake unit. The air gap is the distance between the mobile anchor and the brake unit.

MANUAL OPERATION TO RELEASE THE BRAKE

1. Unscrew the self locking nut (31) until the cast iron fan moves away from the mobile anchor (28) beyond the widest possible air gap. This allen screw also allows to check the air gap back to the original distance after the wearing out of the brake linings.

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12. Dust Extraction

3.7 THE IMPORTANCE OF DUST EXTRACTION

Before the machine is started, ensure that adequate dust extraction provisions have been installed. Dust extraction is extremely important not only for health and safety but also for the correct upkeep of the machine. Saw dust can cause the machine not to operate properly or even fail completely. By keeping the machine free of large amounts of waste the performance will be optimised.

If large amounts of MDF or toxic woods are to be cut we recommend that there is a good ventilation system in place and that a particle mask is worn as minimum protection.

3.8 STARTRITE EXTRACTORS

MDE-F2

The MDE-F2 is a vacuum extractor ideal for fine dust producers such as table saws or bandsaws. Filtration is below 0.5 microns and the machine has two motors mounted in a metal hood. The MDE-F2 has an 80 litre collection capacity. The metal hood not only gives the necessary protection for use in a busy workshop it is acoustically lined to reduce noise. Powerful enough to run a small system and cope with long hose runs.

Filtration: 0.5 micron
Airflow: 106 litres per second
Capacity: 80 litres
Motor: 2 x 1.2kw

MDE-HCE

An economical and effective trolley mounted impeller extractor, ideal for use with a single planer thicknesser or spindle moulder. The machine is trolley mounted for ease of transport around the workshop and the motor unit can be mounted so the extraction port faces either upwards or downwards.

Impeller diameter:	260mm
Suction hood diameter:	150mm
Bag diameter:	450mm
Filter bag length:	870mm
Collection bag length:	875mm
Air flow (cu.m/hr):	2000
Motor Power:	1HP

MDE-HCS

A powerful and effective trolley mounted impeller extractor, ideal for use with either single machines or as part of a small to medium sized dust extraction system. The machine is trolley mounted for ease of transport around the workshop and the motor unit can be mounted so the extraction port faces either upwards or downwards.

Impeller diameter:	305mm
Suction hood diameter:	150mm
Bag diameter:	500mm
Filter bag length:	1060mm
Collection bag length:	640mm
Air flow (cu.m/hr):	3000
Motor Power:	2HP

MDE-HCT

The largest and most powerful Startrite dust extractor, this twin-bag trolley mounted impeller extractor is ideal for heavy-duty use with either single machines or as part of a workshop dust extraction system. The machine is trolley mounted for ease of transport around the workshop and the motor unit can be mounted so the extraction port faces either upwards or downwards.

Impeller diameter:	330mm
Suction hood diameter:	200mm
Bag diameter:	500mm
Filter bag length:	1210mm
Collection bag length:	1020mm
Air flow (cu.m/hr):	5000
Motor Power:	3HP

Please note: Only the MDE-F2 provides 0.5 Micron filtration as standard. To achieve this level of filtration with Startrite impeller extractors, a suitable fine filter cartridge must be purchased.

	MDE-F2	MDE-HCE	MDE-HCS	MDE-HCT
Bandsaws **Circular saws** **Sanders** Intermittent usage	✓ **Recommended**	✓ **Recommended**	✓ **Recommended**	✓ **Recommended**
Bandsaws **Circular saws** **Sanders** Heavy usage			✓ **Recommended**	✓ **Recommended**
Planer Thicknessers **Spindle Moulders** **Universals** Intermittent usage		✓ **Recommended**	✓ **Recommended**	✓ **Recommended**
Planer Thicknessers **Spindle Moulders** **Universals** Heavy usage			✓ **Recommended**	✓ **Recommended**
Dust Extraction System Intermittent usage			✓ **Recommended**	✓ **Recommended**

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13. Maintenance

BEFORE ANY INTERVENTION ALWAYS DISCONNECT THE ELECTRICAL SUPPLY!
Periodically check that all screws are tightly fastened and the condition of the various guards. Any guards that are missing, broken or not functioning correctly should be replaced immediately.

V BELTS
After the first few hours of operation it is necessary to check that the tension of the belts is correct,as they tend to stretch. To control the tension of the belts push the mid-point of the belt applying 3-4 Kg of pressure, the displacement should not exceed 5-6 mm. To adjust the blade tension loosen the nuts A, **Fig.13.1.** and tighten the nut D, **Fig.13.1.** this will increase the tension. Tighten the nuts when the belt is adequately tensioned.

It is recommended that the correct belt tension is maintained as loose belts reduce the motor power and can increase the braking time. Belts that are too tight can cause the belts to become hot .

TO CHANGE THE BELTS
Slacken the tension as described above, remove the screw "B", **Fig.13.3.** loosen the screws "A", pull-out the bandwheel and shaft, repeat the operations in reverse to re-assemble.

IMPORTANT: loosen only the 2 screws indicated so as not to interfere with the alignment of the fly-wheel.

DISMANTLING THE UPPER FLY-WHEEL
Remove the screw "E", **Fig.13.2.** and remove fly-wheel and shaft from their positions.

REPLACEMENT OF RUBBER COVERING OF THE FLY-WHEELS
It is recommended that this be carried out by a competent specialist or the manufacturer, this is because the rubber covering is not only glued onto the fly-wheel, but also ground in a crown form. It is strongly advised not to grind and shape the rubber directly on the machine using gouges, files or abrasives.

CLEANING AND LUBRICATING
Periodically clean the inside of the machine with the aid of a dust extractor for any saw-dust deposits, remove any resinous deposits from the fly-wheels surface. The fly-wheel bearings do not require any greasing. It is not necessary to lubricate any part or component of the machine as the sawdust circulating within will adhere to any oiled or greased surface jeopardizing the sliding of moving parts such as the shaft of the blade guide adjustment and the slide of the tensioning assembly.

Frequently control the cleanliness of the rubber surfaces on the fly-wheels, particularly in cases of cutting resinous materials or chip-board. Clean the surfaces, while machine is not in motion , of any resinous deposits taking care do not damage the surface.

Fig.13.1

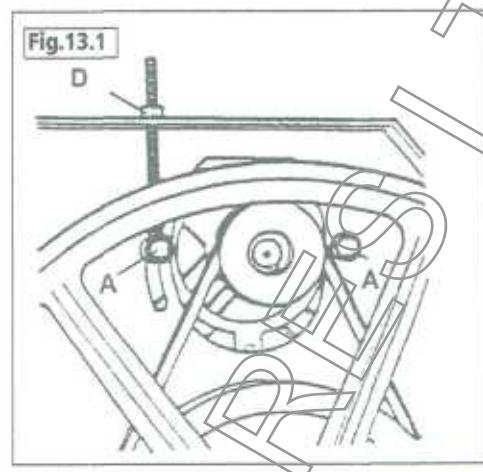


Fig.13.2

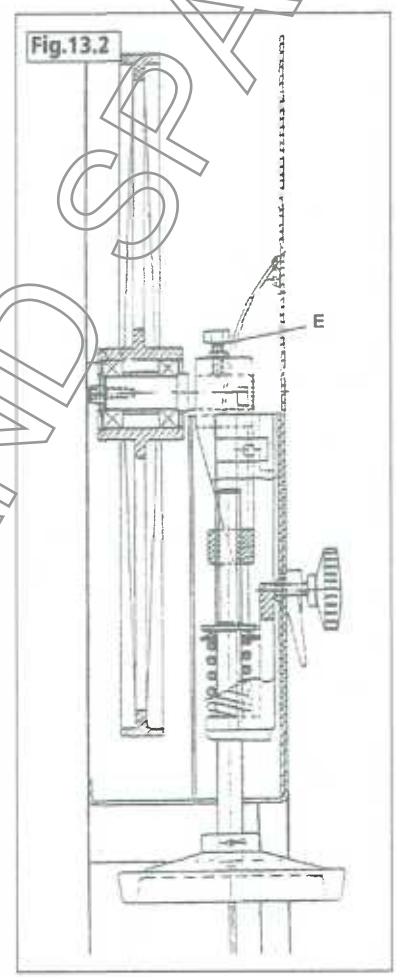
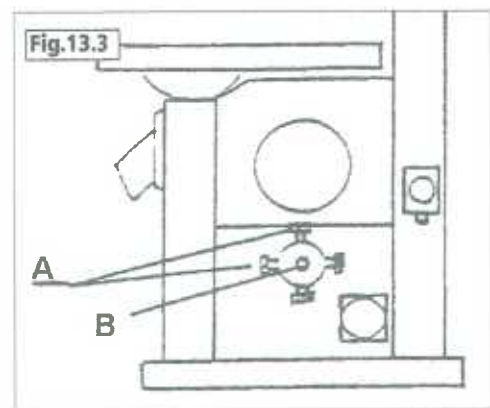


Fig.13.3



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14. Trouble Shooting

THE MOTOR DOES NOT START

- Check that the fly-wheel doors are correctly closed , otherwise the safety microswitch will not allow operation
- Check that the emergency stop button, when fitted, is released. If a kick stop switch is fitted check that it is released correctly.
- If the "ON" button of the magneto thermal switch does not lock-in, check that the selector to release the brake is in the correct position, or,when the star delta is fitted,check that the knob of the star delta starter is in "O" position.
- The motor lacks electrical power: consult an electrician.

THE MACHINE DOES NOT WORK EFFICIENTLY DURING OPERATION

- Incorrect connection of the motor: consult an electrician
- Loose drive belts: follow the tightening procedure

DOES NOT CUT STRAIGHT

- Check the sharpness and setting of the blade
- Check the alignment of the rip fence

THE BLADE HAS CRACKS AT THE BASE OF THE TEETH

- Incorrect sharpening and consequent overheating, othervise incorrect setting of the teeth
- Incorrect blade thickness in relation to bandwheels diameter
- The bandwheel tyres are damaged or have incrustation deposits
- Badly aligned bandwheels: requires the intervention of a qualified technician

THE BLADE IS CRACKED AT THE BACK

- Excessive feed during cutting
- Imperfect weld alignment: eliminate badly welded part and repeat the weld
- The rear thruster of the blade guide is damaged

THE BLADE BREAKS AT THE WELD :

- Overheating of the blade during welding: remove the weak area and repeat the welding
- Cooling down the weld too quickly after welding, proceed as above

THE MACHINE STOPS WITH THE BLADE JAMMED INTO THE WORKPIECE

- Stop the motor and release the brake, widen the cut using a wedge to aid removing the workpiece, after this operation check the blade and its position on the bandwheels before recommencing

OTHER PROBLEMS

- The blade moves backwards and forwards: weld misaligned
- The blade slips back at the beginning of cut: blade not sharpened or blade incorrect for material in work or there is a defect on the crown of the bandwheel surface.

15. Spare Parts

WHEN ORDERING SPARE PARTS SPECIFY:

Machine Model
Serial number
Part number required, taken from the enlarged machine designs on the following pages
Quantity required

EXAMPLE: TO ORDER LOWER FLY WHEEL FOR 781S

Model: 781S
Registration number: xyxyxyy
Part number: 95
Quantity: 1 piece

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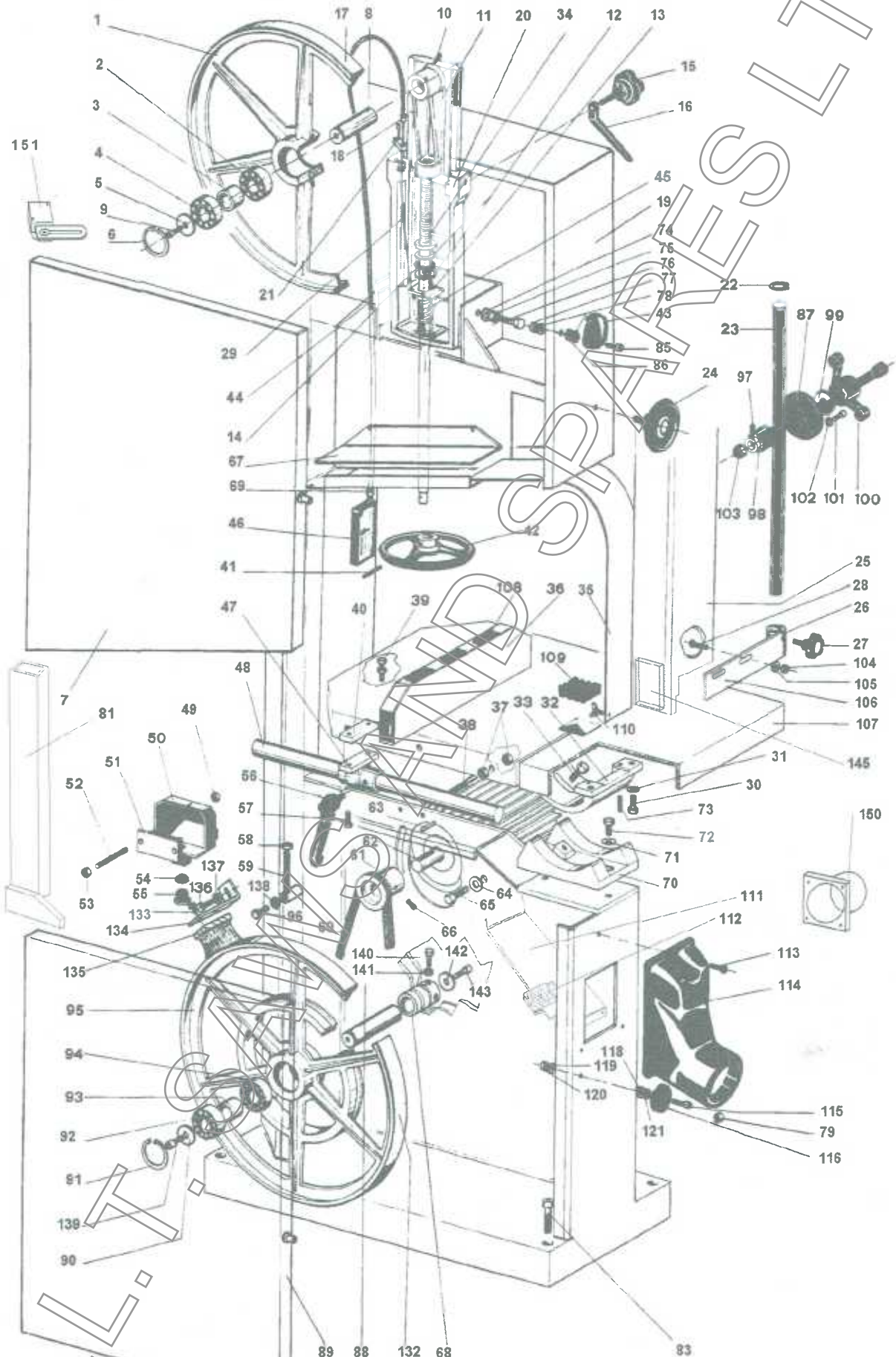
16. Diagrams & Components



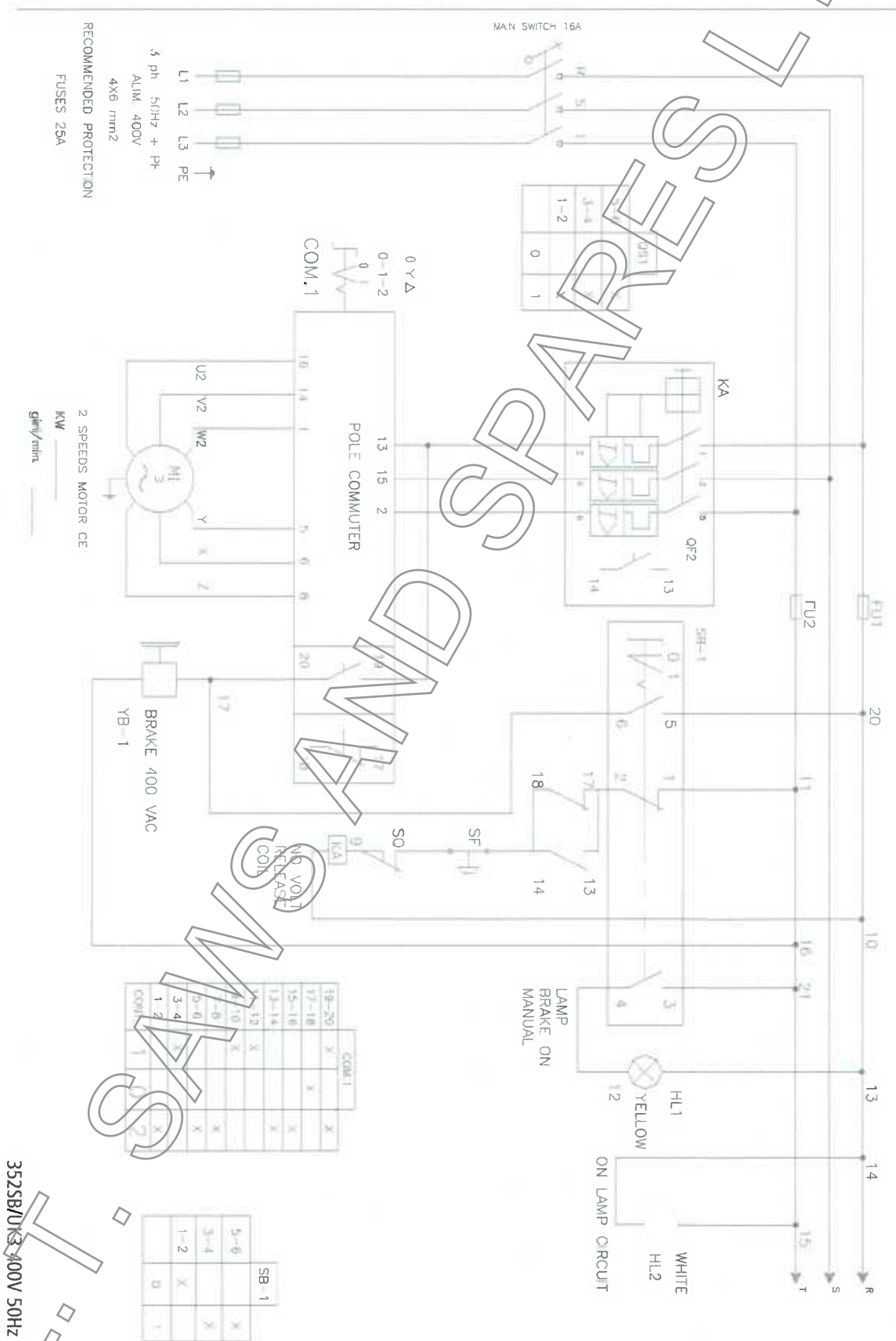
A.L.T. CAMS AND SPARES LTD

16. Diagrams & Components - cont.

Symbol	Description	QTY
QS1	Main switch 16A 3 POLI	1
QF2	Magnetothermal Switch	1
KA	No volt release coil	1
SB-1	Brake release	1
HL1	Lamp-brake on-manual	1
HL2	Circuit-on lamp	1
SQ	Micro switch	1
YB.1	Brake	1
FU1/FU2	Fuses Amp	1
SK	Kick back emergency	1
COM1	Pole computer	1
Constructor	Decsription	
Startrite	352 SB 2 Speeds Motor	
	Schema N	
	Data PR 23/04/2003	No Fogli 2
	Data Mod 23/04/2003	Foglio No 1

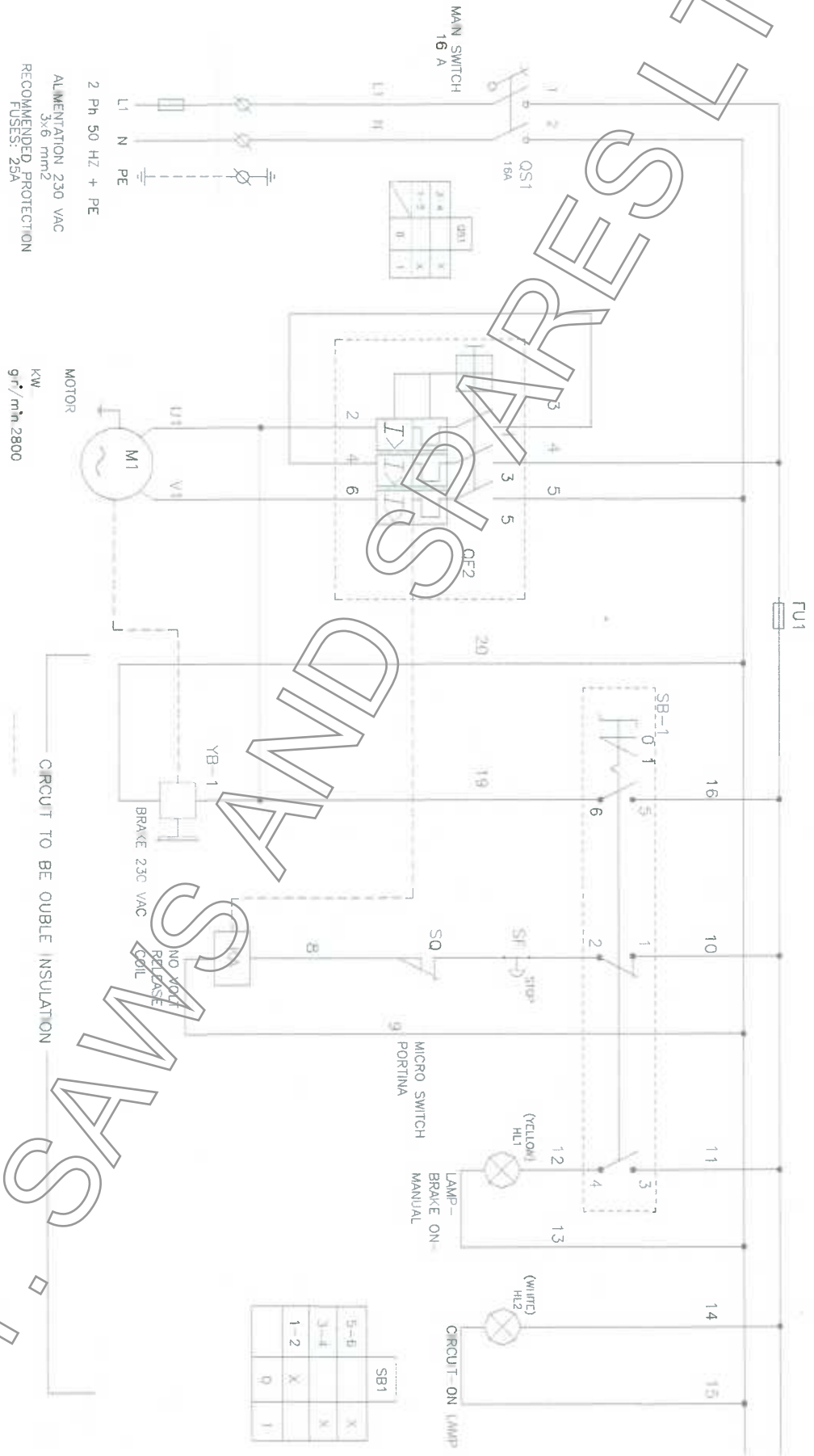
A.L.T. SAWS AND SPARES LTD

16. Diagrams & Components - cont.



A.L.I. SAWS AND SPARES LTD

16. Diagrams & Components - cont.



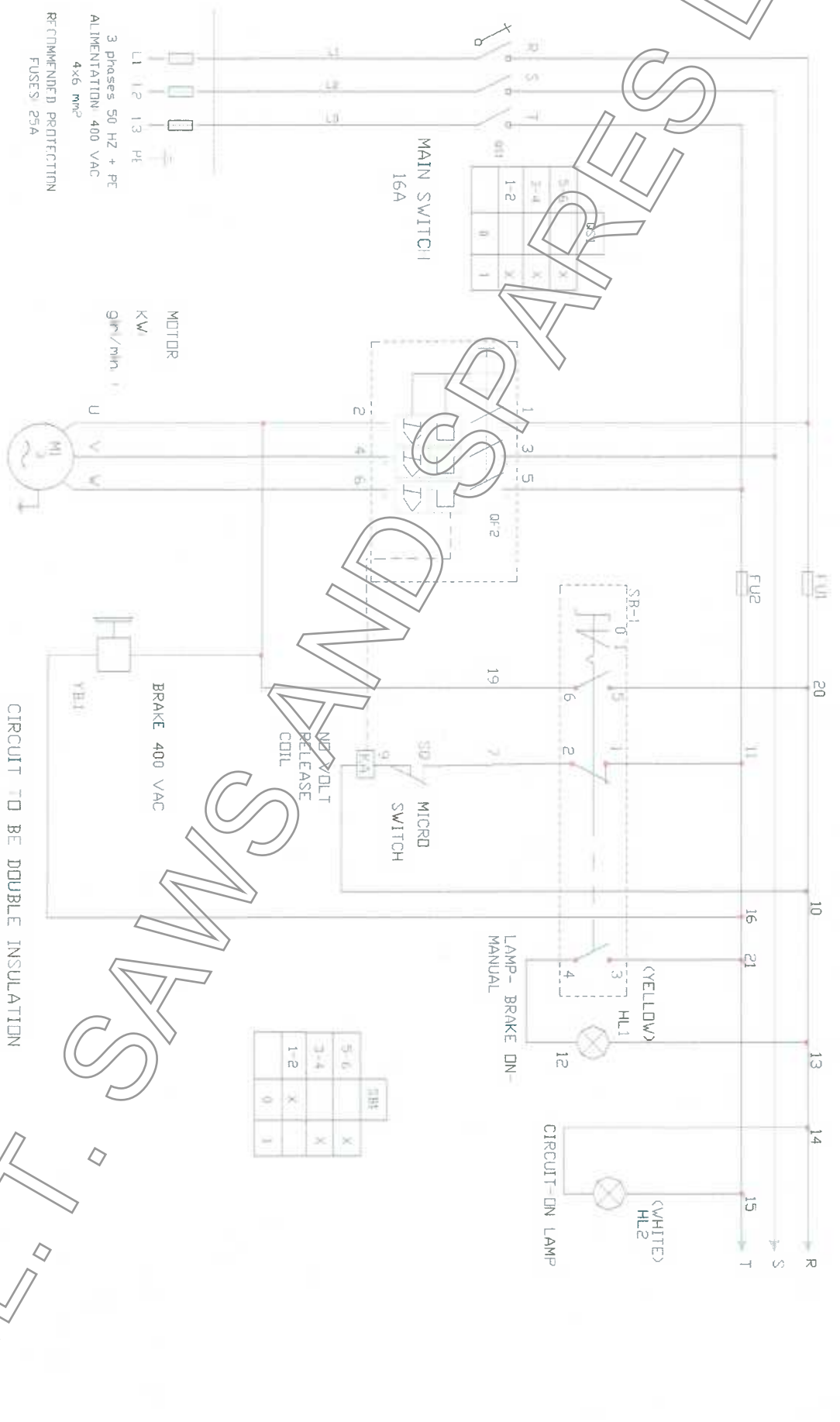
A.L.I. SAWS AND SPARES LTD

16. Diagrams & Components - cont.

Symbol	Description	QTY
QS1	Main switch 16A 3 POLI	1
QF2	Magnetothermal Switch	1
KA	No volt release coil	1
SB-1	Brake release	1
HL1	Lamp-brake on-manual	1
HL2	Circuit-on lamp	1
SQ	Micro switch	1
YB.1	Brake	1
FU1/FU2	Fuses Amp	1
SF	Kick back emergency	1
Constructor	Decsription	
Startrite	Single Phase 352 SB	
	Schema N	
	Data PR 23/04/2003	No Fogli 2
	Data Mod 23/04/2003	Foglio No 1

A.L.T. SAWS AND SPARES LTD

16. Diagrams & Components - cont.



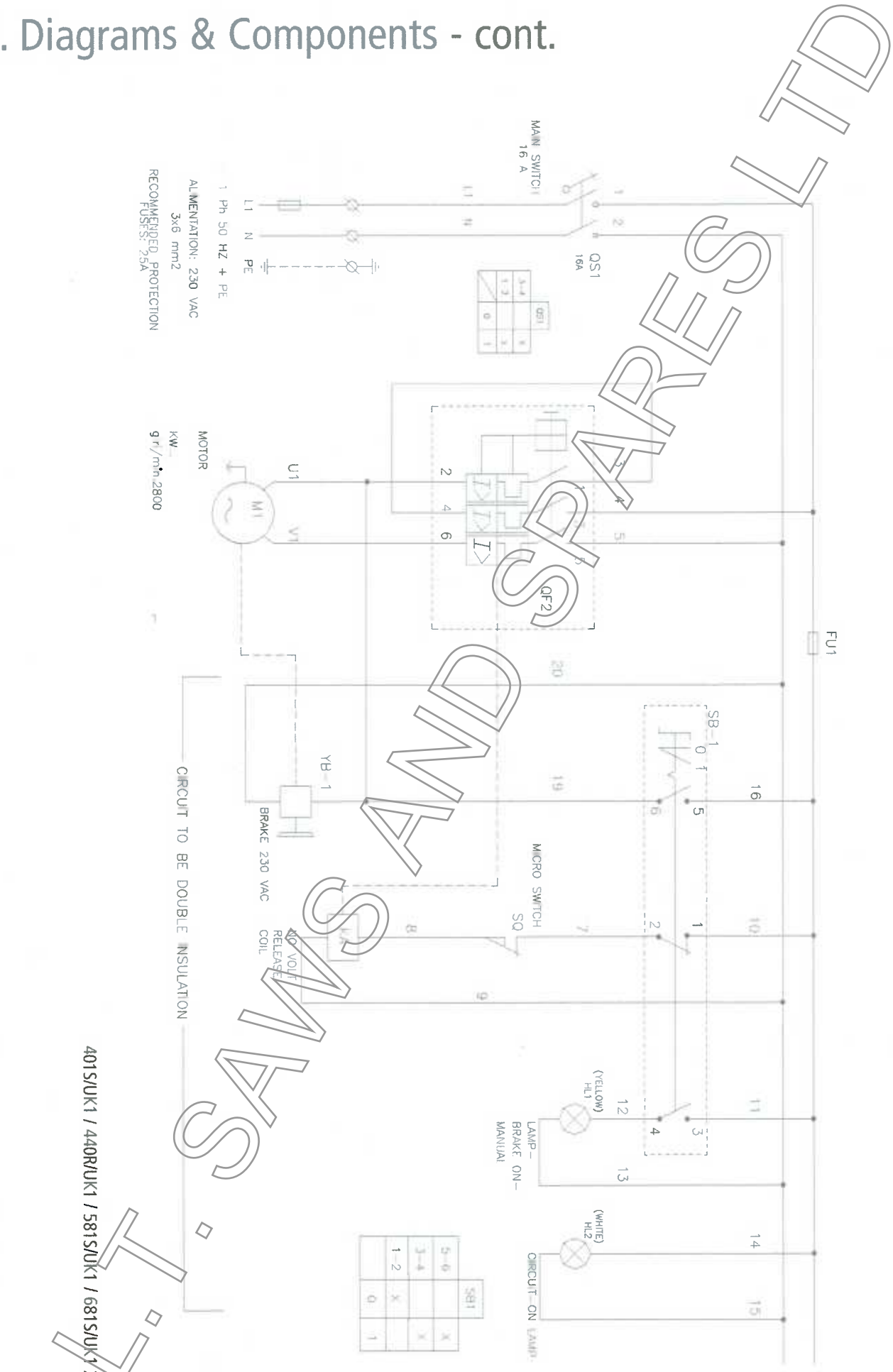
A.L.T. SAWS AND SPARES LTD

16. Diagrams & Components - cont.

Symbol	Description	QTY
QS1	Main switch 16A 3 POLI	1
QF2	Magnetothermal Switch	1
KA	No volt release coil	1
SB-1	Brake release	1
HL1	Lamp-brake on-manual	1
HL2	Circuit-on lamp	1
SQ	Micro switch	1
YB.1	Brake	1
FU1/FU2	Fuses Amp 2	1
Constructor	Decsription	
Startrite	Three Phase 401	
	Schema N	
	Data PR 23/04/2003	No Fogli 2
	Data Mod 23/04/2003	Foglio No 1

A.L.T. SAWS AND SPARES LTD

16. Diagrams & Components - cont.



401S/UK1 / 440R/UK1 / 581S/UK1 / 681S/UK1 230V 50Hz

A.L.T. SAWS AND SPARES LTD

16. Diagrams & Components - cont.

Symbol	Description	QTY
QS1	Main switch 16A 3 POLI	1
QF2	Magnetothermal Switch	1
KA	No volt release coil	1
SB-1	Brake release	1
HL1	Lamp-brake on-manual	1
HL2	Circuit-on lamp	1
SQ	Micro switch	1
YB.1	Brake	1
FU1/FU2	Fuses Amp 2	1
Constructor	Decsription	
Startrite	Single Phase 401	
	Schema N	
	Data PR 23/04/2003	No Fogli 2
	Data Mod 23/04/2003	Foglio No 1

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