# STARTRITE

# **Original Instruction Manual**

352E, 502E & 602E

Industrial Bandsaw

#### **IMPORTANT**

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

A.L.T. SAWS AND SPARES LTD 01634 850833

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Version 2.0

Woodworking Machines & Accessories

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#### HEALTH AND SAFETY GUIDELINES

Always follow the instructions provided with the manual. Always wear safety glasses when using woodworking equipment. Always disconnect the power before adjusting any equipment. Failure to observe proper safety procedures and guidelines can result in serious injury.

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



Always wear safety glasses when using woodworking equipment.

STARTHITE



Always read the instructions provided before using woodworking equipment.



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## Startrite Guarantee

#### 1. INTRODUCTION

- **1.1** We supply machinery through a network of dealers and authorised distributors and you should be aware that your contract of sale is with the retailer from whom you purchased this product.
- **1.2** If you are not satisfied with this product you should in the first instance approach the retailer from whom you purchased it.
- **1.3** Customers have statutory rights to protect them and information on this can be found at the Citizens Advice Bureau or on such web-sites as those operated by the DTI (http://www.dti.gov.uk)
- **1.4** Returning your guarantee card will speed up the claims procedure and can be very helpful as a proof of purchase should the initial receipt be mislaid or damaged. We recommend that this is returned as close to your original purchase date as possible.
- **1.5** Correct installation, set-up, adjustment and routine maintenance of the machine are the responsibility of the end-user and problems arising from incorrect set-up, adjustment or maintenance are not covered by the terms of this guarantee. However support is available in the first instance from the retailer who supplied you and free technical support is available from Startrite on 01246 561 520 during office hours and from an extensive knowledge base on our website www.startrite.co.uk. We also recommend those users who have not had suitable training in safe use of machinery should seek such training locally before using or attempting to set up and adjust any machinery (please contact your retailer for recommendations in your local area).

#### 2. GUARANTEE

- **2.1** In addition to the above Startrite guarantees that for a period of 1 year from the date of purchase the components of this product will be free from defects caused by faulty construction or manufacture.
- **2.2** During this period Startrite will repair or replace free of charge any parts which are proved to be faulty in accordance with paragraph 2.1 above provided that:
- 2.2.1 You follow the claims procedure set out below;
- **2.2.2** We are given a reasonable opportunity after receiving notice of the claim of examining the product.
- **2.2.3** If asked to do so by us you return the product or faulty part to Startrite's premises or other approved premises such as those of the supplying dealer, for the examination to take place.
- **2.2.4** The fault in question is not caused by accidental damage, fair wear and tear, wilful damage, negligence on your part, incorrect electrical connection, unapproved modification, abnormal working conditions, failure to follow our instructions, misuse, or alteration or repair of the product without our approval.
- **2.2.5** This product has been purchased by you and not used for hire purposes;
- **2.2.6** This Guarantee extends to the cost of carriage incurred by you returning the product or faulty part to Startrite as long as it is demonstrated that the defect falls within the terms of this Guarantee and you follow the claims procedure as outlined below:

### 3. CLAIMS PROCEDURE

- **3.1** In the first instance please contact the retailer who supplied the product to you. In our experience many initial problems with machines that are thought to be due to faulty parts are actually solved by correct setting up or adjustment of the machines. A good dealer should be able to resolve the majority of these issues much more quickly than processing a claim under the guarantee.
- **3.2** If the dealer who supplied the product to you has been unable to satisfy your query, any claim made under this Guarantee should be made directly to Startrite at the address set out at the foot of this Guarantee. The claim itself should be made in a letter setting out the date and place of purchase, and giving a brief explanation of the problem which has led to the claim. This letter should then be sent with proof of the purchase date (preferably a receipt) to Startrite. If you include a phone number or email address this will help to speed up your claim.

- **3.3 PLEASE NOTE** that it is essential that the letter of claim reaches the address below on the last day of this Guarantee at the latest Late claims will not be considered.
- **3.4** We will contact you once we have received your initial written claim. If it is necessary to return the item, in most cases but subject always to clause 2.2.5, we will arrange for collection or will provide freepost information to enable return depending on the weight and size of the product or component concerned. If the product is to be returned to us, we will agree with you in advance a Returns Number, to speed tracking of the claim and ensure the most appropriate method of return to you is used.

#### 4. NOTICE

This Guarantee applies to all goods purchased from an authorised retailer of Startrite within the United Kingdom of Great Britain and Northern Ireland. This Guarantee does not confer any rights other than those expressly set out above and does not cover any claims for consequential loss or damage. This Guarantee is offered as an extra benefit and does not affect your statutory rights as a consumer. Additional written copies of this Guarantee can be obtained by writing to the address below. Please include a stamped and self addressed envelope for each copy of the Guarantee requested.

Startrite Machines Unit B, Adelphi Way Ireland Industrial Estate Staveley, Chesterfield S43 3LS

## 1. General Information

## 1.1 FOREWORD

This manual must be read and understood before operating the machine. This will provde a better working knowledge of the machine, for increased safety and to obtain the best results.

## 2. Machine Description

## 2.1 MACHINE IDENTIFICATION

There is a specification label fixed to the machine, containing the manufacturer's data, year of construction, serial number and blade data.

#### 2.2 TECHNICAL SPECIFICATION

SPECIFICATION (Phase)	602E (Single Phase)	602E (Three Phase)	502E (Single Phase)	502E (Three Phase)	352E (Single Phase)	352E (Three Phase)
Throat depth. mm	550	550	465	465	345	345
Blade Speed m/min	1080	1080	1000	1000	1000	1000
Motor Power output (W)	3000	2750	2450	2300	2000	1900
Cutting Depth (mm)	370	370	340	340	295	255
Table Tilt	0-20°	0-20°	0-20°	((0-20°)	0-20°	0-20°
Blade Length (mm)	4230	4230	3810	3810	2845	2845
Blade Width (mm)	10-35	10-35	10-35	10-35	6-25	6-25
Nett Weight (kg)	290	290	200	200	125	125
Power Supply	230V / 50Hz	400V / 50Hz	230V / 50Hz	400V / 50Hz	230V / 50Hz	400V / 50Hz
Full Load Current (A)	12.38	5.48	10.62	4.68	9.41	4.16
Max Short Circuit Current (A)	1000	1000	_1000	1000	1000	1000

## 2.3 RECOMMENDED PROTECTIVE CLOTHING

- Gloves for moving work material and when carrying out the blade changes;
- Non-slip shoes;
- Protective eye glasses.

## 2.4 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: (Constant K4 dB measured in accordance with EN150 3746: 1995)

Sound power level (no load) <90dB(A)
Sound power level (load) <100dB(A)
Sound Pressure level (no load) <80dB(A)
Sound Pressure level (load) <90dB(A)

The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission 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 of the workforce include the characteristics of the work room and the other sources of noise etc. i.e. the number of machines and other adjacent processes. Also the permissible exposure level 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.

## 2.5 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

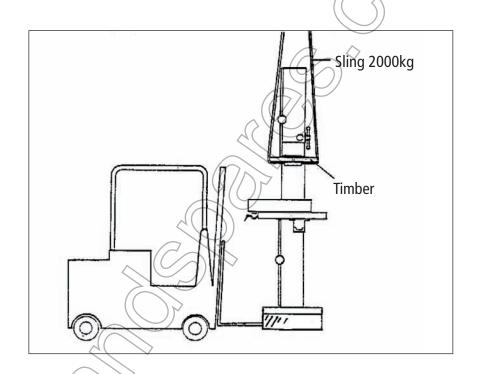
#### 2.6 HAZARDS

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.

## 3. Installation

## 3.1 LIFTING

The machine can be lifted using a fork-lift truck, placing the forks under the feet or by using a "SLING", as shown, with a lifting capability of 2000 Kg.



## 3.2 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.
- Ensure that the work area has adequately lighting.
- 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.

There are 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 base of the machine.

**NOTE:** Due to the height of the machine, the centre of gravity will also be high causing the machine to be unstable or top heavy. The machine, where possible should always be fixed directly to a solid floor using appropriate fixings for the type of floor.

Extra care should be taken when moving the machine to ensure that it cannot fall. Always ensure that machine is fully supported and operators stand well clear whilst the machine is moved.

## 3.3 DUST EXTRACTION

The machine must be connected to an adequate dust extraction system. Diameter of the extraction tubes and connecting positions on the machines are indicated.

- 1, Necessary Airflow =  $460 \text{m}^3/\text{h}$
- 2, Pressure drop at each dust extraction connection outlet at the conveying air velocity = 530Pa
- 3, Recommended conveying air velocity = 20m/s

Model	Port Size	
602E	A:100mm	B:100mm
502E	A:100mm	B:100mm
352E	A:32mm	B:100mm



## 3.4 ELECTRICAL CONNECTION - START UP

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

The mains connection should be made using the terminal box.

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 2.5 mm, including the earth wire.

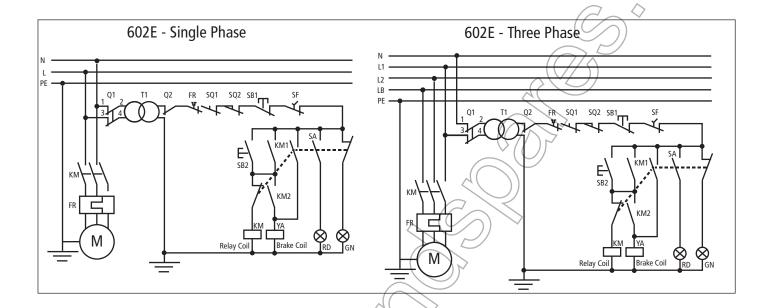
For a mains supply of 230 V or a power rating greater than 15 A it will be necessary to increase the section of the connecting cables.

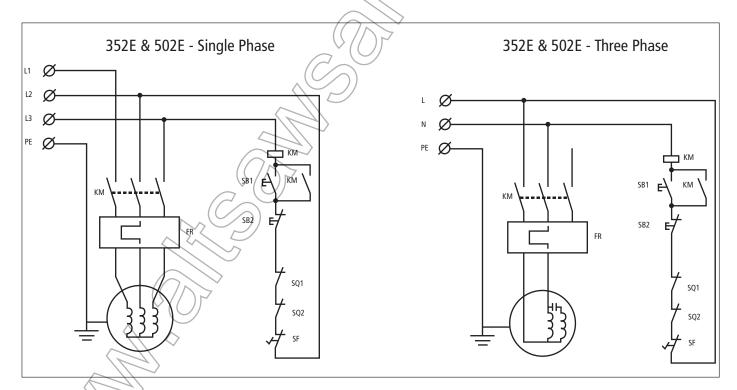
Connect the phase wires to the terminals R-S-T (L1-L2-L3) and the earth wire to the earth terminal.

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.

Starting the machine:





T1: Transformer SQ1: Sefety switch

**SQ1:** Sefety switch **SQ2:** Sefety switch

**SF:** Foot switch **SB1:** Stop button

SB2: Start button

KM: Contactor FR: Overload contactor

Q1 & Q2: Circuit breaker

## 5. HEALTH AND SAFETY GUIDANCE

THE MACHINE SHALL BE DISCONNECTED FROM THE SUPPLY **BEFORE MAINTENANCE.** 

WARNING: WHEN USING POWER TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK AND PERSONAL INJURY, INCLUDING THE FOLLOWING.

**READ ALL THESE INSTRUCTIONS BEFORE ATTEMPTING TO OPERATE THIS MACHINE. SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE.** 

- Keep work area clear
  - Cluttered areas and benches invite injuries.
- 2. Consider work area environment
  - Do not expose tools to rain.
  - Do not use tools in damp or wet locations.
  - Keep work area well lit.
  - Do not use tools in the presence of flammable liquids of gases.
- 3. Guard against electric shock
  - Avoid body contact with earthed or grounded surfaces.
- 4. Keep other persons away
  - Do not let persons, especially children, not involved in the work touch the tool or the extension cord and keep them away from the work area.
- 5. Store idle tools
  - When not in use, tools should be stored in a dry locked up place, out of reach of children.
- 6. Do not force the tool
  - It will do the job better and safer at the rate for which it was intended.
- 7. Use the right tool
  - Do not force small tools to do the job of a heavy duty tool.
  - Do not use tools for purposes not intended : for example do not use circular saws to cut tree limbs or legs.
- 8. Dress properly
  - Do not wear loose clothing or jewellery, they can be caught in
  - Non-skid footwear is recommended when working outdoors.
  - Wear protective hair covering to contain long hair.
- 9. Use protective equipment
  - Use safety glasses.
  - Use face or dust mask if cutting operations create dust.
- 10. Connect dust extraction equipment
  - If device are provided for the connection of dust extraction and collecting equipment, ensure these are connected and properly used.
- 11. 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.
- - Where possible use clamps or a vice to hold the work
  - It is safer than using your hand.
- 13. Do not overreach
  - Keep proper footing and balance at all times
- 14. Maintain tools with care
  - Keep cutting tools sharp and clean for better and safer performance.

  - Follow instructions for lubricating and changing accessories.
     Inspect tool cords periodically and if damaged have them repaired by an authorized service facility,
  - Inspect extension cords periodically and replace if damaged.
  - Keep handles dry, clean and free from oil and grease.
- - When not in use, before servicing and when changing accessories such as blades, bits and cutters, disconnect tools from the power supply.
- 16. Remove adjusting keys and wrenches
  - Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
- 17. Avoid unintentional starting
  - Ensure switch is in "off" position when plugging in.
- 18. Use outdoor extension leads
  - When the tool is used outdoors, use only extension cords intended for outdoor use and so marked.
- 19. Stay alert
  - Watch what you are doing, use common sense and do not operate the tool when you are tired.

20. Check damaged parts

- Before further use of tool, 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 placed by an authorized service centre unless otherwise indicated in this instruction manual.
- Have defectives switches replaced by an authorized service centre.
- Do not use the tool if the switch does no turn it on and off.

#### 21. Warning

- The use of any accessory or attachment other than one recommended in this instruction manual may present a-risk of personal injury.
- 22. Have your tool repaired by a qualified person
  - -This electric tool complies with the relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.
- 23. Safety precautions
  - -Do not use saw bands which are damaged or deformed.
  - -Replace the table insert when worn.
  - -Connect band saw to a dust-collecting device when sawing wood.
  - -Do not operate the machine when the door or guard protecting the saw band is open.
  - -Take care that the selection of the saw band and the speed depends on the material to be cut.
  - -Do not clean the saw band whilst it is in motion.
  - -Wear suitable personal protective equipment, when necessary, this could include:
  - -Hearing protection to reduce the risk of induced hearing loss.
  - -Respiratory protection to reduce the risk of inhalation of harmful dust. Gloves for handling the saw band and rough material.
- 24. Safety operation
  - When straight cutting against the fence use a push stick.
  - During transportation the saw band guard should be fully down and close to the table.
  - When bevel-cutting with the table inclined, place the guide on the lower part of the table.
  - When cutting round timber use a suitable holding device to prevent twisting of the workpiece.
  - -Handle and two wheels for lifting and transportation positions have clearly been indicated on the tool.
  - -Do not use guarding for handling or transportation.
  - -Adjust the adjustable guard as close to the workpiece as practicable.
- 25. Adjust the guard as close as possible to the piece to be cut.
- 26. For the long workpiece, auxiliary device shall be used for cutting(such
  - roller stand).
- 27. The store location for push stick.
- 28. The electrical equipment shall be operated correctly under the load with the conditions of the nominal supply: 0.9 to 1.1 times of nominal voltage.
- 29. The electrical equipment shall be capable of operating correctly in an ambient air temperature between +5°C and +40°C, and the average ambient air temperature over a period of 24 h shall not exceed +35°C.
- 30. The electrical equipment shall be capable of operating correctly within a relative humidity not exceed  $90\%(20^{\circ}\text{C})$ .
- 31. The electrical equipment shall be capable of operating correctly at altitudes up to 1000m above mean sea level.
- 32. The mains connection must have maximum 16A fuse.

## **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. It is also important to wear ear protectors when operating the table saw.

#### ATTENTION!

Through poor conditions of the electrical MAINS, short voltage drops can appear when starting the EQUIPMENT. This can influence other equipment (eg. Blinking of a lamp). If the MAINS-IMPEDANCE Zmax<0.325W (for and 0.420W) such disturbances are not expected. (For the futher information contact your local supplier).

## 6. Using The Machine

## 6.1 PRINCIPAL MACHINE PARTS

- 1 Base
- 2 Upper bandwheel
- 3 Lower bandwheel
- 4 Switch
- 5 Blade tension wheel
- 6 Upper blade guide
- 7 Lower blade guide
- 8 Table
- 9 Rip fence
- 10 Table insert

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.

## 6.2 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 and 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.

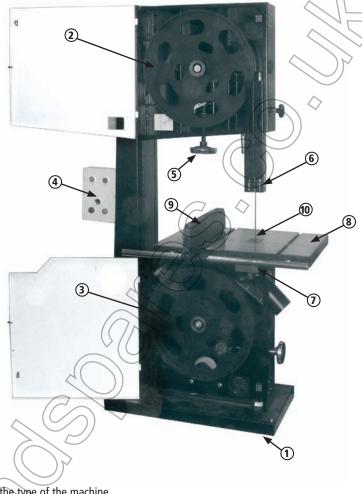
#### Causes of blade breakage:

- 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.

	602E	502E	352E
Blade Length	4230mm	3810mm	2845mm
Blade Width mm	10-35	10 - 35	6 - 25

## 6.3 STARTING THE MACHINE

Before attempting to start the machine, ensure the kickswitch is reset (i.e. pulled forward). For extra safety a keyswitch is fitted to the control box (Fig 6.1) and must be set to the on pisition, with the key vertical, The green 'on' switch can then be engaged.





## 6.4 FITTING THE FENCE BAR

#### 3.6 Cast iron fence carrier

Insert Brass Pad into fence carrier (See Fig.6.2).

## 3.7 Fitting the fence assembly

Locate fence assembly onto the fence bar. Position the fence on to the table and lock off using fence ratchet handle. (See Fig.6.3).

## 3.8 Fence alignment 1

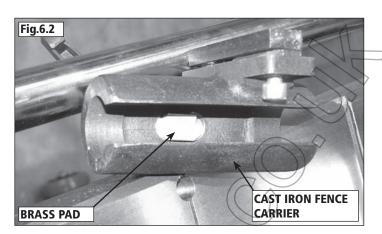
Align the fence assembly in or out until parallel with the side of the blade (**See Fig.6.4**) by adjusting the fence bar nuts accordingly.

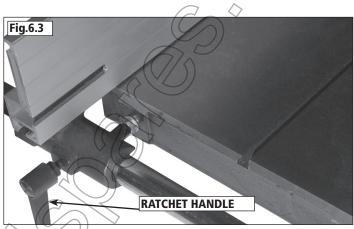
#### 3.9 Fence alignment 2

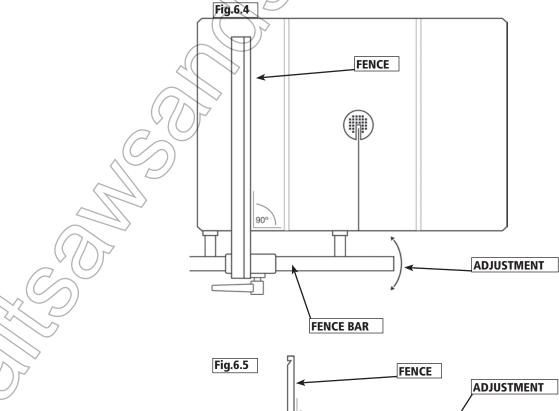
Check that the fence is 90° to the table using a suitable square. If no adjustment is needed fully tighten the fence bar nuts. If adjustment is required this is achieved by raising or lowering either side of the fence rail until the fence itself is 90° to the table, **(See Fig.6.5).** Once set at 90° fully tighten the fence bar nuts.

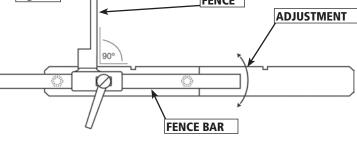
## **CAUTION:** Components of the machine are heavy.

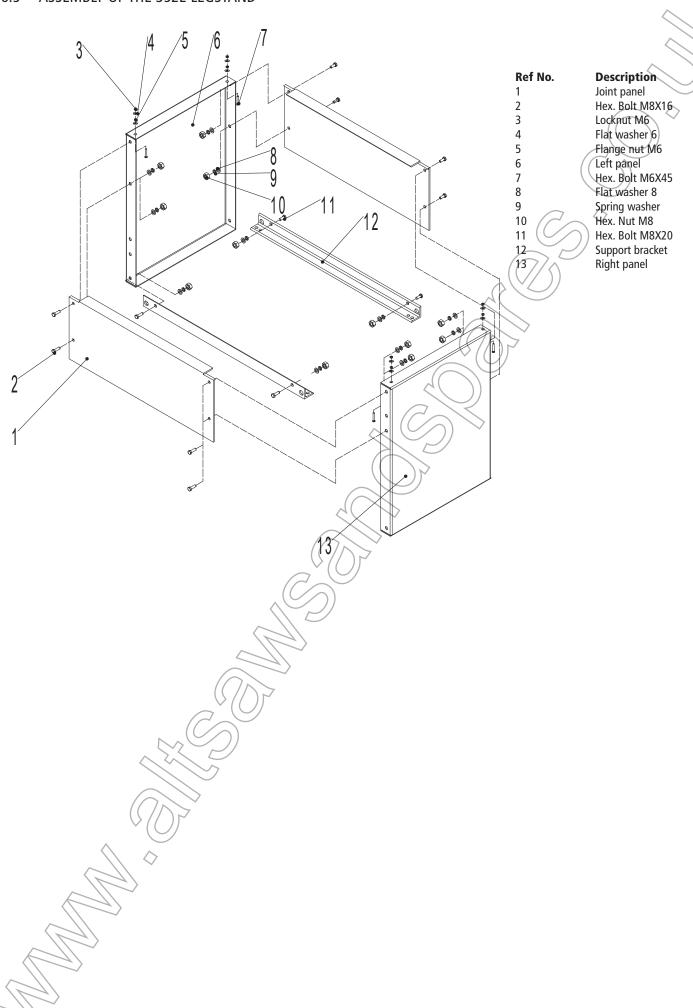
Care should be taken when handling heavy components during assembly. Always seek help when fitting or removing the worktable as this will require two people to safely lift and position on the machine











#### 6.6 BLADE MOUNTING AND ADJUSTMENT

For the 602E it is necessary to release the motor brake that prevents manual rotation of bandwheels when mounting the blade. To release the brake, while machine is stopped and with power on, switch the brake release selector to "brake release" position. (FIG, 6.6)

To mount blade first remove the steel bar (A of FIG. 6.7) underneath the table, and the table insert ( (A) FIG. 6.8) Place the blade onto the bandwheel checking the teeth are in a correct position, and tighten the tension using the handwheel ( (A) of FIG. 6.9). The correct tension value is indicated on the tension scale inside the upper door, the indicated value corresponds to the width of the blade. (e.g. for blade width 25 mm tighten until no. 25 appears on the indicator).

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. To adjust the blade position on the bandwheels slacken the locking lever ( (B) of FIG. 6.9), and then turn the knob ( (C) of FIG.6.9): the blade will move inwards when turning the knob clockwise and the blade will move further out when turning the knob anticlockwise; A quarter of one turn is sufficient to make a noticeable displacement. Tighten the locking lever after the blade is positioned correctly.

ON OFF

FIG. 6.6

Then reinstall the table insert, close the band wheels accessing doors. And for the 602E you also need to switch the brake selector back to brake on 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.

FIG. 6.7

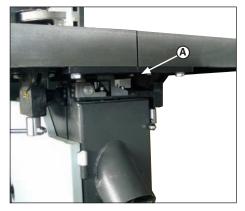
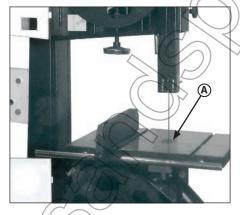
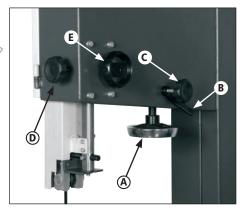


FIG. 6.8



ŒlG.6.9



## 6.7 SETTING THE SAW BLADE GUIDE & GUARD

#### ADJUSTING THE SAW BLADE GUARD

The adjustable saw blade guard should be positioned as close as possible to the workpiece. To adjust the height, release the locking knob ( (D) of Fig. 6.9 ) and turn the handwheel ( (E) of Fig. 6.9) to adjust the guard up or down. Lock the knob once the correct position of guard is obtained. This operation must always be carried out while the machine is stopped.

#### **BLADE GUIDE ROLLER BEARINGS**

The side rollers should almost touch the blade, to prevent vibration during operation and ensure correct direction of cutting. The positioning of these rollers is controlled by screw ( (A) of Fig.6.10), once they have been adjusted, tighten grub screw ( (B) of Fig.6.10); they should be 2mm behind the teeth of the blade. The thrust shaft 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 ( (C) of Fig.6.10).

#### LOWER SAW BLADE GUIDE

To adjust the lower blade guide move the table insert and adjust it from the top of the table. The lower blade guide should be positioned as close as possible to the workpiece (5-10mm)

The side rollers 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 ( (A) of Fig.6.11), once they have been adjusted, tighten nut ( (B) of Fig.6.11); they should be 2mm behind the teeth of the blade. The thrust shaft 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 ( (C) of Fig.6.11).

FIG. 6.10

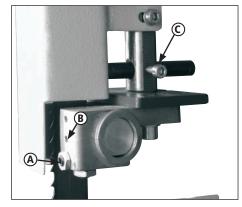
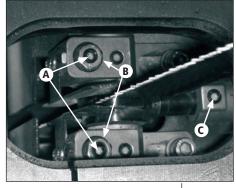


FIG. 6.11



## 6.8 TABLE INSERT FOR DUST EXTRACTION

The machines are equipped with a removable plastic insert under the work-table(A of FIG.6.12), the insert improves dust extraction. It is recommended that the insert "A" be replaced when the blade cutting clearance widens, this will maintain maximum efficiency of dust extraction.

## 6.9 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 saw blade; to adjust the parallelism of the guide, slacken, without removing, the 2 screws (B of FIG. 6.12), adjust the guide position and re-tighten, firmly, the 2 screws

## 6.10 TILTING THE WORK TABLE

The table can be tilted to a maximum of 20°
To incline it, loosen off the locking ratchet handle (FIG. 6.13)
position A. Turn the table by hand until table is at required angle.

FIG. 6.12

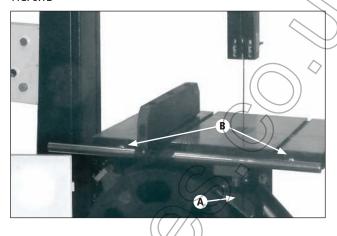
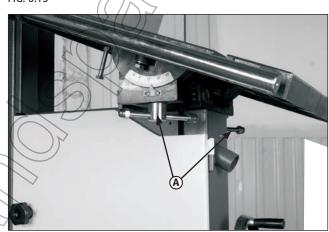


FIG. 6.13



## 7. Safety Advice

#### a) Machine out of order

Before making any adjustments or repairs to the machine, disconnect from the electrical supply.

If any faults are suspected, disconnect the electrical supply and put a visible notice on the machine. Always report faults on the machine (including guards and saw blades) as soon as they are discovered.

- b) Before operating
- Keep the surrounding floor space clean;
- Wear suitable clothing, not loose garments;
- Check that the blade is sharp, correctly tensioned, the correct width, and correctly positioned on the bandwheels and always observe the maximum speed marked on the saw blade;
- Use support stands for long or wide material;
- Use a dust extractor of adequate performance as detailed in section 3.3 of this manual.

#### c) During operation

Never clean the table with hands, use a brush or a piece of wood.

Do not remove off cuts or work pieces from the cutting area unless by using a push stick.

In case of an emergency such as blade breakage or other emergency do not attempt to intervene before the bandwheels have completely stopped.

When the bandwheel has stopped, lower the upper blade guides to the level of the table, loosen the blade and leave a sign advising of this operation. REMOVE THE ELECTRICAL CONNECTION PLUG.

d) During maintenance

- Place the machine out of order as indicated above;
- Use gloves to handle the saw band;
- Periodically check the electrical grounding of the machine.

#### e) Tensioning

When the machine is not in use, for example at the end of a shift, release the sawblade tension and place a notice on the machine to indicate this and to remind the next user to adjust the tension before starting up.

f) Guard removal/replacement

Where guards are removed replace them in accordance with the manufacturer's instructions.

g) Noise reduction

Regular maintenance of sawblades, extraction system, cleaning and lubrication of the sawblade etc. is necessary to help control machine noise.

h) Operator training

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

other principles of machine setting and operation, including the correct use and adjustment of workpiece holding and guiding devices and quards;

- the safe handling of the workpiece when cutting;
- the use of personal protective equipment for ear and eye protection.

#### i) Tooling

Care should be taken to avoid damaging the sawblade. When not in use, untensioned band sawblades should be coiled and secured. They should be stored in a safe, dry place. Before use they should be checked for damaged teeth and cracks.

- To avoid cracking, tensioned sawblades should be stored in accordance with Fig 7.1.
- At least two operators will be needed to change a wide sawblacle.
- Suitable carrier equipment should be provided for transporting tensioned wide sawblades.
- Suitable gloves (or other handling aids) should be worn whenever sawblades are handled.

#### j) Sawblade thrust wheel

The purpose of the thrust wheel on a table band saw is to give support to the sawblade when cutting. Position it just clear of the back of the sawblade when the sawblade is running free after being strained and tracked. Lack of clearance will cause grooving of the thrust wheel and lead to sawblade failure.

k) Machine operation

It is necessary to adjust the adjustable sawblade guard as close to the workplace as practicable.

I) Straight work

Always use a fence for straight cutting, to prevent the workplace rocking or sliding.

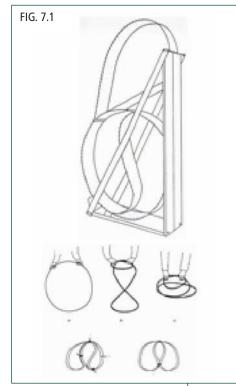
When hand feeding against the fence, it is necessary to use a push stick for feeding close to the sawblade.

m) Cross cutting round stock

If cutting round stock it is necessary to secure the workpiece against rotation by using a jig or holder and to use a sawblade suitable for cross cutting.

n) Operator training

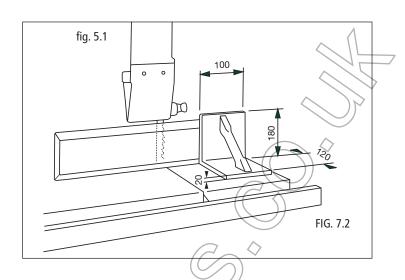
It is essential that all operators are adequately trained in the correct use and adjustment of safety appliances such as jigs, templates and extension tables.



## 7.2 SAFETY DEVICES AND GUARDS

The upper portion of the saw blade is fully protected inside the machine column

The lower portion of the blade is protected by an adjustable guard which is adjustable for height depending on the thickness of material to be cut.

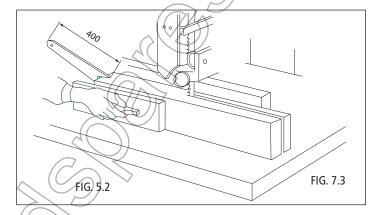


## 7.3 FACE CUTTING

Use a square for safe guiding of the work during face cutting FIG. 7.2

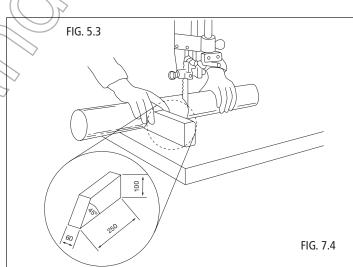
## 7.4 CUTTING SHORT PIECES

Use the push stick provided for the cutting of short pieces. FIG 7.3



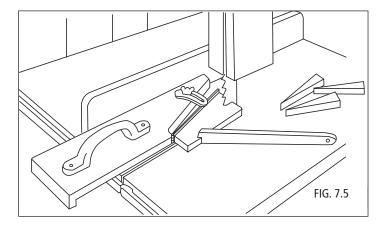
## 7.5 CUTTING OF ROUND PIECES

Use a wedge rest to prevent rotation of round parts during cutting. FIG 7.4



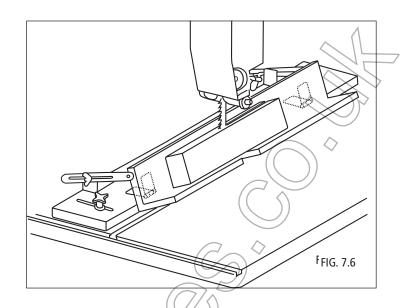
## 76 WEDGE CUTTING

Pushing device for wedge cutting FIG 7.5



#### 7.7 CUTTING OF WEDGE-SHAPED LENGTHS

Equipment for cutting wedge-shaped lengths. FIG 7.6



## 8. Maintenance

## BEFORE ANY INTERVENTION ALWAYS DISCONNECT THE ELECTRICITY SUPPLY

Periodically check that all screws are tightly fastened and the condition of the various guards

#### V belts

After the first few hours of operation it is necessary to check that the tension of the belts is correct. 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 belt tension turn the handwheel (A, FIG. 8.1) clockwise, this will increase the tension.

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 may become hot.

### To change the belts

Slacken the tension as described above, remove the screw ("B", FIG. 8.1), pull-out the bandwheel from the shaft, repeat the operations in reverse to re-assemble. (CAUTION: Bandwheels are heavy and assistance may be required)

### Dismantling the upper fly-wheel

To remove the upper flywheel, follow the same procedure as for the bottom flywheel.

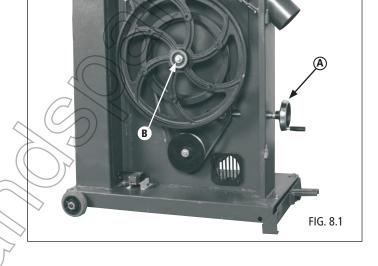
## Replacement of rubber covering of the fly-wheels

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 group.

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.



## 9. Trouble Shooting

#### The motor does not start

- Check that the fly-wheel doors are correctly closed, otherwise the safety switch will not allow operation.
- Check that the emergency button, when fitted, is released.
- If the "ON" button of the magneto thermal switch does not lock-in, and for 602E 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, otherwise 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 correction by 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.

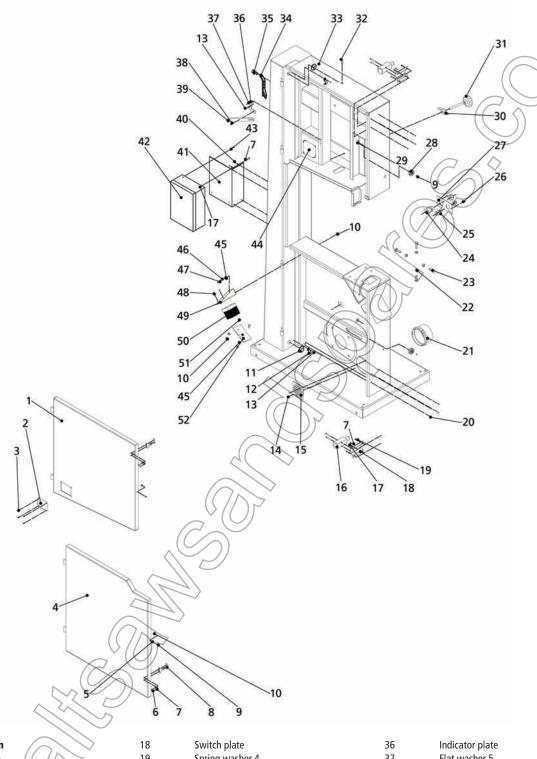
#### The machine stops with the blade jammed into the workpiece

• 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.

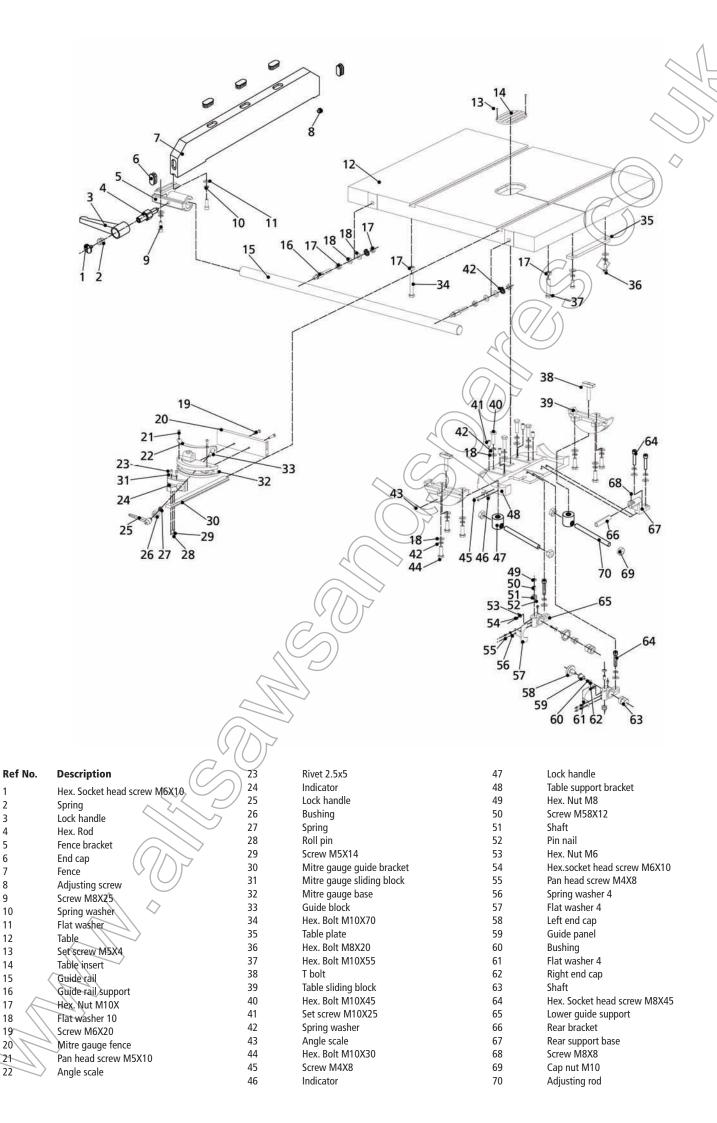
## Other problems

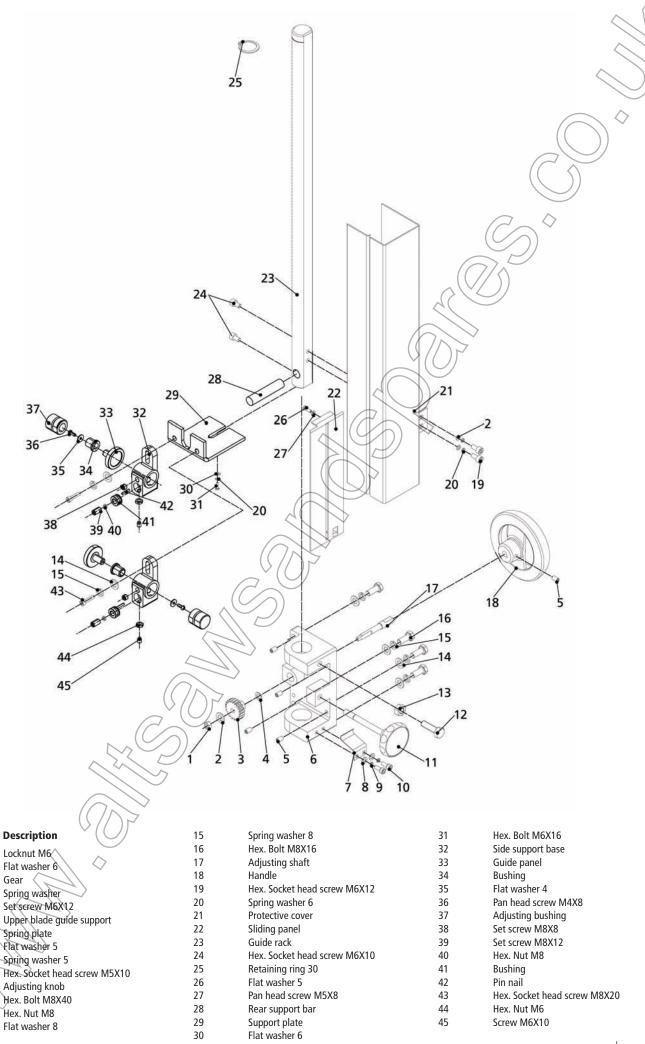
- The blade moves backwards and forwards: weld misaligned.
- The blade slips back at the beginning of cut: blade not sharpened or blade incorrect for material in work or there is a defect on the crown of the bandwheel surface.

# 10. Diagrams & Components-602E



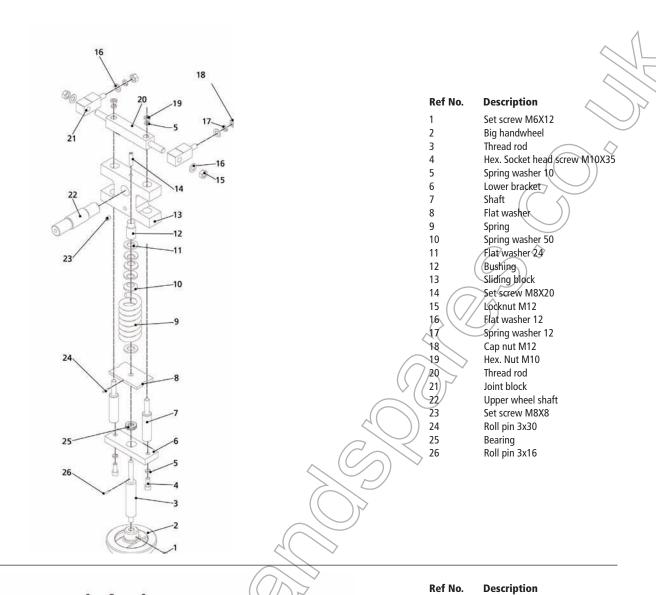
Ref No.	Description	18	Switch plate	36	Indicator plate
1	Upper wheel cover	19	Spring washer 4	37	Flat washer 5
2	Clear window	20	Pan head screw M4X16	38	Screw
3	Rivet 3X7	21	Dust port	39	Indicator
4	Lower wheel cover	22	Hex. Nut M8	40	Pan head screw M5X16
5	Bushing	23	Hex. Bolt M8X25	41	Switch mounting plate
6	Pan head screw M4X10	24	Strain relief M20	42	Main switch
7	Flat washer 4	25	Strain relief M16	43	Pan head screw M4X16
8	Thread plate	26	Pan head screw M6X12	44	Tension label
9	Hex. Socket head screw M6X20	27	Cable plate	45	Flat washer 6
10	Hex. Nut M6	28	Star handle	46	Spring washer 6
11 ~	Rubber bushing	29	Locknut M6	47	Hex. Socket head screw M6X12
12	Clamp plate	30	Lock handle	48	Tapping screw M4.8X16
13	Screw M5X10	31	Adjusting knob	49	Brush holder
14	Tapping screw M3.5X13	32	Ring	50	Brush
_15	Dust bar screen	33	Frame	51	Hex. Bolt M6X20
16	Safety switch	34	Plastic pusher	52	Board
17	Hex. Nut M4	35	Screw M6X25		

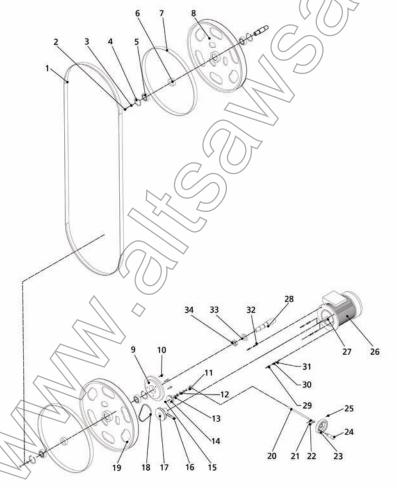




Ref No.

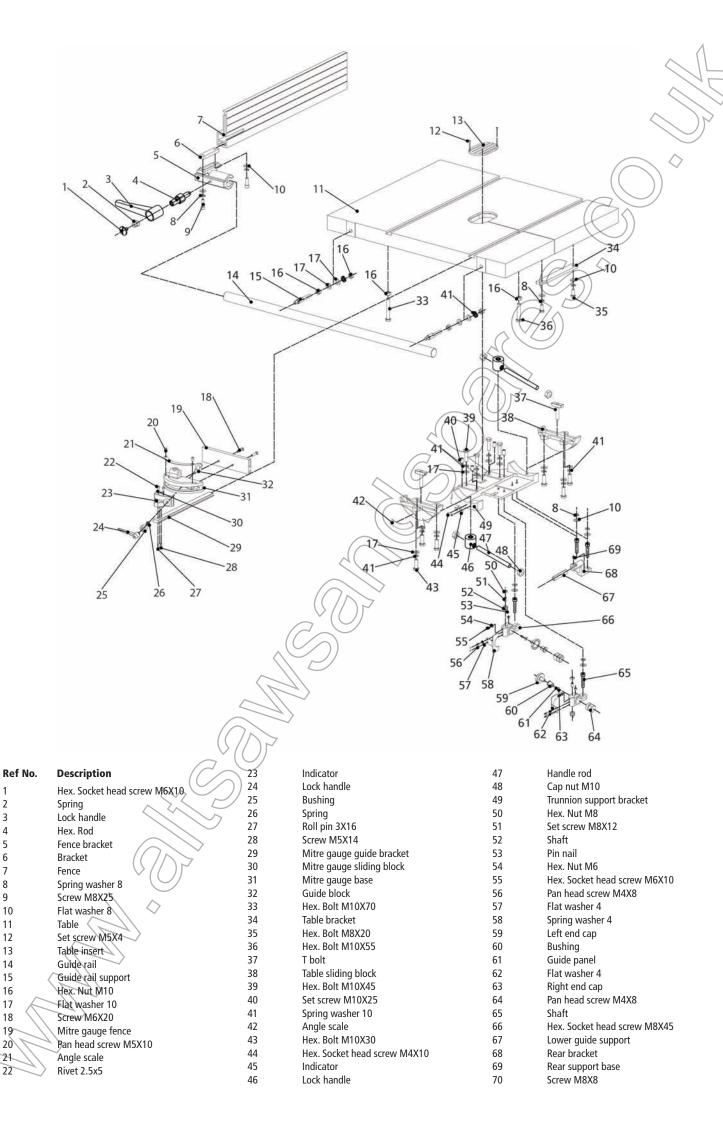
11/

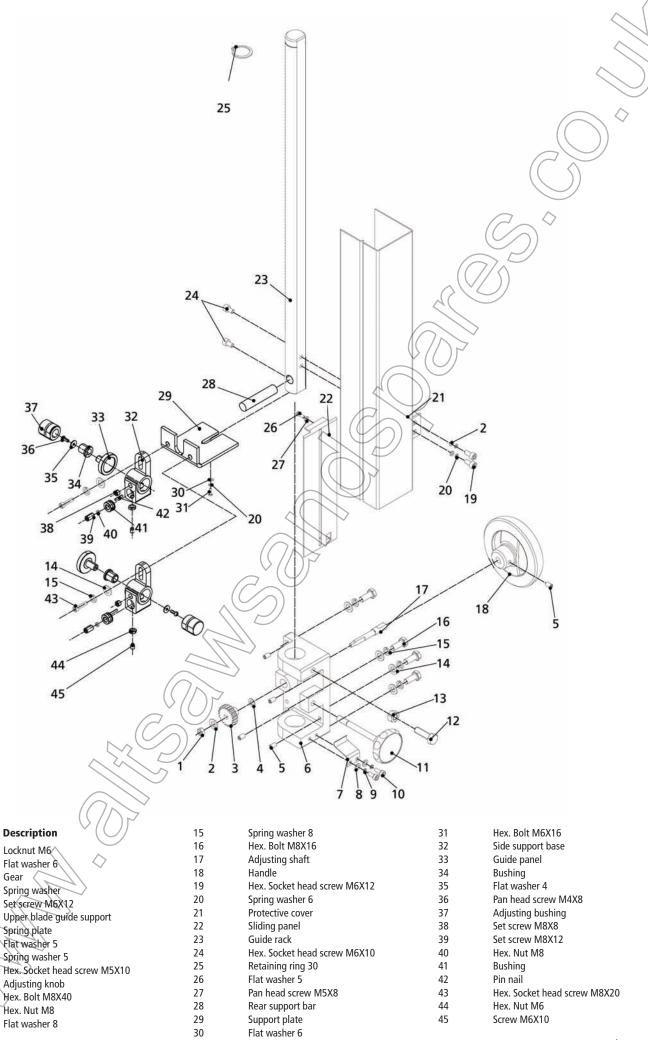




1	Saw blade
2	Hex. Socket head screw M10X20
3	Washer
4	Retaining ring 52
5	Bearing
6	Bearing
7	Tyre
8	Upper wheel
9	Pulley
10	Hex. Socket head screw M8X30
11	Tension shaft
12	Bearing
13	Retaining ring 28
14	Tension wheel
15	Retaining ring 12
16	Set screw M8X10
17	Motor pulley
18	V belt
19	Lower wheel
20	Thread rod
21	Retaining tube
22	Set screw M5X10
23	Small handwheel
24	Small handle
25	Hex. Socket head screw M6X16
26	Motor
27	Key 8x40
28	Upper wheel shaft
29	Hex. Bolt M10X30
30	Flat washer 10
31	Spring washer 10
32	Hex. Nut M10
33	Spring washer 30
34	Hex. Nut M30

#### 10. Diagrams & Components-502E 36 37 38 40 26 23 22 46 21 48 20 49 10 50 15 18 17 16 Ref No. Description 17 Hex. Nut M4 Screw M6X25 34 18 Switch plate 35 Indicator plate Upper wheel cover Spring washer 4 19 36 Flat washer 5 2 Clear window 20 Dust port 37 Pan head screw M5X6 3 Rivet 3x7 Hex. Nut M8 21 Screw 38 4 Lower wheel cover 22 Screw M8X25 39 Indicator 5 Bushing Strain relief M20 23 40 Tension label Pan head screw M4X12 24 Strain relief M16 41 Screw M4X50 7 Flat washer 4 25 Pan head screw M6X8 42 Switch 8 Thread plate 26 Cable plate 43 Flat washer 6 Hex. Socket head screw M6X20 9 27 Star handle 44 Spring washer 6 10 Hex. Nut M6 28 Locknut M6 45 Hex. Socket head screw M6X12 Rubber bushing 11 29 Lock handle Tapping screw 4.8x16 46 12 Clamp plate 30 Adjusting handle Brush holder 47 13 Screw M5X10 31 Ring 48 Brush Tapping screw 3.5X13 14 32 Frame 49 Hex. Bolt M6X20 15 Dust bar screen 33 50 Plastic pusher **Board** 16 Safety switch

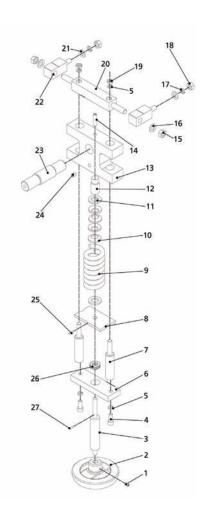




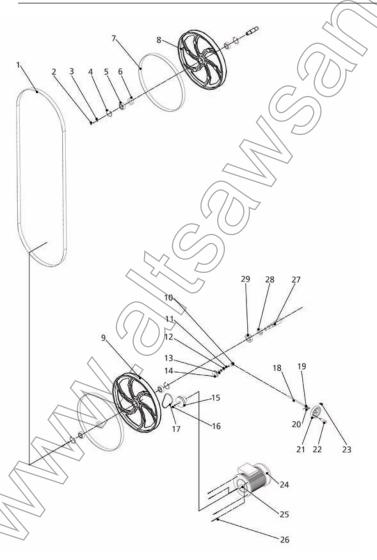
Ref No.

11/

13.



Ref No.	Description
1	Set screw M6X12
2	Big Handwheel
3	Thread rod
4	Hex. Bolt M10X25
5	Spring washer 10
6	Lower bracket
7	Shaft
8	Flat washer ( (
9	Spring
10	Spring washer 50
11	Flat washer 24
12	Bushing
13	Sliding block
14	Set screw M8X20
15	Locknut M12
16 (	Flat washer 10
17	Spring washer 12
18	Cap nut M12
19	Hex. Nut M10
20	Thread rod
(21/)	Flat washer 12
< (22 ) )	Joint block
23	Upper wheel shaft
24	Set screw M8X8
<i>J 2</i> 5	Roll pin 3x30
26	Bearing
27	Roll pin 3x16

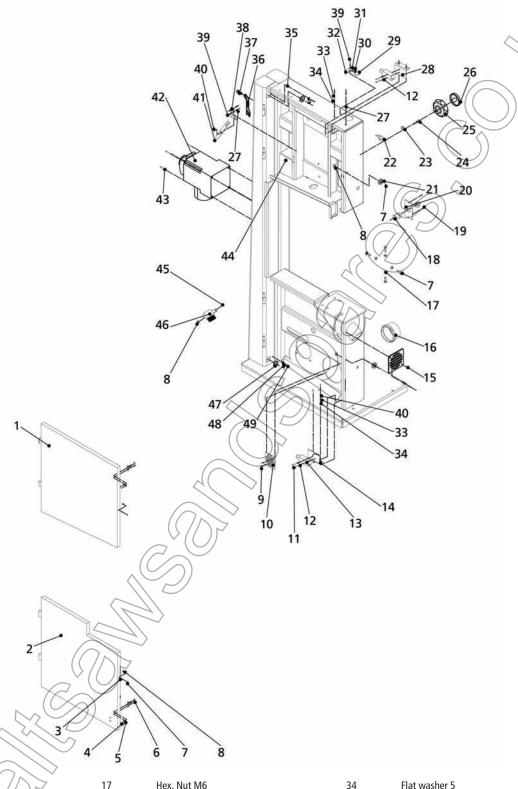


MCI NO.	Description
1	Saw blade
2	Screw M8X16
3	Washer 8
4	Retaining ring 47
5	Bearing
6	Bearing
7	Tyre
8	Upper wheel
9	Lower wheel
10	shaft
11	Retaining ring 12
12	Bearing
13	Retaining ring 28
14	Tension wheel
15	Motor pulley
16	Left-hand bolt M8X20
17	V belt
18	ThreaAd rod
19	Retaining tube
20	Screw M5X8
21	Small handwheel
22	Small handle
23	Screw M6X12
24	Motor
25	Key 6x28
26	Washer 8
27	Lower wheel shaft
28	Washer 27
29	Hex. Nut M27

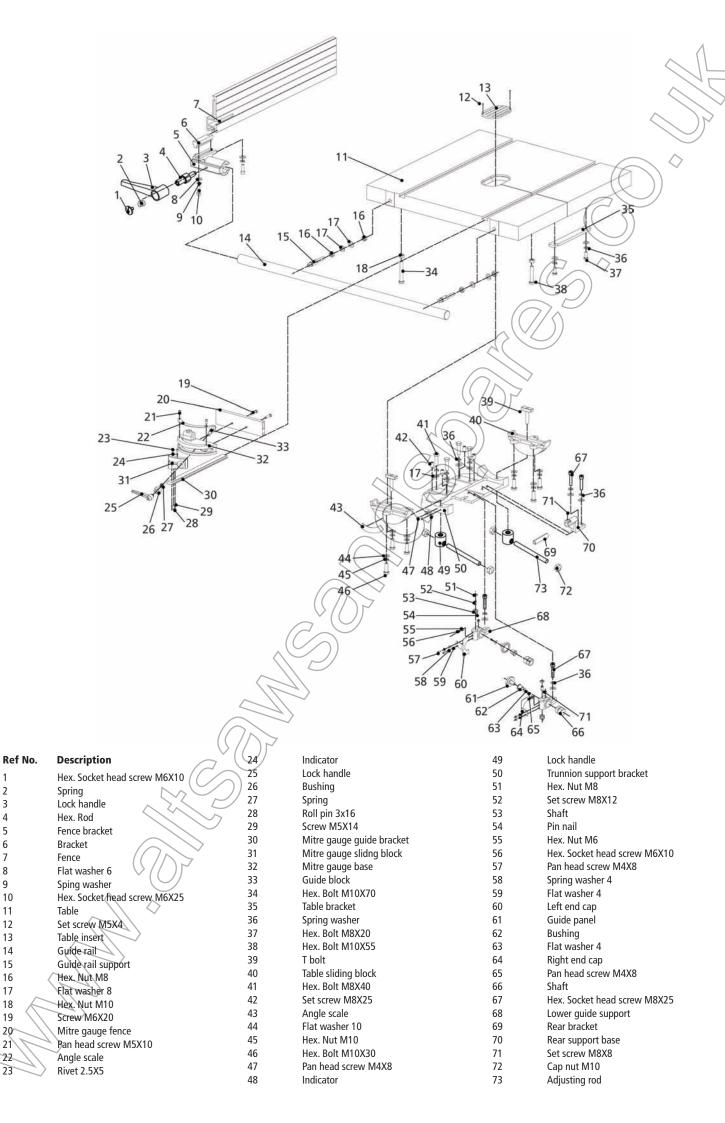
Description

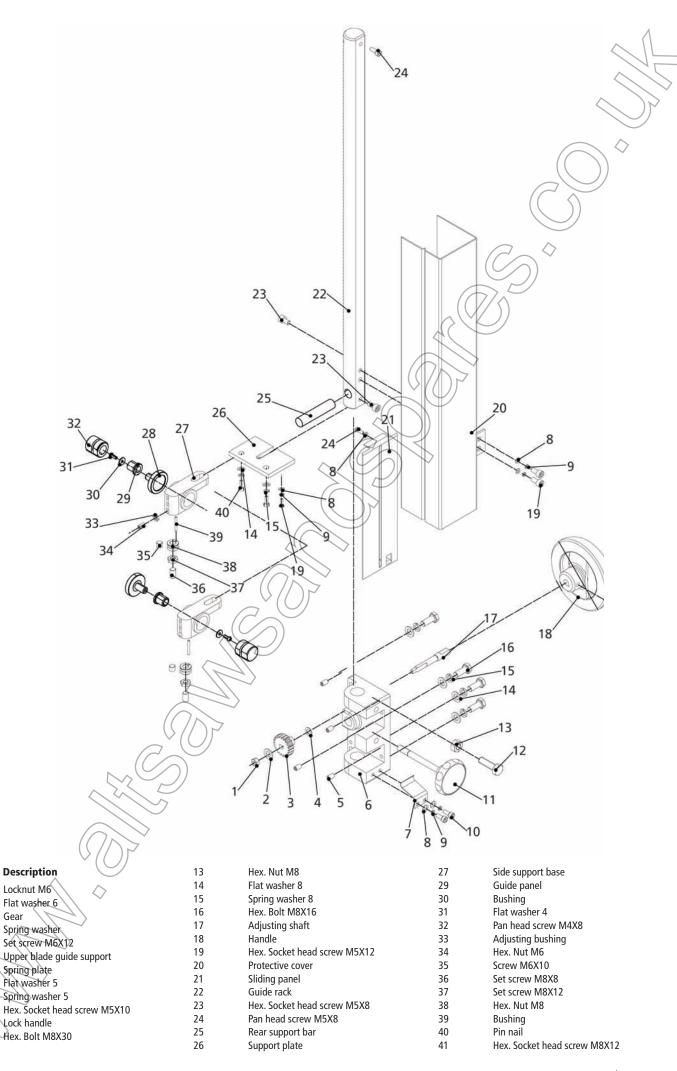
Ref No.

# 10. Diagrams & Components-352E



Ref No.	Description	17	Hex. Nut M6	34	Flat washer 5
1	Upper wheel cover	18	Strain relief M20	35	Frame
2	Lower wheek cover	19	Pan head screw M6X8	36	Plastic pusher
3	Bushing	20	Cable plate	37	Screw M6X25
1	Pan head screw M4X10	21	Star handle	38	Indicator plate
5	Flat washer 4	22	Wing nut	39	Pan head screw M5X16
6	Thread plate	23	Hex. Nut M8	40	Screw
7	Hex. Socket head screw M6X20	24	Hex. Bolt M8X60	41	Indicator
8	Locknut M6	25	Knob body	42	Switch
9	Tapping screw 3.5X9.5	26	Knob cap	43	Pan head screw M4X50
10	Dust bar screen	27	Hex. Nut M5	44	Tension scale
11	Pan head screw M4X30	28	Switch plate	45	Hex. Bolt M6X25
12_	Spring washer 4	29	Gemel	46	Brush
13	Safety switch	30	Spring	47	Rubber holder
14	Switch plate	31	Gemel	48	Clamp plate
15	Dust bar screen	32	Pin shaft	49	Screw M5X10
16	Dust port	33	Spring washer 5		



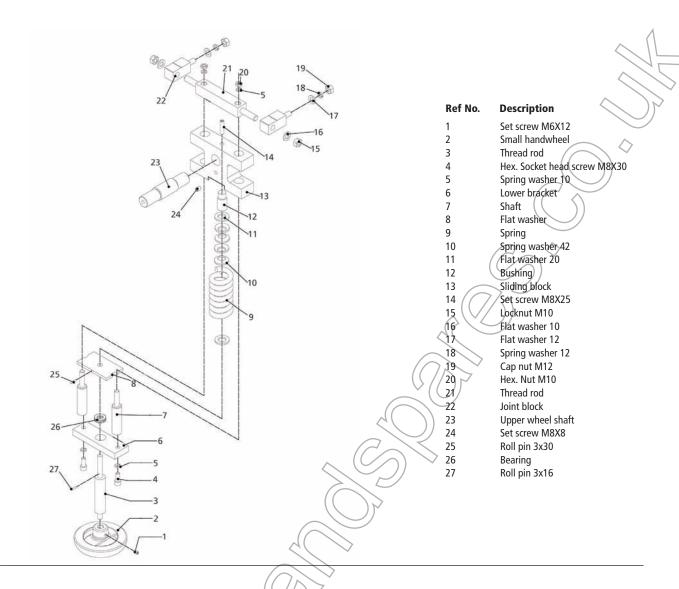


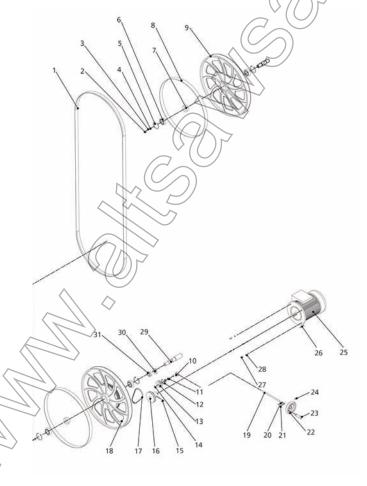
Ref No.

Gear

3

5





1	Saw blade
2	Hex. Socket head screw M8X16
3	Spring washer 8
4	Flat washer M8
5	Retaining ring 40
6	Bearing
7	Bearing bushing
8	Tyre
9	Upper wheel
10	Shaft
11	Bearing
12	Retaining ring 28
13	Tension wheel
14	Retaining ring 12
15	Set screw M6X8
16	Motor pulley
17	Multi-belt
18	Lowe wheel
19	Thread rod
20	Retaining tube
21	Set screw M5X8
22	Small handwheel
23	Small handle
24	Hex. Socket head screw M6X16
25	Motor
26	Roll pin 6x20
27	Hex. Bolt M6X16
28	Spring washer 6
29	Lower wheel shaft
30	Hex. Nut

Description

Ref No.

