HAFCO METALMASTER

Edition : 2.0
Date: (08/25)

Instruction Manual

METAL CUTTING BAND SAW
EB-285DSV

Order Code: (B064V)

MACHINE DETAILS

MACHINE.	**Metal Cutting Band Saw**
MODEL NO.	**EB-285DSV**
SERIAL NO.	
DATE OF MANF.	

Imported by

Australia

HARE&FORBES MACHINERYHOUSE

www.machineryhouse.com.au

New Zealand

MACHINERYHOUSE

www.machineryhouse.co.nz

NOTE:
This manual is only for your reference. At the time of the compiling of this manual every effort to be exact with the instructions, specifications, drawings, and photographs of the machine was taken. Owing to the continuous improvement of the HAFCO METALMASTER machine, changes may be made at any time without obligation or notice. Please ensure the local voltage is the same as listed on the specification plate before operating any electric machine.

SAFETY SYMBOLS:
The purpose of safety symbols is to attract your attention to possible hazardous conditions

⚠ WARNING ***Indicates a potentially hazardous situation causing injury or death.***

⚠ CAUTION ***Indicates an alert against unsafe practices.***

Note: Used to alert the user to useful information

NOTE:
In order to see the type and model of the machine, please see the specification plate. Usually found on the back of the machine. See example (Fig.1)

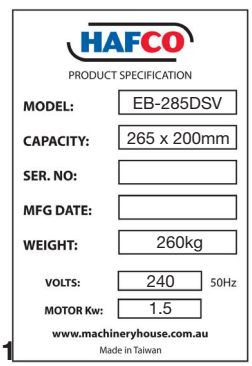


FIG. 1

C O N T E N T S:

WARNING!

Read and understand the instructions in this manual, before operating this machine to reduce the risk of serious injury or even death. Save all warnings and instructions for future reference.

1.1. SPECIFICATIONS

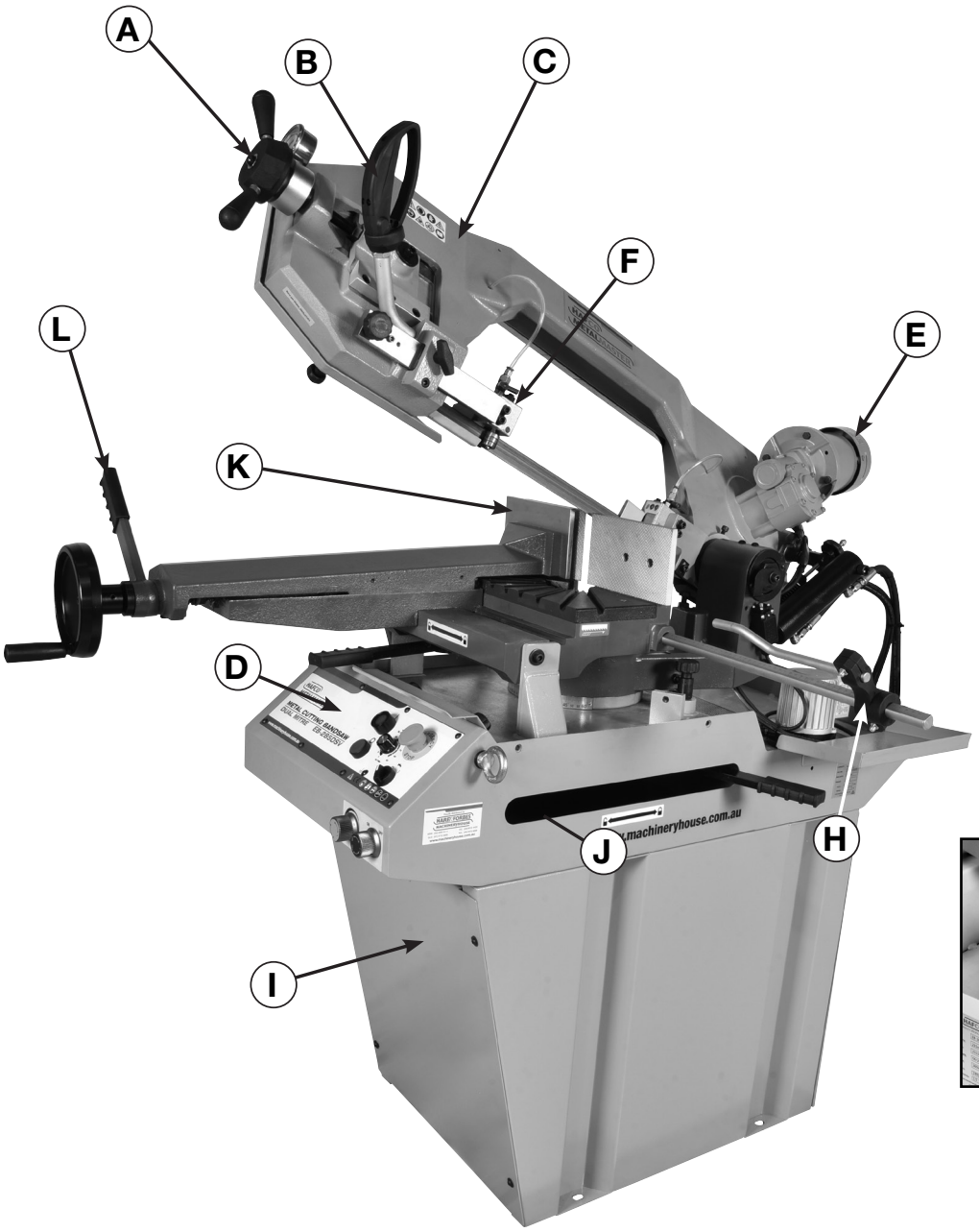
Order Code	B064V
Model	**EB-285DSV**
Operation Type	Swivel Head / Dual Mitre
Round @ 90° (mm)	235
Round @ 45° (mm)	200
Round @ 60° (mm)	120
Square @ 90° (mm)	230
Square @ 45° (mm)	185
Square @ 60° (mm)	120
Rectangle (W x H) @ 90° (mm)	265 x 200
Rectangle (W x H) @ 45° (mm)	180 x 200
Rectangle (W x H) @ 60° (mm)	115 x 120
Coolant System	Yes
Table Working Height (mm)	990
Cutting Head Beam Type	Manual
Cutting Head Beam Return	Manual Return
Cutting Head Down Feed Control:	Adjustable Hydraulic
Vice Clamping Fixture	Manual Quick Action
Bundle Cutting Fixture	~
Blade Steps / Speeds (m/min)	Variable 20-90
Blade Size (L x W x T) (mm)	2645 x 27 x 0.9
Motor Power (kW / hp)	1.5/2
Voltage / Amperage (V / amp)	240/10
Weight (Gross / Nett) (kg)	290

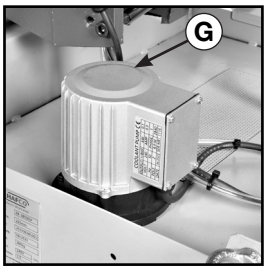
1.2. STANDARD EQUIPMENT

- ❑ Machine stand with integrated cooling fitted as standard
- ❑ Blade cleaning brush
- ❑ Ball bearing blade guides

1.3. IDENTIFICATION

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.





A	Blade Tension Handle	**E**	Motor	**I**	Stand
B	Hand Grip and Trigger	**F**	Ball Bearing Guide	**J**	Head Lock
C	Saw Bow	**G**	Coolant Pump	**K**	Vice
D	Control Panel	**H**	Length Stop	**L**	Quick Action Handle

2. IMPORTANT INFORMATION

2.1 GENERAL WORKSHOP SAFETY

DO NOT use this machine unless you have read this manual or have been instructed in the use of this machine in its safe use and operation

WARNING

This manual provides safety instructions on the proper setup, operation, maintenance, and service of this machine. Save this manual, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes, but is not limited to proper installation in a safe environment, personnel training and authorization to use, proper inspection and maintenance, manual availability and comprehension of the application of the safety devices, integrity, and the use of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

Safety glasses must be worn at all times in work areas. Earmuffs should be worn if the work area is noisy.

Sturdy footwear must be worn at all times in work areas.

Gloves should NOT be worn when operating machines. They should be only used when handling the work piece

Long and loose hair must be contained with a net or under a hat.

OWNER'S MANUAL. Read and understand this owner's manual before using the machine.

DISCONNECT POWER FIRST. If using power, always disconnect the machine from power supply before making adjustments, or servicing the machine. This prevents any risk of injury from unintended startup or contact with live electrical equipment

TRAINED OPERATORS ONLY. Operators that have not been trained have a higher risk of being seriously injured. Only allow trained or supervised people to use this machine. When the machine is not being used, disconnect the power to the machine to prevent unauthorized use—especially around children. Make the workshop safe.

2.1 GENERAL WORKSHOP SAFETY CONT.

WEARING PROPER APPAREL Do not wear clothing, apparel or jewellery that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of operating control.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on the machine can become dangerous projectiles upon startup. Never leave hex keys, wrenches, or any other tools on the machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB.
Only use this tool for its intended purpose. Do not force the machine or its attachments to do a job for which they were not designed. Never make unapproved modifications. Modifying the machine or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make operating control difficult. This could increase the risk of accidental injury.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly.

FORCING MACHINERY. Do not force the machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if the machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify the machine is stable and if using a mobile base it is locked in position.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn the machine OFF and ensure all moving parts have completely stopped before walking away. Never leave the machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep the machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

CHECK DAMAGED PARTS. Regularly inspect the machine for any condition that may affect the safe operation. Immediately repair or replace damaged or parts that are incorrectly fitted before operating.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

BLADE CONDITION. Do not operate with dull, cracked or badly worn blades. Inspect the blades for broken teeth before each use.

CAUTION!

It is impossible to cover all possible hazards. All workshop environments are different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.

2.2 SPECIFIC SAFETY FOR BAND SAWS

DO NOT use this machine unless you have been instructed in its safe use and the operator has read and understands the instructions in this manual

Safety glasses must be worn at all times in work areas.

Long and loose hair must be contained.

Hearing protection must be worn around noisy machines

Sturdy footwear must be worn at all times in work areas.

Close fitting/protective clothing must be worn.

Rings and jewellery must not be worn

PRE-OPERATIONAL SAFETY CHECKS

- ❑ Locate and ensure you are familiar with all machine operations and controls
- ❑ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ❑ Check workspaces and walkways to ensure no slip/trip hazards are present.
- ❑ Ensure the hydraulic damping mechanism functions.
- ❑ Check that the blade is in good condition.
- ❑ Ensure the blade's speed, tension and tracking are properly adjusted.
- ❑ Check coolant delivery system to allow for sufficient flow of coolant.

OPERATIONAL SAFETY CHECKS

- ❑ Lift the head of the unit up and lock it in the upward position.
- ❑ Set the angle of the vice or check it to ensure its squareness.
- ❑ Clamp workpiece firmly into the vice. Long material must be supported.
- ❑ Adjust blade guards to cover unused portion of blade.
- ❑ Ensure hands are away from the blade, and then turn the machine on.
- ❑ Allow the upper head assembly to come down slowly until the teeth are cutting the material.
- ❑ Keep hands away from the blade and cutting area.
- ❑ Turn off the machine and bring it to a complete standstill and lift the blade out of the cut.
- ❑ Stop the saw immediately if the blade develops a 'click', and check for a broken tooth.
- ❑ Ensure the saw bow is locked in the upward position before removing the workpiece.

ENDING OPERATIONS AND CLEANING UP

- ❑ Switch off the machine when work completed.
- ❑ Reset all guards to a fully closed position.
- ❑ Before removing scrap pieces from the vice area or making adjustments, stop the machine and bring it to a complete standstill.
- ❑ Leave the machine in a safe, clean and tidy state

DON'T

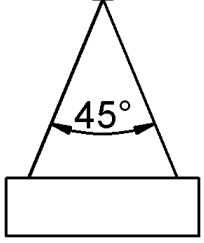
- ❑ Do not use faulty equipment. Immediately report suspect machinery.
- ❑ Do not push down on the cutting head while it is cutting.
- ❑ Never leave the machine running unattended.

2.3 LIFTING INSTRUCTIONS

On the day that the machine arrives, make sure that a crane with sufficient capacity is available to unload the machine from the vehicle. Ensure access to the chosen site is clear and that doors and ceilings are sufficiently high and wide enough to receive the machine. To handle the machine, the slings should be positioned so the machine is level when lifted. When using slings please take note of the sling angle and the loads that apply.

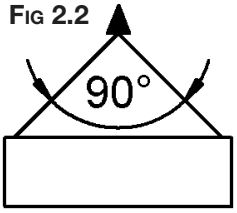
Lifting Points
Use only the 4 eye bolts supplied with the machine to attach the slings. When lifting the machine only certified lifting slings should be used. Ensure that when lifting, the machine does not tip over. Check that the lifting slings do not interfere with the hydraulic pipes or electrical conduits. Failure to follow these instructions could cause damage to the machine.

FIG 2.1.



When the slings are at a 45° angle then each sling is carrying the equivalent of 50% of load weight. (Fig.2.1).

FIG 2.2



When the slings are at a 90° angle then each sling will have a weight equal to 75% of the load on each sling.(Fig 2.2)
Note! The manufacturer recommends not to exceed 90° angle

FIG. 2.3

2.4 MACHINE STAND ASSEMBLY

To assemble the stand, find a flat even space with plenty of room to layout the side panels.

- ❑ Fit the side panels of the machine stand as shown in the diagram Fig. 2.4.
- ❑ Place the metal band saw on the machine stand.
- ❑ Screw the drip pan to the machine stand

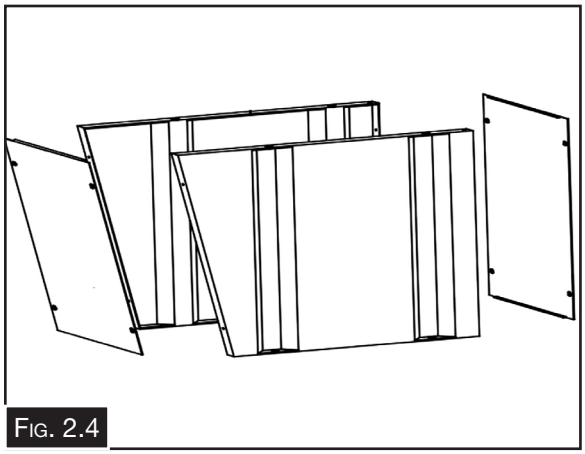


FIG. 2.4

3. SETUP

3.1 SITE PREPARATION

When selecting the site for the machine, consider the largest size of workpiece that will be processed through the machine and provide enough space around the machine for operating the machine safely. Consideration should be given to the installation of auxiliary equipment. Leave enough space around the machine to open or remove doors/covers as required for the maintenance and service as described in this manual.

It is recommended that the machine is anchored to the floor to prevent tipping or shifting. It also reduces vibration that may occur during operation. The machine should be mounted on a reinforced concrete floor with a minimum of 150mm thickness. The floor must be able to support the weight of the machine and any workpiece that is to be worked.

3.2 CLEAN - UP

The unpainted surfaces of the machine have been coated with a waxy oil to protect them from corrosion during shipment. Remove the protective coating with a solvent cleaner or a citrus based degreaser.

Optimum performance from your machine will be achieved when you clean all moving parts or sliding contact surfaces that are coated with rust prevented products.

Hafco advise to avoid chlorine based solvents, such as acetone or brake parts cleaner, as they will damage painted surfaces and strip metal should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

3.3 MACHINE MOUNTING OPTIONS

Although it is not required Hafco recommends that you secure your machine to the floor. Masonry anchors with bolts are the best way to anchor machinery, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. (Fig. 3.1) Other methods of mounting is the use of machine mounts which also help with the levelling of the machine and isolating vibration. (Fig.3.2)

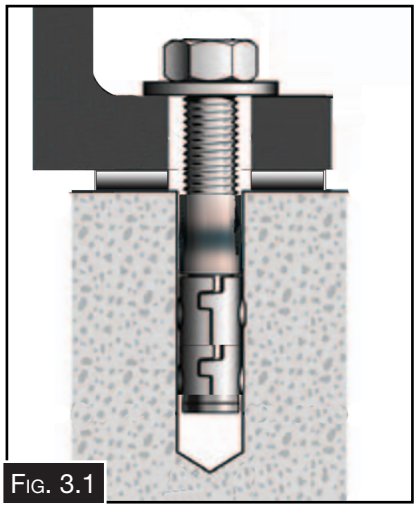


FIG. 3.1

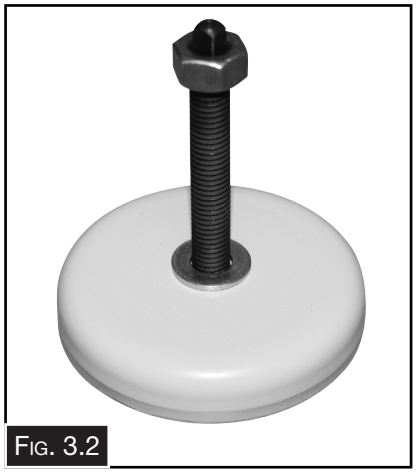


FIG. 3.2

CAUTION!

Do not install the machine in areas that are wet, cluttered, or have poor lighting.

3.4 MACHINE LEVELING

To set your machine up so that it operates to optimum performance, apply the following procedure:

After your machine has been anchored to a concrete slab floor, it then needs to be leveled. Loosen the hold down bolts and place a level on the surface of the working table. Metal shims need to be placed under the corner of the base of the machine until level. Once level then tighten the hold down bolts. (Fig. 3.3).

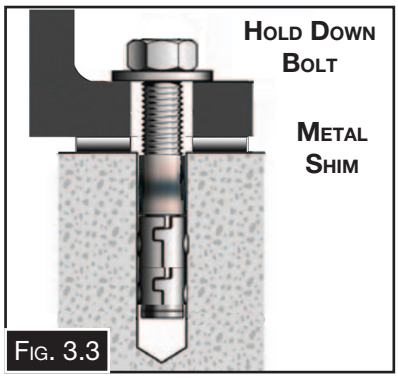


Fig. 3.3

CAUTION!

The machine must not rest on supports other than those defined in Fig. 3.3

3.5 ELECTRICAL INSTALLATION

Place the machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure there is access to a means of disconnecting the power source. The electrical circuit must meet the requirements for 240V 50Hz single phase.

NOTE : The use of an extension cord is not recommended as it may decrease the life of electrical components on your machine.

ELECTRICAL REQUIREMENTS

Nominal Voltage..... 240V
Cycle..... 50 Hz
Phase..... Single Phase
Power Supply Circuit.....10 Amps
Full Load Current..... 6.0 Amps

(Full load current rating is also on the specification plate on the motor.)

3.6 FULL-LOAD CURRENT RATING

The full-load current rating is the amperage a machine draws at when running at 100% of the output power. Where machines have more than one motor, the full load current is the amperage drawn by the largest motor or a total of all the motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating for these machine at 240V is 6.0 Amps

It should be noted that the full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating and if the machine is overloaded for a long period of time, damage, overheating, or fire may be caused to the motor and circuitry.

This is especially true if connected to an undersized circuit or a long extension lead. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements.

4. OPERATION

4.1 CONTROLS (Fig. 4.1)

A. ON Button. When pressed energizes the electrical system ready to operate when the trigger is depressed.

B. OFF Button. When pressed the motor and blade is stopped

C. Emergency Stop. When pressed all electrical operating items will stop. To allow the machine to restart the red button needs to be twisted to allow the button to pop up. Now the start button will operate.

D. Coolant Switch. Switches on the coolant pump.

E. Speed Control. When turned adjusts the speed of the blade in metres/minute

FIG. 4.1

4.1 CONTROLS Cont.

ADJUSTABLE-HYDRAULIC-DOWN-FEED-CONTROL
The machine if fitted with an adjustable control for the down feed of the bow saw. There are two dial controls. (Fig.4.2)

ON/OFF Dial. Shuts off the hydraulic flow to the feed system.

Feed Rate Dial. Adjusts the speed of the bow saw on the downward stroke.

FIG. 4.2

LIFT-UP & SWIVEL HANDLES

The machine is fitted with a handles. One to help when lifting the head and then both handles used to help control the head when it needs to be swiveled. (Fig. 4.3)


FIG. 4.3

QUICK ACTION SLIDING VISE

The band saw is fitted with a sliding quick action vice that allows for the vice to be moved from side to side to accommodate the bow saw being able to swivel in each direction. The vice side movement is secured with a lock lever that holds the vice in place after being adjusted.
(Fig. 4.4)

NOTE: After moving the vice, check to make sure that it does not come into contact with the bow saw or blade.

The quick action lever allows for the quick tightening or releasing of material in the vice. The quick action has a limited stroke so the hand wheel is required to move the vice jaws closer together. (Fig. 4.5)

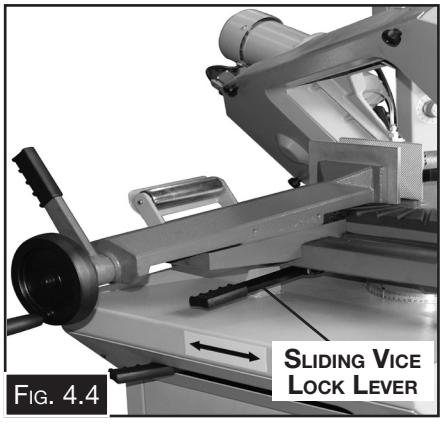


FIG. 4.4

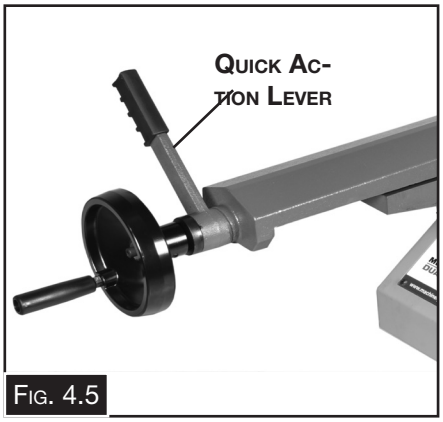


FIG. 4.5

TENSIONING THE SAW BLADE

The tension of the saw blade can be adjusted by means of the hand wheel. (Fig.4.6) Using the graduated scale on the gauge adjust the tension until it reads in the green section. It can also be checked by pressing the blade in the middle between the supports. The blade should only be able to be pushed down 3 mm with a force of approximately 50 N.

NOTE: The tension for carbon blades is 20,000 PSI. For bi-metal blades the tension should be 20,000 to 22,000 PSI.

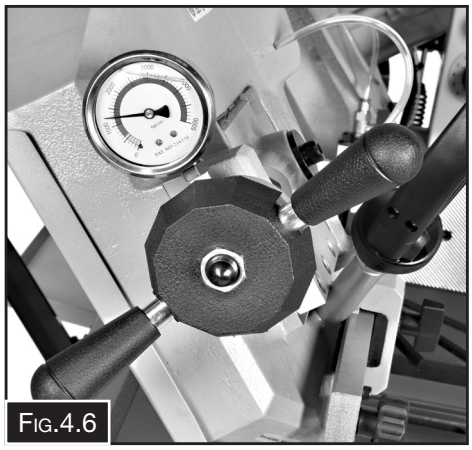


FIG.4.6

LENGTH STOP

The machine is fitted with an adjustable length stop. (Fig.4.7)

To install the length stop

1. Screw the threaded rod into the base of the machine and tighten the lock nut.
2. Slide the length stop onto the rod
3. Measure the distance from the blade to the face of the length stop and move the length stop in or out until the correct measurement is achieved.
4. Tighten the length stop on the rod.

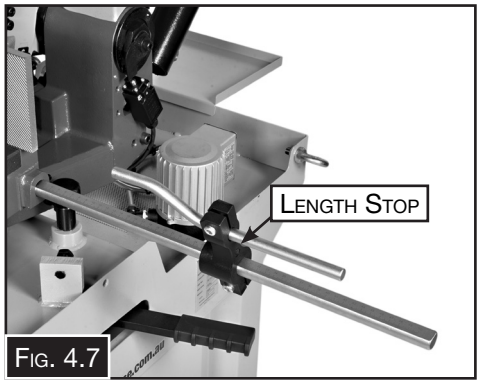


FIG. 4.7

COOLANT SYSTEM

The sawing movement produces high temperatures at the edge of the blade due to the friction generated.

The blade must therefore be cooled during operation. Using a suitable lubricant or cooling agent leads to better results and longer saw blade life. (Fig. 4.8)

HAFCO recommend that soluble cutting oil be used available in tow sizes.

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20 Ltr Order Code S091

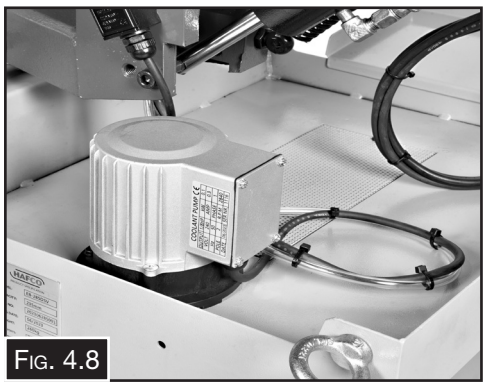


FIG. 4.8

BLADE GUIDES (Fig.4.9)

The upper blade guide should be as close to the workpiece as possible. This helps ensure straight cuts by keeping the blade from twisting or drifting off the cut line.

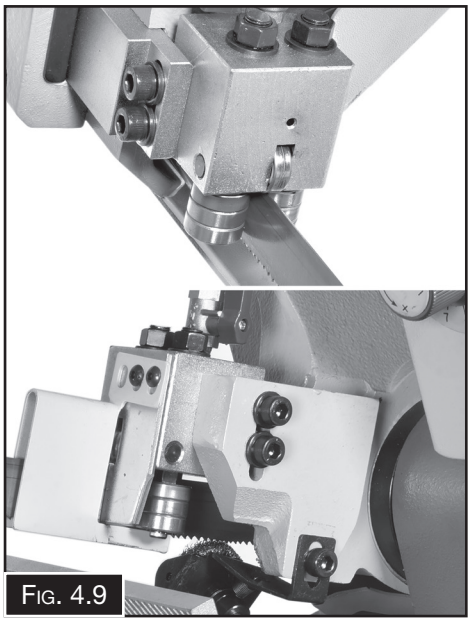


FIG. 4.9

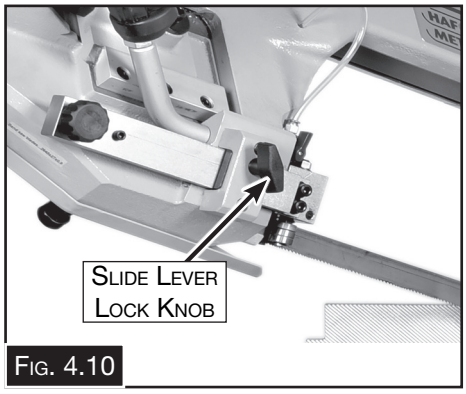


FIG. 4.10

Adjust the upper blade guide by loosening the slide lever lock as in Fig. 4.10

4.2 SETTING THE DOWN FEED

The down feed is the speed at which the saw blade cuts through the workpiece. The rate at which the bow saw drops is controlled by a valve that can be adjusted to increase or decrease the speed that it moves.

To set the feed rate raise the bow to the highest position and hold it in place with the feed ON/OFF dial. (Fig. 4.11)

Adjust the feed rate dial to the desired feed rate.

Start the saw and coolant pump and begin cutting.

If the chips have a slightly colour change and are slightly curved and evenly shaped, then the blade speed and feed are correct.

FIG. 4.11

4.3 SETTING THE CUTTING ANGLE

The band saw is fitted with the capacity to cut angles with the head being able to be swiveled up to 60° to the right and up to 45° to the left.

To set the angle on the left.

Raise the bow saw to the highest point and hold by setting the ON/OFF dial to OFF. (Fig.4.11). Move the swivel lock lever (Fig.4.12) to the right and rotate the head until the scale (Fig.4.13) is at the angle required. Move the swivel lock lever to the left to lock the head.

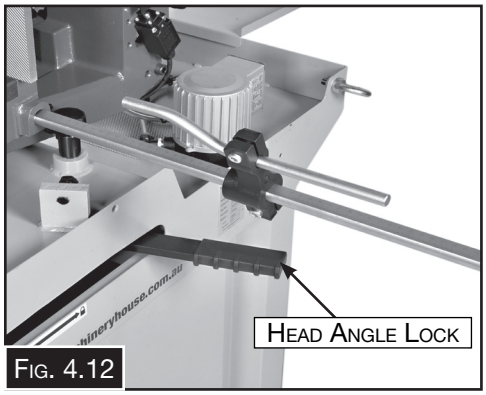


FIG. 4.12

TO SWIVEL THE HEAD TO THE RIGHT.

Move the swivel lock lever (Fig.4.12) to the right to release the head, then remove the 90° stop pin and swivel the head to the desired angle. The maximum angle available in this direction is 60° set when the head is hard up against the stop. (Fig. 4.15)

Place the pointer of the scale at the angle required.

Move the swivel lock lever to the left to lock the head.

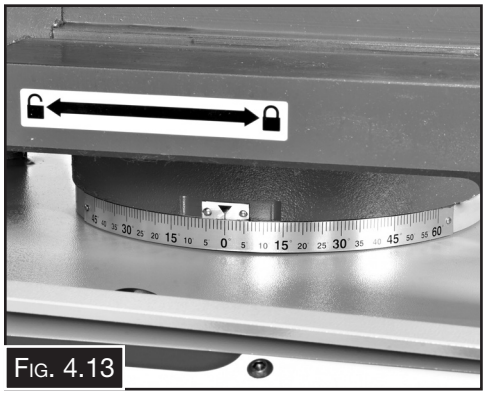


Fig. 4.13

NOTE: Please note that the scale (Fig.4.13) is for reference only and if the angle is required to be very accurate then the angle should be checked with a protractor after the cut.

USING THE 45° AND 60° STOPS

Move the swivel lock lever (Fig.4.12) to the right to release the head, then swivel the head until the pointer is on 60. (Fig.4.16) The swivel head of the band saw will now be against the 60° stop. (Fig. 4.15)

Move the swivel lock to the left to lock the head. (Fig. 4.12) To set the head using the 45° stop (Fig. 4.15), flip the stop top plate over so that it restricts the movement of the head to 45°.

Check that the scale reads 45° (Fig.4.17) To return the head for right angle cuts, unlock the head by loosening the swivel lock. Return the swivel head to the 0°and replace the 0° stop pin (Fig. 4.14) making sure that the head is hard up against the stop. Move swivel lock lever to the left to lock the head. (Fig.4.12)

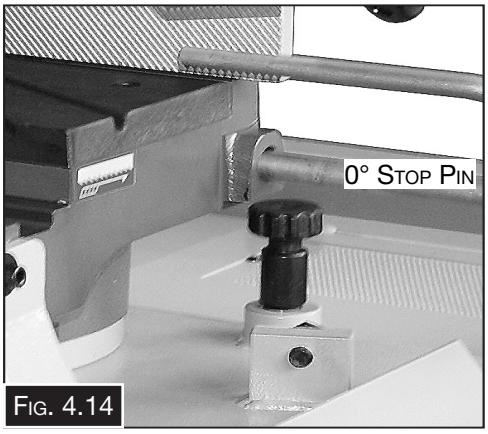


Fig. 4.14

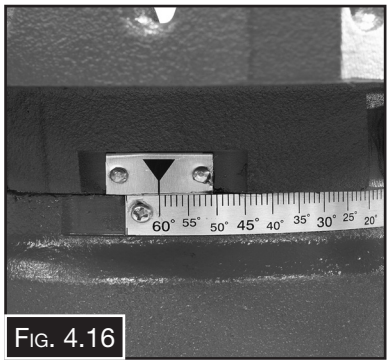


Fig. 4.16

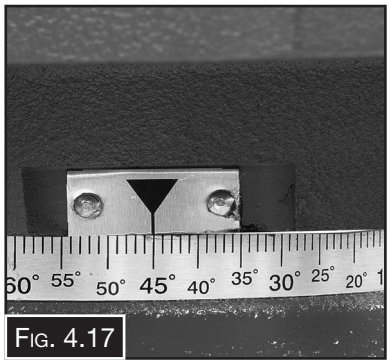


Fig. 4.17

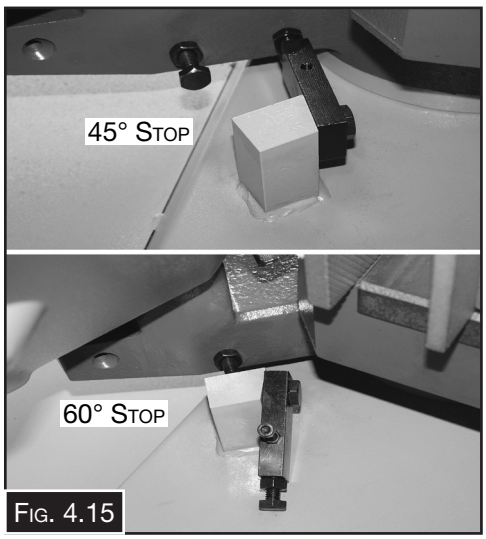


Fig. 4.15

4.4 ADJUSTING THE SPEED OF THE SAW BLADE

The HAFCO EB-285DSV is fitted with a variable speed motor which is controlled by the rotary dial on the control panel. (Fig.4.18)

The speeds on the dial and in the table below are only an estimate and should be varied to suit the application when the blade is running.

FIG. 4.18

Material	(m/mm)	Feed Motion per tooth(mm)	Material	(m/mm)	Feed Motion per tooth(mm)
C10, C15,ST34, ST37 Steel up to 500N/mm	30 ~ 50	0.03 ~ 0.06	Aluminium and Alloy Aluminium	600 ~ 900	0.04 ~ 0.09
C20, C40, 15Cr3 16MNC35 Steel up to 88 N/mm	20 ~ 40	0.03 ~ 0.04	Aluminium and Alloy Aluminium (Profiles)	800 ~ 1200	0.03 ~ 0.07
38NCD4, 50Cr3,16MnC35 Steel up to 1200 N/mm	15 ~ 25	0.02 ~ 0.03	Brass and Copper	200 ~ 300	0.04 ~ 0.06
Stainless Steel	10 ~ 30	0.01 ~ 0.03	Bronze	400 ~ 600	0.04 ~ 0.08
Casting	30 ~ 50	0.04 ~ 0.05	Synthetic Materials	60 ~ 150	0.04 ~ 0.08

4.5 BUNDLE CUTTING.

HAFCO does not recommend that bundle cutting be done . See the chart as a guide (Fig. 4.19) to the quick position of the work piece between the vice jaws to avoid slipping during cutting.

Stacked or bundled steel can slip and cause the blade to break and may cause injury.

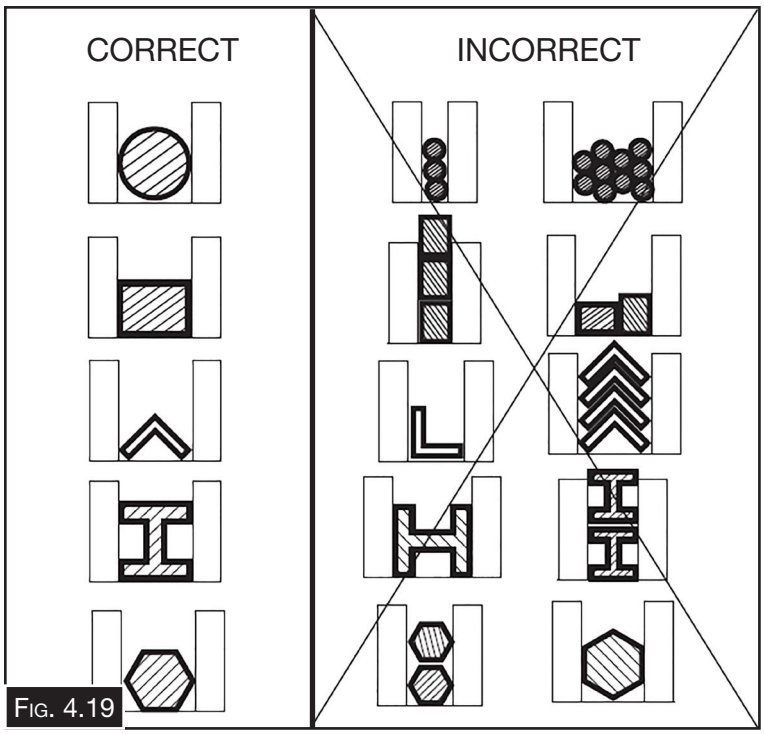


FIG. 4.19

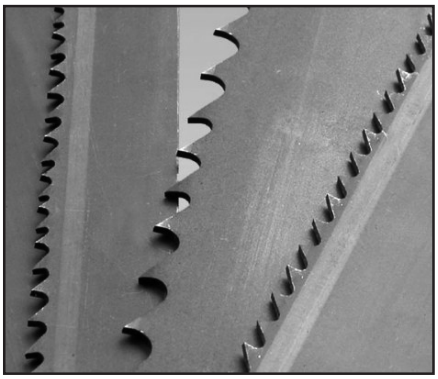
4.6 BLADE SELECTION

Band saw tooth size is determined by the size of the cross section to be cut. In general cutting thinner sections requires more teeth per inch, thicker sections require coarser pitches, or less teeth per inch.

To select an appropriate tooth size please refer to the table immediately below unless material to be cut is a tube, in which case refer to the larger table below. For general purpose cutting use a constant pitch blade, for more aggressive production cutting of harder to cut materials use a variable pitch blade.

SOLID SECTION

Section Size (mm)	Constant Pitch (TPI)	Variable Pitch (TPI)
Up to 10	24 or 18	14/18 or 10/14
10 - 15	14	8 - 12
16 - 30	10	6 - 10
31 - 50	8	5 - 8
51 - 80	6	4 - 6
81 - 120	4	3 - 4
121 - 200	3	1 - 3
Over 200	2 or 1.25	1.4 - 2 or 0.8 - 1.3



TUBE SECTION

Wall Thickness (mm)	Outside diameter of tube or maximum profile section length (mm)												
	20	40	60	80	100	120	150	200	300	500	600	700	800
2	14	14	14	14	14	14	10-14	10-14	8-12	8-12	6-10	5-8	5-8
3	14	14	10-14	10-14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	5-8
4	14	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6
5	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6	4-6
6	14	10-14	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4
8	16	10-14	8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4
10		8-12	8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4	3-4
12		8-12	6-10	6-10	5-8	5-8	4-6	4-6	3-4	3-4	3-4	3-4	2-3
15			6-10	5-8	5-8	4-6	4-6	4-6	3-4	3-4	3-4	2-3	2-3
20				5-8	4-6	4-6	4-6	3-4	3-4	2-3	2-3	2-3	2-3
30					4-6	4-6	3-4	3-4	3-4	2-3	2-3	2-3	2-3
50						3-4	3-4	3-4	2-3	2-3	2-3	2-3	2-3
75							2-3	2-3	2-3	2-3	2-3	1.4-2	1.4-2

5 MAINTENANCE

5.1 SCHEDULE

For the best performance of the machine follow the instructions given in this section and follow the schedule laid out below.

Daily Check
- ❑ Loose mounting bolts
- ❑ Damaged saw blade
- ❑ Correct blade tension
- ❑ Cutting fluid level
- ❑ Worn or damaged lead
- ❑ Any unsafe condition

Monthly Check
- ❑ Lubricate vice screw
- ❑ Check cutting fluid levels

Annual Check
- ❑ Replace cutting fluids and clean out the tank.

5.2 CHANGING THE BLADE

The blade needs to be changed when it is dull or when teeth are missing. It also may need to be changed when the thickness of the material changes.

TO CHANGE THE BLADE.

1. DISCONNECT MACHINE FROM THE POWER SUPPLY.

2. Raise the bow saw for access and turn the feed ON/OFF lever to hold the bow saw up. (Fig. 5.1)

3. Remove the back cover by removing the 4 knobs displayed in Fig. 5.2.

4. Slide the upper blade guide as far as possible away from the lower blade guide.

5. Remove the blade guard on the movable roller guide by removing the two button head cap screws. (Fig. 5.3)

FIG. 5.1

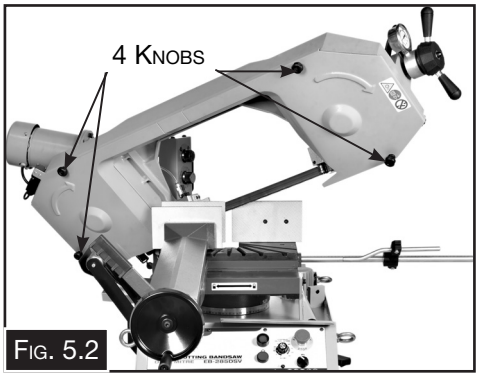


FIG. 5.2

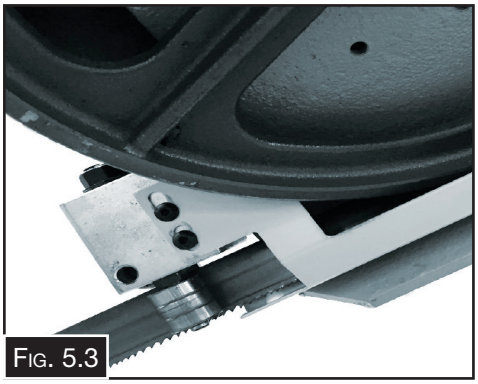


FIG. 5.3

WARNING!

Blades are very sharp. If not careful serious injury can result from touching the blades with bare hands. Leather work gloves should be worn when handling these blades.

6. Release the tension off the blade by turning the tension handle clockwise until the blade is loose. (Fig.5.4)


FIG. 5.4

7. Remove the old blade and replace the new blade making sure that the teeth are facing in the right direction.

NOTE: Always wear leather gloves when handling cutting blades. The blades are very sharp and could cause injury to hands.

8. Re-tension the blade and replace the back cover.

9. Replace the blade guard on the movable roller guide making sure that the blade runs freely without touching the guards.

10. Adjust the movable blade guide so that it just clears the work piece.

11. Switch the machine on and make sure the blade is running correctly

5.3 CHANGING THE COOLANT

This band saw is fitted with a coolant system that extends the life of the band saw blade by lowering the temperature of the blade and the workpiece.
To maintain the effectiveness of the cutting it is important to keep the coolant clean, therefore the coolant should be changed every 1000 hrs.

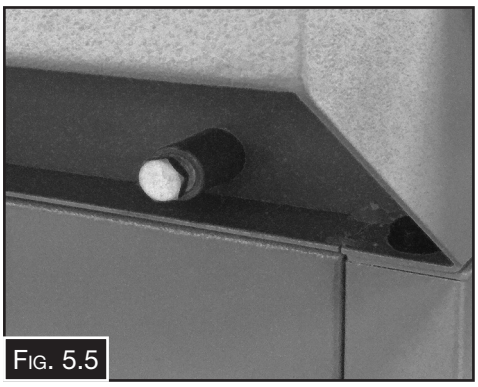


FIG. 5.5

To change the coolant.

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY

2. Place a container under the drain and remove the drain plug on the side of the machine. (Fig 5.5)

3. Once the coolant is empty remove the two screws that secure the screen on the top of the reservoir, and remove the screen. (Fig.5.6)

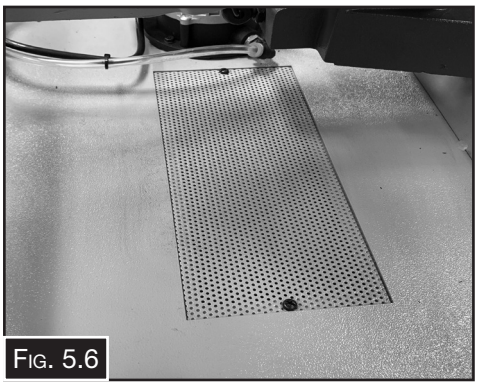


FIG. 5.6

4. With clean rags, wipe out the bottom of the coolant reservoir until it is clean and free from dirt or metal chips.

5. Replace the screen and drain plug and refill with clean coolant.

5.4 BLADE GUIDE ADJUSTMENT

The blade guides are set before the machine leaves the factory but may need to be adjusted due to movement while shipping, or general wear and tear after long operation.

To adjust the support roller

1. Make sure that the blade is oiled and correctly tensioned.
2. DISCONNECT MACHINE FROM THE POWER SUPPLY
3. Raise and lock the bow saw for easy access. Slide the blade guides as close as possible together and lock in place.
4. Loosen the cap screws (Fig.5.7) and adjust the blade guide housing so the back of the blade just touches the bearing, making sure the guide housing is not tilted.
5. Tighten the cap screws.

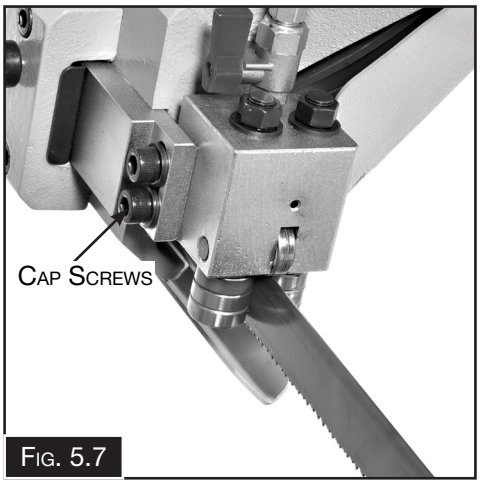


FIG. 5.7

NOTE: To access the cap screws on the other blade guide you will need to remove the two Phillips head screws and move the limit switch and its bracket out of the way. (Fig.5.8)

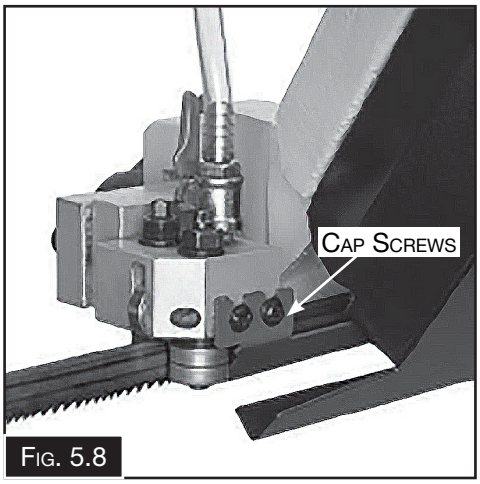


FIG. 5.8

To adjust the side bearings

1. DISCONNECT MACHINE FROM THE POWER SUPPLY
2. Loosen the lock nut on the top of the eccentric bolt.
3. Using a spanner on the hex section between the bearing and the casting, adjust the bearing, so it is against the side of the blade. There should be no clearance. (Fig. 5.9)
4. Tighten the lock nut making sure that the eccentric bolt does not turn.
5. Adjust the other ball bearing guide on the housing.
6. Repeat steps 1-4 on the other set of ball bearing guides on the opposite side of the saw bow.

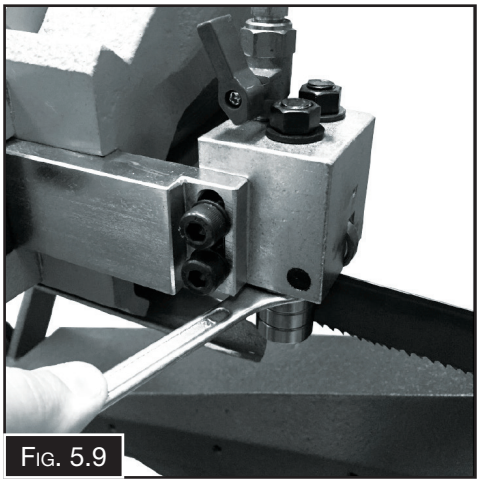


FIG. 5.9

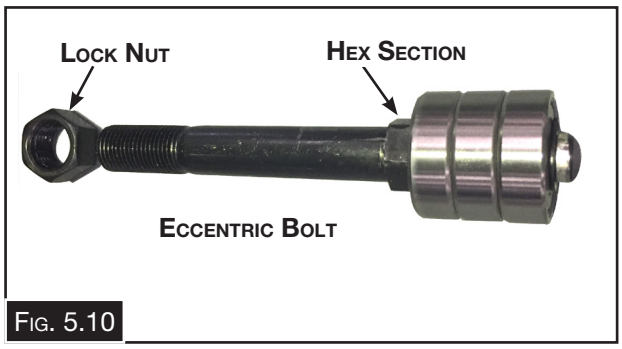


FIG. 5.10

5.5 ADJUSTING FEED STOPS

Before any blade adjustment is made it may be necessary to adjust the feed stop. The blade should never rest or rub on any part of the vice casting.

The over tilt stop may also need to be adjusted to stop the saw bow from being able to lift past 40° causing the machine to be unstable.

To Adjust the Feed Stop Bolt

1. DISCONNECT MACHINE FROM THE POWER SUPPLY
2. Release the lock nut on the Feed Stop bolt.(Fig.5.11)
3. Adjust the feed bolt until the teeth on the saw blade are just below the vice table surface when the machine stops.
4. Tighten the lock nut and run the machine cycle and check that the adjustment is correct.

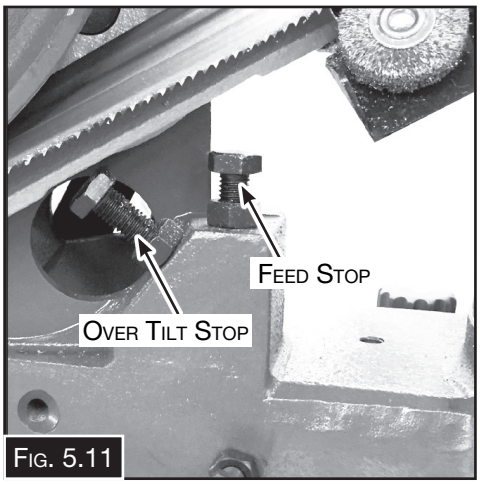


Fig. 5.11

5.6 ADJUSTING THE AUTO FEED STOP

During adjustment of the blade guides it may be necessary to remove the feed auto stop for better access.

If this has happened then the feed auto stop needs to be reset.

To adjust the feed auto stop.
Undo the lock nut on the feed auto stop bolt and adjust the bolt so that the teeth on the band-saw blade are just below the vice table surface when the blade has finished the cut and the machine stops.

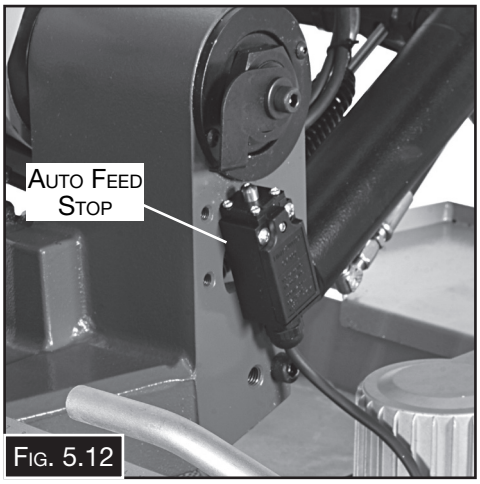


Fig. 5.12

5.7 ADJUSTING THE HEAD SWIVEL STOPS

The head swivel stops are set by the factory, but due to shipping or continuing use, the stops may need to be adjusted.

NOTE: The scale is only to be used for approximate guide. For accurate setting a protractor should be used

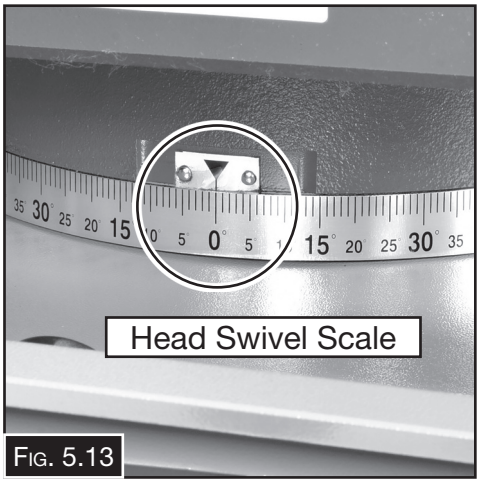


Fig. 5.13

TO ADJUST THE ZERO (90°) STOP.

1. DISCONNECT MACHINE FROM THE POWER SUPPLY
2. Make sure that the blade is oiled and tensioned, tracking correctly, and the guides are set correctly.
3. Raise the saw bow, then move the head and set the scale to “0”. (Fig. 5.13) then lower the saw bow and lock in place.
4. Check that the “0” head stop is hard up against the stop pin. If there is a gap between the pin (Fig. 5.11) and the stop screw, then loosen the lock nut and adjust the stop bolt until it rests against the pin.
5. Tighten the lock nut on the swivel head bolt.
6. Unlock the head and swivel the head away from the stop and the return and check that the adjustment is correct.
7. Take a cut and check with a square.

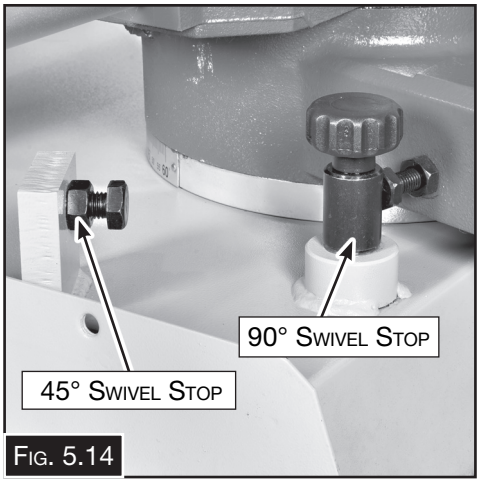


Fig. 5.14

To adjust the 45° angle stops.

1. DISCONNECT MACHINE FROM THE POWER SUPPLY
2. Make sure that the blade is oiled and tensioned, tracking correctly, and the guides are set correctly.
3. Raise the saw bow, then move the head and set the scale to 45°, (Fig. 5.15) then lower the saw bow and lock in place.
4. Check that the 45° head stop is hard up against the casting. If there is a gap between the casting (Fig. 5.15) and the stop screw, then loosen the lock nut and adjust the stop bolt until it rests against the casting.
5. Tighten the lock nut on the swivel head bolt.
6. Unlock the head and swivel the head away from the top and then return and check that the adjustment is correct.

NOTE: The scale may not be accurate and should only be used as a guide.

7. Take a cut and check the angle with a square. If the finished cut is not correct then loosen the lock nut and adjust the stop accordingly. (Fig. 5.16)

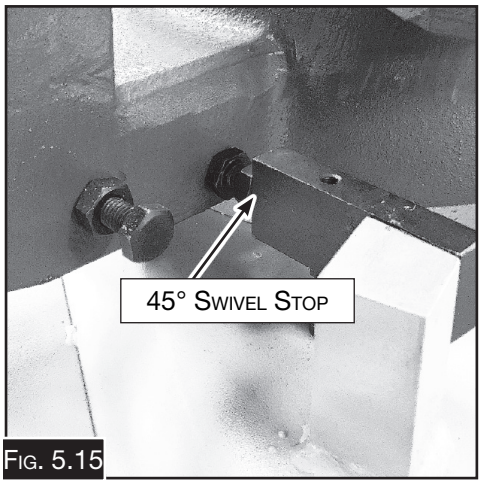


Fig. 5.15

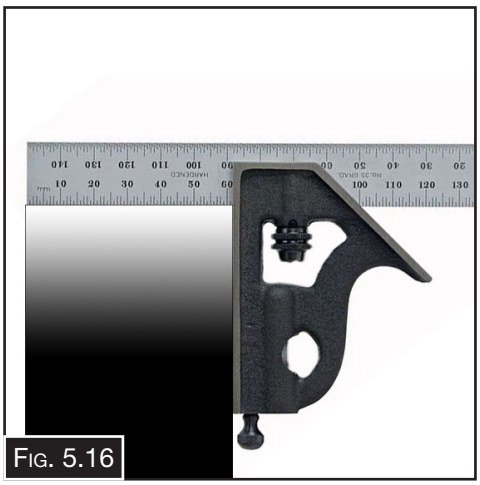


Fig. 5.16

TO ADJUST THE 60° ANGLE STOPS.

1. DISCONNECT MACHINE FROM THE POWER SUPPLY.

2. Make sure that the blade is oiled and tensioned, tracking correctly, and the guides are set correctly.

3. Flip the 45° stop over so that the 60° stop is exposed. (Fig.5.17)

4. Raise the saw bow, then move the head and set the scale to 60°, (Fig. 5.18) then lower the saw bow and lock in place.

5. Check that the 60° head stop is hard up against the casting. If there is a gap between the casting (Fig. 5.17) and the stop screw, then loosen the lock nut and adjust the stop bolt until it rests against the casting.

6. Tighten the lock nut on the swivel head bolt.

7. Unlock the head and swivel the head away from the stop and then return it and check that the adjustment is correct.

NOTE: The scale may not be accurate and should only be used as a guide.

8. Take a cut and check the angle with a square. If the finished cut is not correct then loosen the lock nut and adjust the stop accordingly. (Fig. 5.17)

Fig. 5.17

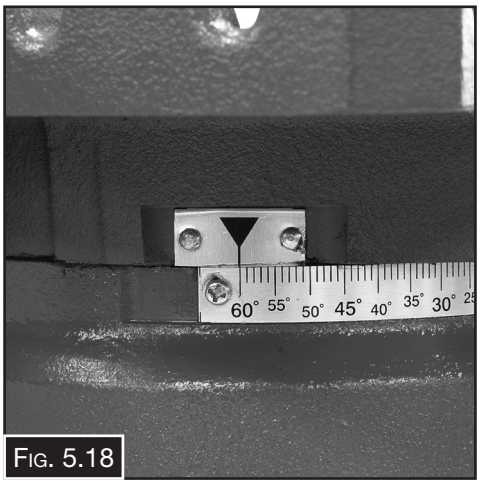
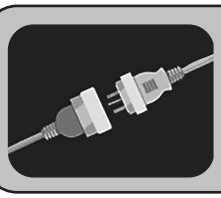


Fig. 5.18



WARNING!

Always disconnect the power to the machine before servicing or doing maintenance to the machine.

CAUTION!

Some service processes should only be carried out by professional maintenance personnel. If you are unsure of your ability to complete a task, please contact your local HAFCO Metalmaster service engineer.

5.8 TROUBLE SHOOTING

If the machine develops a problem, review the trouble shooting section below to find a fix for the problem. If the problem cannot be solved then contact your dealer for help or to book a service engineer.

SYMPTOM	POSSIBLE CAUSE	ACTION REQUIRED
Machine does not start	1. Emergency Stop button pressed 2. Power Supply in the OFF position 3. Motor ON/OFF switch is faulty 4. Faulty Motor	1. Reset the E-Stop by twisting the button 2. Check power supply is ON and not faulty 3. Test and replace the switch 4. Test and replace the motor
Machine stalls or seems underpowered	1. Wrong blade for the work piece 2. Feed rate too fast for the blade 3. Blade is slipping on the wheels 4. Motor over heating 5. Motor is faulty	1. Change to the correct blade 2. Decrease the feed rate 3. Adjust the blade guides and the tension 4. Let the motor cool and reduce the work load 5. Test and replace
Machine is noisy or vibrates	1. Blade is faulty 2. Motor fan is rubbing on cover 3. Speed is set too slow	1. Replace with new or correct blade 2. Adjust and tighten fan or replace 3. Adjust the speed to suit the work piece
Machine bogs down or is loud	1. Excessive feed rate 2. The blade T.P.I. is too great for the material	1. Reduce the feed rate 2. Check for the correct blade (Page 16)
Blades Breaking	1. Blade is not tensioned correctly 2. Loose work piece 3. The feed or cutting speed is wrong 4. Incorrect blade selection 5. The blade is too thick or low quality	1. Check the blade tension (Page 13) 2. Re-clamp the work piece tighter or use a jig 3. Adjust the feed rate and the speed (Page14) 4. Refer to blade selection (Page 16) 5. Use better quality blade
Teeth breaking off the blade	1. The feed is too great 2. The blade TPI is too course 3. Blade gullets are loaded up with chips	1. Decrease the blade pressure 2. Refer to blade selection (Page 16) 3. Use a coarser tooth blade
The cuts are crooked	1. The feed pressure is too high 2. The blade tension is low 3. The blade is dull	1. Reduce the feed rate 2. Adjust the blade tension as required. 3. Replace the blade.

CAUTION!

The data in the tables above are a recommendation only and may need to change due to individual situations.

TROUBLE SHOOTING CONT.

SAW BLADE DOES NOT CUT SQUARE.

Check to see if the saw blade is cutting square. If the blade is not cutting square as per the example (Fig. 5. 19)

1. Replace with a new blade and check for squareness. The workpiece should be as per Fig. 5.20
2. Inspect the blade guides to see if there is a gap between the bearings and the blade (Fig. 5.21)

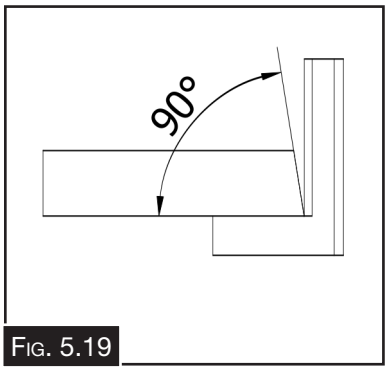


FIG. 5.19

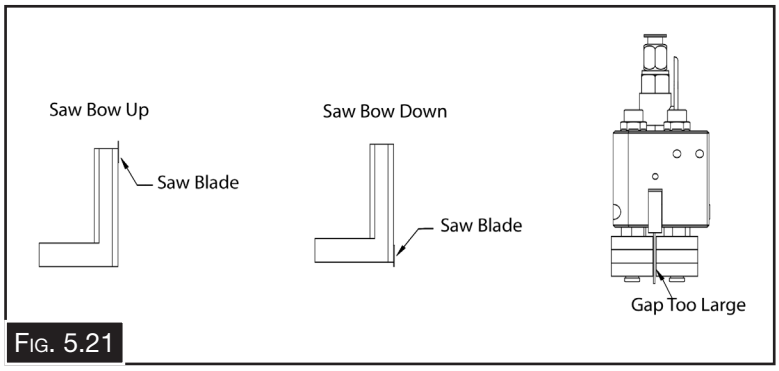


FIG. 5.21

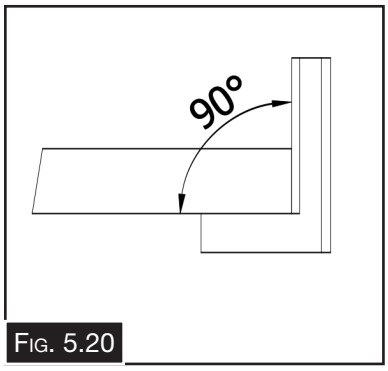


FIG. 5.20

WARNING!

The machine is the sole responsibility of the owner for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training, proper inspection and maintenance, manual availability and comprehension. The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

METAL CUTTING BAND SAW
EB-285DSV

Order Code: (B064V)

EDITION : 2.0
DATE: (08/25)

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at anytime without notification.

HOW TO ORDER SPARE PARTS

1. Have your machines model number, serial number & date of manufacture on hand, these can be found on the specification plate mounted on the machine.

2. A scanned copy of your parts list/diagram with required spare part/s identified.

NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

3. Go to www.machineryhouse.com.au/contactus and fill out the inquiry form attaching a copy of scanned parts list.

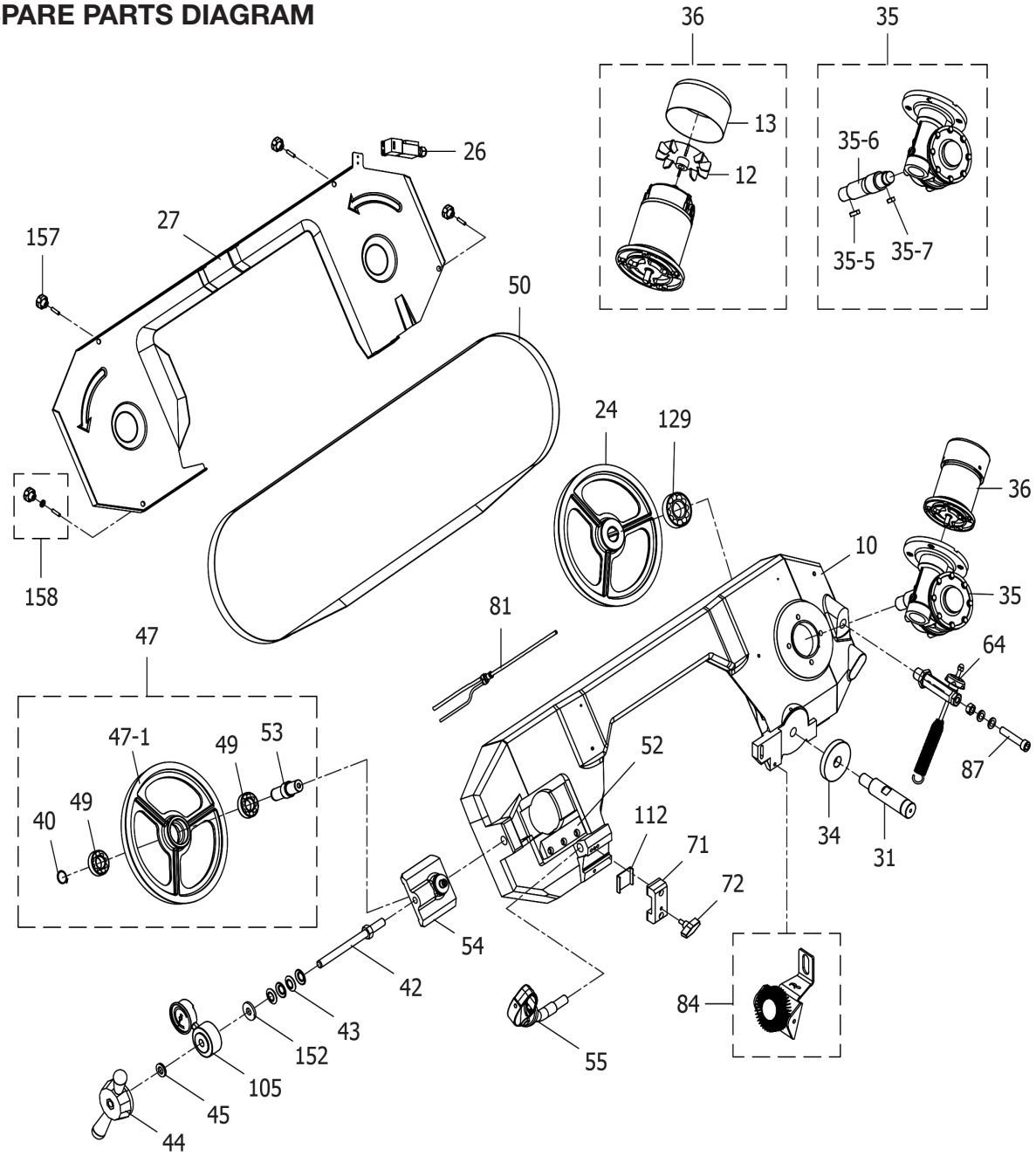
WARNING!

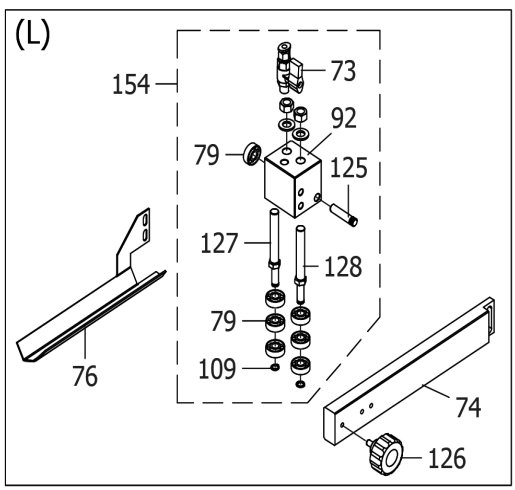
Electricity is dangerous and could cause death.
All electrical work must be carried out by a qualified electrician.

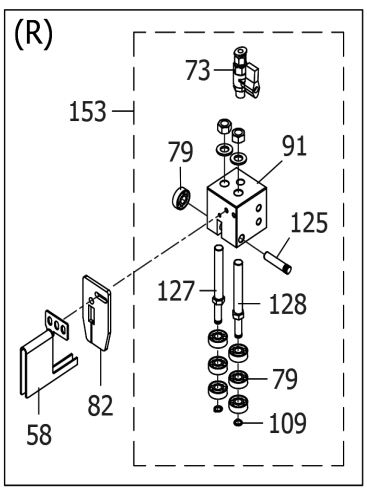
CAUTION!

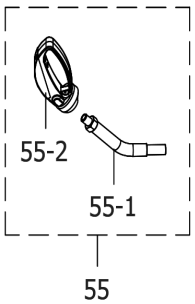
It is impossible to cover all possible hazards Every workshop environment is different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.

SPARE PARTS DIAGRAM

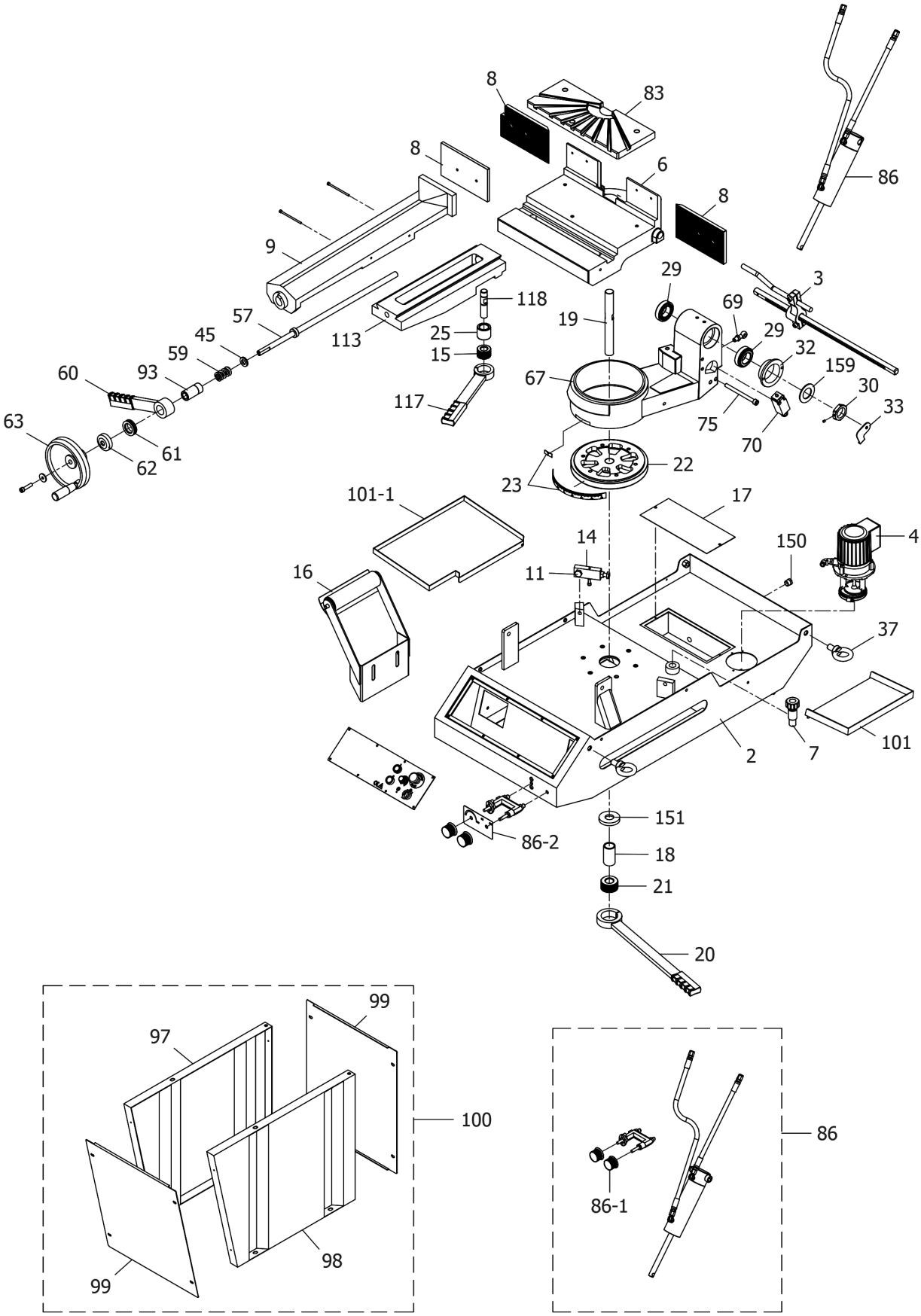








SPARE PARTS DIAGRAM

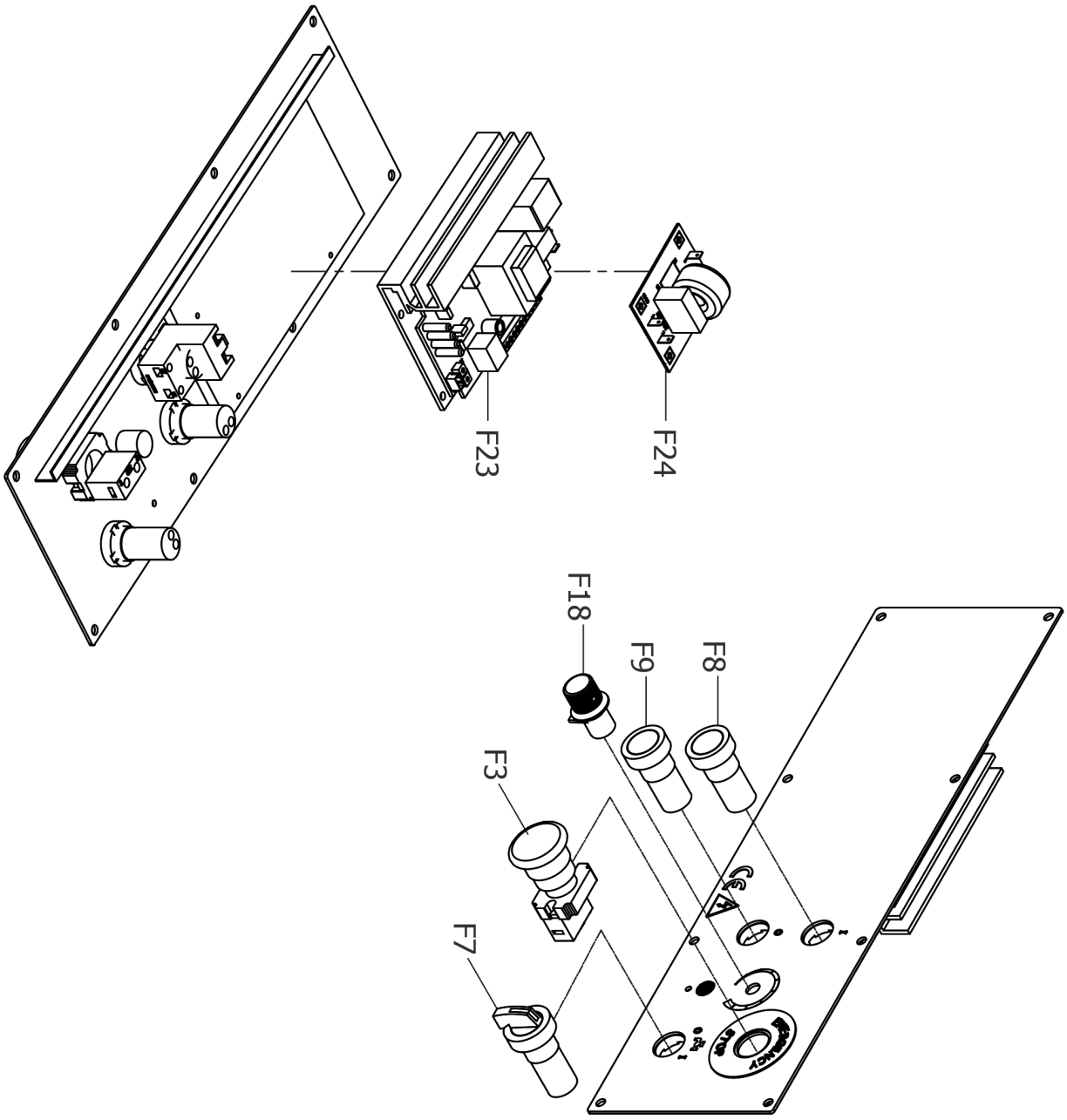


SPARE PARTS LIST

Item	Fig. No.	Description	Qty	Item	Fig. No.	Description	Qty.
2	CDA07006-2	BASE	1	58	CHF04002-1	R/H BLADE GUARD	1
3	IED00005	BAR STOP ROD	1	59	IOD01001	VICE SPRING	1
4	CLZ02001	COOLANT PUMP	1	60	CBI99001	VICE LEVER	1
6	CBB03001	COUNTER VICE	1	61	IZA00009	BEARING 51106	1
7	IDJ01001	PIN	1	62	ICG03001	BEARING COVER	1
8	CBF05000	VICE JAW	1	63	CCH02003	VICE HAND WHEEL	1
9	CBC05001	VICE	1	64	COB04001	SPRING SET	1
10	CAA07007	BODY FRAME	1	67	CEA06002	REVOLVING ARM	1
11	IEJ02001	SCREW M12	1	69	TANC1203+TCAA1202	SCREW + NUT	1
12	IKJ04001	MOTOR FAN	1	70	IJG00001	MICRO SWITCH CY101	1
13	CKI00002	MOTOR COVER	1	71	CAG01002	BLOCK BLADE TENSION	1
14	IEJ01001	45 / 60° BLOCK	1	72	IHB04001	HANDLE	1
15	ICC02001	NUT M20	1	73	IHG01001	VALVE	2
16	CDB00001	ROLLER WAY	1	74	IHB01005	ARM	1
17	CDD01001-2	FILTER	1	75	TADC1010	SCREW M10*120	1
18	IEC05001	BUSH	1	76	CHF04001-1	BLADE GUARD	1
19	IEC01005	PIN	1	79	IZA00014	BEARING 608	14
20	CEC04001	LEVER	1	81	UDA99008	WATER PIPE SET	1
21	IEC03001	NUT M24	1	82	IHH03001	RUST PLATE	1
22	CEB02001	ROUND TABLE	1	83	CBG01001	VICE PAD	1
23	UBC01009 & UBC02002	SCALE	1	84	CHI00005	BRUSH	1
24	CFA06002	MOTOR FLYWHEEL	1	86	CIA07003	CYLINDER	1
25	ICC03001	BUSH	1	86-1	IJJ02003	KNOBS	2
26	IJG00006	SWITCH	1	86-2	UBA00103	THROTTLE VALVE PLATE	1
27	CAB06002-2	BLADE COVER	1	87	TADC1402	SCREW M14*90	1
29	IZA00005	BEARING 32007	2	91	IHA04002	R/H BLADE GUIDE PLATE	1
30	IEE02003	RING NUT M35 + SCREW	1	92	IHA04001	L/H BLADE GUIDE PLATE	1
31	IEE01005	PIVOT	1	93	ICG02001	BUSH	1
32	IEF03001	BEARING COVER	1	97	CGC03001-2	STAND (L)	1
33	IEG03001	PLATE	1	98	CGC03002-2	STAND (R)	1
34	IEE03006	PLATE	1	99	CGC03003-2	STAND (FRONT / REAR)	2
35	CMZ03007	GEAR BOX	1	100	CGC03000-2	STAND	1
35-5	TDC01001	KEY (7*7*35)	1	101	CDC01001-2	WATER PLATE	1
35-6	IMC02002	GEAR SHAFT	1	101-1	CDC02001-2	WATER PLATE	1
35-7	TDC01002	KEY (8*7*22)	1	105	IFD00001	BLADE TENSION GAUGE	1
36	CKI06007	MOTOR	1	109	TGCF0801	C-RING S8	4
37	IDI00002	FLYING RING	4	112	IAG02002	PLATE	1
40	TGCF2501	C-RING	1	113	CCA02001	VICE SLIDING SEAT	1
42	IFC03003+TCAA1601	SCREW M16+NUT	1	117	CCD01001	HANDLE	1
43	TBBF1601	SPRING WASHER	4	118	ICC01001	BOLT	1
44	IFB01001	HANDLE	1	125	IHJ02001	PIN	2
45	IZA00002	BEARING 1629	2	126	IHB02001	SCREW	1
47	CFS06001	RETURN FLYWHEEL SET	1	127	IHD05002	PIVOTS ECCENTRIC	2
47-1	CFA06001	RETURN FLYWHEEL	1	128	IHD05001	PIVOTS CENTRIC	2
49	IZA00024	BEARING 6205	2	129	IZA00033	BEARING 6207	1
50	IAF06001	SAW BLADE	1	150	IDZ01001	PLUG 3/8PT	1
52	IFC02004	45° BLOCK	1	151	TBAA2501	WASHER	1
53	IFZ01005	BLADE STEEL SHAFT	1	152	TBAA1601	WASHER	1
54	CFC01004	BLOCK BLADE TENSION	1	153	CHS04002	R/H BLADE GUIDE PLATE SET	1
55	CAE99002	HANDLE SET	1	154	CHS04001	L/H BLADE GUIDE PLATE SET	1
55-1	CAD99002	LEVER+NUT	1	157	IAZ04001	NUT	3
55-2	CAE00002	HANDLE	1	158	CAZ04001	NUT SET	1
57	ICG01005	VICE SCREW	1	159	TBAA3501	WASHER	1

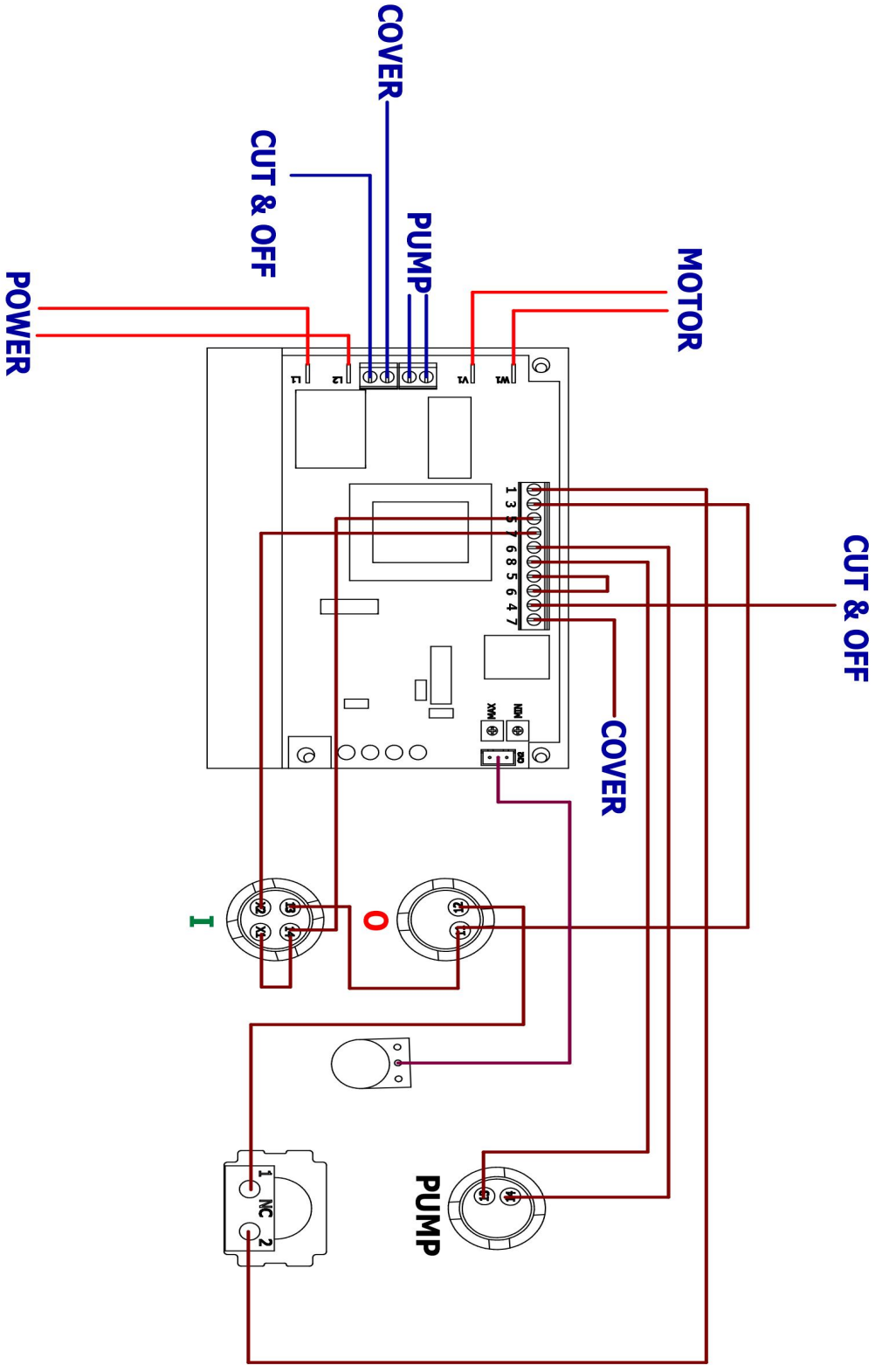
NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

DC SWITCH SPARE PARTS DIAGRAM



NO.	PARTS NO,	PARTS NAME.
F3	IJJ04004	EMERGENCY STOP
F7	IJJ04005	PUMP SWITCH
F8	IJJ03003	ON-SWITCH
F9	IJJ03007	OFF-SWITCH
F18	IJJ01001+IJJ01004	KNOB
F23	IJH02002	DC-PLATE
F24	IJH03001	FILTER

EB-285DSV ELECTRICAL DIAGRAM



ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

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