

HAFCO METALMASTER

OPERATION MANUAL



SWIVEL HEAD METAL BAND SAW

Model. BS-5S

Order Code B003

Edition No : BS-5S-1

Date of Issue : 10/2020

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MACHINE DETAILS

MACHINE	<input type="text" value="METAL CUTTING BAND SAW"/>
MODEL NO.	<input type="text" value="BS-5S"/>
SERIAL NO.	<input type="text"/>
DATE OF MANF.	<input type="text"/>

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NOTE:

This manual is only for your reference. 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 this electric machine.



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)

HAFCO
PRODUCT SPECIFICATION

MODEL:	<input type="text"/>
CAPACITY:	<input type="text"/>
SER. NO:	<input type="text"/>
MFG DATE:	<input type="text"/>
WEIGHT:	<input type="text"/>
VOLTS:	<input type="text"/>
MOTOR Kw:	<input type="text"/>

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Made in China

FIG.1

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1.1 SPECIFICATION

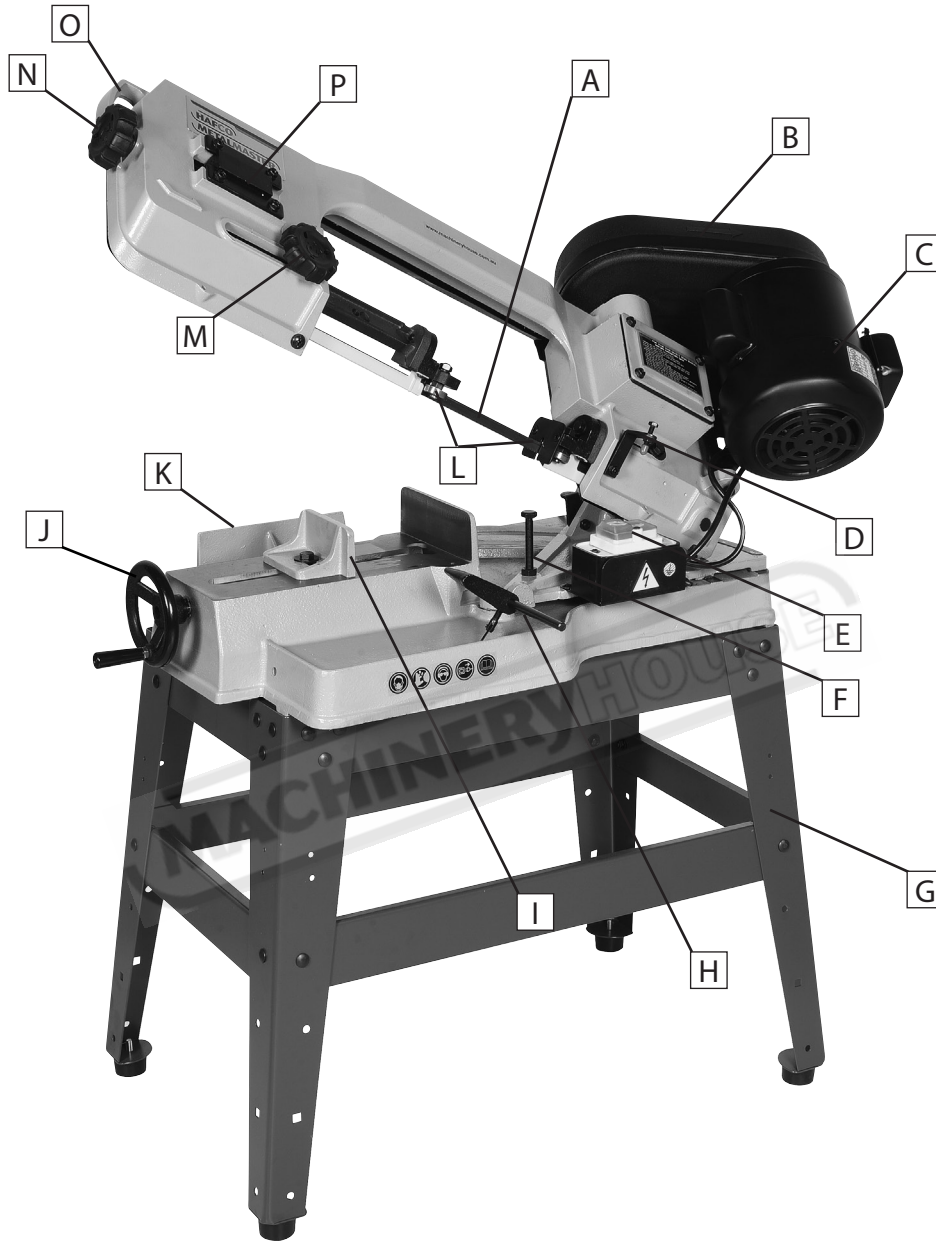
Order Code	B003
MODEL	BS-5S
Operation Type	Swivel Head
Capacity Round @ 90° (mm)	125
Round @ 45° (mm)	80
Square @ 90° (mm)	125
Square @ 45° (mm)	75
Rectangle @ 90° (W x H) (mm)	200 x 125
Rectangle @ 45° (W x H) (mm)	125 x 72
Table Working Height (mm)	680
Cutting Head Beam Type	Manual
Cutting Head Down Feed Control	Fixed Spring Type
Vice Clamping Fixture	Manual
Blade Steps / Speeds (m/mm)	10 - 29 - 50
Blade Size (L x W x T) (mm)	1727 x 12.7 x 0.65
Motor Power (kW / hp))	0.375 / 0.5
Voltage / Amperage (V / amp)	240 / 10
Dimensions (L x W x H) (mm)	995 x 420 x 1162
Weight (kg)	65

1.2 ACCESSORIES INCLUDED

- 1 x Adjustable length stop for repetition cutting
- 1 x Vertical cutting table included
- 1 x Band Saw Blade



1.3 IDENTIFICATION



A	Blade	I	Vice Jaws
B	Pulley Cover	J	Vice Crank Handle
C	Motor	K	Rear Material Support
D	Auto Off Tab	L	Blade Guide Bearing Assemblies
E	ON/OFF Switch	M	Movable Guide Bearing Support Clamp
F	Horizontal Stop	N	Blade Tension Knob
G	Stand	O	Bow Saw Lifting Handle
H	Length Stop	P	Tilting Tracking Mechanism

2.1 GENERAL METALWORKING MACHINE 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.



- ✓ Always wear safety glasses or goggles.
- ✓ Wear appropriate safety footwear.
- ✓ Wear respiratory protection where required.
- ✓ Gloves should never be worn while operating the machine, and only worn when handling the work piece.
- ✓ Wear hearing protection in areas > 85 dBA. If you have trouble hearing someone speak from one metre (three feet) away, the noise level from the machine may be hazardous.
- ✓ DISCONNECTION THE MACHINE FROM POWER when making adjustments or servicing.
- ✓ Check and adjust all safety devices before each job.
- ✓ Ensure that guards are in position and in good working condition before operating.
- ✓ Ensure that all stationary equipment is anchored securely to the floor.
- ✓ Ensure all machines have a start/stop button within easy reach of the operator.
- ✓ Each machine should have only one operator at a time. However, everyone should know how to stop the machine in an emergency.

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

- ✓ Ensure that keys and adjusting wrenches have been removed from the machine before turning on the power. Appropriate storage for tooling should be provided.
- ✓ Ensure that all cutting tools and blades are clean and sharp. They should be able to cut freely without being forced.
- ✓ Stop the machine before measuring, cleaning or making any adjustments.
- ✓ Wait until the machine has stopped running to clear cuttings with a vacuum, brush or rake.
- ✓ Keep hands away from the cutting head and all moving parts.
- ✓ Avoid awkward operations and hand positions. A sudden slip could cause the hand to move into the cutting tool or blade.
- ✓ Return all portable tooling to their proper storage place after use.
- ✓ Clean all tools after use.
- ✓ Keep work area clean. Floors should be level and have a non-slip surface.
- ✓ Use good lighting so that the work piece, cutting blades, and machine controls can be seen clearly. Position any shade lighting sources so that they do not cause any glare or reflections.
- ✓ Ensure there is enough room around the machine to do the job safely.
- ✓ Obtain first aid immediately for all injuries.
- ✓ Understand that the health and fire hazards can vary from material to material. Make sure all appropriate precautions are taken.
- ✓ Clean machines and the surrounding area when the operation is finished.
- ✓ Use proper lock out procedures when servicing or cleaning the machines or power tools.

DO NOT

- × Do not distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Do not wear loose clothing, gloves, necktie's, rings, bracelets or other jewellery that can be come entangled in moving parts. Confine long hair.
- × Do not handle cuttings by hand because they are very sharp. Do not free a stalled cutter without turning the power off first. Do not clean hands with cutting fluids.
- × Do not use rags or wear gloves near moving parts of machines.
- × Do not use compressed air to blow debris from machines or to clean dirt from clothes.
- × Do not force the machine. It will do the job safer and better at the rate for which it was designed.



BEFORE OPERATING ANY MACHINE, TAKE TIME TO READ AND UNDERSTAND ALL SAFETY SIGNS AND SYMBOLS. IF NOT UNDERSTOOD SEEK EXPLANATION FROM TRADE MAGAZINES OR AN EXPERIENCED OPERATOR.

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

HAZARDS ASSOCIATED WITH MACHINES include, but are not limited to:

- Being struck by ejected parts of the machinery
- Being struck by material ejected from the machinery
- Contact or entanglement with the machinery
- Contact or entanglement with any material in motion

Health Hazards (other than physical injury caused by moving parts)

- Chemicals hazards that can irritate, burn, or pass through the skin
- Airborne items that can be inhaled, such as oil mist, metal fumes, solvents, and dust
- Heat, noise, and vibration
- Ionizing or non-ionizing radiation (X-ray, lasers, etc.)
- Biological contamination and waste
- Soft tissue injuries (for example, to the hands, arms, shoulders, back, or neck) resulting from repetitive motion, awkward posture, extended lifting, and pressure grip)

Other Hazards

- Slips and falls from and around machinery during maintenance
- Unstable equipment that is not secured against falling over
- Safe access to/from machines (access, egress)
- Fire or explosion
- Pressure injection injuries from the release of fluids and gases under high pressure
- Electrical Hazards, such as electrocution from faulty or ungrounded electrical components
- Environment in which the machine is used (in a machine shop, or in a work site)



MACHINES ARE SAFEGUARDED TO PROTECT THE OPERATOR FROM INJURY OR DEATH WITH THE PLACEMENT OF GUARDS. MACHINES MUST NOT BE OPERATED WITH THE GUARDS REMOVED OR DAMAGED.

2.2 SPECIFIC SAFETY FOR BAND SAWS

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



Safety glasses must be worn at all times in work areas



Long and loose hair must be contained.



Gloves must not be worn when using this machine.



Sturdy footwear must be worn at all times in work areas



Close fitting/protective clothing must be worn



Rings and jewelry must not be worn.

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Ensure no slip/trip hazards are present in workspaces and walkways.
- ✓ Check that all guards are in position.
- ✓ Ensure hydraulic damping mechanism functions.
- ✓ Check that the blade is in good condition.
- ✓ Ensure that blade speed, blade tension and blade tracking are properly adjusted.
- ✓ Check coolant delivery system to allow for sufficient flow of coolant.
- ✓ Locate and ensure you are familiar with the operation of the ON/OFF starter and E-Stop.
- ✓ Faulty equipment must not be used. Immediately report suspect machinery.

OPERATIONAL SAFETY CHECKS

- ✓ Lift the head of unit up and lock it in the upward position.
- ✓ Set the angle of the vice, or check it to ensure its squareness.
- ✓ Clamp work piece 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 point of operation during cutting.
- ✓ Turn off the machine and bring it to a complete standstill if the blade is to be lifted out of an uncompleted or jammed cut.
- ✓ Stop the machine and bring it to a complete standstill before removing scrap pieces from the vice area or making adjustments.
- ✓ Stop the saw immediately if the blade develops a 'click'. Report it to your teacher.
- ✓ Ensure the cutting head is locked in the upward position before removing work piece.

AFTER OPERATION

- ✓ Switch off the saw and reset all guards to a fully closed position.
- ✓ Leave the machine in a safe, clean and tidy state.

DO NOT

- Pushing down on the cutting head while it is cutting
- Leaving the machine running unattended

3. POWER SUPPLY

3.1 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.

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.....	3.5 Amps

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

3.2 FULL-LOAD CURRENT RATING

The full-load current rating is the amperage a machine draws 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 3.5 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 SETUP

4.1 UNPACKING

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. If items are damaged, please contact your distributor.

NOTE: *Save all the packaging materials until you are completely satisfied with the machine and have resolved any issues with the distributor, or the shipping agent.*

When unpacking, check the packing list to make sure that all parts shown are included. If any parts are missing or broken, please contact the your distributor.

4.2 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.

It is advised 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.

4.3 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.

4.4 LIFTING INSTRUCTIONS



WARNING

This machine is extremely heavy.

Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate.



On the day that the machine arrives, make sure that a forklift or lifting device, 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.

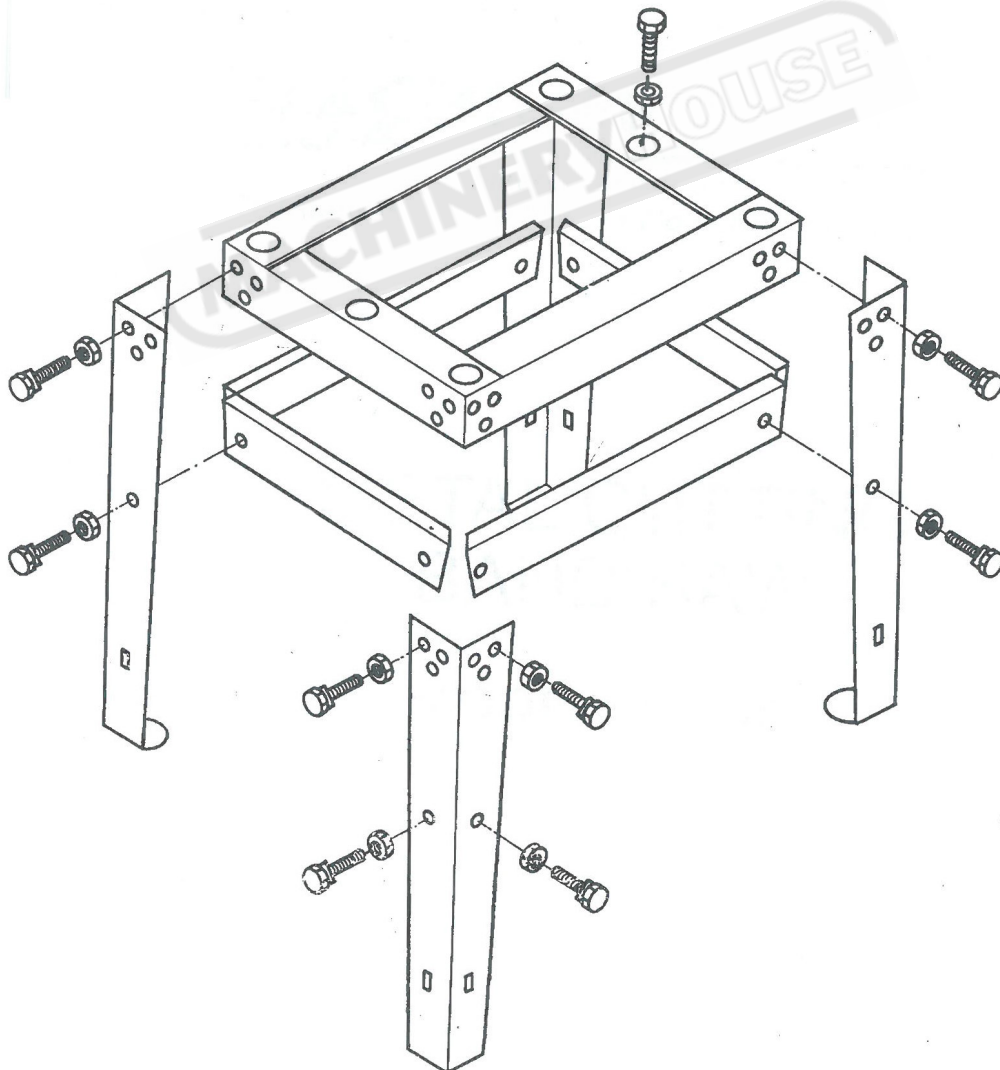
4.5 ASSEMBLY

The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly. Although the main components of the Hafco Metalmaster BS-5S are assembled at the factory, some assembly is required.

1. Assemble the stand using the M8 x 10mm bolts, and M8 nuts (Fig. 4.1)
See diagram below

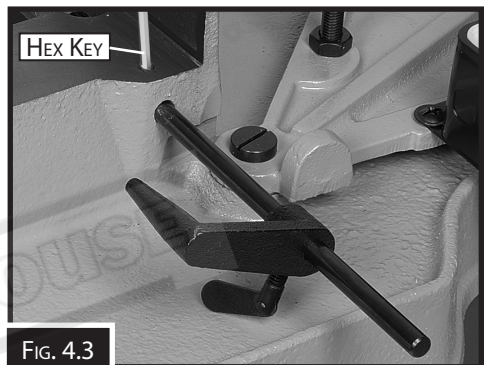
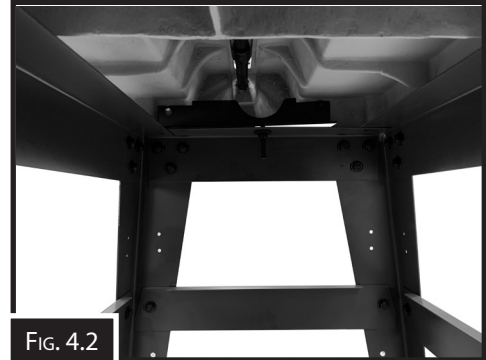


Note: At this time, tighten with a 14mm wrench or socket just enough to secure the parts. Final tightening will take place when the band saw has been added to the stand.



4.5 ASSEMBLY CONT.

2. Place the band saw on the stand, and secure it to the stand using a M8 x 50 mm stud and nut at the middle of the vice end and a M8 x 100 mm in the middle of the motor end. (Fig. 4.2)
3. Check to see if band saw is relatively level, then tighten all bolts and nuts.
4. Install the length stop shaft into side of band saw, then lock it in place by using a Hex key to tightening the set screw. (Fig. 4.3)



4.6 TEST RUN

Once assembly is complete, test run the machine to ensure it is properly connected to the power and that the guards and safety components are functioning properly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from the power, and fix the problem **BEFORE** operating the machine again. The Troubleshooting table in the Maintenance section of this manual can help. If no answer can be found contact your local distributor and report the fault.

To test run the machine, do these steps:

1. Clear all setup tools away from machine.
2. Connect machine to power supply.
3. Turn machine ON, and verify motor operation. The motor should run smoothly and without unusual noises.
4. Turn the machine OFF.



WARNING

*Serious injury or death can result from using this machine **BEFORE** understanding its controls and related safety information. **DO NOT** operate, or allow others to operate, machine until the information is understood.*

5. OPERATION

This machine may perform many types of operations that are beyond the scope of this manual. Many of these operations may be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. If at any time you are experiencing difficulties performing any operation, stop using the machine!

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced operator before performing any unfamiliar operations. **Above all, your safety should come first!**

5.1 OPERATION OVERVIEW

The overview below provides the novice machine operator with a basic understanding of how the machine is used during the operation, so that the machine controls and parts discussed later in this manual are easier to understand.

Due to its generic nature, this overview is NOT intended to be an instructional guide.

A typical operation, consists of the following:

1. Select the work piece to be cut, making sure that the material is suitable to be cut.
2. Raise the head and swivel the head lock into place. (Fig. 5.1) Place the work-piece in the vise and close the vice jaws to within 1 mm or 2 mm
3. Lower the head and measure the length from the blade to be cut and then tighten the vise.
4. Check the V-belt position on the pulleys to ensure that it is the correct cutting speed for the work piece.
Refer to blade speed table on page 17
5. Check the band saw blade to make sure that the number of teeth are suitable for the material.
Refer to blade selection chart on page 16
6. Make sure that there is no obstructions and the workpiece and band saw are stable. Wear safety glasses and suitable footwear.
7. Start the machine, and wait for blade to reach its full speed. (Fig. 5.2)
8. Slowly lower the head until blade makes contact with the work piece, then release the head and allow the weight of the head to continue to lower blade into the work piece until the cut is finished. Stop the machine, raise the head, and remove the workpiece

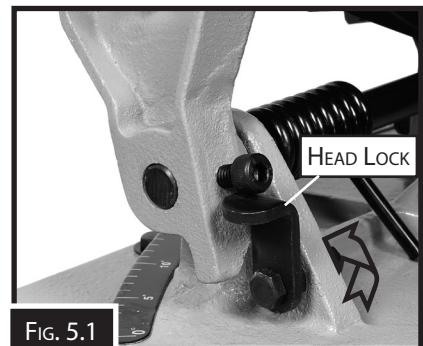


FIG. 5.1



FIG. 5.2

5.2 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 45° to the right. (Fig. 5.3) To set the angle of the cut, raise the bow saw to the highest point and hold with the head lock.

Loosen the swivel lock lever (Fig. 5.4) and rotate the head until the scale (Fig. 5.4) is at the angle required. Tighten the swivel lock lever to keep the head in place.

NOTE: Please note that the scale (Fig.5.4) 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.



FIG. 5.3

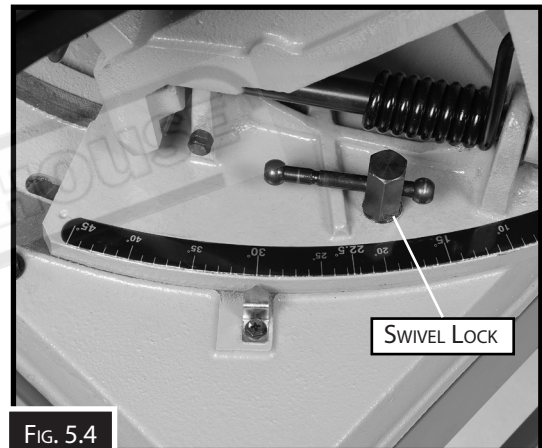


FIG. 5.4

5.3 VERTICAL OPERATION

The Model BS-5S can easily be set up for vertical cutting operations to make cuts that are not a straight cut through the entire workpiece, such as curves or pattern cuts. To assemble the band saw for vertical cutting:

1. DISCONNECT THE BAND SAW FROM THE POWER!
2. Remove the two flat head screws and the blade guide cover shown in Fig. 5.5.
3. Install the table and replace the two screws removed in Step 2.

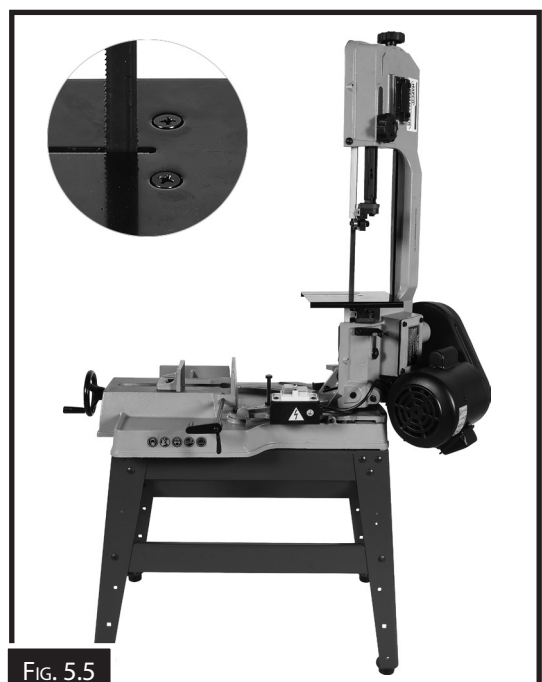


FIG. 5.5

5.4 CHANGING THE BLADE

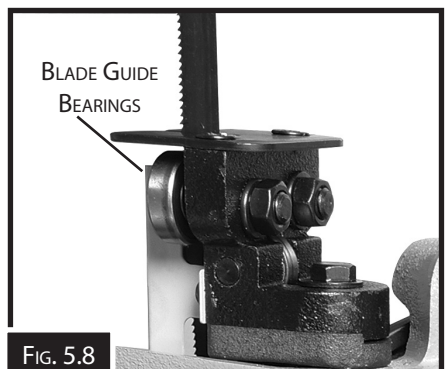
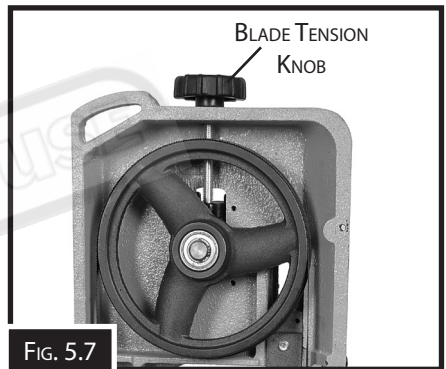
Blades should be changed when they become dull, damaged, or when the teeth per inch does not suit the operation and requires a different blade

To change the blade on the band saw:

1. DISCONNECT THE BAND SAW FROM POWER!
2. Raise the head of the band saw to the vertical position, then remove wheel access cover. (Fig. 5.6)
3. Loosen the tension knob and slip blade off wheels. (Fig. 5.7)
4. Install new blade through both blade guide bearings, as shown in Fig. 5.8, around bottom wheel.
5. Hold the blade around bottom wheel with one hand and slip it over the top wheel with the other hand, keeping the blade between the blade guide bearings.

NOTE: It is sometimes possible to flip blade inside out, in which case the blade will be installed in wrong direction. Check to make sure the blade teeth are facing toward the workpiece.

6. Once the blade is around both wheels, adjust the position of the blade so the back of the blade is against shoulder of wheels.
7. Tighten tension knob so the blade will not slip on the wheels upon start up.
8. Refit the belt access cover.
9. Connect the band saw to the power source.



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

5.5 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

5.6 SELECTING SPEEDS

This band saw has operating speeds of 20, 29, or 50 MPM. The speed can easily be adjusted by changing the V-belt placement. Figure 5.9 shows an illustration of each pulley belt combination, and the list below shows the blade speeds in meters per minute.

Position 1 will have a blade speed of 20 m/min

Position 2 will have a blade speed of 29 m/min

Position 3 will have a blade speed of 50 m/min

To change the blade speeds:

1. DISCONNECT THE BAND SAW FROM THE POWER!
2. Open the belt drive cover (Fig. 5.10)
3. Loosen the V-belt tension hex screw to allow the motor to pivot (Fig. 5.11).
4. Raise the motor to relieve the belt tension and position the belt in the desired pulley alignment.
5. Release the motor and let the motor weight tension the belt.
6. Position the V-belt tension hex screw back against the frame of the band saw.

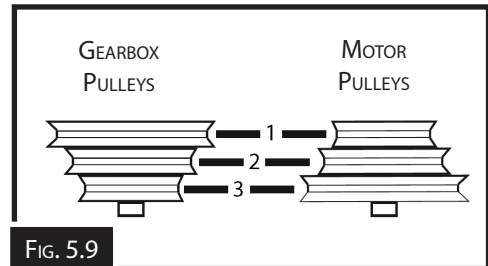


FIG. 5.9



FIG. 5.10



FIG. 5.11

NOTE: Selecting the correct speed is important for longer blade life See table below

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 ²	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 ²	20 ~ 40	0.03 ~ 0.04	ALUMINIUM AND ALLOY ALU- MINIUM (PROFILES)	800 ~ 1200	0.03 ~ 0.07
38NCD4, 50Cr3, 16MnC35 STEEL UP TO 1200 N/MM ²	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

5.7 OPTIONAL ACCESSORIES.

The following band saw accessories, suitable for this machine may be available through your local Dealer. If you do not have a dealer in your area, these products are also available for delivery through the Australian on-line website @ www.machineryhouse.com.au or for New Zealand @ www.machineryhouse.co.nz.

Order Code	Description	
B206	Metal Band Saw Blade - 6TPI Carbon, Blade 1727 x 12.7 x 0.65mm	
B207	Metal Band Saw Blade - 14TPI Carbon, Blade 1727 x 12.7 x 0.65mm	
B208	Metal Band Saw Blade - 18TPI Carbon, Blade 1727 x 12.7 x 0.65mm	
P235	Coolant Pump & Tank 240 volt 1/8HP Pump and 10 Litre Plastic Tank	
S090A	Synthetic Metal Cutting Fluid - 1 Litre	
S090	Synthetic Metal Cutting Fluid - 5 Litre	
S091	Synthetic Metal Cutting Fluid - 20 Litre	
L8123	RC-290S - Roller Conveyor 290 x 1500mm Ø50mm Rollers	
L816	RS-290L - Roller Conveyor Stand - Suits RC-290 Conveyor. 505-800mm Adjustable Height	
W343A	RS-720 - Roller Stand 450-720mm 30kg Capacity	

6 MAINTENANCE

6.1 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
- Worn or damaged power lead
- Any unsafe condition

Monthly Check

- Lubricate vice screw
- V-belts for correct tension, damage or wear

Annual Check

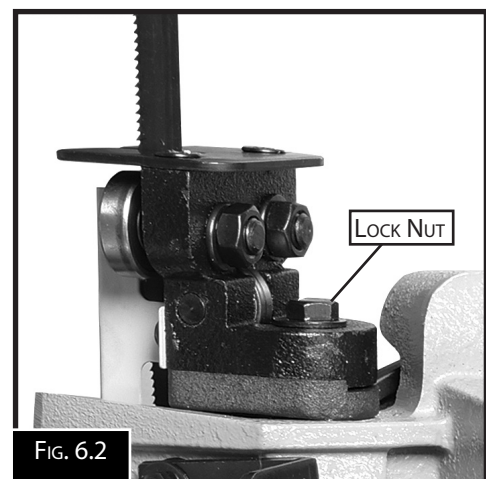
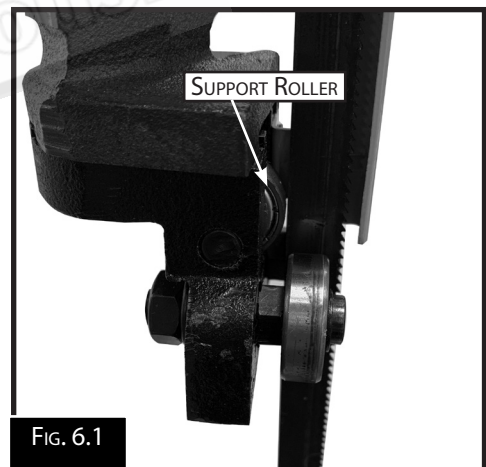
- Grease in the gear box.

6.2 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 (Fig. 6.1)

1. DISCONNECT THE BAND-SAW FROM THE POWER SUPPLY
2. Make sure that the blade is correctly tensioned.
3. Raise and lock the bow saw for easy access. Slide the blade guides as close as possible together and lock in place. Remove the blade guards by loosening the button head screws.
4. Loosen the lock nut (Fig. 6.2) and adjust the blade guide housing so the back of the blade just touches the roller, making sure the guide housing is not tilted.
5. Tighten the lock nut.



To adjust the side Rollers

1. Loosen the lock nut on the top of eccentric bolt. (Fig.6.3)
2. 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. 6.4)
3. Tighten the lock nut making sure that the eccentric bolt does not turn.
4. Adjust the other ball bearing guide.
5. Repeat steps 1-4 on the other set of ball bearing guides on the opposite side of the saw bow.

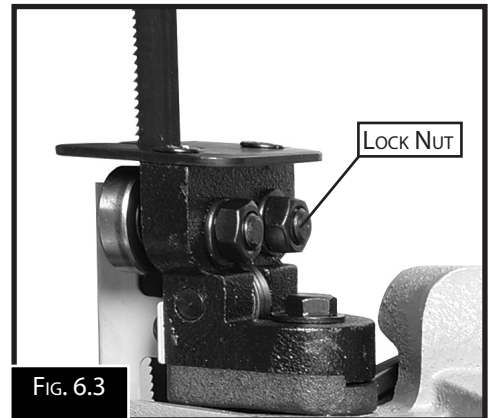


FIG. 6.3

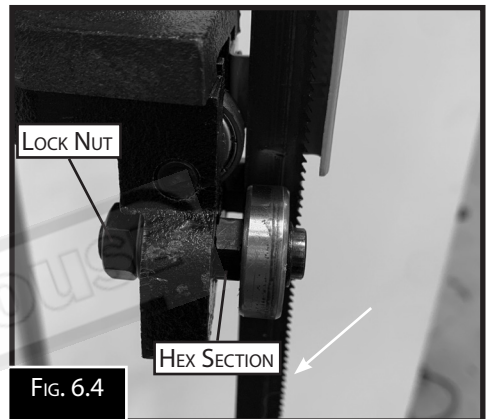


FIG. 6.4

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. 6.5)

1. Replace with a new blade and check for squareness. The workpiece should be as per Fig. 6.6
2. Inspect the blade guides to see if there is a gap between the bearings and the blade (Fig.6.7)

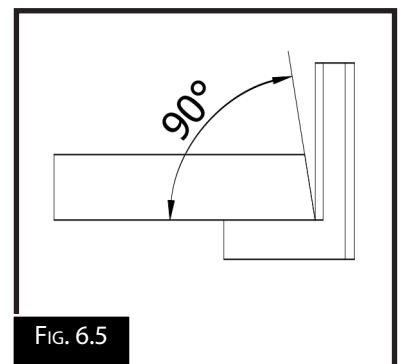


FIG. 6.5

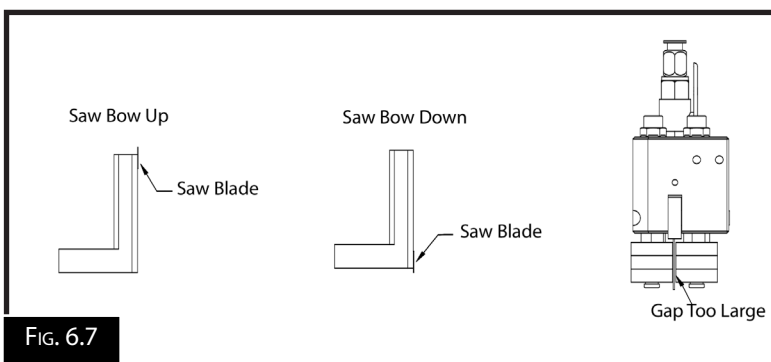


FIG. 6.7

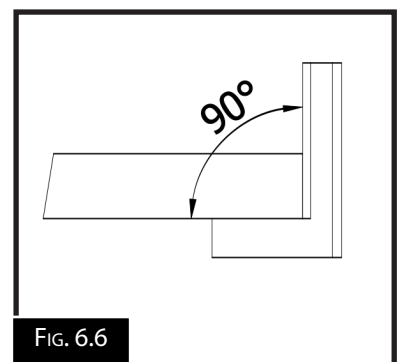


FIG. 6.6

6.3 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	<ol style="list-style-type: none"> 1. POWER SUPPLY IN THE OFF POSITION 2. MOTOR ON/OFF SWITCH IS FAULTY 3. FAULTY MOTOR 	<ol style="list-style-type: none"> 1. CHECK POWER SUPPLY IS ON AND NOT FAULTY 2. TEST AND REPLACE THE SWITCH 3. TEST AND REPLACE THE MOTOR.
MACHINE STALLS OR SEEMS UNDERPOWERED	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. BLADE IS FAULTY 2. MOTOR FAN IS RUBBING ON COVER 3. SPEED IS SET TOO SLOW 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. EXCESSIVE FEED RATE 2. THE BLADE T.P.I. IS TOO GREAT FOR THE MATERIAL 	<ol style="list-style-type: none"> 1. REDUCE THE FEED RATE 2. CHECK FOR THE CORRECT BLADE
BLADES BREAKING	<ol style="list-style-type: none"> 1. BLADE IS NOT TENSION 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 	<ol style="list-style-type: none"> 1. CHECK THE BLADE TENSION 2. RE-CLAMP THE WORK PIECE TIGHTER OR USE A JIG 3. ADJUST THE FEED RATE AND THE SPEED 4. REFER TO BLADE SELECTION 5. USE BETTER QUALITY BLADE
TEETH BREAKING OF THE BLADE	<ol style="list-style-type: none"> 1. THE FEED IS TOO GREAT 2. THE BLADE T.P.I. IS TOO COARSE 3. BLADE GULLETS ARE LOADED UP WITH CHIPS 	<ol style="list-style-type: none"> 1. DECREASE THE BLADE PRESSURE 2. REFER TO BLADE SELECTION 3. USE A COARSER TOOTH BLADE
THE CUTS ARE CROOKED	<ol style="list-style-type: none"> 1. THE FEED PRESSURE IS TOO HIGH 2. THE BLADE TENSION IS LOW 3. THE BLADE IS DULL 	<ol style="list-style-type: none"> 1. REDUCE THE FEED RATE 2. ADJUST THE BLADE TENSION AS REQUIRED. 3. REPLACE THE BLADE.

SPARE PARTS SECTION

SWIVEL HEAD METAL BAND SAW

Model. BS-5S

Order Code B003

Edition No : BS-5S-1

Date of Issue : 10/2020

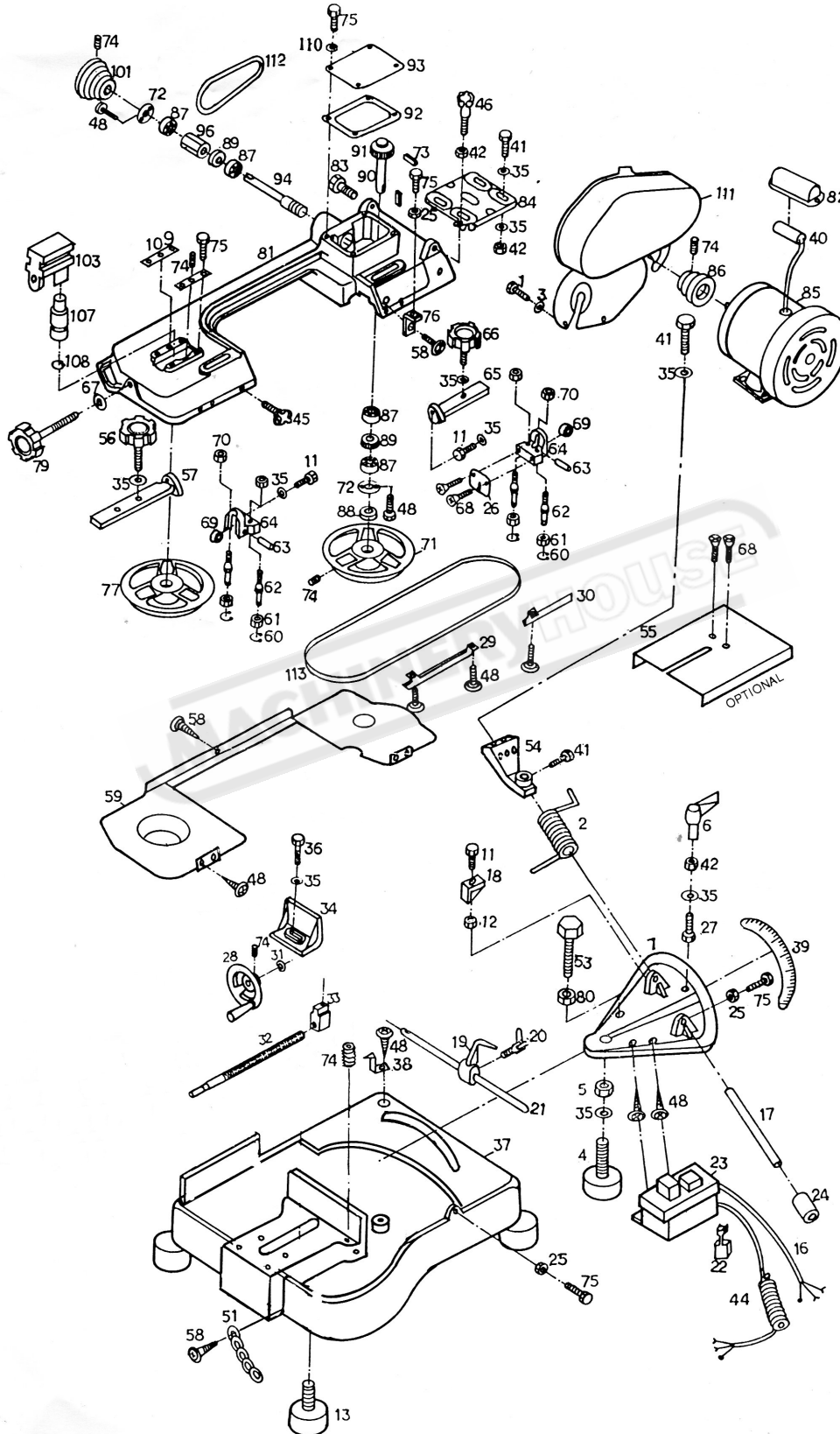
The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at any time without notification.

HOW TO ORDER SPARE PARTS

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

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

BS-5S PARTS DIAGRAM



BS-5S SPARE PARTS LIST

ITEM	DESCRIPTION	QTY.	ITEM	DESCRIPTION	QTY.
1	HEX. HEAD SCREW	2	58	SCREW	3
2	SPRING	1	59	BLADE COVER	1
3	WASHER	2	60	C-RING	4
4	BOLT, (MITER PLATE)	1	61	BEARING	4
5	NUT	1	62	GUIDE PIVOT	4
6	FIXING LEVER	1	63	BEARING SHAFT PIN	2
7	MITER PLATE	1	64	BLADE SEAT	2
11	HEX. HEAD SCREW	3	65	BLADE GUIDE BRACKET, R	1
12	HEX.NUT	1	66	BRACKET LOCK, R	1
13	PAD, (BASE)	4	67	WASHER	1
16	ELECTRIC CABLE	1	68	SCREW	2
17	ROD	1	69	BEARING (608)	2
18	SUPPORT PLATE	1	70	HEX,NUT	4
19	STOCK STOP	1	71	DRIVE BLADE WHEEL	1
20	THUMB SCREW	1	72	BEARING COVER	1
21	ROD, STOCK STOP	1	73	KEY	2
22	WIRE RELIEF RETAINER	3	74	HEX. SET SCREW	6
23	SWITCH	1	75	HEX. HEAD SCREW	11
24	BUSHING	1	76	SWITCH CUT OFF TIP	1
25	HEX.NUT	1	77	IDLE BLADE WHEEL	1
26	BLADE GUARD	1	78	HEX. HEAD SCREW	4
27	HEX. HEAD SCREW	1	79	TENSION KNOB	1
28	HAND WHEEL	1	80	HEX. NUT	1
29	BLADE COVER, L	1	81	BODY FRAME	1
30	BLADE COVER, R	1	82	CONDENSER COVER	1
31	C-RING	1	83	SET SCREW	2
32	LEAD SCREW	1	84	MOTOR PLATE	1
33	WISE NUT	1	85	MOTOR	1
34	CLAMPING PLATE, VISE	1	86	MOTOR PULLEY	1
35	WASHER	15	87	BALL BEARING (6202Z)	4
36	HEX. HEAD SCREW	1	88	BUSHING	1
37	BASE	1	89	OIL SEAL	2
38	ANGLE POINTER	1	90	TRANSMISSION GEAR SHAFT	1
39	SCALE	1	91	TRANSMISSION GEAR	1
40	CONDENSER, (MOTOR)	1	92	GASKET, GEAR BOX	1
41	HEX. HEAD SCREW	1	93	GEAR BOX COVER	1
42	HEX.NUT	5	94	WORM GEAR	1
44	ELECTRICAL CABLE	1	96	BUSHING	1
45	KNOB	1	101	GEAR PULLEY	1
46	KNOB	1	103	BLOCK, BLADE TENSION	1
48	SET SCREW	13	107	WHEEL SHAFT	1
49	WISE BASE	1	108	C-RING	1
51	LOCKING CHAIN	1	109	TRACKING PLATE	2
53	HEX. HEAD SCREW	1	110	SPRING WASHER	4
54	ARM	1	111	PULLEY CASE	1
55	VERTICAL CUTTING TABLE	1	112	V- BELT (A22)	1
56	BRACKET LOCK, L	1	113	SAW BLADE	1
57	BLADE GUIDE BRACKET, L	1	114	QUICK GRIP VISE	1

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

WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
- 2. Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
- 3. Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
- 4. Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
- 5. Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
- 6. Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
- 7. Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
- 8. Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
- 9. Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
- 10. Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
- 11. Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
- 12. Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
- 13. Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
- 14. Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
- 15. Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
- 16. Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
- 19. Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
- 20. Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
- 21. Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
- 22. Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
- 23. Lock mobile bases.** Make sure any mobile bases are locked before using machine.
- 24. Allergic reactions.** Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

WARNING

Meat Cutting Bandsaw Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Maintenance.** Make sure the bandsaw is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
- 2. Bandsaw Condition.** Bandsaw must be maintained for a proper working condition. Never operate a bandsaw that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Blade Condition.** Never operate a bandsaw with a dull, cracked or badly worn blade. Before using a bandsaw inspect blades for missing teeth and cracks. Replace if required.
- 4. Replacing Blade.** Make sure teeth are face forward to the workpiece and blade is properly tensioned. Wear gloves to protect hands and wear safety glasses to protect your eyes.
- 5. Use Correct Blade.** Use the correct blade for the material being cut and the type of cut you are performing.
- 6. Hand Hazard.** Keep hands and fingers clear from the line of cut of the blade. Serious injury can occur.
- 7. Leaving a bandsaw Unattended.** Always turn the bandsaw off and make sure all moving parts have come to a complete stop before leaving the bandsaw. Do not leave bandsaw running unattended for any reason.
- 8. Avoiding Entanglement.** Blade guard must be used at all times. Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the bandsaw moving parts.
- 9. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 10. Power outage.** In the event of a power failure during use of the bandsaw, turn off all switches to avoid possible sudden start up once power is restored.
- 11. Work area hazards.** Keep the area around the bandsaw clean from oil, tools, offcuts. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 12. Workpiece Handling.** Never hold small workpieces with your fingers during a cut. Always support/feed the workpiece with push stick, table support, vice, or some sort of clamping fixture.
- 13. Hearing protection and hazards.** Always wear hearing protection as noise generated from bandsaw blade and workpiece vibration, material handling can cause permanent hearing loss over time.
- 14. Cutting techniques.** Plan your cuts so you always cut out of the meat. Do not back the workpiece away from the blade while the saw is running. If you need to back the workpiece out, turn off the bandsaw and wait till the blade has come to a complete stop, and do not twist or put excessive stress on the blade while backing work out.
- 15. Feeding material.** Always feed material evenly and smoothly. Do not force or twist blade while cutting, especially while cutting small radii material.
- 16. Job Material.** This machine is designed to cut meat only. It is not designed to cut metal or use cutting fluid. Always inspect the meat before cutting. If you have any doubt about stability or structural integrity of the meat do not cut it.
- 17. Starting position/speed.** Never turn the bandsaw on when the blade is resting on the workpiece. Allow blade to reach full speed before cutting.
- 18. Guards.** Do not operate bandsaw without the blade guard in place or with the doors open. Ensure all guards removed to do maintenance or change blades on the machine are refitted correctly in place before the machine is used again.
- 19. Stopping the Blade.** Do not stop or slow the blade with your hand or workpiece. Allow the blade to stop on its own, unless the machine is equipped with a brake.
- 20. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Meat Cutting Bandsaw

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
 This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace (WHSA 2011 No10)


Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies <small>(Recommended for Purchase / Buyer / User)</small>
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support Long / heavy Meat when cutting
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Blade guards should always be in the closed position before starting machine. Blade guide system should be adjusted to suit meat width. Wear gloves when changing blades. Concentrate on the cutting process and avoiding distractions. Isolate main power switch before changing blade, cleaning or adjusting. If blade breaks do not open door until both wheels have stopped. Check blade tracking before starting.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on. Isolate power to machine prior to changing blades or maintenance.
F	STRIKING	LOW	Support long heavy meat when cutting and stand clear of offcuts. Stand clear of machine when in operation. Remove all loose objects around moving parts. Wear safety glasses & non slip footwear
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Ensure machine is connected to an electrical Circuit with an RCD (Residual Current Device) also known as an RCCB (Residual Current Circuit Breaker) Machine should be installed & checked by a Licensed Electrician.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			



www.machineryhouse.com.au



www.machineryhouse.co.nz

Authorised and signed by:
 Safety officer:
 Manager: 

Revised Date: 27th Jan 2016