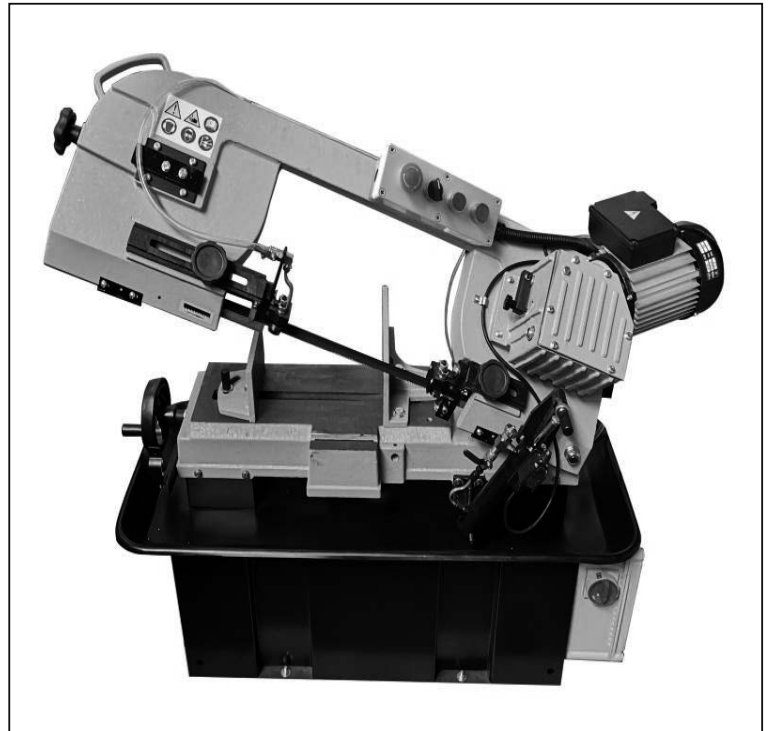


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SIP 12" Metal Cutting Bandsaw - Gearbox Transmission



SIP Code 01573

For help or advice please
contact your distributor, or sip
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Email: sales@sip-group.com
or
customerservice@sip-group.com
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Sip
SIP INDUSTRIAL

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SAFETY INSTRUCTIONS

SAFETY INSTRUCTIONS - GENERAL INFORMATION

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.



Danger / Caution: This image indicates risk of personal injury and/or the possibility of damage.



Warning: This image indicates risk of electrical injury or damage!



Note: This image indicates supplementary information.



Important: Please read the following instructions carefully, failure to do so could lead to serious personal injury and / or damage to the item.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
5. KEEP CHILDREN AND VISITORS AWAY. All children and visitors should be kept a safe distance from work area.
6. MAKE WORK SHOP CHILD PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.
9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition.
10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

13. DON'T OVERREACH. Keep proper footing and balance at all times.
14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. DISCONNECT TOOLS before servicing and changing accessories, such as blades, bits, cutters, and the like.
16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.
18. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
19. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

SAFETY INSTRUCTIONS - METAL CUTTING BANDSAWS

1. Do not operate your bandsaw with dull or badly worn blades. Dull blades require more effort to use and are difficult to control. Inspect blades before each use.
2. Make sure the blade has been properly tensioned and is tracking on the center of the wheels.
3. Always support stock in the vise and make certain it is firmly secured. Never attempt to hold material by hand while sawing.
4. Keep belt guard and bandsaw wheel covers in place when operating the machine.
5. Never force the saw through the cut. Allow the feed cylinder to control the rate of cutting. If the saw blade binds or stalls turn the power off immediately.
6. Never position fingers or thumbs in line with the cut. Serious injury could occur.
7. Periodically check the horizontal stopscrew and the automatic shutoff limit switch to make sure they are properly adjusted.
8. Exercise great caution when replacing blades. Wear protective gloves and safety glasses when handling the blade.
9. Support long or heavy workpieces which extend from the machine bed with a roller stand or other support device.
10. Habits-good and bad-are hard to break. Develop good habits in your shop and safety will become second-nature to you.



Operating this equipment has the potential to propel debris into the air which can cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses they are not safety glasses.

SAFETY INSTRUCTIONS



Like all power tools there is danger associated with this Metal Bandsaw. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored serious personal injury may occur.



Read the manual before assembly and operation. Become familiar with the machine and its operation before beginning any work. Serious personal injury may result if safety or operational information is not understood or followed.



No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury damage to equipment or poor work results



Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle combined motor amp loads. Outlets should be located near each machine so power or extension cords are not obstructing high-traffic areas. Be sure to observe local electrical codes for proper installation of new lighting, outlets, or circuits..

Floor Load

This machine represents a moderately large weight load in a small footprint. Most commercial shop floors will be adequate for the weight of the machine. Some floors may require additional support. Contact an architect or structural engineer if you have any question about the ability of your floor to handle the weight.

To ensure sufficient upright stability of the machine it should be bolted to floor. For this purpose 4 slots are provided in the machine's bracket of work stand.

Working Clearances

Working clearances can be thought of as the distances between machines and obstacles that allow safe operation of every machine without limitation. Consider existing and anticipated machine needs, size of material to be processed through each machine, and space for auxiliary stands and/or work tables. Also consider the relative position of each machine to one another for efficient material handling. Be sure to allow yourself sufficient room to safely run your machines in any foreseeable operation.

ELECTRICAL CONNECTION

WARNING! It is the responsibility of the owner and the operator to read, understand and comply with the following:

You must check all electrical products, before use, to ensure that they are safe.

You must inspect power cables, plugs, sockets and any other connectors for wear or damage.

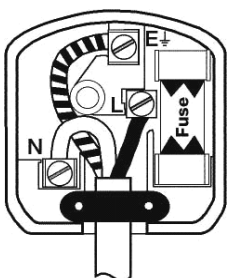
You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices; A residual current circuit Breaker (RCCB) should be incorporated in the main distribution board. We also recommend that a residual current device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any doubt consult a qualified electrician.

Connecting to the 1 phase power supply:

This SIP bandsaw is fitted with a standard 230v ~ 13 amp type plug. Before using the bandsaw, inspect the mains lead and plug to ensure that neither are damaged. If any damage is visible have the bandsaw inspected / repaired by a suitably qualified person. If it is necessary to replace the plug a heavy duty impact resistant plug would be preferable.

The wires for the 1 phase plug are coloured in the following way:

Yellow /Green	Earth
Blue	Neutral
Brown	Live



As the colours of the wires may not correspond with the markings in your plug, proceed as follows: The wire which is coloured blue, must be connected to the terminal marked with N or coloured black. The wire which is coloured brown, must be connect-ed to the terminal, which is marked L or coloured red. The wire which is coloured yellow / green should be connected to the terminal which is coloured the same or marked



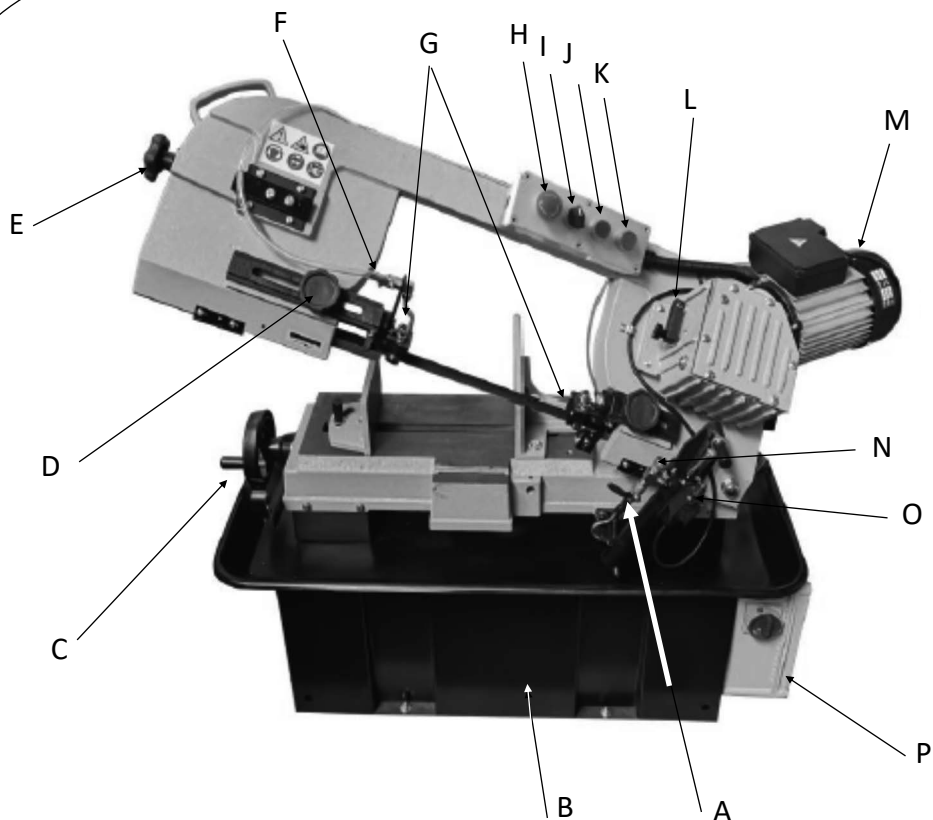


Note: Always make sure the mains supply is of the correct voltage and the correct fuse protection is used.

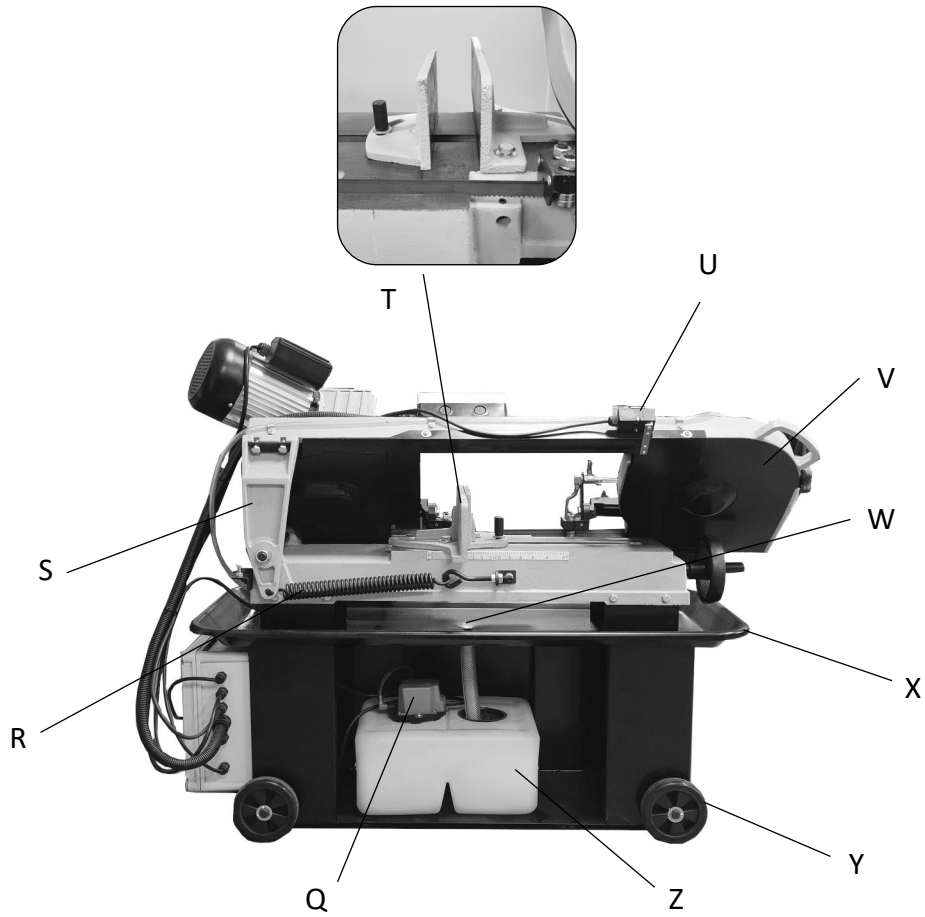


Note: If an extension lead is necessary in order to reach the mains supply; The cross section should be checked so that it is of sufficient size so as to reduce the chances of voltage drops. Always fully unwind the lead during use.

GETTING TO KNOW YOUR BANDSAW

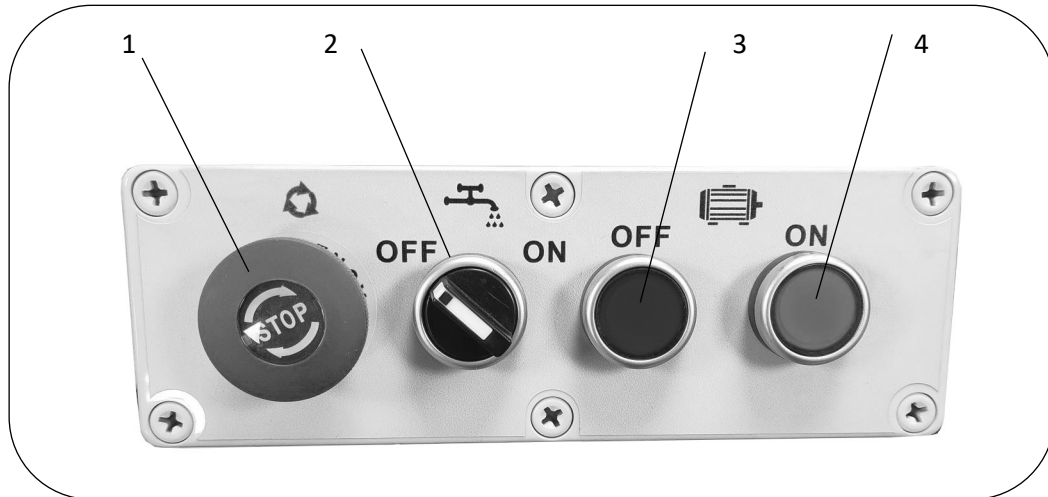


<i>Item</i>	<i>Description</i>	<i>Item</i>	<i>Description</i>
A	Bow Lock	I	Coolant On/Off Switch
B	Base	J	Motor Off Button
C	Vice Hand Wheel	K	Motor On Button
D	Blade Guide Adjuster	L	Speed Adjustment Lever
E	Blade Tension Knob	M	1100watt Motor
F	Coolant Valve Control	N	Bow Feed Control Knob
G	Blade Bearing Guides	O	Auto Cut Off Micro Switch
H	Emergency Stop	P	Main On/ Off Switch & Control Box









<i>Item</i>	<i>Description</i>	<i>Item</i>	<i>Description</i>
Q	Coolant Motor	V	Blade Guard
R	Return Spring	W	Coolant Filter
S	Bow	X	Saw Tray
T	Vice Assembly	Y	Wheel
U	Blade Guard Safety Interlock Switch	Z	Coolant Tank

CONTROL PANEL



1	Emergency Stop Button	Press to interrupt the power to the system & stop the motor. Reset by twisting the button
2	Coolant Pump Switch	Turns the coolant pump ON & OFF
3	Stop Button	Stops the machine
4	Start Button	Starts the machine

TECHNICAL SPECIFICATION

<i>Model</i>	<i>SIP 12" Bandsaw Gearbox Transmission</i>
Input Voltage	230v 50Hz 13A
Capacity 90°	
	180mm
	180mm
	300 x 180mm
Capacity 45°	
	130mm
	125mm
	110 x 180mm
Blade Speeds	39 - 55 - 67mtr/min
Blade Size	2360 x 20 x 0.9mm
Motor Power	1100watts / 1.5HP
Transmission / Drive	Gearbox Direct Drive
Packaged Dimensions L x W x H	1265 x 470 x 1120mm
Product Dimensions L x W x H	1230 X 620 X 940mm
Weight	154.7kg GW / 120.34kg NW

GUARANTEE

This SIP Bandsaw is covered by a 24 month parts and labour warranty covering failure due to manufacturers defects. This does not cover failure due to misuse or operating the machine outside the scope of this manual.

Consumable items such as bandsaw blades etc are not covered under warranty.

In the unlikely event of warranty claims, contact your distributor as soon as possible.



Note: Proof of purchase will be required before any warranty can be honoured.

UNPACKING

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover any damage, packing materials, call your SIP distributor. When you are completely satisfied with the condition of your shipment, inventory the contents.



SUFFOCATION HAZARD!

Keep children and pets away from plastic bags or packing materials shipped with this machine. Discard immediately

CONTENTS

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.



If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Box Contents:-

- A. 1 x Hydraulic Cylinder
- B. 4 x Washers
- C. 4 x Wheels
- D. 2 x Axle
- E. 4 x Split Pins
- F. 1 x Metal Swarf Filter
- G. 1 x Material Stop Assy

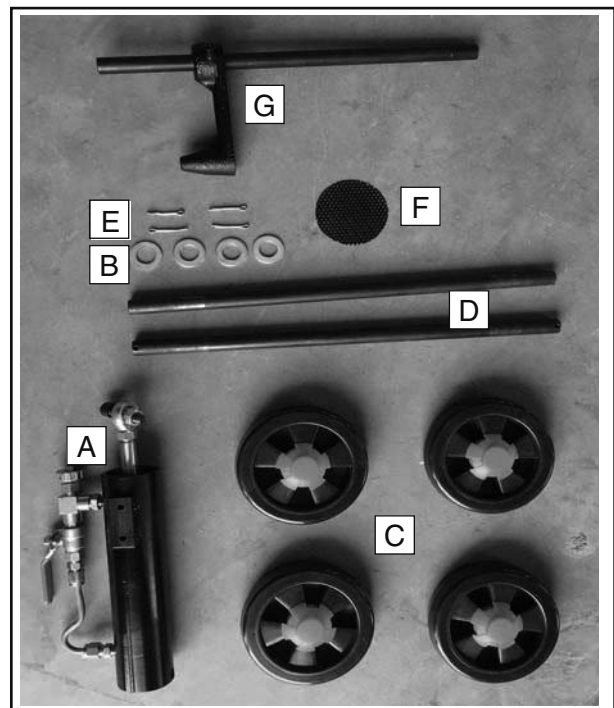


Figure 1. Loose parts contents.

CLEANING

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:

:Disposable rags :Cleaner/degreaser :Safety glasses & disposable gloves :Plastic paint scraper

Basic steps for removing rust preventative:

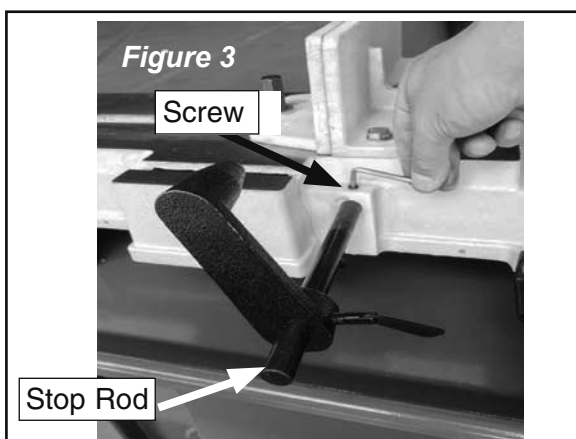
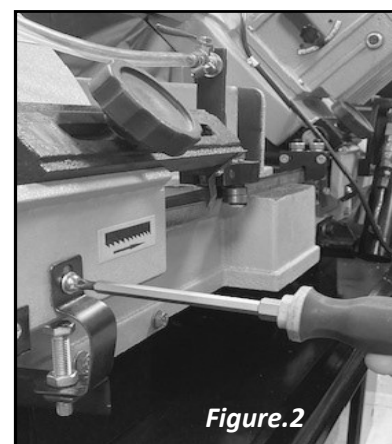
1. Put on safety glasses.
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.
4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

Shipping Bracket

A shipping bracket has been installed on the bandsaw to protect the alignment of the bow during shipment. After removal, store the bracket in a safe place until you need to move or ship the bandsaw in the future.

To remove shipping bracket:

1. Remove the shipping bracket shown in Figure 2.



1. Insert work stop rod through hole in base and lock in place with screw (**Figure 3**).
2. Slide work stop over rod.
3. Measuring from outside of blade, tighten thumbscrew to set work stop at desired length.

HYDRAULIC CYLINDER

To fit the hydraulic unit, remove nut & washer (A). **Figure 4A**

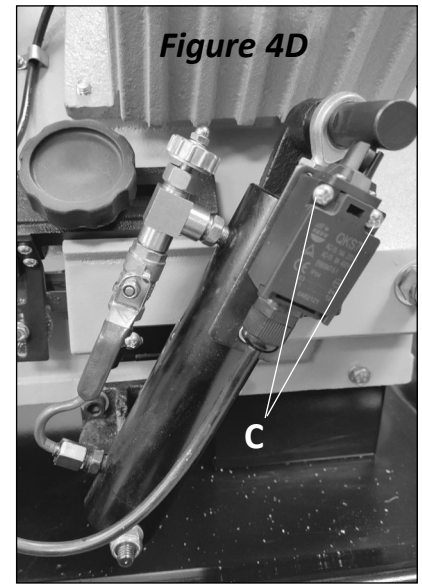
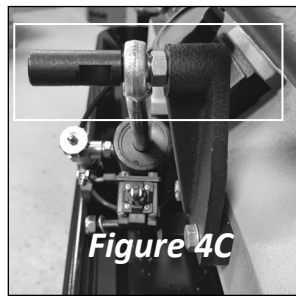
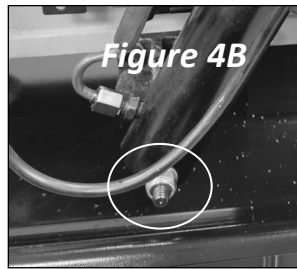
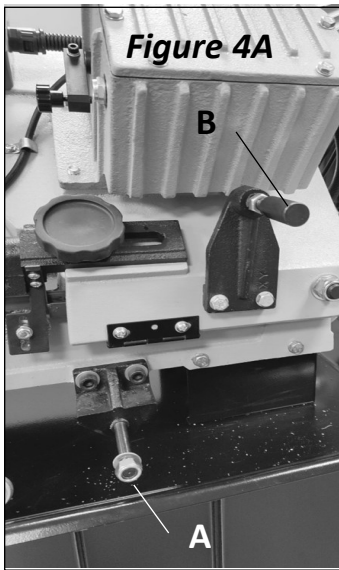
Remove actuator shaft (B). **Figure 4A.**

Fit hydraulic unit bottom connection and secure in place with nut & washer. **Figure 4B.**

Fit the hydraulic unit top connection. **Figure 4C.** Pay attention to the position of the lock-nut.

The hydraulic unit should now look like **Figure 4D.**

The cut-off microswitch can be finely adjusted by using screws C if required.



WHEELS

The wheels may be installed to make it easier to move the bandsaw.

Wheel Kit contents:-

4 x Wheels

2 x Axle Shafts

4 x Split Pins 3 x 30mm

4 x Washers 16mm

To install wheels

1. Slide axle through holes in bottom of cabinet.
2. Slide one flat washer onto the axle, followed by a wheel. Secure with cotter pins and plastic cover as shown in Figure 5.

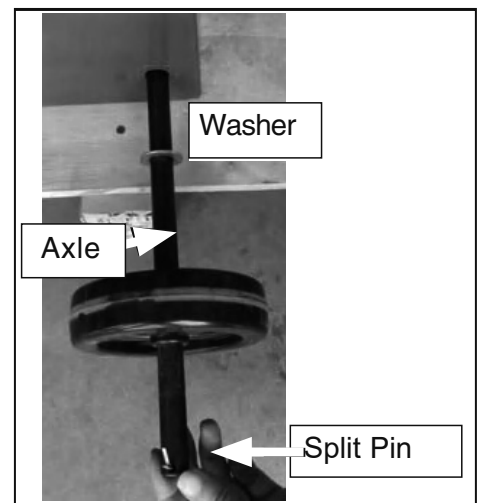


Figure 5. Wheels secured with cotter pin.

TEST RUN

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

If you find any unusual problems during the test run, immediately stop the machine, disconnect it from the power supply; fix the problem BEFORE operating the machine again. The **Troubleshooting** table section of this manual can help.



Serious injury or death can result from using this machine. Make sure you understand the controls and related safety information before use. DO NOT operate, or allow others to operate, machine until the information is understood.



DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Clear all set-up tools away from machine.
2. Connect machine to power supply.
3. Turn power switch On, press motor ON button. Verify motor operation, and then press motor OFF button. The motor should run smoothly and without unusual problems or noise.

OPERATION OVERVIEW

The purpose of this overview is to inform the machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual and seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.

OPERATION

1. Examine the workpiece to make sure it is suitable for cutting.
2. Adjust the swivel head, if necessary, to correct angle of desired cut.
3. Adjust the material stop to the desired width of cut, then lock it in place.
4. Check out-feed side of the saw for proper support and to make sure workpiece can safely pass all the way through blade without interference.
5. Wear the correct PPE (Personal Protective Equipment).
6. Start the saw.
7. Set the saw feed speed, ensure even pressure is maintained on the blade allowing an even cut.
8. Switch on coolant.
9. Once the cut is complete, the saw will stop.
10. Isolate the machine from the mains supply before making changes to the blade etc.



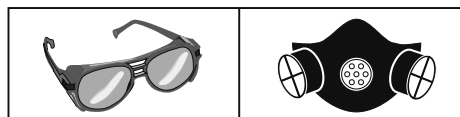
Read the manual before assembly and operation. Become familiar with the machine and its operation before beginning any work. Serious personal injury may result if safety or operational information is not understood or followed.



DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.



Reduce the risk of injury, make sure you wear the correct PPE.

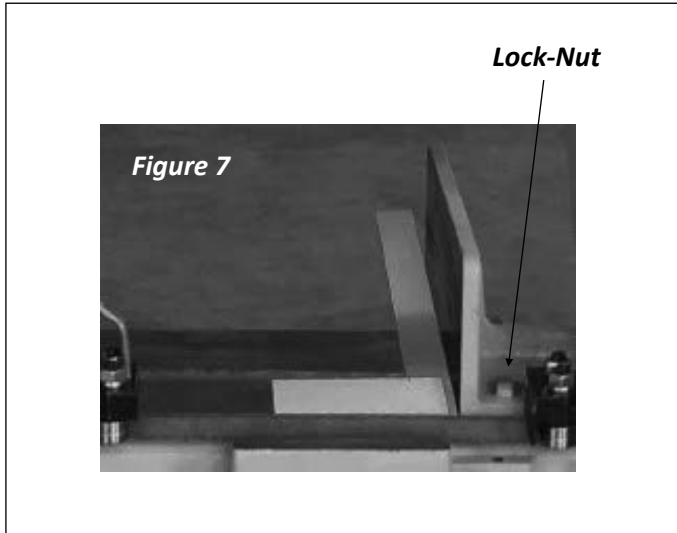


VICE

The vice can hold material up to six inches wide and be set to cut angles from 0 to 45 degrees.

To square blade to vise:

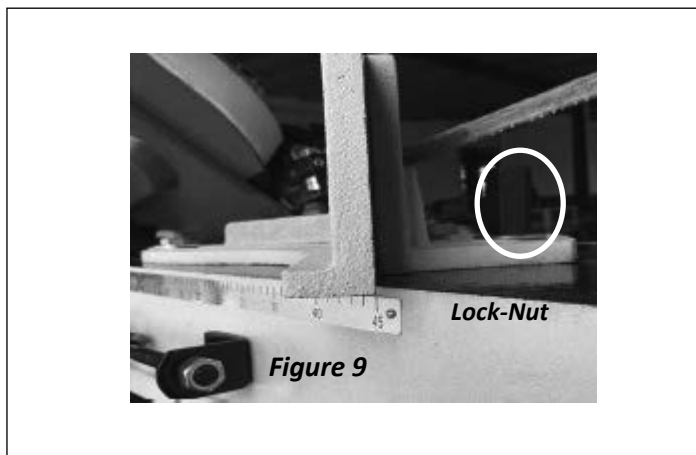
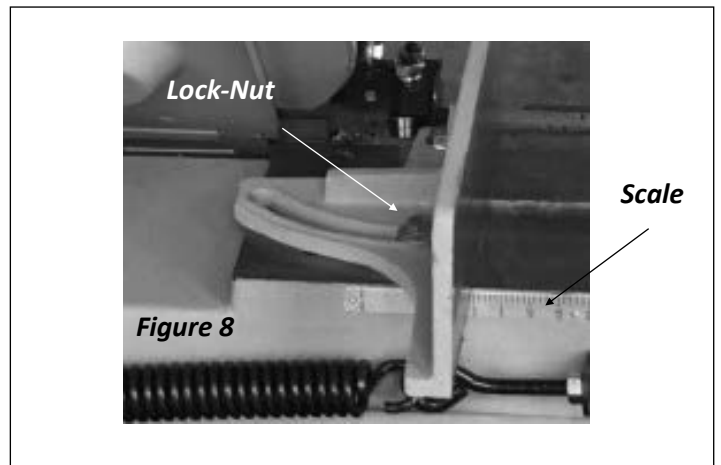
1. Loosen lock nut shown in **Figure 7**



2. Use scale as a guide to set your angle, or a machinist's square to square blade to vise.
3. Tighten lock nut.

TO ADJUST THE VICE ANGLE

1. Loosen lock nut on rear jaw with a spanner, as shown in **Figure 8**.
2. Use scale to set your angle.
3. Tighten lock nut.
4. Loosen lock nut in **Figure 9**, on opposite jaw so jaw can float, and match angle of workpiece.



5. Tighten vice against workpiece.

BLADE SELECTION

Tooth Pitch

Usually measured as TPI (teeth per inch), tooth pitch determines the size/number of the teeth. More teeth per inch (fine pitch) will cut slower, but smoother; while fewer teeth per inch (coarse pitch) will cut rougher, but faster.

As a general rule, choose blades that will have at least three teeth in the material at all times. Use fine pitched blades on harder metals and coarse pitched blades on softer metals. When selecting blades, refer to **Figures 13 & 14** on **Pages 15–16** for recommended blade tooth (TPI) and speed (FPM) based on the workpiece material.

Tooth Style

When selecting blades, another option to consider is the shape, gullet size, teeth set and teeth angle—otherwise known as “Tooth Style.” Many blade manufacturers offer variations of the four basic styles shown in **Figure 10**.

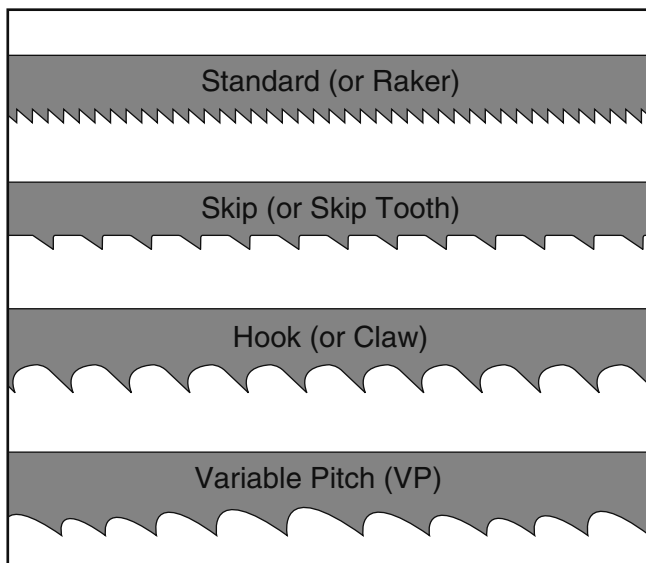


Figure 10. Bandsaw blade tooth types.

Standard: This style is considered to be the standard because the tooth size and shape are the same as the tooth gullet. The teeth on these blades usually are very numerous, have no angle, and produce cuts by scraping the material; these characteristics result in very smooth cuts, but do not cut fast and generate more heat than other types while cutting.

Skip: This style is similar to a raker blade that is missing every other tooth. Because of the design, skip toothed blades have a much larger gullet than raker blades, and therefore, cut faster and generate less heat. However, these blades also leave a rougher cut than raker blades.

Hook: The teeth on this style have a positive angle (downward) which makes them dig into the material, and the gullets are usually rounded for easier waste removal. These blades are excellent for the tough demands of resawing and ripping thick material.

Variable Pitch: These blades typically feature combinations of tooth styles that provide qualities of both.

Tooth Set

Three of the most common tooth sets are alternate, wavy, and raker (see **Figure 11**).

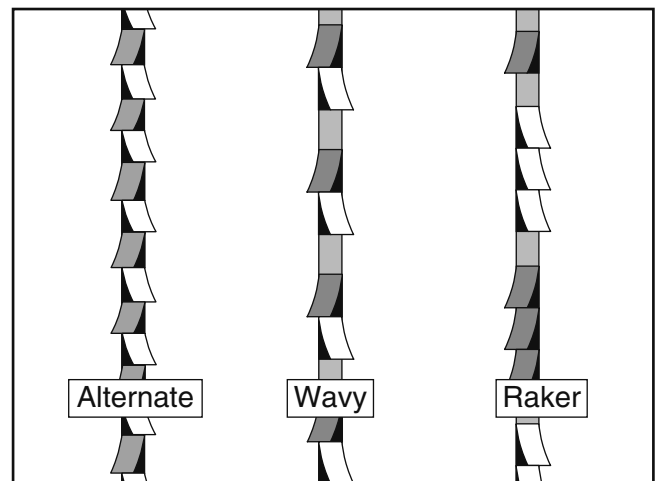


Figure 11. Bandsaw tooth sets.

CHOOSING BLADE TPI

Selecting the right blade for the job depends on a variety of factors, such as type, hardness, and shape of the material being cut, machine capability, and operator technique.

The chart in **Figure 13** is a basic starting point for choosing blade type based on teeth per inch (TPI) for variable tooth pitch blades and for standard raker type bi-metal blades/HSS blades. As a general rule, there should be at least 3 teeth in contact with the workpiece at all times. However, for exact specifications of bandsaw blades, contact the blade manufacturer.

When cutting structural shapes such as angle iron or I-beams, workpieces should be positioned to maintain the same material width throughout the cut, as illustrated in **Figure 12**.

To select correct blade TPI:

1. Measure material thickness. This measurement is the length of cut taken from where the tooth enters the workpiece, sweeps through, and exits the workpiece.
2. Refer to "Material Width" row of blade selection chart in **Figure 14** and read across to find workpiece thickness you need to cut.
3. In the center row, find the TPI that corresponds to the workpiece thickness.

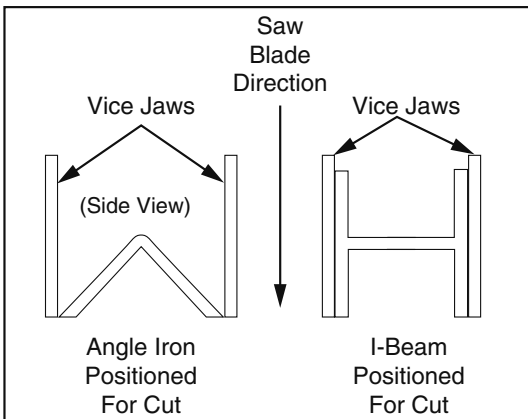


Figure 12. Structural workpieces positioned in vise for cut.

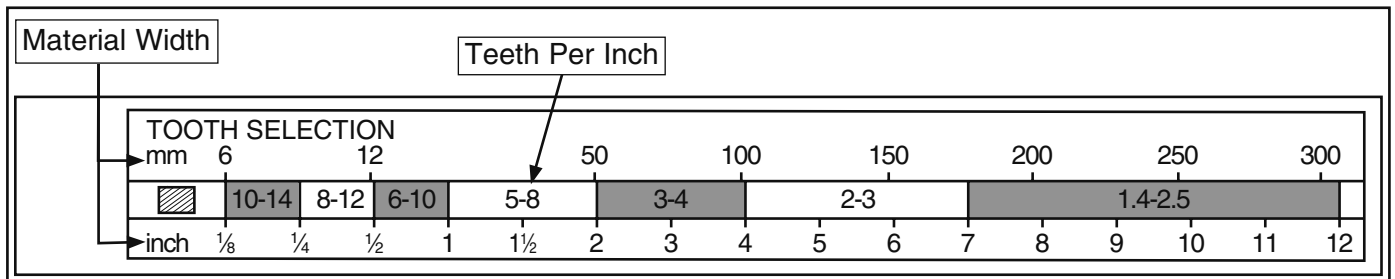


Figure 13. Material width and recommended teeth per inch.

CHOOSING BLADE CUTTING SPEEDS

Selecting the right blade speed for cutting depends on the type of material being cut. Selecting the correct blade speed prolongs the life of your blade and provides the best possible cutting results.

The "Cutting Speed Rate Recommendation Chart" in **Figure 14** offers guidelines for various metals, given in feet per minute (speed FPM) and meters per minute in parenthesis. Choose the speed closest to the number shown in the chart.

Follow the directions in the **Changing Blade Speed** section on **Page 19** to set the machine to the closest available speed.

Material	Speed M/Min (FPM)	Material	Speed M/Min (FPM)	Material	Speed M/Min (FPM)	Material	Speed M/Min (FPM)
Carbon steel	60 - 108 (196 - 354)	Tool steel	62 (203)	Alloy steel	34 - 98 (111 - 321)	Free machining stainless steel	46 - 62 (150 - 203)
Steel section	54 - 67 (180 - 220)	High speed tool steel	23 - 36 (75 - 118)	Mold steel	75 (246)	Gray cast iron	33 - 75 (108 - 255)
Thin tube	54 - 67 (180 - 220)	Cold work tool steel	95 - 213 (29 - 65)	Water hard tool steel	242 (74)	Ductile austenitic cast iron	65 - 85 (20 - 26)
Aluminium alloy	67 - 163 (220 - 534)	Hot work tool steel	62 (203)	Stainless steel	26 (85)	Malleable cast iron	98 (321)
Copper alloy	70 - 147 (229 - 482)	Oil hardening tool steel	62 - 65 (203 - 213)	Cold rolled stainless Steel	26 - 62 (85 - 203)	Figure 14	



Note: The above table is an approximate guide reference only, various factors mean some materials may require different speeds to the ones quoted.

CHANGING THE BLADE SPEED

There are three speeds, each speed can be selected by turning fixing pin handle to change the position of gears; left position is 67m/min (Fig.A), middle position is 39m/min (Fig.B), right position is 55m/min (Fig.C).

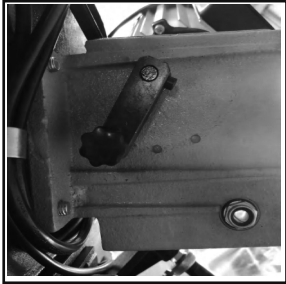


Fig.A

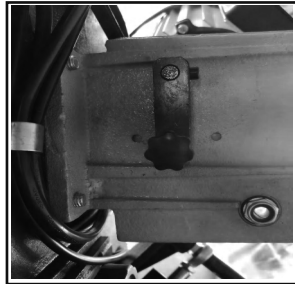


Fig.B

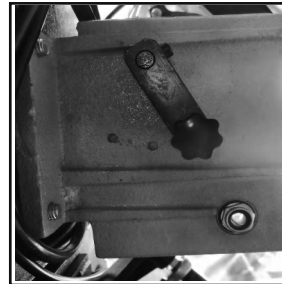


Fig. C

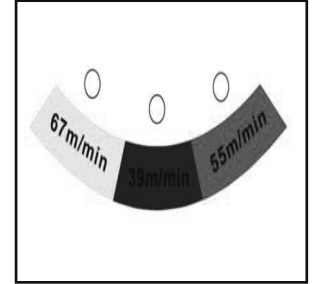


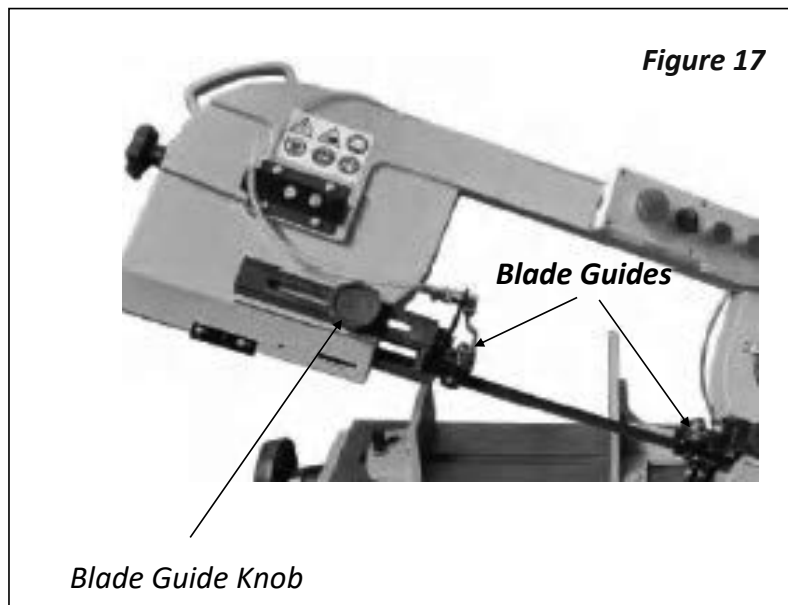
Figure 16. Adjustable handle for speed change

BLADE GUIDES

The blade guides should be positioned approximately $\frac{1}{4}$ " away from workpiece if possible. This will help ensure straight cuts by keeping the blade from twisting and drifting off the cut line.

To adjust blade guides:

1. Loosen blade guide knob shown in **Figure 17**.



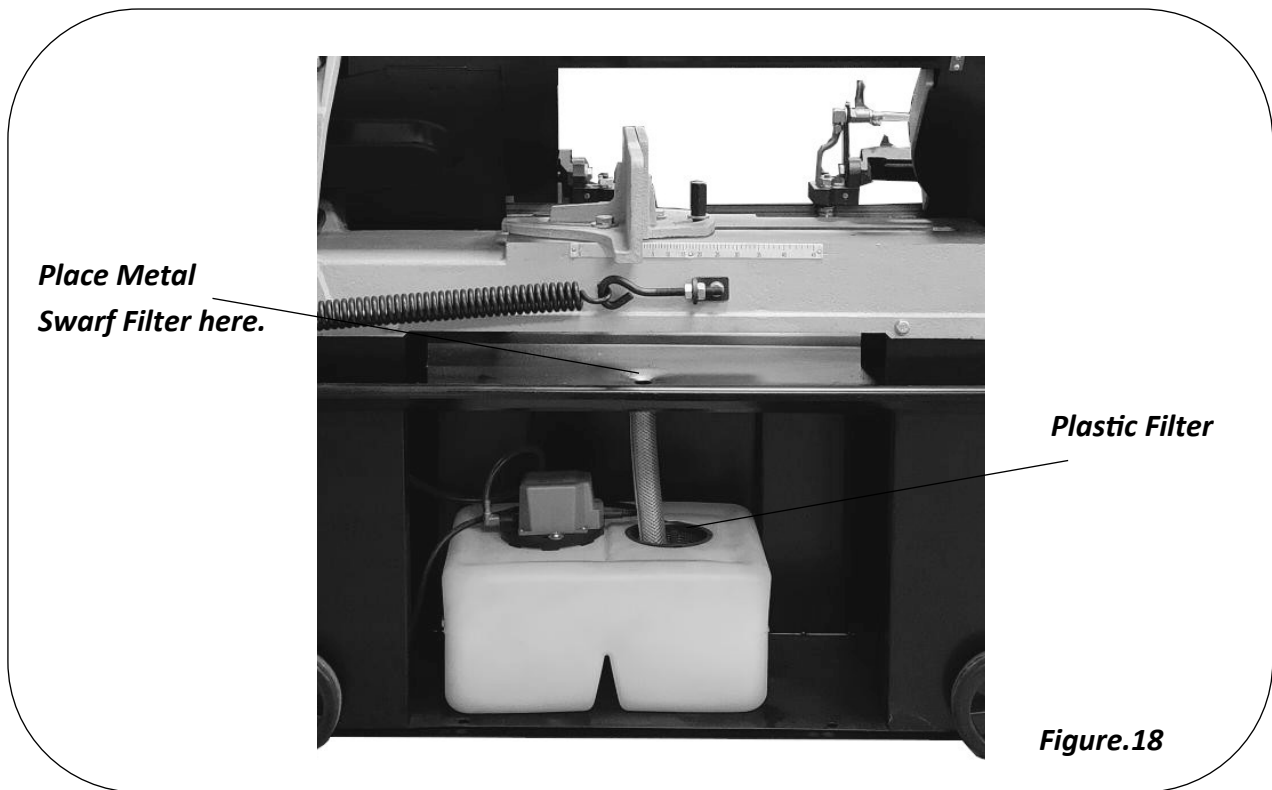
2. Slide rear blade guide as close to workpiece as possible.
3. Tighten knob.

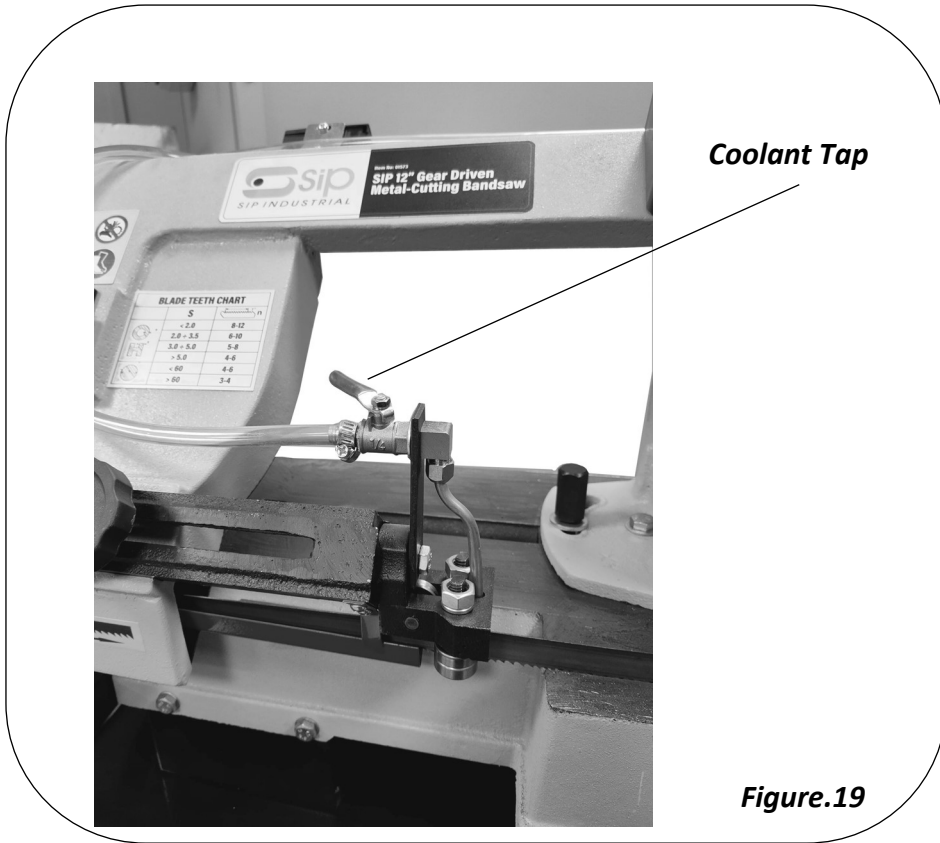
USING THE COOLANT PUMP



Note: We recommend the use of water soluble coolant, this will prolong the blade life and make the cut more efficient.

1. Slide the coolant tank from the rear of the bandsaw. **(Figure. 18)**
2. Make sure the filter is fitted and fill with fresh coolant.
3. Slide the coolant tank back into the bandsaw base.
4. Make sure the coolant hose is over the filter.
5. Place the metal swarf filter over the coolant return hole in the bandsaw tray (item F page 10)
6. Open the coolant tap. **(Figure.19)**
7. Turn the coolant on at the saw control panel. (see page 8 item 2)
8. The coolant will start to pump when the saw start button is pressed. (See page 8 item 4)
9. The flow can be controlled by using the lever on the coolant tap to restrict the flow. **(Figure.19)**





FEED RATE

The speed at which the saw blade will cut through a workpiece is controlled by blade type, feed rate, and feed pressure.

To set feed rate:

1. Raise bow to maximum height to remove spring tension. Close ON/OFF valve to lock bow in place.
2. Adjust feed pressure tension spring by rotating adjustment nut (see **Figure 20**). Tighten enough to remove play but not enough to apply tension to spring.

Note: *This spring adjustment is an initial setting. Depending on cutting circumstances, you will have to fine-tune the feed pressure with this adjustment. Increasing the spring tension will reduce the feed pressure.*

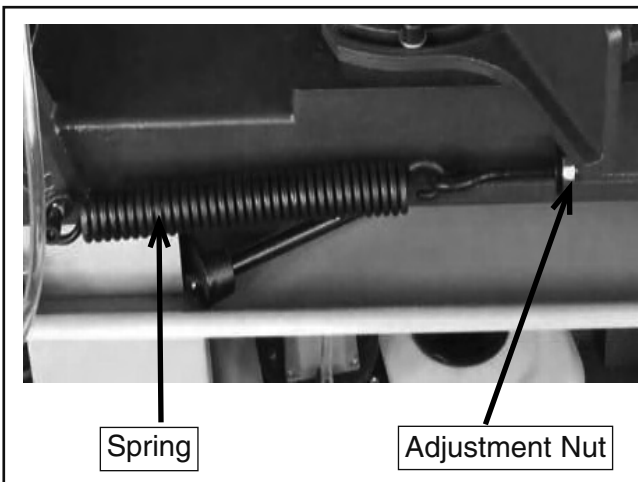


Figure 20. Location of adjustment nut.

3. Clamp workpiece in table vice.
4. Close feed ON/OFF valve shown in **Figure 21**, to lock the bow.
Position the blade a few inches above the workpiece.

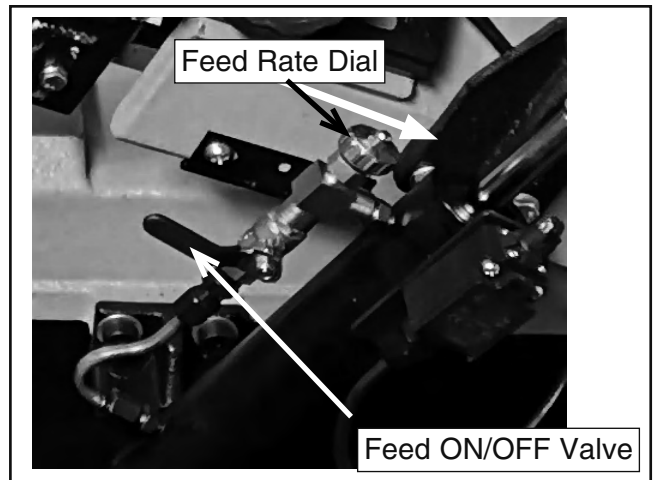


Figure 21. Location of feed ON/OFF valve.

5. With correct saw blade and blade speed selected, turn saw and lubricant pump **ON**.
6. Open the ON/OFF valve, then slowly rotate the feed rate dial clockwise to a slow feed rate until saw begins to cut workpiece (see **Figure 19**).
7. Observe the metal swarf that is removed by the cut, and increase or decrease the feed rate according to the characteristics.

- If the swarf is tightly curled, warm shavings, brown to black in color, there is too much downward pressure.
- If the swarf is blue looking, the blade speed is too high.
- If the swarf is thin and powder-like, there is insufficient feed pressure. This will dull your blade rapidly.
- The best cut and feed rate will give you evenly shaped spiraled curls with very little color change, if any at all.

OPERATION TIPS

The following tips will help you safely and effectively operate your bandsaw, and help you get the maximum life out of your saw blades.

Tips for horizontal cutting:

- Use work stop to quickly and accurately cut multiple pieces of stock to same length.
- Clamp material firmly in vice jaws to ensure a straight cut through the material.
- Let blade reach full speed before engaging workpiece (see **Figure 22**. Never start a cut with blade in contact with workpiece.

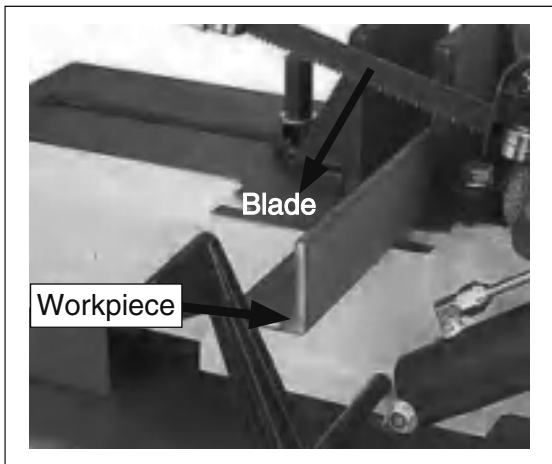


Figure 22. Correct blade starting position.

- Wait until blade has completely stopped before removing workpiece from vice, and avoid touching cut end - it could be very hot!
- Support long workpieces so they won't fall when cut, and flag ends of workpieces to alert passers-by of potential danger.
- Position blade guides approximately $\frac{1}{4}$ " from workpieces to minimize side-to-side blade movement.
- Use coolant when possible to increase blade life.



Loosen blade tension at end of each day to prolong blade life.



To reduce risk of shock or accidental startup, always disconnect machine from power supply before adjustments, maintenance, or service.

Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily Check:

- Loose mounting bolts.
- Damaged saw blade.
- Worn or damaged wires.
- Any other unsafe condition.
- Clean after each use.
- Proper blade tension.

Monthly Check:

- Lubricate vise screw.
- Check gear box lubrication.

Cleaning

Cleaning this machine is very easy; vacuum excess the metal chips and swarf, and wipe off the remaining dust with a dry cloth. If any residue has built up, use a cleaner to remove it. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning. Always wear correct PPE during cleaning.

Unpainted Cast Iron

Protect the unpainted cast iron surfaces on the table by wiping the table clean after every use.

LUBRICATION

An essential part of lubrication is cleaning the components before lubricating them.

This step is critical because grime and chips build up on lubricated components over time, which makes them hard to move.

Clean all exterior components in this section with mineral spirits, shop rags, and brushes before lubricating.

Vice Leadscrew

Lube Type.. ISO 68 General Purpose Equivalent

Lube AmountThin Coat

Lubrication Frequency..... 40 hrs. of Operation

To lubricate vice leadscrew:

1. Using vice handwheel, move vise as far forward as possible.
2. Use mineral spirits and a brush to clean existing grease and debris off of the vice lead-screw shown in **Figure 23**. Allow lead-screw to dry.
3. Apply thin coat of ISO 68 machine oil to exposed lead-screw threads, then move vice through its full range of motion several times to disperse oil along full length of lead-screw.

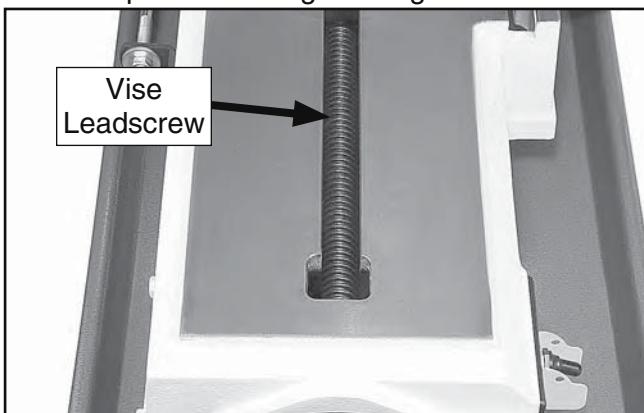


Figure 2 Location of vice leadscrew.

Gears

Lube Type..NLGI #2 Equivalent

Lube AmountThin Coat

Lubrication Frequency..... 90 hrs. of Operation

To lubricate gears:

1. Remove cover on gearbox (see **Figure 24**).

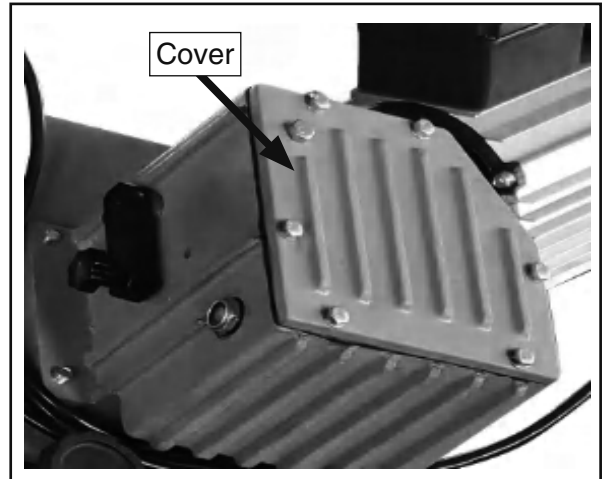


Figure 24 Location of gearbox cover.

2. Using small brush, apply thin coat of grease to headstock gears.
3. Re-install gearbox cover removed in **Step 1**.

GEARBOX OIL:

Lubricant Type ...GL4

AmountFill up to centre of the sight glass.

Check Frequency.....90hrs of operation



Follow reasonable lubrication practices as outlined in this manual. Failure to do so could lead to premature failure of machine and will void warranty.

BLADE CHANGE

Blades should be changed when they become dull, damaged, or when you are using materials that require a blade of a certain type or tooth count.

To change blade on bandsaw:

1. **DISCONNECT MACHINE FROM POWER!**
2. Raise bow of bandsaw to vertical position, close feed ON/OFF valve, and remove wheel access cover.
3. Remove blade guards.
4. Loosen tension handle shown in and slip blade off of wheels. **Figure 25**
5. Install new blade around bottom wheel and through both blade guide bearings.
6. With blade around bottom wheel, slip it around top wheel as shown in **Figure 26**, keeping blade between blade guide bearings
7. When blade is around both wheels, adjust so back of blade is against shoulder of wheels.
8. Complete blade change by following steps in **Blade Tension & Tracking**.



Note: It is possible to flip blade inside out, in which case the blade will be installed in the wrong direction. Check to make sure blade teeth are facing toward workpiece, as shown in **Figure 27**. Some blades have a directional arrow as a guide.

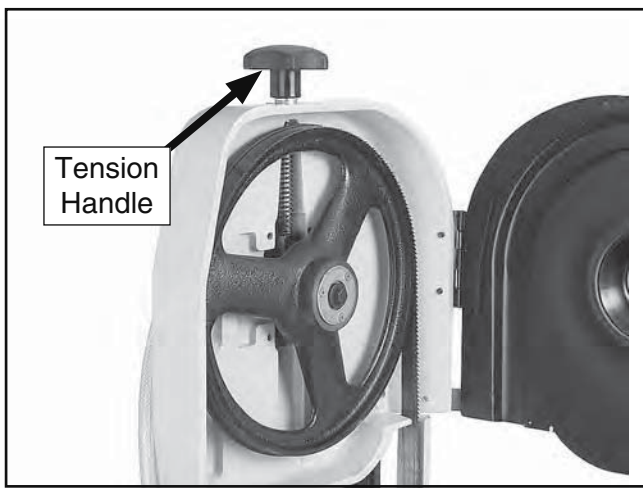


Figure 25. Location of tension handle.



Figure 26. Installing blade.

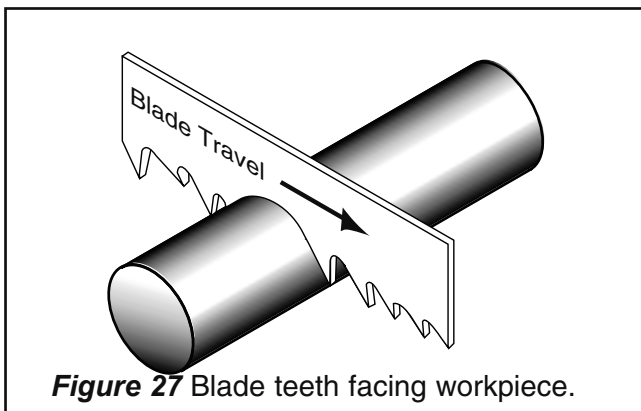


Figure 27 Blade teeth facing workpiece.



CUTTING HAZARD!

Bandsaw blades are sharp and awkward to hold. Protect your hands with heavy gloves when handling blade.

BLADE TENSION & TRACKING

Proper blade tension is essential to long blade life, straight cuts, and efficient cutting. The Model features a blade tension indicator to assist you with blade tensioning.

Two major signs that you do not have proper blade tension are: 1) the blade stalls in the cut and slips on the wheels, and 2) the blade frequently breaks from being too tight.

To loosen and tension blade on bandsaw:

1. Turn blade tension handle clockwise to tension blade
2. Turn blade tension handle anti-clockwise to loosen blade
The blade tracking has been properly set at the factory. The tracking will rarely need to be adjusted if the bandsaw is used properly.

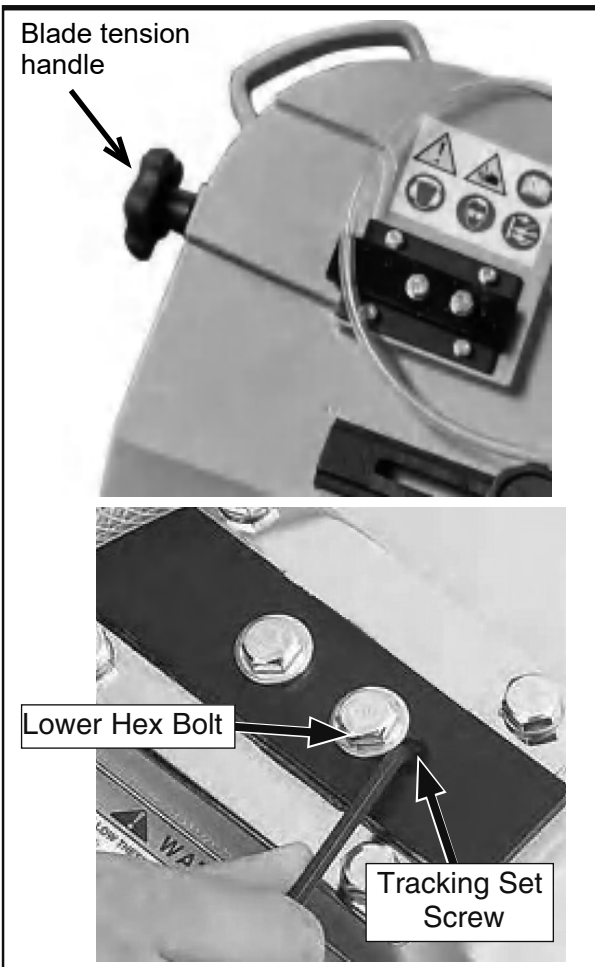


Figure 28 Blade tension / tracking controls.

To adjust blade tracking on bandsaw:

1. **DISCONNECT MACHINE FROM POWER!**
2. Position bandsaw in vertical position.
3. Open wheel access cover.
4. Loosen, but do not remove lower hex bolt in blade wheel tilting mechanism.
5. Loosen the blade tension.
6. Adjust set screw with a 4mm hex wrench **Figure 28**.
—Tightening set screw will move blade closer to shoulder of wheel.
—Loosening set screw will move blade away from shoulder.
7. Tension blade
8. Reconnect machine to power and turn ON bandsaw
—If blade tracks along shoulder of wheel (without rubbing), blade is tracking properly and this adjustment is completed.
—If blade walks away from shoulder of wheel or hits shoulder, repeat Steps 4-7 until blade tracks properly.
9. Turn OFF bandsaw.
10. Close blade guard and wheel access cover.



Loosen blade tension at end of each day to prolong blade life.

SQUARING THE BLADE

It is always a good idea during the life of your saw to check and adjust this setting. This adjustment will improve your cutting results and extend the life of your blade.

To square blade to bed of table:

1. **DISCONNECT MACHINE FROM POWER!**
2. Lower head of the bandsaw until it contacts horizontal stop.
3. Place a square on table bed and against edge of blade (see **Figure 29**), and check different points along length of table between blade guides.

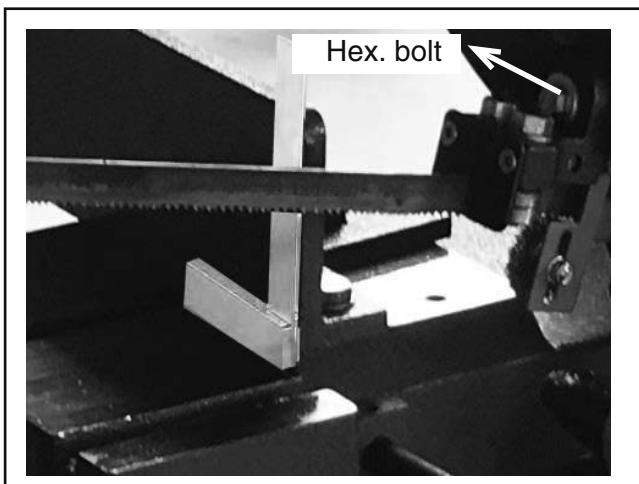


Figure 29. Square placed on table bed against edge of blade.

4. Loosen hex. bolt shown in **Figure 27**, and rotate blade guide until blade is vertical to bed.
Note: Both blade guides can be adjusted to achieve the results you want.
5. Tighten cap screw.

BLADE GUIDE BEARINGS

The blade guide bearings come adjusted from the factory and the need for adjustment should rarely occur. Uneven blade wear and crooked cuts may be the result of improper adjustment. Each bearing assembly has an eccentric bushing (see **Figure 30**) that allows the distance between the blade and bearings to be adjusted. The bearings are secured in place by a hex nut and a lock washer.

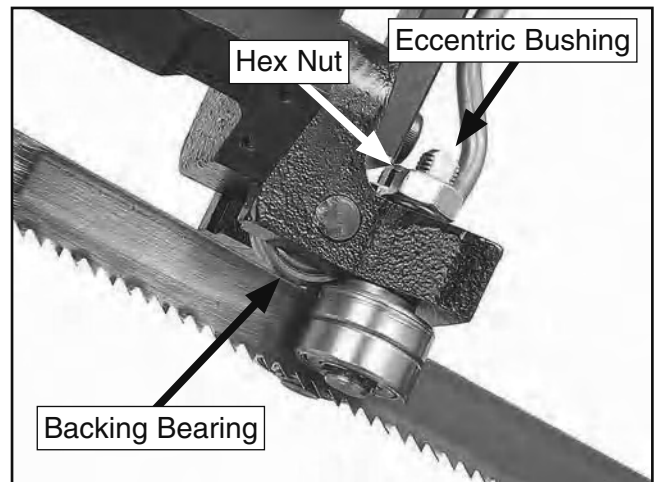


Figure 30 Guide bearing components.

Before adjusting the blade guide bearings, make sure that you have squared the blade to the table as discussed in the previous section.

To adjust blade guide bearings:

1. **DISCONNECT MACHINE FROM POWER!**
2. Position vise to 90°, then lock in place.
3. Put a machinist's square against face of vise and move it over to blade. The square should evenly touch both the face of vise and blade. If it does, skip ahead to **Step 6**.
—If the square does not evenly touch blade, but it does evenly touch vise, continue with next step.
4. Loosen hex nuts that secure eccentric bushings attached to guide bearings.
5. Adjust bearings as necessary to force blade 90° to vise, then tighten hex nuts attached to bearings that are forcing the blade to 90°.
6. Check to see if any bearings are not touching blade evenly. If so, loosen hex nuts and adjust eccentric bushing so contact surface of bearing touches blade evenly.
Note: Since the bearings twist the blade into position, it is acceptable if there is 0.001"-0.002" gap between the blade and the front or back of the bearing. Just make sure not to squeeze the blade too tightly with the bearings. After the guide bearings are set, you should be able to rotate guide bearings (although they will be stiff) with your fingers. The backing bearing is not adjustable and should make light contact with blade.

TROUBLESHOOTING

Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure.

Note: Please gather the serial number and manufacture date of your machine before calling.

MOTOR & ELECTRICAL

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Plug/receptacle is at fault/ wired incorrectly. 2. Power supply is at fault/switched OFF. 3. Motor wired incorrectly. 4. Start capacitor is at fault. 5. Wall fuse/circuit breaker is blown/tripped. 6. Motor ON/OFF switch is at fault. 7. Wiring open/has high resistance. 8. Motor is at fault. 	<ol style="list-style-type: none"> 1. Test for good contacts; correct wiring. 2. Ensure hot lines have correct voltage on all legs and main power supply is switched ON. 3. Correct motor wiring. 4. Test/replace. 5. Ensure correct size for machine load; replace weak breaker. 6. Replace faulty ON/OFF switch. 7. Check/fix broken, disconnected, or corroded wires. 8. Test/repair/replace.
Machine stalls or is underpowered.	<ol style="list-style-type: none"> 1. Wrong blade for workpiece material. 2. Wrong workpiece material. 3. Feed rate/cutting speed too fast for task. 4. Blade is slipping on wheels. 5. Low power supply voltage. 6. Motor bearings are at fault. 7. Plug/receptacle is at fault. 8. Motor connection is wired incorrectly. 9. Motor has overheated. 10. Motor is at fault. 	<ol style="list-style-type: none"> 1. Use blade with correct properties for your type of cutting. 2. Use metal with correct properties for your type of cutting. 3. Decrease feed rate/cutting speed. 4. Adjust blade tracking and tension. 5. Ensure hot lines have correct voltage on both legs. 6. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 7. Test for good contacts; correct the wiring. 8. Correct motor wiring connections. 9. Clean off motor, let cool, and reduce workload. 10. Test/repair/replace.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> 1. Motor fan is rubbing on fan cover. 2. Blade is at fault. 3. Gearbox is at fault. 4. Wrong blade and/or speed too slow. 	<ol style="list-style-type: none"> 1. Replace dented fan cover; replace loose/damaged fan. 2. Replace/resharpen blade. 3. Rebuild gearbox for bad gear(s)/bearing(s). 4. Change blade and/or speed.



To reduce risk of shock or accidental startup, always disconnect machine from power supply before adjustments, maintenance, or service.

BANDSAW OPERATIONS

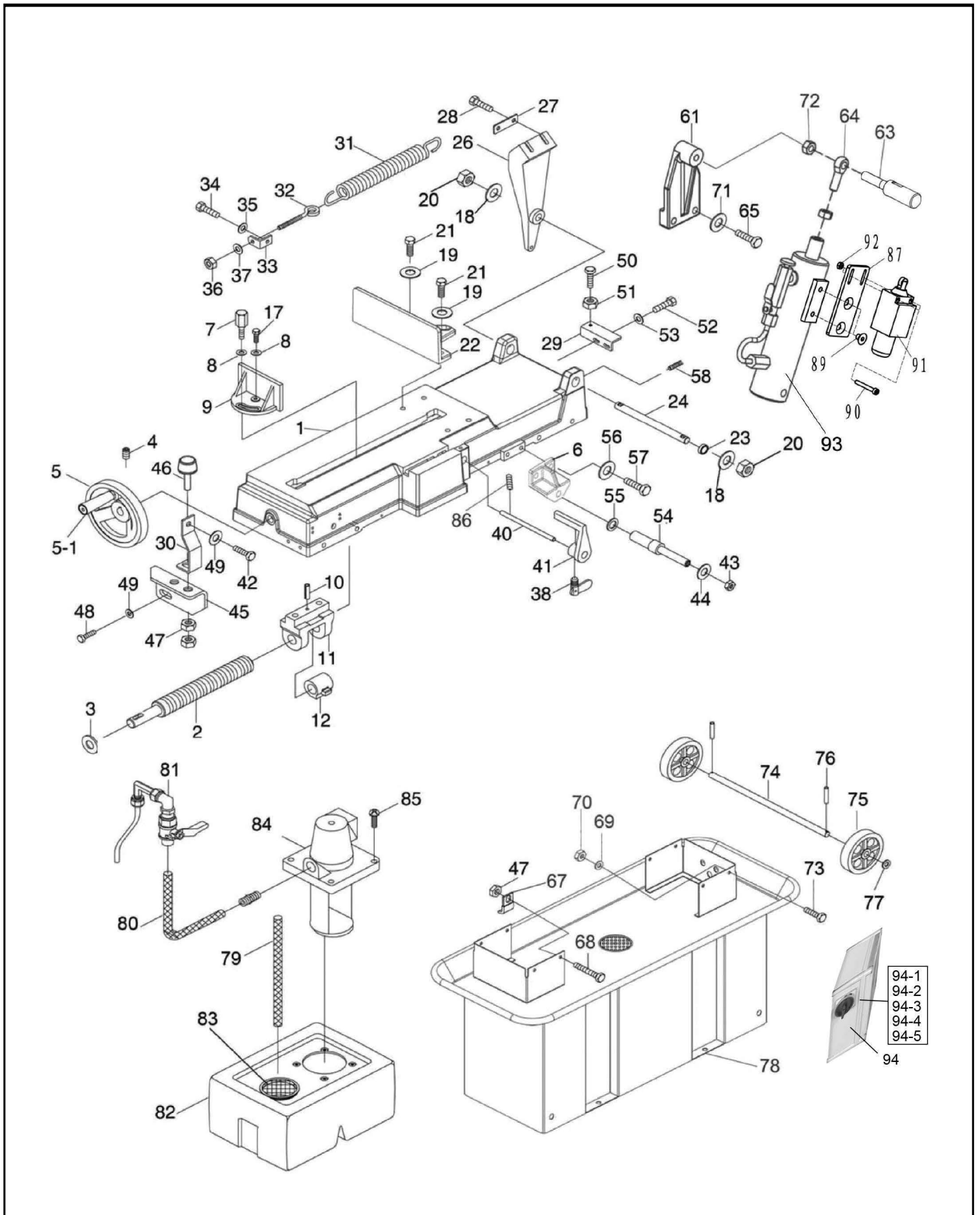
Symptom	Possible Cause	Possible Solution
Machine is loud when cutting or bogs down in the cut.	<ol style="list-style-type: none"> Excessive feed rate. Blade TPI is too great, or material is too coarse. 	<ol style="list-style-type: none"> Refer to Feed Rate on Page 15, or Changing Blade Speed on Page 14, and adjust as required. Refer to Blade Selection on Page 11 and adjust as required.
Blades break often.	<ol style="list-style-type: none"> Blade is not tensioned correctly. Workpiece is loose in vise. Excessive feed rate. Blade TPI is too great, or material is too coarse. Blade is rubbing on wheel flange. Bandsaw is being started with blade resting on workpiece. Guide bearings are misaligned. Blade is too thick, or blades are of low quality. 	<ol style="list-style-type: none"> Check to see that blade is not excessively tight or too loose. Clamp workpiece more tightly, or use a jig to hold workpiece. Refer to Feed Rate on Page 22, or Changing Blade Speed on Page 19, and adjust as required. Refer to Blade Selection on Page 16, and adjust as required. Refer to Blade Tension & Tracking on Page 27, and adjust as required. Start bandsaw and then slowly lower bow by setting feed rate. Refer to Blade Guides on Page 28, and adjust as required. Use a higher quality blade.
Blade dulls prematurely.	<ol style="list-style-type: none"> Cutting speed is too fast. Blade TPI is too great, or material is too coarse. Excessive feed rate. Workpiece has hard spots, welds, or scale is on material. Blade is twisted. Blade is slipping on wheels. 	<ol style="list-style-type: none"> Refer to Changing Blade Speed on Page 19, and adjust as required. Refer to Blade Selection on Page 16, and adjust as required. Refer to Feed Rate on Page 22, or Changing Blade Speed on Page 19, and adjust as required. Increase feed pressure, and reduce cutting speed. Replace blade. Refer to Blade Tension & Tracking on Page 27, and adjust as required.
Teeth are ripping from the blade.	<ol style="list-style-type: none"> Feed pressure is too heavy and blade speed is too slow; or blade TPI is too coarse for workpiece. Workpiece is vibrating in vise. Blade gullets are loading up with chips. 	<ol style="list-style-type: none"> Refer to Blade Selection on Page 16 and decrease feed pressure. Refer to Feed Rate on Page 22, and adjust as required. Reclamp workpiece in vise, and use a jig if required. Use a coarser-tooth blade.
Cuts are crooked.	<ol style="list-style-type: none"> Feed pressure is too high. Guide bearings are out of adjustment, or too far away from workpiece. Blade tension is low. Blade is dull. Blade speed is wrong. 	<ol style="list-style-type: none"> Refer to Feed Rate on Page 22, and adjust as required. Refer to Blade Guides on Page 28 and replace or adjust. Refer to Blade Tension & Tracking on Page 27, and adjust as required. Refer to Blade Change on Page 26 and replace blade. Refer to Changing Blade Speed on Page 19, and adjust as required.



To reduce risk of shock or accidental startup, always disconnect machine from power supply before adjustments, maintenance, or service.

EXPLODED DRAWING

PARTS DRAWING-A



PARTS LIST

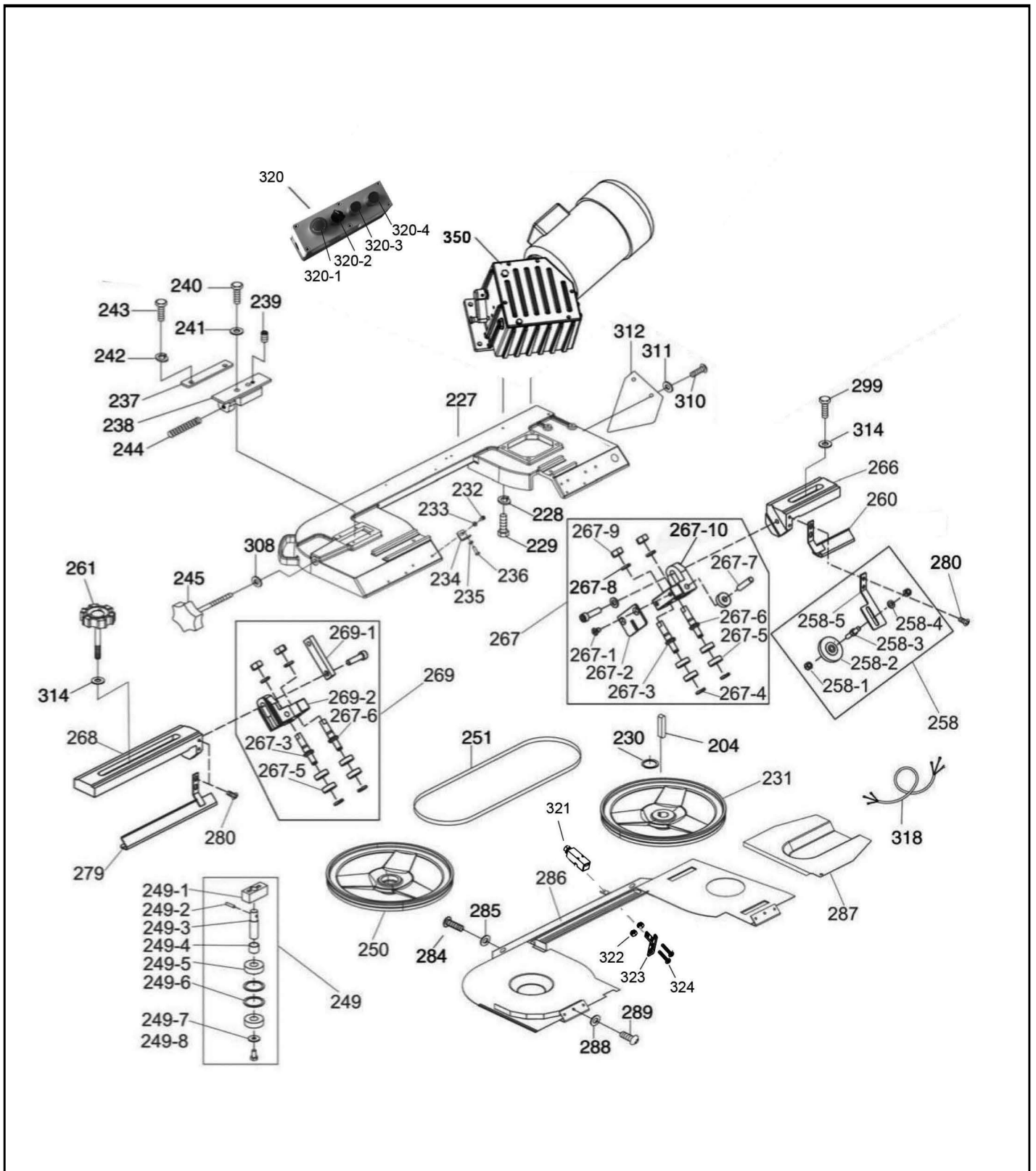
PARTS DRAWING-A

PART NO	DESCRIPTION
1	TABLE
2	ACME SCREW
3	SPACER
4	SET SCREW M6X10
5	WHEEL
5-1	WHEEL HANDLE
6	SUPPORT BRACKET
7	DRAGGING HANDLE
8	WASHER 10
9	VICE JAW BRACKET (REAR)
10	SPRING PIN 6X20
11	BRACKET
12	QUICK NUT
17	HEX. BOLT M10X35
18	WASHER 16
19	WASHER 12
20	LOCK NUT M16
21	HEX. BOLT M12X35
22	VICE JAW BRACKET (FRONT)
23	BUSHING
24	SUPPORT ROD
26	PIVOT BRACKET
27	PLATE
28	HEX. BOLT M10X35
29	SUPPORT PLATE
30	FIXED PLATE
31	SPRING
32	SPRING ADJUSTING ROD
33	SPRING HANDLE BRACKET
34	HEX. BOLT M8X16
35	WASHER 8
36	NUT M10
37	WASHER 10
38	LOCK BOLT
40	WORK STOP ROD
41	WORK STOP
42	SCREW M6X12
43	LOCK NUT M10
44	WASHER 10
45	SUPPORT PLATE
46	BUFFER BLOCK
47	NUT M8
48	HEX. BOLT M8x16
49	WASHER 8
50	HEX. BOLT M8x25
51	NUT M8

52	HEX. BOLT M8x16
53	WASHER 8
54	CYLINDER SUPPORT ROD
55	WASHER
56	WASHER 10
57	BOLT M10x30
58	SET SCREW M8x12
61	CYLINDER BRACKET
62	CYLINDER
63	SPECIAL BOLT
64	JOINT BEARING
65	HEX. BOLT M8*30
67	KEEP PLATE
68	HEX. BOLT M8*30
69	WASHER 8
70	NUT M8
71	WASHER 8
72	NUT M10
73	HEX. BOLT M8*30
74	WHEEL ROD
75	WHEEL
76	COTTER 2.5X25
77	WASHER 16MM
78	COOLANT FRAME
79	HOSE
80	HOSE
81	NOZZLE COCK
82	COOLANT TANK
83	FILTRATION
84	COOLING PUMP
85	PAN HEAD SCREW M6x12
86	SET SCREW M6X12
87	SWITCH BRACKET
89	SUNK HEAD SCREW M6x8
90	ALLEN SCREW M4X30
91	LIMIT SWITCH
92	NUT M4
93	HYDRAULIC CYLINDER
94	PLASTIC BOX NOT INCLUDING ELECTRIC PARTS INSIDE
94-1	POWER SWITCH
94-2	KM1 CONTACTOR FOR MOTOR
94-3	KM2 CONTACTOR FOR PUMP
94-4	TC TRANSFORMER
94-5	FR1 THERMAL PROTECTOR

EXPLODED DRAWING

PARTS DRAWING-B



PARTS LIST

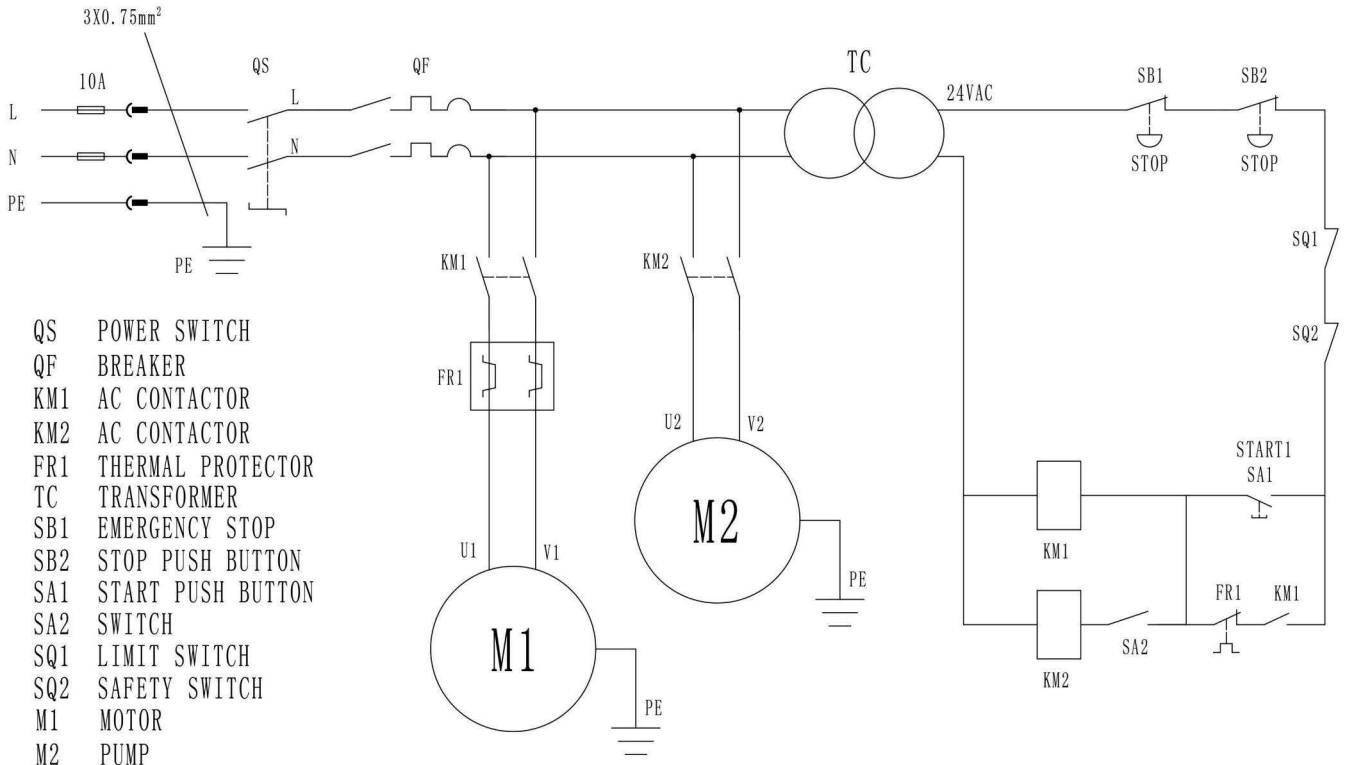
PARTS DRAWING-B

PART NO	DESCRIPTION
202	SET SCREW M8x12
204	KEY 6*6*20
227	BODY FRAME
228	WASHER 10
229	HEX. BOLT M10x35
230	SPACER
231	DRIVE WHEEL
237	SLIDING PLATE
238	BLADE TENSION SLIDING BLOCK
239	SET SCREW M8x20
240	HEX. BOLT M8x40
241	WASHER 8
242	WASHER 6
243	HEX. BOLT M6x16
244	SPRING
245	BLADE ADJUSTABLE KNOB
249	WHEEL SHAFT ASSEMBLY
249-1	IDLER WHEEL SEAT
249-2	COTTER 5X22
249-3	WHEEL SHAFT
249-4	SPACER
249-5	BEARING 6203
249-6	CIRCLIP FOR HOLE
249-7	BIG WASHER 8
249-8	HEX. BOLT M8X16
250	IDLER WHEEL
251	BLADE 0.9*19*2360
258	BRUSH ASSEMBLY
258-1	LOCK NUT M8
258-2	BRUSH
258-3	BRUSH SHAFT
258-4	WASHER 8
258-5	BRUSH BRACKET
260	BLADE COVER, REAR
261	KNOB BOLT
266	ADJUST BRACKET, REAR
267	GUIDE BLOCK ASSEMBLY, REAR
267-1	SUNK HEAD SCREW
267-2	SPLASH GUARD

267-3	ECCENTRIC SHAFT
267-4	CIRCLIP FOR SHAFT
267-5	BEARING
267-6	BEARING SHAFT
267-7	PIN
267-8	WASHER
267-9	LOCK NUT M8
267-10	GUIDE BLOCK, REAR
268	ADJUST BRACKET, FRONT
269	GUIDE BLOCK ASSEMBLY, FRONT
269-1	BRACKET FOR HOSE
269-2	GUIDE BLOCK, FRONT
279	BLADE COVER, FRONT
280	SCREW M5x10
284	SCREW M6x12
285	WASHER 6
286	BLADE BACK COVER
287	DRIVE WHEEL COVER
288	WASHER 6
289	PAN HEAD SCREW M6x12
290	PAN HEAD SCREW M6x12
299	HEX. BOLT M10x30
308	WASHER 10
309	MOTOR
310	SCREW M6x12
311	WASHER 6
312	SUPPORT PLATE
314	WASHER 10
318	POWER SWITCH CORD
319	POWER CABLE
320	SWITCH BOX W/O ELECTRIC PARTS
320-1	EMERGENCY STOP BUTTON
320-2	PUMP ON/OFF BUTTON
320-3	MOTOR ON BUTTON
320-4	MOTOR OFF BUTTON
321	LIMIT SWITCH
322	WASHER
323	KEY FOR LIMIT SWITCH
324	BOLT
350	MOTOR W/GEAR DRIVING SYSTEM (REFER TO DRAWING-C FOR DETAILS)

WIRING DIAGRAM

SINGLE PHASE 230V, 50Hz



- QS POWER SWITCH
- QF BREAKER
- KM1 AC CONTACTOR
- KM2 AC CONTACTOR
- FR1 THERMAL PROTECTOR
- TC TRANSFORMER
- SB1 EMERGENCY STOP
- SB2 STOP PUSH BUTTON
- SA1 START PUSH BUTTON
- SA2 SWITCH
- SQ1 LIMIT SWITCH
- SQ2 SAFETY SWITCH
- M1 MOTOR
- M2 PUMP

Declaration of Conformity

We

SIP (Industrial Products) Ltd
Gelders Hall Road
Shepshed
Loughborough
Leicestershire
LE12 9NH
England

As the manufacturer within the UK, England, Scotland & Wales, declare that the

SIP 12" Metal Cutting Bandsaw Gearbox Transmission - SIP Code 01573

Conforms to the requirements of the following directive(s), as indicated.

Supply of Machinery (Safety) Regulations 2008
Electrical Equipment (Safety) Regulations 2016
Electromagnetic Compatibility Regulations 2016
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

And the relevant harmonised standard(s), including

EN 55014-1:2017+A11
EN 55014-2:2015
EN IEC 61000-3-2:2019
EN 61000-3-3:2013+A1



Signed:

Mr P. Ippaso - Director - SIP (Industrial Products) Ltd

Date: 22/04/2023



Declaration of Conformity

We

SIP (Machinery Europe) Ltd
ASM Chartered Accountants
First Floor Block One
Quayside Business Park
Dundalk
County Louth
Republic of Ireland

As the manufacturer's authorised representative within the EC declare that
the

SIP 12" Metal Cutting Bandsaw Gearbox Transmission - SIP Code 01573

Conforms to the requirements of the following directive(s), as indicated.

2006/42/EC	Machinery Directive
2006/95/EC	Low Voltage Directive
2004/108/EC	EMC Directive
2011/65/EU & (EU)2015/863	RoHS Directive

And the relevant harmonised standard(s), including

EN 55014-1:2017+A11
EN 55014-2:2015
EN IEC 61000-3-2:2019
EN 61000-3-3:2013+A1

Signed: 
.....

Mr P. Ippaso - Managing Director - SIP (Machinery Europe) Ltd
Date: 22/04/2023.





Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

Never dispose of electrical equipment or batteries in with your domestic waste. If your supplier offers a disposal facility please use it or alternatively use a recognised recycling agent. This will allow the recycling of raw materials and help protect the environment.

**FOR HELP OR ADVICE ON THIS
PRODUCT PLEASE CONTACT
YOUR DISTRIBUTOR, OR SIP
DIRECTLY ON:
TEL: 01509 500400
EMAIL: sales@sip-group.com
or
customerservice@sip-group.com
www.sip-group.com**