

Clarke®

METALWORKER



7" METAL CUTTING BANDSAW

MODEL NO: CBS7MC

PART NO: 6460123

OPERATION & MAINTENANCE INSTRUCTIONS

UK
CA | CE



ORIGINAL INSTRUCTIONS

GC0922 Rev 1

INTRODUCTION

Thank you for purchasing this CLARKE Bandsaw which is designed for DIY & light industrial use.

Before attempting to operate the machine it is essential that you read this manual thoroughly and carefully follow all instructions given. In doing so you will ensure the safety of yourself and that of others around you and you can look forward to the product giving you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

ENVIRONMENTAL PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All unwanted accessories and packaging should be sorted and taken to a recycling centre for disposal in a manner which is compatible with the environment.

ENVIRONMENTAL RECYCLING POLICY



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste but according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

SPECIFICATIONS

Weight	135kg
Dimensions Folded Down (L x W x H)	1220 x 495 x 1001mm
Dimensions Folded Up (L x W x H)	1220 x 495 x 1630mm
Table Height from Floor	610mm
Tilt Angle	0 - 45°
Maximum Cutting Capacity@0°	Height: 180mm Width: 270mm
Maximum Cutting Capacity@45°	Height: 180mm Width: 120mm
Throat/Cutting Width	335mm
Blade Speed (4 speeds)	22, 33, 45, 65m/min
Blade Size	2360 x 19 x 0.9mm - 6 tpi
Supply Cable Length	1900mm
Sound Power Level Measured (Lw)	85.8dB(A) whilst cutting
Operating Voltage	230V - 50Hz
Output Wattage	1100W
IP Rating	IP20

SAFETY SYMBOLS

	Read the manual and safety instructions before use		Wear eye protection		Wear protective mask
	Wear ear protection		Wear protective gloves		Disconnect from Power Supply When Not in Use
	Warning: Electricity		Warning: Sharp Blade		Warning: Risk of Trapping Hand/ Fingers

SAFETY WARNINGS



CAUTION: FAILURE TO FOLLOW THESE PRECAUTIONS COULD RESULT IN PERSONAL INJURY, AND/OR DAMAGE TO PROPERTY.

WORK ENVIRONMENT

1. Please read these instructions carefully and retain for future reference.
2. **ALWAYS** keep the work area clean and well lit. Cluttered and dark areas invite accidents.
3. **DO NOT** operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
4. This machine is designed for indoor environments only and must not be used for other purposes.
5. **ALWAYS** keep children and bystanders away while operating a power tool. Anyone entering the work area must wear personal protective equipment (PPE). Distractions can cause you to lose control and fragments of work or a broken blade may fly away and cause injury.
6. **ALWAYS** store power tools correctly when not in use. Abrasive products should be stored in a dry, secure place out of the reach of children.

ELECTRICAL SAFETY

1. Power tool plugs must match the outlet. **NEVER** modify the plug in any way. **DO NOT** use adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce the risk of electric shock.
2. **DO NOT** expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
3. **DO NOT** abuse the power cable. **NEVER** use the cable for carrying, pulling or unplugging the power tool. Keep the cable away from heat, oil, sharp edges or moving parts. Damaged or entangled cables increase the risk of electric shock.
4. **ALWAYS** position the power cable so that it cannot be inadvertently pulled or pinched, and where it does not cause a trip hazard.
5. **DO NOT** use extension power cables.
6. Before cleaning or maintenance tasks, **ALWAYS** unplug the machine from the power supply.

PERSONAL SAFETY

1. Stay alert, watch what you are doing and use common sense when operating a power tool. **DO NOT** use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in personal injury.
2. **ALWAYS** use personal protective equipment (PPE). Wear eye protection, safety equipment such as dust mask, non-slip safety shoes, hearing protection and a workshop apron capable of stopping small abrasive or workpiece fragments.
3. **AVOID** accidental starting. Ensure the switch is in the off position before plugging in. Plugging in power tools that have the switch in the on position invites accidents.
4. **ALWAYS** remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a moving part of the power tool may result in personal injury.
5. **DO NOT** overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
6. Keep your hair and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
7. **AVOID** operator fatigue. Stop the power tool at regular intervals for a short break to rest hands and arms.
8. This machine must only be used by adults. Children **SHOULD NOT** be allowed to play with this product.

POWER TOOL USE AND CARE

1. **DO NOT** force the machine. Use the correct power tool for your application. It will do a better and safer job at the rate for which it was designed.
2. **DO NOT** use the power tool if the switch does not turn it on or off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
3. **ALWAYS** disconnect the power tool from the power supply before making any adjustments, changing accessories, or storing the tool. These measures will reduce the risk of the power tool starting accidentally.
4. Store power tools out of the reach of children and **DO NOT** allow persons unfamiliar with these instructions to operate the power tool. Power tools are potentially dangerous in the hands of untrained users.
5. Maintain power tools in top condition. Keep tools/ machines clean for the best and safest performance. Check for misalignment or binding of moving parts, broken parts, or any condition that may affect the power

tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools. If in doubt, **DO NOT** use the machine. Consult your local CLARKE dealer.

6. Machine cleanliness. **DO NOT** allow the ventilation slots in the machine/motor to become blocked with dust.
7. Regularly clean the power tool's air vents. The motor fan will draw dust inside the housing and accumulation of material could cause electrical or fire hazards.
8. Maintain your tools. Keep all handles and grips dry and clean.

SERVICING

1. When necessary, have your power tools serviced or repaired by a qualified person using identical replacement parts (see pages 36-41). This will ensure that the safety of the power tool is maintained.

ADDITIONAL PRECAUTIONS FOR BANDSAWS

1. **ALWAYS** check safety guards are in place and functioning correctly before switching the machine on.
2. **ALWAYS** use the appropriate saw blade for the material being cut.
3. **NEVER** use the machine if the electric cable, plug or motor is in poor condition.
4. **NEVER** touch the blade immediately after use, when changing the blade always allow time for it to cool.
5. **NEVER** use bent or cracked blades. (Replacement blades are available from your CLARKE dealer, see page 32).
6. When cutting round stock, use a suitable jig or fixture to keep the work from turning.
7. **ALWAYS** ensure the blade is fully tightened and correctly adjusted before use.
8. **ALWAYS** switch the machine off immediately the task is completed.

ELECTRICAL CONNECTIONS



WARNING! Read these electrical safety instructions thoroughly before connecting the product to the mains supply.

Before switching the product on, make sure that the voltage of your electricity supply is the same as that indicated on the rating plate. This product is designed to operate on 230VAC 50Hz. Connecting it to any other power source may cause damage.

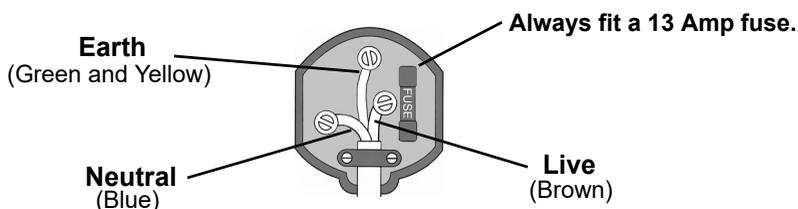
This product may be fitted with a non-rewireable plug. If it is necessary to change the fuse in the plug, the fuse cover must be refitted. If the fuse cover becomes lost or damaged, the plug must not be used until a suitable replacement is obtained.

If the plug has to be changed because it is not suitable for your socket, or due to damage, it should be cut off and a replacement fitted, following the wiring instructions shown below. The old plug must be disposed of safely, as insertion into a mains socket could cause an electrical hazard.

If the colours of the wires in the power cable of this product do not correspond with the markings on the terminals of your plug, proceed as follows.

- The **Blue** wire must be connected to the terminal which is marked **N** or coloured **Black**.
- The **Brown** wire must be connected to the terminal which is marked **L** or coloured **Red**.
- The **Yellow and Green** wire must be connected to the terminal which is marked **E** or  or coloured **Green**.

Plug must be BS1363/A approved.

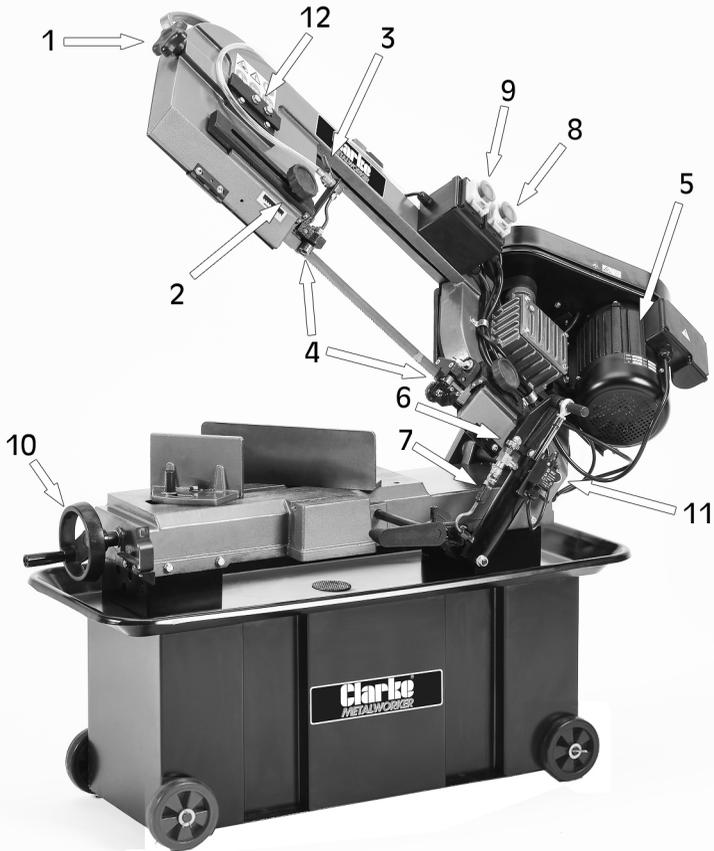


Ensure that the outer sheath of the cable is firmly held by the clamp

We strongly recommend that this machine is connected to the mains supply via a Residual Current Device (RCD)

If in any doubt, consult a qualified electrician. **DO NOT** attempt any repairs yourself.

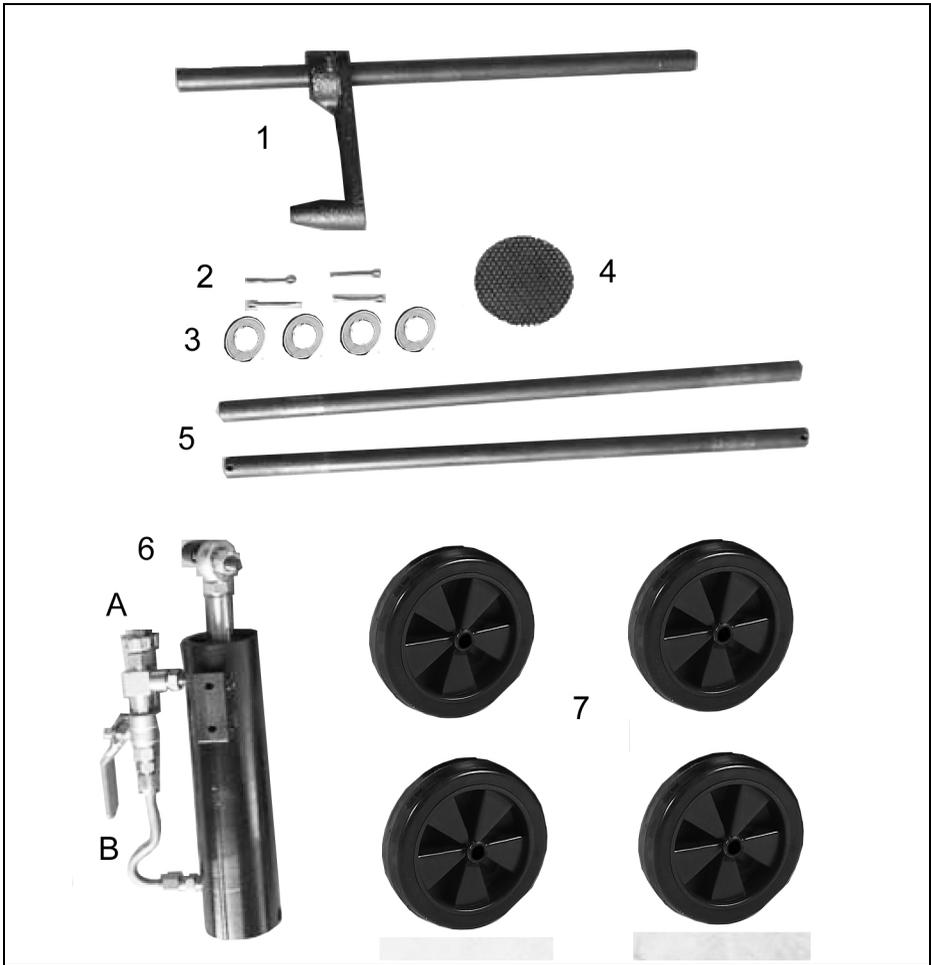
OVERVIEW



Item	Description
1	Blade Tension Handle
2	Blade Guide Adjustment Knob
3	Lubricant Control Valve
4	Blade Guides
5	Motor
6	Feed Rate Control Knob

Item	Description
7	Feed ON/OFF Valve Lever
8	Lubricant Pump ON/OFF Switch
9	Saw Motor ON/OFF Switch
10	Vice Handwheel
11	Automatic Shut Off Switch
12	Blade Tracking Controls

ASSEMBLY PARTS



Item	Description
1	Work Stop and Rod
2	4 x 3mm x 30mm Cotter Pin
3	4 x 5/8" Washer
4	Swarf Screen
5	2 x Wheel Axle

Item	Description
6	Hydraulic Cylinder
6A	Feed Rate Control Knob
6B	Feed ON/OFF Valve Lever
7	4 x Wheel & Covers

ASSEMBLY & SET UP

The bandsaw comes partly assembled. Unpack and lay out all the items and identify each one, referring to pages 9 & 10.

If any parts are missing, immediately contact the dealer where the product was purchased.

CLEAN UP

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.

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

BEFORE CLEANING, GATHER THE FOLLOWING:

- Disposable rags/cloth
- Cleaner/degreaser
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

BASIC STEPS FOR REMOVING RUST PREVENTATIVE

1. Coat the rust preventive with a liberal amount of cleaner/degreaser and let it soak for 5-10 minutes.
2. Wipe off the surface. If the 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 a rag.
3. Repeat steps 1 & 2 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.

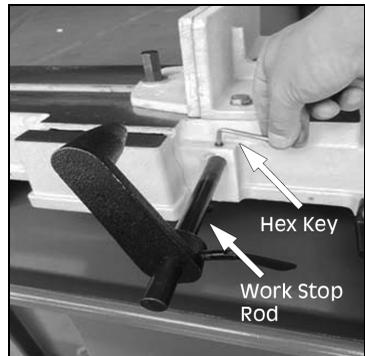
1. Unbolt the shipping bracket shown here.

NOTE: Retain all components, as the bracket can be reinstated if the bandsaw needs transporting/ shipping in the future.

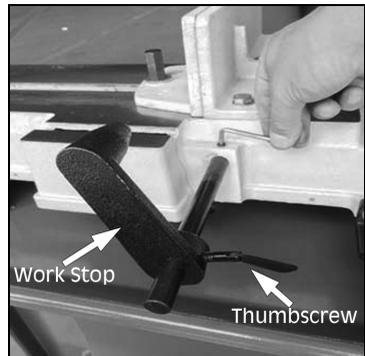


INSTALLING WORK STOP

1. Insert the work stop rod through the hole in the base and lock in place with a hex key and screw.
2. Slide work stop over the rod.

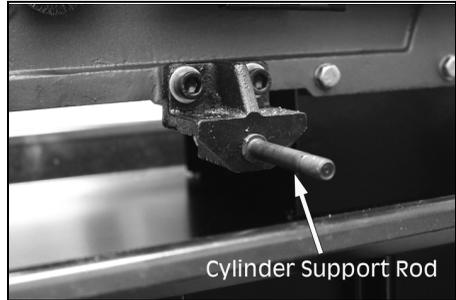


3. Measuring from the outside of the blade, tighten the thumbscrew to set the work stop at the desired length.

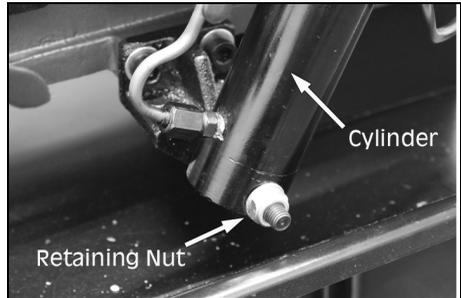


INSTALLING THE HYDRAULIC CYLINDER

1. Unscrew the retaining nut from the cylinder support rod and tighten the bolts that hold it to the side of the machine using a 17mm spanner.

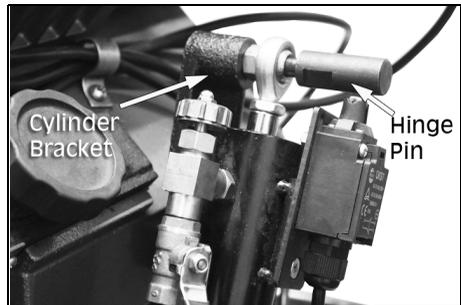


2. Slide the cylinder onto the rod, as shown, with the feed rate control knob pointing upwards and refit the retaining nut into position at the end of the support rod.



3. Insert the hinge pin through the hole in the end of the piston and move the cylinder upwards towards the cylinder bracket attached to the main arm.

NOTE: In order to screw the hinge pin into the bracket, it may be necessary to depress the piston. Alternatively, get a second person to raise and support the bandsaw arm until the hinge pin is aligned with the hole in the bracket.

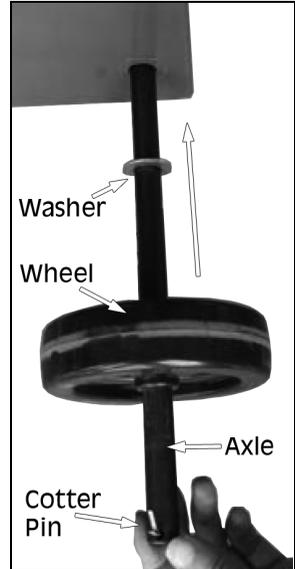


4. Screw in and tighten the hinge pin using a 14mm spanner.

INSTALLING THE WHEELS

COMPONENTS & HARDWARE NEEDED

- 4 x Wheels
 - 2 x Axle
 - 4 x Cotter Pins (3 x 30mm)
 - 4 x Flat Washers (5/8")
1. Slide axle through the holes in the bottom of the cabinet.

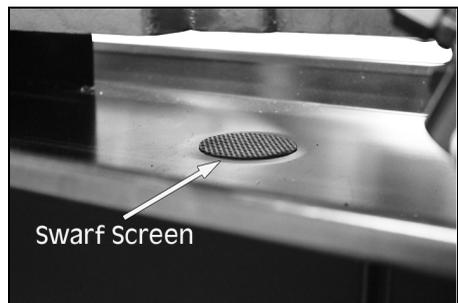


2. Slide the flat washers onto the axle, followed by the wheels. Secure the wheels with the cotter pins as shown.



INSTALLING THE SWARF SCREEN

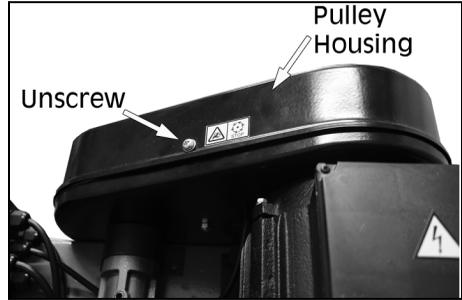
1. To prevent swarf getting into the blade lubricant and pump, place the swarf screen over the drainage hole in the centre of the drip tray as shown.



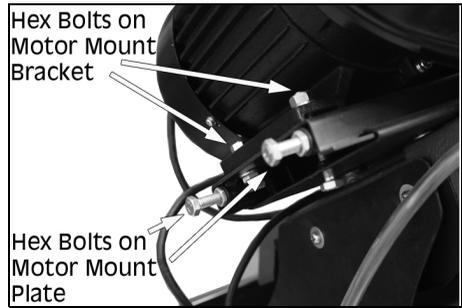
DRIVE V-BELT

The drive belt may need to be tensioned or repositioned for your desired speed.

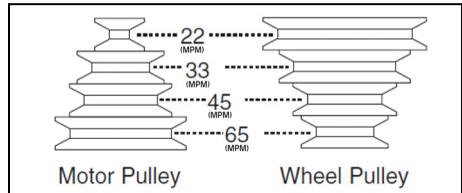
1. Disconnect the machine from the power supply.
2. Unscrew the cover to the pulley housing



3. Loosen the two hex bolts on the motor mount bracket, as shown.
4. Adjust the two hex bolts on the motor mount plate to loosen the belt.



5. Slip the belt over the combination of pulleys to get the desired meters per minute, MPM (see adjacent chart). Make sure the belt is on parallel pulley wheels.



6. Readjust and tighten the two hex bolts on the motor mount plate.
7. Retighten the two hex bolts on the motor mount bracket.

CUTTING SPEED RATE RECOMMENDATION

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

The Cutting Speed Rate Recommendation Chart that follows offers guidelines only for various metals, given in feet per minute (FPM) and meters per minute (MPM). Choose the speed closest to the number shown in the chart.

Material	Speed FPM (MPM)	Material	Speed FPM (MPM)
Carbon Steel	196 - 354 (60 - 108)	Oil Hardened Tool Steel	206 - 2132 (62 - 65)
Tool Steel	203 (62)	Stainless Steel	85 (26)
Alloy Steel	111 - 321 (34 - 98)	CR Stainless Steel	85 - 203 (26 - 62)
Free Machining Stainless Steel	150 - 203 (46 - 62)	Thin Tube	180 - 220 (54 - 67)
Angle Steel	180 - 220 (54 - 67)	Aluminum Alloy	220 - 534 (67 - 163)
High Speed Tool Steel	75 - 118 (25 - 36)	Copper Alloy	229 - 482 (70 - 147)
Mold Steel	246 (75)	Grey Cast Iron	108 - 225 (33 - 75)
Cold Work Tool Steel	95 - 213 (29 - 65)	Ductile Austenitic Cast Iron	65 - 85 (20 - 26)
Hot Work Tool Steel	203 (62)	Malleable Cast Iron	321 (98)
Water Hardened Tool Steel	246 (75)	Plastic	220 (67)

BLADE SELECTION

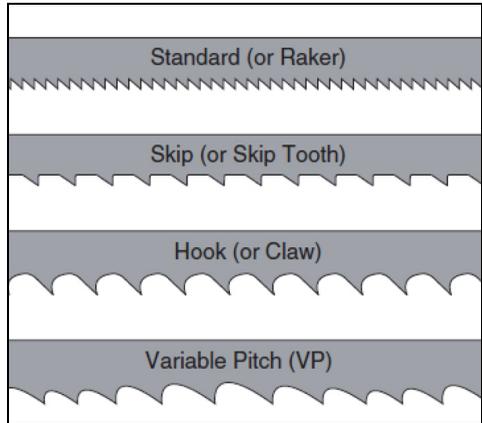
TOOTH PITCH

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 blades, refer to the above chart and following diagram for recommended blade tooth (TPI) and speed (FPM) based on workpiece material.

TOOTH STYLE

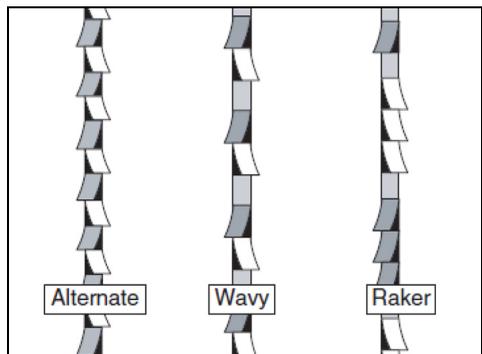
When selecting blades, another option to consider is the shape, gullet size, teeth set and teeth angle, otherwise known as Tooth Style. Many blade manufacturers offer variations of the four basic styles, as shown.



- **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 the 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 re-sawing 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 & Raker



CHOOSING BLADE TPI

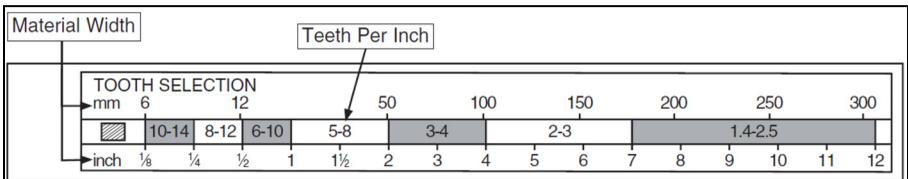
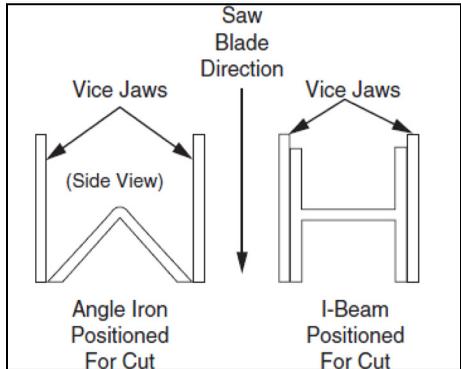
Selecting the right blade for the job depends on a variety of factors, such as type, hardness and shape of the material being cut, machine capability and operator technique.

The chart below 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.

To select the correct blade TPI:

1. Measure the 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 the Material Width row of the blade selection chart below and read across to find the workpiece thickness you need to cut.
3. In the centre row, find the TPI that corresponds to the workpiece thickness.



TEST RUN

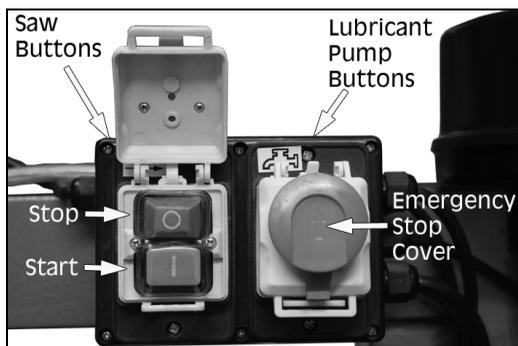
Once the assembly has been completed, test run the machine to ensure it is properly connected to the power and safety components are functioning correctly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from the power source and fix the problem before operating the machine again. The troubleshooting table on page 33-35 of this manual may help.

OPERATION

STARTING & STOPPING

The bandsaw has two start/stop buttons. One for the saw motor and one for the lubricant pump. They both have a spring loaded emergency stop cover, which should always be in the down position when the bandsaw is in operation.



OPERATING TIPS

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

Tips for horizontal cutting:

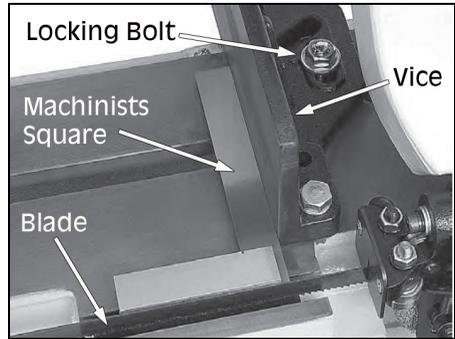
- Use work stop to quickly and accurately cut multiple pieces of stock to the same length.
- Clamp material firmly in the vice jaws to ensure a straight cut through the material.
- Let the blade reach full speed before engaging with the workpiece. Never start a cut with the blade in contact with the workpiece.
- Wait until the blade has completely stopped before removing workpiece from the vice, and avoid touching the cut end as 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.
- Use coolant when possible to increase blade life.
- Loosen blade tension at the end of each day to prolong blade life.

WORK VICE

The vice can cut angles from 0° - 45° and hold material up to 10.5" wide at 0° to 5" wide at 45°.

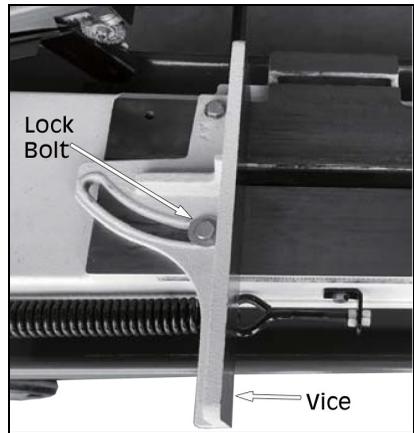
TO SQUARE VICE TO BLADE

1. Loosen the locking bolt, as shown.
2. Use the scale as a guide to set your angle, or a machinists square to square the blade to the vice.
3. Tighten the lock bolt.

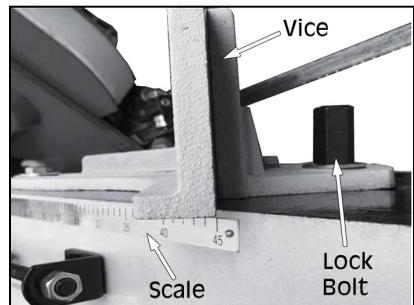


TO ADJUST VICE ANGLE

1. Loosen the lock bolt on the rear jaw, as shown, with a wrench.
2. Use the scale to set your angle.
3. Tighten the lock bolt.



4. Loosen the lock bolt on the opposite jaw, as shown, so the jaw can float, and match the angle of the workpiece.
5. Tighten vice against the workpiece.
6. Tighten the lock bolt.

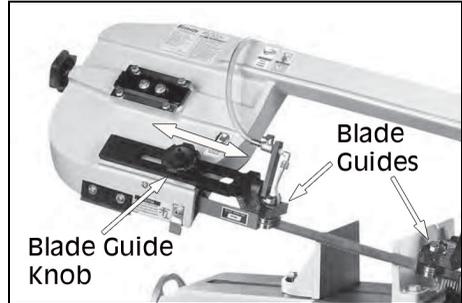


BLADE GUIDES

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

To adjust the blade guides:

1. Loosen the blade guide knob as shown.
2. Slide the blade guide as close to the workpiece as possible.
3. Tighten blade guide knob.

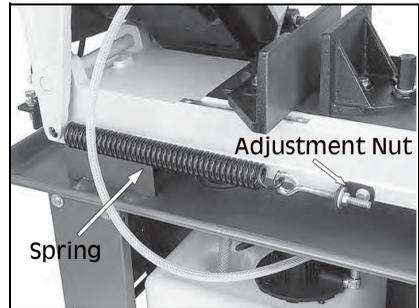


FEED RATE

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 the bow to maximum height to remove spring tension. Close the ON/OFF valve on the hydraulic cylinder to lock bow in place.



2. Adjust feed pressure tension spring by rotating the adjustment nut, as shown. 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.

3. Clamp workpiece in table vice.
4. Close the feed ON/OFF valve to lock the bow and blade a few inches above the workpiece.
5. With the correct saw blade and blade speed selected, turn the 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 the saw begins to cut the workpiece.
7. Observe the chips that exit the cut, and increase or decrease the feed rate according to the following chip characteristics.



- If the chips are tightly curled, warm shavings, brown to black colour, there is too much downward pressure.
- If the chips are blue looking chips, the blade speed is too high.
- If the chips are thin and powder like, there is insufficient feed pressure. This will dull your blade rapidly.

BLADE LUBRICATION

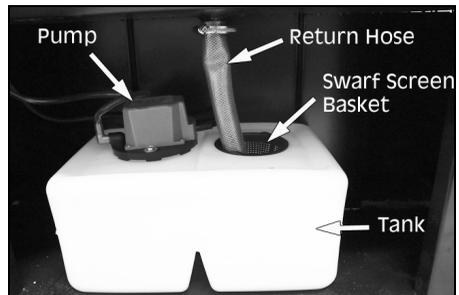
To increase cutting efficiency and to prolong the blade life, it is recommended that a water soluble cutting lubricant is used with this bandsaw. The 16 litre lubricant tank is located in the base unit of the bandsaw and can be accessed via the rear of the base unit. To fill the tank and use, proceed as follows:

ADDING CUTTING LUBRICANT

1. Always disconnect the machine from the power source before adding or changing the lubricant.
2. Slide the tank out of the base unit and unscrew the pump.

NOTE: Due to the power cable to the pump, the pump must stay with the bandsaw.

3. Fill the tank with a suitable lubricant fluid (16 litre capacity) (see page 32)

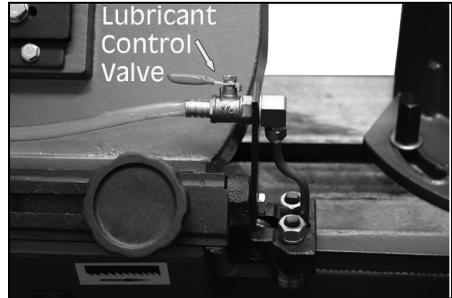


4. Replace the pump and slide the tank back into the base unit.
5. Replace the return hose back into the hole with the swarf screen basket.

USING THE CUTTING LUBRICANT

1. Check that there is sufficient lubricant in the tank and the pump inlet is submerged.
1. Adjust and set the bandsaw up to cut the required item.
2. Turn the lubricant pump on and adjust the lubricant control valve to the desired feed rate.
3. Turn on the bandsaw and commence cutting.

NOTE: When the bandsaw is not in use for long periods or needs transporting, it is recommended that you empty the lubricant tank.



MAINTENANCE



WARNING: ALWAYS SWITCH OFF AND DISCONNECT FROM THE POWER SUPPLY BEFORE CARRYING OUT ANY CLEANING OR MAINTENANCE TASKS.

GENERAL

Remove all accumulated swarf from inside the bandsaw frequently using a soft brush and/or vacuum cleaner. Alternatively, if compressed air is used, ensure it is set to no more than 10 psi and wear protective safety glasses. Maintain a thin film of oil on all unpainted surfaces including all screw threads to protect your saw from corrosion.

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
- Damage to saw blade
- Worn or damaged wires
- Any other unsafe condition

- Clean after each use
- Check blade tension

MONTHLY CHECK:

- Lubricate vice screw (see below)
- Check gear box lubrication (see page 25)

CLEANING

Cleaning the machine is relatively easy. Vacuum clean excess metal chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

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.

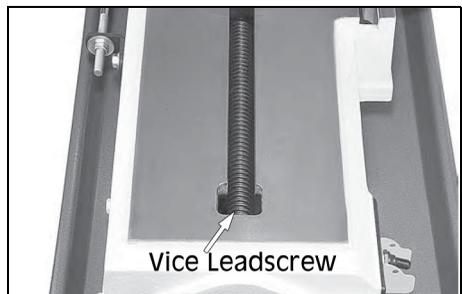
Clean all exterior components in this section with mineral spirits, shop rags and brushes before lubricating.

VICE LEADSCREW

- Lube Type: ISO 68 equivalent oil
- Lube Amount: Thin Coat
- Lube Frequency: Every 40 Hours of operation

TO LUBRICATE VICE LEADSCREW

1. Disconnect the machine from the power supply.
2. Using the vice hand wheel, move the vice as far forward as possible.
3. Use mineral spirits and a brush to clean existing grease and debris off of the vice lead screw, and allow to dry.
4. Apply thin coat of machine oil to exposed lead screw threads, then move the vice through its full range of motion several times to disperse the oil along the full length of the lead screw.

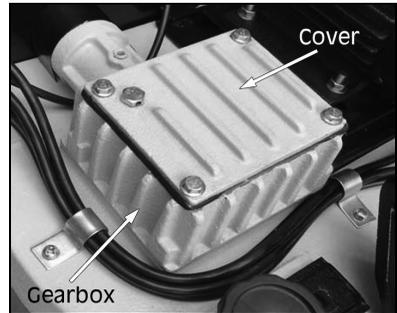


GEARS

- Lube Type: NLGI#2 equivalent grease
- Lube Amount: Thin coat
- Lube Frequency: Every 90 Hours of operation

TO LUBRICATE GEARS

1. Disconnect the machine from the power supply.
2. Remove the cover from the gearbox.
3. Using a small brush, apply a thin coat of grease to the headstock gears.
4. Re-install the gearbox cover removed in step 2.
5. Operate the saw to work the grease through the gears.



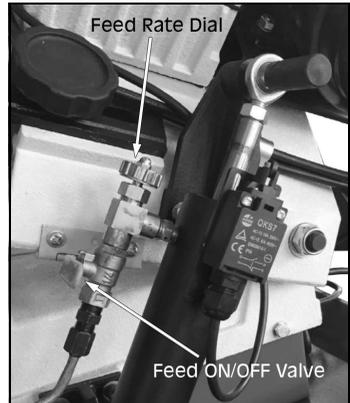
BLADE CHANGE

The blade should be changed when it becomes dull, damaged or when you are using materials that require a blade of a certain type or tooth count (see page 31 for replacement blades).

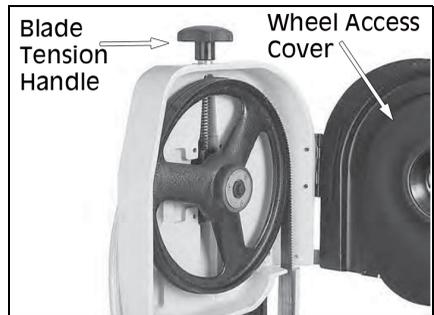
TO CHANGE THE BLADE

1. Disconnect the machine from the power source.

2. Raise the bow of the bandsaw to the vertical position, close the feed ON/OFF valve to lock the bow in place and open the wheel access cover.
3. Remove the blade guards.



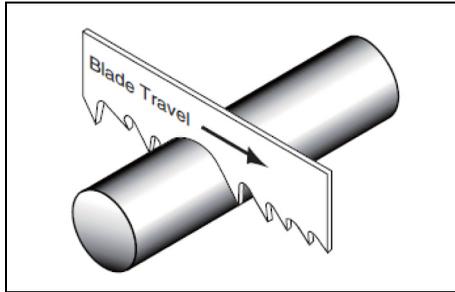
4. Turning anti-clockwise, loosen the blade tension handle, as shown, and slip the blade off the wheels.



5. Install new blade around the bottom wheel and through both blade guide bearings.
6. With the blade around the bottom wheel, slip it around the top wheel as shown, keeping the blade between the blade guide bearings



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



7. When the blade is around both wheels, adjust so the back of the blade is against the shoulder of the wheels.
8. Complete blade change by following the steps in the Blade Tension & Tracking on page 26.

BLADE TENSION & TRACKING

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

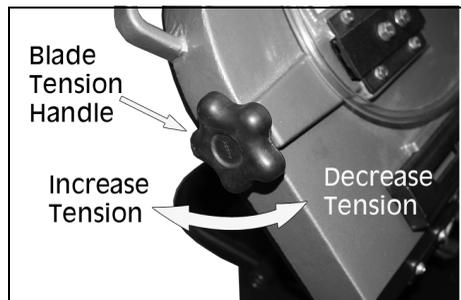
Correct blade tension is essential to long blade life, straight cuts and efficient cutting. This machine features a blade tension indicator to assist you with blade tensioning.

Two major signs that you do not have correct blade tension are:

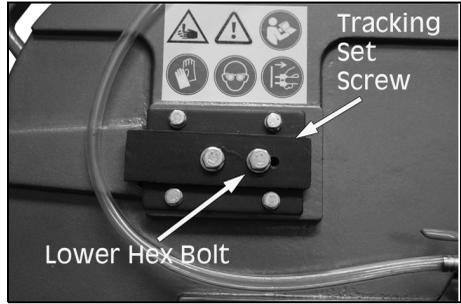
1. The blade stalls in the cut and slips on the wheels.
2. The blade frequently breaks from being too tight.

TO TENSION BLADE ON BANDSAW

1. Turn the blade tension handle clockwise to increase tension to the blade, anti-clockwise to release tension to the blade.



- Using the blade tension controls, as shown, tension the blade to the required amount.



- To fine tune the blade tension, use a blade tensioning gauge.

TO ADJUST BLADE TRACKING ON BANDSAW

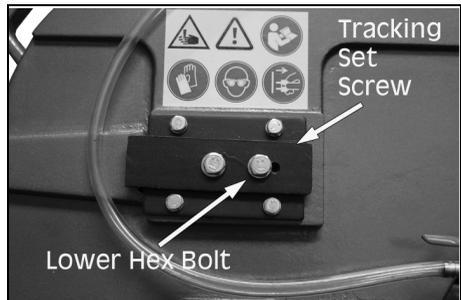
The blade tracking has been correctly set at the factory. The tracking will rarely need to be adjusted if the bandsaw is used properly.

If the tracking does need adjusting, then the following procedures should be undertaken.

- Disconnect the machine from the power source.
- Position the bandsaw in the vertical position.
- Open the wheel access cover.



- Loosen, but do not remove the lower hex bolt in the blade wheel tilting mechanism.



- Relax the blade tension.

6. Adjust set screw with a 4mm hex wrench, then tighten hex bolt loosened in step 4.

NOTE: Tightening the set screw will move the blade closer to the shoulder of the wheel.

NOTE: Loosening the set screw will move the blade away from the shoulder.

7. Re-tension the blade as set out on page 27.

8. Reconnect the machine to the power source and turn the bandsaw on.

NOTE: If the blade tracks along the shoulder of the wheel (without rubbing), the blade is tracking properly and this adjustment is complete.

NOTE: If the blade walks away from the shoulder of the wheel or hits the shoulder, repeat sets 4 - 7 until the blade tracks correctly.

9. Turn off the bandsaw.

10. Replace the blade guard and wheel access cover.

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 the blade.

TO SQUARE THE BLADE TO THE BED OF THE TABLE.

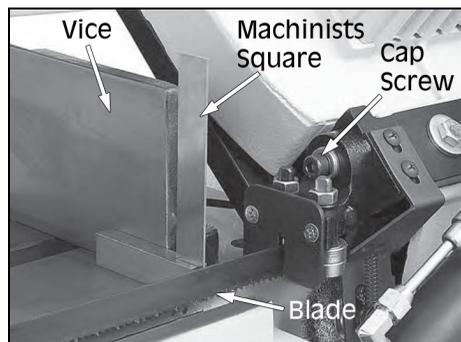
1. Disconnect the machine from the power source.
2. Lower the head of the bandsaw until it contacts the horizontal stop.

3. Place a square on the table bed and against the edge of the blade as shown, and check the different points along the length of the table between the blade guides.

4. Loosen the cap screw shown, and rotate the blade guide until the blade is vertical to the bed.

NOTE: Both the blade guides can be adjusted to achieve the results you want.

5. Tighten the cap screw.



BLADE GUIDE BEARINGS

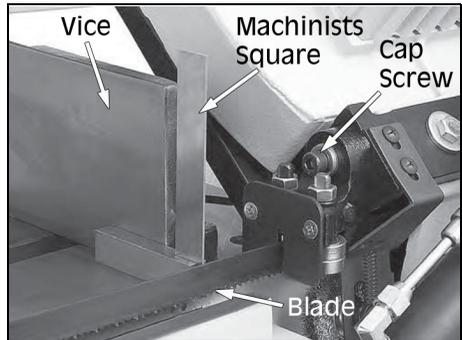
The blade guide bearings come adjusted from the factory and the need for adjustment should rarely occur. Uneven blade wear and crooked cuts may be the results of improper adjustment.

Each bearing assembly has an eccentric bushing 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.

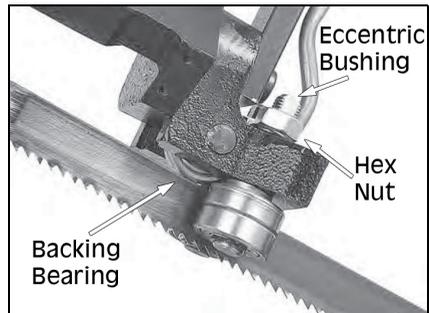
Before adjusting the blade guide bearings, make sure that you have squared the blade to the table as set out above.

TO ADJUST BLADE GUIDE BEARINGS

1. Disconnect the machine from the power source.
2. Position the vice to 90°, then lock in place.
3. Put a machinist's square against the face of the vice and move it over to the blade. The square should evenly touch both the face of the vice and the blade. If it does, skip to step 6, if the square does not evenly touch the blade, but does evenly touch the vice, continue with the next step.



4. Loosen the hex nuts that secure the eccentric bushings attached to the guide bearings.
5. Adjust the bearings as necessary to force the blade to 90° to the vice, then tighten the hex nuts attached to the bearings that are forcing the blade to 90°.
6. Check to see if any bearings are not touching the blade evenly. If so loosen the hex nuts and adjust eccentric bushing so the contact surface of the bearing touches the blade evenly.



NOTE: Since the bearings twist the blade into position, it is acceptable if there is 0.025mm - 0.050mm of a 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 the guide bearings (although they will be stiff) with your fingers.

The backing bearing is not adjustable and should make light contact with the blade.

STORAGE

When storing the bandsaw, disconnect the power cable, cover the machine with a plastic sheet and store it in a dry location.

REPLACEMENT BLADES & SUNDRIES

Replacement blades and sundries are available from your CLARKE dealer;

Blade (10tpi) 1 per pack	Part no 1600772
Blade (24tpi) 1 per pack	Part no 1600771
CLARKE cutting fluid ref: 1 Litre	Part no 3051059
CLARKE cutting fluid ref: 5 Litre	Part no 3051061

TROUBLESHOOTING

Bandsaw Operations		
Problem	Check	Solution
Excessive blade breakage	<ol style="list-style-type: none"> 1. Material loose in vice. 2. Incorrect speed or feed. 3. Blade pitch too great. 4. Material too hard. 5. Incorrect blade tension. 6. Teeth touching work before start-up. 7. Blade rubs on wheel flange. 8. Mis-aligned guide bearings. 	<ol style="list-style-type: none"> 1. Clamp work securely. 2. Adjust speed or feed. 3. Replace with finer, toothed blade. 4. Select a slower speed and finer toothed blade. 5. Adjust blade tension. 6. Place blade in contact with work after motor has started. 7. Adjust wheel alignment. 8. Adjust guide bearings.
Premature blade dulling	<ol style="list-style-type: none"> 1. Teeth too coarse. 2. Speed too great. 3. Inadequate feed pressure. 4. Hard spots/scale on material. 5. Work hardening of material. 6. Blade twist. 	<ol style="list-style-type: none"> 1. Use finer tooth blade. 2. Reduce speed. 3. Reduce spring tension on side of saw. 4. Reduce speed/increase feed pressure. 5. Increase feed pressure by reducing spring tension. 6. Replace with a new blade & adjust tension.
Unusual wear on side/back of blade	<ol style="list-style-type: none"> 1. Blade guides worn. 2. Blade guide bearings not adjusted correctly. 3. Blade guide bearing, bracket loose. 	<ol style="list-style-type: none"> 1. Replace guides. 2. Adjust bearings. 3. Tighten bracket.
Teeth ripping from blade	<ol style="list-style-type: none"> 1. Teeth too coarse for work. 2. Too slow speed. 3. Vibrating workpiece. 4. Teeth clogging. 	<ol style="list-style-type: none"> 1. Use finer tooth blade. 2. Reduce pressure / increase speed. 3. Clamp workpiece, securely. 4. Use coarser blade or brush away swarf.

Motor running too hot	<ol style="list-style-type: none"> 1. Blade tension too high. 2. Drive belt too tight. 3. Gears need lubrication. 4. Blade is binding. 	<ol style="list-style-type: none"> 1. Reduce blade tension. 2. Reduce drive belt tension. 3. Check oil bath. 4. Decrease feed speed.
Bad cuts (not cutting square)	<ol style="list-style-type: none"> 1. Feed pressure too great. 2. Guide bearing not adjusted properly. 3. Inadequate blade tension. 4. Dull blade. 5. Speed incorrect. 6. Blade guides too far apart. 7. Blade guide assembly loose 8. Blade tracks too far away from wheel flanges. 	<ol style="list-style-type: none"> 1. Reduce pressure by increasing spring tension of the saw. 2. Adj guide bearing clearance not greater than 0.025mm. 3. Increase blade tension. 4. Replace blade. 5. Adjust speed. 6. Adjust guides space. 7. Tighten. 8. Check and adjust blade tracking.
Bad cuts (rough)	<ol style="list-style-type: none"> 1. Too great a speed of feed. 2. Blade is too coarse. 3. Blade tension slack. 	<ol style="list-style-type: none"> 1. Decrease speed of feed 2. Replace with finer blade. 3. Adjust blade tension.
Blade is twisting	<ol style="list-style-type: none"> 1. Blade is binding. 2. Too much blade tension. 	<ol style="list-style-type: none"> 1. Decrease feed pressure 2. Decrease blade tension

Motor & Electrical

Problem	Check	Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Plug is at fault/wired incorrectly. 2. Power supply is at fault/switched OFF. 3. Motor wired incorrectly. 4. Start capacitor is at fault. 5. 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 power supply is switched ON. 3. Correct motor wiring. 4. Test/replace capacitor. 5. Ensure correct size of fuse for the machine load, replace weak breaker. 6. Replace faulty ON/OFF switch. 7. Check/fix broken, disconnected or corroded wires. 8. Test/Repair/Replace.

<p>Machine stalls or is underpowered</p>	<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 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. Make sure the power source is set for correct voltage. 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.
<p>Machine has vibration or noisy operation</p>	<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 and replace bad gear(s)/bearing(s). 4. Change blade and/or speed.

PARTS LIST & DIAGRAM

NO	DESCRIPTION	NO	DESCRIPTION
Parts Diagram A		32	Nut M10
1	Table	33	Washer
2	Adjusting Screw	34	Lock Bolt
3	Spacer	35	Work Stop Rod
4	Set Screw M6 x10	36	Work Stop
5	Wheel	37	Screw M6 x 12
6	Wheel Handle	38	Lock Nut M10
7	Support Bracket	39	Washer
8	Dragging Handle	40	Support Plate
9	Washer 10	41	Buffer Block
10	Vice Jaw Bracket (Rear)	42	Nut M8
11	Spring Pin 6 x 20	43	Hex Bolt M8 x 16
12	Bracket	44	Washer
13	Quick Nut	45	Hex Bolt M8 x 25
14	Hex Bolt M10 x 35	46	Nut M8
15	Washer 16	47	Hex Bolt M8 x 16
16	Washer 12	48	Washer
17	Lock Nut M16	49	Cylinder Support Rod
18	Hex Bolt M12 x 35	50	Washer
19	Vice Jaw Bracket (Front)	51	Washer 10
20	Bushing	52	Bolt M10 x 30
21	Support Rod	53	Set Screw M8 x 12
22	Pivot Bracket	54	Cylinder Bracket
23	Plate	55	Hydraulic Cylinder
24	Hex Bolt M10 x 35	56	Special Bolt
25	Support Plate	57	Joint Bearing
26	Fixed Plate	58	Hex Bolt M8 x 30
27	Spring	59	Keep Plate
28	Spring Adjusting Rod	60	Hex Bolt M8 x 30
29	Spring Handle Bracket	61	Washer
30	Hex Bolt M8 x 16	62	Nut M8
31	Washer 8	63	Washer

NO	DESCRIPTION
64	Nut M10
65	Hex Bolt M8 x 30
66	Wheel Rod
67	Wheel
68	Cotter Pin 2.5 x 25
69	Washer
70	Coolant Frame
71	Hose
72	Hose
73	Nozzle Cock
74	Coolant Tank
75	Swarf Filter Screen
76	Cooling Pump
77	Pan Head Screw M6 x 12
78	Set Screw M6 x 12
79	Switch Bracket
80	Sunk Head Screw M6 x 8
81	Hex Screw M4 x 30
82	Limit Switch
83	Nut M4
Parts Diagram B	
84	Gearbox Assembly(see diag C)
85	Set Screw M8 x 12
86	Key 5 x 5 x 30
87	Key 6 x 6 x 20
88	Electrical Box
89	Main Switch
90	Pump Switch
91	Pulley Cover Micro Switch
92	Spindle Pulley
93	Set Screw M8 x 10
94	Drive-Belt 660
95	Body Frame
96	Washer
97	Hex Bolt M10 x 35
98	Spacer

NO	DESCRIPTION
99	Drive Wheel
100	Sliding Plate
101	Blade Tension Sliding Block
102	Set Screw M8 x 20
103	Hex Bolt M8 x 40
104	Washer
105	Washer
106	Hex Bolt M6 x 16
107	Spring
108	Blade Adjusting Knob
109	Wheel Shaft Assembly
110	Idler Wheel Seat
111	Cotter Pin 5 x 22
112	Wheel Shaft
113	Spacer
114	Bearing 6203
115	Circlip
116	Washer
117	Hex Bolt M8 x 16
118	Idler Wheel
119	Blade 0.9 x 19 x 2360
120	Brush Assembly
121	Lock Nut M8
122	Brush
123	Brush Shaft
124	Washer
125	Brush Bracket
126	Blade Cover, Rear
127	Knob Bolt
128	Adjusting Bracket, Rear
129	Guide Block Assembly, Rear
130	Sunk Head Screw
131	Splash Guard
132	Eccentric Shaft
133	Circlip for Shaft
134	Bearing

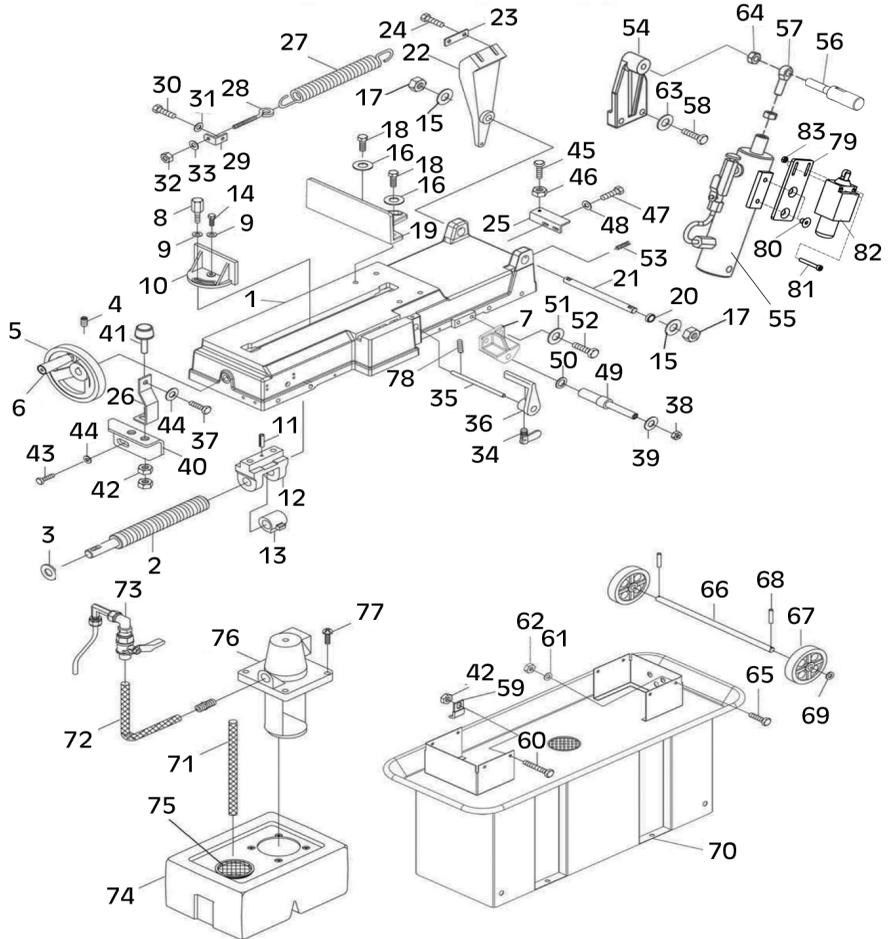
NO	DESCRIPTION
135	Bearing Shaft
136	Pin
137	Washer
138	Lock Nut M8
139	Guide Block, Rear
140	Adjust Bracket, Front
141	Guide Block Assembly, Front
142	Bracket for Hole
143	Guide Block, Front
144	Blade Cover, Front
145	Screw M5 x 10
146	Screw M6 x 12
147	Washer
148	Blade Back Cover
149	Drive Wheel Cover
150	Washer
151	Pan Head Screw M6 x 12
152	Closing Bolt
153	Motor Pulley Cover
154	Shaft Cover
155	Screw M6 x 10
156	Washer
157	Key 6 x 6 x 25
158	Motor Pulley
159	Hex Bolt M8 x 25
160	Hex Bolt M10 x 30
161	Hex Bolt M8 x 60
162	Nut M8
163	Motor Mount
164	Nut M8
165	Hex Bolt M8 x 16
166	Washer
167	Motor Mount Bracket
168	Washer
169	Motor
170	Screw M6 x 12

NO	DESCRIPTION
171	Washer
172	Support Plate
173	Washer
174	Hex Bolt M8 x 25
175	Power Switch Cable
176	Power Cable
Parts Diagram C	
177	Gearbox Assembly
178	Gearbox Housing
179	Transmission Wheel Shaft
180	Spacer
181	Oil Seal 25 x 47 x 10
182	Ball Bearing 6005
183	Key 6 x 6 x 20
184	External Retaining Ring 25mm
185	Gearbox Gasket
186	Gearbox Cover
187	Hex Bolt M6 x 12
188	Vent Plug
189	Washer
190	Hex Bolt M8 x 16
191	Worm Gear
192	Special Washer
193	Spring Washer
194	Hex Bolt M10 x 25
195	Worm Gear Shaft Assembly
196	Worm Shaft
197	Bearing Bushing
198	Ball Bearing 6003
199	Oil Seal 17 x 35 x 7
200	Key 5 x 5 x 30
201	Set Screw M10 x 16
202	Bearing Cover
203	Spacer
204	Set Screw M8 x 10
205	Screw M5 x 10

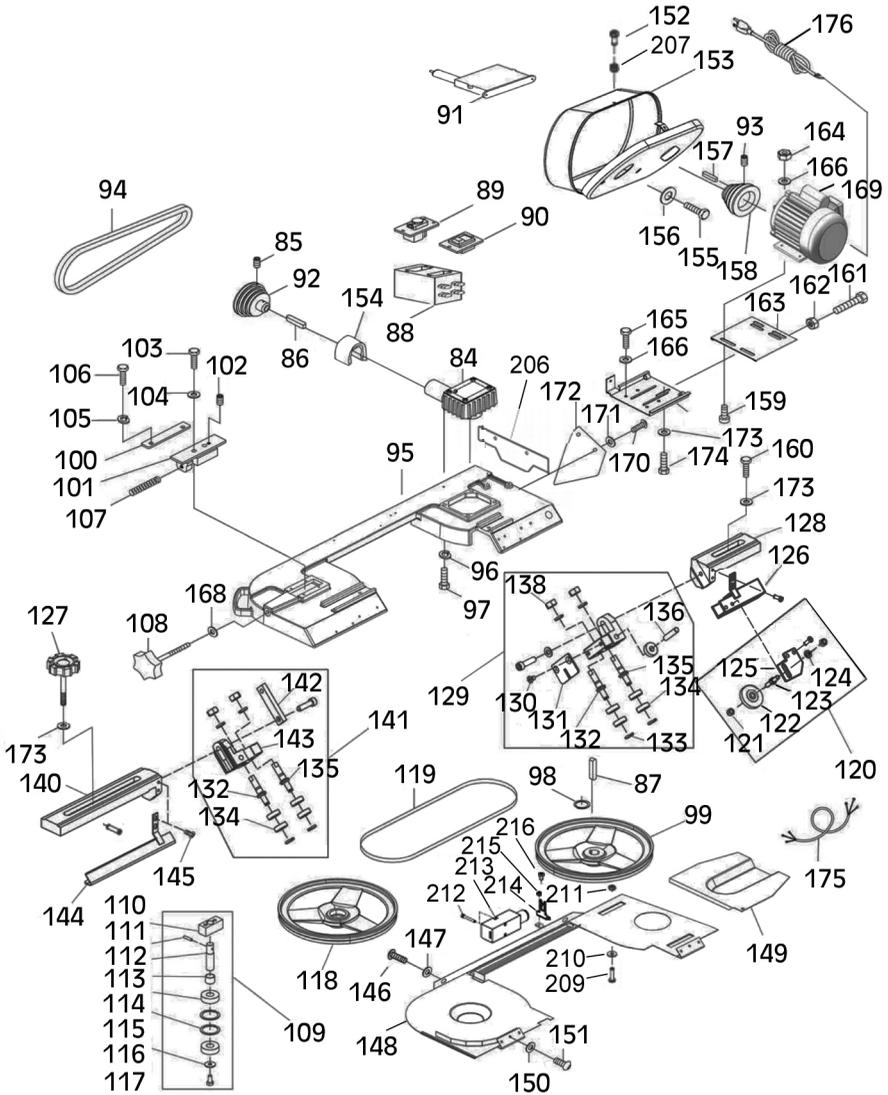
NO	DESCRIPTION
Parts Diagram B Additions	
206	End Plate
207	Nut
208	Pin
209	Bolt
210	Washer
211	Nut

NO	DESCRIPTION
212	Screw
213	Switch
214	Switch Bracket
215	Nut
216	Screw

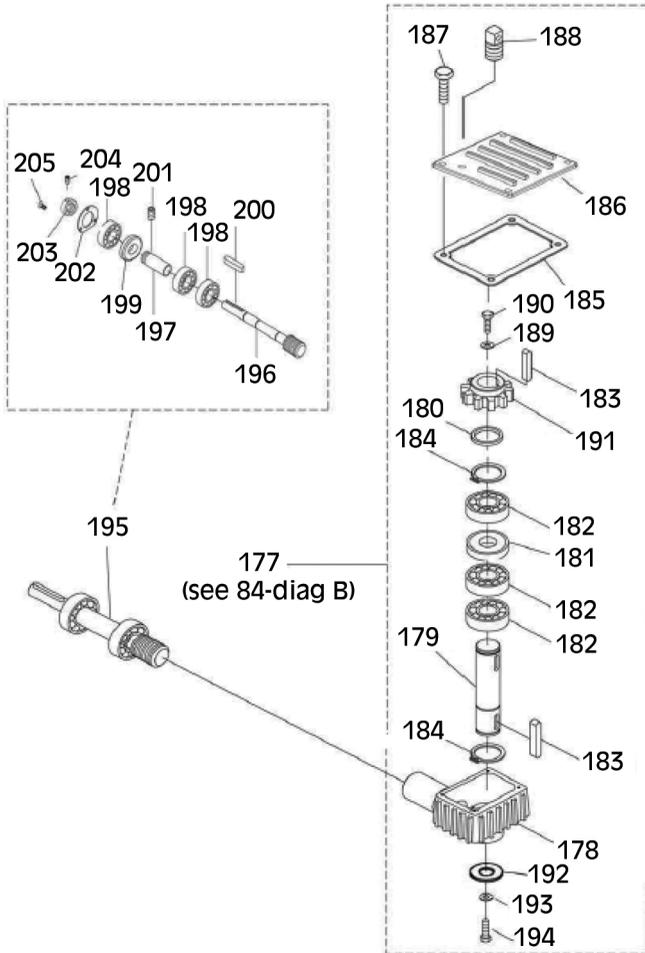
PARTS DRAWING A



PARTS DRAWING B



PARTS DRAWING C



DECLARATION OF CONFORMITY - UKCA



Clarke[®]
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Hemndal Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following statutory requirement(s):

Supply of Machinery (Safety) Regulations 2008

Electromagnetic Compatibility Regulations 2016

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The following standards have been applied to the product(s):

EN 60204-1:2006+A1:2009+AC:2010, EN 60034-1:2010, EN 13898:2003+A1:2009+AC:2010,

EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, IEC 62321-3-1:2013,

IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015,

IEC 62321-7-2:2017, EN ISO 17075-1:2017.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2022

Product Description:	7" Metal Cutting Band Saw
Model number(s):	CBS7MC
Serial / batch Number:	N/A
Date of Issue:	30/03/2022

Signed:

J.A. Clarke
Director

DECLARATION OF CONFORMITY - CE



Clarke[®]
INTERNATIONAL

Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

2006/42/EC *Machinery Directive*

2014/30/EU *Electromagnetic Compatibility Directive*

2011/65/EU *Restriction of Hazardous Substances (Amended by 2015/863/EU)*

The following standards have been applied to the product(s):

EN 60204-1:2006+A1:2009+AC:2010, EN 60034-1:2010, EN 13898:2003+A1:2009+AC:2010,

EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, IEC 62321-3-1:2013,

IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015,

IEC 62321-7-2:2017, EN ISO 17075-1:2017.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2022

Product Description: 7" Metal Cutting Band Saw

Model number(s): CBS7MC

Serial / batch Number: N/A

Date of Issue: 30/03/2022

Signed:

J.A. Clarke
Director

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