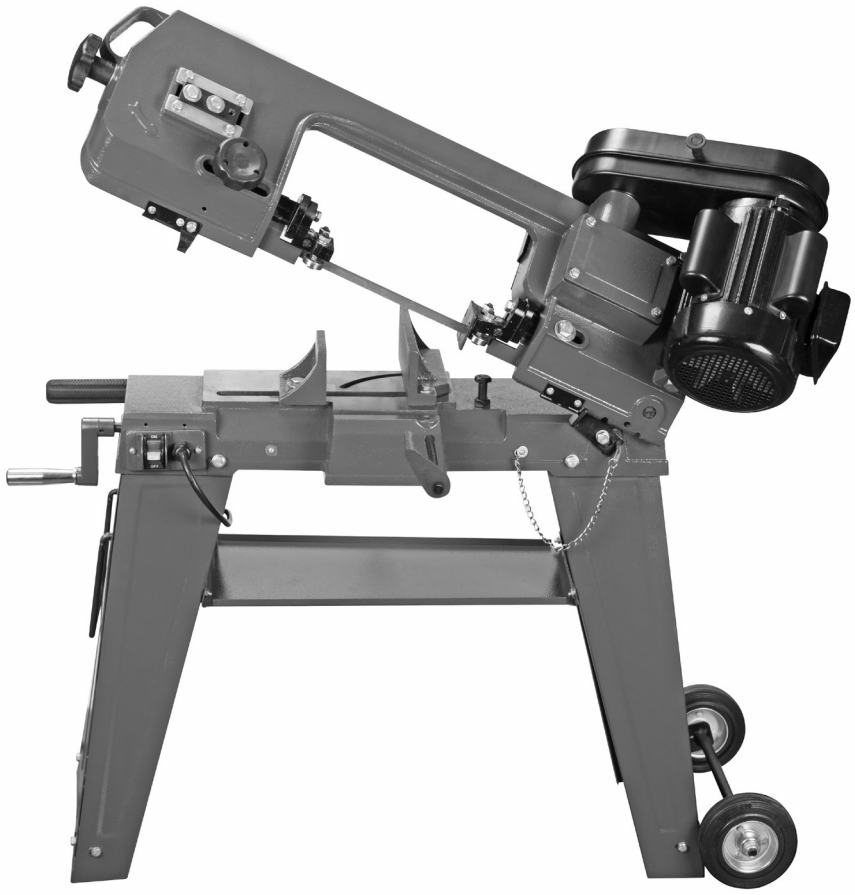
Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 16c

CENTRAL MACHINERY®

HORIZONTAL/VERTICAL METAL CUTTING BAND SAW



Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

ITEM 62377

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

Table of Contents

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Tool Safety Warnings

⚠WARNING

Read all safety warnings and instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.

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 it 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 expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID 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.

Table A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25′	50′	100′	150′
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	**Do not use.**	

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip 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 it 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; when 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 to persons.
18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. 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.
20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

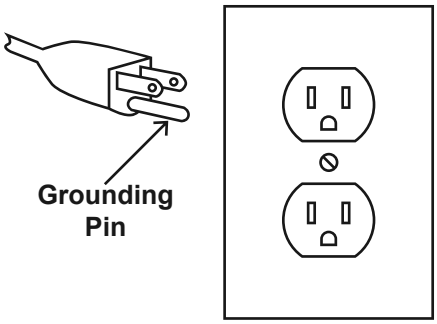
Grounding Instructions

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:

110-120 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



125 VAC 3-Prong Plug and Outlet
(for up to 125 VAC and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Band Saw Safety Warnings

For Your Own Safety Read Instruction Manual Before Operating Saw

1. Wear eye protection.
2. Do not remove jammed cutoff pieces until blade has stopped.
3. Maintain proper adjustment of blade tension, blade guides, and blade guide bearings.
4. Adjust upper guide to just clear workpiece.
5. Hold workpiece firmly against table.
6. Use special care when unpacking or replacing Band Saw blade. Blade can be under tension and may suddenly uncoil. Wear ANSI-approved safety glasses under a full face shield and heavy-duty work gloves.
7. Keep hands away from cutting area and Saw Blade.
8. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.**
9. Properly adjust the upper blade guide, blade tension and blade guide bearing before each use to reduce the risk of injury. See Operating Instructions for explanation of needed adjustments.

10. Never leave the Band Saw unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.

11. Make sure the Band Saw is located on a flat, level, sturdy surface capable of supporting the weight of the Saw and workpieces. Always "chock" the Wheels to prevent the Band Saw from accidentally moving.

12. Before using the Band Saw, check to make sure the Saw Blade is properly mounted and is not cracked or bent.

13. Never attempt to cut more than one workpiece at a time.

14. Never attempt to cut freehand. Make sure the workpiece to be cut is pressed firmly against the Table and/or secured in the Vise.

15. When cutting a large workpiece, make sure its entire length is properly supported. If necessary, use a roller stand (not included).

16. Do not lean on the Band Saw when the tool is in its upright position.

17. When moving the Band Saw, always have its Head lowered to its horizontal position and the Locking Pin (116) inserted in the Pivot (121).

18. Allow the Saw Blade to rotate to full speed before feeding a workpiece into the Blade. When turning off the Band Saw, allow the Saw Blade to spin down and stop on its own. Do not press against the Saw Blade to stop it.

19. Wear heavy-duty work gloves when changing the Saw Blade.

20. Turn off the Band Saw and allow the Saw Blade to completely stop if the Saw Blade is to be backed out of an uncompleted cut.

21. Use indoors only.

22. If the teeth of the Saw Blade are so far apart that they straddle the workpiece, severe damage to the workpiece and/or Saw Blade will result.

23. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.

24. When servicing use only identical replacement parts.

25. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.

26. 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 serious personal injury.

27. Industrial applications must follow OSHA guidelines.

28. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

29. Avoid unintentional starting. Prepare to begin work before turning on the tool.

30. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
    • Avoid operating alone.
    • Do not use with power switch locked on.
    • Properly maintain and inspect to avoid electrical shock.
    • Any power cord must be properly grounded. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

31. WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:
    • Lead from lead-based paints
    • Crystalline silica from bricks and cement or other masonry products
    • Arsenic and chromium from chemically treated lumber
    Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

32. WARNING: The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

33. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Use tools with the lowest vibration when there is a choice between different processes.
4. Include vibration-free periods each day of work.
5. Grip workpiece as lightly as possible (while still keeping safe control of it). Let the tool do the work.
6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

SAVE THESE INSTRUCTIONS.

Specifications

Electrical Rating	120VAC / 60 Hz / 6.5A
Motor No Load Speed	1700 RPM
Blade Speeds	80 FPM / 120 FPM / 200 FPM
Cutting Capacity	4-1/2" Round Stock 4" x 6" Rectangular Stock
Throat Depth	4-1/2"
Angle Cutting Capacity	0°–45° (Left) Miter Plate on Horizontal Cutting Bed
Horizontal Bed	11-1/2" L x 7-1/2" W x 23-1/2" H
Vertical Bed	9-1/2" L x 9-1/2" W x 33-1/2" H
V-Belt Type	0-506
Blade Size	64-1/2" L x 1/2" W x 0.025″ Thick / 14 TPI

US
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CENTRAL MACHINERY®

Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

NOTE: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Assembly/Mounting

To Assemble the Stand

1. Insert the Pull Handle (12) into the two mounting holes located in the upper section of one Stand (10). Then secure the Pull Handle to the Stand, using two Pins (11).
2. Attach one end of the Tool Plate (128) to the upper section of one Stand (10), using two Bolts (9), four Flat Washers (8), and two Nuts (6).
3. Attach the other end of the Tool Plate to the upper section of the remaining Stand, using two Bolts (9), four Flat Washers (8), and two Nuts (6).
4. Align the two mounting holes in the Wheel Bracket (130) with the two mounting holes located in the lower section of the Stand without the Pull Handle.
5. Secure the Wheel Bracket to the Stand, using two Bolts (9), four Flat Washers (8), and two Nuts (6). Refer to Figure A.

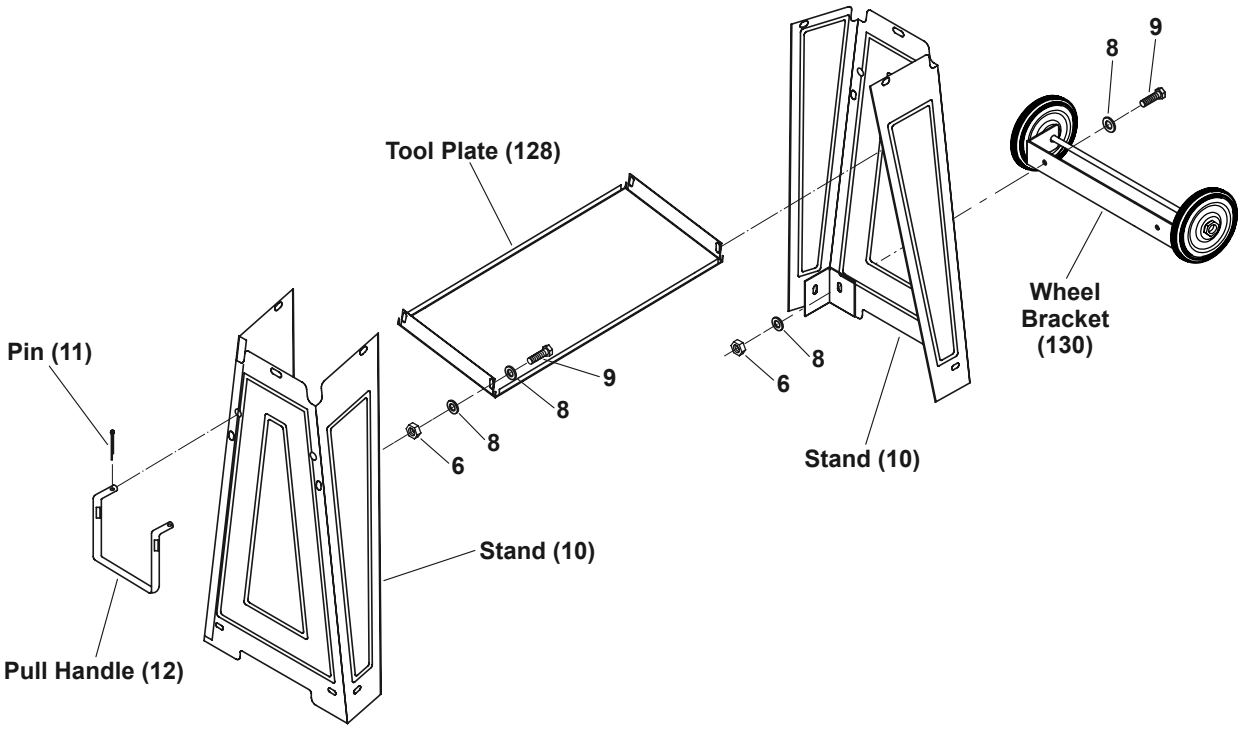


Figure A

To Attach the Band Saw to the Stand

1. With assistance and an adequate lifting device, carefully set the Band Saw on top of the Stand assembly. Place the motor end of the Saw at the wheeled end of the stand, making sure the upper section of the Stand fits *inside* the base of the Band Saw**.**

2. Align the mounting holes on the base of the Band Saw with the mounting holes located on the upper sections of the Stand assembly. Refer to Figure B.

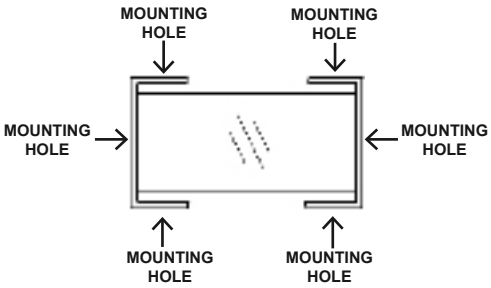


Figure B: Stand (Top View)

3. Secure the Band Saw to the Stand assembly, using a Bolt (13) and Flat Washer (3) on the outside and another Flat Washer (3), Spring Washer (4), and Nut (5) on the inside of each of the six mounting holes. Refer to Figure C.

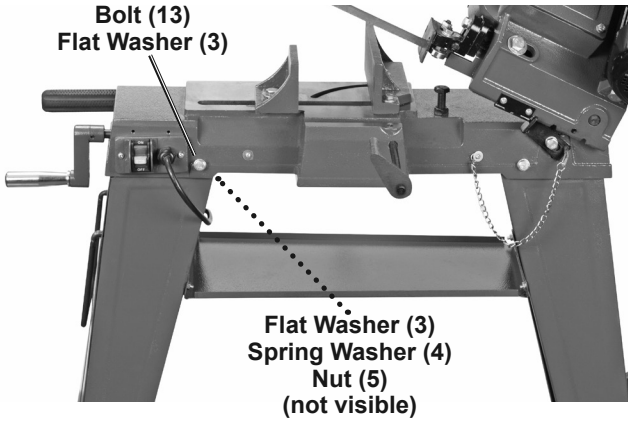


Figure C

To Attach the Stock Stop Assembly

1. When mounted to the Band Saw, the adjustable Stock Stop assembly is used to make repetitive cuts of the same length.

2. To attach the Stock Stop (18), slide the Shaft (19) into the mounting hole in the Machine Bed (122), and secure the Shaft by tightening the Set Screw (49). Refer to Figure D.

3. Slide the Stock Stop onto the Shaft, and secure by tightening the Screw (17)**.**

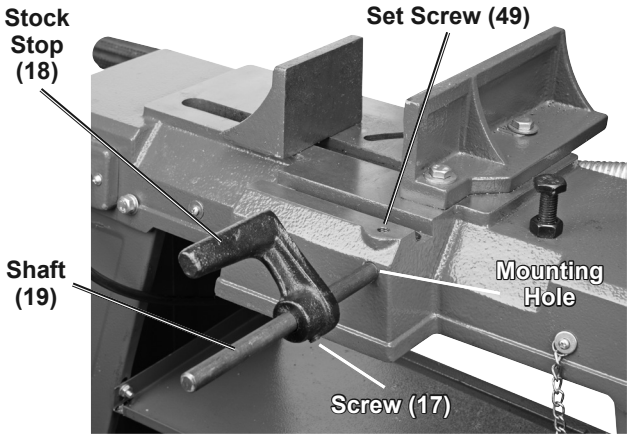


Figure D

To Attach the Pulley Cover

1. Position the Pulley Cover (101) over the Spindle Shaft (97) and Motor Shaft.

2. Align the mounting hole in the Pulley Cover with the mounting hole in the Body Frame (93).

3. Secure the Pulley Cover to the Band Saw, using one Screw (89), Spring Washer (7) and Flat Washer (8). Refer to Figure E.

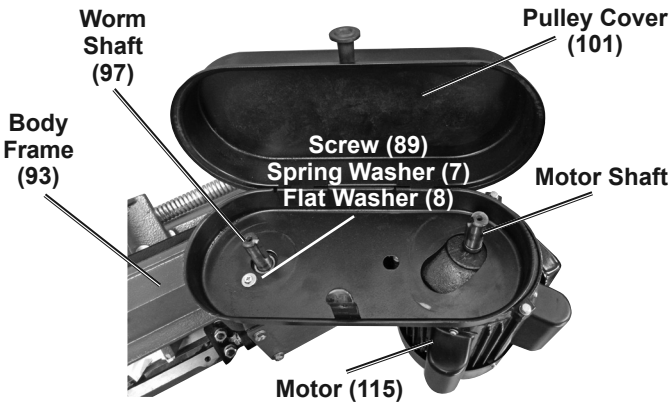


Figure E

To Attach the Spindle Pulley and Motor Pulley

1. Slide the Spindle Pulley (99) fully onto the Spindle Shaft (97). Secure the Spindle Pulley to the Spindle Shaft using one Screw (52). Refer to Figure F.
2. Insert the Shaft Key (51) in the slot on the Motor Shaft. Align the slot in the Motor Pulley (105) with the Shaft Key. Slide the Motor Pulley fully onto the Motor Shaft. Secure the Motor Pulley to the Motor Shaft using one Screw (52).

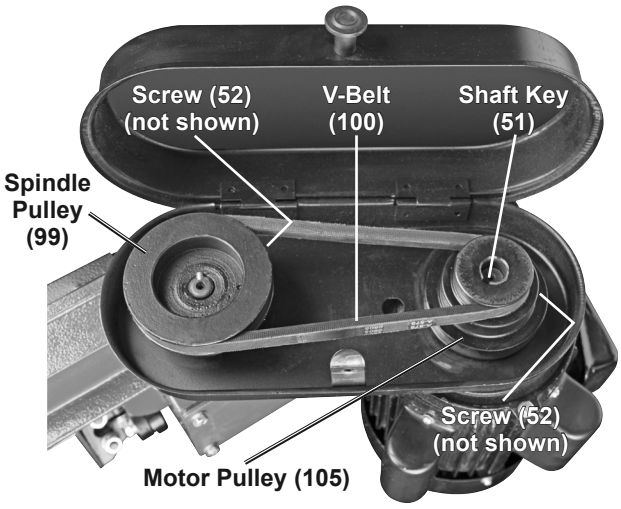


Figure F

To Install the V-Belt

1. Loosen the Bolt (108) and press the Motor (115) toward the Body. Refer to Figure G.
2. Place the V-Belt (100) around the top grooves in the Spindle Pulley (99) and Motor Pulley (105). Refer to Figure F.
3. Adjust the position of the Motor to obtain approximately 1/2″ depression in the V-Belt when applying pressure with your thumb.
4. Re-tighten the Bolt to secure the Motor in place.

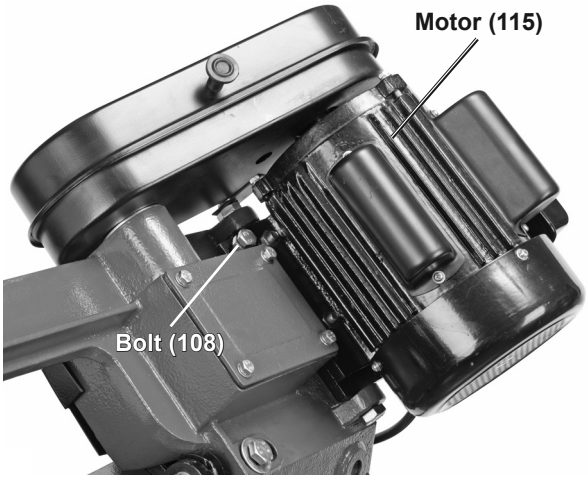


Figure G

To Adjust the Cutting Speed

1. The Band Saw is designed to cut at three different speeds: 80, 120, and 200 FPM (Feet Per Minute) depending on the type of material being cut.

MATERIAL	SPEED (FPM)	PULLEY GROOVE	
		SPINDLE	MOTOR
Tool Steel, Stainless Alloy Steels, Bearing Bronze	80	LARGE	SMALL
Medium to High Carbon Steels, Hard Brass or Bronze	120	MEDIUM	MEDIUM
Low to Medium Carbon Steels, Soft Brass, Aluminum, Plastic	200	SMALL	LARGE

Figure H

2. Refer to the Chart at left to determine the proper cutting speed for a specific type of material being cut.
3. The cutting speed can be adjusted by changing the position of the V-Belt:
   a. Loosen the Bolt (108) and press the Motor (115) toward the Body.
   b. Place the V-Belt around the desired grooves in the Spindle Pulley (99) and Motor Pulley (105).
   c. Ease the Motor back to its original position to tighten the tension on the V-Belt.
   d. Re-tighten the Bolt to secure the Motor in place. Refer to Figure F, Figure G.

⚠**WARNING!** Always securely close the Lid on the Pulley Cover after installing a V-Belt or adjusting the cutting speed.

To Convert the Band Saw for Vertical Use

NOTE: Notching, slitting, and contour work is best done with the Band Saw in its vertical position.

1. Remove the Locking Pin (126) from the Body Frame (93).
2. Raise the Body Frame to its full vertical position. Turn the Support Plate (127) clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock Body Frame into position. Refer to Figure I.

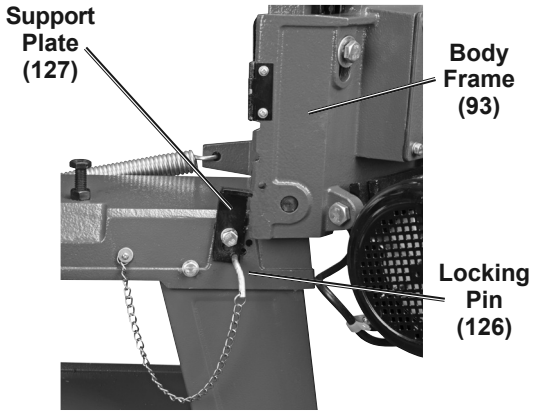


Figure I

3. Remove the Screw (142) and Flat Washer (141) to open the Blade Back Cover (82). Refer to Figure J.

⚠WARNING! Keep hands and fingers safely away from the Saw Blade (66).

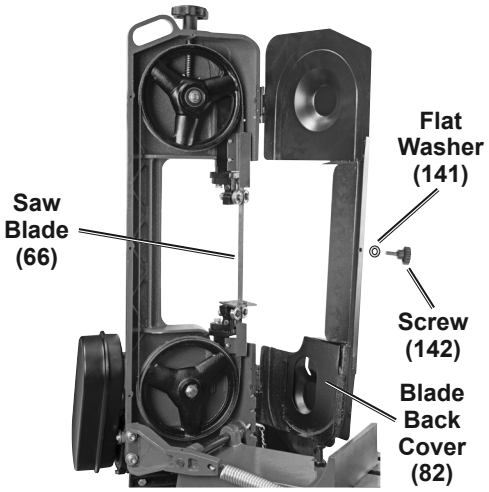


Figure J

4. Remove two Screws (78) and remove the Horizontal Cutting Guard (71). Refer to Figure K.

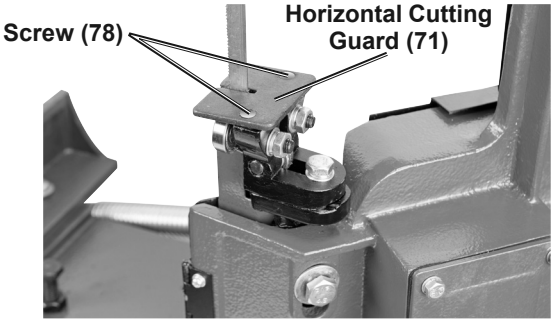


Figure K

5. Close the Blade Back Cover and secure with the Screw and Flat Washer.
6. Guide the Saw Blade through the slot in the Vertical Cutting Table (134), and secure the Vertical Cutting Table in position with the two Screws (78). Refer to Figure L.

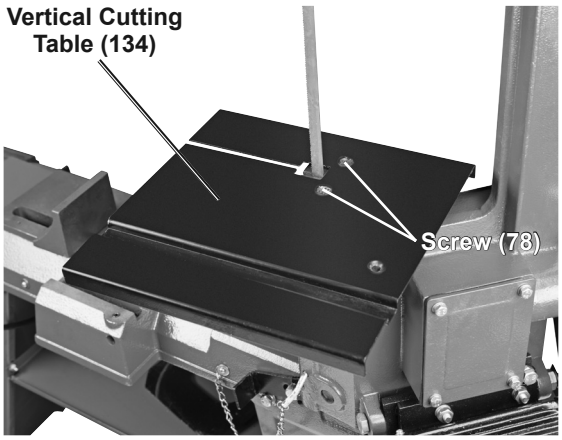


Figure L

7. To mount the Vertical Cutting Table Support (136):

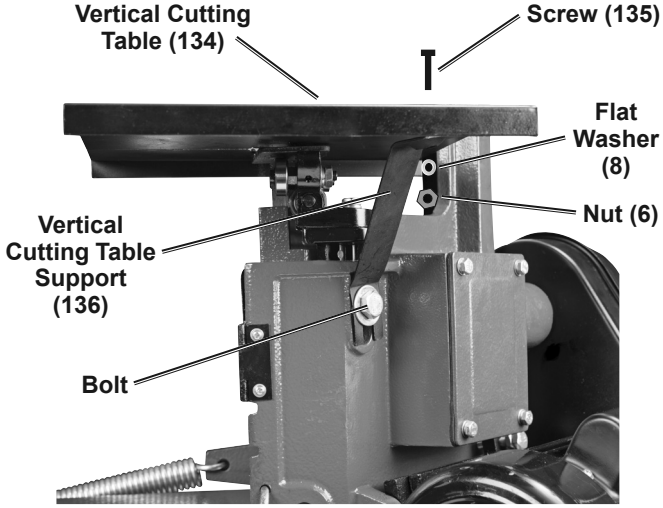


Figure M

a. Insert one Screw (135) downward through the mounting hole in the Vertical Cutting Table.
b. Attach the top section of the Vertical Cutting Table Support to the Vertical Cutting Table using one Flat Washer (8) and one Nut (6).
c. Loosen the Bolt on the Body Frame as shown in Figure M.
d. Position the Vertical Cutting Table Support between the Body Frame and the head of the Bolt.
e. Firmly re-tighten the Bolt.

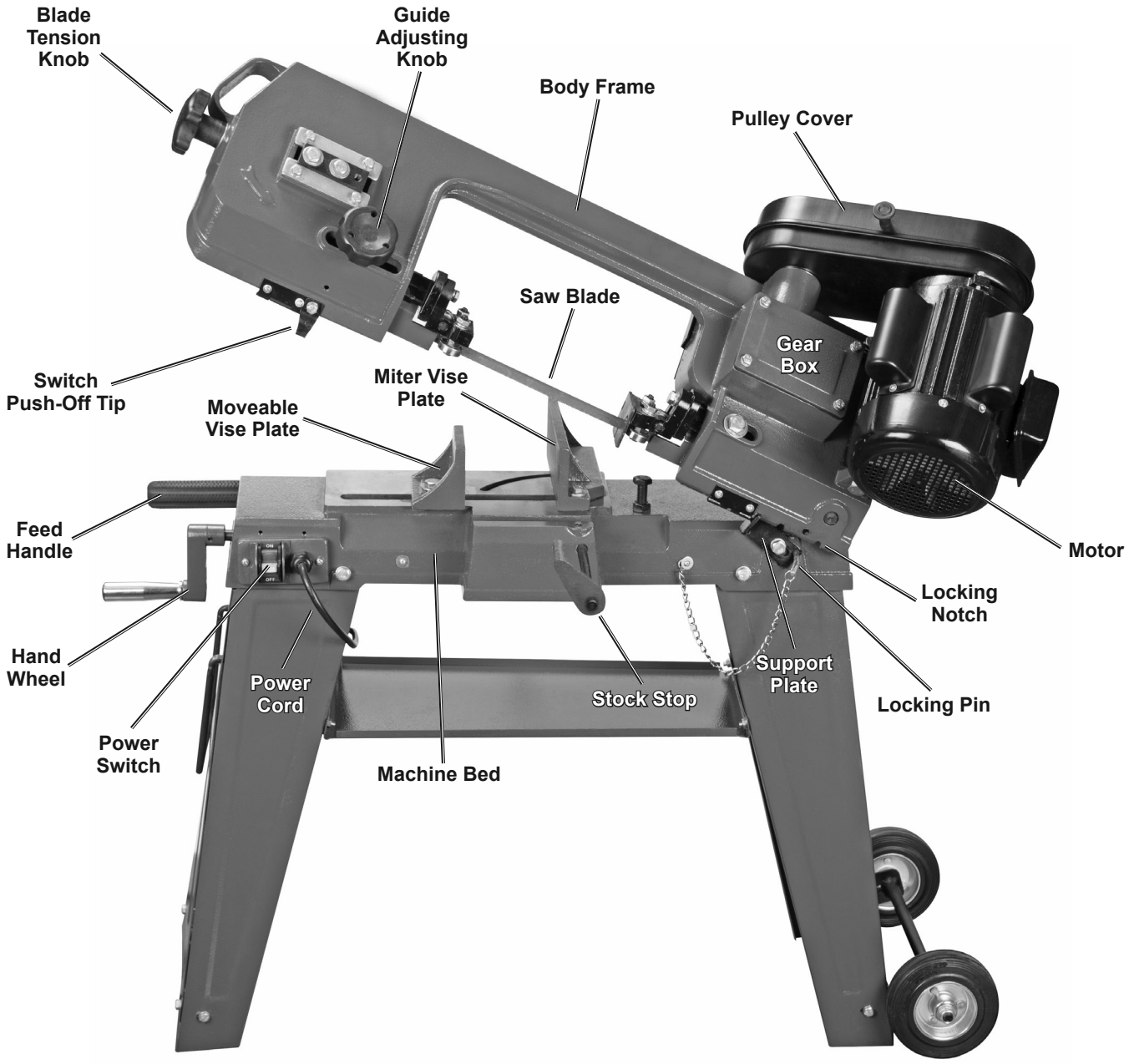
To Convert the Band Saw for Horizontal Use

1. Remove the screws (78) holding the Vertical Cutting Table (134) in place.
2. Loosen the Bolt and guide the Vertical Cutting Table Support assembly away from the Saw Blade. Refer to Figure M on page 11.
3. Remove the Screw (113) and Flat Washer (114) to open the Blade Back Cover (115). Refer to Figure J on page 11.

⚠**WARNING!** Keep hands and fingers safely away from the Saw Blade (66).

4. Guide the Horizontal Cutting Guard (71) around the Saw Blade and secure in place with the Screws (78).
5. Close the Blade Back Cover and secure with the Screw and Flat Washer.
6. Remove the Locking Pin (126) and turn the Support Plate (127) counterclockwise until it disengages from the Body Frame (93).
7. Lower the Body Frame to its full horizontal position.
8. When storing or moving the Band Saw, lock it in the horizontal position by inserting the Locking Pin into the Body Frame. Refer to Figure W on page 18.

Functions



Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY:
DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.
Moving guards must move freely and close instantly.

To Use the Vise

1. Raise the Body Frame (93) to its vertical position, and lock the Body Frame in place with the Support Plate (127) and Locking Pin (126). Refer to Figure I on page 11.
2. Open the Moveable Vise Plate (38) to accept the workpiece by rotating the Hand Wheel (31) counterclockwise. Refer to Figure N.
3. Place the workpiece on the Machine Bed (122). If the workpiece is long, support the end.

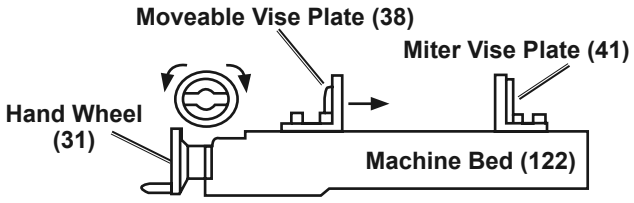


Figure N

4. Clamp the workpiece firmly against the Miter Vise Plate (41) with the Moveable Vise Plate by rotating the Hand Wheel clockwise.

To Use the Quick Vise Adjustment for an Angle Cut

1. Loosen the Bolt (43) and adjust the Miter Vise Plate to the desired angle as indicated by the Angle Scale. Re-tighten the Bolt. Refer to Figure O.
2. Loosen the Bolt (40) and adjust the Moveable Vise Plate to parallel the Miter Vise Plate. Re-tighten the Bolt.

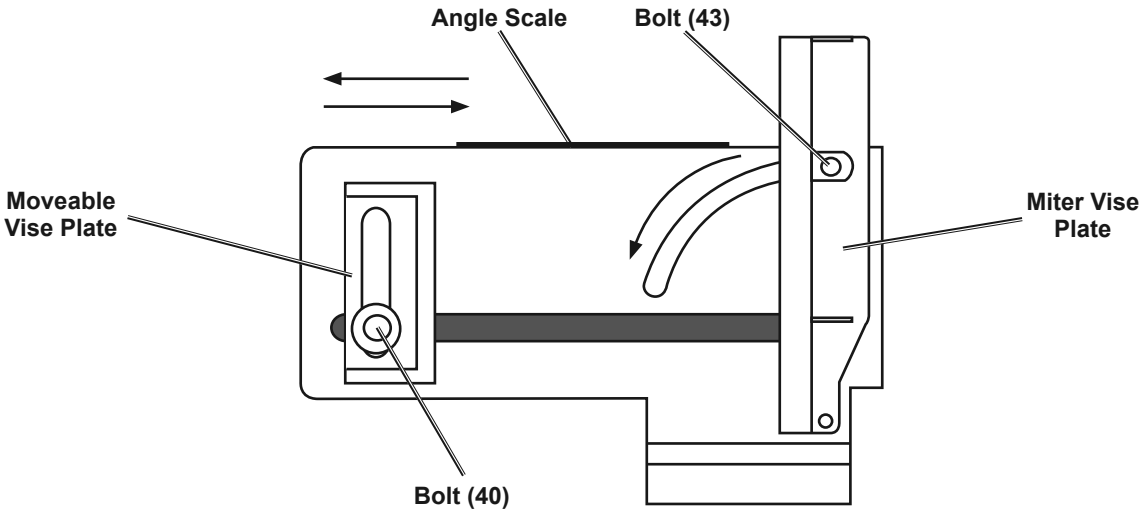


Figure O

Adjustments

To Adjust the Stock Stop

1. Loosen the Socket Head Screw (17) that holds the Stock Stop (18) to the Shaft (19). Refer to Figure P.

2. Adjust the Stock Stop to the desired length position. Re-tighten the Socket Head Screw.

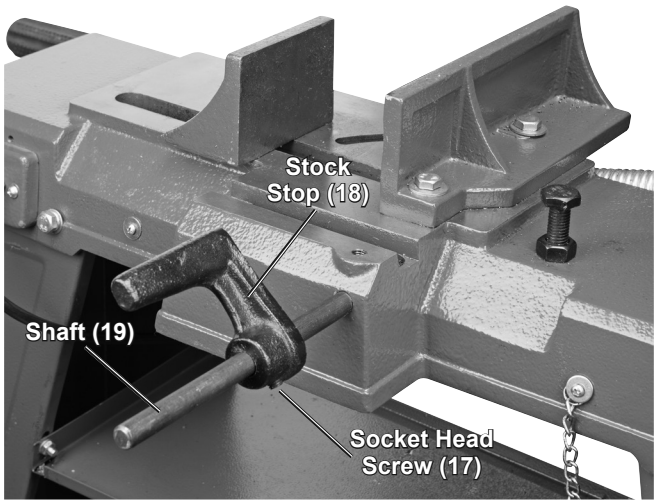


Figure P

To Adjust the Blade Guide Bearings

NOTE: Blade Guide Bearings (72) adjustment is a critical factor in the performance of the Band Saw.

NOTE: Before attempting to adjust the Blade Guide Bearings, try installing a new Saw Blade (66) to correct poor cutting. If a Saw Blade becomes dull on one side sooner than the other, it will begin cutting crooked. A Saw Blade replacement will correct this problem, whereas Blade Guide Bearings adjustment will not.

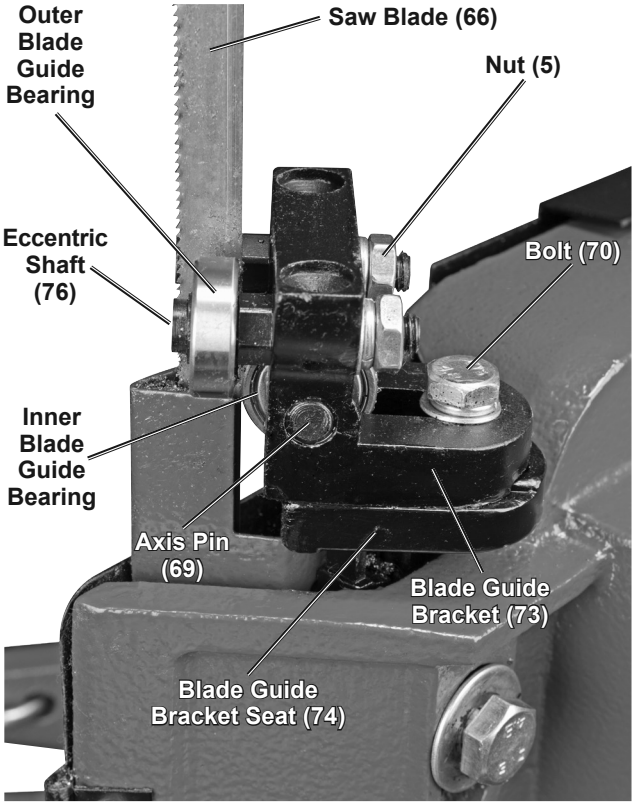


Figure Q: Lower Blade Guide Assembly

1. If a new Saw Blade does not correct the problem, check that the Blade Guide Bracket Seats (67, 74) are clear of the Saw Blade.

2. There should be from 0.000" (just touching) to 0.001" clearance between the Saw Blade and Blade Guide Bearings. Refer to Figure Q. To obtain this clearance adjust as follows:

   a. The *Outer* Blade Guide Bearings are mounted to Eccentric Shafts (76) and can be adjusted.

   b. Loosen the Nuts (5) while holding the Blade Guide Bearings.

   c. Turn the Blade Guide Bearings until they are appropriately clear of the Blade. Then re-tighten the Nuts.

   d. To adjust the *Inner* Blade Guide Bearings, loosen the Bolts (70) holding the Blade Guide Brackets (73, 79) in place.

   e. Move the Blade Guide Brackets forward or back until the proper clearance is obtained. Then re-tighten the Bolts.

To Adjust the Blade Tracking

1. Adjust the Band Saw speed to its slowest setting. See *To Adjust the Cutting Speed* on page 10.
2. Remove the Locking Pin (126) from the Body Frame (93).
3. Raise the Body Frame to its full vertical position. Turn the Support Plate (127) clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock Body Frame into position. Refer to Figure I on page 11.
4. Remove the Screw (142) and Flat Washer (141) to open the Blade Back Cover (82). Turn on the Band Saw and examine the Upper Blade Wheel (83).

⚠**WARNING!** This procedure requires running the Band Saw with the Blade Back Cover open. To avoid injury, keep hands clear of turning blade.

5. The Saw Blade (66) is tracking properly when the back of the Blade is just touching the edge of the Upper Blade Wheel flange. The back of the Blade should not rub against the flange. Refer to Figure R.

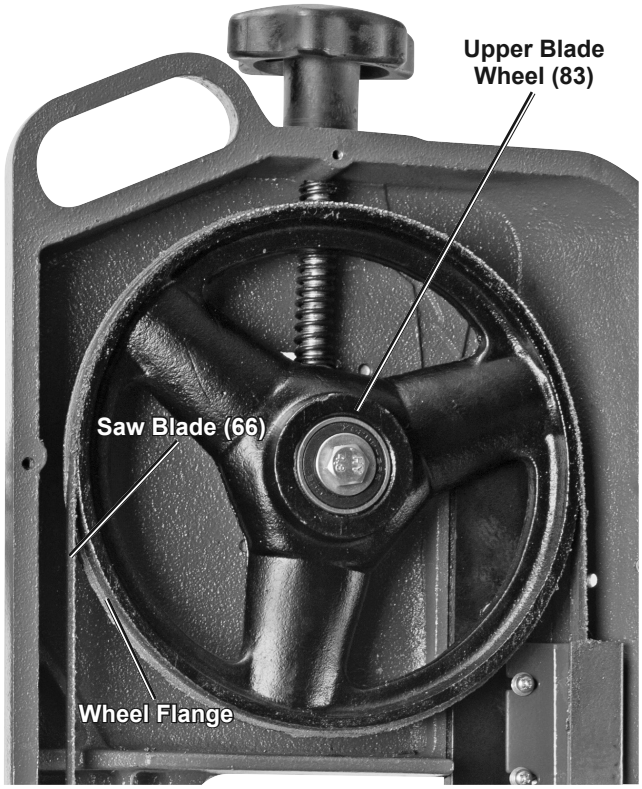


Figure R

NOTE: If adjustment is necessary, the Blade Guide Bearings should be completely clear of the Saw Blade. Refer to Figure Q on page 14.

6. Turn off the Band Saw and loosen two Bolts (13) to a point where they are loose but snug. Refer to Figure S.

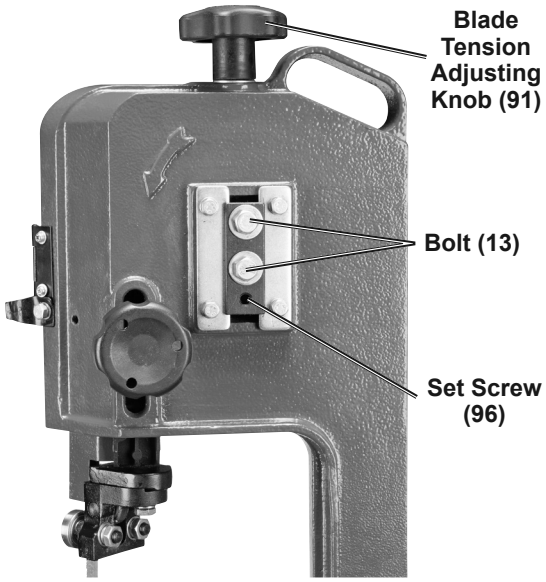


Figure S

7. With the Band Saw running, turn the Set Screw (96) until the Saw Blade tracks properly. Make sure Blade tension is maintained by turning the Blade Tension Adjusting Knob (91).
8. When adjustment is complete, turn off the Band Saw and re-tighten the two Bolts.
9. Close the Blade Back Cover and secure with the Screw and Flat Washer.

To Adjust the Blade Tension

1. Raise the Body Frame (93) to its full vertical position. Turn the Support Plate (127) to the right until it firmly locks into the Body Frame and insert the Locking Pin (126) to lock Body Frame into position. Refer to Figure I on page 11.
2. Turn the Blade Tension Adjusting Knob (91) *clockwise* to **increase** tension on the Saw Blade (66).
3. Turn the Blade Tension Adjusting Knob *counterclockwise* to **decrease** tension on the Saw Blade.
4. Correct tension has been acquired when the Saw Blade is just tight enough for the Blade Wheels (63, 83) to grip the Blade and turn it.

NOTE: Release blade tension when Band Saw will not be used for extended periods.

To Adjust the Feed Rate

Adjust the feed rate of the Body Frame by turning the Feed Handle (35) *clockwise* to decrease the feed rate or *counterclockwise* to increase the feed rate. Refer to Figure T.

NOTICE: Do not turn the Feed Handle more than one turn at a time. Excessive feed pressure can break the Saw Blade. Insufficient feed pressure dulls the Saw Blade rapidly.

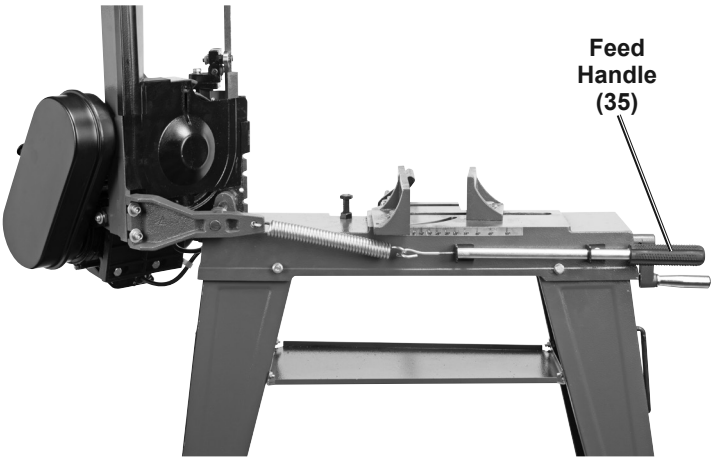


Figure T

To Adjust the Blade Guide Brackets

1. The Upper Blade Guide Bracket (79) is adjustable by loosening the Blade Guide Adjusting Knob (68) and sliding the Bracket up or down to accommodate the depth of the workpiece. Refer to Figure U.
2. The Blade Guide Brackets should be set as close as possible to the workpiece, without interfering with the workpiece or contacting the Machine Bed (122).
3. Once the adjustment is made, re-tighten the Blade Guide Adjusting Knob.

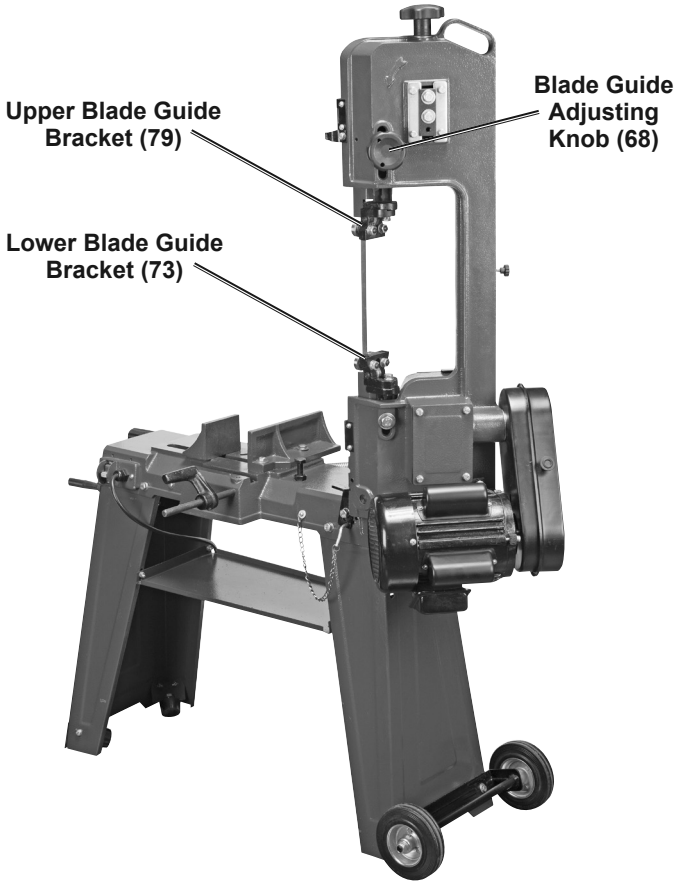


Figure U

Workpiece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. Secure loose workpieces using a vise or clamps (not included) to prevent movement while working.
4. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

Vertical Position

⚠**WARNING!** Always wear ANSI-approved safety impact eye goggles when operating the Band Saw.

1. **Do not plug the Power Cord into an electrical outlet until all necessary adjustments (as previously discussed in this manual) have been made.**
2. Remove the Locking Pin (126) from the Body Frame (93).
3. Raise the Body Frame to its full vertical position. Turn the Support Plate (127) clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock Body Frame into position. Refer to Figure V.

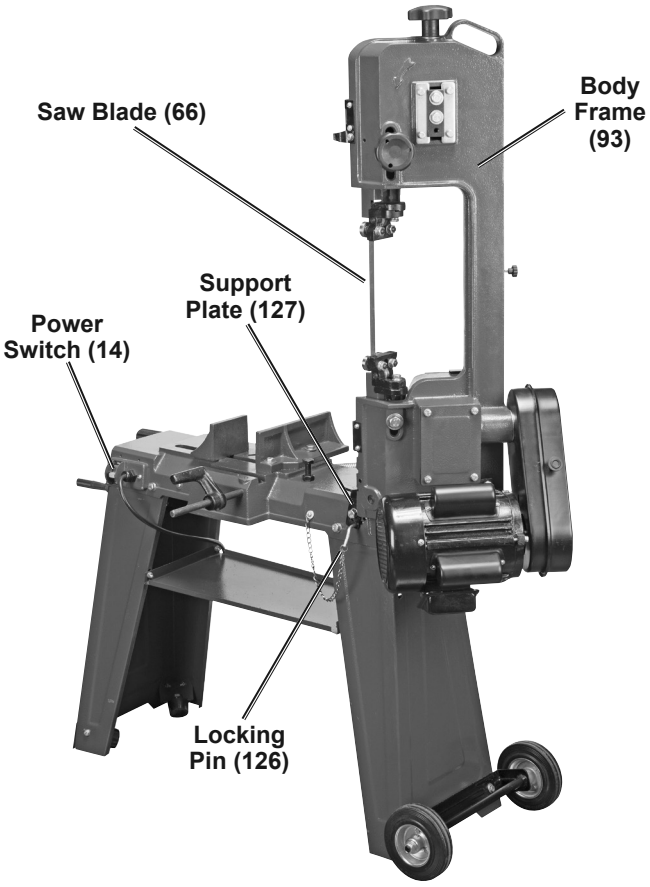


Figure V

4. Once all necessary adjustments to the Band Saw have been made, plug the Power Cord (27) into the nearest **120 volt, grounded, electrical outlet**.
5. Turn the Power Switch (14) to its **"ON"** position.

⚠**CAUTION!** Cut only *flat* workpieces when the Band Saw is in its vertical position. Never attempt to cut pipes or other round objects with the Band Saw in its vertical position.

6. Before cutting, turn on the Band Saw and check for excessively loose Saw Blade (66) tension or machine vibration. Turn off the Band Saw and correct any problems before using.
7. Set the workpiece on the Vertical Cutting Table (134). Keep downward pressure on the workpiece throughout the cutting process.
8. When cutting a large workpiece, make sure its entire length is properly supported. If necessary, use a roller stand (not included) with a larger workpiece.
9. Allow the Saw Blade to reach full speed before feeding the workpiece into the Saw Blade.

⚠**WARNING!** Keep hands and fingers safely away from the cutting area.

10. Feed the workpiece into the Saw Blade gradually. Do not force the Band Saw to remove material faster than it is designed to cut.
11. Use two hands and hold workpiece securely against table at all times.

⚠**WARNING!** Never attempt to remove material stuck in the moving parts of the Band Saw while it is plugged in and running. Turn off the Band Saw if the workpiece is to be backed out of an uncompleted cut.

12. Once the cut is made, turn the Power Switch to its **"OFF"** position and unplug the Power Cord from its electrical outlet.
13. Wait until the Saw Blade comes to a complete stop. Remove the workpiece and scrap material from the Vertical Cutting Table.
14. Remove the Locking Pin and turn the Support Plate counterclockwise until it disengages from the Body Frame. Lower the Body Frame to its horizontal position.
15. Clean, lock in the horizontal position by inserting the Locking Pin into the Body Frame, then store the tool indoors out of children's reach. Refer to Figure W.

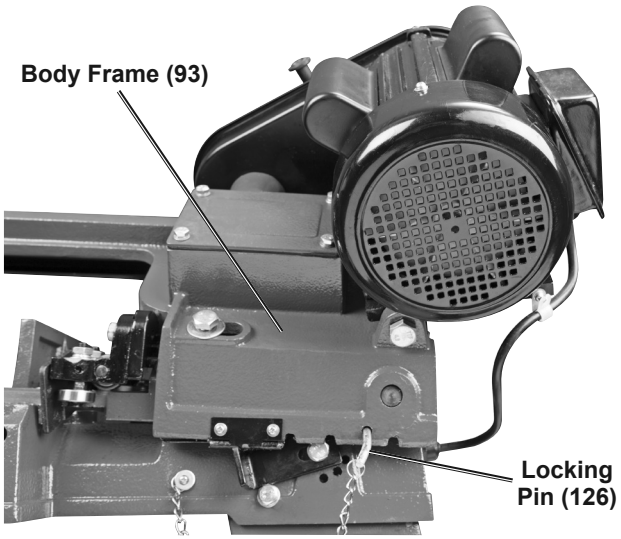


Figure W

Horizontal Position

⚠**WARNING!** Always wear ANSI-approved safety impact eye goggles when operating the Band Saw.

1. **Do not plug the Power Cord into an electrical outlet until all necessary adjustments (as previously discussed in this manual) have been made.**
2. If needed, convert the Band Saw for horizontal use as described in *To Convert the Band Saw for Horizontal Use* on page 12.
3. Remove the Locking Pin from the Body Frame.
4. Raise the Body Frame to its full vertical position. Turn the Support Plate clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock the Body Frame in position. Refer to Figure V on page 18.
5. Secure the workpiece in the Vise Assembly (38, 14). When cutting a large workpiece, make sure its entire length is properly supported. If necessary, use a roller stand (not included) with a larger workpiece. Refer to Figure X.

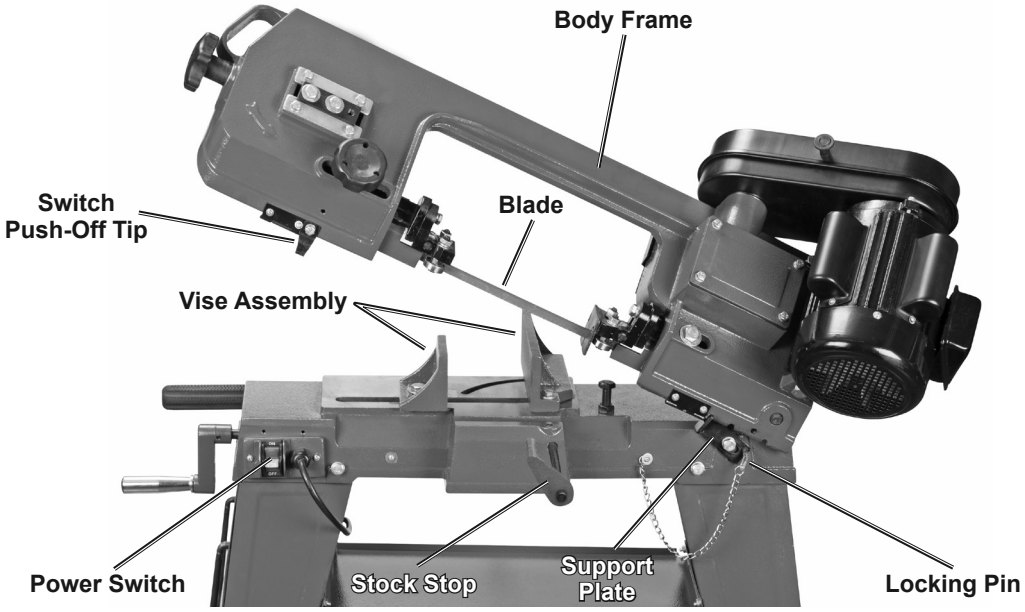


Figure X

6. If cutting several workpieces at the same length, you may wish to adjust the Stock Stop (18) to the desired position.
7. Once all necessary adjustments to the Band Saw have been made, plug the Power Cord into the nearest **120 volt, grounded, electrical outlet.**
8. Before cutting, turn on the Band Saw and check for excessively loose Saw Blade tension or machine vibration. Turn off the Band Saw and correct any problems before using.
9. To begin cutting, turn the Power Switch to its **"ON"** position. Remove the Locking Pin and slowly lower the Body Frame until the Saw Blade is just above the workpiece cut line.
10. Allow the Saw Blade to reach full speed before feeding the Saw Blade into the workpiece.

⚠**WARNING!** Keep hands and fingers safely away from the cutting area.

11. Slowly lower the Body Frame, while it gradually feeds the Saw Blade into the workpiece. Do not force the Band Saw to remove material faster than it is designed to cut.
12. Never attempt to remove material stuck in the moving parts of the Band Saw while it is plugged in and running. Turn off the Band Saw if the workpiece is to be backed out of an uncompleted cut.

IMPORTANT: When in the horizontal cutting mode only, the Switch Push-Off Tip (90) will automatically turn the Power Switch to its **"OFF"** position and shut off the Band Saw Motor when the cut has been completed.

13. Once the cut is made, check to make sure the Power Switch is in its **"OFF"** position and unplug the Power Cord from its electrical outlet.
14. Wait until the Saw Blade comes to a complete stop. Raise the Body Frame to its full vertical position. Turn the Support Plate clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock Body Frame in position. Remove the workpiece from the Vise assembly and scrap material from the Machine Bed (122) of the Band Saw. Then, slowly lower the Body Frame to its horizontal position.
15. Clean, lock in the horizontal position by inserting the Locking Pin into the Body Frame, then store the tool indoors out of children's reach. Refer to Figure W on page 18.

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - cracked or broken parts,
   - damaged electrical wiring, and
   - any other condition that may affect its safe operation.
2. **BEFORE EACH USE,** inspect the Saw Blade (66). Using a dull Saw Blade will cause excessive wear on the Motor of the Band Saw and will not produce a satisfactory cut. Replace with a new Saw Blade when needed.
3. **AFTER USE,** wipe external surfaces of the tool with clean cloth. **To clean the exterior parts of the Band Saw,** use only a clean cloth and mild detergent or mild solvent to clean the body of the Saw. **Do not immerse any electrical part of the machine in any liquids.**
4. Periodically, wear ANSI-approved safety goggles and NIOSH-approved breathing protection and blow dust out of the motor vents using dry compressed air.
5. **When the Band Saw is not in use or when transporting the tool:** Always lower the Body Frame (93) to its horizontal position and insert the Locking Pin (126) into the Body Frame to secure in place. Refer to Figure Y.

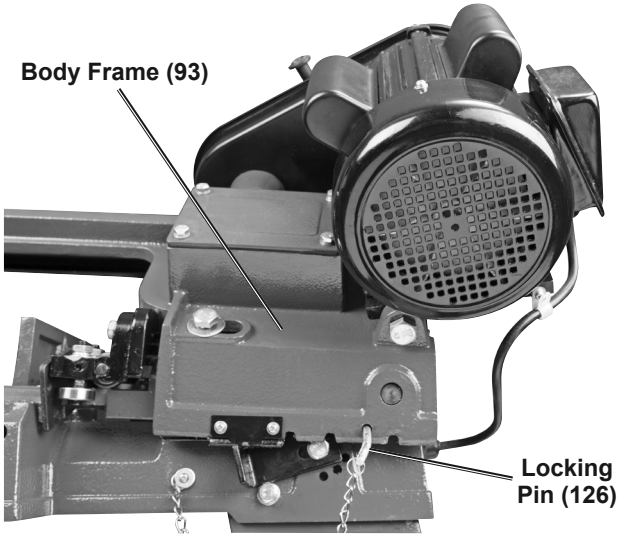


Figure Y

⚠**CAUTION!** All maintenance, service, or repairs not mentioned in this manual must only be performed by a qualified service technician.

⚠**WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Replacing the Saw Blade

1. Wear heavy-duty work gloves to avoid accidental cuts from the Saw Blade when performing this procedure.
2. Raise the Body Frame to its full vertical position. Turn the Support Plate (127) clockwise until it firmly locks into the Body Frame and insert the Locking Pin to lock the Body Frame in position.
3. Release Saw Blade tension by turning the Blade Tension Adjusting Knob (91).
4. Remove the Screw (142) and Flat Washer (141) to open the Blade Back Cover (82) and access the Saw Blade. Refer to Figure Z.

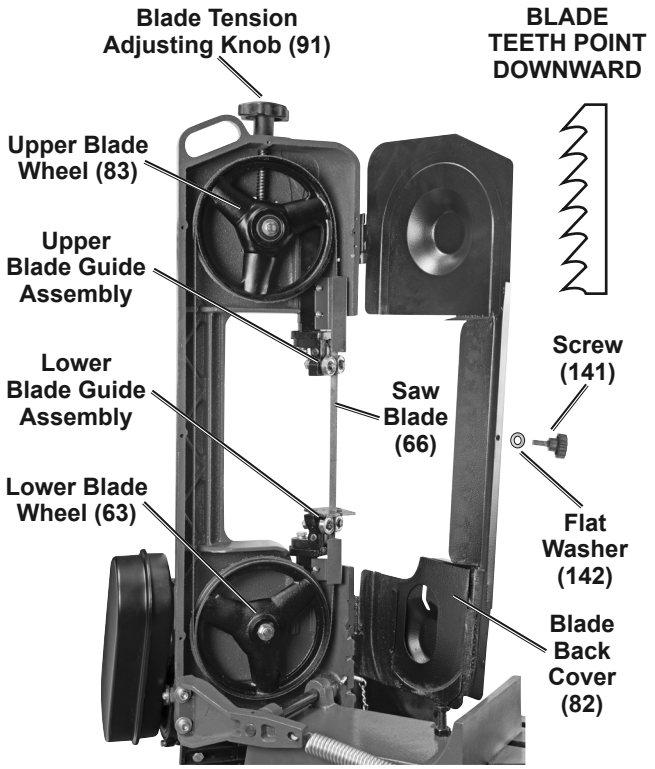


Figure Z

5. Slip the old Saw Blade off the Upper Blade Wheel (83), Lower Blade Wheel (63), and out of the Blade Guide Assemblies.

6. Place the new Saw Blade between each of the Blade Guide Assemblies and around the Upper Blade Wheel and Lower Blade Wheel. **IMPORTANT: The teeth must be pointing <u>downward</u> toward the Motor.**

<u>NOTE:</u> The Band Saw is equipped with a 64" diameter, 0.025" thick, 15/32" wide, 14 teeth per inch Saw Blade. The machine will also accept Blades in 4, 6, 8, and 10 tooth sizes. The choice of Blade pitch is determined by the thickness of the material to be cut. The thinner the workpiece, the greater the number of teeth required for proper cutting. A minimum of 3 teeth should engage the workpiece at all times.

<u>CAUTION!</u> If the teeth of the Saw Blade are so far apart that they straddle the workpiece, severe damage to the workpiece and/or Saw Blade will result.

7. Tighten the tension on the new Saw Blade by turning the Blade Tension Adjusting Knob.

8. Close the Blade Back Cover and secure with the Screw and Flat Washer.

Replacing the V-Belt

The Band Saw uses a size 0-506 V-Belt (100).
To replace the V-Belt:

1. Open the Pulley Cover (101).

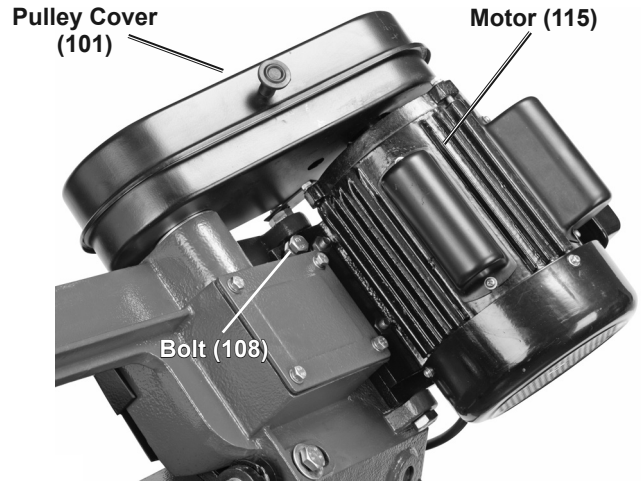


Figure AA

2. Loosen the Bolt (108) and press the Motor (115) toward the Body to release tension on the old V-Belt. Refer to Figure AA.

3. Remove the old V-Belt from the two Pulleys (99, 105). Refer to Figure AB.

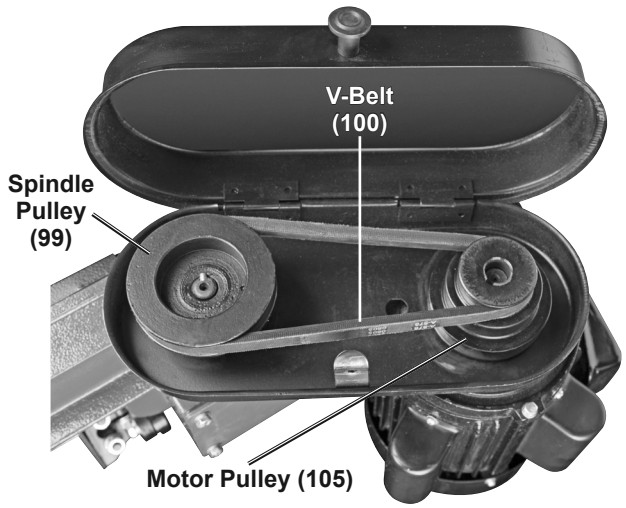


Figure AB

4. Place the new V-Belt onto the proper Pulley combination for the desired Blade speed. Refer to Figure H on page 10.

5. Adjust the position of the Motor to obtain approximately 1/2" depression in the V-Belt when applying pressure with your thumb.

6. Tighten the Bolt to secure the Motor in place.

Lubricating the Worm Gear and Worm Shaft

The Spindle Shaft (97) and Worm Gear (53) run in an oil bath Gear Box and should not require an oil change more than once a year, unless the oil becomes contaminated or a leak occurs due to improper replacement of the Gear Box Cover. To change oil in the Gear Box:

1. Position the Body Frame (93) in the horizontal position (see Figure Y on page 20).
2. Remove four Bolts (111), Spring Washers (7), and Flat Washers (8). Remove the Gear Box Cover (110) and Gear Box Gasket (109). Refer to Figure AC.

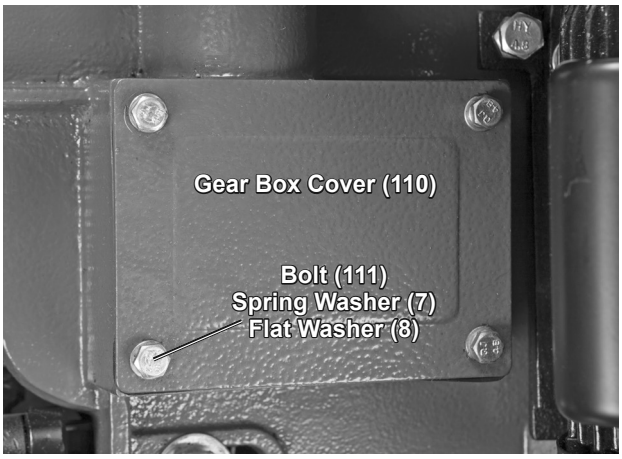


Figure AC

3. Remove the old oil from inside the Gear Box and replace the oil using 140 weight gear oil. The new oil should just come to the edge of the Gear Box. Do not overfill. Refer to Figure AD.

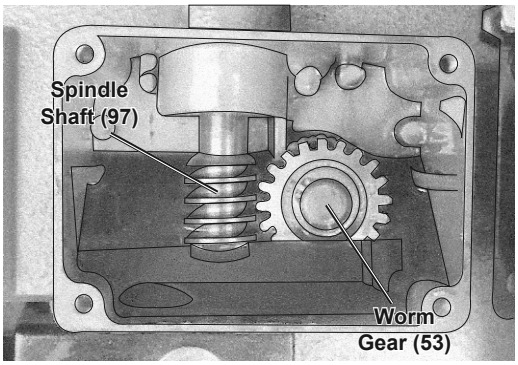


Figure AD

4. Replace the Gear Box Gasket, Gear Box Cover, and four Spring Washers, Flat Washers, and Bolts.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected.	1. Check that cord is plugged in.
	2. No power at outlet.	2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads.
	3. Tool's thermal reset breaker tripped (if equipped).	3. Turn off tool and allow to cool. Press reset button on tool.
	4. Internal damage or wear. (Carbon brushes or switch, for example.)	4. Have technician service tool.
Tool operates slowly.	Extension cord too long or wire size too small.	Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See Table A on page 3.
Performance decreases over time.	1. Saw Blade dull or damaged.	1. Replace Saw Blade.
	2. Carbon brushes worn or damaged.	2. Have qualified technician replace brushes.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing machine to work too fast.	1. Allow machine to work at its own rate.
	2. Saw Blade dull or damaged.	2. Replace Saw Blade.
	3. Blocked motor housing vents.	3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air.
	4. Motor being strained by long or small diameter extension cord.	4. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See Table A on page 3.
	5. Saw Blade tension is too high.	5. Gradually adjust Saw Blade tension until optimal tension has been achieved. See page 16.
	6. V-Belt tension too high.	6. Gradually adjust V-Belt tension until optimal tension has been achieved. See page 10.
	7. Blade is too coarse or too fine for workpiece.	7. See *Replacing the Saw Blade* on page 20 for recommended Blade type. Replace with more appropriate Saw Blade.
	8. Gear not aligned properly.	8. Adjust Gears so that Worm is in center of Gear.
	9. Gears need lubrication.	9. Check oil bath. See page 22.
Excessive Blade breakage.	1. Saw Blade is loose.	1. Tighten Blade tension.
	2. Saw Blade turns too quickly or too slowly.	2. Check manual for correct Blade speed. See page 10.
	3. Vise is not gripping the workpiece.	3. Clamp workpiece securely.
	4. Wheel Flange is eroding Saw Blade.	4. Adjust Saw Blade tracking. See page 15.
	5. Saw Blade teeth are spaced too widely for the workpiece material.	5. See *Replacing the Saw Blade* on page 20 for recommended Blade type. Replace with more appropriate Saw Blade.
	6. Saw Blade is not permitted to reach full speed before workpiece is fed into it.	6. Allow Blade to reach full speed before feeding material into it.
	7. Blade Guides are poorly aligned.	7. Adjust Blade Guides.

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.

Problem	Possible Causes	Likely Solutions
Premature Blade dulling	1. Saw Blade teeth are spaced too widely for the workpiece material. 2. Saw Blade turns too quickly. 3. Body Frame descends too lightly. 4. Saw Blade installed backwards. 5. Insufficient Saw Blade tension.	1. Check manual for recommended Blade type. See page 20 and replace with appropriate Saw Blade. 2. Try next lower speed. See page 10. 3. Increase pressure by reducing spring tension on side of Saw. See page 16. 4. Re-install Saw Blade properly. 5. Gradually increase Saw Blade tension until optimal tension has been achieved. See page 16.
Blade cuts crooked.	1. Vise is not square with Saw Blade. 2. Feed pressure is too great. 3. Guide Bearing is not adjusted properly. 4. Insufficient Saw Blade tension. 5. Blade Guides are too far from workpiece. 6. Saw Blade is dull. 7. Saw Blade turns too quickly or too slowly for workpiece. 8. Saw Blade tracks too far away from Wheel Flanges.	1. Adjust Vise so it is square with Blade. Always clamp work tightly in Vise. 2. Reduce pressure by increasing spring tension on side of Saw. See page 16. 3. Adjust Guide Bearing to 0.001" greater than maximum thickness, including the weld of the Saw. See page 14. 4. Gradually increase Saw Blade tension until optimal tension has been achieved. See page 16. 5. Move Blade Guide as close to workpiece as possible. 6. Replace Saw Blade. See page 20. 7. Check Manual for recommended speeds. See page 10. 8. Adjust Saw Blade tracking. See page 15.
Blade cuts rough.	1. Saw Blade turns too quickly. 2. Feed pressure is too heavy. 3. Saw Blade teeth are spaced too widely for the workpiece material.	1. See page 10 for recommended speeds. 2. Reduce pressure by increasing spring tension on side of Saw. See page 16. 3. Check manual for recommended Blade type. See page 20 and replace with more appropriate Saw Blade.
Blade twists.	1. Saw Blade is caught in the workpiece cut. 2. Saw Blade tension is too high.	1. Reduce pressure by increasing spring tension on side of Saw. See page 16. 2. Gradually adjust Saw Blade tension until optimal tension has been achieved. See page 16.
Unusual wear on side/back of Blade.	1. Blade Guides are worn down. 2. Blade Guide Bearings are out of place. 3. Blade Guide Bearing Bracket is loose.	1. Replace Blade Guides. See page 16. 2. Adjust Blade Guide Bearings. See page 14. 3. Tighten Blade Guide Bearing Bracket.

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Part	Description	Qty
1	Foot Pad	2
2	Stand Support	4
3	Flat Washer 8	18
4	Spring Washer 8	15
5	Nut M8	16
6	Nut M6	14
7	Spring Washer 6	16
8	Flat Washer 6	21
9	Bolt M6x12	9
10	Stand	1
11	Pin 4x20	2
12	Pull Handle	1
13	Bolt M8x20	7
14	Power Switch	1
15	Bolt M5x16	2
16	Flat Washer 5	4
17	Socket Head Screw M8x16	2
18	Stock Stop	1
19	Shaft	1
20	Locknut M5	2
21	Pull Relief	3
22	Screw M4x10	4
23	Spring Washer 4	7
24	Toothed Washer 4	2
25	Switch Box	1
26	Switch Panel	1
27	Power Cord	1
28	Bolt M6x20	2
29	Bolt M8x70	1
30	Handle Knob	1
31	Hand Wheel	1
32	Adjusting Rod	1
33	Nut For Rod	1
34	Rod Support	1
35	Feed Handle	1
36	Rod	1
37	Feed Handle Bracket (A)	1
38	Moveable Vise Plate	1
39	Flat Washer 10	3
40	Bolt M10x30	2
41	Miter Vise Plate	1
42	Bolt M8x25	1

Part	Description	Qty
43	Bolt M8x40	1
44	Bolt M12x30	1
45	Bolt M6x30	1
46	Pivot Rod	1
47	Pivot	1
48	Flat Washer	2
49	Set Screw M8x10	2
50	Socket Head Screw M8x20	2
51	Flat Key B5x20	2
52	Screw M6x10	3
53	Worm Gear	1
54	Bearing 6202	6
55	Oil Seal	3
56	Axle Sleeve	1
57	Ring 15	1
58	Cover	2
59	Screw M4x10	6
60	Gear Shaft	1
61	Gear Shaft Bushing	1
62	Flat Key B5x25	1
63	Lower Blade Wheel	1
64	Wheel Retaining Ring	2
65	Bolt M8x16	1
66	Saw Blade	1
67	Upper Blade Guide Bracket Seat	1
68	Blade Guide Adjusting Knob	1
69	Axis Pin	2
70	Bolt M8x30	2
71	Horizontal Cutting Guard	1
72	Bearing 6000	6
73	Lower Blade Guide Bracket	1
74	Lower Blade Guide Bracket Seat	1
75	Lower Guard Plate	1
76	Eccentric Shaft	4
77	Ring 10	4
78	Screw M5x8	3
79	Upper Blade Guide Bracket	1
80	Upper Guard Plate	1
81	Flat Washer 4	9
82	Blade Back Cover	1
83	Upper Blade Wheel	1
84	Lift Block	1

Part	Description	Qty
85	Bushing	1
86	Pin 4x20	1
87	Adjusting Block	1
88	Upper Blade Wheel Axle	1
89	Bolt M6x10	4
90	Switch Push-Off Tip	1
91	Blade Tension Adjusting Knob	1
92	Coil Spring	1
93	Body Frame	1
94	Blade Tension Sliding Plate	2
95	Blade Tension Sliding Guide	1
96	Set Screw M8x20	1
97	Spindle Shaft	1
98	Spacer	1
99	Spindle Pulley	1
100	V-Belt	1
101	Pulley Cover	1
102	Flat Washer 4	1
103	Knob	1
104	Screw M6x12	1
105	Motor Pulley	1
106	Hex Bolt	1
107	Motor Plate	1
108	Bolt M8x40	4
109	Gear Box Gasket	1
110	Gear Box Cover	1
111	Bolt M6x16	4
112	Snap-Gauge	1
113	Spring	1

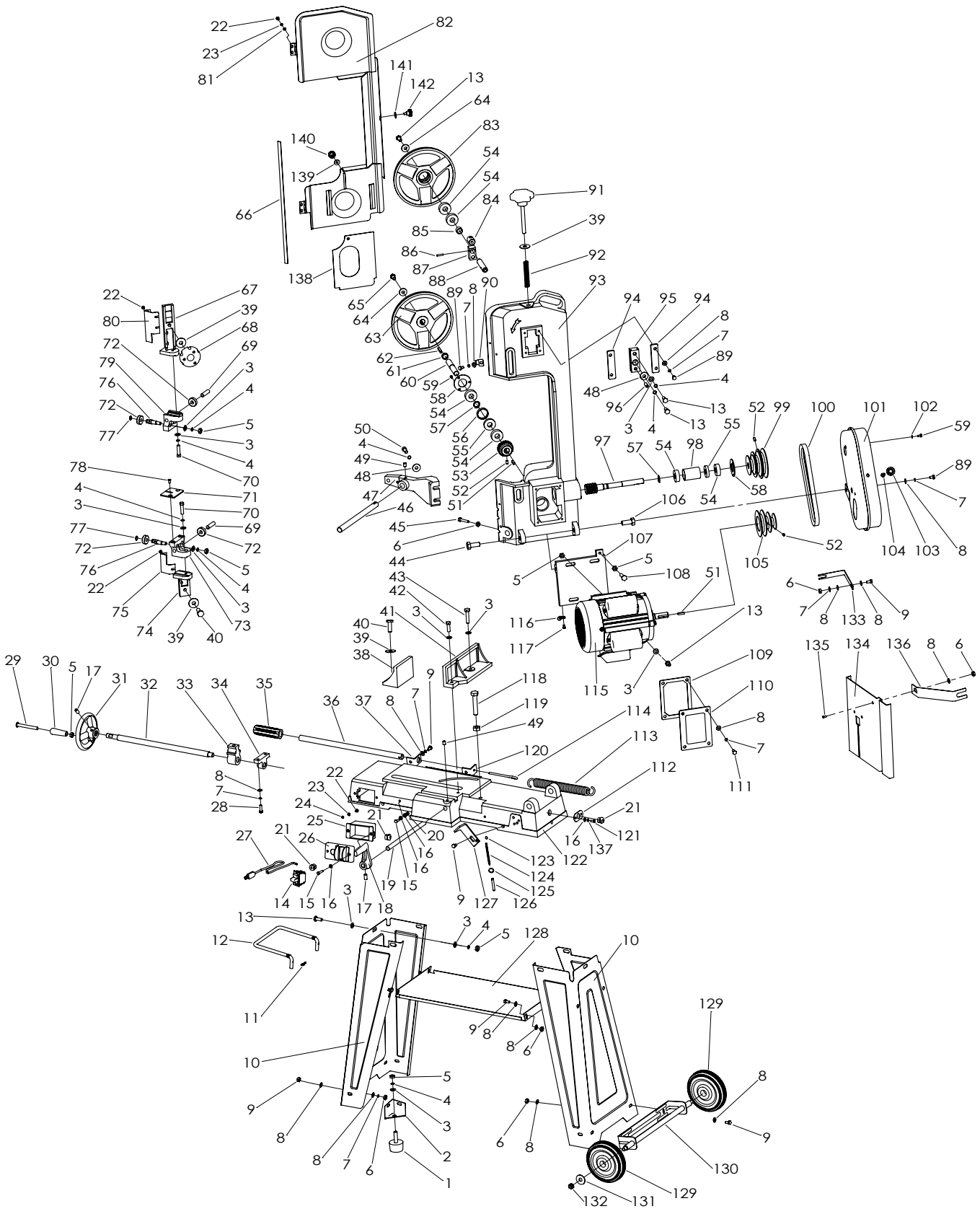
Part	Description	Qty
114	Spring Adjusting Screw	1
115	Motor	1
116	Fixed Clamp	3
117	Screw M4x8	2
118	Bolt M12x70	1
119	Nut M12	1
120	Feed Handle Bracket (B)	1
121	Screw M5x8	2
122	Machine Bed	1
123	Chain Ring (A)	1
124	Chain	1
125	Chain Ring (B)	1
126	Locking Pin	1
127	Support Plate	1
128	Tool Plate	1
129	Wheel	2
130	Wheel Bracket	1
131	Flat Washer 10	2
132	Lock Nut M10	2
133	Motor Cover Bracket	1
134	Vertical Cutting Table	3
135	Socket Head Screw M6x16	1
136	Vertical Cutting Table Support	1
137	Flat Washer 5	2
138	Back Cover Bracket	1
139	Flat Washer 5	1
140	Knob M5	1
141	Flat Washer 6	1
142	Screw M6	1

Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

Assembly Diagram



Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

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