

Operating Instructions and Parts Manual Horizontal-Vertical Variable Speed Band Saw Model HVBS-56V



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1.0 IMPORTANT SAFETY INSTRUCTIONS

Read and understand the entire instruction manual before operating machine.

This band saw is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a band saw, do not use until proper training and knowledge have been obtained.

WARNING – To reduce risk of injury:

- a. Wear eve protection.
- b. Do not remove jammed cut off pieces until blade has stopped.
- Maintain proper adjustment of blade tension, blade guides, and thrust bearing.
- d. Adjust upper guide to just clear workpiece.
- e. Secure workpiece firmly against table.
- Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
- Replace the warning labels if they become obscured or removed.
- Do not use this band saw for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
- 4. Always wear ANSI Z87.1 approved safety glasses or face shield while using this band saw. (Everyday eyeglasses only have impact resistant lenses; they are *not* safety glasses.)
- Before operating this machine, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Do not wear loose clothing. Confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do not wear gloves.
- 6. Wear hearing protection (plugs or muffs) if noise exceeds safe levels.
- 7. CALIFORNIA PROPOSITION 65 WARNING: This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.
- This product, when used for welding, cutting, or working with metal, produces fumes, gases, or dusts which contain chemicals known to the State of California to cause birth defects and, in

- some cases, cancer. (California Health and Safety Code Section 25249.5 et seq.)
- Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
- Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.
- 11. Make certain the machine is properly grounded.
- Make all machine adjustments or maintenance with the machine unplugged from the power source.
- 13. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
- 14. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after completion of maintenance.
- 15. Check damaged parts. Before further use of the machine, 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.
- 16. Provide for adequate space surrounding work area and non-glare, overhead lighting.
- 17. Keep the floor around the machine clean and free of scrap material, oil and grease.
- 18. Keep visitors a safe distance from the work area. Keep children away.
- Make your workshop child proof with padlocks, master switches or by removing starter keys.
- Give your work undivided attention. Looking around, carrying on a conversation and "horseplay" are careless acts that can result in serious injury.
- 21. Maintain a balanced stance at all times so that you do not fall into the blade or other moving parts. Do not overreach or use excessive force to perform any machine operation.
- 22. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.
- 23. Use recommended accessories; improper accessories may be hazardous.

- 24. Maintain tools with care. Keep saw blades sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
- 25. Turn off the machine before cleaning. Use a brush or compressed air to remove chips or debris do not use your hands.
- Do not stand on the machine. Serious injury could occur if the machine tips over, or if the cutting tool is unintentionally contacted.
- 27. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
- Remove loose items and unnecessary work pieces from the area before starting the machine.
- 29. Make sure workpiece is securely clamped in vise. Never use your hand to hold the workpiece.

- Never reach around or over a moving saw blade.
- 31. Feed work into a blade or cutter only against the direction of rotation of the blade or cutter.
- 32. Set blade guides for minimal exposure of blade before operating.
- 33. Don't use in dangerous environment. Don't use power tools in damp or wet location, or expose them to rain. Keep work area well lighted.
- 34. 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 2 (sect. 6.2) shows correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Familiarize yourself with the following safety notices used in this manual:

This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

This means that if precautions are not heeded, it may result in serious, or possibly even fatal, injury.

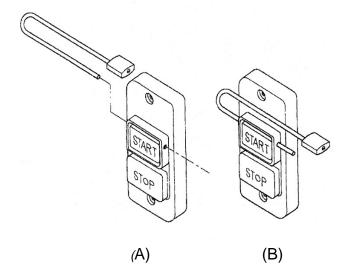
SAVE THESE INSTRUCTIONS

1.1 ON/OFF Switch padlock

To avoid accidental starting by young children or others not qualified to use the tool, the use of a padlock (not provided) is required.

To lock out an ON/OFF switch:

- 1. Open the padlock (Figure A).
- 2. Insert through hole in start button (Figure B).
- 3. Close the padlock.
- Place the key in a safe place out of the reach of children.



2.0 About this manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a JET Model HVBS-56V Band Saw. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

If there are questions or comments, please contact your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

AWARNING Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

Register your product using the mail-in card provided, or register online: http://www.jettools.com/us/en/service-and-support/warranty/registration/

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The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

4.0 Specifications

Model number			HVBS-56V	
Stock number			414548	
Motor and Electricals				
Motor type			DC brushed motor	
Horsepower			1/2 HP (0.375 kW)	
Motor phase			single	
Voltage			115 V only	
Cycle			60 Hz	
Listed FLA (full I	load amps)		4	
Motor speed	. ,		1200-3600 RPM	
On/off switches			Magnetic push-button; toggle shut-off on bed	
Power transfer			Gear	
Power cable			SJT 3x18AWG, 300V, length 5-1/2 ft. (168 cm)	
Power plug insta	alled		120 V, 15A	
Recommended	circuit size 1		15 A	
Sound emission	without load 2		60~65 dB at 1m (40 in.)	
Capacities				
	Round	90 deg.	5 in. (127 mm)	
Horizontal	Round	45 deg.	3 in. (76 mm)	
capacity	Rectangle	90 deg.	5 x 5-3/4 (127 x 146 mm); and 2 x 6 in. (51 x 152.4 mm)	
	(HxW)	45 deg.	4-1/2 x 3 in. (114 x 76 mm)	
Throat depth			5 in. (127 mm)	
Bow and blade				
Blade type provi	ided		raker type, bi-metal	
Blade size			1/2 x 0.025 x 64-1/2 in. (13 x 0.64 x 1638 mm)	
Blade speeds			variable, 80-230 SFPM (25-72 MPM)	
Blade wheel dia	meter		7-3/8 in. (187 mm)	
Bed and vise				
Bed height from	floor (mounted	d to stand)	25-1/2 in. (648 mm)	
Vise swivel			0 – 45 deg.	
Main materials				
Bed			cast iron, ground surface	
Bow			cast iron	
Stand			steel	
Side blade guide			ball bearings mounted on eccentric shafts	
Rear blade guid	es		ball bearings	
Band wheels			flanged cast iron	
Dimensions				
Vertical cutting p			9-5/8 x 9-1/2 in. (244.5 x 241 mm)	
Floor space requ			16-1/4 x 42-1/2 in. (413 x 1080 mm)	
Overall assembl			37 x 17.72 x 41.34 in. (940 x 450 x 1050 mm)	
Shipping dimens	sions (LxWxH)		38.78 x 13.98 x 17.80 in. (985 x 355 x 452 mm)	
Majabta				
Weights				
Net weight Shipping weight			115 lbs. (52 kg) 143.30 lbs. (65 kg)	

Table 1

L = length, W = width, H = height

SFPM = surface feet per minute

RPM = revolutions per minute

¹ subject to local/national electrical codes.

² The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

5.0 Setup and assembly

AWARNING Read and understand all instructions before attempting assembly. Band Saw must be disconnected from power during all assembly procedures. Failure to comply may cause serious injury.

5.1 Shipping contents

See Figures 5-1 and 5-2.

- 1 Band saw (not shown)
- 2 Wheels A
- 2 Adjustable foot with nuts and washer B
- 1 Vertical cutting plate C
- 1 Vertical cutting plate stand **D**
- 1 Open end wrench 12/14mm E
- 1 Work stop assembly F
- 1 Handle G
- 1 Handwheel H
- 1 Axle I
- 1 Stand shelf J
- 2 Stand cross braces K
- 1 Stand front panel L
- 4 Stand legs (2 LH, 2 RH) M
- 1 Hardware package, includes:
 - 19 Phillips hd screws, 1/4x5/8 HP1
 - 6 Socket hd cap screws, 5/16x1-1/4 **HP2**
 - 2 Cotter pins, 1/8x1 **HP3**
 - 6 Flat washers, 5/8 HP4
 - 20 Flat washers, 1/4 HP5
 - 20 Hex nuts, 1/4 **HP6**
 - 1 Flat head screw. 1/4 x 3/4 **HP7**
 - 6 Flat washers, 5/16 HP8
 - 6 Hex nuts, 5/16 **HP10**

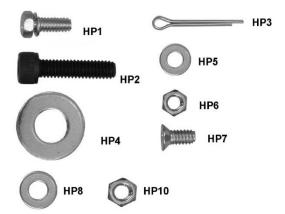


Figure 5-1: Hardware package HVBS56V-HP

5.2 Tools required for assembly

Wrenches, 10mm, 12mm Hex wrench, 4mm #2 cross point screwdriver Pliers

(Note: Ratchet wrench with sockets will speed assembly.)

5.3 Unpacking and cleanup

- Inspect all contents for shipping damage. Compare contents of shipping carton with contents list in this manual. Report any damage or part shortages to your distributor.
- 2. Do not discard packing material until saw is assembled and running properly.
- Remove rust protectant from exposed surfaces, such as bed, vise assembly, etc., with a clean rag and cleaner/degreaser. Apply a light coat of oil on these surfaces to inhibit rust.

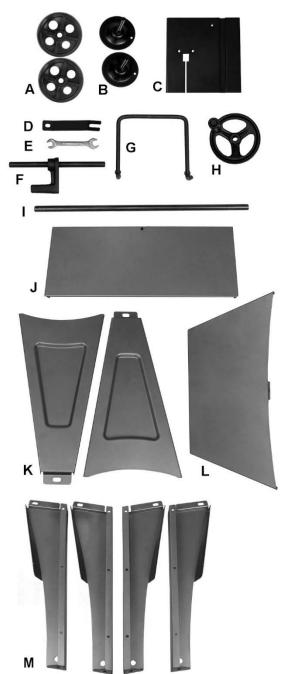


Figure 5-2: contents

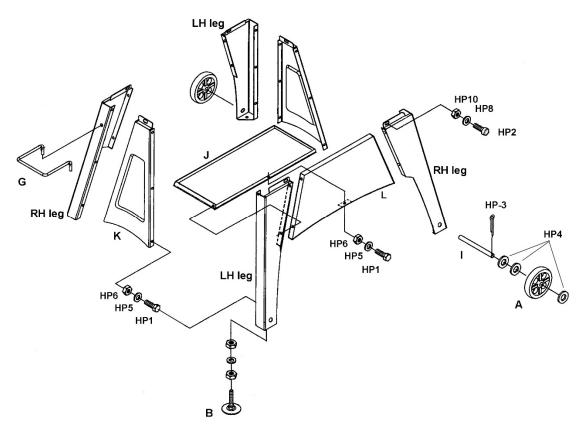


Figure 5-3: stand assembly

5.4 Assembling stand

Refer to Figure 5-3.

NOTE: Only make fasteners hand-tight at this time. They will be fully tightened after band saw has been settled atop stand.

- 1. Assemble legs, cross braces, front panel and shelf, as shown in Figure 5-3.
- 2. Install handle (G) into end of assembled stand
- 3. Install axle and wheels on right side of stand. Use two flat washers between wheel and stand leg on each side. Insert cotter pin (HP3) at each axle end and bend prongs to secure.
- 4. Install adjustable feet (B) at opposite end of stand and adjust until stand is level.

5.5 Mounting saw to stand

AWARNING Saw is heavy; two-person lift.

- 1. With help from another person, position saw atop stand, and secure with socket head cap screws and washers (HP2/8/10, Figure 5-3).
- 2. Fully tighten all fasteners on stand assembly.

5.6 Additional assembly

 Remove shipping bracket (P, Figure 5-4) and adjust switch trip (Q) so that it will turn off switch when bow reaches down position. (Switch trip is bendable for optimum positioning.) Retain shipping bracket in case machine must be transported in the future.

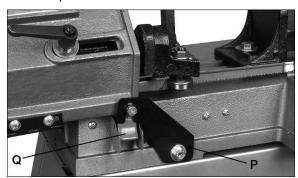


Figure 5-4

- 2. Install handwheel (H, Figure 5-5) onto vise lead screw shaft, aligning the set screw with the flat on the shaft. Tighten set screw.
- 3. Install workstop rod (F) into hole and tighten set screw (F₁). Slide work stop on rod and secure with set screw.

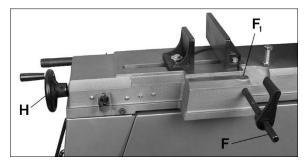


Figure 5-5

5.7 Vertical cutting plate

NOTE: The following steps apply only when using band saw in vertical mode.

- 1. Disconnect band saw from power source.
- 2. Raise bow to vertical position.
- 3. Loosen bolt (S, Figure 5-6) just enough to slide stand (D) behind bolt. Tighten bolt just enough to hold stand in position.
- 4. Remove two flat head screws (T) and bearing guard (U). [Note: Bearing guard (U) must be reinstalled when returning to horizontal mode.]
- Guide blade through slot in vertical cutting plate (C, Figure 7) and fasten cutting plate with the two screws.
- 6. Fasten stand (D) to underside of table using screw and hex nut (HP6/7). Stand can be bent slightly to accommodate plate.
- 7. Tighten bolt (S).

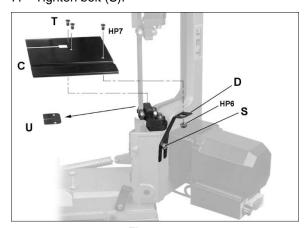


Figure 5-6

6.0 Electrical connections

The HVBS-56V Band Saw is rated for 115V power only. The band saw comes with a plug designed for use on a circuit with a *grounded outlet* that looks like the one pictured in **A**, Figure 6-1.

Before connecting to power source, be sure switch is in *off* position.

It is recommended that the band saw be connected to a dedicated 15 amp circuit with circuit breaker or

fuse. If connected to a circuit protected by fuses, use time delay fuse marked "D". Local codes take precedence over recommendations.

6.1 GROUNDING INSTRUCTIONS

This machine must be grounded. 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.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

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.

electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Failure to comply may cause serious or fatal injury.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in **A**, Figure 6-1. An adapter, shown in **B**, may be used to connect this plug to a 2-pole receptacle as shown in **B** if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. **Note:** In Canada, the use of a temporary adaptor is not permitted by the Canadian Electrical Code, C22.1.

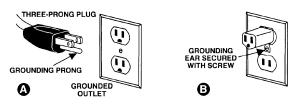


Figure 6-1

6.2 Extension cords

The use of extension cords is discouraged; try to position machines near the power source. If an extension cord is necessary, make sure it 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 2 shows 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.

Amper Rating		Volts	Total length of cord in feet		in feet	
More	Not	120	25	50	100	150
Than More Than			AWG			
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recomi	mended

Table 2: Extension cord recommendations

7.0 Adjustments

AWARNING Disconnect band saw from power source before making adjustments.

7.1 Tools required for adjustments

(Not all may be needed depending on adjustment.)

Wrenches 12,14,16mm Hex wrench 4mm Square Straight edge Small clamp

7.2 Blade guide adjustment

- 1. Disconnect band saw from power source.
- Loosen handle (B, Figure 7-1) and slide left blade guide assembly (C) as close as possible without interference to material being cut. Tighten handle.
- Loosen bolt (D) and slide right blade guide assembly (E) as close as possible to cutting area, without interference with bed casting. Tighten bolt. (Once the right blade guide assembly is properly positioned, it can generally remain in that position for all operations.)

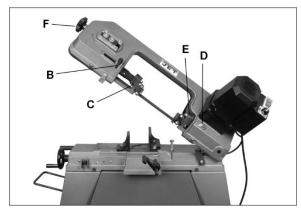


Figure 7-1

7.3 Blade tension

- 1. Disconnect band saw from power source.
- Open blade cover by removing knob and 2 screws (G, Figure 7-2). Observe position of blade on wheel. If blade is not adjacent to wheel flange, first adjust blade tracking according to sect. 7.6, Blade tracking, then proceed to step 3
- Turn blade tension handle (F, Figure 7-2) clockwise to tighten blade. Pluck the blade with your finger; a tensioned blade will emit a "twang" sound.

For precise measurement, use a blade tension gauge (not provided). Hard-back blades are generally tensioned at about 25,000 PSI (1757 kg/cm²); bi-metal blades at about 35,000 PSI (2460 kg/cm²).

4. Perform cutting operations with the saw, and make further tension adjustments as deemed necessary. As experience with the saw is gained, the operator should develop a better "feel" for how tight to set a particular blade. Tick marks can be made on tension knob for quickly resetting tension when re-installing a blade.

7.4 Blade changes

- 1. Disconnect band saw from power source.
- Raise bow to vertical position, and open back blade cover.
- 3. Remove red blade guards.

dwarning
It is essential these red guards be installed after new blade has been fitted. Failure to comply may cause serious injury.

- 4. Release tension on blade by turning tensioning knob (F, Figure 7-2). Slide blade off wheels.
- Place new blade between blade guide assemblies and around each wheel. Make sure blade teeth are pointing in proper direction (see Figure 7-3).

If teeth do not orient properly regardless of how blade is positioned, turn blade inside-out. Tension blade enough to hold in place.

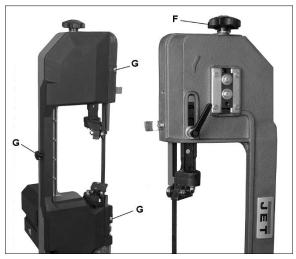


Figure 7-2

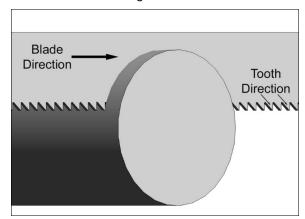


Figure 7-3

- 6. Install red blade guards with screws.
- 7. Tension blade fully (see sect. 7.3 Blade tension.)
- 8. Place 2 to 3 drops of lightweight oil on blade.
- 9. Connect machine to power source.
- 10. Operate saw and make sure blade is tracking properly (sect. 7.6, Blade tracking.)
- 11. Follow blade break-in procedures, sect. 8.2.

7.5 Blade guide bearings

- 1. Disconnect band saw from power source.
- Loosen bolt (H, Figure 7-4) and adjust assembly so that rear bearing (J) is slightly set back from back edge of blade. Also, inside bearing (K) should very lightly contact blade. Tighten bolt (H).
- 3. Inside bearing (K) is fixed. Outside bearing (L) rotates on an eccentric shaft. Loosen top nut (L_1) and rotate bottom nut (L_2) to adjust eccentric bearing to very slight distance away from blade.

- Hold bottom nut (L₂) to prevent it turning further, and retighten top nut (L₁).
- 5. Repeat above steps for opposite blade guide assembly.

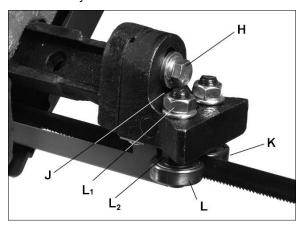


Figure 7-4

7.6 Blade tracking

AWARNING Blade tracking adjustment requires running saw with back cover open. Use caution when making this adjustment. Failure to comply may cause serious injury.

Blade tracking has been set by the manufacturer and should not need immediate adjustment. If blade tracking should ever require adjustment:

- 1. Confirm that blade tension is set properly. To adjust, see *sect. 7.4*, *Blade tension*.
- Raise bow to vertical position and open blade cover.

Mhile performing the following steps, keep blade from rubbing excessively on wheel flange. Excessive rubbing will damage wheel and/or blade.

- 3. Run saw at low speed and observe blade. Blade should run next to but not tightly against wheel flange.
- 4. Loosen bolts (M, Figure 7-5) with 12mm wrench.
- Turn set screw (N) with 4mm hex wrench, while observing blade tracking on wheel. Turn set screw clockwise to track closer to wheel flange. Turn set screw counterclockwise to track away from wheel flange.

NOTE: This adjustment is sensitive; start with 1/4 turns on the set screw and allow blade to respond to changes.

6. Once tracking is set, tighten bolts (M).

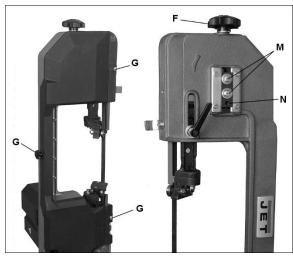


Figure 7-5

7.7 Feed pressure adjustment

Feed pressure is the amount of weight the bow is allowed to exert upon the workpiece. Turn handle (O, Figure 7-6) clockwise to decrease feed pressure; counterclockwise to increase feed pressure.

A good indication of proper feed pressure is the color and shape of the cutting chips. If the chips are thin or powdered, increase feed pressure. If chips are burned and heavy, decrease feed pressure. If they are still burned and heavy, reduce blade speed. Optimum feed pressure has been set when chips are curled, silvery, and warm.

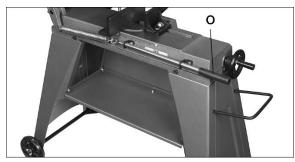


Figure 7-6

7.8 Blade-to-table squareness

The blade must be perpendicular to table to ensure a straight cut. This setting should be checked. Special blade setting gauges can be purchased for this type of inspection; however, it can also be done using more common shop items, as follows.

 "Extend" the surface of blade by clamping a straight, flat object to blade. (Figure 7-7 uses a small, lightweight aluminum ruler.) Use a lightweight clamp.

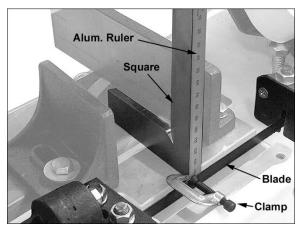


Figure 7-7

- 2. Place a square on table and against ruler. The square should lie flat against ruler without a gap.
- 3. If there is a gap, loosen bolt (H, Figure 7-4) on each blade guide assembly and rotate blade guide assembly until gap is eliminated between square and ruler.
- 4. Retighten bolts (H, Figure 7-4).
- After making this adjustment, be sure to recheck other blade adjustments as noted in this manual.

7.8.1 Test cut to verify adjustment

Test cuts can be used to determine whether or not the blade is accurately adjusted. Use 2-inch round bar stock to perform these test cuts, as follows:

- 1. With bar stock securely clamped in vise, make a cut through the bar stock. (See Figure 7-8.)
- 2. Mark the top of bar stock.
- 3. Move the bar stock about 1/4-inch past the blade so that you can begin a second cut.
- 4. Rotate the bar stock 180 degrees so the mark you made is now at bottom of cut.
- 5. Make a cut through the bar stock.
- 6. Use a micrometer to measure the thickness variation of the disk you have cut from the bar stock. Measure at top and bottom of disk.

The saw blade can be considered correctly adjusted when the variation measure is no more than 0.012 inch across the face of the disk.

If you do not have a piece of 2-inch bar stock available for a test cut, use a larger diameter test piece rather than a smaller one. [Note: Do not exceed material capacity of the machine – refer to specifications.] The maximum thickness variation on any test piece should be no more than 0.003 inch, per side, per inch of stock diameter.

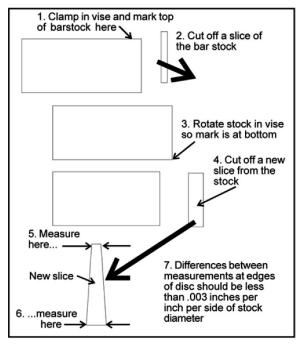


Figure 7-8

7.9 Auto shut-off adjustment

The saw is properly adjusted when blade shuts off just after cut completion. To set this:

- If saw completes cut but blade continues moving, adjust switch trip (P, Figure 7-9) downward.
- If blade stops before cut is complete, adjust switch trip (P) upward.
- If blade stops descending and continues running without completing the cut, turn stop bolt (Q) down.

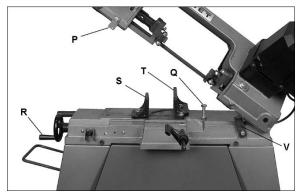


Figure 7-9

7.10 Vise adjustment

Use handwheel (R, Figure 7-9) to open and close vise.

Vise can be adjusted for square and miter cuts. Loosen hex bolts on fixed jaw (T) and adjust to desired angle. Refer to scale on back of bed for angle. (For precise work, always verify with a square against blade and vise.) tighten bolts.

Slightly loosen bolt on floating jaw (S) to allow it to conform to workpiece as jaw is brought into clamping position. Tighten bolt before operating.

7.11 Vertical stop adjustment

The stop screw (Figure 7-10) can be adjusted to ensure bow is at 90-degrees when using vertical cutting plate. Loosen nut, adjust screw, then tighten nut against casting to secure setting.

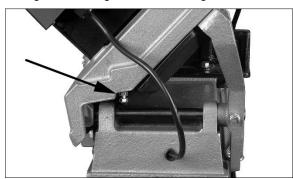


Figure 7-10

8.0 Operation

The HVBS-56V is equipped with a motor driver containing a voltage feedback device to provide consistent torque during operation.

The saw is also provided with an overload protection device to prevent overheating of the motor. If saw shuts off because of overload, allow to cool a few minutes, then restart.

8.1 Blade selection

The saw is provided with a blade that is adequate for a variety of cut-off jobs on a variety of common materials.

See Table 3 for recommended speeds for various materials. These selections, while appropriate for many shop cutting needs, do not encompass the wide variety of blades of special configuration (tooth pitch and set) and special alloys for cutting unusual or exotic materials.

Material	Speed (SFPM)*
Hardened Ferrous	80-130
Ferrous	130-180
Non-ferrous, Plastic, Wood	180-230

^{*}SFPM = surface feet per minute

Table 3: Speed recommendations

A coarse blade could be used for a solid steel bar but a finer tooth blade would be used on a thin-wall tube. In general, the blade choice is determined by the thickness of the material; the thinner the material, the finer the tooth pitch. General rule for band saw blade speed: The harder the material being cut, the slower the blade speed.

A minimum of three teeth should be on the work piece at all times for proper cutting. The blade and workpiece can be damaged if the teeth are so far apart that they straddle the workpiece.

For very high production on cutting of special materials, or to work hard-to-cut materials such as stainless steel, tool steel, or titanium, ask your industrial distributor for more specific blade recommendations. Also, the supplier who provides the workpiece material should be prepared to provide specific instructions regarding the best blade (and coolant or cutting fluid, if needed) for the material and shape supplied.

Use of a cutting oil is recommended when cutting at higher blade speeds.

8.2 Blade break-in

New blades are very sharp and therefore have a tooth geometry which is easily damaged if a careful break-in procedure is not followed. Consult the blade manufacturer's literature for break-in of specific blades on specific materials. However, the following procedure will be adequate for break-in of JET-supplied blades on lower alloy ferrous materials.

- Clamp a round section workpiece in the vise.
 The workpiece should be 2 inches or larger in diameter.
- 2. Set the saw on low speed. Start the cut with a very light feed rate.
- When the saw has completed 1/3 of the cut, increase feed rate slightly and allow saw to complete the cut.
- Keep the same hydraulic cylinder setting and begin a second cut on the same or similar workpiece.
- When blade has completed about 1/3 of cut, increase feed rate. Watch chip formation until cutting is at its most efficient rate and allow saw to complete the cut (see sect. 8.4, Evaluating cutting efficiency).
- 6. The blade is now ready for regular service.

8.3 General operating procedure

1. Raise bow and secure in position using support plate (V, Figure 7-9).

Always secure bow in raised position with support plate before loading material. Never start a cut with blade contacting workpiece.

Position workpiece in vise and tighten vise. Workpiece should be fitted directly between jaws without adding other objects. When workpiece is profiled section, flat piece or special shape, refer to examples in Figure 8-1 for proper clamping positions. The top row shows acceptable clamping positions, the bottom row shows *unacceptable* positions.

If the thickness of profile section is very thin, a piece which duplicates the profile should be fitted inside the workpiece itself, to prevent workpiece being crushed between the jaws.

AWARNING Do not load/unload material from vise while machine is running. Never hold workpiece by hand when cutting; workpiece must be firmly secured in vise. Do not reach into cutting area during cutting operations.

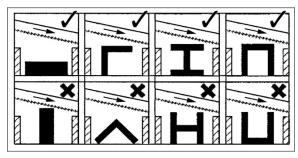


Figure 8-1: clamping positions

- Adjust blade guides to minimize exposed blade area.
- 4. Release support plate (V, Figure 7-9) and turn on saw. Lower bow until blade contacts material. Release bow to allow cutting to proceed. Weight of bow in conjunction with spring tension will force blade through material until cut is finished.
- 5. Switch trip tab must turn off saw at completion of cut. If it fails to do this, see *sect.* 7.9.

8.4 Evaluating cutting efficiency

Is the blade cutting efficiently? The best way to determine this is to observe the chips formed by the cutting.

If chip formation is powdery, then the feed rate is much too light, or the blade is dull.

If chips are curled, but colored — that is, either blue or straw-colored from heat generated during the cut — then the feed rate is too high.

If chips are slightly curled and are not colored by heat, the blade is sufficiently sharp and is cutting at its most efficient rate.

9.0 User-maintenance

Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

9.1 General maintenance

Wipe down saw with a soft rag after each use, and clear metal particles with a small paint brush or parts cleaning brush. Do not use compressed air, as it may force chips into guide bearings and other critical areas of saw.

Periodically apply a light coat of oil, such as SAE30, on exposed metal surfaces to inhibit rust.

Make frequent inspections of motor fan, and blow out (with low pressure air hose) or vacuum any accumulation of foreign material to maintain normal motor ventilation.

Keep blade guides clean and free of metal particles.

Check guide bearings frequently to make sure that they are properly adjusted and turning freely.

Inspect power cord; if worn, cut or damaged in any way, have it replaced immediately.

9.2 Commutator brush inspection

To maintain motor efficiency, inspect the two carbon brushes every two months, or more frequently if saw is heavily used. Stalling or loss of power may be a symptom of worn carbon brushes. If one brush is worn out, replace both at the same time.

Continued use of a damaged or worn brush may result in damage to motor armature.

- 1. Unplug saw from power source.
- 2. Remove four button head screws, and remove motor sleeve.
- 3. Unscrew and remove cap with flat blade screwdriver. See Figure 9-1.
- Gently pry up an edge of the brass clip, until the spring causes it to disengage from hole. (Notice orientation of brush as you remove it; it should be inserted in the same manner; curvature of brush will match curvature of motor.)
- 5. Pull out brush and inspect. Brush should be replaced if any of the following are discovered:

- Brush has worn to about 1/2-inch long.
- Signs of crumbling, burning, breaking.
- End of brush is rough or pitted.
- Abnormal coloration of spring
- Broken lead in spring
- Collapsed spring
- Install new brush (or reinstall current brush) and gently press it all the way into hole until brass clip is secured.
- Install cap.
- 8. Repeat for other brush.
- 9. Reinstall motor sleeve and screws.

NOTE: It is recommended that saw be run without load for several minutes to seat new brushes.



Figure 9-1

9.3 Lubrication

Ball bearings on blade guide assemblies and blade wheels are permanently lubricated and sealed, and should require no further lubrication.

Lubricate the vise lead screw as needed with #2 tube grease.

9.4 Additional servicing

Any additional servicing on the band saw should be performed by an authorized service representative.

10.0 Troubleshooting HVBS-56V Band Saw

10.1 Mechanical and electrical problems

Symptom	Possible Cause	Correction *
Motor will not start.	Low voltage.	Check power line for proper voltage.
	Open circuit in motor or loose connection.	Inspect all lead connections on motor for loose or open connections.
	Overload condition.	Allow machine to cool down, then restart.
Motor will not start, or motor stalls, resulting	Too many tools running on one circuit.	Reduce number of tools connected to circuit.
in blown fuse or tripped breaker.	Motor brushes worn.	Inspect and replace brushes if needed.
breaker.	Short circuit in line cord or plug.	Inspect cord or plug for damaged insulation and shorted wires.
	Short circuit in motor or loose connections.	Inspect all connections on motor for loose or shorted terminals or worn insulation.
	Incorrect fuses or circuit breakers in power line.	Install correct fuses or circuit breakers.
Motor overheats.	Motor overloaded.	Reduce load on motor: increase speed or decrease feed pressure. Make sure blade is appropriate for material.
	Air circulation through motor is restricted.	Clean motor fan with vacuum to restore normal air circulation.
	Gears misaligned.	Contact JET technical service.
Machine slows when operating.	Excessive feed pressure.	Adjust spring tension to reduce feed pressure, or increase speed.
	Motor brushes worn.	Inspect and replace brushes if needed.

Table 3

10.2 Operational problems

Symptom	Possible Cause	Correction	
Cuts not square.	Blade not square to vise/material.	Adjust vise square to blade.	
	Blade surface not perpendicular to table.	Adjust blade guides until perpendicular.	
	Workpiece shifting in vise.	Properly secure workpiece.	
	Low blade tension.	Increase tension.	
	Blade guides out of adjustment.	Adjust blade guides.	
Premature dulling of	Improper blade break-in.	Follow proper break-in procedure.	
blade teeth.	Excessive blade speed, blade teeth overheating.	Decrease speed.	
	Insufficient downfeed pressure.	Increase feed rate (adjust spring tension).	
	Insufficient blade tension.	Increase blade tension.	
	Improper tooth pitch for material.	Use proper blade.	
	Hard spots on, or work hardening of, material	Reduce blade speed and increase downfeed rate.	

^{*} **WARNING:** Some corrections may require a qualified electrician.

Symptom	Possible Cause	Correction
Rough cut.	Improper blade break-in.	Follow proper break-in procedure.
	Improper speed or feed rate.	Adjust as needed.
	Dull or damaged teeth.	Replace blade.
	Poor weld on blade.	Replace or re-weld blade.
Frequent blade	Workpiece shifting in vise.	Properly secure workpiece.
breakage.	Improper blade selection; too few teeth per inch or blade too thick.	Use blade with appropriate thickness and tooth pitch for material.
	Incorrect blade speed or downfeed rate.	Use proper speed and feed rates.
	Improper blade tension.	Tighten blade to prevent slippage on wheels.
	Blade overstressed, pushing against wheel flange.	Adjust blade tracking.
	Poor blade construction; cracks at weld.	Use properly welded blades.
	Blade contacting workpiece before saw is started.	Blade must be clear of workpiece when turning on saw.
	Guide bearing misalignment.	Adjust blade guides according to instructions.
Blade refuses to track properly on wheels.	Improper blade tension.	Tighten blade to prevent slippage on wheels.
	Guide bearing misalignment.	Adjust blade guides according to instructions.
	Blade catching in workpiece.	Use good quality blade of appropriate style and tooth pitch for workpiece. Use a cutting fluid when needed.
	Improper wheel alignment.	Inspect and adjust wheel alignment. Contact JET technical service if needed.
	Wheel bearings/bushings worn.	Inspect and replace if needed.

Table 4

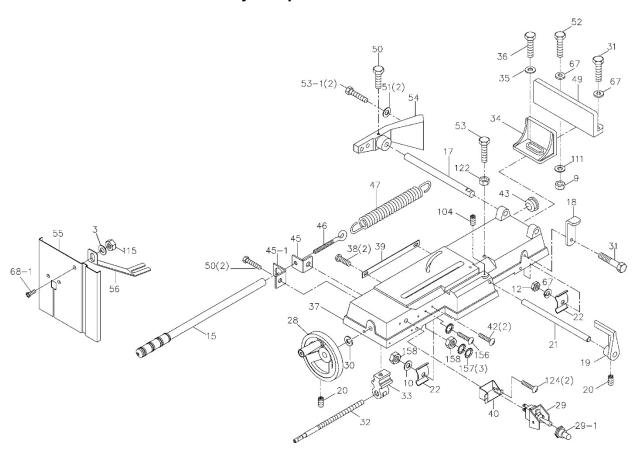
11.0 Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday, 8:00 a.m. to 5:00 p.m. CST. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

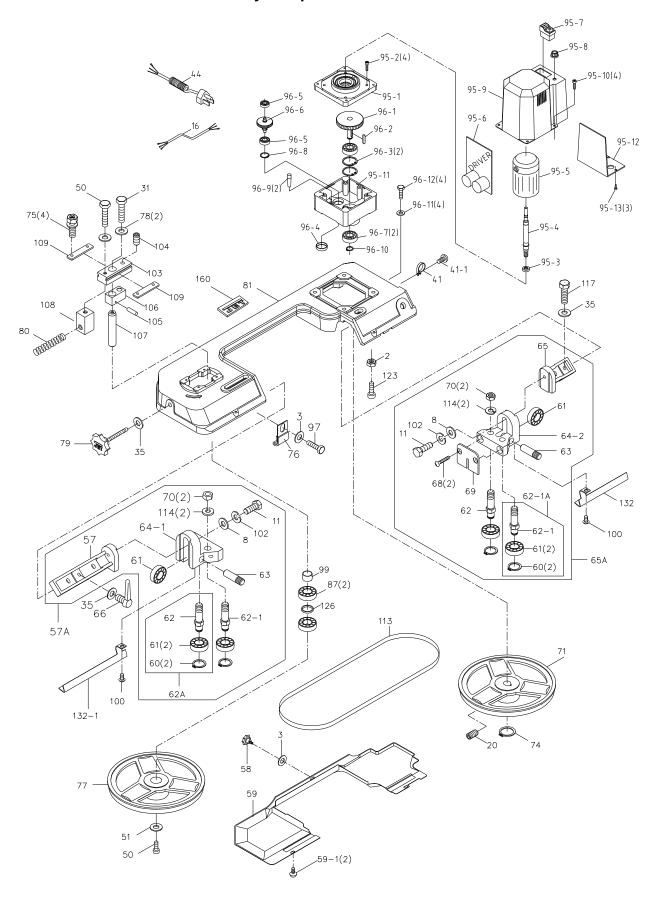
Some parts are shown for reference only, and may not be available individually.

Non-proprietary parts, such as fasteners, can usually be found at local hardware stores or may be ordered from JET.

11.1.1 HVBS-56V Bed Assembly – Exploded View



11.1.2 HVBS-56V Bow Assembly – Exploded View



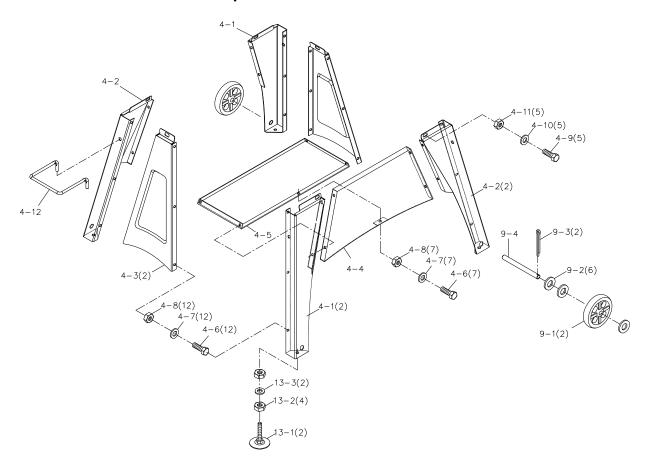
11.1.3 HVBS-56V – Bow and Bed Assemblies Parts List

Index No	Part No	Description	Size	Qty
2	. TS-0561011	Hex Nut	1/4"-20	1
3	TS-0680021	Flat Washer	1/4"	3
		Flat Washer		
		Flat Washer		
11	TS-0051051	Hex Cap Screw	5/16"-18x1"	2
		Hex Nut		
		Adjusting Rod		
		Electric Cord		
		Pivoting Rod		
		Support Plate		
		Stock Stop		
		Set Screw		
		Stock Stop Rod		
		Wire Relief Retainer		
		Handwheel		
		Toggle Switch Assembly		
		Plastic Cover		
		E-Retaining Ring, Ext		
		Hex Cap Screw		
		Lead Screw		
		Vise Nut		
		Moveable Vise Plate		
		Flat Washer		
		Hex Cap Screw		
		Bed		
		Phillips Pan Hd Machine Screw		
		Scale		
		Electric Cord Clip		
		Cable Clamp		
41-1	IS-081C022	Phillips Pan Hd Machine Screw	#10-24x3/8"	1
		Phillips Pan Hd Machine Screw		
		Rubber Ring		
		Power Cable with Plug		
		Nut Plate		
45-1	HVBS56M-045-1	Spring Handle Bracket		1
		Spring Adjusting Screw		
		Spring		
49	HVBS462-049	Mitering Vise Plate		1
		Hex Cap Screw		
		Flat Washer		
		Hex Cap Screw		
		Hex Cap Screw		
		Hex Cap Screw		
		Pivot Bracket		
		Vertical Cutting Plate		
		Stand for Vertical Cutting Plate		
		Adjustable Bracket LH		
		Adjustable Bracket Assembly LH		
		Knob		
		Blade Back Safety Cover		
		Truss Head Phillips Machine Screw		
		C-Retaining Ring, Ext		
		Ball Bearing		
		Guide Pivot		
		Center Shaft Assembly (Includes #60-62)		
		Centrifugal Guide Pivot		
		Eccentric Shaft Assembly (Includes #60,61,62-1)		
		Bearing Shaft Pin		
		Blade Seat Left		
		Blade Seat Right		
		Adjustable Bracket-RH		
		Adjustable Bracket-Assembly RH		
юб	. HVR220M-000	Lock Knob	3/8"-16UNCX30L	1

Index No.	Part No.	Description	Size	Qty
		Lock Washer		
		Phillips Flat Head Machine Screw		
68-1	.TS-081F051	Phillips Flat Head Machine Screw *	1/4"-20X3/4"	1
69	. HVBS462-069	Bearing Guard		1
70	. TS-0561032	Hex Nut	3/8-24 UNF	4
		Drive Blade Wheel		
		C-Retaining Ring		
		Hex Cap Bolt (w/Washer)		
		Switch Cut Off Trip		
		Idle Blade Wheel		
		Flat Washer		
		Blade Tension Knob		
		Spring		
		Ball Bearing		
		Gear Box Cover		
		Socket Head Cap Screw		
		Oil seal		
		Motor Shaft		
		Motor		
		Driver		
		Magnetic Switch		
		Variable Resistor		
95-9	. HVBS56V-95-9	Motor Sleeve		1
95-10	. TS-1502041	Socket Head Cap Screw	M5x16L	4
		Gear Box		
		Electric Plate		
		Phillips Pan Hd Machine Screw		
		Active Shaft		
		Double Round Hd Key		
		C-Retainer Ring, Internal		
		Band		
		Ball Bearing		
		Gear		
		Ball Bearing C-Retainer Ring, Internal		
		C-Retainer Ring, Internal Pivot Pin		
		C-Retainer Ring, External		
		Lock Washer		
		Hex Cap Screw		
		Hex Cap Screw		
		Spacer		
		Truss Hd Phillips Machine Screw		
		Lock Washer		
		Blade Tension Sliding Plate		
104	. TS-0270071	Socket Set Screw	5/16"-18x3/4"	2
105	. F12072	Roll Pin	Ø4x20L	1
		Sliding Plate Draw Block		
		Blade Wheel Shaft		
		Shaft Block		
		Blade Tension Sliding Guide		
		Flat Washer		
		Blade		
		Flat Washer		
		Hex Nut *		
		Hex Cap Screw		
		Hex Nut		
		Hex Cap Screw		
		Phillips Pan Hd Machine Screw		
		Bushing		
		Blade Guard-Right Blade Guard-Left		
		Round Head Screw		
		Ext Tooth Lock Washer		
107		LAL TOOLIT LOOK WASHEL		

Index No. Part No.	Description	Size	Qty
158TS-0680021	Hex Nut	3/16"-18	2
160 JET-92	JET Logo with 3M adhesive	92x38 mm	1
JJ6CS-OEW2	Open End Wrench (not shown)	12/14 mm	1
LM000282	ID Label, HVBS-56V (not shown)		1
	Warning Label (not shown)		
LM000283	Speed Chart, HVBS-56V (not shown)		1
LM000284	VR Speed Label, HVBS-56V (not shown)		1
HVBS56V-HP	Hardware Package (contains items with *	')	1

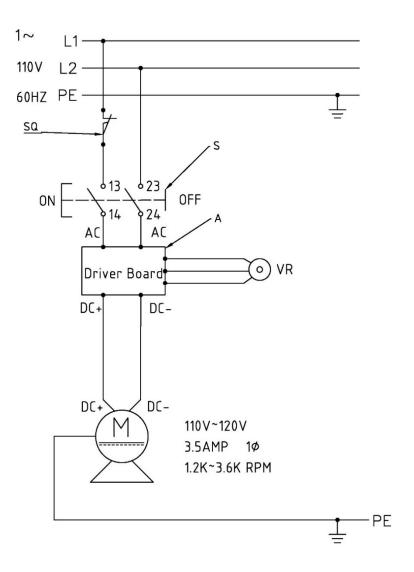
11.2.1 HVBS-56V Stand – Exploded View



11.2.2 HVBS-56V Stand – Parts List

Index No Part No	Description	Size	Qty
	Complete Stand Assembly		
4-1 HVBS56M-S1	Left Stand Leg		1
4-2 HVBS56M-S2	Right Stand Leg		1
	Cross Brace		
4-4 HVBS56M-S4	Front Panel		1
4-5 HVBS56M-S5	Shelf		1
4-6 HVBS56M-2	Hex Head Screw w/lock washer *	1/4"-20 x 5/8"	19
4-7TS-0680021	Flat Washer *	1/4"	19
	Hex Nut *		
4-9TS-0208071	Socket Head Cap Screw *	5/16"-18 x 1-1/4"	6
4-10TS-0680031	Flat Washer*	5/16"x23xt2	6
4-11TS-0570022	Hex Nut*	5/16"	6
4-12 HVBS462-014	Floor Stand Handle		1
9-1 HVBS56M-09	Wheel		2
	Flat Washer *		
9-3 HVBS462-006	Cotter Pin *	1/8" x 1"	2
	Axle		
13-1 HVBS56M-013	Adjustable Foot	3/8"	2
13-2TS-0561032	Hex Nut	3/8"-24 UNF	4
13-3TS-0680041	Flat Washer	3/8"	2
HVBS56V-HP	Hardware Package (contains items with *)		

12.0 Electrical Connections - HVBS-56V Band Saw



SQ = Lower (toggle) limit switch

S = Electromagnetic switch

A = Driver board

VR = Variable resistor

M = Motor

13.0 Warranty and service

JET warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

Warranty Period

The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

Who is Covered

This warranty covers only the initial purchaser of the product from the date of delivery.

What is Covered

This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. JET woodworking machinery is designed to be used with Wood. Use of these machines in the processing of metal, plastics, or other materials outside recommended guidelines may void the warranty. The exceptions are acrylics and other natural items that are made specifically for wood turning.

Warranty Limitations

Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

How to Get Technical Support

Please contact Technical Service by calling 1-800-274-6846. Please note that you will be asked to provide proof of initial purchase when calling. If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

More Information

JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

How State Law Applies

This warranty gives you specific legal rights, subject to applicable state law.

Limitations on This Warranty

JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. JET 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 PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

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Product Listing with Warranty Period

90 Days - Parts; Consumable items

1 Year - Motors; Machine Accessories

2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories; Woodworking Machinery used for industrial or commercial purposes

5 Year – Woodworking Machinery

Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools; Air Tools

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