



OPERATOR'S MANUAL

VBS-1408/1610 Metalworking Bandsaw



(VBS-1610 shown)

JET EQUIPMENT & TOOLS, INC.
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No. M-414485 2/97

Important Information

**1 YEAR
LIMITED WARRANTY**

**JET offers a one year limited
warranty on this product**

REPLACEMENT PARTS

Replacement parts for this tool are available directly from JET Equipment & Tools. To place an order, call 1-800-274-6848. Please have the following information ready:

1. Visa, MasterCard, or Discover Card number
2. Expiration date
3. Part number listed within this manual
4. Shipping address other than a Post Office box.

REPLACEMENT PART WARRANTY

JET Equipment & Tools makes every effort to assure that parts meet high quality and durability standards and warrants to the original retail consumer/purchaser of our parts that each such part(s) to be free from defects in materials and workmanship for a period of thirty (30) days from the date of purchase.

PROOF OF PURCHASE

Please retain your dated sales receipt as proof of purchase to validate the warranty period.

LIMITED TOOL AND EQUIPMENT WARRANTY

JET makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON THIS JET PRODUCT. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities or to a lack of maintenance. JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD SPECIFIED ABOVE FROM THE DATE THE PRODUCT WAS PURCHASED AT RETAIL. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG THE 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. To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an authorized service station designated by our Auburn office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, JET will either repair or replace the product or refund the purchase price, if we cannot readily and quickly provide a repair or replacement, if you are willing to accept such refund. JET will return repaired product or replacement at JET's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of JET's warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights, and you have other rights which vary from state to state.

WARNING

- **Read and understand the entire instruction manual before operating machine.**
- **This manual is intended to familiarize you with the technical aspects of this bandsaw. It is not, nor was it intended to be, a training manual.**
- **This machine is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper safe use of a bandsaw, do not use this machine until proper training and knowledge has been obtained.**
- Always wear approved safety glasses/face shields while using this machine.
- Make certain the machine is properly grounded.
- Before operating the machine, remove tie, rings, watches, other jewelry, and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Do **not** wear gloves.
- Keep the floor around the machine clean and free of scrap material, oil and grease.
- Keep machine 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.
- Do **not** over reach. Maintain a balanced stance at all times so that you do not fall or lean against blades or other moving parts.
- Make all machine adjustments or maintenance with the machine unplugged from the power source.
- Use the right tool. Don't force a tool or attachment to do a job which it was not designed for.
- Replace warning labels if they become obscured or removed.
- Make certain the motor switch is in the OFF position before connecting the machine to the power supply.
- Give your work undivided attention. Looking around, carrying on a conversation, and "horse-play" are careless acts that can result in serious injury.
- Keep visitors a safe distance from the work area.
- Use recommended accessories; improper accessories may be hazardous.
- Make a habit of checking to see that keys and adjusting wrenches are removed before turning on the machine.
- Never attempt any operation or adjustment if the procedure is not understood.
- Keep fingers away from the blade while in operation.
- Keep belt guard in place and in working order.
- Never force the cutting action.
- Do not attempt to adjust or remove tools during operation.
- Always keep the blade sharp.
- Always use identical replacement parts when servicing.
- Read and understand all warnings posted on the machine.
- Failure to comply with all of these warnings may cause serious injury.

Specifications:**VBS-1408**

Stock Number	414483
Blade Speed (SFPM)	82-330
Maximum Capacity:	
Height	8"
Throat	14"
Table Size	20" x 20"
Table Tilt:	
Front and Back	8°
Left	12°
Right	15°
Welder Capacity	1/2"
Blade Length (approx.)	114"
Blade Width (max.)	1/2"
Overall Height	68-1/2"
Table Height at 90°	39"
Floor Space Required	34" x 24"
Motor	1HP, 1Ph
.....	115/230V, prewired 115V
Net Weight (approx.)	580 lbs.
Shipping Weight (approx.)	685 lbs.

Specifications:**VBS-1610**

Stock Number	414485
Blade Speed (SFPM)	82-330 (low)
.....	985-3950 (high)
Maximum Capacity:	
Height	10"
Throat	15-1/2"
Table Size	22" x 24"
Table Tilt:	
Front and Back	8°
Left	12°
Right	15°
Welder Capacity	5/8"
Blade Length (approx.)	123-1/2"
Blade Width (max.)	5/8"
Overall Height	72-1/2"
Table Height at 90°	40"
Floor Space Required	37" x 28"
Motor	2HP, 3Ph
.....	230/460V, prewired 230V
Net Weight (approx.)	900 lbs.
Shipping Weight (approx.)	1015 lbs.

The specifications in this manual are given as general information and are not binding. JET Equipment and Tools reserves the right to effect, at any time and without prior notice, changes or alterations to parts, fittings, and accessory equipment deemed necessary for any reason whatsoever.

Uncrating and Clean-Up

1. Finish uncrating the bandsaw. Contact your distributor if any damage has occurred during shipping.
2. Remove any preservative with kerosene or diesel oil. Do not use gasoline, paint thinner, or any cellulose-based product. These will damage painted surfaces.
3. Remove two hex cap screws from left side of the vertical column. Attach shear assembly (A, Fig. 1) to column by inserting hex cap screws.

Installation

1. Remove three nuts and washers holding the bandsaw to the shipping crate bottom.
2. Using the lifting ring, lift the bandsaw into its permanent location. For best performance, the bandsaw should be bolted to the floor after a level position has been found.
3. Using a square, adjust the table 90 degrees to the blade both front to back and side to side. Loosen the hex cap screws below the table to move it and tighten to hold the table in place. If necessary, adjust the pointers to zero should they read different once the table is perpendicular to the blade in both directions.
4. To level the machine, place a machinist's level on the table and observe in both directions.
5. Use metal shims under the appropriate hold down screw. Tighten screw and recheck for level.
6. Adjust with additional shims, as required, until the table is level when all mounting screws (or nuts) are tight.

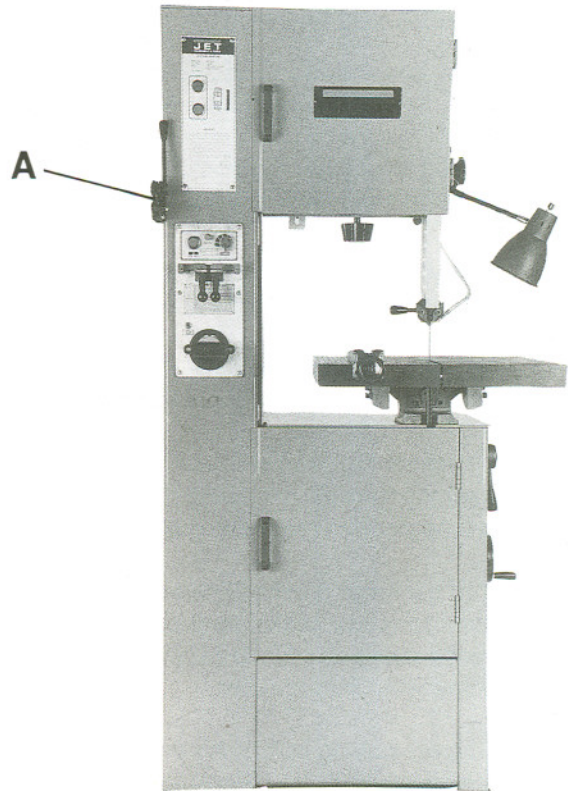


Figure 1

Electrical Connections

WARNING

All electrical connections must be done by a qualified electrician.
All adjustments or repairs must be done with the machine disconnected from the power source.
Failure to comply may result in serious injury!

The VBS-1408 bandsaw is rated at 115/230V and comes from the factory prewired 115V.

The VBS-1610 bandsaw is rated at 230/460V and comes from the factory prewired 230V.

To switch to from 115V to 230V (or 230V to 460V) operation, follow the wiring diagram found on the inside cover of the motor junction box.

The bandsaw must be grounded. A qualified electrician can make the proper electrical connections and confirm the power on site is compatible with the saw.

Before hooking up to the power source, make sure the switch is in the off position.

Controls

Note: Pictures used for illustrations show the VBS-1610. The descriptions and functions are the same for the VBS-1408, except where noted.

Variable Speed Hand Wheel (A, Fig. 2) - located below work table on right side of machine base. Turn clockwise to increase speed and counter-clockwise to decrease speed. **Caution:** Do not turn handle while machine is stopped. Adjust speed only when machine is running.

Upper Blade Guide Lock Knob (B, Fig. 2) - located on right side of upper arm. Turn counter-clockwise to loosen and clockwise to tighten.

Work Lamp Switch (C, Fig. 2) - on top of lamp shade; turns lamp on and off.

Main Motor Start Switch (D, Fig. 2) - located on upper front column. Depress to start bandsaw.

Main Motor Stop Switch (E, Fig. 2) - located on upper front column. Depress to stop bandsaw.

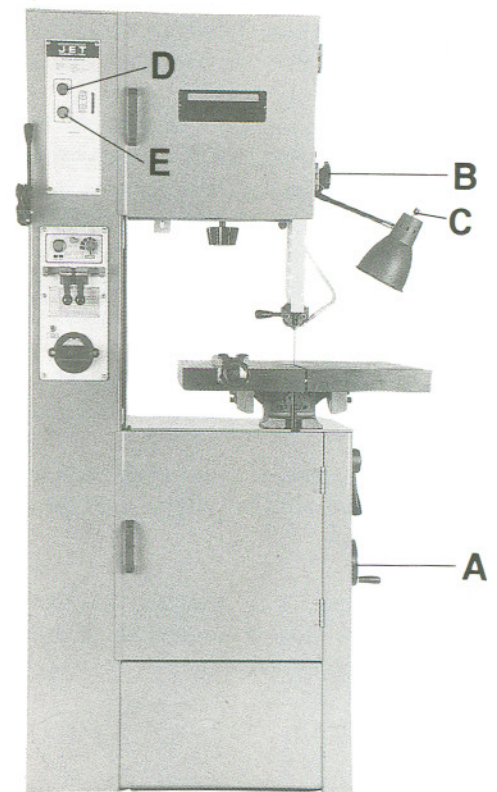


Figure 2

Gear Shift Lever (A, Fig. 3 – VBS-1610 only) – located on the right side of the base under the table. Move the lever toward the front of the machine to engage the low range setting. Move the lever toward the rear to engage the high range setting. Change gears only when the power is off. Turn variable speed handwheel while changing speed ranges to help the gears engage.

Grinder Toggle Switch (B, Fig. 3) - located on blade welder panel found on column front. Flip switch up to start grinder; flip down to stop grinder.

Weld Button (C, Fig. 3) - located on blade welder panel found on column front. Depress and hold to start welding. Shuts off automatically when weld is done. Release when weld is completed.

Anneal Button (D, Fig. 3) - located on blade welder panel found on column front. Depress and hold to anneal blade, release to stop.

Blade Clamp Pressure Knob (E, Fig. 3) - located on blade welder panel found on column front. Turn counter-clockwise to bring blade clamps closer together and clockwise to separate.

Blade Clamps (F, Fig. 3) - located on blade welder panel found on column front. DOWN position allows insertion of blade into clamp. UP position locks blade.

Blade Tension Handwheel (G, Fig. 3) - located on underside of upper frame. Turn clockwise to tension blade; counter-clockwise to release tension on blade.

Shear Lever (H, Fig. 3) - located on upper column. UP position allows insertion of blade end into shear. Pull lever DOWN to cut blade.

Blade Tension Indicator (I, Fig. 3 – VBS-1610 only) – located under the idler wheel housing with the calibration scale visible from the rear of the machine. Indicates blade tension relative to the width of the blade being used.

Table Tilt Mechanism - located under work table. To tilt table left or right, loosen two hex cap screws (A, Figure 4) at rear of mechanism. To level table front to back, loosen four hex cap screws (A, Fig. 5) on either side of mechanism.

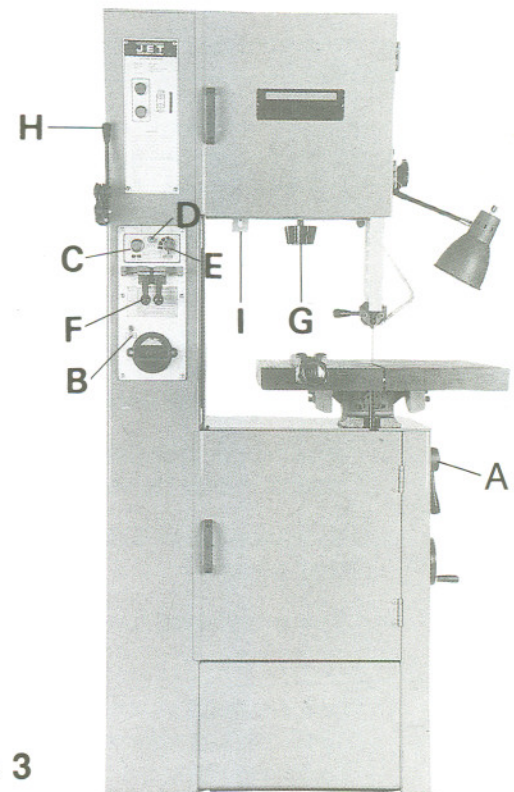


Figure 3

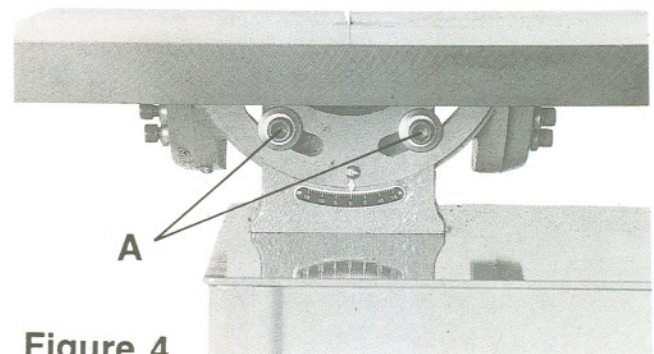


Figure 4

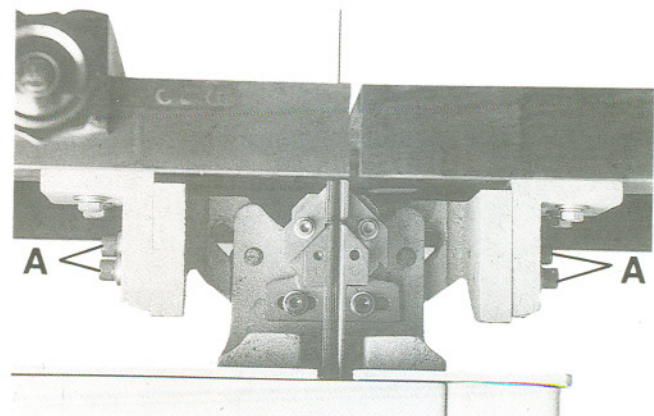


Figure 5

Adjustments

WARNING

All adjustments or repairs to the machine must be done with the power off and the machine disconnected from the power source! Failure to comply may cause serious injury!

Blade Tensioning

1. Raise upper blade guide by loosening lock knob (A, Fig. 6) and lifting blade guide handle (B, Fig. 6) to it's highest position.
2. Apply finger pressure to the blade. Travel from vertical should be approximately 3/8" each way.
3. To tighten blade, turn handwheel (C, Fig. 6) clockwise.
4. To loosen blade, turn handwheel counter-clockwise.
5. Use the blade tension indicator (D, Fig. 6 – VBS-1610 only) as reference only. Blade should be tensioned using the finger pressure method.

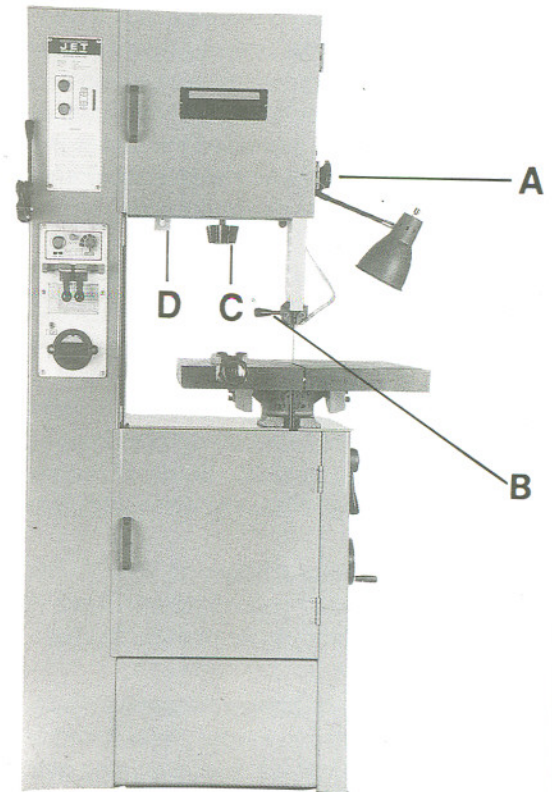


Figure 6

Blade Tracking Alignment (VBS-1408)

Blade tracking has been adjusted at the factory. Run the bandsaw and observe the blade on the wheels. The blade should run next to but not against the flange at the rear. If adjustment is necessary:

1. Slightly loosen all four hex cap screws (A, Fig. 7) found at the rear of the machine at the top.
2. Tighten two top set screws (B, Fig. 7) slightly to shift blade toward the front. Conversely, tighten two set screws (C, Fig. 7) to shift blade toward the rear. Once blade is tracking properly, slightly tighten other two set screws and then tighten all four hex cap screws.

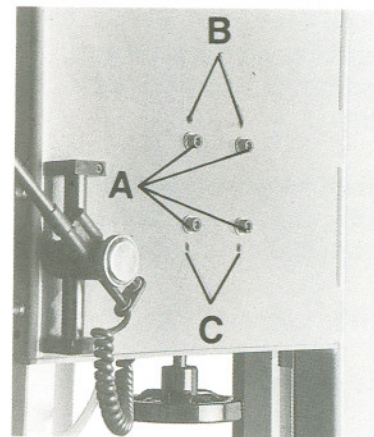


Figure 7

Blade Tracking Alignment (VBS-1610)

1. Open the idler wheel door and observe the position of the blade on the wheel.
2. Turn the Idler wheel adjustment knob (A, Fig. 8) clockwise or counter-clockwise until the blade runs next to, but not against, the wheel flange.

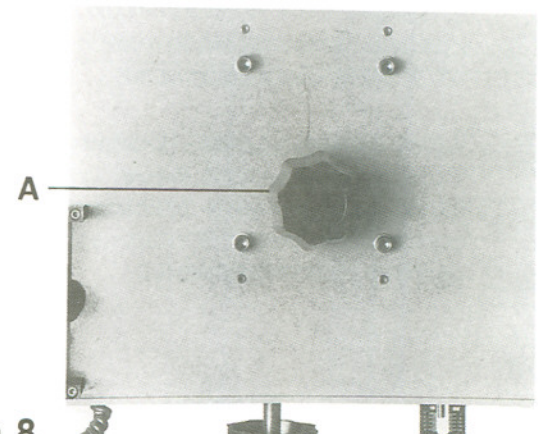


Figure 8

Blade Guide Adjustment

CAUTION!

Blade guides must be properly adjusted or damage may occur to the blade and/or the guides.

⚠ WARNING

Blade guard has been removed to show detail. Never operate saw without the blade guard in place and properly adjusted. Failure to comply may cause serious injury!

Blade guide adjustment has been set at the factory. Should adjustment be necessary:

1. Loosen the upper blade guide lock knob, raise the guide assembly to half way between table and head, then tighten lock knob.
2. Loosen two set screws (A, Fig. 9) and adjust guide so that blade guides are in back of the saw teeth. Blade guides must be adjusted far enough back to clear saw blade even during the cutting operation when the blade is deflected toward the rear.
3. Tighten two set screws (A, Fig. 9).
4. Open the upper access door and rotate the blade wheel by hand until the weld portion of the blade is between the two fingers.
5. Loosen two hex cap screws (B, Fig. 9) and adjust each finger toward the blade. They should not touch the blade. Adjust for .010" clearance on either side.
6. Tighten two hex cap screws (B, Fig. 9) once proper adjustment has been made. Be sure that adjustment for air nozzle has not changed and it directs the flow of air to the cut.
7. Adjust lower blade guide in the same manner. See Fig. 10.
8. Even properly adjusted blade guides will show wear after continual use. Re-adjust as necessary.

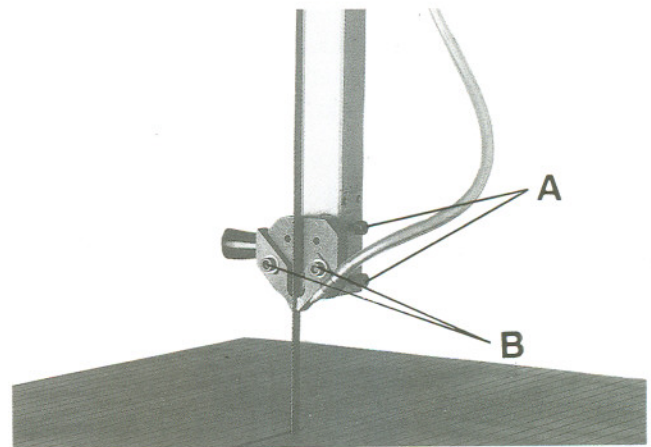


Figure 9

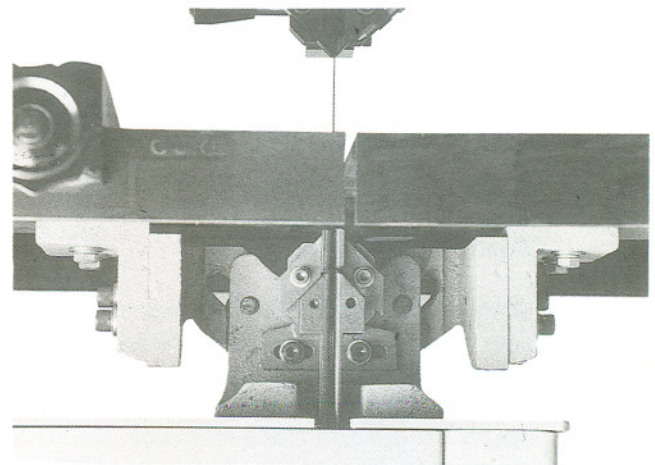


Figure 10

Top Guide Adjustment

Always position the top guide to within an 1/8" of the top surface of the workpiece. This minimizes exposure of the operator's hands to the saw blade.

Changing Saw Blades

1. Disconnect saw from the power source.
2. Move the upper blade guide to its highest position and lock in place.
3. Open both wheel doors. Turn the tension adjustment knob counter-clockwise to loosen tension on the blade.
4. Remove the blade from both wheels and maneuver it around the blade guard on the column and protective shield on the upper blade guide.
5. Install new blade by maneuvering around blade guard on the column and protective shield on the upper blade guide.
6. Place it between the fingers of both blade guides and onto both wheels. Position next to both wheel flanges. Make sure teeth point down toward the table.
7. Retention the saw blade by turning tension hand wheel. Rotate the wheel by hand and make sure the blade is properly seated in the blade guides. Blade guides will have to be adjusted if the replacement blade is a different type and width.
8. Turn on the saw and check blade tracking. Adjust tracking if necessary.

Blade Selection

Proper blade selection is just as important to band saw operation as is blade speed and material feed. Proper blade selection will impact blade life, straightness of cut, cut finish, and efficiency of operation. Excess blade breakage, stripping of teeth, and waviness of cut are some of the results of improper blade selection.

Blades are classified by material composition, tooth shape, pitch of teeth, and type of set, gage of the band material, and kerf of the set (width of cut).

Material Composition

Carbon Steel - low cost, for use with non-ferrous materials, wood, and plastics.

High Speed Steel - resists heat generated by dry cutting. Used for ferrous metals and are more expensive than carbon steel blades.

Alloy Steel - tough and wear resistant, cuts faster with longer blade life. Used on hard materials. More expensive than carbon or high speed steel.

Carbide Tipped - for cutting unusual materials such as uranium, titanium, or beryllium. Very expensive.

Tooth Shape

Note: When cutting thin materials, the rule for blade pitch is to have a minimum of two teeth engaging the material being cut at all times.

Standard Tooth - generally used to cut ferrous metals, hard bronze, hard brass, and thin metals.

Skip Tooth - have better chip clearance (larger gullet) and are used on softer, non-ferrous materials such as aluminium, copper, magnesium, and soft brass.

Hook Tooth - provides a chip breaker and has less tendency to gum up in softer materials. Used in the same materials as skip tooth but can be fed faster than standard or skip tooth blades.

Set Type

Straight Set - used for free cutting non-ferrous materials; i.e., aluminum, magnesium, plastics, and wood.

Wavy Set - used on materials of varying thickness (pipe, tubing, and structural shapes).

Raker Set - used in large cuts on thick plate and bar stock where finish of cut is not as important as speed.

Gage

Blade gage is the thickness of material the blade from which the blade is produced. The thicker the material, the stronger the blade will be.

Kerf

Kerf is the width of a cut. Kerf will vary according to set of blade teeth.

Blade Width

The thinner the blade, the tighter the minimum radius of cut will be. Always use the widest blade possible for the job.

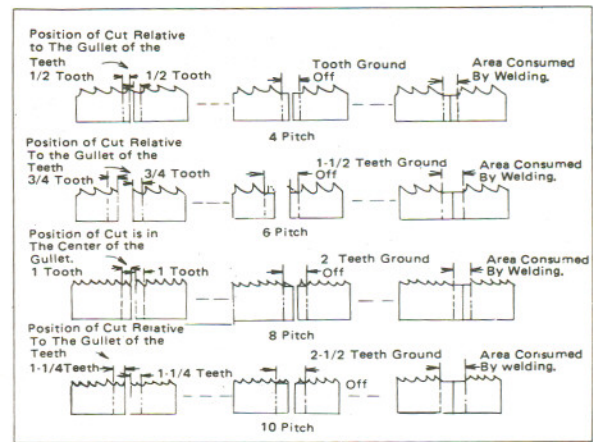
General rules for blade selection:

- Select coarser pitch blades for thicker or softer material.
- Select finer pitch blades for thinner or harder material.
- Use fine pitch blades to obtain a smooth finish.
- Use coarse pitch blades to obtain faster cutting speeds (thick material).
- To prevent premature blade wear, use the fastest practical speed.
- Adjust the feed rate to ensure continuous cutting action.
- Run the bandsaw with the blade centered in the upper and lower guides and the guide fingers adjusted as close as possible without touching the blade or weld joint.

Using the Blade Welder

Blade Shear and Blade Preparation

1. The blade should be cut to the longest length that machine will accept.
2. Put the handle in the upright position.
3. Place the blade against the back of the square cutting guide of the shear.
4. Bring the handle down firmly to cut blade.
5. Use the blade grinder to assure the blade ends are flat, square, and smooth.
6. With fine pitched blades, one or more teeth from each side will have to be removed by grinding so that the cross section of the weld area is uniform.



Follow these cutting and grinding instructions and the teeth will be uniformly spaced after the weld.

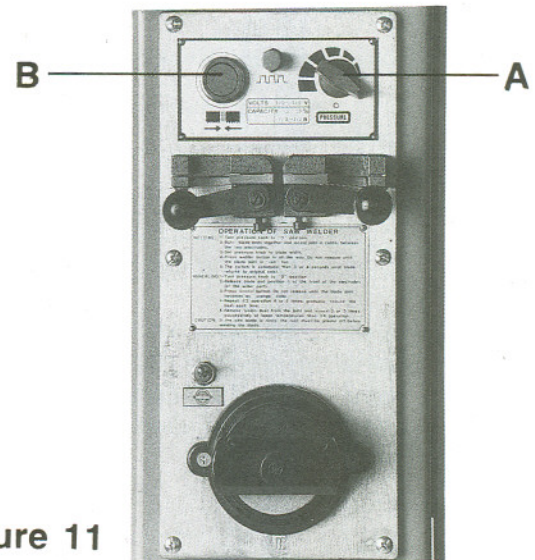


Figure 11

Welder Preparation

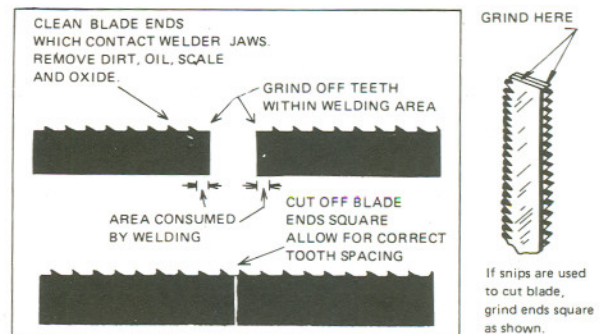
1. Clean the welder jaws and the lower jaw inserts.

Welding

CAUTION!

The welder is designed for intermittent use. Repeated welding within a short period of time may cause the welder to overheat.

1. Turn pressure switch (A, Fig. 11) to the zero position.
2. Join blade ends together and locate union in the center between two electrodes.
3. Set pressure switch (A, Fig. 11) to blade width according to the scale.
4. Press weld button (B, Fig. 11). Do not release until the weld has been completed.



Points to remember in preparing the blade for welding.

Annealing

1. Release the welded blade and clamp it again between the front edge of the two jaws.
2. Annealing procedure will depend on blade type:

Carbon Steel Blades

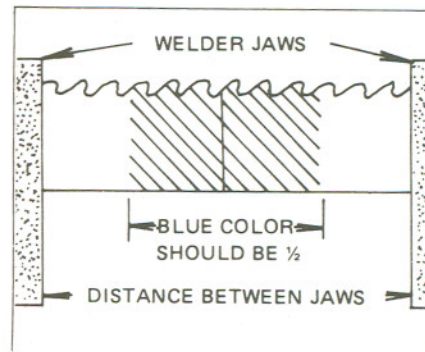
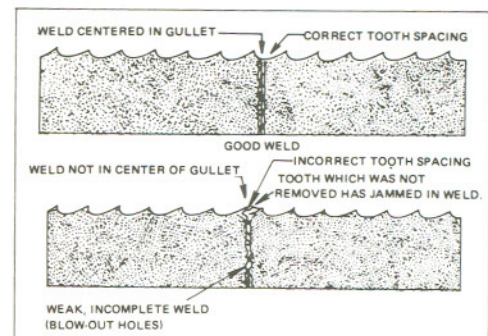
1. Press and jog the annealing switch button until the weld is a "dull cherry" to "cherry red" color.
2. Allow the blade to cool slowly by decreasing the jogging frequency.

Carbon Steel Hard Back Blades

1. Heat the blade slowly until the weld becomes a deep blue color.
2. Continue to heat by jogging the anneal button until the width of the blue color is one-half the length of the band exposed between the jaws.
3. Do not overheat or the temper of the band will be damaged. Caution - Do not heat beyond the "blue" stage. If the band begins to show any red color, it is too hot. Cool quickly by releasing the anneal button.

Bi-Metal Blades

1. Heat the blade slowly by jogging the annealing switch button until the weld just begins to emit light (dull red color). The desired color may not always be visible in normal room light - always shade the weld area with your hand.
2. Cool the weld quickly by releasing the annealing button.
3. Follow this procedure before and after grinding bimetal blades.



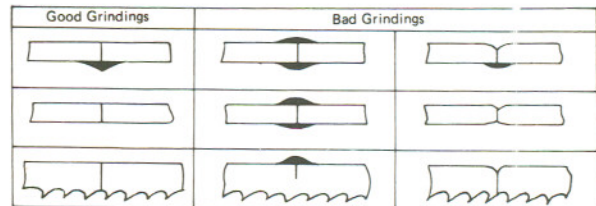
Correct annealing of Carbon Steel Hard Back Blades

Blade Grinding

WARNING!

Keep hands away from rotating grinding wheel!
Always heed the indicator light - when glowing, it warns that the grinder motor is running!
Failure to comply may cause serious injury!

After annealing, the blade must be ground to remove excess metal or flash from the weld. With the teeth facing out, grind the weld carefully. Do not hit the teeth, grind deeper than the weld, burn, or overheat the weld area. Be sure to remove flash from the back edge of the blade. Any flash or "stub" teeth which project beyond the normal set or height of the other teeth must be ground off.



Secondary Annealing

Anneal the weld 2-3 times again after grinding.

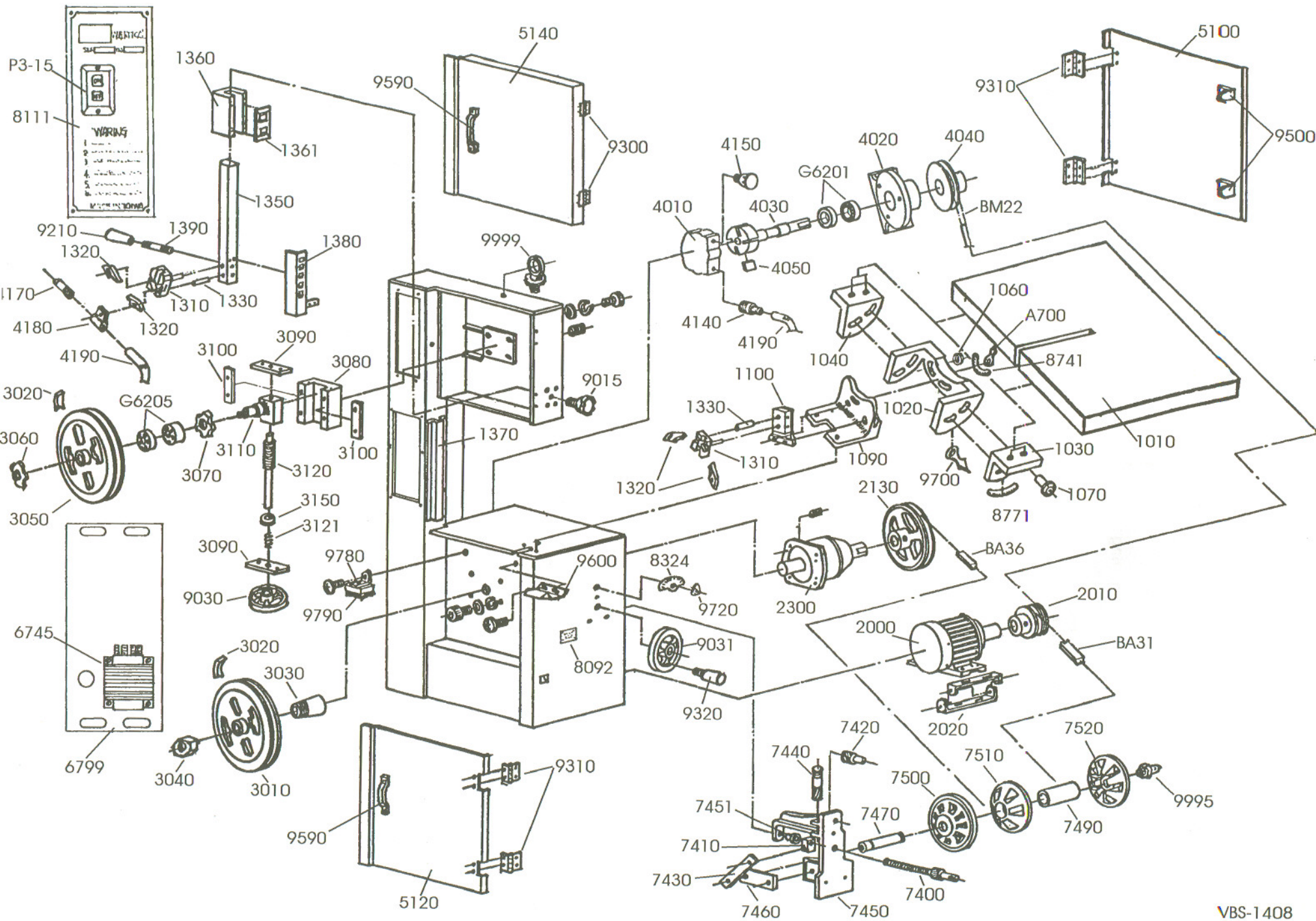
Welder Clean-Up

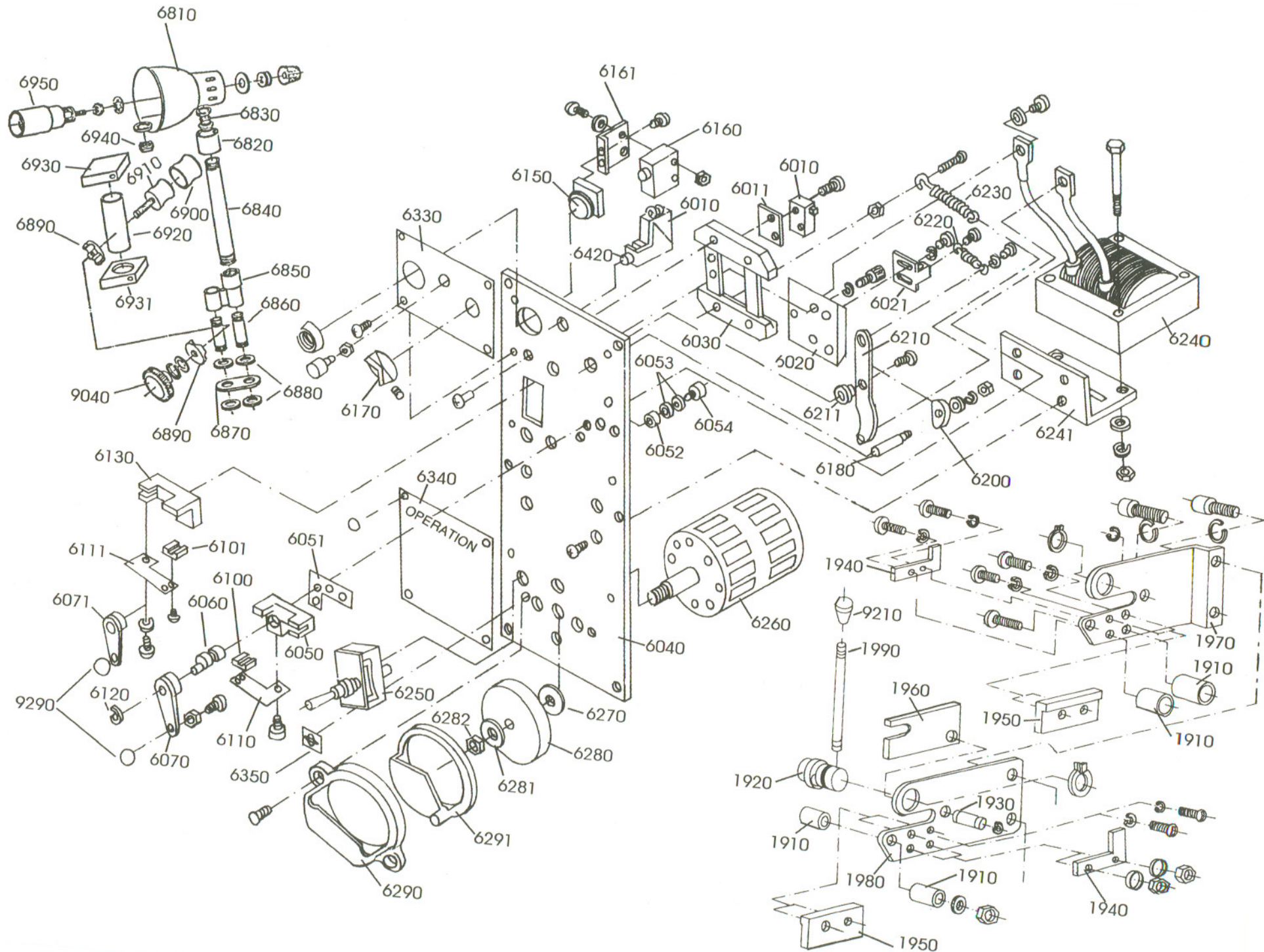
It is important that the welder jaws be kept clean at all times. The jaws and inserts must be wiped or scraped clean after every weld. Doing this will ensure better welds by:

1. Holding proper alignment.
2. Preventing flash from becoming embedded in the blade.
3. Preventing shorts or poor electrical contact.

Lubrication Schedule

- **Upper Blade Guide Shaft** - lightly grease weekly. Clean after every day's use.
- **Speed Change Handle** - grease monthly with a light film on teeth and threads.
- **Variable Pulley** - grease fitting using a light weight grease found on end of pulley shaft.
- **Blade Tension Screw** - grease monthly.



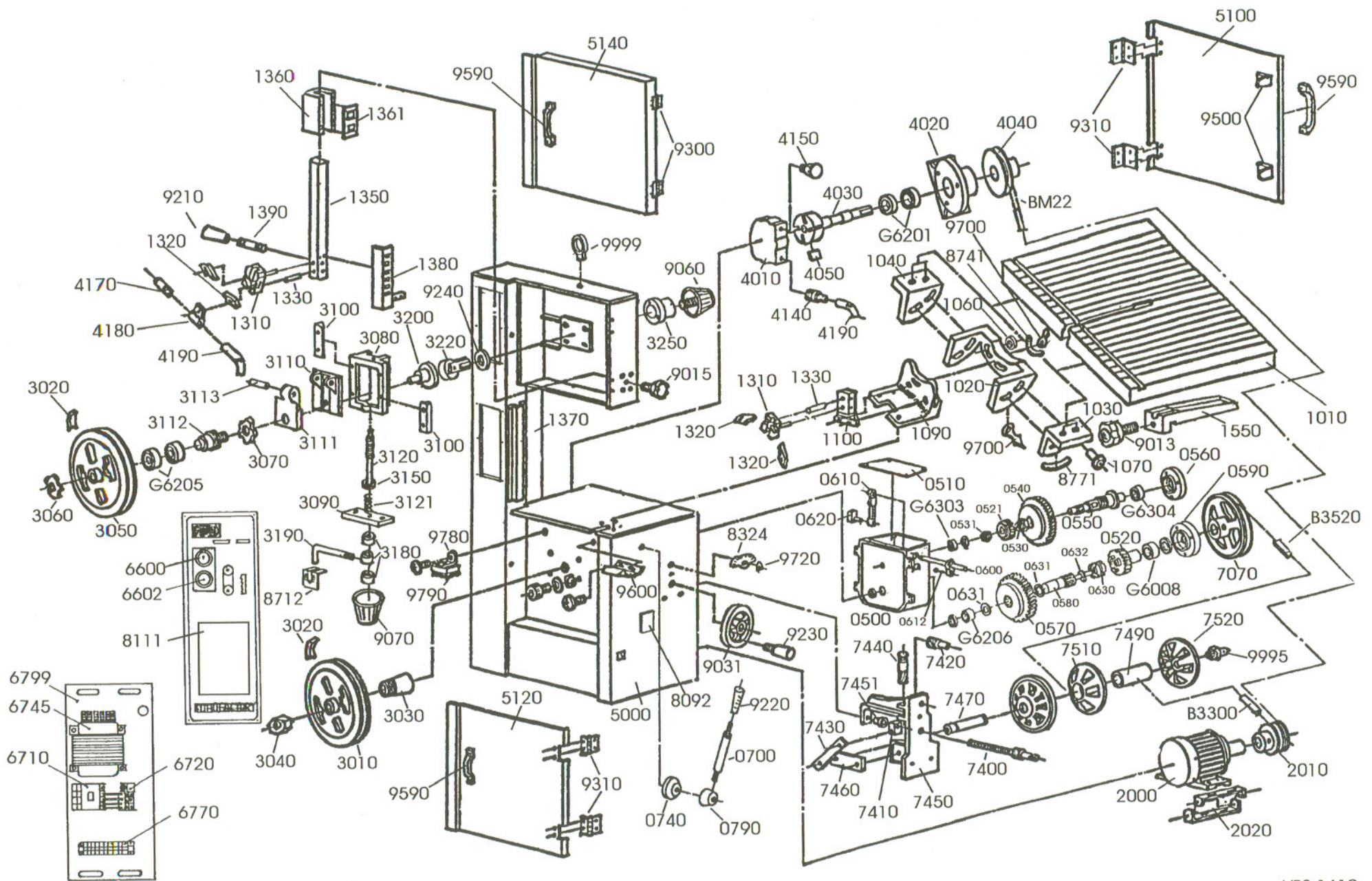


Parts List for the VBS-1408 Bandsaw

Index No.	Part No.	Description	Size	Qty.
1010	VBS1408-1010	Work Table		1
1020	VBS14-102	Table Support Frame		1
1030	1030	Table Bracket (right)		1
1040	1040	Table Bracket (left)		1
1060	TS-0680061	Washer	1/2	2
1070	1070	Tube Screw		4
1090	1090	Table Support Housing		1
1100	1100	Guide Support Housing		1
1310	VBS16-131	Blade Guide Support		2
1320	VBS1220A-132	Blade Guide		2
1330	VBS16-133	Blade Stopper		2
1350	1350	Blade Guide Post		1
1360	1360	Guide Post Housing		1
1361	1361	Guide Post Spring		1
1370	1370	Blade Guide (left)		1
1380	1380	Blade Guide (right)		1
1390	1390	Post Holding Pin		1
	VBS1610-BS	Blade Guide Assembly Complete		1
1910	1910	Bushing (re: VBS1610-BS)		4
1920	1920	Lift (re:VBS1610-BS)		1
1930	1930	Blade Shaft (re:VBS1610-BS)		1
1940	1940	Vaned Iron Plate (re:VBS1610-BS)		2
1950	1950	Lower Blade (re:VBS1610-BS)		2
1960	1960	Upper Blade (re: VBS1610-BS)		1
1970	1970	Joint Plate - Left (re: VBS1610-BS)		1
1980	1980	Chain Joint - Right (re: VBS1610-BS)		1
1990	1990	Handle Bar (re: VBS1610-BS)		1
2000	VBS14-009	Drive Motor		1
2010	VBS1408-2010	Motor Pulley		1
2020	2020	Motor Suspension Arm		2
2130	2130	Reducer Pulley	8"	1
2300	2300	Speed Reducer		1
3010	VBS1408-3010	Lower Wheel		1
3020	VBS14-302	Rubber Tire		2
3030	VBS1408-3030	Taper Sleeve		1
3040	VBS1408-3040	Wheel Lock Nut		1
3050	VBS1408-3050	Upper Wheel		1
3060	VBS1408-3060	Upper Wheel Lock		1
3070	3070	Upper Wheel Nut		1
3080	3080	Slide Block Housing		1
3090	VBS14-309	Slide Block Seat		2
3100	3100	Slide Block Guide		2
3110	3110	Upper Wheel Slide		1
3120	VBS1408-3120	Wheel Shaft		1
3121	3121	Spring		1
3150	3150	Washer		1

.....	VBS1610-AP	Air Pump Assembly Complete	1
4010	4010	Air Pump Housing (re: VBS1610-AP)	1
4020	4020	Pump Cover (re: VBS1610-AP)	1
4030	4030	Pump Shaft (re: VBS1610-AP)	1
4040	4040	Air Pump Pulley	1
4050	4050	Air Pump Vein	4
4140	4140	Air Outlet (re: VBS1610-AP)	1
4150	4150	Air Inlet (re: VBS1610-AP)	1
4170	4170	Air Nozzle	1
4180	4180	Air Nozzle Clip	1
4190	4190	Air Tube	1
5000	VBS1408-5000	Main Body	1
5100	VBS1408-5100	Rear Door	1
5120	VBS1408-5120	Lower Door	1
5140	VBS1408-5140	Upper Door	1
6010	VBS14-601	Limit Switch	2
6011	6011	Insulator	1
6020	6020	Guide Block	1
6021	6021	Spring Bracket	1
6030	6030	Guide Casting	1
6040	6040	Housing	1
6050	6050	Stationary Jaw	1
6051	6051	Insulator	1
6052	6052	Insulator Tube	3
6053	6053	Insulator Washer	3
6054	6054	Spacer	3
6060	6060	Eccentric Shaft	2
6070	6070	Clamp Lever (right)	1
6071	6071	Clamp Lever (left)	1
6100	6100	Clamp Support (right)	1
6101	6101	Clamp Support (left)	1
6110	6110	Clamp Plate (right)	1
6111	6111	Clamp Plate (left)	1
6120	6120	Cam	2
6130	6130	Moving Jaw	1
6150	6150	Weld Button	1
6160	6160	Micro Switch	1
6161	6161	Bracket	1
6170	VBS16-617	Pressure Adjust Knob	1
6180	VBS16-618	Shaft	1
6200	VBS16-620	Cam	1
6210	VBS16-621	Weld Tension Arm	1
6211	6211	Bushing	1
6220	6220	Spring (short)	1
6230	6230	Spring (long)	1
6240	VBS14-624	Transformer	1
6241	6241	Mounting Bracket	1
6250	VBS16-625	Switch	1
6260	VBS14-626	Grinder Motor	1
6270	6270	Spacer	1
6280	JWG12-628	Grinder Wheel	1
6281	TS-0680021	Washer	1/4
6282	TS-1540041	Hex Nut	6MM
6290	VBS16-629	Grinder Guard	1

6291 ...6291	Grinder Cover	1
6330 ...6330	Welder Nameplate	1
6340 ...6340	Instruction Label	1
6350 ...6350	Grinder Label	1
6420 ...6420	Anneal Switch	1
6745 ...6745	Voltage Reducer	1
6799 ...6799	Wiring Plate	1
.....VBS1610-WL	Work Lamp Assembly Complete	1
6810 ...6810	Shield (re: VBS1610-WL)	1
6820 ...6820	Jointer (re: VBS1610-WL)	1
6830 ...6830	Brass Nut (re VBS1610-WL)	1
6840 ...6840	Lamp Arm (re: VBS1610-WL)	1
6850 ...6850	Arm Jointer (re: VBS1610-WL)	1
6860 ...6860	Arm Tube (re: VBS1610-WL)	2
6870 ...6870	Tube Holder (re: VBS1610-WL)	1
6880 ...6880	Arm Nut (re: VBS1610-WL)	4
6890 ...6890	Tube Locker (re: VBS1610-WL)	2
6900 ...6900	Arm Housing Adjuster (re: VBS1610-WL)	1
6910 ...6910	Housing Adjust Screw (re: VBS1610-WL)	1
6920 ...6920	Lamp Arm Housing (re: VBS1610-WL)	1
6930 ...6930	Holder (re: VBS1610-WL)	1
6931 ...6931	Holder (re: VBS1610-WL)	1
6940 ...6940	Hex Nut (re: VBS1610-WL)	1
6950 ...6950	Lamp Socket (re: VBS1610-WL)	1
7400 ...VBS16-7400	Speed Change Shaft	1
7410 ...VBS16-7410	Shaft Block	1
7420 ...VBS16-7420	Speed Indicating Shaft	1
7430 ...VBS16-7430	Gear Shaft Arm	1
7440 ...7440	Indicate Gear Shaft Arm	1
7450 ...VBS16-7450	Speed Shaft Housing	1
7451 ...VBS16-7451	Washer Tube	1
7460 ...VBS16-7460	Pulley Shaft Arm	1
.....VBS1610-VP	Variable Pulley Assembly Complete	1
7470 ...7470	Variable Pulley Shaft *	1
7490 ...VBS16-7490	Pulley Shaft Housing *	1
7500 ...VBS16-7500	Inner Pulley *	1
7510 ...VBS16-7510	Middle Pulley *	1
7520 ...VBS16-7520	Outer Pulley *	1
8111 ...8111A	Name Plate	1
8741 ...8741	Tilt Indicator (L&R)	1
8771 ...8771	Tilt Indicator (F&R)	1
9015 ...9015	Guide Post Block	1
9030 ...9030	Hand Wheel	1
9031 ...9031	Hand Wheel	1
9040 ...9040	Brass Hand Wheel (re: VBS1610-WL)	1
9210 ...9210	Handle Knob	2
9230 ...9230	Hand Wheel Knob	1
9290 ...VBS14-609	Knob	2
9300 ...9300	Upper Door Hinge	2
9310 ...9310	Hinge	4
9500 ...9500	Spring Plate	4
9590 ...9590	Handle Arm	3
9600 ...9600	Chip Stopper	1
9720 ...9720	Pointer	1



9780	9780	Brush Bracket	1
9700	9700	Pointer	2
9790	9790	Chip Brush	1
9995	9995	Grease Nozzle	1
9999	9999	Eye Bolt	1
A700	A700	Pointer	1
BA32	VB-A32	V-Belt	1
BA36	VB-A36	V-Belt	1
BH32	VB-M29	V-Belt	1
G6201	BB-6201	Ball Bearing	2
G6205	BB-6205	Ball Bearing	2
P3-15	P3-15	On-Off Switch	1

* included in VBS1610-VP Variable Pulley Assembly Complete

Parts list for the VBS-1610 Bandsaw

Index No.	Part No.	Description	Size	Qty.
	VBS1610-GB	Gear Box Assembly Complete		1
0500	0500	Gear Box *		1
0510	0510	Gear Box Cover *		1
0520	0520	Gear *		1
0521	0521	Gear *		1
0530	0530	Screw Nut *	35MM	1
0540	0540	Gear *		1
0550	0550	Gear Shaft *		1
0560	0560	Shaft Cover *		1
0570	0570	Gear *		1
0580	0580	Main Shaft *		1
0590	0590	Main Shaft Cover *		1
0600	0600	Speed Changing Shaft *		1
0610	0610	Speed Changing Arm *		1
0611	0611	Shaft Stopper *		1
0612	0612	Spring *		1
0620	0620	Slide Block *		1
0630	0630	Clutch *		1
0631	0631	Brass Bracket *		2
0632	0632	Brass Bracket *		1
0700	0700	Speed Changing Lever		1
0740	0740	Shaft Housing		1
0790	0790	Speed Lever Ring		1
1010	VBS1610-1020	Work Table		1
1020	VBS14-102	Table Support Frame		1
1030	1030	Table Bracket (right)		1
1040	1040	Table Bracket (left)		1
1060	TS-0680061	Washer	1/2	2
1070	1070	Screw Bushing		4
1090	1090	Table Support Housing		1
1100	1100	Guide Support Housing		1
1310	VBS16-131	Blade Guide Support		2
1320	VBS1220A-132	Blade Guide		4
1330	VBS16-133	Blade Stopper		2
1350	1350	Blade Guide Post		1
1360	1360	Guide Post Housing		1
1361	1361	Post Clamp Spring		1
1370	1370	Blade Guard (left)		1
1380	1380	Blade Guard (right)		1
1390	1390	Post Holding Pin		1
1550	VBS16-155	Rip Fence		1
	VBS1610-BS	Blade Shear Assembly Complete		1
1910	1910	Bushing (re:VBS1610-BS)		1
1920	1920	Lift (re: VBS1610-BS)		1
1930	1930	Blade Shaft (re: VBS1610-BS)		1
1940	1940	Vaned Iron Plates (re: VBS1610-BS)		1
1950	1950	Lower Blade (re: VBS1610-BS)		2
1960	1960	Upper Blade (re: VBS1610-BS)		1

1970	1970	Plate (re: VBS1610-BS)	1
1980	1980	Joint (re: VBS1610-BS)	1
1990	1990	Handle Bar (re: VBS1610-BS)	1
2000	VBS1610-2000	Main Drive Motor	1
2010	VBS1610-2010	Motor Pulley	1
2020	2020	Motor Suspension Arm	2
2030	2030	Motor Spring Housing	1
2040	2040	Motor Spring	1
2050	2050	Motor Spring Support	1
3010	VBS1610-3010	Lower Wheel	1
3020	VBS16-302	Rubber Tire	2
3030	3030	Taper Sleeve	1
3040	VBS1610-3040	Wheel Locking Nut	1
3050	VBS16-305	Upper Wheel	1
3060	VBS14-306	Upper Wheel Lock	1
3070	3070	Upper Wheel Nut	1
3080	3080	Slide Block Housing	1
3090	3090	Slide Block Seat	2
3100	3100	Slide Block Guide	2
3110	3110	Upper Wheel Slider	1
3111	3111	Slide Cover	1
3113	3113	Slide Pin	1
3120	VBS1610-3120	Wheel Elevate Shaft	1
3121	3121	Spring	2
3150	3150	Washer	1
3180	3180	Indicating Ring	3
3190	3190	Tension Indicator	1
3200	3200	Wheel Tilt Adjuster	1
3220	3220	Wheel Tilt Connector	1
3240	3240	Connector Washer	1
3250	3250	Connector Housing	1
	VBS1610-AP	Air Pump Assembly Complete	1
4010	4010	Air Pimp Housing (re: VBS1610-AP)	1
4020	4020	Pump Cover (re: VBS1610-AP)	1
4030	4030	Pump Shaft (re: VBS1610-AP)	1
4040	4040	Air Pump Pulley	1
4050	4050	Air Pump Vane	4
4140	4140	Air Outlet (re: VBS1610-AP)	1
4150	4150	Air Inlet (re: VBS1610-AP)	1
4170	4170	Air Nozzle	1
4180	4180	Air Nozzle Clip	1
4190	4190	Air Tube	1
5000	VBS1610-5000	Main Body	1
5100	VBS1610-5100	Rear Door	1
5120	VBS1610-5120	Lower Door	1
5140	VBS1610-5140	Upper Door	1
6010	VBS14-601	Limit Switch	2
6011	6011	Insulator	1
6020	6020	Guide Block	1
6021	6021	Spring Bracket	1
6030	6030	Guide Casting	1
6040	6040	Housing	1
6050	6050	Stationary Jaw	1
6051	6051	Insulator	1

6052	6052	Insulator Tube		3
6053	6053	Insulator Washer		3
6054	6054	Spacer		3
6060	6060	Eccentric Shaft		2
6070	6070	Clamp Lever (right)		1
6071	6071	Clamp Lever (left)		1
6100	6100	Clamp Support (right)		1
6101	6101	Clamp Support (left)		1
6110	6110	Clamp Plate (right)		1
6111	6111	Clamp Plate (left)		1
6120	6120	Cam		2
6130	6130	Moving Jaw		1
6150	6150	Weld Button		1
6160	6160	Micro Switch		1
6170	VBS16-617	Pressure Adjust Switch		1
6180	VBS16-618	Shaft		1
6200	VBS16-620	Cam		1
6210	VBS16-621	Weld Tension Arm		1
6211	6211	Bushing		1
6220	6220	Spring (short)		1
6230	6230	Spring (long)		1
6240	VBS16-624	Transformer		1
6241	6241	Mounting Bracket		1
6250	VBS16-625	Switch		1
6260	VBS16-626	Grinder Motor		1
6270	6270	Spacer		1
6280	JWG12-628	Grinder Wheel		1
6281	TS-0680021	Washer	1/4	1
6282	TS-1540041	Nut	6MM	1
6290	VBS16-629	Grinder Guard		1
6291	6291	Grinder Cover		1
6330	6330	Welder Name Plate		1
6340	6340	Instruction Plate		1
6350	6350	Grinder Label		1
6420	6420	Anneal Switch		1
6600	6600	Push Button (on)		1
6602	6602	Push Button (off)		1
6710	6710	Magnetic Switch		1
6720	6720	Overload Starter		1
6745	6745	Voltage Reducer		1
6770	6770	Wire Housing		1
6799	6799	Wiring Plate		1
	VBS1610-WL	Work Lamp Assembly Complete		1
6810	6810	Shield (re: VBS1610-WL)		1
6820	6820	Jointer (re: VBS1610-WL)		1
6830	6830	Brass Nut (re: VBS1610-WL)		1
6840	6840	Lamp Arm (re: VBS1610-WL)		1
6850	6850	Arm Jointer (re: VBS1610-WL)		1
6860	6860	Arm Tube (re: VBS1610-WL)		2
6870	6870	Tube Holder (re: VBS1610-WL)		1
6880	6880	Arm Nut (re:VBS1610-WL)		1
6890	6890	Tube Locker (re: VBS1610-WL)		1
6900	6900	Arm Housing Adjuster (re: VBS1610-WL)		1
6910	6910	Housing Adjust Screw (re: VBS1610-WL)		1

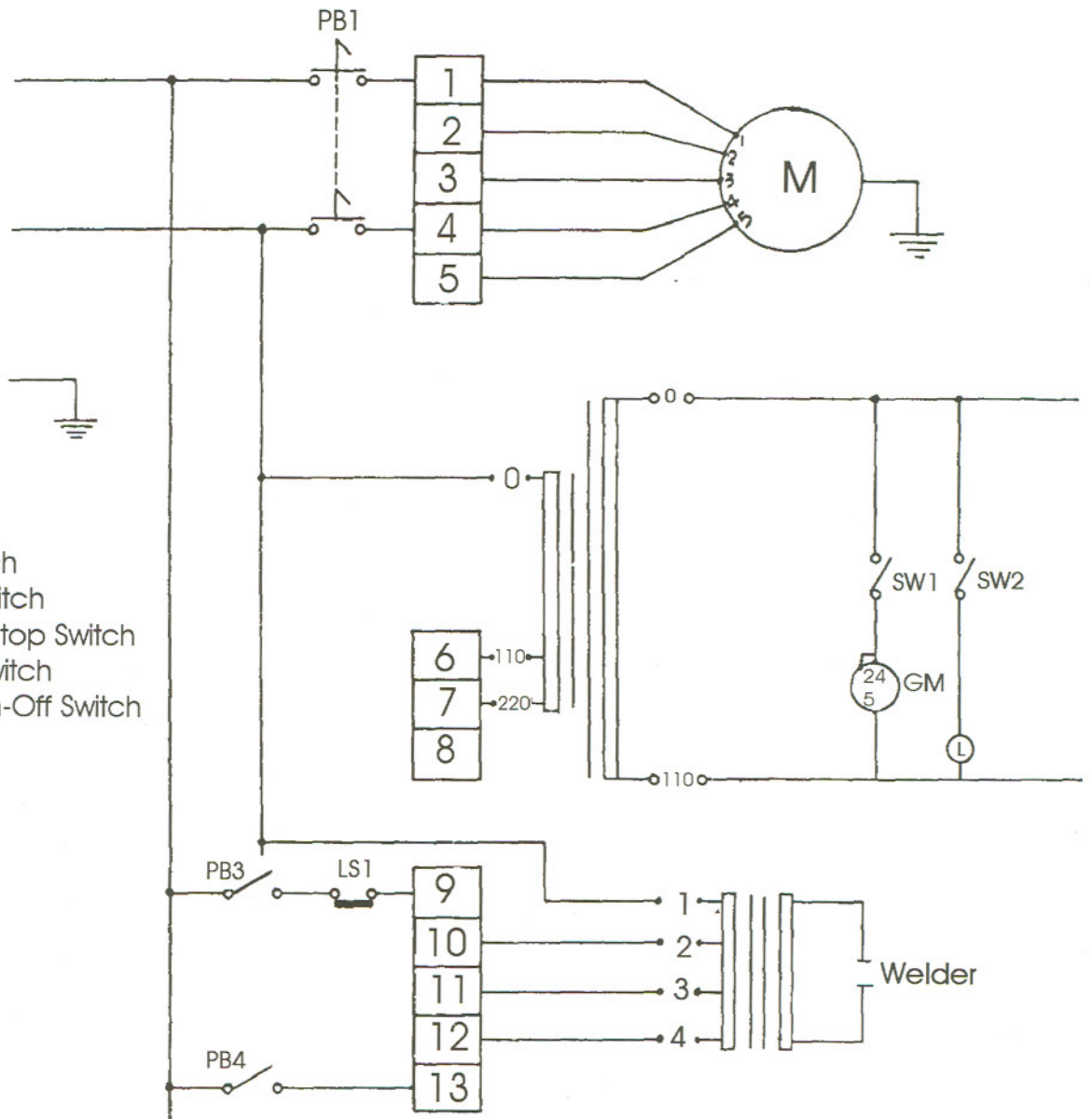
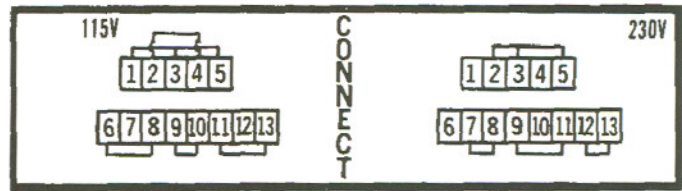
6920	6920	Lamp Arm Housing (re: VBS1610-WL)	1
6930	6930	Holder (re: VBS1610-WL)	1
6931	6931	Holder (re: VBS1610-WL)	1
6940	6940	Hex Nut (re: VBS1610-WL)	1
6950	6950	Lamp Socket (re: VBS1610-WL)	1
7070	7070	Pulley	1
7400	VBS16-7000	Variable Pulley Shaft	1
7410	VBS16-7410	Shaft Block	1
7420	VBS16-7420	Speed Indicate Shaft	1
7430	VBS16-7430	Gear Shaft Arm	1
7440	7440	Indicate Gear Shaft Arm	1
7450	VBS16-7450	Speed Shaft Housing	1
7451	VBS16-7451	Washer Tube	1
7460	VBS16-7460	Pulley Shaft Arm	1
	VBS1610-VP	Variable Pulley Assembly Complete	1
7470	VBS16-7470	Variable Pulley Shaft **	1
7490	VBS16-7490	Pulley Shaft Housing **	1
7500	VBS16-7500	Pulley (inner) **	1
7510	VBS16-7510	Pulley (middle) **	1
7520	VBS16-7520	Pulley (outer) **	1
8092	8092	Lubrication Plate	1
8111	8111A	Name Plate	1
8712	8712	Indicator Plate	1
8741	8741	Tilt Indicator (left and right)	1
8771	8771	Tilt Indicator (front and back)	1
9013	9013	Rip Fence Lock Knob	1
9015	9015	Guide Post Lock	1
9040	9040	Brass Hand Wheel (re: VBS1610-WL)	1
9060	9060	Tilt Adjust Hand Wheel	1
9070	9070	Hand Wheel	1
9031	9031	Hand Wheel	1
9210	9210	Knob	1
9220	9220	Lever Knob	1
9230	9230	Hand Wheel Knob	1
9240	9240	Washer	1
9290	VBS14-609	Knob	2
9300	9300	Upper Door Hinge	2
9310	9310	Hinge	4
9500	9500	Spring Plate	4
9590	9590	Handle Arm	2
9600	9600	Chip Stopper	1
9700	9700	Indicate Pointer	2
9720	9720	Speed Pointer	1
9780	9780	Brush Bracket	1
9790	9790	Chip Brush	1
9995	9995	Grease Nozzle	1
9999	9999	Eye Bolt	1
B3320	VB-B22	V-Belt	1
B3520	VB-B52	V-Belt	1
BM36	VB-M36	V-Belt	1
G6008	BB-6008	Ball Bearing	1
G6201	BB-6201	Ball Bearing	2
G6206	BB-6206	Ball Bearing	1
G6205	BB-6205	Ball Bearing	2

G6303.....	BB-6303	Ball Bearing.....	1
G6306.....	BB-6303	Ball Bearing.....	1
G6304.....	BB-6304	Ball Bearing.....	1

* Included in VBS1610-GB Gear Box Assembly Complete

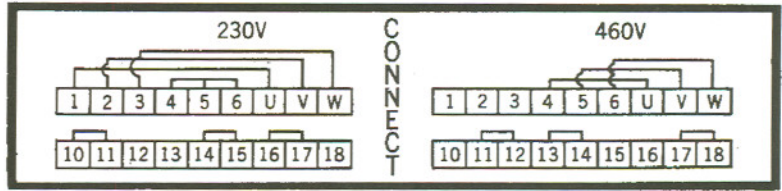
** Included in VBS1610-VP Variable Pulley Assembly Complete

VBS-1408

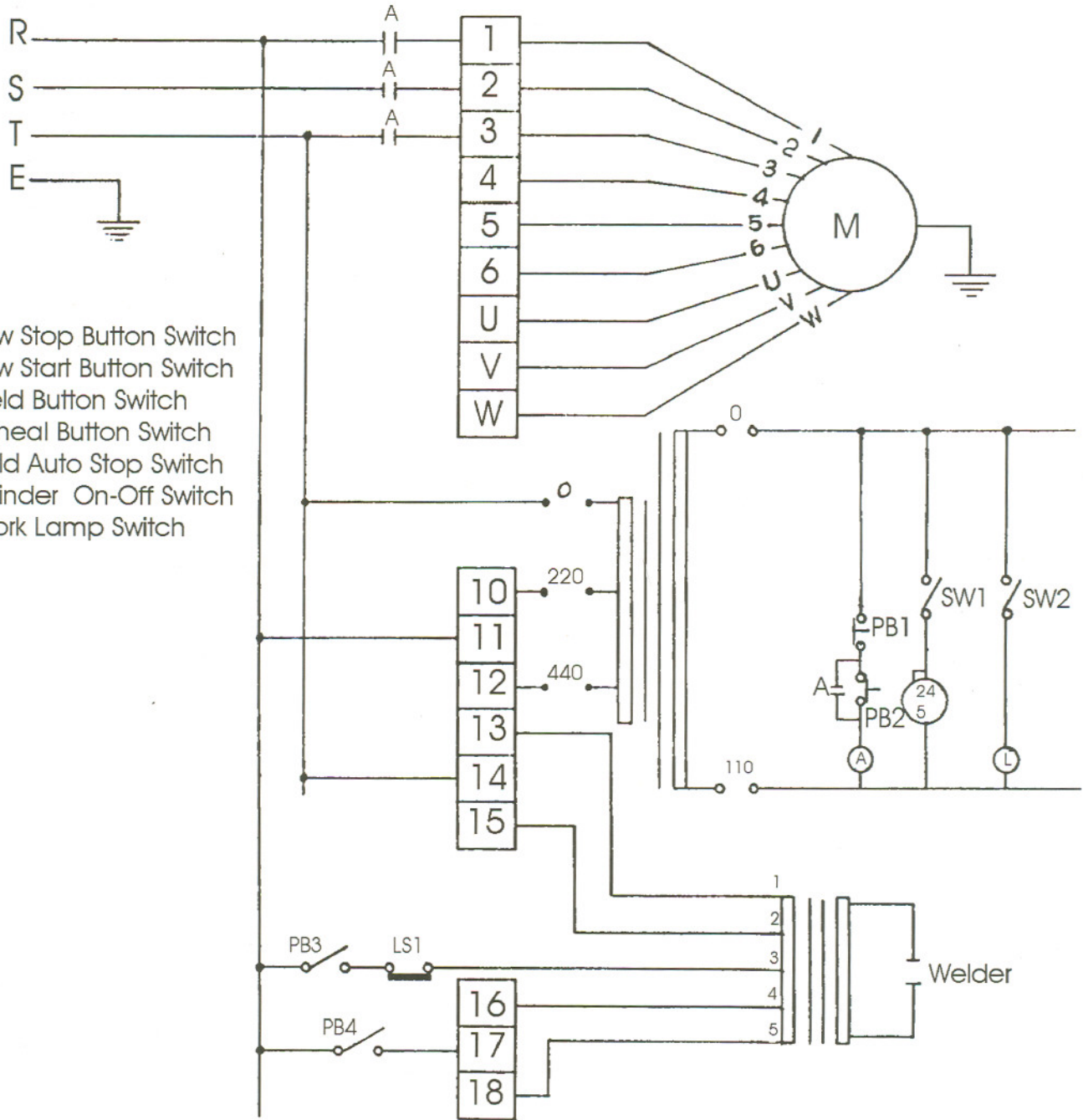


- PB3: Weld Button Switch
- PB4: Anneal Button Switch
- LS1: Weld Automatic Stop Switch
- SW1: Grinder On-Off Switch
- SW2: Welder Lamp On-Off Switch

VBS-1610



- PB1: Saw Stop Button Switch
- PB2: Saw Start Button Switch
- PB3: Weld Button Switch
- PB4: Anneal Button Switch
- LS1: Weld Auto Stop Switch
- SW1: Grinder On-Off Switch
- SW2: Work Lamp Switch



NOTE
