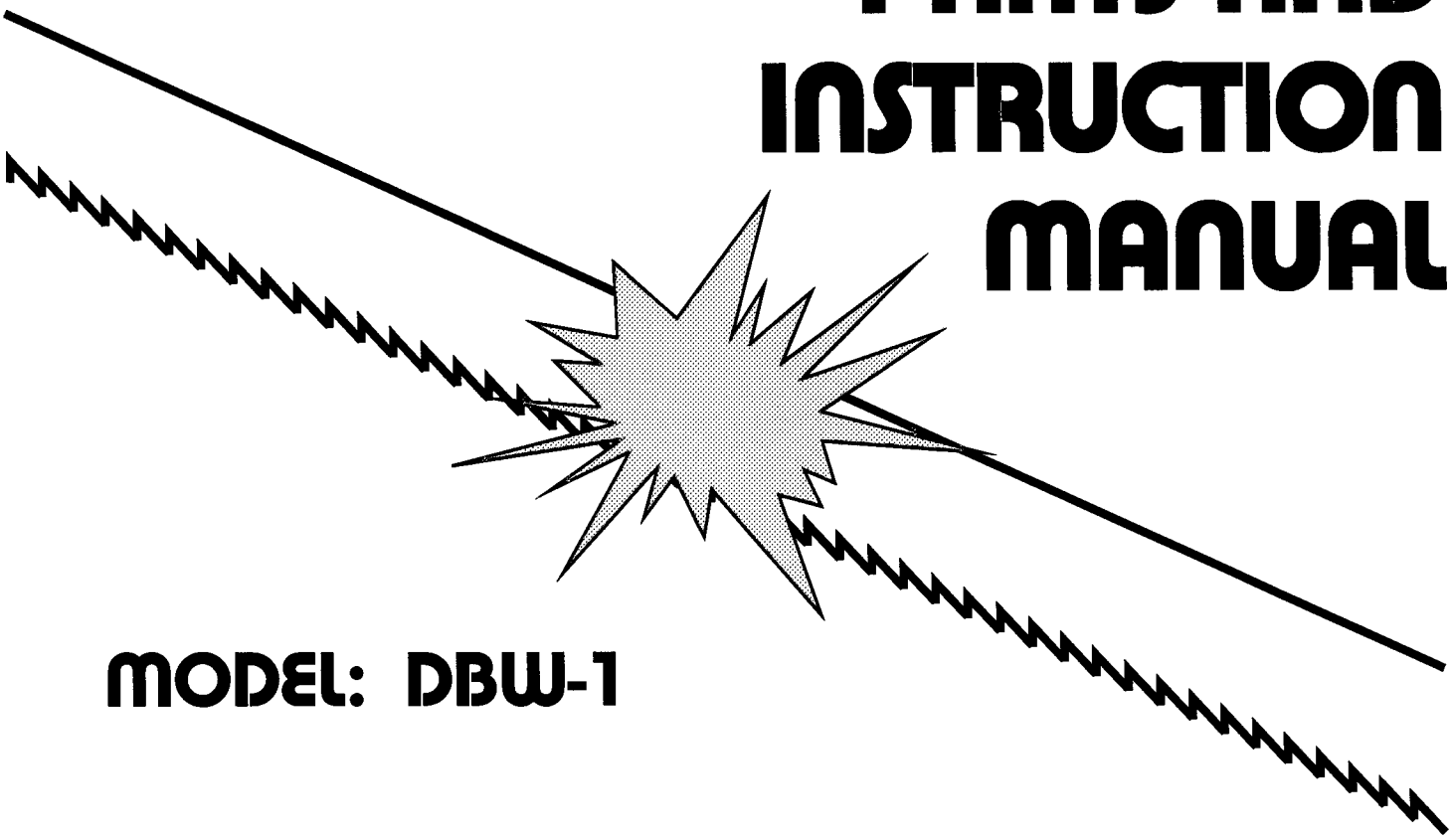
DoALL

PARTS AND INSTRUCTION MANUAL



MODEL: DBW-1

SERIAL NO: 1944 to 1949

BUTTWELDER

DAMAGE CLAIM PROCEDURE

VISIBLE DAMAGE AT TIME OF DELIVERY:

1. Note damage on carrier's delivery receipt. Accept the shipment. It can be returned later if repairs are not possible in the field.

2. Request a "damage inspection" from the delivery carrier:

   a. The carrier will send his own people or contract an independent agency to make the inspection.

   b. The inspector will request a signature on the report and leave a copy.

   c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or at least give them the details of the damage.

3. Do not move the equipment from the receiving area and keep all shipping materials until the carrier "damage inspection" report is complete.

4. If possible, take photographs of the damage and keep them for your file. Photos could possibly prove a claim at a later time.

5. Keep a record of all expenses and be sure they are documented.

6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.

7. You have nine (9) months to file a claim.

CONCEALED DAMAGE:

1. You have fourteen (14) days to report damage not noted at time of delivery.

   a. Report damage as soon as possible. This makes it easier to prove that it did not happen cosignee's plant.

   b. Inspect machines carefully before moving from the receiving area. Again if machine is not moved it is easier to prove your case.

2. Request a "damage inspection" from the delivery carrier:

   a. The carrier will send his own people or contract an independent agency to make the i nspection.

   b. The inspector will request a signature on the report and leave a copy.

   c. The carrier "damage inspection" report is not final. If additional damage is found when repairs are started, contact the carrier for another inspection; or, at least give them the details of the damage.

3. Do not move the equipment from the receiving area and keep all shipping materials until the carrier "damage inspection" report is complete.

4. If possible, take photographs of the damage and keep them for your file. Photos could possibly prove a claim at a later time.

5. Keep a record of all expenses and be sure they are documented.

6. Repair damage in the field whenever possible. Carriers encourage this to keep expenses down.

7. You have nine (9) months to file a claim.

WELDER SPECIFICATIONS

MODEL NO.		SERIAL NUMBER			
VOLTAGE		PHASE		CYCLE	
AMP.		INST. K.V.A.		CONT. K.V.A.	

FOREWORD

For your information and future reference, pertinent data concerning your welder may be inserted in the spaces provided above. This information is stamped on the data plate mounted on the welder.

Always include the model and serial numbers in parts orders or correspondence concerning your welder.

The specifications contained herein were in effect at the time this manual was approved for printing. The DoALL Company, whose policy is one of continuous improvement, reserves the right, however, to change specifications or design at any time without incurring obligations.

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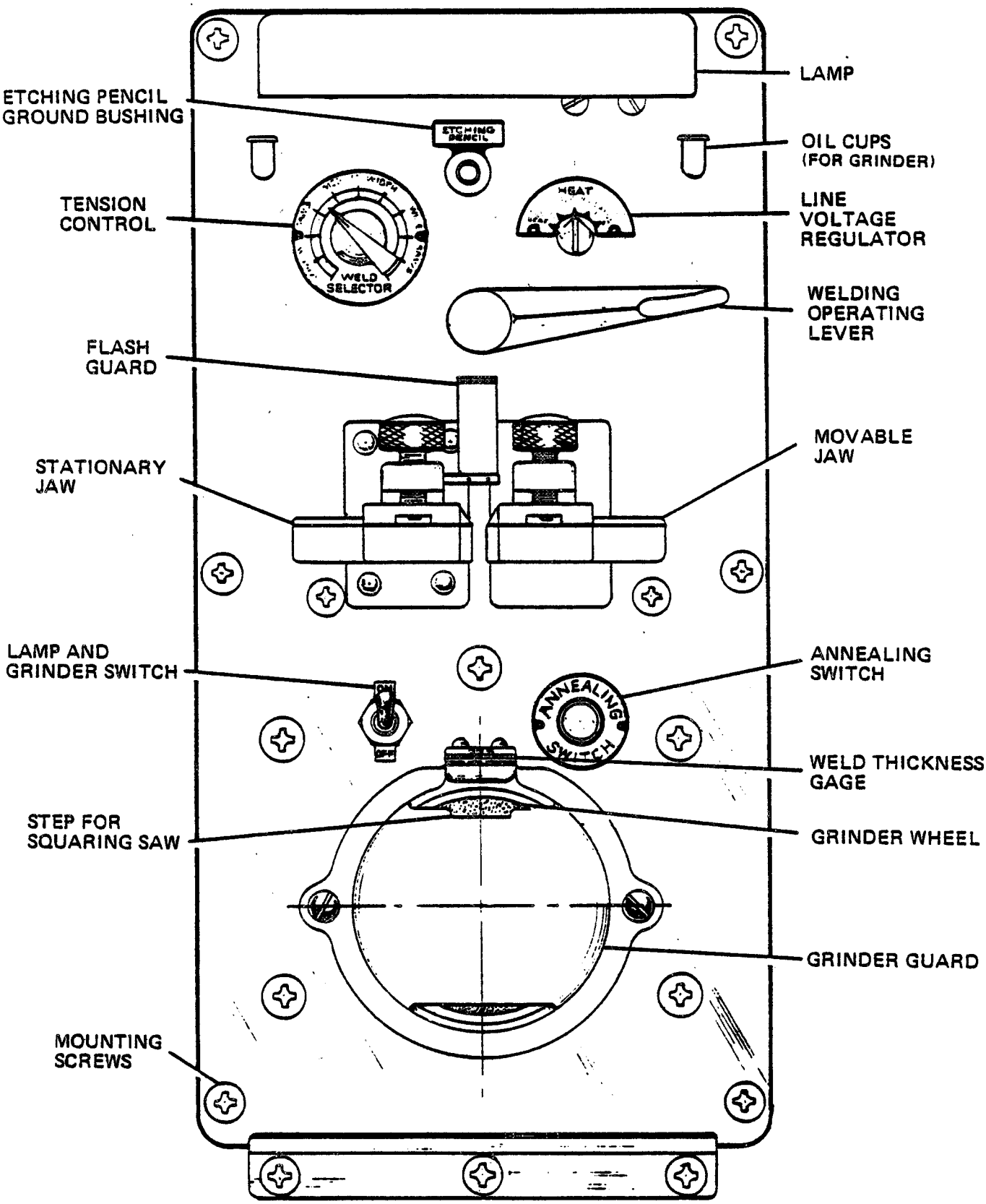
DBW NO.1 BUTT WELDER

GENERAL SPECIFICATIONS

The DBW No.1 Butt Welder Panel Assembly drawing shows the general arrangement of the panel as viewed by the operator. At the top of the panel a 15 watt lamp is housed and on either side of the panel you will note two oil fillers. These spring cap fillers are connected by means of copper tubing to the sleeve bearings of the grinder motor. Below the oilers is the tension control dial which regulates the tension of the moving jaw for each width of saw being welded. To the right of the tension selector is the screw driver adjustment switch for regulating the amount of heat which will be generated at the weld. This switch regulates the current between the saw clamping jaws from 2-1/2 volts at the "less" to 3-1/4 volts at the "more" positions when the line current is 220 volts. This switch is operated by a screw driver, and for those plants that have a fairly constant line voltage, it is unnecessary to change the position once it has been properly set.

Directly below this switch is the welding lever. It is so constructed that it can be depressed without holding on to the welder jaw. Do not use the moving welder jaw as a support or grip when pressing the welding lever. Directly below the moving welder jaw is the annealing switch which is a red bakelite button held out under spring tension. This is not a snap switch and should be pushed in - to a hard stop and held when annealing. To the left of the annealing switch is the grinder motor switch. Below the welder and annealing switches is the grinder wheel guard. Above the grinding wheel guard is a gauge to test the saw thickness after grinding. The saw weld should pass freely through this gauge.


LAMP
ETCHING PENCIL GROUND BUSHING
ETCHING PENCIL
OIL CUPS (FOR GRINDER)
TENSION CONTROL
WIDTH
WELD SELECTOR
HEAT
LINE VOLTAGE REGULATOR
WELDING OPERATING LEVER
FLASH GUARD
MOVABLE JAW
STATIONARY JAW
LAMP AND GRINDER SWITCH
ON
OFF
ANNEALING SWITCH
ANNEALING
SWITCH
WELD THICKNESS GAGE
STEP FOR SQUARING SAW
GRINDER WHEEL
GRINDER GUARD
MOUNTING SCREWS

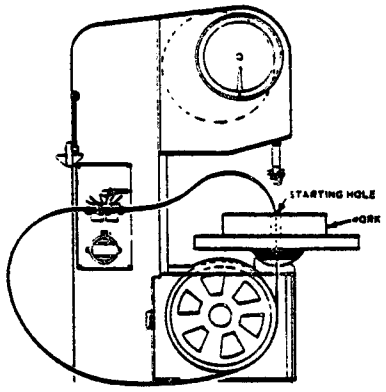
WELDING THE SAW

For welding the ends of the saw, either in joining the saw for internal work or in repairing a broken band, it is only necessary to cut the ends of the band square so that they make a butt joint when inserted in the welder jaws. If the contact across the width is not complete when the ends are clamped in the jaws, remove one end and recut it. An incomplete joint will cause an incomplete weld.

If internal sawing is to be done, the blade is inserted through the starting hole in the work, and the ends of the saw are then ready to be clamped into the terminals of the butt welder.

For sawing an internal contour, the band must be cut, run through a starting hole in the work, and then welded as shown.

NOTE: When welding band which passes through hole in workpiece - be sure to insulate band from contact with workpiece or table, this will insure a better weld.

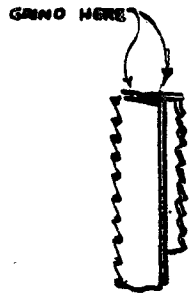


Insert the saw between the clamping blocks with the back against the ledge at the back of the terminals. This ledge lines up the saw, so that it will be in a straight line after welding. The ends of the saw should meet at the center of the welding gap without any offset either in thickness or across the width. The ends of the saw must be clamped in the welder terminals so that the joint is flat, and so that one end is not offset from the other. If the ends are clamped in an off-set manner, an overlapping weld which will not hold, will result.

After the saw ends are lined up and clamped securely between the welder terminals, the tension control switch should be set to the correct position for the width of the saw being welded. If there is a variation of ten or more volts in the line voltage, the welder will not give satisfactory results. To compensate for variations, adjust the screw driver head pointer screw of the line voltage regulator. Turning the screw clockwise gives an increase in heat; counter-clockwise, a decrease in heat.

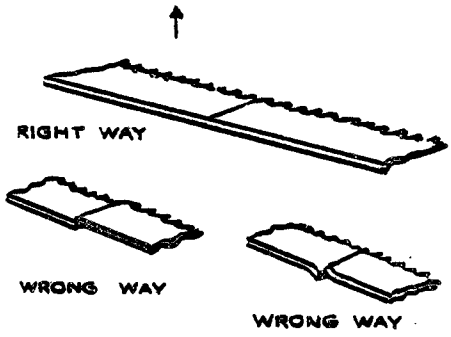
Be sure the flash guard is down. Then press the operating lever down to make the weld. The spring tension on the jaws releases when the switch is released. It is important that the switch lever be held down until the weld is automatically made and has cooled below a red heat. It can then be released and the saw is ready to be annealed.

When the band is heated up in the butt welding process, the steel at the point of the weld air hardens and is brittle. Hence, it is necessary to anneal the weld which returns the temper of the steel at this point to approximately the same as its original temper. To anneal the weld unclamp the saw from the welding terminals, move it forward to the wide gap position at the front of the welding terminals, and reclamp. Then press the annealing switch button, until the saw comes up to a dull cherry red color. It is important that the weld be annealed properly or it will be too brittle to flex overthe band wheels. If the weld is allowed to get beyond a dull cherryred color, it will reharden, causing the joint to be brittle. It is best to turn off the welder light when annealing a weld so that the "color heat" of the weld can be accurately determined. The annealing heat will properly anneal all saws up to 1" wide. Approximately 15 seconds are required to bring the 1/2" saw up to the proper heat.

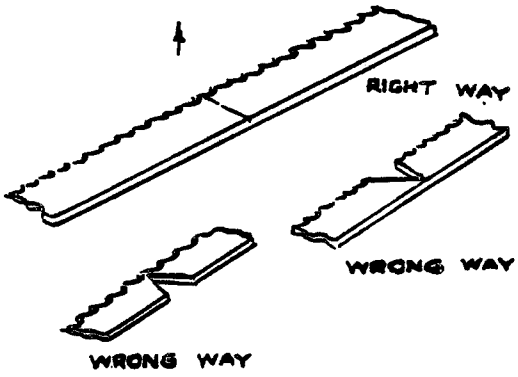


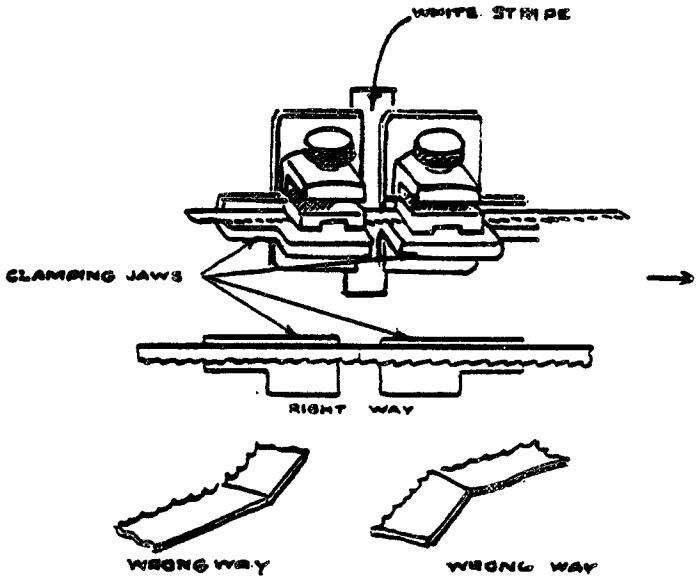
BEFORE WELDING, GRIND BOTH ENDS OF THE SAW IN ONE OPERATION. HOLD THE ENDS SO THAT THE TEETH POINT IN OPPOSITE DIRECTIONS AS SHOWN AT THE LEFT. REGARDLESS OF THE ANGLE OF GRINDING, THE TWO ENDS WILL MATCH UP PERFECTLY WHEN TURNED OVER.

BUTT ENDS TOGETHER. BE SURE THE ENDS OF THE SAW MATCH ON THE SAME PLANE AS SHOWN BELOW.



BUTT ENDS TOGETHER. BE SURE THE BACK EDGE OF THE SAW IS IN A STRAIGHT LINE AS SHOWN TO THE RIGHT.





BEHIND THE CLAMPING JAWS IS A WHITE STRIPE FOR LINING UP THE SAW BLADE. BE SURE THAT THE BLADE IS FLAT AGAINST THE BACK EDGE OF THE CLAMPING JAWS AND THAT IT IS LINED UP STRAIGHT.

After the weld is annealed, remove it from the terminals and grind off the flash from the weld on the small grinding wheel directly below the welding terminals. It is important that the welded joint in the saw be no thicker than the rest of the saw. The thickness of the weld should be tested in the gauging slot located in the grinding wheel guard before placing the saw on the wheels. The grinder switch operates the light which acts as a pilot against inadvertently leaving the silent grinder motor running after the weld is finished.

Make sure that the teeth of the saw are in line when making the weld. If they are not, the blade will not saw smoothly. If it is found that the welding of 1/16" to 3/16" saws is difficult, you should place the saws in the jaws as usual, **but leave approximately 1/64" gap between the butts.** Then press in the welding lever. This small gap prevents the saw from piling up a lot of metal at the weld. It also prevents saw ends from overlapping.

Do not weld the saw in the same place twice. Since the welding operation uses up no more than 1/16" of the blade, the band will not shorten appreciably even after several welds have been made. If it is found after making a weld that the teeth of the band point in the wrong direction, the saw can be reversed by turning the band inside out, but this kink can only be used when the saw is not welded through a piece of material for internal sawing. In this case, the saw must be cut and properly rewelded.

ADJUSTMENTS TO BUTT WELDER

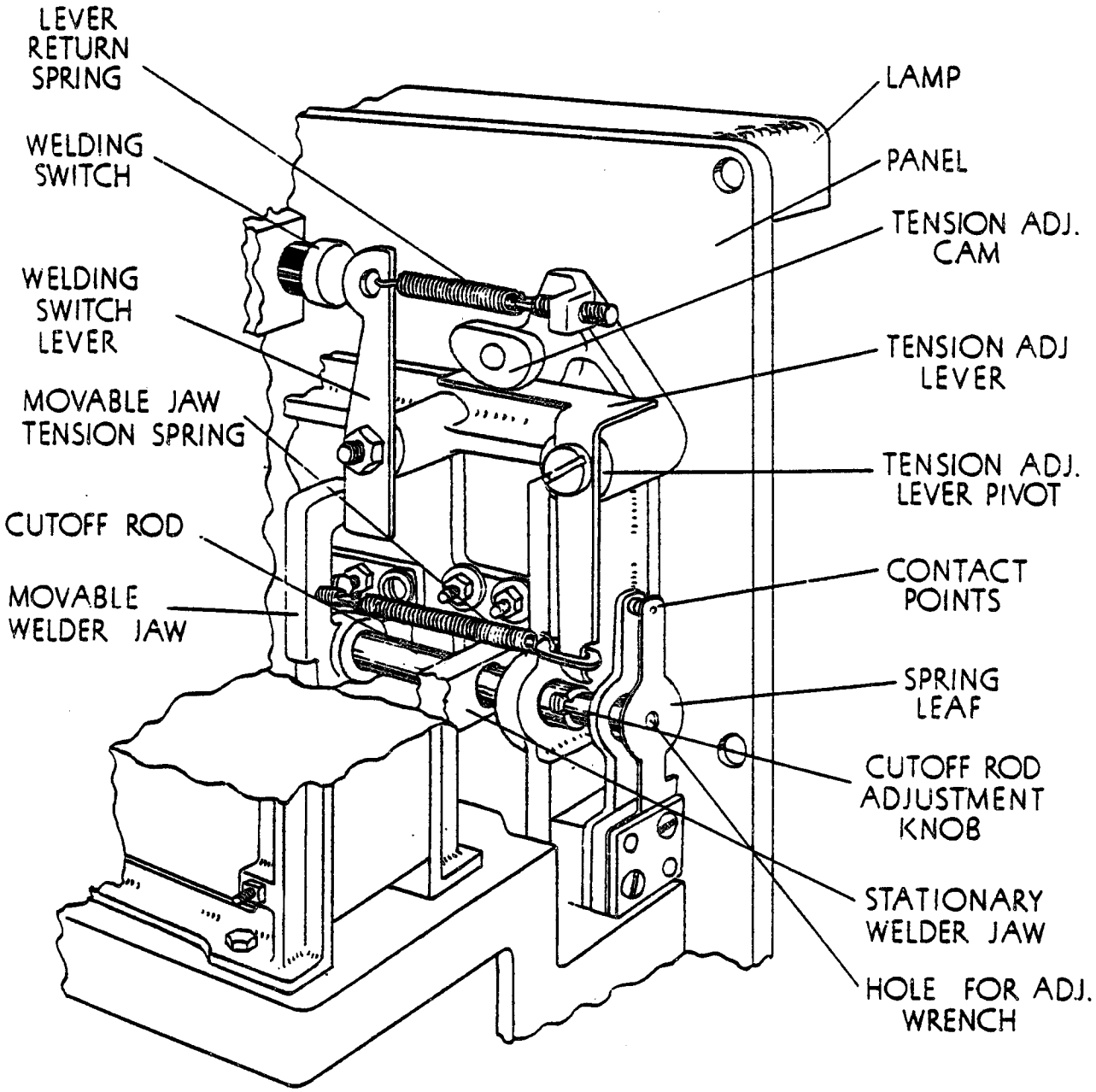
The DBW No. 1 Butt Welder is held into the column of the band saw by means of six Phillips Head Screws. In addition to this, you will note below the grinder guard at the bottom edge of the panel a bracket. This bracket consists of an angle strip attached by means of Phillips Screws to the column of the machine directly below the welder opening. The welder panel rests in the groove provided by the angle strip. The purpose of the strip is to hold the butt welder in position should adjustment be necessary. To remove the welder from the column, it is only necessary to remove the six Phillips Head Screws from the panel, grasp the lamp shade as a handle and pull the panel forward until it is at approximately a 45 degree angle. The angle strip at the bottom of the panel acts as a hinge and a stop holds the welder assembly from tilting more than 45 degrees outward.

Referring to the perspective drawing of the butt welder, this view shows the welder mechanism from the rear with the transformer cut away. The moving welder jaw is designed to give a straight line movement. The moving welder jaw is rigidly mounted on a single slide rod that slides in the welder frame. The slide rod, to which is secured the moving welder jaw, is set to give a definite amount of movement. This movement has been standardized at .040. This represents the amount of movement of the moving jaw during the weld. This .040 movement cannot be changed as that is correct for all widths of saw from 1/16" to 1". Viewed from the front of the panel the slide rod carries a switch cut-off knob at its left end. This knob is mounted on a socket head set screw so that it can be adjusted in or out, thus regulating the timing of the weld. The cut-off knob operating against the leaf of the cut-off switch, opens the circuit when the moving jaw is in the closed position.

Again, referring to the drawing, you will note an opening in the end of the leaf switch. This opening permits the insertion of an Allen Head Wrench in the cut-off knob screw. An Allen Wrench of the proper size for the cut-off switch adjustment is attached to each welder on a tag secured to the top of the transformer. It is used in adjusting the length of time current flows between the welder jaws. **This timing adjustment is probably the most important part of the welding unit and all adjustments should be made at this point.**

A clockwise rotation of the cut-off switch adjustment screw will cause a slower breaking of the welding circuit, which in effect will give more heat at the point of weld. A counter-clockwise adjustment of the cut-off knob will give a lesser amount of heat. Welders that may require adjustment can be corrected if the following procedure is used:

> With the welding lever depressed, it will be noticed that the leaf switch is open. This opening should be between 1/32" to 3/64" on the butt welder. NOTE-do not make this adjustment with the Allen Wrench inserted in the cut-off knob—if the current is on and the welding lever depressed.


LEVER RETURN SPRING
WELDING SWITCH
WELDING SWITCH LEVER
MOVABLE JAW TENSION SPRING
CUTOFF ROD
MOVABLE WELDER JAW
LAMP
PANEL
TENSION ADJ. CAM
TENSION ADJ LEVER
TENSION ADJ. LEVER PIVOT
CONTACT POINTS
SPRING LEAF
CUTOFF ROD ADJUSTMENT KNOB
STATIONARY WELDER JAW
HOLE FOR ADJ. WRENCH

Under normal voltage (220 volts) the standard setting of the jaws in the "open" position is .187. The cut-off switch should start to open when the gap between the jaws is .167 wide. At the "closed" position, the gap between the jaws should be .147.

After the welder has been adjusted as above, make a sample weld using a 1/2" saw. If the weld appears to be thick toward the teeth and tapering toward the back of the saw, the welder is operating correctly.

When the weld is completed and the operating lever held in closed or down position, loosen the thumb screw on the moving jaw. There should be no movement of the jaws after the weld has been completed. Any closing movement noticed when the thumb screw is released is due to the following:

The leaf switch is not properly adjusted. In other words, the cut-off switch has broken the circuit before the jaw has moved its full .040. To correct this the leaf switch adjustment screw should be adjusted by means of the Allen Wrench supplied, in clockwise rotation. This will give a slower breaking of the leaf switch which in effect gives an increase in heat. A quarter turn of the leaf switch adjustment screw will cause a movement of .008 on the knob. Each click of the ratchet is equivalent to .002 movement. When making the adjustment, the voltage selector switch should be set in the next to the highest position.

The cut-off may be rusted due to condensation from temperature changes. A drop of oil on this rod working it along the rod by repeated depressing of the welding lever will correct it.

The web strap which conducts electricity to the transformer may have become kinked causing it to pull against the spring movement of the cut-off rod. Check this web strap for free movement.

The tension control for the different saw widths is regulated by means of the weld selector knob connected to a shaft which operates a cam controlled lever giving the proper rate of jaw pressure against the molten saw.

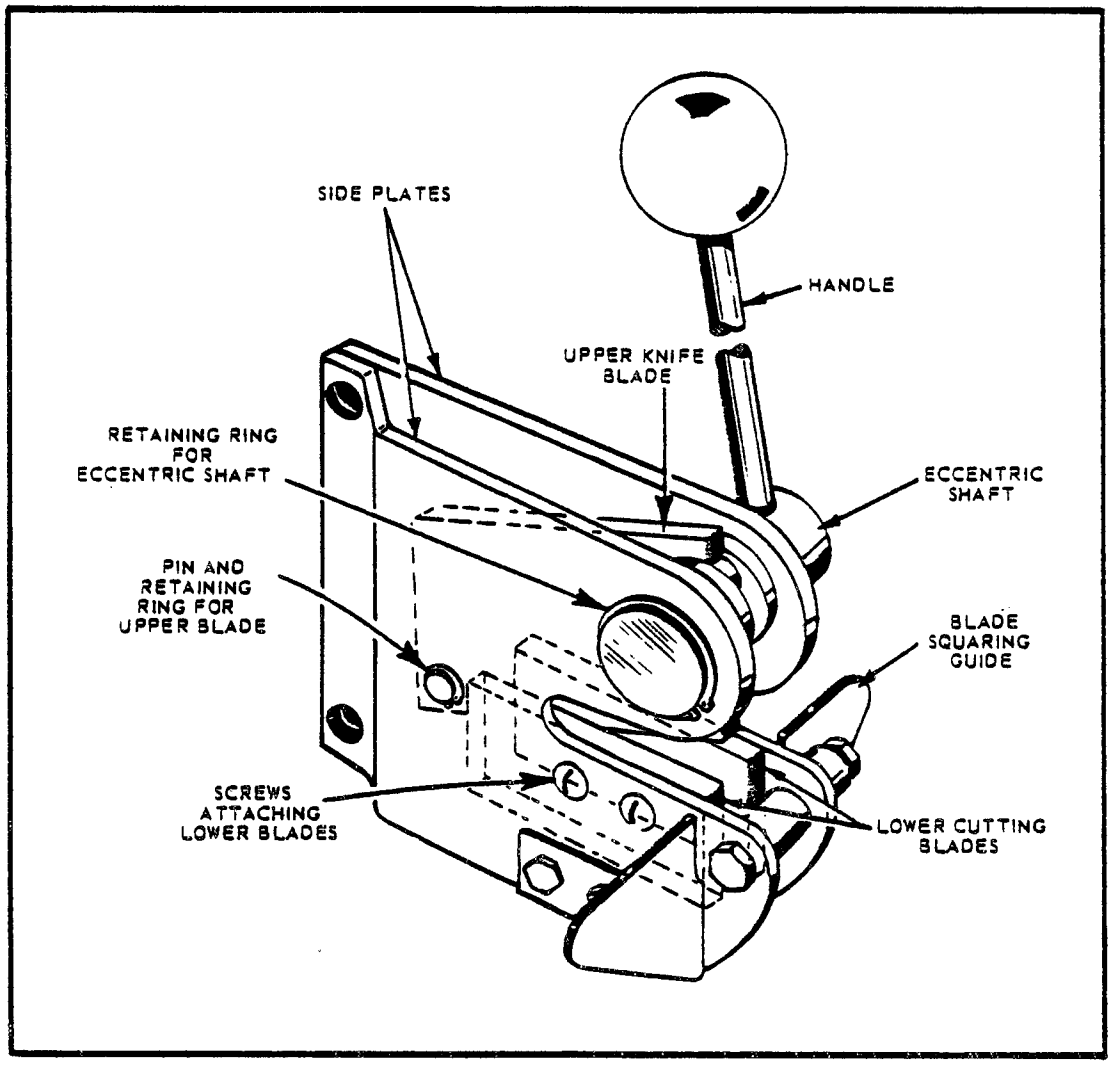
The welding switch is a two circuit switch on which the annealing circuit is normally closed and the welding circuit normally open. When the welding lever is held down, there is no possibility of "shorting" the transformer or burning out fuses should the annealing switch accidently be pressed.

WELDER GRINDER CIRCUIT

On all circuits over 220 volts requiring a step-down transformer for the primary current, the grinder circuit is coupled through the annealing side of the welder switch. When the welding lever is depressed the circuit to both the annealing switch and the grinder is open. If the grinder is running while a weld is being made the grinder will momentarily shut off when the welding lever is depressed.

BLADE SHEAR

The cutter blades can be easily replaced. Disassemble by removing the snap rings from the pivot pin and eccentric disk. Then remove the retaining screws on the bottom blades. .

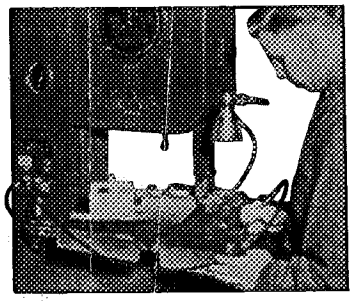


The Blade Shear Assembly.

ETCHING PENCIL

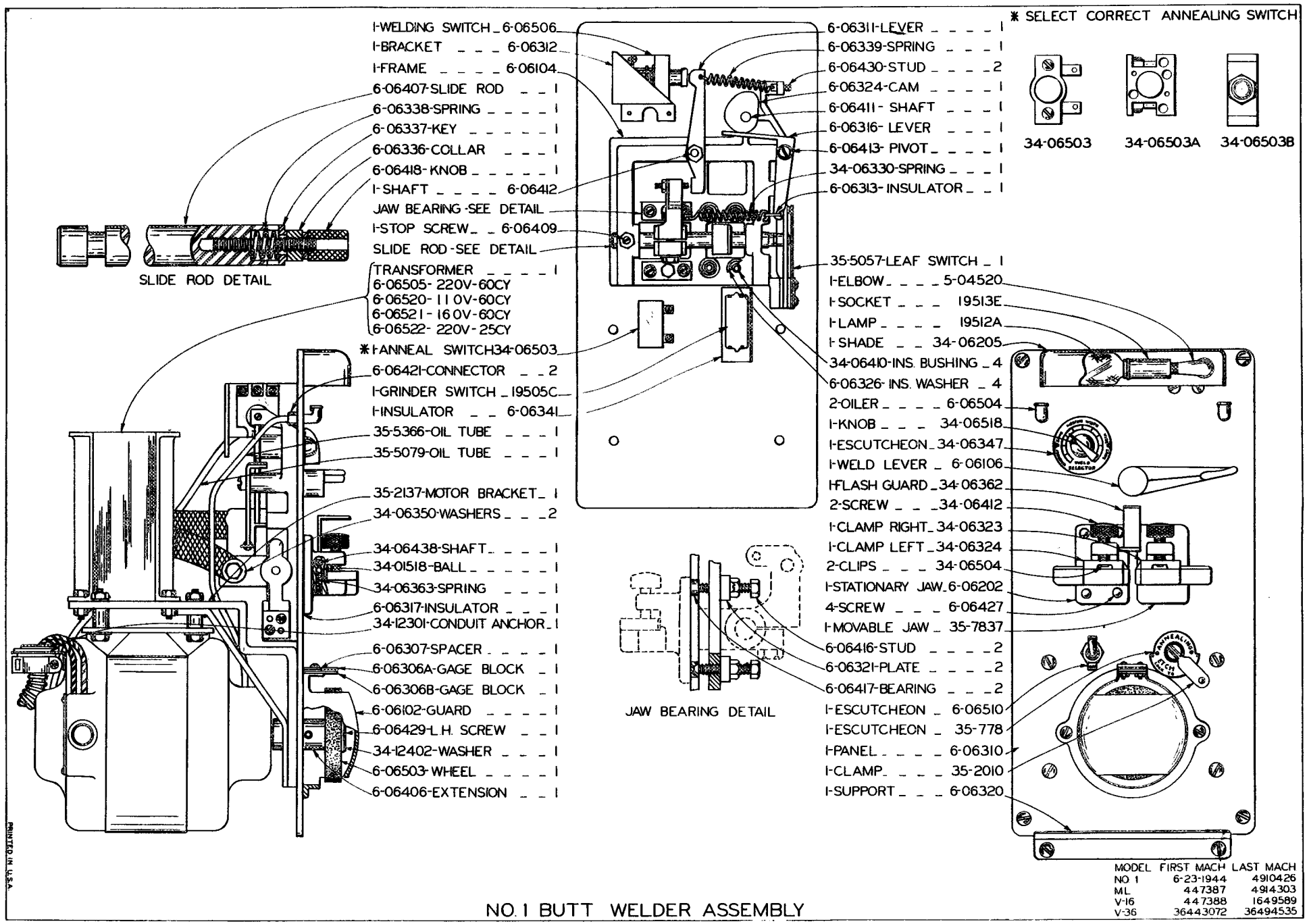
Instructions for applying the etching pencil are as follows:

1. Be sure the saw clamps are in the reset or open position.
2. The terminal strips must be clamped in the saw clamps so that no movement in the saw clamps can take place when the welding lever is pressed, and also so that each clamp is insulated from the other. First, take the etching pencil lead and place the terminal in the right saw clamp with the fiber spacer between the clamp and tighten the thumb screw. Then, secure the terminal from the ground lead in the left saw clamp so that it butts against the fiber spacer on the etching pencil terminal.
3. Insert plug in the jack in the panel receptacle marked "Etching Pencil". Depress the welding lever; this closes the circuit through the welder and also grounds the etching current through the machine.
4. Set the voltage selector switch by means of a screw driver to the tap marked "etch."
5. Place the work to be etched on the table of the machine. Since the machine is grounded, there is no second lead required to the piece being etched.
6. Etch with sufficient pressure to prevent the point from arcing but not great enough to destroy the copper point.
7. If a heavy etched line is desired, the voltage selector switch may be set up one click. However, this tap should be used only on intermittent duty. Continuous use in this position will cause the pencil to heat.
8. The copper point should be kept sharp to secure the best results.
9. "Caution." The anneal button must not be held in when the etching pencil is ready for operation as this will throw increased voltage through the motor and cause the transformer to heat.



REPLACEMENT PARTS CATALOG

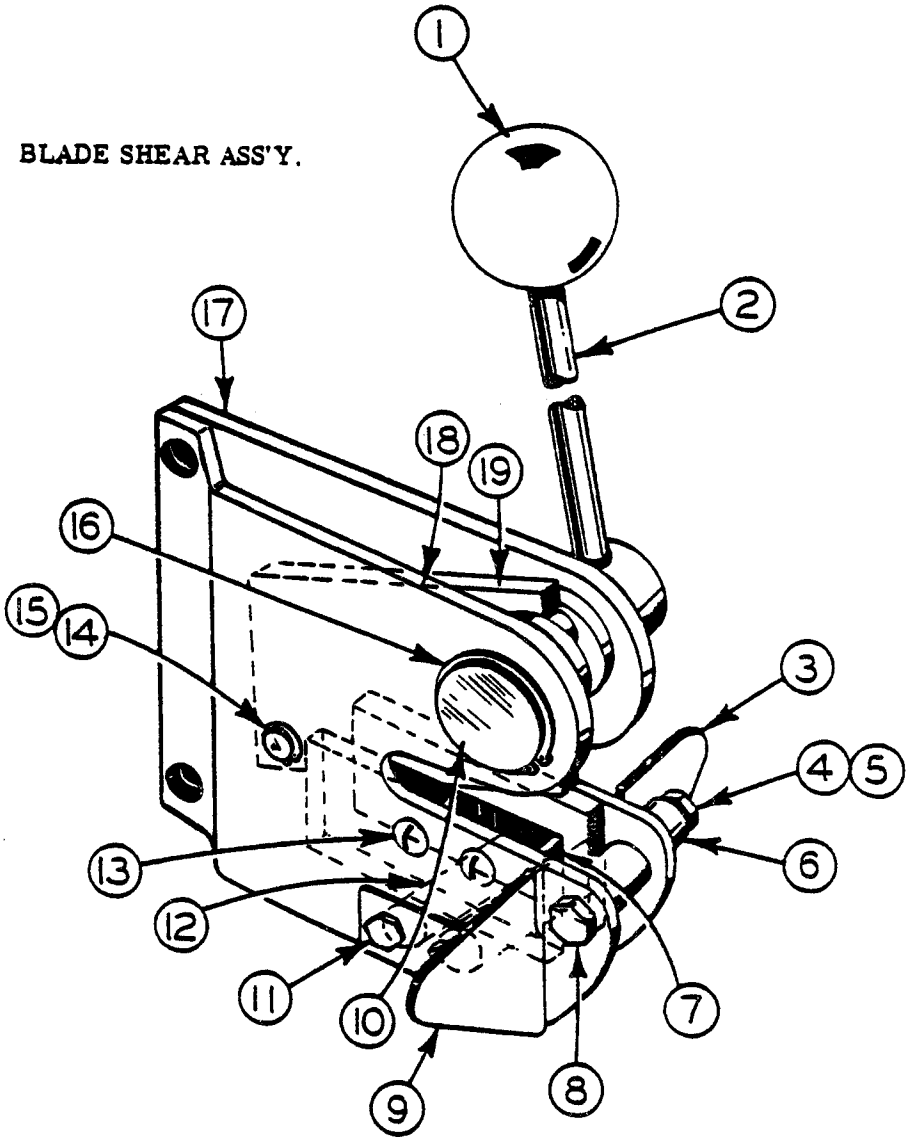
You can avoid unnecessary delay and inconvenience by specifying correct model and serial numbers on all parts orders.



MODEL	FIRST MACH	LAST MACH
NO 1	6-23-1944	4910426
ML	447387	4914303
V-16	447388	1649589
V-36	36443072	36494535

NO. 1 BUTT WELDER ASSEMBLY

BLADE SHEAR ASS'Y.



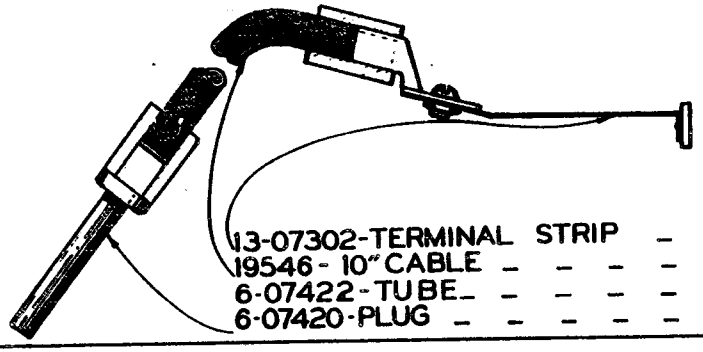
INDEX NO.	PART NO.	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASS'Y.
	35-8440	Blade Shear Ass'y.	
1	34-13508	. Ball	1
2	35-8438	. Handle	1
3	35-8446	. Square R. H.	1
4	Comm	. Hex Nut 1/4-20NC . . .	3
5	Comm	. Washer, Lock 1/4SAE Std.	3
6	35-8585	. Spacer	1
7	100015	. Blade	2
8	Comm	. Hex Hd. Cap Scr. 1/4-20 NC x 1 1/2"	1
9	35-8445	. Square L. H.	1
10	35-8441	. Eccentric	1
11	Comm	. Hex Hd. Cap Scr. 1/4-20 NC x 1 1/4"	2
12	100016	. Spacer	3
13	Comm	. Rd. Hd. Mach. Scr. 10-24NF x 1/4"	4
14	35-8582	. Ret. Ring	2
15	35-8451	. Pin	1
16	35-7558	. Ret. Ring	2
17	35-8448	. R. H. Side Plate	1
18	35-8447	. L. H. Side Plate	1
19	35-8437	. Knife	1

9-19-51

✱NOTE: FOR WELDERS SHIPPED BEFORE 6-23-44
(WITH GROUND BUSHING IN PANEL)

13-07003-ETCHING PENCIL COMPLETE

35-5109- SHORT END ASSEMBLY ONLY



13-07302-TERMINAL STRIP – 1
19546 - 10" CABLE – – – – 1
6-07422 - TUBE – – – – 2
6-07420 - PLUG – – – – – 1

2154 - FERRULE – – – – 2
19545 - TERMINAL LUG – – – – – 1
13-07304 - TERMINAL STRIP – – – 1
19546 48" CABLE – – – – 1
6-07423 - CONNECTOR – – – 1
6-07311 - WASHER – – – – 2
35-5077 - STEM & TUBE ASSY. – 1
6-07503 - CORK TUBE – – – 1
6-07307 - FINS – – – – – 12
6-07308 - FIN – – – – – – 1
6-07309 - FIN – – – – – – 1
6-07310 - FIN – – – – – – 1
6-07424 - POINT – – – – – 1

1 - 8/32 X 5/16 NC RD HD SCREW
1 - 8/32 NC HEX. NUT
1 - #8 STD. BRASS WASHER

FOR ALL MACHINES

ETCHING PENCIL ASSEMBLY - 13-07004 ✱

FIRST MACHINE 10-1-39

PRINTED IN U.S.A.