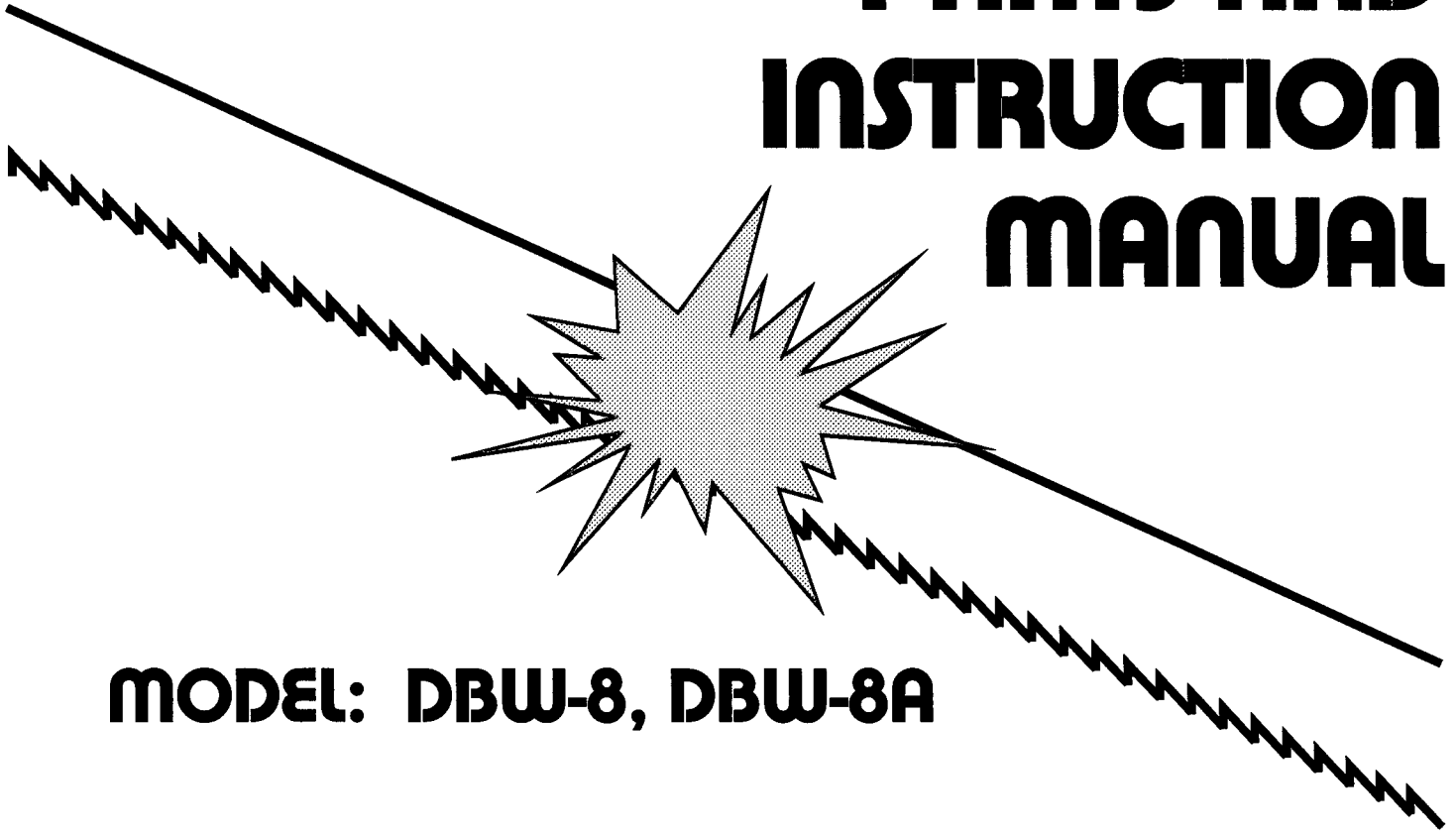




PARTS AND INSTRUCTION MANUAL

A stylized graphic consisting of a jagged, zigzag line representing a lightning bolt. It strikes a central, multi-pointed starburst or explosion shape. The starburst has a stippled or halftone texture. The entire graphic is oriented diagonally from the upper left towards the lower right.

MODEL: DBW-8, DBW-8A

**SERIAL NO: 154-59101 to 154-652461
180-60101 to 180-68195**

BUTTWELDER

DAMAGE CLAIM PROCEDURE

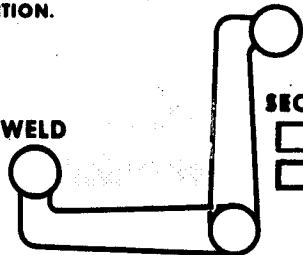
VISIBLE DAMAGE AT TIME OF DELIVERY:

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 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.

INSTRUCTION AND PARTS MANUAL

 WELDER	
MODEL NO.	
SERIAL NO.	
VOLT.	AMP.
PHASE	INST. K.V.A.
CYCLE	CONT. K.V.A.
NOTE: OPERATE WELDING AND ANNEALING CYCLE AS PER INSTR. MANUAL. DO NOT PUSH WELD AND ANNEAL SWITCHES AT THE SAME TIME. REMOVE FLASH PARTICLES FROM JAWS AFTER EACH WELD. BEFORE RESETTNG RESET LEVER TO WELD POSITION, MOVE TO EXTREME ANNEAL POSITION.	
	
RESET LEVER POSITIONS	
DoALL COMPANY DES PLAINES, ILLINOIS U.S.A. 23485	

For your information and future reference, pertinent data concerning your machine should be written in the spaces provided above. This information is stamped on a plate attached to your machine. Be sure to provide machine model and serial numbers with any correspondence or parts orders.

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 notice and without incurring obligations.

Please read this manual carefully before operating the machine.

The following registered trademarks of the DoALL Company are used in this manual: DoALL.



DoALL COMPANY
254 NORTH LAUREL AVENUE
DES PLAINES, ILLINOIS 60016 U.S.A.

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INSTALLATION

LOCATION

- (1) Place DoALL flash butt welder where sufficient operating room is available.
- (2) Allow enough space so coiled saw bands cannot injure other persons when a welding procedure is underway.
- (3) Place where welding sparks will not ignite flammable material.

ELECTRICAL CONNECTIONS

- (1) Connect welder to an electrical power line with capacity to provide 300 per cent momentary overload without more than 10 per cent voltage drop.
- (2) Fuse according to amperage shown on welder data plate.
- (3) The 240-volt, 50-60-hertz unit can be connected for a 220-240 or 230-240 voltage range. Refer to furnished wiring diagrams if necessary. Low voltage or current supply will cause uneven flashing action during the welding cycle, and the weld will not be perfect.

NOTE: Portable, case-mounted butt welders for 380/480 and 575-volt operation must include an extra transformer (No. 41157).

INITIAL LUBRICATION

Your butt welder was lubricated at the factory. See Lubrication and Maintenance sections of this manual for further lubrication instructions.

WELDER SPECIFICATIONS

- (1) Jaws: Motor controlled, cam-actuated.
- (2) Capacity: Carbon steel bands 1/16th to 2-inch width. High-speed steel bands: up to 1/2-inch wide by 0.025-inch gage.
- (3) Transformer Capacity: 8 kva.

- (4) Welding Voltage: 5 volts.
- (5) Annealing Voltage: selective among 1, 1-1/2 or 2 volts.
- (6) Operating Current: Standard 240-volt, single-phase, 60-hertz. Optional 208, 380, 480 and 575-volt, 50 or 60 hertz.
- (7) Grinder Motor: 230-volt, 1/6 hp.
- (8) Net Weight: 180 pounds in carrying case.
- (9) Floor Space: 20 by 26 inches required for pedestal-mounted welder.
- (10) Rod Welding Jaws (optional): 1/16-inch capacity diameter steel rods.

OPERATING FEATURES

GENERAL DESCRIPTION

The DoALL Model DBW-8 is a "flash butt welder". It is heavily-built throughout and has reserve power for exacting continuous service. This self-contained unit incorporates welding, annealing, grinding and cut-off equipment. Weld uniformity is assured by a motor-powered, cam-actuated welding cycle with calibrated controls which synchronize gap spacing and upset pressure. Principle welder operating features shown in Fig. 1 are described in the following paragraphs.

Grinder (Optional):

Mounted above the welder, it has a 3-inch diameter by 1-inch thick grinding wheel driven by a 1/6 hp electric motor. Top and bottom wheel portions are exposed so the operator can grind both welded band sides without having to turn it over. Use the band thickness gage located above grinding wheel to check the welded area's thickness.

Band Cut-Off Shear:

Simple and rugged unit cuts saw bands so butt ends are smooth, flat and square -- all necessary for strong welds. Cutter blades can be easily replaced.

Jaw Gap Control:

The jaw gap control wheel is located on welder's left side. It is marked with numbers from "1" through "6". Each control wheel setting will produce a different gap between welder jaws at the start of a welding cycle. Example: A No. 2 setting produces a 3/8-inch jaw gap. The correct jaw gap must be used for each saw band size. See the Operations section for proper settings.

Jaw Pressure Selector:

This control regulates spring compression which forces the moveable jaw toward the stationary jaw. It also provides the necessary upsetting force at welding cycle finish. Numbers marked on selector shaft indicate various pressures used for different saw bands.

Welding Jaws:

The welding jaws serve as electrode fixtures for band ends which become the electrodes. The stationary jaw is insulated from the welder frame, while the moveable jaw is grounded to the frame. Both jaws are made of brass for greater electrical conductivity. Two jaw clamping handles hold the band ends securely in alignment as they are butted together during welding. Jaw inserts can be easily removed for cleaning or replacement.

Reset Lever:

This lever has two positions: horizontal or "weld", and vertical or "anneal". Moving lever to the "weld" position will compress the spring which produces jaw travel and upset force.

"Weld" and "Anneal" Switches:

These separate switch buttons located on welder's right side are made of non-conductive material. Use the "anneal" selector switch to select annealing voltage required by size of the saw band.

OPERATING FEATURES (Continued)...

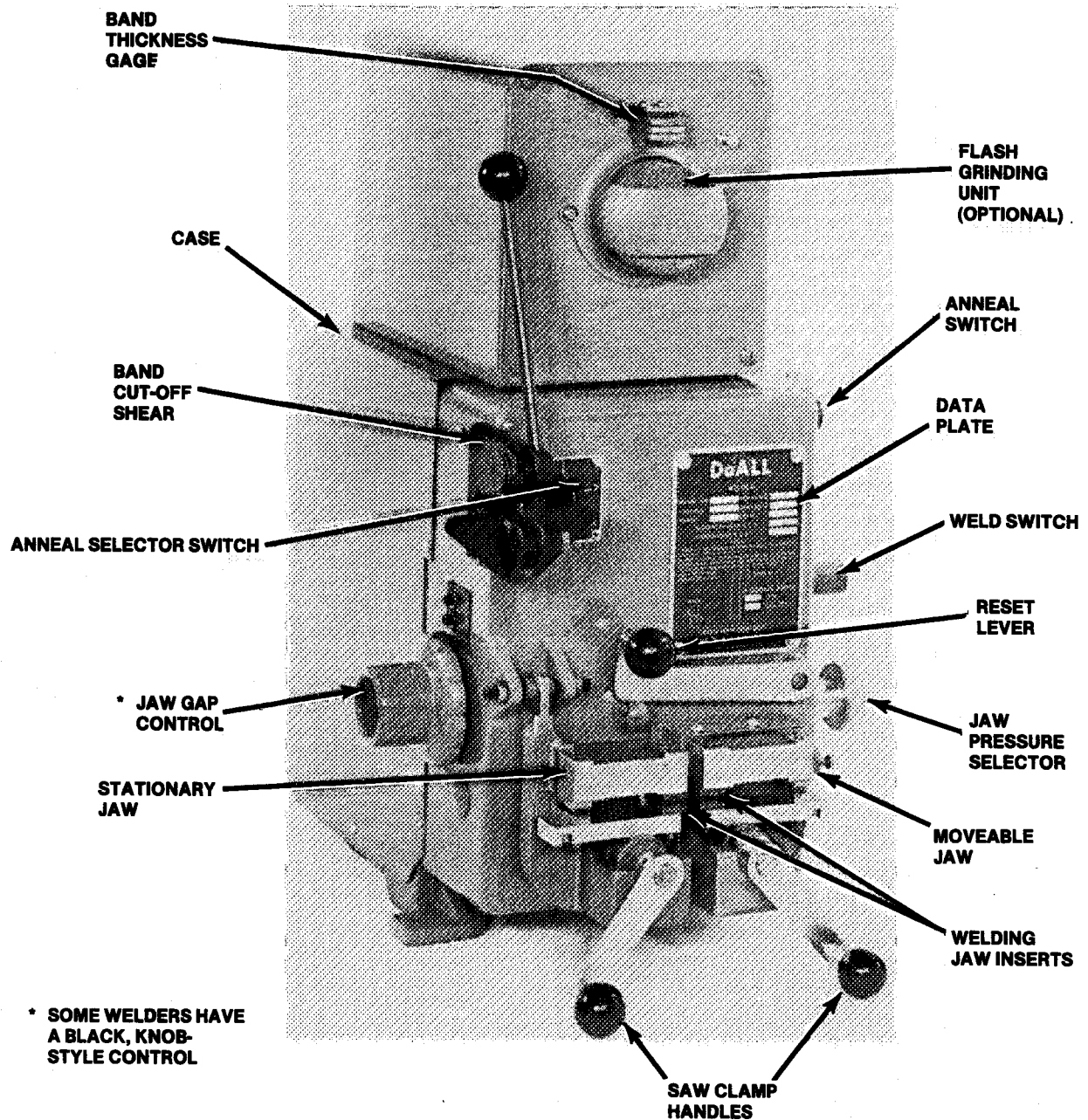


FIG. 1. WELDER OPERATING FEATURES.

OPERATION

WELDING OPERATION DESCRIPTION

First, a properly-prepared band is clamped securely in the jaws (these jaws are the welder's electrode fixtures). Butt band ends (electrodes) together and center them between the jaws. Press weld switch to establish a low AC voltage arc between band ends. This arc induces band combustion and generates necessary welding heat.

Move band ends together to maintain arc as material is consumed at each end. The ends are moved toward each other as a compression spring advances moveable jaw toward the fixed jaw. Movement rate is limited by a cam and cam follower assembly.

Material consumption rate increases as the band heats. Speed at which the ends move toward each other must be increased at the same rate. The cam which controls jaw speed is designed to advance band ends at the proper increasing rate so a gap is provided which maintains the arc.

When band ends reach correct welding temperature, the cam displaces the cam follower assembly. This allows spring advancing the moveable jaw to exact full upset pressure on the band. The weld switch trips and cuts voltage to the jaws after a pre-determined jaw movement increment. The additional jaw movement and upset pressure combine to forge and complete the weld.

NOTE: A number of variables must be considered when welding. Settings and procedures used in this manual are general guide lines.

BAND PREPARATION

- (1) Cut band to correct length. Make sure ends are square. See Fig. 2.

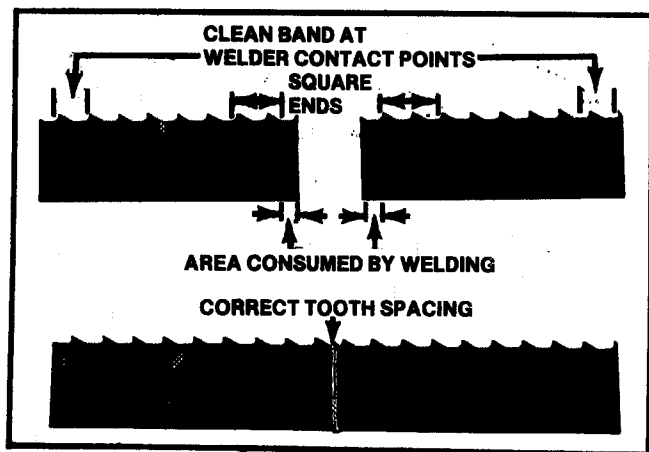


FIG. 2. BAND PREPARATION FOR WELDING.

- (2) Tooth Spacing. With fine-pitched bands, teeth on each cut side must be removed by grinding. This will insure cross-section uniformity of the band's weld area. It will also insure proper weld area tooth spacing, and teeth set pattern may be retained when necessary. Approximately 1-inch of material is consumed in welding; this means that 1/8-inch of teeth from both band ends must be removed. Examples below cover grinding range for a 1-inch saw band. Also see Fig. 3.

When to Grind Teeth:

2 Pitch	 None
3 Pitch	 None
4 Pitch	 1/2 tooth each end.
6 Pitch	 3/4 tooth each end.
8 Pitch	 1 tooth each end.
10 Pitch	 1-1/4 tooth each end.

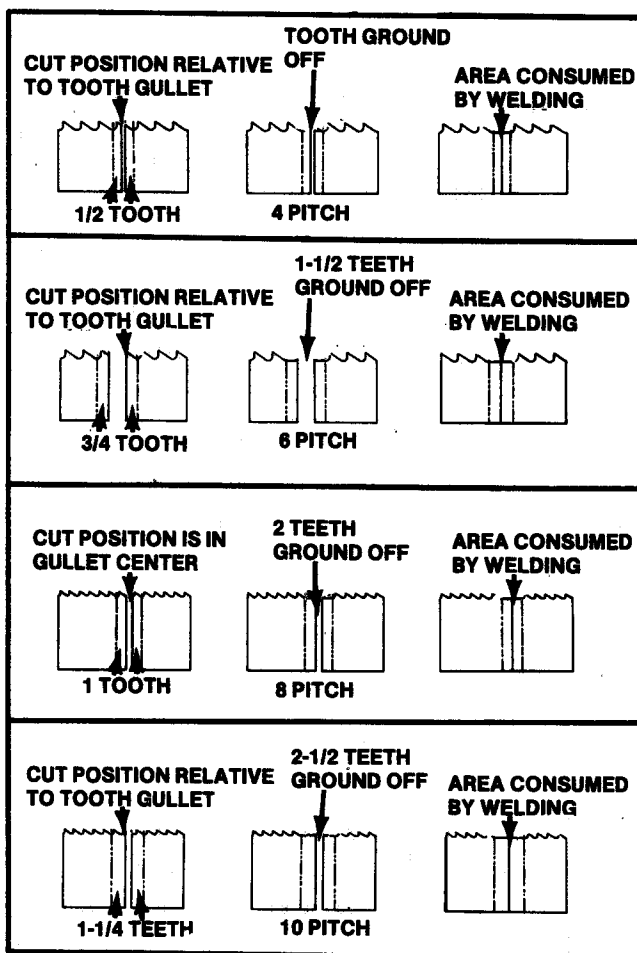


FIG. 3. CORRECT TOOTH SPACING.

BAND PREPARATION (Continued) . . .

CAUTION: Care must be taken so that emery cloth does not touch teeth. This will damage teeth set or sharpness. Remove any oxide or residue because it will prevent good electrical contact; thus producing weld area hard spots, and a poor weld.

- (3) Clean the band. Use No. 120 grit emery cloth or equivalent. The part of each band end which contacts insert must be sanded.

WELDER PREPARATION

- (1) Supplied inserts have two chamfered edge sizes to prevent coarse-pitch band teeth from breakage by clamping jaws. The inserts also allow proper electrical contact when welding fine-pitched bands. Top inserts must be set with small chamfer to rear for 3/4-inch and wider fine-pitched bands, and for all bands 1/2-inch and narrower.

Set wide chamfer to the rear for coarse-pitched bands in sizes 3/4-inch and wider. Upper inserts must be removed and reversed when changing band pitch sizes. The lower inserts are interchangeable so chamfer can be relocated.

- (2) Clamping jaw surfaces and clamping block assembly must be wiped clean.
- (3) Turn jaw gap control wheel to correct setting for band width and gage to be welded. See Figs. 4 & 4A.

NOTE: Settings in parentheses () are for welders with Serial Nos. 154-621100 to 154-621200.

DART, CARBON ALLOY, BLUE RIBBON BUTCHER SAW BANDS				
WIDTH	GAGE	JAW PRESSURE	JAW GAP	ANNEALING SETTING
1/16 in.	0.025	2	1	1
1/4 in.	0.025	3 (2)	4 (1)	1
3/8 in.	0.025	3 (2)	4 (3)	1
1/2 in.	0.025	3 (2)	4 (3)	1
5/8 in.	0.032	3	4	2
3/4 in.	0.032	3	5 (4)	2
1 inch	0.035	4 (5)	5	2
1 inch	0.050	5 (6)	6	2
2 inch		6	6	3*

* Manual Only

FIG. 4. CONTROL SETTINGS CHART.

FRICTION SAW BANDS				
WIDTH	GAGE	JAW PRESSURE	JAW GAP	ANNEALING SETTING
1/2 in.	0.032	3	5	2
3/4 in.	0.035	4	5	2
1 inch	0.035	4	5	2

ROD WELDING			
DIAMETER	JAW PRESSURE	JAW GAP	ANNEALING SETTING
1/16 in.	2	1	1
3/32-1/8 in.	3	3	1
3/16 in.	4	4	2
1/4 in.	6	6	3
5/16 in.	6	6	3

FIG. 4A. CONTROL SETTINGS CHART.

- (4) Place reset lever in "weld" position.
- (5) Turn jaw pressure selector to correct setting chosen from Control Settings Chart (Fig. 4). Number settings in the chart refer to selector shaft numbers. See Fig. 5.

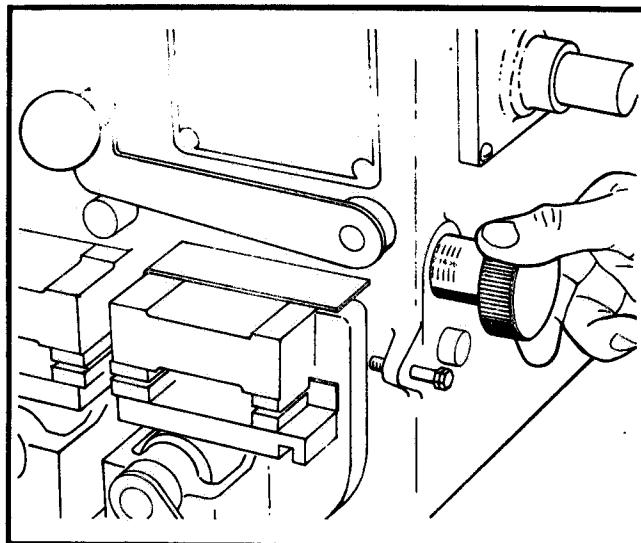


FIG. 5. SETTING JAW PRESSURE.

NOTE: Control Settings Chart adjustments are approximate. Experience may indicate using slightly-different settings.

SPECIAL NOTE FOR WELDING TWO-INCH WIDE CARBON BAND

Best results will be obtained when band ends are cut as shown in Fig. 6. Clamp blade ends in the jaws with teeth pointing out -- toward the operator.

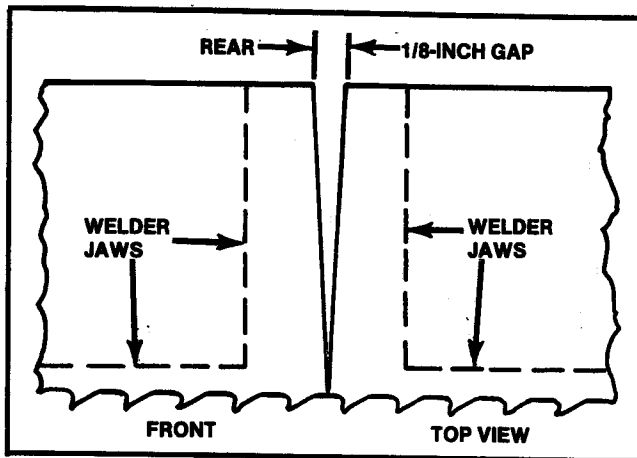


FIG. 6. WELDING 2-INCH BAND.

MAKING THE WELD

- (1) Place reset lever in "weld" position.
- (2) Place one band end in the left jaw with teeth to the rear against the line-up surface. Keep the band end in the gap center between the two jaws. Clamp the left jaw.
- (3) Insert other band end in right jaw with teeth to the rear against line-up surface, and band ends butted in jaw gap center. Clamp the right jaw. See Fig. 7.

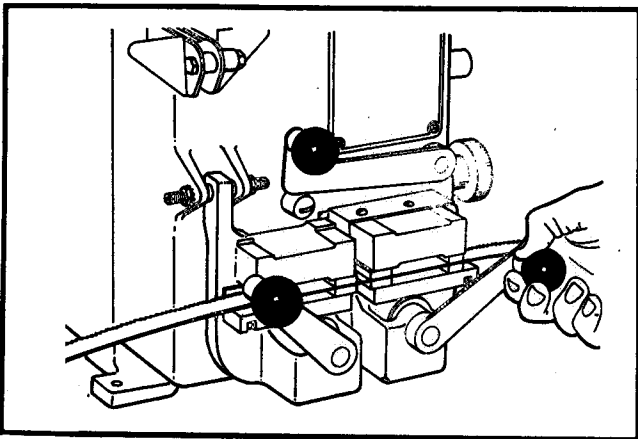


FIG. 7. CLAMPING BAND IN WELDER JAWS.

- (4) Press weld switch "in" all the way to a full mechanical stop. **RELEASE IMMEDIATELY.** See Fig. 8.

CAUTION: Step to welder's right side to avoid flash.

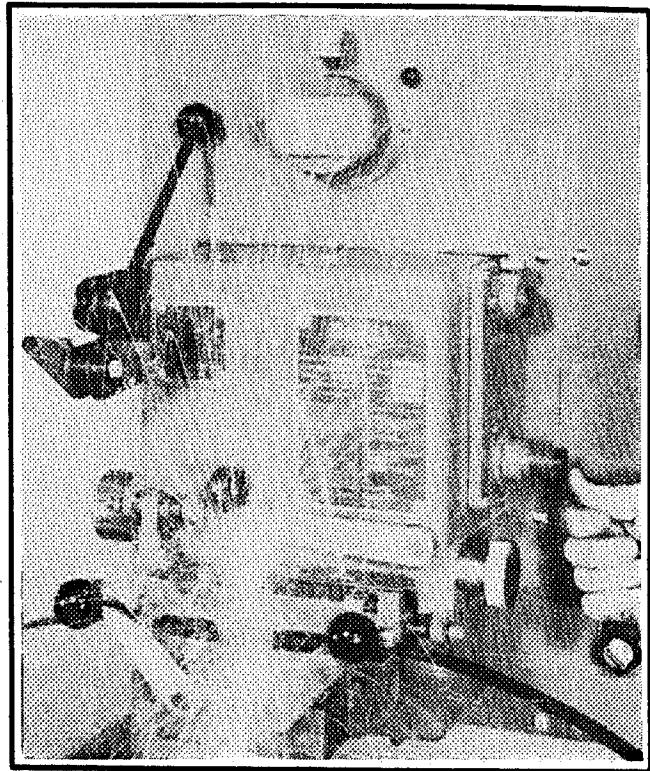


FIG. 8. WELDING ONE-HALF-INCH BAND.

Operator should note the following characteristics during welding process: The flash during welding should be consistent. It should not sputter or be intermittent. The flash should be sharp in color; not dull. If the above characteristics are not present, check welder for mechanical interferences and electrical shorts. Re-check all settings.

- (5) When weld is completed, raise reset lever enough to release spring tension.

NOTE: Periodically check spacing between jaw inserts before welder jaws are unclamped. Correct spacing between left and right inserts should be approximately 1/16-inch. Check and correct all settings before continuing if spacing is not right.

- (6) Release clamp handles. Remove band.

Because various alloys are used to manufacture band, and because other varying factors may be present, the Control Settings Chart should be used only as a basic reference.

For example: A metal-cutting saw band with high chrome percentage requires a higher forging or upset temperature than ordinary hi-carbon steels. Welding this type of band with welder controls set according to the table may cause a brittle-weld tendency. Eliminate this condition by increasing jaw gap setting, but do not increase jaw pressure.

MAKING THE WELD (Continued)...

Increasing jaw gap setting without changing or reducing jaw pressure will automatically increase the forging or upset temperature.

INSPECTING THE WELD

- (1) Remove band from welder.
- (2) Inspect for upset material's symmetry and good weld characteristics. The upset material's color should be blue-gray and have equal intensity throughout.
- (3) Teeth spacing should be uniform. The weld should be located in the center of the gullet.

NOTE: Major jaw misalignment can be easily noted at this time by the weld's appearance.

- (4) Check every weld in the weld area by applying a 6-inch straight edge to the band's edge. This is done to check for a saw band "rock" condition. See Fig. 9. Such a condition is caused by operator improperly inserting band, or misalignment of back-up surfaces.

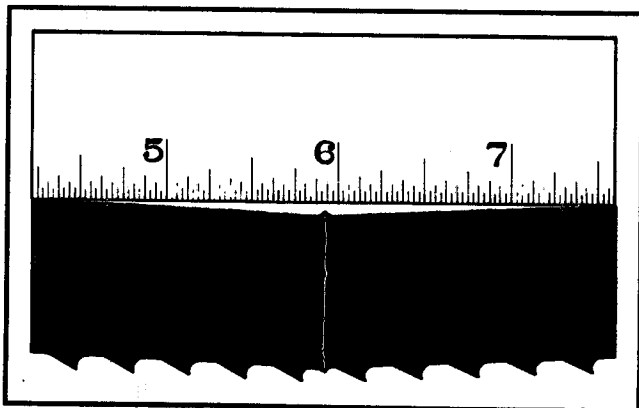


FIG. 9. CHECKING FOR "ROCK".

CLEAN-UP AFTER WELDING

The welder jaws must be **KEPT CLEAN** at all times. Jaws and inserts must be wiped or scraped (or both wiped and scraped) clean after each weld. Doing this maintains band strength and fatigue characteristics by:

- (1) Holding proper alignment.
- (2) Preventing flash from becoming embedded in the band.
- (3) Preventing shorts or poor electrical contact.

GRINDING THE BAND

Dress band after welding to remove excess metal or flash from weld. Grind weld down to same thickness as the band. Hold band with teeth facing out and use lower grinding wheel edge to grind flash from one band side. See Fig. 10. Then grind opposite band side with the grinding wheel's upper half.

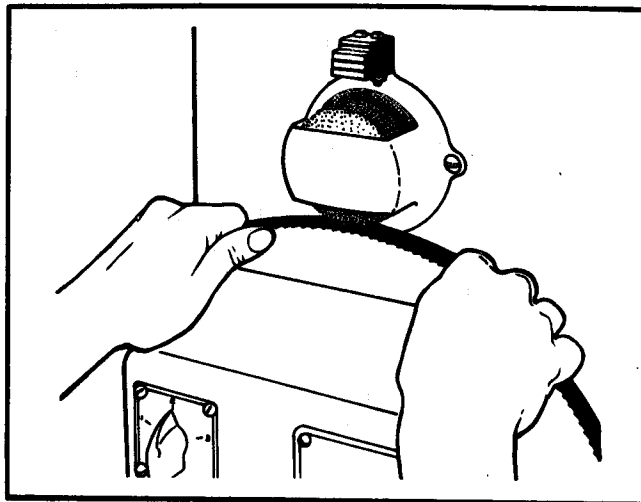


FIG. 10. GRINDER & BAND THICKNESS GAGE.

CAUTION: Use care when handling the band. The weld is brittle because it has not yet been annealed.

Avoid hitting the teeth, grinding deeper than band thickness, burning or over-heating the weld area. Weld should pass freely through grinding wheel gage which is marked for various band thicknesses.

ANNEALING THE BAND

Steel at the weld becomes "air hardened" and brittle when the band is heated during welding and grinding processes. This makes it necessary to anneal the weld to restore steel temper to approximately the same as its original temper.

For proper annealing, steels should be heated slowly to the critical temperature; then cooled slowly. Critical temperature is indicated by the steel's color as it is heated. Generally, the proper color for carbon bands is from **dull cherry red** to **cherry red**. Heat a band to a **dull cherry red** only. Low heat on a band, plus heating and cooling the weld are the most important factors in good weld life.

ANNEALING THE BAND (Continued) . . .

Annealing Procedure:

- (1) Clean jaws and inserts.
- (2) Move reset lever to "anneal" position; then back toward "weld" until jaw moves 1/16-inch toward center. (This allows for band expansion from heating).
- (3) Clamp saw band in the jaws. Band teeth should be to the rear and the weld in the gap middle.
- (4) Set anneal selector switch at heat recommended by Control Setting Chart.
- (5) Jog the anneal switch button "in" and "out" intermittently until the saw band has the correct heat or color. This should take approximately 15 seconds.

CAUTION: Do not over-heat.

NOTE: The dull red color may not be visible if the weld area is well lighted. Shield weld area with your hand, if necessary.

- (6) Set anneal selector switch one point higher if voltage at jaws does not bring band to proper heat or color.
- (7) Release switch button. Press the annealing switch intermittently so the weld will cool slowly.

ADJUSTMENTS

Jaw Gap Adjustment:

- (1) Disconnect electrical power from welder. Remove welder from machine or remove cover.
- (2) Place reset lever at "weld" position. Move jaw gap control wheel to No. 6 position.
- (3) Rotate gears until cam is in "A" position. See Fig. 11.

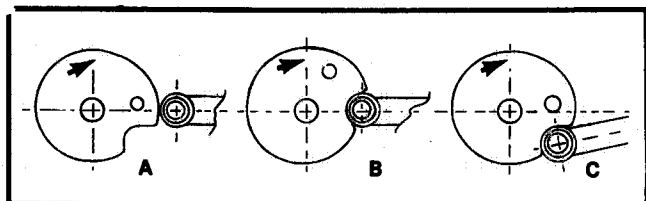


FIG. 11 . CAM POSITIONS.

- (5) Opening between jaws should be 1/2-inch. If not, adjust gap by turning adjusting screw. See Fig. 12.

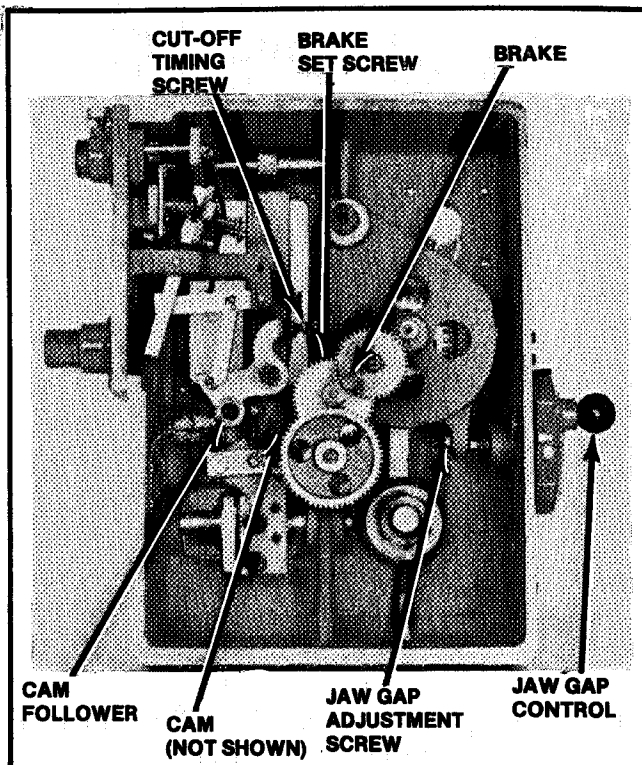


FIG. 12. JAW GAP ADJUSTMENT - REAR VIEW.

Jaw Gap Adjustment:

NOTE: Follow this procedure for welders with serial numbers 154-621100 to 154-621200.

- (1) Disconnect welder from electrical supply line. Remove welder from machine or remove cover.
- (2) Place reset lever at "weld" position.
- (3) Turn jaw gap control wheel to No. 2 position.
- (4) Rotate the gears manually until the cam and cam follower are in position shown in Fig. 11.
- (5) Opening between jaws should be 3/8-inch. If not, adjust gap by turning adjustment screw. See Fig. 12.

Electrical Cut-Off Timing Adjustment:

- (1) Disconnect electrical power from welder. Remove welder from machine or remove cover.
- (2) Place reset lever at "weld" position. Move jaw gap control wheel to No. 6 position.
- (3) Rotate gears until cam is in "A" position. See Fig. 11.
- (4) Jaw gap should be 1/2-inch. Turn jaw gap adjustment screw to achieve this distance.

ADJUSTMENTS (Continued) . . .

- (5) Depress weld switch and rotate gears manually until jaws move together.
- (6) Weld switch should snap open when jaw gap reaches 1/4-inch. Adjust cut-off timing screw if this does not occur.

Electrical Cut-Off Timing Adjustment:

NOTE: Follow this procedure for welders with serial numbers 154-621100 to 154-621200.

- (1) Disconnect electrical power from welder. Remove welder from machine or remove cover.
- (2) Place reset lever at "weld" position. Place jaw gap control wheel at No. 2 position.
- (3) Place a 0.157-inch feeler gage stack between upper jaw inserts.
- (4) Depress weld switch. Rotate gears manually until jaws move together.
- (5) Feeler gages will stop jaw movement when rapid upset begins. Weld switch should snap open. If it does not, reverse electrical cut-off screw and repeat this step.
- (6) Cycle welder manually. Place a 0.161-inch feeler gage stack between upper jaw inserts. Repeat this step.
- (7) Feeler gages will stop jaw movement when rapid upset begins. Weld switch should not snap open. If it does, turn electrical cut-off screw "forward" and repeat this step. Weld switch must snap open between 0.157 and 0.161-inch settings.

NOTE: The above distance is for welders with serial numbers 154-621100 to 154-621200.

Jaw Stop Adjustment:

A stop adjustment screw keeps the moveable jaw from moving in and touching the stationary jaw at any time.

- (1) Run the welder through several simulated weld cycles with no material in the jaws.
- (2) Gap between jaws should be 1/32-inch at the end of a weld cycle. If not, adjust the moveable jaw stop screw by loosening jam nut "A" and turning the screw in or out as required. Tighten jam nut "A". See Fig. 13.

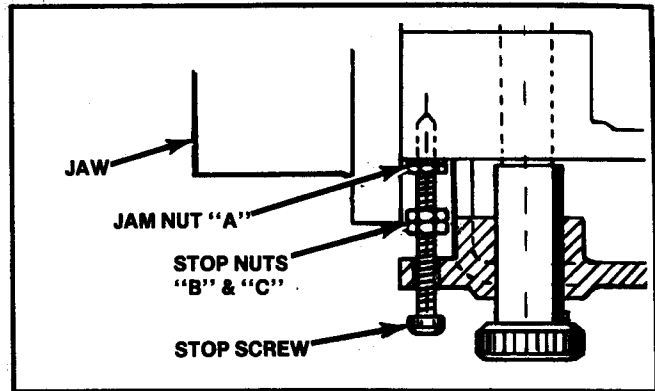


FIG. 13. JAW STOP ADJUSTMENT.

- (3) Stop nuts "B" and "C" provide a weld switch mechanical block. This prevents accidental tipping of the welding switch during an annealing operation, resulting in a burned out weld. Adjust stop nuts "B" and "C" until the jaw insert gap in the fully open or "anneal" position is 7/8-inch. Check to see that weld switch is prevented from operating. See Fig. 14.

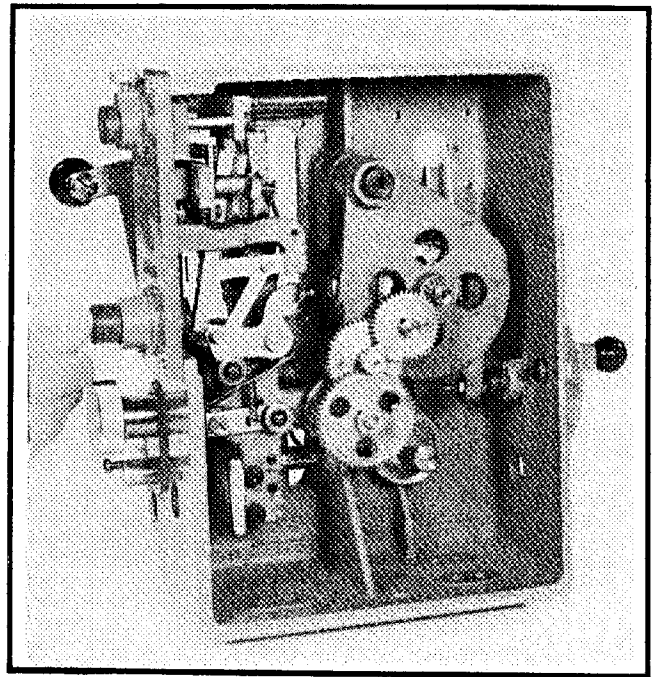


FIG. 14. WELD SWITCH IS BLOCKED WITH RESET LEVER AT "ANNEAL" POSITION.

Brake Adjustment:

The brake mounted on first idler gear prevents cam overtravel. Brake adjustment should not be necessary since the brake shoe spring automatically compensates for wear. However, if brake adjustment becomes necessary:

- (1) Run the welder through several complete welding cycles without material in the jaws.

ADJUSTMENTS (Continued)...

- (2) Disconnect electric power.
- (3) Check to see if the cam stops in position "A". See Fig. 11.
- (4) If there is cam overtravel, loosen the brake housing set gear. Move housing toward gear face and tighten set screw. See Fig. 12.
- (5) Move housing away from gear if there is cam undertravel.
- (6) Check adjustment by repeating step (1).

WELDER JAW ALIGNMENT

Accurate jaw alignment is very important. The jaws have been aligned at the factory. However, realignment may be necessary if the machine was bumped, etc., during transit. Any problem of this type (mechanical jaw misalignment, or saw band end misalignment caused by flash accumulation on the jaws) will cause imperfect welds.

The easiest and most effective way to check for possible jaw misalignment is inspect the welded joint made on a 1/2-inch band. Check completed realignment by welding a 1/2-inch band and inspecting the joint. The following are checking and realignment steps which should be followed. See Figs. 15-20.

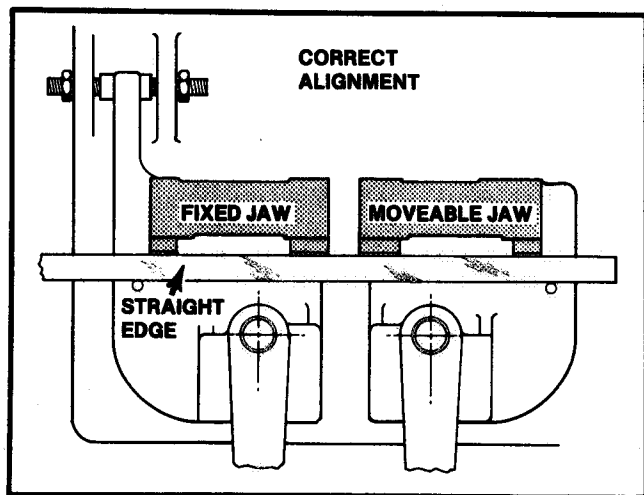


FIG. 15. CORRECT WELDER JAW ALIGNMENT.

Checking Jaw Alignment:

Remove lower jaw assemblies. Place a straight edge against upper jaw inserts. See Figs. 15 & 16.

- (1) **Elevation.** Check for elevation difference between the two jaws. See Fig. 16.

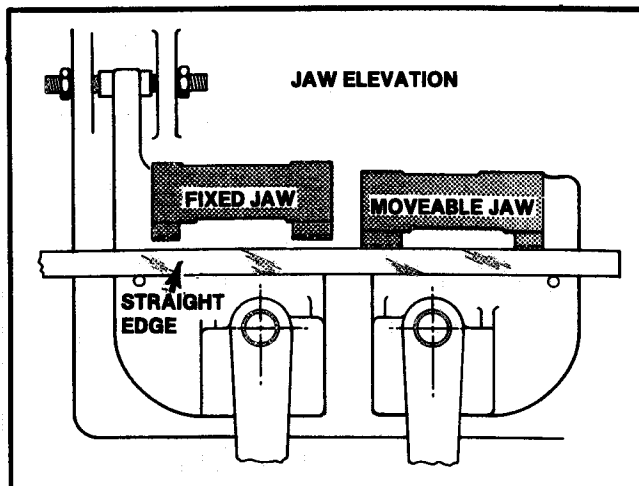


FIG. 16. ELEVATION MISALIGNMENT - FIXED JAW HIGHER THAN MOVEABLE JAW.

- (2) **Inclination.** Check to see if jaw inclinations are parallel. See Fig. 17.

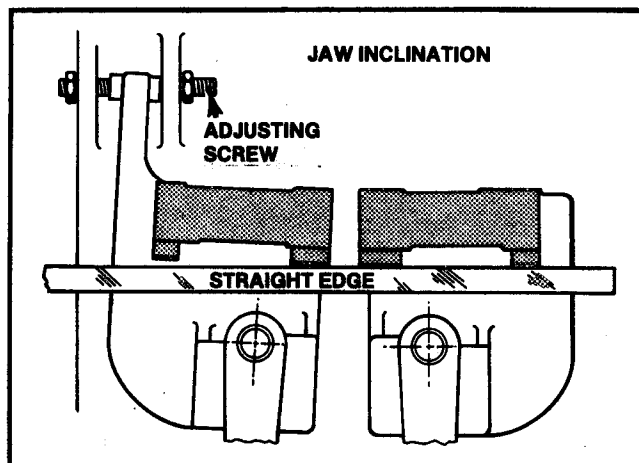


FIG. 17. INCLINATION MISALIGNMENT - FIXED JAW IS INCLINED.

- (3) **Twist.** Check for a "twist" existing between plane surfaces of the two jaws. Do this by moving the straight edge in and out on the two jaws. See Fig. 18.

WELDER JAW ALIGNMENT (Continued) .

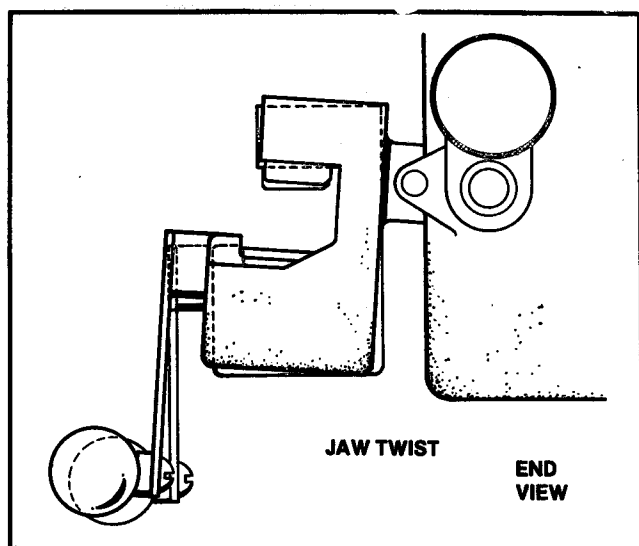


FIG. 18. TWIST MISALIGNMENT - MOVEABLE JAW AT ANGLE TO FIXED JAW.

- (4) **Back-Up Bearings.** Saw band teeth rest on back-up bearing blocks which must be in alignment with each other. Check alignment with a straight edge.

Alignment Procedures:

- (1) **Elevation.** Place a straight edge against under side of the upper inserts. Then adjust elevation with the eccentric behind stationary jaw. A supplied spanner wrench is used for this purpose. See Fig. 19.

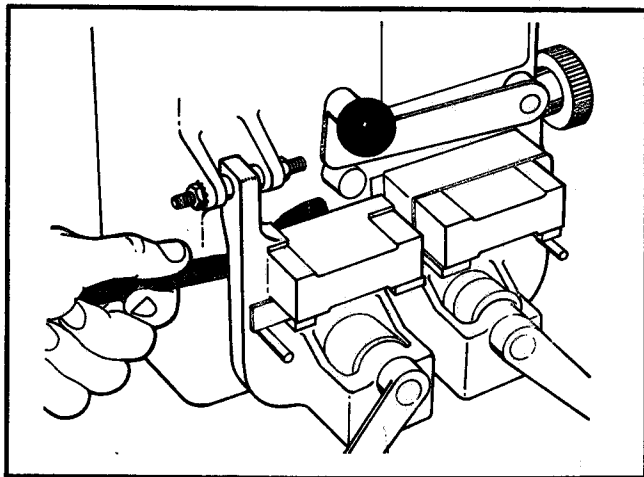


FIG. 19. ADJUSTING JAW ELEVATION.

- (2) **Inclination.** Adjust stationary jaw inclination until it matches that of the stationary jaw. Do this by using an Allen wrench to loosen two set screw locknuts; then adjusting the set screws. See Fig. 20.

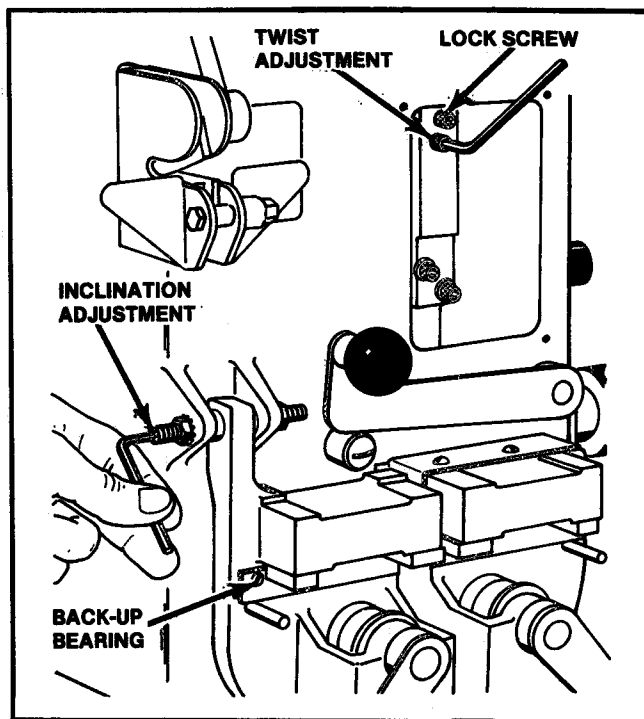


FIG. 20. INCLINATION & TWIST ADJUSTMENTS.

- (3) **Twist.** Adjust with two socket head cap screws on moveable jaw's upper fork assembly. A 1/4 adjustment screw turn will move the jaw 0.005-inch. Remove data plate to gain access to adjusting screws. The upper screw is a lock screw which must be loosened with an Allen wrench before adjusting moveable jaw twist with the lower screw.
- (4) **Back-Up Bearings.** Relative back edge (or tooth edge) band alignment is maintained by shimming backing plates which bear against teeth surfaces with band in welder jaws. Remove lower inserts and place welder in the "weld" position before aligning with a straight edge.

MAINTENANCE

LUBRICATION

- (1) Maintain a film of grease on the upper slide rod at all times. Use Lubriplate grease, or equivalent.
- (2) The cam, gear train, various linkage, and pivot points, etc., should be oiled lightly each month with S.A.E. No. 20 oil.

NOTE: Refer to Figs. 21 & 22 during lubrication, maintenance, and repair instructions.

MAINTENANCE & REPAIR

- (1) **Cleaning.** The necessity for keeping a clean welder cannot be emphasized too strongly. Preventive maintenance will help insure high-quality welds. The welder is designed to afford maximum protection to its mechanical and electrical components. However, slag particles produced during welding flashes can cause problems. **Clean the welder jaws and surrounding area after each welding operation.**

NOTE: Do not use compressed air for cleaning purposes.

- (2) **Inserts.** Upper and lower inserts can be refinished on a surface grinder, when necessary. Do not remove too much material, however, because it will affect clamping pressures. Clean mounting screws and holes before replacing inserts.
- (3) **Weld Switch Contacts.** These may be refaced if necessary. Replace contacts if weld switch does not compress the spring at least 1/16-inch when in "weld" position.
- (4) **Motor & Gear Train.** Clean thoroughly every 6 months. Oil gears lightly after cleaning with S.A.E. No. 20 oil.

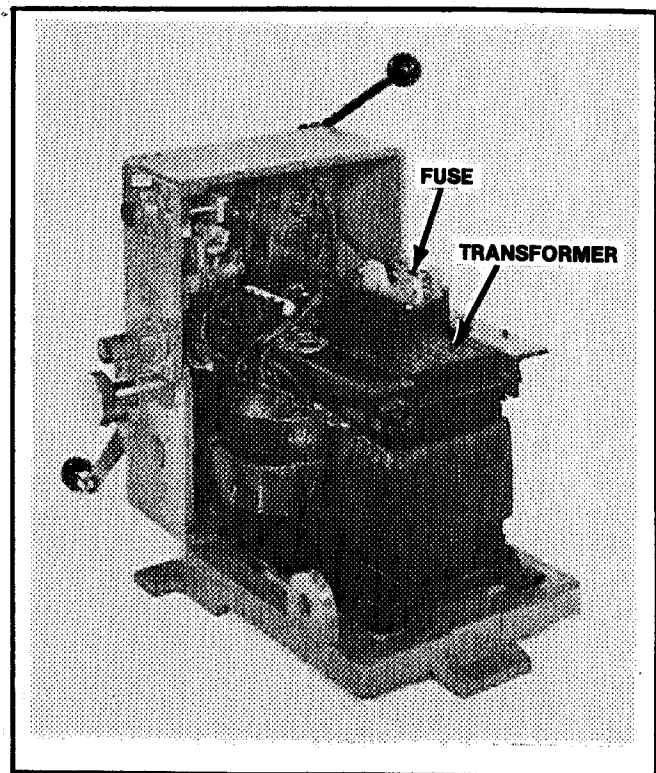


FIG. 21. LUBRICATION & MAINTENANCE POINTS - PARTIAL REAR VIEW.

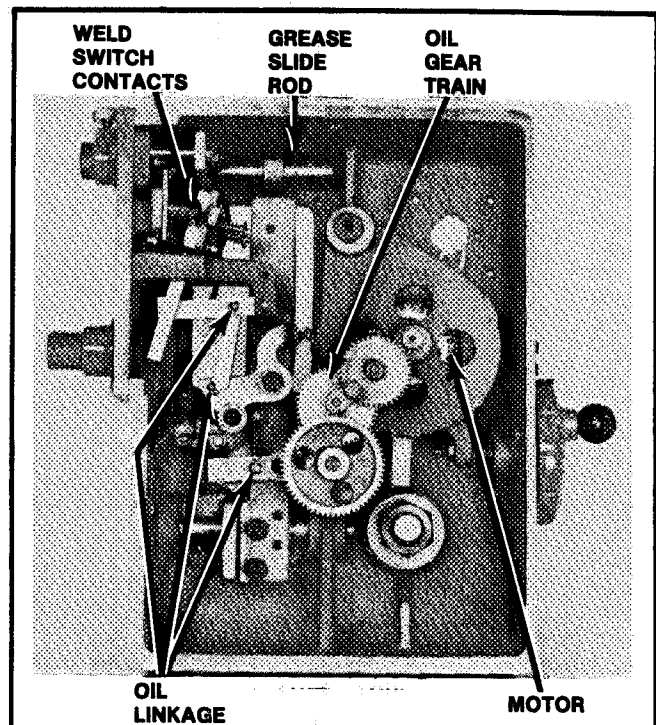


FIG. 22. LUBRICATION & MAINTENANCE POINTS - FULL REAR VIEW WITH TRANSFORMER REMOVED.

TROUBLE SHOOTING

SYMPTOM	CAUSES	REMEDY
Overlapped welds.	1. Misalignment. 2. Dirty or worn jaw inserts.	1. Check & adjust jaw alignment. 2. Clean or replace inserts.
Brittle Welds. Hard spots in weld (lighter color spots).	1. Incorrect jaw gap setting. 2. Low voltage.	1. Increase jaw gap setting 1/2 notch. 2. Check wiring diagram & incoming voltage.
Incomplete or partly joined weld.	1. Low voltage. 2. Burned or pitted weld switch contacts. 3. Wrong electrical cut-off timing. 4. Wrong jaw pressure setting.	1. Check wiring diagram & incoming voltage. 2. Replace contacts. 3. Check timing -- see Adjustments section. 4. Refer to Control Settings Chart.
Blue color around weld area.	1. Dirty or worn jaw inserts. 2. Wrong jaw gap setting.	1. Clean or replace inserts. 2. Refer to Control Settings Chart.
Arcing & grounding in secondary circuits.	1. Secondary circuit is grounding between stationary (insulated) jaw, its affected units & case. Poor housekeeping is the most frequent cause. It can also be caused by damaged insulation.	1. Clean welder often & thoroughly. 2. Do not allow flash particles to build-up at any point on welder. Build-up usually occurs across the insulator between stationary jaw & frame. 3. Check insulator for cracks & presence of metallic particles.
Jaws will not return to weld position (stay together).	1. Low line voltage or material too heavy for jaw gap setting being used.	1. Move reset lever about half-way between "weld" and "anneal" positions (when reset lever is in full "anneal" position, the weld switch is mechanically blocked). Jog weld switch momentarily and immediately move reset lever to "weld" position. Run welder through simulated weld. Check brake if jaws still come almost together. See Adjustments section.
Weld switch contacts remain closed after after welding.	1. Weld switch retracting spring broken or weak. 2. Electrical cut-off timing is wrong.	1. Replace spring. 2. See Adjustments section.

ACCESSORIES

AUTOMATIC ANNEALER

The annealer has a control unit mounted above the welder, and a photocell mounted between and below welder jaws. See Fig. 23. It automatically controls annealing cycle for band type being used.

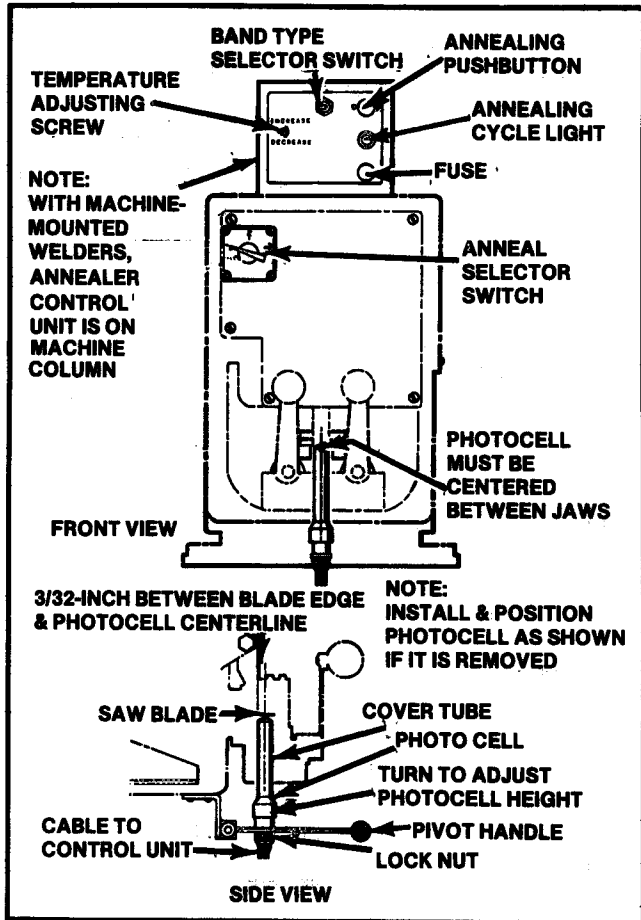


FIG. 23. AUTOMATIC ANNEALER CONTROLS & FEATURES.

As the weld is heated during the annealing process, the photocell detects infrared rays emitted at a rate directly proportional to weld temperature. When temperature is correct for blade type (either 900° or 1200°), annealing heat is automatically stopped by the control circuit.

ETCHING PENCIL

Can be used with the butt welder to mark finished jobs, or tools, jigs, fixtures, templates, etc. Follow these etching procedures:

- (1) Clamp pencil's cable end in the left hand (stationary) jaw.

- (2) Set anneal selector switch in position according to heat desired.
- (3) Push anneal switch button "in" firmly. Lock with thumb screw.
- (4) To etch with band saw machine welder: Place work to be marked on machine table. Since the machine is "grounded", there is no second lead required to the work. See Fig. 24.

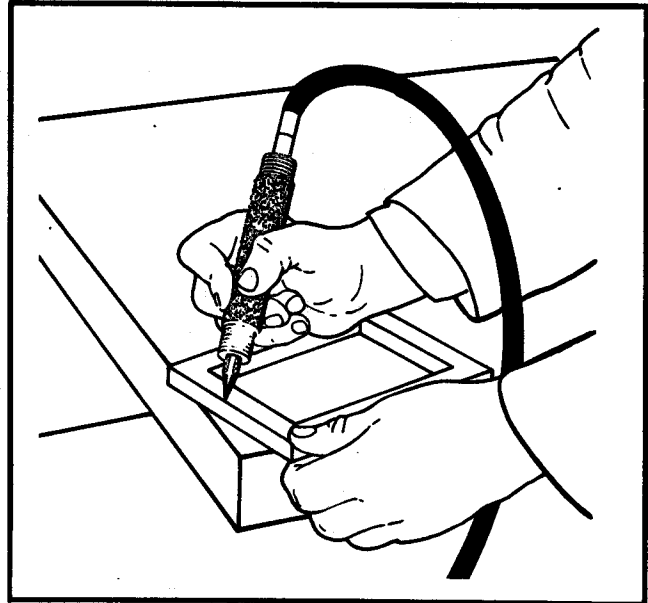


FIG. 24. USING ETCHING PENCIL WITH BAND SAW.

- (5) To etch with portable-bench, or pedestal-mounted welder: Workpiece must have good contact with welder frame. Hold work against frame or a metal plate bolted under welder on work bench. See Fig. 25. When much etching is to be done, it may be advisable to use a cable attached to the welder frame at one end, with a clamp to contact workpiece at the other end.

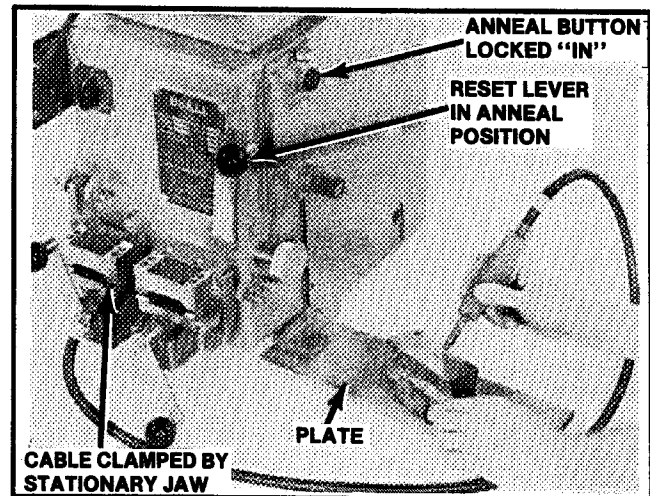


FIG. 25. USING ETCHING PENCIL WITH PORTABLE WELDER.

ETCHING PENCIL (Continued)...

- (6) Etch with enough pressure to prevent point arcing, but not great enough to destroy the copper point.
- (7) Keep copper point sharp to secure best results.
- (8) Be sure to unlock anneal button thumbscrew when etching is finished.

ROD WELDING JAWS

This accessory has a pair of special jaws and an 8 kva transformer. Welding jaws are mounted on the welder jaws as shown in Fig. 26. Steel rods from 1/16-inch to 5-16-inch can be welded with this accessory.

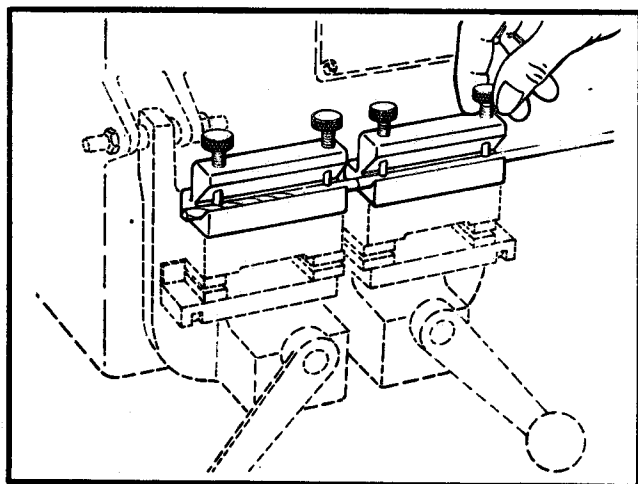


FIG. 26. USING ROD WELDING JAWS TO WELD EXTENSION ON DRILL.

- (1) Set jaw gap and pressure controls. Correct settings for various rod sizes are listed in the Control Settings Chart.
- (2) Place reset lever at the "weld" position.
- (3) Place rods in welding jaw "V" grooves and tighten thumbscrews. Rod ends should be cut off square and butted together.
- (4) Welding, grinding and annealing procedures are identical to those described in the Operation section.

CAUTION: Flash and sparking during rod welding are sometimes much more violent than for saw band welding. **STAND CLEAR.**

PEDESTAL MOUNTING

A pedestal mounting stand is available for portable, case-mounted welders. Mounting holes located to fit the welder base are provided in the platform. See Fig. 27.

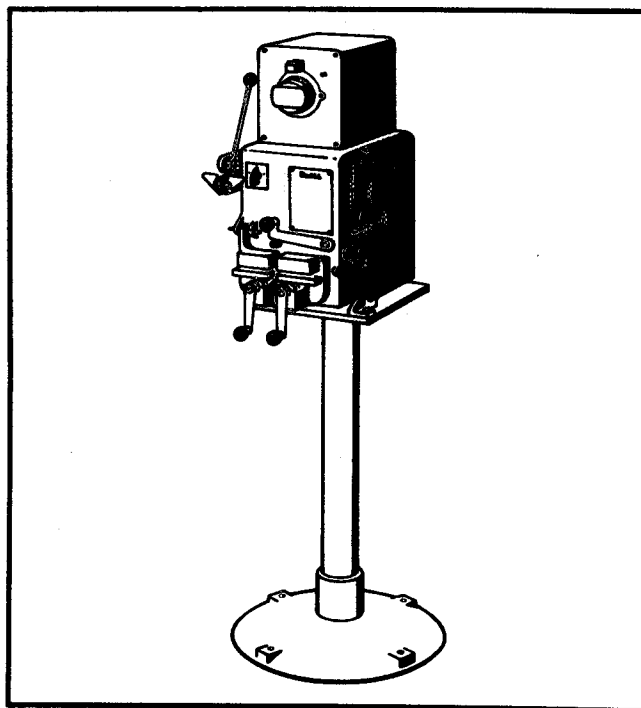


FIG. 27. WELDER & GRINDER MOUNTED ON PEDESTAL.

PARTS PAGES

Replacement parts and wiring diagrams for DBW-8 & DBW-8A Welders are shown on the following pages. Always include your welder's complete model number and serial number with parts orders or correspondence. These numbers are stamped on the welder's front data plate.

Be sure to note that each parts page applies only to welders having certain serial numbers. Welder serial numbers covered by each parts page are listed on the page's lower right-hand corner. Welder sub-assemblies and accessories are shown on separate parts pages.

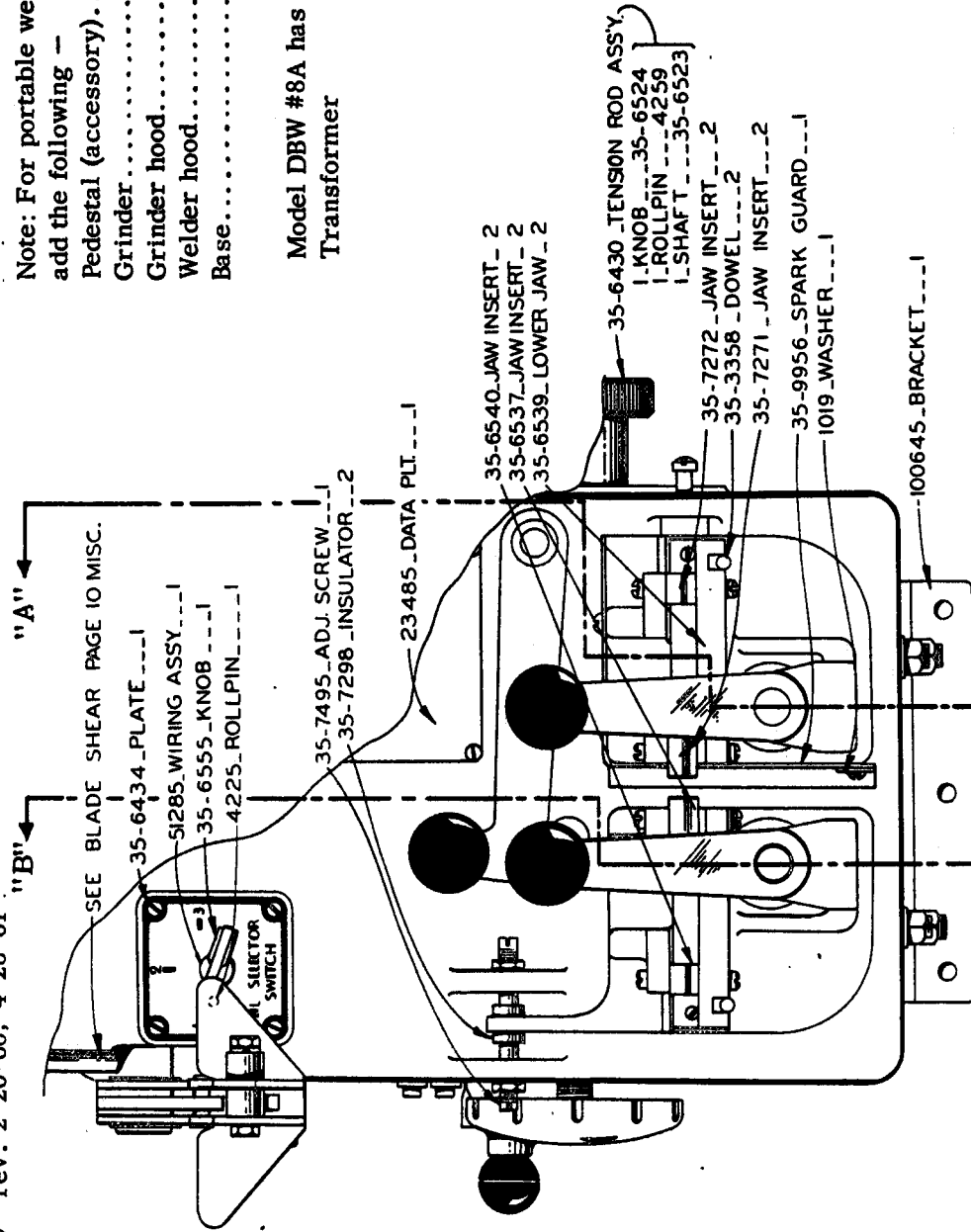
INDEX

FICHE NO. H1 & 2 CLASS Buttwelder MODEL DBW-8 SERIAL NO. 154-59101 TO 154-652461

PAGE NO.	DESCRIPTION	FRAME NO.		DWG.	P. LIST	FICHE NO.
		FIRST SERIAL	LAST SERIAL			
H1-8.0	Welder Ass'y. (Front View)	154-59101	to 154-621099	D-3 & 4	D-3 & 4	
H1-8.0.1	Welder Ass'y. (Front View)	154-621100	to 154-631872	D-5 & 6	D-5 & 6	
H1-8.0.2	Welder Ass'y. (Front View)	154-631873	to 154-652461	D-7	D-8	
H1-8.1	Welder Ass'y. (Section A-A)	154-59101	to 154-621099	D-9 & 10	D-9 & 10	
H1-8.1.1	Welder Ass'y. (Section A-A)	154-621100	to 154-631872	D-11	D-12	
H1-8.1.2	Welder Ass'y. (Section A-A)	154-631873	to 154-652461	D-13	D-14	
H1-8.2	Welder Ass'y. (Section B-B)	154-59101	to 154-621099	E-1 & 2	E-1 & 2	
H1-8.2.1	Welder Ass'y. (Section B-B)	154-621100	to 154-641916	E-3 & 4	E-3 & 4	
H1-8.2.2	Welder Ass'y. (Section B-B)	154-641917	to 154-652461	E-5	E-6	
H1-8.2.3	Welder (Side View, Sect. B-B)	154-641917	to 154-652461	E-7	E-8	
H1-8.3	Welder Ass'y. (Section C-C)	154-59101	to 154-621099	E-9 & 10	E-9 & 10	
H1-8.3.1	Welder Ass'y. (Section C-C)	154-621100	to 154-641916	E-11 & 12	E-11 & 12	
H1-8.3.2	Welder Ass'y. (Section C-C)	154-641917	to 154-652461	E-13	E-14	
H1-8.4	Welder Sub-Ass'y.	154-631873	to 154-652461	F-1	F-2	
H1-8.5	Grinder Motor Ass'y.	ALL		F-3	F-3	
	NOTE: All Welders May Have The Following					
H1-19.0	Blade Shear Ass'y.	ALL		D-9	D-10	
H1-20.0	Etching Pencil Ass'y.	ALL		D-13	D-14	

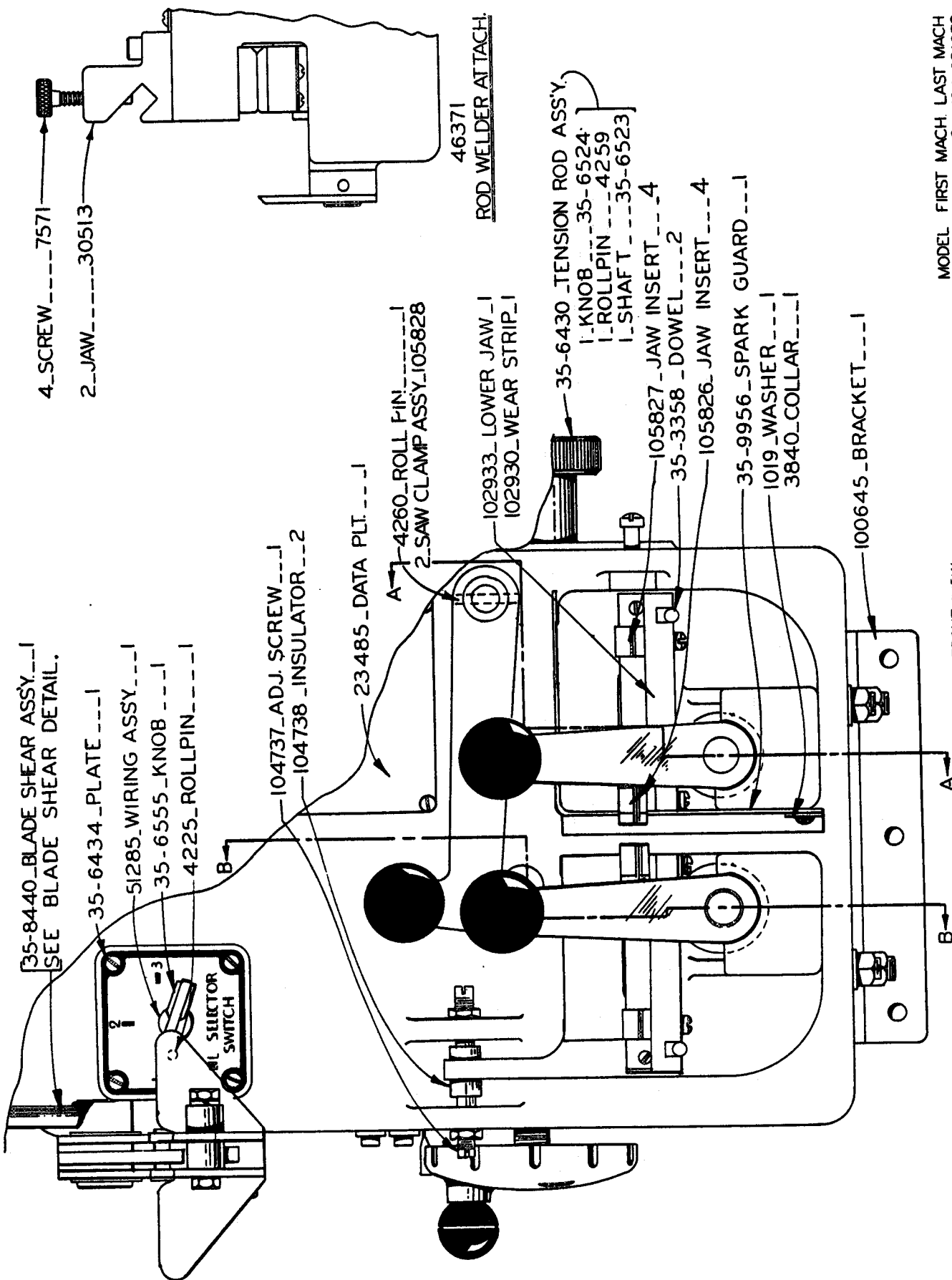
Note: For portable welders
add the following --
Pedestal (accessory).....35-7756
Grinder.....53196
Grinder hood.....35-7701
Welder hood.....40689
Base.....54894

Model DBW #8A has an 8 kva
Transformer



FRONT VIEW
DBW #8 BUTT WELDER
Assembly No. 51809
Machine Mounted

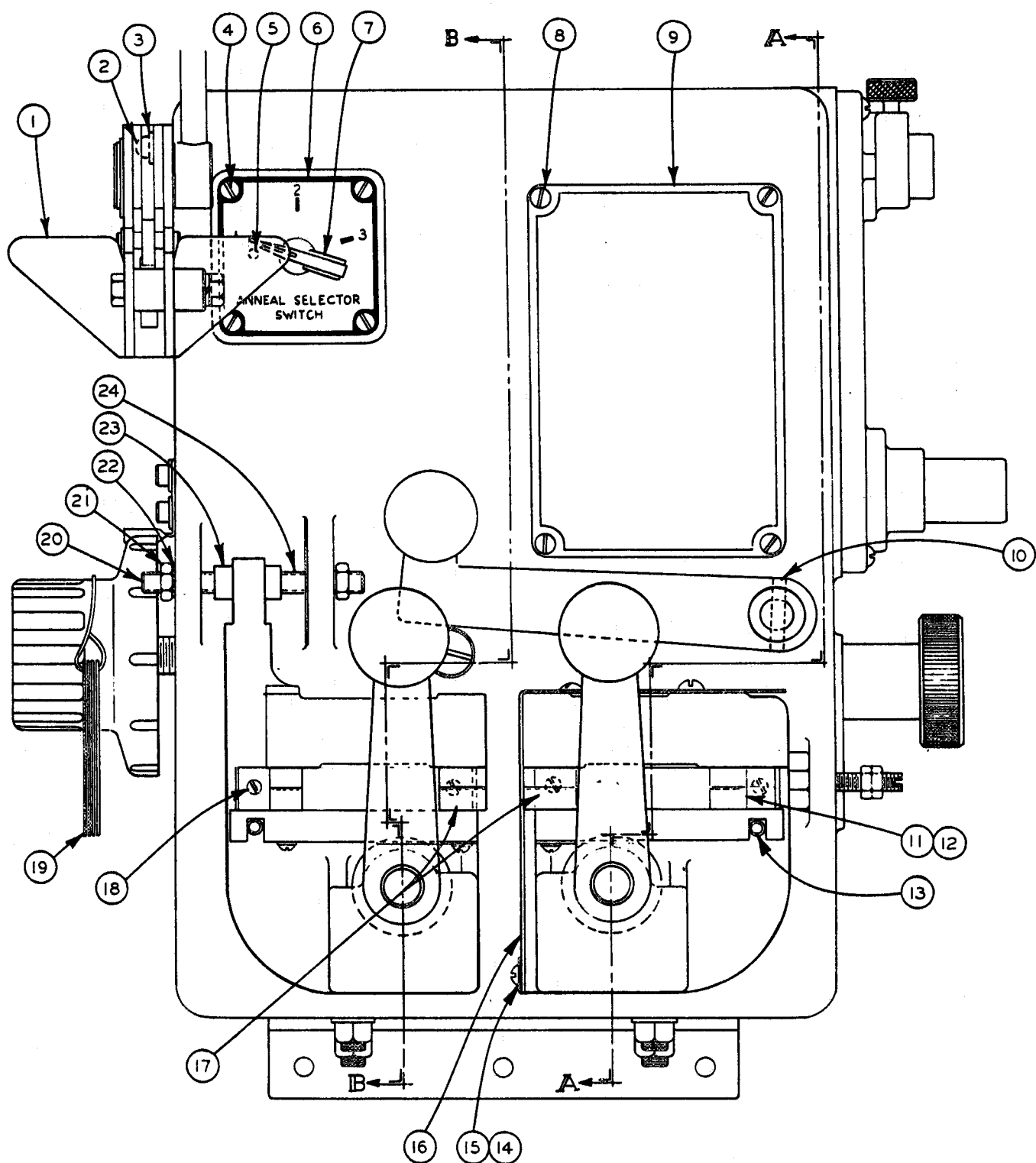
Model	First Machine	Last Machine
DBW#8	154-59101	154-621099



MODEL FIRST MACH. LAST MACH
DBW#8 154-621100 154-631872

D-6

D-5



FRONT VIEW
 NO. 8
 BUTTWELDER ASS'Y.
 MACHINE MOUNTED
 HI-8.0.2

MODEL FIRST MACH. LAST MACH.
 DBW#8 154-631873 154-652461

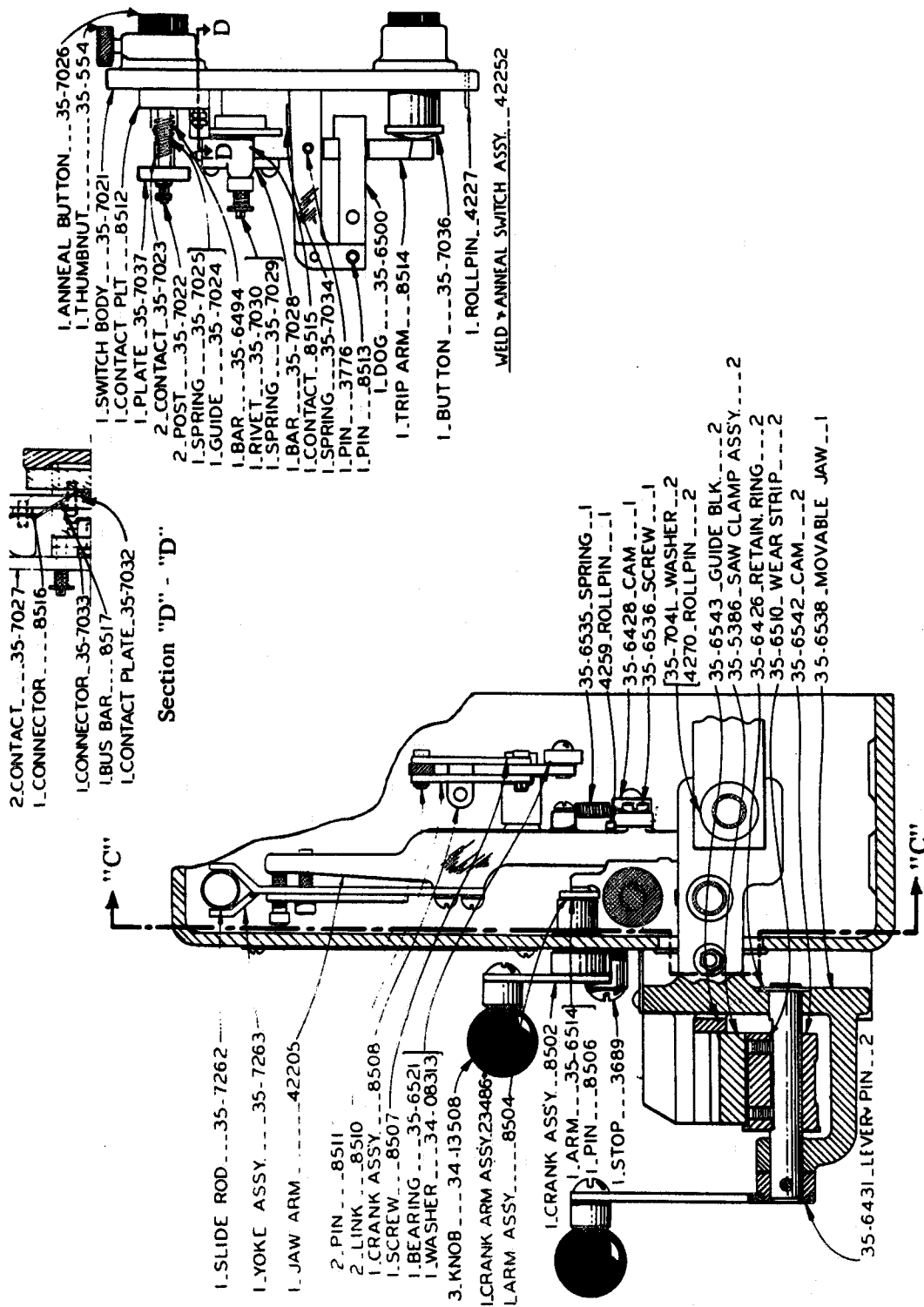
PRINTED IN USA.

TITLE

CODE NO. H1-8.0.2

DBW #8 WELDER ASSEMBLY

INDEX NO.	PART NO.	DESCRIPTION							UNITS PER ASS'Y.
		1	2	3	4	5	6	7	
Ref.	51809	WELDER ASS'Y. #8 (Machine Mounted)							
1	35-8440	.	Blade Shear Ass'y. (See Detail)						1
2	Comm.	.	Screw, Rd. Hd. Mach. 5/16-18NC x 3/4"						2
3	Comm.	.	Washer, Lock 5/16 Std.						5
4	Comm.	.	Screw, Rd. Hd. Mach. #8-32NC x 3/4"						4
5	4225	.	Roll Pin						1
6	35-6434	.	Escutcheon.						1
7	35-6555	.	Knob						1
8	Comm.	.	Screw, Rd Hd. Mach. #8-32NC x 5/16						10
9	23485	.	Data Plate						1
10	4260	.	Roll Pin						1
11	13177	.	Jaw Insert (Right & Left)						2
12	Comm.	.	Screw, Soc. Hd. Cap #10-32NF x 1"						4
13	35-3358	.	Dowel Pin						2
14	Comm.	.	Screw, Rd. Hd. Mach. #10-24NC x 1/2						3
15	1019	.	Washer						1
16	35-9956	.	Spark Guard						1
17	13176	.	Jaw Insert (Right & Left)						2
18	Comm.	.	Screw, Fl. Hd. Mach. #6-32NC x 3/8"						4
19	21073	.	Tag Sub-Ass'y.						1
20	104737	.	Adjusting Screw						1
21	Comm.	.	Nut, Jam 3/8-24NF						2
22	Comm.	.	Washer, Lock 3/8 Shakeproof.						2
23	104738	.	Insulator Button						2
24	13197	.	Adjusting Screw						1



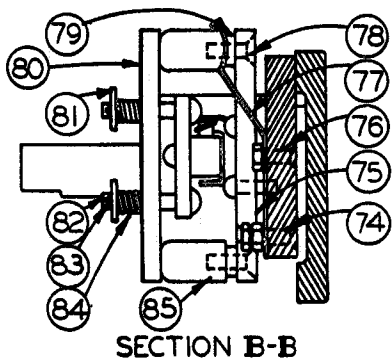
HI- 8.1

Model First Machine Last Machine
DBW#8 154-59101 154-621099

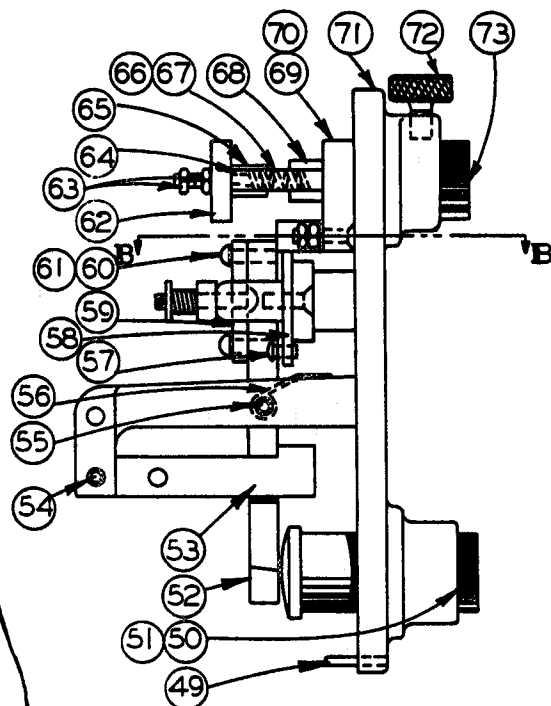
DBW # 8 BUTT WELDER
51809

D-9

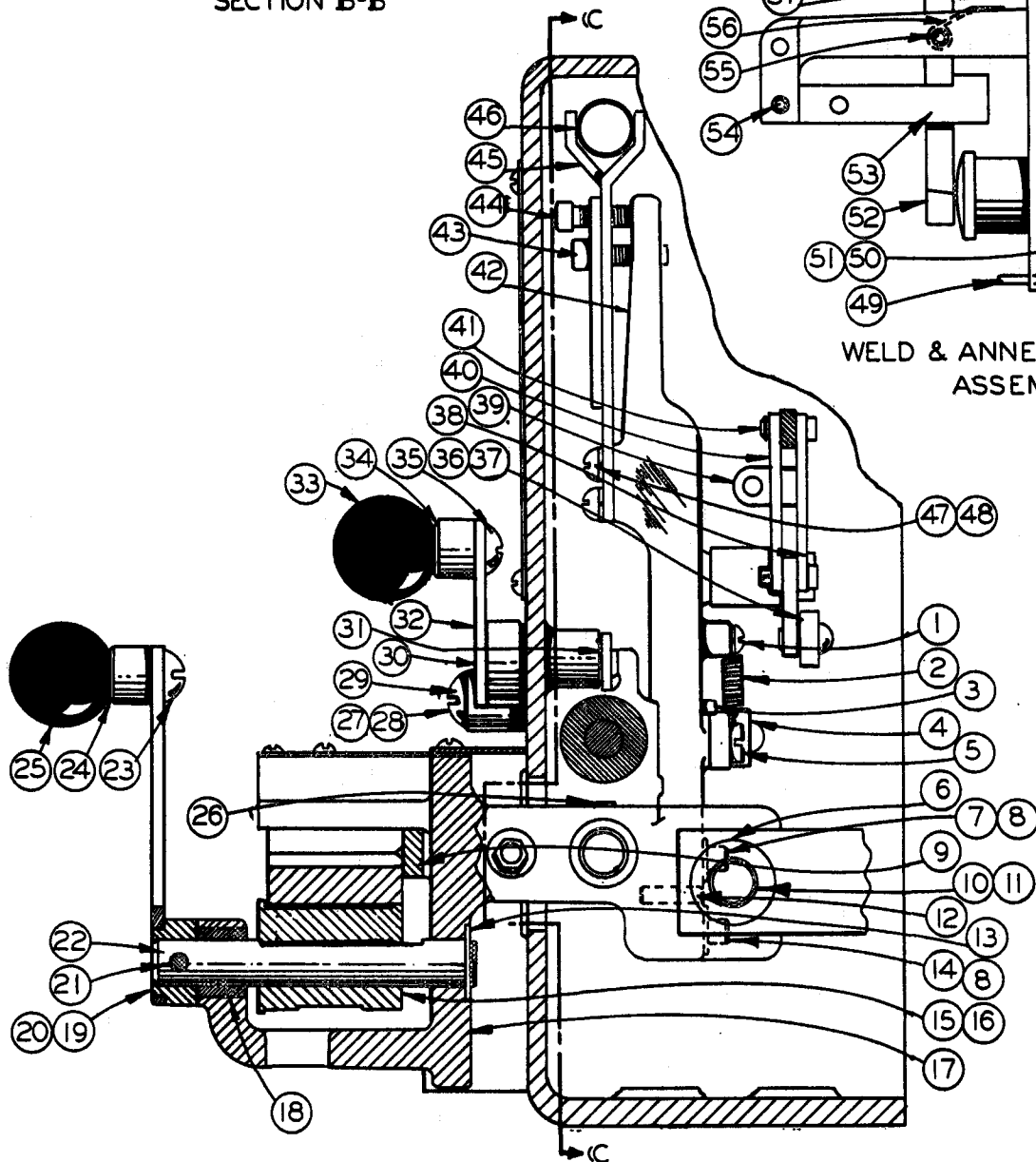
D-10



SECTION B-B



WELD & ANNEAL SWITCH
ASSEMBLY



SECTION A-A
BUTTWELDER ASSY
MACHINE MOUNTED
HI- 8.1.1

MODEL FIRST MACH LAST MACH
DBW*8 154-621100 154-631872

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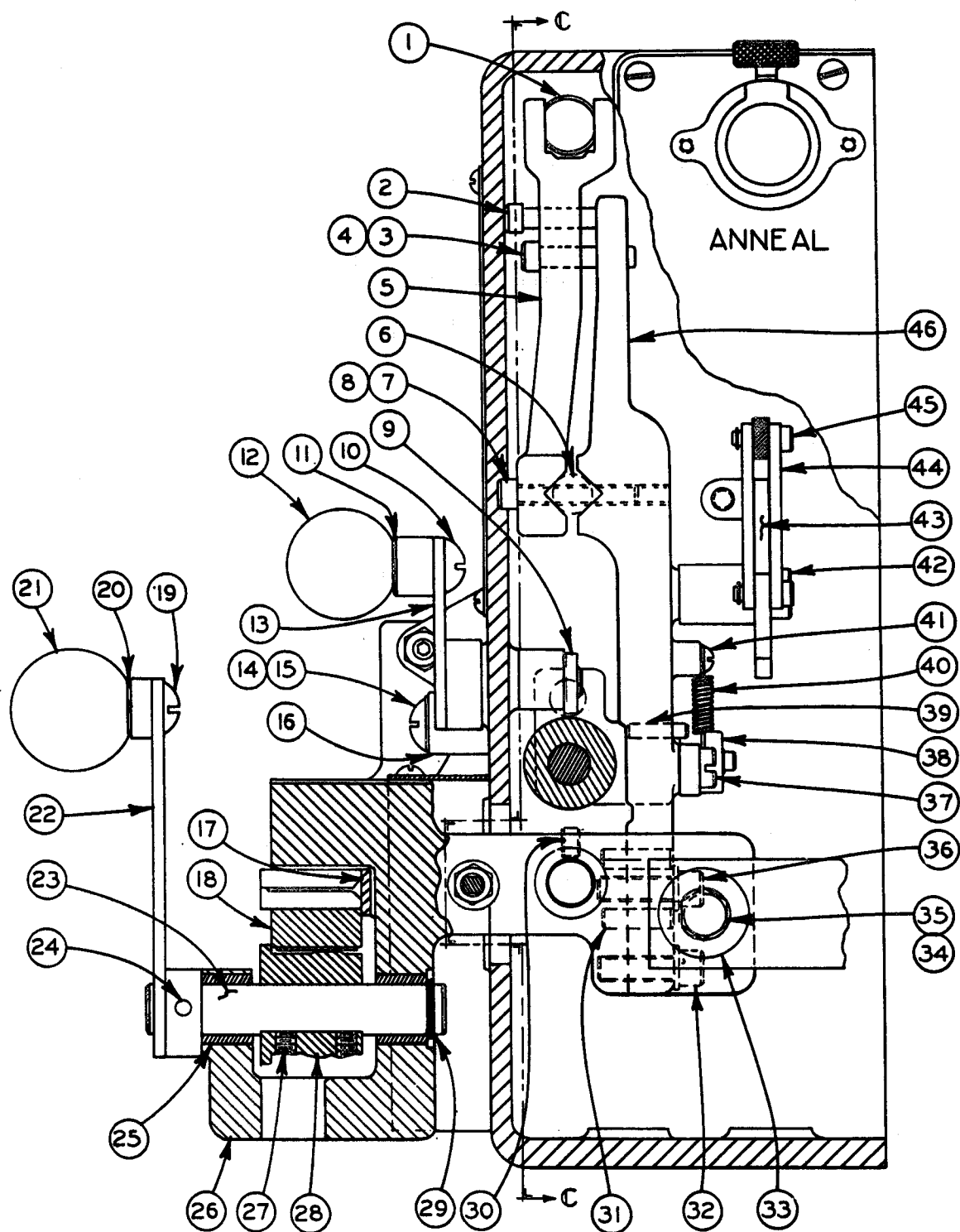
TITLE

H1-8.1.1

CODE NO.

BUTTWELDER ASSEMBLY
MACHINE MOUNTED

INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.	INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.
		1 2 3 4				1 2 3 4	
	51809	DBW-8 Welder Assembly . . .	1	52	8514	. . Trip Arm	1
1	Comm.	. Rd. Hd. Mach. Scr. #10-24 x		53	35-6500	. . Dog	1
		3/8	4	54	8513	. . Pin	1
2	35-6535	. Spring	1	55	3776	. . Pin	1
3	4259	. Rollpin	1	56	35-7034	. . Spring	1
4	35-6428	. Cam Roller	1	57	Comm.	. . Bind Hd. Mach. Scr. #8-32	
5	35-6536	. Shoulder Screw	1			x 3/8 Brass	2
6	35-7041	. Washer	2	58	35-7033	. . Connector	1
7	Comm.	. Skt. Hd. Cap Scr. 5/16-18 x		59	35-7028	. . Contact Bar	1
		7/8	1	60	Comm.	. . Rd. Hd. Mach. Scr. #8-32	
8	Comm.	. Lockwasher 5/16-Std. . . .	5			x 1/2	4
9	105109	. Guide Block	4	61	Comm.	. . Lockwasher #8-32	7
10	Comm.	. Hex Hd. Cap Scr. 3/8-16 x 1	1	62	35-7037	. . Contact Plate	1
11	Comm.	. Lockwasher 3/8 Std.	6	63	Comm.	. . Hex Nut #8-32 Brass . . .	11
12	4270	. Rollpin	2	64	35-7022	. . Guide Post	2
13	35-6426	. Retaining Ring	2	65	35-7023	. . Contact	2
14	Comm.	. Skt. Hd. Cap Scr. 5/16-18 x		66	35-7024	. . Spring Guide	1
		1-1/2	1	67	35-7025	. . Spring	1
15	Comm.	. Skt. Hd. Set Scr. 1/4-20NC		68	35-6494	. . Bus Bar	1
		x 3/8	6	69	Comm.	. . Contact Plate	1
16	102936	. Cam	1	70	8512	. . Flat Hd. Mach. Scr. #8-32	
17	46256	. Movable Jaw	1			x 1/2	2
18	8866	. Bearing	4	71	35-7021	. . Switch Body	1
19	102938	. Cam Lever & Pin Assembly	1	72	35-554	. . Thumbnut	1
20	35-6512	. . Cam Lever Assembly . . .	1	73	35-7026	. . Anneal Button	1
21	4260	. . Rollpin	1	74	Comm.	. . Flat Hd. Mach. Scr. #8-32	
22	102937	. . Pin	1			x 3/4 Brass	1
23	Comm.	. . Rd. Hd. Mach. Scr. 3/8-		75	35-7032	. . Contact Plate	1
		16 x 1	1	76	Comm.	. . Flat Hd. Mach. Scr. #8-32	
24	Comm.	. . Lockwasher 3/8	1			x 1/2 Brass	1
25	34-13508	. . Knob	1	77	8517	. . Bus Bar	1
26	Comm.	. Skt. Hd. Set Scr. 5/16-24NF		78	Comm.	. . Flat Hd. Mach. Scr. #10-24	
		x 3/8	2			x 5/8	2
27	Comm.	. Truss Hd. Mach. Scr. 5/16-		79	8516	. . Connector	1
		18 x 1	1	80	35-7027	. . Contact	1
28	Comm.	. Shakeproof Lockwasher 5/16		81	Comm.	. . Washer #10 Std.	2
		Std.	1	82	35-7030	. . Rivet	2
29	3689	. Lever Stop	1	83	Comm.	. . Cotter Pin 1/16 x 3/8 . . .	2
30	23486	. Reset Crank Arm Ass'y. . . .	1	84	35-7029	. . Spring	2
31	8504	. . Reset Arm Assembly	1	85	8515	. . Contact	2
32	8502	. . Reset Crank Assembly . . .	1				
33	34-13508	. . Knob	1				
34	Comm.	. . Lockwasher 3/8 Ext.					
		Shakeproof	1				
35	Comm.	. . Rd. Hd. Mach. Scr. 3/8-					
		16 x 1	1				
36	34-08313	. Washer	1				
37	35-6521	. Ball Bearing	1				
38	8507	. Shoulder Screw	1				
39	8508	. Bell Crank	1				
40	8510	. Link	2				
41	8511	. Pin	2				
42	42205	. Jaw Arm	1				
43	Comm.	. Soc. Hd. Cap Scr. 1/4-20 x 1	1				
44	Comm.	. Soc. Hd. Cap Scr. 1/4-20 x					
		3/4	1				
45	35-7263	. Yoke Assembly	1				
46	35-7262	. Slide Rod	1				
47	Comm.	. Lockwasher 1/4 Std.	2				
48	Comm.	. Soc. Hd. Cap Scr. 1/4-20 x					
		3/4	2				
49	4227	. Rollpin	1				
50	42252	. Weld & Anneal Switch Ass'y.	1				
51	35-7036	. . Weld Button	1				



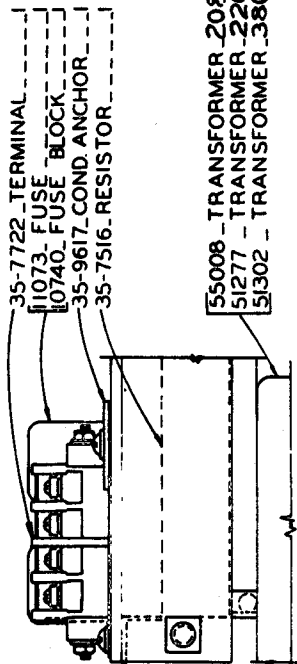
SECTION A - A
 NO. 8
 BUTTWELDER ASS'Y.
 MACHINE MOUNTED
 HI-8.1.2

MODEL FIRST MACH. LAST MACH.
 DBW#8 154-631873 154-652461

PRINTED IN U.S.A.

DBW #8 WELDER ASSEMBLY

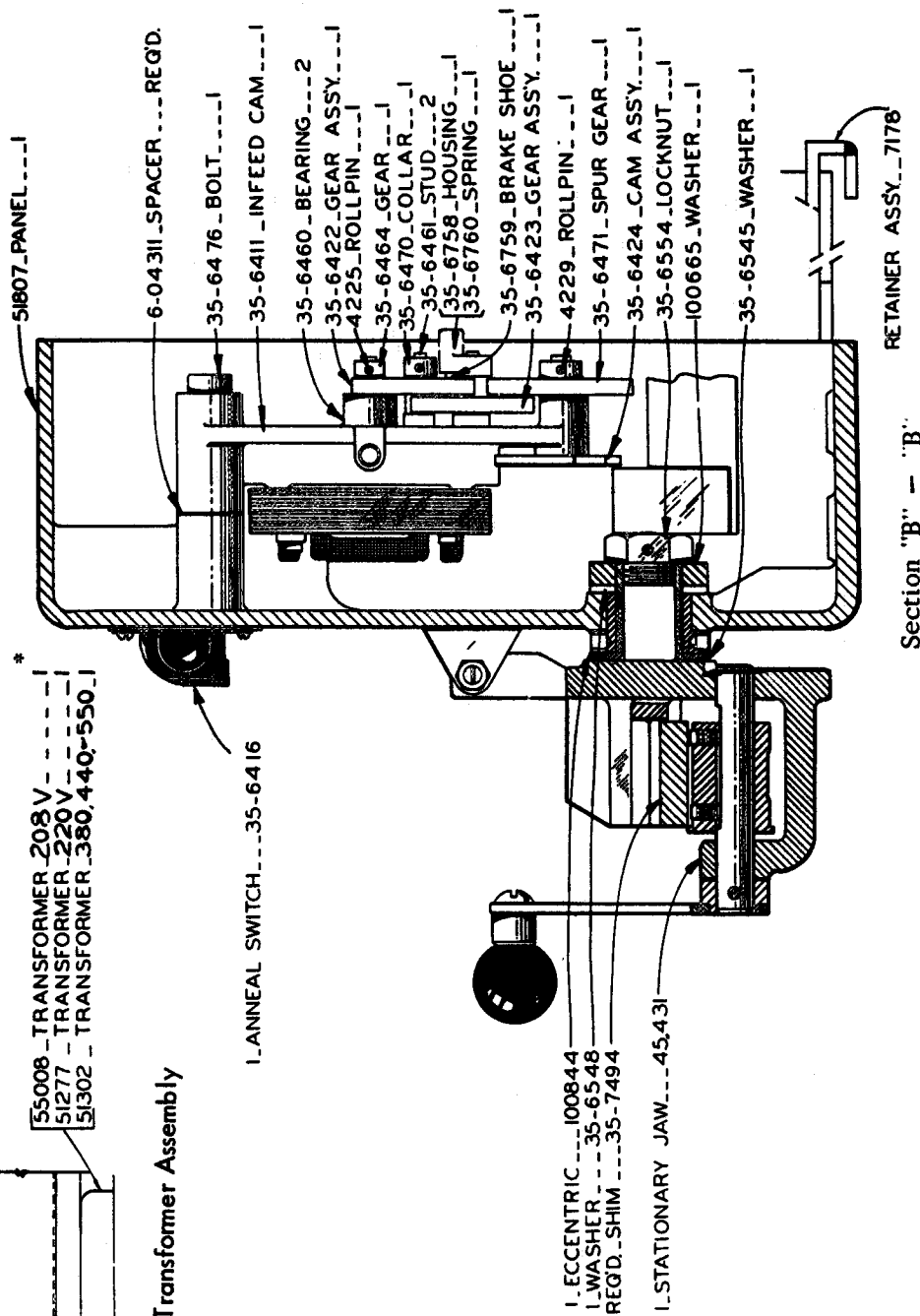
INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.
Ref.	51809	Welder Ass'y. #8 (Machine Mounted)	
1	107747	. Slide Rod (Before Ser. No. 154-641917 Slide Rod was 35-7262)	1
2	Comm.	. Screw, Soc. Hd. Cap 1/4-20NC x 1"	1
3	Comm.	. Screw, Soc. Hd. Cap 1/4-20NC x 1-1/4"	1
4	Comm.	. Washer 1/4 Std.	1
5	33054	. Slide Yoke (Before Ser. #154-641917 Slide Yoke was 35-7263)	1
6	106990	. Pivot Rod (Used After Ser. #154-641916)	1
7	Comm.	. Screw, Soc. Hd. Cap 1/4-20NC x 1-1/2"	2
8	Comm.	. Washer, Lock 1/4 Std.	2
Ref.	23486	. Reset Crank Arm Ass'y.	1
9	8504	. . Reset Arm Ass'y.	1
10	Comm.	. . Screw, Rd. Hd. Mach. 3/8-16NC x 1"	1
11	Comm.	. . Washer, Lock 3/8 Ext. Shakeproof	1
12	34-13508	. . Knob	1
13	8502	. . Reset Crank Ass'y.	1
14	Comm.	. Screw, Truss Hd. Mach. 5/16-18NC x 1"	1
15	Comm.	. Washer, Lock 5/16 Ext. Shakeproof	1
16	3689	. Lever Stop	1
17	107048	. Guide Block	2
18	105828	. Saw Clamp Sub-Ass'y. (See Detail)	1
Ref.	102938	. Cam Lever & Pin Ass'y.	2
19	Comm.	. . Screw, Rd. Hd. Mach. 3/8-16NC x 1"	1
20	Comm.	. . Washer, Lock 3/8 Int. Shakeproof	1
21	34-13508	. . Knob	1
22	35-6512	. . Cam Lever Ass'y.	1
23	102937	. . Pin	1
24	4260	. . Roll Pin	1
25	8866	. Bearing	4
26	48317	. Movable Jaw (Before Ser. #154-641917 Jaw was 46256)	1
27	Comm.	. Screw, Soc. Set 1/4-20NC x 3/8"	2
28	102936	. Cam	2
29	35-6426	. Retaining Ring	2
30	Comm.	. Screw, Soc. Set 5/16-24NF x 3/8"	2
31	4270	. Roll Pin	2
32	Comm.	. Screw, Soc. Hd. Cap 5/16-18NC x 1-1/2"	1
33	35-7041	. Washer	2
34	Comm.	. Screw, Hex Hd. Cap 3/8-16NC x 1"	1
35	Comm.	. Washer, Lock 3/8 Std.	6
36	Comm.	. Screw, Soc. Hd. Cap 5/16-18NC x 7/8	1
37	35-6536	. Screw, Shoulder	1
38	35-6428	. Lever Ass'y.	1
39	4259	. Roll Pin	1
40	35-6535	. Spring	1
41	Comm.	. Screw, Rd. Hd. Mach. #10-24NC x 3/8"	2
42	8507	. Screw, Shoulder	1
43	8508	. Bell Crank Sub-Ass'y.	1
44	8510	. Link	2
45	8511	. Pin	2
46	47780	. Jaw Arm (Before Ser. #154-641917 Jaw Arm was 42205)	1



Transformer Assembly

1. ANNEAL SWITCH...35-6416

* Note: Specify voltage of transformer when ordering.



Section "B" -- "B"

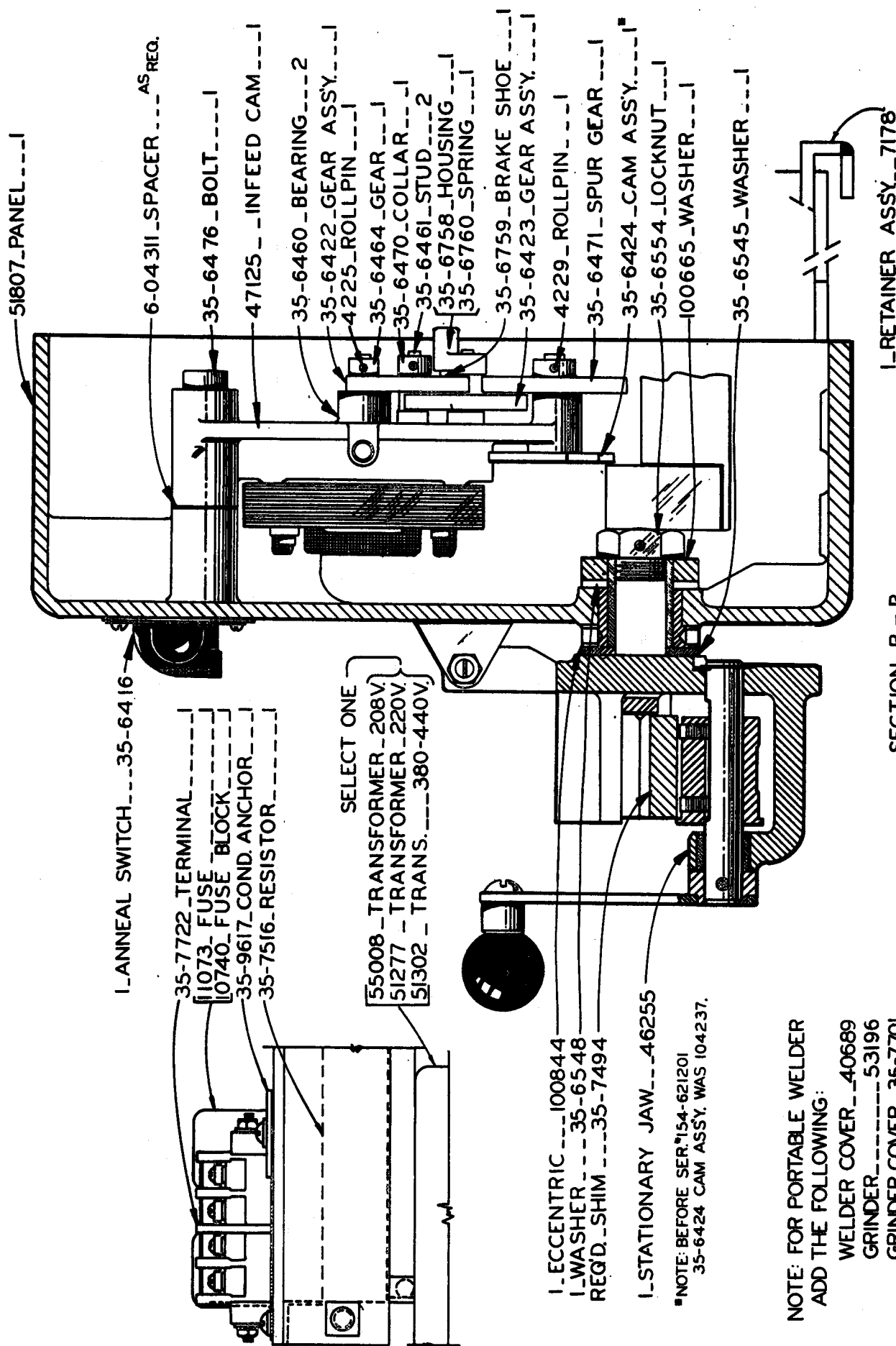
DBW #8 BUTT WELDER
51809

Model DBW#8
First Machine 154-59101
Last Machine 154-621099

Page 3 of 4

E-1

E-2



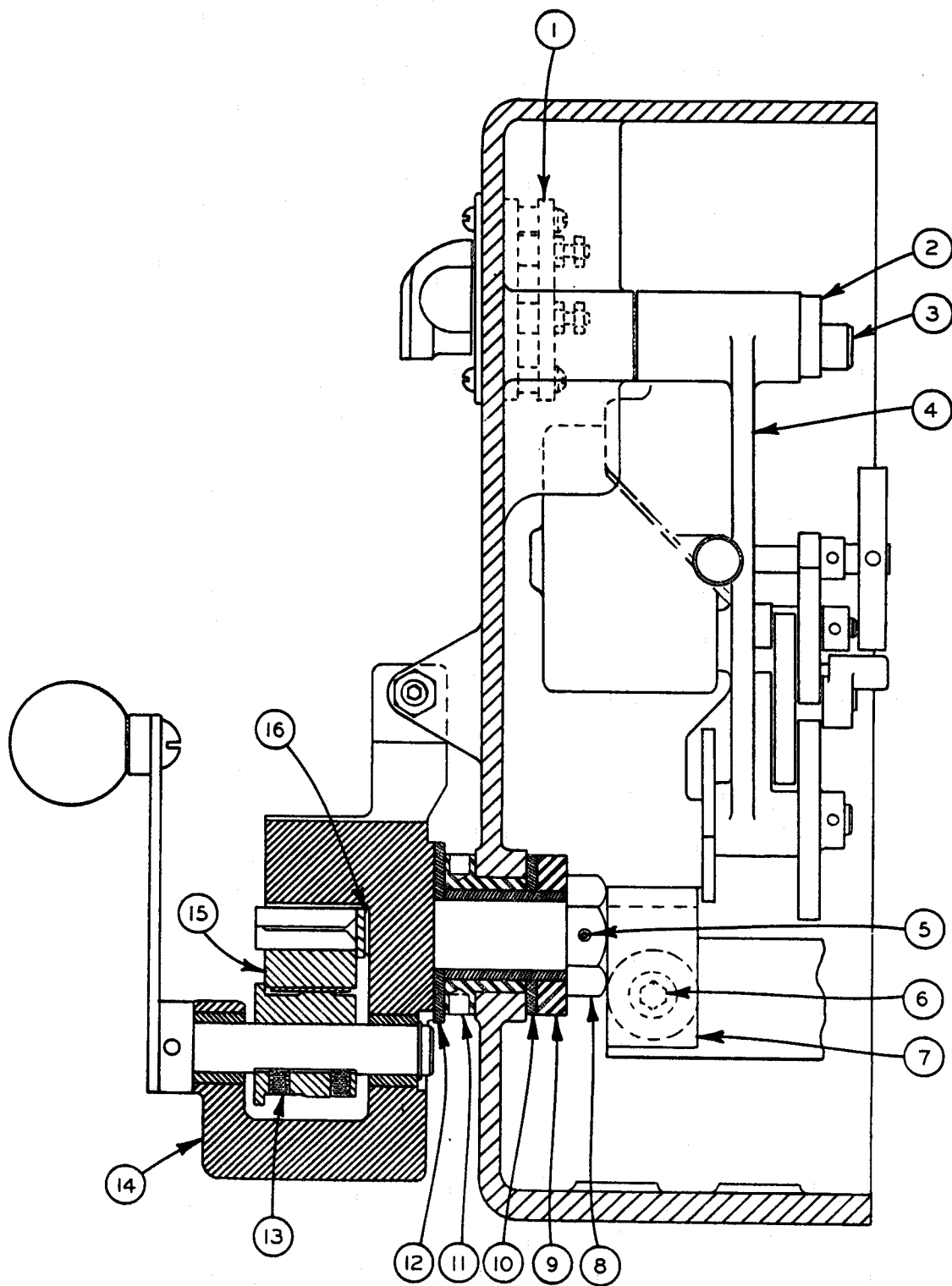
H-8.2.1

PRINTED IN U.S.A.

E-3

E-4

PAGE 1 OF 2



VIEW B - B

NO. 8
BUTTWELDER ASS'Y.

MODEL FIRST MACH. LAST MACH.
DBW*8 154-641917 154-652461

HI-8.2.2

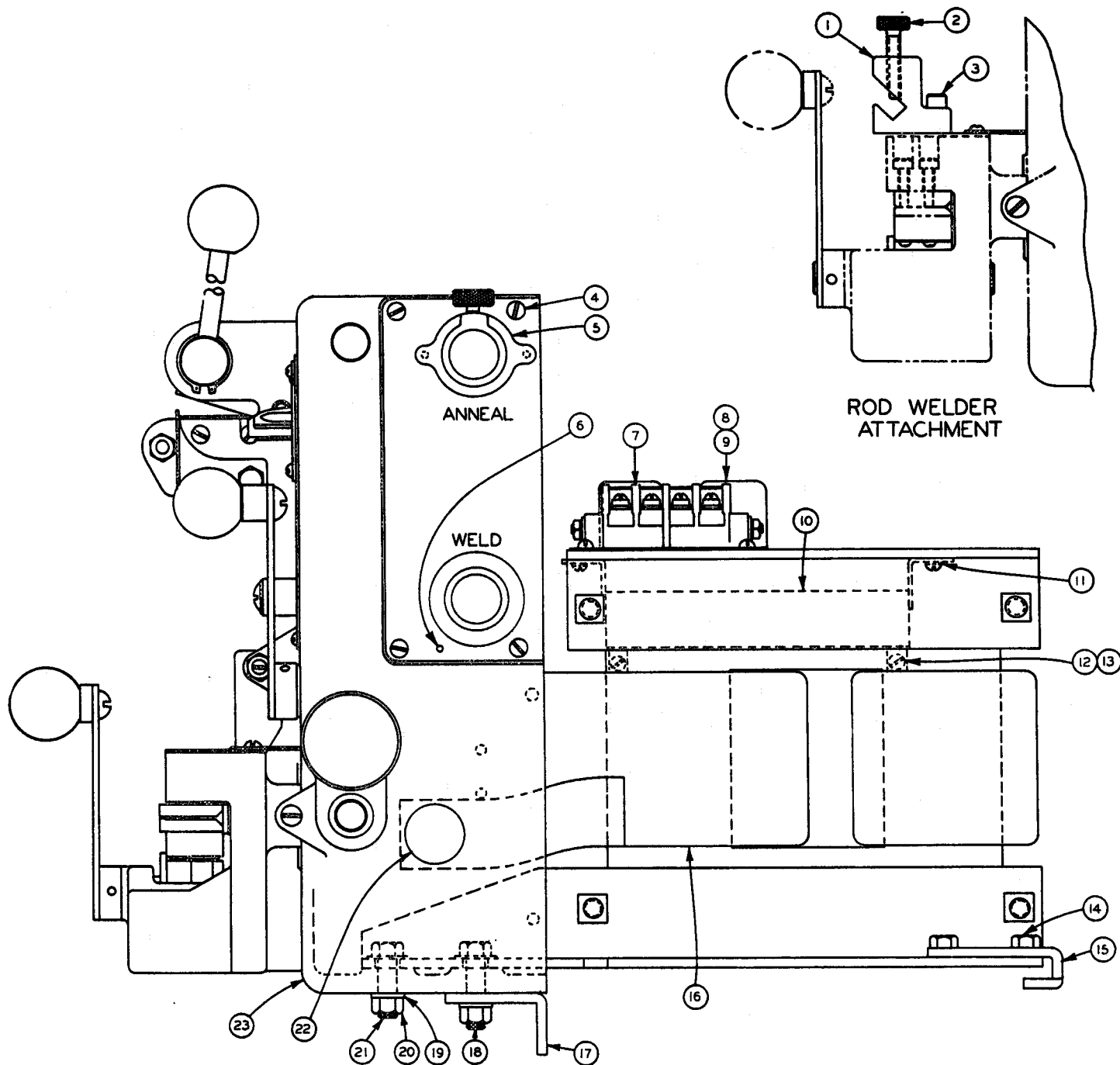
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TITLE

CODE NO. H1-8.2.2

DBW #8 BUTTWELDER ASS'Y.

INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.
		1 2 3 4 5 6 7	
Ref.	51809	DBW #8 Buttwelder Assembly (Continued)	
1	35-6416	. Switch Assembly (See Detail)	1
2	109521	. Eccentric	1
3	Comm.	. Screw, Soc. Hd. Cap 3/8-16NC x 2-3/4"	1
4	47914	. Infeed Cam Drive Assembly (See Detail)	1
5	Comm.	. Screw, Soc. Set. #10-24NC x 3/16"	1
6	Comm.	. Screw, Soc. Hd. Cap 3/8-16NC x 2"	1
7	35-7042	. Cable Connector	1
8	35-6554	. Jam Nut.	1
9	100665	. Washer	1
10	107086	. Washer	1
11	100844	. Eccentric & Bushing Sub-Ass'y.	1
12	35-6545	. Washer	1
13	Comm.	. Screw, Soc. Set 1/4-20NC x 1/4"	4
14	47846	. Stationary Jaw (Before Ser.# 154-641930 Jaw was 46255).	1
15	107049	. Saw Clamp Sub-Ass'y. L.H. (See Detail)	1
16	107066	. Shim	AR



SECTION B - B

DBW #8
BUTTWELDER ASSEMBLY
(SIDE VIEW)

MODEL FIRST MACH LAST MACH
DBW#8 154-641917 154-652461

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HI-8.2.3

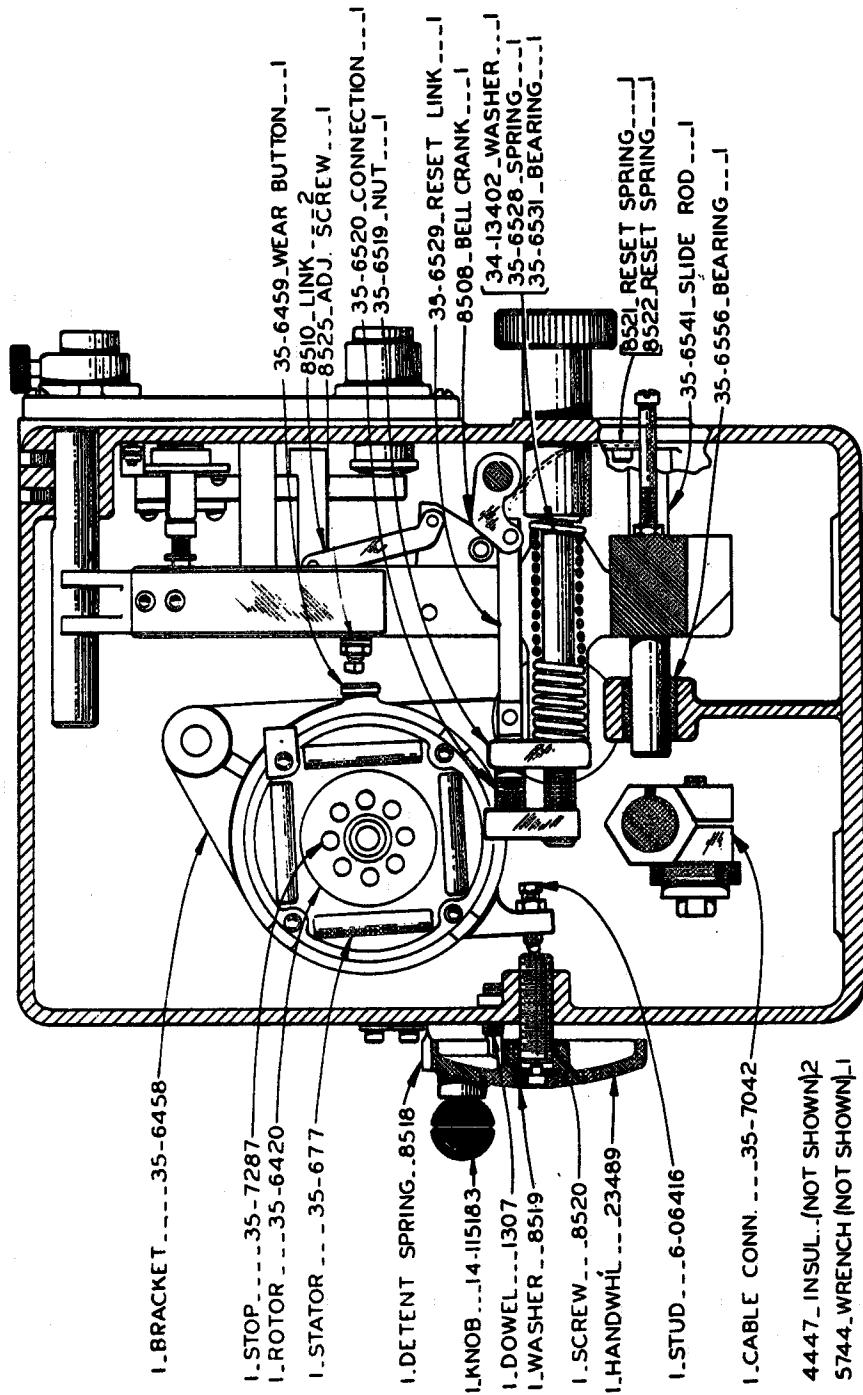
TITLE

CODE NO. H1-8.2.3

DBW #8 BUTTWELDER ASSEMBLY

INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.
		1 2 3 4 5 6 7	
Ref.	51809	DBW #8 Buttwelder Ass'y. (Continued)	
Ref.	46371	. Rod Welder Attachment.	1
1	30513	. . Rod Welder Clamp	2
2	7571	. . Thumbscrew	4
3	Comm.	. . Screw, Soc. Hd. Cap 1/4-20NC x 1"	4
4	Comm.	. Screw, Rd. Hd. Mach. #10-24NC x 5/8"	4
5	42252	. Weld & Anneal Switch Ass'y. (See Detail)	1
6	4227	. Roll Pin	1
7	110201	. Terminal Block	USE
	110202	. Terminal Block	ONE
8	110062	. Fuse Block	1
9	11073	. Fuse	1
10	35-7516	. Resistor (50 OHMS).	1
11	Comm.	. Washer, Lock #8 Std.	4
12	Comm.	. Screw, Rd. Hd. Mach. #8-32NC x 1/4"	2
13	Comm.	. Nut, Hex #8-32NC.	2
14	Comm.	. Screw, Hex Hd. Cap 5/16-18NC x 3/8"	2
15	7178	. Retainer Assembly	1
16	35-7045	. Transformer 220V & 240 V	U
	35-7045A	. Transformer 190V	S
	35-7045B	. Transformer 208V	E
	35-7045C	. Transformer 280V	
	35-7883	. Transformer 380 - 440 - 550V	
	35-7883A	. Transformer 380 - 440 - 500V	O
	35-7883B	. Transformer 280 - 415 - 550V	N
	35-7883C	. Transformer 288 - 440 - 550V	E
17	100645	. Bracket	1
18	Comm.	. Screw, Hex Hd. Cap 3/8-16NC x 1-1/2"	2
19	Comm.	. Washer 3/8 Std.	4
20	Comm.	. Nut, Hex 3/8-16NC	4
21	Comm.	. Screw, Hex Hd. Cap 3/8-16NC x 1-1/4"	2
22	35-6640	. Plug Button	2
23	51807	. Panel	1
NOT SHOWN:			
	5744	. Wrench	1
	4447	. Insulator (For 220 Setup)	2
	Stk. #741	. Wire - Black #14 SL	AR
	Stk. #550	. Wire Markers #1-33	AR
	103835	. Wire Terminal (For Motor Leads)	2
	101457	. Wire Diagram (See Detail) 220/240V.	
	101458	. Wire Diagram (See Detail) 380 - 440 - 550V.	

II-8.3



Section "C" - "C"

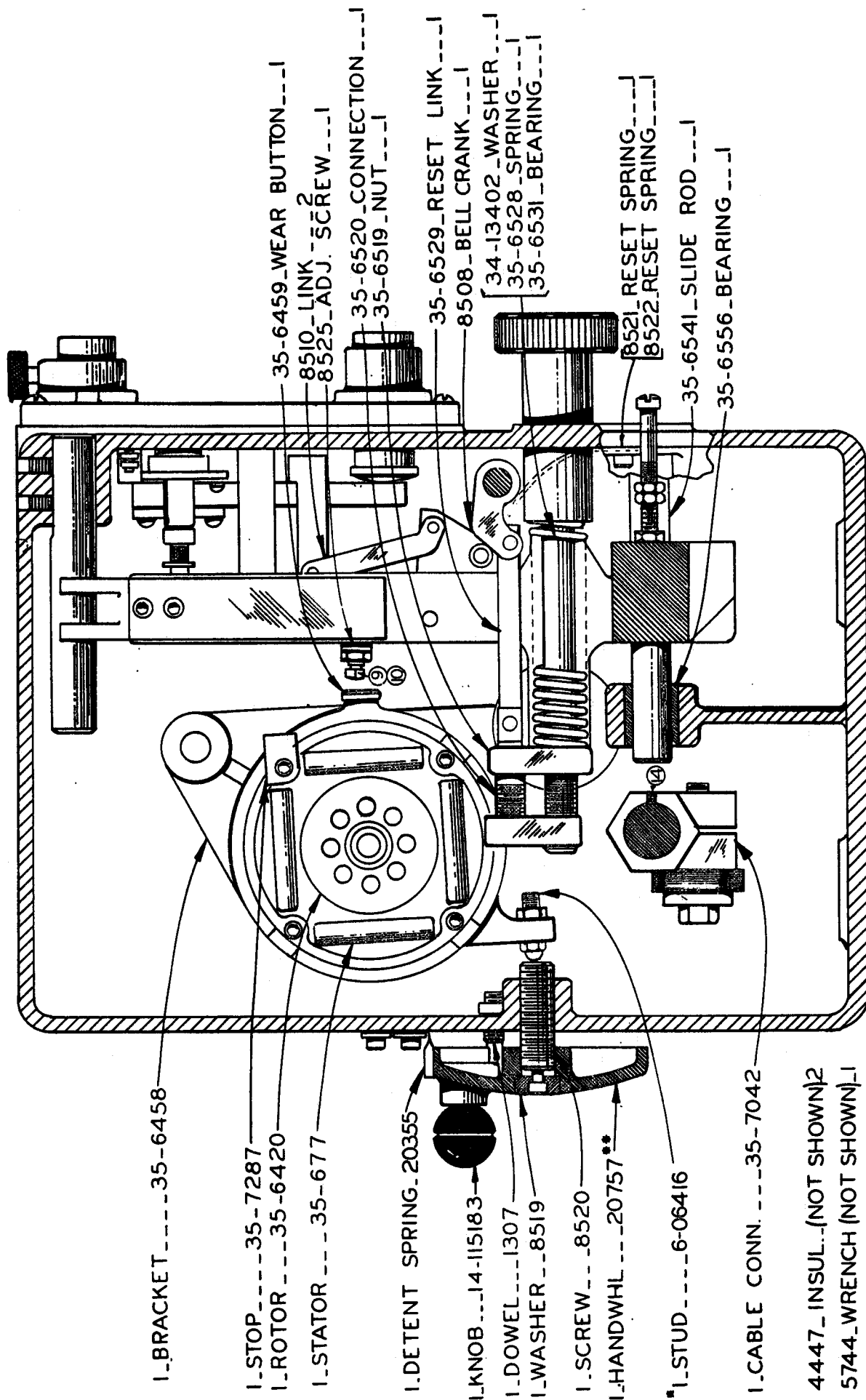
Model First Machine Last Machine
DBW#8 154-59101 154-621099

DBW #8 BUTT WELDER
51809

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E-9



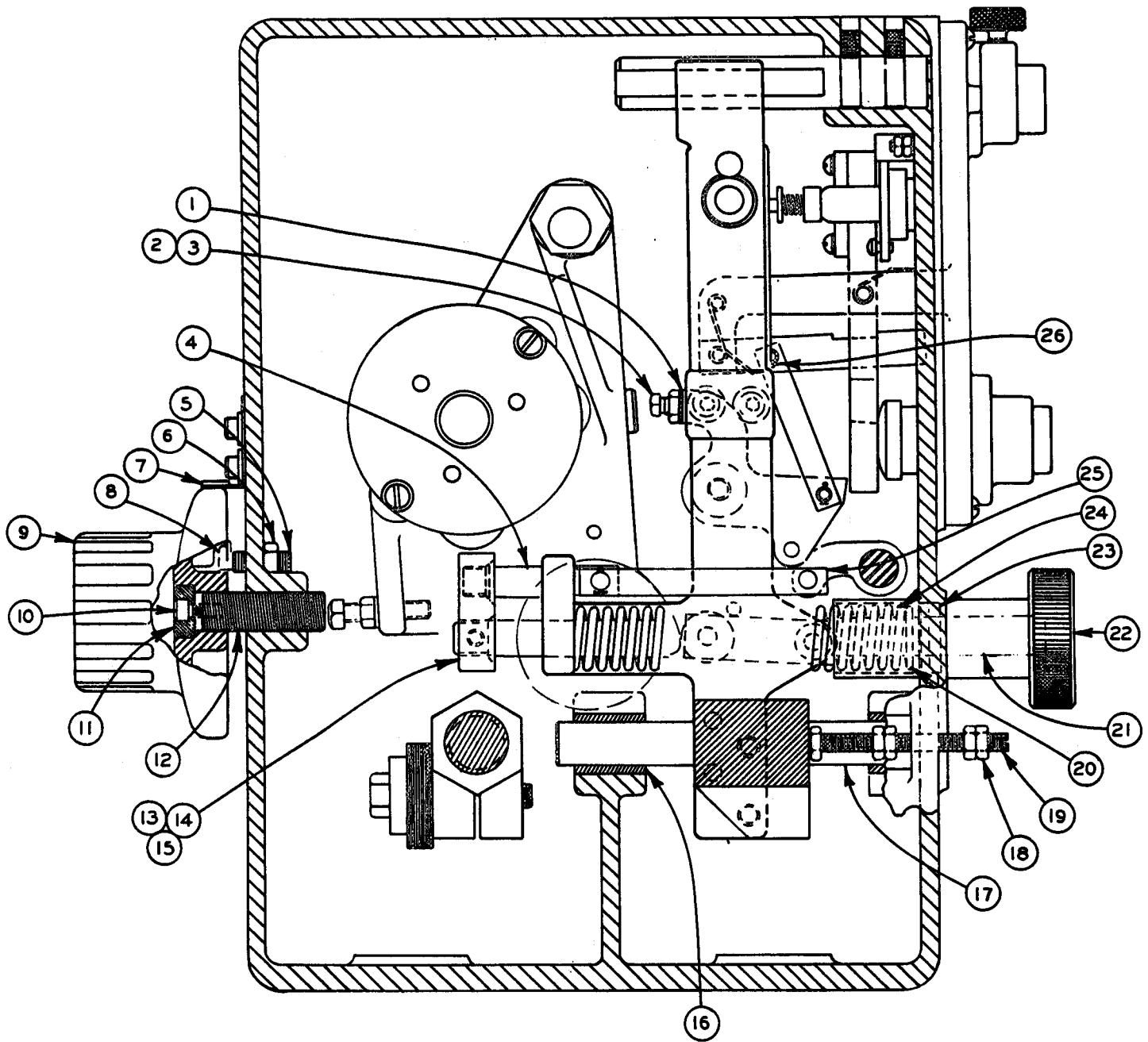
SECTION C - C

51809
BUTTWELDER ASS'Y.

*NOTE: BEFORE SER. #154-621201
6-06416 STUD WAS 104978.
**NOTE: BEFORE SER. #154-621319
20757 HANDWHL. WAS 23489.

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MODEL FIRST MACH. LAST MACH.
DBW#8 154-62100 154-641916



VIEW C - C

NO. 8
BUTT WELDER ASS'Y.

MODEL FIRST MACH. LAST MACH.
DBW#8 154-641917 154-652461

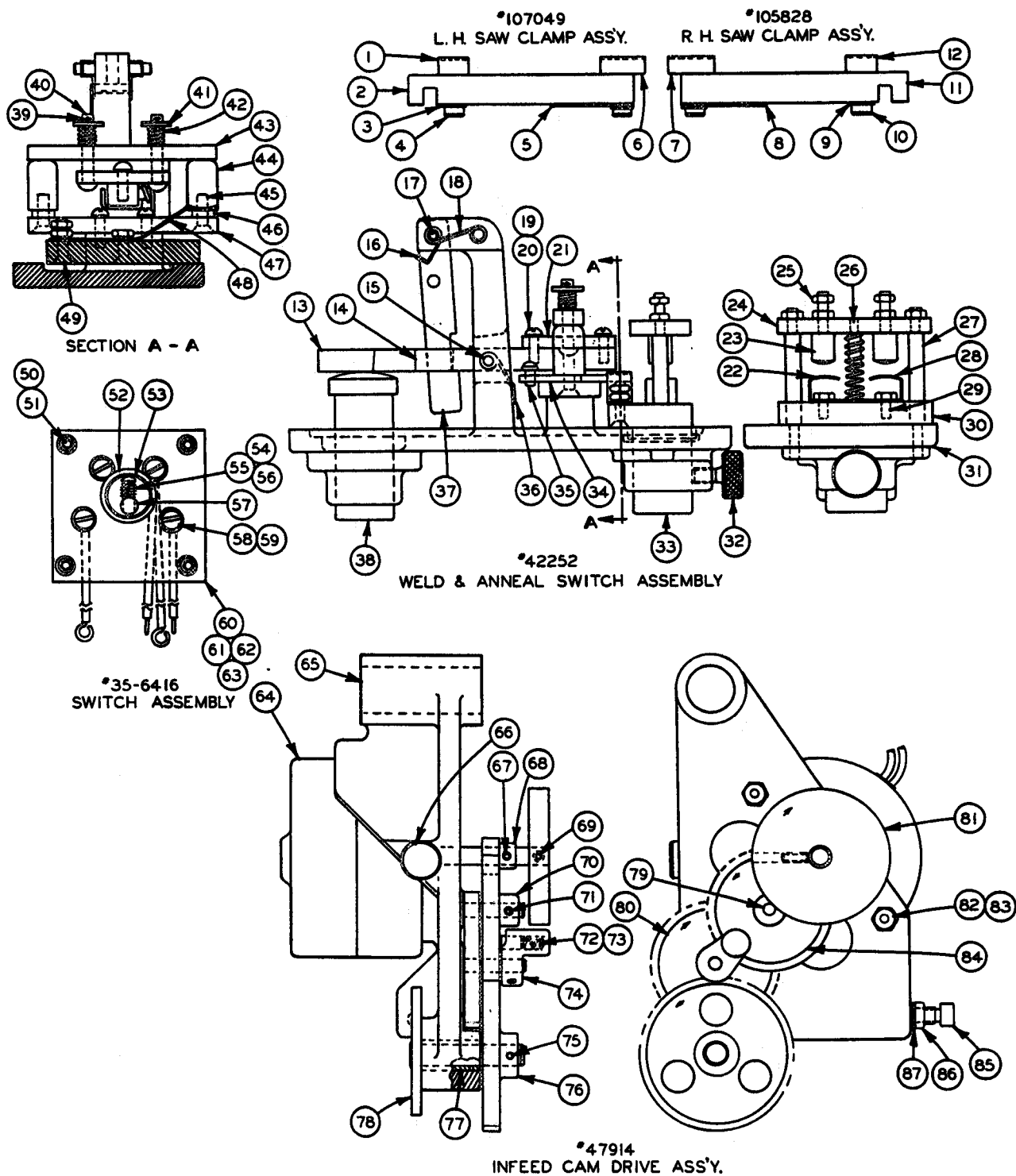
HI-8.3.2

PRINTED IN USA

CODE NO. H1-8.3.2

DBW #8 WELDER ASSEMBLY

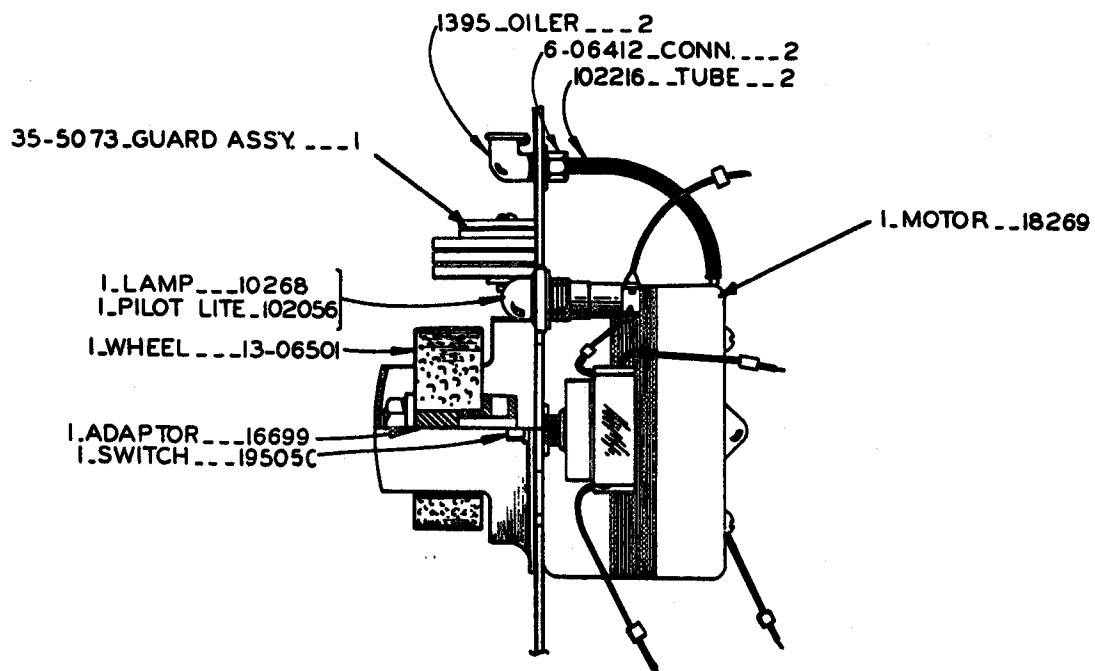
INDEX NO. Ref.	PART NO.	DESCRIPTION	UNITS PER ASS'Y.
	51809	Welder Ass'y. #8 (Machine Mounted)	
1	Comm.	. Washer, Lock 1/4 Ext. Shakeproof	2
2	8525	. Adjusting Screw	1
3	Comm.	. Nut, Jam 1/4-28NF	1
4	14189	. Connection (Before Ser. #154-642118 Connection was 35-6520)	1
5	Comm.	. Screw, Soc. Set 5/16-18NC x 1" Dog Pt.	1
6	Comm.	. Nut, Hex Jam 5/16-18NC	1
7	20355	. Spring, Detent	1
8	1307	. Dowel Pin	1
9	20757	. Hand Wheel	1
10	Comm.	. Screw, Soc. Hd. Cap #10-24NC x 1/2"	1
11	8519	. Washer	1
12	8520	. Screw	1
13	7927	. Plug	1
14	14190	. Nut (Before Ser. #154-642118 Nut was 35-6519)	1
15	Comm.	. Screw, Soc. Hd. Set 1/4-20NC x 3/8"	1
16	35-6556	. Bearing	2
17	14183	. Slide Rod (Before Ser. #154-642266 Slide Rod was 35-6541) ..	1
18	108282	. Hex Nut	5
19	107123	. Stud	1
20	107106	. Washer	AR
21	14191	. Shaft	1
22	14192	. Knob	1
23	35-6531	. Thrust Bearing	1
24	35-6528	. Spring	1
25	35-6529	. Reset Link Assembly	1
26	Comm.	. Pin Cotter 1/16 Dia. x 1/2"	4



DBW #8 BUTTWELDER ASSEMBLY

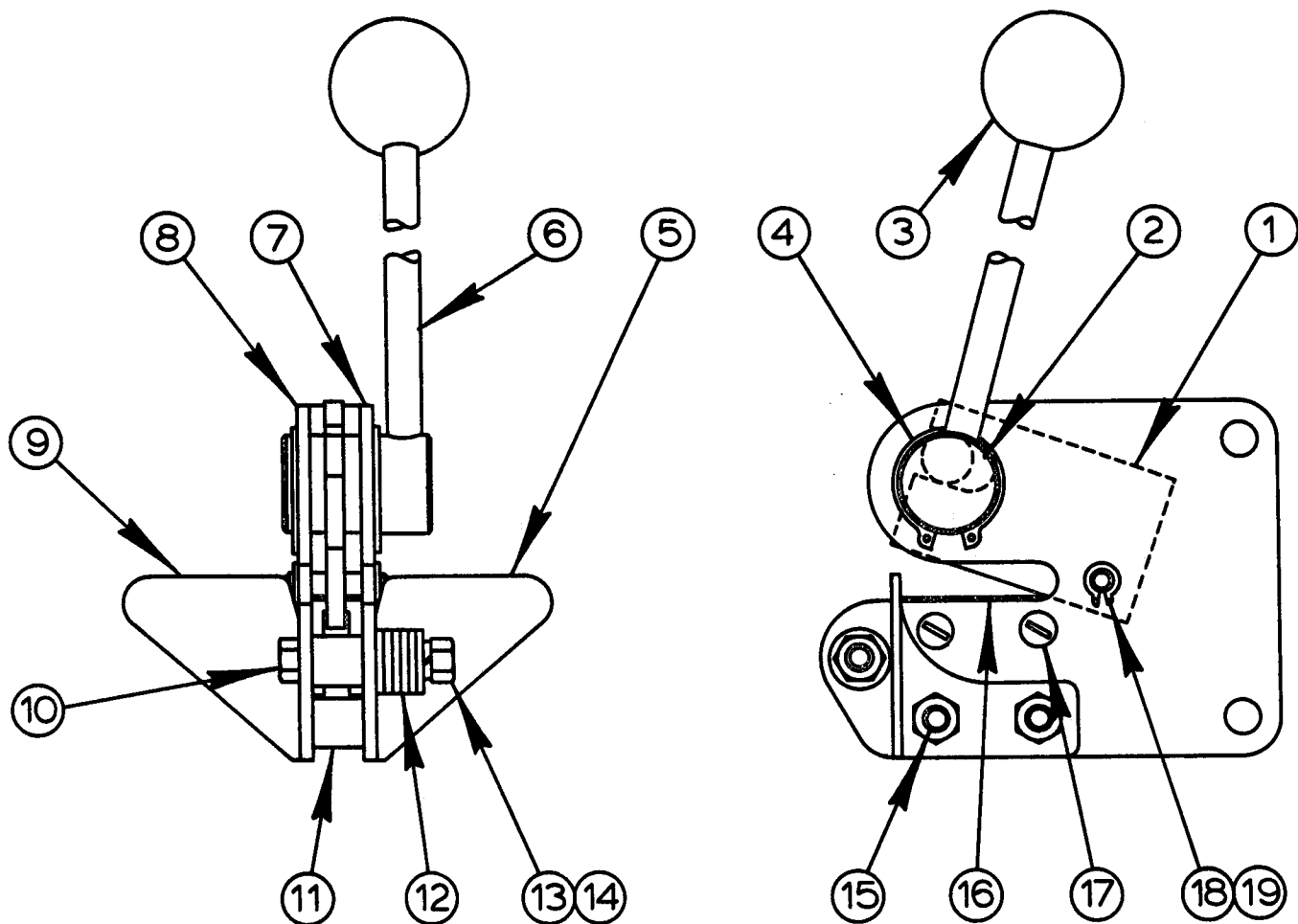
DBW #8 BUTTWELDER DETAIL

INDEX PART		DESCRIPTION				UNITS	INDEX PART		DESCRIPTION				UNITS
NO.	NO.	1	2	3	4	PER ASS'Y,	NO.	NO.	1	2	3	4	PER ASS'Y.
Ref.	51809	DBW #8 Buttwelder Ass'y.					Ref.	35-6416	Switch Ass'y. (Used after				
Ref.	107049	L.H. Saw Clamp Sub-Ass'y. (Used							Ser.#154-631872)				1
		after Ser.#154-631872)				1	50	Comm.	Washer, Lock #8 Std.				4
1	107046	Jaw Insert				1	51	Comm.	Screw, Rd. Hd. Mach. #8-32				
2	102933	Lower Jaw				1			NC x 1/4"				4
3	Comm.	Washer, Lock #10 Std.				4	52	35-6486	Contact Ring				1
4	Comm.	Screw, Soc. Hd. Cap #10-32NC					53	35-7496	Insulator Ring				1
		x 3/4"				4	54	35-6489	Spring Guide				1
5	102930	Wear Strip				1	55	35-6487	Spring				1
6	107047	Jaw Insert				1	56	6171	Pin				1
Ref.	105828	R.H. Saw Clamp Sub-Ass'y. (Used					57	35-6482	Shaft				1
		after Ser.#154-631872)				1	58	Comm.	Screw, Flat Hd. Mach. #8-32				
7	107047	Jaw Insert				1			NC x 7/8"				4
8	102930	Wear Strip				1	59	Comm.	Nut, Hex #8-32NC.				8
9	Comm.	Washer, Lock #10 Std.				4	60	35-6483	Front Plate				1
10	Comm.	Screw, Soc. Hd. Cap #10-32NC					61	35-6485	Rear Plate				1
		x 3/4"				4	62	35-6484	Spacer				4
11	102933	Lower Jaw				1	63	35-6488	Contact				4
12	107046	Jaw Insert				1			NOT SHOWN:				
Ref.	42252	Weld & Anneal Switch Ass'y.(Used					Stk.#741	Wire - Black #14 Solid.				AR	
		After Ser.#154-631872)				1	Stk.#550	Wire Markers.				AR	
13	8514	Trip Arm.				1	Ref.	47914	Infeed Cam Drive Ass'y.(Used				
14	18693	Retainer				1			after Ser. #154-641916).				1
15	3776	Pin				1	64	39535	Motor				1
16	35-7498	Pin				1	65	48150	Bracket				1
17	3775	Pin				1	66	35-6459	Wear Button				1
18	35-7499	Spring.				1	67	4225	Roll Pin				1
19	Comm.	Washer, Lock Spring #8				7	68	108981	Gear				1
20	Comm.	Screw, Rd. Hd. Mach. #8-32					69	Comm.	Screw, Soc. Set #10-24NC x				
		NC x 1/2"				4			1"				1
21	35-7028	Contact Bar				1	70	35-6470	Collar				1
22	35-7025	Spring				1	71	Comm.	Screw, Soc. Set #10-24NC x				
23	35-7023	Contact.				1			3/16"				2
24	35-7037	Contact Plate				1	72	35-6759	Brake Shoe				1
25	Comm.	Nut, Hex #8-32				11	73	35-6760	Spring				1
26	35-7024	Spring Guide				1	74	35-6758	Brake Housing				1
27	35-7022	Guide Post				2	75	4229	Roll Pin.				1
28	35-6494	Bus Bar				1	76	35-6471	Spur Gear.				1
29	Comm.	Screw, Flat Hd. Mach. #8-32					77	35-6460	Bearing.				1
		NC x 1/2"				3	78	104237	Cam Assembly				1
30	8512	Contact Plate				1	79	35-6461	Stud				2
31	35-7021	Switch Body				1	80	35-6423	Gear Assembly				1
32	35-554	Thumb Nut				1	81	108980	Fly Wheel.				1
33	35-7026	Anneal Button.				1	82	Comm.	Nut, Jam #8-32NC				2
34	35-7033	Connector				1	83	Comm.	Washer, Lock #8				2
35	Comm.	Screw, Blad. Hd. Mach. #8-32					84	35-6422	Intermediate Gear Ass'y.. . . .				1
		x 3/8"				2	85	109061	Stud				1
36	35-7034	Spring				1	86	Comm.	Nut, Jam 1/4-28NF				1
37	35-6500	Dog				1	87	Comm.	Washer, Lock 1/4 Ext.				
38	35-7036	Weld Button.				1			Shakeproof				1
39	Comm.	Cotter Pin 1/16 Dia. x 3/8".				2							
40	35-7030	Rivet				2							
41	Comm.	Washer, Flat #10				2							
42	35-7029	Spring.				2							
43	35-7027	Contact.				1							
44	8515	Contact.				2							
45	Comm.	Screw, Flat Hd. Mach. #10-24											
		x 5/8"				2							
46	8516	Connector				1							
47	35-7032	Contact Plate				1							
48	8517	Bus Bar.				1							
49	Comm.	Screw, Flat Hd. Mach. #8-32											
		x 3/4"				1							
NOT SHOWN:													
Stk.#741	Wire, Black #14 ga - Solid					AR							
Stk.#550	Wire Markers					AR							



<u>Model</u>	<u>First Machine</u>	<u>Last Machine</u>
1613-2	150-59101	150-61233
1612-3	152-59101	152-61263
3613-2	151-59101	151-61187
3612-3	153-59101	153-61504

1/25 H.P.
 Machine Mounted
GRINDER ASSEMBLY
 Assembly No. 45525



BLADE SHEAR ASSEMBLY

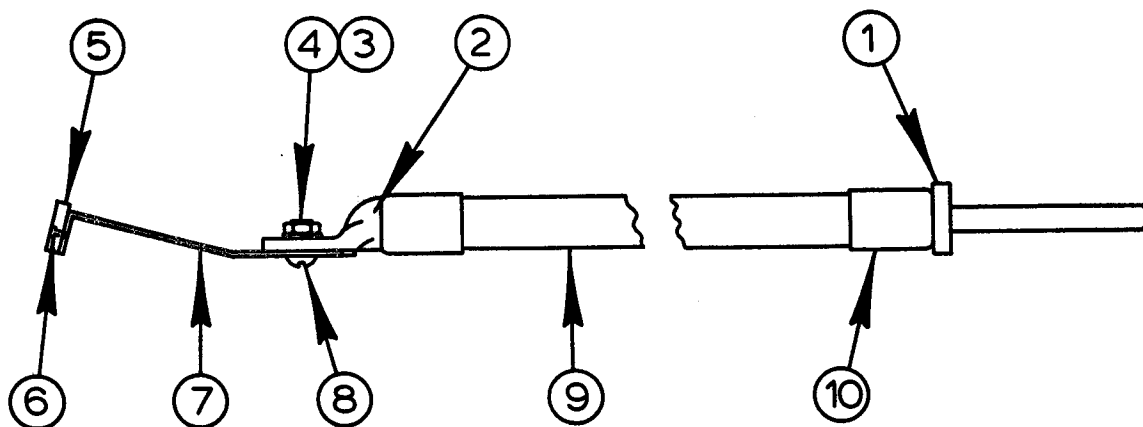
BLADE SHEAR ASSEMBLY

INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y
Ref.	135-084408	Blade Shear Assembly	
Ref.	*094-082120	L.H. Blade Shear Assembly (Wire Bands)	
1	135-084374	. Knife.....	1
2	*135-084416	. Eccentric.....	1
3	134-135086	. Knob.....	1
4	135-075588	. Retaining Ring.....	2
5	135-084465	. R.H. Square.....	1
6	135-084382	. Handle.....	1
7	*135-084481	. R.H. Side Plate.....	1
8	*135-084473	. L.H. Side Plate.....	1
9	135-084457	. L.H. Square.....	1
10	*091-980128	. Screw, Hex. Hd. Cap 1/4-20NC x 1-1/2.....	1
11	091-000166	. Spacer.....	3
12	*091-992610	. Washer, Flat 1/4 S.A.E Std.....	6
13	*091-991158	. Nut, Hex. 1/4-20NC.....	3
14	*091-993212	. Washer, Lock 1/4 Std.....	3
15	*091-980110	. Screw, Hex. Hd. Cap 1/4-20NC x 1-1/4.....	2
16	091-000158	. Blade.....	2
17	091-988659	. Screw, Rd. Hd. Mach. #10-24NC x 1/4.....	4
18	135-085827	. Retaining Ring.....	2
19	135-084515	. Pin.....	1

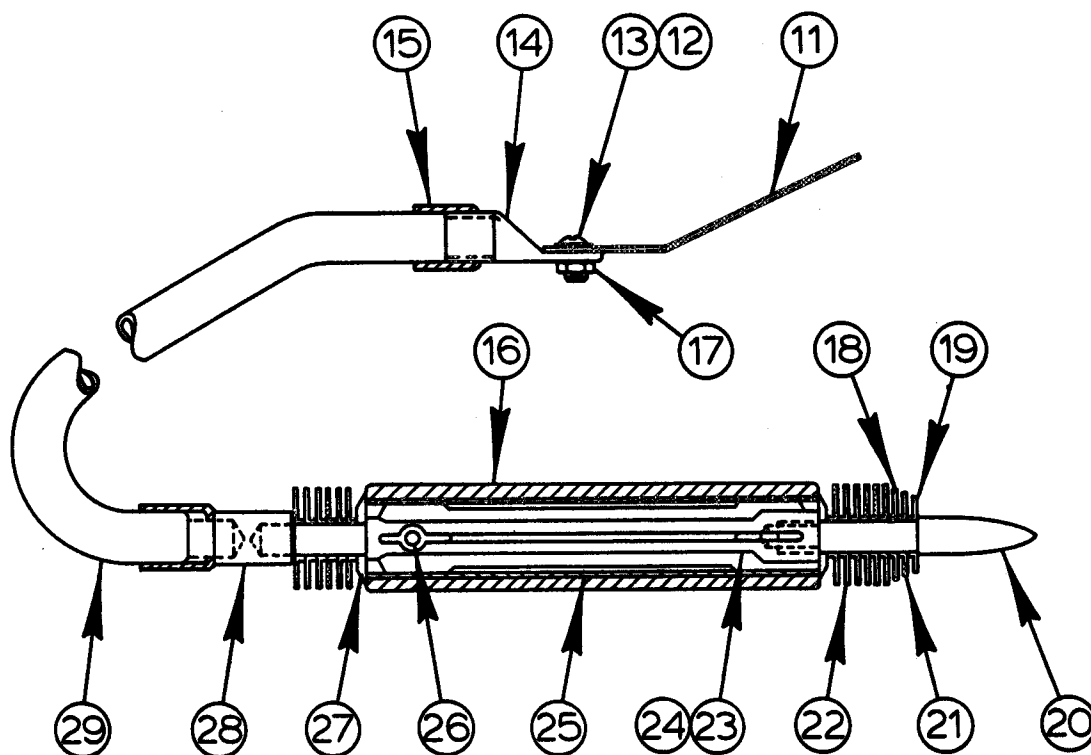
FOLLOWING NOT SHOWN AND USED FOR MOUNTING. SELECT WHAT APPLIES TO YOUR MACHINE:

091-211276	. Nutsert 5/16-18NC.....	2
091-980276	. Screw, Hex. Hd. Cap 5/16-18NC x 3/4.....	2
091-993238	. Washer, Lock 5/16 Std.....	2
091-467209	. Bracket.....	1
091-989061	. Screw, Rd. Hd. Mach. 5/16-18NC x 3/4.....	2

*NOTE: For L.H. Blade Shear Assembly, Starred Items Are On Opposite Side Than What Drawing Indicates. This Assembly Is A Mirror Image Of 135-084408.



ETCHING PENCIL SHORT END ASSEMBLY



ETCHING PENCIL ASSEMBLY

CODE NO. H1-20.0

ETCHING PENCIL ASSEMBLY

INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASS'Y
Ref.	113-070031	Etching Pencil Assembly	
*Ref.	135-051092	. Etching Pencil Short End Assembly.....	1
1	106-074206	. . Plug.....	1
2	090-195454	. . Terminal Lug.....	1
3	091-991091	. . Nut, Hex. Jam #8-32NC.....	1
4	091-992925	. . Washer, Flat #8-S Brass.....	1
5	113-073035	. . Welder Jaw Insulator.....	1
6	134-184076	. . File Rivet.....	2
7	113-073027	. . Terminal Strip.....	1
8	091-988527	. . Screw, Rd. Hd. Mach. #8-32NC x 5/16.....	1
9	091-359943	. . Cable.....	A.R.
10	090-021544	. . Ferrule.....	2
Ref.	113-070049	. Etching Pencil Assembly.....	1
11	113-073043	. . Terminal Strip.....	1
12	091-988527	. . Screw, Rd. Hd. Mach. #8-32NC x 5/16.....	1
13	091-992909	. . Washer, Flat #10-L Brass.....	1
14	090-195454	. . Terminal Lug.....	1
15	090-021544	. . Ferrule.....	2
16	106-075039	. . Tube.....	1
17	091-991091	. . Nut, Hex. Jam #8-32NC.....	1
18	106-073083	. . Fin.....	1
19	106-073109	. . Fin.....	1
20	106-074248	. . Point.....	1
21	106-073091	. . Fin.....	1
22	106-073075	. . Fin.....	12
23	135-050771	. . Etching Pencil Stem Assembly.....	1
24	106-072010	. . . Stem.....	1
25	106-074212	. . . Brass Tube.....	1
26	106-074255	. . . Pin.....	1
27	106-073117	. . Washer.....	2
28	106-074230	. . Connector.....	1
29	091-359943	. . Cable.....	A.R.

*NOTE: This Assembly Used For Buttwelders With Ground Bushing On Panel Before 6-23-44.

