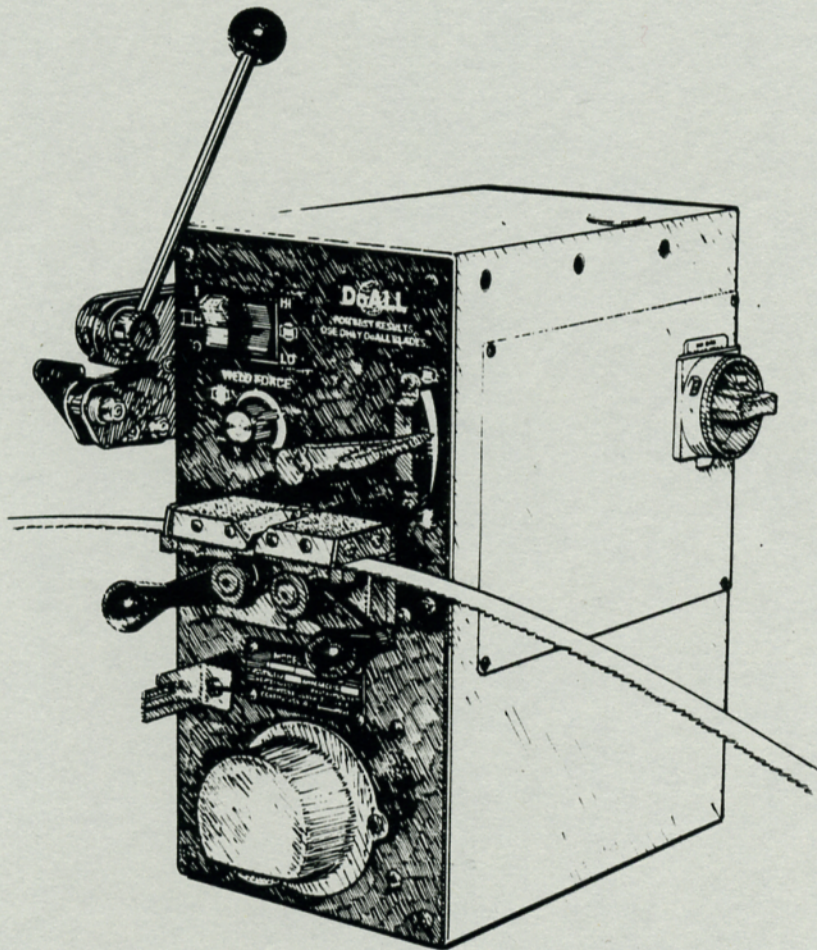




INSTRUCTION MANUAL & PARTS LIST



MODEL DBW-15
BUTT WELDER

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 aren't possible in the field.
2. Request a "damage inspection" from the delivering 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 isn't 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. Don't 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 with 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 9 months to file a claim.

CONCEALED DAMAGE

1. You have 14 days after delivery to report damage not noted at time of delivery.
 - a. Report damage as soon as possible. This makes it easier to prove that it didn't happen in consignee's plant.
 - b. Inspect machines carefully before moving from the receiving area. Again if machine isn't moved it's easier to prove your case.
2. Request a "damage inspection" from the delivering 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 isn't 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. Don't 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 with 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 9 months to file a claim.

OPERATOR'S INSTRUCTION MANUAL

BUTT WELDER

MODEL
DBW-15

FIRST SERIAL NO.
471-88101

LAST SERIAL NO.

MODEL DBW-15

SERIAL NO.

VOLTAGE (V) AMPERAGE (A)

HERTZ (\sim) 50/60 PHASE ($\sim\sim\sim$) 1

INSTANTANEOUS kVA 7.2 (-kVA)

CONTINUOUS kVA .5 (——— kVA)

175662

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.

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.



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

The following registered trademarks of the DoALL Company are used in this manual: DoALL, Imperial Bi-Metal, Carbon, Dart.

PRINTED IN U.S.A.

PB-413 (3-88)

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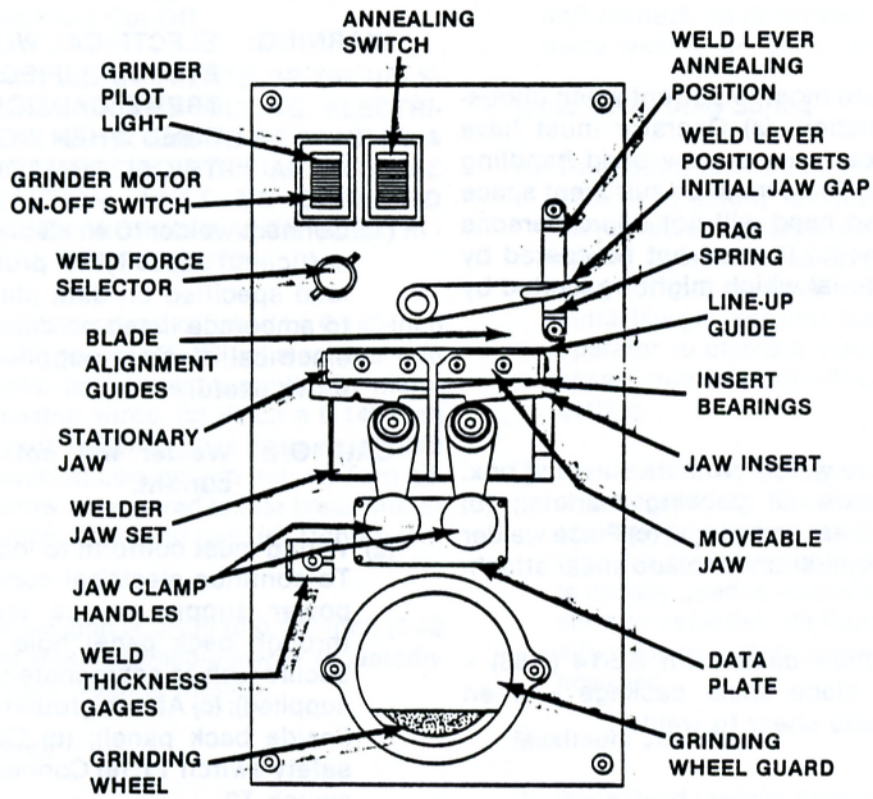
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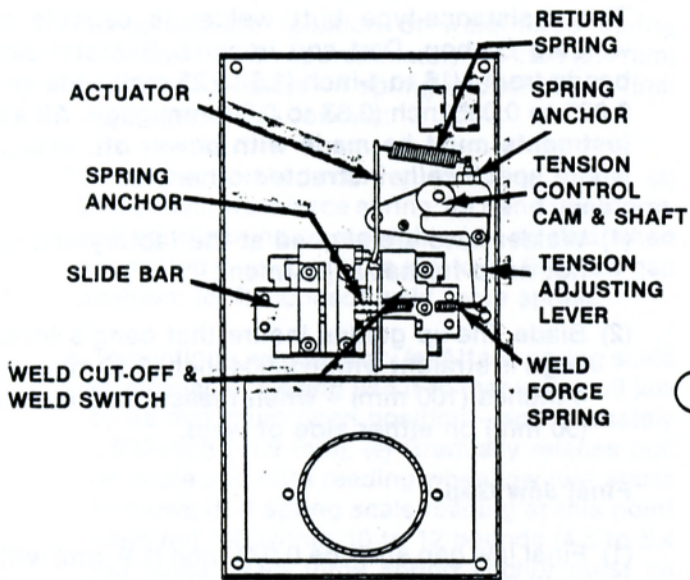
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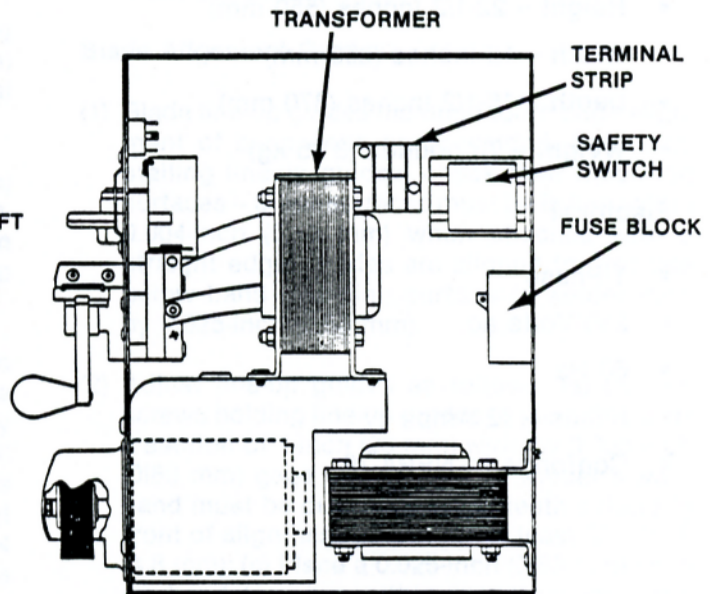
MACHINE FEATURES



REAR VIEW



SIDE VIEW



Grinder Features -- Front, Left Side & Rear Views.

INSTALLATION

LOCATION

- (1) Three factors are most important when choosing welder location: (a) Operator must have sufficient space for easy saw band handling and welding; (b) There must be sufficient space so that a coiled band will not injure persons passing nearby; (c) It must not be coated by flammable material which might be ignited by welding sparks.

UNPACKING

- (1) Carefully remove welder from its shipping box. Then: (a) Remove all packing material; (b) Unpack blade shear and gauge; (c) Place welder on a table in preparation for blade shear attachment.
- (2) Follow instruction page form **SE-14 (6-63)** -- supplied with blade shear package -- when assembling blade shear to welder.

OVERALL WELDER SPECIFICATIONS

Mechanical (blade shear mounted)

- **Height** -- 22-1/2 inches (550 mm)
- **Width** -- 12 inches (285 mm)
- **Depth** -- 15-1/2 inches (370 mm)
- **Weight** -- 70 pounds (31.5 kg)

Electrical

- 1 Phase
- 230 Volts ac
- 60 Hz
- Fuses -- 12 Amps
- Conforms to NFPA-79

ELECTRICAL CONNECTIONS (Portable Welder Only)

WARNING: ELECTRICAL WORK IS TO BE DONE BY A QUALIFIED ELECTRICIAN. EXTREME CAUTION MUST BE EXERCISED WHEN WORKING WITH ELECTRICAL COMPONENTS.

- (1) Connect welder to an electrical power line with sufficient capacity to provide instantaneous load specified on data plate. Fuse according to amperage listed on data plate. Referring to electrical diagram supplied with welder may prove useful.

CAUTION: Welder will not operate on direct current.

- (2) Wiring must conform to local electrical codes. To continue electrical connections: (a) Route power supply source (customer supplied) through back panel hole in welder box; (b) Secure with an appropriate connector (customer supplied); (c) Attach ground wire to ground stud (inside back panel); (d) Connect line "1" to safety switch T1; (e) Connect line "2" to safety switch T2.

FIELD ALIGNMENT & ADJUSTMENT

This resistance-type butt welder is capable of welding Carbon, Dart and Imperial Bi-Metal saw bands from 1/16 to 1-inch (1.5 to 25 mm) wide and 0.025 to 0.035-inch (0.63 to 0.89 mm) gage. **All adjustments must be made with power off**, except where specifically instructed otherwise.

- (1) Welder jaws are aligned at the factory and do not need further adjustment.
- (2) Blade line-up guides insure that band's tooth edge is straight within 0.004-inch (0.10 mm) per 4 inches (100 mm) -- when measured 2 inches (50 mm) on either side of weld.

Final Jaw Gap

- (1) Final jaw gap shall be 0.075-inch (1.9 mm) with weld lever fully depressed (it is factory set). If jaw gap becomes noticeably reduced, a new jaw gap spacer is required.

FIELD ALIGNMENT & ADJUSTMENT (Continued)

Jaw Gap at Electrical Cut-Off

WARNING: ANY ADJUSTMENTS OR TROUBLESHOOTING INVOLVING ELECTRICAL WORK ARE TO BE DONE BY A QUALIFIED ELECTRICIAN. EXTREME CAUTION MUST BE EXERCISED WHEN WORKING WITH ELECTRICAL COMPONENTS.

- (1) Jaw gap at electrical cut-off shall be 0.140-inch (3.65 mm) with power off. Adjust electrical cut-off as follows: (a) Connect a continuity meter to cut-off switch wires; (b) Place a 0.140-inch (3.65 mm) gage between jaws (jaws must hold gage in place); (c) Loosen jam nut; (d) Turn adjustment screw as required to just break circuit with 0.140-inch (3.65 mm) gap; (e) Tighten jam nut.
- (2) Acceptable jaw gap is 0.135 to 0.140-inch (3.42 to 3.65 mm) when moveable jaw is repeatedly cycled through welding motion.

Weld Upset Force

- (1) Upset force shall be from 10 to 12 pounds (4.5 to 5.4 kg) when measured at moveable jaw with Weld Force selector set for narrowest width band.
- (2) Approximate location of weld force spring anchor is with approximately 1/4-inch (6.4 mm) of thread visible on spring anchor. Make final adjustment as follows:

*Disconnect weld lever return spring. Then: (a) Disconnect weld force spring; (b) Bend transformer lead attaching to moveable jaw so that when connected it will just urge jaw to its final jaw gap position; (c) Reconnect weld force spring.

- To continue adjustment: (a) Attach spring scale to moveable jaw and use it to manually pull jaw to its maximum open position -- approximately 15/32-inch (11.9 mm); (e) Gradually release pull on scale and note reading when jaw just starts to move; (f) If spring scale reading at this point does not fall within 10 to 12 pounds (4.5 to 5.4 kg) range, weld force spring anchor must be reset.

- To continue adjustment: (g) To reset spring anchor, disconnect weld force spring and turn screw as required; (h) Replace weld force spring and recheck as described above; (i) Finally, replace weld lever return spring.

Weld Lever Drag Spring

- (1) This spring serves 2 functions: (a) Upper corner acts as a detent to locate moveable jaw for band annealing purposes; (b) Force exerted by spring against weld lever provides frictional drag to hold lever at any of several required initial jaw gap settings for welding. This allows operator to clamp a blade in welder or adjust upset force selector without disturbing jaw gap setting.
- (2) Weld lever drag spring is mounted on the panel and secured by 2 screws. It is adjusted by shimming between panel and spring (shim as required to obtain both objectives). Top shim is usually used to establish detent; the bottom shim to establish frictional drag. Shims under either top or bottom screws will affect function, however.

Maximum Jaw Gap

- (1) Place Weld Lever in "anneal" position and Weld Force selector at its widest position. Then: (a) Turn jaw gap adjustment set screw to obtain 15/32-inch (11.9 mm) jaw gap; (b) Lock adjustment set screw in place.

Blade Alignment Guides

- (1) Blade line-up guides maintain tooth edge alignment of band ends being welded. Before installing line-up guides, check their mounting surfaces -- these surfaces must be in line within 0.004-inch (0.10 mm) when checked with a straight edge. Guides are aligned to protrude below band clamping surface of welder jaws by 0.025-inch (0.63 mm).
- (2) Adjust line-up guides as follows: (a) Loosen screws holding line-up guides to jaws; (b) Insert a section of 1-inch (25 mm) wide by 0.035-inch (0.89 mm) gage saw band into welder jaws -- band must be out of the jaws (teeth extend in front of alignment guides) by at least 3/16-inch (4.8 mm); (c) Place a 0.025-inch (0.63 mm) shim on band top, but within jaw clamping area; (d) Clamp jaws; (e) Adjust band guides to touch band side; (f) Lock in place.

Continued Next Page

FIELD ALIGNMENT & ADJUSTMENT (Continued)

Final Jaw Alignment

- (1) Make a weld in a 1-inch (25 mm) wide by 0.035-inch (0.89 mm) gage Imperial Bi-Metal saw band in order to check final alignment. The finished weld must be straight within 0.004-inch (0.10 mm) in 4 inches (100 mm) -- when measured 2 inches (50 mm) on either weld side.
- (2) To make this weld: **(a)** Set Weld Force knob at its maximum width position; **(b)** Set initial jaw gap by adjusting Weld Lever position (it must be set to line indicating widest width); **(c)** Make final jaw alignment adjustment required to result in tolerances listed.

OPERATION

GENERAL DESCRIPTION

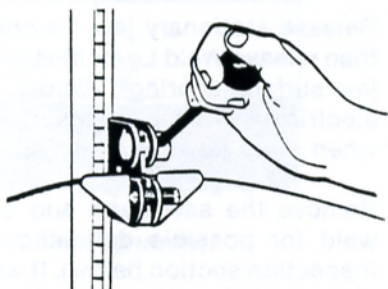
- (1) DoALL Model DBW-15 is a "resistance-type" butt welder. Its 2 clamping jaws hold butted saw band ends together during the welding process. When operator presses the Weld Lever, an electric current flows through butted band ends. This creates enough heat to soften and join the band ends.
- (2) Pressing the Weld Lever also releases a spring which causes clamping jaws to force band ends together (electrical current shuts off before moveable jaw has completed its movement).
- (3) Final upset of "forging" occurs while band is still hot, but no longer being heated by its electrical energy source.

PREPARING FOR WELDING

It is important that both saw blade and welder be properly prepared for each welding operation.

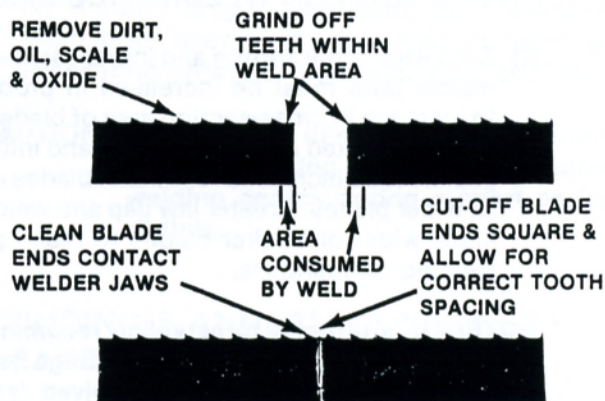
Blade Preparation

- (1) **Cutting.** Cut saw blade to length using Blade Shear (if supplied) to insure that blade ends are flat, square and smooth.



Use Blade Shear to Cut Band.

- (2) **Tooth Spacing.** When preparing fine-pitched bands, one or more teeth on each cut side must be ground off to insure uniformity of band's weld cross-section area. This will also insure proper tooth spacing at weld area and that teeth's set pattern will be retained.



Grind off Teeth to Insure Weld Area Uniformity.

NOTE: If Blade Shear is not used to cut saw band, both ends must be squared before welding. To do so: (a) Grind both ends in one operation; (b) Then hold ends so that teeth point in opposite directions; (c) Regardless of grinding angle, both ends should match perfectly when turned over.

GRIND HERE



Grind Blade Ends When Necessary.

- (3) **Cleaning.** Use No. 120 grit emery cloth or equivalent for this operation. Be sure emery cloth does not touch teeth and damage set of teeth sharpness. Sand that part of each band end that will contact jaws (any dirt, oil, oxide or scale that is not removed will prevent good electrical contact). Oxide on Dart blades must also be removed.

Welder Preparation

- (1) Clean welder jaws. Then: (a) Remove and clean lower jaw inserts; (b) Set Weld Force selector to correct position for width of blade to be welded; (c) Adjust Weld Lever position according to blade width.

Continued Next Page

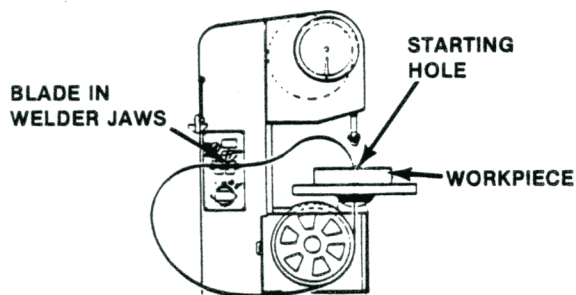
PREPARING FOR WELDING (Continued)

- (2) Both weld force setting and initial gap between welder jaws must be increased in proportion to increase in cross-section area of blade being welded -- stated differently, force and initial jaw gap must be increased for thicker blades as well as wider blades. Greater jaw gap and weld force allow wider or thicker blades to reach proper welding temperature.

NOTE: It is difficult to establish recommended jaw gap and Weld Force settings because so many variables are involved (such as different blade types, widths and gages, and variations between welders). Settings which provide best welds for each width, gage and type of blade should be determined by experience and noted for future use.

Saw Blade Alignment

- (1) For internal sawing purposes, insert blade through a starting hole drilled in work. Then bring blade ends together to be clamped into the jaws. **Cut out the old weld if welding a used band -- it is recommended that saw bands contain only one weld.**



Preparing for Internal Sawing.

CAUTION: When welding bands which pass through a workpiece hole, insulating band from contact with workpiece or table will insure a better weld.

- (2) Place band ends between jaws with teeth against line-up guides attached to front edge of jaws. Blades 1/8-inch (3.2 mm) in width or less are too narrow to be clamped correctly when placed against line-up guides. Move these narrow blades back slightly from line-up plates, align them by eye, then clamp in place.

- (3) Clamp jaws by moving handles upward. Check to be sure band ends meet in jaw gap center without any offset in thickness or across the width. If contact across band width is not complete, remove one end and recut it. **A misaligned joint will cause an incomplete weld.**

MAKING THE WELD

Jaw Gap & Weld Force Controls

- (1) Initial welder jaw gap and Weld Force selection settings must be in proportion to cross-sectional area of band being welded. Greater jaw gaps allow a wider or thicker band to reach proper welding temperature.
- (2) Greater Weld Force produces the same unit pressure while welding wider or thicker bands.
- (3) Weld Force selector provides variable control of upsetting force. Initial jaw gap is set by adjusting weld lever position before making the weld.

Weld Procedures

WARNING: Always step to one side to avoid welding sparks.

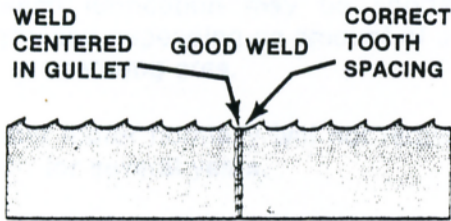
- (1) Use a smooth, steady motion (not too fast or too slow) when pressing Weld Lever and holding it down. **Hold lever down until weld has cooled.**
- (2) Release stationary jaw clamping handle first, then release Weld Lever (this will prevent welder jaw surface scoring). Welder mechanism and electrical switches are automatically recocked when Weld Lever is released.
- (3) Remove the saw band and carefully inspect weld for possible deficiency (refer to Weld Inspection section below). If weld is poor, refer to Trouble Shooting section for possible cause.

CAUTION: Imperial Bi-Metal and very narrow carbon saw bands require special treatment to protect a weld from accidental breakage. It is recommended that welds in these saw bands be annealed **BEFORE** removal for grinding, and **AFTER** grinding as well.

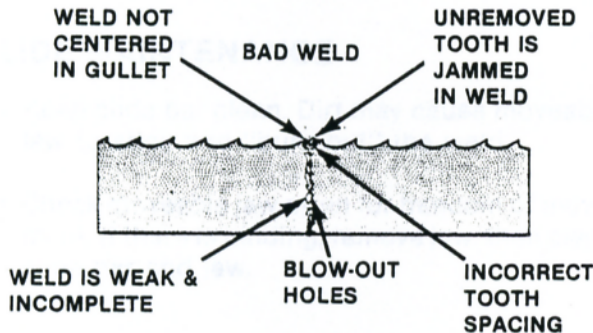
MAKING THE WELD (Continued)

Weld Inspection

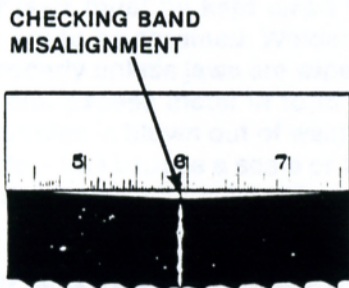
- (1) Inspect weld carefully immediately after removing band from welder. Check to see that: (a) Teeth spacing is uniform; (b) Weld is located in gullet center.



Good Weld Characteristics.



Bad Weld Characteristics.



Checking Band Misalignment.

- (2) Major jaw misalignment is easily noted from weld appearance. Refer to Trouble Shooting section if weld is imperfect.

Welder Jaw Clean-Up

- (1) It is very important that welder jaws be kept clean at all times. That means jaws and inserts must be wiped or scraped clean after every weld.

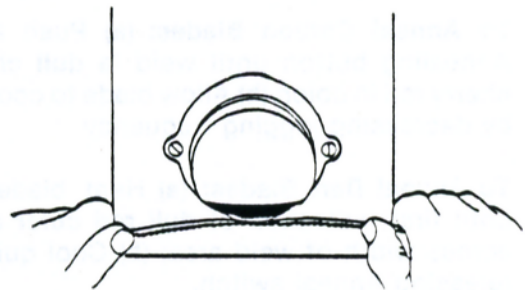
- (2) Clean welder jaws help insure better welds by:
(a) Holding proper alignment; (b) Preventing flash from becoming embedded in band; (c) Preventing shorts or poor electrical contact.

CAUTION: This welder is designed for intermittent use. Overheating may occur if repeated welding occurs during a short period of time.

GRINDING & ANNEALING WELDED BANDS

Grinding

- (1) Use the grinding wheel to prepare blade for welding, and to remove flash from weld. Flash on both weld sides must be ground off to blade thickness (weld should then pass freely through the band gage).
- (2) The grinder switch pilot light is provided as a safety feature since it may be difficult for operator to visually ascertain if grinding wheel is rotating. This light shines when grinding motor is running.



Using the Grinding Wheel.

WARNING: Keep hands away from the rotating grinding wheel. The shining pilot indicates when grinder motor is running and grinder wheel rotating.

- (1) Dress the saw band after welding to remove excess metal from weld flash. With teeth facing outward, grind welded area down to same thickness as remainder of band. **Handle the band carefully; welds are brittle before being annealed.**

Continued Next Page

GRINDING & ANNEALING WELDED BANDS (Continued)

- (2) Grind weld carefully and observe these precautions: (a) **Do not** hit saw band teeth; (b) **Do not** grind deeper than band thickness; (c) **Do not** burn or overheat weld area; (d) **Do** remove flash from band's back edge; (e) **Do** grind off any flash or "stub" teeth projecting beyond normal set or height of other teeth; (f) **Do** check weld thickness by passing it through correct band thickness gage.

Annealing

- (1) When a band is heated with the butt-welding process, steel at point-of-weld "air-hardens" and becomes brittle. The Annealing switch is used to "anneal" the weld by reheating it -- this returns band to an approximation of its original condition.
- (1) Swing Weld Lever completely upward to "anneal" position (drag spring bend holds lever in place). Then: (a) Clamp band between welder jaws; (b) Carefully follow annealing instructions below:
- **To Anneal Carbon Blades:** (a) Push and jog Annealing button until weld is **dull cherry** to **cherry red** in color; (b) Allow blade to cool slowly by decreasing jogging frequency.
 - **To Anneal Dart Blades:** (a) Heat blade slowly until first indication of **dull red color** appears across width of weld area; (b) Cool quickly by releasing Anneal switch.

CAUTION: Overheating will damage band temper. Always shade weld area with a hand because desired color may not be visible with normal lighting conditions.

- **To Anneal Imperial Bi-Metal Blades:** (a) Jog Annealing switch so band heats slowly until weld just begins to emit light (**dullest red** color); (b) Cool weld quickly by releasing annealing button. Follow this procedure both **before** and **after** grinding Imperial Bi-Metal blades.

CAUTION: Overheating will damage band temper. Always shade weld area with a hand because desired color may not be visible with normal lighting conditions.

MAINTENANCE

LUBRICATION

- (1) Lubricate weld force selector cam and all miscellaneous pivot points every 6 months. Interval between lubrication may be shortened or lengthened depending on amount of dust and dirt in operating area.
- (2) Grinder motor normally will not require lubrication for several years.
- (3) Use ASTM Grade 215, Union 76, UNAX-RX 215, or equivalent oil on all lubrication points.

SLIDE MAINTENANCE

- (1) Keep slide bar clean. Dirt may cause moveable jaw to stick and "burn out" the weld.
- (2) Check moveable jaw often for freedom of movement. If there is binding, remove jaw, then clean slide bar and jaw.

WELDER JAW MAINTENANCE

- (1) Welder jaws must be kept clean if consistent results are to be obtained. Welder will not perform properly unless jaws are wiped clean after each weld. Excess metal in form of incandescent particles is blown out of weld during welding cycle -- this causes a scale or flash to build on welder jaws.

JAW ALIGNMENT

- (1) Welder jaws are aligned at the factory and do not require further adjustment. Replace both welder jaws if either jaw becomes damaged.

JAW GAP, ELECTRICAL CUT-OFF & UPSET FORCE ADJUSTMENTS

- (1) Incomplete and "burned out" welds result from incorrect adjustments. If weld cycle is cut off too quickly, the weld will be incomplete (low heat produces a weak weld which may be only partly joined). A weld cycle lasting too long produces excessive heat which will result in a "burned out" weld (excess molten metal around discontinuous joint).

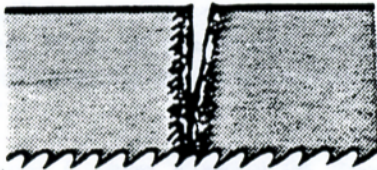
WARNING: ALWAYS DISCONNECT ELECTRIC POWER TO WELDER BEFORE MAKING ADJUSTMENTS.

- (2) To adjust cut-off point, insert an Allen wrench through slide casting and into adjusting set screw.
- (3) For all adjustments, follow procedures outlined in Field Alignment & Adjustment portion of Installation section.

TROUBLE SHOOTING

MISALIGNED WELD

- (1) **Cause** -- Dirt or scale on jaws or blade. **Solution** -- Clean with #120 emery cloth.
- (2) **Cause** -- Blade ends not cut off squarely. **Solution** -- (a) Shear properly; (b) Replace knives in blade shear.
- (3) **Cause** -- Worn jaws or insert. **Solution** -- replace jaws or insert.
- (4) **Cause** -- Jaws not aligned correctly. **Solution** -- Replace jaws and/or slide bar.
- (5) **Cause** -- Blade not clamped correctly. **Solution** -- Refer to Saw Blade Alignment instructions in Operation section.



Misaligned Weld.

MISALIGNED WELD -- BLADE ENDS ARE OVERLAPPED

- (1) **Cause** -- Jaw Weld Force control set for wider blade than being used. **Solution** -- Adjust correctly.
- (2) **Cause** -- Jaws not aligned correctly. **Solution** -- Replace jaws and/or slide bar.



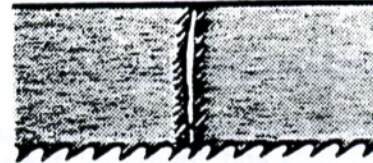
Overlapped Weld.

WELD BREAKS WHEN USED

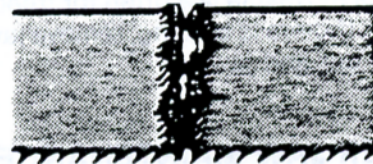
- (1) **Cause** -- Weld not annealed correctly. **Solution** -- Refer to Annealing Welded Band instructions in Operation section.
- (2) **Cause** -- Weld has been ground too thin. **Solution** -- Refer to Grinding Welded Band instructions in Operation section.

INCOMPLETE WELD (Joint Not Complete or Has "Blow Holes")

- (1) **Cause** -- Incorrect initial set-up. **Solutions** -- (a) Initial jaw gap (Weld Lever position) not set correctly; (b) Weld Force control not set correctly.
- (2) **Cause** -- Improper clamping procedures. **Solution** -- Refer to Saw Blade Alignment instructions in Operation section.
- (3) **Cause** -- Defective cut-off switch may not break circuit at end of welding operation. **Solution** -- Replace weld cutoff switch.



Incomplete Weld.



Burned Out Weld.

- (4) **Cause** -- Cut-off switch not adjusted correctly. **Solution** -- Refer to Jaw Gap at Electrical Cut-Off instructions in Installation section.
- (5) **Cause** -- Jaw movement obstructed by kinked jaw cable or tangled wires. **Solution** -- Bend cable or untangle wires.

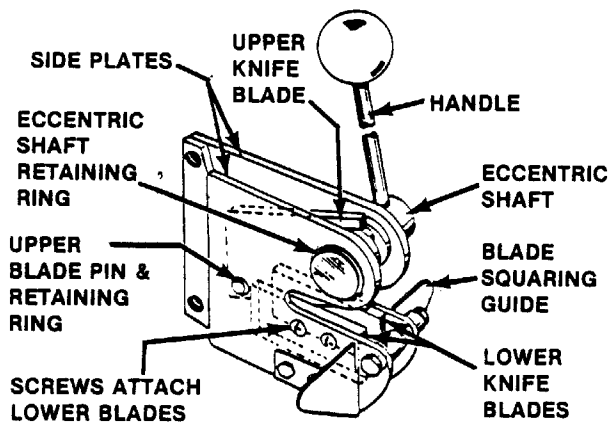
BRITTLE WELDS

- (1) **Cause** -- Incorrect annealing heat. **Solution** -- Bring weld up to correct color as described in Annealing Welded Band instructions in Operation section.
- (2) **Cause** -- Scale or oil on weld. **Solution** -- Clean weld area properly.

ACCESSORIES

BLADE SHEAR

- (1) This unit has cutter blades which are easily replaceable. Disassemble by removing snap rings from pivot pin and eccentric disk, then remove retaining screws attaching lower blades.

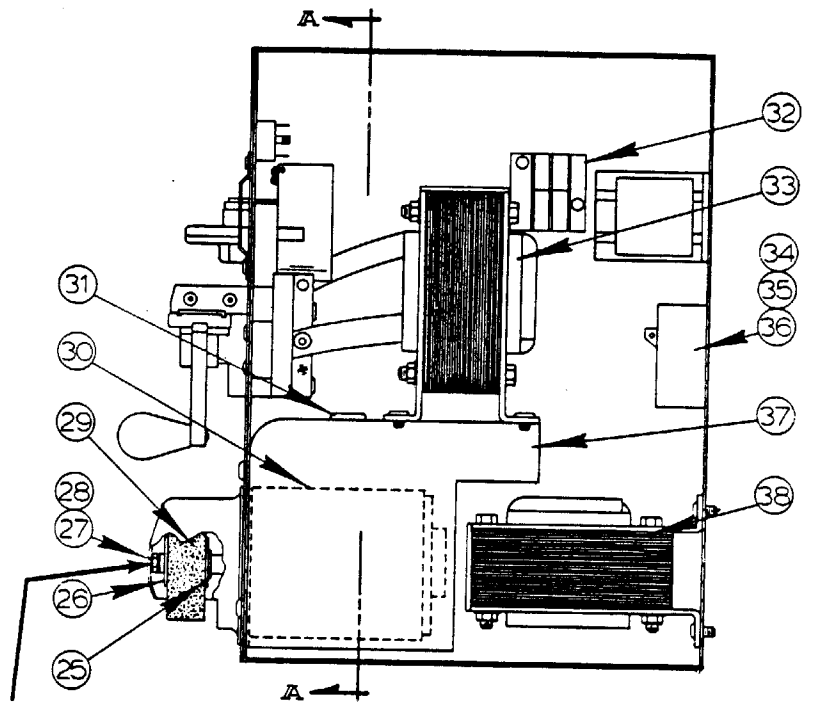
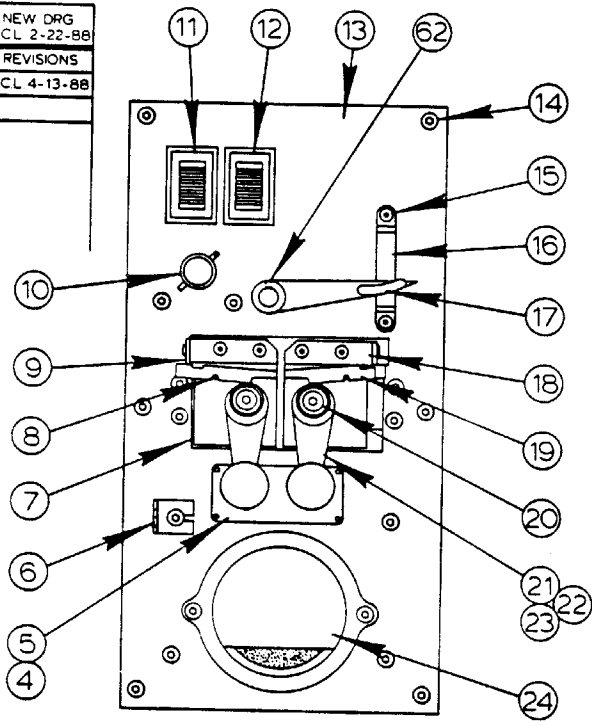


Blade Shear Features.

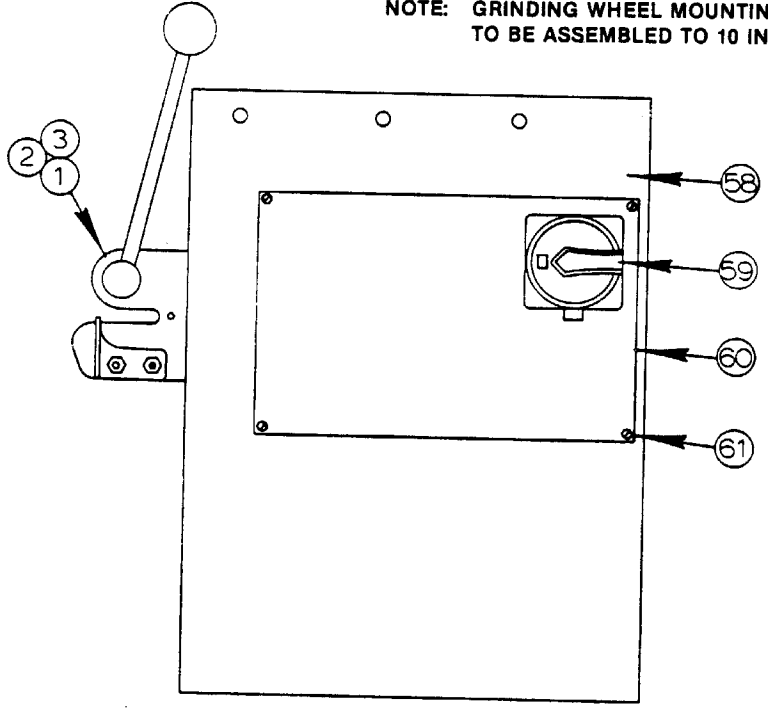
BUTTWELDER ASSEMBLY

INDEX NO. Ref.	PART NO.	DESCRIPTION	UNITS PER ASS'Y
1	081-318073	DBW-15 Buttwelder Assembly	1
2	091-989061	. Blade Shear Assembly (See Detail).....	1
3	091-211276	. Screw, Rd. Hd. Mach. 5/16-18NC x 3/4.....	2
4	091-756627	. Nutsert 5/16-18NC.....	2
5	091-994004	. Escutcheon (Specifications).....	1
6	091-756122	. Screw, Rd. Hd. Drive #6 x 1/4.....	4
7	094-144060	. Blade Gauge.....	1
8	091-199067	. Weilder Jaws (Order As A Unit).....	1
9	091-210674	. Pin.....	2
10	091-733741	. Insert Bearing.....	2
11	091-748517	. Knob.....	1
12	091-748509	. Grinder Motor Switch.....	1
13	095-132213	. Anneal Switch.....	1
14	091-983494	. Panel Assembly.....	1
15	091-983445	. Screw, Button Hd. Soc. 1/4-20NC x 1/2.....	A.R.
16	091-198804	. Screw, Button Hd. Soc. #8-32NC x 1/2.....	10
17	091-759191	. Drag Spring.....	1
18	091-210666	. Handle.....	1
19	090-386608	. Line-Up Guide.....	2
20	090-181512	. Jaw Insert.....	2
21	093-155034	. Shoulder Screw.....	2
22	091-748533	. Cam And Handle.....	2
23	091-983684	. Knob.....	2
24	094-143658	. Screw, Button Hd. Soc. 1/4-20NC x 3/4.....	2
25	093-172864	. Grinder Wheel Guard.....	1
26	091-770628	. Retaining Ring.....	1
27	091-992099	. Fender Washer.....	2
28	091-993006	. Nut, Hex Jam 3/8-24NF (Left Hand).....	1
29	113-065015	. Washer, Flat 1/4 Wrought (If supplied).....	1
30	091-770412	. Grinding Wheel.....	1
31	091-074294	. Electric Motor.....	1
32	091-745224	. Grommet.....	1
33	094-154499	. Terminal Block.....	1
	094-151263	. Transformer (208V).....	1
	091-385617	. Transformer (240V).....	1
34	091-757674	. Fuse Block.....	2
35	091-385625	. Fuse.....	2
36	095-135455	. End Section.....	1
37	094-083839	. Bracket Assembly.....	1
38	091-040303	. Transformer (Above 240V).....	1
39	091-751487	. Spring.....	1
40	091-991141	. Spring Anchor.....	2
41	135-095503	. Nut, Hex. Jam 1/4-20NC.....	2
42	091-207969	. Tension Adjusting Lever.....	1
43	094-153046	. Screw, Soc. Hd. Shoulder 1/4-20NC x 3/8.....	1
44	106-063134	. Switch Mounting Bracket Assembly.....	1
45	106-063399	. Insulator.....	1
46	091-983601	. Tension Spring.....	1
47	091-729251	. Screw, Button Hd. Soc. 1/4-20NC x 7/8.....	1
48	091-752618	. Switch.....	2
49	091-983767	. Jaw Gap Spacer.....	2
50	091-998112	. Screw, Button Hd. Soc. #6-32NC x 3/8.....	6
51	093-154789	. Screw, Button Hd. Soc. 1/4-20NC x 1-1/2.....	4
52	091-730630	. Slide Bar Assembly.....	1
53	091-984294	. Slide Casting.....	1
54	093-154763	. Screw, Soc. Set 1/4-20NC x 1-1/4.....	2
55	093-166015	. Frame Casting.....	1
56	091-757203	. Tension Adjustment Cam (Includes Pin).....	1
57	095-135430	. Actuator Weldment.....	1
58	091-751057	. Buttwelder Box Assembly.....	1
59	091-748459	. Safety Switch.....	1
60	091-994707	. Side Cover.....	1
61	091-984104	. Screw, Pan Hd. Self-Tap #10-24NC x 5/16.....	4
62		. Screw, Soc. Set #10-24NC x 1/4.....	1
Following Not Shown:			
	106-065022	. Tag (Caution).....	1
	091-750711	. Wire (14" W/.250 Spade).....	5
	071-756159	. Instructions/Parts Manual.....	1
	091-760621	. Ground Wire (4" W/.250 Ring Terminal Both Ends; Ground Wire Added).....	1
For Machine Mounted Units:			
	091-286120	. Welder Panel Support.....	2
	091-983494	. Screw, Button Hd. Soc. 1/4-20NC x 1/2.....	2
	091-289686	. Conduit Sub-Assembly.....	1

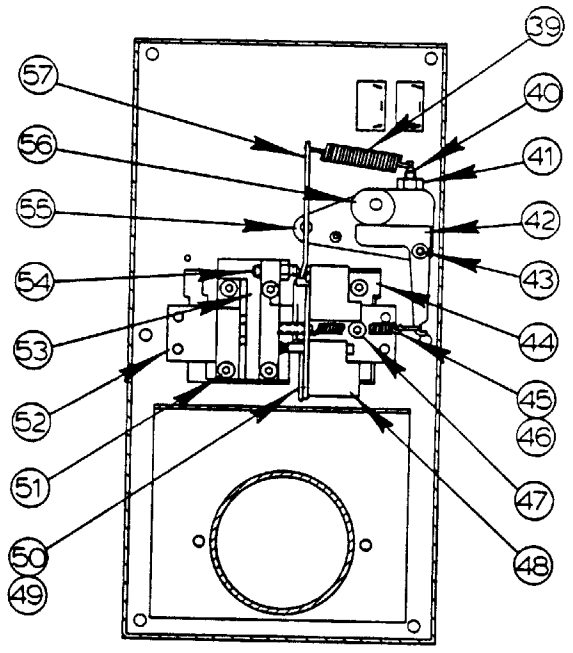
NEW DRG
SCL 2-22-88
REVISIONS
SCL 4-13-88



NOTE: GRINDING WHEEL MOUNTING NUT TO BE ASSEMBLED TO 10 IN./LBS.



RIGHT SIDE VIEW



SECTION A-A

NOTE: SOME PARTS MAY NOT APPLY TO EVERY UNIT.

MODEL FIRST MACH. LAST MACH.
DBW-15 471-88101

BUTTWELDER ASSEMBLY

H1-13.10

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