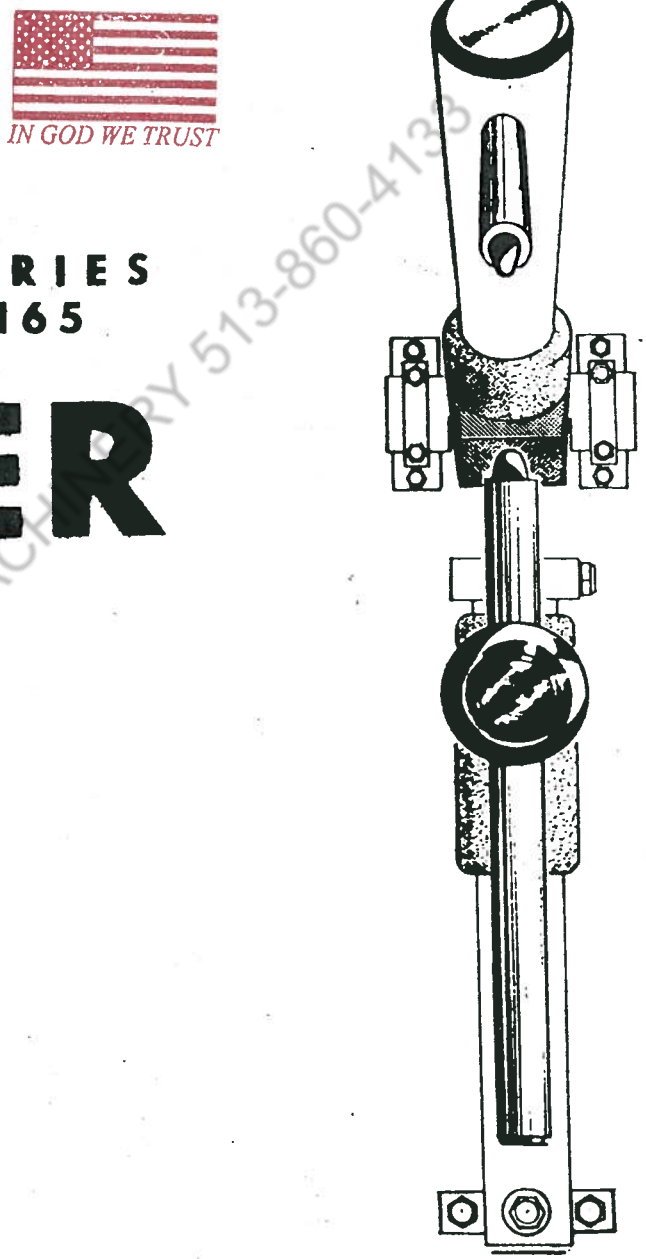
WESTERN ARCTRONICS



IN GOD WE TRUST

SEMI-AUTOMATIC

SPOT WELDER

SERIES 165

Operating and Service Instructions

0-19 270

OPERATING INSTRUCTIONS-SEMI-AUTOMATIC SPOTWELDER

(All Models, S/N 2124 through 7 HK 056 Dwg. 10808 and #7 HK 057 and up Dwg. 10908)

1.0 Uncrate welder. Check to be sure the following parts are included with the welder.

- 1.1 Footswitch with cord and plug attached.
- 1.2 Set of arms.
- 1.3 Set of tip holders, tips and water hoses.

2.0 PRE-OPERATIONAL REQUIRMENTS

- 2.1 Install arms (DO NOT install tip holders, tips and hoses at this time.)
- 2.2 Adjust vertical throat distance (arms center-to-center) as required.
- 2.3 Set TEST/OFF/OPERATE switch to 'OFF' position.
- 2.4 Connect footswitch.
- 2.5 Connect to power source.
- 2.6 Set range switch to lowest (#1) position.
- 2.7 Set timer to approximately 60 cycles.

3.0 ADJUSTMENT

- 3.1 Connect air supply and adjust regulator to approximately 35-40 lbs.
- 3.2 Adjust pressure switch to approximately 50 lbs.
- 3.3 Set TEST/OFF/OPERATE switch to TEST position.
- 3.4 Depress footswitch slowly to mid-travel position until arms close.
  - 3.4.1 Note: two seperate switches are incorporated in the footswitch assembly. The one which closes at the mid-travel position operates the water solenoid valve and air cylinder which causes the arms to close; when fully depressed, the second switch section closes, allowing the dequence to continue through its cycle.
- 3.5 Slowly reduce the pressure switch setting until indicator lamp illuminates.
- 3.6 Release footswitch.
- 3.7 Increase pressure switch setting very slightly.
- 3.8 Depress footswitch to mid-travel position.
- 3.9 Readjust pressure switch setting (Ref. step 3.5)
- 3.10 Arm travel speed adjustment.
  - 3.10.1 If arm travel speed is too fast or too slow, adjust at this time by readjusting the flow control screw setting on the air cylinder valve block.
  - 3.10.2 CAUTION: If cylinder retract speed is too fast, damage to the air cylinder may result. A minimum time of ½ second is recommended.
- 3.11 Disconnect air supply.
- 3.12 With arms parallel, install tip holders, tips and hoses and adjust tip holders until tips make contact.
- 3.13 Connect air supply (which raises upper arm) and reduce tip spacing ¼ (one fourth) inch by adjusting tip holders.
- 3.14 Connect water supply. (Supply pressure should not exceed 20 lbs.)
- 3.15 Depress footswitch to maximum down position.
  - 3.15.1 Verify water flows.
  - 3.15.2 Verify indicator illuminates for approximately 1 second and extinguishes.
  - 3.15.3 Release footswitch-arms open.

4.0 FUNCTIONAL TEST

4.1 Swithc TEST/OFF/OPERATE switch to OPERATE.
4.2 Place work between tips.
4.3 Depress footswitch to first (mid-travel position).
4.4 Depress footswitch to maximum down position.
4.5 4.4.1 Indicator illuminates, weld is made.
4.5 Release footswitch.
4.5.1 Arms retract.

5.0 OPERATION ADJUSTMENTS

5.1 Once steps 2.1 through 4.5 have been accomplished, individual adjustments in pressure, arm travel speed, etc. may be made with tip holders and tips installed. (Refer to Step 3.10.2)
5.2 Squeeze pressure at the tips can be controlled by varying air pressure at the regulator. (Increasing regulator pressure increases tip pressure). If regulator pressure is changed, this directly affects arm travel speed and pressure switch adjustment. Consequently, any change in regulator pressure will require re-adjustment of pressure switch and may require readjustment of air cylinder flow control.

6.0 OPERATING INSTRUCTIONS

6.1 The HEAT SWITCH has settings from 1 to 5 on welders below the 40 KVA size and from 1 to 7 on the 40 KVA size. the knob with the pointer is used to set the desired heat for welding. Be sure the pointer is pointing directly to a number and not between the numbers. The best rule to follow for setting this switch is to test-weld by starting at the lowest heat you think is needed to get the desired weld. If weld is not good enough, the pointer should be turned to the next higher number and increased as necessary to secure the best weld. If the metal burns badly and leaves a depression with rough surface and sparks fly from the weld, it is an indication that the heat is too high, therefore, the pointer should be turned back to a lower number until this does not occur.

6.2 The WELD TIME TIMER should always be set to the lowest number of cycles possible to secure a good weld. To increase the cycles on this timer is to prolong the time the heat is being applied. If the heat is sufficient enough to liquify the metals and fuse the pieces together, a hot spot will occur with no weld. The prolonged weld time is hard on the tips and will cause them to burn which will necessitate dressing frequently. Always remember to use the highest heat number possible on the HEAT SWITCH and the lowest possible number of cycles on the WELD TIMER to g et the desired weld.

6.3 Select the material you intend to weld and set the heat switch and the timer dial according to above instructions and with the toggle switch on OPERATE position, place the material between the tips with the metal resting on the lower tip and press the footswitch. The welder should complete one weld cycle and stop with upper arm in lowered position until footswitch is released.

6.3.1 NOTE: If the weld is not good enough and the indications are that the metal has not fused together, you should se the HEAT SWITCH TO THE NEXT HIGHEST NUMBER ON THE DIAL.

6.4 Remember that the best welds are obtained at the lower cycle periods of the weld timer rather than increasing the cycle until the metal has been heated at the low heat setting of the HEAT SWITCH. Of course, the thicker the metal the longer it takes to heat through the metal sufficiently to make the metal fuse together. If the spot appears to be indented too much and the cooled spot appears to be thin, it is evidence of too much air pressure and the pressure should be reduced by backing the guage down by use of the regulator. This in turn will require resetting of the air pressure switch as defined in Section 8.

SEMI-AUTOMATIC SPOTWELDER

(All Serial # 2124 through 7 HK 056 Dwg. 10808 and # 7 HK 057 and up, Dwg. 10908)

1.0 COMPONENT FUNCTION DESCRIPTION.

1.1 Control transformer - 230V to 115V transformer which supplies power for all control circuits.

1.2 TEST/OFF/OPERATE Switch - A double pole double throw switch. One set of contacts switches 230 volt input power to the control transformer. The other set of contacts is in series with the contactor coil. This allows test of the welder without actual weld being performed.

1.3 Indicator lamp - Illuminates during the weld cycle with TEST/OFF/OPERATE switch in either position.

1.4 Timer - Adjustable from 0 to 60 cycles (1 sec.). Determines actual weld time.

1.5 Contactor - Switches 230 volt power to power transformer.

1.6 Footswitch - A two position switch. The first position (mid-travel) energizes the water solenoid valve and air cylinder; the second energizes the weld control circuits through the pressure switch.

1.7 Water Solenoid Valve - When open, allows cooling water to flow through tip holders to cool welding tips.

1.8 Air Solenoid Valve - When open, causes air cylinder to extend and tips to squeeze (depending on air regulator setting).

1.9 Pressure Switch - Closes when preset squeeze tip pressure is reached. Energizes timer and starts weld cycle.

1.10 Range Switch - Connects input power to taps on transformer primary and controls output welding current.

2.0 Operational Sequence (TEST)

2.1 Pre-operational requirements.

2.1.1 Water supply connected.

2.1.2 Unit connected to power source

2.1.3 Foot switch connected.

2.1.4 Air supply connected.

2.1.4.1 Air regulator adjusted (approximately 40 lbs.)

2.1.4.2 Pressure switch adjusted at or slightly below regulator setting.

2.1.5 TEST/OFF/OPERATE switch in TEST position.

2.2 Operation (TEST)

2.2.1 Depress foot switch slowly to mid-travel position.

2.2.1.1 Water solenoid valve opens, cooling water flows.

2.2.1.2 Air cylinder extends, tips squeeze.

2.2.1.3 Pressure switch closes.

2.2.2 Depress foot switch to maximum down position.

2.2.2.1 Timer is energized and starts timing, indicator illuminates.

2.2.2.2 Timer times out, indicator extinguishes. (Simulates weld time).

2.3 Foot switch released

2.3.1 Water solenoid valve closes.

2.3.2 Air cylinder retracts - arms open

2.3.3 Pressure switch opens

2.3.4 Timer resets.

3.0 Operational Sequence (WELD)

3.1 Through 3.1.4.2 - Same as 2.1 through 2.1.4.2

3.1.4.3 TEST/OFF/OPERATE switch in OPERATE position

3.2 Operation (WELD)

3.2.1 through 3.2.1.3 - Same as 2.2.1 through 2.2.1.3

3.2.2 Depress foot switch to maximum down position.

3.2.2.1 Timer is energized, indicator illuminates, contactor closes and weld cycle starts.

NOTE: Do not operate unit without work, between tips when in OPERATE (weld) condition or tips will be damaged

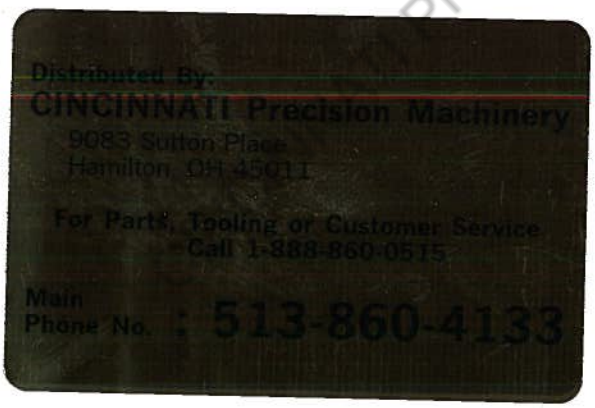
3.2.2.2 Timer times out, timer relay energizes.

3.2.2.2.1 Indicator lamp extinguishes.

3.2.2.2.2 Contactor is deenergized.

3.2.2.2.3 Weld cycle stops.

3.3 Through 3.3.4 - Same as 2.3 through 2.3.4



TROUBLE SHOOTING the SEMI - AUTOMATIC SPOTWELDER

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Footswitch depressed to mid-travel position no water flows, air cylinder extends.	Water supply not connected.	Connect & verify pressure.
	Water solenoid valve defective.	Replace.
Footswitch depressed to mid-travel position - no water flows, air cylinder does not extend.	Unit not connected to power source.	Connect & verify correct voltage.
	Footswitch not connected.	Connect.
	Footswitch defective.	Repair or replace.
	Control transformer defective.	Replace.
Footswitch depressed to mid-travel position - water flows but air cylinder does not extend.	Air supply not connected.	Connect.
	Air regulator not properly adjusted.	Adjust (refer to operating manual).
	Air cylinder valve block defective.	Clean or replace.
	Air solenoid defective.	Replace.
	Air cylinder flow control screw improperly adjusted.	Re-adjust (see operating instructions).
Footswitch fully depressed - water flows, air cylinder extends but no weld is made.	Pressure switch not properly adjusted.	Re-adjust (refer to operating instructions).
	Pressure switch defective.	Repair or replace.
	Timer defective.	Replace.
	*TEST/OFF/OPERATE switch in TEST position (see Note 2).	Switch to OPERATE position.
	*Intermediate relay defective (see Note 1).	Clean contacts or replace relay as required.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
	Contactor defective.	Repair or replace as required.
	Heat range switch improperly positioned between taps.	Verify correct positioning.
Weld cycle will not terminate without releasing footswitch	Timer defective.	Replace timer.
	* Intermediate relay defective. (see Note 1)	Clean contacts or replace relay.
Arm travel speed too fast or too slow.	Flow control screws improperly adjusted.	Re-adjust to give desired arm travel speed.

*Note 1 - On some models this relay is deleted and the contactor is operated by the timer relay.

*Note 2 - This switch only used on units after serial # 2000.

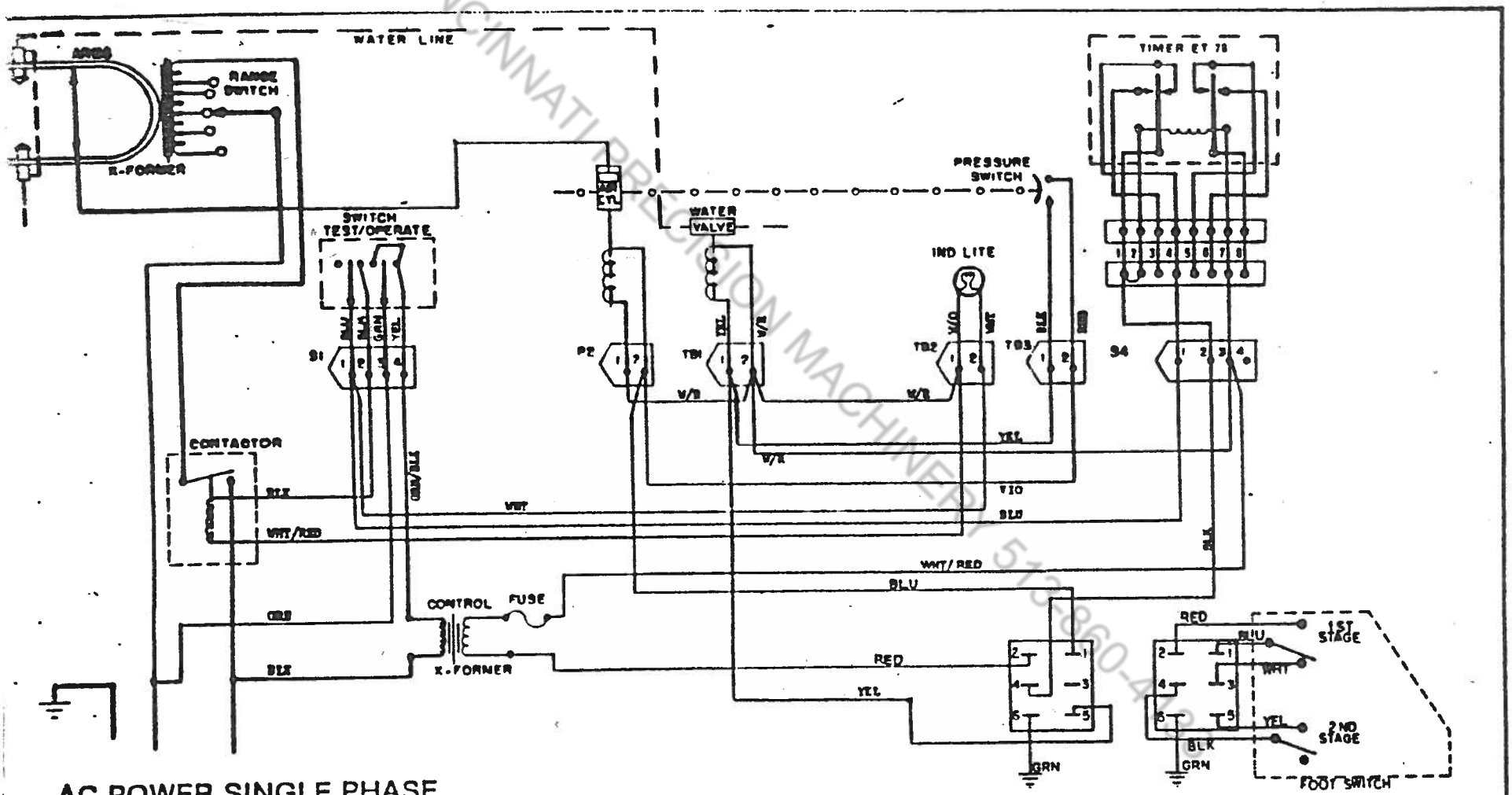
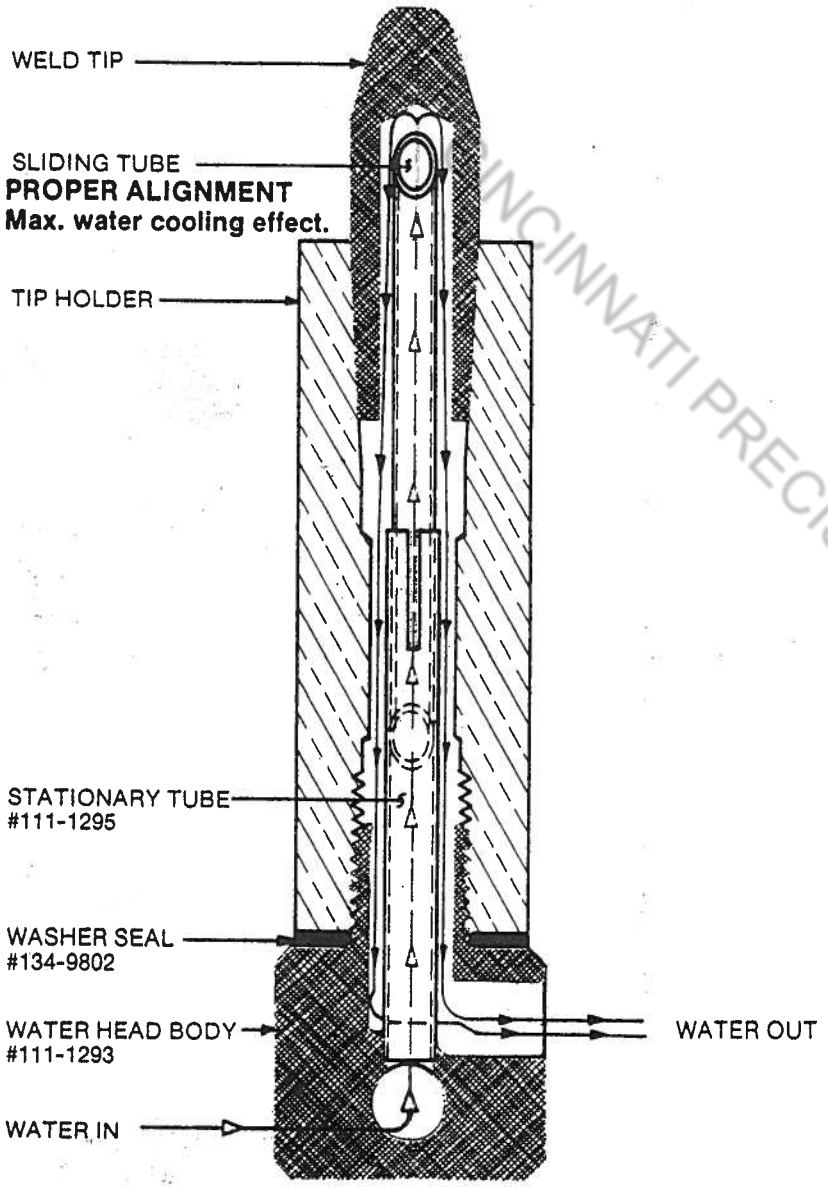

WATER LINE
RANGE SWITCH
X-FORMER
SWITCH TEST/OPERATE
WATER VALVE
PRESSURE SWITCH
TIMER ET 78
IND LITE
CONTACTOR
CONTROL FUSE
X-FORMER
1ST STAGE
2ND STAGE
FOOT SWITCH
AC POWER SINGLE PHASE INPUT
WIRING DIAGRAM
SPOTWELDER MODEL 140 THRU 160 KVA, TYPE "94", 165 SERIES
WESTERN ARCTRONICS
FORT COLLINS, COLORADO
DWG NO. 10908 M

ILLUSTRATION OF WATER FLO N TIP HOLDER/WATER HEADS



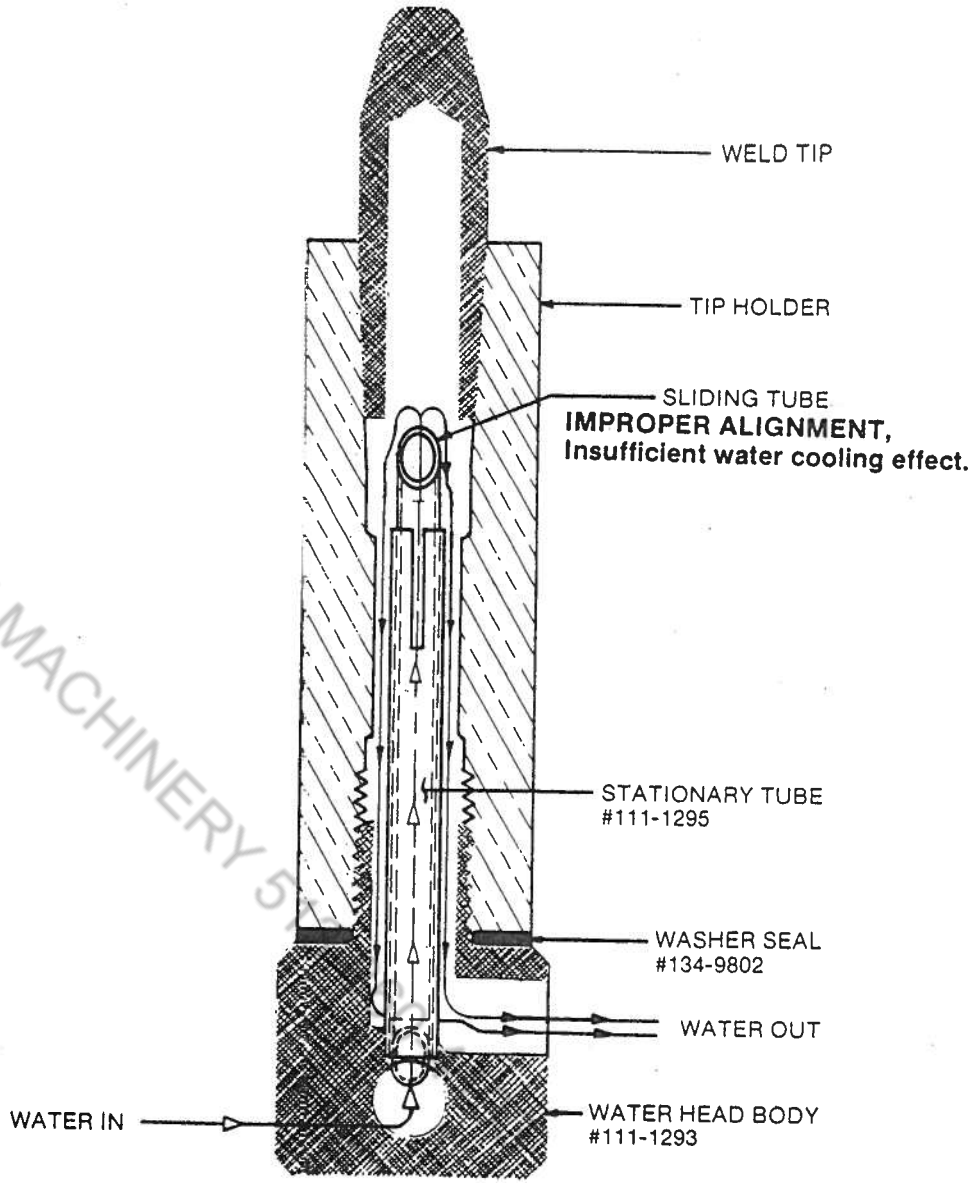


FIG. "A"

Correct Setup for Flat or Low depth Assemblies.
NOTE:

1.) ARMS Do Not travel past parallel line,

2.) LOWER ARM CASTING is at top of Vertical Arm, allowing maximum current to arm.

3. With Arms set-up at minimum distance from each other, Tip Holders have less of their length than current must travel allowing max current flow.

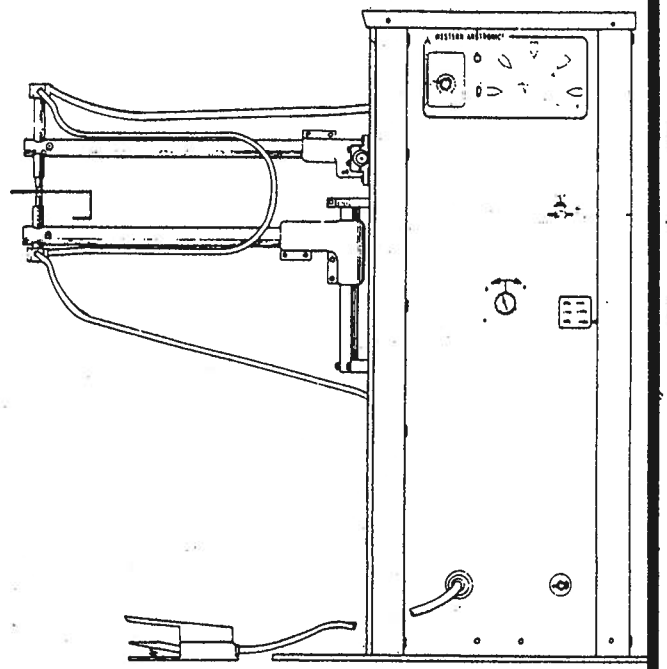


FIG. "B"

Correct set up for welding deep assemblies. Upper Arm does not travel beyond level or parallel line. This requires two 8" Tip Holders.

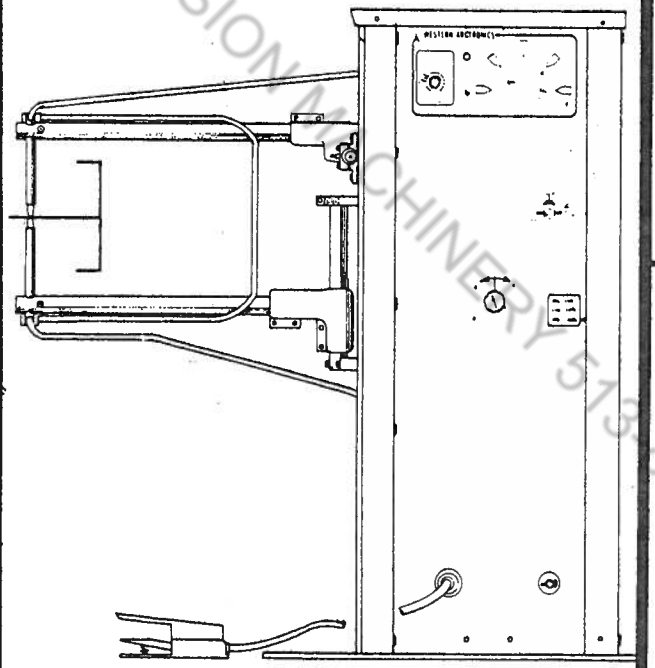


FIG. "C"

INCORRECT SET-UP—Arm travels beyond level (parallel) line. This condition can cause the following failures.

1.) When Arm travels too far, Tip pressure will decrease or Tips will not make firm contact, causing poor welds and "Blow-outs."

2.) Damage to Secondary Straps from severe bending.

3.) Lower casting in inverted position can cause failure of the casting.

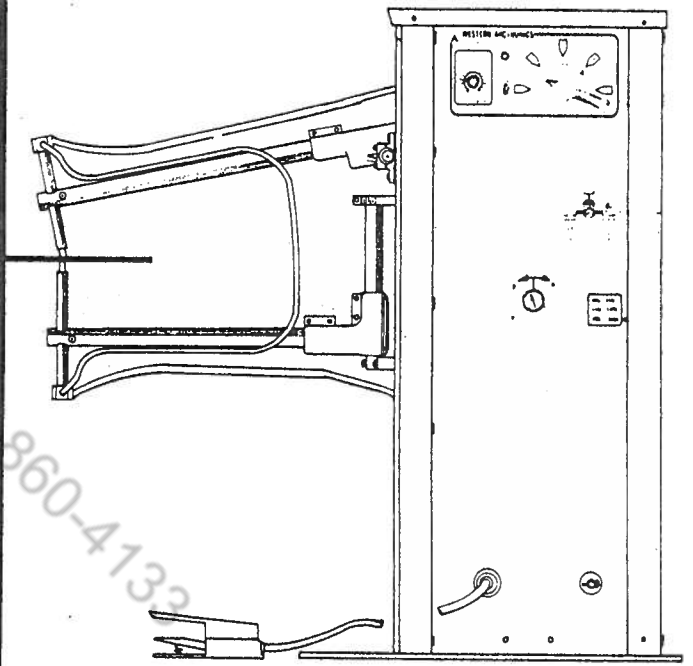


ILLUSTRATION SHOWING PROPER SET-UP OF ARMS/TIP HOLDERS

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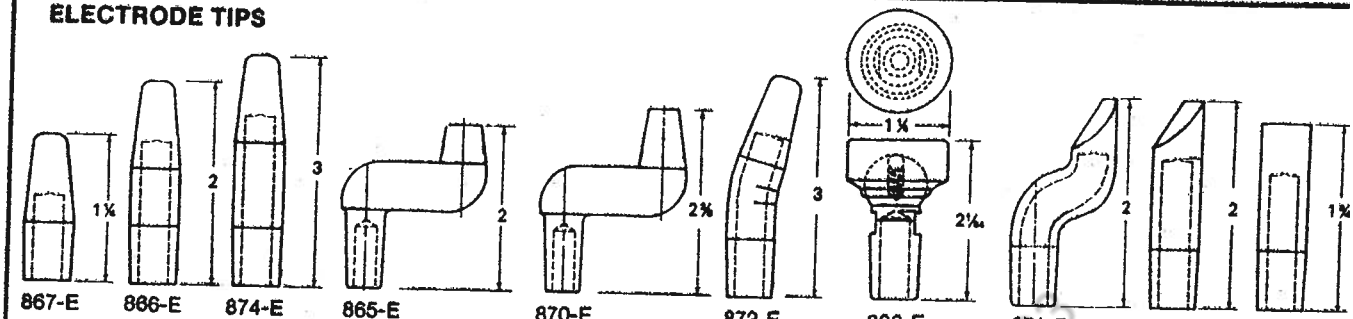
SPOT WELDER ACCESSORIES
1830 LAPORTE AVENUE, FORT COLLINS, COLORADO 805
PHONE (970) 482-7271

ELECTRODE TIPS



867-E 866-E 874-E 865-E 870-E 872-E 868-E 871-E 869-E 873-E

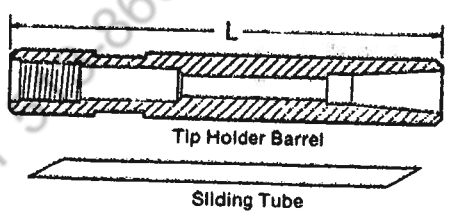
#1 Morse Taper

1202-E 1201-E 1209-E 1200-E 1205-E 1207-E 1203-E 1206-E 1204-E 1208-E

#2 Morse Taper (5 RW)

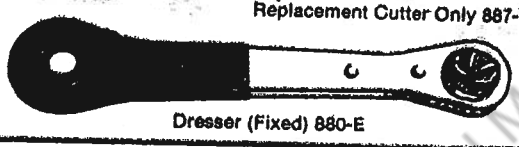
TIP HOLDERS

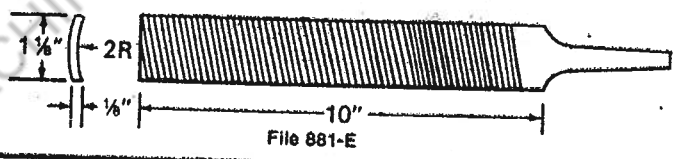
Length "L"	Mini	3"	5"	8"
Model 130 ⅝" dia.	816-E	817-E	818-E	819-E
Model 140 10 ¾" dia.	820-E	821-E	822-E	823-E
Models 15, 30, 40 & 50 1" dia.	824-E	825-E	826-E	827-E
Sliding Tube		856-E	857-E	858-E



*Mini Waterhead, Mini Tip Holders and Tip #215-7902 will insert into a 3" tube or space.

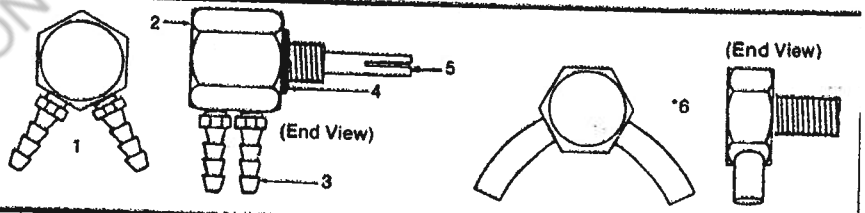
DRESSER — FILE





WATER HEAD ASSEMBLY

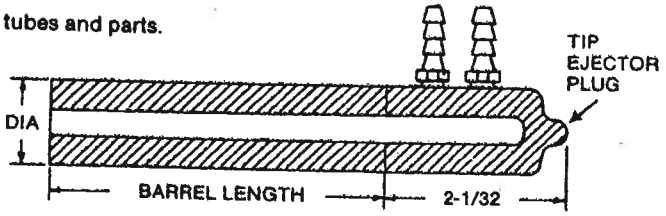
1)	810-E	Complete Assembly
2)	811-E	Water Head Body
3)	812-E	Water Hose Fittings
4)	813-E	Washer Seal
5)	814-E	Stationary Tube
*6)	815-E	Mini Waterhead Assembly

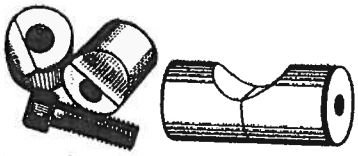


TIP HOLDERS — Tip Ejector Type—Water Cooled

Complete assemblies include waterhead, barrel, nipples, internal tubes and parts.

CATALOG #	BARREL DIAMETER	BARREL LENGTH
#1 Morse Taper		
830-E	¾"	3"
831-E	¾"	8"
832-E	¾"	12"
833-E	1"	3"
834-E	1"	8"
835-E	1"	12"
#2 Morse Taper (5 RW)		
1215-E	¾"	8"
1216-E	¾"	12"
1217-E	1"	3"
1218-E	1"	8"
1219-E	1"	12"



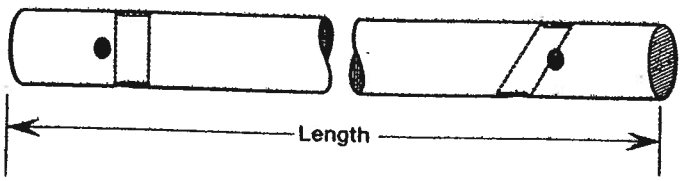


860-E
Lock Assembly for Tip Holder ½" dia. with screw (140-10)

861-E
Lock Assembly for Tip Holder ¾" dia. with screw (15-30-40-50)

ARMS

Model	12"	18"	24"	30"	36"
130 1" dia.	841-E				
140 1-¼" dia.	842-E	843-E	844-E		
10 1-½" dia.	837-E	838-E	839-E		
15 and 30 2" dia.	845-E	846-E	847-E	848-E	
40-50 2½" dia.	849-E	850-E	851-E	852-E	853-E



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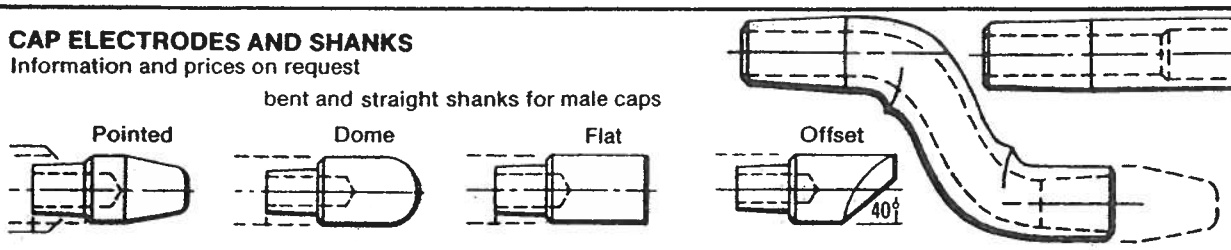
SPOT WELDER ACCESSORIES PHONE (970) 482-7271

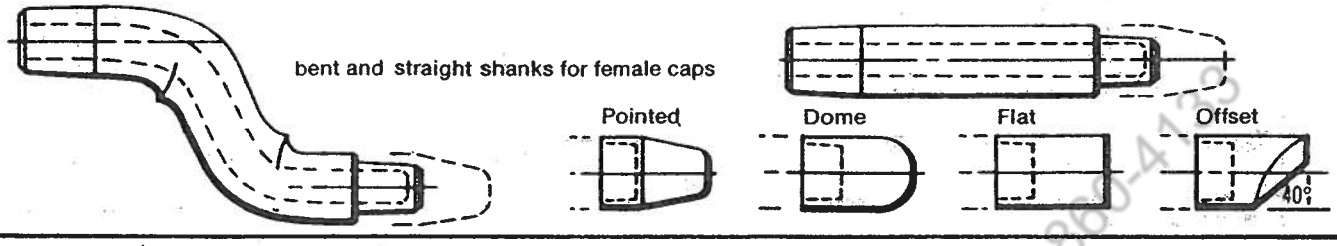
CAP ELECTRODES AND SHANKS

Information and prices on request

bent and straight shanks for male caps

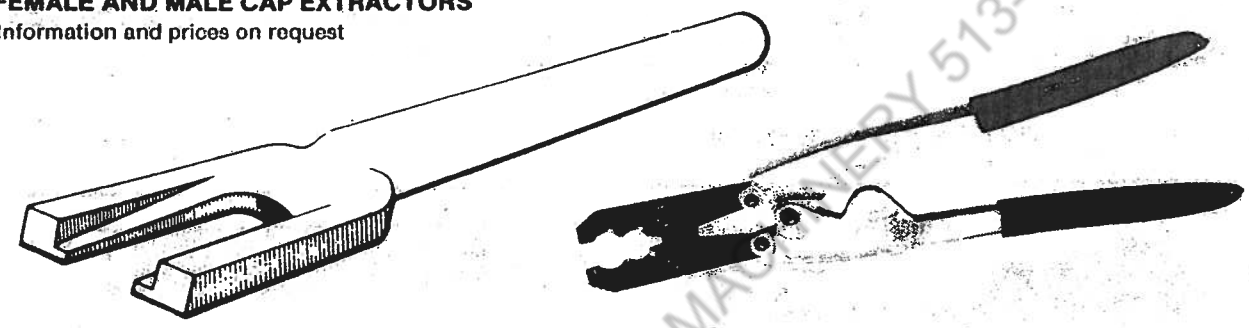


bent and straight shanks for female caps



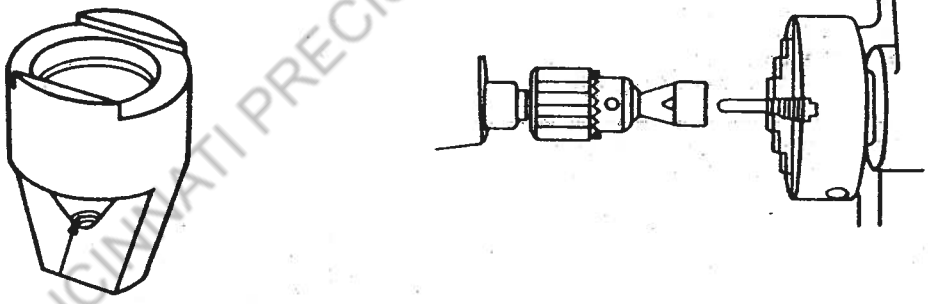
FEMALE AND MALE CAP EXTRACTORS

Information and prices on request

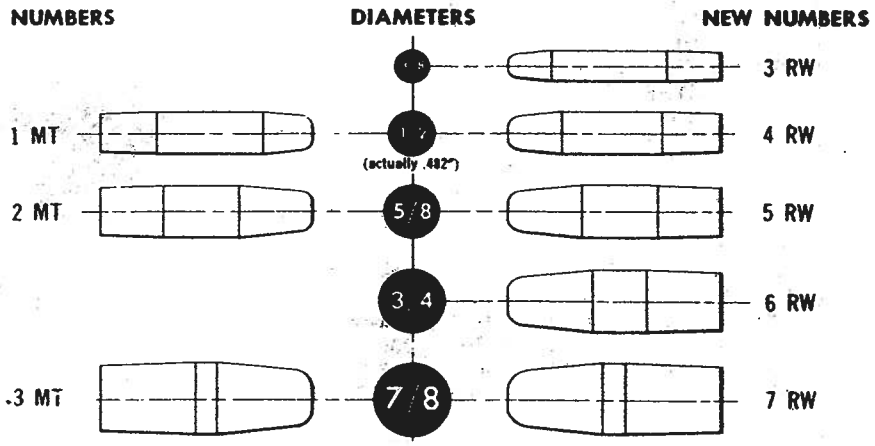


ELECTRODE DRESSER ADAPTER

For use on standard machine shop equipment Information and prices on request



The RWMA tip numbering system has generally replaced the old Morse taper numbers with new "RW" numbers, and has added two new sizes, as the chart illustrates.



DATA SHEET

This Chart shows graphically the importance of Electrode maintenance. This is not only important from the quality of the weld, which is of first importance, also extra load added to the welding machine and equipment. Read the data on the chart, you can then draw your own conclusions.

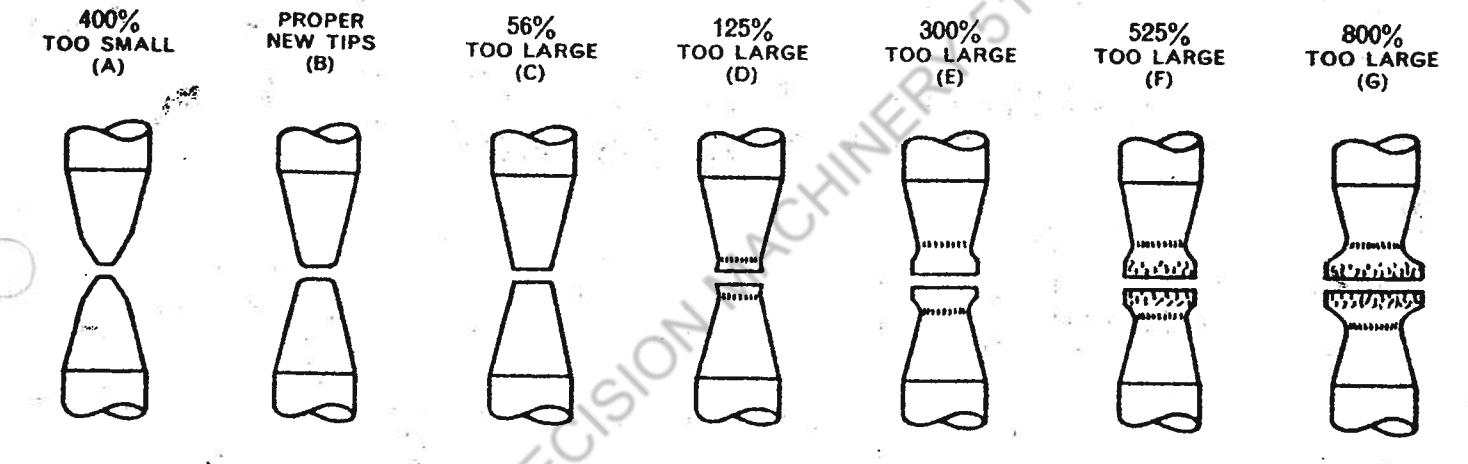
YOU CAN'T AFFORD TO NEGLECT YOUR ELECTRODES!

We can supply you with Tip Files, hand operated Tip Dressers, or Pneumatic Power Driven Dressers. Design or type will depend on your production requirements.

A TIP DRESSER WILL PAY DIVIDENDS!

Keep your Electrodes dressed for maximum production and quality welds.

RESISTANCE WELDING

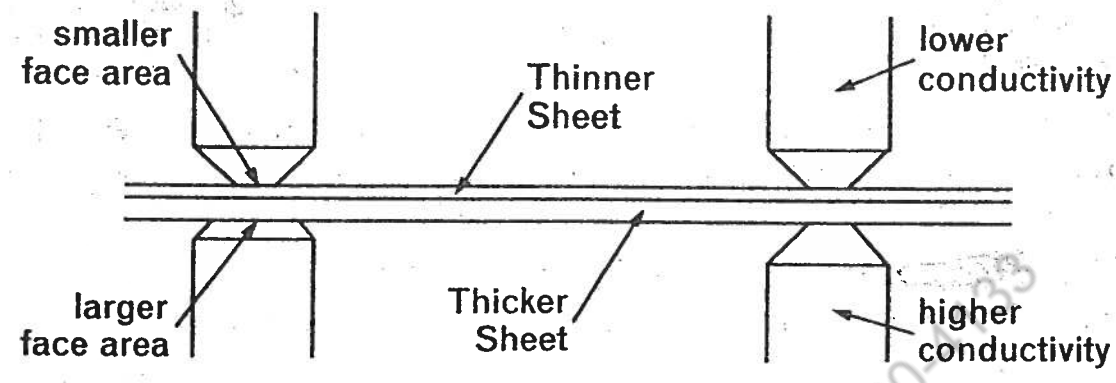


400% TOO SMALL (A)	PROPER NEW TIPS (B)	56% TOO LARGE (C)	125% TOO LARGE (D)	300% TOO LARGE (E)	525% TOO LARGE (F)	800% TOO LARGE (G)
Approx. 1/81 sq. in. at 1/8" Dia.	Approx. 1/20th sq. in. at 1/4" Dia.	Approx. 1/13th sq. in. at 5/16" Dia.	Approx. 1/9th sq. in. at 3/8" Dia.	Approx. 1/5th sq. in. at 1/2" Dia.	Approx. 1/3rd sq. in. at 5/8" Dia.	Approx. 1/2 sq. in. at 3/4" Dia.
2,460 amperes would be required (†)	9,823 Amperes would be required (†)	15,337 Amperes would be required (†)	22,100 Amperes would be required (†)	39,300 amperes would be required (†)	61,350 amperes would be required (†)	88,500 amperes would be required (†)
127,640 lbs. sq. in. pressure (*)	31,960 lbs. sq. in. pressure (*)	20,470 lbs. sq. in. pressure (*)	14,200 lbs. sq. in. pressure (*)	7,990 lbs. sq. in. pressure (*)	5,120 lbs. sq. in. pressure (*)	3,500 lbs. sq. in. pressure (*)
RESULT: Four times too much pressure, current. Very severe indentation and spitting from high current density.	**RESULT:** Correct pressure, current, tips. Excellent weld. This is the size tip (new) for which the pressure time and current are adjusted.	**RESULT:** Only 60% of proper pressure, current. Borderline weld. Lower strength. Last diameter size tolerated unless current and pressure were set between the 1/4 and 5/16 size tips.	**RESULT:** Only 43% of the required pressure and current. Welds would be unacceptable. If the current or time were increased with tips in this condition a large weak weld would result.	**RESULT:** Only 25 % of required current and pressure. No weld would be made if tips were left in this condition.	**RESULT:** Only 16% of required current and pressure. This is a very serious condition and the only cure is to dress the tips back to (B) condition.	**RESULT:** Only 11% of needed current and pressure. This is an absurd (though often seen) condition that only heats a spot.
CORRECTION: Cut pressure to 1/4 Cut current to 1/4						

† Current density required for this gage to be 200,000 amps. per sq. in. Setting is 9,900 amps for condition (B)

(*) Five inch diameter air cylinder A 80 lbs. air pressure—1570 lbs. on ram.

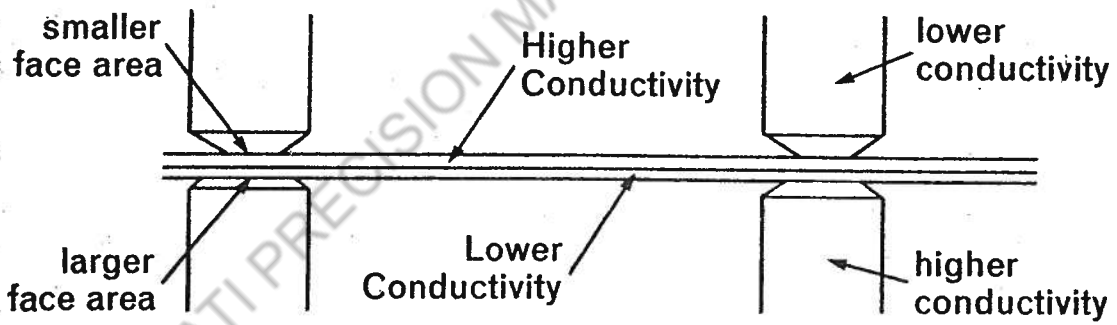
WELDING UNEQUAL THICKNESSES OF SAME MATERIAL



Vary Electrode Faces
Use Same Electrode Materials

Use Equal Electrode Faces
Vary Electrode Materials

WELDING MATERIALS WITH DIFFERENT COMPOSITIONS



Vary Electrode Faces
Use Same Electrode Materials

Use Equal Electrode Faces
Vary Electrode Materials

Fig. #1

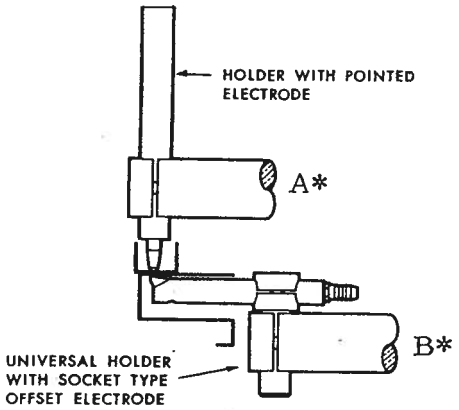


Fig. #2

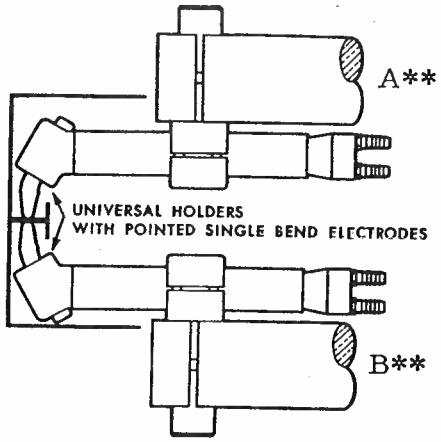


Fig. #3

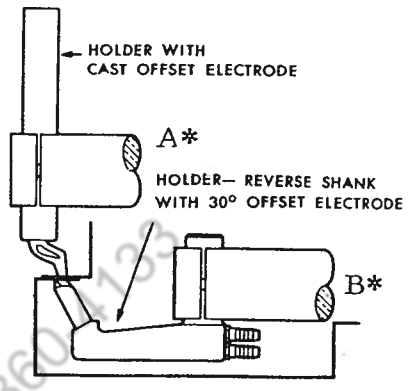


Fig. #4

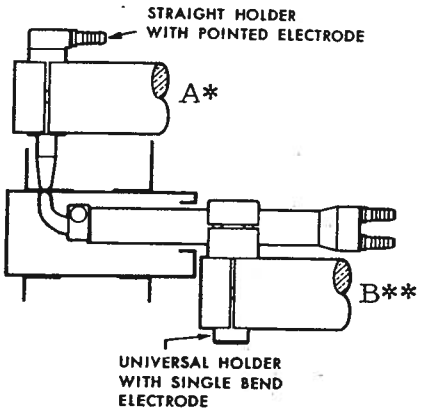


Fig. #5

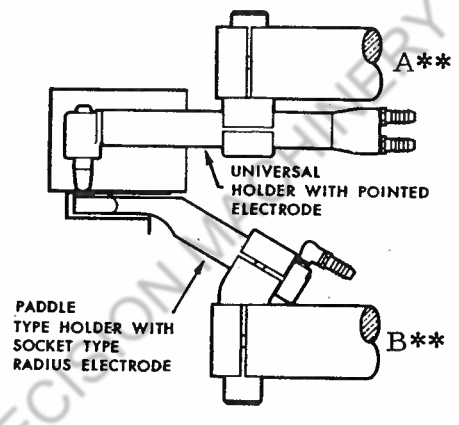


Fig. #6

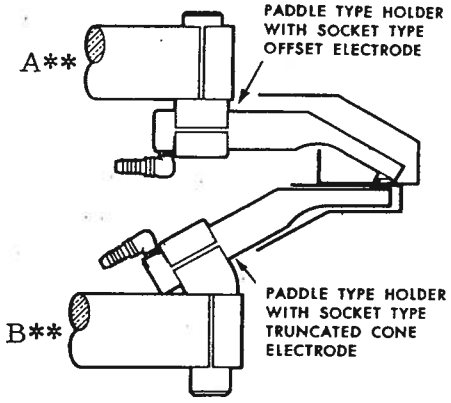


Fig. #7

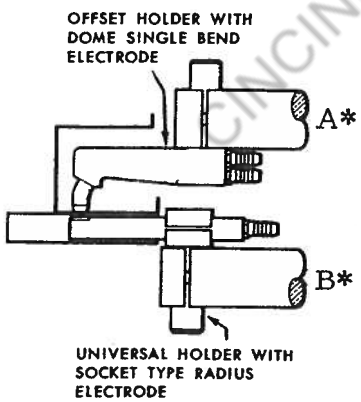


Fig. #8

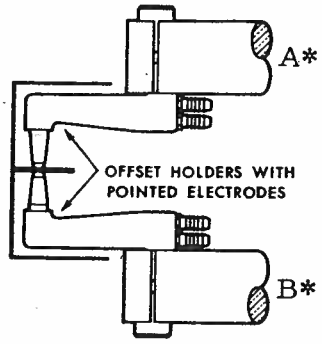


Fig. #9

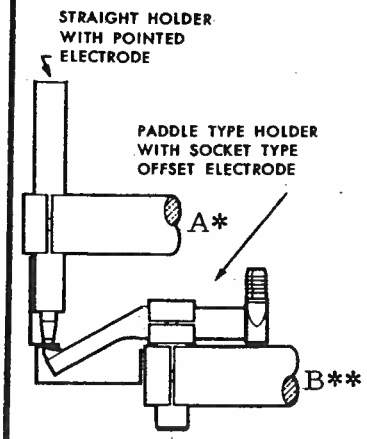
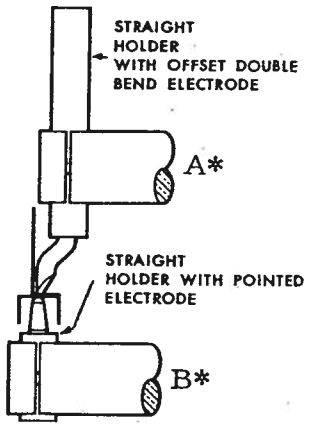


Fig. #10



* Fits Models 140, 15, 30 & 40

** Fits Models 15, 30 & 40

Prices Available On Request
List Fig. # and Letter

DATA SHEET

WELD DEFECTS AND CAUSES

This chart is intended only as a check list of the posslible causes of some of the more common weld defects. The data shown should be used only as a guide and applies basically to two equal thicknesses of mild steel.

AREA OF CAUSE	POSSIBLE CAUSE OF WELD DEFECT		TYPE OF DEFECT: EXPULSION AT WELD INTERFACE	SURFACE EXPULSION ELECTRODE STICKING	ELECTRODE MUSHROOM	LOW WELD STRENGTH	EXCESSIVE WELD INDENTATION	INTERNAL CRACKS IN WELD NUGGET	CRACKS IN PARENT METAL	DISPLACE WELD NUGGET
WELDING CONDITIONS	SQUEEZE TIME—Short		X	X						
	WELD TIME	Short				X				
		Long			X		X	✓		
	HOLD TIME—Short			X				X	✓	
	WELD FORCE	Low	X	X	X		✓	X		
		High			✓	X	X		X	
	WELD CURRENT	Low				X				
		High	✓	✓	X		✓			
WELDING ELECTRODES	ELECTRODE FACE AREA	Small			X	X			✓	
		Large				✓	✓	✓		
	ELECTRODES MISALIGNED			✓						X
	INSUFFICIENT COOLING				X		✓		X	
	POOR HEAT BALANCE			✓		X				X
	CONDUCTIVITY ELECTRODE MATERIAL	Low		X	X					
		High				✓				✓
PARTS WELDED	DIRTY-SCALEY MATERIAL		X	X	✓	✓		X		
	POOR FIT UP		X	✓		✓	X			X
	INSUFFICIENT EDGE DISTANCE		X			✓	✓			
	WELDS TOO CLOSE TOGETHER					X				
	METALLURGY OF MATERIAL WELDED		✓	✓		✓	✓	X	X	
MISC.	POOR HEAD FOLLOW-UP		✓	✓			✓	X		
	WELDER HEAD IMPACTS WORK				X		X			
	POOR VOLTAGE REGULATION		✓	✓						
	POOR AIR PRESSURE REGULATION		✓	✓						

NOTE: Causes Considered Individually

X = MORE PREVALENT ✓ LESS PREVALENT

Tips on Spot Welding Galvanized Steel

Galvanized and other zinc-coated sheet metals will lend themselves to spot welding if certain considerations and procedures are followed.

Zinc is applied to the steel as corrosion resistant material and has very little strength property as compared to steel. Therefore, it is necessary that the zinc is burned away or penetrated through allowing the steel metal sections to spot weld with each other to insure sufficient strength spot welds.

It is therefore necessary that more heat be applied to the tips by increasing the amperage settings on the spot welder. A longer time cycle is also required on zinc-coated metals than on clean metals. This longer time is required to burn through the coatings. Keep in mind that when spot welding two thicknesses of galvanized material there are four layers of zinc to be penetrated before an adequate spot weld can be made. Another factor requiring additional heat to the tips is that zinc has higher conductivity than steel and detours some of the amperage/heat from the weld zone.

Another method to increase the heat for a given spot is to reduce the welding tip contact diameter which increases the amperage per square inch ratio. This concentrates more heat into a smaller area to force penetration.

Another factor in increasing the penetration force is to increase the amount of tip pressure. On air-operated machines this is done by increasing the air pressure regulator and the air pressure switch setting. On foot pedal operated spot welders the adjustment of the micro switch on the foot pedal push rod can be made causing the spring to be depressed an additional distance before the micro switch "fires" the welder. Also on foot pedal operated spot welders, the operator should develop a smooth depressing movement of the foot without stopping the downward movement of the foot because the spot operations start. A smooth follow through to the bottom of the stroke and then hesitating a second or two for the cool section of the weld cycle before lifting the foot to the top of the stroke.

To summarize; galvanized takes more heat and longer heat settings than similar clean metals. Reduced tip contact diameter and increased tip pressure will also help in forcing penetration to the weld area.

Welding Galvanized with the Model 130

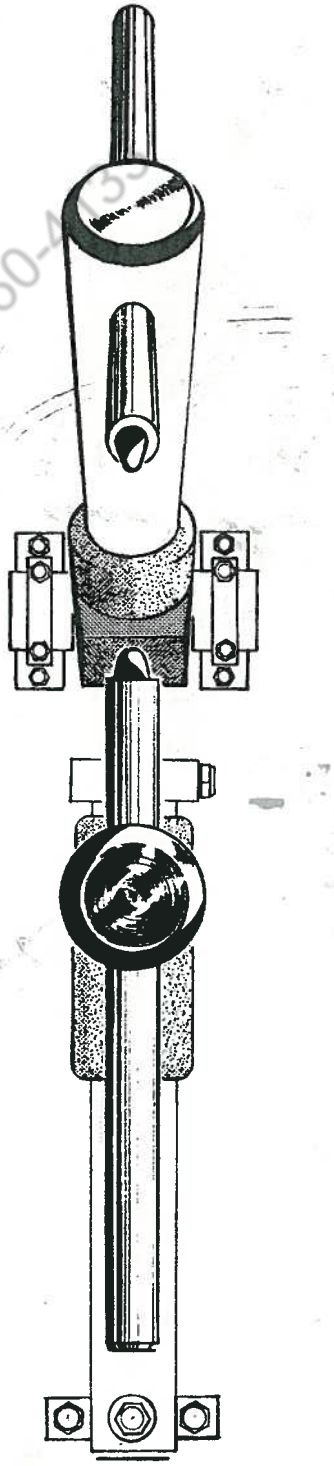
Generally spot welders of 10 K.V.A. or larger should be recommended for welding galvanized. However, the Model 130 can in many cases be used to welding galvanized unless the galvanized zinc coating is quite heavy in thickness. If difficulty on the 130 is encountered, we recommend that in addition to the above suggestions on spot welding galvanized, additional procedures be followed. To increase the amount of heat available from the spot welder the shortest arm distance possible should be set up. The tip contact diameter should be between 1/16" and 3/32" with the standard taper of 45 degrees. The foot pedal should be adjusted to give maximum tip pressure. If inadequate bonding is still encountered, it may be because the voltage drop of power to the machine, or perhaps the galvanized zinc thickness may be too great. To remedy the voltage drop the spot welder should be set as close as possible to the main power source and connected with #6 wire or greater with no other equipment connected to the same lead at the same time.

E01

WESTERN ARCTRONICS

IN GOD WE TRUST

SPOT WELDERS



Parts List

165 SERIES-10 15 30 40 50 KVA

Effective above Ser. No. 2000

PARTS PICTORIAL FOR 40 & 50 KVA SPOTWELDERS
SHOWING UPPER ARM SLIDER VERSION

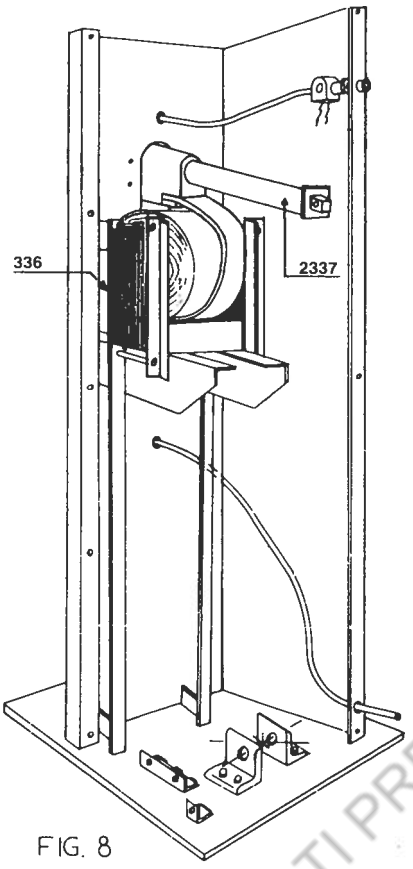


FIG. 8

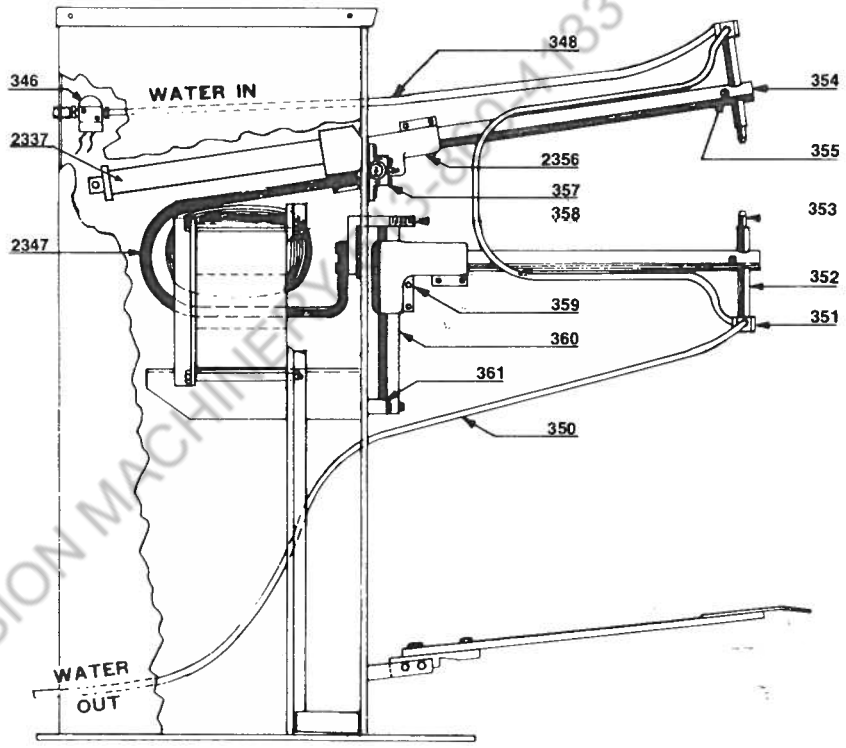


FIG. 9

CAT. #	ITEM	PART NO.	DESCRIPTION	CT	SA	FA
1039E	2337	34742	TUBE ASSEMBLY	X	X	X
1040E	2347a	34758	SECONDARY STRAPS 40 KVA	X	X	X
1041E	2347b	34858	SECONDARY STRAPS 50 KVA		X	X
1042E	2356	34741	ROCKER ARM CASTING, (SLIDER)	X	X	X

WESTERN ARCTRONICS 1828 LAPORTE AVENUE, FORT COLLINS, COLORADO 80521
PHONE (970) 482-7271

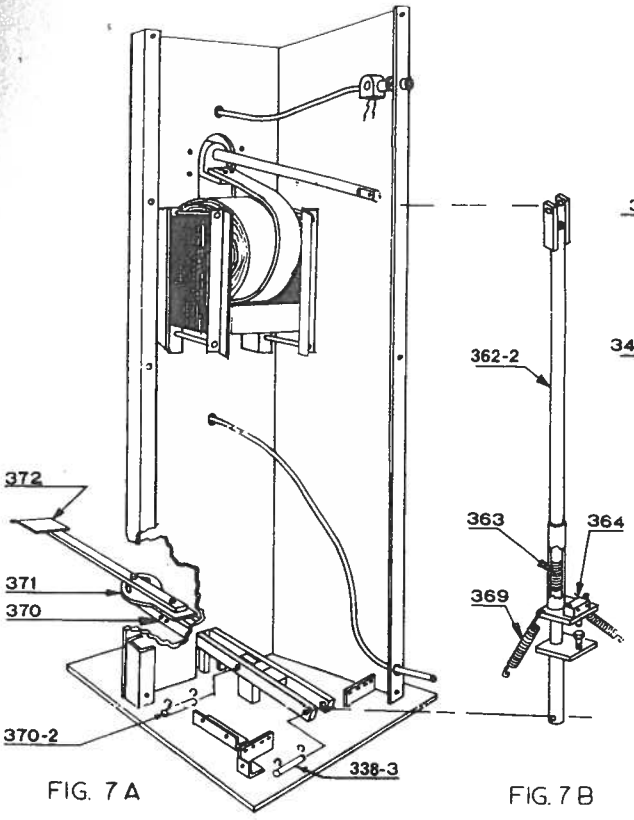


FIG. 7 A

FIG. 7 B

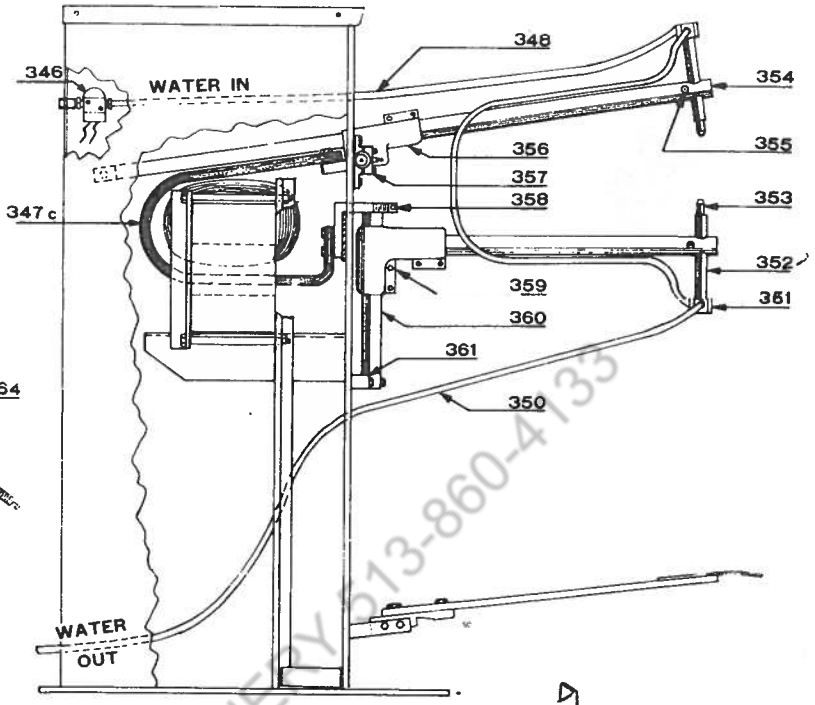
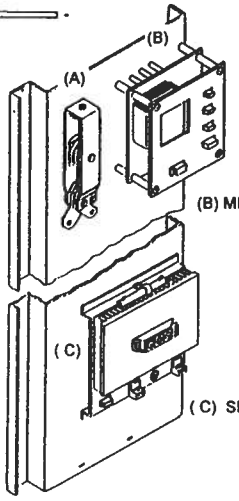


FIG. 4



(A) TWO-STAGE HEATSWITCH *

(B) MICROPROCESSOR CONTROL *

(C)

(C) SILICON CONTROL RECTIFIER *

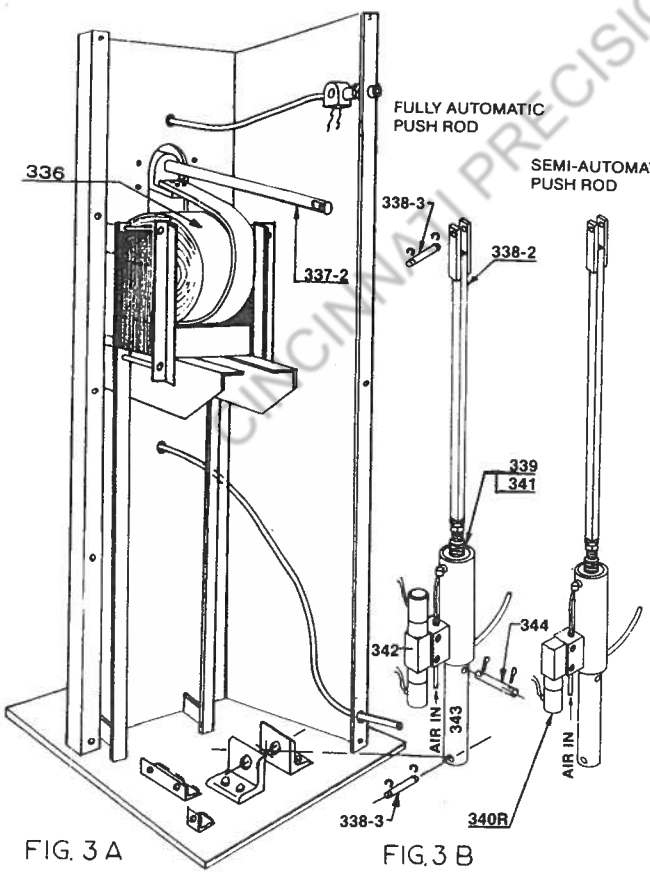
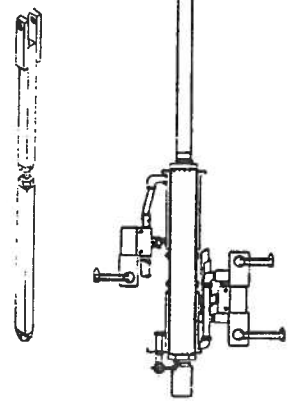


FIG. 3 A

FIG. 3 B

THREADED * ADJUSTABLE PUSH ROD

OPTIONAL * HI-PRODUCTION AIR SYSTEM



WHEN ORDERING PARTS, ALWAYS STATE MODEL OF UNIT, STYLE OF UNIT, AND SERIAL NUMBER

I.E. MODEL 15 KVA, CT (FOOT OPERATED) , SERIAL NO.
MODEL 15 KVA, SA (SEMI AUTOMATIC) , SERIAL NO.
MODEL 15 KVA, FA (FULLY AUTOMATIC) , SERIAL NO.

REFER TO PARTS PRICE SHEET FOR PROPER PART NUMBERS, DESCRIPTION, AND PRICES

I.E. ITEM #309, PART NO. A1345 ELECTRONIC TIMER, ET 76

* CONTACT YOUR DISTRIBUTOR FOR INFORMATION

PARTS PICTORIAL

10 15 30 40 50 KVA SPOT WELDERS

165 SERIES

WA–121.4/01

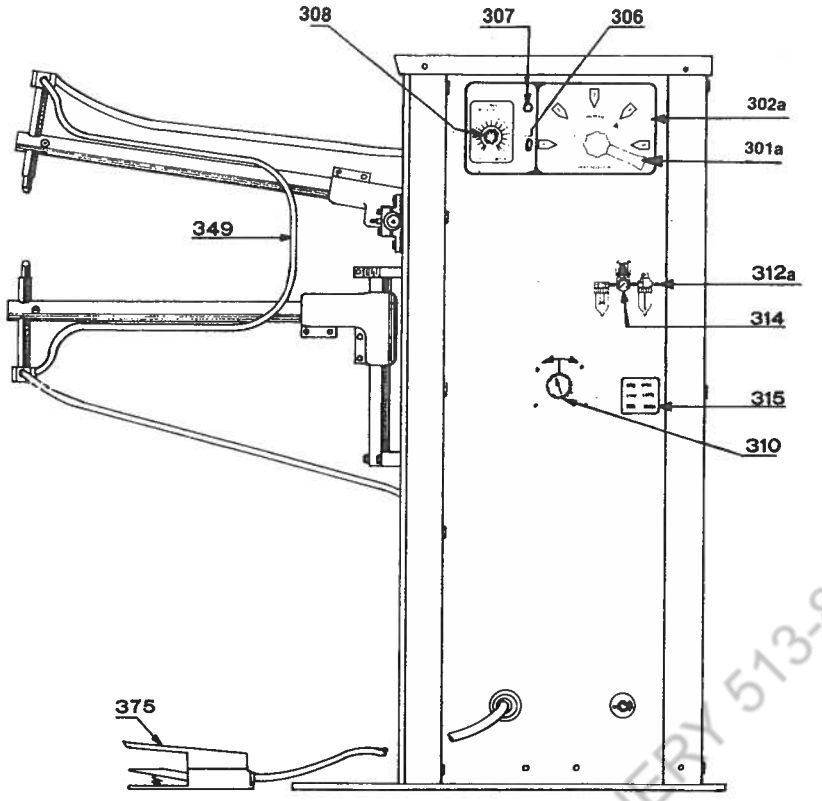


FIG. 1 A

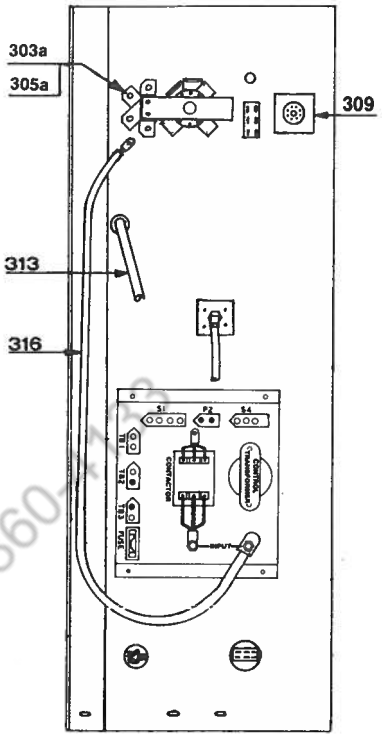


FIG. 2A

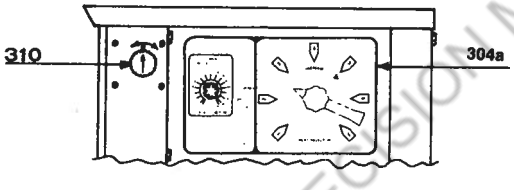


FIG. 1 B

SHOWING LOCATION OF PRESSURE SWITCH ON 30 & 40 KVA MODELS.

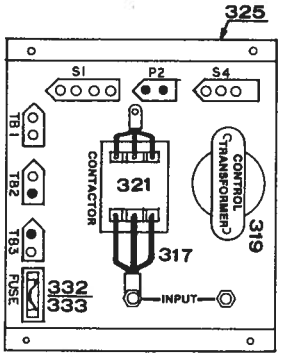


FIG. 2D INSTRUMENT PANEL CT/AO.

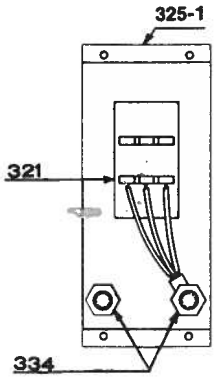
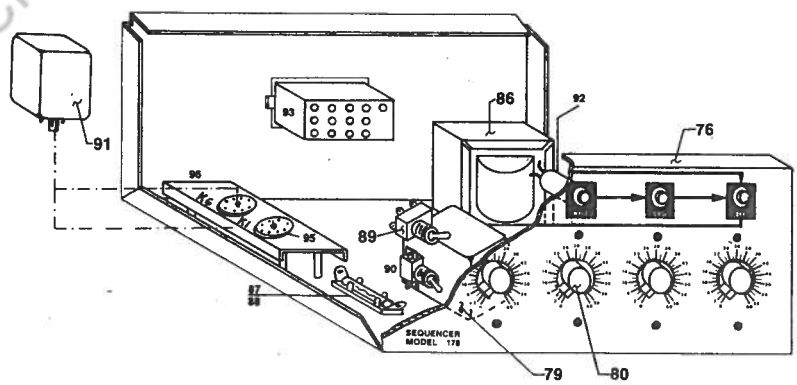


FIG. 2 C

SEQUENCER STYLE "178-A" FOR FA MODELS



ITEM #	PART NO.	DESCRIPTION
75	11085	ASS'Y SEQUENCER
76	11086	CASE FRONT, BOTTOM AND REAR
77	11087	CASE TOP AND SIDES
78	A1345	ELECTRONIC TIMERS ET 76
80	A1345-A	TIMER KNOB
82	A1345-B	TIMER SHELL (FIBRE TUBE)
86		CONTROL X-FORMER
87	153-2430	FUSE HOLDER
88	153-2504	FUSE 1.0 AMP
89	151-7308	SWITCH (Operate/Test) DP.D.T.
90	151-7325	SWITCH (Repeat/Non-Repeat) SP. ST.
91	153-6714	RELAY, DP.D.T. (Plug-In Type)
92	151-4502	INDICATOR LAMPS
93	155-1033	TERMINAL BLOCK 15 PIN.
94	10865	TIMER MOUNTING BRACKETS
95	155-1032	SOCKET, 8 Pin Female
96	11078	RELAY, MOUNTING BRACKET