

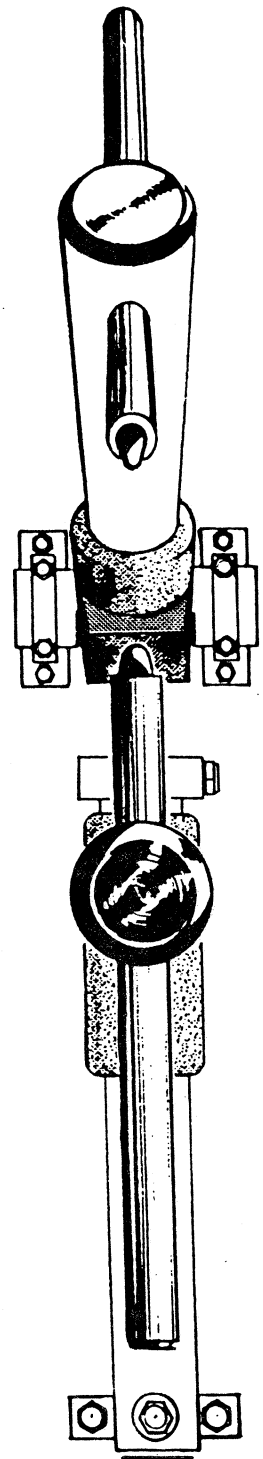
WESTERN ARCTRONICS

MANUAL

SPOT WELDER

SERIES
165

**Operating
and
Service
Instructions**



0-18 270

OPERATING INSTRUCTIONS

Bulletin 200

MANUAL SPOTWELDER

(Serial numbers 2000 and up. All models except 130)

1. Check your electricity. This Spotwelder is designed to operate on 230 volts, 60 cycle single phase current. When taking off of 2 or 3 phase line be sure you have the 230 volt leg going to spotwelder.

MODEL	RECOMMENDED FUSE	INPUT
140 T	60 AMPS	47 AMPS
15 KVA	100 AMPS	95 AMPS
30 KVA	200 AMPS	100 AMPS
40 KVA	300 AMPS	170 AMPS

2. Correct adjustment of the distance between the electrode tips insures satisfactory operation of the switch and tension spring. If the electrode tips exceed this distance between them you may not have the proper pressure on your metal. See specifications below:

MODEL	ARM LENGTH	TIP DISTANCE
140 15-30-40	12"	1-3/4"
140 15-30-40	18"	2-1/8"
140 15-30-40	24"	2-1/2"
15-30-40	30"	3"
40	36"	3-1/2"

3. The quality of the spotweld depends on the right combination of heat control switch setting (1-5) on the side of the spotwelder and the cycle number setting of the electronic timer (3 to 120). For best spot welds and most efficient operation of the welder it is desirable to select a low heat (from 1 to 3) on the heat control switch and to try cycle settings from 15 to 30 for best results. The Spotwelder will operate at best efficiency on the No. 3 heat control switch settings even for heavier gauge sheets.
4. After the settings on the heat control switch and the cycle dial of the electronic timer have been made the tips are closed and energized by stepping on the foot pedal. The electronic timer will start and stop the current flow automatically regardless of how long the foot pedal is held down. (In the case of machines without the electronic timer the current will continue to flow as long as the foot pedal is held down.)
5. It is not necessary to burn a weld in; this will only flatten your tips and produce an unsatisfactory spotweld. The contact surfaces of the tips should never exceed the tip diameter shown on the spotwelding data chart, and should be kept that way by frequent filing. Scale from coated or dirty metal should not be allowed to collect on the tips. A wire brush may be used effectively to remove this scale.
6. Cooling water hoses should be attached to permit water to flow in at the top of electrode holder and exit at fitting at side of electrode holder. The cooling system can be connected to your regular water faucet with a recommended water pressure of 20 pounds.

7. To change tips unscrew fitting on top of the electrode holder and insert a 1/8" rod into the tube. Tap until tip drops out the other end. Do not use pliers on tips or try to unscrew. Standard No. 1 Morse taper tips are used in the Spotwelders. Tip holders that become out of round and leak may be cleaned up with a No. 1 Morse taper reamer.
8. Spotwelder should not be operated without water system in operation unless solid copper tip holder and tip are being used. Excessive heat at the tip will cause the tip to become insulated from the tip holder when being used without water.
9. Arms of any length, size or shape can be used as long as the length does not exceed length of arms listed in catalog for the particular model. Tip distance must be maintained for length of arms as listed in paragraph No. 2.
10. Your spotwelder will operate best on lines carrying from 220 to 230 volts. inadequate wiring and extended drop cords will substantially decrease the performance of the spotwelder.
11. If it is desired to increase capacity of spotwelder slightly, shorter arms may be used. 6" shorter arms will increase capacity of machine to handle one size heavier gauge metal.
12. When spotwelder does not operate at normal efficiency be sure to check the following:
 - A. Water not flowing freely through tips. Tips will not dissipate heat without water.
 - B. Screws must be tight on horns at tip holders and at casting.
 - C. Points of tips not correct diameter.
 - D. Points of tips too far apart or too close - See par. 2.
 - E. Galvanized or scaly metal requires that tips be cleaned quite often and that tip diameter be maintained at minimum. Will not weld at same heat settings on galvanized or scaly metal as on clean steel. This is normal, more heat and time is required to burn through scale.
 - F. Arms must be held all the way back in castings.
 - G. Adjustable lower horn must be tight on vertical arm.
 - H. Incoming power may be inadequate.
 - I. Metal between the arms acts as a shunt and when passed all the way to the base of arms reduces the capacity of the machine slightly.

MANUAL OR FOOT OPERATED SPOTWELDER

Serial numbers 2000 and up. All models except 130. (Ref. Dwg. B936 & 10705)

1.0 Pre-operational conditions

1.1 Water supply connected

1.2 TEST/OFF/OPERATE switch in OFF position

1.3 Unit connected to power source

2.0 TEST Sequence

2.1 TEST/OFF/OPERATE switch in TEST position

2.2 Foot pedal depressed

2.2.1 Arms close and squeeze

2.2.2 Micro-switch closes

2.2.2.1 Water valve opens - cooling water flows

2.2.2.2 Timer is energized - starts timing

2.2.2.3 Indicator lamp illuminates

2.3 Timer times out

2.3.1 Indicator lamp extinguishes

2.4 Foot pedal released

2.4.1 Micro-switch opens

2.4.2 Timer resets

2.4.3 Water valve closes

2.4.4 Arms open

3.0 Operational Sequence

3.1 TEST/OFF/OPERATE switch in OPERATE position

3.2 All functions identical to section 2.0 except the following:

(a) At the time the indicator lamp illuminates (Step 2.2.2.3) the contactor closes and the weld is made.

(b) At the time the timer times out (Step 2.3) and the indicator lamp extinguishes (Step 2.3.1), the contactor deenergizes and the weld function stops.

MANUAL SPOTWELDER TROUBLESHOOTING

Bulletin -202

Foot pedal depressed- No water flow	Water supply not connected	Connect
	TEST/OFF/operate switch in OFF position	Switch to TEST position
	Micro-switch not properly adjusted	Adjust
	Control transformer defective	Replace
Water flows, indicator lamp illuminates, but no weld is made	TEST/OFF/OPERATE switch in TEST position	Switch to OPERATE position
	Contactors defective	Clean contacts or replace as required
	Range switch improperly posit- ioned between contacts.	Verify range switch properly positioned.
Water flows, indicator lamp does not illuminate, no weld is made.	Defective timer	Replace
Operates normally except weld cycle will not end until foot pedal is released.	Defective timer	Replace
Water flow and Weld cycle intermittent	Micro-switch improperly adjusted	Re-adjust
Weld cycle intermittent	Defective timer	Replace
	Timer relay contacts dirty or corroded	Clean contacts or Replace timer
	Contacts of contactor burned or badly pitted.	Replace
Welder seems to function norm- ally but output (welding heat) seems insufficient.	230 volt unit connected to 208 volt line.	Connect to proper voltage source.
	Tips burned or not properly shaped.	Clean and shape tips. (see instruction manual)
	Low line voltage	Verify proper line voltage under load (while welding)
	Connections (surfaces) between tips and tip holders, tip holders and arms corroded.	Remove, clean with crocus cloth & replace.
	Surfaces of material being weld- ed not clean	Clean and de-grease material
	Thickness of material too great for capacity of machine	Larger machine required.
	Welder being used for spot- welding galvanized material	See special section on welding galvanized material.