SOFT TOUCH for NON-UNITROL CONTROLS

9181-34YB/115, 9181-34WB/115
9181-34YB/24DC, 9181-34WB/24DC
9181-34YM/115, 9181-34YM/24DC
9181-34WM/115, 9181-34WM/24DC
9181-34YM/24AC, 9181-34WM/24AC
9181-34YB/24AC, 9181-34WB/24AC

UNITROL ELECTRONICS, INC.
702 LANDWEHR ROAD
NORTHBROOK, ILLINOIS 60062
techsupport@unitrol-electronics.com
847-480-0115

Thank you for purchasing this Unitrol SOFT TOUCH system. It is designed to protect your resistance welder operator from serious electrode pinch point injury. Please let us know if there are any questions or problems with the installation or use of this product. You can contact us:

By Phone:

Monday - Friday 9:00 - 5:00 CT: 847-480-0115.

By Email:

techsupport@unitrol-electronics.com

By Regular Mail:

Unitrol Electronics, Inc.

Technical Support

702 Landwehr Road

Northbrook, Illinois 60062

MODEL NUMBER AND OPTIONS AS CHECKED BELOW

SERIAL NUMBER:

CHECK	MODEL	WELDER TYPE AND HARDWARE	RAM TYPE	VALVE VOLTAGE
	9181-34WB/115	1Ø AC INCLUDES A SNUBBER AND 2=MUFFLERS	HEAVY WEIGHT	115AC
	9181-34YB/115		LIGHT WEIGHT, ROCKER ARM	
	9181-34WB/24DC		HEAVY WEIGHT	24VDC
	9181-34YB/24DC		LIGHT WEIGHT, ROCKER ARM	
	9181-34WB/24AC		HEAVY WEIGHT	24VAC
	9181-34YB/24AC		LIGHT WEIGHT, ROCKER ARM	
	9181-34WM/115	MFDC (INVERTER) INCLUDES 2=MUFFLERS	HEAVY WEIGHT	115VAC
	9181-34YM/115		LIGHT WEIGHT, ROCKER ARM	
	9181-34WM/24DC		HEAVY WEIGHT	24VDC
	9181-34YM/24DC		LIGHT WEIGHT, ROCKER ARM	
	9181-34WM/24AC		HEAVY WEIGHT	24VAC
	9181-34YM/24AC		LIGHT WEIGHT, ROCKER ARM	

OPTIONS		
	9181-34BPA	Timed bypass. Includes security lock selector switch, 2 = LED indicator lights, faceplate. Closes electrodes under low force, delays, and brings electrodes to welding force.
	9181-34JA	Retract Kit. **Includes** HEAD DOWN proximity switch and mounting bracket kit. May require additional field bracketry to match welder
	9181-34JB	Retract option **without** proximity switch. For use with welders that have **separate** RETRACT and WELD INITIATION switches.
	9181-34LSA	Limit Switch. Allows use of ram position or continuity. Includes RAM POSITION proximity switch and mounting bracket kit. May require additional field bracketry to match welder. Includes security lock selector switch, 2 = LED indicator lights, faceplate
	9181-34LSB	Limit Switch. Allows use of a ram position or continuity. Includes security lock selector switch, 2 = LED indicator lights, faceplate. Does NOT include a proximity switch or mounting bracket kit. Use with customer-supplied PNP proximity switch.
	9181-34LSC	Limit Switch used as a redundancy with continuity. Always in operation and not keylock selected. Includes RAM POSITON proximity switch and mounting bracket kit. May require additional field bracketry to match welder. Can be turned off by moving a jumper on the control board inside the locked cabinet.
	9181-34FRL-1/2	½" NPT Filter, regulator, lubricator with inter block for pilot line. With air gauge. Not needed if existing regulator is good.
	9181-34FRL-3/4	¾" NPT Filter, regulator, lubricator with inter block for pilot line. With air gauge. Not needed if existing regulator is good.

WARRANTY

Unitrol Electronics provides a 5-year limited warranty to cover all of this SOFT TOUCH system. The warranty periods are determined using the date the new control was originally shipped from Unitrol Electronics. All warranty coverage is FOB Northbrook. Illinois.

This warranty, except for exclusions shown herein covers the following items:

DURING YEAR #1: All parts (exclusive of fuses) that fail due to manufacturing defects. Necessary labor to repair control that has failed due to manufacturing defects.

DURING YEAR #2: 80% cost of all parts (exclusive of fuses).

80% cost of necessary labor to repair control that has failed due to manufacturing defects.

DURING YEAR #3: 60% cost of all parts (exclusive of fuses).

60% cost of necessary labor to repair control that has failed due to manufacturing defects.

DURING YEAR #4: 40% cost of all parts (exclusive of fuses).

40% cost of necessary labor to repair control that has failed due to manufacturing defects.

DURING YEAR #5:
20% cost of all parts (exclusive of fuses).

20% cost of necessary labor to repair control that has failed due to manufacturing defects.

EXCLUSIONS TO WARRANTY
Any expense involved with repair of control by other than Unitrol Electronics personnel that has not been authorized in advance and in writing by an officer of Unitrol Electronics.

All costs for freight, to and from Unitrol Electronics, are excluded from this warranty

All field service labor, travel expense, and field living expenses associated with field service are excluded from this warranty.

No coverage, parts or labor, is offered for components that have failed on control **not** being used as specified in Unitrol Electronics published literature, technical sheets, and this direction book.

No warranty coverage will be made on controls that are being used contrary to specifications, that were mechanically or electronically altered by customer or installer, or that were physically damaged after shipment from Unitrol Electronics.

Damages to a control by lightning, flood, or mechanical damage are excluded from this warranty.

Unitrol Electronics assumes no liability for damage to other equipment or injury to personnel due to a failure in the Unitrol Electronics control.

Unitrol Electronics shall not be responsible for any consequential damages of whatever kind.

Expenses involving alteration or installation of a Unitrol Electronics control are not covered in this warranty.

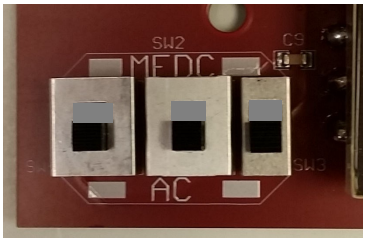
NO OTHER UNITROL ELECTRONICS INC. WARRANTY, WRITTEN OR IMPLIED, COVERS THIS CONTROL UNLESS IN WRITING AND SIGNED BY AN OFFICER OF UNITROL ELECTRONICS, INC. PRIOR TO SHIPMENT OF PRODUCT.

TABLE OF CONTENTS

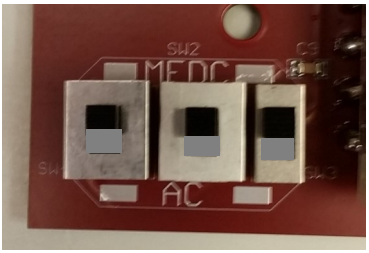
VERIFY YOUR SOFT TOUCH SENSOR BOARD IS CORRECT

The SOFT TOUCH sensor board can be configured in several ways. Before turning power on, check to be sure that the mode and valve voltage matches your welder.

1. TYPE OF WELDING CONTROL. This board can be set to operate either a 1ØAC welder or an MFDC (inverter) welder. This is done by pushing the three switches on the lower left corner to a position to match your welding control.



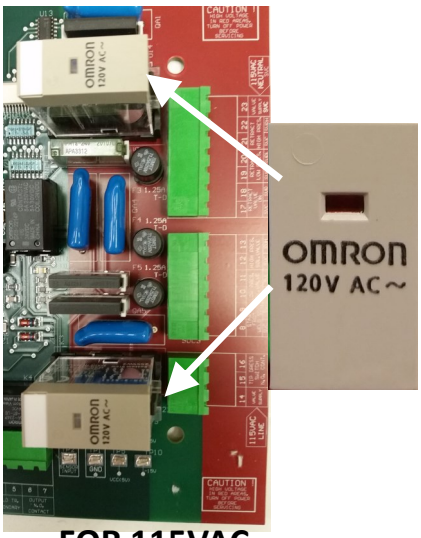
FOR 1ØAC WELDERS



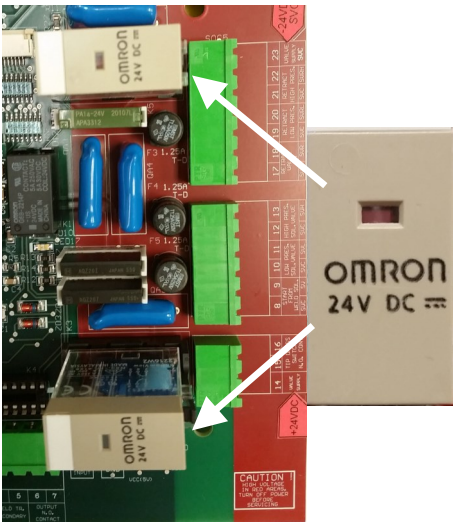
FOR MFDC (inverter) WELDERS

---

2. SOLENOID VALVE VOLTAGE. Be sure that the two tall relays, K2 and K3, show the same voltage on the top printing as the solenoid voltage of your welding control.



FOR 115VAC SOLENOID VALVES



FOR 24VDC SOLENOID VALVES

SOFT TOUCH PINCH POINT PROTECTION SYSTEM FOR INSTALLATION ON NON-UNITROL 1Ø AC and MFDC WELDING CONTROLS

HOW THE SYSTEM OPERATES

When the solenoid valve output from the welding control goes HIGH, this voltage goes to the 9280-TS6 SOFT TOUCH detection board, terminal #9.

The output terminal #11 (SVL) goes HIGH to turn on solenoid valve SVL.

For 9181-34WB systems, this closes the welding electrodes under gravity force with low force bucking pressure (ADVANCE) acting on the underside of the cylinder piston to counterbalance part of the ram dead weight.

For 9181-34YB systems, this closes the welding electrodes under low force using low air pressure on the forward port of the welder cylinder.

The 9280-TS6 board checks input at terminals #4 and #5 to see if the voltage signal drops a minimum value indicating that the electrodes have made contact on a conducting material (continuity detected).

If this contact is NOT sensed within the maximum time setting on the board's DIPswitches, the output terminal #11 (SVL) will go LOW and drop out solenoid valve SVL to open the electrodes.

If this contact IS sensed within the maximum time setting:

Terminal #11 (SVL) will continue to be HIGH

Terminal #13 (SVH) will go HIGH

Solenoid valve SVH will be turned ON to start high electrode pressure, and relay K4 on this board will close to start the welding sequence

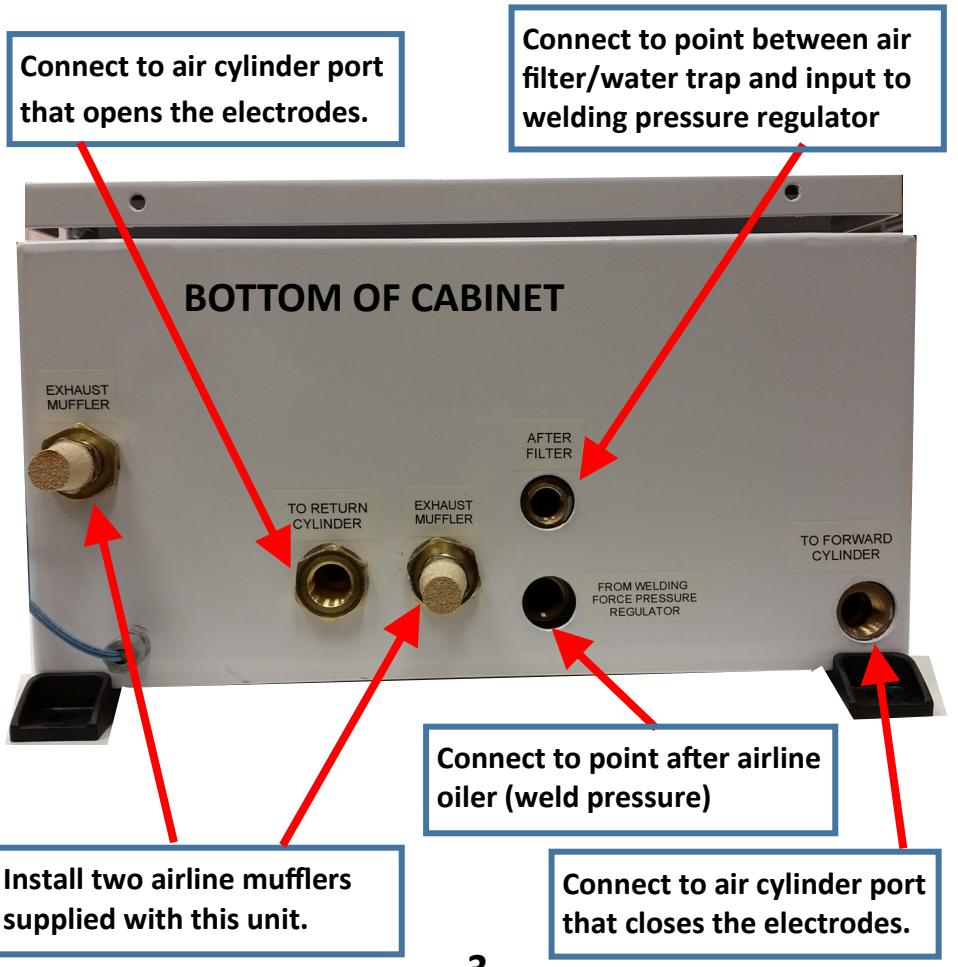
The contact across terminals #6 and #7 on the TS2 board close to tell the welding control to start the welding sequence.

INSTALLATION

Note that this system REPLACES the existing weld solenoid valve.

1. **Mount the control in a convenient location using the four mounting tabs on the back of the box.**
2. **Remove hoses from the existing welding solenoid valve. This solenoid valve will not be used with this this control.**
3. **Connect hoses from the control to the air cylinder as shown in the photos below and the next page. Choose the photo that matches your control model.**

HOSE CONNECTION FOR 9181-34W SERIES CONTROLS



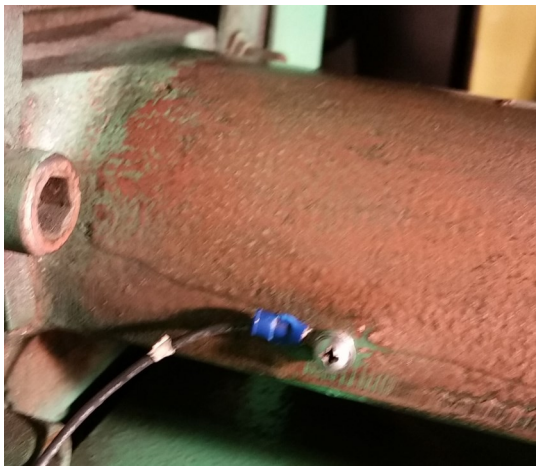
HOSE CONNECTION FOR 9181-34Y SERIES CONTROLS

Note that this system REPLACES the existing weld solenoid valve.

WIRING CONTROL

CONNECTING SIGNAL PICKUP WIRES

1. Connect the **two blue wires** from the bottom of the box to the upper and lower secondary pad on the welding transformer or any point close to the pad. See photos below for suggested areas for various types of welders.

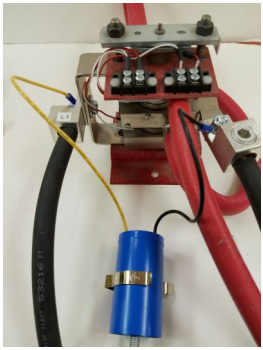


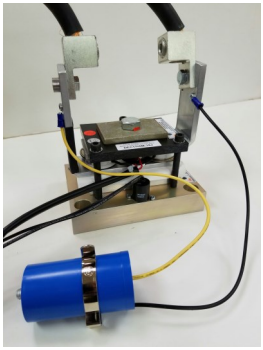
WIRING CONTROL
(CONTINUED)

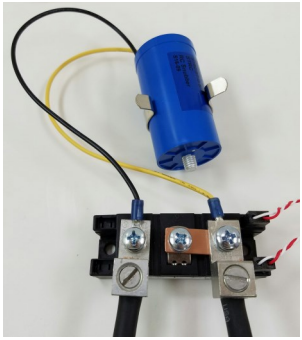
CONNECTING SNUBBER

2. **: For 9181-34WB… and 9181-34YB… models,** Connect blue snubber cylinder in this kit across the SCR contactor per the HOOK-UP drawing and typical photos below. It does not matter which wire from the snubber connects to which side of the SCR contactor.

NOTE: If the welding control already has a snubber or a resistor in series with a capacitor wired across the SCR contactor, remove it. There should only be the new blue snubber installed across the SCR contactor.







CONNECTING CONTROL CABLE

3. Route the black multi-wire cable from the top of the SOFT TOUCH enclosure to the welding control.
4. Install the supplied strain relief fitting in the welding control and bring cable into the control.
5. Trim the cable to allow it to reach the terminals shown in the table on the next page. Wire as shown.

WIRING CONTROL

(CONTINUED)

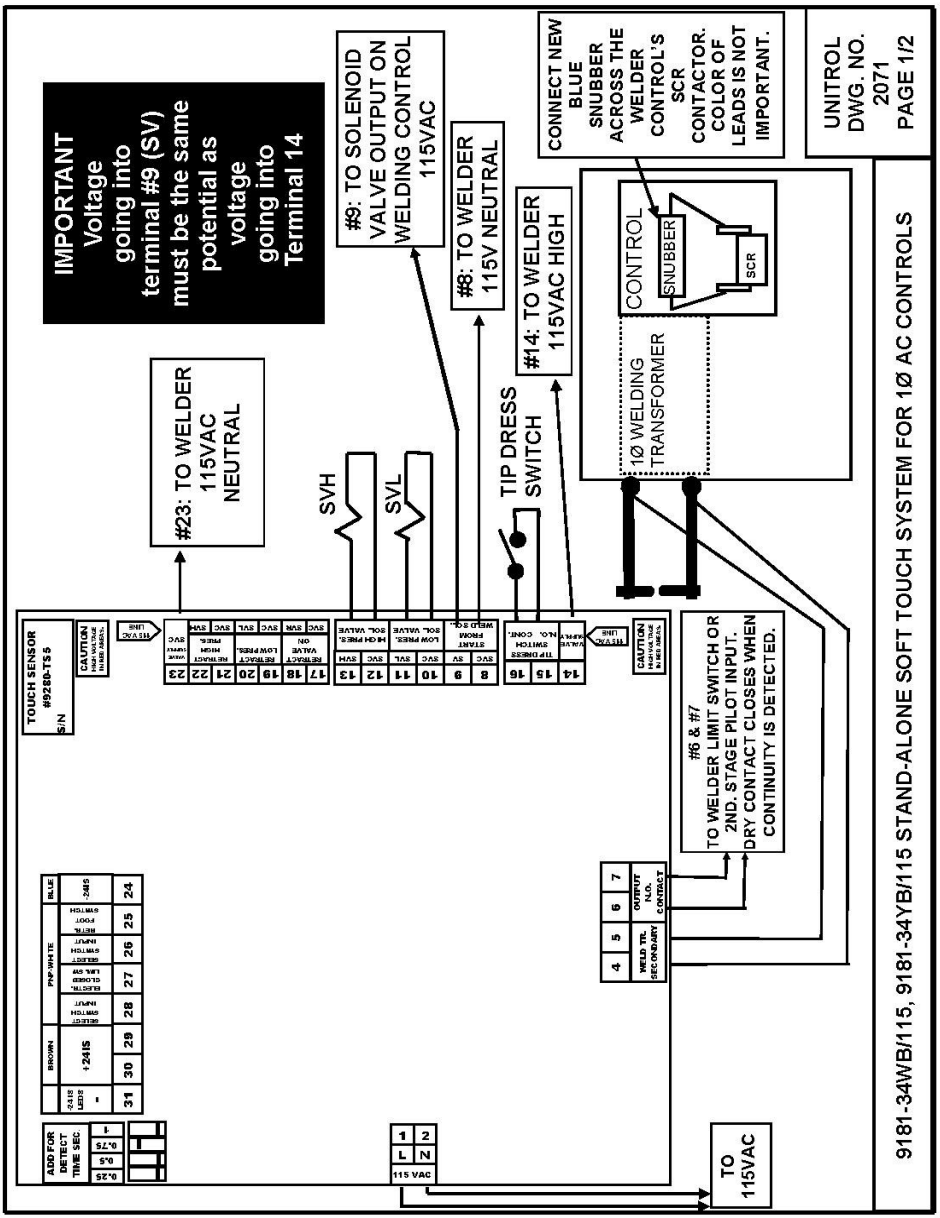
CONTROL CABLE WIRING CHART

WIRE COLOR	TS6 TERM	CONNECT IN WELDING CONTROL FOR 24VDC MODELS 9181-34WB/24DC 9181-34WM/24DC 9181-34YB/24DC 9181-34YM/24DC	CONNECT IN WELDING CONTROL FOR 115VAC MODELS 9181-34WB/115 9181-34WM/115 9181-34YB/115 9181-34YM/115
BLACK	1	115VAC L	115VAC L
WHITE	2	115VAC N	115VAC N
RED/BLACK STRIPE	6	INITIATION	INITIATION
RED	7	INITIATION	INITIATION
BLUE	14	24VDC +	NOT USED
WHITE/BLACK STRIPE	23	24VDC 0V	NOT USED
ORANGE	9*	24VDC + SOLENOID VALVE DRIVER OUTPUT*	115VAC L SOLENOID VALVE DRIVER OUTPUT*
GREEN	-	GROUND STUD	GROUND STUD

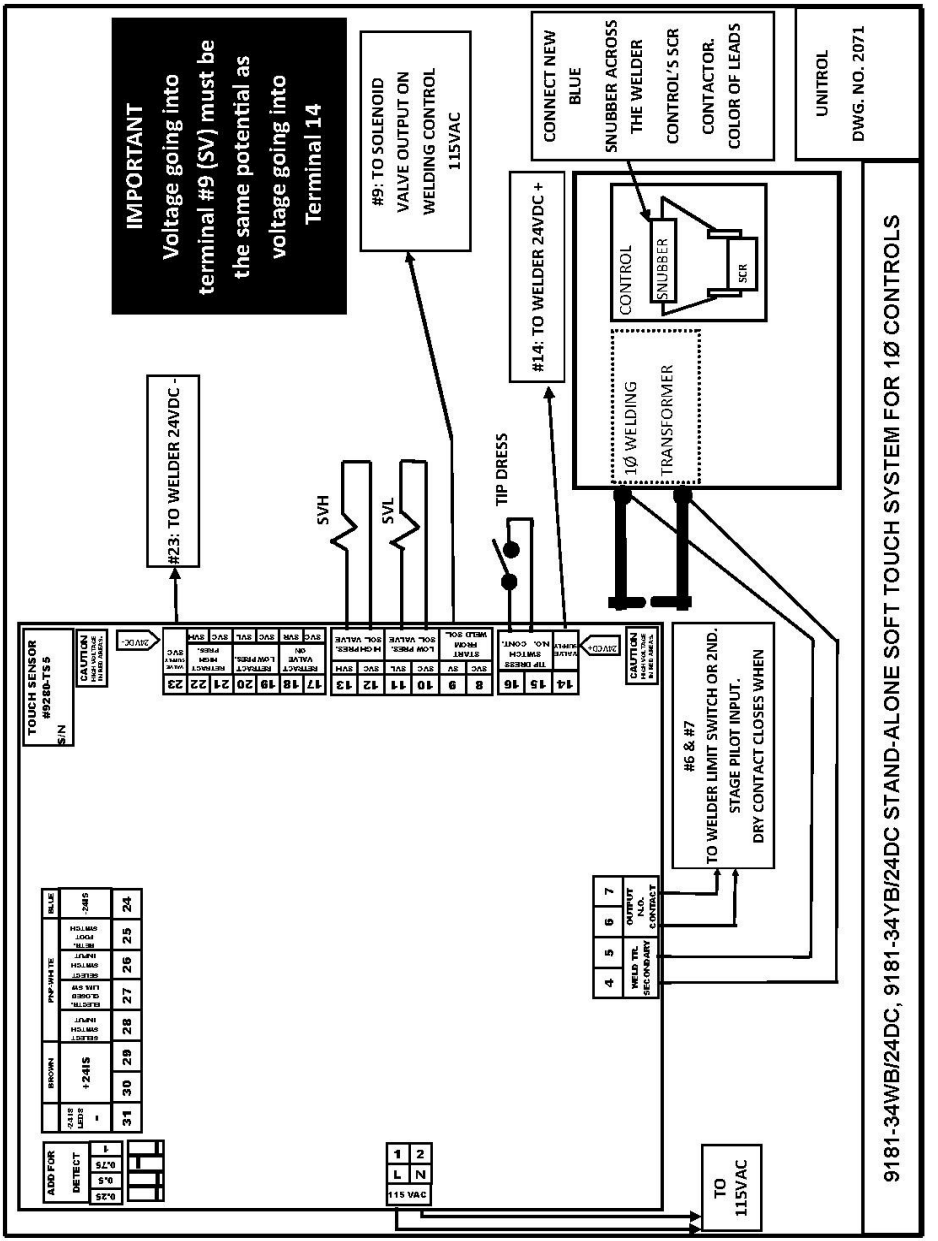
*BE SURE THAT THE ORANGE WIRE IS CONNECTED TO THE WELDING CONTROL TERMINAL THAT ORIGINALLY SUPPLIED EITHER 115V L (HIGH) OR 24VDC+ TO THE WELD SOLENOID VALVE.

SEVERE DAMAGE CAN OCCUR IF THIS IS NOT WIRED CORRECTLY.

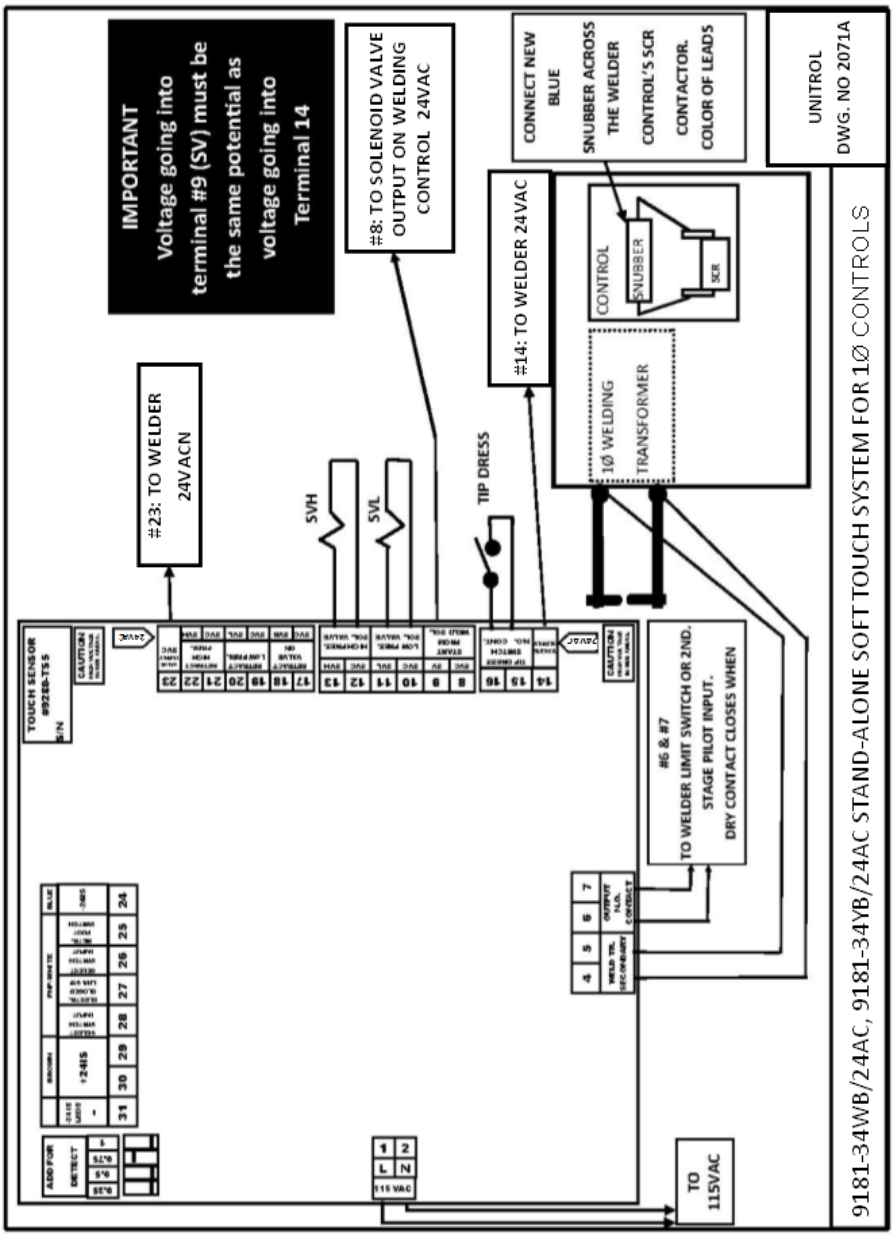
INSTALLATION
HOOK-UP DRAWING
9181-34WB/115, 9181-34YB/115



INSTALLATION
HOOK-UP DRAWING
9181-34WB/24VDC, 9181-34YB/24DC



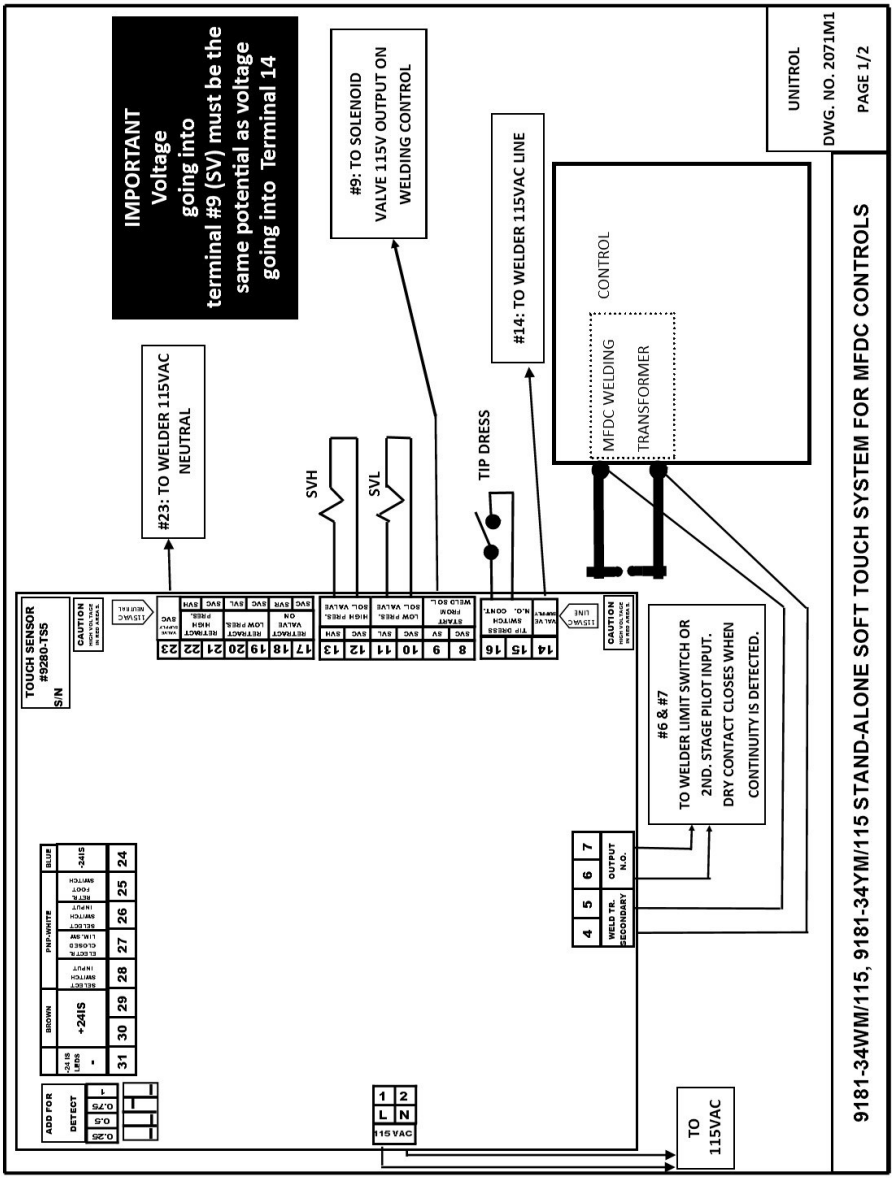
INSTALLATION
HOOK-UP DRAWING
9181-34WB/24VAC, 9181-34YB/24AC



INSTALLATION

HOOK-UP DRAWING

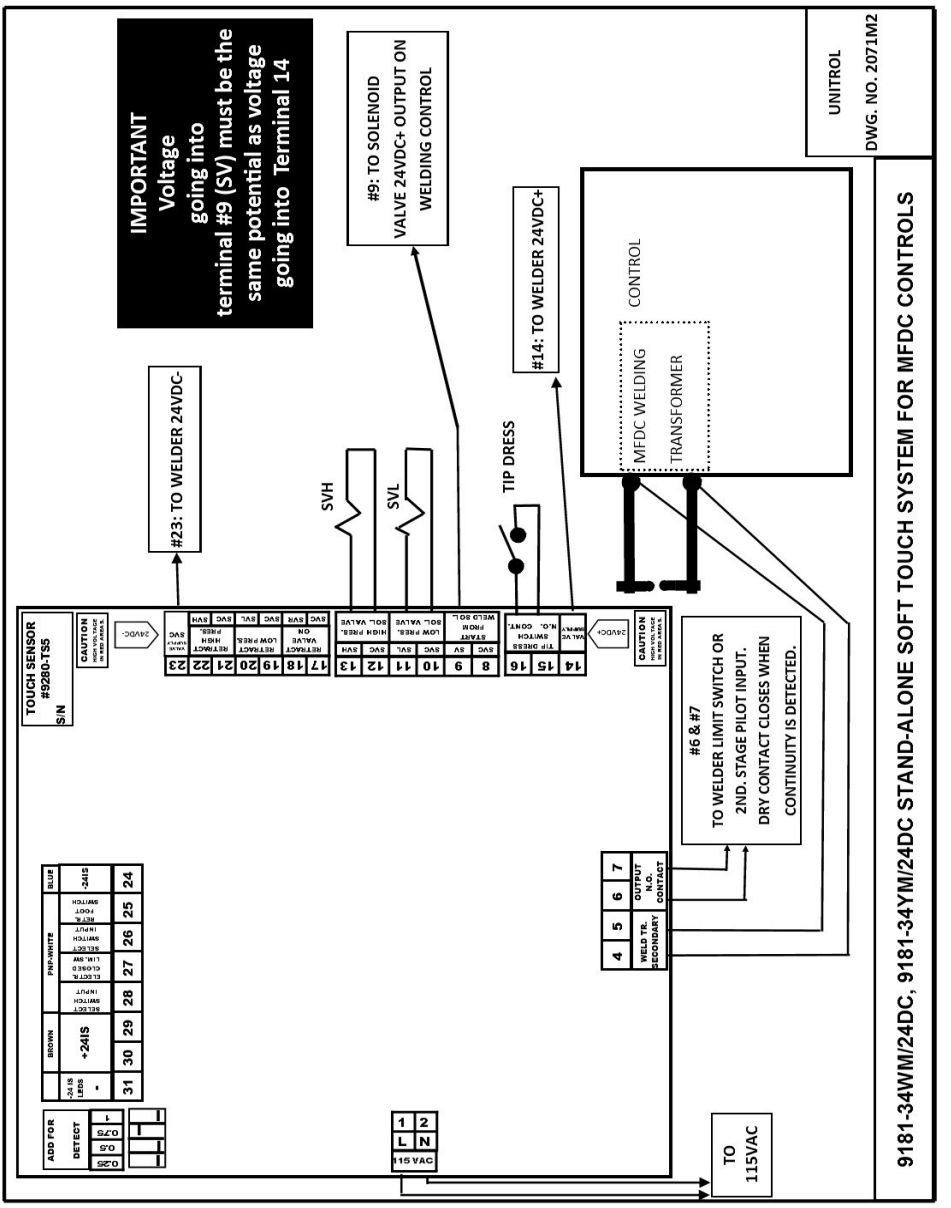
9181-34WM/115, 9181-34YM/115



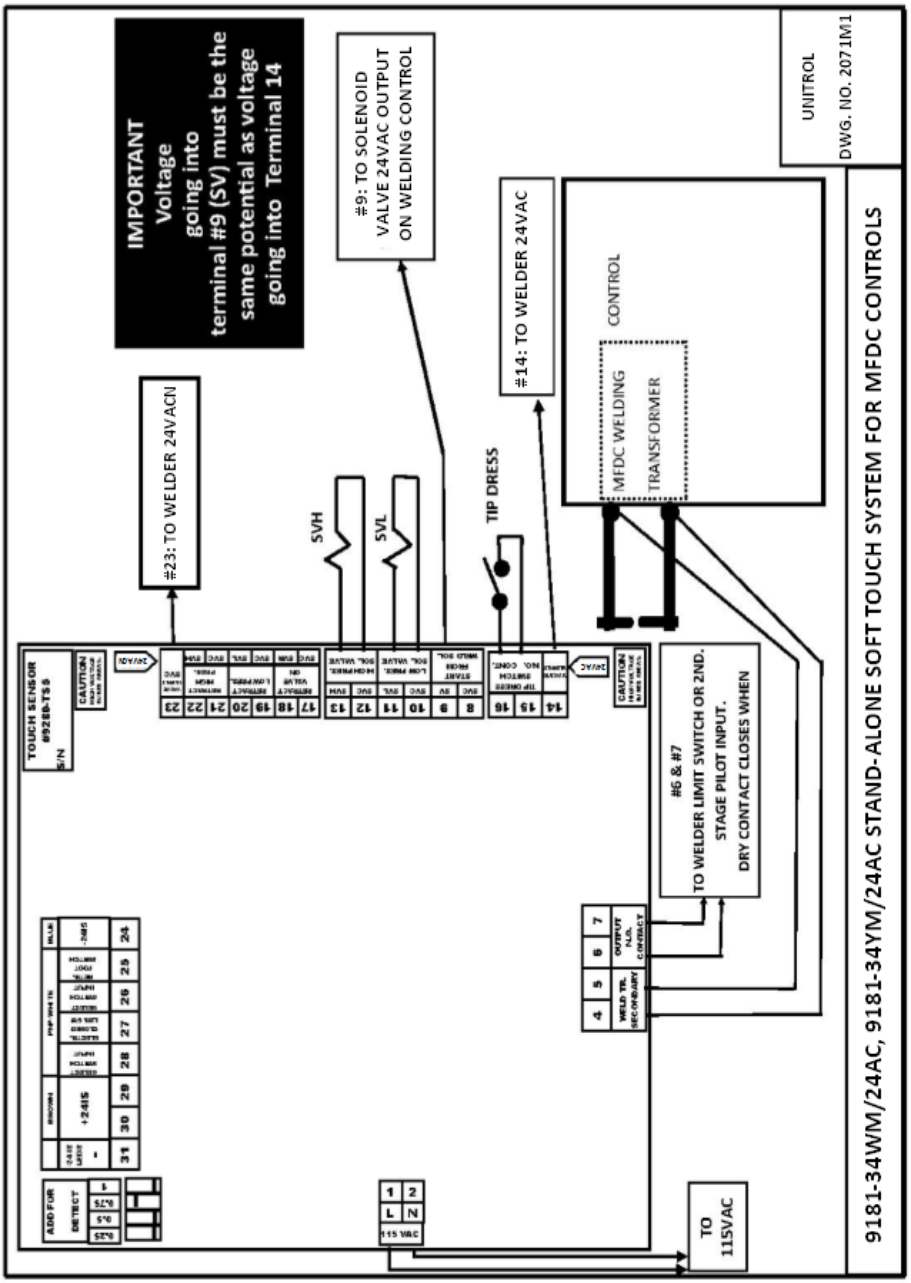
INSTALLATION

HOOK-UP DRAWING

9181-34WM/24VDC, 9181-34YM/24DC



INSTALLATION
HOOK-UP DRAWING
9181-34WM/24VAC, 9181-34YM/24AC



OPTIONAL RETRACT WITH SOFT TOUCH
9181-34JA
FOR WELDERS WITH A RETRACT TYPE CYLINDER.
OPERATED BY A 3-SECTION FOOT SWITCH

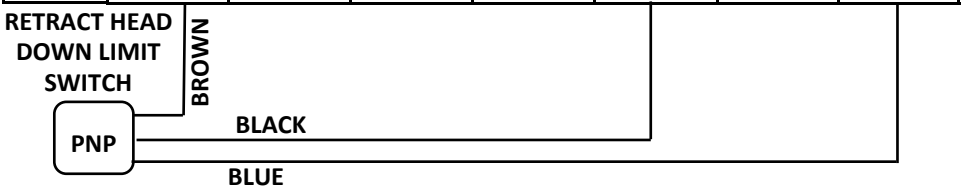
This type of foot switch has the RETRACT switch controlled as the first level and mechanically latched. The other two levels of this foot switch operate the welding sequence.

This option protects against pinch point injury when bringing the electrodes from fully open RETRACT position to the WORK position (small space between electrodes). The option includes a PNP proximity switch that is adjusted to go high when the retract cylinder is fully bottomed putting the electrodes in the (small opening) WORK position.

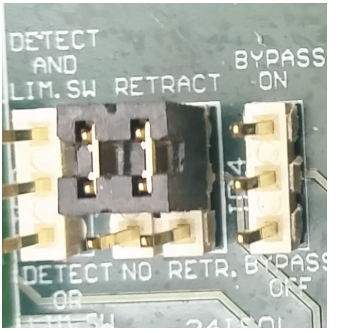
1. Install the PNP proximity switch using the starter bracket kit in this option. Modify as necessary to work with your welder. The proximity switch has to be **blocked** when the ram is down in the WORK (small opening) position. This will put 24VDC into terminal 26.

2. Wire the PNP proximity switch as shown below.

-24IS LEDS	P-N-P BROWN		P-N-P BLACK				P-N-P BLUE
	+24IS		SELECT SWITCH INPUT	ELECTR. CLOSED LIM. SW	HEAD DOWN LIM. SW	RETR. FOOT SWITCH	-24IS
31	31	29	28	27	26	25	24

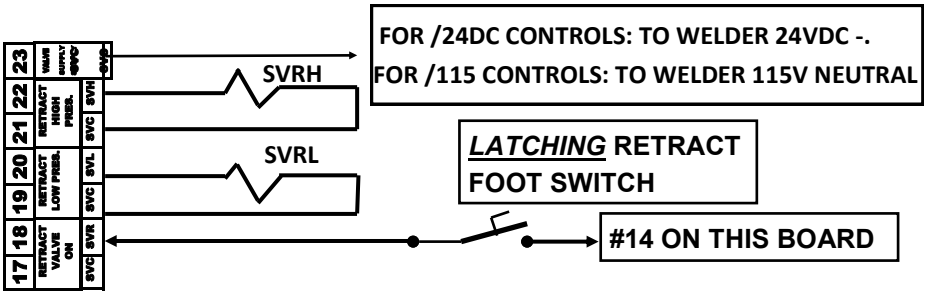


3. Move the double **RETRACT** jumper plug to the **RETRACT** (upper) position as shown. This is located on the upper left corner of the board.



OPTIONAL RETRACT WITH SOFT TOUCH
9181-34JA
(continued)

Connect the foot switch as shown below to a mechanically-latching 3-stage foot switch.

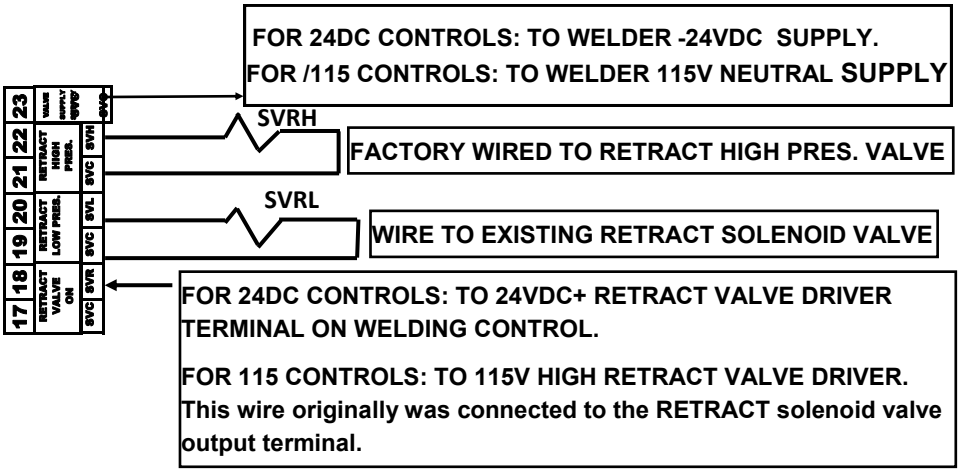


OPTIONAL RETRACT WITH SOFT TOUCH 9181-34JB

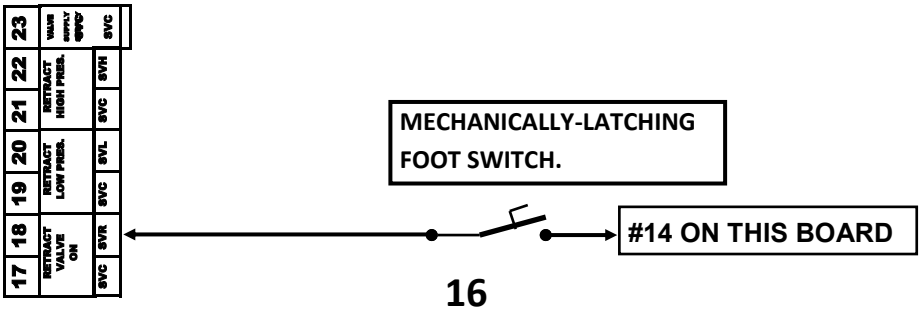
This option 9181-34JB is for RETRACT that operates from either a separate RETRACT foot switch, or from a RETRACT VOLTAGE from the welding control.

DO NOT USE THIS OPTION FOR WELDERS THAT USE A COMMON WELD AND RETRACT FOOT SWITCH.

1. HOOKUP FOR SYSTEMS USING RETRACT VOLTAGE SIGNAL FROM THE WELDING CONTROL:
2. Remove the existing wire from the welding control RETRACT valve driver terminal and wire as shown below to terminal #16.



If RETRACT will be operating from a separate RETRACT foot switch, connect the foot switch as shown below to terminal #18 and #14.



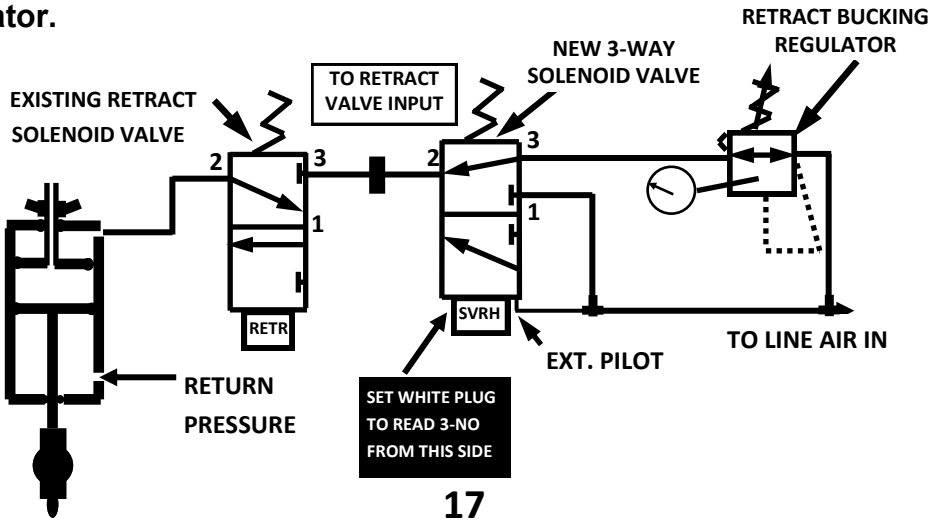
OPTIONAL RETRACT WITH SOFT TOUCH 9181-34JB (continued)

Insert a jumper from terminal 26 to terminal 29. Note that the HEAD DOWN LIM. SW light on the annunciator panel will be on permanently when this jumper is in place.

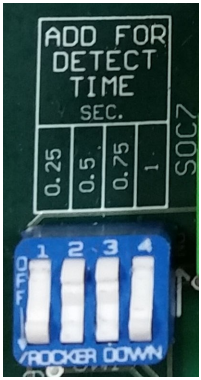
-24IS LEDS	P-N-P BROWN		P-N-P BLACK				P-N-P BLUE
	+24IS		SELECT SWITCH INPUT	ELECTR. CLOSED LIM. SW	HEAD DOWN LIM. SW	RETR. FOOT SWITCH	-24IS
31	31	29	28	27	26	25	24

PLUMBING: Connect hoses from the input port on the existing RETRACT SOLENOID to the bulkhead on the SOFT TOUCH enclosure as shown below.

ADJUST the RETRACT BUCKING REGULATOR until the electrodes close with less than 50 pounds of force. If you change the RETURN pressure you will have to adjust the bucking regulator.



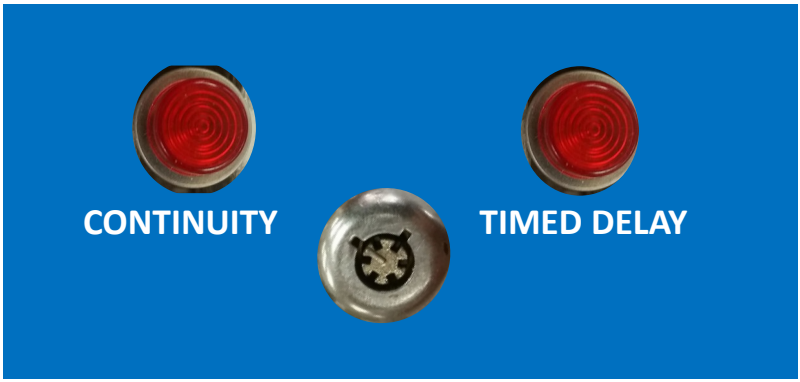
OPTIONAL TIMED BYPASS
9181-34BPA



Some materials being welded have coatings or other conditions that prevent good continuity between electrodes. For these conditions option #9181-34BPA will allow the welder to be operated using TIMING rather than CONTINUITY to switch from low force to high welding force. In this case, the low force will be applied for the time set on the 4-position **DETECT TIME DIPswitch,** and then the high welding force will turn on. The time from initiation to high force is the **SUM** of the switches pushed down on top.

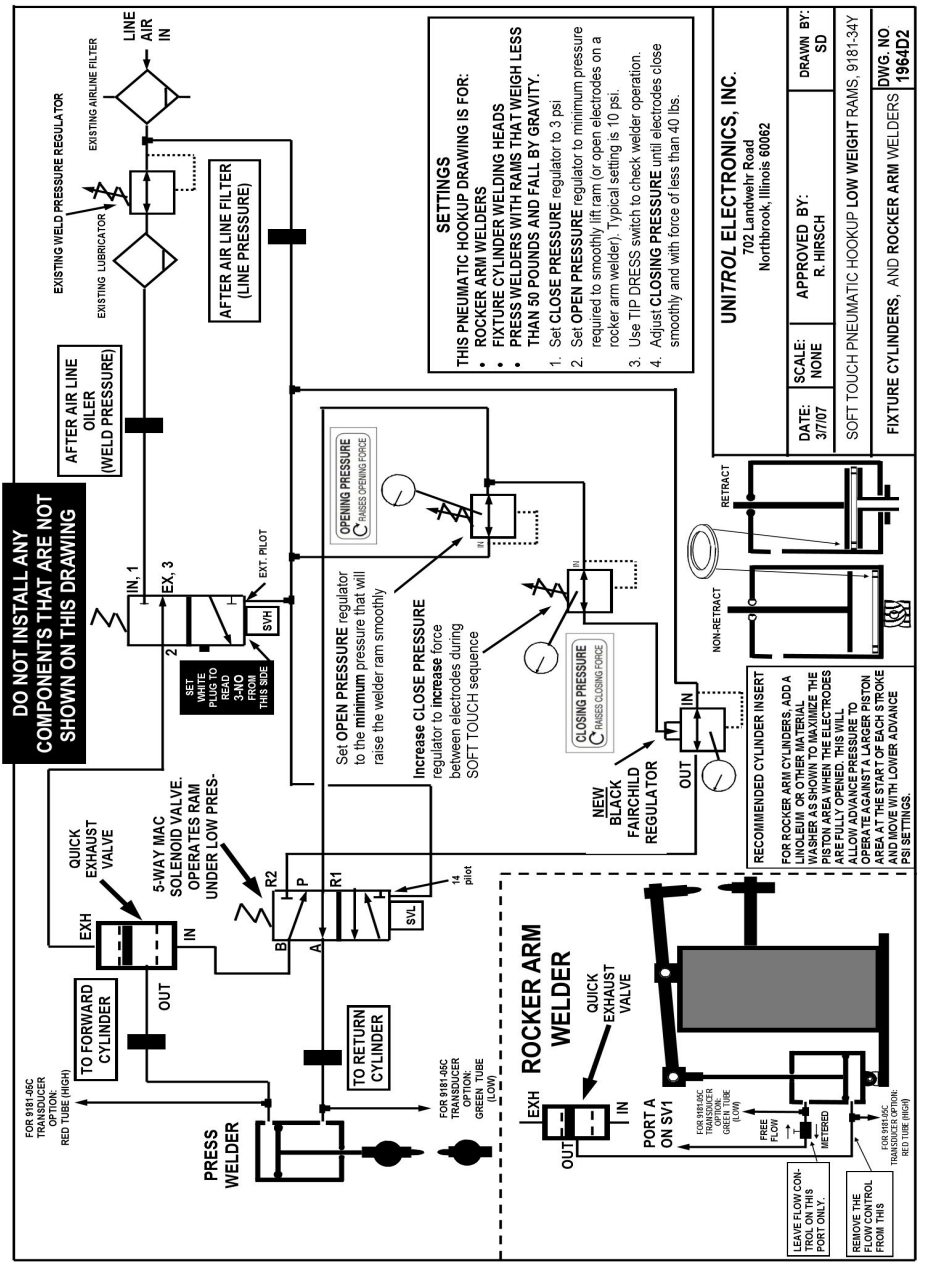
CAUTION: When the key switch is in the TIMED position, the HIGH WELDING FORCE will turn on after the selected delay(detect) time unless initiation is opened. This will happen *even if a non-conductive material or body part is between the electrodes.*

This option will be factory wired and supplied with the faceplate shown below. A key selector switch will allow selection of CONTINUITY or TIMED DELAY. An LED will glow above the selected mode of operation.



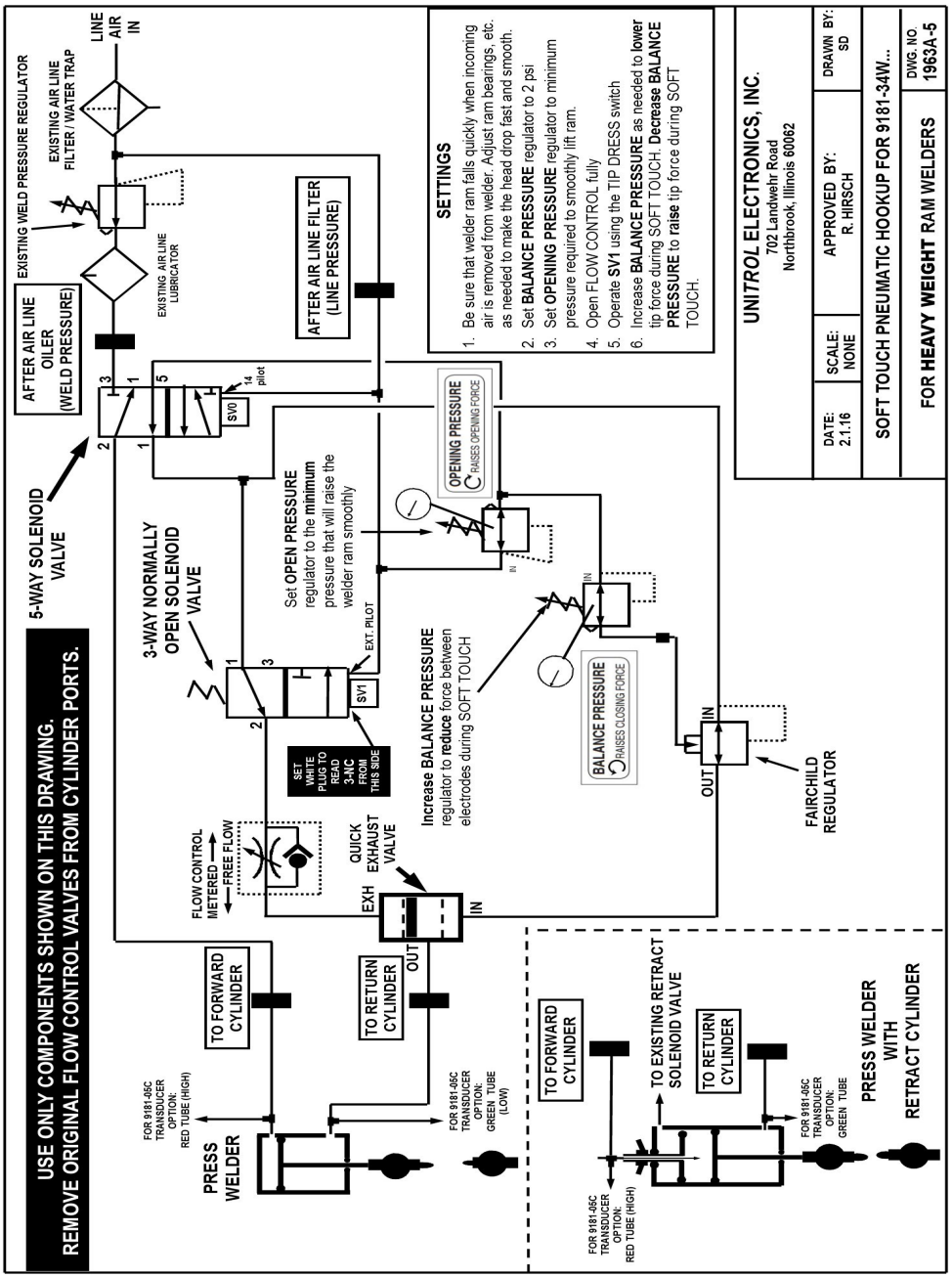
PNEUMATIC HOOKUP

9181-34Y... LIGHT RAM OR ROCKER ARM WELDERS



PNEUMATIC HOOKUP

9181-34W... HEAVY WEIGHT RAM WELDERS



ADJUSTING THE SOFT TOUCH VALVE SYSTEM

F0R 9181-34WB… SERIES CONTROLS - HEAVY WEIGHT RAMS

1. The ADVANCE PRESSURE puts air on the underside of the air cylinder piston to LIFT the welder ram. This is used to partially lower the force between the electrodes due to the dead (gravity) weight of the welder's ram. Increasing this ADVANCE PRESSURE value will decrease the force between the electrodes when closed under low force.
2. **Be sure that all flow control valves have been removed from the welder cylinder before doing any adjustment of this system.**
3. Set the ADVANCE PRESSURE regulator inside the enclosure so that the ADVANCE PRESSURE gauge on the door is at approximately 1-psi.
4. Set the RETURN PRESSURE regulator inside the enclosure so that the RETURN PRESSURE gauge on the door is at approximately 12 psi.
5. Turn the TIP DRESS switch ON. The electrodes should close. Check the force between the electrodes and **increase** the pressure slightly if the force is great enough to crush a wood pencil more than 1/16" in depth. If the electrodes do not close, **decrease** the pressure to as low as 0 psi. Even though the pressure gauge shows 0psi, this pressure is actually 1/2psi.
6. Adjust the RETURN PRESSURE regulator so that when the TIP DRESS switch is OFF, the electrodes open smoothly. Use the **lowest** setting on this RETURN PRESSURE regulator that will smoothly open the electrodes. This will produce the fastest electrode closing time.

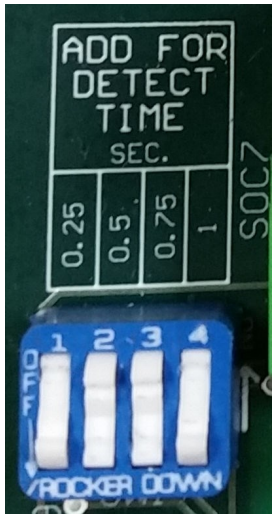
F0R 9181-34YB… SERIES CONTROLS - LIGHT WEIGHT RAMS AND ROCKER ARM WELDERS

1. Set the ADVANCE PRESSURE regulator inside the enclosure so that the ADVANCE PRESSURE gauge on the door is at approximately 3psi.
2. Set the RETURN PRESSURE regulator inside the enclosure so that the RETURN PRESSURE gauge on the door is at approximately 12 psi.
3. Turn the TIP DRESS switch ON. The electrodes should close. If they don't, **increase** the ADVANCE pressure. Check the force between the electrodes and **decrease** the pressure slightly if the force is great enough to crush a wood pencil more than 1/16" in depth.
4. Adjust the RETURN PRESSURE regulator so that when the TIP DRESS switch is OFF, the electrodes open smoothly. Use the **lowest** setting on this RETURN PRESSURE regulator that will smoothly open the electrodes. This will produce the fastest electrode closing time.

SETTING SOFT TOUCH BOARD MAXIMUM DETECT TIME SWITCHES

Locate the four-section DIPswitch on the left side of each SOFT TOUCH board. This switch is marked: 1, .75, .5, and .25 seconds. Set the switches to a value that is about 2 to 3 times how long it will take for the electrodes to close. The on-board computer adds the value of these switches. For example, pushing 1 and .5 down to the left side will produce a detection time of 1.5 seconds. This setting is not critical. A typical setting is 1 second. Longer times might be needed for very long stroke cylinders

For example, in the photo below the 0.25 and 1 switch is pushed down toward the top of the board for a total maximum detect time of 1.25 seconds.

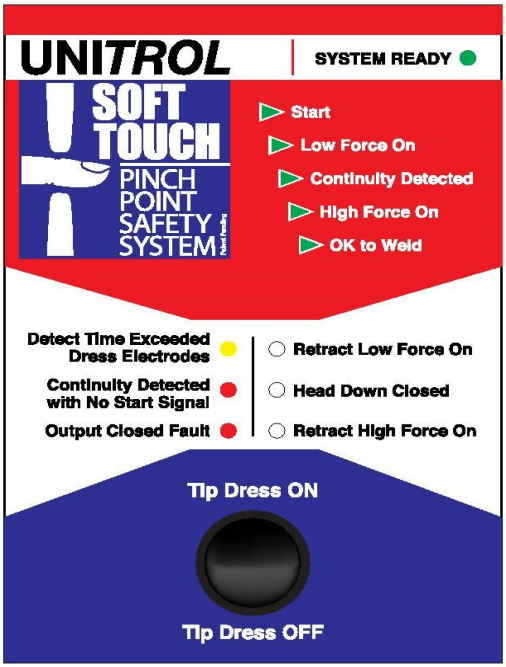


TESTING THE ELECTRONIC SYSTEM

1. Clean electrodes on welder
2. With nothing between electrodes, close electrodes by turning **ON** the **TIP DRESS** switch at the bottom of the annunciator panel.
3. The electrodes should close. The **Continuity Detected with no Start Signal** LED should start flashing.
4. Turn **OFF** the **TIP DRESS** switch and the electrodes will open.

STARTUP PROCEDURE

1. Turn on power to welding control.
2. The SOFT TOUCH annunciator panel should go through a test procedure and then the READY LED should turn on solidly.
3. If the READY LED does flashes slowly or quickly see the trouble shooting section in this direction book.
4. The system should be ready for operation. There is no customer calibration needed now or ever.



SUCCESSFUL SEQUENCE WITHOUT LIMIT SWITCH

1. Weld control sends voltage to terminal **9 (SV).**
2. **START** lights
3. Low Force solenoid valve **(SVL)** is energized, **Low Force ON** LED lights**.**
4. Electrodes close
5. Continuity is detected and **Continuity Detected** LED lights.
6. High Force solenoid valve **(SVH)** is energized, **High Force ON** LED lights.
7. Output relay at terminals 6 & 7 closes to start weld control sequence, and **OK to Weld** LED lights.

UNSUCCESSFUL SEQUENCE

If continuity is not detected within the maximum time set on the DIPswitch, electrodes will **not** get to welding force, will open, and the **Detect Time Exceeded, Dress Electrodes** LED will light. Clean the electrodes and try the sequence again. Or check to see if the DIPswitch on the board is set to a long enough time to allow for the electrodes to close.

TESTING ELECTRODE CLOSING FORCE

Adjust the pneumatic system to produce safe closing electrode closing force using the directions on page 16 (to match the model number).

Use the TIP DRESS switch to close the electrodes each time you make a change in the pressure regulator settings. A successful pneumatic setting will provide a force under 50 pounds between the electrodes. There are two methods to check this force:

1. The most precise method is to use a tip force measuring instrument between the electrodes. This produces data that can be recorded on safety records and is less subjective to visual observation. Unfortunately most of these devices do not have any accuracy in the low force ranges. **Do not use an instrument that has poor or unknown accuracy in the low force range.** An excellent device that **can** read the low forces is Tuffaloy model 601-3000DLC. This unit can also be used to read welding forces up to 3,000 pounds.
2. Place a wood pencil between the electrodes and close using the TIP DRESS switch. The electrodes should not dent more than 1/32” into either side. A typical #2 wood office pencil works well. A carpenter’s pencil works better since the flat area is much larger.

TROUBLE SHOOTING CHART

NOTE: This SOFT TOUCH system will not operate if any fault is detected. SYSTEM READY will glow solidly if faults are clear.

INDICATION	CAUSE	WHAT TO CHECK OR DO
Start LED not on **solid**	No power to control. If any fault shown below is detected. The **Start** LED will only glow solidly when the system is ready for operation.	Be sure that 115V is at terminals #1 and #2.
Start LED flashing **slowly** **Or** **Continuity Detected with No Start Signal** LED on.	Voltage on blue sensor wires too low or not connected. Insulator missing or some conducting component is connected between insulated side of welder secondary and welder frame.	Measure voltage between electrodes. It should be a minimum of 25mv (.025VAC). If it is above zero, a second snubber might have to be added across the SCR to bring this voltage up. Or the snubber might need replacement. Check mechanical system. Disconnect flexible shunt that connects weld transformer secondary to moving arm, pull out plug on SOFT TOUCH board at terminals 4 to 7. Measure resistance between electrodes. If it is not 0, check for bad insulator or some other patch between the insulated moving welder part and the welder frame. Repair or replace as needed.
Start LED flashing **quickly**	Voltage on blue sensor wires is too high	Contact Unitrol service for instructions.
Detect Time Exceeded. Dress Electrodes LED flashing	Not enough time allowed to close electrodes Electrodes not making good contact. Electrodes do not touch when welder air cylinder is fully extended.	Increase DIPswitch time. Remember that this maximum time is the addition of all switches pushed down towards the time numbers (.25sec, .5 sec, .75sec, 1 sec) Clean electrodes or check part being welded. Adjust electrode holders so that there is at least a 1/4" left in the air cylinder travel when the electrodes touch.
Output Closed Fault LED is on	Output relay K4 is mechanically closed (welded contacts)	Replace K4 relay.

SOFT TOUCH TS-6 TOUCH SENSOR BOARD

INDICATOR LIGHTS

LED14 (GREEN): IS ON WHEN RETR. FOOT SWITCH CONTACT IS CLOSED

LED8 (BLUE): IS ON WHEN RETRACT VALVE ON INPUT IS HIGH OR RETR. FOOT SWITCH CONTACT IS CLOSED

NOTE: FOR TS-5 BOARDS, LED 6, 7, 8, 9 14, AND 15 ARE ALL GREEN.

LED6 (YELLOW): IS ON WHEN ELECTR. CLOSED LIM. SW. CONTACT IS CLOSED

LED15 (WHITE): IS ON WHEN HEAD DOWN LIM. SW. CONTACT IS CLOSED

LED9 (ORANGE): IS ON WHEN START FROM WELD SOL. INPUT IS HIGH

LED7 (RED): IS ON WHEN SELECT SWITCH INPUT CONTACT IS CLOSED

100mA fuse for 24VIS ISOLATED VOLTAGE. USED FOR OUTSIDE SWITCHES

LED2: (ORANGE): 24VIS ISOLATED VOLTAGE. USED FOR OUTSIDE SWITCHES

LED5 (ORANGE): 24VDC USED FOR ELECTRONIC CIRCUITRY ON THIS BOARD

LED3 (ORANGE): +15VDC

LED4 (ORANGE): -15VDC

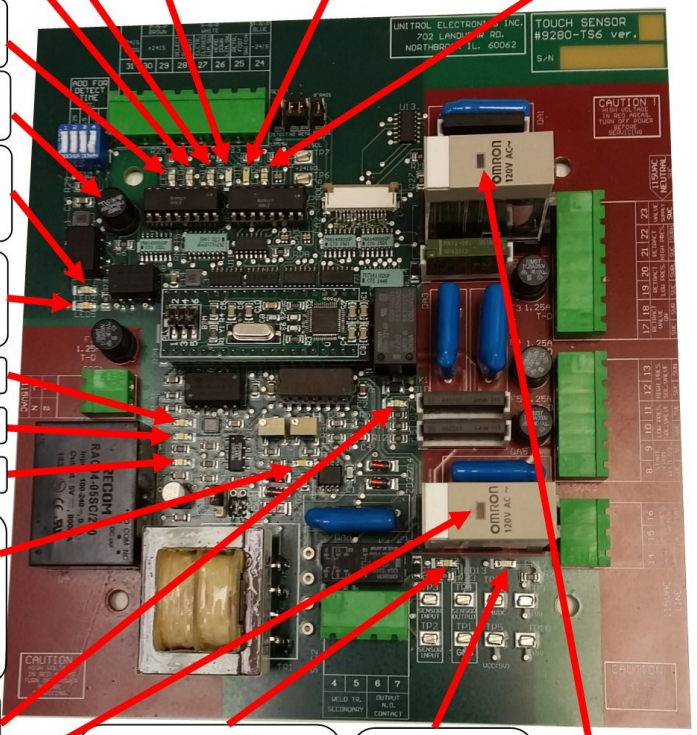
LED1 (ORANGE): +5VDC

LED16 (WHITE): HIGH GAIN AMPLIFIER IS ON. FOR AC UNITS: INDICATES THAT SENSOR INPUT VOLTAGE IS UNDER 300mV.

FOR MFDC UNITS: THIS IS THE NORMAL CONDITION.

LED17 (RED): K1 SPURIOUS OPERATION RELAY IS ENERGIZED

WINDOW TURNS RED WHEN START FROM WELD SOL. INPUT VOLTAGE IS HIGH



LED13 (RED): OUTPUT N.O. CONTACT IS CLOSED.

CONTACT CLOSURE TELLS CONTROL TO START WELD SEQUENCE.

JP5 IN "STD": LED WILL BE OFF DURING STANDBY AND TURN ON AT CONTINUITY.

JP 5 IN "S2": LED WILL BE ON DURING STANDBY, OFF AFTER SV INPUT, AND ON WHEN CONTINUITY IS DETECTED.

LED512 (BLUE): OUTPUT N.O. CONTACT IS OPEN.

JP5 IN "STD": THIS IS THE NORMAL STAND-BY CONDITION.

JP5 IN "S2": THIS WILL BE OFF UNTIL SV INPUT. THEN WILL BE ON UNTIL CONTINUITY IS DETECTED.

WINDOW TURNS RED WHEN RETRACT VALVE ON INPUT IS HIGH OR RETR. FOOT SWITCH CONTACT IS CLOSED

Having trouble or need answers to your questions?

Call: Unitrol tech support

847-480-0115, M-F 9:00 - 5:00 CT.

Or Email at:

techsupport@unitrol-electronics.com

Unitrol supplies free phone support for the life of this and all their products.

UNI*TROL* ELECTRONICS, INC.
702 LANDWEHR ROAD
NORTHBROOK, IL 60062
847-480-0115
techsupport@unitrol-electronics.com