PRO SPOT

PR-10 / PR-10 DUO

Resistance Spot Welding System

INSTRUCTION MANUAL

WARRANTY CARD

PRO SPOT
INTERNATIONAL, INC.
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Escondido, CA 92029, U.S.A.
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Register Online:
www.prospot.com

IMPORTANT! **FILL OUT AND MAIL TO ENSURE WARRANTY REGISTRATION** ***IMPORTANT!***

Company Name:		***Address:***	
City:		***State:***	***Zip:***
Owner/President:			
Phone:		***Fax:***	
E-Mail:		***Web Site:***	
Date of Purchase:	***Serial No:***	***Model purchased:***	
Purchased from:		***Address:***	
Comments:			

TABLE OF CONTENTS

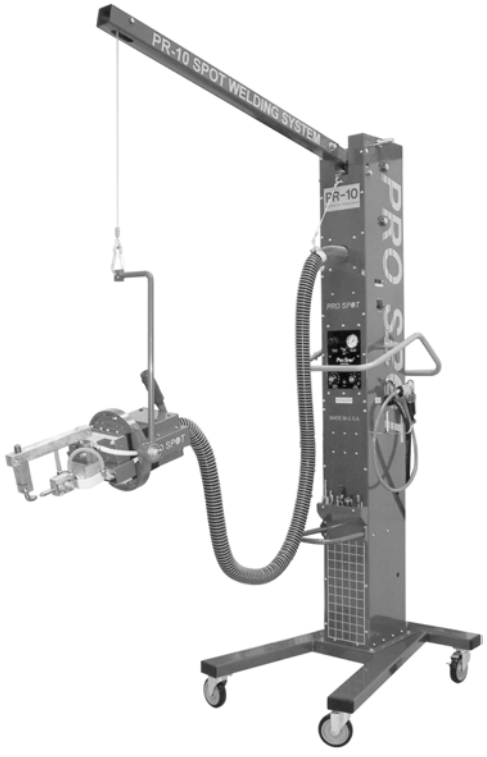
Congratulations on acquiring your new PRO SPOT PR-10 welder!

Team Pro Spot looks forward to supporting you.
You have a welder and support group that will increase your productivity. The integrated features, ease of use, speed and quality welds that your PR-10 offers, will become an important tool in your efforts to increase productivity in your business.

The following information will be needed when you call Pro Spot:

* MODEL TYPE: PR-10 PR-10 DUO

* SERIAL NO:_____



For parts or service contact your local distributor,

Local number: _____

or in the U.S. call 1-877-PRO SPOT
for a customer service representative or
visit our website: www.prospot.com

Your welder has been designed and tested to meet strict safety requirements. Please read the following instructions carefully before operating the PR-10 and refer to them as needed to ensure the continued safe operation of your welder.

All electrical work on the unit must be performed by authorized personnel only.
Unplug this welder from the wall outlet before servicing, cleaning or maintenance.
Do not operate or place this welder near water, wet locations or outdoors.
Installation requires a 220V or 400V supply with ground connection.
Contact an electrician to install a plug with ground connected to green wire.

Risk of tripping: loose cables.
Do not place the welder on unstable or uneven ground. It could fall causing personal injury and serious damage to the welder.

If an extension cord is used with the welder, ensure that the length does not exceed 30 feet and to use a minimum of 6 AWG stranded wire with ground contact.
Contact your electrician for safe and proper installation.

Sparks from welding could start a fire.

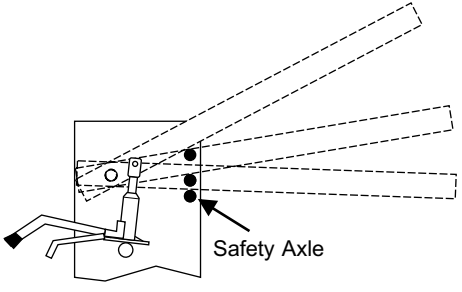
Appropriate eye protection must be worn when using this equipment.
Protective gloves, clothing and shoes must be worn when using this equipment.

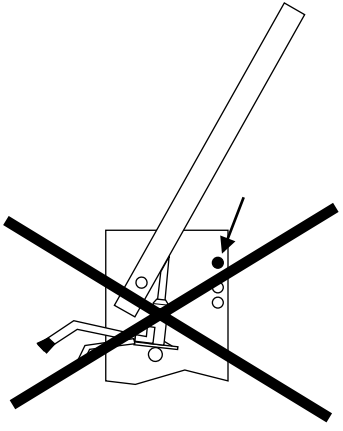
HYDRAULIC BOOM SAFETY

Always rest boom against safety axle.

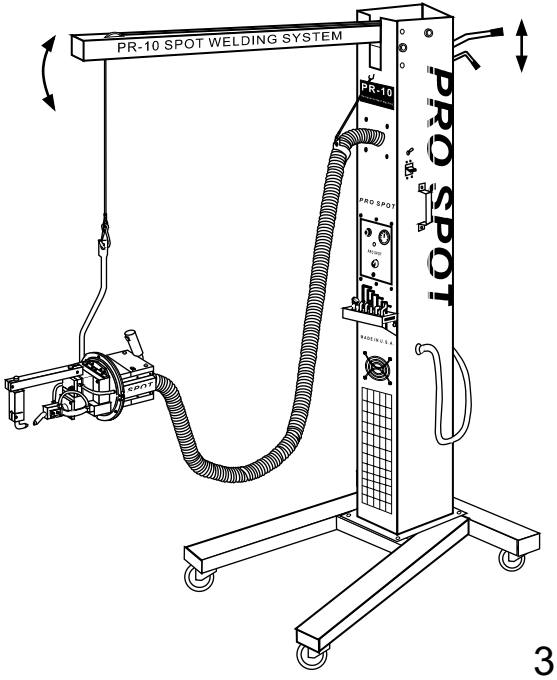
Do not extend the boom above top safety axle.

Lower Boom Slowly!





DANGER! Do not extend boom above top safety axle!



1) Cut the shipping straps and remove the A-frame from the crate.
2) Attach casters to the A-frame with supplied bolts. Casters are shipped in the accessories box.
3) Stand the A-frame upright on it's wheels.
4) Remove the crate side panel at the base of the tower and raise the tower on the A-frame.

⚠ **NOTE: Y**ou will need at least two people for this step: one to hold the A-frame and the other to raise the tower.

5) Secure the tower with bolts provided in the accessories box.
6) Insert the telescoping boom over the boom base at the top of the tower.
7) Secure it with a bolt (included).
8) Make sure that the cable runs over the bearing grooves and moves freely before hanging the welding head.

⚠ **NOTE:** The weight of the head is 85 pounds. Please be sure to get help while lifting it.

10) Remove the lower panel on the back of the welder.
11) Fill cooling tank, located in bottom of tower, with 50/50 mix antifreeze coolant. Use a funnel.
    Do not remove tank when filling it.
12) Close the lid and attach the hoses.
13) Install an electrical plug on the welder input power cable. The welder uses single-phase 220/380 V plus ground,
    minimum 50 A. A 60 Amp breaker is recommended.

⚠ **NOTE:** Please refer to the instructional video tape received with the welder for more information.

BEFORE YOU BEGIN WELDING

Congratulations on your purchase of the PR-10. Before you begin welding be sure to read and understand the following instructions.

The Pro Spot PR-10 is a state of the art resistance welder that was designed for the bodyshop to duplicate the welding procedure used by the car manufacturers. It is important to understand the design and function of this resistance welder before operating it.

ELECTRICITY ONLY

The PR-10 uses only electricity to create the welds unlike the MIG welder that uses an arc from a feeding wire to build a weld nugget from the material in the feeding wire.

PRESSURE

The PR-10 also has a built in pneumatic feature that compresses the welding tips together automatically when triggered. The compression is an important factor for a good resistance weld. The compression pressure is adjustable from the control panel. The optimum pressure varies between 60-80 PSI. Use 70 PSI as a starting point. As a rule, increase pressure with thicker metals but remember that too much pressure will decrease resistance and therefore weld quality.

CURRENT

Another important factor is the current applied to the work piece. Weld creation starts when a large current is transferred through the metals. The resistance in the metal to the current

WELD PROGRAM

Maintaining the pressure after the current shuts off, forces the weld to cool down under pressure building a hardened and stronger weld. This feature is built into the PR-10's weld control program and is engaged automatically after the weld is started. Notice that even if the operator let go of the trigger button, the weld program follows through its entire cycle. In other words, there is no risk that the operator could accidentally interrupt the weld cycle when using the PR-10.

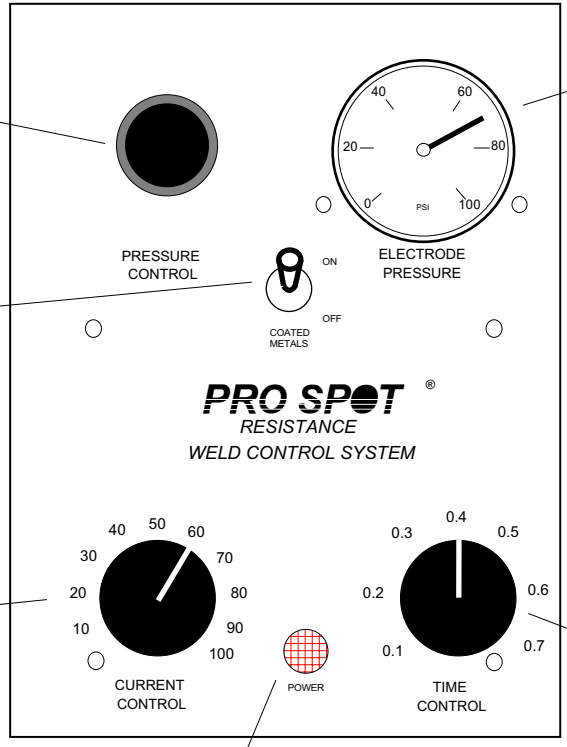
TIME

The Timer controls the duration of the current applied during the weld. Average settings are between 0.4 & 0.6 The ideal is to try to get a weld that uses higher current and

PRO SPOT PR-10 WELD CONTROL PANEL

AIR PRESSURE REGULATOR
Adjusts electrode pressure by turning the knob.
Pull out to adjust. Push in to lock.

AIR PRESSURE GAUGE
Indicates adjusted electrode pressure(PSI).
Recommended pressure: 60-80 PSI



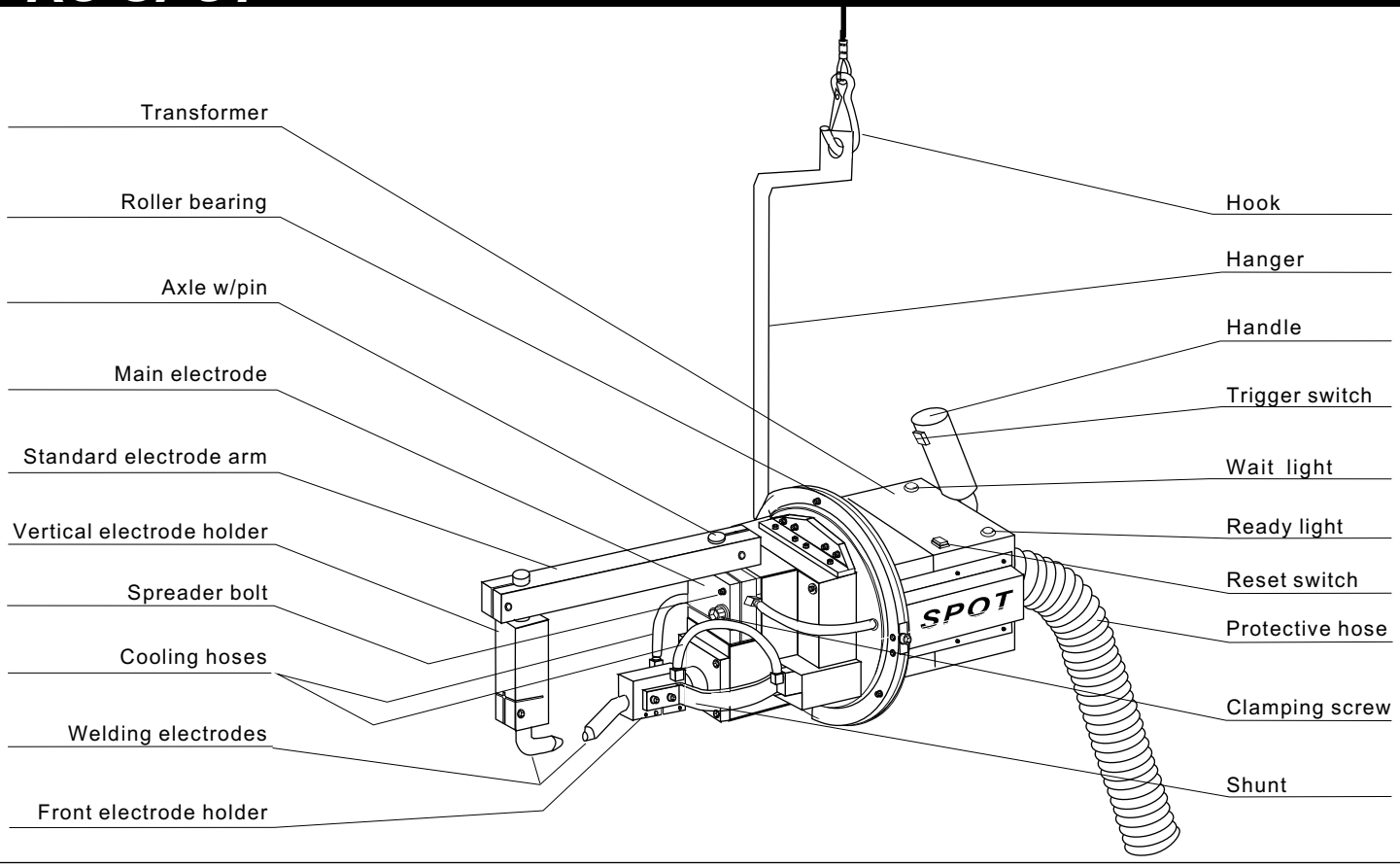
COATED METAL SWITCH
Keep switch "ON" when welding any metals with coatings, primers, dirt, etc. This feature senses the resistance for adequate connection before welding. The timed cycle will not engage until connection is established.

CURRENT CONTROL KNOB
Adjusts the current by turning the knob. Always start out with low settings and adjust up. Too much current will cause unnecessary sparking and burn through.

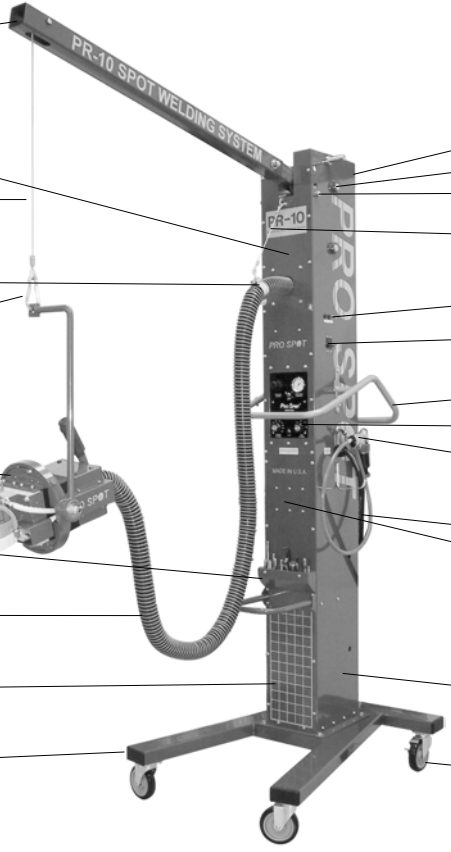
TIME CONTROL KNOB
Adjusts the duration of the weld cycle. Use as short a time as possible. Too much time will cause over heating and low quality welds.

PILOT LIGHT
Indicates power on when lit.

PR-10 WELDING HEAD



PRO SPOT TOWER SYSTEM



Boom

Front panel (top)

Cable

Hose clamp

Cable hook

Welding gun
(see separate view for detail)

Tool tray

Protective hose

Front panel (bottom)

A-frame

Hydraulic Jack

Boom pivot axle

Boom adjustment axle

Strain relief cable

Cooling switch

Switch, On/Off

Pulling handle

Control panel

Pneumatic Electrode Dresser

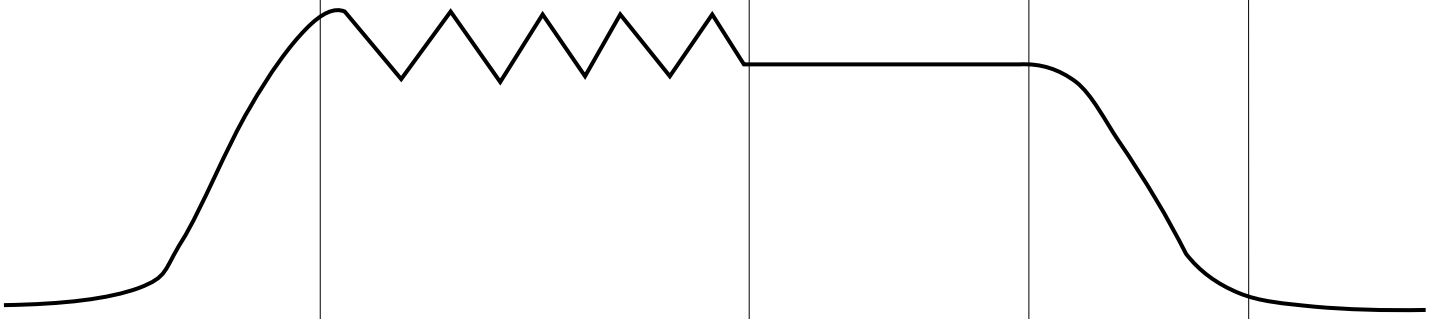
Input cable

Front panel (center)

Side panel, left

Caster

PR-10 WELD CYCLE CHART



SQUEEZE

When the trigger button is pushed, the electrodes compress together (SQUEEZE)

Electrode pressure is building up to the preset air pressure on the control panel.

A built-in two second delay allows maximum pressure to build inside the gun before the weld cycle begins.
During that time, you can simply release the button and the squeeze pressure will release.

WELD

After two seconds of squeeze, the WELD cycle is engaged. The weld density is determined by the current setting on the control panel. Weld Current shuts off automatically.

If paint and dirt are not cleared from the repair area, the weld program will not complete the timed weld until adequate connection is established.

After the weld is turned on the weld program will cycle through completely even if the trigger button
is released.

HOLD

After the Weld cycle is turned off, the HOLD cycle remains to compress the electrodes together for 2 seconds.

The purpose is to let the high temperature in the weld to cool down under pressure. This causes the weld nugget to harden uniformly creating a stronger weld.

WAIT

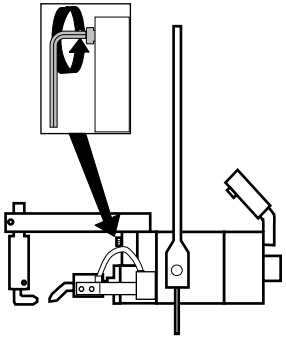
After the Hold cycle, the WAIT cycle is engaged and the electrodes release.

The WAIT cycle determines the welders duty cycle. The red WAIT light is turned on during this cycle.

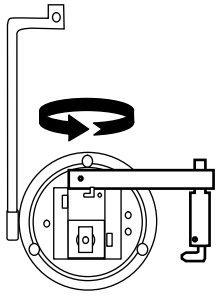
READY

The green READY light is turned on following the Wait delay.

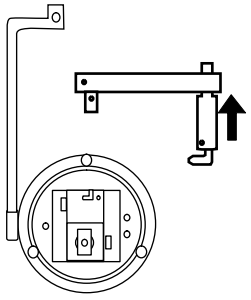
This indicates that the Pro Spot PR-10 is ready to perform another spot weld .



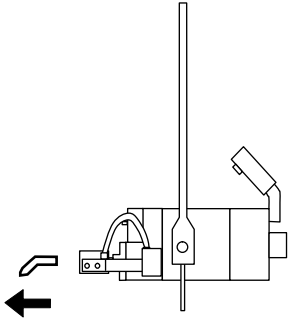
Loosen screw (use allen wrench 8 mm)



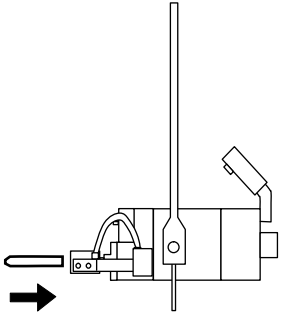
Swing arm 90 degrees to the side



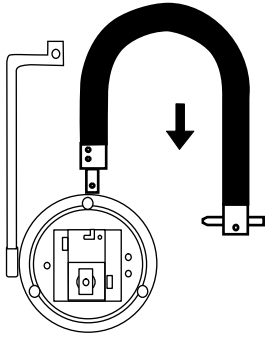
Lift arm out. Use 3mm set screw to widen the spread if needed

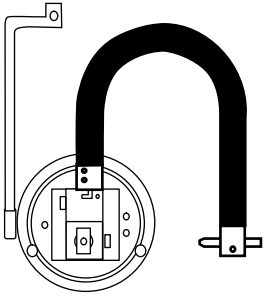


Remove tip.

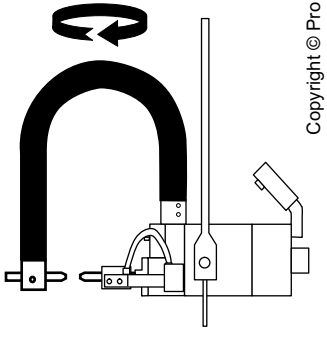


Insert welding tip (PLT-14)



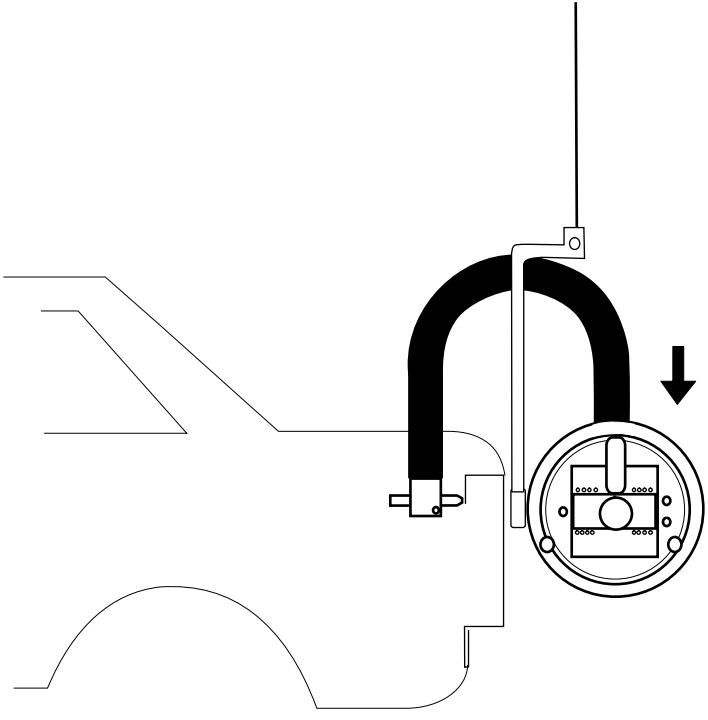


Insert desired Extension arm as shown with the dowel pin forward

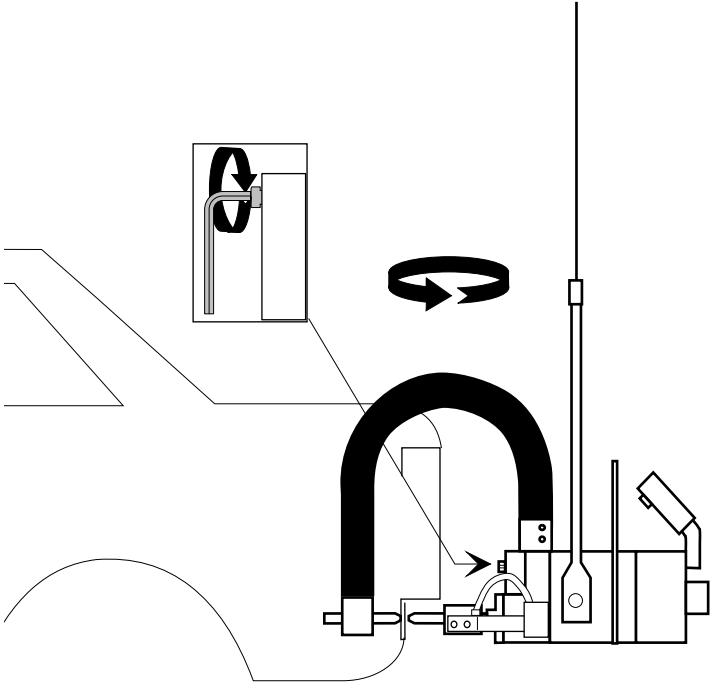


Swing arm 90 degrees back to the stop. Tighten clamp screw firmly.

EXTENSION ARM SYSTEM, cont'd

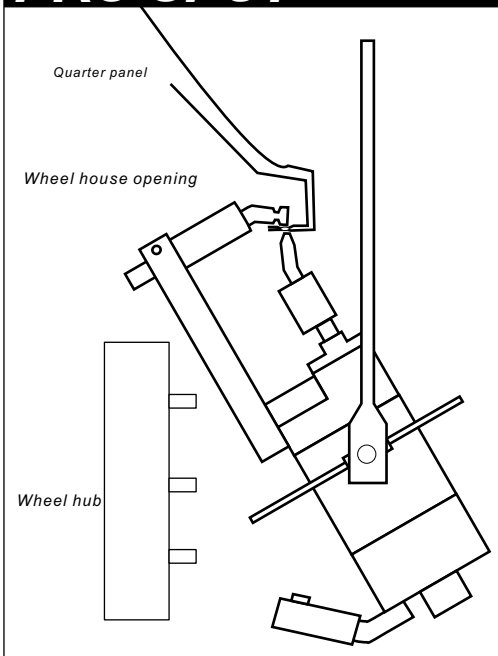


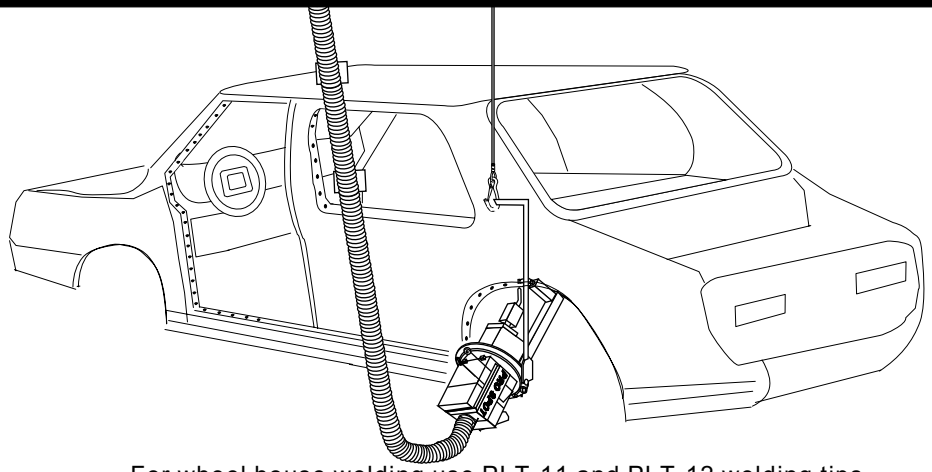
Swing extension arm to the side. Lower gun over the wide area into the work area.



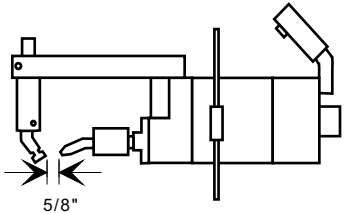
Then, swing the gun back to the stop.
Lock the clamping screw tight.
Check the weld control setting for correct Time, Current and Pressure. Start welding.

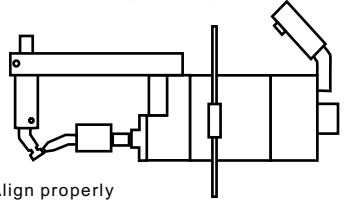
WHEEL HOUSE WELDING





For wheel house welding use PLT-11 and PLT-12 welding tips. Make sure to align the tips so when they close, the spot on PLT-12 should hit the flat on PLT-11. Adjust tips to 5/8" (16mm) gap.





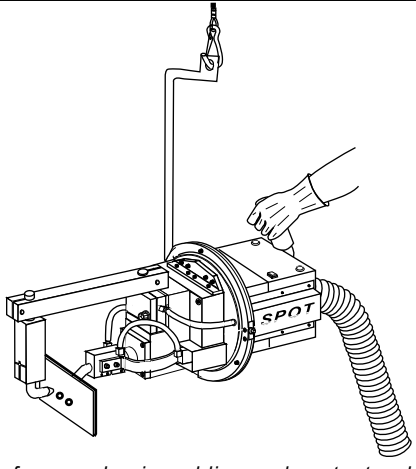
The PLT-11 and 12 are designed in a 22 degree angle, allowing the welding gun to operate at a consistent angle outside the wheel house preventing any parts of the gun from interfering with the wheel hub or such.

Always perform some test welds on similar material and thickness before welding. Start with 60% Current, 0.4 Time and 60PSI pressure.

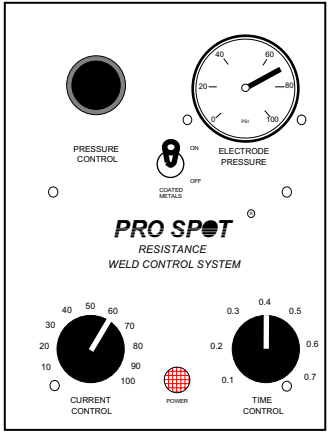
Welding with PLT-11 and PLT-12 also works well for core supports, etc.

WELDING OF GALVANIZED STEEL

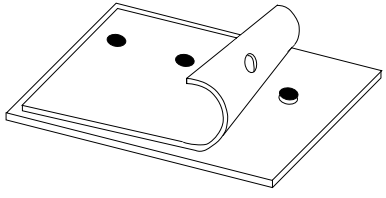
A popular way of protecting mild steel against corrosion is to plate it with zinc (otherwise known as galvanizing). The zinc can be deposited electrically or the steel is dipped in molten zinc. Many car manufacturers are currently using galvanized metals in the production of their automobiles.Resistance spot welding has advantages over arc welding.
Much less heat is created and less fumes are generated.



Before you begin welding,make a test weld using the same materials as those that will be used for your project.
Perform a destructive weld strength test.
Adjust settings on the control panel.



Start with CURRENT set at 60% and TIME on 0.4 and ELECTRODE PRESSURE at 70 PSI



When you tear the metals apart as shown above, the weld nugget should remain on one plate and a torn hole will result in the other plate around the weld.

TIP:

** Turn the power down if a reddish color appears in the weld nugget, or if the nugget seems shallow.*
** Turn up the pressure slightly and/or if throw out appears turn down current and time.*
** Keep in mind that the weld nugget from galvanized metal does not appear as burnt as carbon steel.*

ADJUSTMENT OF ELECTRODES

HORIZONTAL ADJUSTMENT:

1. Loosen clamp screw (A), swing arm all the way, until it hits the stop.
2. Tighten clamp screw (A).
3. If welding electrodes are not aligned horizontally loosen screw (B)
4. Swing the arm so it aligns the two welding tips.
5. Tighten screw (B).

VERTICAL ADJUSTMENT:

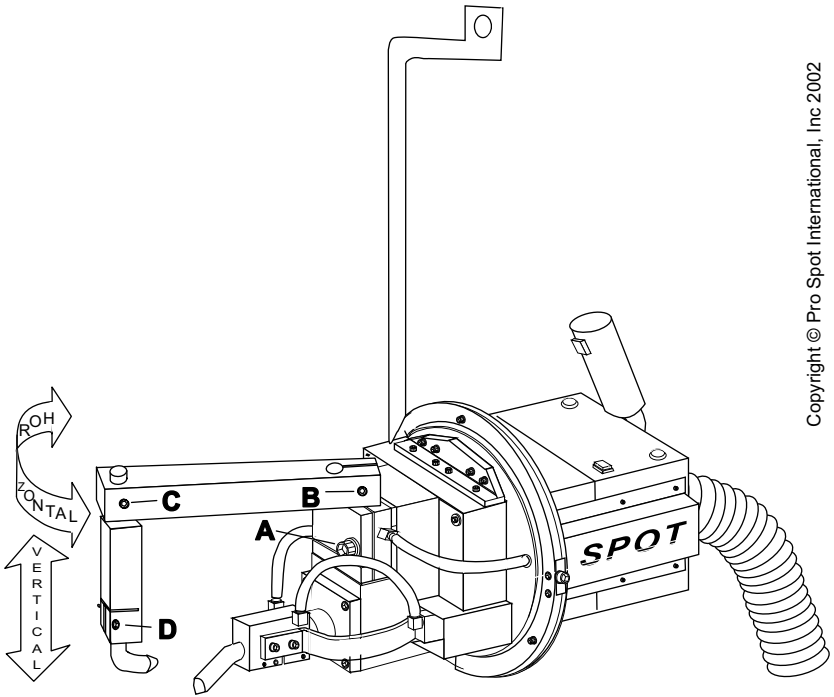
1. If the welding tips are not aligned vertically, there are two ways to adjust. Loosen screw (C) and adjust adapter up or down until aligned, or loosen screw (D) to adjust welding tip.

MAINTENANCE OF TIPS

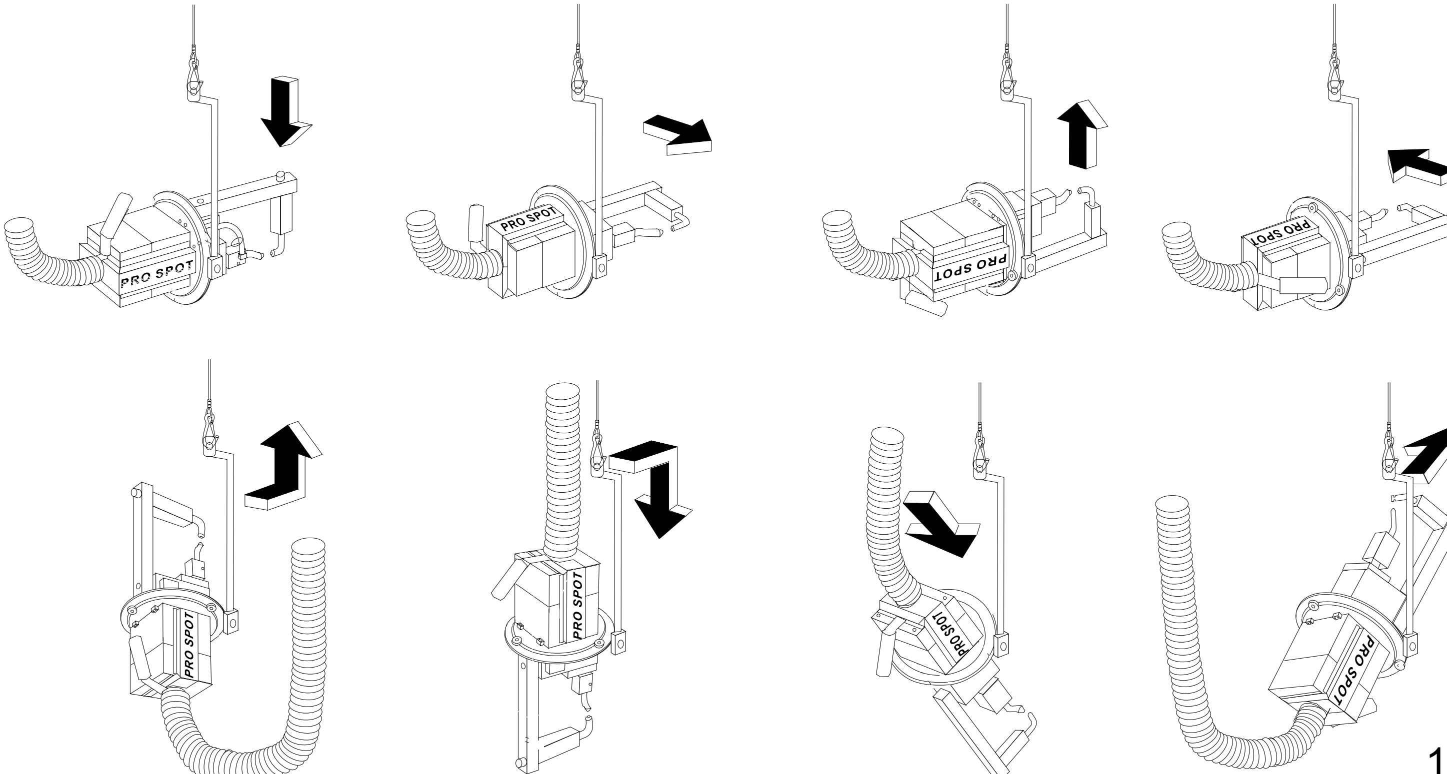
Always keep copper tips free of dirt and metal. If sheet metal is left on the spot surface, metal from the nugget area will spatter away from the electrodes (blowing holes). Use a tip dresser to maintain a 6mm spot diameter.

TIP:

To check the tip alignment, push and release the trigger repeatedly. This will compress the electrodes without completing the weld cycle.



IT IS VERY IMPORTANT THAT THE WELDING TIPS ARE ALIGNED. MISALIGNMENT WILL CAUSE WEAK WELDS AND IT COULD BLOW HOLES IN THE METALS.



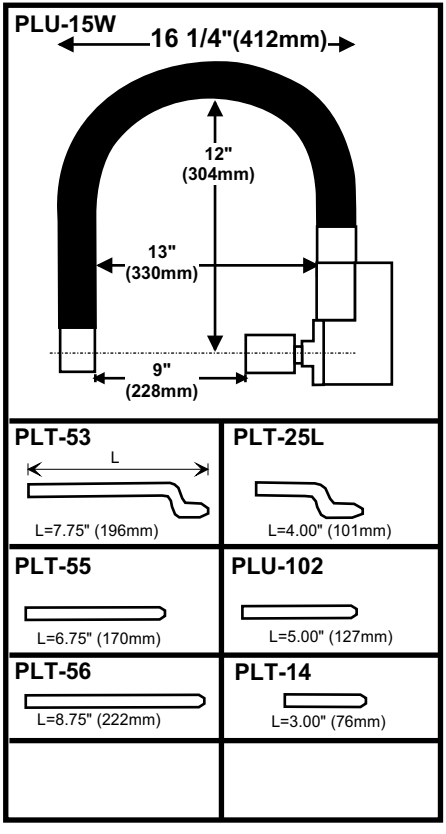
PROBLEM	SOLUTION
Nothing happens when the trigger is pushed.	No air pressure, air line not connected.
Blows holes when welding	Air pressure too low, don't go below 60 psi. Gap between panels. Welding multiple layers of metal when middle layers are not grounded. Turn "coated metal" switch off and place vise grip next to the weld area.
Throw out occurs in weld nugget.	Too low pressure, and/or too high current
Welder overheats	Check cooling system: pump, cooling fluid level welding tips dirty and too big weld surface.
Weak welds	Welding tips misaligned, dirty welding tips, poor input voltage connection, check plug, extension cord under rated,

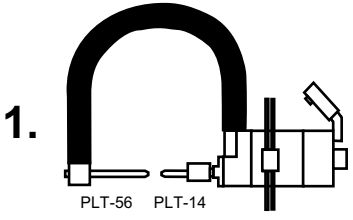
Manufactured by Pro Spot International, Inc. 926 S. Andreasen Drive #101 Escondido, CA 92029 U.S.A. Phone (760) 489-1380 Fax (760) 489-1531
Toll Free: 877-PRO SPOT WEB: www.prospot.com E-Mail: info@prospot.com

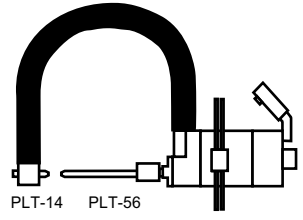
Pro Spot PR-10 Resistance Spot Welding System

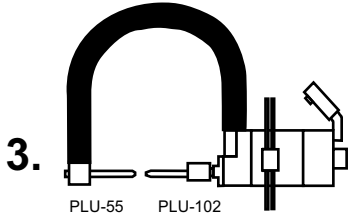
Input Voltage	208/240 V, 380/415 V 50/60 Hz.
Input Cable 6 AWG 30' (914 cm) L	Install to 50 A breaker for 220 V. Install Proper Electrical Plug
Open Circuit Voltage	4.5-6.5 V
Output Amperage	16 000 A Max.
Amperage At Electrodes	10.500 A
Duty Cycle	50%
Cooling System	Liquid. Circulating Loop System.
Electrode Pressure, Pneumatic	Adjustable 230 - 660 Lbs. Square inch
Air Pressure (input)	60-80 PSI (413-551 kPa)
Electrode Squeeze Time	1.5 - 3.0 Seconds
Automatic Hold Time	1.5 Seconds
Internal Line Protection	50 A Circuit breaker
Operating Temperature	+5ºC to 40ºC (41ºF to 104ºF)
Operating Humidity	35% to 85% RH
Maximum Altitude	6562' (2000m)
Coated Metal Welding Capability	Yes, On/Off switch
Removable Electrode Holder	Yes, Quick connect
Extension Arm System Capability	Yes (Patented). Reach: 10-20 inches
Dimensions - Welding Head	18" (46cm) L, 79 Lbs (36 kg)
Dimensions - Tower	74x12x9" (188x30x23 cm), 205 Lbs (93 kg)
Dimensions - Boom	2.5x2.5x60" (6.4x6.4x152 cm)
Dimensions - Shipping Crate	94x48x22" (239x122x56 cm), 588 Lbs (267kg)

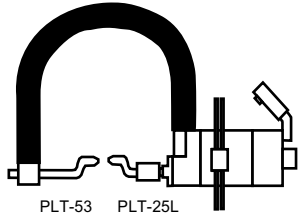
WELDING ELECTRODES FOR PLU-15W

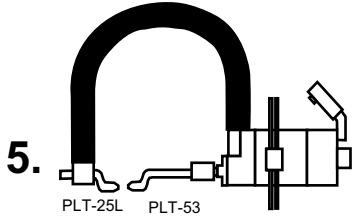


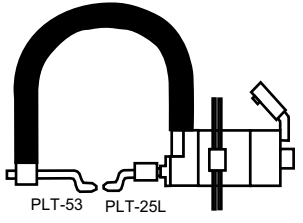












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