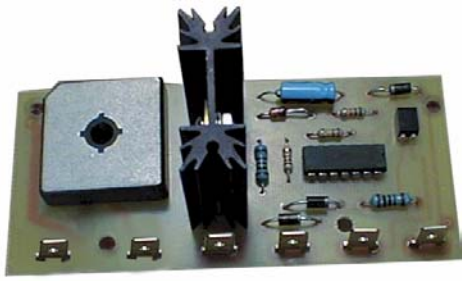
Installation and operation of the Weldtron Products

PIPELINER

Remote Amperage Controller

Installation and operation of the PIPELINER REMOTE AMPERAGE CONTROLLER.



US Patent Applies

Invented and Manufactured by:
Weldtron Products
PO Box 30
Alice, Texas 78332
Telephone: 361-664-4413 Fax: 361-664-9135
Email: sales@weldtron.com
Internet: www.weldtron.com

WELCOME.

This booklet contains various installation schematics for the Weldtron Products Pipeliner remote amperage controller to a wide range of engine driven welding machines. Do not dispose of this manual...it will become invaluable when the need arises for maintenance or repair of your remote controller.

The Pipeliner is currently adaptable to over 59 different types and brands of welding machines.

GENERAL OPERATION.

The Pipeliner remote is extremely simple to operate.

1. It uses a standard three wire extension cord for both control and power.
2. I does not require the installation of any switches. Plug it into the remote extension cord—it's on. Unplug it—it's off.
3. The electronic controller within your machine simply parallels your machine's own rheostat and simply pulse modifies the machine's own field current.
4. In the event of failure your machine can still operate normally by simply removing two wires from the Pipeliner machine circuit board.
5. Minimum set welding current is simply selected by setting your machine rheostat to the lowest amperage you wish. The Pipeliner will automatically range from that setting to the machine maximum.
6. When the hand control unit is not in use the remote extension cord can be used as a standard extension cord by utilizing a common 3 prong to 2 prong 120 volt adapter to isolate the ground terminal.
7. The Pipeliner can be used with a GFI system on machines with AC auxiliary power.
8. The large knob on the hand control makes it easy to turn with welding gloves on.
9. The magnetic base allows the hand control to be attached to any iron or steel.
10. The electrical receptacle on the hand control is rated at 20 amps, AC or DC.

CAUTIONS.

1. Do not allow the hand control unit to be submerged in mud, snow or water even though it is protected from the weather, it is not waterproof.
2. Don't use the remote extension cord for a standard extension cord without the hand control plugged in unless the adapter mentioned in paragraph 6 above is used.
3. Wet, muddy or damaged extension cord connections can (and will) cause malfunctions that appear to be generated from the remote hand control.

4. Most malfunctions with the Pipeliner occur upon installation. Read and follow the installation instruction exactly as shown. DO NOT GUESS at anything. If in doubt, contact us immediately BEFORE you damage the unit, or worse yet, your machine.

INSTALLATION.

Mechanical Installation:

1. Place the machine circuit board on a piece of thick paper and mark the mounting holes on it. This will be your drilling template.
2. Mount the circuit board behind the machine's front panel where it will be protected from the weather. Use the screws supplied to mount the nylon spacers to the front panel. Simply snap the circuit board to the spacers.
3. Mount the supplied receptacle into the machine panel or mount it onto a piece of sheet metal mounted on the gas tank rail. We recommend the receptacle be mounted inside the cover of the machine to protect it from wind driven rain, road water or snow. You may use the supplied receptacle or a generic isolated ground receptacle such as the generic part number **5361-IG** that can be obtained at most electrical supply houses. This part number is generic for brands such as Hubbel, Levaton and many others. If an isolated ground cannot be readily obtained use a temporary remote receptacle by cutting off the head of an extension cord and using it as a "drop cord" until you can purchase the correct isolated receptacle.

WARNING! Do not use any receptacle that has an integral (internal or external) ground terminal attached to the machine frame. It will cause the remote to become inoperative.

ELECTRICAL INSTALLATION.

Basic Installation for all machines.

The following installation diagrams apply to ALL installations and to all machines accepting our Pipeliner remote controls.

Machine Circuit Board

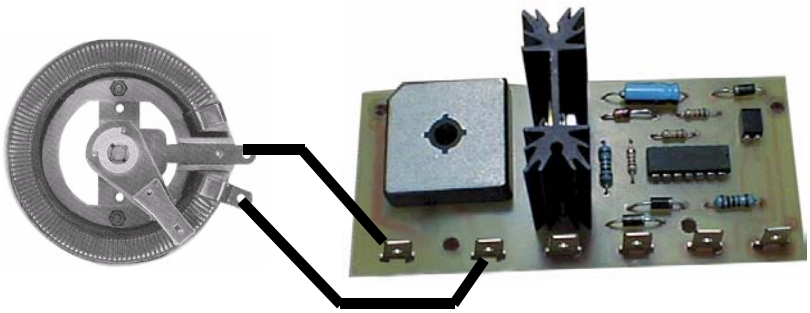
Rheostat

Machine power receptacle

Diode Bridge

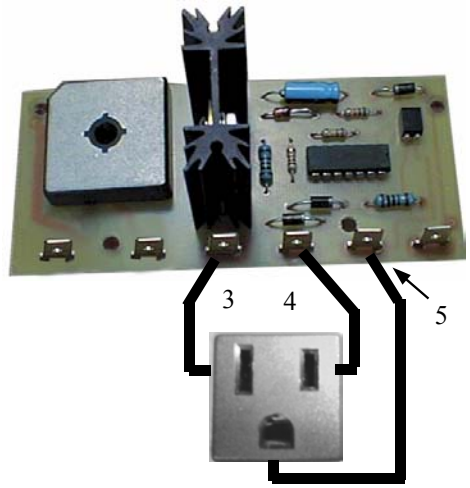
Remote Receptacle

1. Connecting the rheostat:



Locate the machine's fine current control rheostat. **DO NOT REMOVE ANY ORIGINAL WIRING FROM THE RHEOSTAT!** Add a new wire from the rheostat to terminal #1 on the machine circuit board. Add another new wire from the rheostat to terminal #2. It does not matter what wire goes to what terminal on the circuit board and polarity does not matter either. Simply attach the wires as shown. This completes the wiring to the machine's rheostat.

2. Connecting the remote receptacle:

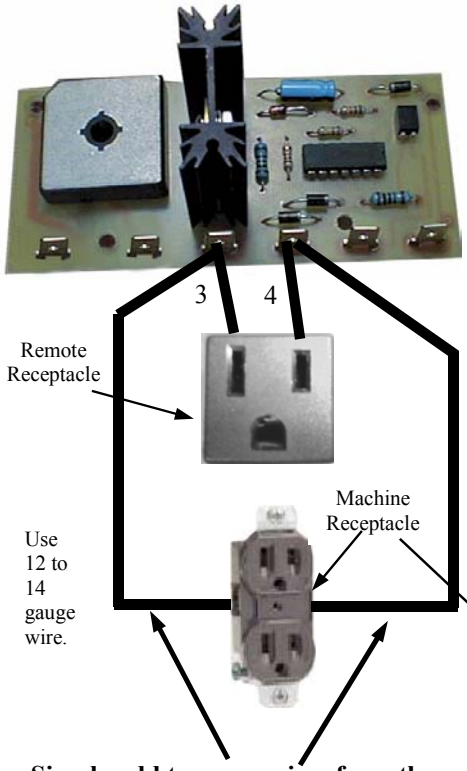


Connect the remote receptacle as shown. You may use the supplied receptacle or any other **ISOLATED GROUND** receptacle such as the generic part number **5361-IG.**

WARNING! Do not use any standard electrical receptacle. They all have grounded center conductors and will cause the remote to malfunction. Most installation problems are caused by the use of common electrical receptacles.

3. Connecting the Machine 120 volt receptacle to the remote receptacle:

Note: Lincoln SA-200, Classic-I and Pipeliner 200G and D machines have a single receptacle but wiring is the same. Polarity does not matter.



Simply add two new wires from the machine auxiliary receptacle to terminals #3 and #4

Wiring the remote receptacle from the machine's auxiliary power receptacle is easy. Simply parallel the wiring as shown in this picture.

Note: in the previous step wiring from the remote receptacle was connected to the circuit board. Simply connect these additional wires to the remote receptacle.

WARNING! Note that the ground wiring connections are not made between the machine auxiliary receptacle and the remote receptacle. DO NOT CONNECT THE GROUND WIRING!

Receptacle for SA-200, Classic I, Pipeliner 200G and Pipeliner 200D.

GFI Connections: Ground Fault Interrupter (GFI) receptacles may be wired the same as shown above. Simply use the secondary side of the GFI receptacle to attach to the remote receptacle. Read the GFI instructions that come with the GFI receptacle.

NOTE: **GFI receptacles are only utilized on AC auxiliary powered machine. They do not operate on DC auxiliary powered machines** such as the SA-200, Classic-I or Pipeliner 200G or D series machines.

THIS COMPLETES BASIC INSTALLATION OF ALL WIRING COMMON TO ANY MACHINE UTILIZING THE PIPELINER REMOTE AMPERAGE CONTROL.

SPECIALIZED WIRING CONNECTIONS

Once the basic connections have been completed, terminal #6 on the circuit board must be performed. Different machines have different connections. Follow the specialized installation instructions below to complete installation of the Pipeliner Remote Amperage Control. Once completed, you will be ready to use your remote amperage control.

WARNING!

95% of all Pipeliner malfunctions occur due to errors installation! DON'T GUESS! If you are unsure of a connection call us at 361-664-4413 for technical support.

NOTE: When installing to a machine that produces AC auxiliary power, you must know how to locate and identify the machine's diode bridge. The following gives a short description that will assist you in installation of the Pipeliner Remote Control.

Identifying the Diode Bridge

The diode bridge is a black plastic cube that is mounted on the rear of the front panel of the welding machine. It is easily recognizable. Some have small symbols on them stating " AC, AC, Neg, Pos, -, or +.

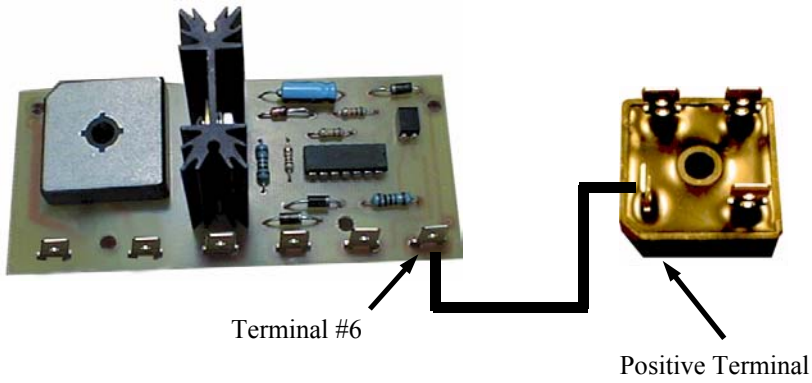
Positive terminal identifier

When connecting terminal #6 from the circuit board, only the positive terminal on the diode bridge will be used. No other terminals will be used. Do not disconnect any of the original wiring that is on the diode bridge when connecting the circuit board.

The positive terminal of the diode bridge is easily recognized by several means. **Most have a beveled edge**, different from the other squared edges of the bridge. If the edge is not beveled there will be either a **red dot**, a + **symbol** or the word **pos**. The positive terminal on some diode bridges can easily be located because they are turned differently than the other terminals.

SA-250 with AC auxiliary power, Classic II and III and 300D series machines.

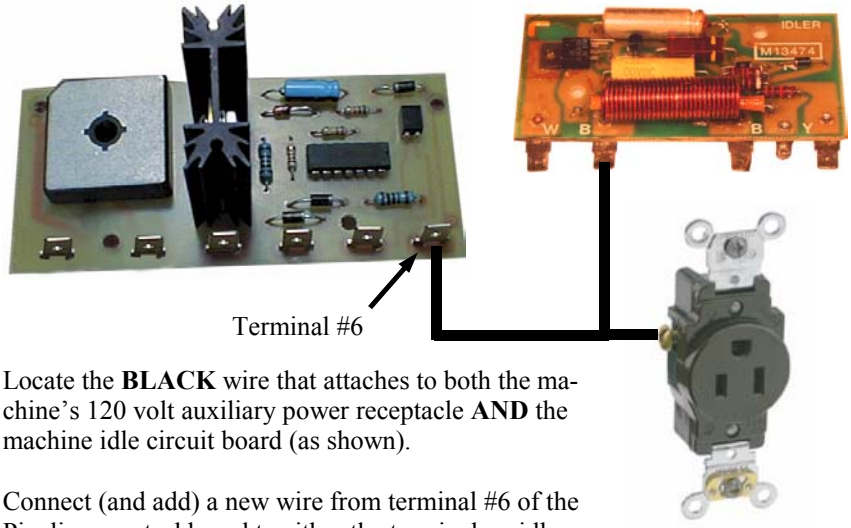
Locate the machine diode bridge behind the control panel. It will normally be located close to the fine current control . In most cases the AC terminals will have YELLOW wires connected to them and the other connections will be negative and positive.



Connect the circuit board terminal to the positive connection of the diode bridge. Do not remove any wiring from the bridge, simply add a new wire to the bridge on the positive terminal and route to the #6 terminal on the circuit board.

SA-200, Classic I and SA-250 with DC auxiliary power.

Machine Idle circuit board.



Locate the **BLACK** wire that attaches to both the machine's 120 volt auxiliary power receptacle **AND** the machine idle circuit board (as shown).

Connect (and add) a new wire from terminal #6 of the Pipeliner control board to either the terminal on idle control board or the terminal on the auxiliary power plug.

Machine Auxiliary Power Receptacle

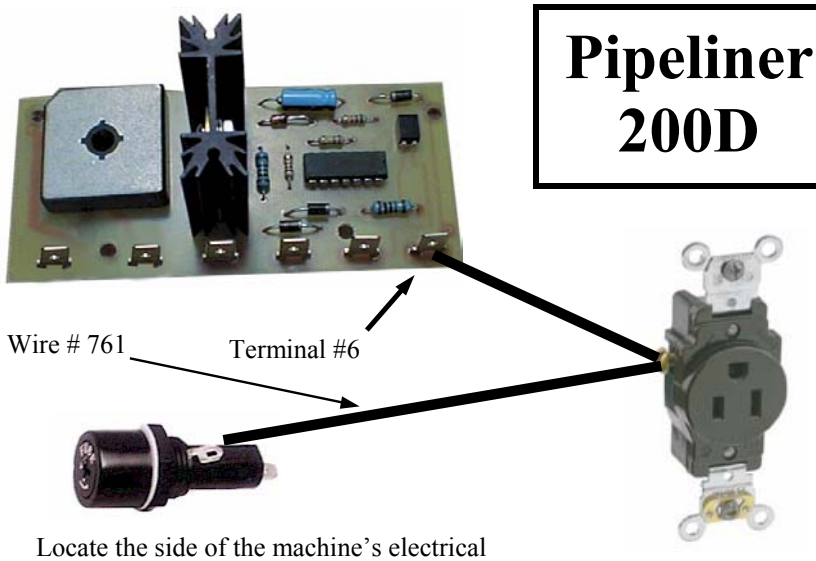
If the machine is very old and does not have an electronic idler installed, simply start the machine and measure the voltage polarity at the auxiliary power receptacle. Identify the **POSITIVE** terminal on the receptacle, turn the machine off and add a new wire from that terminal to terminal #6 of the Pipeliner control board.

If the wire colors are still visible on the machine, the **BLACK** wire will be the **POSITIVE** wire on the machine.

SPECIAL NOTE ABOUT LINCOLN MACHINES
Wire colors and polarity are just the OPPOSITE of what you think they are!

BLACK is POSITIVE.
RED is NEGATIVE.

Pipeliner 200D

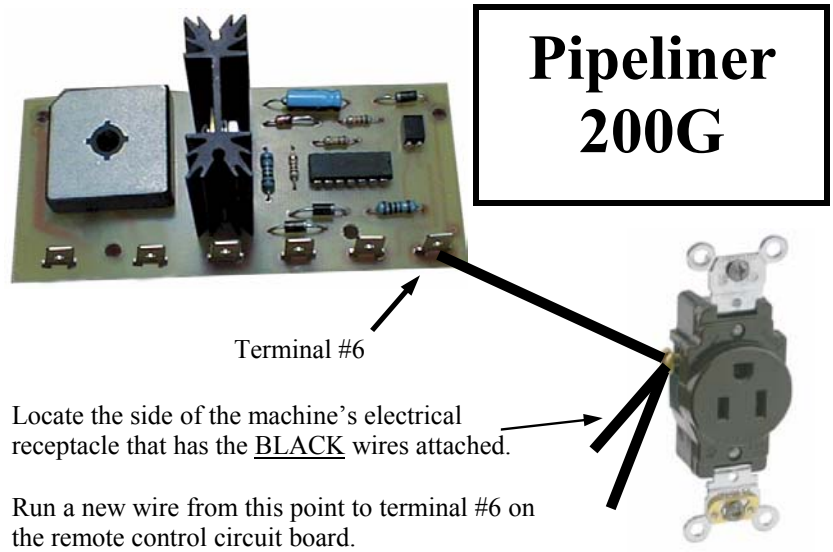


Locate the side of the machine's electrical receptacle that is connected to the fuse holder on the front panel..

Run a new wire from this point to terminal #6 on the remote control circuit board.

Machine Auxiliary Power Receptacle

Pipeliner 200G



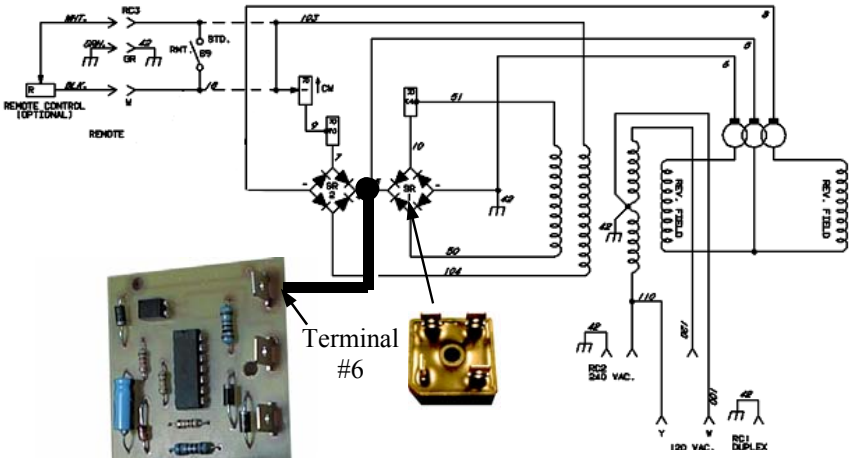
Locate the side of the machine's electrical receptacle that has the <u>BLACK</u> wires attached.

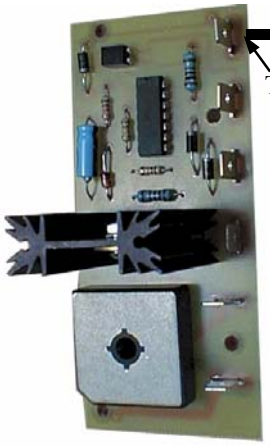
Run a new wire from this point to terminal #6 on the remote control circuit board.

Machine Auxiliary Power Receptacle

Miller Electric

Machines with 350 watt rheostats. Big 40, Trailblazer , Wildcat 350 and all similar machines.





Simply connect a new wire from terminal #6 of the Pipeliner machine board to the POSITIVE of either diode bridge. That will be the wire that goes to the CENTER slip ring on the machine's rotor.

OPERATION OF THE PIPELINER REMOTE AMPERAGE CONTROL.

Operation is very simple. The remote control utilizes a standard 3 wire extension cord for both control and auxiliary power. There are no switches to throw or special cables to use.

When the remote hand control is plugged into the remote extension cord it becomes active and controls your welding arc. When it is unplugged, it becomes inactive and full control reverts back to your machine's own current control. When using the remote control, set your machine's own fine current control at it's minimum setting (0%). This will insure that you have full control over the entire range of the machine from minimum to maximum current when using the remote.

The remote hand control dial ranges from 0 to 100%. This is a linear ranging device and will be close, but not duplicate your machine's own fine current control. After using the remote you will become familiar with it's operation.

For very fine control between ranges of your machine, you may set your machine's fine control to any setting and the remote control will give a much greater control over the minimum range set on the machine to it's maximum setting. The machine's fine current control setting will determine the **MINIMUM** current that the remote will produce.

The remote extension cord can be of any length. We recommend that a 12 gauge extension cord be used so that large tools can be used (such as chop saws and 1/2 inch drills).

The hand control is water resistant but not waterproof. Keep it dry and if it becomes wet DO NOT USE IT or it will be damaged. In most cases simply open the case and let it dry out for about 24 hours. **DO NOT SPRAY THE HAND CONTORL CIRCUIT BOARD WITH ANY CHEMICALS OR MOISTURE DISPLACEMENT SPRAYS! You will void your warranty.**

TROUBLESHOOTING PROBLEMS WITH THE REMOTE CONTROL.

NOTE: 95% of all problems with the remote controller are caused by improper installation. In most cases, it is caused by the use of standard grounded electrical receptacles being used for the remote receptacle instead of the required isolated ground receptacle.

Troubleshooting problems is very simple. The problem can be confined to

one of three devices. (1) The machine circuit board (2) The extension cord being used for the control cable and (3) the hand control unit.

Rule #1: Always suspect the extension cord. In almost all cases, the extension cord is the problem. It may have become wet and electrical conduction from one of the live wires is conducting into the control wire (the ground wire). The cord could be broken or have a conductor crushed against another. Metal filings could be contaminating the receptacle or plug on the cord. The receptacle or plug could have become "carbon tracked" by arcing of the 120 volt connections across the body of the receptacle or plug.

FOLLOW THESE STEPS IN THIS ORDER TO PROPERLY TROUBLESHOOT ANY PROBLEMS YOU MAY HAVE.

DO NOT USE THESE TROUBLESHOOTING TECHNIQUES UNTIL THE INTITIAL INSTALLATION HAS BEEN VERIFIED AND POSITIVELY ALL WIRING AND CONNECTIONS ARE CORRECT.

UPON COMPLETION OF THE INSTALLATION, PLUG THE REMOTE CONTROL INTO THE REMOTE RECEPTACLE AND TEST IT! IF IT DOES NOT OPERATE PROPERLY THE INSTALLATION IS IN ERROR AND MUST BE CORRECTED BEFORE GOING FARTHER!

NOTE: These procedures are to be used for machines that have been operating properly with the Pipeliner since installation.

1. Testing the machine board. Disconnect both the extension cord from the machine and/or remote control from the machine. Operate the machine without any remote cables or devices. Strike an arc (or measure the open circuit voltage , OCV) while turning the machine's fine current control up and down. If the machine operates correctly, the problem is external to the machine. There is no problem with the Pipeliner machine board. If the machine is too hot or the OCV cannot be varied, the machine circuit board is defective. If the machine acts normally, go to step #2.

2. **Test the hand control unit.** Bypass, and do not use the extension cord for this test. Plug the hand control unit into the remote receptacle and vary it's control from 0 to 100% while welding or monitoring the OCV. If it

does not control the arc or OCV the hand control is defective. If it controls the arc or OCV then the hand control is good and go to step #3.

3. Test the extension cord. Unplug the remote hand control and plug the extension cord into the remote receptacle. **DO NOT PLUG THE HAND CONTROL IN AT THIS TIME**. Test the machine by using it's own fine current control and vary the arc or OCV from 0 to 100%. If there is no control, or if the machine is not acting normal, the extension cord is at fault. Fix it or replace it. If the machine operates normally **THEN PLUG THE HAND CONTROL INTO THE EXTENSION CORD** and vary the hand control from 0 to 100%. If the machine does not operate properly then, the problem is still in the extension cord and it must be repaired or replaced.

These basic checks will quickly reveal most problems. For much more advanced troubleshooting and complete electrical schematics visit our website at www.weldtron.com and go to the technical support section. These procedures are far advanced and are designed to provide information for welding machinery repair shops in repairing our products.

WARRANTY

All products manufactured by Weldtron Products hold a conditional warranty for a period of one year from date of purchase. This warranty covers defective parts under normal wear and tear along with quality of workmanship.

Warranty is voided by errors in installation or application, physical damages, abuse, attempted repairs by others, alteration of any identifying information on the product, or damages caused by forces external to the product.

If you require warranty please contact us and we will issue a **R**eturn **M**aterials **A**uthorization (**RMA**) document number to you to identify the problem and to whom it belongs to. **DO NOT SEND products in for repair until you obtain a RMA number.**

You may obtain the RMA by contacting us by way of telephone, fax, email, or on our website.

Our repair center address is:

Weldtron Products Repair Center
1904 N. Texas Blvd.
Alice, Texas 78332
Telephone 361-664-4413

EMERGENCY OPERATION WITH A DEFECTIVE REMOTE AMPERAGE CONTROLLER.

If you experience a problem with your remote controller you can continue to weld normally by simply disconnecting the wiring to the machine rheostat. Section #1 shows terminals #1 and #2 that are connected to the machine rheostat. Simply remove both wires from terminals #1 and #2 and your machine will weld normally until the problem with the remote can be repaired.

For your records, please enter the information below:

Note: We keep records on each product serial number so that we can track repairs and also locate the proper owners of stolen units.

Date Purchased:_____

Purchased From:_____

Hand Control Serial Number:_____

Machine Circuit Board Serial Number:_____

Other Notes:

Visit our website to view our entire line of products for engine driven welding machines.

- **REMOTE AMPERAGE CONTROLS**
- **GENERIC IDLER CIRCUIT BOARDS**
- **IDLER UPGRADE MODULES**
- **POWER CONTROL CIRCUITS**
- **COMPLETE TECHNICAL SUPPORT PAGES**
- **ONLINE ORDERING**