

PlasmaDyn 5 Wire Foot Pedal Installation Primer

PlasmaDyn sells a **5 wire foot pedal** that fits most TIG welders using a voltage controlled output current – that is, the welder uses a voltage input to control the machine’s output current, **using 3 wires.**

Most new welders use this type of voltage control – if you have an old machine that requires a 25W-100W rheostat – this foot pedal is not appropriate. If your machine has a 3 wire pot on the machine face – this pedal should work. Be sure you check your machine before buying this pedal as we do not accept returns based on fitment issues. If you send pictures of the inside of your machine, we may be able to help determine fitment.

Note – we CANNOT know how your machine hooks up – this is ONLY A GUIDE – purchasing this foot pedal requires the buyer to understand how to hook this pedal up. Sorry, we cannot help beyond this document.



This foot pedal uses a 10K potentiometer driven by a track mounted to the pedal itself; when the pedal is depressed, the track moves a gear connected to the potentiometer inside the case.

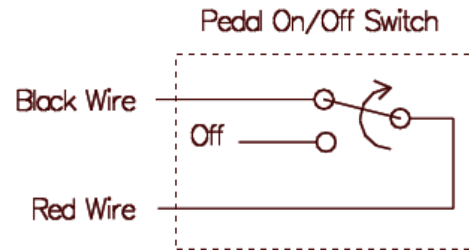
This pot has a voltage across it (usually 0V on pin 1 to 25V on pin 3). As the pot is turned, a “wiper” on pin 2 moves from pin 1 to pin 3 effectively varying the voltage from 0V to 25V. **This “wiper” voltage is the input to the welding machine, used to control TIG output current.**

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Some machines use 0V (Vmin) for max welder output current, some use 25V (Vmax) for max output current. We cannot tell you what your machine requires.

Hook up is relatively easy –

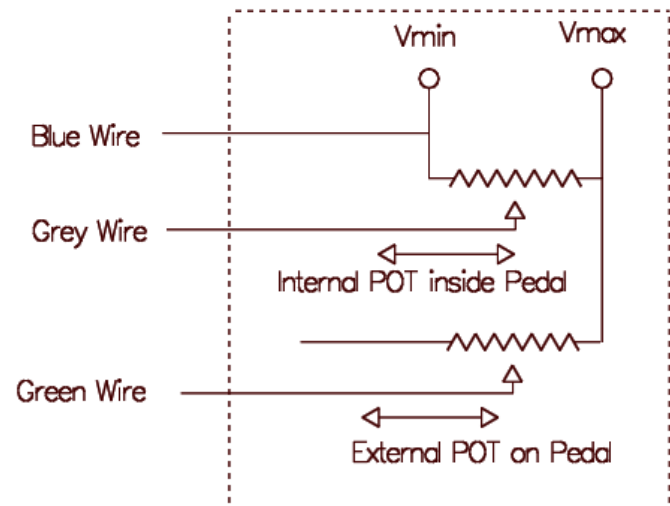
1. Find the 2 x on/off wires on the pedal
2. Find the 3 current control wires on the pedal
3. Determine the wiper wire from the 3 current control wires
4. Match the 3 current control wires to your machine input



The diagram at right shows the wire colors for the foot pedal below

Note: wire colors will vary – you MUST determine the wire color for your foot pedal.

The “**Internal POT**” is the pedal control.
The “**External POT**” is a fine tune control.

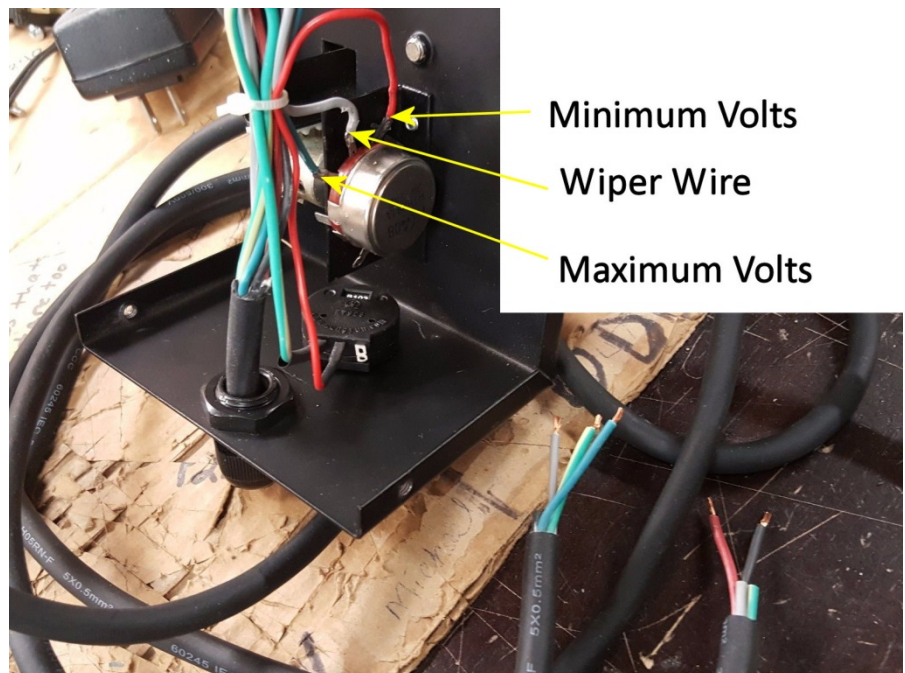


It is not required to determine which wires are Vmin and Vmax if you have a 3 pin POT.

The middle wire will be the wiper wire and the two outer wires are Vmin and Vmax

After hookup, if the machine is at full current with the pedal “UP” you need to reverse Vmin and Vmax connection.

This image shows how this foot pedal is wired – Red and Black are on/off and the 3 current wires are Blue, Green, and Grey (**Grey being the wiper wire because it is the middle wire (pin #2) on the pot – see image.**)



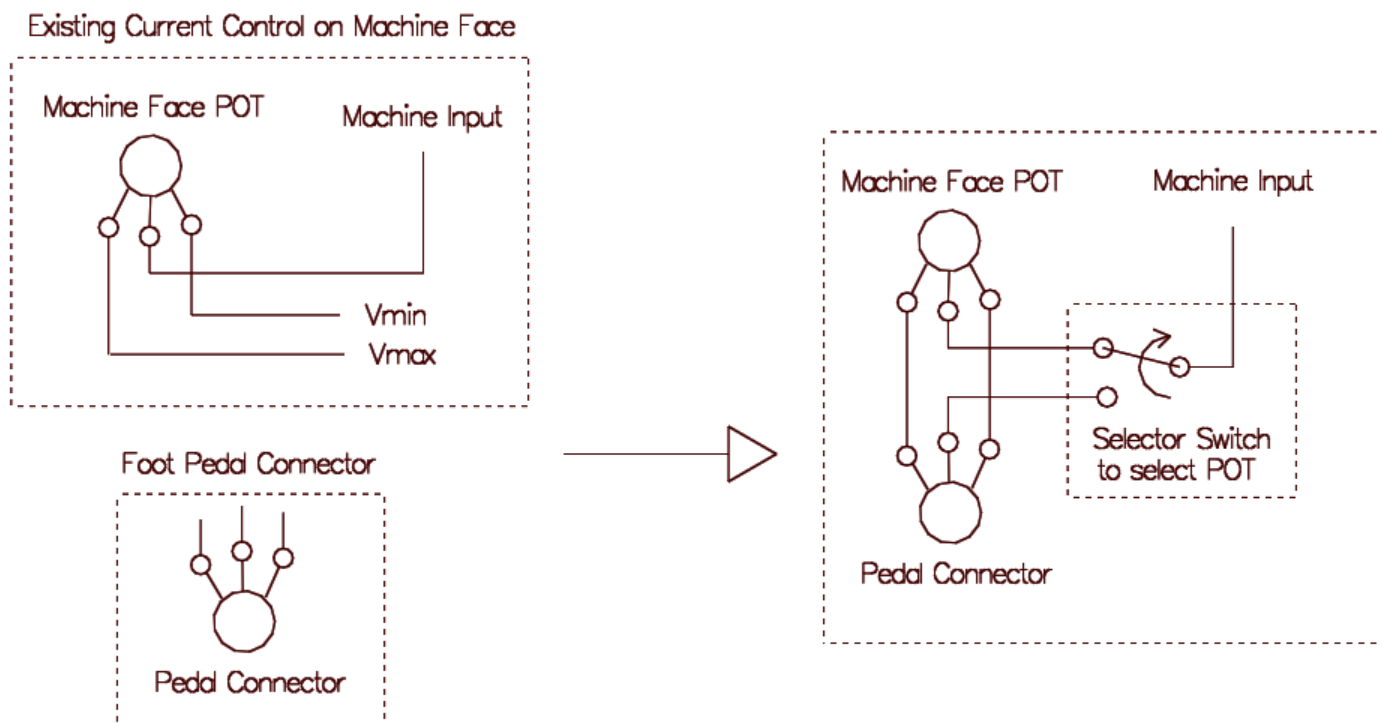
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General hook up instructions for most machines

Your TIG welder probably already has a 3 pin pot mounted on the welders face plate that controls current.

Most current control pots use 3 wires – a wire for Voltage Min, a wire for Voltage Max, and a middle wire for wiper voltage. If you do not have a foot pedal plug, you will need to connect this pedal to the pot on the machine face.

Solder 3 wires from the face mounted pot to each pin on your connector socket inside your machine – the wiper wire is the critical one. The drawing below shows an existing current control POT and your new pedal connector – and the new pedal connector wired to the existing POT that also uses a selector switch. This selector switch allows you to select which POT controls the machine – although in most case this switch is not required.



So the new foot pedal POT is wired in parallel to the existing POT, and the machines input wire connects to a switch allowing you to select which POT controls current

Hooking this pedal to your machine requires you provide the correct – machine specific connector.

Alternatively, PlasmaDyn sells connectors that will work on virtually any welder – we recommend a 2 pin plug/socket for On/Off and a 3 pin plug/socket for current control.

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Or – you can use a larger (5/8”) plug and socket for all 5 wires – although this is a bit harder to solder.

Its best to use the factory connector, but these will work fine.

Note: you MUST solder the wires for the machine to function reliably.

Miller welders have been standardized to usually a 14 pin plug – we do sell this plug if needed

Hook up is straightforward –



Connect the Miller 14 pin plug as follows:

- Wiper wire to Pin E
- Voltage 1 wire to D
- Voltage 2 wire to C
- On/off wire to A
- Other on/off wire to B

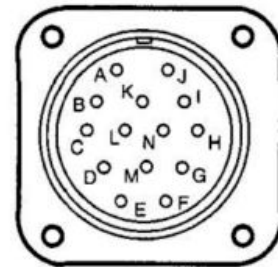
For example - this foot pedal:

- Red >> A
- Red >> B
- Green >> C
- Blue >> D
- Grey >> E (wiper wire)

(Again wire color will vary)



If the machine is at full current with pedal UP – reverse the Voltage #1 & Voltage #2 wires



S-0004

Figure 4-3. Front View Of 14-Socket Amphenol Receptacle With Socket Locations

- Socket A: High-frequency remote start switch connection.
- Socket B: High-frequency remote start switch connection.
- Socket C: Amperage control connection - maximum side.
- Socket D: Amperage control connection - minimum side.
- Socket E: Amperage control connection - wiper contact.

Miller 14 Pin Wiring Diagram

