

INTRODUCTION

The Fusion Pendant is a power supply peripheral for automatic orbital tube welding. It is intended to be used in conjunction with Arc Machines, Incorporated (AMI) power supplies and orbital tube weld heads. The Fusion Pendant provides additional operator controls and feedback for GTAW (Gas Tungsten Arc Welding) process.

NOTICE

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Revision History

| <i>Revision</i> | <i>ECO No.</i> | <i>Change Description</i> | <i>Date</i> | <i>By:</i> | <i>Appr.</i> |
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1.0 SAFETY PRECAUTIONS

The Fusion Pendant is intended to be used with AMI welding power supplies for the purpose of GTAW welding of metal tube. The system is not to be used for any other purpose, specifically heating or cutting.

1.1 SHOCK HAZARD WARNING

WARNING

| ICON KEY | |
|---|-------------------|
|  | Warning |
|  | Electrical Hazard |

The nature of the GTAW process creates **POTENTIAL HAZARDS**. In accordance with international safety regulations the **EXCLAMATION SYMBOL** indicates that this equipment is considered **HAZARDOUS**. The **LIGHTNING FLASH SYMBOL** indicates that there are potential electrical hazards. The use and display of these symbols make it the **OPERATOR'S RESPONSIBILITY TO ENSURE THAT HE HAS READ AND/OR BEEN MADE AWARE OF ALL OF THE SAFETY-RELATED ITEMS**

CONTAINED IN THIS MANUAL.

HIGH VOLTAGE is present on exposed terminals. The **ELECTRODE** (tungsten/rotor) is also an **EXPOSED TERMINAL** and by its nature the **GTAW** process requires electrical potential to be present on the electrode during arc starting and during welding.



This manual is intended to assist users of this equipment in set up and basic operation, it is **NOT INTENDED AS A SUBSTITUTE FOR FACTORY TRAINING**.



The Fusion Pendant is intended to be used with AMI power supply for the purpose of GTAW welding of metal tube or pipe. The system is not to be used for any other purpose, specifically heating or cutting.

2.0 SPECIFICATIONS

These specifications pertain to the Fusion Pendant only. For power supplies and weld heads, refer to the specification sheet of each particular model. For non-AMI supplied equipment such as gas tanks and regulators, refer to the original manufacturer's documentation. The Fusion Pendant is a mobile device that is intended to be hand carried. The supporting equipment such as power supplies, weld heads, water coolers, gas regulators, and extension cables can also be hand carried. Items such as gas tanks and welding fixtures should be moved with appropriate equipment and safety precautions. Gas tanks should be securely anchored to prevent falling over.

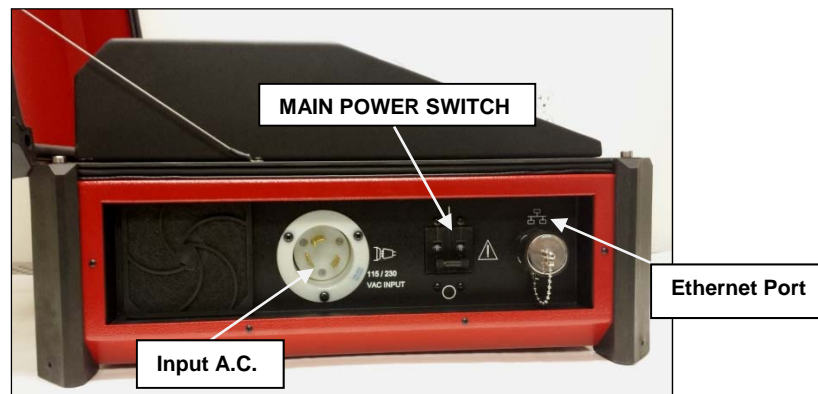
2.1 PHYSICAL DIMENSIONS

| | |
|-----------------------|-------------------|
| FUSION PENDANT HEIGHT | 8.0" (204mm) |
| FUSION PENDANT WIDTH | 4.15" (106mm) |
| FUSION PENDANT DEPTH | 1.85" (47mm) |
| FUSION PENDANT WEIGHT | 1.25 lbs (.57 kg) |

3.0 START-UP

3.1 POWER SUPPLY CONNECTION

1. Below is a view of the input and output sides of the **Model 217** Power Supply with all connectors visible. Connect the Fusion Pendant to the ethernet port.



Note:

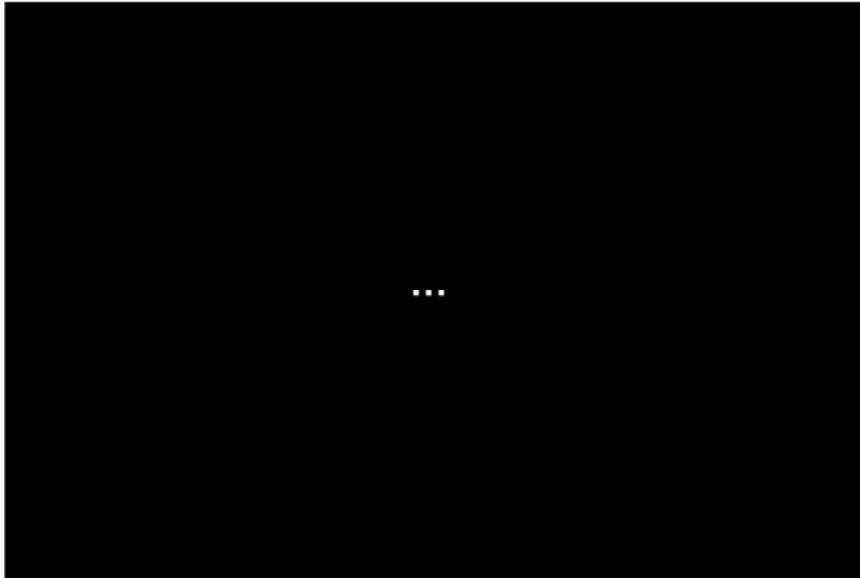
- *M217s with serial number 61778 or higher do not require the retro-fit kit to be compatible with the Fusion Pendant.*
- *M217s with serial numbers lower than 61778 require a retro-fit kit to be compatible with the Fusion Pendant.*

3.2 POWER ON

Flip **ON** the main power switch. This will apply power to the Fusion Pendant. Upon receiving power from the power supply, the pendant begins its boot sequence.

3.2.1 BOOTUP OPERATION

Bootup will take approximately 30 seconds. It is important to note that during bootup all keys of the pendant are disabled.



[LOADING SCREEN]

3.2.2 SPLASH SCREEN

Upon successful completion, the boot sequence the Splash Screen will be displayed. The Splash screen is displayed after the Operating System of the pendant have been successfully loaded. The splash screen displays “AMI FUSION PENDANT” and the version number of the installed pendant software. The Splash screen will be displayed for 3 seconds.



[SPLASH SCREEN]

4.0 PENDANT SCREENS OVERVIEW

There are two major screens to the Fusion Pendant. These are the Library Screen and the Main Screen.

4.1 LIBRARY SCREEN

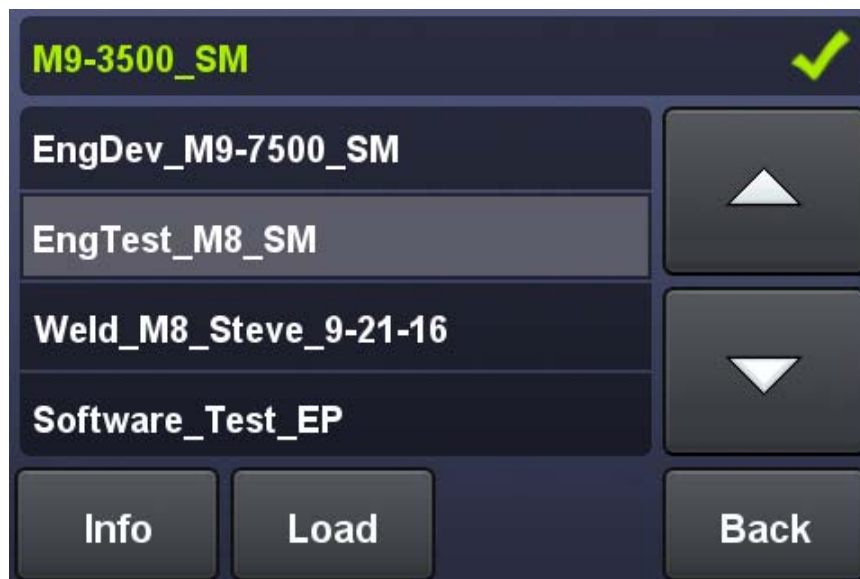
The library screen of the pendant will be displayed at any time the power supply does not have an active weld schedule loaded. From this screen the operator may select a weld schedule to be loaded.

4.2 MAIN SCREEN

The Main Screen will be displayed when a weld schedule is loaded on the power supply. The main screen provides information about: Current weld level, and rotor position. Program values for current travel. Feedback on the actual weld current and voltage.

5.0 SCREEN DETAILS

5.1 LIBRARY SCREEN



[LIBRARY SCREEN]

The library screen is used to display all available weld schedules on the power supply.

Schedule List

This is a list of all available weld schedule contained in the power supply memory. A highlighted schedule name indicates the selected schedule. The schedule list includes a scroll bar allowing the list of displayed schedules to be moved up or down.

Info Button

The information button is used to display additional information about the selected weld schedule. This additional information screen displays the following: Weld Type, Material, Diameter, Cut, Arc Gap, Maximum travel speed, and the weld head name.

Load Button

The load button will load the selected weld schedule into the power supply. Once the weld schedule has loaded the pendant will display the “Main Screen”.

Back Button

The back button will return the pendant display to the “Main Screen”.

Note: The Back button will be disabled if the power supply does not have a weld schedule loaded.

5.2 MAIN SCREEN



[MAIN SCREEN]

This screen provides information about the loaded weld schedule, and provides information about the status of the welding process. The main screen can be divided into four parts: Graphic Section, Feedback Section, Level Info, and library info.

Graphic Section

Located in the center of the Main Screen, the graphic section displays: A graphical representation of the rotor position, along with a numeric readout. The current level number, and the amount of time left in that level.

Feedback Section

Provides a readout of the weld current, heat input, rotor speed, and arc voltage.

Home Position Button

The home position button will command rotor go to home position.

Change Tungsten Position Button

The change tungsten position button will command rotor to tungsten position.

Schedule Name Button

The schedule name button will navigate to schedule info. screen.

Menu Button

The menu button will display the following buttons: Library, Schedule Info., Tungsten, and Power Adjust. These buttons will navigate to different screens.



5.3 SCHEDULE INFO. SCREENS



[SCHEDULE INFO. SCREEN]

This screen provides information about the loaded weld schedule: Weld Type, Material, Diameter, Wall, WDR, Cut Length, Arc Gap, Max. Speed, Weldhead, and Dual WH. Schedule will display the load schedule name.

Back Button

The back button will return the pendant display to the “Main Screen”.

5.3 TUNGSTEN SCREENS



[TUNGSTEN SCREEN]

Move to Button

The move to button will move the rotor to the tungsten change position where the operator can access the set screw that holds the tungsten in place.

Unlock Button

The unlock button will lock or unlock rotor motion.

Reset Button

The reset button will reset electrode count to zero and the stamp will record.

Back Button

The back button will return the pendant display to the “Main Screen”.

5.3 POWR ADJUST SCREENS



+/- Button

These buttons allow for adjusting the welding current up or down in 0.1 or 1.0% increments.

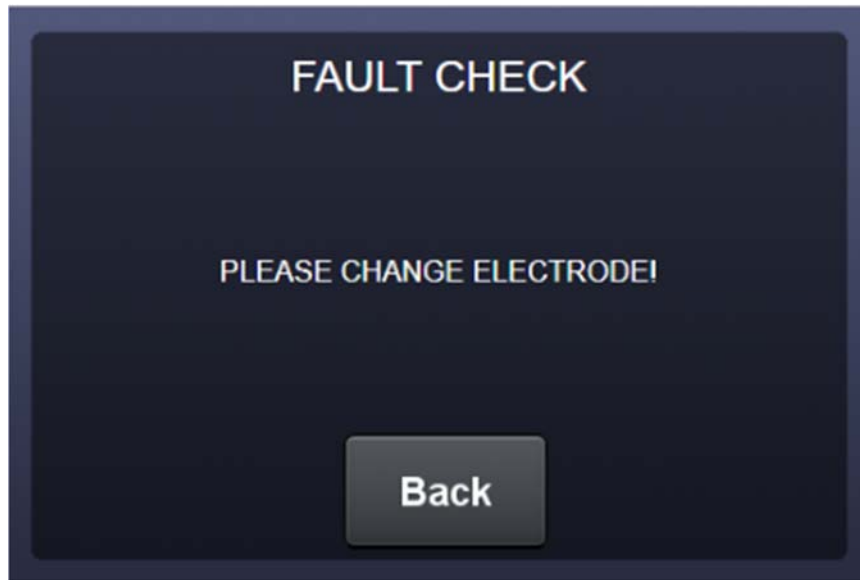
1.0/0.1 Button

These buttons will select course/fine adjust for power adjust.

Back Button

The back button will return the pendant display to the “Main Screen”.

5.3 FAULT SCREENS



[FAULT SCREEN]

Fault screens will be displayed in the event of a monitored condition is outside the acceptable range. Typical fault screens are listed below.

**BAD ARC START – ARC FAILED TO START.
CHECK EQUIPMENT, CONNECTIONS AND ELECTRODE
VOLTAGE IS ABOVE RECOMMENDED VALUE
VOLTAGE IS BELOW RECOMMENDED VALUE
GAS FAULT
PURGE PRESSURE IS NOT RECOMMENDED VALUE
UNIT OVERHEATED
COOLANT FAULT DETECTED
PLEASE CHANGE ELECTRODE
WELD ID ALREADY EXISTS, PLEASE RENAME**

Back Button

The back button will return the pendant display to the “Main Screen” and clear power supply fault screen.

6.0 PENDANT KEYPAD

Weld / Test - This key is active when a weld schedule is loaded, and the power supply is not executing a weld sequence. This button also contains two LEDs to indicate which mode is active.

Sequence Start - This key will start the weld sequence. It is only active when the weld schedule is not already executing.

Sequence Stop - This key is used to stop an existing weld sequence. This sequence can be in either Weld or Test. Upon pressing this button the machine will go directly to downslope. This is the preferred method of stopping the weld sequence.

All Stop - This key is used to abruptly stop the weld sequence. The power supply will immediately shut down the welding power, and begin the post purge cycle.

Override (A+ and A-) - These keys allow for adjusting the welding current up or down in 0.1 or 1.0% increments.

Purge - This key turns on / off the gas solenoid allowing a manual purge of the weldhead. This key is only enabled when the power supply is not executing a weld sequence.

Library - This key will display the weld schedule library on the pendant. See Library Screen for more details.

Flashlight - A high intensity LED is built into the back of the pendant. The flashlight key is used to turn this LED on and off.

Jog (CW and CCW keys) - These keys allow for manually position the weld head rotor. It can only be used when a weld schedule is loaded, and the power supply is not executing the schedule.

Home - This key will cause the weld head rotor to return to the home position. This key is disabled while welding.

Lock - This key will lock and unlock touch screen and keypad. Lock, Sequence Stop and All Stop key will enable all time.

Weld Head Selection (WH#1 and WH#2 keys) - These two keys switch the Switch box between the two connected weldheads. These buttons also contain LED indicators showing which weldhead is currently selected. Both the keys are disabled when no schedule is loaded; or the Switch box is not connected.

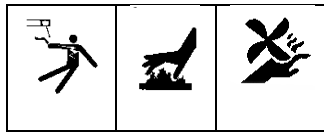
7.0 MAINTENANCE AND TROUBLESHOOTING



Always disconnect the AC power cable from the line voltage before attempting to work on this welding power supply.

There are no user serviceable components located inside the Fusion Pendant. Do not open the unit in an attempt to repair it. Contact Arc Machines, Inc. if the unit is malfunctioning, or suspected of being broken. As such, no wiring diagram or internal circuit drawing is provided.

8.1 GENERAL MAINTENANCE



CLEANING EXTERIOR AND INTERIOR SURFACES - Prolonged use in dusty shop or outside environments may cause the outside surfaces to accumulate a coating of dirt and dust. Do not use shop air (usually too wet) to blow dust particles away from the panels. Use a vacuum cleaner with a soft brush. Where a vacuum brush cannot reach, use a clean, soft paint brush and then vacuum.



Figure 1. Cleaning Tools

8.0 SERVICE AND OFFICE LOCATIONS

Service locations are subject to change. For the most up-to-date service locations, see the AMI web page for information:

<http://www.arcmachines.com/support/tech-support/authorized-service-centers>

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