

XMS-HWT

Hot Wire TIG System

Product Specification



Hot Wire TIG Feeding System

The XMS-HWT is a new, precise hot wire TIG feeding system. The powerful 250 amp, 20 volt AC hot wire power supply is rated for 100% duty cycle, with frequency adjustment from 50 to 300 hz.

AMET uses advanced DSP technology for precise control of the hot wire power supply output and wire feed. By using this digital technology, AMET has the ability to completely program the hot wire feeding parameters from a handheld remote pendant, including hot wire voltage, frequency, and wire feed rate.

AMET's hot wire power source produces a true sine-wave output, resulting in a stable and consistent welding arc. The AC waveform insures no magnetic affect with the DC welding arc.

The system provides for a remote voltage feedback to ensure precision voltage is supplied at the wire guide tip. Encoder feedback is used to ensure precision wire feed rate. The sum of all these factors combine to produce the most advanced hot wire feeding system available.

While we call the system a "hot wire TIG" system, AMET has supplied hot wire systems to add filler wire for PAW and a second filler wire on GMAW applications.

Purpose/ Applications:

The hot wire TIG feeding system is designed to provide precisely controlled, pre-heated filler wire the weld bead. This type of wire feeding is typically required for the following welding applications:

1. Overlay and hard surfacing projects
2. Precision valve body and bore cladding
3. Pipe welding involving exotic metals
4. Narrow groove, thick wall section
5. Critical property and high production requirements for Sub-C oil and gas welding applications

Benefits/Advantages:

The AMET hot wire feeding system has the following features and benefits:

- Higher deposition rates with lower dilution of the parent material (2 to 3 times cold wire feed rates, in excess of 300 IPM)
- Cleaning of wire prior to it entering the weld puddle
- Additional argon flow into the weld puddle if gas flows through wire path
- Able to override each hot wire parameter during welding from hand pendant
- More powerful power source can allow customer to increase deposition rates

- Hot Wire contactor assembly uses conventional parts you can find in most welding outlets
- Higher production rates from continuous process
- More process consistency and higher weld quality, with improved weld strength and toughness
- Consistent weld bead reduces post-welding machining costs
- Ability to weld high strength steels and alloys, resulting in higher component properties
- Can increase production rates up to 8 times when compared to conventional cold wire process
- Provides better control of weld pool size and side wall fusion & erosion



XMS-HWT Hot Wire System shown with compact hot wire contactor assembly ("Carlton" torch)



Standard Hot Wire Contactor assembly

AMET offers two styles of hot wire torch assemblies. The standard "robust" version and our compact "Carlton" assembly, where the narrow profile and torch tip allow it into tighter joint profiles. The standard torch allows for gas shield on the hot wire.

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XMS-HWF

AMET'S Stand-Alone Hot Wire Feeder uses a single DSP in the control module to monitor and correct the hot wire voltage and the wire feed rate as required.

The XMS-HWF includes the AC hot wire power source and the operator remote control hand pendant. This pendant allows the operator to set up, program, control and override the hot wire voltage parameters and wire feeder from a convenient location.

The XMS-HWF also consists of an XM control module built into the hot wire source, loaded with hot wire voltage and wire feed software, the 4 roll wire drive assembly, basic wire positioner, the hot wire contactor assembly, an interconnection cable between control and wire drive, and a hand pendant with retractable cord and the power cord.



GENERAL SPECIFICATIONS:

XHW-250 Power Source: 250 amps, 20 Volts – 100% duty
 Output Waveform: AC Sinewave
 Voltage Feedback: Included for closed loop control
 AC Frequency: Programmable from 50 to 300 hz
 Voltage Override: Available on hand pendant
 Frequency Override: Available on hand pendant
 Hot/Cold Selection: Programmable

Wire Diameter Range: “V” – 1.0 to 1.6 mm (.035 to .062”)
 XMS-HWF Feed Rate: 1 to 500 IPM (25 to 12700 mm/min)
 Wire Start Delay: 0 to 99.00 seconds
 Wire Stop Delay: 0 to 99.00 seconds
 Wire Retract: 0 to 1” (25 mm)

Wire Retract Speed: Programmable
 Wire Spool Holder: 12” / 30 lbs (300 mm/13.5 kg) with 2” (50 mm) hole
 Wire Spool Cover: Included on all models
 Wire Speed Override: Available on all models
 Override % Limits: Programmable
 Feed Rate Closed-loop: via encoder feedback
 Jog Forward/Reverse: Available on all models
 Pulse rate: 0 to 5 pulses per second when using cold wire feed

Cabinet Dimensions & Mounting Specs:

XMS-HWF Power Source:

Please contact AMET for drawing on power source and hand pendant control

Please contact AMET if additional dimensional information on the XMS-HWT system is required.

Wire Drive Specifications:

As standard, we set up the Mechafin wire drive with a flat pressure roll on top with a “V” or “U” groove shaped wheel on the bottom. This reduces the time to change from one wire diameter to another, as only one set of drive rolls has to be changed. Please note that other components, such as the wire liner and torch components will have to be changed.

The XMS-WF uses a DC Servo motor with encoder feedback to drive the Mechafin drive assembly.

**Four Roll
XM Wire Feeder**
.023” - .062” Wire

