



Advanced Manufacturing Engineering Technologies

AMET® CV GTAW Hot Wire System

AMET®'s XMS-HWT hot wire system consists of an advanced, constant voltage, digital hot wire power supply and a precision wire feed system. The powerful, constant voltage, 200A, 20V AC hot wire power supply is rated for 100% duty cycle, with frequency adjustment from 50 to 300 Hz. AMET® uses advanced DSP (Digital Signal Processing) technology for precise control of the hot wire power supply output and wire feeder. By using this digital technology, AMET® has the ability to program and accurately command the hot wire voltage and wire feed parameters from any of AMET®'s controllers. The frequency is set via the control knob and display on the hot wire power supply source. AMET® has incorporated a precision AC frequency drive to produce true sine-wave output and ensure the most stable and consistent welding arc by minimizing interactions between the AC Hotwire and the main DC welding arc (arc blow).

The system has the capability to provide remote voltage feedback to ensure voltage is precisely monitored and controlled at the wire guide tip, making it independent of cable lengths associated with many hot wire applications. Encoder feedback is used to ensure consistent and accurate wire feed rates. 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 as a second filler wire on GMAW applications.

The AMET® XM® and XPro Control Systems allow for seamless integration of this hot wire system with multiple weld positioners, power supplies, and all other additional process equipment providing a *completely integrated welding system*.



The AMET® Advantage:

- ✓ Higher deposition rates with lower dilution of parent material (Potentially 2-3 times cold wire feed rates)
 - ✓ Maintains GTA weld quality while allowing increased travel speeds up to 2X that of standard GTAW processes
 - ✓ Ability to adjust the commanded hot wire voltage and wire feed speed, during live welding, from the pendant
 - ✓ High 20V output ensures that enough voltage and power is available at the wire nozzle contact tip even when long distances (cable runs) between the power supply and the contact tip are required
 - ✓ Remote voltage sensing ensures the programmed voltage is always maintained at the wire contact tip
 - ✓ Hot Wire contact tip assembly uses conventional parts available from most welding supply outlets
 - ✓ Improved process consistency and higher weld quality, typically with improved weld strength and toughness
 - ✓ Ability to weld high strength steels and alloys, resulting in increased material selection options
 - ✓ Provides better control of weld pool size and side wall fusion, reducing potential undercut or lack of fusion
 - ✓ Unique ability to adjust the frequency of the AC sine wave.
- Most hot wire supplies have a fixed frequency, typically based on the frequency of the incoming facility power. This feature helps to make the process more consistent since the hot wire frequency is not dependent on the incoming power and is not susceptible to variations in the frequency of incoming facility power. It also allows the frequency to be adjusted to minimize arc blow if a specific weld process is experiencing or susceptible to it.



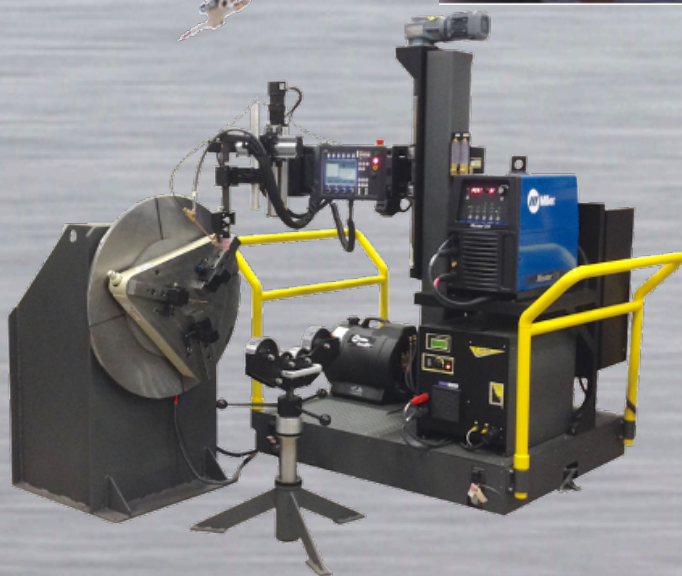
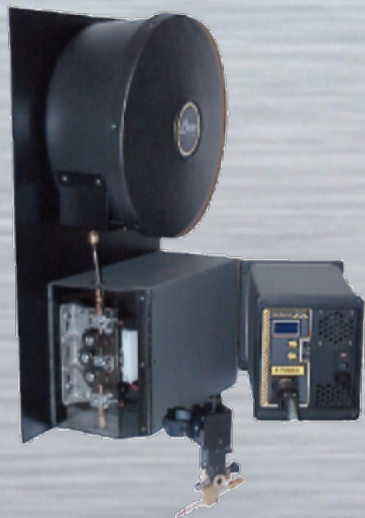


Advanced Manufacturing Engineering Technologies

Purpose / Applications:

The hot wire feeding system is designed to provide precisely controlled, pre-heated filler wire into the weld puddle. This type of wire feeding is commonly used in the following welding applications:

- ✓ Overlay and hard surfacing projects
- ✓ Precision valve body and bore cladding
- ✓ Pipe welding involving exotic metals
- ✓ Narrow groove and thick wall section
- ✓ Critical property requirements
- ✓ High production requirements



Specifications:

- ✓ Constant Voltage, 200A, 100% duty cycle at 20V
- ✓ True sine wave output with frequency adjustment from 50 to 300 Hz.
- ✓ Length – 25 1/4 “, Width – 18 3/8”, Height – 20 1/8”
- ✓ Weight – 215 lbs.
- ✓ Input power: 480 V, 3 phase, 15A