

XMS-MAG

Magnetic Arc Oscillator

Product Specification



Magnetic Arc Oscillators

AMET is pleased to provide the following product introduction on our stand-alone model of magnetic arc oscillators. These magnetic arc oscillators are designed to move the arc on GTAW (TIG) and PAW (plasma) welding. They accomplish this oscillating motion using a magnetic field to move the welding arc in a weaving motion. The magnetic arc oscillator can also be programmed to deflect the arc in a maintained position, typically used in fillet welding.

AMET has a distinct advantage over “conventional” magnetic oscillators on the market. AMET uses DSP technology and using this digital technology provides us the ability to completely program the oscillation parameters. Many companies only allow you to program one parameter, such as oscillation amplitude, while the rest of the parameters have to be set physically on an analog control panel. The AMET oscillator allows your operator to program and recall all oscillation parameters during welding, which reduces the chance of an incorrect parameter being set on the control. In addition, the XMS-MAG also allows the operator the ability to conveniently override all of the parameters from the hand pendant.

AMET has designed a compact, single tip, electro-magnetic probe assembly. This probe assembly is an air-cooled device. For welding in high temperature environments, a water-cooling jacket is available. While the probe is compact, the magnetic field it creates is larger than the competition.

AMET'S Magnetic Arc Oscillators are currently presented to the market in two models, the X-MAG and XMS-MAG. The X-MAG is designed to mate with AMET XM series of controls. The XMS-MAG is our “Stand-Alone” version, which can be mounted on an existing system and operated independently via a hand pendant. At any time in the future, the XMS-MAG can be integrated with the XM system control. The XMS-MAG can be sequenced by the T2 and QII system controls.

Purpose/ Applications:

The magnetic arc oscillator is designed to provide precisely controlled weaving motion to the weld bead. This type of oscillation motion is typically required for the following welding applications:

1. “Cap” pass on a multi-pass weld
2. Small oscillation motion to improve sidewall tie-in on “deep” groove welds
3. Fillet welds for fill and sidewall tie-in
4. Single and dual-arc seam welding for reducing undercut
5. Arc stiffening and direction capability

Benefits:

The AMET Oscillator is ideally suited for GTA and PAW arc welding applications as a result of the following features and benefits:

- Programmed oscillation parameters. Eliminates risk of operator setting incorrect oscillation parameters.
- Stirring motion of weld puddle reduces porosity and minimizes undercut
- Easily mounts to most machine-type TIG or Plasma torches
- Able to override each oscillation parameter during weld
- Able to adjust “center” or arc position during welding
- Use on both magnetic and non-magnetic materials
- Reduces heat affected weld zone

These benefits and advanced features give AMET oscillators an advantage over most of the oscillators in the welding market. These oscillators are designed for more precise welding requirements and to meet your requirements, yet affordably priced.



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AMET'S Stand-Alone magnetic arc welding oscillator uses a single DSP (digital signal processor) in the control module to program, override, control and change the oscillation as required or requested.

The XMS-MAG includes the operator remote control hand pendant. This pendant allows the operator to set up and control the oscillation from a convenient location.

The XMS-MAG consists of an XM control module, loaded with magnetic arc oscillation software, a single tip probe assembly, an interconnection cable between control and probe, a hand pendant with cord and the power cord.

GENERAL SPECIFICATIONS:

Oscillation Amplitude:	0 to 100%, approximately 2 times the arc length up to a maximum of 3/8"
Slew Time:	0 to 3 seconds
Slew Time:	adjustable during oscillation
Oscillation Start Delay:	0 to 100 seconds
Oscillation Stop Delay:	0 to 100 seconds
Arc Position:	-100% to 100%, where maximum is a 1 to 1 ratio with arc length
Left Dwell Time:	0 to 3 seconds, adjustable
Right Dwell Time:	0 to 3 seconds, adjustable
Arc/Center Position:	adjustable at all times
Magnetic Field Strength:	300 gauss at 1 amp
Cooling Requirements:	1 qt/min at 40 PSI
Remote Start:	Available
Remote Stop:	Available

Control Dimensions & Mounting Specs:

X-MAG Probe:	Please contact AMET for drawing
XMS-MAG Control:	Please contact AMET for drawing on module and hand pendant