

# Orbital Welding Technology for Pharmaceutical Piping Systems

## Application:

- Piping systems in bio-pharmaceutical industry

## Material:

- 0.5" to 4" (12,7 mm to 101,6 mm) OD seamless 316L stainless steel tubes

## Welding Equipment:

### *Power Supplies:*

- Model 205
- Model 207

### *Weld Head:*

- Model 8-4000

## Benefits:

- ✓ Repeatability of weld reduces dead legs and improves cleanability and sterilizability
- ✓ Improved corrosion resistance
- ✓ Increased productivity and reduced weld time

For further information, call AMI at 1-818-896-9556 or e-mail [sales@arcmachines.com](mailto:sales@arcmachines.com)



Model 205



Model 207



Model 8-4000

The ability to make smooth, crevice-free inner weld beads on a repeatable basis has led to orbital welding becoming the preferred joining technology for bio-pharmaceutical process piping over the past decade. The expanding biopharmaceutical industry in the USA has placed an increasing emphasis on quality standards and documentation in order to expedite the approval process for new therapeutic products by the FDA (United States Food and Drug Administration).

During validation, the FDA will examine all the documentation to make certain that procedures outlined in the project specification have been followed and properly documented in accordance with the CGMP (Current Good Manufacturing Practices). Orbital welding done in compliance with the ASME Bioprocessing Equipment Standard, which by reference includes ASME B31.3 Process Piping and ASME Section IX of the Boiler and Pressure Vessel Code, is a key component in achieving pharmaceutical piping system validation.

The repeatability of the process makes it possible to achieve crevice-free welds with a smooth surface that can be maintained in a clean and sterile condition. The smoother surface decreases the affinity for colonization and growth of microorganisms and increases the efficacy of CIP (Cleaning-In-Place).

The controlled heat input of orbital welding combined with the use of proper purging technology and passivation results in welds that are comparable in corrosion resistance to unwelded base materials. Thus orbitally welded systems, installed with proper fabrication techniques and documentation, are in compliance with 21 CFR (Code of Federal Regulations) B211 Subpart D facilitating piping system validation as well as providing excellent performance in service.

To read the full story, visit [www.arcmachines.com](http://www.arcmachines.com)



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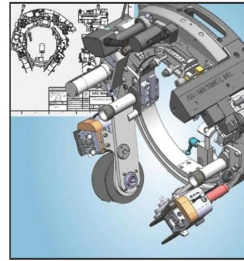
# LEADERS & INNOVATORS in Automated Orbital Welding



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With over 3000 customer relationships in over 50 countries, Arc Machines, Inc. has set the standard for Automated Orbital Welding Equipment for over 30 years, combining Quality and Durability with Innovative Engineering and Design. Around the world, leading manufacturers and contractors rely on AMI for their expertise in automated orbital welding and to develop customized solutions for new welding challenges.

[www.arcmachines.com](http://www.arcmachines.com)

# AMI

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### M205 Power Supply

### QUICK SPECS

#### Input Power

115 - 230 VAC service,  
single-phase, 50/60 Hz

#### Weld Current

3 - 100/150 A DCSP  
100% Duty Cycle @ 100 A

#### I/O Devices

USB (2.0)

#### Memory Capacity

4 GB

#### Water Cooler

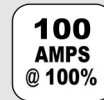
Optional

#### Dimensions

18" x 19" x 14.75"  
(457 mm x 483 mm x 375 mm)

#### Weight

50 lbs.  
(23 kg)



### M207 Power Supply

#### Input Power

100 - 240 VAC service  
single-phase  
50/60 Hz

#### Weld Current

100 - 150 A DC  
100% Duty Cycle

#### I/O Device

M-207EMM

#### Memory Capacity

100 weld schedules maximum,  
100 levels per schedule maximum

#### Water Cooler

Optional

#### Dimensions

11" x 22.75" x 18.75"  
(280 mm x 578 mm x 476 mm)

#### Weight

79 lbs.  
(36 kg)



### M8-4000 Weld Head

#### OD Range

0.50" - 4.00"  
(12,7 mm - 101,6 mm)

#### Travel Motor

D.C., P.M., D.C. Tachometer

#### Head Weight

10 lbs.  
(4,5 kg)

#### Electrode Size

1/16" and 3/32"  
(1,6 mm and 2,3 mm)

#### Rotor RPM

0.1 - 10.0

#### Cable Length

25 ft. (7,6 m) when connected to adapter cable (extension cables available)

➔ Water cooling is recommended

➔ Compatible with all AMI Power Supplies