

# Orbital Welding of Tubesheets for Reactors

## Application:

- Heat exchanger

## Materials:

- Carbon steel
- Tube sheet: WSTE 355
- Tube: ASTM 179

## Welding Equipment:

### *Power Supply:*

- Model 227 with remote pendant

### *Weld Head:*

- Model 6 with wire feed & AVC

## Benefits:

- ✓ 220 welds per 10-hour shift
- ✓ All welds passed helium test and met codes
- ✓ Project completed on time

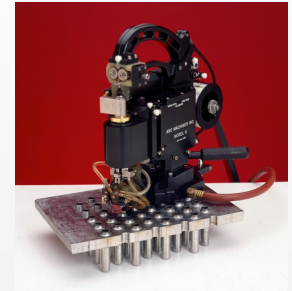
For further information, call AMI at 1-818-896-9556 or e-mail [sales@arcmachines.com](mailto:sales@arcmachines.com)



Model 227



Remote Pendant



Model 6

When Verolme Machinefabriek Ijsselmonde b.v. (VMIJ), a Dutch company specializing in the design and manufacture of heavy equipment, such as heat exchangers and pressured vessels for the energy, petrochemical and chemical industries, was awarded a contract for four carbon steel reactors, the customer required the reactor tubesheets to be orbitally welded and delivered within seven months.

In order to meet this deadline and the customer's specifications, VMIJ needed high productivity equipment. They purchased 3 **Model 227** microprocessor-based GTAW power supplies with operating pendant and 3 **Model 6** tube-to-tube sheet weld heads, from Arc Machines, Inc. VMIJ's welders were trained and qualified by AMI's personnel for proper setup, operation, and maintenance of the equipment.

With manual welding, due to limited access to the joint, the welder typically starts and stops the arc in the middle of a weld, adding time to the operation. With orbital welding, the machine's weld head could complete the entire operation without stopping, even for multiple passes. Each machine performed 220 welds during a 10-hour shift. The weld head quickly mounted and dismantled from the pneumatic loading fixtures. To increase productivity two fixtures per head were used. The weld head's method to feed wire into the weld also contributed to overall productivity.

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



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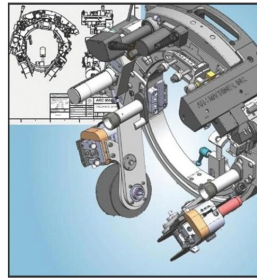
# LEADERS & INNOVATORS in Automated Orbital Welding



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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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## M227 Power Supply

## QUICK SPECS

➔ In place of the Model 215 Power Supply!

### Input Power

100 - 240 VAC  
single-phase  
50/60 Hz

### Weld Current

3 - 100 A DC @ 100/120 VAC input  
3 - 225 A DC @ 200/240 VAC input  
100% Duty Cycle

### Memory Capacity

100 weld schedules maximum,  
100 levels per schedule maximum,  
100 different passes per level

### I/O Device

M-227EMM

### Water Cooler

Optional

### Dimensions

15" x 23" x 20"  
(381 mm x 584 mm x 508 mm)

### Weight

88 lbs.  
(40 kg)



## M6 Tubesheet Weld Head

### AVC Stroke

Automatic

### Wire Feed Speed

5 - 100 IPM  
(13 - 254 cm/min.)

### Rotation Speed

0.1 - 10.0 RPM

### Tungsten Size:

1/16" or 3/32"  
(1,6 mm or 2,4 mm Ø)

### Weld Current

200 A (Maximum)

### Torches

Water-cooled, 200 A  
100% Duty Cycle

### Wire Manipulator

Vertical, Horizontal and  
Angular

### Weight

16 lbs. (7,3 kg) less cables

- ➔ Gas chamber for welding titanium available
- ➔ Compatible with AMI Model 227 and Model 415 Power Supplies

