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 dismounted 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.

For further information, call AMI at 1-818-896-9556 or e-mail sales@arcmachines.com

To read the full story, visit www.arcmachines.com

**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

![Model 227](Image)  ![Remote Pendant](Image)  ![Model 6](Image)
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)

**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)

**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