

Orbital Welding of Furnace Tubes

Application:

- Refinery furnace tube

Material:

- Incoloy 800

Welding Equipment:

Power Supply:

- **Model 227**

Weld Head:

- **Model 81**

Benefits:

- ✓ **Quality welds at hard-to-reach locations**
- ✓ **20-44 welds per shift**
- ✓ **Zero defects**

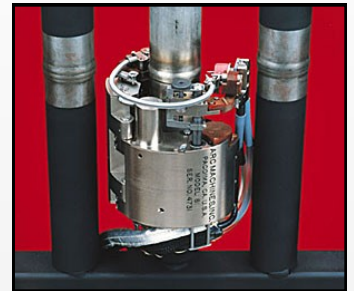
For further information, call
AMI at 1-818-896-9556 or e-mail
sales@arcmachines.com



Model 227



Remote Control



Model 81

Industrial contractor, SW Industrial, Inc., was confident it could manually weld the small-bore heavy-walled piping on a hydrogen furnace. However, it realized that the job was more complex than expected. The furnace tubes at the bottom of the hydrogen furnace were spaced at one-foot centers making it impossible for manual welders' helmets to pass. Furthermore, the material specified for the 1-1/4" pig-tails was Incoloy 800 because of the severe operating temperature of the furnace.

SWI identified automatic orbital welding as a solution to this welding problem. They leased a **Model 227** microprocessor-based power supply and a **Model 81** full-function pipe weld head from Arc Machines, Inc. and sent 3 people to the AMI factory for training. By the 3rd day of training, each welder was developing weld schedules and welding x-ray quality welds on his own. Welding parameters for Incoloy 800 were established during training and stored in the memory of the power supply.

To facilitate the tight construction schedule in effect on this site would have required six manual welders to do the job of the single orbital welding operator who performed the welds on this job. The average was about 20 complete welds per shift including fit-up and tacking and actually peaked at 44 joints welded in one 10-hour shift. No defects were found in any of the 160 pigtail welds. The quality and appearance of the welds were beyond the client's expectations.

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



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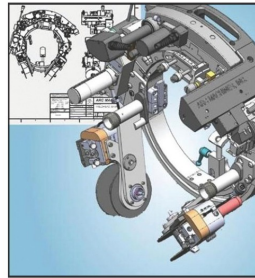
LEADERS & INNOVATORS in Automated Orbital Welding



Cutting Edge Narrow-Groove
Pipe Welding Technology



Advanced Fusion Welding
and Process Control



High-Tech Designs &
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Turnkey Integrated Systems

Advanced Products, Systems & Solutions



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

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M227 Power Supply

QUICK SPECS

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)



M81 Weld Head

AVC Stroke

1.00" (25,4 mm)

Torch Oscillation

+/- 0.31" (7,87 mm)

Wire Feed Speed

1 - 100 IPM

Radial Clearance Range

1.750" (44,45 mm) (Minimum)
depends on pipe diameter

Axial Clearance

6.325" (160,65 mm) (Minimum)

Carriage Travel

0 - 10 IPM

- ↻ Water-cooled body
- ↻ Compatible with AMI Model 415 or Model 227 Power Supplies

