

Recovery Boiler Tubing Replacement with Orbital Welding Equipment

Application:

- Tube-to-tubesheet

Material:

- 2" Diameter Boiler Tubes
- 30" (ID) economizer drum

Welding Equipment:

Power Supply:

- **Model 215**

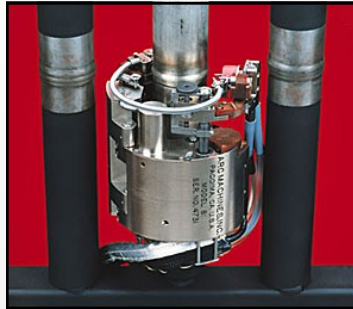
Weld Head:

- **Model 81**

Benefits:

- ✓ 80 welds per shift using 2 weld heads
- ✓ Quality welds in tight operating conditions
- ✓ Training and factory support

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



Model 81



When Gold River Pulp Mill of Canadian Pacific Forest Products Ltd., underwent a planned shutdown to overhaul their recovery boiler, they hired the design/engineering firm of Asea Brown Boveri (ABB Combustion Services Div.) for the project. The recovery boiler is very important to mill operation: it provides steams for mill processes and recovers chemical used in pulping. Downtime for repairs is very expensive.

ABB's use of orbital MIG on previous boiler repairs has led to problems in the past. According to a survey of recovery boilers in the US, weld related defects in the boiler as a whole accounted for about half of all the critical leaks that occurred between 1948 and 1990. Severe working environments with high temperature and extremely tight space are other reasons for ABB to use orbital GTAW welding equipment which can provide the consistent quality in difficult conditions.

ABB used two **Model 215** microprocessor-controlled pipe-welder power supplies and **Model 81** pipe welding heads with AVC tilt. The head was mounted on a special mandrel that locates inside of the tubing ends to support the weld head while making seal welds between the base of the tubes and the inside of the drums. **The Model 81** is water-cooled to allow for a high-duty cycle.

After thorough evaluation and testing of weld jobs on mock-up drum sections and some boiler tubes, four days were devoted to training five welders. During the training, the operators learned to set up and operate the power supply. Once a good welding procedure was achieved in the field, two welders operated two model 81 weld heads at the same time inside the drum which made possible to reach 80 welds per shift.

This project was successful due to advance planning in selecting GTAW welding equipment, developing good welding procedures and training, and factory support from Arc Machines, Inc.

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



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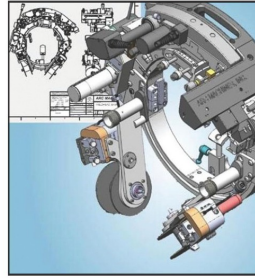
LEADERS & INNOVATORS in Automated Orbital Welding



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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

AMI

ARC MACHINES, INC.®

Arc Machines, Inc.
10500 Orbital Way
Pacoima, CA 91331 U.S.A.
(818) 896-9556
fax (818) 890-3724
sales@arcmachines.com

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)



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 - 100 IPM

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

