

Orbital Welding Saved \$750,000 at Pulp Mill While Increasing the Life of Its Boiler

Application:

- 2,1 m tubing stubs on boiler headers

Material:

- 5 cm OD with 4,8-5,0 mm thickness 178 mild steel tube
- “J” type insert rings
- 0,8 mm diameter ER80SD2 wire

Welding Equipment:

Power Supply:

- **Model 215**

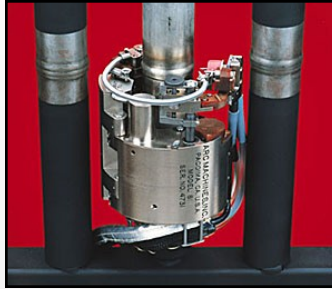
Weld Head:

- **Model 81**

Benefits:

- ✓ Completion of 858 field weld without leaks
- ✓ Completion of the header replacement before deadline
- ✓ Cost saving of \$750,000

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



Model 81



James River's Marathon pulp mill in Ontario, Canada, recently extended the life of its boiler without replacing the unit's economizer headers which would have been very expensive and difficult. The mill replaced only the lower back headers and 2.1 m of tubing stubs using orbital welding technology to finish the project within the time frame of a 25-day shutdown. The estimated cost saving compared to manual welding was \$750,000.

ABB Combustion Engineering Services, the contractor for the project, used a **Model 215** power supply with versatility and speed and a **Model 81** orbital pipe weld head which has a radial clearance of less than 5cm. Orbital welding was selected because of the short duration of the scheduled shutdown along with severely restricted access to the weld zone. Three lower headers, which weigh about 2,780 kg each, and attached tubing were hoisted into place on the fifth floor of the boiler building. A total of 858 field welds were completed in less than 3 weeks.

In order to prevent any possibility of a bad weld joint in the tubing, all the welds were examined by radiography, instead of the normal 10% requirement. The repair rate was about 1.9%, mostly due to the poor alignment after tacking. Upon completion of the project, the boiler was hydro tested without any leaks.

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



Advanced Products, Systems & Solutions

AMI
ARC MACHINES, INC.®

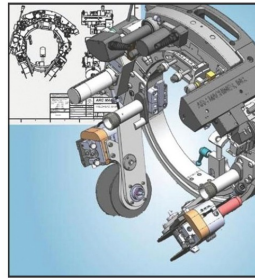
LEADERS & INNOVATORS in Automated Orbital Welding



Cutting Edge Narrow-Groove
Pipe Welding Technology



Advanced Fusion Welding
and Process Control



High-Tech Designs &
Engineering Services



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

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" (7,9 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

