

Orbital Welding of Christmas Tree Assemblies for the Terra Nova Project

Application:

- Sub-sea “Christmas Tree” wellheads

Material:

- 316L stainless steel, 2205 duplex stainless steel

Welding Equipment:

Power Supply:

- **Model 227**

Weld Head:

- **Model 9-750**

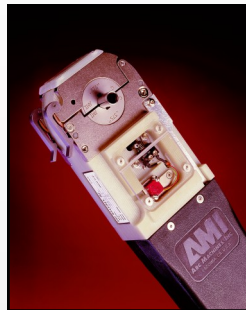
Benefits:

- ✓ **Reduced the original reject rate by 65%**
- ✓ **High productivity cuts project time to 1/3**
- ✓ **Repeatable high quality welds**

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



Model 227



Model 9-750



When the FMC Corporation Wellhead Equipment Group in Dunfermline, Scotland contracted for the welding of pipework for the supply of 13 sub-sea “Christmas Tree” wellheads for the Terra Nova Capex II Project for Petro-Canada they were required to meet very stringent quality standards. The Terra Nova project specified 100% visual inspection of the outside (OD) of the welds, 100% radiography and 100% dye penetrate inspection. In addition to the requirements for 316L stainless steel, welds on 2205 duplex stainless steel tubing were subjected to ferrite counts, macro and micro examinations, and Vickers hardness testing. Welds on duplex also had to pass the stringent ASTM G-48 test of corrosion resistance and the finished trees were subjected to hydrostatic pressure tests.

In order to meet the demanding quality requirements and the specification for a 25 year guarantee of the Christmas trees, FMC decided to invest in orbital GTA welding technology for the project. They purchased a **Model 227** power supply and a **Model 9-750** weld head. When FMC initially subcontracted the welding of the first Christmas Tree, welds had unacceptable 14% reject rate. After changing their approaches to incorporate the use of mixed gas, pressure control, alignment clamps and material control, the reject rate fell to 5% with reduced weld time from 3 weeks to 6 days.

Welding of “Tree Number 3” was performed by a subcontractor and the results were back to being unacceptable. At this point FMC took full control and implemented their own Standard Operating Procedures (SOP’s) based on what they had learned from Arc Machines UK Ltd. They put one of their own welders in charge and did the rework of “Tree Number 3” and all of the remaining trees from 4 through 13 themselves. Once FMC took control of the welding, the reject rates for individual trees were much lower.

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



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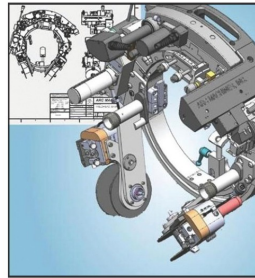
LEADERS & INNOVATORS in Automated Orbital Welding



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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.

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AMI

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M227 Power Supply

QUICK SPECS

Input Power

100 - 240 VAC service,
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)



M9 Series Weld Heads

OD Range

0.093" to 7.500"
(2,362 mm - 190,500 mm)

Travel Motor

D.C., P.M., D.C. Tachometer

Head Weight

11 lbs. - 35 lbs.
(4,9 kg - 15,9 kg)

Electrode Size

0.040", 1/16", 3/32"
(1 mm, 1,6 mm, 2,3 mm)

Rotor RPM

0.1 - 20

Cable Length

25 ft. (7,6 m) when connected to adapter cable
(extensions available)

➡ Removable tube clamps

➡ Pre-plumbed for water-cooling



Compatible with all AMI Power Supplies