

Automated Orbital Welding with Arc Machines, Inc.

Orbital GTAW Boosts Production of Leak-Free Tubing

Application:

- Tube assemblies for hydraulic lines

Material:

- Tube with carbon steel end fitting sizes range from 1/4" to 1 1/4" (6,35 mm to 31,75 mm) OD with various thicknesses

Welding Equipment:

Power Supply:

- Model 207

Weld Heads:

- Model 9-1500
- Model 9-2500

Benefits:

- ✓ Ultra-low reject rate of 3ppm
- ✓ 75,000 welds per month
- ✓ High quality welds with no leaks

For further information, call AMI at 1-818-896-9556 or e-mail

sales@arcmachines.com



Model 207



Model 9-1500



Iracroft Ltd., a specialist in the manufacture of rigid tube assemblies for high-pressure pneumatic and hydraulic applications, received an order from a major customer for a supply of tube assemblies to be used for hydraulic lines in tractors, forklifts, and similar industrial equipment. The customer wanted to replace tubing that was rolled to produce a pipe thread on one end, and which required an "o" ring for the connection, with a leak-free welded connection.

The company was experienced in gas metal arc welding (GMAW) which could provide the quantities, but not leak-free welds. They turned to **Arc Machines, UK Ltd.**, for orbital gas tungsten arc welding (GTAW) technology which provides high quality and high integrity welds. Together they developed a prototype workstation that incorporated a **Model 207** power supply and a **Model 9-1500** orbital weld head. After the improvements and adjustments were made to reduce weld rework, 13 power supplies were used to weld 6 different tube sizes ranging from 1/4" to 1 1/4" OD with various wall thicknesses. To improve productivity, supplementary water cooling for the fitting clamp housing was designed to work in concert with the built-in water cooling system.

When the welded assemblies were subjected to fatigue, pressure and underwater leak testing, the reject rate was an ultra-low 3ppm (parts per million). At the present, the GTA workstations produce about 3,500 to 4,000 orbital welds per day, or about 75,000 per month. For the first three years after the fabricator began its orbital welding operation, it has welded more than 1.7 million parts. Automation of the orbital GTAW process allowed the fabricator to meet the demand for high productivity and leak-free products.

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



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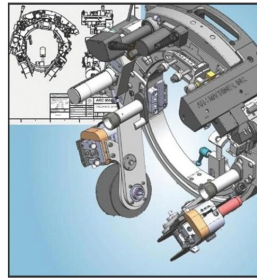
LEADERS & INNOVATORS in Automated Orbital Welding



Cutting Edge Narrow-Groove
Pipe Welding Technology



Advanced Fusion Welding
and Process Control



High-Tech Designs &
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

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M207 Power Supply

QUICK SPECS

Input Power

100 - 240 VAC service
single-phase
50/60 Hz

Weld Current

100 - 150 A DC
100% Duty Cycle

I/O Device

M-207EMM

Memory Capacity

100 weld schedules maximum,
100 levels per schedule maximum

Water Cooler

Optional

Dimensions

11" x 22.75" x 18.75"
(279 mm x 578 mm x 476 mm)

Weight

79 lbs.
(36 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