

MODEL 81



SMALL-DIAMETER PIPE WELD HEAD

The widest range of orbital welding equipment in the world



The Model 81 is a full function orbital pipe weld head featuring programmable Arc Voltage Control, Torch Oscillation, onboard Wire Feeder and Travel in a very compact package.

The Model 81 in its standard configuration will weld pipe from 1.9" (48 mm) OD to 5.563" (142 mm) OD with as little as 1.750" (45 mm) radial clearance and 6.325" (161 mm) axial clearance.



The Model 81 is used in a wide variety of applications that require high quality welding results in applications with limited axial and radial clearances. Common uses for the Model 81 include shipbuilding and high-pressure steam piping in fossil fuel power plants and many other applications.

QUICK SPECS

Pipe OD Range

1.9" - 5.563"
(48 mm - 141 mm)

Torch Oscillation Stroke

0.31"
(7,87 mm)

Wire Feed Speed

1.0 - 100 IPM
(25 - 2540 mm/min.)

Travel Speed

0.1 - 10 IPM
(2,5 - 250 mm/min.)

AVC Stroke

0.750"
(2,4 or 3,2 mm Ø)

Filler Wire Size

0.030" or 0.035"
(0,8 or 0,9 mm Ø)

Wire Spool

0.5 lb. special spool
(0,2 kg) other sizes available

Weight

6 lbs. (2,7 kg)
(less cables)

Tungsten Size

3/32" or 1/8"
(2,4 mm or 3,2 mm Ø)

Axial Clearance

6.325" (160 mm) minimum

Radial Clearance

1.75" (45 mm) minimum

Torch

Water-cooled, 200 A DC
100% Duty Cycle (standard)

Torch Cross-Seam Steering Range

0.31" (8 mm) motorized
0.25" (6,35 mm) manual

Torch Adjustments

lead / lag +/-15°
tilt in / out +/-15°



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STANDARD FEATURES

1. Servo-controlled rotation
2. Servo-controlled AVC
3. Servo-controlled synchronized wire feed
4. Servo-controlled torch oscillation
5. Motorized torch steering
6. Water-cooled body for use in pre-heated pipes

The unique clamping assembly of the Model 81 weld head increases production rates by minimizing the mounting and dismounting times of the weld head to as little as 30 seconds each.



OPTIONAL HARDWARE

- **200 A torch with direct-view cameras**, to monitor leading and trailing edges of the weld puddle in hazardous environments
- **AVC tilt**, to allow the AVC motion of the torch to work in the same plane as the torch tilt, to weld flanges, sockets and similar joints
- **AVC/OSC**: interchange with torch tilt used for mud drum and superheater header welding
- **Adapter kits**, for 1/2" (12,7 mm) pipe through 1.90" (48,26 mm) OD
- **Spool holder**, for larger, 4" (101,6 mm) spools
- Remote-controlled, motorized torch tilt

Model 81 weld head in AVC/Tilt version welding inside the mud drum



Compatible Power Supplies:

- Model 415 WDR Programmable Multi-Function Power Supply
- Model 227 Portable Pipe Welding Power Supply

The Global Welding Company

For further information please visit our website



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