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.

**Pipe OD Range**
1.9” - 5.563”
(48 mm - 141 mm)

**Torch Oscillation Stroke**
0.31”
(7.87 mm)

**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)

**Tungsten Size**
3/32” or 1/8”
(2,4 mm or 3,2 mm Ø)

**Axial Clearance**
6.325” (160 mm) minimum

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

**Torch Cross-Beam Steering Range**
0.31” (8 mm) motorized
0.25” (6,35 mm) manual

**Wire Feed Speed**
1.0 - 100 IPM
(25 - 2540 mm/min.)

**Radial Clearance**
1.75” (45 mm) minimum

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

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

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

**STANDARD FEATURES**

**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

Compatable Power Supplies:

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

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

**The Global Welding Company**

For further information please visit our website or contact us at 1-818-896-9556

_www.arcmachines.com  www.theglobalweldingcompany.com_

HEADQUARTERS
Arc Machines, Inc.
10500 Orbital Way
Pacoima, CA 91331 U.S.A.
Tel: +1 / 818 / 896 / 9556
Fax: +1 / 818 / 890 / 3724
sales@arcmachines.com

SOUTHWEST OFFICE
Arc Machines, Inc.
10650 Haddington Drive
Houston, TX 77043 U.S.A.
Tel: +1 / 818 / 896 / 9556
Fax: +1 / 818 / 890 / 3724
sales@arcmachines.com

GERMAN OFFICE
Arc Machines GmbH
Markelsbach 2
D-53804 Much, Germany
Tel: +49 / 2245 / 91680
Fax: +49 / 2245 / 916868
sales@arcmachines.de

UK OFFICE
Arc Machines UK Limited
11 Low March
Daventry, NN11 4SD, UK
Tel: +44 / 1327 / 879606
Fax: +44 / 1327 / 315034
sales@arcmachines.co.uk

INDIA OFFICE
AMI India Pvt. Ltd.
G O Square, “B” Building,
1st Floor, Aundh - Hinjewadi Road, Wakad
Pune - 411033 MH, India
Tel: +91 / 90110 / 24331
sales@arcmachines.com