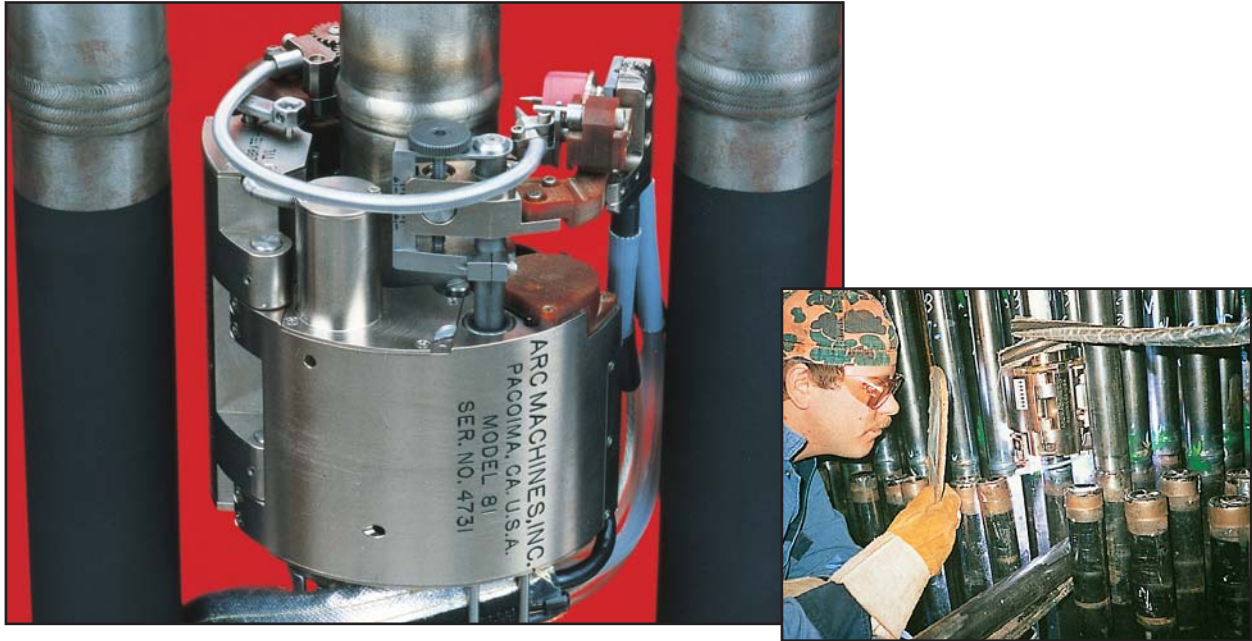


MODEL 81 SMALL-DIAMETER PIPE WELD HEAD



The Model 81 is a full function orbital pipe weld head featuring programmable AVC (Arc Voltage Control), Torch Oscillation (weaving), onboard Wire Feeder and Travel in a very compact package. The Model 81 has found widespread use in a 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. The Model 81 can be equipped with a wide variety of options to allow its use in specialized applications that include remote arc viewing vision systems and fillet welding options.

- Extremely compact, rugged weld head with 200 amp water-cooled torch and body
- Minimum clearances:
 - Axial: 6.325" (160mm)
 - Radial: 1.75" (45mm)
- Mount / dismount in as little as 30 seconds
- Range from 1/2" to 5" schedule pipe
- Automatic arc voltage control
- Cross-seam steering
- Rotation speeds from 0.1 to 10 I.P.M. (2,5 - 250mm/min)
- On-board wire feed mechanics, synchronized pulsed wire feed
- Compatible with Arc Machines' Model 227 and 415 power supplies

MODEL 81 SMALL-DIAMETER PIPE WELD HEAD

The Arc Machines' Model 81 is a field-proven weld head which represents the culmination of over 20 years experience in the successful design and development of precision low-profile orbital welding heads. The Model 81 in its standard configuration will weld pipe from 1.9" O.D. to 5.563" O.D. with as little as 1.750" radial clearance and 6.325" axial clearance. Our unique clamping assembly increases production rates by minimizing the mounting and dismounting times of the weld head to as little as 30 seconds each.

Configuration Options Include:

- 200 Amp Torch with Video Camera: For welding in hazardous environments
- AVC Tilt: Allows the AVC motion of the torch to work in the same plane as the torch tilt, to weld flanges, sockets and similar joints
- Adapter Kits: Kits for 1/2" pipe through 1.90" O.D.
- Spool Holder: For larger, 4" spools (with increased radial clearance)
- AVC / OSC: Interchange with torch tilt used for mud drum and superheater header welding

The Arc Machines Model 81 Offers:

- Servo-controlled rotation
- Servo-controlled AVC
- Servo-controlled synchronized wire feed
- Servo-controlled torch oscillation and dwell
- Electronically controlled torch steering
- Compatible with Arc Machines' Model 227, 215 or 415 power supplies
- Water-cooled body



Model 81 in AVC/tilt version welding inside mud drum

Technical Data

Process:	GTAW (TIG)	Torch Oscillation Amplitude, Max.:	0.500" (13mm)
Arc Voltage Control:	0.750" (19mm)	Wire Manipulator: (Manual Adj.)	Vertical, horizontal and Angular
Travel Speed:	0.1 to 10 IPM (2,5 - 250mm/min)	Filler Wire Size:	0.030" - 0.035" (0.8 - 0.9mm)
Wire Feed Speed:	1.0 to 100 IPM (25 - 2540mm/min)	Axial Clearance:	6.325" (minimum) (160mm)
Torch:	Water-cooled, 200 ADC 100% duty cycle (standard)	Radial Clearance:	1.75" (minimum) (45mm)
Torch Adjustments:	Adjustable lead / lag $\pm 15^\circ$ tilt in / out $\pm 15^\circ$	Wire Spools:	0.5 lb. special spool (0.2 kg) (other sizes available)
Tungsten Size:	3/32" or 1/8" (2,4 - 3,2)	Weight:	6 lbs. (less cables) (2.7 kg)
Torch Cross-seam Steering Range:	0.625" (16mm)	Outline Drawing Nos.:	40810007, 40810008, 40810016
		Applicable Specification:	No. 81

ARC MACHINES, INC.