

# Model 52

## HEAVY-DUTY PRECISION AUTOMATED ORBITAL WELD HEAD



## THE WIDEST RANGE OF ORBITAL WELDING EQUIPMENT IN THE WORLD

The Model 52 is engineered and designed for high-deposition circumferential and flat welding in heavy industrial and harsh field applications where quality requirements are stringent and the use of the GTAW process is beneficial. It is intended for all-position, automated welding of pipe, plate or fittings using the Cold or Hot Wire Feed GTAW (TIG) process.

### FEATURES

- Synchronized torch oscillation
- 4" (102 mm) AVC and oscillator slides
- Cross-seam steering
- Exclusive, zero-backlash dual gear drive
- Digital encoder feedback
- Water-cooled main housing
- Tool-less mounting mechanism
- On-board wire feed mechanics, single or dual wire feed system

### INDUSTRY

- Nuclear
- Power Generator
- Shipyard
- Offshore
- Oil and Gas
- Vessel Manufacturing



**NARROW-GAP WELDING WITH VISION**

### TORCH OPTIONS

The Model 52 weld head provides a durable, extremely versatile, heavy-duty platform for using a variety of torch options:

- Single or dual wire entry torches
- Narrow-Gap Torches up to 12" (305 mm) deep groove
- Torches for remote welding with Vision, Motorized wire manipulation
- Hot or Cold Wire options
- Custom-designs are available to meet application specific needs

Visit [arcmachines.com](http://arcmachines.com) for more information.

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### MODEL 52 "P" TORCH

The "P" torch is only one of numerous torches designed for use with AMI's Remote Welding Video Systems. It incorporates direct-view optics and color video cameras to show both the leading and trailing sides of the weld puddle. These optic assemblies are combined with remote-controlled dual wire manipulators to allow welding in both directions and to remotely observe the weld puddle. AMI's arc light filtration, along with miniature video cameras allows for a very small and compact package with a minimum amount of cabling. It is recommended for any application requiring remote vision, such as high-radiation areas or where direct observation of the weld process by operators is limited. The "P" torch can be ordered with single or dual wire feed options.

### FEATURES

- A Video System for remote operation and observation of the weld zone from leading and trailing directions
- Excellent display of filler wire position and entry point
- Addition of filler wire while welding in either direction
- Remote-controlled motorized wire guide manipulators
- Wire size range: 0.020" - 0.045" (0.5 mm - 1.2 mm)
- Industry standard gas lenses and gas cups are available
- Water-cooled, 300 A @ 100% Duty Cycle

QUICK SPECS	
AVC Stroke	4" standard (102 mm) (position encoder)
Torch Oscillation Stroke	4" (102 mm) standard up to 16" (408 mm) optional
Wire Feed Speed	5 - 200 IPM
Tungsten Size	3/32", 1/8" or 5/32" 2.3 mm, 3.2 mm, or 4 mm Ø
Filler Wire Size	0.020" - 0.045" (0.5 mm or 1.1 mm Ø)
Wire Spool	10 lbs. 8" Ø standard spool (4.5 kg, 203 mm Ø spool)
Torch Cross-Seam Steering Range	2 lbs. or 4" standard spool (1 kg or 100 mm Ø spool)
Max. Wall Thickness	Depends on torch type, options and accessories
Travel Speed	0.2 - 20 RPM (position encoder)
Radial Clearance Range	Depends on pipe diameter, torch type and configuration 6.56" (167 mm) minimum
Axial Clearance Range	Depends on torch type and options 15.75" (400 mm) minimum

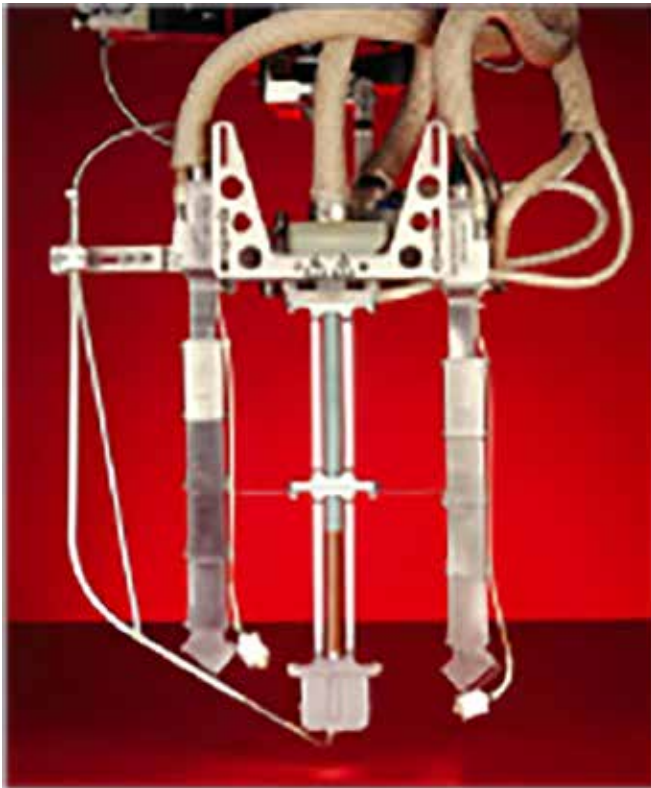
\* A variety of water-cooled torches are available.

\* Compatible Power Supply: Model 415 WDR

\* Compatible with many AMI torch assemblies, including video-equipped torches.

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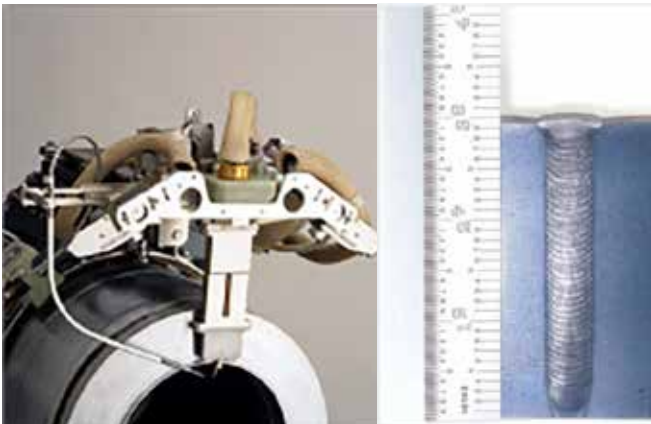


### NARROW-GAP TORCH

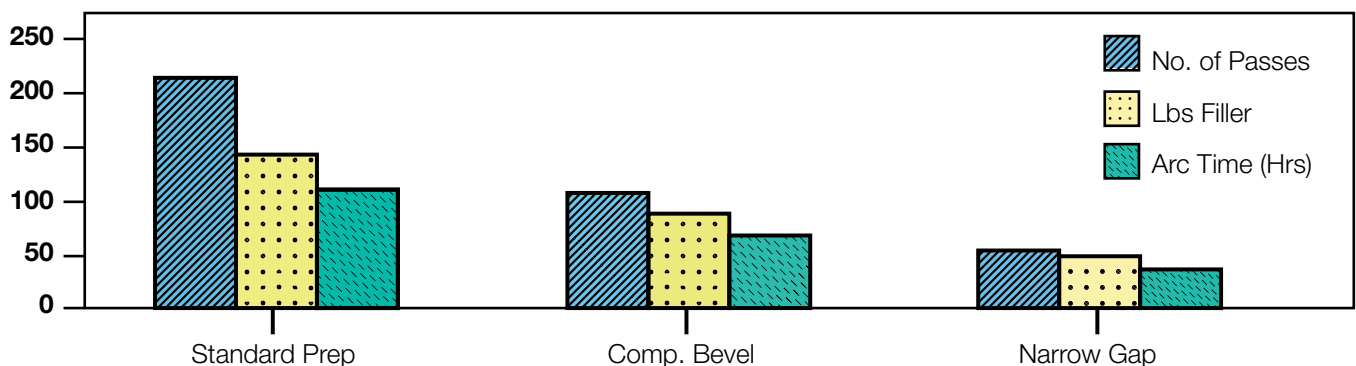
The AMI NGT (Narrow-Gap Torches) were designed to perform narrow groove heavy-wall pipe and vessel welds, with less heat input and shorter weld times than conventional narrow gap equipment. These torches use a rotating tungsten, which provides mechanical manipulation of the arc and wire feed within the groove. The integral gas cup provides direct gas shielding of the tungsten and the weld metal. The rotating electrode assures excellent side wall fusion and minimizes weld defects. The rotating electrode in conjunction with the narrow preps, allows deposition rates that are significantly higher than conventional Cold Wire GTAW. Typical weld preps used are approximately 1/2" (18 mm) wide, in the root area, with a 3 to 9 degree included angle for welds up to 12" (305 mm) thick. The compact torch design simplifies operation so that no special training is required for operators familiar with AMI orbital pipe welding equipment.

### FEATURES

- Wire size range: 0.030" - 0.045" (0.8 mm - 1.2 mm)
- Water-cooled, 350 A torch
- 2 video cameras, providing excellent remote visibility
- Torch set-up in 2" (51 mm) increments to minimize radial clearance
- Standard accessories to weld up to 6" (152 mm) thicknesses or optional configurations up to 12" (305 mm) wall thicknesses
- Optional 0.375" (9.5 mm) wide gas cups for special applications
- Increased productivity
- Reduced heat input
- Reduced work-piece distortion



### Narrow Groove Data : 30° OD, 4" Wall Pipe



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AN ESAB® BRAND

OPTIONS	
The Model 52 weld head and torch are just two of the elements required for an automated pipe welding system. Precision guide rings providing positive, gear-driven traction, AMI's Model 415 WDR Power Supply, and many other options offer a complete system suitable for high-quality orbital pipe welding of a wide range of applications with excellent productivity.	
10 or 40 IPM Travel (rotation) Motors	for applications requiring more torque or faster travel
300 IPM Wire Feed Motor	for use with special-application torches
Oscillator Cross-Seam Stroke	4" (102 mm) standard, range increases available in 2" (51 mm) increments up to 16" (408 mm) total
AVC Travel	4" (102 mm) standard, range increase or decrease in 2" (51 mm) increments available
Right-Angle Drive	Allows the weld head to be mounted perpendicular to the pipe instead of parallel to it. Used for short radius elbows or tight axial clearance in conjunction with AVC/OSC interchange
Guide Rings	Standard, flat, ID and special guide rings are available
52-CW Wire Feeder and Spool Holder	Additional (second) wire feeder that allows welding in both directions of head travel. The Power Supply automatically selects proper wire feeder as a function of rotation direction
Wire Spool Holders	10 lbs. (4.5 kg) (8"; 203 mm) wire spool holders are standard. Optional holders available for 4" (102 mm), 2 lbs. or 12" (306 mm), 30 lbs. wire spools
Gas Cup/Gas Lens/Wire Manipulator Extender	Various options available



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