

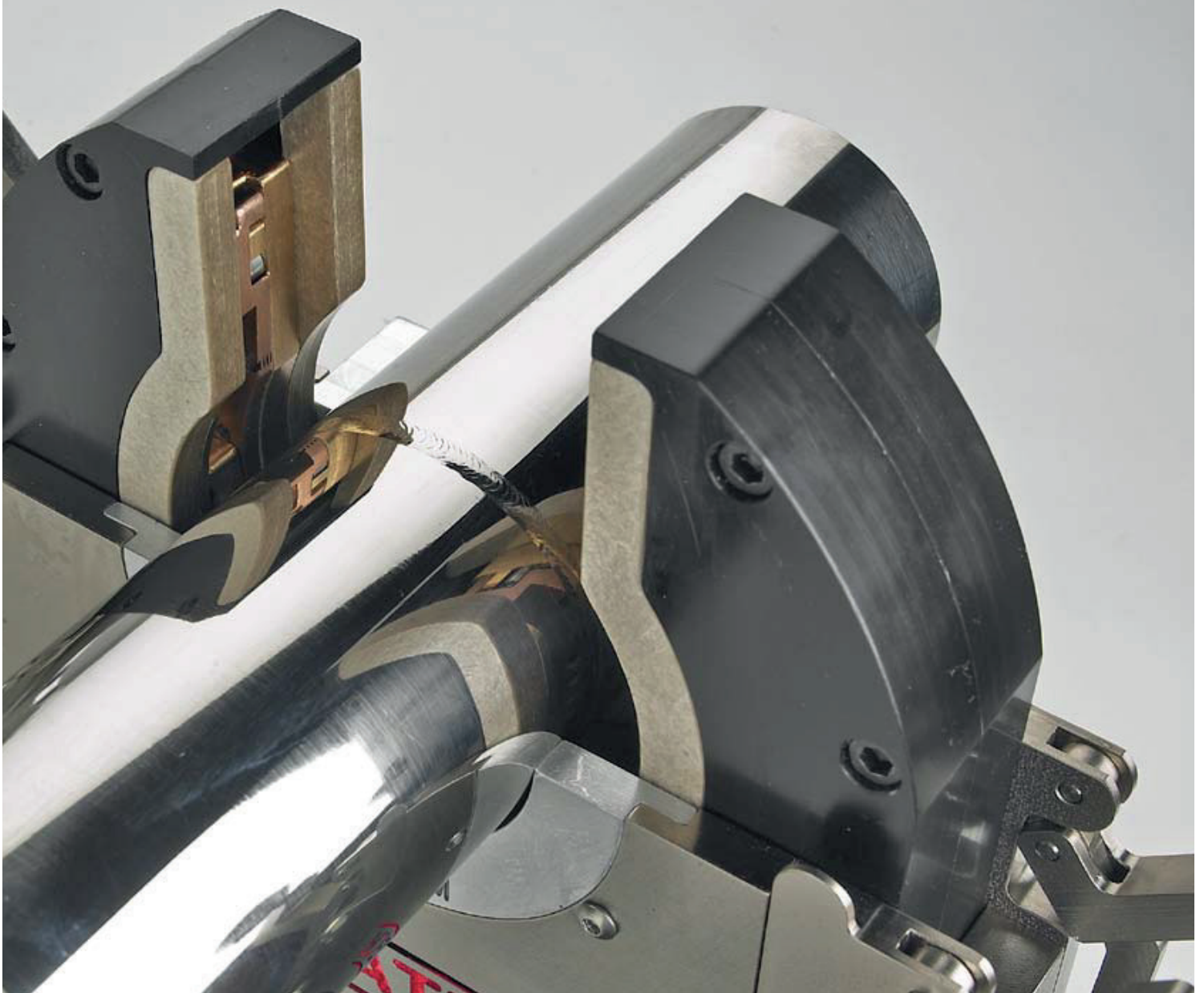


WELD HEADS

805 810 820

830 840 860

**MAGNATECH**



# 805 810 820 830 840 860 WELD HEADS

## ORBITAL WELD HEADS FOR FUSION WELDING OF TUBES

Magnatech introduces an entirely new line of easy-to-operate tools for autogenous tube welding. Five models with overlapping ranges cover tubes from 3 – 152 mm (0,125" – 6") O.D. Magnatech's 800 series heads make tube-to-tube and tube-to-fitting welds in less time with precision and repeatability. The double-clamping design simplifies work piece fit-up and eliminates tack welding in many cases. Collets are available for any tube and fitting size.



## Features

- Collets for all tube sizes/fitting geometries
- Waterproof carry case standard
- Internal weld head cooling standard
- Convenient flip-up view port allows final inspection before welding
- Encoder motors provide precise, repeatable speed regulation
- "Jam" detection/protection.  
If rotation stops for any reason, it is instantly sensed and power to the motor is immediately interrupted. No more damaged motors or drive trains
- Standard 8 m (25') hose pack length
- New rotation drive design tolerant of metal debris
- "Home" position switch automatically readies the head for removal following weld completion, and never requires adjustment
- Simple assembly makes field service straightforward

## Accessories

- Extension cables allow use up to 23 m (75') from power supply
- Pre-ground tungsten electrodes
- Offset Tungsten Holders (Butt weld) allow use when axial clearance restrictions exist (such as short tangent fittings)
- Offset Tungsten Holders (Fillet weld) allow fillet (socket) welds to be made
- Bench mount bracket



Tungsten Electrodes

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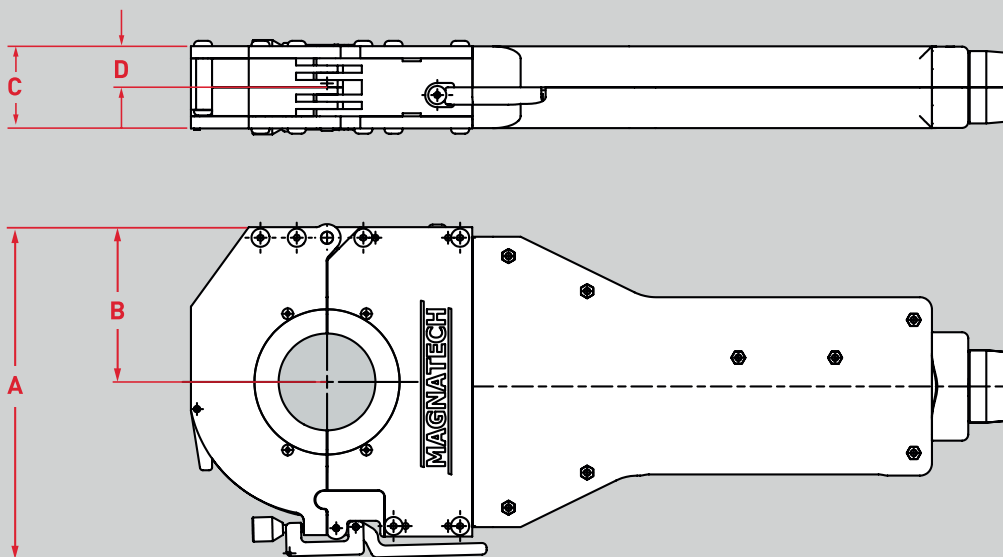
## Specifications

<b>Application</b>	Orbital autogenous GTAW welding of tube-to-tube, tube-to-fitting
<b>Cable length</b>	7.6 m (25') standard. Extension cables available
<b>Power supply compatibility</b>	Tubemaster models, Pipemaster models

## Dimensions/weights

	805	810	820	830	840	860
<b>Tube Diameter Range</b>	3-16 mm (.125-.625")	3-25 mm (.125-1.0")	6-51 mm (.25-2.0")	9-75 mm (.375-3.0")	12-102 mm (.5-4.0")	50-152.4mm (2-6.0")
<b>RPM Range</b>	1.8 - 2.0	0.6 - 9.5	0.3 - 5.0	0.1 - 2.5	0.1 - 2.3	0.1 - 2.0
<b>Weight</b>	2.5 kgs (5.5 lbs.)	3.2 kgs (7 lbs.)	5.0 kgs (11 lbs.)	6.4 kgs (14 lbs.)	8.2 kgs (18 lbs.)	10.0 kgs (23 lbs.)
<b>"A"</b>	91 mm (3.6")	124 mm (4.90")	175 mm (6.89")	202 mm (7.96")	231 mm (9.10")	297 mm (11.71")
<b>"B"</b>	36 mm (1.4")	62 mm (2.45")	83 mm (3.26")	96 mm (3.79")	110 mm (4.31")	144 mm (5.65")
<b>"C"</b>	31.3 mm (1.3")	42 mm (1.64")	43 mm (1.70")	43 mm (1.70")	43 mm (1.70")	43 mm (1.70")
<b>"D"<sup>1</sup></b>	15 mm (0.6")	19.5 mm (.77")	19.5 mm (.77")	19.5 mm (.77")	19.5 mm (.77")	19 mm (.75")

<sup>1</sup> Distance from nearest flush collet face to tungsten centerline. (Tungsten offset from center)





## WELD HEAD

# M500

### ORBITAL WELD HEADS FOR FUSION WELDING OF TUBES AND FITTINGS

The ultra-low profile M500 is designed for precision welding of fittings and components with minimal straight extensions as short as 6.35mm (0.25").

The M500 covers the size range of 3.18-12.7mm (.125-.500") using interchangeable, size-specific cartridge assemblies, or cartridges using interchangeable collets (Tube Clamp Inserts) providing the complete size range capability with a single cartridge.

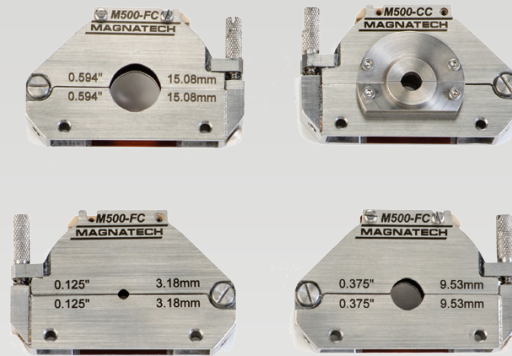
The M500 is ideal for restricted clearance micro-fitting welding applications in the semiconductor, aerospace, instrumentation, and the hygienic process industries (pharmaceutical/biopharmaceutical).

Three different clamp assemblies allow the M500 to be tooled for all applications.

# WELD HEAD M500

## FEATURES

- Collets (TCI) for all tube/fitting geometries
- Flush cartridge assemblies without collets achieve narrowest configuration for welding of micro-fitting
- Flush cartridge with single collet for micro-fitting to tube provides optimal fit-up alignment
- Accepts Arc Machines (AMI) collets (tube clamp inserts) for 9-500
- Optional Quick Release Kit allows remote locating and clamping of components for an unobstructed view of the joint fit-up
- Waterproof carry case standard
- Bench mount bracket
- Convenient flip-up view port allows final inspection before welding
- Standard 7.6m (25') cable length
- Now available in two cable connector versions: For the Tubmaster 514 or AMI 205/207/217
- Housing body fabricated using Torlon 5030 material rated for an unprecedented 274°C (575°F). Allows high duty cycle without the need for water cooling
- Stainless steel rotor insures long wear life
- Collet frames hinge on the same side, allowing greater access to tight clearance welds



## SPECIFICATIONS

Application	Orbital autogenous GTAW welding of tube-to-tube, tube-to-fitting
Cable length	7.6 m (25') standard
Power supply compatibility	Tubemaster models, Pipemaster models (Optional AMI 205,207,217)
RPM range	1-22
Tube diameter range	3.18-12.7mm (.125-.500")

**MAGNATECH**

AUTOMATIC PIPE WELDING SOLUTIONS

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# REDHEAD WELD HEADS 427A / 428A 429A

**MAGNATECH**

## ARC LENGTH ADJUSTMENT CONTROL

Maintains set arc length. Allows adjustment during welding.

## WATER-COOLED TORCH

With adjustable lead/lag angle.

## PUSH BUTTON CLUTCH

For rapid cable unwind.

## TOGGLE LEVER

Actuates clamps – can be positioned for right or left hand operation.

**3-AXIS POSITION ADJUSTMENT FOR FILLER WIRE NOZZLE**  
(Vertical, horizontal, angular)

## TORCH CROSS-SEAM ADJUSTMENT

Allows lateral torch adjustment during welding.

## BROAD STAINLESS STEEL CLAMP PADS

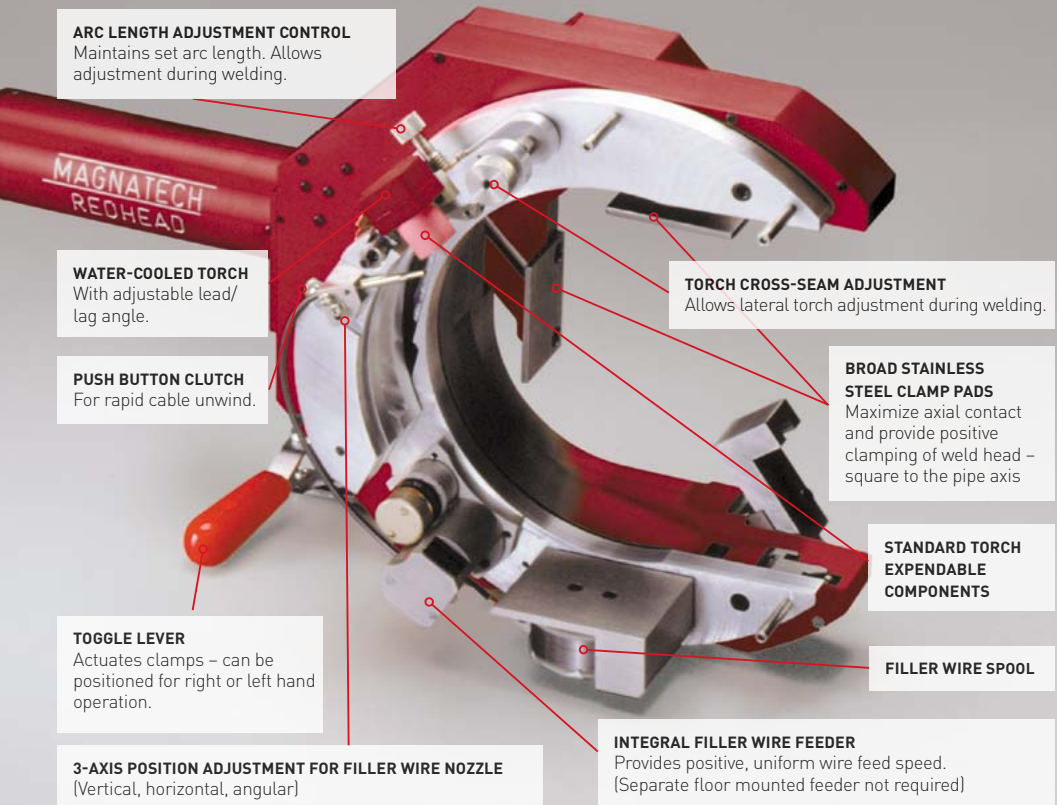
Maximize axial contact and provide positive clamping of weld head – square to the pipe axis

## STANDARD TORCH EXPENDABLE COMPONENTS

## FILLER WIRE SPOOL

## INTEGRAL FILLER WIRE FEEDER

Provides positive, uniform wire feed speed.  
(Separate floor mounted feeder not required)



# 427A 428A 429A REDHEAD

## ORBITAL WELD HEADS FOR FUSION AND WIRE FEED WELDING OF PIPE

Magnatech Redheads are designed to make pipe-to-pipe and pipe-to-fitting welds with precision and repeatability. Redheads can be used for fusion welding, or with filler wire addition – an integral headmounted feeder is standard on all models. Three models cover the size range of 12.7 to 168 mm (0.5 to 6.625") OD. Digital technology forever eliminates the need for periodic calibration – rotation and wire speed remain accurate regardless of wear, and heads can be interchanged without time-consuming recalibration.



## MOUNTING

The Weld Head mounts entirely on one side of the joint, allowing use on pipe-to-pipe and pipe-to-fitting welds.

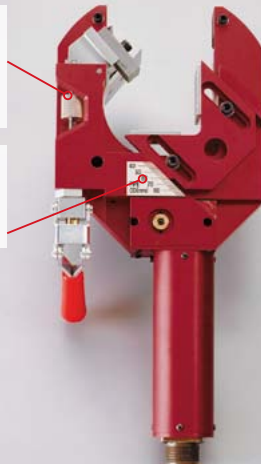


## CLAMPING

### MICROMETER FINE ADJUSTMENT ON CLAMP

Provides rapid Adjustment for Pipe O.D. Variation

### ENGRAVED SCALE CLAMP ADJUSTMENT FOR PIPE O.D. (METRIC OR INCH)



## TORCH ROTATION

Uniform torch rotation is ensured by a chain and sprocket drive using a precision stainless steel bearing assembly that is immune to heat.



# REDHEAD 427A 428A 429A

## Options

- Extension Cables
- Fillet/Socket Weld Kit
- Extended Clamping Range Kit
  - R-2 allows welding down to 21mm (0.84 inch) OD
- Extended Clamping Range Kit
  - R-3 allows welding down to 50 mm (2 inch) OD

## Applications

- Pharmaceutical
- Sanitary (Hygienic) Process Piping
- Food Processing/Dairy
- Brewery Tubing
- Power Generation
- Chemical



## Specifications

	R-1 (MODEL 427A)	R-2 (MODEL 428A)	R-3 (MODEL 429A)
<b>Application</b>	Orbital GTAW welding of pipe-to-pipe, pipe-to-fittings		
<b>Pipe (tube) OD size range</b>	13 – 38 mm (0.5 – 1.5")	33 – 90 mm (1.315 – 3.5")	90 – 168 mm (3.5 – 6.625")
<b>Filler wire module</b>	Wire size: 0.8 mm (0.03")		
<b>CE standards adopted</b>	Max. speed capability: 1900 mm/min. (75 IPM) Spool size: 0.16 kg (0.35 lbs)		
<b>Arc gap control module</b>	Mechanical, adjustable		
<b>Torch propulsion module</b>	0 – 4.0 rpm	0–1.5 rpm	0–0.6 rpm
<b>Water-cooled torch</b>	200 A continuous		
<b>Torch adjustment capability</b>	Torch lead/lag adjustment: ± 15 degrees (manual) Torch tilt adjustment: Requires optional socket weld kit		
<b>Cable length</b>	7.6 m (25') standard. Extension cables available.		
<b>Power supply compatibility</b>	Tubemaster 514, Pipemaster 515, Pipemaster 516		

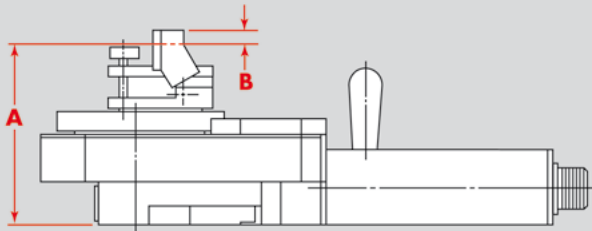


# 427A 428A 429A REDHEAD

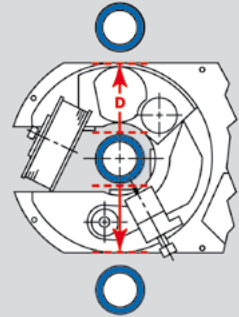
## Dimensions/weights

	R-1 (MODEL 427A) R-2	R-2 (MODEL 428A)	R-3 (MODEL 429A)
<b>Weight</b>	3.9 kg (8.5 lbs.)	5.4 kg (12 lbs.)	9.0 kg (20 lbs.)
<b>Axial Clearance (Torch C/L to Rear Extremity) (A)</b>	127mm (5.0")	127mm (5.0")	127mm (5.0")
<b>Axial Clearance (Torch C/L to Front Extremity) (B)</b>	10mm (0.41")	10mm (0.41")	10mm (0.41")
<b>Width (C)</b>	140mm (5.5")	191mm (7.5")	280mm (11.0")
<b>Radial Clearance Requirement (D)</b>	[140mm (5.5") - Pipe O.D.] ÷ 2 = Radial Clearance	[191mm (7.5") - Pipe O.D.] ÷ 2 = Radial Clearance	[280mm (11") - Pipe O.D.] ÷ 2 = Radial Clearance

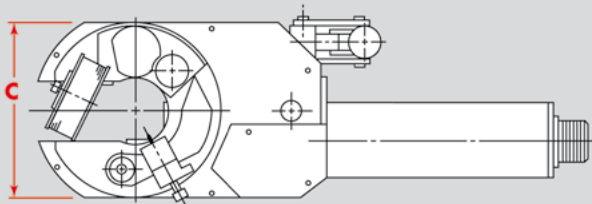
TOP VIEW



RADIAL CLEARANCE



SIDE VIEW





# TUBEMASTER 514E

## PROGRAMMABLE POWER SOURCE FOR ORBITAL WELD HEADS

The model 514 brings the benefits of true digital technology to the orbital welding customer: unparalleled accuracy, repeatability, and reliability. Digital technology forever eliminates the need for periodic weld head calibration – rotation speed remains accurate regardless of head wear, and heads can be interchanged without time-consuming calibration. Weld parameters are actively monitored for QA/QC reporting. Now equipped with an intuitive, color touch screen interface, both programming and every day usage is faster and simpler.

- Unique autoprogramming
- Rugged design
- Operates fusion and wire feed heads

# TUBEMASTER 514E

## FEATURES

- 200 amp output @ 100% duty cycle
- Up to 100 levels per program
- Stores 100 weld programs internally
- Wire feed capability for wire feed heads
- AutoProgram automatically generates procedures
- Programmable "override limits" provide supervisory control
- Weld parameter monitoring/reporting for QA/QC purpose
- Transfer programs and data to PCs using USB flash drive
- Offline programming with USB program transfer
- AutoTack automatically generates tack weld programs
- Large, color LCD touch screen
- Head-mounted membrane switches eliminate remote pendant
- Help files provide immediate information/assistance
- Password protection of key functions
- Built-in printer allows program/QC report printout
- Detachable coolant recirculator with integral flow switch protection
- Operator immediately alerted to entry errors, with prompts



## SPECIFICATIONS

Application	For use with many weld head models (GTAW process)
Functions controlled	Welding current output/current pulsing, weld head rotation, Weld head wire feed speed
Output power	0 – 200 amps
Input power requirements (rated load)	115/230 VAC, 1 Ø, 4.0 KVA, 50/60 Hz
Internal memory capacity	100 weld programs
Units of measurement	Metric and Inch (selectable)
Program transfer	USB flash drive
Language (selection)	English, Spanish, German, French, others
Settable override limits	Individually scalable overrides on each function 0 – 100%
Maximum open circuit voltage	80 V
Water and gas flow switches	Standard. Prevent damage to equipment and workpiece
Data recording/printout	Operator ID, weld ID number, program number, material, OD, wall thickness, date, time, weld head model, project, drawing, programmed parameters, etc.
QC-parameter monitoring/recording/printout	Monitors and records any actual deviations from preprogrammed limits
Arc start type	HF
Operating/storage temperature	Operating: -18 to 50°C (0 to 120°F) Storage: -25 to 60°C (-20 to 140°F)
Humidity	To 98% RH (non-condensing)

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# EZ ORBITAL 517

**MAGNATECH**



## ORBITAL WELD HEADS FOR FUSION WELDING OF TUBE

Magnatech introduces an innovative solution to orbital tube welding with its modular EZ Orbital welding systems. The model 517 is a tube welding controller that integrates the operation of a standard, commercial GTAW power source with the weld head. The new line of weld heads, the 1000 series, with digital control of rotation speed regulation, ensuring perfect repeatability.



### Features

#### WELDING CONTROLLER

- Full color, touch screen operation
- Intuitive symbol-based operation
- Real time head temperature monitoring and over temperature alert
- Visual display of welding cycle
- Simple % adjustment of preset welding parameters
- Diagnostic fault detection system (gas purge, weld head jam, etc)
- Software updates and upgrades available by internet download via USB interface
- Compact and lightweight controller built into waterproof rugged case

#### WELD HEADS

- Digital rotation motor ensures 100% repeatable speed regulation
- Easy access collet clamp adjustment – optimal grip without deformation
- Flip top viewing port – accurate pre-weld fit up inspection
- Molded silicone switch panel on weld head handle – eliminates need for remote pendant
- Indestructible SS hinge provides rigidity for positive tube alignment
- Collets for all tube sizes/fitting geometries
- Internal water cooling standard – simply connect to a commercial water recirculator for high duty cycle applications

### Accessories

- Extension cables allow use up to 12 m (40') from power supply
- Pre-ground tungsten electrodes
- Waterproof carry case
- Bench mount bracket



Tungsten Electrodes

# EZ ORBITAL 517

## OVER-CENTER CLAMPING USES SOLID COLLETS – NEVER NEEDS REPLACEMENT\*

\*Patent Applied For

- Flush collets for minimal axial clamping length
- Extended collets for maximum alignment capability



## Specifications

Length x width x height	330 x 420 x 170 mm (13 x 16.5 x 6.8")
Weight	6 kg (13 lbs)
Power supply capability	Consult factory for suitable models
Input power requirements	90/240 VAC, 1 Ø, 0.5 A fuse, 50/60 Hz
Unites of measurement	Metric and inch (selectable)
Operating temperature	-18 to 50 ° C (0 to 120 ° F)
Storage temperature	-25 to 60 ° C (-20 to 140 ° F)
Humidity	To 98% RH (non-condensing)
Power source	Conventional tig
Weldhead	1030
Pipe (tube) size	25 - 75 mm (1.0/3.0")

## HOW EASY IS EZ ORBITAL?

The model 517 Controller has an intuitive symbol-based touch-screen user interface. Operation involves selecting a tube size and wall thickness and pressing the Start Weld switch on the Head. The operator can adjust amperage by a percentage override to accommodate tube lot variation.

1 From Start Up Display



2 Select (Input) Tube O.D.



3 Select Wall Thickness

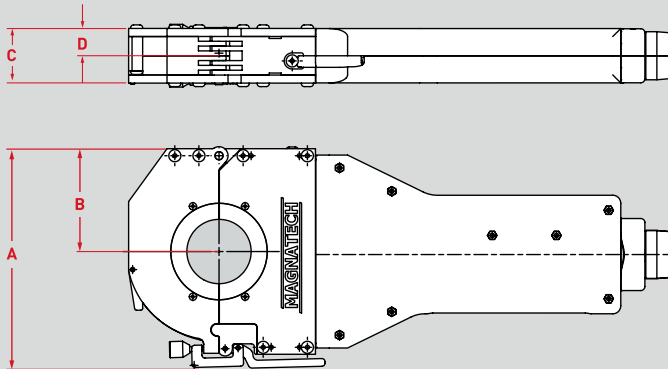


## Dimensions/weights

### HEAD MODEL 1030

<b>Tube Diameter Range</b>	25 – 75 mm (1.0–3.0")
<b>Weight</b>	6.4 kgs (14 lbs.)
<b>"A"</b>	202 mm (7.96")
<b>"B"</b>	96 mm (3.79")
<b>"C"</b>	43 mm (1.70")
<b>"D"</b>	19.5 mm (.77")
<b>Cable length</b>	4.6 m (15') standard. Extension cables available

<sup>1</sup>Distance from nearest flush collet face to tungsten centerline. (Tungsten offset from center)



### 4 Press Start Weld



5 ...For a perfect weld every time