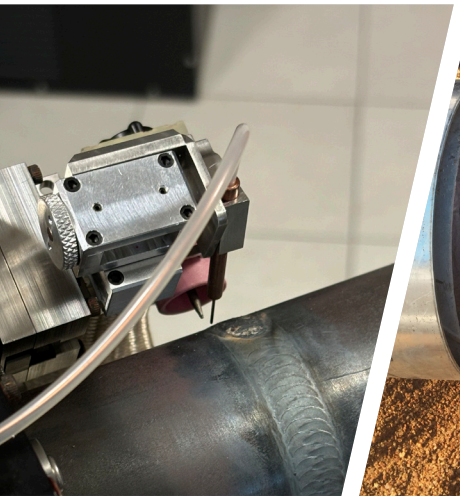
D-HEAD 420 WELDING HEAD

0.84 - 14" o/d / 21.34 - 355.6 mm o/d







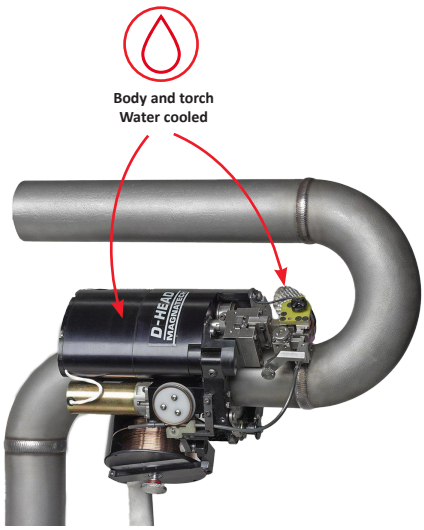
MAGNATECH
AN SPE GROUP BRAND

Daonte
Tecnología Metalmecánica

MAGNATECH D-HEAD 420 WELDING HEAD

0.84 - 14" / 21.34 - 355.60 mm o/d

- **Function:** multi-pass orbital GTAW pipe-to-pipe, pipe-to-fitting
- **Materials:** carbon based and exotic alloys
- **Power supply compatibility:** Pipemaster 515 and Pipemaster 516

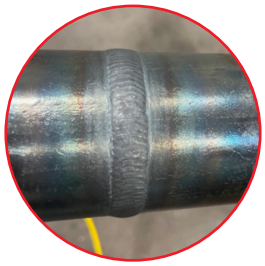


The Magnatech D-Head 420 weld head is designed to make pipe-to-pipe and pipe-to-fittings welds. It reproduces all required functions, motions and flexibility of highly skilled manual welding, reduces repair rates, while offering high repeatability and efficiency.

The D-Head 420's key differentiator is its ability to be used on **applications with radial and axial clearance constraints**. The minimum required clearance is 2" / 51 mm, making it a unique weld head for particular applications accross various industries.

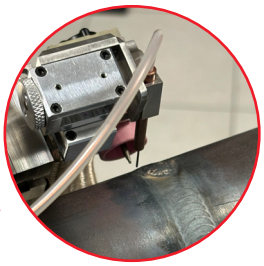
The D-Head is positioned on the pipe using interchangeable guide rings (standard 24 guide ring sizes are available). Guide ring insert kits can be used allowing to cover the diameter range of 0.84 - 14" / 21.34 - 355.60 mm o/d.

MAIN FEATURES



TORCH OSCILLATION (WEAVING)

Customize welds with precision: independently program the width, speed, and endpoint “dwell” of the torch oscillation. Control the torch’s “cross seam” steering electronically via a remote pendant, and benefit from pulsed current automatically synchronized with the oscillation for flawless results.

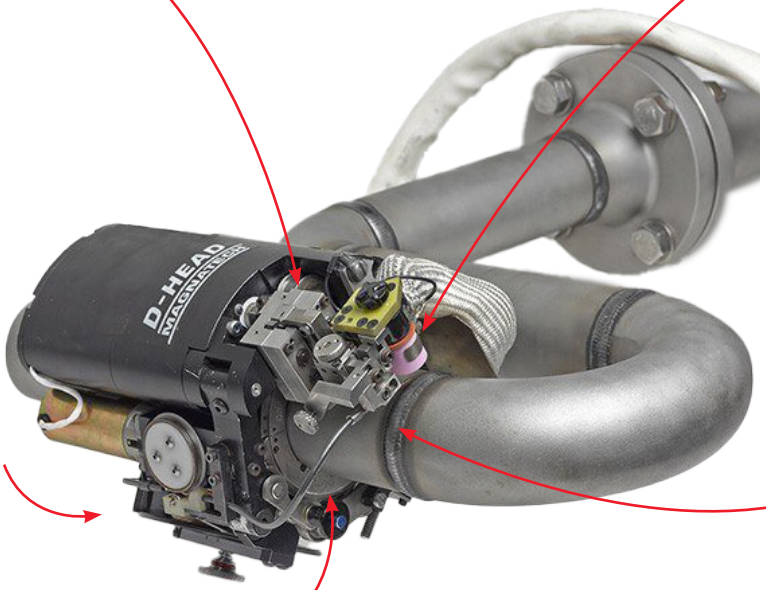


ARC GAP CONTROL (AGC)

AGC allows real time control of the distance between the electrode and the workpiece by maintaining the gap rather than just the voltage alone, ensuring consistent and precise welding performance.

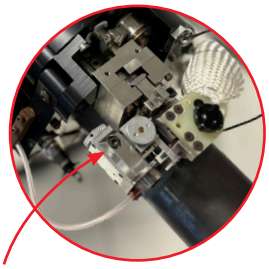
FILLER WIRE SPOOL

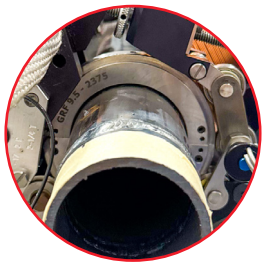
Supports **standard** 1 kg / 2 lbs spools or 0.5 kg / 1 lbs **low-profile** spool for a reduced radial footprint, enhancing maneuverability in tight spaces.



COMPACT HEAD-MOUNTED WIRE FEEDER

Handles a variety of wire diameters with ease, ensuring flexibility and efficiency in every weld.





WELDING HEAD MOUNTING/ROTATION

Heavy-duty metal guide rings lock the head firmly onto the pipe. The rugged sprocket drive system provides steady rotation speed, guaranteeing consistent and precise welds every time.

USE ON PREHEATED PIPES : engineered for extreme conditions, the D-Head 420's heat-tolerant components and water-cooled housing make it perfect for welding alloys that require preheating. Tackle high-temperature applications with confidence and precision.

3-AXIS ADJUSTABLE FILLER WIRE NOZZLE

Achieve exact positioning of the filler wire entry into the weld puddle with **multiple adjustment options**, allowing for precise control and optimal weld quality.

MODEL

PART NO.	DESCRIPTION
420PTCB000	Model 420P Weld Head, Standard Profile

Every D-Head 420 welding head comes fully equipped for convenience and optimal weld performance.

Includes :

- a complete wire size kit ranging from 0.020" (0.5 mm) to 0.045" (1.2 mm)
- durable wire conduits
- standard and low-profile setup options
- all required accessories to operate the head
- tool kit for mechanical adjustement
- miscellaneous screw package

All securely packed in a rugged, heavy-duty storage case for maximum protection and portability.

ACCESSORIES INCLUDED



DELIVERY AND STORAGE



REQUIRED ACCESSORIES

GUIDE RINGS

Guide rings are available in 24 standard sizes. The guide rings are used to fix the welding head around the pipe and to allow accurate rotation of the head around it. It consists of two hinged segments which closed around the pipe and latch together. Guide rings may be used on smaller pipe diameter than what they are designed for by using insert kits (see below section guide ring insert kits).

PART NO.	DESCRIPTION	PICTURE
103854-1750	Guide ring, chain / link kit, 1.75" tube, 1.750" / 44.45 mm	
103854-1900	Guide ring, chain / link kit, 1.5" pipe, 1.900" / 48.26 mm	
103854-2000	Guide ring, chain / link kit, 2" tube, 2.000" / 50.80 mm	
103854-2125	Guide ring, chain / link kit, 2.125" tube, 2.125" / 53.975 mm	
103854-2250	Guide ring, chain / link kit, 2.25" tube, 2.250" / 57.15 mm	
103854-2375	Guide ring, chain / link kit, 2" pipe, 2.375" / 60.33 mm	
103854-2500	Guide ring, chain / link kit, 2.5" tube, 2.500" / 63.50 mm	
103854-2875	Guide ring, chain / link kit, 2.5" pipe, 2.875" / 73.025 mm	
103854-3000	Guide ring, chain / link kit, 3" tube, 3.000" / 76.20 mm	
103854-3250	Guide ring, chain/link kit, 3.25" tube, 3.250" / 82.55 mm	
103854-3500	Guide ring, chain / link kit, 3" pipe, 3.500" / 88.90 mm	
103854-4000	Guide ring, chain / link kit, 4" tube, 4.000" / 101.60 mm	
103854-4500	Guide ring, chain / link kit, 4" pipe, 4.500" / 114.30 mm	
103854-5000	Guide ring, chain / link kit, 5" tube, 5.000" / 127.00 mm	
103854-5563	Guide ring, chain / link kit, 5" pipe, 5.563" / 141.30 mm	
103854-6000	Guide ring, chain / link kit, 6" tube, 6.000" / 152.40 mm	
103854-6625	Guide ring, chain / link kit, 6" pipe, 6.625" / 168.275 mm	
103853-7250	Guide ring, chain / link kit, 7.25" tube, 7.250" / 184.15 mm	
103853-7750	Guide ring, chain / link kit, 7.75" tube, 7.750" / 196.85 mm	
103853-8000	Guide ring, chain / link kit, 8" tube, 8.000" / 203.20 mm	
103853-8625	Guide ring, chain / link kit, 8" pipe, 8.625" / 219.075 mm	
103853-10750	Guide ring, chain / link kit, 10" pipe, 10.750" / 273.05 mm	
103853-12750	Guide ring, chain / link kit, 12" pipe, 12.750" / 323.85 mm	
103853-14000	Guide ring, chain / link kit, 14" pipe, 14.000" / 355.60 mm	

OPTIONAL ACCESSORIES

GUIDE RINGS INSERT KITS

Guide ring insert kits may be used with larger guide rings on smaller pipe diameters when preheating is required, preventing overheating of the weld head. They are necessary to reach tube/pipe diameters smaller than 1.75“ / 44.45mm (down to 0.84” / 21.34mm).

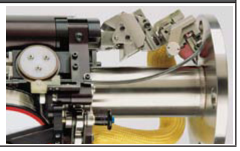

Guide ring with insert kit

PART NO.	DESCRIPTION	PICTURE
102222-XXX	Guide ring insert kit 8" o/d or less	
102222-XXX-L	Guide ring insert kit 8" o/d or more	

XXX refers to the length of the insert (in inch) under 1 inch (25.4mm)
XXXX refers to the length of the insert (in inch) over 1 inch (25.4mm)

ANGLED AGC KIT

Allows torch to be pivoted up to 60° in and out for socket / fillet welds. Maintains arc length correction motion along the tungsten electrode axis. Please contact us for additional information.

PART NO.	DESCRIPTION	PICTURE
1003943	Angled AGC kit	 

EXTENSIONS CABLES

Available extension cable in 25 ft / 7.6 m and 50 ft / 15.2 m.

Maximum extension allowed is 100 ft / 30.4 m, including the 25 ft of standard weld head cable.

PART NO.	DESCRIPTION	PICTURE
1003157-25P	25 ft / 7.6 m extension cable kit for Pipemaster 515 and 516	
1003157-50P	50 ft / 15.2 m extension cable kit for Pipemaster 515 and 516	

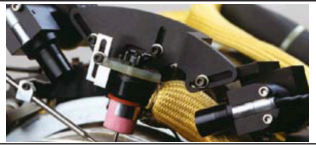
VIDEO ARC MONITORING

The Video Arc Monitoring (VAM) system is an optional feature that enhances the D-Head 420 welding head's capabilities. It integrates miniature video cameras with special filtering to allow operators to:

- Inspect fit-up before welding to ensure proper workpiece alignment.
- Monitor the weld and observe the welding puddle during the weld..
- Inspect the completed weld for quality assurance.

Available in single or dual cameras set-up.



PART NO.	DESCRIPTION	PICTURE
Available on request	Video arc monitoring for D-head 420 welding head	

TORCH CONSUMABLE KITS

Torch consumables kit includes all necessary consumables to operate the D-head 420 welding head.

PART NO.	DESCRIPTION	PICTURE
104175-1	Torch consumables kit 420	

WIRE CONSUMABLE KITS

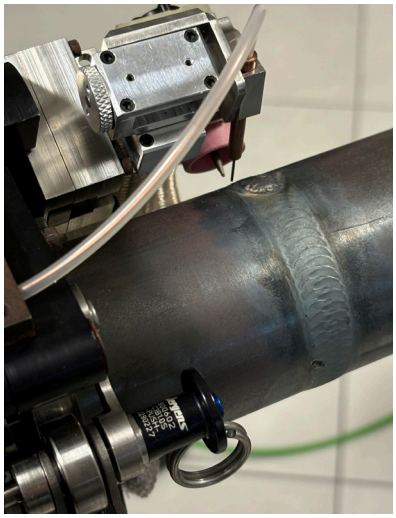
Wire consumables kit includes wire nozzle and tube wire guide and are required according to the configuration.
A complete set of conduits is supplied with the machine, however, they are also available for purchase as consumables.

PART NO.	DESCRIPTION	PICTURE
104175-10	Wire consumables kit, large guide ring, low profile, 0.035" wire diameter	
104175-20	Wire consumables kit, small guide ring, low profile, 0.035" wire diameter	
104175-30	Wire consumables kit, small guide ring, standard profile, 0.035" wire diameter	
104175-40	Wire consumables kit, large guide ring, standard profile, 0.035" wire diameter	
104175-50	Wire consumables kit, small guide ring, standard profile, 0.030" wire diameter	
104175-60	Wire consumables kit, large guide ring, standard profile, 0.030" wire diameter	

Small guide ring: 6" pipe and under
Large guide ring: above 6" pipe







TECHNICAL SPECIFICATIONS

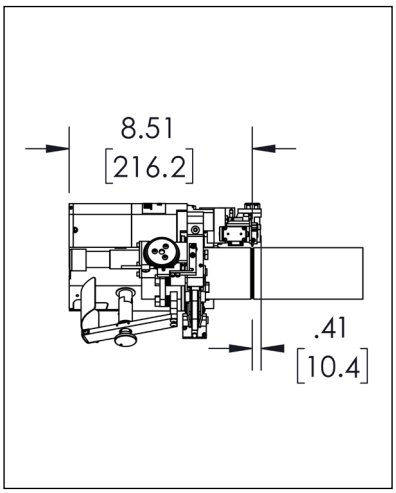
PIPE (TUBE) SIZE RANGE	0.84 - 14" / 21.34 - 355.60 mm	
CABLE LENGTH	25' / 7.6 m standard	
FILLER WIRE MODULE	Wire size	0.020", 0.030", 0.035", 0.040" / 0.5, 0.8, 0.9, 1.0 mm
	Max. speed capability	2540 mm/min. (100 IPM)
	Spool size	2 lbs / 1 kg standard; 1 lbs / 0.5 kg low profile
OSCILLATION MODULE	Max. oscillation stroke amplitude	0.625" / 16 mm
	Max. oscillation speed	1520 mm/min. (60 IPM)
	Oscillation dwell	0 - 1 second
	Cross seam adjustment	0.5" (12.7 mm)
ARC GAP CONTROL MODULE	0.5" / 12.7 mm stroke. Additional mechanical adjustment allows welding heavier wall pipe up to 1" / 25.4 mm	
TORCH PROPULSION MODULE	25.4 cm/min (10 IPM) maximum rotation speed	
WATER-COOLED TORCH	200 A continuous capability	
TORCH ADJUSTMENT CAPABILITY	Torch lead/lag adjustment	± 15 degrees (manual)
	Torch tilt adjustment	± 10 degrees (manual)

DIMENSIONS/WEIGHTS

WEIGHT	8 lbs / 3.6 kg (not including the torch cable)
AXIAL CLEARANCE	Torch center line to Rear Extremity: 8.51" / 216.2 mm Torch center line to Front Extremity: 0.41" / 10.4 mm
RADIAL CLEARANCE REQUIREMENT	2.5" / 63.5 mm with standard spool* 2.0" / 50.8 mm with low profile spool*

*For pipe/tube o/d's less than 1.75" / 44.45 mm, radial clearance requirement increases with decreasing diameter. Contact us for more information..

AXIAL CLEARANCE



RADIAL CLEARANCE

