

# HELIX<sup>®</sup> C450 Orbital Weld Head

**Processes**

TIG

**Product Number**

K52095-1 HELIX C450 Orbital Weld Head

*See back for complete specs*

**Input Power**

25V DC

**Operated with APEX<sup>®</sup> 2100 Orbital Control System**

**Clearance**

Radial: 2.5 in. (63.5 mm)\*  
Axial: 7.55 in. (191.77 mm)

**Pipe Diameter Range (OD)**

1.315-4.5 in. (33.4-114.3 mm)

**Net Weight**

19.85 lb. (9.0kg)

**Electrode to Rear**

5.8 in. (147.3 mm) min.  
6.8 in. (172.7 mm) max.

**Electrode to Front**

0.75 in. (19.05 mm)

**Oscillation Stroke**

1.0 in. (25.4 mm)

*\*on a 4 in. pipe.*

## Clamp-on Style Orbital TIG Weld Head

As a one of four HELIX C series Orbital TIG clamp-on weld heads, the C450 model is specifically designed for pipes and tubes with an outside diameter of 1.315-4.5 in. (33.4-114.3 mm). These clamp-on heads are rugged, compact and easy to install and position on tubes and pipes. The C series weld heads are engineered to perform consistent and repeatable welds.

**FEATURES**

▶ **Industrial Construction**

- Comes standard with programmable Arc Voltage Control (AVC) and oscillation.
- Control precise wire placement in the joint with the three axis wire feed mechanism.
- Water cooled motor housing, and torch keeps the weld head from overheating.
- Travel clutch is easily engaged and disengaged for rapid relocation of the torch.
- Torch tilt and lead/lag adjustment is optional.

▶ **Versatile Clamping Mechanism**

- Quick release clamp shoe system makes set up for different pipe diameters fast and simple.
- Custom clamp shoes can be built for any non-standard pipe and fitting configurations.
- Disengage and reposition the clamping system with one easy motion.



*Shown:  
K52095-1 HELIX C450 Orbital Weld Head*

▶ **Multiple Wire Feed Options**

- Compact and lightweight suitcase feeder for 2-10 lb. (0.91-4.5 kg) spools.
- Bench feeder for 10-44 lb. (4.5-20.0 kg) spools.
- Each delivers easy wire loading and smooth, stable wire feeding that eliminates birdnesting.

**APPLICATIONS**

- ▶ Nuclear Energy
- ▶ Thermal Energy
- ▶ Petroleum Processing
- ▶ Pressure Vessel

## HELIX C450 WELD HEAD

Part Number	Description	Part Number	Description
K52095-1	HELIX C450 Weld Head	KP52115-045	Bench Feeder Inlet/Outlet Guide Set .040-.045 in. (1.0-1.1 mm)
K52072-25	HELIX T55 Cable Hose Extension, 25 ft. (7.6 m)	KP52110-1	HELIX C Series Low Profile Back Cap
K52072-50	HELIX T55 Cable Hose Extension, 50 ft. (15.2 m)	KP52100-035	HELIX C Series Wire Guide Tip .030-.035 in. (0.8-0.9 mm)
K52072-75	HELIX T55 Cable Hose Extension, 75 ft. (22.7 m)	KP52100-045	HELIX C Series Wire Guide Tip .040-.045 in. (1.0-1.1 mm)
K52097-1	WF20S Suitcase Feeder 2-10 lb. (0.9-4.5 kg) Capacity	KP52109-1	HELIX C Series Wire Liner
K52097-2	WF20B Bench Feeder 10.0-44.0 lb. (4.5-20.0 kg)	K52124-1	HELIX C Series External Wire Feed Cable Extension
KP52122-1	HELIX C450 Cable/Hose Assy	KP52125-1	HELIX C Series Power Water Hose
KP52123-1	HELIX C450 Control Cable	KP52126-1	HELIX C Series Water Hose
KP42-3035-15	Liner .030-.035 in. (0.8-0.9 mm)	KP52127-1	HELIX C Series Gas Hose
KP42-4045-15	Liner .040-.045 in. (1.0-1.1 mm)	KP52128-1	HELIX C Series Cable/Hose Main Cover
KP52079-030	External Feeder Drive Roll Kit .030 in. (0.8 mm)	KP52129-1	HELIX C Series Cable/Hose Hi Temp Cover
KP52079-035	External Feeder Drive Roll Kit .035 in. (0.9 mm)	KP2029-5B1	1/8 in. (3.2 mm) Collet
KP52079-040	External Feeder Drive Roll Kit .040 in. (1.0 mm)	KP2029-4B1	3/32 in. (2.4 mm) Collet
KP52079-045	External Feeder Drive Roll Kit .045 in. (1.1 mm)	KP2029-3B1	1/16 in. (1.6 mm) Collet
KP52080-035	Suitcase Feeder Inlet/Outlet Guide Set .030-.035 in. (0.8-0.9 mm)	KP2035-1B1	Back Cap Short
KP52080-045	Suitcase Feeder Inlet/Outlet Guide Set .040-.045 in. (1.0-1.1 mm)	KP2035-2B1	Back Cap Medium
KP52115-035	Bench Feeder Inlet/Outlet Guide Set .030-.035 in. (0.8-0.9 mm)	KP2035-4B1	Back Cap Long

## HELIX C450 CLAMP SHOES

Part Number	Description
K52096-450	C450 Clamp Shoe 4.5 in. (114.3 mm)
K52096-400	C450 Clamp Shoe 4.0 in. (101.6 mm)
K52096-350	C450 Clamp Shoe 3.5 in. (88.9 mm)
K52096-288	C450 Clamp Shoe 2.875 in. (73.0 mm)
K52096-238	C450 Clamp Shoe 2.375 in. (60.3 mm)
K52096-190	C450 Clamp Shoe 1.9 in. (48.3 mm)
K52096-166	C450 Clamp Shoe 1.66 in. (42.2 mm)
K52096-132	C450 Clamp Shoe 1.315 in. (33.4 mm)
K52096-000	C450 Clamp Shoe Special Size

## HELIX C450 WELD HEAD SPECIFICATIONS

Product Name	Product Number	Input Power	Travel Speed rpm	Wire Feed Speed ipm (cmpm)	Wire Size Range in. (mm)	Clearance in. (mm)		Oscillation Stroke in. (mm)	Electrode to Front in. (mm)	Total Length in. (mm)	Lead/Lag	Torch Tilt	
						Radial <sup>(1)</sup>	Axial					In	Out
HELIX C450 Weld Head	K52095-1	28 DC	0.07-1.27	1.0-130 (2.5-330.2)	0.030-0.045 (0.8-1.1)	2.5 (63.5)	7.55 (191.77)	1 (25.4)	.75 (19.05)	14.69 (373.1)	Optional ±15°	Optional 18°	Optional 30°

<sup>(1)</sup> on a 4 in. pipe.

For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit [www.lincolnelectric.com](http://www.lincolnelectric.com) for more details.

### CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.