

Orbital Systems

Tube Welding Made Easy™

Sanitary, Ultra High-Purity and High-Pressure Welds

Whether it's for bench or portable applications, MK Products provides a solution when it comes to orbital welding systems. Making an orbital weld has never been this easy, we do all the programming and calculations for you.

The **CobraTig® 150** GTA orbital power supply uses an Auto Procedure Generator built-in to the interface or weld procedure development PC software using our **SmartArc®** technology.

Portable and lightweight, the **CobraTig® 150** is digitally controlled inverter welding technology that produces the most reliable and repeatable welds in the industry. Rugged and proven, the **CobraTig® 150** is built with the field welding contractor in mind...a 4" LCD screen and **SoftTouch™** membrane buttons enhance the user interface. Manual TIG welding can also be performed along with **MicroTig™** welding down to ½ amp starting currents.

Our **Advanced Color Logic®** with Intel Pentium® controller and inverter technology provides a patented on-screen weld graphic display and real-time data logging with playback and export to disk options. The PC development software supports off-line weld procedure development with weld data management exported in standard Excel data format.

Select the **MiniMicro™** or the **Mr. Micro™** weldheads for your ultra high-purity welds with patented water cooling for increased productivity. Diameters from 1/8" to 3/4" OD, round or hex, fitting to fitting, fitting to gland or fitting to valve body - these microheads can weld it!

The **CopperHead®** and **DiamondBack™** series weldheads will compliment your orbital toolbox with capacities from 1/8" OD to 6" NPS. Perfect for all your sanitary tube and pipe jobs!



DiamondBack™
The most versatile tool in your box.



CobraTig® 150
Built to travel, designed for simplicity.

FEATURES AT A GLANCE

- **MicroTig™ Technology**
- **150 Amp and 200 Amp Models**
- **Auto Procedure Generation (APG)**
- **QA/QC Weld Data Monitoring**
- **Manual Welding Capabilities**
- **Weldheads from 1/8" Tube to 6" Pipe**
- **Sanitary • High-Pressure • High-Purity**

Orbital Tube & Pipe Welding

You Too Can Weld Circles Around Your Competition™

Orbital welding was developed in the USA during the space race of the 1950's and 60's. As aircraft flew faster and higher, the need to shift from mechanical tube connections to high-pressure welded tubes became a challenge. The solution was developed using the gas tungsten arc welding (GTAW) process by attaching the tungsten electrode to a rotating gear that could orbit around the fixed position tubes within an inert welding enclosure. The result was a precise method for autogenous butt welding of critical tubing systems.

Today, advanced orbital welding systems include digital controllers that emulate the skills of a certified welder by generating auto weld procedures from basic tube O.D. and wall thickness inputs. MK provides real-time weld data monitoring for QA/QC requirements.

MK Orbital weldheads are a field proven method for welding sanitary, high-pressure

and ultra high-purity tubing systems. Our easy to use weldheads are application specific and often adaptable to those unusual weld configurations. Combined with one of our digitally controlled inverter power sources, you too can produce cost effective and high integrity orbital welds.

Orbital welding is ideal for sanitary stainless steel food processing and pharmaceutical weld standards, high-pressure titanium tubing systems for aerospace performance and ultra high-purity electro-polished tubing for the semiconductor industry.

Special weld fitting collets and mandrels are available for most

weld fitting manufacturer's products, including short ferrule, miniature weld fitting and valve weld assemblies.

Operator/programmer training is now available from the manufacturer, distributors, colleges, universities and Union Apprentice (U.A.) training centers around the country.

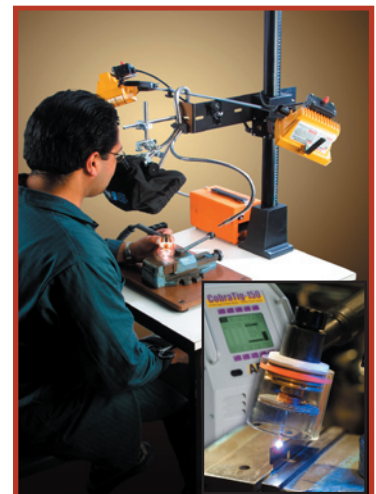


MicroTig™ Technology

ArcSoft™ smooth, for perfect weld starts at low currents

Precision MicroTig™ Technology is a standard feature of the CobraTig® 150. The ideal precision manual welder produces reliable, smooth arc starts at less than 1 amp and is perfect for welding precision exotic materials such as titanium and stainless steel with extremely small diameter wires. No other power supply for MicroTig™ (GTAW) welding can compare with this cost effective solution for your precision weld applications.

The CobraTig® 150 with MicroTig™ Technology is ideal for mold and die repair, small diameter wires, diaphragms, metal bellows, sensors, surgical instruments, micro switches, metal meshes, needles, precision enclosures and many other applications where precision arc characteristics and weld performance are required.



Orbital Weldheads

Sanitary • High-Pressure • Ultra High-Purity

MiniMicro™ & Mr. Micro™ Ultra High-Purity Weld Applications

The model 4000 MiniMicro™ is designed to accommodate a variety of miniature weld fittings and face seal fittings and glands. The MiniMicro™ is capable of welding diameters from 1/8~1/2 inch O.D. The Mr. Micro™ is capable of welding diameters from 1/8~3/4 inch O.D. Both water-cooled micro weldheads are ideal for welding tubes and fittings with controlled surface finishes and are electro-polished to meet ultra high-purity system requirements.



Models 4000 & 5000

CopperHead® Series Sanitary and High-Pressure Weld Applications

The CopperHead® series are our most cost-effective and rugged in-place orbital weldheads offered in three models. The CopperHead® models 5001 (1/8~1-inch O.D.), 5002 (1/4~2-inch O.D.) and 5003 (1/2~3-inch OD) each offer versatility and high-output production rates. The water-cooled, narrow profile weldheads are lightweight and easy to handle for those awkward welds with limited access. All of the CopperHead® models are equipped with finger tip controls in the handles eliminating the need for additional remote control pendants.



Models 5001, 5002 & 5003

DiamondBack™ Series Process Piping Perfection

The model 5006 DiamondBack™ is our largest in-place orbital weldhead (2-inch Tube O.D. up to 6-inch Pipe Size). Heavy-duty and versatile, the DiamondBack™ has a narrow profile and is perfect for process piping and weld fitting applications found in food & beverage, dairy and other sanitary process piping installations. Also, great for high-pressure aerospace applications, this easy to use weldhead is simple yet robust to meet the demands of field construction or manufacturing production environments.



Model 5006

Orbital Power Supplies

GTAW Performance from 0.2 to 200 AMPS

CobraTig 150[®] with MicroTig[™]

Most Portable Orbital Model 0.2 ~ 150 Amps

The rugged, lightweight and portable CobraTig[®] 150 is the perfect package for construction environments. The ease of operation and additional MicroTig[™] capabilities make this model our most popular. For orbital and manual welding, the CobraTig[®] 150 with SmartArc[®] control provides flexibility previously unavailable. All CobraTig[®] 150's are shipped in a sealed rugged case with wheels for easy mobility on or off the jobsite.

Now available as the extended memory (XM) version! Model 254-151



Model 254-151

CobraCooler[®] Water Recirculator

Portable Integrated Water Cooler for Hot Jobs

The cooling unit is a separate stand-alone unit that conveniently attaches both mechanically and electrically to an MK Products CobraTig[®] 150 welding power source. The cooling unit provides cooling water to an attached weldhead that has provisions for water cooling. The cooling unit also provides coolant status information to the welding power source regarding any potential coolant failures such as no water flow, over-temperature, or power failure.



Model 250-151

MicroTig[™] Manual Weld Kit

Precision Welding Thin Materials and Exotic Alloys

Perfect for tool & die repair and other precision welds where controlled low heat input is a must. Kit includes hard case, gas cooled tig torch (80 amps max, 12.5ft), variable foot control, ground cable & clamp (13ft), gas cup, collet & collet body, medium back cap and .020" tungsten (1 pkg).



P/N 005-0670

Advanced Color Logic[®]

Most Powerful Orbital Model 1.0 ~ 200 Amps

Digital control and real-time color graphics are combined to provide a dynamic color display for easy operation. Our patented Advanced Color Logic[®] assigns process variables to selected colors for fast and simple on-screen reference. The menu driven software develops a near ideal weld procedure through the use of our automatic procedure generator (APG). Just enter the tube O.D. and wall thickness and the rest is automatic. Weld data monitoring is provided in both text and graphic on-screen displays as well as export in Excel data format.



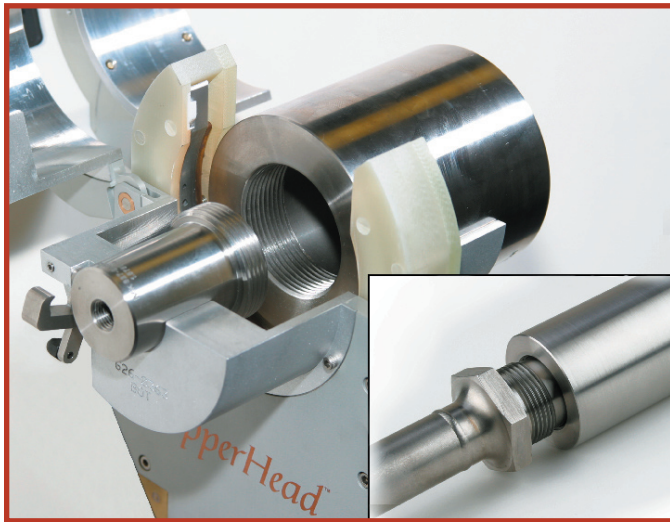
Model 254-201

World Class Products and Design

Innovative Ideas and Solutions for the Welding Professional

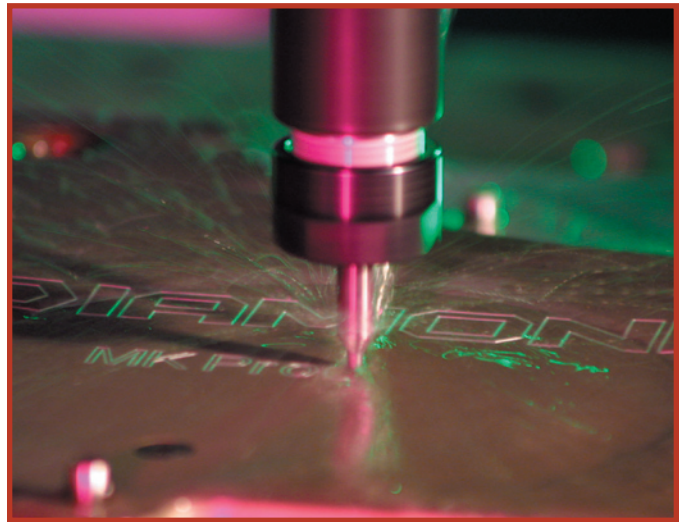
High-Pressure Weld Tooling

Custom machined collets combined with locating and threaded weld fitting mandrels position the electrode right where you want it. MK's ability to create standard and custom tooling can help make the difference in your critical welding applications, including aerospace.



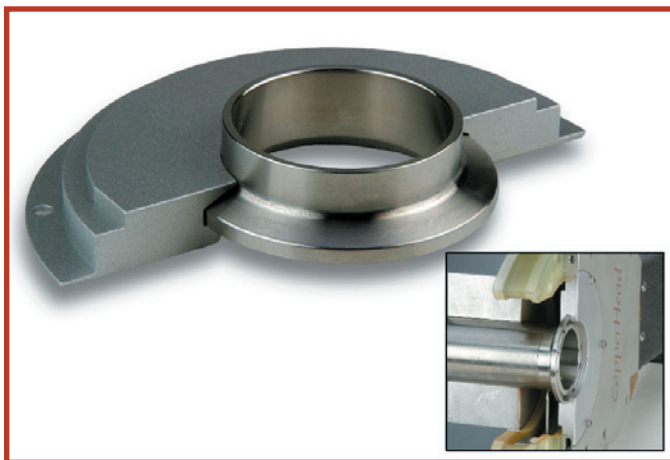
Top of the Line Quality

Every piece that goes into an MK weldhead is designed and built in-house using only the most advanced 3-D modeling software and computer controlled machining centers to meet exacting standards and quality. The quality goes in before our name goes on!



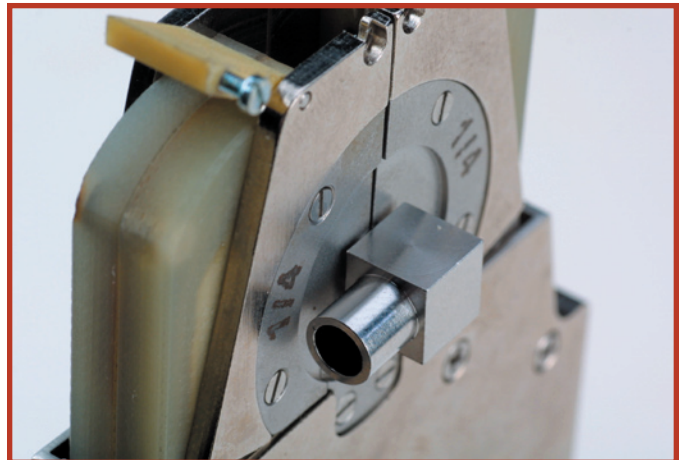
Sanitary, Short Ferrule Collets

Easy to use and cost effective collets to simplify your orbital welding applications. MK strives to make your job easier by providing off-the-shelf solutions to life's tough challenges. Collets designed for precise tungsten placement offer enhanced repeatability for each weld.



Sanitary • High-Pressure • Ultra High-Purity

Miniature weld fitting collets, tool mounting side plates and clamping jaws are made of nickel plated tool steel and each hardened for wear and toughness. These are just some of the standards that you have come to expect from MK, the leader in orbital welding systems.



HOW TO ORDER

254-201 Advanced Color Logic® (ACL) Orbital Power Source & Control

200 AMP inverter power supply and digital controller, 14" color monitor, keyboard, handheld control, printer, PC development software, input power cord and start-up kit.

ACL ACCESSORIES

- 001-1230 480/240VAC, 3 Phase, external stepdown transformer
- 001-3693 Water recirculator 120VAC
- 001-3709 Water recirculator 230VAC
- 005-0348 Protective welding system enclosure (ACL only)
- 005-0619 Power connector pigtails to adapt CopperHeads® (5000 Series)
- 005-0620 Interface cable for Astro Arc Weldhead

254-151 CobraTig®150 XM Portable Orbital Power Source & Control

150 amp inverter power supply with MicroTig™ technology for 0.5 amp arc starting, SmartArc™ digital controller with weld data monitoring and logging, high speed thermal printer, argon regulator/flow meter, gas hose with fittings, high impact shipping case with wheels. Now standard with expanded memory.

250-151 CobraCooler® Portable Water Recirculator

Electronically integrated assembly latches tightly under the CobraTig®150 power supply providing water cooling for any MK water cooled weldhead, complete with high impact shipping case.

- 005-0669 CobraCooler adapter board for Mr. Micro™*

005-0670 MicroTig® Manual Weld Kit

Gas cooled hand torch (80 Amps max), variable foot control, ground cable with clamp and carry case.

Model 4000 MiniMicro™ Orbital Weldhead	1/8" ~ 1/2" O.D.
Model 5000 Mr. Micro™ Orbital Weldhead	1/8" ~ 3/4" O.D.
Model 5001 CopperHead® I Orbital Weldhead	1/8" ~ 1" O.D.
Model 5002 CopperHead® II Orbital Weldhead	1/4" ~ 2" O.D.
Model 5003 CopperHead® III Orbital Weldhead	1/2" ~ 3" O.D.
Model 5006 DiamondBack™ Orbital Weldhead	2" O.D. ~ 6" NPS

WELDHEAD ACCESSORIES

- 005-0634 Bench mount kit for 4000~5003 weldheads
- 005-0680 Bench mount kit for 5006 weldhead
- 005-0635 25ft cable extension W/C 5000~5003 weldheads

Collets, Flush and Extended*

A set of collets for models 5001~5003 are defined as top and bottom halves for each side of the weldhead. Typically, 2 sets are required per weldhead. A set of collets for models 4000, 5000 and 5006 are defined as 3 each 120° segments for each side of the weldhead. Typically, 2 sets are required per weldhead.

Tungsten, Tube and Pipe*

2% Ceriated electrodes, pre-ground and cut to length, 18° included angle, .015" flat tip, .040", 1/16" or 3/32" diameter, 10 pieces per package.

Locating Mandrels*

Locating mandrels are used for precise and repeatable tube and weld fitting positioning and alignment.



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* Consult Factory for details.

MK Products, Inc. is a responsive manufacturer, but the selection and use of specific products sold by MK Products, Inc. is solely within the control of, and remains the sole responsibility of the customer.