

**2023
EDITION**

ORBITAL WELDING CATALOG

AMI | AXXAIR | MAGNATECH

PURGE PLUG KITS

*Find The Purging Solution
That's Right For You*

ORBITAL WELDING HEADS

*Find The Right Orbital
Welding Head Style For
Your Company.*

ORBITAL WELDING FUNDAMENTALS

*Learn the 8 Steps Every
Successful Orbital Welder Should
Use When Creating Consistent &
Repeatable Welds*

417 - 485 - 4575

www.morganitech.com



JEFF MORGAN

CEO & FOUNDER

Dear Reader,

Thank you for downloading our ebook! We appreciate your support and hope you find the information valuable.

Our team strives to provide you with the latest trends, techniques, and technology related to industrial welding.

Thank you again for choosing Morgan Industrial Technology as your source for orbital welding knowledge.

Best regards,

WELCOME TO MIT

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About Us

Morgan Industrial Technology was established in 2005 with the simple mission of being a single-source provider for companies needing orbital welding, facing, cutting, and beveling tools for tube and pipe applications.

Located in Ozark, MO MIT is positioned to support customers in a variety of industries across the United States. With over 25 years of experience Morgan Industrial Technology is the most trusted name in orbital welding supplies, sales, service, and training. From AMI and Magnatech orbital welding machines to Axxair orbital cutters, and ESCO flange and facing tools Morgan Industrial has the solutions to deliver precision on every job site.

At Morgan Industrial Technology, we believe conversation is essential to providing the best possible service and solutions, which we strive to do every day, for every customer. Our high standards and unparalleled service make us the only orbital welding and cutting specialist with the equipment and technical expertise to solve your unique challenges.

The background of the entire page is a close-up, high-contrast photograph of several industrial pipes. The pipes are arranged in a way that creates a sense of depth and perspective. The edges of the pipes are beveled, and the lighting highlights the metallic texture and the precision of the beveling process. The overall color palette is dark, with shades of blue, grey, and black, accented by the bright highlights on the pipe edges.

ARC MACHINES, INC

THE BIGGEST NAME IN ORBITAL WELDING

“Beveling is the key to efficient plant outages, unlocking the potential for smooth transitions, reduced downtime, and a safer working environment.



AMI Model 217

The AMI 217 power supply is the perfect combination of power, precision, and reliability, providing exceptional control and performance for all your orbital welding applications.

RENTALS AVAILABLE



CUTTING EDGE ORBITAL WELDING

POWER SUPPLIES AND WELD HEADS

AMI®

AN ESAB® BRAND



AMI 207

The AMI 207 power supply is well known orbital welding system. Designed for a variety of welding applications and offering advanced features such as touch-screen controls, programmable weld schedules, as well as high-frequency start capabilities for consistent and reliable performance.

Rental Only



AMI 227

The AMI 227 is an advanced welding power supply that provides exceptional performance for a wide range of welding applications, offering features such as a large touch-screen display, programmable weld schedules, and real-time monitoring for optimal control and precision. Its robust construction and versatile capabilities make it a top choice for demanding welding projects.

Rental Options Available



AMI 217

The AMI 217 is a powerful and versatile orbital welding power supply that offers advanced features such as programmable weld schedules, real-time monitoring, and touch-screen controls, making it the ideal solution for a wide range of welding applications. Its precision and reliability make it the go-to choice for demanding welding projects.

Rental Options Available



AMI 317

With the AMI 317, welders can achieve precise and consistent welds, even in challenging materials such as titanium and nickel alloys, which are commonly used in aerospace and semiconductor applications. The system's advanced data acquisition capabilities allow welders to monitor and control the welding process in real-time, ensuring that weld quality is maintained throughout the entire process.

Rental Options Available



AMI 205

The AMI 205 enables welders to achieve precise and consistent welds on a range of materials commonly used in these industries, including stainless steel and other corrosion-resistant alloys. The system's advanced data acquisition capabilities allow welders to monitor and control the welding process in real-time, ensuring that weld quality is maintained throughout the entire process.

Rental Options Available



AMI 217P

The AMI 217P is a specialized orbital welding system designed specifically for use in the pharmaceutical industry. This system includes additional features such as a positive pressure enclosure and a HEPA filtration system, which helps to ensure that the welding process is conducted in a sterile environment.

Rental Options Available



AMI 415

The key feature of the AMI 415 is its ability to weld heavy wall pipe and tube with wall thicknesses up to 2 inches. This is achieved through the system's high output power and advanced welding parameters, which allow welders to achieve high-quality welds in challenging materials such as stainless steel, Inconel, and titanium.

Rental Options Available



AMI Dual Weld Head Controller

The AMI Dual Weld Head Controller features two independent weld head channels, each of which can control a separate welding head. This allows welders to set up two welding heads at the same time and operate them independently, with each head having its own set of welding parameters.

Rental Options Available



AMI Cooling Unit

The AMI Cooling Unit features a water tank, pump, and heat exchanger that work together to circulate water through the welding head. As the water circulates, it absorbs heat generated by the weld and carries it away, preventing the welding head from overheating and ensuring that the weld remains strong and consistent.

Rental Options Available



25ft/50ft Extension Cable

AMI Extension Cables provide flexibility and range of motion that can be especially beneficial for welders working on larger projects, where the welding system may need to be moved frequently or repositioned to accommodate different clearances..

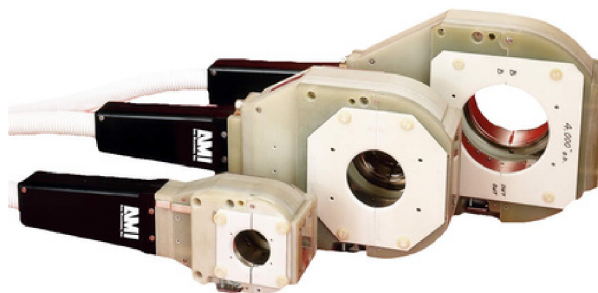
Rental Options Available



8 Series Weld Heads

The Model 8 series orbital weld heads offer consistent and repeatable fusion (TIG) welds for tubes, thin wall pipes, and fittings from 0.25" (6 mm) to 6.625" (168 mm) OD and standard wall thicknesses up to 0.025" – 0.160" (0.635mm – 4 mm). Their narrow width makes them the perfect choice for confined spaces and tight fit welds.

Rental Options Available



9 Series Weld Heads

The Model 9 series of AMI orbital welding heads are designed for fusion (TIG) welding of tube, pipe, fittings or other cylindrical components. Available in ten sizes and three versions, they can be configured over 60 different ways and can accommodate diameters from 3/32" (2,3 mm) to 7.5" (190,5 mm) OD, and wall thicknesses from 0.01" (0,25 mm) to 0.16" (4 mm)

Rental Options Available



The Orbital Welding Process

1

CUT

Before aligning tube or pipe ends, they first need to be cut. Orbital saws are commonly used on sanitary tubing and small thin-walled pipe. For larger applications, use a clamshell or band saw.

2

FACE OR BEVEL

After cutting, use a tube facing tool to get rid of burrs and other imperfections. If adding wire on a heavy walled application, you'll need to prepare the tube or pipe with a bevel.

3

CLEAN

This step is important, especially in sanitary welding stainless steel. Cleaning the tube or pipe gets rid of potential contaminants and puts you in the best position for a successful weld.

4

TUNGSTEN

To strike an arc, you'll need an electrode. In this case, it will be ceriated tungsten. Place the appropriate tungsten piece within the weld head in the tungsten holder.

5

ALIGN

The fit-up is extremely important when it comes to the penetration of the weld. Align the joint of the two pieces with the tungsten.

6

PURGE

After aligning, purge oxygen from the inside of the tube or pipe, using argon or mixed shielding gas. This prevents sugaring on the backside of your weld and helps keep the weld from becoming concave.

7

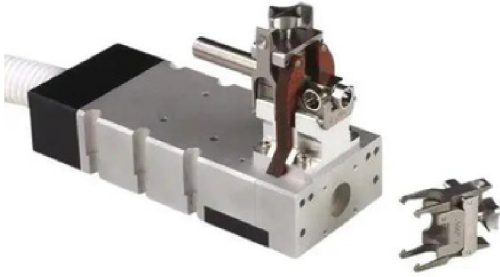
PROGRAM

Power supplies have manual and auto program options. Input the prompted information, such as weld head, material, OD size, and wall thickness to generate a program.

8

WELD

With all these steps completed, you're ready to strike an arc. Complete the weld and make adjustments as needed.



AMI 4-500 Weld Head

The 4-500 is designed to produce high-quality and highly-accuracy welds that are perfect for assembling and joining together sub-components in semiconductor & aerospace. It is the premier choice for industries that demand pristine welds and highly reliable results.

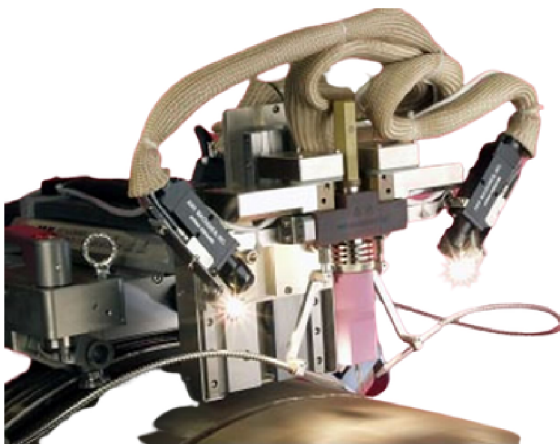
Rental Options Available



AMI Model 96

The weld head is held in place on the tube to be welded by an expanding mandrel. This mandrel is actuated by a single button, conveniently located in the handle. Actuation of the mandrel holds the weld head firmly to the tubesheet and positions the torch concentric to the tube to be welded.

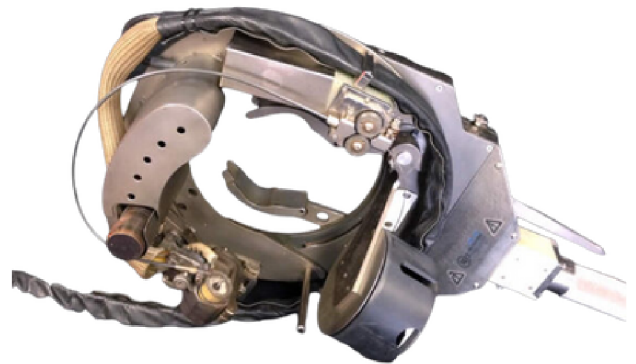
Used Units Available



AMI Model 52

The Model 52 is a "full function" welding head, meaning that it provides all functions necessary for true automated welding including Arc Rotation, Arc Voltage Control (AVC) for arc gap control, Wire Feed (weld filler) and Torch Oscillation (weave).

Rental Options Available



AMI Model 79

Designed for both fabrication shop and field process pipe welding applications, these open weld heads are some of the most reliable tools on the market. Capable of welding pipe sizes from 0.75" outside diameter to 6.625" outside diameter, and a wall thickness greater than 0.75" (19,05 mm).

Rental Options Available

MAGNATECH

DIGITAL ORBITAL WELDING SOLUTIONS

“Perfect Welds Don’t Happen On Accident. The Prep That Goes Into Making A Weld Is Vital To The Structure & Integrity Of The End Result.”

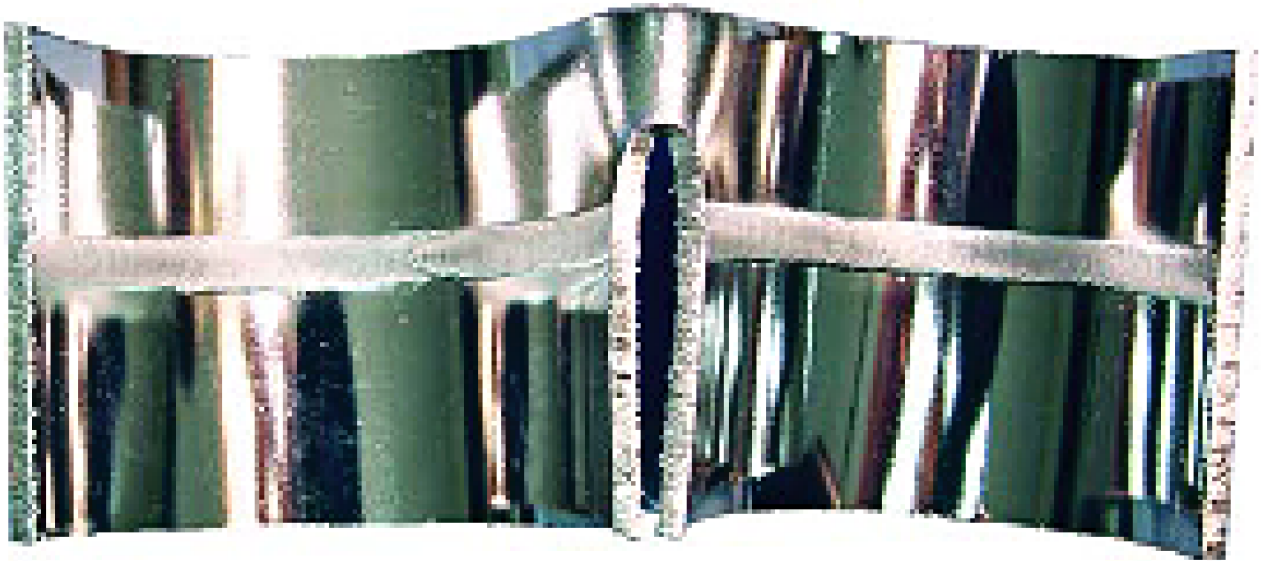




514 Tubemaster

The ultimate welding system for all your pipe, tube and fitting needs, boasting cutting-edge technology such as programmable weld schedules and automated wire feeding to streamline your welding process and enhance productivity.

RENTALS AVAILABLE



PURGE PLUG KITS

CLEAN ROOM SOLUTIONS

When it comes to purging electropolished tubes or clean room set up's, it's important to choose the right type of purge plug to ensure a successful weld. The ideal purge plug for electropolished tubes is made of a material that is inert, non-reactive, and won't contaminate the weld area.

One popular choice for purge plugs is silicone rubber, which is chemically inert and won't react with the electropolished tube. Silicone rubber purge plugs also have a high-temperature tolerance, making them suitable for use in high-heat welding applications.

Another option for purge plugs is inflatable bladder systems, which are designed to conform to the shape of the tube and provide a tight seal during the welding process. Inflatable bladder systems can be made of materials such as silicone, nylon, or Teflon, which are all inert and non-reactive.

Morgan Industrial's line of silicon and expandable purge plugs are a great solution for electropolish and clean room welding. Kits range from 1"-4.5" and include a set of 10 gas diffusers





514 Tubemaster

The Magnatech Tubemaster Model 514 brings orbital welding to the digital age, offering unmatched precision, repeatability, and dependability. Magnatech's new digital technology reduces the requirement of periodic weld head calibration and ensures the rotation speed is precise regardless of head wear. Magnatech weld heads can now be switched with no time-consuming calibration.

Rental Options Available



515 Pipemaster

The Pipemaster 515 offers tons of exclusive features. It allows multi-pass welding of pipes, tubes, and tubesheets; runs on a 200-amp output; and boasts an Auto-Ranging input that eliminates the need for internal modification. The Pipemaster 515 has the capacity to store 100 weld programs internally and the AutoProgram feature will generate procedures previously saved to produce quick, on the spot welds.

Rental Options Available



516 Pipemaster Controller

The latest generation of Pipemaster controllers is the result of a new direction in power source design. Created to be used with many commercially available weld power sources, the Model 516 allows systems with a wide range of output amperage to meet specific application requirements (200 – 500 amps). All critical electronics are mounted in a completely sealed (IP-65) slide-out module. The Model 516 also operates the T-Head, for larger diameter and heavy pipe welding applications.

Rental Options Available

Magnatech 800 Series



Magnatech 800 Series Weld Heads are the ultimate welding solution for orbital welders, designed to precisely, efficiently, and reliably weld tubes to tubes and tubes to fittings with a wide range of sizes, from 3mm to 152.4mm (0.125" – 6.0") OD.

Its unique double-clamping design allows for simplified work piece set-up, and in many cases, completely eliminating the need for tack welding. On top of that, its interchangeable collets are extremely durable and are available for any tube and fitting size up to 6"

Rental Options Available

Magnatech QX800 Series



Offering six models with overlapping range capabilities to accommodate tubes of sizes between .0125" to 6.625" (3-168mm) O.D., the Quick Exchange Collets are compatible with all tube and fitting sizes, eliminating the need for tack welding in many cases and simplifying the fit-up process. Not only can they observe the weld in real-time, but also make corrections where necessary. VAM delivers an uninterrupted view that any welder would be familiar with in a via direct visual inspection.

Rental Options Available

Magnatech M500 Micro Head



With its ultra-low profile and measuring in at only 10" in length, the M500 is engineered for precise fusion welding of small tubes and fittings and features the industry's narrowest configuration flush cartridge and collet. Perfect for tight clearance micro-fit welding applications

Features of the Magnatech M500 Micro Weld Head include three configurations to fit various power supplies. The M500 is designed to weld tube ranging from .125" (3,175 mm) thru .5" (12,7 mm) and has a housing rated for 525° F (273° C).

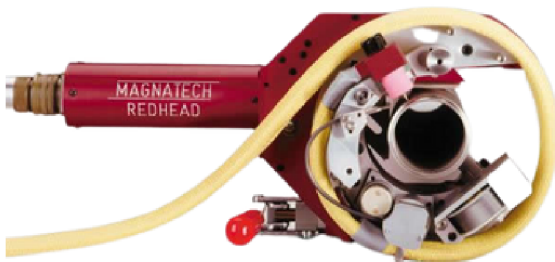


Magnatech D-head

Magnatech's D Head offers versatility, with interchangeable guide rings that allow it to cover a wide range of pipe diameters, ranging from 1/2" – 14" (25mm to 356mm). The D Weld Head offers several advantages, such as improved productivity and consistent quality welds, by way of its improved duty cycle and reduced rework rates.

It features a rugged design and can generate high-quality welds, with a unique tilt AGC option available for socket welding. Its components are heat-tolerant, allowing it to be used on preheated alloys.

Rental Options Available



Magnatech Redhead

The RedHead allows for fusion welding without having to use any manually added filler, due to the head mounted feeder which is integrated into the model. The three models range in size from .05"– 6.625" (12.7 to 168 mm) OD.

The Magnatech RedHeads was specially designed for schedule 5 and schedule 10 as well as for large OD tubing where ovality is an issue.

Rental Options Available



Video Arc Monitoring

The Video Arc Monitoring System (VAM) is a remote monitoring system designed to allow operators to visually monitor and manage the GTAW process in hazardous or visually inaccessible environments. Not only can they observe the weld in real-time, but also make corrections where necessary. VAM delivers an uninterrupted view that any welder would be familiar with in a via direct visual inspection.

Rental Options Available

AXXAIR ORBITAL WELDING

CUTTING EDGE WELDING TECHNOLOGY

“AXXAIR is renowned for its commitment to innovation and quality, and its products are designed to provide efficient and reliable solutions for even the most demanding cutting, beveling, and welding applications.”





AXXAIR SAXX 200

AXXAIR's revolutionary orbital welding system. Portable and powerful, the SAXX-200 is designed to deliver high quality welds every time & the full digital interface simplifies QA/QC processes.

Full Setup

With SATFX - 76

Rental Options Available



WELDING IN THE 21ST CENTURY

ADVANCED ORBITAL WELDING MACHINES

AXXAIR



SAXX-200

The Saxx 200 uses inverter technology to deliver a high-frequency welding current that can be adjusted to match the specific needs of the welding application. This allows for greater control over the welding process and helps to produce cleaner and more precise welds.

In addition to its welding capabilities, the Saxx 200 also has a number of safety features to ensure that the user is protected during operation. These include overheat and overcurrent protection, as well as automatic voltage regulation to prevent voltage fluctuations.

Rental Options Available

AXXAIR SWITCHBOX



The AXXAIR Switchbox is compatible with all SAXX orbital power sources, and allows two welding heads to be connected to a single power source and used alternately. This enables the operator to optimize welding efficiency by reducing downtime between welding operations.

Rental Options Available

SATFX - 115

high-precision welding head is designed to provide precise, high-quality welds on tubes and pipes with a diameter range of .25" to 4.5". It is ideal for use in industries such as aerospace, automotive, and pharmaceutical manufacturing.

Its compact, lightweight design makes it easy to maneuver in tight spaces and allows for easy integration into automated welding systems.

Rental Options Available





SATFX - 76

The SATFX 76 is AXXAIR's middleweight contender for tube and pipe ranging from .25" - 3". With a cable length of 24 ft, this welding head offers excellent flexibility and reach during welding. Despite its impressive features, the AXXAIR SATFX 76 is lightweight, weighing only 19.6 lb. It is a highly reliable, efficient, and easy-to-use welding head that delivers consistent, high-quality results with every use.

Rental Options Available



SATFX - 52

The AXXAIR SATFX-52 is a highly advanced orbital welding head designed to deliver exceptional performance in confined spaces. With a diameter range of .25" - 2", it is perfect for use in a wide range of industries, including aerospace, automotive, and pharmaceutical manufacturing.

This weld head features grease-free operation, which makes it compatible with clean room standards. The closed chamber also provides perfect gas protection, ensuring that welding is carried out with very limited coloration. As a result, the SATFX-52 delivers high-quality and repeatable welds in a minimum space.

Rental Options Available

**Demo The
AXXAIR Line**





AXXAIR CC122

The CC122 uses a cold cutting process that produces clean and burr-free cuts, ensuring a high-quality finish. The machine is compact and easy to use, making it an ideal choice for both small-scale and large-scale industrial applications. The CC122 is ideal for cutting tube <1" - 4.5" and thicknesses ranging from .035" - .540" stainless steel.

Rental Options Available



AXXAIR CC172

The Axxair CC172 is a portable and versatile pipe cutting and beveling machine that is designed to provide precise cuts and bevels on pipes and tubes. The machine is easy to use and can be quickly set up on a job site, making it ideal for both small-scale and large-scale industrial applications. The CC172 is ideal for cutting tube 1" - 6.25" and thicknesses ranging from .035" - .540" stainless steel.

Rental Options Available

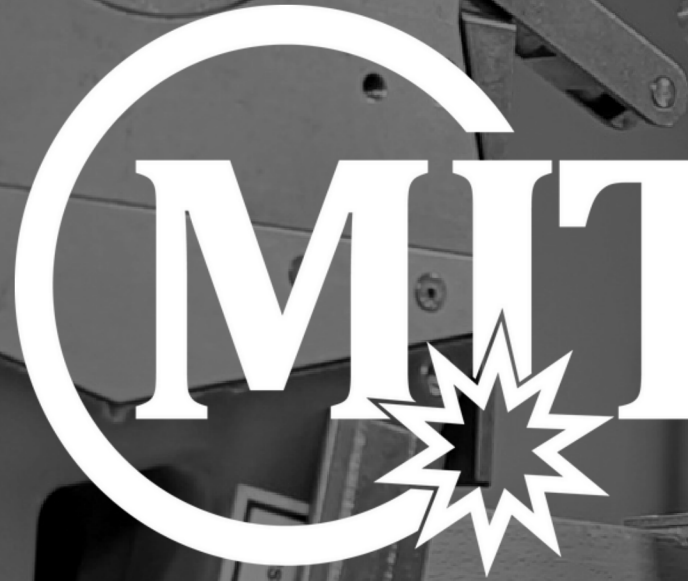


CCPS21 SUPPORT LEGS

Create a stable workstation in minutes with the CCPS21. The storage box, located on the back, is perfect for storing accessories or consumables.

All three legs come off the stand to make for easy storage and transportation. Simply mount the top plate into place and bolt on. The back leg can be bolted to the ground for added safety and stability.

Rental Options Available



THE ORBITAL WEL

SALES

RENTAL





**MORGAN
INDUSTRIAL
TECHNOLOGY**

WELDING SPECIALISTS

TRAINING

SERVICE



ORBITAL WELDING EQUIPMENT CATALOG

Morgan Industrial Technology is the Single
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