



OTTO ARC SYSTEMS, INC.

PRODUCTS FOR TUBE, PIPE & VESSEL APPLICATIONS

**CLOSED ORBITAL
WELDING PRODUCTS**



**PLASMA/FLAME
CUTTING MACHINES**



**OPEN ORBITAL
WELDING PRODUCTS**



**LASER
CUTTING MACHINES**



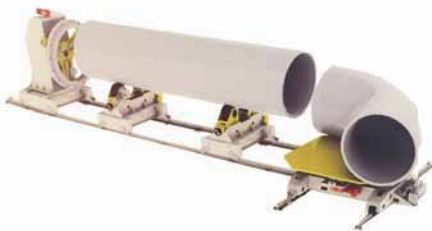
**PIPE SPOOLING WELDING
PRODUCTS**



AUXILIARY PRODUCTS



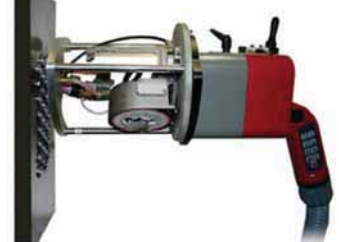
PIPE FIT-UP PRODUCTS



**PIPE CUTTING AND
BEVELING PRODUCTS**



**ORBITAL TUBE SHEET
PRODUCTS**



OW-ARC 180 (Power Unit with AVC) 180 AMPS

The OW-ARC 180 welding power supply provides digital control of the weld current and electrode travel speed; producing consistent and repeatable weld results. The OW-ARC 180 features a touch-screen display for easy navigation and data input. To access menus and input weld data, the operator presses the touch screen over the selection. Weld programming is easily accomplished using the built-in auto programming feature.

PERFORMANCE

- Windows CE operating system
- Up to 20 levels for each program for accurate welding control
- Internal memory can store 200 welding programs
- USB port for importing and exporting data
- Controls for welding current, travel/wire speed
- Remote pendant (optional)
- Fault detection and message display for easy maintenance
- Integrated printer
- Welding heads available for a wide range of welding applications
- Cooling system
- Solid metal case for convenient transport
- Auto select 120/240 VAC
- Real time data collection with printout
- Auto print weld summary option
- Burn through protection prevents weld head damage
- Start, stop, downslope, home and set home from weld head

**OW-ARC 180 Power Unit Includes: Machine, Hoses, Manual and Case**

OW-ARC 180 Auto Shift 115V or 230V 50/60Hz Single Phase	P/N: OW-ARC 180
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OW-ARC	Printer paper for OW-ARC Power Units
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OW-ARC 250 (Power Unit with AVC and OSC) 250 AMPS

The OW-ARC 250 uses an intelligent PC based control system with digital signal processing and high resolution monitoring for every output and sampling signal. It also contains a windows CE embedded version operating system and simple operating interface for accurate welding. Also includes off-line programming and off-line printing function.

PERFORMANCE

- Up to 20 levels for each program for accurate welding control
- Internal memory can store 100 welding programs
- USB support for importing and exporting data
- Controls for welding current, travel/wire speed and gas
- Control pendant display for real-time weld monitoring
- Welding distance can be set according to time or degree
- Arc voltage tracking control for peak and/or base values or simultaneous values
- Oscillation edge lock function
- Memory function for welding parameter changes made during weld
- Fault detection and message display for easy maintenance
- Pulse rotation and pulse wire feeding function
- Wire feeding ON/OFF during the welding process
- Current, rotation/wire feed speed, oscillation width, speed, center position and arc voltage are adjustable during the welding process
- Data transfer between the same series power source by USB driver
- Option to choose offline programming and printing with USB support
- Welding heads available for autogenous (fusion) / wire feed applications
- Multi-axis function display
- Integrated water cooling system/Internal printer to print data
- Solid metal case for convenient transport



Cover flips up to view Control/Data Display

**OW-ARC 250 Power Unit Includes: Machine, Hoses, Manual and Pendant**

OW-ARC 250 Electric 220v Single Phase	P/N: OW-ARC 250
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The OW-ARC 450 digital GTAW (TIG) welding power source consists of an inverter power supply, remote control pendant, integrated water cooling system and gas bottle rack on a portable chassis. The system utilizes a state-of-the-art PC controller with 10" touch screen and is designed for medium to thick wall pipe and tubing. It offers easy programming and versatility to tackle the most demanding piping applications for power generation, petrochemical, marine and aerospace industries.

PERFORMANCE

- PC based with Windows CE
- Up to 20 levels of parameter control (sector/levels) per welding program
- Stores 200 welding programs in internal memory
- Parameter controls for welding current, travel speed, wire speed, shielding gas and AVC / OSC control
- Arc voltage tracking control for peak and/or base value tracking or simultaneous tracking
- Welding heads available for autogenous (fusion) / wire feed applications
- Control pendant display for real-time weld monitoring
- Oscillation controls - width, speed and center position are adjustable during the welding process
- High frequency or touch start arc ignition
- Built in integrated water cooling system
- Comprehensive fault detection and message display for easy maintenance and on-line help
- Option to choose offline programming with offline printing
- Onboard "Help" menu
- Internal storage for 999 weld schedules
- "Next pass" feature to support multipass welds
- Internet connectivity for software update and multi program import/export to USB

OW-ARC 450 Power Unit Includes: Machine, Hoses, Manual and Pendant

OW-ARC 450 (380V-480V 3 Phase)	P/N: OW-ARC 450
OW-ARC	Printer paper for OW-ARC Power Units (5 pack)



OW-ARC 450

Type	Inverter
Current	5A - 450A
Duty Cycle (40C)	350A 100% / 450A 60%
Open Circuit Voltage	75A
Efficiency	50Hz / 60Hz
Input Voltage	3x480V (3x415V, 3x380V) (-15%~+15%)
Max. Power	38kw
Insulation / Projection level	F/IP2IS
Temp. Environment	15° -104° F
Temp. of Transportation and Storage	13° -131° F
Pump lift	100ft / 30m
Torch Cooling	Integrated water circuit
Display	Industrial PC
Program Storage	999
Number of Levels (per program)	20
Water Tank Capacity	4 Gal / 15L
Weight (ex. Coolant) kg /lbs	310 lbs / 140kg
Dimension mm (inches)	1110mm x 545mm x 1120mm (43.7" x 21.45" x 44")
Functions	Gas control, current control, rotation control, wire feeding, oscillation and Arc voltage control

The TPWH-C series is designed to perform orbital TIG welds on tube and thin wall pipe without the need for wire feeding. The sealed cavity is filled with protective gas prior to and during the welding process. This weld head is very efficient and has a water cooled system. Various collet sizes are available, offering accurate positioning without tacking.



Pictured:
TPWH-C-6 Closed Weld Head

PERFORMANCE

- TIG autogenous (fusion) welding without filler material
- Precision design for accurate tube positioning
- Tube clamping collits manufactured from 17-4 SS for repeatability
- Closed chamber for better gas coverage and cleaner welds
- Compact design for small work areas
- Commonly used for stainless steel, nickel alloys and titanium
- Water cooled head for high production and larger wall thickness
- The tool of choice for medical, food, biological, electric, instrument and pipe installation industries
- Recommended Power Unit = OW-ARC 180

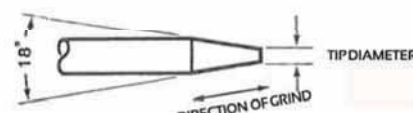
Diameter Range	TC-100	TPWH-C-1	TPWH-C-2	TPWH-C-3	TPWH-C-4	TPWH-C-6
mm	Φ6~Φ12.7mm	Φ6~Φ25.4mm	Φ12.7~Φ50.8mm	Φ12.7~Φ76.2mm	Φ38.1~Φ101.6mm	Φ50.8~Φ168.3mm
(Inches)	(1/4~1/2")	(1/4~1")	m(1/2~2)	m(3/4~3")	m(1.5~4")	(2"~6 5/8")
A	65mm (2.6")	80mm (3.2")	136mm (5.3")	145mm (5.7")	195mm (7.7")	295mm (11.6")
B	24mm (1")	40mm (1.6")	65mm (2.6")	72mm (2.9")	97mm (3.8")	150mm (5.9")
C	12.5mm (0.5")	40mm (1.6")	38mm (1.5")	42mm (1.6")	57mm (2.3")	61mm (2.4")
D	314mm (12.4")	340mm (13.4")	426mm (16.77")	412mm (16.2")	497mm (19.6")	630mm (24.8")

For TPWH-C Series Weld Head Inserts and Tungsten Tips, please call or visit www.ottoarc.com

TPWH-C SERIES - Closed Weld Head Inserts

WELD HEAD COLLETS
(For TPWH-C SERIES)

TUNGSTEN TIPS (For TPWH-C SERIES)
RECOMMENDED TUNGSTEN GEOMETRY

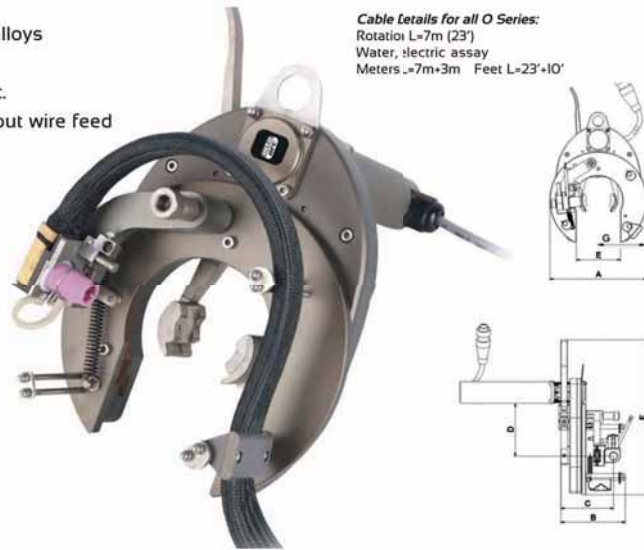


The TPWH-O Series is designed for TIG welding on tube to tube, pipe to pipe and pipe fittings and is suitable for carbon and stainless steel. The TPWH-O Series is used for applications that do not require AVC/OSC. Welds tubing and pipe for industries such as chemical, food, medicine, boilers, military and nuclear industries.

PERFORMANCE

- Suitable for thin wall stainless steel, carbon steel and other common alloys
- Capable of welding 4mm (.158") wall thickness
- Used for tube to tube, tube to flange, tube to elbow and tube to valve etc.
- Automatic all position TIG welding for tube to tube welding with or without wire feed
- Water cooled and highly durable torch design
- Mechanical tracking ensures consistent torch height control
- **Recommended Power Unit = OW-ARC 180**

TPWH-O Series		
	TPWH-O-3	TPWH-O-5
Tube OD	.75" - 3"	1.5" - 5"
Main Dimensions	mm (inches)	mm (inches)
A	180mm (7.09")	300mm (11.8")
B	120mm (4.75")	235mm (9.25")
C	95-101mm (3.75"-4")	132-172mm (5.2"-6.7")
D	92mm (3.62")	165mm (6.5")
E	82mm (3.23")	132mm (5.2")
F	290mm (11")	400mm (15.5")
G	60mm (3.545")	150mm (5.9")



Pictured:
TPWH-O-5 Open Weld Head

Cable Details for all O Series:
Rotation L=7m (23')
Water, electric assay
Meters =7m+3m Feet L=23'+10'

TPWH-OA SERIES (Open Weld Head with AVC and OSC for Tube and Pipe)

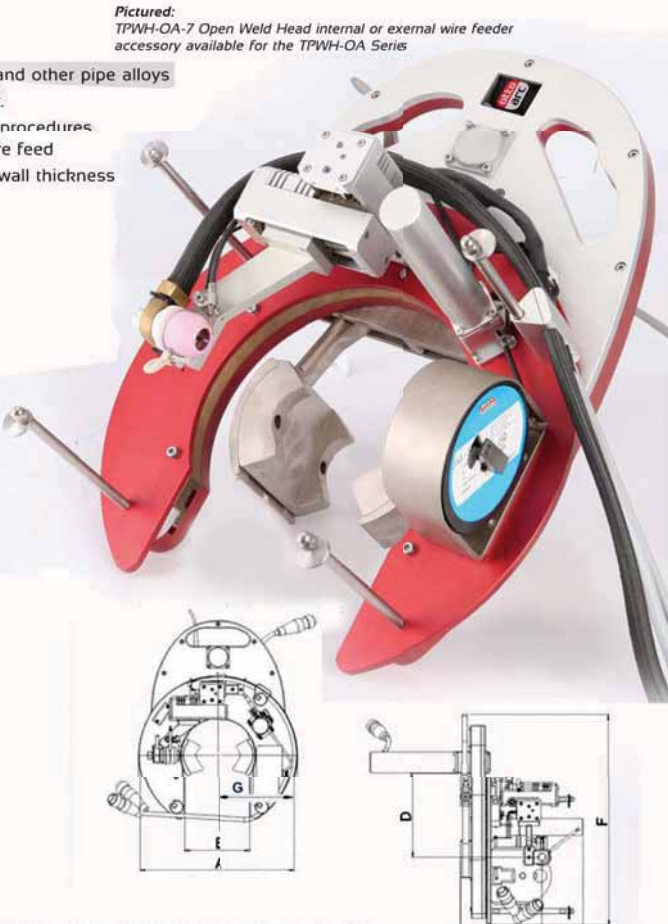
The TPWH-OA Series is designed for TIG welding on tube to tube, pipe to pipe and pipe fittings and is suitable for carbon and stainless steel. The TPWH-OA Series is used for applications that require AVC/OSC. Welds tubing and pipe for industries such as chemical, food, medicine, boilers, military and nuclear industries.

PERFORMANCE

- Commonly used for medium to thick wall stainless and carbon steel material and other pipe alloys
- Used for pipe to pipe, tube to tube, butt welds, flange welds, elbows, valves etc.
- Arc voltage control (AVC) and oscillation control (OSC) for multi-pass welding procedures
- Automatic all position TIG welding for tube and pipe welding with or without wire feed
- Compact design for limited radial and axial clearances / can perform up to 1" wall thickness
- Water cooled and highly durable torch design
- **Recommended Power Unit = OW-ARC 250 and 451**

TPWH-OA Series			
	TPWH-OA-3	TPWH-OA-5	TPWH-OA-7
Tube OD	.75" - 3"	1.5" - 5"	2" - 7"
Main Dimensions	mm (inches)	mm (inches)	mm (inches)
A	220mm (8.66")	300mm (11.8")	375mm (14.75")
B	180mm (6")	235mm (9.25")	260 (10.25")
C	112-132mm (4.41"-5.2")	132-172mm (5.2"-6.7")	184-224mm (7.24"-8.82")
D	92mm (3.6")	165mm (6.5")	225mm (8.85")
E	82mm (3.23")	132mm (5.2")	184mm (7.24")
F	320mm (14.5")	400mm (15.5")	525mm (20")
G	110mm (4.33")	150mm (5.9")	187.5mm (7.375")

TPWH-OA Series		
	TPWH-OA-9	TPWH-OA-1
Tube OD	4.5" - 9"	6" - 12"
Main Dimensions	mm (inches)	mm (inches)
A	425mm (16.73")	550mm (21.6")
B	300 (11.5")	312mm (12.3")
C	194.5-234.5mm (7.65"-9.23")	228.5-268.5mm (8.9"-10.57")
D	249mm (9.8")	297mm (11.7")
E	230mm (9.06")	278mm (10.94")
F	570mm (22")	680mm (26.5")
G	212.50mm (8.365")	275mm (10.825")

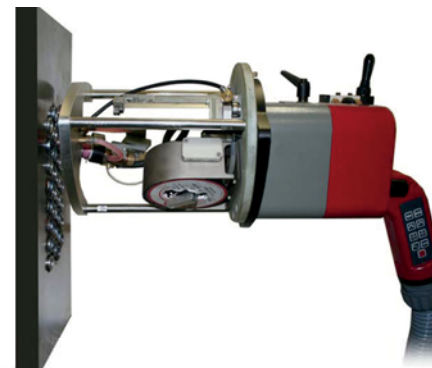


Pictured:
TPWH-OA-7 Open Weld Head internal or external wire feeder accessory available for the TPWH-OA Series

The TSWH-1.25 tube to tube sheet weld head is designed for TIG welding small tube to tube sheet, suitable for carbon steel, stainless steel, titanium and other nickel alloys. It can also be used for recessed, projected and flush tubing, with or without wire feed.

PERFORMANCE

- High precision with fast and accurate performance, suitable for small heat exchanger
- Auto AVC control with on and off function for manual adjustments
- Water cooled TIG weld head, easy to change or adjust Tungsten
- Integrated wire feed for recessed, protruded or flush tube ends
- Buttons on handle for easy operation
- Uses localized guide for self-centering of welds 1.25"OD and under using TPF-M manipulator
- **Recommended power unit = OW-ARC 250 or 450**



TSWH-1.25

Diameter Range mm (inches)	8-32mm (.375"-1.25")
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TSWH-1.5 (Fusion Tube to Tube Sheet Weld Head)

Designed for TIG welds for tube to tube sheet carbon and stainless steel. Mainly used for flush tube connections that require no wire feed.

PERFORMANCE

- Tube to tube sheet welding without filler wire
- Commonly used for stainless steel, titanium and nickel alloy tube to tube sheet welding
- Small, light and simple operation
- Uses localized guide for self-centering with optional spring balancer
- Expandable centering mandrel designed for precise positioning
- Enhanced water cooling system and high duty cycle for durability
- **Recommended power unit = OW-ARC 180, 250 or 450**



TSWH-1.5

Diameter Range mm (inches)	16-38mm (.630"-1.5")
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TSWH-3 (Tube to Tube Sheet Weld Head)

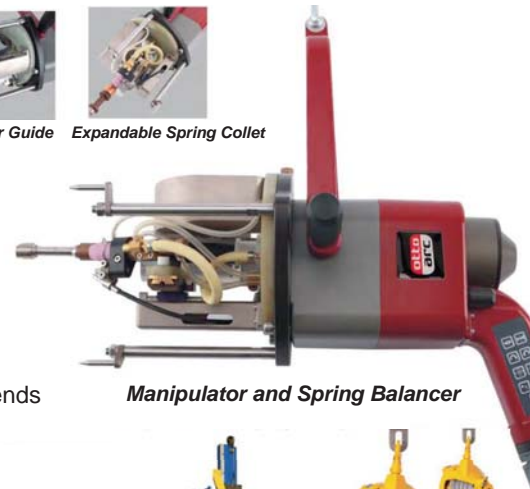
The TSWH-3 tube to tube sheet weld head is designed for TIG welding tube to tube sheet, suitable for carbon steel, stainless steel, titanium and other nickel alloys. It can also be used for recessed, protruded and flush tubing with or without wire feed. We recommend for pipe with an OD of less than 1.25" with manipulator/balancer. For pipe with OD more than 1.25" the self centering mandrel is used with our optional spring balancer.

PERFORMANCE

- With/without wire feeding TIG DC/pulse welding
- Continuous rotation weld head with no cable twist
- Suitable for Tungsten electrodes 3/32 up to 1/8
- Expandable pneumatic mandrel for easy positioning
- Easily connects to the balancer
- Suitable for tube to tube sheet welding (boiler industry)
- Compatible with manipulator - useful within the heat exchange industry
- Material types - carbon and stainless steel, and other alloys
- For flush tube, recessed (1 mm max.) and projected (not over 5mm) tube ends
- Arc voltage control (AVC) for consistent arc length
- **Recommended power unit = OW-ARC 250 or 450**



Localizer Guide Expandable Spring Collet



Manipulator and Spring Balancer

TSWH-3

Diameter Range mm (inches)	16-60mm expandable to 90mm (.630"-2.36" expandable to 4")
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TSWH-HB-625 (Headerbox Tube to Tube Sheet Weld Head)

Rometec srl - www.rometec.it - info@rometec.it - Rometec srl - www.rometec.it - info@rometec.it

This weld head is designed for deep hole tube to tube sheet TIG welding. It is suitable for carbon steel, stainless steel and most TIG type materials.

PERFORMANCE

- Commonly used for special heat exchanger needs within the chemical industry (for example: air-cooled hydrogenation)
- Perfect for wire feed welds in hard to reach areas
- Narrow space welds reaching 4.75" to 8.5" (4.75" to 8.5" is the min. and max. distance between the two tube plates)
- Can customize according to specific requirements
- Torch angle negative 3 degrees
- Optional external or integrated wire feed available
- Recommended power unit = OW-ARC 250 or 450



TSWH-HB-625

Tube OD 25mm - 32mm (1" and 1¼")

TSWH-i-75 (Tube to Tube Sheet Weld Head)

The TSWH-i-75 tube to tube sheet weld head is designed for inner tube to tube sheet TIG welding and is suitable for carbon and stainless steel without wire feed.

AUTOGENOUS /
FUSION



PERFORMANCE

- Commonly used on heat exchangers, inner tube to tube sheet welding
- Minimum inner tube diameter of 19mm (.75 inches)
- Precise positioning and accurate/repeatability welding
- Suitable for carbon and stainless steel
- Can customize according to specific requirements
- Recommended power unit = OW-ARC 250 or 450



TSWH-i-75

Tube ID 19mm (0.75")

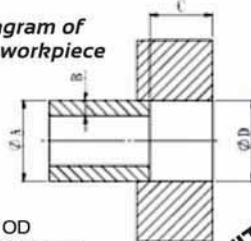
TSWH-i-1 (Tube to Tube Sheet Weld Head)

This welding head is also designed for inner tube to tube sheet TIG welding with integrated wire feeder.

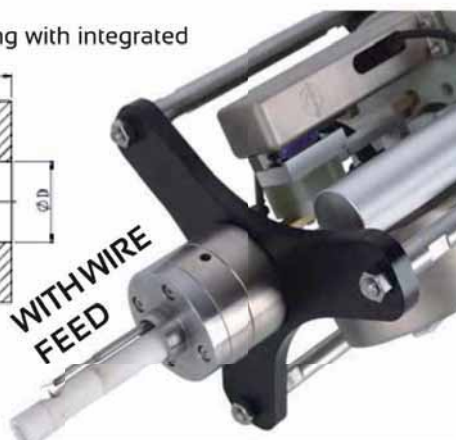
PERFORMANCE

- Inner-hole with integrated wire feed
- No wire twisting with special wire feed design
- Minimum inner tube diameter of 25mm (1 inch)
- Achieves complex single and multi layer welds
- Can customize according to specific requirements
- Special water cooling feature (cools to the end of torch, near the Tungsten)
- Recommended power unit = OW-ARC 250 or 450

Sample diagram of
inner tube workpiece



A. Tube OD
B. Tube thickness
C. The distance between tube sheet and welding position
D. Tube-sheet hole diameter



TSWH-i-1

Tube ID >25mm (1")

ORBITAL TUBE WELDING PRODUCTS

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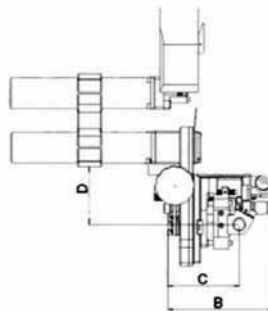
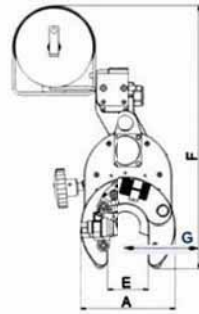
TPWH-NS-2 (Narrow Space Weld head for Tube and Pipe)

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The TPWH-NS-2 is designed for tube to "U" shape (return bends) TIG welding suitable for carbon and stainless steel tube to tube connections and is used mainly for applications that require wire feeds or autogenous welding. This product also includes an integrated wire feeder with AVC & OSC controls.

PERFORMANCE

- Orbital welding head with integrated wire feed
- Motorized AVC and OSC control for narrow spaced applications
- Quick clamping and accurate centering ensure repeatability
- Special design for return bends, "S" bends and other reduced clearance applications
- Recommended Power Unit = OW-ARC 250 or 450

**TPWH-NS-2**

Diameter Range mm 32-51mm (1.25"-2")

Main Dimensions mm (inches)

A	128mm (5.04")
B	138mm (5.43")
C	85-97mm (3.25"-4")
D	75mm (2.95")
E	59mm (2.32")
F	360mm (14")
G	64mm (2.52")

PWH-LD TIG (Large Diameter for Medium/Heavy Wall Pipe)**PERFORMANCE**

- TIG orbital welding system for medium and heavy wall pipe
- Track mounted welding head with single/dual wire feed
- Optional with hot wire TIG welding power source and hot wire TIG wire feeder for greater performance
- Welds large diameter and thick wall stainless steel pipe welding with standard J or compound preps
- Standard "V" prep on carbon steel only
- Recommended Power Unit = OW-ARC 250 or 450

PWH-LD SERIES (TIG)

	PWH-LD
Diameter Range mm (inches)	203.2-1219.2mm (8" to 48")

For PWH-LD TIG rack sizes, please call or visit www.ottoarc.com



PRECISION CIRCUMFERENTIAL WELDING SYSTEM

PERFORMANCE

- AVC & OSC Functions
- TIG Welding with/without wire
- Internal welding clamp
- Manual clamp
- Adjustable angle and distance to allow downward welding

Material	Stainless/Carbon Steel
Tube OD	Ø40-Ø110
Connection	Fillet, lap and butt joint
Protective Gas	Ar
Cooling	Water
Cooling Flow (ml/min)	≥450



TPH-WH-S (Horizontal/Vertical Weld Station)

This system is especially designed for tube to flange TIC welding. It can perform a spot, seam and orbital weld with or without wire feed. It can handle vertical or horizontal placement. Suitable for all industries.

PERFORMANCE

- Pneumatic clamp design, ensures precise positioning
- Keeps workpiece stable
- Quick and convenient positioning
- Eliminates wire wrapping - reducing preparation time
- Option to choose with or without wire feed
- Water circuit cooling torch for increased working time
- Recommended power unit = OW-ARC 250 or 450

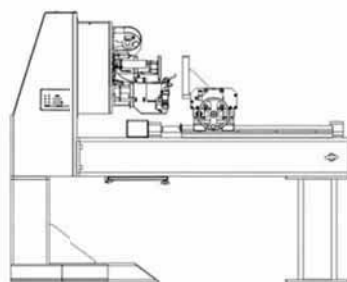


Diagram showing optional stand.



ACCESSORIES (For Otto Arc Systems Orbital Welding Products)

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MANIPULATOR

The manipulator is also designer for tube to tube sheet welding. The manipulator allows the operation to be easy and convenient by controlling the position of the weld head by 3 moving axes and by using pneumatic locking. It also assist with locating the center of the tube aid creates stability during the welding process.

PERFORMANCE

- Durable and stable steel construction
- Linear track for each axis for smooth and reliable operation
- Three-axes pneumatic locking system
- Two fixed and flexible wheels, easy to move
- For tube to tube sheet weld heads
- Patented design

MANIPULATOR (TPF-M)

	Millimeters	Inches
Height Between Tube and Ground	500mm	19.7"
X axis Traverse	1500mm	59"
Y-axis Traverse	1500mm	59"
Z-axis Traverse	450mm	17.7"
Weight	220kg	507 lbs
Dimensions	2063 x 2325 x 1269mm	81" x 91.5" x 50"



PERFORMANCE

- Convenient for moving
- Adjustable weight loading range
- For tube to tube sheet weld heads

SPRING BALANCER (SB-1)

Loading kg/lbs)	9-15kg (19-33lbs.)
Traverse mm/inches)	2000mm (78".7)
Weight (kg/lbs)	3.8kg (8lbs.)

ADJUSTABLE SAW GUIDE - AN OTTO ARC EXCLUSIVE!

The Otto Arc Saw Guides are designed with multiple sizes in one and include 17-4 hardened steel guides that will assist in keeping the saw blade straight for square cuts plus less chance of accidentally sawing into the guide itself.



SAW GUIDES	PART NUMBER
5"- 1.5" Pipe or Tube	P/N: SG-1500
1.5"- 3" Pipe or Tube	P/N: SG-3000
2"- 6" Pipe or Tube	P/N: SG-6000

Note: The SG-1500 & SG-3000 can be used with a hack saw or portaband saw. Our SG-6000 must be used with a Sawzall.



QC-44 Saw Blade

SAW BLADES FOR CUTTING STAINLESS

(ALSO FITS GF STYLE MACHINES)

S/W BLADES	TEETH	PART NUMBER
2"- .5" Tube	150	P/N: QC-150
.5"- 1" Tube	100	P/N: QC-100
1"- 3" Tube	70	P/N: QC-70
2"- 4" Pipe (120 Wall Max.)	44	P/N: QC-44
2"- 4" Pipe (375 Wall Max.)	32	P/N: QC-32

(Blades can be requested with Laser Coating)



INTEGRATED WIRE FEEDER

PERFORMANCE

- Simple design
- Light weight, easy to carry
- Branded Servo motor driving system
- Loop control
- Stable wire feeding speed
- Compatible with all TPWH-O and TPWH-OA Series weld heads

INTEGRATED WIRE FEEDER (WFI-1)

100-1800 mm/min (4"-70.9")
0.8mm, 0.9mm, 1.0mm
1.5kg (3lbs.)

QUICK CUT SAW ELECTRIC



Our Otto Arc "Quick Cut Saw" is designed for fabrication facilities and for projects that require beveling or squaring for pre-prep welding of pipes and tubes.

PERFORMANCE

- Will cut tubing from .75" to 4.5"
- Will cut piping from 1" to 4"
- Will cut square to .005"
- Steady rest for accurate cutting
- Enclosed gear box (does not require expensive oil)
- Enclosed bearings for smooth operation
- Designed to keep out chips during operation
- Simple to adjust sizes and depth
- Performs bevels and squaring
- Ideal for high-purity applications
- Can also cut plastic, aluminum and a variety of other alloys
- Electric motor: variable speed control 110v or 220v

QUICK CUT SAW

	MOTOR SPECS
PN: QC-4000-E (electric)	110V/60Hz or 220V/50Hz

BEVELING BLADES

30 DEGREE BEVEL	37.5 DEGREE BEVEL
PN: QC-R-30	QC-R-37.5

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TSM-1000 • 1/8" to 1" TUBE (OD Mount / Battery Powered)

FEATURES - PORTABLE!

TSM-1000 is one of the smallest designed facing tools on the market today. The machine is powered by an air cooled 18V-Li Metabo battery motor and the total working weight of the machine is 6 lbs. The design of this machine makes it easy to use on job sites, making hard-to-reach areas easily accessible due to its small size.

PERFORMANCE

- Size range 1/8" to 1" Tube (3.175 mm - 25.4 mm)
- 18V Metabo air cooled Li powered battery motor
- Easy replacement of collets and size ranges
- Uses Stainless Steel collet set (upper / lower)
- 6 lbs. (2.6 kg) approximate working weight
- Faces most metals and plastics, including high nickel materials
- Battery charger: 110V/60Hz US Style / 220V/50Hz (E Compliant)
- Tool bits are designed to work on the following materials: stainless steel, inconel, hastelloy, carbon steels, aluminum and other alloys
- Options: additional batteries can be purchased



TSM-1000 Machine Kit Includes: Machine, Tool Bits (2), Tooling, Manual and Case

TSM-1000 Kit with Variable Battery Powered Motor	P/N: TSM-1000-IO-BP
TSM-1500 Kit with Variable Battery Powered Motor (230v)	P/N: TSM-1000-IO-BP-230

TSM-1500 • 1/8" to 1.5" TUBE (OD Mount / Electric)

This is our first machine and the tool that started a revolution in the field of facing tools. Our machines offer increment feed control so you can cut and debur tubing at precision lengths.

All TSM-1500 Collets are made of hard anodized aluminum for maximum hold and minimal weight. Their three-piece design ensures accurate centering while affording the most surface area contact for the greatest holding power.

PERFORMANCE

- Size range 1/8" to 1.5" Tube (3.175 mm - 38.1 mm)
- Standard 110/220V variable speed motor
- Portable or mountable for high volume production
- Easy replacement of collets and size ranges
- 10 lbs. approximate working weight
- Adjustable measure indicator for accurate facing
- Large view port for easy bit replacement
- Tool bit designed to keep chips out of polished ID
- Faces most metals and plastics, including high nickel and carbon steel materials
- Options: bench mount kit or battery powered motor



TSM-1500 Machine Kit Includes: Machine, Tool Bits (2), Tooling, Manual and Case

TSM-1500 Kit with Variable 110v Motor	P/N: TSM-1500-IO
TSM-1500 Kit with Variable 230v Motor	P/N: TSM-1500-IO-230
TSM-1500 Kit with Variable Battery Powered Motor (110V)	P/N: TSM-1500-IO-BP
TSM-1500 Kit with Variable Battery Powered Motor (230v)	P/N: TSM-1500-IO-BP-230
TSM-1500 with 230volt motor, VTC	TSM-1500-IO-230-VTC (variable speed motor)
Note: Bench Mount Option Available	P/N: TSM-253

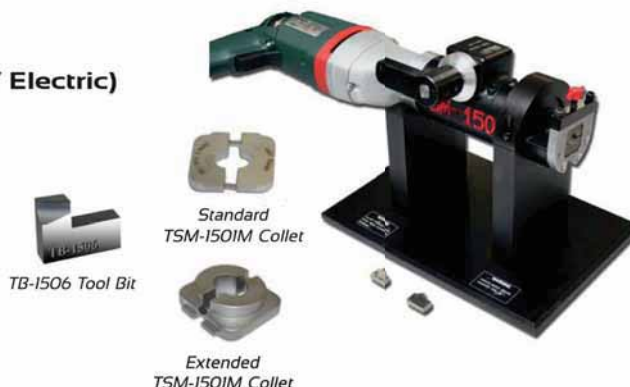
TSM-150IM • 1/8" to 1" TUBE (OD Mount / Electric)

Our new micro facing machine was designed to face 1/8" to 1" tubing. We also offer two collets: our standard collets for facing micro fitting or short tubing from .20" long and our extended collets for 1" and above.

This new machine will let you face quickly and squarely every time. You will also find this machine has an unobstructed view of the tool bit and tubing. Stainless collets will not damage your electro-polish tubing. Our feed indicator will give you precise lengths every time.

PERFORMANCE

- Size range 1/8" to 1" Tube (3.175mm - 25.4 mm)
- Standard 110/220V variable speed motor
- Easy replacement of collets
- 9 lbs. approximate working weight
- Adjustable measurement indicator
- Large view port for easy bit replacement
- Faces most metals and plastics, including high



TSM-150IM Machine Kit Includes: Machine, Tool Bits (2), Tooling, Manual and Case

TSM-150IM Kit with Variable 110v Motor	P/N: TSM-150IM-IO
TSM-150IM Kit with Variable 230v Motor	P/N: TSM-150IM-IO-230
TSM-150IM Kit with Variable Battery Powered Motor (110V)	P/N: TSM-150IM-IO-BP
TSM-150IM Kit with Variable Battery Powered Motor (230v)	P/N: TSM-150IM-IO-BP-230
TSM-150IM with 230volt motor, VTC	TSM-150IM-IO-230-VTC (variable speed motor)

FEATURES - HOLDS 3 TOOL BITS! FACES, BEVELS AND COUNTERBORES

This new facing tool will face tubing from 1/2" to 2.5" and is designed like our TSM-450IM, but lighter in weight, approximately 19 lbs. This tool was designed with our Pharmaceutical contractors in mind.

Our feed knob will give you the control you need to ensure precise lengths. This machine comes with a Metabo motor with speed control that will keep the RPM constant under load. This speed control will help extend the life of your tool bits.



TB-0206 Tool Bit



Various Collets for TSM-2500M

PERFORMANCE

- Size range .5" to 2.5" Tube (12.7 mm - 63.5mm)
- Less than 20" in length and 8" in overall height
- Easy replacement of collets, various sizes
- Adjustable measurement indicator for accurate facing
- 19 lbs. approximate working weight
- Large view port for easy tool bit replacement
- Spring loaded collets
- Worm gear drive

TSM-2500M Machine Kit Includes: Machine, Tool Bits(2), Tooling, Manual and Case

TSM-2500M Kit with Variable Speed Control 110v Motor

P/N: TSM-2500M-10

TSM-2500M Kit with Variable 230v Motor

P/N: TSM-2500M-10-230

TSM-450IM • 1" to 4.5" TUBE (OD Mount / Electric)

FEATURES - HOLDS 3 TOOL BITS. FACES, BEVELS AND COUNTERBORES!

This lightweight 25lb. facing machine has a wide working range of 1" to 4-1/2" OD. Our facing tool offers floating collets that let you grip oversize or out-of-round tubing.

PERFORMANCE

- Size range for pipe 1" OD to 4.5" OD (25.4 mm - 114.3 mm)
- Rugged two speed design to fit more applications
- Quick-close latching system reduces setup time
- Comes with bench stand
- Easy replacement of collets and size ranges
- Adjustable measurement indicator for accurate facing
- Large view port for easy bit replacement
- Faces high nickel and carbon steel materials
- Spring loaded collets help align out-of-round tubing
- Worm gear drive
- Floating collet design
- Specially designed collets for efficient loading



TSM-450IM Machine Kit Includes: Machine, Tool Bits (2), Tooling, Manual and Case

TSM-450IM Kit with Variable with Speed Control 110v Motor P/N: TSM-450IM-10

TSM-450IM Kit with Variable 230v Motor

P/N: TSM-450IM-10-230

TSM-6001 • 1" to 6" TUBE (OD Mount / Electric)

FEATURES - HOLDS 3 TOOL BITS. FACES, BEVELS AND COUNTERBORES!

This lightweight 42 lb. facing machine has a wide working range of 1" to 6.625" OD.

PERFORMANCE

- Size range for pipe 1.315" OD to 6.625" OD
- Size range for tube 1" to 6"
- Rugged two speed design to fit more applications
- Comes with bench stand
- Adjustable measurement indicator for accurate facing
- Large view port for easy bit replacement
- Worm gear drive
- Floating collet design
- Specially designed collets for efficient loading
- Faces most metals and plastics, including high



Front View



TB-0206 Tool Bit



TSM-6001 Collet

TSM-6001 Machine Kit Includes: Machine, Tool Bits (2), Tooling, Manual and Case

TSM-6001 Kit with Variable with Speed Control 230v Motor

P/N: TSM-6001-10-230

Our Fiber Laser Machine uses an IPG fiber laser system that uses a high amount of efficiency compared to conventional lasers. In addition, it, also provides numerous advantages such as lowering overall costs associated with labor and setup time. This system features a rigid mechanical structure and precise control system.

SCUT2000 Laser Cutting Control System

- CypTronic-F CNC Specification
- Mainboard Model: BCE4
- CPU: Intel (R) Celeron (R) CPU J1900@23Hz
- Chipset: Intel Bay Trail-T
- RAM: 4G (DDR3 1600MHz)
- Hard Drive: 64GB/SSD
- Operating System: Windows Embedded Standard 7 (x86)
- Power: DC24V
- Protection Degree: IP40
- Working Conditions:
- Temperature 0-65 °C
- Humidity 5%-95% (no condensation of moisture)



Fiber Laser Cutting Machine	
Processing Range	1500mm x 3000mm / 6000mm (5x10 / 20)
Speed	X, Y 50m/min, 100m/min
Top Speed	70m/min (2755IPM), 140m/min (5510IPM)
Acceleration	0.6G, 1G
Positioning Accuracy / Cutting Precision	0.005mm (0.0002") / 0.2mm (0.008")
Laser	IPG
Power	500W, 1000W, 1500W, 2000W, 3000W, 4000W, 6000W

YASKAWA Driving System



Ray Tools AG

- Optimized optical configuration
- Smooth and efficient gas flow design
- Multiple fiber laser interfaces
- Slim and long nozzle connectors suitable for 3-dimense cutting
- Collimator and focus lens for special composite lens, ensuring high quality optical BPP and cutting
- Collimator and focus lens are both equipped with water cooling system ensuring up to 4W laser power output
- Knob type focus adjustment, high flexibility
- Adjustment range: 15mm (0.6") with Accuracy of: 0.05mm (0.02")
- Built-in ring blowing and side blowing structure for protection when cutting high reflective materials



MINICUT CNC PLATE CUTTING MACHINE

SPACE SAVER - GREAT FOR ARTWORK & SMALL JOBS

Our Mini CNC Plate Cutting Machine has many features. It can assist with saving space, high productivity, efficiency, mobility and precise automatic cutting. It is simple to use, easy to train on and an affordable way to cut your design up to 2" thick plate. Its compact design is light weight and small scale and can be easily moved to perform in any indoor or outdoor working environment. With its ease of use and small size many industries can improve their productivity by saving labor costs and time. This machine can also cut various types of materials such as carbon steel (flame cutting), stainless steel, aluminum (plasma cutting) and other metal materials. It is designed to cut single or multiple batches during production.



MiniCut CNC Plate Cutting Machine			
Input power source	220V±10% 50Hz/60Hz 220W	Cutting speed (mm/min) (inches/min)	50-3000 / 1.96"- 118" (.0ft.)
LCD	7 Inch color LCD	Cutting thickness (Flame) (mm/inches)	5-120mm / .2" - 4.75"
Effective cutting range XxY (mm/feet)	1500 X 3000 / 5' x 10'	Cutting thickness (Plasma)(mm/inches)	Depends on customer's plasma power supply
Beam section size (mm/inches)	50x60mm / 2" x 2.35"	Gas pressure (Mpa)	0.01-0.3
Beam length (mm/feet)	2000mm / 6.5'	Oxygen pressure (Mpa)	0.3-0.7
Beam weight (kg./lbs.)	13.9 / 30 lbs.	Types of gas	Propane or Acetylene
Track length (mm/feet)	3540mm / 11.5'	Measurement (mm)	Host: 460 x 330 x 260 Track: 3450 x 273 x 60
Track weight (kg./lbs.)	40.5 / 89 lbs.	Measurement (inches)	Host: 18" x 13" x 10.2" Track: 135.8"(11ft.) x 10.75" x 2.36"
Host weight (kg / lbs.)	19 / 42 lbs.		

Note: Standard configuration is a acetylene nozzle if there are no other special requirements.

EASycut / EASycut PLUS CUTTING MACHINE (PLASMA & FLAME)

MEDIUM DUTY WITH DOUBLE SIDED AC SERVO

Our EasyCut medium duty double sided AC Servo driving CNC cutting table has two types of carriers, the main horizontal driving carrier, which carries one torch and the second, which can carry an additional two torches together - one plasma torch and one flame torch. The maximum torch capacity is 3 which offers a combination of 3 flame cutting torches or 1 plasma torch with 2 flame cutting torches.

The EasyCut machine was developed to help with job requirements that need more than a MiniCut yet not a heavy duty designed machine, such as our higher priced ProCut. We have designed this machine so that it delivers high performance, stability and results without having to buy a larger more expensive piece of equipment



MORE FEATURES:

- Strong frame structure to insure cutting precision and durability
- Precision gear box torch trolley driving system to ensure high accuracy
- Various torches for various cutting processes as flame cutting and plasma cutting
- Suitable for wide and complicated applications
- Otto Arc and Hypertherm Controllers available.
- Doublesided driver (AC Servo)
- Flame cutting torch auto-ignitor (optional)
- Various FastCAM software available

EasyCut / EasyCut Plus

Effective cutting width (in/mm)	5', 6', 8', 10', 12' / 1500mm, 1800mm, 2500mm, 3000mm, 3600mm
Effective cutting length (in/mm)	Per Customer Specifications / Maximum length goes up to 100' (30m)
Maximum Speed (in/mm)	20 IPM (6m/min), 40 IPM (12m/min)

FINECUT PLASMA CUTTING MACHINE

THERMAL CUTTING

This machine is an integrated and moveable CNC premier thermal cutting machine with medium duty size structure and multi-axis control, suitable for small piece plate cutting

FineCut CNC Plasma Cutting Machine	
Model	3015
Effective Working Area (in/mm)	5" x 10" / 1500mm x 3000mm
Drive Speed (mm/min) (ft/min)	40 ft/min or 80 ft/min
Max. Number of Heads	1

MORE FEATURES:

- Strong frame for single plasma cutting torch
- Suitable for small plate sizes
- Dual precision driving trolley system
- One torch recommended, but up to two torches may be integrated (one plasma & one flame)
- Precision gear box torch trolley driving system to ensure high accuracy in locating transmission
- High cutting speed available
- Otto Arc and Hypertherm Controllers available.
- Touch screen optional
- Supports various FastCAM software



PROCUT CUTTING MACHINE (Plasma & Flame)

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FOR WIDE AND COMPLICATED APPLICATIONS

This machine is a heavy duty extended size CNC premier thermal cutting machine with multi-axis control suitable for various plate cutting applications. The driving trolley system is designed to assist with cutting larger width material. It also offers a variety of different tools including: strip cutting, tripe torch and plasma arc contour beveling unit.

PERFORMANCE

- Heavy duty thermal premier CNC plate cutting machine
- Special design to improve effective cutting width
- Heavy frame structure to ensure cutting precision and durability
- Suitable for wide and complicated applications
- Various torches for an array of cutting processes such as, flame and plasma
- Dual precision driving trolley system
- Precision gear box torch trolley driving system ensures high accuracy in locating transmission
- High cutting speed is available
- 17 inch high-resolution color LCD or 15" touch screen
- Regular display or touch screen optional
- Various FastCAM software available
- Foundation Base (optional)



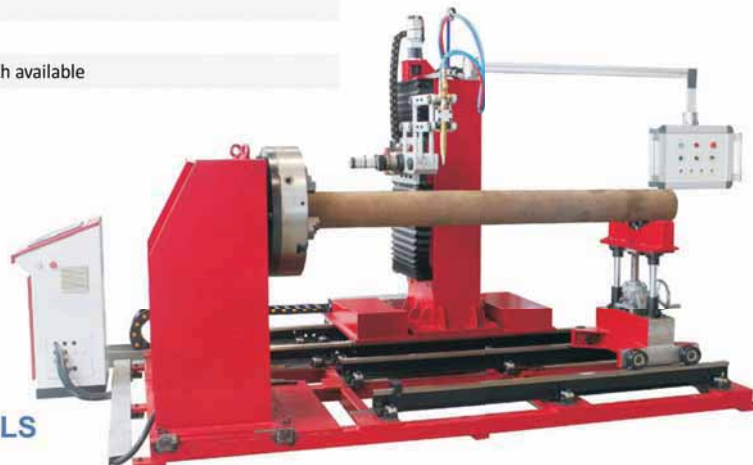
PROCUT PLASMA & FLAME CNC CUTTING MACHINE

EFFECTIVE CUTTING WIDTH (IN/MM)	10'-20'
EFFECTIVE CUTTING LENGTH (IN/MM)	Per Customer Specifications / Maximum length goes up to 100' (30m)
MAXIMUM SPEED (IN/MM)	20 IPM (6m/min), 40 IPM (12m/min)
MAX. NO. OF TORCHES	6 (with 2 plasmas available)
STRIP TROCHES	Available
BEVEL TORCHES	Available
CONTROLLER	Otto Arc /Hypertherm are both available
SENSOR THC	Available

(Plasma & Flame)

PROPIPE CUTTING MACHINE

CALCULATES PRECISE CUTS AND BEVELS



Our ProPipe is designed to cut profiles or steel or other various types of pipe material by using automatic calculation. It's widely used in cutting pipe and fittings for ship yards and other industrial steel structures, which require pipe intersection holes, or intersected ends. When using our ProPipe system, it eliminates the tough traditional way of marking your pipe along with lifting, cutting and lots of manual grinding. The traditional process is very time consuming, inconsistent, complicated and not cost effective! Using our system allows the operator to input the diameter and degree of the intersected pipe, and that's it! The machine will calculate the cut and the required bevel. There is minimal training required and it's very easy to educate lead managers and staff on how to use this efficient and quick system.

The system uses a cylindrical coordinating system with 5 synchronized axes, which can achieve fixed angle and multi-beveling angles as per AWS requirements. It also provides a multi-language interface input parameter and step by step communication during the cutting and beveling process. This system also has deviation function for various roundness, eccentricity, piercing and also includes a cutting speed control function.

ProPipe Pipe Cutting Machine	
Axis	2-6 Axis
OD (mm / in)	50-1500 / 2" - 60"
Length (mm / feet)	2000-18000 / 6.5'-60'
Thickness (mm / in)	5-60 / 0.19"-2.3"
Max Pay Load (KG/Tons)	8000 / 8.81
Torches	Plasma & Oxy-Fuel
Cutting Speed (mm/min)/(in/min)	80-2500 / 3.14"-98.5"
Idle Speed (mm/min)/(ft/min)	0-10000 / 0-32'
Cutting Method	Plasma & Oxy-Fuel
Bevel	1/4"V+ 45° Plasma +60° Oxy-Fuel

MORE FEATURES:

- Axle: 2 - 6
- OD Range: 2" - 60"
- Cutting Type: Oxy fuel or plasma
- Bevel: AWS

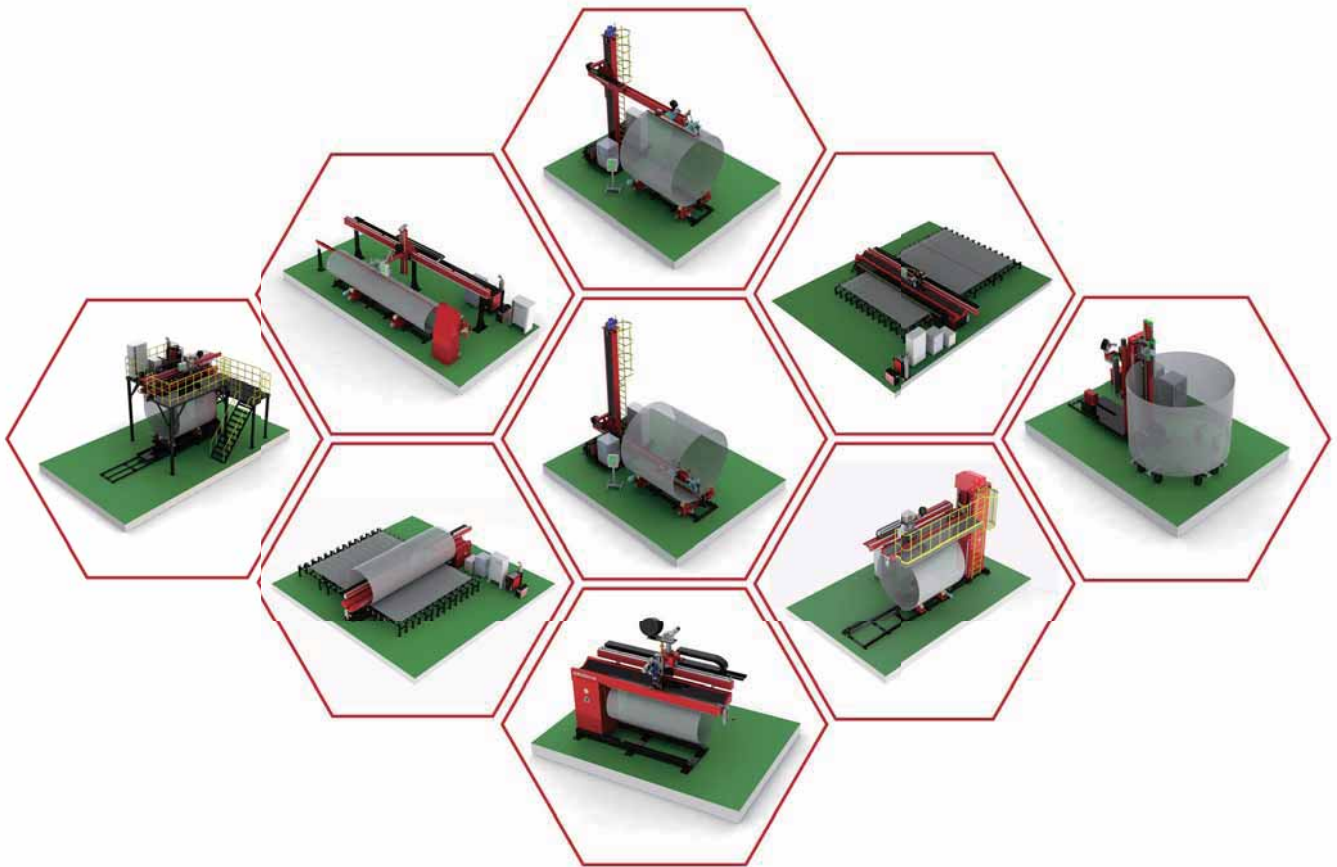
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AUTOMATED SOLUTIONS

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Longitudinal Seam Welding System can weld internal and external seams. Various medium wall materials such as, carbon/stainless steel and alloys can be used along with a variety of welding processes; PAW, TIG, Plasma and MIG/MAG. System is widely used in many industrial manufacturing industries - food, medica, tanks, pressure vessels and many others. Additional features such as, mounting blocks and protection devices can be added per customer requirements and or needs.

- Uses bronzed finger camp for small welding distortion
- Suitable for 0.4mm - 12mm wall thickness
- Uses the TIG, MIG, MAG and PAW welding process
- Uses various material: such as carbon and stainless steel, titanium and aluminum alloys
- Can order as standard or customize per customer requirements



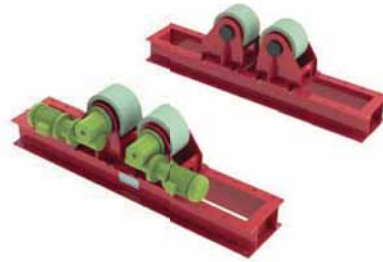
Bolt Adjusting Rollers

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adjustable for a wide range of sizes. They are commonly used in pressure vessel fabrication, wind power fabrication, ship yards, cladding applications, petrochemical and many other industries.

PERFORMANCE / TECHNICAL

- The distance between the rollers is adjustable by moving the rollers to a different bolt hole location
- Uses worm gears with double motors for smooth rotation
- Speed can be adjusted using the digital display
- AV variable is controlled by the remote pendant



Screw Adjusting Rollers

Our Screw Adjusting Rollers make the job of changing to different sizes as easy as turning the hand crank to move the rollers in or out. From small pipe to large vessels these tools are capable of handling the job. Widely used in the construction of pressure vessels, small and large pipe sections, boiler vessels, heat exchangers, shipyards, cladding and more.

PERFORMANCE / TECHNICAL

- This unit is self-adjusting through a wide range, with fast and easy motorized changes
- Uses worm gears with double motors for smooth rotation
- Speed can be adjusted using the digital display
- AV variable is controlled by the remote pendant



Self-Adjusting Rollers

This is the ultimate in pipe and vessel roller systems. It has four motorized rollers which use worm gears to assure a smooth rotation and is self-adjusting through a wide range. Commonly used in pressure vessel fabrication, wind power, small and large pipe sections, boiler vessels, heat exchangers, shipyards, cladding and many more.

PERFORMANCE / TECHNICAL

- Uses worm gears with double motors for smooth rotation
- Four master wheels driven by smooth gears
- This unit is self-adjusting through a wide range, with fast and easy motorized changes
- Speed can be adjusted using the digital display
- AV variable is controlled by the remote pendant
- Optional rubber wheels available



Tilting Positioner Series

Our welding positioners significantly increase production and make the welder's job much easier when they can rotate the part during the welding process. We have a wide range of accessories available for this style of positioners.

PERFORMANCE / TECHNICAL

- Heavy duty integral tilt gear
- Electrically activated tilt motor
- Minimal backlash
- Optional Dynamic Braking on the rotation drives
- 360 degree rotation, and 90 to 135 degrees of tilt (see spec for particular model)
- High frequency protected
- Ground capacity 1000 amps

BENEFITS!

- Built to last!
- Optimal welding position produces consistent high quality welds
- Increased production
- Direct Drive Gears provide smooth operation even under heavy loads for consistent welds at all speeds and loads



Hydraulic Positioner Series

PERFORMANCE / TECHNICAL

- Heavy duty integral tilt gear
- Electrically activated tilt motor
- Minimal backlash
- Optional Dynamic Braking on the rotation drives
- 360 degree rotation, 135 degrees of tilt
- High frequency protected
- Ground Capacity 1000 amps

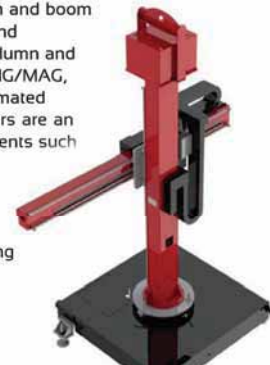


Light - Medium Manipulator Series

We manufacture a complete line of light load column and boom welding manipulators which maximize both safety and production with load capacities up to 176 lbs. Our column and boom welding manipulators are designed for TIG, MIG/MAG, PAW or SAW welding processes for a turn-key automated welding system. Manual or powered Trolley base cars are an option that can be included for varying length weldments such as seam welders.

PERFORMANCE / TECHNICAL

- Built-in fail safe system to prevent boom from falling
- Uses linear guide rail
- Transmission is rack and gear
- Remote pendant
- Customized systems are available



PIPE PREPARATION SOLUTIONS

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HIGH SPEED CUTTING AND BEVELING MACHINE

- Includes advanced techniques for many international standards
- Max thickness 254mm
- SERVO radius feeding
- Easy programming for graphic parameters
- Can cut and bevel at the same time (V Bevel)
- Adjustable hydraulic pressure clamping
- Pneumatic chucks (4)
- Suitable material type: CS, SS and Alloy Steel
- Digital controls + PLC + Touch Screen
- Pipe wall thickness 3-25mm
- Pipe diameter 60-325mm
- Optional conveyer system and pipe feeding features



PIPE FIT-UP STATIONS

MULTI-FUNCTION

- Quick and fast fit-up for straight, flange, elbow and tee pipes
- Improves efficiency and quality
- Reduces labor intensive costs and time
- 1 or 2 end fit up configurations available per customers request



(TIG/MIG/MAG/SAW and OPTIONAL HOT WIRE)

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MAG or SAW with a simple flip of the switch, allowing for a TIG root pass and MIG/MAG or SAW filler and cap all at the same welding station. Optional Hot Wire TIG is also available.

Our patented Open Head Stock technology is available in manual or automatic clamping. The Open Headstock design allows for welding and easy removal of pipe with fittings on both ends.

Adjustable rollers allow for easy centering of all pipe sizes within the range of the open head stock (see page 4 for ranges of different models). The rail system the rollers are mounted on assures consistent centering of pipe and can easily be moved up and down the rail to accommodate different pipe lengths.



OPEN HEADSTOCKS

ADVANTAGES / TECHNICAL

- Easy loading and unloading of material due to open design
- No axial jumping during rotation
- No radial jumping during rotation
- Three jaw clamping, automatic centering motor drives
- AC Servo Motor with speed adjustment
- Gear and Sprocket drive for high transmission and large loading



OHS SERIES				
Model Number	OHS-370	OHS-500	OHS-630	OHS-760
Rotation Speed (Servo Control) r/min	4.3	3.5	2	2.26
Maximum Torque	2900	7000	20000	20000
Welding Diameter (in / mm)	4.5 - 14.5" (114 - 370 mm)	8.6 - 20" (219 - 500 mm)	2.3 - 25" (60 - 630 mm)	8.6 - 30" (219 - 760 mm)
Payload (lbs./kg)	2900 lbs. (1300 kg)	6,600 lbs. (3000 kg)	11,000 lbs. (5000 kg)	11,000 lbs. (5000 kg)
Motor Power (kw)	1.3	3	4.4	4.4
Center Rotation Height (in / mm)	30" (780 mm)	37" (950 mm)	46.8" (1190 mm)	50" (1280 mm)
Clamp Method	Motor-Drive	Motor-Drive	Servo Motor-Drive	Manual
Dimensions (in)	30.5" x 19.68" x 44.7"	39" x 25" x 56"	69" x 47.25" x 74.5"	82.6" x 43" x 84.25"
Dimensions (mm)	7740 x 500 x 1135	1000 x 630 x 1420	1750 x 1200 x 1915	2100 x 1090 x 2140

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WE CAN CUSTOMIZE PER YOUR SPECS!

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PRODUCTION LINE EXAMPLES



Example of 2" - 14" Pipe Production Line



Example of 8" - 24" Pipe Production Line



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