



**ORBITAL**  
Welding System

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# iOrbital 1200

Programmable Orbital Welding Power Source



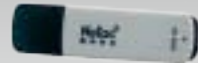
## Summary

iOrbital 1200 welding power source is designed and manufactured according to advanced technology. It consists of a controlling system, power source system, and water chiller. This power source was developed and manufactured based on our 20 years of experience, which is advanced, digital, easy to operate, intelligent, flexible, and stable. The PLC controlling system combined with touch screen HMI achieves centralized setting and storage of parameters and DSP synchronized controlling. It is specially designed for tube, thin wall thickness pipe, fittings, and elbow. It is widely used in semiconductor, chemical, food, pharmaceutical, and instrumentation tubing industries. Compatible with all TC series fusion heads.

## Technical Specification

Type	Inverter
Voltage	220V
Current	5~120A
Duty Cycle	100A 100% / 120A 60%
Open circuit voltage	42V
Input voltage	220V(-10%~+10%) 50/60Hz
Maximum power	3KW
Distribution box	5KVA
Insulation/Protection Class	F/IP21S
Cooling method/Torch cooling	Air cooling/Air cooling
Screen	7"
Control function	Gas control/current control/rotary motion
Program Storage	200
Number of Level	20
Print	With print
Dimension(mm)	586×312×370
Weight(kg)	24.5Kg
Manufacture Standard	GB15579.1-2004, IEC60974/IEC

## Accessories



Printing software



Printer



Off-line programming software



Autocar



Controller



Water tank

# iOrbital 2000

Programmable Orbital Welding Power Source



## Summary

iOrbital2000 welding power source is designed and manufactured according to advanced technology. It consists of a controlling system, power source system, and water chiller. This power source was developed and manufactured based on our 20 years of experience, which is advanced, digital, easy to operate, intelligent, flexible, and stable. The PLC controlling system combined with touch screen HMI achieves centralized setting and storage of parameters and DSP synchronized controlling. It is widely used in chemical, food, electronic tubing, and heat exchanger in power plants etc. Compatible with all TC, TOK, TP040 series welding heads.

## Features

- PC controlling, industrial touch screen with graphic interface, easy to operate.
- Powerful program and library function, can store 200 sets of welding programs, each program can be divided into 20 sections, parameters can be changed according to process requirements.
- Automatically calculate the weld numbers, convenient for management.
- Import/export welding programs by USB driver, easy to switch between different programs.
- Perfect troubleshooting and error code display, reasonable modular design, easy to maintain.
- With both English and Chinese operation interfaces.
- Achieve editing of welding/printing configuration.

## Technical Specification

Type	Inverter
Current	5~200A
Duty cycle(20°C)	200A 60% / 160A 100%
Open Circuit Voltage	42V
Input Voltage	220V ±10% 50/60Hz
Power	6KVA
Cooling	External water circuit
Display	Industrial PC
Control Function	Gas control/Current control Rotation control/Wire feeding control
Program Storage	200
Number of Level	20
Screen	7"
Print	With printer
Insulation/Protection Class	F/IP21S
Weight	25.5Kg
Dimension(mm)	645×312×370
Manufacture Standard	GB15579.1-2004, IEC60974/IEC

## Water Tank

Type	RC-6
Input Voltage	220V ±10% 50/60Hz
Power	800w
Max Water Flow	8L/min
Pump Head	40m
Water Tank Capacity	5.5L
Insulation/Protection Class	F/IP21
Weight(no coolant)	16.5Kg
dimension(mm)	641×309×196
Manufacture	GB15579.1-2004, IEC60974.1



# iOrbital 3600

Programmable Orbital Welding Power Source



## Technical Specification

Type	Inverter
Current	5-360A
Duty cycle	360A 60% 295A 100%
Open Circuit Voltage	72V
Input Voltage	380V ±15% 50/60 Hz
water-cooled	Built-in water tank
Power	10KVA
Display	7"
Control Function	Gas control, Current control, Rotation control, Wire feeding
Display	Chinese/English
Program Storage	200
Numbers of Level	20
Insulation/Protection Class	H/IP23
Print	Option: printer
Dimension(mm)	1100 x 454 x 951
Manufacture Standard	GB15579.1-1995, IEC60974

## Summary

This welding power source is designed and manufactured according to advanced technology. It consists of controlling system, power source system and water chiller. This power source was developed and manufactured based on our 20 years experience, which is advanced, digital, easy to operate, intelligent, flexible and stable. It is specially designed for tube/tube-sheet welding. It is compatible with T66 tube/tube-sheet weld heads to apply in welding and repairing in petrol-chemical industry.

## Features

- Use popular PLC and digital modular to high definition monitor at the output and input signals.
- Touch screen operation with Chinese and English interface.
- Import/export welding program by USB driver, easy to switch between different programs.
- Built in expert welding programs, generate welding program according to the workpiece.
- Powerful water circulation pump and big water tank to ensure continuous working
- Perfect trouble shooting and error code display, reasonable modular design, easy to maintenance.

# iOrbital 5000

Programmable Orbital Welding Power Source



## Technical Specification

Type	Inverter
Mains power supply voltage	3 x 415V
Welding current	5A-500A
Duty cycle(40°C)	387A 100% 500A 60%
Work Period	10min
Open circuit voltage	80V
Mains power supply(wave)	3 x 380V(-15%~+ 15%)
Frequency	60HZ
Max. power	34KW
Cos /Efficiency	0.98/78%
Insulation/Protection	F/IP23
Working temperature	-40°C~+40°C
Transporting and storing temperature	-25°C~+55°C
Welding head cooling	Air or Water
Screen	10.4" industrial touch screen
Control function	Gas control/Current control/Rotation control/wire feeding control/OSC/AVC
Program storage	999
Section	20
Printing	Integrated printer
Water pump	30m/0.3MPa
Coolant capacity	15L
Dimension L/W/H[mm]	1081 x 455 x 990
Weight(without coolant) [kg]	110kg
Standard	GB15579.1-2013, IEC60974/IEC

## Summary

iOrbital 5000 distributed orbital welding power source is an automatic is programmable power source designed. adopting the world's most advanced technology. This power source is using popular inverter and computer science technology and the big colorful touch screen as HMI, which is the pioneer in this industry. It has accurate controlling of welding current, rotation, wire feeding, OSC, AVC, shielding gas and compress gas. It could be used with all TC products, TOA products, TP060/TP040 and GT60 welding head that manufactured. It usually applies in the tube/tube, tube to tube-sheet welding of chemical industry, food industry, medical industry, electric pipeline, all sorts of heat exchangers, engineering machinery, boiler, locomotive, military industry and nuclear power industry etc.



## Features

- Controlling interface including: WORK, PROGRAM, CONFIGURATION, FILE, LIBRARY, HELP
- Auto-generate the welding parameter for tube/tube-sheet, and thin wall tube/tube welding
- Intelligent AVC function and carry out mechanism
- Real time detect and feedback of error like arcing fail, short circuit, over heat, over voltage, lack of gas lack of water, lower voltage, arc extinguish, communication error etc.
- Import/export welding program by USB driver, easy to switch between different programs.
- Memory of the program editing while welding, and display the difference to original program
- Parameter like weaving speed/center/width, current, rotation speed can be adjusted while welding to achieve special requirement of some welding seam
- Online and USB driver upgrade function and offline program function

# iOrbital 401

Programmable Orbital Welding Power Source



## Summary

iOrbital401 distributed digital welding power source is designed and manufactured according to advanced technology. It is advanced, digital, easy to operate, intelligent, flexible and stable. Its control system is PC controller, which is one open and updatable embedded 32bit Windows CE operating system, support for centralized setting, storing and controlling of all the function parameters. It is commonly used for thermal power, valve, coal mine machinery, nuclear plant, boiler industries etc

## Technical Specification

Name	iOrbital 401
Type	Inverter
Current	5~400A
Duty Cycle(20°C)	400A 60% 310A 100%
Open Circuit Voltage	72V
Input Voltage	3×380V ±10% 50/60Hz
Power	13.5KVA
Cooling	Air cooling
Screen	6.5"/EnglishScreen
Programming	Panel programming
Display	Chinese/English
Program Storage	100
Expert parameter	Pre-storage
Numbers of Level	20
Torch cooling	External water circuit
Water tank type	CW-04
Weight(kg)	260
Manufacture Standard	GB15579-2004
Insulation/protection Class	H/IP23
Dimension(mm)	710×500×1500

## Features

- Windows CE embedded version operation system with updatable, simple interface for easy operation.
- External USB support for import and export data.
- Real-time welding parameter record during welding process.
- Control pendant display for real-time data monitoring.
- Adjustable parameter during welding process for some special welding requirements
- Time & degree exchanging for welding travel and some relevant parameters
- Built-in various welding head parameter for accurate motion control
- Perfect fault detection solution, error display, modular design for easy maintenance
- Chinese & English operation screen
- Real-time monitoring and sampling printing
- Multi-pulse & multi-high frequency
- option to choose offline programming or offline printing

## Technical Specification

Type	Inverter
Current	5~600A
Duty Cycle (20°C)	600A 60% 500A 100%
Hot filament current	5~200A
Duty Cycle (20°C)	200A 60% 120A 100%
Open Circuit Voltage	79V
Input Voltage	3×380V ±10% 50/60Hz
Power	35KVA
Cooling	Air cooling
Screen	6.5"/EnglishScreen
Programming	Panel programming
Display	Wire controller/Panel/Chinese English
Program Storage	100
Expert parameter	Pre-storage
Numbers of Level	20
Torch cooling	External water circuit
Water tank type	RC4
Weight (kg)	290
Manufacture Standard	GB15579-2004
Insulation/protection Class	H/IP23
Dimension (mm)	810×600×1700

## Summary

iOrbital 600 Hot Wire Programmable Orbital Welding DC inverter power source is designed and manufactured according to advanced technology. It's main consists of main power source, wire heat power source main controlling system, monitoring system, water cooling system etc. It is advanced, digital, easy to operate, intelligent, flexible and stable. Its control system is PC controller, which is one open and updatable embedded 32bit Windows CE operating system, support for concentrated setting, storing and controlling of all the function parameters. It is commonly used for thermal power, valve, coalmine machinery, nuclear plant, boiler etc.

## Features

- Windows CE embedded version operation system with updatable, simple interface for easy operation.
- Intelligent PC control system and world famous DSP & signal chips, monitoring kinds of output & sampling signals.
- Gradual and pulsating for current, rotation and wire feeding
- Control pendant display for real-time data
- External USD support for import and export data
- Time & degree exchanging for welding travel and some relevant parameters
- Accurately set distance between tungsten and work-piece, tungsten would upraise certain distance while touching work-piece.
- Perfect fault detection solution, error display, modular design for easy maintenance
- Chinese & English operation screen
- Real-time monitoring and sampling printing
- Multi-pulse & multi-high frequency
- Option to choose offline programming or offline printing
- Hot wire power source, setting hot wire current independently, increase welding efficiency

# iOrbital 600

Hot Wire Programmable Welding Power Source

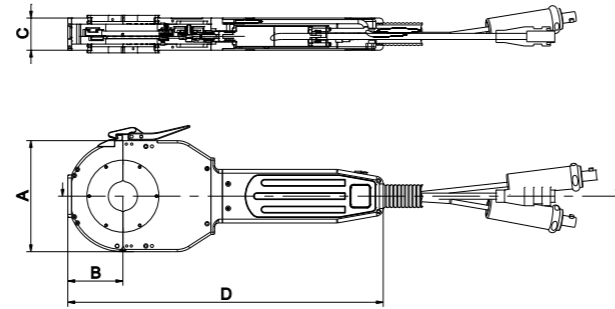






# Closed

## Tube to Tube Orbital Welding Head



### Summary

This welding head is specially designed orbital TIG welding head without wire feeding for kinds of pipe fitting. The sealed cavity is filled with protective gas before welding to ensure the quality of welds. This is one high efficiency and high quality welding head with water cooling for welding head & collect and special made collects according to customers requirements which could ensure accurate positioning without pre-tack. They are compatible with iOrbital200, iOrbital2000, iOrbital3600, iOrbital5000 programmable Orbital Welding Power Source, and mainly apply in Electronic, instrument, pharmaceutical, engineering installation, military, nuclear and so on.

### Features

- Aluminum body, light structure
- Close design, better protection
- Pattern design of the self-align collet, accurate positioning
- Suitable for thinner wall mild steel, stainless steel, Titanium tube welding
- Fusion welding without wire feeding
- Control button on the weld head, capable for onsite installation



### Technical Specification

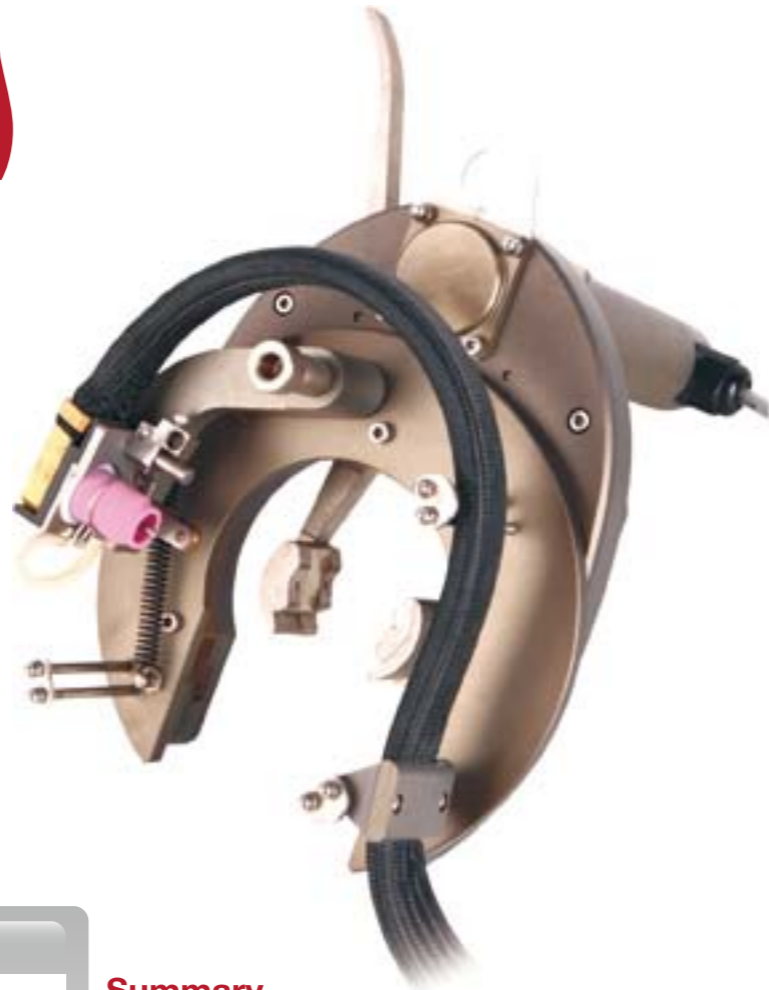
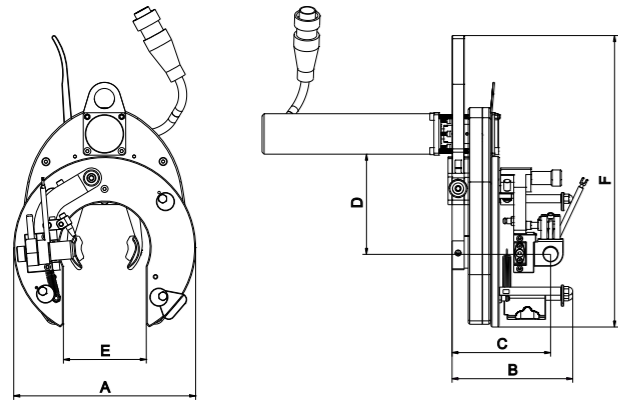
	TC12	TC26	TC36	TC76
Weldable material	Stainless steel/titanium	Carbon steel/Stainless steel/titanium	Carbon steel/Stainless steel/titanium	Carbon steel/Stainless steel/titanium
Tube OD (mm)	Φ3~Φ12.7 (1/8"~1.2")	Φ6~Φ26 (1/4"~1")	Φ6~Φ32 (1/4"~1.5")	Φ19.05~Φ76 (3/4"~3")
Tungsten Diameter (mm)	Φ1.0	Φ1.0, Φ1.6	Φ1.6, Φ2.4	Φ1.6, Φ2.4
Spinning speed (rpm)	2.3~46.1	0.6~12	0.3~6	0.2~4
Protective gas	Argon	Argon	Argon	Argon
Cooling method	Air cooling	water-cooled	water-cooled	water-cooled
Cooling flow (ml/min)		≥300	≥300	≥300
Rated Current	45A Duty Cycle 60%	60A Duty Cycle 60%	65A Duty Cycle 60%	75A Duty Cycle 60%
A	65	80	98	145
B	35	40	47	72
C	12.5	40	41	43
D	280	340	360	412
Weight (kg)	0.85 (no cable)	2.0 (no cable)	2.0 (no cable)	3.0 (no cable)
Dimension (mm)	280×85×45	340×80×40	360×120×41	412×165×43

### Technical Specification

	TC116	TC156	H-3000	H-6000
Weldable material	Carbon steel/Stainless steel/titanium	Carbon steel/Stainless steel/titanium	Carbon steel/Stainless steel/titanium	Carbon steel/Stainless steel/titanium
Tube OD (mm)	Φ38.1~Φ104.3 (1 1/2"~4.5")	Φ50.8~Φ152.4 (2"~6")	Φ6~Φ32 (1/4"~1 1/4")	Φ12.7~Φ63.5 (1/2"~2 1/2")
Tungsten Diameter (mm)	Φ2.4, Φ3.2	Φ2.4, Φ3.2	Φ1.6, Φ2.4	Φ1.6, Φ2.4
Spinning speed (rpm)	0.095~1.9	0.06~1.2	0.3~6	0.2~4
Protective gas	Argon	Argon	Argon	Argon
Cooling method	water-cooled	water-cooled	Air cooling	Air cooling
Cooling flow (ml/min)	≥300	≥300		
Rated Current	100A Duty Cycle 60%	100A Duty Cycle 60%	50A Duty Cycle 60%	60A Duty Cycle 60%
A	195	295	98	145
B	97	150	48	72
C	57	61	42	42
D	497	630	346	412
Weight (kg)	6 (no cable)	10.5 (no cable)	2 (no cable)	3 (no cable)
Dimension (mm)	497×230×57	630×330×61	346×120×42	412×165×42

# TOK series

Tube to Tube Orbital Welding Head



## Technical Specification

	TOK43	TOK77
Weldable material	Carbon steel/Stainless steel	Carbon steel/Stainless steel
Internal clamp	Φ15~Φ25(5/8~1")	Internal clamp:Φ19.05~Φ45(3/4~1 3/4")
Diameter (mm)	Outside the clamp:Φ25~Φ43(1~1 5/8")	Outside the clamp:Φ45~Φ77(1 3/4~3")
Tungsten Diameter(mm)	Φ2.4	Φ2.4
Spinning speed(rpm)	0.37~7.45	0.19~3.8
Protective gas	Argon	Argon
Cooling method	water-cooled	water-cooled
Cooling flow(ml/min)	≥300	≥300
Dimension (mm)		
A	128	180
B	115	120
C	85~92	95~101
D	165	92
E	44	82
F	230	290
Weight (kg)	2.5 (Cable not included)	4.0 (Cable not included)
Dimension (mm)	305×128×230	310×180×290

## Summary

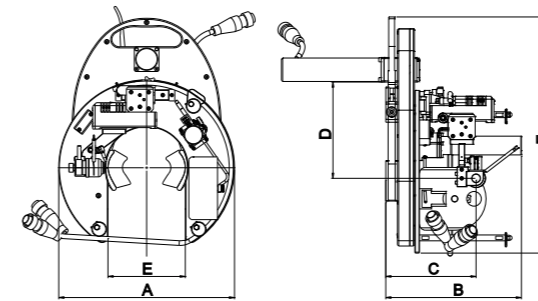
This welding head is special designed for tube to tube TIG welding, suitable for carbon steel, stainless steel tube to tube butt joint, capable for wire feeding or self-fusion welding. This weld head is compatible with Hu aheng iOrbital2000, iOrbital3600, iOrbital5000 programmable to achieve accurate orbital TIG welding for tube/tube welding with high repeatability. It mainly applied in chemical, food, medicine, engineering installation, boiler, military, nuclear and soon.

## Features

- Light Aluminum body structure, adjustable clamp suit for different diameter tubes
- No clearance gear transmission, smooth rotation with less inertness or block
- Mechanism copy device keep the distance from tungsten to work piece
- Water circuit cooling, achieving long time working
- Suit for wire feeding or fusion welding
- Widely used for tube/tube, tube/elbow, tube/flange, tube/valve onsite installation

## Summary

This welding head is special designed for tube to tube TIG welding, suitable for carbon steel, stainless steel tube to tube butt joint. It's fit for fusion welding or wire feeding with external TB150 integrated wire feeder with AVC & OSC function. It is compatible with iOrbital5000 programmable to achieve accurate orbital TIG welding for tube/tube welding with high repeatability. It mainly applied in chemical, food, medicine, engineering installation, boiler, military, nuclear and so on.



# TOA series

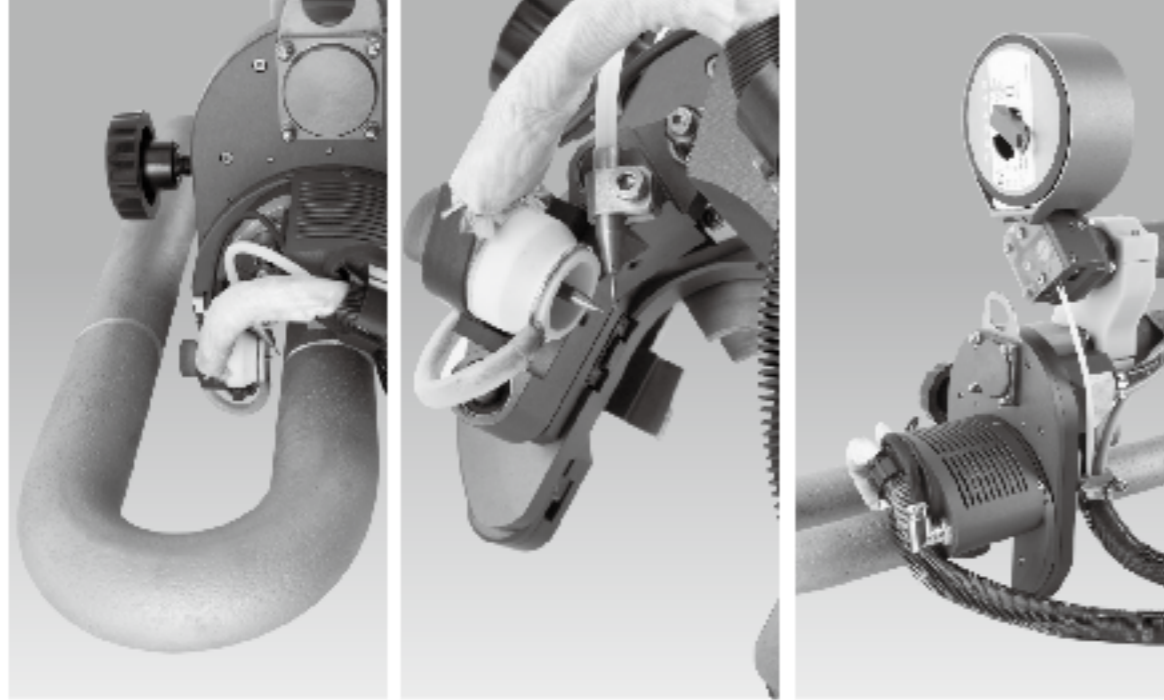
Tube to Tube Orbital Welding Head



## Technical Specification

	TOA77	TOA130	TOA180	TOA230	TOA320
Weldable material	Carbon steel/Stainless steel	Carbon steel/Stainless steel	Carbon steel/Stainless steel	Carbon steel/Stainless steel	Carbon steel/Stainless steel
Internal clamp	Φ19.05~Φ45(3/4~1 3/4")	Internal clamp: Φ38.1~Φ76 (1 1/2~3")	Internal clamp: Φ50.8~Φ114.3 (2~4 1/2")	Internal clamp : Φ120~Φ178 (4 1/2~7")	Internal clamp : Φ150~Φ230 (6~9")
Diameter (mm)	Outside the clamp: Φ45~Φ77 (1 3/4~3")	Outside the clamp: Φ76~Φ130 (3~5")	Outside the clamp: Φ114.3~Φ180 (4 1/2~7")	Outside the clamp : Φ178~Φ230 (7~9")	Outside the clamp : Φ230~Φ324 (9~12 3/4")
Tungsten Diameter (mm)	Φ2.4, Φ3.2	Φ2.4, Φ3.2	Φ2.4, Φ3.2	Φ2.4, Φ3.2	Φ2.4, Φ3.2
Spinning speed (rpm)	0.19~3.8	0.11~2.2	0.09~1.8	0.05~1.0	0.026~0.52
Protective gas	Argon	Argon	Argon	Argon	Argon
Cooling method	water-cooled	water-cooled	water-cooled	water-cooled	water-cooled
Cooling flow (ml/min)	≥300	≥300	≥300	≥300	≥300
Width (mm)	20	40	40	40	40
Arc length height (mm)	40	40	40	40	40
Wire diameter (mm)	Φ1.0 (Standard)	Φ1.0 (Standard)	Φ1.0 (Standard)	Φ1.0 (Standard)	Φ1.0 (Standard)
Maximum wire feed speed	1800	1800	1800	1800	1800
A	220	300	375	425	550
B	180	235	285	300	315
C	112~132	156~196	184~224	195~235	230~270
D	92	165	225	250	297
E	82	132	182	232	328
F	320	400	525	570	680
Weight (kg)	5.5 (Cable not included)	10.8 (Cable not included)	19.5 (Cable not included)	21.5 (Cable not included)	36 (Cable not included)
Dimension (mm)	370×220×320	435×300×400	445×375×525	465×425×570	430×610×680





## Summary

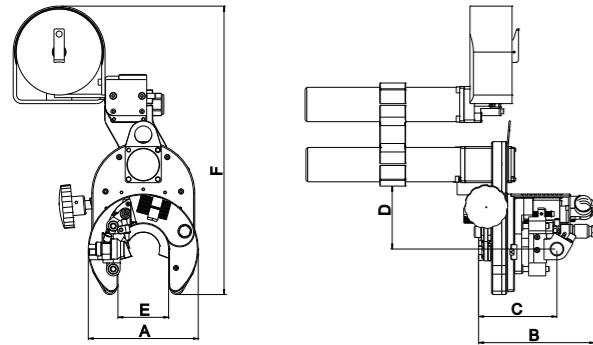
This welding head is special designed fo tube to tube TIG welding, suitable for carbon steel, stainless steel tube, tube(OD32~51mm) butt joint, mainly for wire feeding or self-fusion with AVC & OSC function. It is compatible with iOrbital 5000 programmable orbital welding power source to achieve accurate orbital TIG welding for tube/tube welding with high repeatability. It's mainly used for chemical, food, engineering installation, boiler, military, nuclear industry and so on.

## Features

- Main consists of rotation system, clamping device, transmission system
- Light Aluminum body structure, adjustable clamp suit for differnt diameter tubes
- No clearance gear transmission, smooth rotation with less inerthess or block
- Motorized AVC & OSC funtion suit for multi-pass welding
- Suitable for middle and thick wall thickness carbon steel, stainless steel tube orbital welding
- Water circuit cooling, achieving long time working
- Suit for wire feeding or fusion welding
- Widely used for tube/tube, tube/elbow, tube/flange, tube/valve onsite installation

# TOA50

Narrow Spacing Tube to Tube Orbital Welding Head



### Technical Specification

Pipe diameter (mm)	Φ32~Φ51
Tungsten Diameter (mm)	Φ3.2
Wire diameter (mm)	Φ1.0
Speed (rpm)	0.25~5.02
Cooling method	water-cooled
Dimension (mm)	
A	128
B	155
C	85~97
D	78
E	59
F	360
Weight (kg)	5

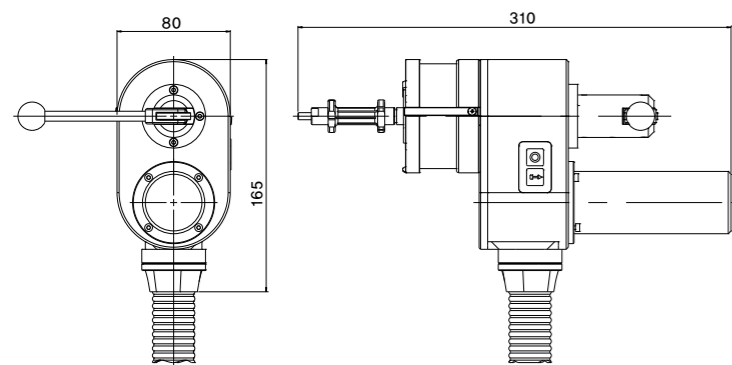






# TP040

## Tube to Tube Sheet Welding Head

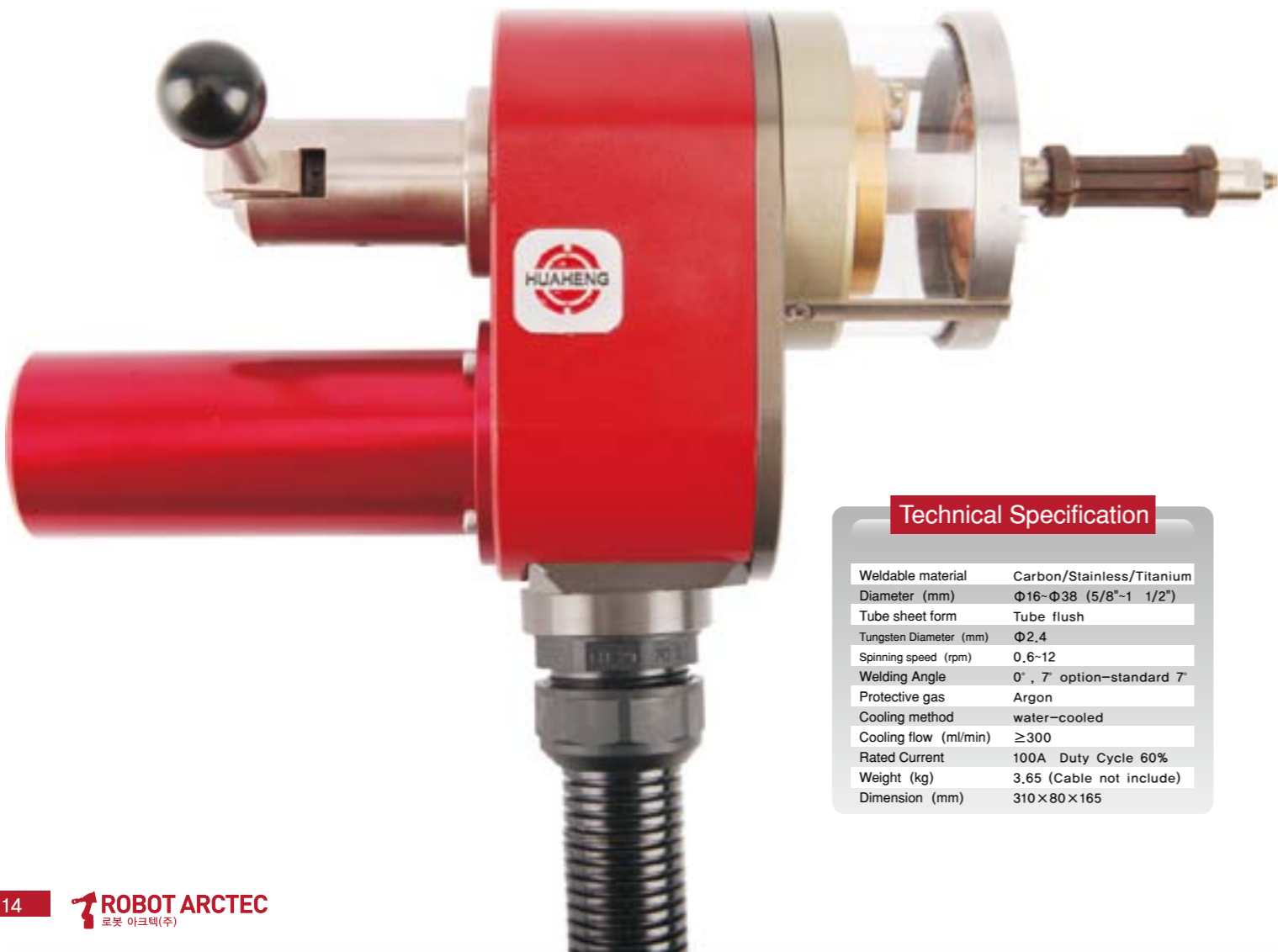


### Summary

This weld head is special designed automatic TIG orbital welding for tube/tube sheet. It's suit for CS, SS tube/tube sheet flush welding without wire feeding to achieve ideal repeatable welding quality. It's compatible with iOrbital2000, iOrbital3600, iOrbital5000 programmable digital welding power source and apply in chemical, food, medicine, heat exchanger, power plant, military, nuclear etc.

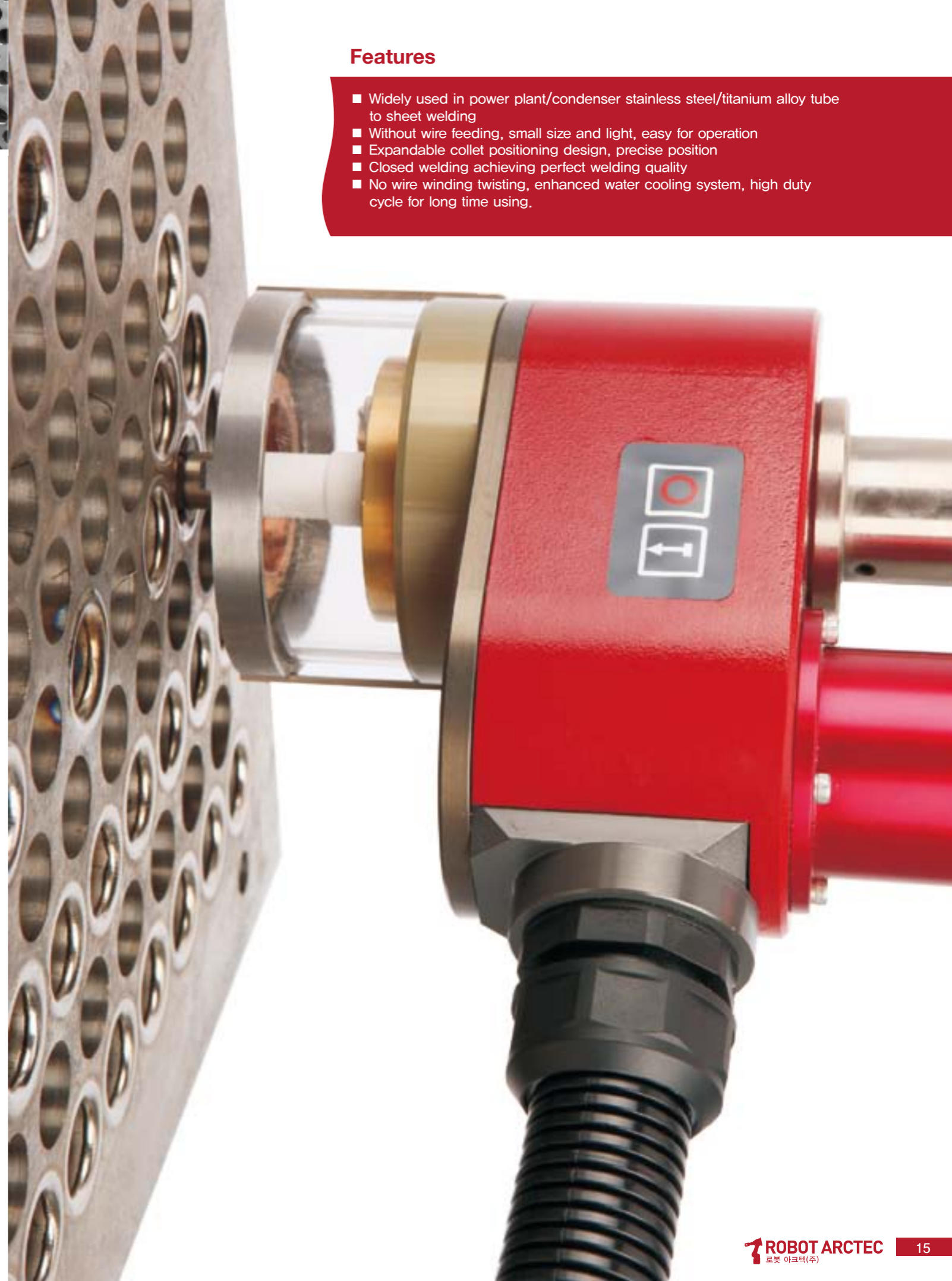
### Features

- Widely used in power plant/condenser stainless steel/titanium alloy tube to sheet welding
- Without wire feeding, small size and light, easy for operation
- Expandable collet positioning design, precise position
- Closed welding achieving perfect welding quality
- No wire winding twisting, enhanced water cooling system, high duty cycle for long time using.



### Technical Specification

Weldable material	Carbon/Stainless/Titanium
Diameter (mm)	Φ16-Φ38 (5/8"-1 1/2")
Tube sheet form	Tube flush
Tungsten Diameter (mm)	Φ2.4
Spinning speed (rpm)	0.6-12
Welding Angle	0°, 7° option-standard 7°
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	≥300
Rated Current	100A Duty Cycle 60%
Weight (kg)	3.65 (Cable not include)
Dimension (mm)	310×80×165



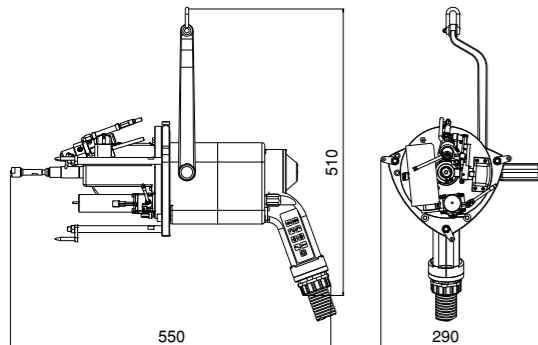


# TP060

Tube to Tube Sheet Welding Head

## Summary

This welding head is one special designed TIG welding head for tube to tube-sheet which is used for carbon steel stainless steel tube to tube-sheet connection, mainly for protrusion tube and flush tube without wire feeding or with wire feeding. The standard small torch with additional gas cover to weld Titanium alloy or other material which need higher protection. For OD32mm and below tube, use localizer to positioning and expansion collet with spring balancer for positioning. It's compatible with iOrbital3600, iOrbital5000 programmable digital welding power source to apply in chemical, food, medicine, heat exchanger, power plant, military and nuclear industries etc.



## Technical Specification

Weldable material	Carbon steel/Stainless steel/titanium
Diameter (mm)	Φ16-Φ60 (5/8"-2 1/2") (Optional extended toΦ89)
Tube sheet form	Protrusion Tube,Tube flush
Tungsten Diameter (mm)	Φ2.4, Φ3.2
Wire diameter (mm)	Φ0.8, Φ1.0
Spinning speed (rpm)	0.37-7.39
Torch inclination	0° ~ 30°
Arc length adjustment pitch(mm)	18
Maximum wire feed speed(mm/min)	1800
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	≥600
Rated Current	300A Duty Cycle 60%
Weight (kg)	12 (Cable not include)
Dimension (mm)	550×290×510

## Features

- Pneumatic clamping to fix the weld on the work piece, no need human interference and lower down the operation skill of the welder
- Automatic AVC function, optional manual AVC
- Standard water cooling TIG torch, easy to change and adjust the tungsten electrode
- Wire feeding without twisting, integrated wire feeder with 1.0kg wire
- Water, gas and electricity without twisting while rotation
- Operation button on the weld head, convenient to operate

## Aux equipment



# T66

Tube to Tube Sheet Orbital Welding Head



## Summary

This welding head is one special designed TIG welding head for tube to tube-sheet which is used for carbon steel stainless steel tube to tube-sheet connection, mainly for protrusion tube and flush tube without wire feeding or with wire feeding. It can achieve ideal welding quality with high repeatability. Also can weld Titanium alloy or other material which need higher protection with additional gas cover. It is compatible with iOrbital3600 programmable digital welding power source to apply for welding or repair of all kinds of tube/tube sheet on heat exchangers.

## Technical Specification

Weldable material	Carbon steel/Stainless steel/titanium
Diameter (mm)	Φ16-Φ32
Tube sheet form	Protrusion tube,Tube flush
Spinning speed (rpm)	0.65-13
Torch inclination	0° ~ 30°
Arc length adjustment pitch(mm)	18
Maximum wire feed speed(mm/min)	1800
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	≥300
Rated Current	300A Duty Cycle 60%
Weight (kg)	9 (Cable not include)
Dimension (mm)	610×206×165

## Aux equipment



## Features

- Rapidly position fixing by three dimensional manipulator and localizer, really lower down the operation skill of the welder
- Duplex water cooling system design to ensure long time welding
- Standard water cooling TIG torch, easy to change and adjust the tungsten electrode
- Wire feeding without twisting, integrated wire feeder with 1.0kg wire
- Water, gas and electricity without twisting while rotation
- Easy operation and maintenance

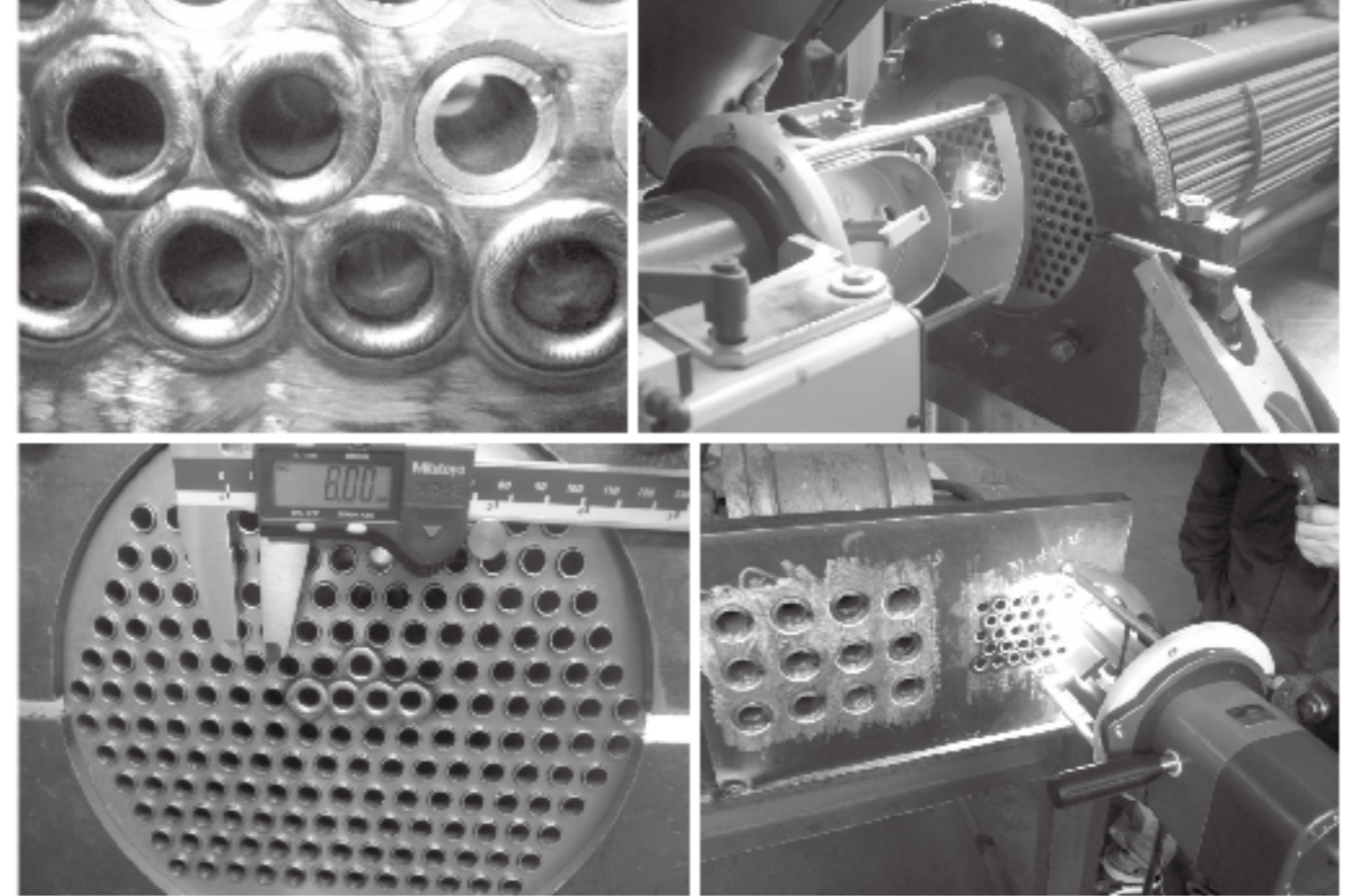


# T8

## Tube to Tube Sheet Welding Head

### Summary

This welding head is one special designed TIG welding head for small diameter tube to tube-sheet, which is used for carbon steel stainless steel tube to tube-sheet connection, mainly for protrusion tube, flush tube, tube retraction welding without wire feeding or with wire feeding. The standard small torch with additional gas cover to weld Titanium alloy or other material which need higher protection. It's compatible with iOrbital5000 programmable digital welding power source to apply in chemical, food, medicine, heat exchange, power plant, military and nuclear industries etc.



### Technical Specification

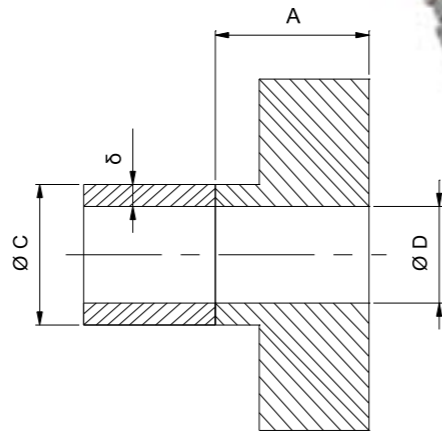
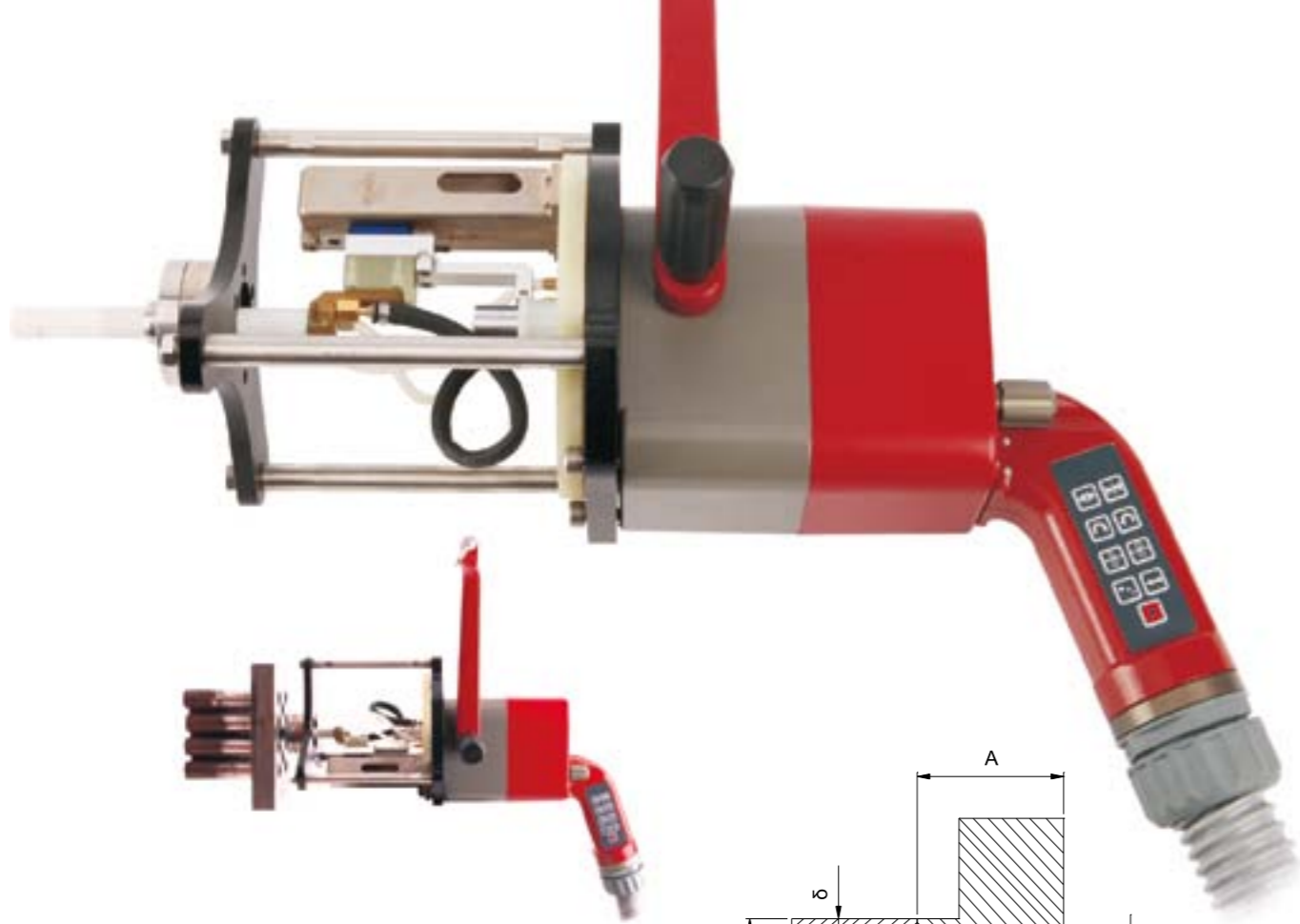
Weldable material	Carbon steel/Stainless steel/titanium
Diameter (mm)	Φ8-Φ32 (3/8" ~ 1 1/4" )
Tube sheet form	Tube shrinkage/Protrusion tube/Tube flush
Tungsten Diameter (mm)	Φ2.4
Spinning speed (rpm)	0,37-7,39
Arc length adjustment pitch (mm)	18
Maximum wire feed speed (mm/min)	1800
Wire diameter (mm)	Φ0.8
Torch inclination	-10° ~ 30°
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	≥300
Rated Current	300A Duty Cycle 60%
Weight (kg)	11 (Cable not include)
Dimension (mm)	477×363×365



### Features

- High-precision localizer, fast and accurate, suitable for small heat exchanger
- Automatic AVC function, optional manual AVC
- Standard water cooling TIG torch, easy to change and adjust the tungsten electrode
- Wire feeding without twisting, integrated wire feeder with 1.0kg wire
- Water, gas and electricity without twisting while rotation
- Operation button on the weld head, convenient to operate





# TPN19

## Inner Bore Orbital Welding Head

### Summary

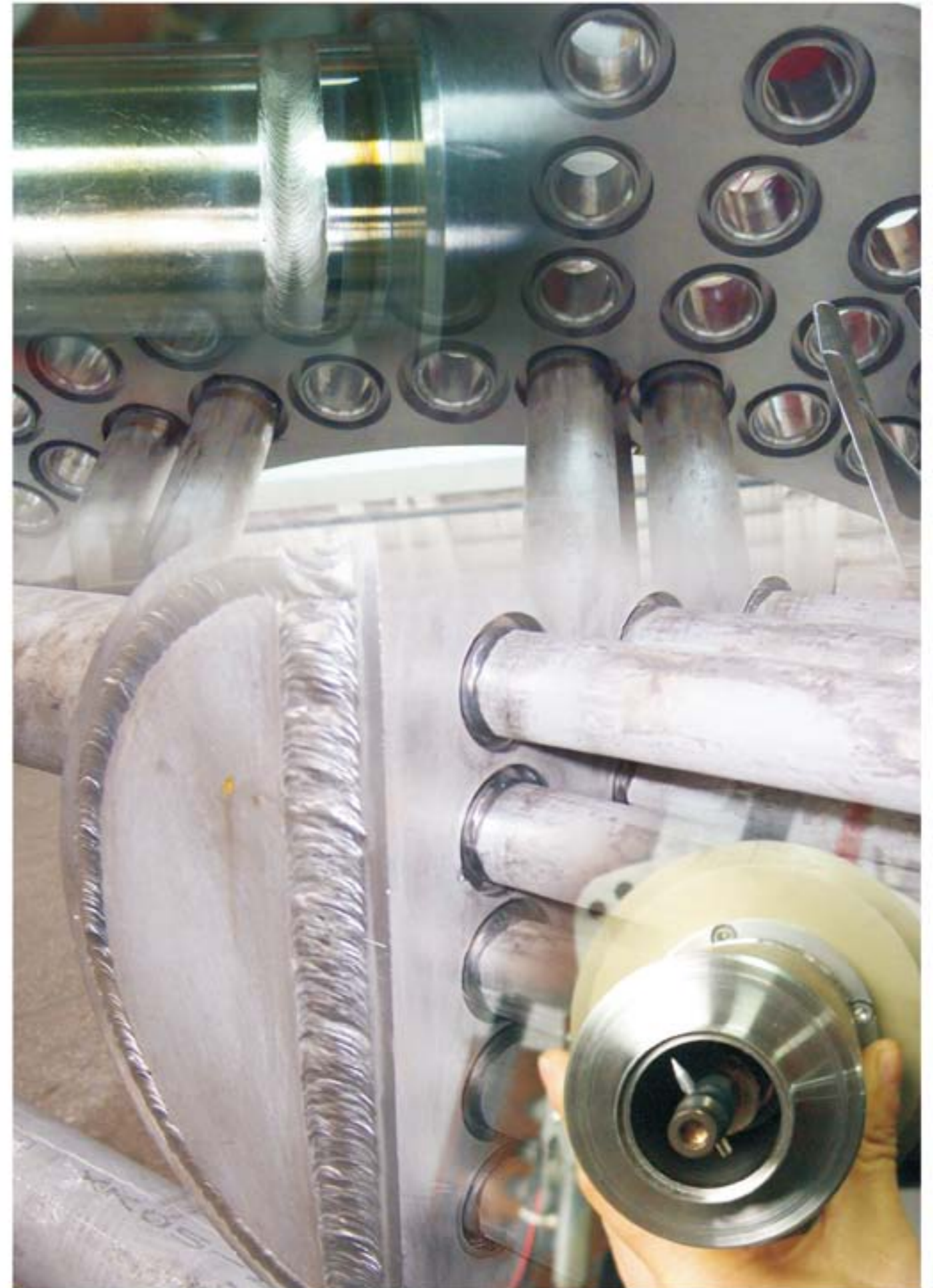
This weld head is special designed for tube/tube sheet inner bore TIG welding. It can weld tube ID  $\geq 19$ mm carbon steel and stainless steel without wire feeding. It's compatible with iOrbital5000 programmable digital welding power source to apply in chemical, food, medicine, heat exchanger, power plant, military and nuclear industries etc. to achieve precision TIG inner bore welding with high quality and repeatability.

### Technical Specification

Weldable material	Carbon steel,Stainless steel
Diameter D (mm)	$\geq \phi 19$
Length (mm)	20-120
Wall thickness of pipe (mm)	1-2.5
Tube sheet form	Tube insertion/Tube flush
Tungsten Diameter (mm)	$\phi 2.4$
Spinning speed (rpm)	0.37-7.39
Arc length adjustment pitch (mm)	15
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	$\geq 300$
Weight (kg)	11 (Cable not include)
Dimension (mm)	570×290×510

### Features

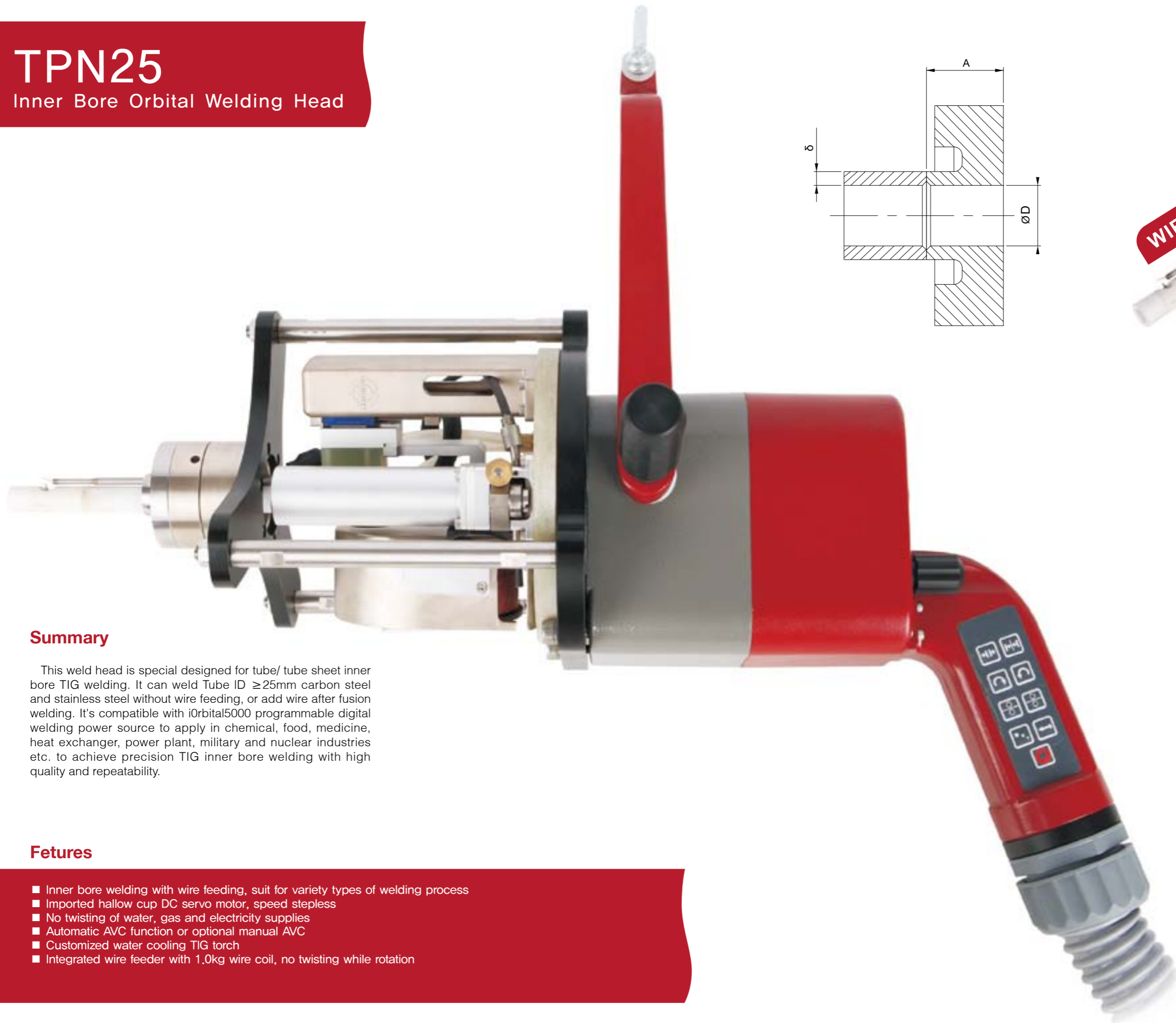
- Suitable for the heat exchanger inner tube to tube-sheet welding in petrochemical industry
- Minimum inner diameter of  $\phi 19$ mm
- Precise positioning, easy for operation
- Suitable for carbon steel and stainless steel
- Customization according to specific requirements





# TPN25

## Inner Bore Orbital Welding Head

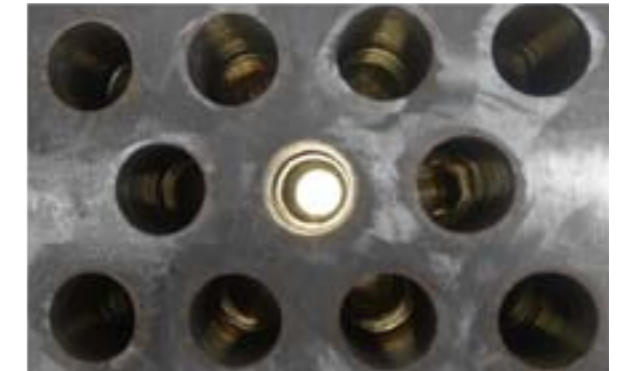
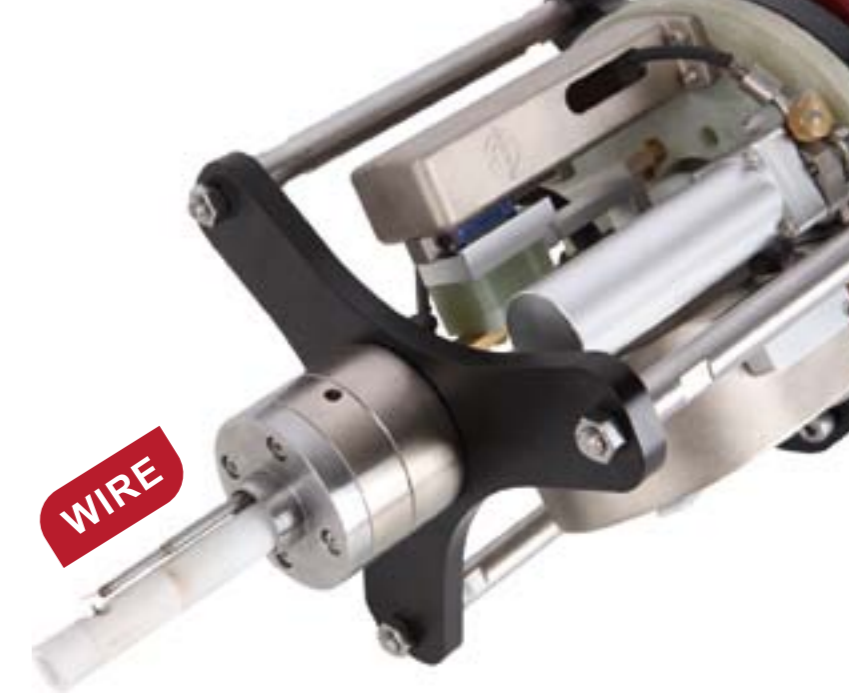


### Summary

This weld head is special designed for tube/ tube sheet inner bore TIG welding. It can weld Tube ID  $\geq 25$ mm carbon steel and stainless steel without wire feeding, or add wire after fusion welding. It's compatible with iOrbital5000 programmable digital welding power source to apply in chemical, food, medicine, heat exchanger, power plant, military and nuclear industries etc. to achieve precision TIG inner bore welding with high quality and repeatability.

### Features

- Inner bore welding with wire feeding, suit for variety types of welding process
- Imported hollow cup DC servo motor, speed stepless
- No twisting of water, gas and electricity supplies
- Automatic AVC function or optional manual AVC
- Customized water cooling TIG torch
- Integrated wire feeder with 1.0kg wire coil, no twisting while rotation

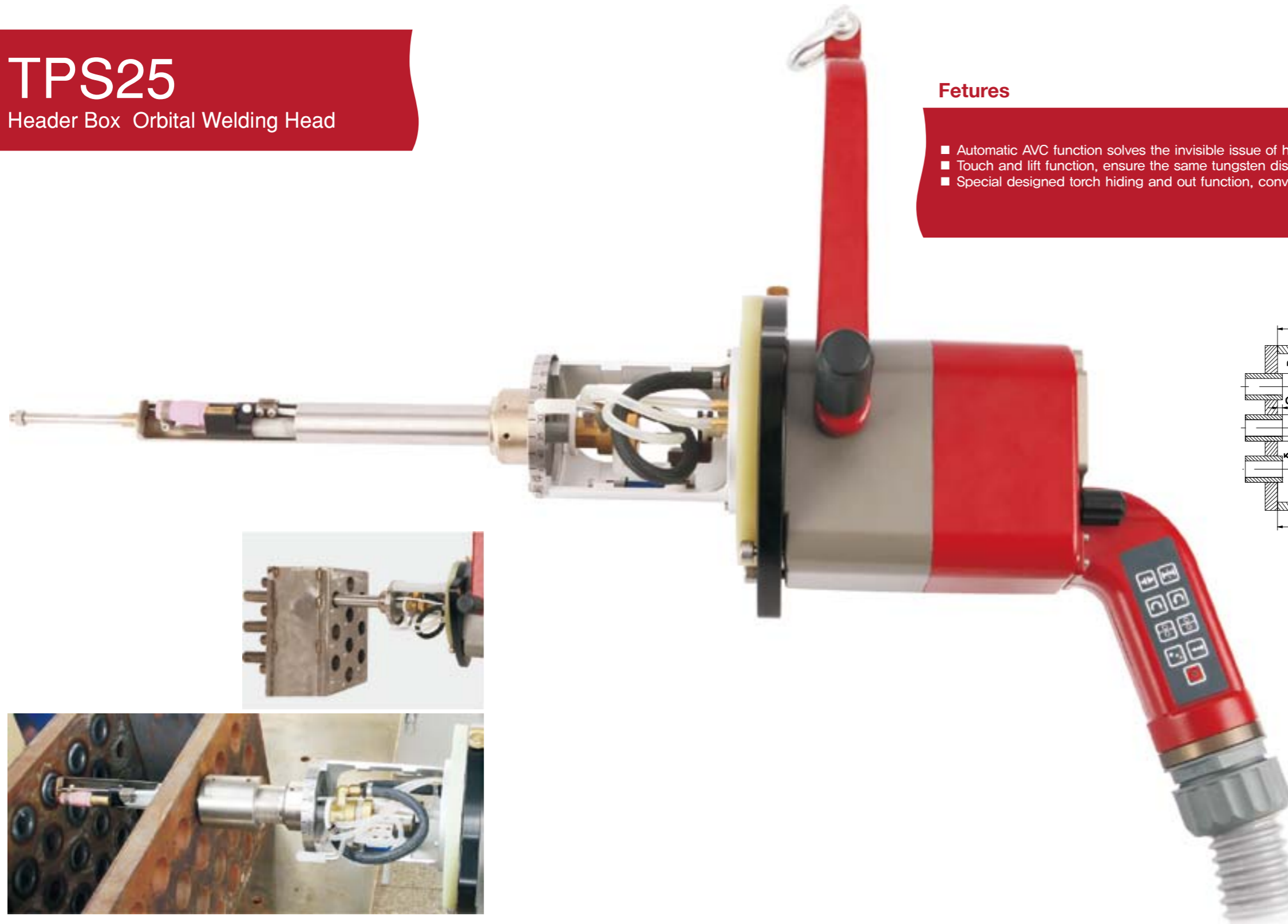


### Technical Specification

Weldable material	Carbon steel/Stainless steel
Diameter (mm)	$\geq \Phi 25$
Length (mm)	20-80
Tube sheet form	Tube insertion/Tube flush
Tungsten Diameter (mm)	$\Phi 2.4$
Spinning speed (rpm)	0.37-7.39
Arc length adjustment pitch (mm)	15
Maximum wire feed speed (mm/min)	1800
Wire diameter (mm)	$\Phi 0.8$
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	$\geq 300$
Weight (kg)	12 (Cable not include)
Dimension (mm)	570×290×510

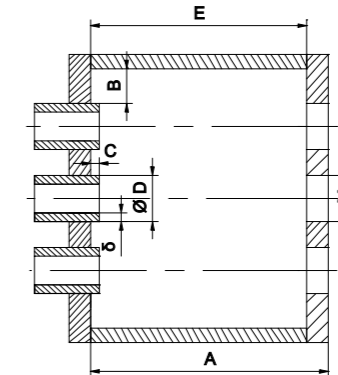
# TPS25

Header Box Orbital Welding Head



## Features

- Automatic AVC function solves the invisible issue of header box welding, optional manual AVC
- Touch and lift function, ensure the same tungsten distance to work piece
- Special designed torch hiding and out function, convenient to insert the torch and carry out welding job



Main dimension(mm)		
M	M32×2	M36×3
ΦD	Φ25	Φ32
A	80 ≤ A ≤ 230	
B	≥ 10	
C	≤ 1,5	
δ	≤ 3,5	

## Technical Specification

Weldable material	Carbon steel Stainless steel
Diameter (mm)	Φ25, Φ32 (Standard Φ25)
Maximum Stretch Length (mm)	230(including plate thickness)
Tube sheet form	Tube flush
Tungsten Diameter (mm)	Φ2,4
Spinning speed (rpm)	0,37-7,39
Torch inclination	-3°
Arc length adjustment pitch (mm)	18
Maximum wire feed speed (mm/min)	1800
Wire diameter (mm)	Φ0,8
Protective gas	Argon
Cooling method	water-cooled
Cooling flow (ml/min)	≥300
Rated Current	200A Duty Cycle 60%
Weight (kg)	13 (Cable not include)
Dimension (mm)	780×290×310

## Summary

This weld head is special designed for header box tube/tube sheet orbital TIG welding. It can weld Φ25 and ≥32mm carbon steel and stainless steel tube flush with or without wire feeding. It's compatible with iOrbital5000 programmable digital welding power source to apply in boiler, heat exchanger, power plant, chemical industries etc. to achieve precision TIG header box welding with high quality and repeatability.





# Boiler Industry

Boiler Outer Tube to Tube Sheet Welding Application

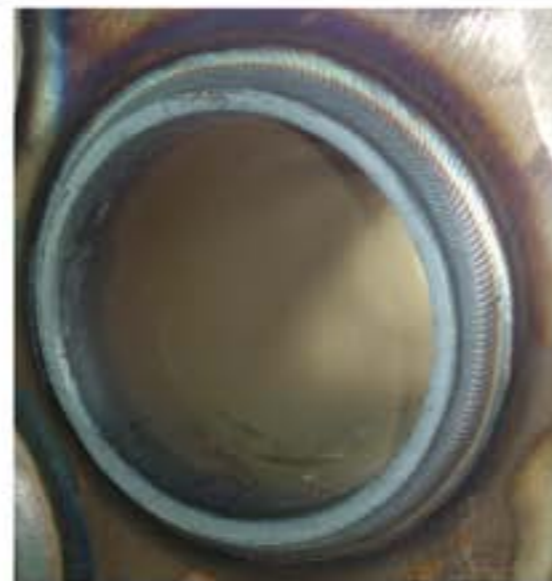


## Suitable application:

- OD range:  $\Phi 16$ - $\Phi 60$ , extend to  $\Phi 89$
- Tube material: carbon steel, Stainless Steel, Titanium Alloy
- Welding type: orbital welding
- Joint type: Tube flush, Tube protrusion
- Wire specification:  $\Phi 0.8\text{mm}$ ,  $\Phi 1.0\text{mm}$ : 1kg spool

## Welding preparation:

- Cleaning oil, dust and polish to metal color at the end of tube (10mm) and around of tube hole on tube sheet
- Tube protrusion arrange: 3-6mm
- Fit-up between tube to tube sheet should be controlled in 0.8mm
- Bevel on tube sheet:  $\leq 2 \times 45^\circ$
- Using TIG with or without wire in tack welding if necessary the tack point should be controlled to a small dimension
- Tube facing and burring



## Technical advantage:

- Deep penetration, no welding leakage, stable welding shape
- Intelligent programming
- Pneumatic tube expansion for centering
- Water, power and gas are un-twined design





# Boiler Industry

## Boiler Inner Tube to Tube Sheet Welding Inside Boiler Application



### Suitable application:

- OD range:  $\Phi 45$ - $\Phi 60$
- Tube material: carbon Steel
- Welding type: orbital with saddle-shaped welding
- Joint type: tube protrusion
- Wire specification:  $\Phi 0.8$ mm,  $\Phi 1.0$ mm; 1kg spool

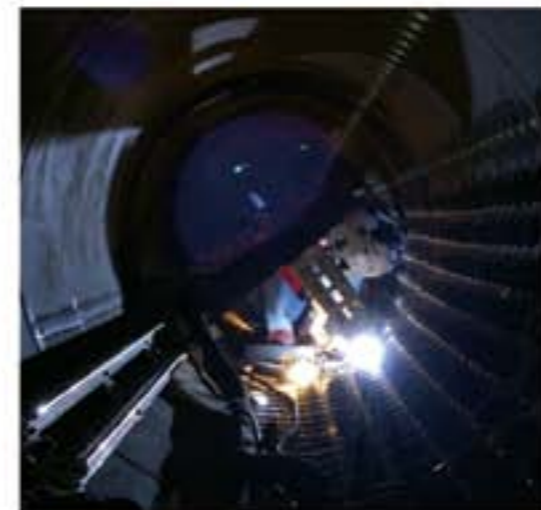
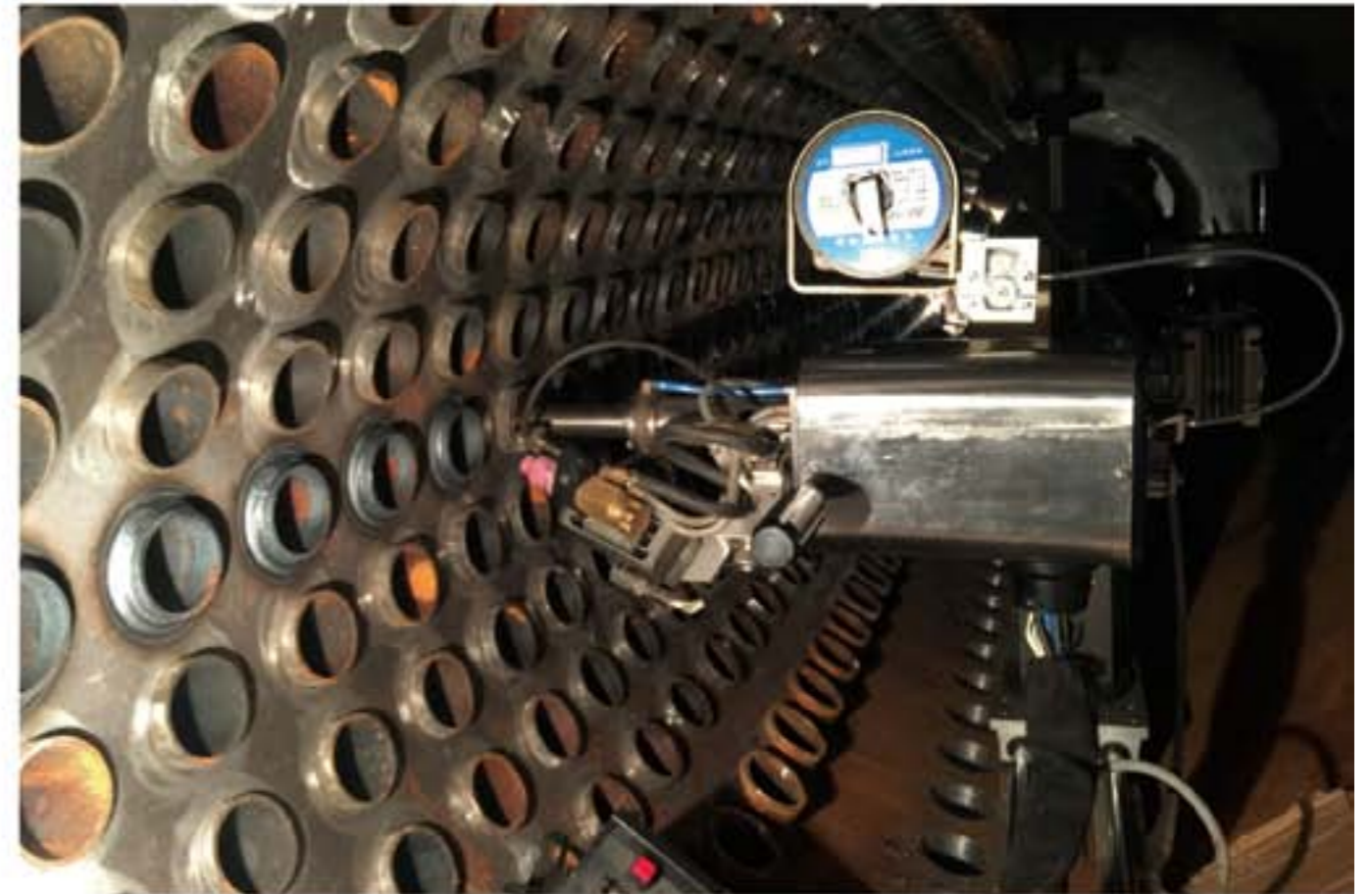
### Welding preparation:

- Cleaning oil, dust and polish to metal at the end of tube(10mm) and around of tube hole on tube sheet
- Tube protrusion arrange: 3-6mm
- Fit-up between tube to tube sheet should be controlled in 0.8mm
- Bevel on tube sheet:  $\leq 2 \times 45^\circ$
- Using TIG with or without wire in tack welding if necessary the tack point should be controlled to a small dimension
- Tube facing and burring



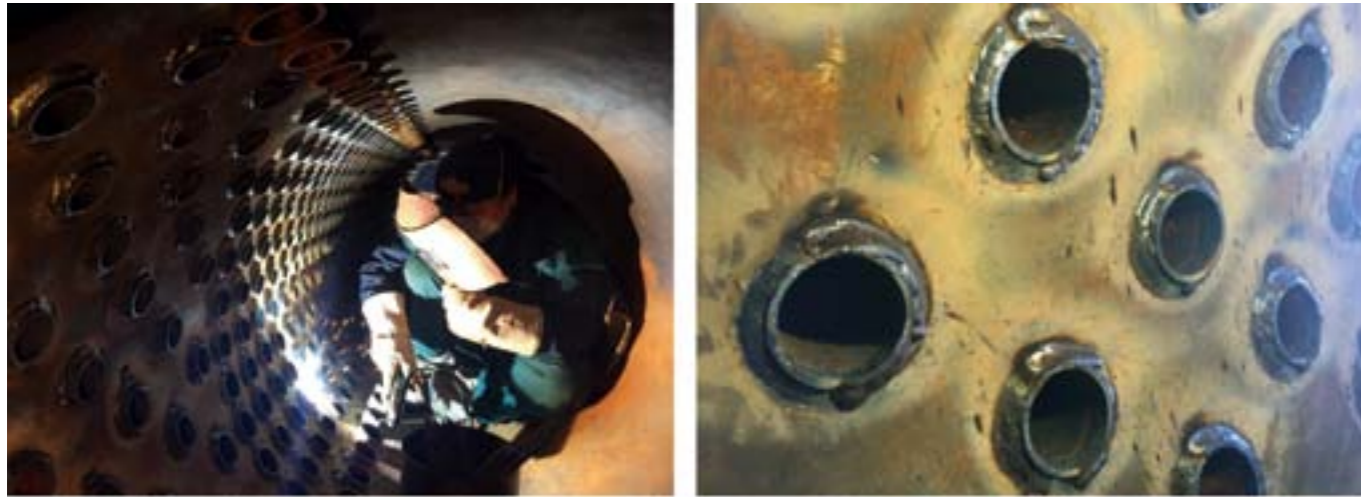
### Technical advantage:

- Deep penetration, no welding leakage stable welding shape
- Intelligent programming
- Pneumatic tube expansion for centering
- Water, power and gas are un-twined design
- Automatic arc voltage control, multi-passes welding process is possible
- Installation, rebuilding and moving are easy to operate





### ● Manual Welding In Tube to Tube Sheet Welding



#### Shortages of manual welding:

- Power input: very big
- Height of fillet joint: inconsistent and hard to control
- Welding joint shape: unstable, uneven
- Lift of boiler barrel: short, there is crack or craze around the heat affected zone
- Environmental pollution: big, MMA welding process releases lots of poisonous gas
- Cleaning: MMA welding produces lots of welding spatter needs to be cleaned

### ● Automatic TIG Tube to Tube Sheet Welding

#### Advantages of automatic TIG welding:

- Pores in welds: small welding pores propensity
- Water pressure test: high qualified
- Tube end: no burn tube end and easy to repair
- Orbital welding: due to AVC, it is possible to use in orbital welding process
- TIG applicate in boiler industry: TIG has been used a lot in horizontal boiler a long time, it suits for the produce standard of boiler.



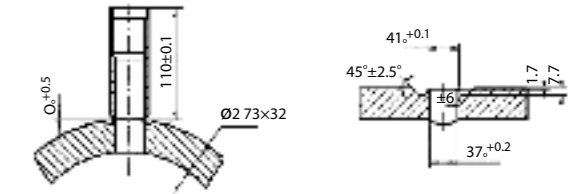
#### Suitable application:

- Header OD range:  $\Phi 219\text{mm}-\Phi 426\text{mm}$ , maximum wall thickness is 50mm, regular size is  $\Phi 273 \times 32$
- Tube ID range:  $\Phi 20\text{mm}-\Phi 6\text{mm}$ , regular sizes are  $\Phi 51 \times 7$ ,  $32 \times 4$ ,  $\Phi 38 \times 5$
- Tube length: 100mm-300mm (including pressure testing length), regular size is 110mm

A typical workpiece processing nozzle size

#### Welding preparation:

- Cleaning oil, dust and polish to metal color at the end of tube (10mm) and around of tube hole on tube sheet
- Misalignment between bevel on header to inside tube:  $\pm 0.1$
- Gap between bevel on header to tube: 0.1
- Tube length tolerance: 0.1
- Tube ID Tolerance: 0.2
- Using TIG with or without wire in tack welding if necessary, the tack point should be controlled to a small dimension
- Tube facing and burring



#### Welding preparation:

- High percentage of pass, no welding leakage, stable welding shape.
- Intelligent programming.
- Water, power and gas are un-twined design.
- Tube inside tracking system, special welding process to get full penetration in one side welding
- High accurate welding head localization, easy to operate







## Environmental Protection Industry

Air Cooling Exchanger Tube to Tube Sheet Welding Application

### Suitable application:

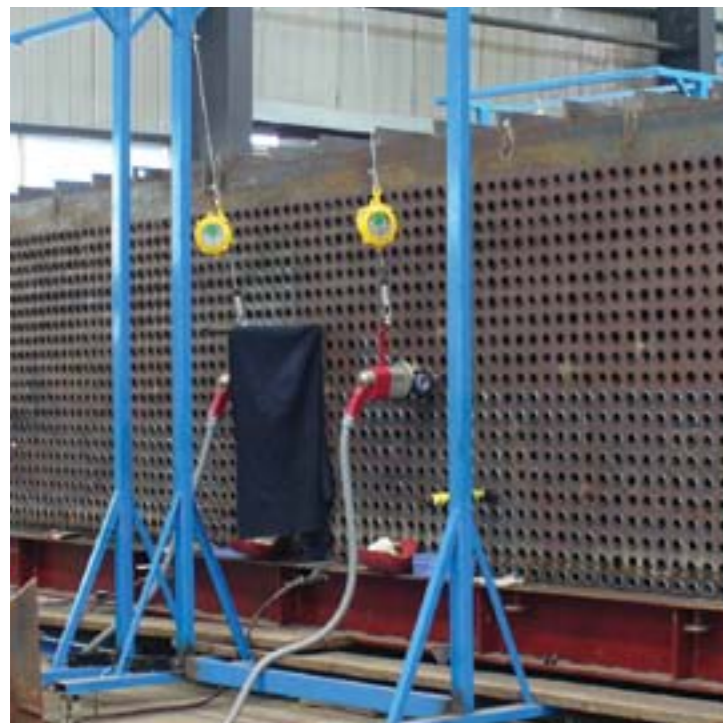
- OD range:  $\Phi 32$ - $\Phi 60$ , available to extend to 120
- Tube material: carbon Steel, low alloy steel, high alloy steel
- Welding type: orbital welding
- Joint type: tube flush, Tube protrusion
- Wire specification:  $\Phi 0.8\text{mm}$ ,  $\Phi 1.0\text{mm}$ ; 1kg spool

### Welding preparation:

- Cleaning oil, dust and polish to metal color at the end of tube(10mm) and around of tube hole on tube sheet
- Tube protrusion arrange: 3-6mm
- Fit-up between tube to tube sheet should be controlled in 0.8mm
- Bevel on tube sheet:  $\leq 2 \times 45^\circ$
- Using TIG with or without wire in tack welding if necessary, the tack point should be controlled to a small dimension
- Tube facing and burring

### Technical advantage:

- Deep penetration, no welding leakage, stable welding shape
- Intelligent programming
- Pneumatic tube expansion for centering
- Arc voltage control tracking (option)
- Water, power and gas are un-twine design



### Suitable application:

- OD range:  $\Phi 16$ - $\Phi 60$
- Tube material: carbon Steel, stainless steel, brass alloy, titanium alloy
- Welding type: orbital welding
- Joint type: tube flush, Tube protrusion
- Wire specification:  $\Phi 0.8\text{mm}$ ,  $\Phi 1.0\text{mm}$  1kg spool

## Petrochemical Industry

Heat Exchanger Tube to Tube Sheet Welding Application





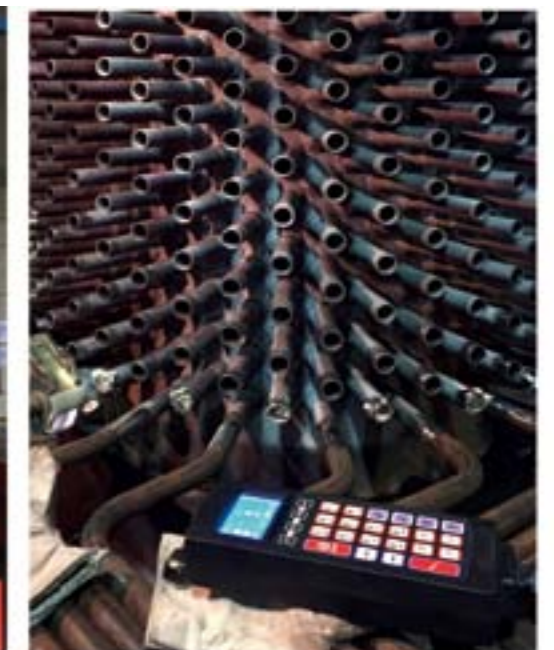
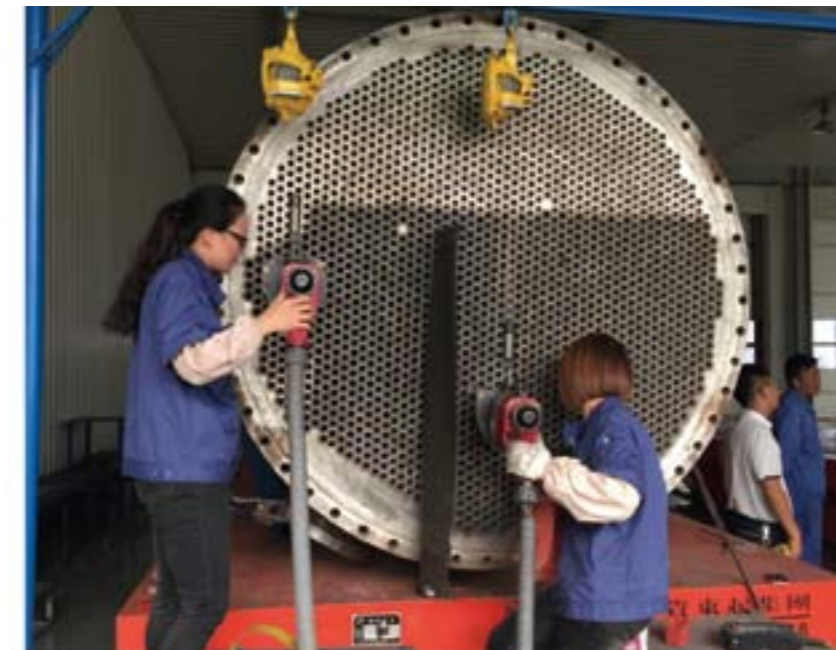


### Welding preparation:

- Cleaning oil, dust and polish to metal color at the end of tube(10mm) and around of tube on tube sheet
- Tube protrusion arrange: 3-5mm
- Fit-up between tube to sheet should be controlled in 0.8mm
- No tack welding requirement, or using TIG with or without wire in tack welding if necessary, the tack point should be controlled to a small dimension
- Tube facing and burring

### Technical advantage:

- Deep penetration, no welding leakage, stable welding shape
- intelligent programming
- Welding procedure parameter management, store, copy and print
- Localizer + 3 axes manipulator to centering
- Water, power and gas are un-twine design





# Water Treatment Industry

Cleaning Tubing Butt Tubing Welding Application

## Suitable application:

- OD range:  $\Phi 8$ - $\Phi 140$
- Tube material: Stainless Steel, Titanium Alloy
- Welding type: orbital welding
- Joint type: fusion butt joint

## Welding preparation:

- Facing, cleaning, polish to metal color
- No gap fit-up
- No need tack welding
- Tube burring

## Technical advantage:

- Intelligent programming, database management
- One side welding both sides formation to get uniform welding shape
- Welding procedure parameter management, store, copy and print
- Easy to teach, learn and understand







**Suitable application:**

- OD range:  $\Phi 6$ - $\Phi 51$
- Tube material: Stainless Steel, Titanium Alloy
- Welding type: orbital welding
- Joint type: Fusion butt joint

# Semiconductor Industry

High-purity Gases Valve and Tubing Welding Application

**Welding preparation:**

- Facing, cleaning, polish to metal color
- No gap fit-up
- No need tack welding
- Tube burring

**Technical advantage:**

- Intelligent programming, database management
- One side welding both sides formation to get uniform welding shape
- Welding procedure parameter management, store, copy and print
- Easy to teach, learn and understand







### Suitable application:

- OD range:  $\Phi 19-\Phi 101$
- Tube material: Stainless Steel, Titanium Alloy
- Welding type: orbital welding
- Joint type: Fusion butt joint

### Welding preparation:

- Facing, cleaning, polish to metal color
- No gap fit-up
- No need tack welding
- Tube burring

### Technical advantage:

- Intelligent programming, database management
- Fast clamp system to suit for row of tubing
- One side welding both sides formation to get uniform welding shape
- Welding procedure parameter management, store, copy and print
- Easy to teach, learn and understand

## Beer Tubing Welding Application



## Pipeline Welding Application

### Suitable application:

- OD range:  $\Phi 16-\Phi 320$  (different OD range needs to choose different head model)
- Wall thickness range: 1.5-12mm
- Tube material: Carbon steel, Stainless Steel, Titanium Alloy
- Welding type: orbital welding
- Joint type: Fusion butt joint

### Welding preparation:

- Facing, cleaning oil and dust, polish to metal color
- V bevel for carbon steel, J bevel for stainless steel or other special material
- No gap fit-up
- No need tack welding
- Tube burring

### Technical advantage:

- Intelligent programming, database management
- AVC (arc voltage control) and OSC (auto-oscillation)
- One side welding both sides formation to get uniform welding shape
- Welding procedure parameter management, store, copy and print





# Petroleum Pipe MAG Welding Application



## ● MIGTRACK60 Track Welding System

### Summary

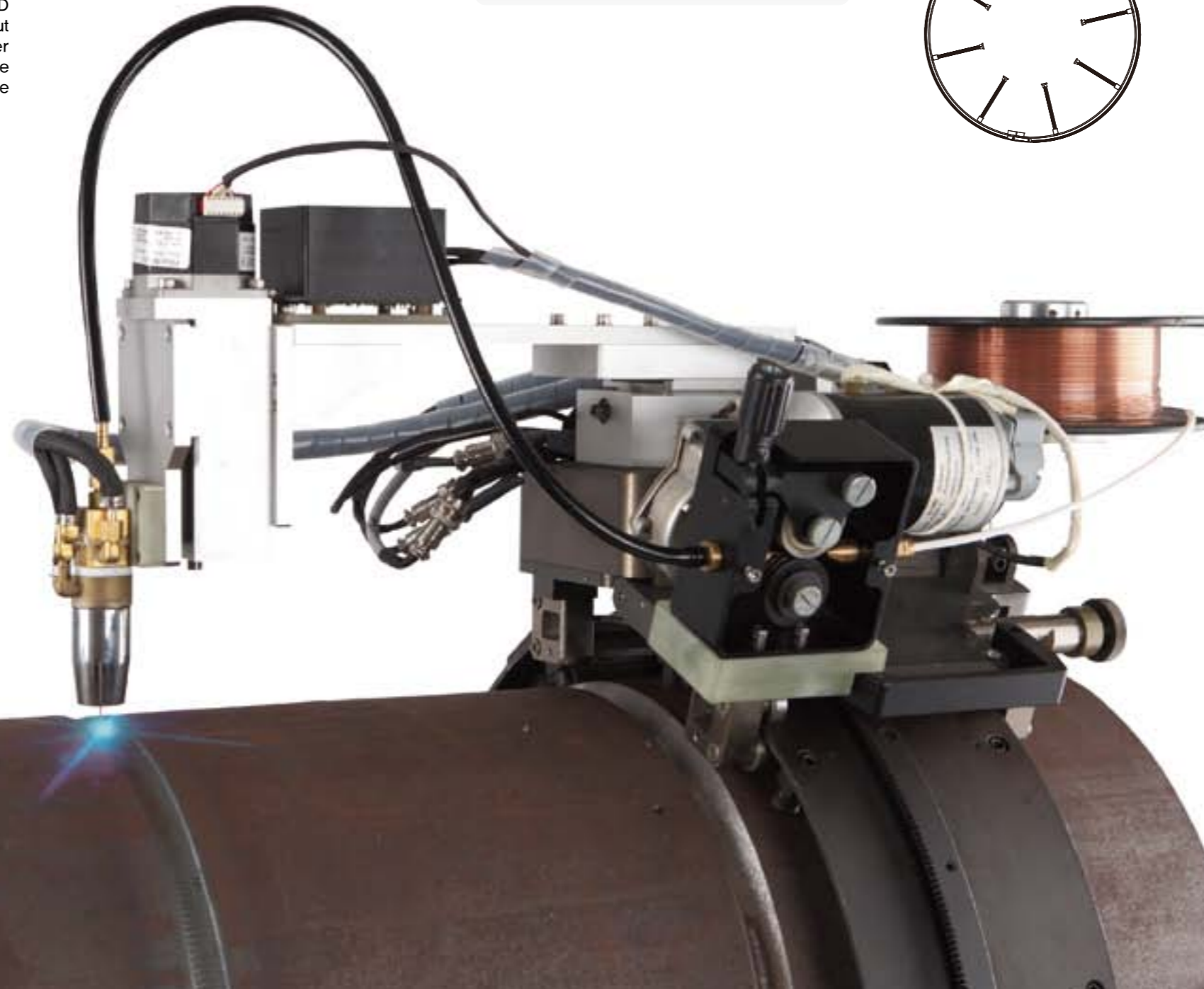
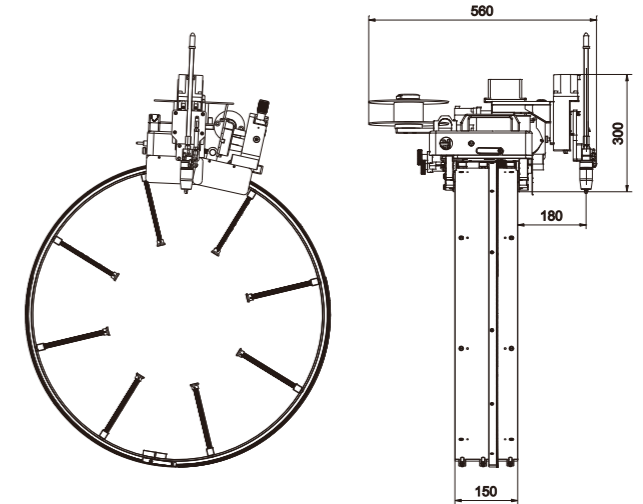
This system is specially designed for pipe to pipe butt joint auto-matic MAG welding application, work with different track ring to weld more than 300mm OD pipe. It is possible to realize root pass, filling and capping welding with or without oscillation function. The system is using PHOENIX COLDARC welding power source from EWM is particularly suitable for liquefied gas pipeling, petroleum pipe line and pipeline suitable for liquefied gas pipeline, petroleum pipeline and pipeline pre-fabricate in shop.

### Features

- Gear transmission, stable rotation speed
- Special MAG double root pass process, satisfying complex work condition
- Double water cooling, suitable to big and thick pipe filling pass process
- Short distance wire feeding, ensure wire feeding stable
- Autocar design, matching different guide to do welding for different ODpipe

### Technical Specification

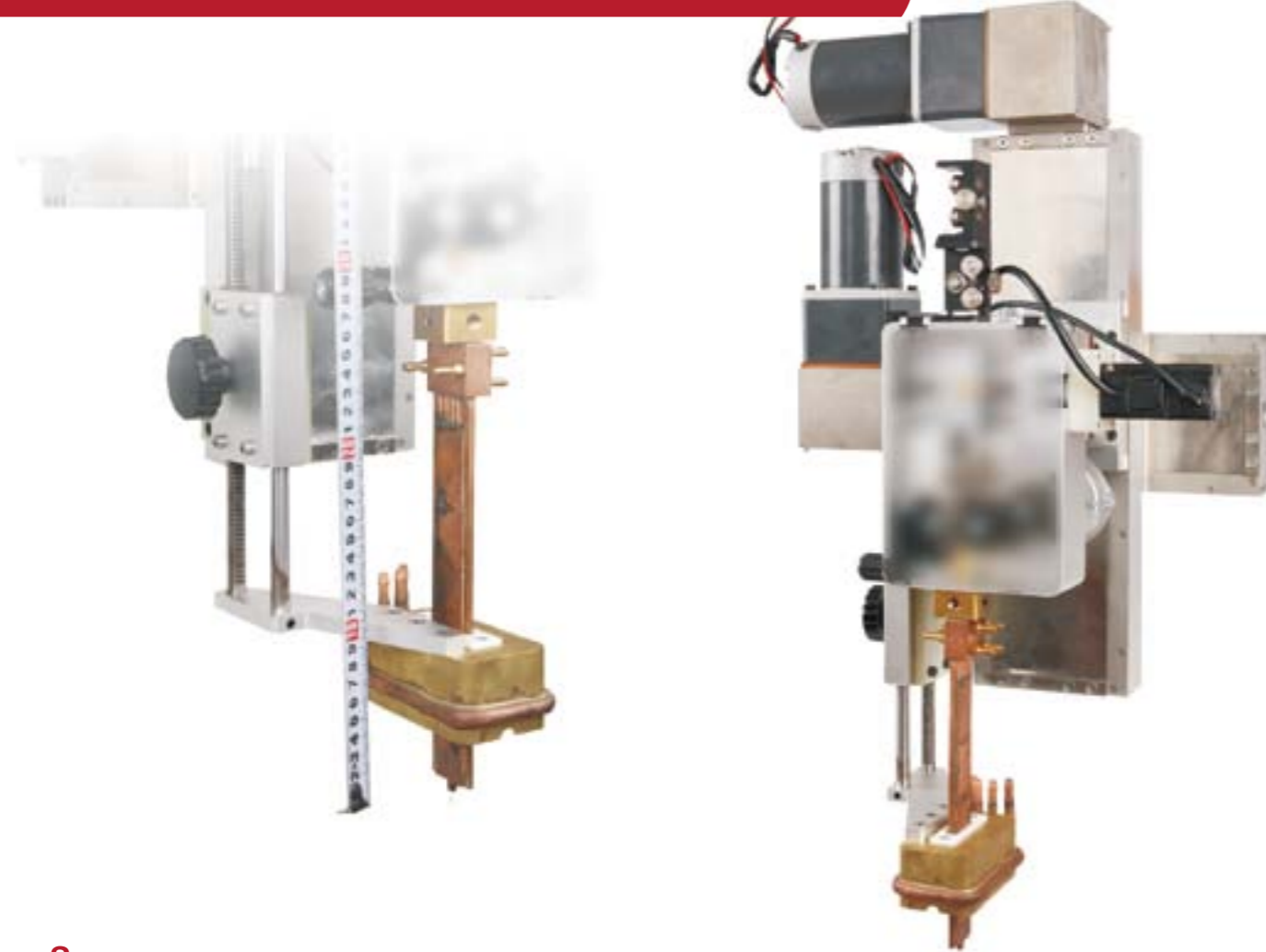
Diameter (mm)	300-1500 (12"-60")
Torch rotating Speed(mm/min)	40-500
Width (mm)	50
Height (mm)	50
Cooling method	Circulating water cooling
Joint form	Pipe to pipe, pipe to elbow





# Steam Turbine Industry

Narrow Groove Welding System for Grating Baffle



## Summary

This system is composed by a narrow groove MAG torch, manipulator, positioner, MIG digital welding power source. It has a PLC control center to control all sectors working together to finish narrow groove continuous or discontinuous welding.

The system suits for welding depth 250mm narrow groove bevel (9~12mm width, inclination 1/100~2/100 I bevel. By giving wire bending qualities, using its waveform which is formed by the welding wire, it makes two wall full penetration at the groove, so it could get one pass one layer high quality welding joint. It is used in power industry, valve industry, coal mine machinery industry, engineering machinery, boiler industry and so on.

## Features

- It suits for wall thickness more than 9mm application
- Applying wire oscillation technology to ensure the penetration at groove double sides
- High deposition rate and low power input
- It suits for horizontal welding, vertical welding in longitudinal seam and circumferential seam
- High duty cycle with water cooling torch
- Dual-shielding gas design
- OD range:  $\Phi 19$ ~ $\Phi 101$
- It suits for carbon steel, stainless steel and other material

## Technical Specification

Bevel type	U type, J type
Suitable wall thickness(mm)	30~250
Suitable bevel width(mm)	9~20
Max.welding current(A)	350
Max.wire feeding speed(mm/min)	24000
Wire Diameter (mm)	$\Phi 1.0, \Phi 1.2$
Shielding type	Mixed gas
Cooling type	Water-cooled
Weight (kg)	5
Dimesions (mm)	320×200×600



## Suitable application:

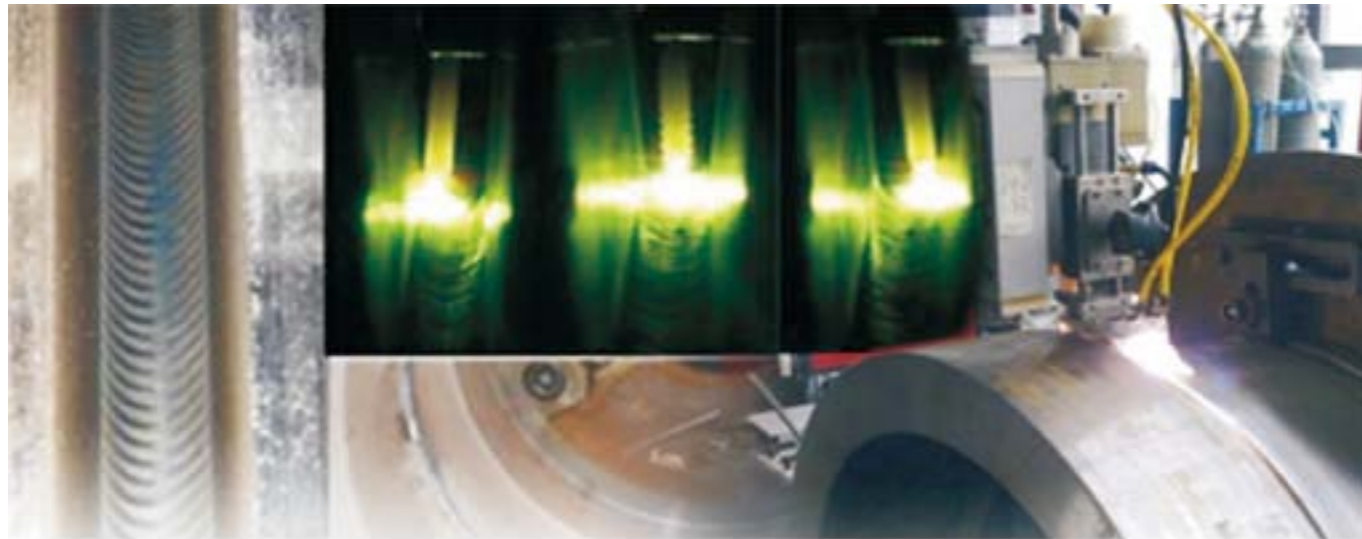
- Application dimension: Max outer circle diameter:  $\Phi 1800$ mm, Min. inner circle diameter:  $\Phi 700$ mm, thickness 4~10mm (6mm is common)
- Material: carbon steel, low alloy steel, martensitic stainless steel and weld between heterogeneous metals
- Welding type: horizontal with angle welding process
- Joint type: butt joint
- Width of groove bottom: 9mm

## Technical advantage:

- Suto oscillation
- Pre-heating function, max. pre-heating temperature is 350° C
- Auto torch lifting in pass to pass
- Dual-shielding gas covers to protect gas area
- Fast clamping locating work piece
- Unify welding parameter adjustment







## Steam Turbine Industry

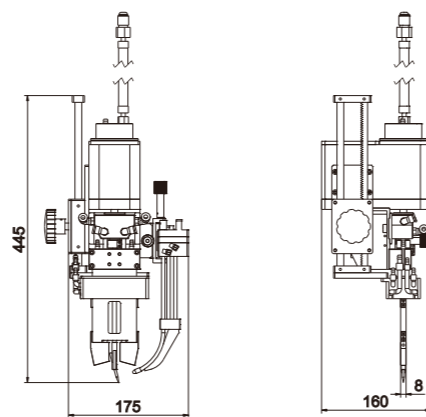
### TIG Narrow Groove Welding System for Valve Casing Connection Application

#### Summary

The system is composed by a torch tungsten oscillation device, torch fixture, purge gas cover, gas cover lifter, wire feeding adjustable device, forward and backward monitor system, and stepper motor ball screw carriage. Torch fixture is using high temperature resistant insulation material with water cooling design and special shielding gas line to ensure it could be continuous working under the high temperature. The shielding gas cover is using stainless steel shell water cooling, and insulate at the place where connects to torch, it realizes to dual-shielding gas which shields the groove root and also shields outer joint together in welding process, it is a dual-shielding design. It is used in heavy wall application as unclear power industry, chemical industry, boiler industry, valve industry, ship building industry, motor rotor and so on.

#### Features

- It suits for wall thickness more than 9mm application
- Tungsten oscillation technology to ensure the penetration at groove double sides
- High deposition rate and low power input
- It suits for horizontal welding, vertical welding in longitudinal seam and circumferential seam
- 5 lines water cooling design to improve duty cycle
- Dual-shielding gas design to ensure getting stable welding shape
- Less consumable parts, less operating cost. Easy torch maintenance
- It suits for carbon steel, stainless steel, nickel alloy, titanium alloy and other material



#### Technical Specification

Bevel type	U, J
Suitable wall thickness(mm)	30~200
Suitable bevel width(mm)	9~20
Max.wire welding current(A)	350
Max.wire feeding speed(mm/min)	5500
Wire diameter (mm)	1.0~1.2
Shielding gas	Argon 99.99%
Cooling gas	Water-cooled
Weight (kg)	7
dimension (mm)	175×160×445

#### Suitable application:

- Pipe connection range: 240–560mm
- Min. pipe connection diameter:  $\Phi 250\text{mm}$
- Max. pipe connection diameter:  $\Phi 800\text{mm}$
- Max. groove depth: 240mm
- Max. height from ground: 1000–2200mm
- Weigh of Valve casing: 25T
- Welding type: 2G horizontal welding

#### Welding procedure requirement:

- TIG in root pass: full penetration in root pass, and ensure the uniform height at the back side
- TIG in groove wall fuse: joint full fuses with double wall of groove, no defect.
- 100% pass RT after welding
- 100% pass MT after welding

#### Technical advantage:

- Intelligent programming, database management
- AVC function ( Arc voltage control)
- Auto tungsten oscillation
- Single pass single layer welding procedure, each pass wall is around 1.8mm–2.5mm
- Less metal filling, but high welding efficiency
- 2G narrow groove hot wire welding process for option
- Narrow groove torch applies at the wall thickness more than 25mm, max, wall thickness will be 250mm





## ● GTX53 hydraulic pipe Welding System

### Summary

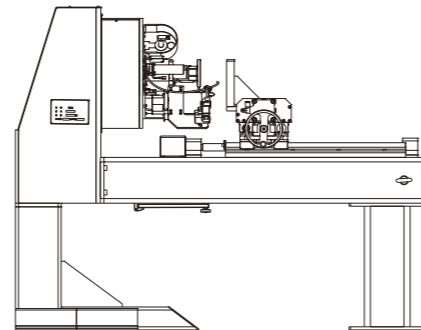
This system is specially designed for tube to flange TIG welding. It could do single position welding or orbital welding, joint or angle welding, with option of self-fusion, wire feeding or wire feeding after self-fusion. It could be place vertical or horizontal.

Support equipment: iOrbital 5000 Programmable Orbital Welding Power Source

Application: Special tube to tube and tube to flange in locomotive, engineering machinery

### Features

- Suitable automatic pipe to flange welding in construction machinery
- Fusion/wire feeding welding processes switch, easy to operate
- Easy to set up orbital position or horizontal welding position
- Pipe clammer is available to been adjusted upward and downward, leftward and rightward manually
- Un-twist design to allow continues to weld
- Pneumatic



### Technical Specification

Material	Carbon ,Stainless steel
Pipe Diameter (mm)	Φ17~Φ76
Tungsten diameter (mm)	Φ3.2
Spinnig speed (rpm)	0.28~5.6
Inclination	0° ~ 45°
Protective gas	Argon
Cooling method	Water-cooled
cooling flow (ml/min)	≥600
OSC width (mm)	40
AVC heigh (mm)	40
Wire diameter (mm)	Φ1.0 (standard)
Speed (mm/min)	1800
Weight (kg)	290
Dimensions (mm)	700×640×1760







# MAG Tube to Tube Sheet welding

## Construction Machinery Industry

Hydraulic cylinder narrow groove MAG welding system



### Suitable Application:

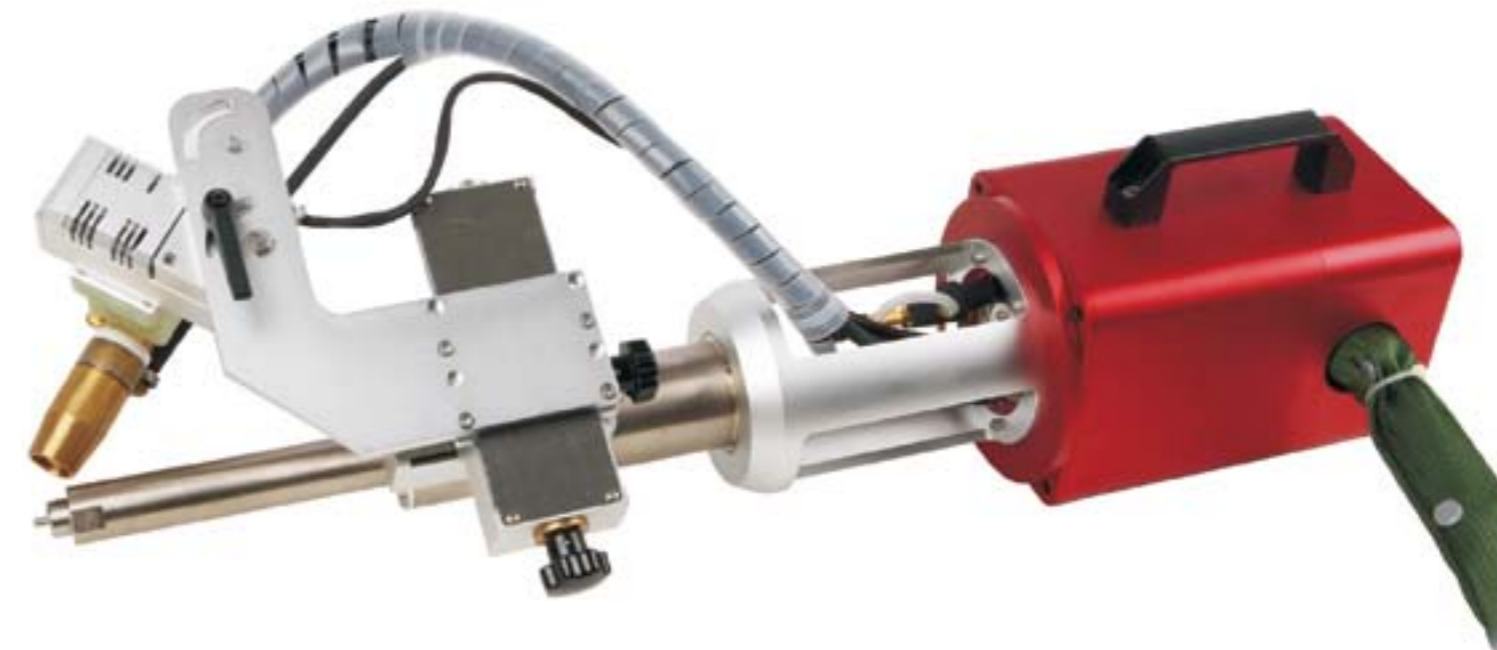
- Apply to weld cylinder bottom, outer cylinder bottom, plunger and other narrow groove circumferential seam welding
- Diameter range: OD  $\Phi 114$ - $\Phi 650$ , length range: 600mm-3000mm
- Weight capacity: 2000kg
- Max. depth of groove: 100mm
- Material: carbon steel, low alloy steel, high alloy steel
- Joint type: narrow groove U bevel butt joint
- Pre-heat: 100-150°C around joint

### Welding procedure requirement:

- Wall fusion: penetration with wall to joint no welding defect
- 100%RT after welding and reach lever with acceptable

### Feature:

- Oscillation
- Auto flame pre-heating, max. temperature goes up to 350°C
- Torch auto lifting from pass to pass
- Double shielding covers
- Faster clamber system with self-centering
- Unified adjust parameter
- Double torches welding together



## ● M90 MAG Tube to Tube Sheet welding Head

### Summary

This system is special designed automatic MAG tube to tube-sheet welding system for engineering machinery sleeve. It is fixed by taper localizer, 3D manipulator or intelligent spring balancer, wide range of localization. It is the first no twist no design for MAG tube to tube-sheet system, smoothly wire feeding, convenient and fast.

Application: Boiler, engineering machinery, so on.

### Technical Specification

Material	Carbon steel
Tube OD (mm)	$\Phi 38$ ~ $\Phi 260$
Rotation speed (rpm)	0.23~4.6
Torch Angle	0° ~60°
Protective gas	Argon
Cooling	Water-cooled
Cooling flow (ml/min)	$\geq 600$
Duty cycle	320A 60%
OSC width (mm)	40
Manual adjusting height(mm)	40
Wire diameter (mm)	$\Phi 1.0$ , $\Phi 1.2$ (standard)
Weight (kg)	15 (Cable not include)
Dimensions (mm)	700×250×240

### Features

- Suitable for engineering machinery sleeve welding, boiler tube to tube-sheet and boiler pull bar MAG welding
- Taper localizer for wide range localization
- No wire twist design and special wire feeding design to achieved complex single-layer welding or multi-layer welding equipments
- Auto swing during welding
- Pneumatic locking on manipulator for up and down: left and right moving
- 15-20kg wire feeding plate, wire diameter:  $\Phi 1.0$ & $\Phi 1.2$







## Precise Accessory Equipment

### ● TPF03 Pneumatic Manipulator

#### Summary

This manipulator is specially designed for tube to tube-sheet welding head, making the operation easy and convenient. It could control the position of the welding head by 3 axis moving and pneumatic locking, fast find the tube center and weld stably.

Support equipment: TPO60, T8 and T66 Tube to tube-sheet welding head. Suitable for small tube to tube-sheet welding

#### Features

- Steel structure, durable and stable
- Linear track for each axis for smooth and reliable motion
- Three-axis pneumatic locking system
- Two fixed wheels and two flexible wheels, easy to



#### Technical Specification

Minimum distance (mm)	500
Horizontal movement distance (mm)	1500
Move up and down (mm)	1500
Forward and backward movement distance (mm)	450
Weight (kg)	310
Dimensions (mm)	2063×1269×2325

### ● Spring Balancer

#### Summary

Spring balancer is specially designed for tube to tube welding head, controlling welding head position by balance principle. It could make it fast to find tube center and weld stable by using with collect.

Support equipment: TP060 Tube to Tube-Sheet welding head. Suitable for large tube to tube-sheet welding.

#### Features

- Convenient for moving
- Maximum loading is adjustable to achieve best status

#### Technical Specification

Load (kg)	9-15
Traverse (mm)	2000
Weight (kg)	3.8





## ● Desktop Tungsten Electrode Grinder



WMJ05

### Features

- Simple design, and easy to operate
- Tungsten angle adjustable with scale indication
- Tungsten length cut adjustable with scale indication

### Technical Specification

Grinding tungsten diameter	All diameter tungsten
Motor Power (w)	250
No-load speed(Turn/Minute)	2800
Input power (V)	220
Weight (KG)	16.5

## ● Portable Tungsten Electrode Grinder



WMJ04

### Performance characteristics

- Small and convenient to carry
- Chargeable battery
- Stable rotation
- Tungsten length cut function

### Technical Specification

Grinding tungsten diameter(mm)	Φ1.6, Φ2.4, Φ3.2
Grinding angle (°)	15-60
Voltage (V)	AC 220
Dimensions (mm)	50×50×240
Weight (kg)	1.8

## ● External Wire feeder



TOA50 External wire feeder

### Features

- Unique and simple design
- Light, easy to carry
- Branded servo motor driving system
- Loop control
- Stable wire feeding speed
- Compatible with all TO series pipe welding head

### Technical Specification

Wire feed speed (mm/min)	100-1800
Wire diameter (mm)	Φ1.0 (Standard)
Weight (kg)	1.5



## ● QC4000 Pipe Blade Saw Cutting Machine



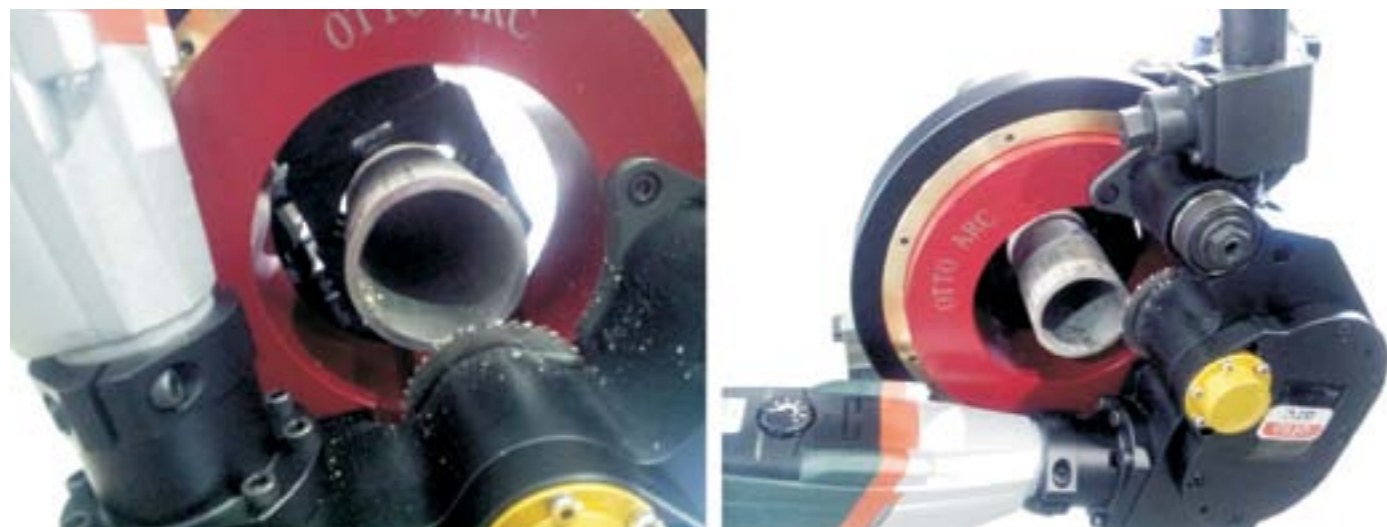
### Application:

Pipe OD:  $\Phi 12\text{mm} - \Phi 100\text{mm}$

Pipe Wall Thickness: 1mm-6mm

### Features

- Enhanced safety due to stationary pipe, and rotation tool
- Self-centering clamping system
- Saw motor with RPM control and ergonomically optimized motor for more secure operator position
- Burr-free cutting surface and deformation-free pipe cross section
- Cold machining process
- Quick cutting process
- Production of standardized welding bevels
- Plug connection with quick disconnect coupler
- Anywhere to start cutting



## ● Facing Machine



### Technical Specification

Specifications Model	Processing range	Weight (kg)	Description
TSM-1000	1/8" (3,18mm) - 1" (25,4mm)	2,6	15 minutes recharge, last for more than 2 hours, 18v battery
TSM-1500	1/8" (3,18mm) - 1 1/2" (38,1mm)	4,5	Increment feed control, cutting and debur tubing at precision lengths
TSM-1501M	1/8" (3,18mm) - 1" (25,4mm)	4,1	Two stainless collects provide enough clamping force
TSM-3001M	1/2" (12,7mm) - 3" (76,2mm)	8,2	Adjustable measure indicator for accurate facing 0,001" or longer
TSM-4500M	1" (25,4mm) - 4 1/2" (114,3mm)	11,3	Adjustable measure indicator for accurate facing 0,001" or longer
TSM-6000	1" (50,8mm) - 6 5/8" (168,3mm)	19,05	

## ● Beveling Machine



### Technical Specification

Specifications Model	Processing range	Weight (kg)	Description
PBM-2500	1" (25,4mm) - 2 1/2" (63,5mm)	5,9	Used in boiler and narrow space tubes
PBM-4500	1 1/4" (31,7mm) - 4 1/2" (114,3mm)	14,1	Three slots to do beveling, facing, deburring or counter-boring
PBM-6000	2" (50,4mm) - 6" (152,4mm)	23,6	Three slots to do beveling, facing, deburring or counter-boring
PBM-8000	3" (76,2mm) - 8" (203,2mm)	29,9	Three slots to do beveling, facing, deburring or counter-boring
PBM-12000	6" (152,4mm) - 12" (304,8 mm)	35,4	

## ● Package Case

