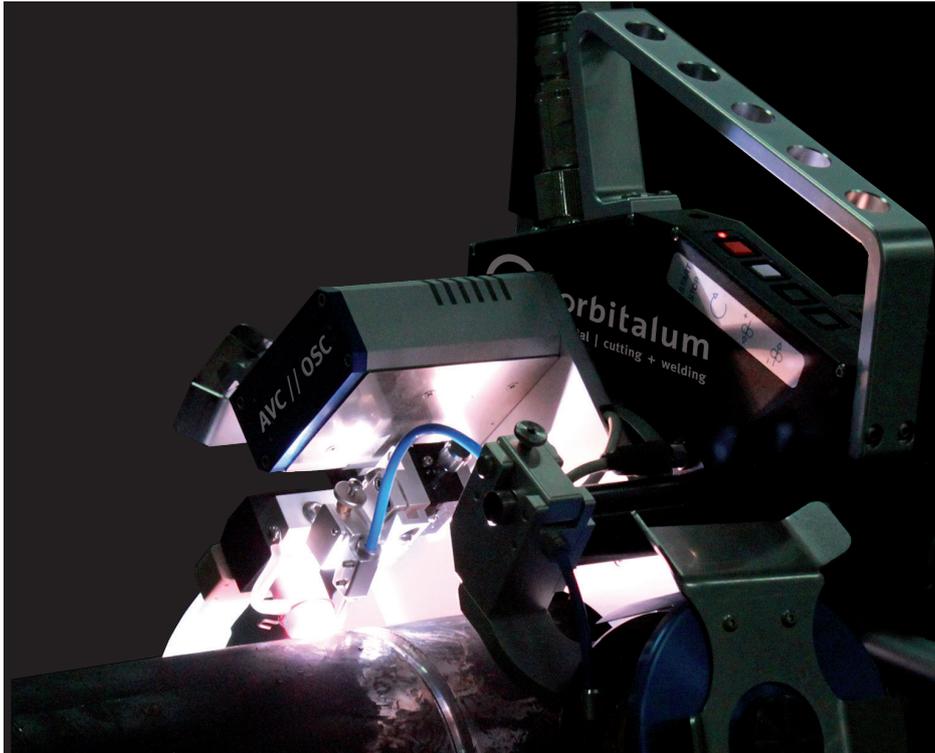


ORBIWELD TP

Open orbital weld heads

The ORBIWELD TP series offers outstanding features in terms of design and functionality:

An extremely compact design has been achieved thanks to the drive motor that is fully integrated into the housing. The drive concept has made the well-known large and costly drives associated with conventional weld heads unnecessary. For field applications the compact wire feeder on the weld head is more comfortable than a separate, heavy wire feeder.



FEATURES OF THE TP SERIES:

- Compact design without any protrusions that would be disturbing in practice
- Applicable with and without cold wire unit
- Cold wire unit retrofittable for all TP weld heads
- With the KD3 versions, the reel for holding the additional wire during TIG cold wire welding is also mounted on the weld head housing. This prevents an irritating twisting of the wire during the joining process
- The cold wire feed nozzle can be adjusted exactly in both a vertical and horizontal direction
- Open arc system
- Infinitely variable clamping mechanism
- Liquid-cooled, continuously adjustable TIG torch head allows fillet welds or short hollowed out tubes to be welded
- The TIG torch head is secured to a slide unit that allows the position of the electrodes to be finely adjusted with great accuracy even during welding

- Simple adjustment of the clamping unit to the pipe diameter without the need for any tools
- The standard equipment of the TP 1000 heads include clamping plates made from tool steel which ensures optimum retention to the pipe surface. The ORBIWELD TP 250, TP 400 and TP 600 are equipped with clamping jaws made of stainless steel (1.4305). Besides increased clamping force, this new clamping system offers improved handling and easier and more precise alignment of the weld head on the pipe. Clamping jaws to extend the clamping range (TP 400) are optionally available. The new clamping unit can be upgraded for older TP 250, TP 400 and TP 600 models.
- TP weld heads are easily centered to the tube and clamped in place with the help of a clamping lever
- No additional remote control is required thanks to the keys integrated directly into the weld head housing

ADDITIONAL FEATURES OF THE TP AVC/OSC:

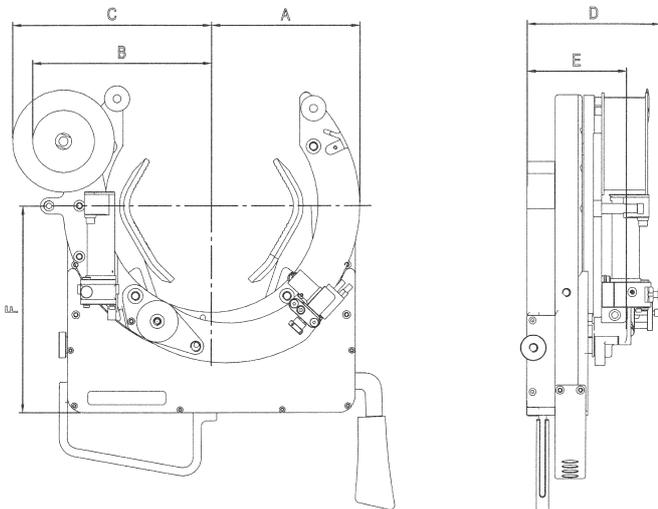
- With oscillation (OSC) and arc voltage control (AVC) - only applicable in combination with the orbital welding power supply ORBIMAT 300 CA AVC/OSC
- The arc length is kept at a constant gap mechanically; with AVC/OSC versions the constant gap is kept automatically
- Can be used for thick wall pipes (multiple layer welds)
- Including a motorized travel option for the TIG torch across the nominal diameter, so that no additional mechanical basic presetting is required for any change in the tube diameter
- Max. oscillation of the torch: 20 mm (0.787")
- Directly on the weld head mounted cold wire feed unit with retainer for \varnothing 100 mm/1 kg (3.937"/2.2 lbs) wire coil

MODEL	TP 250	TP 250	TP 400	TP 400	TP 400	TP 600	TP 600	TP 600	TP 1000	TP 1000	TP 1000	
With cold wire unit (KD):		KD4		KD3-100	KD3-100		KD3-100	KD3-100		KD3-100	KD3-100	
With arc voltage control (AVC) and oscillation (OSC):					AVC/OSC			AVC/OSC			AVC/OSC	
Code	811 000 001	811 000 005	812 000 001	812 000 006	812 000 002	813 000 001	813 000 005	813 000 002	814 000 001	814 000 005	814 000 002	
Application range	[mm]	8 - 28 28 - 76.2	8 - 28 28 - 76.2	(15)*/30 - 115	(15)*/30 - 115	(15)*/30 - 115	70 - 170	70 - 170	70 - 170	120 - 275	120 - 275	120 - 275
	[inch]	0.315 - 1.102 1.102 - 3.000	0.315 - 1.102 1.102 - 3.000	(0.591)*/ 1.181 - 4.528	(0.591)*/ 1.181 - 4.528	(0.591)*/ 1.181 - 4.528	2.756 - 6.693	2.756 - 6.693	2.756 - 6.693	4.724 - 10.827	4.724 - 10.827	4.724 - 10.827
Electrode lengths	[mm]	18 - 32	18 - 32	30 - 55	30 - 55	30 - 55	30 - 55	30 - 55	30 - 55	30 - 55	30 - 55	30 - 55
	[inch]	0.709 - 1.260	0.709 - 1.260	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165	1.181 - 2.165
Wire diameter*	[mm]	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**	0.8/ 1.0**
	[inch]	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**	0.031/ 0.039**
Weight of machine with hose package	[kg]	7.0	8.9	11.0	12.5	15.2	13.7	15.2	18.9	22.5	24.0	28.7
	[lbs]	15.4	19.6	24.3	27.6	33.5	30.2	33.5	41.7	49.6	52.9	63.3
Hose package length	[m]	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	[ft]	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6
Dimension "A":	[mm]	86.00	86.00	108.00	108.00	150.00	147.00	147.00	185.00	215.00	215.00	245.00
	[inch]	3.386	3.386	4.252	4.252	5.906	5.787	5.787	7.283	8.465	8.465	9.646
Dimension "B" without cold wire unit KD:	[mm]	86.00	86.00	108.00	-	-	147.00	-	-	215.00	-	-
	[inch]	3.386	3.386	4.252	-	-	5.787	-	-	8.465	-	-
Dimension "C" with cold wire unit KD:	[mm]	-	-	-	180.00	175.00	-	196.00	215.00	-	237.00	274.00
	[inch]	-	-	-	7.087	6.890	-	7.717	8.465	-	9.331	10.787
Dimension "D":	[mm]	85.00	85.00	120.00	182.00	182.00	140.00	140.00	186.00	170.00	170.00	206.00
	[inch]	3.346	3.346	4.724	7.165	7.165	5.512	5.512	7.323	6.693	6.693	8.110
Dimension "E":	[mm]	74.00	74.00	90.00	165.00	165.00	97.00	97.00	172.00	146.00	146.00	191.00
	[inch]	2.913	2.913	3.543	6.496	6.496	3.819	3.819	6.772	5.748	5.748	7.520
Dimension "F":	[mm]	125.00	125.00	200.00	200.00	200.00	202.00	202.00	202.00	270.00	270.00	270.00
	[inch]	4.921	4.921	7.874	7.874	7.874	7.953	7.953	7.953	10.630	10.630	10.630
Integrated remote control	●	●	●	●	●	●	●	●	●	●	●	●
Liquid-cooled torch body	●	●	●	●	●	●	●	●	●	●	●	●
Pivoting torch body	●	●	●	●	●	●	●	●	●	●	●	●
Precise adjustment of the electrode position	●	●	●	●	●	●	●	●	●	●	●	●
Coupling for manual rotation of the rotor	●	●	●	●	●	●	●	●	●	●	●	●
Infinitely variable clamping mechanism	●	●	●	●	●	●	●	●	●	●	●	●
Optional extension of the clamping range	●	●	●	●	●	○	○	○	○	○	○	○
Integrated cold wire feed	○	○	●	●	●	●	●	●	●	●	●	●
External cold wire feed	●	●	○	○	○	○	○	○	○	○	○	○
Fine adjustment of the wire position	●	●	●	●	●	●	●	●	●	●	●	●
AVC arc voltage control***	○	○	○	○	○	○	○	○	○	○	○	○
OSC oscillation***	○	○	○	○	○	○	○	○	○	○	○	○

The technical data are not binding. They are not warranted characteristics and are subject to change.

● = feature included ○ = feature not included ● = feature limited included (retrofittable) * with accessories ** KD retrofit kits optionally available (page 56) *** only applicable in combination with the orbital welding power supply ORBITAT 300 CA AVC/OSC

DIMENSIONS (VALUES, SEE TABLE):



SCOPE OF DELIVERY	
Including:	<ul style="list-style-type: none"> 1 Open orbital weld head ORBIWELD TP 1 Durable storage and shipping case 1 Handle (TP 1000: 2 handles) 1 Tool set 1 Operating instructions and spare parts list
Suitable accessories (available option):	<ul style="list-style-type: none"> Clamping units "V2" (retrofit kits) Cold wire feed units "KD" (retrofit kits) Extension kits for for TP 400 Control cable Remote control ESG tungsten grinders ORBmax residual oxygen meter ORBIPURGE forming set Earth cable Hose package extensions WS2 tungsten electrodes

Open orbital weld heads OW TP

ORBIWELD TP 250 ORBIWELD TP 400 (AVC/OSC) ORBIWELD TP 600 (AVC/OSC) ORBIWELD TP 1000 (AVC/OSC)

Features, application range, technical data and scope of delivery, see page 53.

The following accessories are essentially required for operating the TP open orbital weld heads and **must be ordered separately**:

- Control cable, see page 57
- Earth cable, see page 86

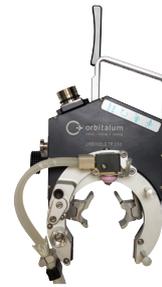
ARTICLE	WITH COLD WIRE UNIT (KD)	CODE	WEIGHT OF MACHINE KG**	DISPATCH WEIGHT KG
Open orbital weld head TP 250	-	811 000 001	7.000	15.600
Open orbital weld head TP 250	KD4	811 000 005	8.900	20.000
Open orbital weld head TP 400	-	812 000 001	11.000	20.000
Open orbital weld head TP 400	KD3-100	812 000 006	12.500	20.000
Open orbital weld head TP 400 AVC/OSC*	KD3-100	812 000 002	15.200	24.800
Open orbital weld head TP 600	-	813 000 001	13.700	23.600
Open orbital weld head TP 600	KD3-100	813 000 005	15.200	30.000
Open orbital weld head TP 600 AVC/OSC*	KD3-100	813 000 002	18.900	33.300
Open orbital weld head TP 1000	-	814 000 001	22.500	38.000
Open orbital weld head TP 1000	KD3-100	814 000 005	24.000	40.900
Open orbital weld head TP 1000 AVC/OSC*	KD3-100	814 000 002	28.700	45.300

* Only applicable in combination with the orbital welding power supply ORBIMAT 300 CA AVC/OSC (see from page 11).

* Machine weight including hose package.

Suitable accessories (available option):

- Clamping units "V2" (retrofit kits), see page 56
- Cold wire feed units "KD" (retrofit kits), see page 56
- Extension kits for clamping jaws for TP 400, see page 57
- Earth cable, see page 86
- Control cable, see page 57
- Remote control, see page 17



ORBIWELD TP 250



ORBIWELD TP 400 KD3-100



ORBIWELD TP 400 AVC/OSC



ORBIWELD TP 600



ORBIWELD TP 1000

OPEN ORBITAL WELD HEADS



KD4 with open lift-off lid



KD3-100 with Ø 100 standard reel



KD retrofit kit



Clamping unit TP 400 complete

Accessories for ORBIWELD TP

Cold wire feed units "KD" (retrofit kits)

Scope of delivery:

- 1 Feed motor for wire Ø 0.8 mm (0.031")
- 1 Wire adjusting unit
- 1 Wire nozzle with wire core (for wire Ø 0.8 mm (0.031"))
- 1 Wire reel retainer for Ø 100 mm/1 kg (3.937"/2.2 lbs) standard wire reels
- 1 External cold wire box (KD4 only)

ARTICLE	APPLICABLE WITH	CODE	KG
Cold wire feed KD4	TP 250	811 050 001	2.110
Cold wire feed KD3-100*	TP 400*	812 050 061	0.680
Cold wire feed KD3-100	TP 600	813 050 001	0.680
Cold wire feed KD3-100	TP 1000	814 050 008	0.720

* For retrofitting the orbital weld head must be sent to the Orbitalum service department.

KD retrofit kits

For retrofitting the cold wire feed unit to wire Ø 1.0 mm (0.039").

ARTICLE	APPLICABLE WITH	CODE	KG
KD retrofit kit to wire Ø 1.0 mm (0.039")	TP 250	811 050 046	0.115
KD retrofit kit to wire Ø 1.0 mm (0.039") V2*	TP 400/600/1000 incl. AVC/OSC	812 050 076	0.115

* Please consider the serial numbers, see above.

Clamping units "V2" (retrofit kits)

Since 11/2013 (ORBIWELD TP 400 and TP 600 (AVC/OSC)) and since 09/2017 (ORBIWELD TP 250) our orbital weld heads are delivered with a new clamping unit. For older models we offer the possibility to retrofit this new clamping unit quickly and easily.

Please submit the respective machine number with the order (see the type plate). The new clamping unit is supplied including a new type plate.

Advantages of the new clamping unit:

- Improved handling, easier and more precise alignment of the weld head
- Increased clamping power
- Includes clamping jaws made of stainless steel (1.4305); clamping jaws for other applications also available (see from page 57)

Scope of delivery:

- 1 Clamping unit with clamping jaws
- 4 Fastening screws M4x20

ARTICLE	CODE	KG
Clamping unit "V2" for TP 250 complete	811 050 050	
Clamping unit "V2" for TP 400 complete	812 050 044	3.785
Clamping unit "V2" for TP 600 complete	813 050 024	4.750

OPEN ORBITAL WELD HEADS

Extension kits for clamping jaws

The extension kits for stainless steel clamping jaws are only available for TP 400 for expanding the clamping range to a pipe OD min. 15.00 mm (0.591").

ARTICLE	VERSION	PIPE OD [MM]	PIPE OD [INCH]	CODE		KG
Extension kit for clamping jaws for TP 400	Stainless steel	15.00 - 30.00	0.591 - 1.181	812 002 005		0.520



Extension kit for clamping jaws for TP 400

Control cable

Suitable for all ORBIWELD TP open orbital weld heads

ARTICLE	LENGTH [M]	LENGTH [INCH]	CODE		KG
Control cable for ORBIWELD TP	7.5	24.6	811 050 003		1.202



Control cable

Other accessories for orbital welding

- ESG tungsten grinders, see page 79
- ORBmax residual oxygen meter, see page 83
- ORBIPURGE forming set, see page 86
- Hose package extensions, see page 86
- WS2 tungsten electrodes, see page 87
- Torch and cold wire consumables, see page 89
- Earth cable, see page 86

OPEN ORBITAL WELD HEADS