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Orbital Tube-Tubesheet welding systems

Inverter power source type IM 99

The TECHNODATA orbital welding systems are the result of many years experience in the field of tube to tube and tube to tube-sheet TIG welding. High quality welds and high repeatability are reached by using ultra modern technical components and special software. The input of all parameters is very easy and logical by means of the control panel with 8-line display.

Technical Data :

- integrated control unit for all TECHNODATA orbital welding heads
- integrated sector control with 10 free selective sectors for the parameters current, rotation- and wire-speed
- program capacity for 40 program blocks
- remote control with 8-line display
- current range: 5 A - 300 A
- max current 40% d.c.: 300 A
- max current 60% d.c.: 250 A
- max current 100% d.c.: 190 A
- no load voltage: 106 V
- welding voltage: 10 V - 30 V
- mains voltage: 3 x 400 V
- tolerance: + 6 % / - 15 %
- frequency: 50 / 60 Hz
- efficiency: 89 %
- surrounding temperature: - 10°C / 40 °C
- cooling: fan
- torch-cooling: water
- ground cable: 35 mm²
- size (L / W / H) : 890 x 500 x 890 mms
- weight: appr. 100 kgs
- tested: VDE 0544 + EN 60974-1 S

Options:

- trolley for 2 gas bottles with support arm and balancer
- double gas valve
- manual torch
- printer type CBM



Orbital-welding head T-250

The TECHNODATA welding head is used for TIG tube to tube-sheet weldings with and without filler wire. The main features are easy handling, high adaptability to the specific welds and precise torch guiding.



Technical Data :

- endless rotating coupling for current, shield gas and coolant
- way control for rotation
- torch water cooled, swivelling
- slide for torch and wire adjustment
- axial adjustment by screw ring
- rotating wire feeding device (dismountable) (spool D 100; wire dia. 0,6 - 1,2 mms; 1 kgs)
- rotating speed: 0,2 - 5 rpm
- wire speed: 0 - 1,5 m / min
- tungsten dia.: 1,6 - 3,2 mms
- max. current: 200 A
- net weight: 7,5 kgs
- size (without centering): L = 450 mms
D = 120 mms

Accessories:

- double gas shield chamber
- pneumatic clamping device
- motorized torch adjustment
- support ring; balancer etc.

Tube-to-Tube Orbital welding head SZ

With the TECHNODATA orbital TIG welding head type SZ tube to tube welding joints with and without filler wire can be performed.

The welding heads are available for single pass - and multi pass weldings with AVC.

Easy handling, low weight and precise torch guiding are the main features of the TECHNODATA orbital welding heads type SZ.

Technical Data:

- rigid and compact body
- smooth torch rotation secured by extremely precise guiding system
- clutch for manual return
- infinitely variable adjustable gripping jaws
- way control for rotation by impulse ejector
- water cooled torch
- torch support spring beared with adjustable distance tracer
- axial sensitive adjusting spindle
- wire feeding device variable mounted according to the clearance situation
- (spool D 100; wire dia. 0,6 - 1,2 mms; 1 kgs)
- rotating speed: 0,2 - 5 rpm
- wire speed: 0 - 1,5 m / min
- tungsten dia.: 1,6 - 3,2 mms
- max. current: 200 A
- net weight:(with wire feeder) appr. 6,5 kgs
(without wire feeder) appr. 5,0 kgs



fig.: Orbital-welding head type SZ

- size 1: 12 - 40 mms
- size 2: 38 - 82 mms
- size 3: 80 - 120 mms

Orbital-welding head T-101

The TECHNODATA welding head type T-101 is used for TIG tube to tube-sheet weldings without filler wire by tubes with thin wall thickness.



fig.: Orbital-welding head type T-101

Technical Data:

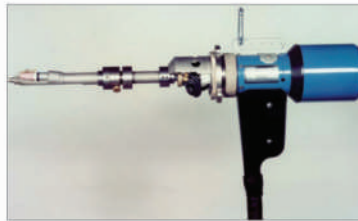
- integrated clamping system in the tube
- way control for rotation
- torch water cooled
- slide for torch radial adjustment
- slide for torch axial adjustment
- axiale fine adjustment of torch supports
- range: I.D. = 12 - 40 mm
- weight: appr. 5,0 kgs
- size (L/W/H): 430 x 360 x 160 mms

- Options :**
- support ring
 - double gas shield chamber

SPECIAL ORBITAL WELDING SOLUTIONS



Inbore welding torch

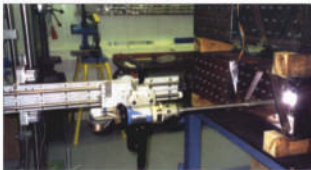


Orbital welding head T-250 with special torch for depth welding jobs

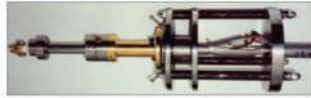
ceramic nozzle & electrode holder



torch for inbore welding (at back side of tube plate)



special torch for aircooler tube-tubesheet weldings (2nd tube sheet)
Multi pass welding, with filler wire



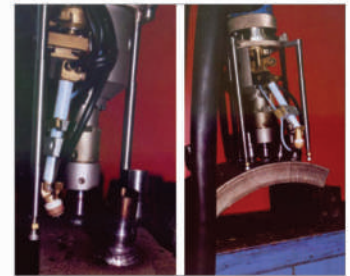
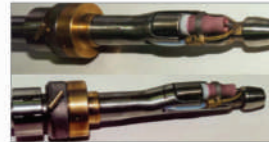
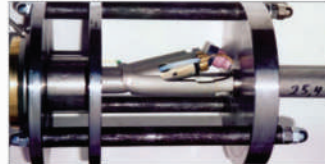
special torch for aircooler tube-tubesheet weldings (2nd tube sheet) fillet weld with filler wire demonstrated at a sample piece



special torch for aircooler tube-tubesheet weldings (2nd tube sheet) through a plug hole (1st tube sheet)

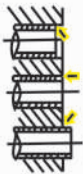


special torch for header drum stud welding



TUBE WELDING AND TUBE EXPANDING FOR HEAT EXCHANGER- AND BOILER MANUFACTURES

with standard equipment:



$D = 12 - 82 \text{ mms}$
 $D_{30^\circ} = 12 - 40 \text{ mms}$

Examples for welding geometries:

Orbital-welding head T-250

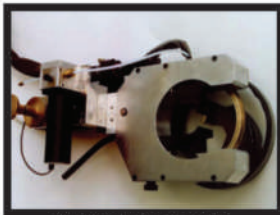


with optional equipment:



i.e:
special torches with or without wire feed, centering device adapted to the special requirements

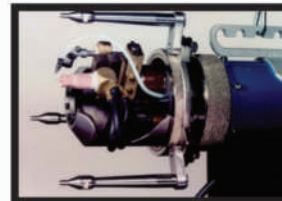
more applications on request



Orbital-welding head SZ



T-250 with double gas shield chamber
picture down: water cooled



torch unit
Orbital welding head T-250



Orbital welding head T-101



TUBE WELDING AND TUBE EXPANDING FOR HEAT EXCHANGER- AND BOILER MANUFACTURES