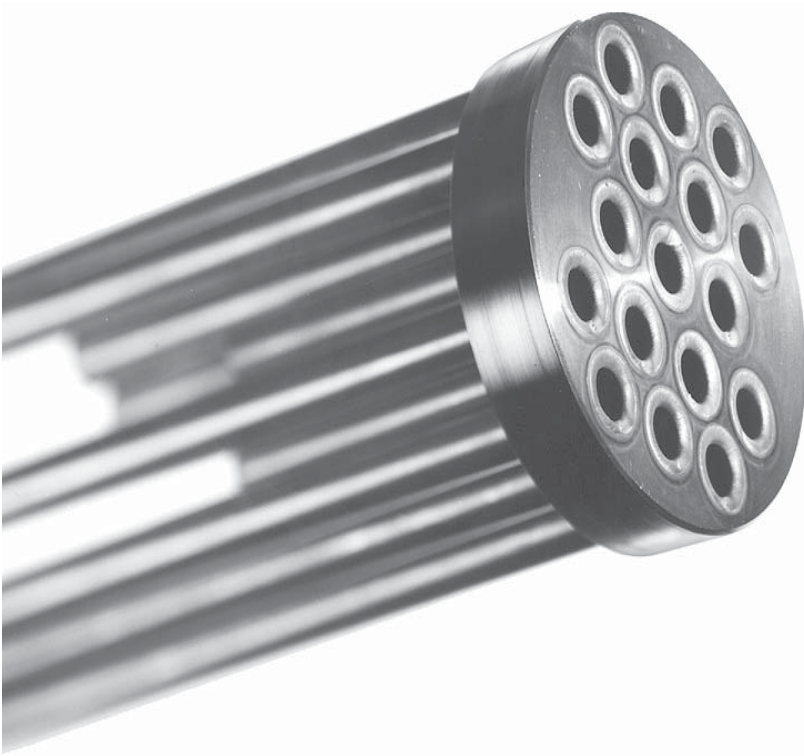


Everything from one hand...

- welding
- expanding
- cutting
- pulling
- cleaning
- testing



- **Sale** • **Rental** • **Service** •
- **Special applications** •
- **Consultation** • **Production** • **Selling** •

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HISTORY of TECHNODATA

The company TECHNODATA, with your seat in Remscheid, is confronted with you as a manufacturer from installations, machines, tools and appliances for the tube welding and tube expanding-technique for heat exchanger and boiler. The TDA range on offer covers also the fields of maintenance, cleaning and repair next to products for the production of heater radiators, condensers and similar industrial plants.

Founded 1982 the GmbH company TECHNODATA took your commercial activities in the year 1991 after the bankruptcy of the company Kothaus + Busch Maschinenfabrik, Remscheid, on.

Long-standing employees and carrier of Know-How changed in this time to the TECHNODATA through that the immense experience treasure could be safeguarded for the production by systems engineering and tools.

Today still our employees are also systems engineering in the situation of repairs or services at Kothaus+Busch (K+B) systems carry on.

The tools currently offered by TDA, as for example tube expanders, base mainly on that one Lines of products K+B, that is due to the constructed in an identical fashion carrying out spare parts are interchangeable

TDA offers not only comprehensive consultation and sale of electrical-electronic, electrical-hydraulic and pneumatic tube pulling-, tube expander, drive and tube processing technique, as well as Orbital-welding technique at, but also a competent, customer-specific service for additional technical fields, „around the tube“, as sample tube cleaning.

The TECHNODATA has on the international world market, in particular on the field of Special solutions a leading position attains.

Whether manufacturer of air coolers/radiators that produce welding or rolling-connections from tubes tube plate in locked or open vestibules or belong to manufacturer from special devices with hollow tube welds to the circle of customers from TDA.

Special appliances for the production of so called Inbore - welds with or without addition of cold wire appertain in the same way to our delivering-spectrum.

On the fields of the orbital-tube welding and tube expanding the TECHNODATA with support of partner companies offers the realization from wage tasks in the work task. Furthermore a wide palette of rental-equipments offers the possibility to cover for example production tops or to gain own experiences in the case of new purchases in the rent park of our custom.



Mechanical-hydraulic tube contact expanding unit type TES 97

The mechanical-hydraulic tube contact expanding device TECHNODATA type TES 97 is a device for conical expanding of tube ends for welding preparation before welding tubes to tube sheets. The unit consists of a portable hydraulic aggregate and a double acting hydraulic cylinder with interchangeable expanding tools.

The expanding tools are adapted to the demands. The tool is inserted into the tube to be expanded. By means of a distance sleeve the axial position of the tube is located. When the mandrel is pushed by the hydraulic cylinder, the

conical tool expands the tube end and occurs a line contact. The tube is centered and fixed in the tube sheet and in an ideal position for automatic welding, tack welding can be avoided, and the centering mandrel is preserved when inserting for automatic tube to tube sheet welding.

Technical Data:

hydraulic aggregate:

pump:	400 V / 3~ / 50/60 Hz / 1,1 kW
conveying capacity:	1,0 l/min / 500 bar (motor rating 1,1 KW)
tank volume:	appr. 10 l
weight:	appr. 45 kgs
hose length:	6 m

hydraulic cylinder:

	size 1	size 2
piston stroke:	40 mms	60 mms
size without tools:	L=230 mms	L=290 mms
weight without tools:	appr. 3 kgs	appr. 6 kgs
range:		
tube o. d.:	12 to 30 mms	12 to 50 mms
wall thickness:	0.5 to 2.5 mms	0.5 to 3.5 mms

further tube diameters on request !

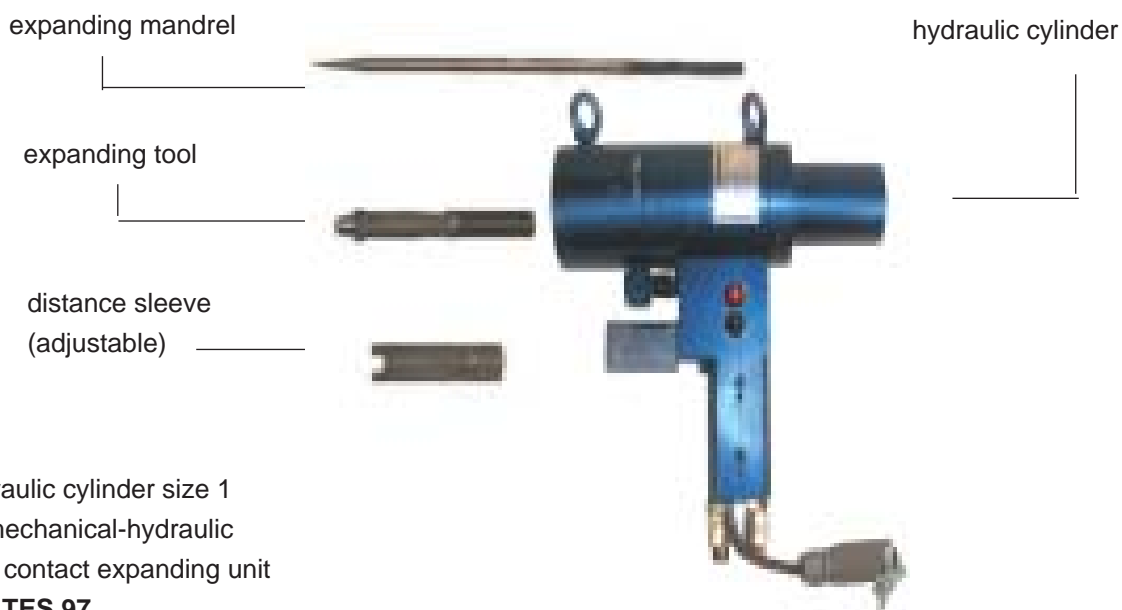


fig.: Hydraulic cylinder size 1
for mechanical-hydraulic
tube contact expanding unit
type **TES 97**

Orbital-tube 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 37 program blocks
- remote control with 8-line display
- current range: 5 A - 300 A
- max current 60% d.c.: 300 A
- max current 100% d.c.: 250 A
- no load voltage: 93 V
- welding voltage: 10 V - 30 V
- mains voltage: 3 x 400 V
- tolerance: + 20 % / - 25 %
- frequency: 50 / 60 Hz
- max. connected load: 14.3 kVA
- surrounding temperature: - 10°C / 40 °C
- cooling: fan
- torch-cooling: water
- tank capacity: 12 l
- ground cable: 35 mm²
- size (L / W / H): 1100 x 455 x 950 mms
- weight: appr. 105 kgs
- tested: VDE 0544 + EN 60974-1 S



Options:

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

Printer type CBM

The printer type CBM is designed for documentation of welding procedures. All digital data of the welding procedure shown in the display of the control panel type E 300 are able to print out as a welding record in the matrix-printer.

There are two designs to select. Type CBM 920, as a fitted unit in the inverter power source type IM-99 and type CBM 910 as a transportable external unit with separate power supply. A separate data cable connects the printer type CBM 910 with an interface at the remote control of the inverter power source



fig.: printer type **CBM 910**

Additional *Orbital*-control unit type MPS

The additional *Orbital*-control unit type MPS is designed to control TECHNODATA *Orbital*-welding heads together with the standard power source TIG 300 DC or other TIG power sources. Three different types of units are available for a number of different technical applications:

- **MPS-1** designed for *Orbital*-welding head T-100, T-101 and T 250 *without* filler wire.
- **MPS-2** designed for *Orbital*-welding head T 250 *with* or *without* filler wire.
- **MPS-3** designed for *Orbital*-welding head T 250 and tube to tube welding head SZ *with* or *without* filler wire.

The basic welding parameters are controlled and adjusted by the control panel of the TIG power source. The control and adjustment of the *Orbital*-welding head is obtained by the control panel. A 2-lane digital readout in front of the control panel makes it possible for the user to communicate with the machine. In this way an easy operation and handling of the system is warranted. The rotation and wire speed are adjustable with two multi-fold potentiometers. An additionally pulse program for the welding current is integrated.

Fig.: Additional *orbital*-control unit type **MPS-3**



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.

The welding head T-250 consist of the central body with centering bell and torch unit, and the mounted rotating filler wire device. The rotating torch is water cooled and can be adjusted radial, axial, and angular. The rotating movement is endless, current, shield gas and coolant are passed over by a rotation coupling.

The welding head T-250 is centered in the tube to be welded by means of a interchangeable centering cartridge mounted on a centering mandrel. The distance and the right angle position are secured by adjustable precise supporting legs. Exact filler wire guiding is guaranteed by a rigid guide system. Stepless adjustable driving motors for rotation and wire feeding together with the way control system are responsible for the automatic single- or multi-pass welding cycle.

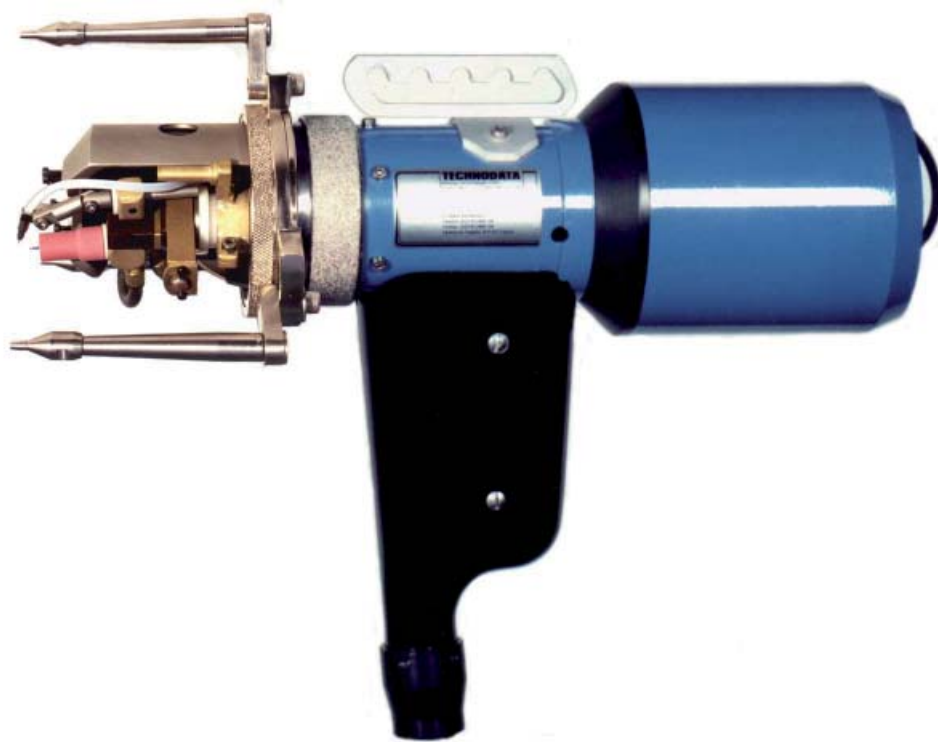
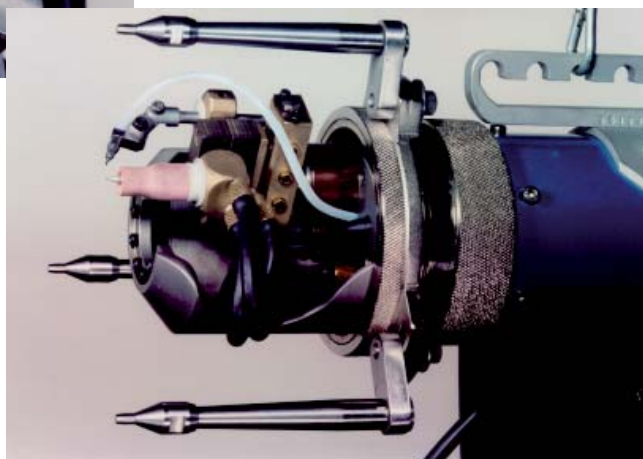
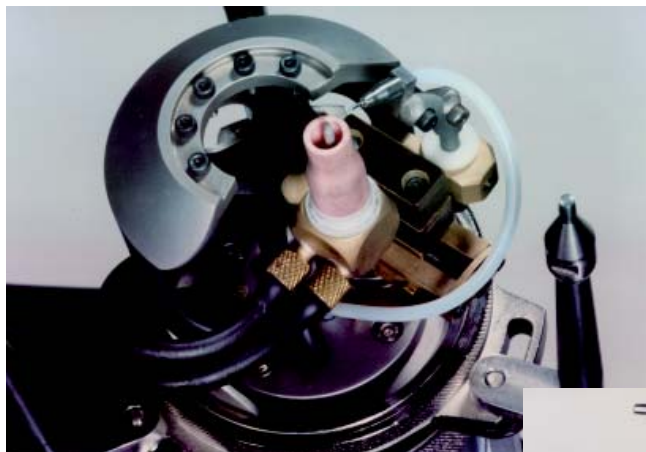
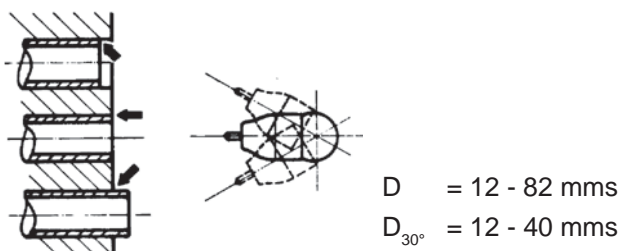


fig.: Orbital-welding head T-250, with double gas shield chamber to weld titanium tubes

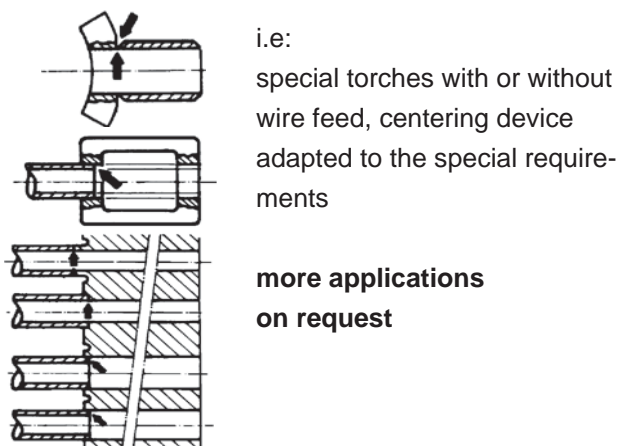


Examples for welding geometries:

with standard equipment:



with optional equipment:



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.

centering cartridges and mandrels for orbital welding head

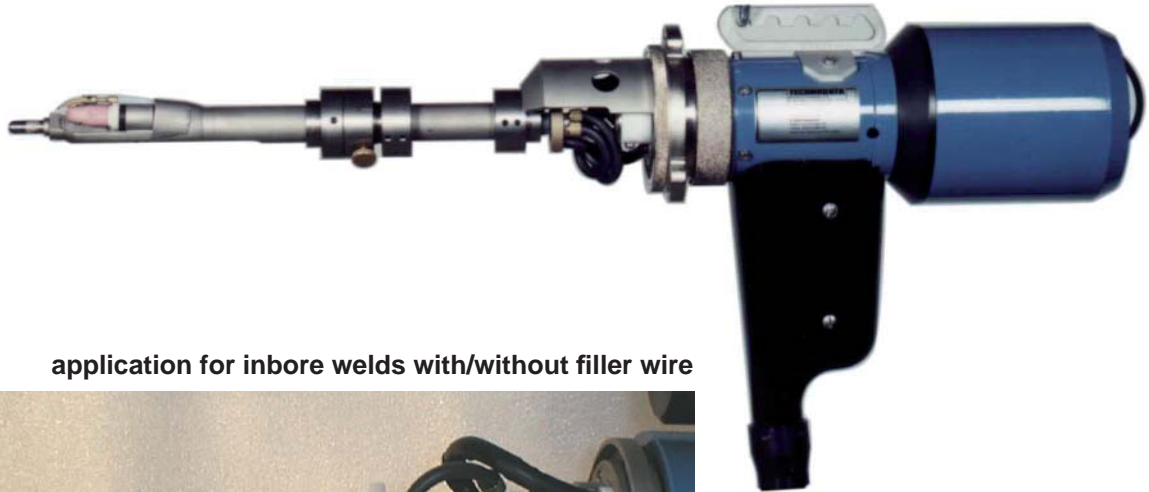


CENTERING CARTRIDGES

ITEM-No.	DENOMINATION	tube ID
179200101	centering mandrel size 1 - f. centering cartridge size 101 - 106	
179209805	centering cartridge for tube ID:	9,8 - 10,3 mm size 101
179210305	centering cartridge for tube ID:	10,3 - 10,8 mm size 102
179210805	centering cartridge for tube ID:	10,8 - 11,3 mm size 103
179211305	centering cartridge for tube ID:	11,3 - 11,8 mm size 104
179211805	centering cartridge for tube ID:	11,8 - 12,3 mm size 105
179212305	centering cartridge for tube ID:	12,3 - 13,0 mm size 106
179200111	centering mandrel size 2 - f. centering cartridge size 107 - 114	
179212812	centering cartridge for tube ID:	12,8 - 14,0 mm size 107
179213812	centering cartridge for tube ID:	13,8 - 15,0 mm size 108
179214812	centering cartridge for tube ID:	14,8 - 16,0 mm size 109
179215812	centering cartridge for tube ID:	15,8 - 17,0 mm size 110
179216812	centering cartridge for tube ID:	16,8 - 18,0 mm size 111
179217812	centering cartridge for tube ID:	17,8 - 19,0 mm size 112
179218812	centering cartridge for tube ID:	18,8 - 20,0 mm size 113
179219827	centering cartridge for tube ID:	19,8 - 22,5 mm size 114
179200121	centering mandrel size 3 - f. centering cartridge size 115 - 125	
179222327	centering cartridge for tube ID:	22,3 - 24,8 mm size 115
179224525	centering cartridge for tube ID:	24,5 - 27,0 mm size 116
179226525	centering cartridge for tube ID:	26,5 - 29,0 mm size 117
179228525	centering cartridge for tube ID:	28,5 - 31,0 mm size 118
179230525	centering cartridge for tube ID:	30,5 - 33,0 mm size 119
179232535	centering cartridge for tube ID:	32,5 - 36,0 mm size 120
179235535	centering cartridge for tube ID:	35,5 - 39,0 mm size 121
179238535	centering cartridge for tube ID:	38,5 - 42,0 mm size 122
179241535	centering cartridge for tube ID:	41,5 - 45,0 mm size 123
179244535	centering cartridge for tube ID:	44,5 - 48,0 mm size 124
179247535	centering cartridge for tube ID:	47,5 - 51,0 mm size 125
179200131	centering mandrel size 4 - f. centering cartridge size 126 - 132	
179250535	centering cartridge for tube ID:	50,5 - 54,0 mm size 126
179253545	centering cartridge for tube ID:	53,5 - 58,0 mm size 127
179257545	centering cartridge for tube ID:	57,5 - 62,0 mm size 128
179261545	centering cartridge for tube ID:	61,5 - 66,0 mm size 129
179265545	centering cartridge for tube ID:	65,5 - 70,0 mm size 130
179269545	centering cartridge for tube ID:	69,5 - 74,0 mm size 131
179273545	centering cartridge for tube ID:	73,5 - 78,0 mm size 132

Different sizes and ranges available. Detailed technical data sheet on request, please contact customer service !

Orbital-welding head Typ T-250 *special solutions for aircooler weld*



application for inbore welds with/without filler wire



Orbital-welding / Standard und special applications



simultaneous working of 7
welding head



special torch for recessed weld



special torch for
header drum stud welding



Frame for double welding system



aircooler torch for fillet
welds
Version 32 28
Version 32 28



T-250 with standard double gas shield chamber



double gas shield chamber, liquid cooled

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.

The main features are easy handling, high adaptation to the specific welds and precise torch guiding.

The welding head T-101 consist of the central body with centering bell and torch unit with integrated clamping system. The rotating torch is water cooled and can be adjusted radial, axial, and angular.

The mediums current, shield gas and coolant water are passed through a hose package which is winded up and down at the back side of the welding head.

The change of the welding direction (clock- or anti clockwise) is done automatically by the control unit and enables shorter cycle times.

The welding head is centered in the tube to weld by a centering cartridge which is mounted on a centering mandrel. The easy centering is done by a manuel turning of a lever at the backside of the welding head.

The stepless adjustable rotation speed with an exactly way and time registration makes a free adjustment possible for the automatic single-pass welding cycle.

The *Orbital* welding head type T-101 guarantees the surely and repeatability of tube to tube-sheet weldings by easiest handling.



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

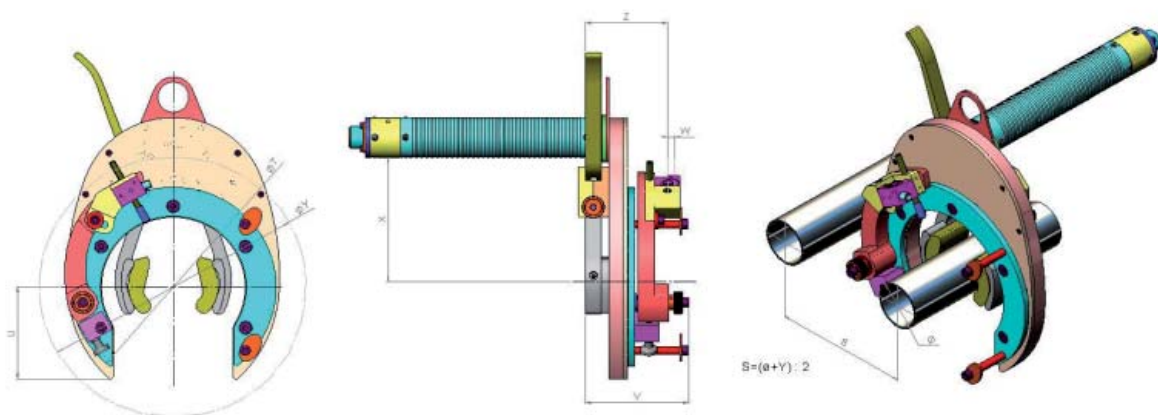
- Options :**
- support ring
 - double gas shield chamber



TIG-Orbital-welding head series OWH

The Open-Frame Orbital welding heads type OWH are available in the following operating ranges:

- OWH-76 DA 10 mm - DA 76.2 mm
- OWH-114 DA 15 mm - DA 114.3 mm
- OWH-168 DA 35 mm - DA 168.3 mm



Type	T	U	V	W	X	Y max	Z
ZO - 76	141	64	100	7	90	235	79
ZO - 114	200	92	100	7	130	322	79
ZO - 168	297	134	100	7	185	476	79

Bevelling machines

For different reasons tube ends of most different tube dimensions - and materials must be machined.

This should be obtained quickly, economically and precise, because the machining result is often determining the efficiency of the following operations, p.e. welding.

For the entire field TECHNODATA offers a range of bevelling machines with internal or external locking.

The bevelling machine **MINI TDA** is designed for precise and economical bevelling and shortening of tube ends. Locking is internal. By mounting three different cutters, three different faces at the tube end can be obtained in one operation. The standard model is pneumatic driven and equipped with manual locking and manual feeding, for tube I. D. range 20 to 42 mms (.78" to 1.65"), optional 12 to 21 mms (.49" to .83"), and is delivered in a plastic box. Electric drive, pneumatic locking, pneumatic feeding and models with more capacity as well as special grippers p.e. for elbow bevelling are available.



fig.: MINI TDA with pneumatic clamping device

Bevelling machine Typ MINI-TDA

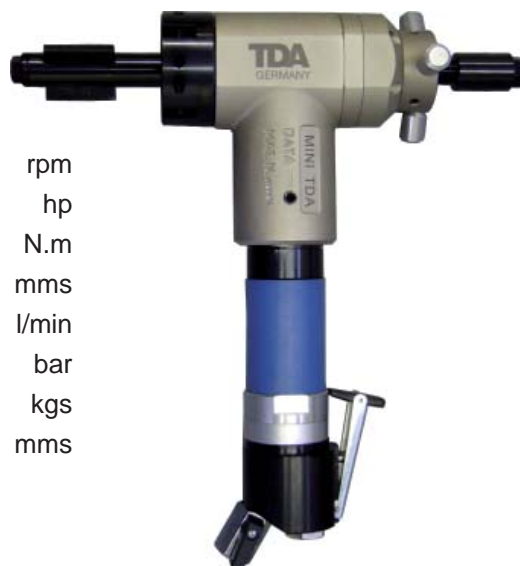


fig.: Bevelling machine type MINI TDA

• idle speed:	180	rpm
• power:	0,28	hp
• torque:	21	N.m
• feeding range:	23 (37)	mms
• air consumption:	350 - 400	l/min
• air pressure:	6	bar
• weight:	4,5	kgs
• sizes:	67 x 300	mms

Bevelling machine Typ BOILER

The bevelling machine type **BOILER** is designed for preparation of tubeends range 28 - 76 mms inside Ø. With special clamping set you can prepare tube ends from inside Ø 20,0 mm.

• idle speed:	110	rpm
• power:	0,55	hp
• torque:	83	N.m
• feeding range:	40	mms
• air consumption:	950	l/min
• air pressure:	6	bar
• weight:	8,3	kgs
• sizes:	80 x 300	mms

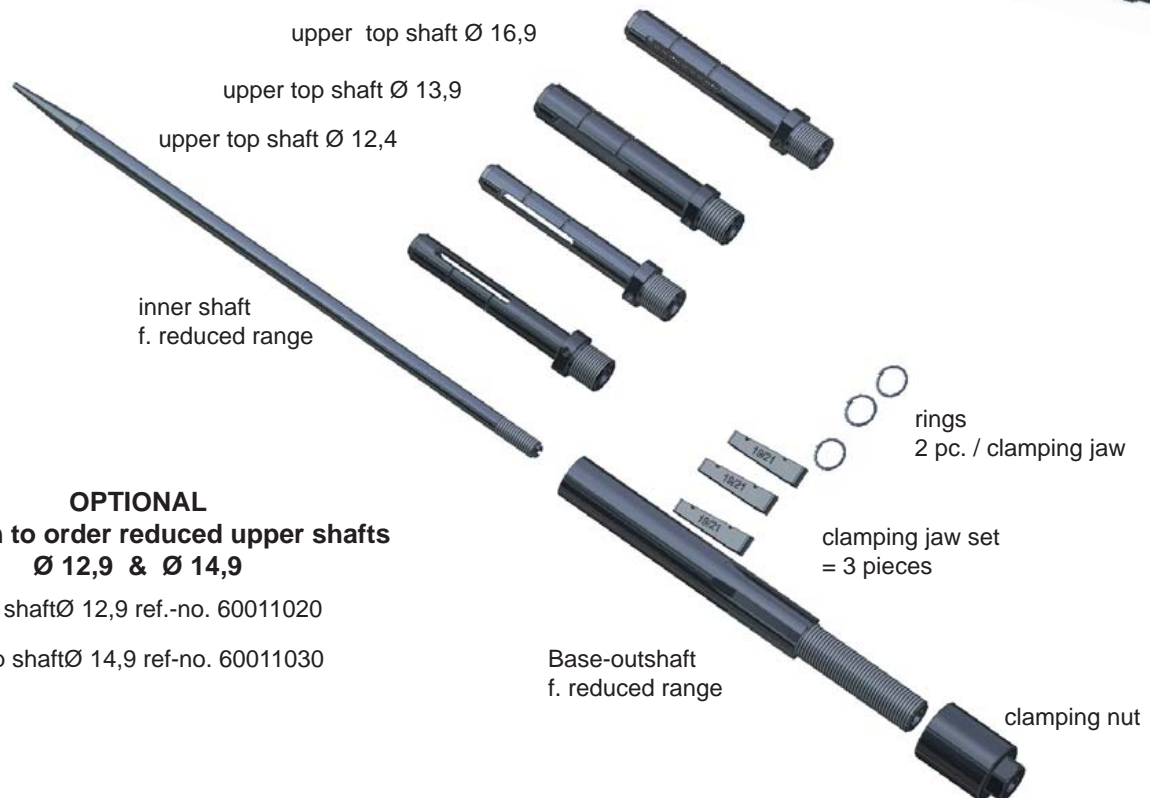
fig.: Bevelling machine type BOILER



Accessories bevelling machine MINI-C / MINI-K / MINI-TDA

Spannbacken		Außenwelle	Innenwelle
Bereich mm	Best.-Nr.	Best.-Nr.	Best.-Nr.
20,0 - 24,0	60013090	Ø 20,0 mm 60021000	60022000
23,0 - 27,0	60013100		
26,0 - 30,0	60013110		
29,0 - 33,0	60013120		
32,0 - 36,0	60013130		
35,0 - 39,0	60013140		
38,0 - 42,0	60013150		

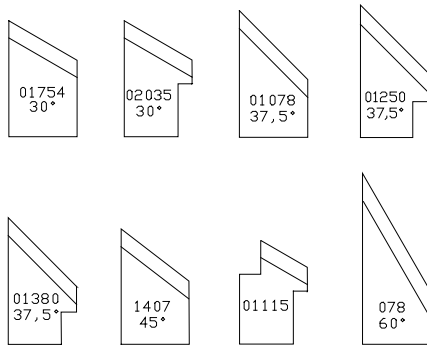
f. reduced tube range 12,5 - 21,0 mm



Wellenoberteile		Spannbacken		Federringe	Basis-Außenwelle	Innenwelle
Ø mm	Best.-Nr.	Bereich mm	Best.-Nr.	Best.-Nr.	Best.-Nr.	Best.-Nr.
12,4	60011010	12,5 - 14,5	60013010	60013010-F	60011000	60012000
		13,0 - 15,0	60013020			
13,9	60011025	14,0 - 16,0	60013030	60013030-F		
		15,0 - 17,0	60013040			
		16,0 - 18,0	60013050			
16,9	60011040	17,0 - 19,0	60013060	60013050-F		
		18,0 - 20,0	60013070			
		19,0 - 21,0	60013080			

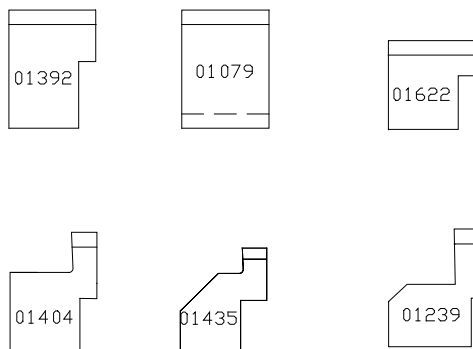
CUTTER BIT bevelling machines

OUTSIDE WORKING



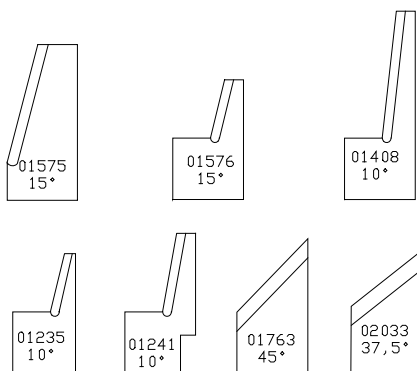
UCO1754	UCO2035	UCO1078	UCO1250
HSS/Co	HSS/Co	HSS/Co	HSS/Co
UCO1380	UCO1407	01115	078/071
HSS/Co	HSS/Co	HSS/Co	HSS/Co

STRAIGHT WORKING



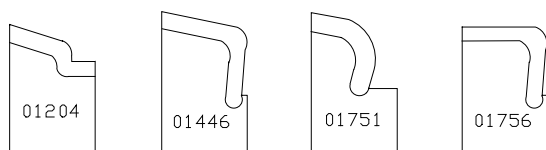
	UCO1392	UCO1079	01622
	HSS/Co	HSS/Co	
	01404	01239	UCO1435
			HSS/Co

INSIDE WORKING



	UCO1575	UCO1576	01408
	HSS/Co	HSS/Co	HSS/Co
01235	01241	UCO1763	UHO2409
		HSS/Co	

special welding preparation



01204	01446	01751	01756

for further bits and special tools for bevelling machines contact your customer service !

Electronic tube expanding controller type NFAB-S and NFAB-S/1

The electronic tube expanding controller is used for exact and repeatable power control of electric driving motors for tube expanding work.

The controller is designed for connection of three phase A.C. motors of different types and power ranges.

The electronic measurement and control of electric power secures the precise breaking torque and guaranties the repeatability of the expanding rate.

A control system adapted to the expanding procedure assures optimal economy. The handling is very easy.

The expanding cycle will be started by foot-pedal switch.

Technical Data :

- mains connection: 400 V / 3~ / 50 Hz
- output voltage: 42 V / 3~ / 50 Hz

(safety voltage)

alternativ: 400 V / 3~ / 50 Hz

- output power: max. 1,9 kVA
(more power on request)
- main switch with overload release (adjustable)
- stand by indicator
- power adjustment by 10-fold potentiometer
- adjustable reverse time appr. 0 - 30 sec
- adjustable delay time appr. 0 - 30 sec
- automatic cycle restart (disengageable)
- zero setting to compensate different no-load power of driving motors
- phase sequence switch

- foot-pedal switch with 3 buttons
- size (L/W/H): 400 x 520 x 315 mms
- weight: (42 V type) appr. 48 kgs
(400 V type) appr. 20 kgs

Options:

- trolley for driving motor support
- hand-switch

NFAB-S/1 with 400 V / 3~ / 50



NFAB-S with 42 V / 3~ / 50 Hz



fig. right
backside with connections
NFAB-S/1(top) and
NFAB-S (down)

Electronic tube expanding controller type NFAB D/2

The electronic tube expanding controller is used for exact and repeatable power control of electric driving motors for tube expanding work.

The controller is designed for connection of single phase motors of different types and power ranges. With the single phase driving motors the power weight of the driving motor is very low.

The electronic measurement and control of the electric power secures the precise breaking torque and guarantees repeatability of the expanding rate. A control system adapted to the expanding procedure assures optimal economy. The handling is very easy.

All parameters will be adjusted by the control panel with the 2-line multiple language digital display. It is possible to store the expanding processes by integrated storage device. Further it is possible to connect the TDA printer LQ 300 for documentation. The expanding cycle will be started by foot-pedal switch.

fig.:

Expanding controller type **NFAB D/2** with with printer LQ-300 and driving motor D230-9

Technical Data :

- main connection: 230 V / 1~ / 50 (60) Hz
- output voltage: 230 V / 1~ / 50 (60) Hz
- output power: max. 1,9 kVA
- main switch with overload release (adjustable)
- stand by indicator
- adjustment by digital display
- adjustable reverse time appr. 0 - 30 sec
- adjustable delay time appr. 0 - 30 sec
- automatic cycle restart (disengageable)
- zero setting to compensate different no-load power of driving motors
- phase sequence switch
- plug for printer
- foot-pedal switch with 3 buttons
- size (L/W/H): 345 x 315 x 180 mms
- weight: appr. 8 kgs



fig.: Expanding controller type **NFAB S/2** with driving motor type D 32

Electronic tube expanding controller type NFAB-D and NFAB-D/1

The electronic tube expanding controller is used for exact and repeatable power control of electric driving motors for tube expanding work. The controller is designed for connection of three phase A.C. motors of different types and power ranges. The electronic measurement and control of electric power secures the precise breaking torque and guarantees the repeatability of the expanding rate. A control system adapted to the expanding procedure assures optimal economy. The handling is very easy. All parameters will be adjusted by the control panel with the 2-line multiple language digital display. It is possible to store the expanding processes by integrated storage device. Further it is possible to connect the TDA IBM compatible printer type LQ-300 with appropriate interface for the documentation. An optional PC-interface make a Up- and Download from stored data possible. The expanding cycle is started by foot-pedal switch.

Technical Data :

- mains connection: 400 V / 3~ / 50 Hz
- output voltage: 42 V / 3~ / 50 Hz

(safety voltage)

alternativ: 400 V / 3~ / 50 Hz

- output power: max. 1,9 kVA
(more power on request)

- main switch with overload release (adjustable)
- stand by indicator
- adjustment by digital display
- adjustable reverse time appr. 0 - 30 sec
- adjustable delay time appr. 0 - 30 sec
- automatic cycle restart (disengageable)
- zero setting to compensate different no-load power of driving motors
- phase sequence switch
- plug for power recorder/printer
- foot-pedal switch with 3 buttons
- size (L/W/H) : 400 x 520 x 315 mms
- weight: (42 V type) appr. 48 kgs
(400 V type) appr. 20 kgs

Options:

- printer type CBM 910
- trolley for driving motor support
- hand-switch

fig. up
NFAB-D/1 mit 400 V / 3~ / 50 Hz



fig. down
NFAB-D mit 42 V / 3~ / 50 Hz



fig.
backside with connections NFAB-D/1 und NFAB-D
(top down)

Working trolley for tube expanding control units

The working trolley in combination with our tube expanding controllers series NFAD-S and NFAB-D allow a „mobile expanding unit. The trolley consists of a high adjustable horizontal bar with a swivelling gallow for flexible expanding of tubes. the driving motor type D-532 or DSL 550 will mounted by the cardanical suspension brackets at the working trolley. The telescopic shaft is connect by a balancer with the swivelling gallow and guarants a high flexible working for the operator.

The lockable tool box, with 2 levels, store tube expanders, measuring instruments or the printer for documentation. Further it will be possible to store the tube expanding controller with telescopic shaft and foot switch after succesful working in the tool chest.



fig.: Expanding controller
type **NFAB-D** inside of the tool chest.

Mechanical-hydraulic tube expanding unit type NFAB-H

The mechanical-hydraulic tube expanding unit is used for exact and repeatable power control of driving motors for tube expanding work, connected with a hydraulic device for precise mandrel pushing.

The electronic measurement and control of the electric power enables for precise breaking torque and guarantees repeatability of the expanding rate.

Mandrel feed is independent and controlled by the hydraulic feeding device using tube expanders with straight rollers. Therefore the tube expanding procedure is much more adaptable to the expanding requirements than by using self feeding tube expanders. The expansions are cylindrical and absolutely round. A cooling and lubricating system is integrated and creates lower tooling costs.

Technical Data :

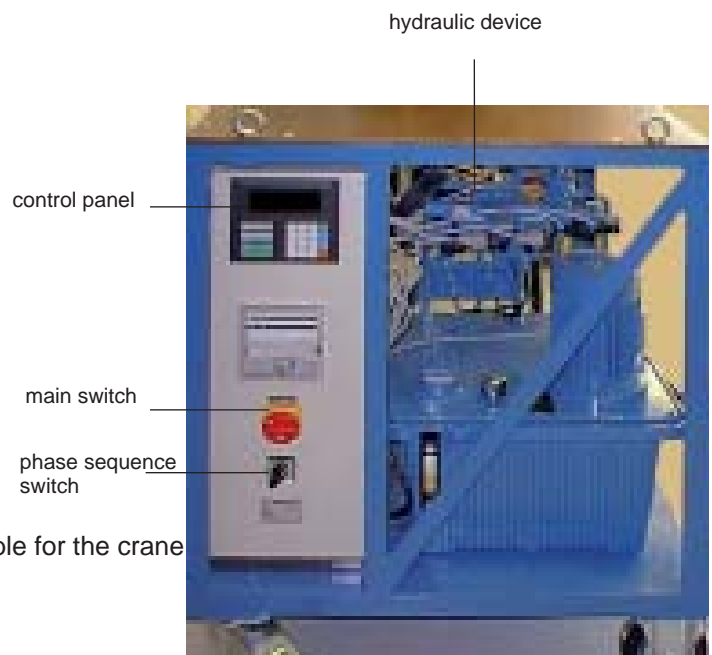
- mains connection: 400 V / 3 - phase / 50/60 Hz other types on request
- output: 42 V / 3 - phase / 50/60 Hz
- output power: max. 1,9 KVA
- hydraulic device with independent pressure and volume control by means of electronic proportional valves (max: 200 bar/ 3 liters/min)
- pulse controlled cooling and lubricating system (lubricant and air independently adjustable)
(air pressure max. 6 bar / lubricant reservoir appr. 3 liters)
- integrated power recorder
- phase sequence switch
- hand-switch
- integrated control panel with display and function keys for preselection of following parameters:
- automatic zero setting to compensate different no - load power of driving motors
- breaking power input
- adjustable reverse time (1 - 99 sec)
- adjustable delay time (1 - 99 sec)
- automatic restart of the expanding cycle
- mandrel speed adjustable
- operating pressure adjustable (max. 200 bar)
- pressure delay time for rounding out
- mandrel reverse pressure adjustable

Options:

trolley extension:

- frame with height adjustable cross bar for supporting the driving motor
- supporting legs to increase the stability
- swivelling support arm for supporting the feeding device

- all parts of the unit are mounted on a trolley, suitable for the crane
- size (L/W/H): 900 x 900 x 1200 mms
- weight: appr. 190 kgs



Driving motors for expanding

42 V / 3~ / 50/60 Hz (safety voltage) or 400 V / 3~ / 50/60 Hz available

**4-speed driving motor
for cardanical suspension
type D-532**



power: 1250 W
speed: 120, 195, 360, 680 rpm
tool connection: internal morse taper MT 3
weight: appr. 15 kgs

**5-speed driving motor
for cardanical suspension
type DSL 550**



power: 1500 W
speed: 20, 40, 80, 160, 700 rpm
tool connection: internal morse taper MT 4
weight: appr. 31 kgs

**Driving motor with fee-
ding device
(compact design)**



for mechanical-hydraulic tube expanding
equipment type NFAB-H, p.e. for special
working areas.
Technical data due to driving motor.

Single-Phase driving motors for expanding work (230 V / 1~ / 50/60 Hz)

**2-speed driving motor
for manual operation
type D 230-9
electronic**



power: 900 W
speed: 100-450 / 300-1000 rpm
tool connection: drill chuck M18 x 2.5
weight: appr. 3.2 kgs

**4-speed driving motor
for manual operation
type D 32**



power: 1500 W
speed: 100, 170, 300, 510 rpm
tool connection: internal morse taper MT 3
weight: appr. 8.3 kgs

Telescopic shaft type TS 72

The ball guiding telescopic shaft with knurled grip range and changeable square insert makes a larger working range by cardanic suspension of the driving motor possible.

Size	Morsetaper	min. length mm	max. length mm	weight kg	max. load Nm	square insert mm / inch
size 2	MT 2	990	1490	7,0	160	9,0 - 12,0 & 14,0 3/8" - 1/2"
size 2	MT 3	990	1490	7,0	160	
size 3	MT 3	1060	1560	12,0	290	
size 3	MT 4	1060	1560	12,0	290	16,0 - 18,0 & 22,0



fig.: telescopic shaft type TS 72

fig.:
square insert
for telescopic shaft TS 72



fig.:
square insert
with quick action chuck
for telescopic shaft TS 72

Accessories for mech.-hydr. tube expanding unit type NFAB-H

Telescopic shaft type TS 72 in combination with hydraulic feeding device and tool holder to accommodate mechanical-hydraulic tube expanders type BR 20.

TOOL HOLDER

with tube expander type BR 20



HYDR. FEEDING DEVICE



TELESCOPIC SHAFT



Tool holder size 2

for feeding device cylinder size 2
to accommodate tube expanders type BR 20

CAGE Ø range
9,0 - 9,6
10,0 - 11,4
12,0 - 13,8
14,5 - 15,5
16,0 - 17,5
18,4 - 19,5
20,0 - 22,0

For each cage range
is one tool holder
necessary.
Special sizes on request

Tool holder size 3

for feeding device cylinder size 3
or cylinder size 2 with enforced cooling system,
to accommodate tube expanders type BR 20

CAGE Ø range
14,5 - 15,5
16,0 - 17,5
18,4 - 19,0
20,0 - 22,0
23,0 - 24,0
25,0 - 26,0
27,0 - 29,0
30,0 - 35,0

Pneumatic torque controlled driving motor D-720

The driving motor type D-720 serves to the expanding and expansion of tubes with small Ø 6,3 mm - 12,7 mm, dependent of wall thickness and material, into heater radiators, condensers, coolers, etc.. Upon reaching the stopped torque the D-720 goes automatically into the counterclockwise rotation. The attitude of the correct torque is achieved above an interior spring load-covered clutch. The small weight, as well as the ergonomic fitting of the machine onto the given operating conditions, facilitate a fast workflow. For a trouble-free course, a corresponding maintenance entity must be pre-connected, this is available as a further option.



TECHNICAL FEATURES

MODEL	D-720-550	D-720-1800	D-720-2500
TUBE OD	1/2" / 12.7 mm*	3/8" / 9.5 mm*	1/4" / 6.3 mm*
SPEED	550 U/min.	1800 U/min	2500 U/min.
TORQUE	0,226 Nm - 8,47 Nm	0,226 Nm -3,05 Nm	0,226 Nm - 0,9 Nm
AIR CONSUMPTION	all types: 4.80 l/min air flow @ min. 6.2 bar		
WEIGHT:	1,20 kg	1,10 kg	1,10 kg
DIMENSION	310 x 80 x 150 mm (L x D x H), without any parts		
TOOL CONNECTION	1/4" quick change chuck Standard / Optional 3/8" quick change chuck		

* depends on tube material, wall thickness, expanding length.

All kind of models have a pneumatic torque control and will be shipped with exhaust muffler, pressure hose with couplings, optional quick action chuck, operating manual and plastic box

Pneumatic torque controlled driving motor D-50

The drive motor type D 50 is designed to expand and roll tubes in heat exchanger, condensers, coolers ,etc. When the adjusted torque is applied the motor shut off automaticly. The adjustment of the correct torque value will be settled by a spring adjusted clutch an secured by a set-screw. The low weight and the flexible handling allows a wide range of technical applications. For reproducible processes it is essential to have as follows points fixed,

air consumption permanent 1.700 l/min., permanent high pressure 6.2 bars, maintenance unit (oiler filter pres-



TYPE	D 50 - 1250	D 50 - 600	D 50 - 400
TUBE Ø:	3/4" / 19.0 mm*	1" / 25.4 mm*	1-1/4" / 31.7 mm*
SPEED:	1250 U/min.	600 U/min	400 U/min.
TORQUE:	1,58 Nm - 12,2 Nm	2,49 Nm - 21,81 Nm	5,00 Nm - 36,00 Nm
AIR CONSUMPTION:	1.700 l/min rate of air flow @ 6.2 bar		
WEIGHT:	4,76 kg / 10,5 lbs		
DIMENSION:	310 x 80 x 150 mm (L x B x H), without tools & accessories		
SQUARE SIZE:	3/8" qucik action chuck / or 1/2" quick action chuck		

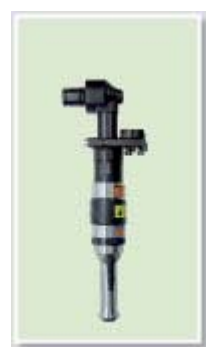
All kind of modells have a pneumatic torque control and will be shipped with exhaust muffler, pressure hose with couplings, optional quick action chuck, operating manual and plastic box

HP-AIR DRIVEN TORQUE CONTROLLED RIGHT ANGEL ROLLING MOTORS

Our HP-air driven torque controlled rolling motors have been designed specifically for the boiler tube industry. The models D-72-90-RT (old K+B ref. no. D-1752R90) and D-73-190-RT are a right angle tools equipped with a roll throttle as standard. A lever throttle is optional. The tools have a unique head design which features a fully enclosed bearing design for long and trouble free life. With industry input, our tools have been specifically engineered to precisely and consistantly expand tubes in steam / mud drums, fire tube and related boilers and equipment .The stall type motors can be use for industrial valve opening and closing. Our angle heads are manufactured of hardened alloy tool steel. The bevel gear is designed to ensure long tool life, whilst working under high torque loading. The gears are manufactured of high alloy tool steel.

TECHNICAL FEATURES

		D-72-90-RT	D-72-90-LT	D-73-190-RT	D-73-190-LT	D-73-280-RT	D-73-280-LT	D-73-375-RT	D-73-375-LT	D-72-ST-90-LT	D-73-ST-190-LT
FREE SPEED	RPM	90	90	190	190	280	280	375	375	90	190
TORQUE CONTROLLED		YES	YES	YES	YES	YES	YES	YES	YES	STALL TYPE	STALL TYPE
MAXIMUM TORQUE	NM	410	410	200	200	140	140	110	110	440	210
	FT.LBS	305	305	140	140	104	104	82	82	325	155
MINIMUM TORQUE	FT.LBS	150	150	70	70	44	44	30	30	STALL TYPE	STALL TYPE
WEIGHT	KG	6,7	6,7	5,8	5,8	5,8	5,8	5,8	5,8	6	5,4
	LBS	14,75	14,75	13	13	13	13	13	13	13,2	11,8
OVERALL LENGTH	MM	550	550	530	530	530	530	530	530	485	465
	INCH	21,7	21,7	20,1	20,1	20,1	20,1	20,1	20,1	19	18,5
HIGHT WITHOUT SQUARE DRIVE	MM	70	70	65	65	65	65	65	65	70	65
	INCH	2,75	2,75	2,6	2,6	2,6	2,6	2,6	2,6	2,75	2,6
SIDE TO CENTER	MM	37	37	28	28	28	28	28	28	37	28
	INCH	1,5	1,5	1,1	1,1	1,1	1,1	1,1	1,1	1,5	1,1
SQUARE DRIVE	MM	3/4"	3/4"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	5/8"
	INCH	19	19	15,8	15,8	15,8	15,8	15,8	15,8	19	15,8
THROTTLE TYPE	TYPE	ROLL	LEVER	ROLL	LEVER	ROLL	LEVER	ROLL	LEVER	LEVER	LEVER
TUBE CAPACITY	MM	101,6	101,6	63,5	63,5	57,1	57,1	50,8	50,8	101,6	63,5
	INCH	4"	4"	2,5"	2,5"	2,25"	2,25"	2"	2"	4"	2,5"
CHUCK SIZE	MM	25,4 & 19	25,4 & 19	19	19	19	19	19	19	25,4 & 19	19
	INCH	1" & 3/4"	1" & 3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1" & 3/4"	1" & 3/4"
CHUCK SIZE OPTIONAL	INCH			1/2" QCC	1/2" QCC	1/2" QCC	1/2" QCC	1/2" QCC	1/2" QCC		1/2" QCC



D-72-ST-90-LT

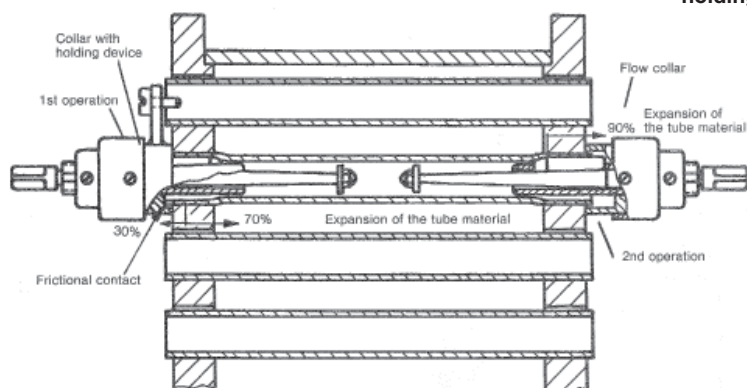


D-72-90-RT



D-73-190-RT

TUBE EXPANDERS



tube expander BR 30,
with recessed collar with
holding device

tube expander BR 30,
with flush collar



tube expander BR 30,
with flow collar

3-roller type

Tube expanders, self-feeding type BR 30

TUBE ID Ø	mm	inch
min.	9,0	0,354
max.	71,0	2,795

TUBE OD Ø	mm	inch
min.	14,0	0,551
max.	88,0	3,465

STANDARD REACH

50/70 & 100 & 150 mm availab

Roller length 40 mm
Roller length 50 mm
Roller length 60 mm

eff. roller length 15 mm - 35 mm
eff. roller length 25 mm - 45 mm
eff. roller length 35 mm - 55 mm

available square
9,5 / 12,7 / 19,0
3/8" - 1/2" - 3/4"

Tube expanders, type BR 40

3-roller type

TUBE ID Ø	mm	inch
min.	5,5	0,217
max.	70,0	2,756

TUBE OD Ø	mm	inch
min.	6,3	0,248
max.	77,0	3,031

STANDARD REACH

without' & 100 / 150 / 200 / 25

eff. roller length 16 mm - 57 mm

available square
9,0 / 12,0 / 14,0

Tube expanders, for mech.-hydr. expanding, type BR 20

TUBE ID Ø	mm	inch
min.	8,8	0,346
max.	46,0	1,811

TUBE OD Ø	mm	inch
min.	11,0	0,433
max.	51,0	2,008

STANDARD REACH

50/70 & 100 & 150 mm availab

Roller length 40 mm
Roller length 50 mm
Roller length 60 mm

eff. roller length 15 mm - 35 mm
eff. roller length 25 mm - 45 mm
eff. roller length 35 mm - 55 mm

available square

by thinwalled and/or high quality tubes we prefer "4" or "5" roller type tube expanders !

All tube expanders are available with one of 4 collar versions as below mentioned:
flush collar / recessed collar with holding device / flow collar / expanding collar

special collars on request !

COMPARISON SHEET

Tube expanding with Self feeding tube expanders

Tube expander with inclined rolls.
No cylindrical tube expansion possible.

Only „point-contact“ between mandrel and rolls
Point-contact causes higher wear of rolls and mandrels.

Expanding area must end 3-5 mms before back tube sheet face.
Creates always a gap at back side of tube-tube sheet joint (crevice !)

Mandrel feed not controlled, self-feeding procedure because of inclined rolls.

Kind and varying quantity of greasing creates **different slippage** during expanding process.

Mandrel feed rate given by geometry of the tube expander

- Mandrel / Roll taper
- Mandrel / Roll diameter ratio
- roll inclination degree and other conditions

Material deforming speed only controlled by speed of driving motor.

No „ironing out“- process when reaching predetermined tube expansion.

No round expansion possible.

Requires **greater wall reduction** with the effect of negative tube treatment and greater potential for ligament movement during expansion process. Higher risk of metal flaking.

High tendency of **twisting stress**.

Remarkable **tube lengthening** because of higher expansion rate and inclined rolls.

Tube expanding with mechanical-hydraulic tube expanders BR 20

Tube expander with „inline“ rolls.
Cylindrical tube expansion possible.
Extremely important when expanding **thin walled** tubes.

„Line - contact“ between mandrel and rolls.
Line contact of rolls and mandrel causes less wear.

Due to „inline“ rolls the rolls have line contact with the mandrel. Therefore the rolls cannot „swivel“. Tube expansion can be executed **completely up to the back side of tube sheet**. No gap at this point.

Mandrel feed is **controlled** by hydraulic mandrel feeding system.

No slippage effect due to controlled mechanical hydraulic mandrel feeding.

Mandrel feed rate controlled by speed of hydraulic mandrel feeding system (adjustable)

Enables controllable tube deformation speed during expanding process

Material deforming speed controlled by effective mandrel feed rate and motor speed

Better for the material / Less time is required

Time-adjustable **„ironing out“ process** after reaching predetermined tube expansion.

Round expansion possible.

Extremely **important** when expanding **thin-walled** tubes.

Requires **lower wall reduction** avoiding all the disadvantages of the self-feeding tube expansion process.

Low tendency of **twisting stress**

Lower expansion rate and „inline“ rolls cause far **less tube lengthening**.

Summary of effects on metallurgy:

- Lower strain hardening rates.
- Reduced potential for stress corrosion cracking in the transition areas.
- Grain structure change is greatly reduced.
- Effective tube expansion length to the end of tube sheet thus avoiding crevice- and corrosion potential.
- Reduced failure potential of tube by expanding within deformation rate of material.
- greater care of material.

Conical tube expander type BR H04/H06

for conical expanding of tube ends. Range of tubes from 9,6 up to 59,0 mm ID.

Available drive squares 9,0 / 12,0 / 14,0 / 16,0 / 18,0 mms.



fig.: conical tube expander type BR H04

size	Type BR H04 with flush collar	Type BR H04 with recessed collar with holding	mandrel Dorn	roll Rolle	cage Körper	range in mm	
	order no.	order no.	order no.	order no.	order no.	tube I.D.	mandrel square
9,6	W00496000	W00696000	W14596000	W20596000	W30596000	9,6 - 12,0	9
10,6	W00497000	W00697000	W14597000	W20597000	W30597000	10,6 - 13,0	9
11,6	W00498000	W00698000	W14598000	W20598000	W30598000	11,6 - 15,5	9
12,6	W00499000	W00699000	W14599000	W20599000	W30599000	12,6 - 15,7	9
13,6	W00401000	W00601000	W14501000	W20501000	W30501000	13,6 - 16,7	9
14,6	W00402000	W00602000	W14502000	W20502000	W30502000	14,6 - 18,2	9
15,5	W00403000	W00603000	W14503000	W20503000	W30503000	15,5 - 19,6	9
16,4	W00404000	W00604000	W14504000	W20504000	W30504000	16,4 - 21,4	9
17,4	W00405000	W00605000	W14505000	W20505000	W30505000	17,4 - 22,4	9
18,4	W00406000	W00606000	W14506000	W20506000	W30506000	18,4 - 23,9	9
19,0	W00407000	W00607000	W14507000	W20507000	W30507000	19,0 - 24,5	9
20,0	W00408000	W00608000	W14508000	W20508000	W30508000	20,0 - 25,5	9
21,0	W00409000	W00609000	W14509000	W20509000	W30509000	21,0 - 26,5	9
22,0	W00410000	W00610000	W14510000	W20510000	W30510000	22,0 - 27,5	12
23,0	W00411000	W00611000	W14511000	W20511000	W30511000	23,0 - 29,0	12
24,0	W00412000	W00612000	W14512000	W20512000	W30512000	24,0 - 30,0	12
25,0	W00490000	W00690000	W14590000	W20590000	W30590000	25,0 - 31,0	12
26,0	W00413000	W00613000	W14513000	W20513000	W30513000	26,0 - 32,0	12
27,0	W00491000	W00691000	W14591000	W20591000	W30591000	27,0 - 33,0	12
28,0	W00414000	W00614000	W14514000	W20514000	W30514000	28,0 - 34,0	12
29,0	W00492000	W00692000	W14592000	W20592000	W30592000	29,0 - 35,0	12
30,0	W00415000	W00615000	W14515000	W20515000	W30515000	30,0 - 36,0	14
32,0	W00416000	W00616000	W14516000	W20516000	W30516000	32,0 - 38,0	14
34,0	W00417000	W00617000	W14517000	W20517000	W30517000	34,0 - 40,0	14
36,0	W00418000	W00618000	W14518000	W20518000	W30518000	36,0 - 42,0	14
38,0	W00419000	W00619000	W14519000	W20519000	W30519000	38,0 - 44,0	16
40,0	W00420000	W00620000	W14520000	W20520000	W30520000	40,0 - 47,0	16
42,0	W00421000	W00621000	W14521000	W20521000	W30521000	42,0 - 50,0	16
44,0	W00422000	W00622000	W14522000	W20522000	W30522000	44,0 - 53,0	18
46,0	W00423000	W00623000	W14523000	W20523000	W30523000	46,0 - 55,0	18
48,0	W00424000	W00624000	W14524000	W20524000	W30524000	48,0 - 57,0	18
50,0	W00425000	W00625000	W14525000	W20525000	W30525000	50,0 - 59,0	18

BOILER TUBE EXPANDERS

Type KA 64 / KB 65 / KC 66 / KD 67

with stop type **KA 64** or with ball beared stop type **KB 65** are available in standard effective roller length 25 mms, 32 mms, 38 mms, 45 mms, 50 mms, 56 mms and 62 mms. Boiler expanders type **KD 67** are designed for expanding and flaring in one operation, with adjustable ball - bearing stop (bell expanding of tube extraction), flaring 18° or 20° both sides of tube axis; to get a basic flaring and no edges of the tube at the flaring seat.

Boiler expanders type **KC 66** like type **KD 67**, but without stop.



TYPE KA 64

expanding with stop and sliding washer for manual operation



TYPE KB 65

expanding with ball - bearing stop for manual or mechanical operation



TYPE KC 66

expanding and flaring
(flare angel 15°)
in one operation for manual operation



TYPE KD 67

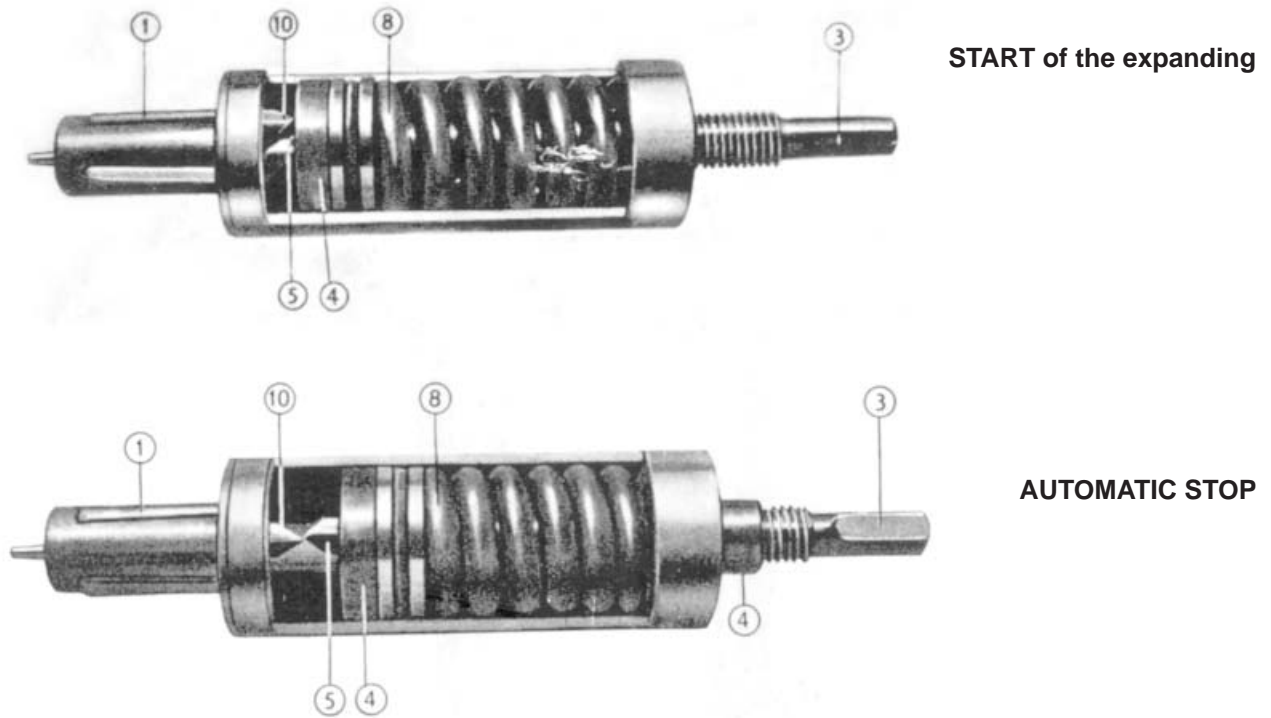
expanding and flaring
(flare angel 15°)
in one operation, with adjustable ball bearing stop
for manual or mechanical operation



For detailed technical information please contact your customer service !

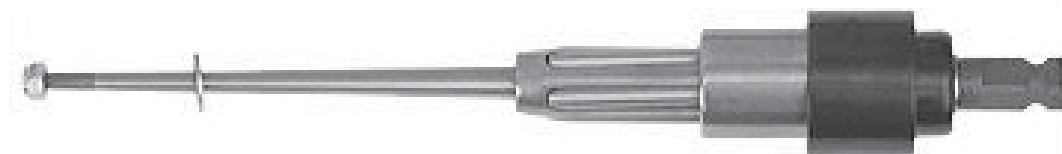
Automatic Tube Expanders „ULTRA“

with built- in compression spring and with preset torque for the expanding of tubes. Beginning of expansion with clutch pins engaged Automatic disengagement. Clutch pins finally are disconnected.



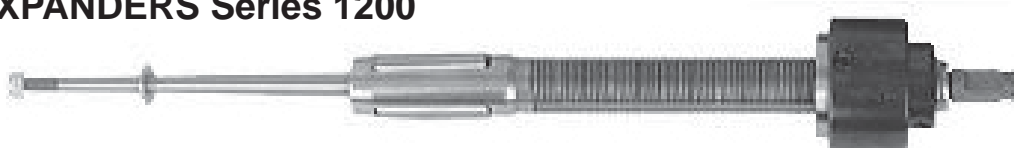
Function: By turning the threaded spindle ③, the clutch pin ⑤ on the flange nut ④ presses against the clutch pin ⑩ on the body, and the flange nut ④ is obstructed by this turning movement. The threaded spindle ③ moves forwards against the nut ④ and causes, by means of the rollers, a consistently increasing pressure to be exerted on the wall of the tube. Simultaneously the nut comes back on the spindle and compresses the spring ⑧. When the counterpressure of the tube and header plate are greater than that of the spring ⑧, this is then compressed to such an extent that the clutch pins disengage. From now on the nut separates itself from the threaded spindle, so that the latter receives no more feed, and there follows a rounding of the point of expansion under constant pressure. This rounding is a particular of the-ULTRA- tube expander. The stresses which are eliminated, an expansion with an exceptionally long life time is achieved.

TUBE EXPANDERS Series 800



Tube expanders series 800			3-roller type			Tube expanders series 800-5			5-roller type		
TUBE ID Ø	mm	inch	TUBE OD Ø	mm	inch	TUBE ID Ø	mm	inch	TUBE OD Ø	mm	inch
min.	8,48	0,334	min.	12,7	1/2	min.	12,98	0,509	min.	15,8	5/8
max.	26,90	1,027	max.	28,5	1-1/8	max.	36,68	1,44	max.	38,1	1-1/2
			effect. Roller length min. 12,7 mm / 1/2"						effect. Roller length min. 12,7 mm / 1/2"		
			max. 57,1 mm / 2-1/4"						max. 57,1 mm / 2-1/4"		

TUBE EXPANDERS Series 1200



Tube expanders series 1200					3-roller type		
TUBE ID Ø	mm	inch	TUBE OD Ø	mm	inch		
min.	8,48	0,334	min.	12,7	1/2		
max.	36,32	1,430	max.	38,1	1-1/2		
effect. Roller length					min. 38,1 mm / 1-1/2"		
					max. 171,4 mm / 6-3/4"		
REACH; tube expanders with roller length 38,1 mm (1-1/2")							
STANDARD	12,7 mm	bis	152,4 mm	1/2"	bis	5-1/4"	
Typ "A"	12,7 mm	bis	203,1 mm	1/2"	bis	7-1/4"	
Typ "C"	12,7 mm	bis	304,6 mm	1/2"	bis	11-1/4"	

Tube expanders series 1200-5					5-roller type		
TUBE ID Ø	mm	inch	TUBE OD Ø	mm	inch		
min.	14,83	0,584	min.	19,0	3/4		
max.	36,32	1,430	max.	38,1	1-1/2		
effect. Roller length					min. 38,1 mm / 1-1/2"		
					max. 171,4 mm / 6-3/4"		
REACH; tube expanders with roller length 57,1 mm (2-1/4")							
STANDARD	31,7 mm	bis	171,4 mm	1-1/4"	bis	6"	
Typ "A"	31,7 mm	bis	222,1 mm	1-1/4"	bis	8"	
Typ "C"	31,7 mm	bis	323,6 mm	1-1/4"	bis	12"	

SPECIAL SIZES or solutions on request, contact customer service !

WATER SOLUBLE OIL & WATER SOLUBLE GREASE

Rolling in corresponds to cold-rolling sheet metal, here developed to prevent for friction and heating up. In order to extend the service life of the tube expanders , as well as a material indulgence to reach is a lubrication/cooling by appropriate oil or grease indispensably. In different quantity sizes available.



WATER SOLUBLE GREASE

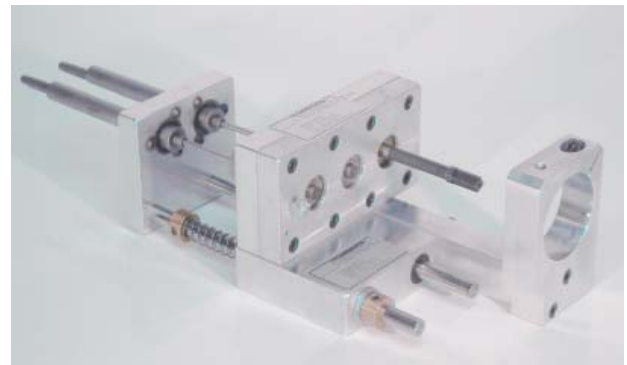
using range -20°C thru +110°C
good-responsive, wear-reducing

WATER SOLUBLE OIL type HZ-22

rarefiable, high corrosion protection,
for all metals applicable.

Double spindle device

The adaption of the double spindle device with TDA driving motors allows the rolling of two tube with the selected torque value at the same time. CW and CCW turning tube expanders will be use



Water hydraulic tube expanding equipment

The water hydraulic tube expanding equipment, with max. 4.000 bar expanding pressure, was designed for expanding tubes in tube sheets, preferable after welding. The procedure is very economical, specially for large expanding lengths, because the whole length can be expanded in one step.

An additional advantage is the low tension left in the tubes. For this reason the danger of stress corrosion cracking is significant lower compared with roller expanded tubes.

The equipment consists of:

- basic device, mounted in a sturdy double frame casing on wheels, with hydraulic pump, valve block, low pressure - and high pressure cylinder, microprocessor-control unit with remote control, water reservoir, data printer
- flexible high pressure hose
- swagging gun with expanding mandrel.

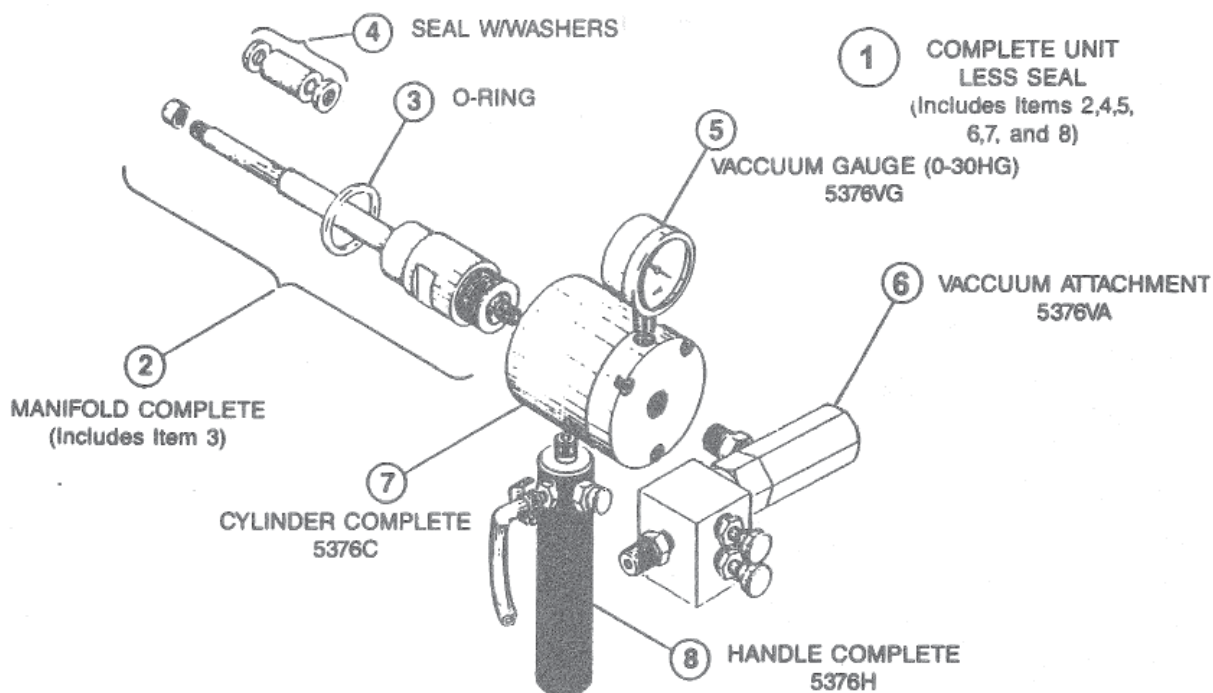
Vacuum tube - tube sheet Joint Tester type 5376 V

TECHNODATA tube - tube sheet joint tester type 5376 V is suitable to detect leaks between expanded tube and tube sheet joints. Specially if testing is required before final pressure test, p.e. if repairing is very difficult after mounting, or it is impossible to determine the leaking tube joint by means of pressure test, the use of the joint tester type 5376 V is highly recommended.

The vacuum tube-tube sheet joint tester type 5376 V consists of the cylinder body, the vacuum attachment, the manifold and the seals. Seal expanding and vacuum obtaining is air activated. The different manifold and sealing sets to suit the different tube sizes and joint types are changeable very easily. So the capability to nearly all testing requirements is warranted.

- air pressure: 3 to 8,5 bar
- air consumption: > 140 ltrs / min

fig.: Vacuum tube - tube sheet joint tester type **5376 V**



TUBE OD	① complete unit without seal	② Manifold complete	③ O-Ring
3/8"	RT-5376-6	RT-5377-6	RT-5378-6
1/2"	RT-5376-8	RT-5377-8	RT-5378-8
5/8"	RT-5376-10	RT-5377-10	RT-5378-10
3/4"	RT-5376-12	RT-5377-12	RT-5378-12
7/8"	RT-5376-14	RT-5377-14	RT-5378-14
1"	RT-5376-16	RT-5377-16	RT-5378-16
1-1/4"	RT-5376-20	RT-5377-20	RT-5378-20
1-1/2"	RT-5376-24	RT-5377-24	RT-5378-24
1-3/4"	RT-5376-28	RT-5377-28	RT-5378-28
2"	RT-5376-32	RT-5377-32	RT-5378-32

Tube Tester Type 5373

TECHNODATA tube tester type 5373, for tubes 7,1 - 31,3 mm (.28"-1.23") ID., is suitable to detect leaks or breaks of tubes between tube sheets. The tube tester consists of air injection gun and plugging gun. The plugging gun with support tube and matching set of seals plugs one end of the tube. By means of air injection gun testing pressure is obtained. Leaks are detected by loss of pressure indicated on the air pressure gauge. Seal expanding is air activated.

For tubes with 31,5 - 64,3 mm (1.24"-2.53") ID use tube tester type 5373 A. Please contact customer service for detailed technical informations.

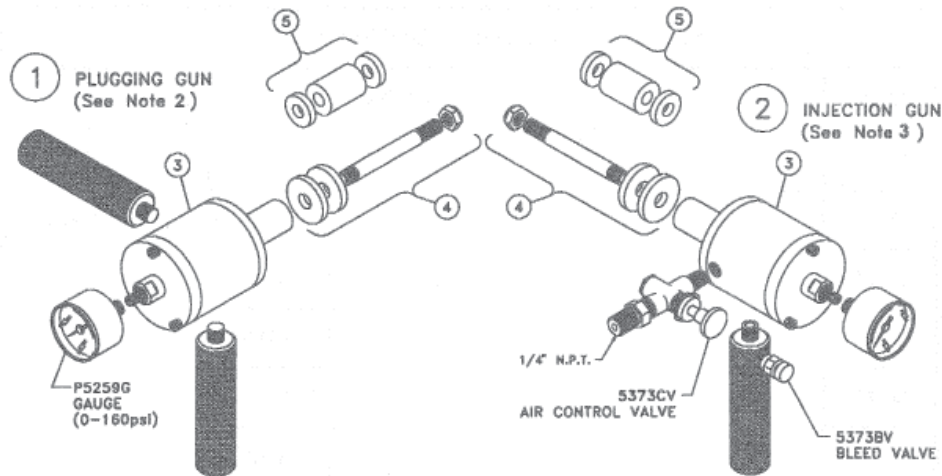


plugging gun



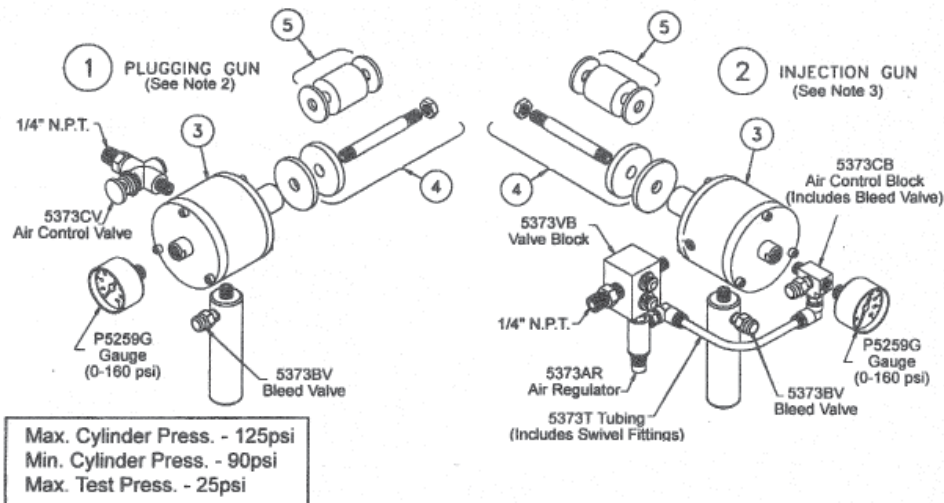
air injection gun

Tube Tester Type 5373



Position	Denomination	Ref.-Nr.
1	plugging gun	RT-5373-1
2	air injection gun	RT-5373-2
3	cylinderbody with holder	RT-5373C1
4	support tube with washer & nut	f. tube-ID
	.28 - .48"	7.1 - 12.1 mm
	.49 - .83"	12.4 - 21.1 mm
	.84 - 1.23"	21.3 - 31.3 mm
5	seal and washer set	look at seal chart

Tube Tester Type 5373 A



Position	Denomination	Ref.-Nr.
1	plugging gun	RT-5373-3
2	air injection gun	RT-5373-4
3	cylinderbody with holder	RT-5373C2
4	support tube with washer & nut	f. tube-ID
	1.24 - 1.63"	31.5 - 41.4 mm
	1.64 - 2.03"	41.7 - 51.6 mm
	2.04 - 2.45"	51.8 - 62.2 mm
5	seal and washer set	look at seal chart

SEALS tube tester Type 5373



ROHR AD.		BWG	ID - mm	Ref.-Nr.	ROHR AD.		BWG	ID - mm	Ref.-Nr.
1/2"	12,7	8-9	4.32 - 5.18	n/v	1-1/8"	28,58	8-9	20.20 - 21.06	RT-5373-780
		10-11	5.89 - 6.60	n/v			10-11	21.78 - 22.48	RT-5373-840
		12-13	7.16-7.87	RT-5373-250			12-13	23.04 - 23.76	RT-5373-870
		14-15	8.48-9.04	RT-5373-300			14-15	24.36 - 24.92	RT-5373-940
		16-17	9.40-9.75	RT-5373-340			16-17	25.28 - 25.64	RT-5373-970
		18-19	10.21-10.57	RT-5373-370			18-19	26.10 - 26.44	RT-5373-1000
		20-24	10.92-11.58	RT-5373-400			20-24	23.80 - 27.46	RT-5373-1030
5/8"	15,8	8-9	7.49-8.36	RT-5373-270	1-1/4"	31,7	8-9	23.37 - 24.23	RT-5373-900
		10-11	9.07 - 9.78	RT-5373-340			10-11	24.94 - 25.65	RT-5373-940
		12-13	10.34 - 11.05	RT-5373-370			12-13	26.21 - 26.92	RT-5373-1000
		14-15	11.66 - 12.22	RT-5373-440			14-15	27.53 - 28.09	RT-5373-1070
		16-17	12.57 - 12.93	RT-5373-470			16-17	28.45 - 28.80	RT-5373-1090
		18-19	13.39 - 13.74	RT-5373-500			18-19	29.26 - 29.62	RT-5373-1120
		20-24	14.10 - 14.76	RT-5373-530			20-24	29.97 - 30.73	RT-5373-1150
3/4"	19	8-9	10.67 - 11.53	RT-5373-400	1-3/8"	34,9	8-9	26.52 - 27.38	RT-5373-1050
		10-11	12.24 - 12.95	RT-5373-440			10-11	28.10 - 28.8	RT-5373-1090
		12-13	13.51 - 14.22	RT-5373-500			12-13	29.36 - 30.08	RT-5373-1120
		14-15	14.83 - 15.39	RT-5373-530			14-15	30.68 - 31.24	RT-5373-1190
		16-17	15.75 - 16.10	RT-5373-590			16-17	31.60 - 31.96	n/v
		18-19	16.56 - 16.92	RT-5373-620			18-19	32.42 - 32.76	n/v
		20-24	17.27 - 17.93	RT-5373-650			20-24	33.12 - 33.78	n/v
7/8"	22,2	8-9	13.84 - 14.71	RT-5373-530	1-1/2"	38,1	8-9	29.72 - 30.58	RT-5373-1150
		10-11	15.42 - 16.13	RT-5373-590			10-11	31.29 - 32.00	RT-5373-1190
		12-13	16.69 - 17.40	RT-5373-620			12-13	32.56 - 33.27	n/v
		14-15	18.01 - 18.57	RT-5373-690			14-15	33.88 - 34.44	n/v
		16-17	18.92 - 19.28	RT-5373-720			16-17	34.80 - 35.15	n/v
		18-19	19.74 - 20.09	RT-5373-750			18-19	35.61 - 35.97	n/v
		20-24	20.45 - 21.11	RT-5373-780			20-24	36.32 - 36.98	n/v
1"	25,4	8-9	17.02 - 17.88	RT-5373-650					
		10-11	18.59 - 19.30	RT-5373-690					
		12-13	19.86 - 20.57	RT-5373-750					
		14-15	21.18 - 21.74	RT-5373-800					
		16-17	22.10 - 22.45	RT-5373-840					
		18-19	22.91 - 23.27	RT-5373-870					
		20-24	23.62 - 24.28	RT-5373-900					

Hydro-Pneumatic test pump Typ L10N / L20N

The technical application of the hydro-pneumatic test pump is testing of tube with water under air pressure. If the pump is connected at the air pressure net, the water flow into the tube by a separate watertank, whereby the tube inlet and outlet must be closed with the testing plugs.

In order to the tube ID the interlock device is variable. The outlet plug will be closed if the complete tube is filled (without an air bubble), after this the high pressure will be applied by the pump.

The valve controlled pumps differentiate from each other by the flow rate and power state. The hydro-pneumatic testing pumps characterized by low weight, easy handling, and design for continuous working.

TECHNICAL DATA:

MODELL L 10 N

connection: air pressure min. 6 bar

operating pressure: max. 60 bar.

flow rate max.: 20L. / Min.

weight: ca. 21 KG

Maße (mm.): 500 x 350 x 250.

MODELL L 20 N

connection: air pressure min. 7 bar.

operating pressure: max. 120 bar

flow rate max.: 10L. / Min.

weight: ca. 21 KG

dimension(mm.): 500 x 350 x 250



Internal tube cutter type TC 58

The internal tube cutter type TC 58 is designed to cut inside the tube, by non - accessibility from outside. This tool will be driven by a driving motor with suitable speed and sufficient torque. The guiding follows by hand. The centering inside the tube takes place by ball guiding at the cutting procedure, also outside by a cone ring. By an adjustment ring you can set the reach. The cutting bodies are available in reach from 100 mm - 400 mm. A very high flexibility is warranted, by two coupling sizes with different changeable „KIT'S“ for each range of tube, diameter , as shown below in the technical data sheet.

Technical data :

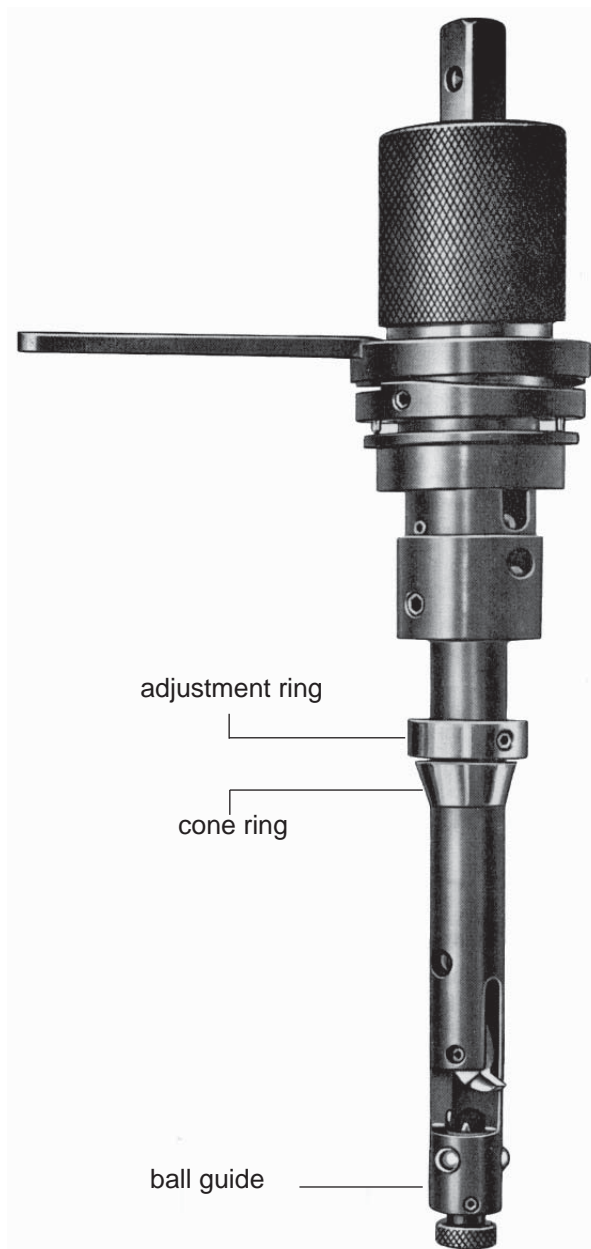
size	tube inside-Ø	tube outside-Ø	cage-Ø square
095	10 - 12 mms	15,0 mms	9,5 mms
105	11 - 13 mms	18,0 mms	10,5 mms
115	12 - 14 mms	19,0 mms	11,5 mms
125	13 - 15 mms	20,0 mms	12,5 mms
135	14 - 17 mms	23,0 mms	13,5 mms
155	16 - 19 mms	25,0 mms	15,5 mms
175	18 - 21 mms	27,0 mms	17,5 mms
195	20 - 25 mms	34,0 mms	19,5 mms
245	25 - 30 mms	38,0 mms	24,5 mms
290	30 - 35 mms	43,0 mms	29,5 mms
330	35 - 40 mms	48,0 mms	33,0 mms
380	40 - 50 mms	58,0 mms	38,0 mms
480	50 - 60 mms	68,0 mms	48,0 mms
530	55 - 65 mms	73,0 mms	53,0 mms
630	65 - 75 mms	83,0 mms	63,0 mms
730	75 - 85 mms	93,0 mms	73,0 mms
830	85 - 95 mms	103,0 mms	83,0 mms
930	95 - 105 mms	113,0 mms	93,0 mms

Coupling No. 1

with square connection 14 mms - inside Ø 10 - 50 mms

Coupling No. 2

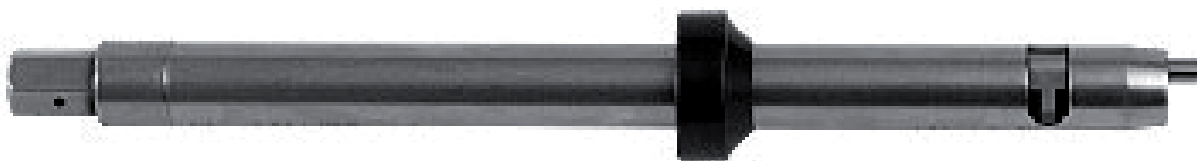
with square connection 22 mms - inside Ø 50 - 105 mms



Internal tube cutter type TC-OR

The internal tube cutter TC-OR is designed for inside cutting of steel-/ brass- and copper tubes.in heat exchanger, condenser, air cooler, boiler, etc. The tool is only to be used by a hand or a wrench. By this simple operation you need no mechanical power. The centering of the TC-OR will effected by the conical ring . The standard reach is 25-150 mm, further reaches are available on request.

The tool works on a exentrical principle. Insert the tool into the tube, the cutter bit is inside the body, turn it clockwise, the cutter bit moves out and cut the tube wall by one revolution.



technical features:

ROHR AD.		BWG	ID - mm	Ø	Ref.-Nr.	ROHR AD.		BWG	ID - mm	Ø	Ref.-Nr.
1/2"	12,7	18-19	10,2 - 10,6	10,0	TC-OR-100	1-1/2"	38,1	10-11	31,3 - 32,1	30,9	TC-OR-309
		20	11,0 - 11,3	10,5	TC-OR-108			12-13	32,5 - 33,3	32,0	TC-OR-320
5/8"	15,8	14	11,4 - 11,9	11,2	TC-OR-113			14-15	33,8 - 34,5	33,3	TC-OR-333
		15-16	12,0 - 12,9	11,7	TC-OR-119	16-17	34,5 - 35,3	34,0	TC-OR-339		
		17-18	12,7 - 13,5	12,3	TC-OR-123	18-19	35,3 - 36,1	34,9	TC-OR-350		
		19-20	13,5 - 14,2	13,1	TC-OR-131	1-3/4"	44,45	10-11	37,0 - 38,5	36,9	TC-OR-369
		22	14,0 - 14,7	13,6	TC-OR-139			12,14	38,8 - 40,3	38,3	TC-OR-383
3/4"	19	14-15	14,7 - 15,5	14,3	TC-OR-145			15-16	40,8 - 41,2	40,3	TC-OR-403
		16	15,2 - 16,5	14,8	TC-OR-151	17-18	41,3 - 42,0	41	TC-OR-410		
		17-18	15,9 - 16,5	15,3	TC-OR-153	2"	50,8	10	44,0	43,5	TC-OR-435
		19-20	16,7 - 17,5	16,3	TC-OR-163			11	44,7	44,2	TC-OR-442
7/8"	22,2	14-15	17,8 - 18,5	17,4	TC-OR-174			12-13	45,0 - 46,0	44,7	TC-OR-447
		16-17	18,8 - 19,5	18,4	TC-OR-184			14-15	46,2 - 48,2	45,7	TC-OR-457
		18	19,3 - 20,0	19,0	TC-OR-190	16-17	47,2 - 48,2	46,8	TC-OR-468		
		19-20	19,8 - 20,6	19,3	TC-OR-193	18-19	48,0 - 49,0	47,6	TC-OR-476		
		1"	25,4	12	19,8 - 20,6	19,3	TC-OR-193	2-1/4"	57,15	10	50,3
14	20,8 - 21,6			20,5	TC-OR-205	11	51,0			50,5	TC-OR-505
14	21,3 - 22,1			21,0	TC-OR-210	12-13	51,6 - 52,3	51,1	TC-OR-511		
16-17	21,8 - 22,6			21,5	TC-OR-215	14-15	52,9 - 53,5	52,4	TC-OR-524		
18-20	22,6 - 23,1			22,3	TC-OR-223	16-17	53,8 - 54,8	53,3	TC-OR-533		
22	23,9 - 24,6			23,2	TC-OR-232	18-19	54,6 - 55,6	54,1	TC-OR-541		
1-1/4"	31,7			10	24,9 - 25,6	24,5	TC-OR-245	2-1/2"	63,5	10	56,7
		12	25,9 - 26,7	25,5	TC-OR-255	11	57,4			56,9	TC-OR-569
		13-14	26,7 - 27,4	26,4	TC-OR-264	12-13	57,6 - 58,6			57,2	TC-OR-572
		15-16	27,9 - 28,7	27,5	TC-OR-274	14-15	58,9 - 60,0			58,5	TC-OR-585
		17-19	28,7 - 29,6	28,3	TC-OR-283	16-17	60,0 - 61,0			58,6	TC-OR-586
						18-19	60,7 - 61,7			60,2	TC-OR-602

Tube end facer type TF 50

The tube end facer TECHNODATA type TF 50 is a special tool for manual cutting of tube protrusions from the tube sheet. It is fitted to a driving motor with suitable speed range by means of a morse taper, square or hexagon-shaft.

The cutter is equipped with an interchangeable pilot for centering during the cutting procedure, according to the tube inside diameter.

An adjustable distance collar touches the tube sheet face when the required tube end position is reached and guarantees a repeatable cutting of tubes.

A selection of pilots, cutters and distance collars makes the tool adaptable for each tube size between 10 mms -

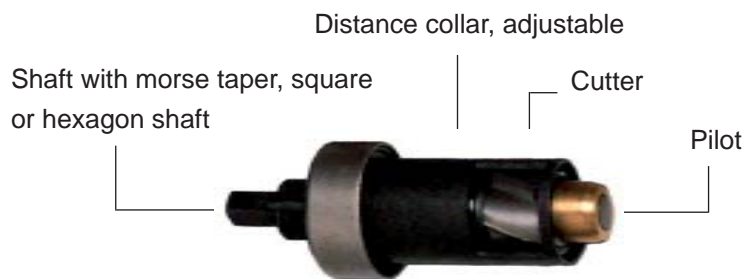


fig.: Tube end facer type **TF 50**

Internal tube cutter type TC 51

The internal tube cutter TECHNODATA type TC 51 is a tool for cutting tubes, up to 2 mms wall thickness and 17,0 thru 26,0 mm ID, behind the tube sheet for retubing works.

The tool is driven by a manual operated driving motor with a suitable speed range. Different shafts on request. During the cutting procedure the internal tube cutter is centered by the cutting knives in symmetrical formation. An adjustable distance collar fixing the reach and a distance ring limiting the radial cutting depth guarantees a repeatable cutting.

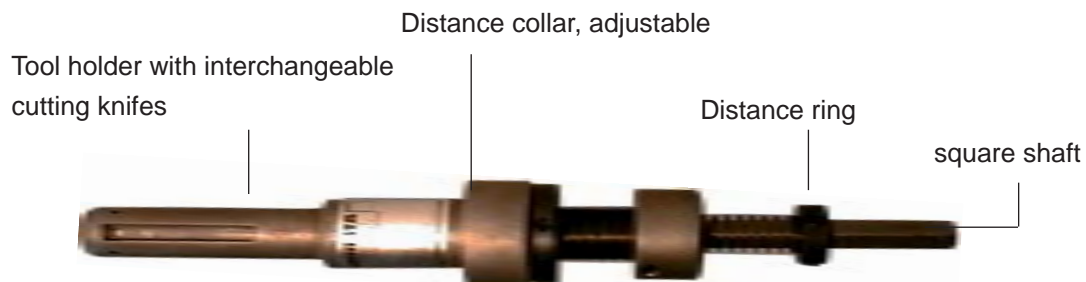


fig.: Internal tube cutter type **TC 51**

Hydraulic tube pulling unit type TP 79 and type TPS 79

The hydraulic tube pulling unit TECHNODATA type TP 79 and type TPS 79 are devices for pulling tubes out of the expanded area of the tube sheet. The unit consists of a portable hydraulic aggregate and a hydraulic pulling device, connected with a hydraulic hose pack.

The pulling devices consist of the combined expanding- and pulling cylinder and has to be completed with the needed pulling tools (expanding sleeve, expanding mandrel and distance sleeve).

The expanding sleeve with the expanding mandrel is inserted into the tube to be pulled.

Controlled by the hydraulic system the expanding sleeve is pressed by the expanding mandrel to the tube wall. After that the expanding piston and the pulling piston are set under pressure and the tube will be pulled out of the expanded area.

The pressure of the expanding sleeve is adjusted manually by preadjustment of the expanding mandrel and by adjusting the hydraulic working pressure.

After the pulling procedure the tools are removed to the start position and the next tube can be pulled.

Technical Data:

hydraulic aggregate:	pump:	400 V / 3~ / 50/60 Hz / 2,2 kW
	conveying capacity:	4,5 l/min / 50 bar // 1,9 l/min / 700 bar (pressure limit preadjusted 450 bar)
	tank volume:	appr. 10 l
	weight:	appr. 50 kgs
	hose length:	6 ms

pulling device:		<u>TP 79</u>	<u>TPS 79</u>
	stroke expanding cylinder:	20 mms	20 mms
	stroke pulling cylinder:	60 mms	150 mms
	pulling force:	10 t	30 t
	size:	L= 320 mms	L= 450 mms
	weight without tools:	appr. 10 kgs	appr. 21 kgs
range:	tube i. d.:	8 to 36 mms	30 to 50 mms
	wall thickness:	0,5 to 2.0 mms	1.5 to 3.6 mms

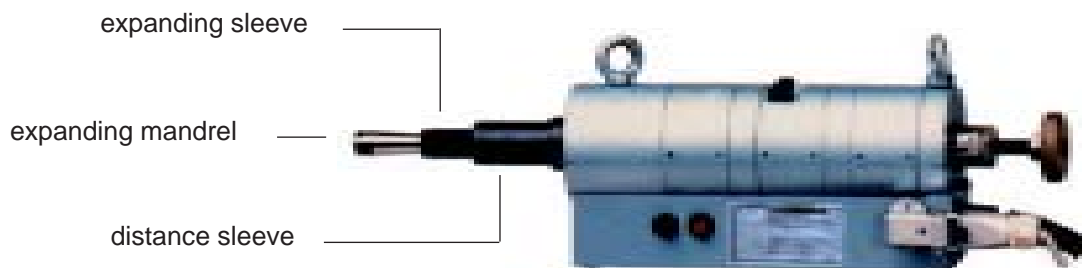


fig.: Hydraulic tube pulling device type **TP 79**

Grooving tool type TDA-GT

with our GT Grooving tool you can serrate grooves into a tubesheet.
Grooving tools can be used both on portable and stationary multi radial drills.
They also find their application on NC machine tools.

We manufacture GT grooving tools within a broad range of sizing
3/8" to 4" (9.52 mm to 101.6 mm), both in imperial and metric versions.
As a standard, the tools have an adjustment system for channel cutting reach 22.2 mm
to 54.0 mm (as counted from the bottom face to the internal edge of the channel being cut).

Tools of a higher cutting reach are manufactured to special order.
A cutter 3 x 6 x 3 mm belongs to the standard outfit of the grooving tool our offer com-

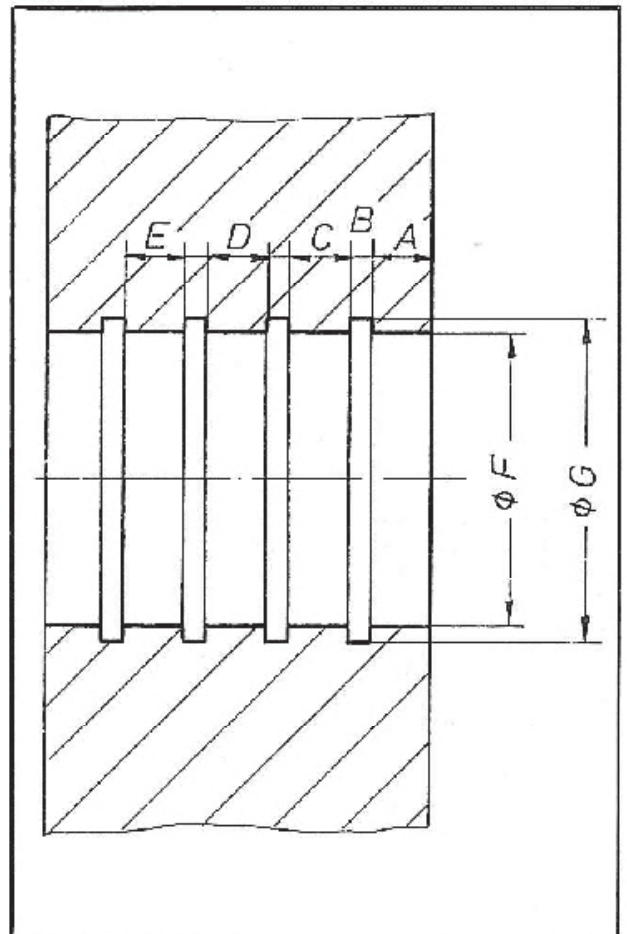


Questionary for grooving tool type TDA-GT

- A = distance top edge - 1.groove _____ mm
 B = groove width _____ mm
 C = distance 1. zu 2. groove _____ mm
 D = distance 2. zu 3. groove _____ mm
 E = distance 3. zu 4. groove _____ mm
 F = bore hole diameter Ø _____ mm
 bore hole tolerance _____
 G = diameter with groove _____ mm
 tolerance _____

tubesheet material _____

type of processing machine or driving motor?



Hydraulic tube pulling unit type TPS 55

The hydraulic tube pulling unit TECHNODATA type TPS 55 is a device for pulling thick walled tubes out of the expanded area of the tube sheet.

The unit consists of a portable hydraulic aggregate and a hydraulic pulling device, connected with a hydraulic hose pack.

The pulling device consists of the hollow piston pulling cylinder and has to be completed with the needed pulling tools (pulling spindle, distance sleeve and clamping jaws). The tools have to be adapted to the tube size.

The pulling tool is screwed in by means of a torque controlled driving motor, held at the square end. After that the pulling device with the distance sleeve is mounted to the spindle and fixed with the clamping jaws on the spindle thread. Then the spindle is pulled by hydraulic pressure and the tube is removed out of the expanded area.

After the pulling procedure the clamping jaws are dismounted and the cylinder removed. Then the spindle is

Technical Data:

hydraulic aggregate:	pump:	400 V / 3~ / 50/60 Hz / 2,2 kW
	conveying capacity:	4,5 l/min / 50 bar // 1,9 l/min / 700 bar (pressure limit preadjusted 450 bar)
	tank volume:	appr. 10 l
	weight:	appr. 50 kgs
	hose length:	6 ms
pulling device:	pulling force:	30 t
	stroke pulling cylinder:	150 mms
range:	tube i. d.:	8 to 60 mms
	wall thickness:	> = 2,0 mms

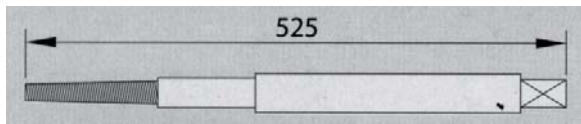
other tube sizes on request !



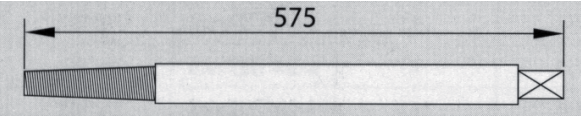
fig.: Hydraulic tube pulling cylinder type TPS 55

Pulling Spears type RAV

Tube O.D.		mandrel square		tool no. TPS-	Tube I.D.	
inch	mm	inch	mm		mm	inch



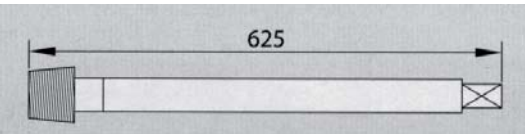
5/8	15,87	1/2	12,7	406-5/8	5,5-6,5	0,215-0,255
				407-5/8	6,5-7,5	0,255-0,295
				408-5/8	7,5-8,5	0,295-0,335
				409-5/8	8,5-9,5	0,335-0,375
				410-5/8	9,5-10,5	0,375-0,415
				411-5/8	10,5-11,5	0,415-0,455
				412-5/8	11,5-12,5	0,455-0,495
				413-5/8	12,5-13,5	0,495-0,535
				414-5/8	13,5-14,5	0,535-0,570



3/4	19,05	5/8	15,87	413-3/4	12,5-13,5	0,495-0,535
				414-3/4	13,5-14,5	0,535-0,570
				415-3/4	14,5-15,5	0,575-0,615
				416-3/4	15,5-16,5	0,615-0,650
				417-3/4	16,5-17,5	0,655-0,695
				418-3/4	17,5-18,5	0,695-0,730

7/8	22,22	3/4	19,05	415-7/8	14,5-15,5	0,575-0,615
				416-7/8	15,5-16,5	0,615-0,650
				417-7/8	16,5-17,5	0,655-0,695
				418-7/8	17,5-18,5	0,695-0,730
				419-7/8	18,5-19,5	0,735-0,770
				420-7/8	19,5-20,5	0,775-0,815
				421-7/8	20,5-21,5	0,815-0,850

1	25,4	3/4	19,05	419-1	18,5-19,5	0,730-0,770
				420-1	19,5-20,5	0,770-0,810
				421-1	20,5-21,5	0,810-0,845
				422-1	21,5-22,5	0,845-0,885
				423-1	22,5-23,5	0,885-0,925
				424-1	23,5-24,5	0,925-0,965



1	25,4	3/4	19,05	425-1	24,5-25,5	0,965-1,005
				426-1	25,5-26,5	1,005-1,045
				427-1	26,5-27,5	1,045-1,085
				428-1	27,5-28,5	1,085-1,125
				429-1	28,5-29,5	1,125-1,160
				430-1	29,5-30,5	1,160-1,200

1	25,4	3/4	19,05	431-1	30,5-31,5	1,200-1,240
				432-1	31,5-32,5	1,240-1,280
				433-1	32,5-33,5	1,280-1,320
				434-1	33,5-34,5	1,320-1,360
				435-1	34,5-35,5	1,360-1,400
				436-1	35,5-36,5	1,400-1,440
				437-1	36,5-37,5	1,440-1,475
				438-1	37,5-38,5	1,475-1,515
				439-1	38,5-39,5	1,515-1,555
				440-1	39,5-40,5	1,555-1,595
				441-1	40,5-41,5	1,595-1,635
				442-1	41,5-42,5	1,635-1,675
				443-1	42,5-43,5	1,675-1,715
				444-1	43,5-44,5	1,715-1,755
				445-1	44,5-45,5	1,755-1,795
				446-1	45,5-46,5	1,795-1,830
				447-1	46,5-47,5	1,830-1,870
				448-1	47,5-48,5	1,870-1,910
				449-1	48,5-49,5	1,910-1,950
				450-1	49,5-50,5	1,950-1,990
				451-1	50,5-51,5	1,990-2,030
				452-1	51,5-52,5	2,030-2,070
				453-1	52,5-53,5	2,070-2,105
				454-1	53,5-54,5	2,105-2,145
				455-1	54,5-55,5	2,145-2,185
				456-1	55,5-56,5	2,185-2,225
				457-1	56,5-57,5	2,225-2,265
				458-1	57,5-58,5	2,265-2,305
				459-1	58,5-59,5	2,305-2,345
				460-1	59,5-60,5	2,345-2,380
				461-1	60,5-61,5	2,380-2,420
				462-1	61,5-62,5	2,420-2,460
				463-1	62,5-63,5	2,460-2,500
				464-1	63,5-64,5	2,500-2,540
				465-1	64,5-65,5	2,540-2,580
				466-1	65,5-66,5	2,580-2,620
				467-1	66,5-67,5	2,620-2,660
				468-1	67,5-68,5	2,660-2,695
				469-1	68,5-69,5	2,695-2,735
				470-1	69,5-70,5	2,735-2,775
				471-1	70,5-71,5	2,775-2,815
				472-1	71,5-72,5	2,815-2,855
				473-1	72,5-73,5	2,855-2,895
				474-1	73,5-74,5	2,895-2,935
				475-1	74,5-75,5	2,935-2,975
				476-1	75,5-76,5	2,975-3,010
				477-1	76,5-77,5	3,010-3,050
478-1	77,5-78,5	3,050-3,090				

Tube cleaners for heat transfer systems

It's fact that tubes lined with even the slightest layer of deposit can rob boilers, chillers, condensers, or other heat transfer systems of their efficiency. TECHNODATA offers a complete line of tube cleaning products to help you clean tubes quickly and easily. So you can restore your heat transfer system to its maximum operating efficiency. With TECHNODATA, you'll find an excellent variety of tube cleaners and accessories for cleaning many types of heat transfer systems.

Four different product groups - Internal-driven, External-driven, Shoot-thru and Rotating flexible shaft - combine to provide the most effective and efficient techniques for tube cleaning success.

Internal-Driven Tube Cleaners deliver powerful cleaning action to make even the toughest job seem easy. Ideal for removing scale and other mineral deposits from dirty boiler tubes, cleaners come with many motor and cleaning tool options to accomodate different tube sizes and requirements. Designed to accompany the cleaning tool into the tube, the motor provides the rotary necessary to loosen deposits from the tube's inner wall. As the deposits fall, the motor's exhaust flushes the debris toward the opposite end of the tube, safely away from the operator.

Four motor series accommodate a wide variety of standard gage sizes for straight and curved tubes.



600 Series



1100 Series



1300 Series



2000 Series

External-Driven Tube Cleaners provide high-torque action ideal for cleaning hard scale, coke, gummy, oily or rubbery deposits from straight tubes, 3/8" - 2" ID.

Available in two styles, each trigger-operated cleaner features an air-powered motor that remains external to the tube, providing a powerful rotary motion to the shaft and cleaning tool. All models are capable of water flush operation - convenient for washing away loose deposits. Air purge models are also available.



5224 XL

Jiffy Guns make cleaning soft deposits safe, easy and fast. Clean sludge, mud and algae virtually in seconds with guns designed for straight tube sizes 5/8" - 1 - 1/2" ID.

Jiffy Guns utilize both water and air to produce a powerful stream to propel a spiral-wound, nylon brush or molded plastic scubber through the tube, removing deposits along the way.



**5371
Jumbo Jiffy Gun**

Roto-Jet comes with many outstanding features for the quick and easy one-step cleaning of tubes, 5/16" - 4" ID. Electric or pneumatic powered, **Roto-Jet** delivers high speed cleaning action that's extremely effective in removing a wide range of deposits, from soft to hard. Remove algae, sludge, mud, scale and mineral deposits with ease utilizing tooling options that include brushes, cleaning heads and descaling tools. Roto-Jet's convenient foot-pedal control design allows the operator to initiate shaft rotation and water flush simultaneously while manually advancing the cleaning tool. Additional features include a built-in storage compartment for accessories, and durable wheels and sturdy handle for transport.



Roto-Jet

Tube cleaning systems ROTO-JET

ROTO-JET Number	Voltage	Reversible	RPM	DIMENSION		WEIGHT		TUBE SIZE	
				Inch	mm	Lbs	Kg	Inch	mm
0620A	120	NO	850	17 X 15 X 10.5	432 X 381 X 267	63	28,6	.250 -3.000	6.35 -76.2
0620AR	120	YES	850	17 X 15 X 10.5	432 X 381 X 267	63	28,6	.250 -3.000	6.35 -76.2
0820A	220	NO	850	17 X 15 X 10.5	432 X 381 X 267	63	28,6	.250 -3.000	6.35 -76.2
0820AR	220	YES	850	17 X 15 X 10.5	432 X 381 X 267	63	28,6	.250 -3.000	6.35 -76.2
0650	120	NO	0-1800	11 X 17 X 9	280 X 432 X 229	35	15,9	.250 -1.000	6.35-25.4
0650R	120	YES	0-1800	11 X 17 X 9	280 X 432 X 229	35	15,9	.250 -1.000	6.35-25.4
0750	220	NO	0-1800	11 X 17 X 9	280 X 432 X 229	35	15,9	.250 -1.000	6.35-25.4
0750R	220	YES	0-1800	11 X 17 X 9	280 X 432 X 229	35	15,9	.250 -1.000	6.35-25.4
ROTO-JET Number	AIR REQ.	Reversible	RPM	DIMENSION		WEIGHT		TUBE SIZE	
				Inch	mm	Lbs	Kg	Inch	mm
0420	120@90PSI	NO	0-2500	21.5 X 10.25 X 10.5	546 X 261 X 267	48	21,8	.250 -3.000	6.35 -76.2



Model Typ 0620A



Pneumatic model 0420

is a pneumatic tube cleaner with a powerful 4 HP motor to clean tubes where electricity is not readily available in power utility plants, sugar mills, paper and steel mills, etc.



Flexible "WET" - shaft



Flexible "DRY" - shaft

"WET" - SHAFT specifications:

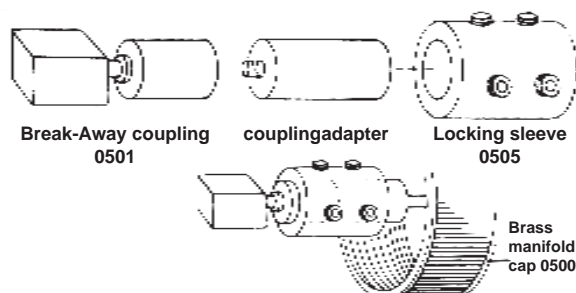
TUBE ID		FLEXIBLE SHAFT / REF. NUMBER						SHAFT Ø	
		LENGTH							
		Feet	Meter	Feet	Meter	Feet	Meter		
Inch	mm	15	4,5	25	7,6	35	10,7	Inch	mm
0,375	10	RJ-051115		RJ-051125		RJ-051135		0,250	9,53
.437-.500	11-13	RJ-051215		RJ-051225		RJ-051235		0,375	12,70
.562-1.00	14-25	RJ-051315		RJ-051325		RJ-051335		0,500	15,88
.750-1.50	19-38	RJ-051415		RJ-0514A25		RJ-0514A35		0,625	19,05
1.00-2.00	26-50	RJ-051415		RJ-051425		RJ-051435		0,750	25,40
2.00+	50+	RJ-051515		RJ-051525		RJ-051535		1.000	22,23

"DRY" - SHAFT specifications:

TUBE ID		FLEXIBLE SHAFT / REF. NUMBER					
		LENGTH					
		Feet	Meter	Feet	Meter	Feet	Meter
1.00-2.00	25-50	RJ-53415		RJ-53425		RJ-53435	

Break-Away Coupling

The Break-Away coupling, extends the cleaning shaft's life. When the torque on the cleaning shaft exceeds the break-away coupling's shear strength the inexpensive coupling breaks and saves the flexible shaft from premature damage. The break-away feature is only available on the 0512 and 0513 flexible shaft sizes.



Tube cleaning brushes for cleaning system ROTO-JET

SERIES 5502 HEAVY DUTY NYLON for cleaning medium to heavy mud and algae deposits from copper alloy and brass tubes. Size brush equal to or .062" (1.6mm) below the tube ID.



SERIES 0941 NYLON for cleaning light to medium soft deposits from copper alloy and brass tubes. Size brush equal to or .062" (1.6mm) below the tube ID.



SERIES 0942B BRASS for cleaning soft and light scale deposits from nonferrous tubing. Size brush equal to or .062" (1.6mm) below the tube ID.



SERIES 0942 STAINLESS STEEL for cleaning soft and light scale deposits from ferrous tubes. Size brush equal to or .062" (1.6mm) below the tube ID.



SERIES 5510 TURBO BRUSHES for cleaning light and soft scale deposits in ferrous and non ferrous tubes. Silicone carbide is impregnated in the brush's nylon bristle allowing the brush to polish the tube as it cleans. Refer to the chart below for sizing.



SERIES 5508 TURBO BRUSHES for cleaning light and soft scale deposits in ferrous and non ferrous enhanced tubes. Silicone carbide is impregnated in the brush's nylon bristle allowing the brush to polish the tube as it cleans. Refer to the chart below for sizing.



Additional brushes for special applications on request, contact customer service !

BRUSHES Ø		THREAD SIZE	SHAFT TYPE	BRUSHES / REF. NUMBERS					
Inch	mm			H.d. NYLON	NYLON	BRASS	STEEL	5510 Turbo	5508 Turbo
0,250	6,35	6-32	RJ-0511	*RJ-5502- 250	RJ-0941250	RJ-0942B250	RJ-0942250	N/A	N/A
0,312	7,92	6-32	RJ-0511	*RJ-5502- 312	RJ-0941312	RJ-0942B312	RJ-0942312	RJ-5510-8	
0,375	9,53	6-32	RJ-0511	*RJ-5502- 375	RJ-0941375	RJ-0942B375	RJ-0942375	3/8" Brush Dia.	
0,437	11,10	1/4-28	RJ-0512	RJ-5502- 437	RJ-0941437	RJ-0942B437	RJ-0942437	RJ-5510-12	RJ-5508-12
0,500	12,70	1/4-28	RJ-0512	RJ-5502- 500	RJ-0941500	RJ-0942B500	RJ-0942500	3/4" Brush Dia.	
0,562	14,27	1/4-28	RJ-0512/RJ-0513	RJ-5502- 562	RJ-0941562	RJ-0942B562	RJ-0942562		
0,625	15,88	1/4-28	RJ-0512/RJ-0513	RJ-5502- 625	RJ-0941625	RJ-0942B625	RJ-0942625	RJ-5510-16 1" Brush Dia.	RJ-5508-16
0,687	17,45	1/4-28	RJ-0513	RJ-5502- 687	RJ-0941687	RJ-0942B687	RJ-0942687		
0,750	19,05	1/4-28	RJ-0513	RJ-5502- 750	RJ-0941750	RJ-0942B750	RJ-0942750		
0,812	20,62	1/4-28	RJ-0513	RJ-5502- 812	RJ-0941812	RJ-0942B812	RJ-0942812	RJ-5510-18	RJ-5508-18
0,937	23,80	1/4-28	RJ-0513	RJ-5502- 937	RJ-0941937	RJ-0942B937	RJ-0942937	1-1/8" Brush Dia.	
1,000	25,40	1/4-28	RJ-0513	RJ-5502- 1000	RJ-09411000	RJ-0942B1000	RJ-09421000		
1,062	26,97	1/4-28	RJ-0513	N/A	RJ-09411062	RJ-0942B1062	RJ-09421062	RJ-5510-20 1-1/4" Brush Dia	N/A
1,125	28,58	1/4-28	RJ-0513		RJ-09411125	RJ-0942B1125	RJ-09421125		
1,187	30,15	1/4-28	RJ-0513		RJ-09411187	RJ-0942B1187	RJ-09421187		
1,250	31,75	1/4-28	RJ-0513		RJ-09411250	RJ-0942B1250	RJ-09421250	N/A	
1,312	33,32	1/4-28	RJ-0513		RJ-09411312	RJ-0942B1312	RJ-09421312		
1,437	36,50	1/4-28	RJ-0513		RJ-09411437	RJ-0942B1437	RJ-09421437		
1,500	38,10	1/4-28	RJ-0513		RJ-09411500	RJ-0942B1500	RJ-09421500		

* 5502 Brushes must use adapter number RJ-5100AC. Sold separately.

Air driven tube cleaning motor type 35-4325 K

tube cleaning motor type 35-4325K



RR-78H13 tube cutter head

RR-L47700A20 Universal coupling

RR-35-4325K Air motor

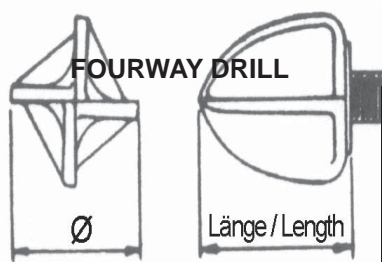
35-4325PKG Aluminum Siphon Tube Cleaner Package for cleaning by conventional hand use. Accommodates minimum siphon tube ID of 2-7/8" (73mm) with a minimum bend radius of 28" (711mm).

Features:

- Powerful Heavy Duty 2-9/16" (65mm) OD Air Motor.
- Aggressive 78H Siphon Tube Cutter Head
- Limited Throw Universal - Prevents motor stall-out increases rotor life.

Other aluminum siphon tube cleaners are available, advise siphon tube ID, minimum bend radius and siphon tube length. Contact Customer Service for details.

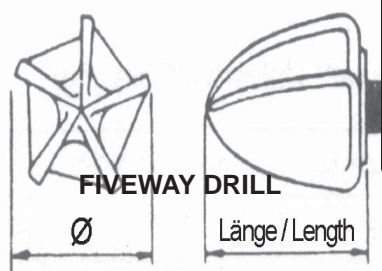
Drill heads are used with universal couplings to remove heavy and hard coke. Universal couplings are always used with drills or cutter heads in cleaning curved tubes. Rugged construction for hard service. For hard coated stellite drills add "S" to end of the drill number. Universals are sold separately.



Drillhead



Universal coupling



DRILL HEAD dimension				THREAD	DRILL HEAD REF.-Number
Ø	Ø/mm	Length	Length mm		
7/8	22,23	1-1/4	31,75	5/16-18	RR-H1145-312
1-1/8	28,58	1-1/2	38,10	7/16-14	RR-H1144-437
1-1/4	31,75	1-3/4	44,45	7/16-14	RR-H1105-437
1-1/2	38,10	2	50,80	7/16-14	RR-H1058-437
1-3/4	44,45	2	50,80	7/16-14	RR-H1059-437
2	50,80	2-1/4	57,15	5/8-11	RR-H1166-625
2-1/4	57,15	2-1/2	63,50	5/8-11	RR-H2356-625
2-5/8	66,68	2-3/4	69,85	3/4-10	RR-H2404-750
2-7/8	73,03	2-7/8	73,03	3/4-10	RR-H2355-750
3-1/8	79,38	3-3/8	86,72	3/4-10	RR-H2347-750
3-1/2	88,90	3-1/2	88,90	1-1/8-12	RR-H2509-1125

Air driven tube cleaning motor for straight tubes from 12.57 upto 46.23 mm / .495" upto 1.820" ID

Standard Equipment										
TUBE ID				Motor Ref. Nr. & Ø Inch/mm	conical Cutter head with thread	Adapter	Brush	Flexible holder	Universal coupling	Operating hose
Inch	mm	Min	Max							
Min	Max	Min	Max							
.495	.513	12,57	13,03	RR-D66900-15 .468/11.87mm	RR-16509	RR-8431A	RR-3323-6	RR-420000	n/a	RR-833000-25P
.514	.532	13,06	13,51				RR-3323-8			
.533	.609	13,54	15,47				RR-3324-8			
.610	.687	15,49	17,45	RR-D67000-18 .562/14.27mm	RR-19768	RR-8431B	RR-3324-10	RR-420000BB	RR-L69100	RR-833100-25P
.688	.729	17,48	18,52				RR-350000			
.730	.778	18,54	19,76				RR-350200			
.779	.850	19,79	21,59	RR-D67100-22 .688/17.48mm	RR-16526	RR-8434C	RR-350400	RR-420100	RR-L69300	RR-833100-25P
.851	.900	21,62	22,86				RR-350600			
.901	.950	22,89	24,13				RR-350800			
.951	1,000	24,16	25,40	RR-D67300-28 .875/22.23mm	RR-19062	RR-8436A	RR-351000	RR-420100BC	RR-L69500	RR-1004-25P
1,001	1,040	25,43	26,42				RR-351200			
1,041	1,072	26,44	27,23				RR-351400			
1,073	1,138	27,25	28,91	RR-D67500-34 1.062/26.97mm	RR-19076	RR-8436C	RR-351600	RR-420200BD	RR-L69600	RR-1009-25P
1,139	1,206	28,93	30,63				RR-351800			
1,207	1,230	30,66	31,24				RR-352000			
1,231	1,260	31,27	32,00	RR-D67500-40 1.250/31.75mm	RR-313500 Single Pin Head	RR-313600 Single Pin Head	RR-352200	RR-420300DF	RR-L76200A	RR-1009-25P
1,257	1,321	31,93	33,55				RR-352400			
1,322	1,400	33,58	35,56				RR-352600			
1,401	1,450	35,59	36,83	RR-D67800-46 1.438/36.53mm	RR-313600 Single Pin Head	RR-313600 Single Pin Head	RR-352800	RR-420300DF	RR-L76200A	RR-1009-25P
1,451	1,484	36,86	37,69				RR-352900			
1,485	1,563	37,72	39,70				RR-353000			
1,564	1,635	39,73	41,53	RR-D67800-46 1.438/36.53mm	RR-313600 Single Pin Head	RR-313600 Single Pin Head	RR-352400	RR-420300DF	RR-L76200A	RR-1009-25P
1,636	1,765	41,55	44,83				RR-352600			
1,676	1,700	42,57	43,18				RR-352800			
1,701	1,730	43,21	43,94	RR-D67800-46 1.438/36.53mm	RR-313600 Single Pin Head	RR-313600 Single Pin Head	RR-352900	RR-420300DF	RR-L76200A	RR-1009-25P
1,731	1,780	43,97	45,21				RR-353000			
1,781	1,820	45,24	46,23				RR-353000			

Note: Cleaner operating hoses shown above are 25' (7.62m) in length.

Operating hoses are also available in 50' (15.24m) length.



**Motor type D673, RR-D67300-28
with flexible holder RR-420100
operating hose RR-833100-25P**

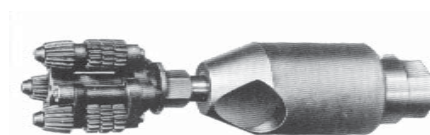


**Expanding Brush
with Universal cou-
pling**

**„Scraper“ head
with flexible holder**

Air driven tube cleaning motor for straight tubes from 44.45 upto 95.25 mm / 1.750" upto 3.750" ID

TUBE ID Ø		Motor Ref.-Nr.	Standard Equipment			
			Motor Ø		Cutter head	Expanding brush
Inch	mm		Inch	mm		
1.750	44,45	RR-D7700-1500	1,500	38,10	RR-H63500	RR-352900
2,000	50,80	RR-D44800-1812	1,812	46,02	RR-H63600	RR-353600A
2,250	57,15	RR-137400D2125	2,125	53,98	RR-336000	RR-N700A
2,500	63,50	RR-136400D2375	2,375	60,33	RR-336100	RR-R770
2,750	69,85	RR-134200D2625	2,625	66,68	RR-336100	RR-T770
3,000	76,20	RR-139300D2875	2,875	73,03	RR-336200	RR-T770A
3,250	82,55	RR-132500D3000	3,000	76,20	RR-336300	RR-V770A
3,500	88,90				RR-336400	RR-V770A
3,750	95,25				RR-336400	RR-Y770A



**1300 Series motor
with swing frame head
for straight tubes**



UO head



**Expanding
Brush**



"G" Brush



Air valve

TUBE ID		Motor Ref.-Nr.	OPTIONS / EXTRA EQUIPMENT					
			Universal coupling	Drill head	'UO' head	"G" Brush	Air valve	Air hose
Inch	mm							
1.750	44,45	RR-D7700-1500	RR-L76200A	RR-H1058-437	nicht verfügbar	RR-3083-8	RR-720500	RR-1006-25P
2,000	50,80	RR-D44800-1812	RR-L27800	RR-H1058-437	RR-302700	RR-3145-4		
2,250	57,15	RR-137400D2125	RR-L57600	RR-H1058-437	RR-302900	RR-3145-8		
2,500	63,50	RR-136400D2375	RR-L52200	RR-H1059-625	RR-303100	RR-3147-4		
2,750	69,85	RR-134200D2625	RR-L28000	RR-H1059-625	RR-303200	RR-3147-8		
3,000	76,20	RR-139300D2875	RR-L28000	RR-H1059-625	RR-303400	RR-3151-4	RR-720600	RR-1007-25P
3,250	82,55	RR-132500D3000	RR-L37300	RR-H2404-750	RR-303600	RR-3196-8		
3,500	88,90		RR-L37300	RR-H2404-750	RR-303600	RR-3196-10		
3,750	95,25		RR-L37300	RR-H2355-750	RR-303800	RR-3196-10		

Additional sizes or special solutions on request, contact customer service !

Air driven tube cleaning motor for curved tubes from 20.09 upto 52.83mm / 0.791" upto 2.080" ID

TUBE ID Ø				Min. Bend Radius		Motor Ref.-Nr. & Ø Inch/mm	cone cutter	Adapter	Exp. Brush	Flexible Holder	Universal coupling	Air hose		
Inch		mm												
Min	Max	Min	Max	Inch	mm									
.791	.815	20,09	20,70	6	157	RR-D66100-22 .687"/17.45mm	RR-17702	RR-8434C	RR-350000	RR-420000CC	RR-L69300	*RR-833100-25P		
.816	.890	20,73	22,61						RR-350200					
.891	.910	22,63	23,11						RR-350400					
.911	.940	23,14	23,88											
.941	1.040	23,90	26,42			RR-D66200-25 .781"/19.84mm	RR-19062	RR-8436A	RR-350600					
1,041	1.100	26,44	27,94											
1,101	1.040	27,97	26,42			RR-D66300-28 .875"/22.22	RR-19840	RR-8436C	RR-350800	RR-420100	RR-L69400			
1,141	1,180	28,98	29,97						RR-351000					
1,181	1,242	30,00	31,55			RR-D66300-31 .968"/24.59mm	RR-19076		RR-351200					
1,243	1,270	31,57	32,26						RR-351400					
1,271	1,300	32,28	33,02			RR-D66500-34 1.062"/26.55mm	RR-19077	RR-8436E	RR-351600	RR-420100BC	RR-L69500	*RR-1004-25P		
1,301	1,360	33,05	34,54						RR-351800	RR-420200BD	RR-L69600			
1,361	1,410	34,57	35,81				RR-19078	RR-352000						
1,411	1,445	35,84	36,70					RR-D66500-40 1.250"/31.75mm	RR-8440A				RR-352200	
1,446	1,490	36,73	37,85			RR-198RR-13	RR-352400							
1,491	1,525	37,87	38,74				RR-198RR-14			RR-352600				
1,526	1,600	38,76	40,64			RR-362800				RR-420300DD	RR-L45500			
1,601	1,640	40,67	41,66			RR-352900								
1,641	1,680	41,68	42,67			RR-353000								
1,681	1,725	42,70	43,82			RR-353200A								
1,726	1,772	43,84	45,01			RR-D66800-46 1.437"/36.5mm								
1,773	1,820	45,03	46,23											
1,821	1,910	46,25	48,51											
1,911	2.000	48,54	50,80											
2,001	2,040	50,83	51,82			10,00	254	RR-D66800C52 1.625"/41.28mm	RR-313800 Single Pin Head		RR-353200A			RR-1009-25P
2,041	2,080	51,84	52,83								RR-353400A			

* Operating hose RR-833100-25P recommend air valve RR-720200. Air valve sold separately.

* Operating hose RR-1004-25P recommend air valve RR-720300. Air valve sold separately.

* Operating hose RR-1009-25P recommend air valve RR-720400. Air valve sold separately.

Motor 1364 equipped with Universal coupling and a swing frame cutter head



for curved tubes from 20.09 upto 52.83mm / 0.791" upto 2.080" ID

TUBE ID		Min. Bend Radius		Standard equipment						OPTIONS / ACCESSORIES			
Inch	mm	Inch	mm	Motor Ref.-Nr.	Inch	mm	cutter head	"G" brush	Universal coupling	Air valve	Air hose	Drill head	Expanding Brush
2,125	53,98	12,0	304,8	RR-137000C1750	1,750	44,45	RR-336000	RR-3145-6	RR-L76200A	RR-720400	RR-1009-25P	RR-H1059-437	P770A
2,250	57,15	9,0	228,6					RR-3145-8					N770A
2,375	60,33	9,0	228,6	RR-139500C1875	1,875	47,63	RR-336000	RR-3146-2	RR-L27600	RR-720400	RR-1009-25P	RR-H1166-625	M770
2,500	63,50	10,0	254					RR-3146-4					R770
2,625	66,68	11,0	279,4	RR-137400D2125	2,125	53,98	RR-336100	RR-3147-4	RR-L52200	RR-720500	RR-1006-25P	RR-H2356-625	T770
2,750	69,85	14,0	355,6					RR-3147-6					
2,875	73,03	12,0	304,8	RR-136400D2375	2,375	60,33	RR-336200	RR-3147-8	RR-L28000	RR-720500	RR-1006-25P	RR-H2404-750	V770A
3,000	76,20	21,0	533,4					RR-3151-2					
3,250	82,55	12,0	304,8	RR-134200D2625	2,625	66,68	RR-336200	RR-3151-4	RR-L52200	RR-720500	RR-1006-25P	RR-H2355-750	Y770A
3,500	88,90	15,0	381					RR-3151-4					
3,750	95,25	13,0	330,2	RR-134200D2625	2,625	66,68	RR-336300	RR-3196-8	RR-L28000A	RR-720500	RR-1006-25P	RR-H2404-750	V770A
4,000	101,60	16,0	406,4										
4,250	107,95	14,0	355,6	RR-139300D2875	2,875	73,03	RR-336400	RR-3196-10	RR-L37300	RR-720600	RR-1007-25P	RR-H2355-750	Y770A
4,500	114,30	15,0	381										
4,750	120,65	16,0	406,4	RR-132500D3000	3,000	76,20	RR-336500	RR-3196-10	RR-L51000	RR-720600	RR-1007-25P	RR-H2355-750	Y770A
		26,0	660,4										
		16,0	406,4	RR-139900D3625	3,625	92,08	RR-316500	RR-3196-10	RR-L37300	RR-720600	RR-1007-25P	RR-H2355-750	Y770A
		21,0	533,4										
		16,0	406,4	RR-139900D3625	3,625	92,08	RR-316500	RR-3196-10	RR-L51000	RR-720600	RR-1007-25P	RR-H2355-750	Y770A
		16,0	406,4										

* Air hose as above shown are 25' (7.62m) length, also available in 50' (15.24m) length

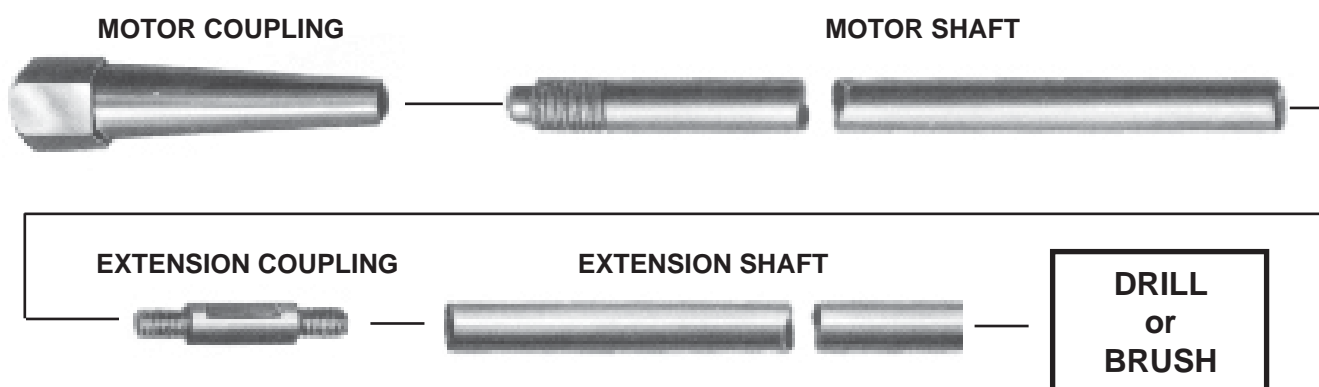
Air driven tube cleaning motor type 522400XL for straight tubes from 9.5 until 25.4mm / 3/8" until 1" inside diameter

the air driven and water supported motor is equipped with a water and air connection. The 522400XL motor provide high torque for cleaning hard scale, coke, gummy, oily or rubbery deposits from straight tubes, ideal tool for sugar, pulp, paper mills, chemical plants and oil refineries. Equipped with a rigid shaft(quill), the cleaning process will start by the hands-witch at the motor, in this moment water will flow through the shaft and will come out of the cleaning tool in front of the shaft. The water flush operation convenient for washing away loose deposits and cooling of the tools.



- Arbeitsdruck: 6,2 – 8,6 bar
- water pressure: max. 50 psi / 8,6 bar
- RPM: 1500
- Max. torque: 9,5 Nm / 700 RPM.
- appr. dimension: L. 230 mm x W. 63 mm x H. 200 mm weight: ca. 3,1 Kgs*

Accessories for type 522400XL



shaft outside Ø	Motor coupling Ref. Nr.	*Motor shaft Ref. Nr.	ext. Coupling gasket Ref.Nr.	extension coupling Ref.Nr.	extension shaft Ref. Nr.
7,94 mm (5/16")	RR-5213C	RR-5213-(FT)	not available	not available	not available
9,52 mm (3/8")	RR-5214C	RR-5214-(FT)	RR-P5034A	RR-501406	RR-5014-(FT)
11,11 mm (7/16")	RR-5215C	RR-5215-(FT)	RR-P5034A	RR-CS113106	RR-5015-(FT)
12,7 mm (1/2")	RR-5216C	RR-5216-(FT)	RR-P5034B	RR-CS113206	RR-5016-(FT)
15,87 mm (5/8")	RR-5218C	RR-5218-(FT)	RR-P5034C	RR-CS113406	RR-5018-(FT)
19,05 mm (3/4")	RR-5219C	RR-5219-(FT)	RR-P5034D	RR-CS113506	RR-5059-(FT)

*specify shaft length, 1500 mm steps are available. other sizes are available, contact customer service.

condenser and heatexchanger tube cleaning drills and brushes for type 522400XL

CT - drill



TD - Bohrer



these drills are carbide tipped
for hard deposits

El Paso - drill



for soft deposits

drill



for gummy deposits



for powder deposits
and polishing

tube OD	tube	tube ID		*CT drill Ref. Nr.	*drill-adapter	**T-drill Ref. Nr.	** coupling Ref. Nr.	El Paso - drill	**TD-drill	*** brush	cleaning shaft OD Inch (mm)
Inch (mm)	BWG	Inch	mm								
1/2"(12.7mm)	16	.370"	9,4	RR-5029-359	RR-5039K	not available		RR-5005-359	not available	RR-5024A22	5/16" (7.94mm)
	17	.384"	9,75					RR-5024A24			
	18	.402"	10,21					RR-5005-390		RR-5024A24	
5/8" (15.8mm)	12	.407"	10,32	RR-5029-390	RR-5039A	RR-5100-422	RR-5100B	RR-5005-422	RR-5172-426	RR-5024B26	3/8" (9.52mm)
	13	.435"	11,05	RR-5029-422		RR-5005-390		RR-5024A24			
	14	.459"	11,66	RR-5029-446	RR-5039B	RR-5100-468	RR-5100C	RR-5005-468	RR-5172-468	RR-5024C28	
	15	.481"	12,22	RR-5029-480		RR-5100-480		RR-5005-480	RR-5172-475	RR-5226C30	
	16	.495"	12,57			RR-5005-512		RR-5172-475	RR-5226C32		
	17	.509"	12,93		RR-5029-512	RR-5005-512	RR-5172-507	RR-5226C34			
	3/4" (19.0mm)	12	.532"	13,51	RR-5029-512	RR-5039C	RR-5100-512	RR-5100D	RR-5005-512	RR-5172-507	RR-5226D36
13		.560"	14,22	RR-5039D	RR-5100-568		RR-5005-568		RR-5172-564	RR-5226D38	
14		.584"	14,83		RR-5100-604	RR-5005-604	RR-5172-600	RR-5226D38			
15		.606"	15,39		RR-5029-604	RR-5100-640	RR-5005-640	RR-5172-632	RR-5226D40		
16		.620"	15,75		RR-5029-640	RR-5100-640	RR-5005-640	RR-5172-632	RR-5226D42		
7/8" (22.2mm)	17	.634"	16,10	RR-5029-640	RR-5039E	RR-5100-691	RR-5100E	RR-5005-691	RR-5172-689	RR-5226D44	5/8" (15.88mm)
	18	.652"	16,56	RR-5029-691		RR-5100-727		RR-5005-727	RR-5172-725	RR-5226D46	
	12	.657"	16,69	RR-5029-727		RR-5005-759		RR-5172-757	RR-5226D48		
	13	.685"	17,4	RR-5029-759	RR-5100-759	RR-5005-759	RR-5172-757	RR-5226D48			
	14	.709"	18,01	RR-5039F	RR-5100-812	RR-5100G	RR-5005-812	RR-5172-814	RR-5226E52		
	15	.731"	18,57		RR-5029-812		RR-5005-848	RR-5172-850	RR-5226E54		
1" (25.4mm)	16	.745"	18,92	RR-5029-848	RR-5039G	RR-5100-848	RR-5100G	RR-5005-848	RR-5172-850	RR-5226E54	3/4" (19.05mm)
	17	.759"	19,28	RR-5029-880		RR-5100-880		RR-5005-880	RR-5172-882	RR-5226E564	
	18	.777"	19,74	RR-5029-880	RR-5100-880	RR-5005-880		RR-5172-882	RR-5226E564		
	12	.782"	19,86	RR-5029-880	RR-5100-880	RR-5005-880		RR-5172-882	RR-5226E564		
	13	.810"	20,57	RR-5029-880	RR-5100-880	RR-5005-880		RR-5172-882	RR-5226E564		

* drill studs are required for CT drills

** drill coupling are required for drill tips and twist drills

*** brush standard material is steel, brushes are also available in brass and stainless steel materials
other size drills and brushes are available, contact customer service for details.

Tube cleaning system TCP

with this system you can internal cleaning tubes, pipes and hoses quick and effective. You can use this equipment in many areas where tubes are involved, heat exchanger, product lines, automotive engineering or final processing of tubes after production, etc.

Cleaning with effectively removes the impurities of the manufacturing process and significantly reduces scavenging times at operation startup. The cleaning process is very simple, with an air pressure of 6-8 bar, the cleaning projectile will shot through the tube with the deposits. These flexible projectile expand and press against the wall of the tube. The combination of the air pressure and the excess of the cleaning projectile effected a perfect cleaning result.

The equipment consists of the launcher unit, nozzles and the cleaning projectile. The launcher unit is manufactured with strength aluminium and a robust construction for hard working conditions. the operating range for tubes will be from 6 upto 65 mm outside diameter. For easy handling is a rotary air connector equipped.

To use the equipment you need further the interchangeable shock-proof plastic nozzles. The size of the nozzle depends of the tube ID to be clean.



projectiles



nozzles



launcher unit
with a mounted nozzle

Cleaning Projectile for tube cleaning system TCP

We have a range of cleaning projectiles for different cleaning jobs, the following chart will help to choose the right one.



STANDARD

these projectiles you will choose to remove loose particles from tubes. They are manufactured of composite foam rubber and are available multicoloured or white.



PREMIUM

these projectiles are airtight and resilient to solvents as well as mechanical wear and tear, making them particularly suited for cleaning piping assemblies, pipelines over 60 mm inner diameter and when dealing with greasy contamination.



FLEX

these projectiles are made of an elastic rubber foam that quickly regains its shape after deformation. Because of their high flexibility, largely oversized projectiles can easily pass through tight cross-section constrictions, achieving a high degree of decontamination in fittings as well as hoses. We recommend these projectiles for the subsequent cleaning of hydraulic systems after assembly.



ABRASIVE

these projectiles have a rough fibrous material on their front end and efficiently remove stubborn debris and coarse contamination.



CORUNDUM

these projectiles have a corundum coating similar to sandpaper that grinds away extremely persistent deposits such as rust or lime. Subsequent cleaning with a standard cleaning projectile is necessary to remove corundum residue.

Information sheet

for technical layout of expanding tools and spare parts

tube O.D.d: _____ mms
 wall thicknesss: _____ mms
 tube material:.....
 number of tubes:..... pcs
 straight tubes: yes / no
 U-tubes: yes / no
 expanded joint: yes / no
 welded-expanded joint:..... yes / no
 expanded-welded joint:..... yes / no
 expanding rate:..... %
 calculating method:.....

bore size D: _____ mms
 tubesheet thickness.....B: _____ mms
 plugsheet thickness.....B1: _____ mms
 plug hole D1: _____ mms
 material:.....

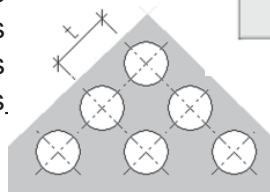
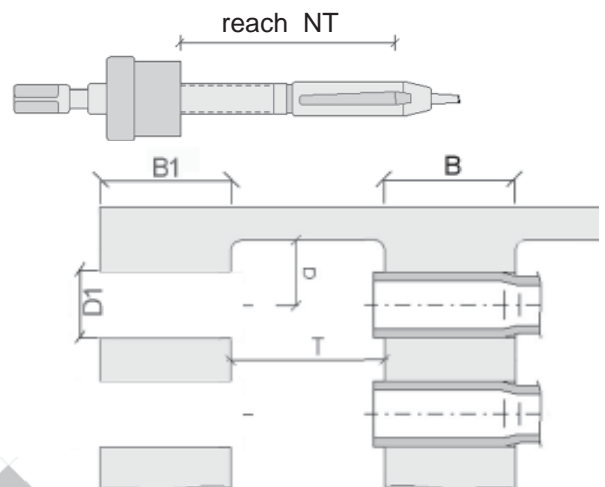
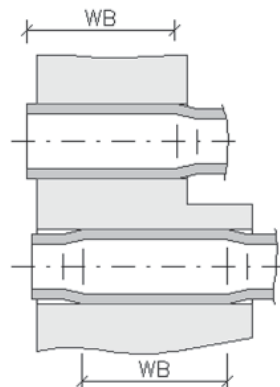
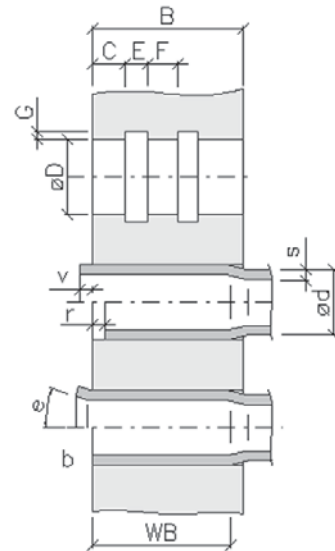
shell-side: pressure: _____ bar
 temp: _____ °C
 medium: _____
 tube-side: pressure: _____ bar
 temp: _____ °C
 medium: _____
 test: type: _____
 pressure: _____ bar
 shell extension..... T: _____ mms
 distancea: _____ mms

reach.....NT: _____ mms
 expanding length WB: _____ mms
 tube flush: yes / no
 tube extraction v: _____ mms
 tube recessr: _____ mms
 bevelling angle.....2e: _____ °
 length of front parabola:..... mms
 length of rear parabola: mms
 pitcht: _____ mms

additional information for grooving tool:

distance front / grooveC: _____ mms
 width of grooveE: _____ mms
 groove dia.....G: _____ mms
 distance groove/grooveF: _____ mms

remarks:



Information sheet

for technical preparation of tube welds

Tube outside diameter d: _____ mms
 Tube wall thickness s: _____ mms
 Tube inside diameter: _____ mms
 Tube protrusion: _____ mms
 Tube reset: _____ mms

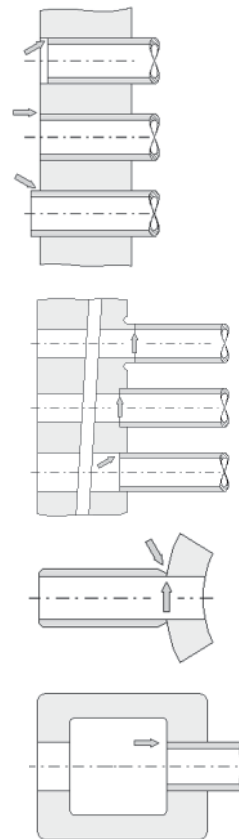
Hole diameter D: _____ mms
 Tubesheet thickness B: _____ mms
 Cladding thickness: _____ mms

Tube material:
 Tubesheet material:
 Cladding material:

First pass wire: _ with / without
 Second pass wire: _ with / without
 First and second pass wire:with / without

Required wire: material: _____
 diameter: _____ mms

Required gas:
 Geometry of weld:



remarks:

more applications on request !

Additional TECHNODATA products and performances:

- Special designed torches for orbital welding units
- Special designed tube expanding tools
- Labour-paid jobs: welding, expanding, cutting and pulling
- Rental units for tube welding and tube expanding jobs
- Service work for our welding equipment as well as for tube expanding equipment
- Tools and equipment for tube welding-, tube expanding- and repair works
- Automatic and semi-automatic handling devices
- Consulting in all questions of the tube assembly, tube disassembly, tube-tube and tube-tubesheet connections (welding, expanding) as well as on the field of material application

PRODUCTION-, SALES- AND CONSULTING PROGRAM

ORBITAL WELDING

- Tube to Tubesheet TIG - Welding Equipment
with / without filler wire feeding device
with / without clamping device
with / without double gas shield chamber
special welding torch systems

- Tube to Tube TIG - Welding Equipment
with / without filler wire feeding device

TUBE EXPANDING

- Electronic tube expanding controllers
- Mechanical-hydraulic tube expanding controllers
- Pneumatic torque controlled driving motor
- Conical tube expanders for welding preparation
- Self - feeding tube expanders for heat exchangers, boilers, coolers and other tubular systems.
- Mechanical - hydraulic tube expanders
- Automatic tube expanders
- Water hydraulic tube expanding system / Mandrels for various expansions
- Mechanical - hydraulic tube contact expanding systems
- Tools for conical and cylindrical contact expansions

TUBE BEVELLING/

- Pneumatic and electronic bevelling machines

CUTTING AND FACING

- Tube facer, internal tube cutter and grooving tools

TUBE PULLING

- Electro-hydraulic tube pulling systems

TUBE CLEANING

- Tube cleaning systems and tools for heat exchangers, boilers, coolers and other tubular systems
- Aluminium smelters

TUBE TESTING

- Tube sheet joint tester / - Tube tester

RENTAL EQUIPMENTS

- TIG - Orbital welding equipments for
tube to tubesheet welding joints / tube to tube welding joints
- Tube expanding equipments for
self - feeding tube expanders / mechanical - hydraulic tube expanders
- Tube pulling systems & Tube bevellings machines & Tube testing equipment
- Mechanical - hydraulic tube contact expanding systems

SERVICE

- Service work for all TECHNODATA products
- Labour jobs: welding, expanding, cutting and pulling
- Consulting in all questions of the tube assembly, tube disassembly
tube to tube and tube to tubesheet connections.

**SPECIAL SOLUTIONS OF EQUIPMENTS AND TOOLS FOR HEAT EXCHANGER-,
BOILER- AND OTHER MANUFACTURER OF TUBULAR SYSTEMS**