



Product overview

TRACTO-TECHNIK GmbH Spezialmaschinen

Plant II • Tube/pipe fabrication technology

Hunold-Rump-Straße 76-80

D-57368 Lennestadt

Telefon: +49 (0) 27 25 / 95 40-0

Telefax: +49 (0) 27 25 / 95 40-39

Internet: <http://www.tracto-technik.de>

E-mail: tubomat@tracto-technik.de



CONTENT

1. Fully automatic CNC-controlled tube/pipe bending machines (TUBOTRON) 3

2. Single-axis-controlled tube/pipe bending machines (TUBOBEND) 5

3. Universal tube/pipe fabrication machines (TUBOMAT, TUBOBEND) 7

4. Press bending machines (PB) 8

5. Tube/pipe end working machines (TUBOFORM) 8

6. Other tube/pipe fabrication machines and assembly devices for hydraulic piping 9

7. 2D/3D tube/pipe measuring systems (TUBOCONTROL, TUBOSCAN, LISA) 10

8. Automated system solution for production of template pipes (SCOPELINK, ROBOFIX) 11

9. Tube/pipe bending software / Software solutions for piping 12

1. Fully automatic CNC-controlled tube/pipe bending machines (TUBOTRON)

TUBOTRON 20

- programmable CNC control
- exposed bending head
- positioning in slide piece/pressure die area
- hydraulic collet chuck
- adjustable clamping pressure
- pneumatic lubrication device
- hydraulic mandrel retraction
- interface for tele-diagnostic service
- max. tube/pipe range: Ø 20 mm
- max. length over mandrel: 6000 mm
- Left/Right bending unit (option)
- stack tooling (max. 6 tools, option)



TUBOTRON 30

- programmable CNC control
- exposed bending head
- positioning in slide piece/pressure die area
- hydraulic collet chuck
- adjustable clamping pressure
- adjustable positioning speed on all axes
- hydraulic mandrel retraction
- automatic minimal metred lubrication device
- tool administration system
- interface for tele-diagnostic service
- max. tube/pipe range: Ø 30 mm
- max. length over mandrel: 6000 mm



TUBOTRON 50

- exposed bending head
- positioning in slide piece/pressure die area
- programmable control
- hydraulic collet chuck
- adjustable clamping pressure
- hydraulic mandrel retraction
- automatic minimal metred lubrication device
- travelling slide piece/pressure die
- interface for tele-diagnostic service
- max. tube/pipe range: Ø 50 mm
- max. length over mandrel: 6000 mm



TUBOTRON 90

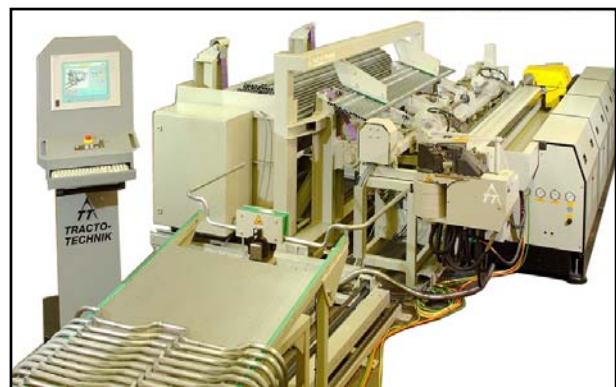
- exposed bending head
- positioning in slide piece/pressure die area
- programmable control
- hydraulic collet chuck
- adjustable clamping pressure
- hydraulic mandrel retraction
- automatic minimal metred lubrication device
- travelling slide piece/pressure die
- interface for tele-diagnostic service
- max. pipe range: Ø 88,9 mm
- max. length over mandrel: 6000 mm



Fully automatic feeding and discharging systems for our TUBOTRON tube/pipe bending machines can be designed according to special demands.

- universal and flexible handling systems for series production
- automatic tube separation, feeding and discharging
- individual adaptation
- feeding from the front (for mandrel bending) or sideways (for bending without mandrel)
- precise length positioning during separation
- weld detection system with rotational alignment (option)
- bending space of the bending machine is not reduced
- high production speeds can be obtained
- brief cycle times / processing times can be realized

Realized solutions, e.g.:



2. Single-axis-controlled tube/pipe bending machines (TUBOBEND)

TUBOBEND 20

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- swivable bending head
- foot pedal
- mobile and flexible to use
- max. tube/pipe range: steel pipes up to \varnothing 16 mm
soft metals up to \varnothing 22 mm
- max. length over mandrel: 6000 mm



TUBOBEND 30

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- removable control panel
- hydraulic mandrel retraction
- mobile and flexible to use
- max. tube/pipe range: \varnothing 30 mm
- max. length over mandrel: 6000 mm



TUBOBEND 50

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- removable control panel
- adjustable clamping pressure
- hydraulic mandrel retraction
- mobile and flexible to use
- max. tube/pipe range: \varnothing 50 mm
- max. length over mandrel: 6000 mm



TUBOBEND 80 L

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- travelling slide piece/pressure die
- hydraulic mandrel retraction
- mobile and flexible to use
- max. tube/pipe range: Ø 76,1 mm
- max. length over mandrel: 6000 mm



TUBOBEND 80

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- removable control panel
- travelling slide piece/pressure die
- adjustable clamping pressure
- hydraulic mandrel retraction
- mobile and flexible to use
- max. tube/pipe range: Ø 76,1 mm
- max. length over mandrel: 6000 mm



TUBOBEND 90

- exposed bending head
- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- travelling slide piece/pressure die
- adjustable clamping pressure
- hydraulic mandrel retraction
- mobile and flexible to use
- max. tube/pipe range: Ø 88,9 mm
- max. length over mandrel: 6000 mm

3. Universal tube/pipe bending machines (TUBOMAT, TUBOBEND)

TUBOMAT 642

- bending angle pre-selection with digital display (4-fold)
- hydraulic mandrel retraction
- saw including cooling and automatic feed
- internal and external deburrer
- cutting ring assembly (automatic pressure adjustment)
- mobile and flexible to use
- max. tube/pipe range: Ø 42 mm
- max. length over mandrel: 6000 mm



TUBOMAT 648

- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- hydraulic mandrel retraction
- saw including cooling and automatic feed
- internal and external deburrer
- cutting ring assembly (automatic pressure adjustment)
- mobile and flexible to use
- max. tube/pipe range: Ø 48 mm
- max. length over mandrel: 6000 mm



TUBOBEND 42

- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- modular design for ease of transportation
- mobile and flexible to use
- max. tube/pipe range: Ø 42 mm
- max. length over mandrel: 6000 mm



TUBOBEND 48

- bending angle control with display of desired and actual values
- automatic sequencing of bending angles
- hydraulic mandrel retraction
- modular design for ease of transportation
- mobile and flexible to use
- max. tube/pipe range: Ø 48 mm
- max. length over mandrel: 6000 mm



4. Press bending machines (PB)

PB 42 plus

- large bending space
- pivoting bending unit
- precise adjustment of stroke (bending angle) via limit switch
- mobile and flexible to use
- internal and external deburrer
- universal seating for flaring device or cutting ring presetting device
- short set-up time (plug-in tool system)
- max. tube/pipe range: Ø 42 mm



PB 42

- large bending space
- remote control via push button
- precise adjustment of stroke (bending angle) via limit switch
- lightweight and mobile bending device
- modular design for ease of transportation
- short set-up time (plug-in tool system)
- max. tube/pipe range: Ø 42 mm



5. Tube/pipe end working machines (TUBOFORM)

TUBOFORM A 8

- axial tube/pipe end forming
- standard or customer-specific tooling
- operation by foot pedal
- mobile and flexible to use
- user-friendly and easy to service
- max. expanding/pressing force: 80 kN
- tube/pipe range: 3 - 25 mm Ø
- number of work stations: 1 - 2



TUBOFORM RM 90

- combined radial tube/pipe end forming
- standard or customer-specific tooling
- mobile and flexible to use
- operation by foot pedal
- max. forming force (internal / external tool): 140 / 260 kN
- tube/pipe range: 20 - 74 mm Ø
- number of work stations: 1 - 4



6. Other tube/pipe fabrication machines and assembly devices for hydraulic piping

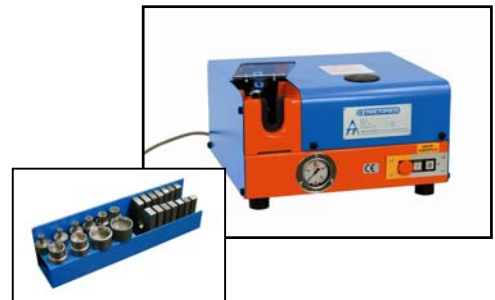
TUBOSAW

- high precision circular saw
- adjustable feed rate and cutting speed
- orthogonal cutting with minimal burr
- tube/pipe fixing by double sided clamping prism
- automatic coolant supply
- length stop in series
- space-saving and mobile
- cutting range: 6 - 42 mm tube/pipe Ø
- connection to separate hydraulic unit or bending machine



TRACTOPRESS

- safe and fast assembling of single and multi-bite cutting rings on hydraulic tubes in seconds
- automatic pressure adjustment
- fast retooling on other tube diameters
- portable table-top unit allowing flexible application
- working tube range: 6 - 42 mm Ø
- well arranged tool box



VARIOMAT

- combination unit for assembling compression fittings with cutting rings and flares of 37°
- manual pressure adjustment (table)
- fast retooling on other tube diameters
- portable table-top unit allowing flexible application
- working tube range: 6 - 42 mm Ø
- well arranged tool box



TUBOGRAT 48

- internal and external deburring unit
- special deburring cutters
- portable table-top unit allowing flexible application
- tube range: 6 - 42 mm Ø (6 - 48 mm Ø)
- collecting box for metal chips



TUBOGRAT 60

- internal and external deburring unit
- special deburring cutters
- portable table-top unit allowing flexible application
- tube range: 20 - 60 mm Ø
- collecting box for metal chips



TUBOGRAT K

- internal and external deburring unit
- special tooling with adjustable depth stop
- portable table-top unit allowing flexible application
- tube range: 20 - 60 mm Ø
- collecting box for metal chips



7. 2D/3D tube/pipe measuring systems (TUBOCONTROL, TUBOSCAN, LISA)

TUBOCONTROL

- mobile measuring table
- magnetic tracing of lengths and angels
- high precision linear guiding for length stop
- measuring range for angels: 0 - 190°
- measuring range for lengths: 0 - 480 mm (1000 mm)
- power supply by battery
- many different measuring possibilities



TUBOSCAN

- lightweight CFK-tubes
- high precision bearings, high resolution optical encoders
- intelligent quick-change probes
- removable counterbalance
- connection to Notebook or PC
- easy to handle measuring software
- fixation by flange mounting or magnetic feet
- measuring by probe or laser fork
- measuring envelopes: 1800 / 2400 / 3600 mm



TUBOSCAN (Microscribe)

- ultra portable design
- precise aluminium housings and CFK-tubes
- high precision bearings, high resolution optical encoders
- intelligent quick-change probes
- connection to Notebook or PC via USB- or RS232-interface
- easy to handle measuring software
- measuring by probe or laser fork
- measuring envelope: 1670 mm
- measuring of long tubes/pipes by displacement of the measuring arm ("leapfrog")



TUBOSCAN L

- touch-less (optical) geometric measurement on rotationally symmetric work pieces (e.g. formed tube/pipe ends)
- rotating work piece fixture
- adjustable measuring angle of the camera
- mobile and flexible to use (close to the production)
- PC with measuring software
- fast measurement and documentation
- robust and almost maintenance-free
- measuring accuracy: $\pm 0,02$ mm



LISA (Laser In-Situ Angular-Measurement)

- touch-less (optical) bending angle measuring system
- process attending quality assurance by in-situ determination and documentation of the bending angle
- evaluation of correction values for flexible process control in serial production
- evaluation software is integrated in the control computer of the bending machine
- robust and almost maintenance-free
- measuring accuracy better than $\pm 0,1$ °



8. Automated system solution for production of template pipes (SCOPELINK, ROBOFIX)

SCOPELINK

- electromechanical precision isometry device for planned tube/pipe installations
- designed in modular system
- easy to handle
- fixed and adjustable length, rotation and angle elements suitable for universal application
- direct collision control
- Outdoor-PC with measuring software



ROBOFIX

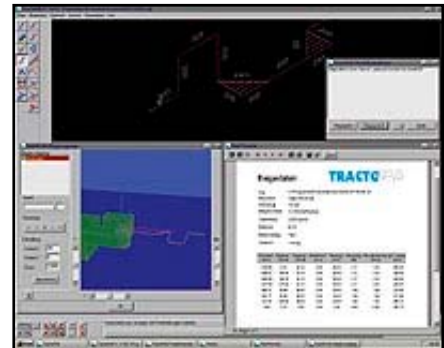
- electromechanical tack welding device for pipes
- automatic high precision, three-dimensional positioning of flanges
- transfer of pipe coordinates obtained through SCOPELINK for exact flange alignment
- verification of the precise fit and tack welding of flanges to the finish-bent pipe
- three-dimensional display of the pipe installations on screen
- noticeable time and cost reduction of pipe fitting installations by combining with SCOPELINK and ROBOFIX



9. Tube/pipe bending software / Software solutions for piping

TRACTOFAB - Tube/pipe bending software

- bending software for economical tube and pipe fabrication
- generates isometric drawings of tube and pipe installations by entering coordinates or vectors
- interface with three-dimensional-measuring systems (e.g. Tuboscan) to incorporate existing data of pipe designs
- adds fittings and automatically adjusts the length of the tube or pipe configurations
- calculates and prints all bending data
- online data transfer of the calculated bending parameters to the bending machine
- simulates the bending process and recognizes any space restrictions or conflicts with the bending equipment
- manages bending programs of all available tube and pipe configurations
- self explanatory text menus and perfected window system





PIPEFAB - the complete software solution for tube/pipe fabrication

- software for the construction, calculation, fabrication and control of pipes and pipe systems
- organisation and control of complex production processes in pipe production and pre-production
- construction of pipeline-isometries on the screen
- transfer of pipe geometry from CAD systems
- cost-optimised calculation of all production data
- direct control of NC machines with production data
- interactive creation and administration of fitting lists, component lists and pipe lists
- transferring material data to material resource planning systems (MRP)
- extendable with many useful modules and interface programs

