

THE BENDING AND FORMING
SPECIALIST
FOR HVAC TUBING

transfluid[®]
The solution for tubes. 

transfluid[®]
The solution for tubes.



transfluid®
**WE HAVE THE RIGHT
SOLUTION.**

With transfluid®, you bring high end technology to your production. Our solutions, services and systems are attuned to what you need to produce on the world market. For your most complex challenges; for individual units or serial production; whether customised developments or our high-performance machines; transfluid® has the solution to advance your ideas.



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T BEND - MANDREL BENDING MACHINES

RIGHT/LEFT BENDING

WITH CNC-CONTROL

For better efficiency. The electric axes can be programmed in synchronicity to give optimum cycle times. Tools for bending on multiple levels with automated tool change make it possible to achieve various radii and the most complex geometries on tubes.

With our clockwise/counterclockwise bending machines – also available with push bending function – the most complex bends become reality with great accuracy.

AVAILABLE MACHINE SIZES

| Model | Pipe- ϕ | Max. Radius |
|----------------|----------------|-------------|
| DB 622-CNC-R/L | 1/4" - 7/8" | 2.6" |
| DB 630-CNC-R/L | 1/4" - 1 1/16" | 3.5" |
| DB 642-CNC-R/L | 1/4" - 1 5/8" | 6.6" |



BASIC EQUIPMENT:

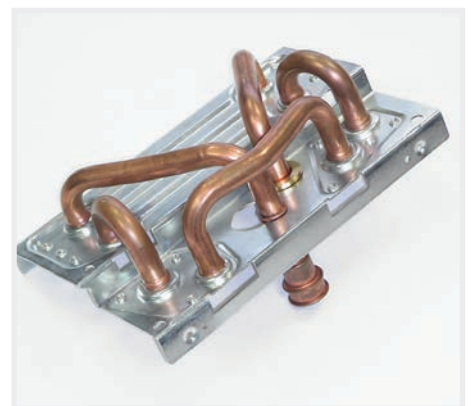
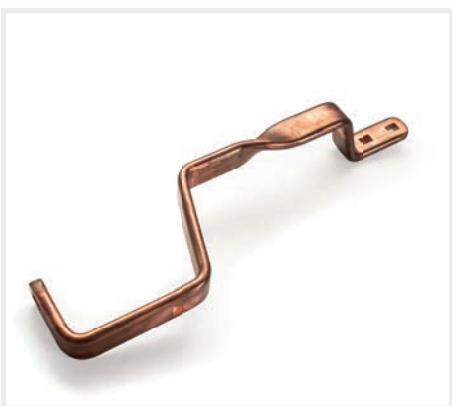
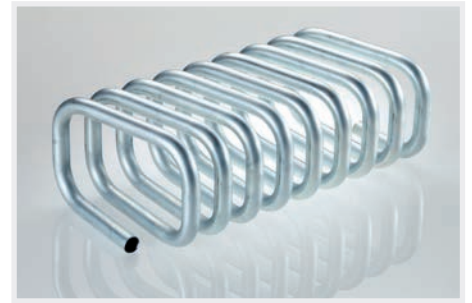
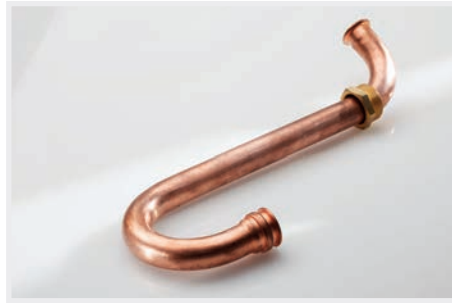
- Bending head for bending right-hand and left-hand with one collet
- Bending head can be positioned horizontally and vertically
- Multilevel bending – Bending head can be equipped with multiple tool sets
- Hollow shaft for tooling for small radii
- Minimum clamping length on the tube end
- Chuck uses segment collets
- Following pressure die for bends up to 180°
- Central lubrication
- Controlled mandrel withdrawal
- Mandrel lubrication
- t-project Professional software
- Air conditioning for the electrical cabinet
- Remote diagnostics

OPTIONAL EQUIPMENT:

- Usable length 6.5 ft, 10 ft, 15 ft, 20 ft
- Repeated gripping
- Push bending of large bend radii
- Boosting function (Centerline booster)
- Automatic loading
- Positioning of weld seam
- Carriage for wiper die
- Safety Cover & Scanner
- Direct import 3D Models (.stp files)



watch the movie



T BEND - SERVO-ELECTRIC MANDREL BENDING MACHINES

The solution for the future. Highly dynamic and flexible, thanks to our all-electric technology. Our machines can be fully customized and equipped to fit your application.

AVAILABLE MACHINE SIZES

| Model | Pipe- ϕ | Max. Radius |
|---------------|----------------|-------------|
| DB 622-CNC-VE | 1/4" - 7/8" | 2.6" |
| DB 630-CNC-VE | 1/4" - 1 1/14" | 3.5" |
| DB 642-CNC-VE | 1/4" - 1 5/8" | 6.6" |
| DB 650-CNC-VE | 1/4" - 2" | 5.9" |

BASIC EQUIPMENT:

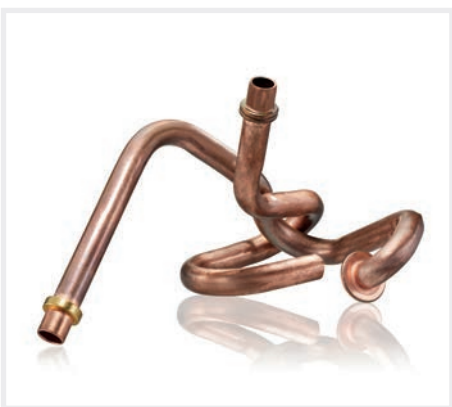
- Clockwise bending direction
- Bending head can be positioned horizontally and vertically
- Multilevel bending – Bending head can be equipped with three tool sets
- Hollow shaft for using tooling for small radii
- Minimum clamping length on the tube end
- Chuck uses segment collets
- Following pressure die for bends up to 180°
- Central lubrication
- Controlled mandrel withdrawal
- Mandrel lubrication
- t-project Professional software
- Remote diagnostics

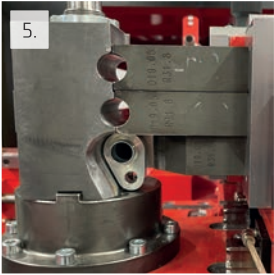
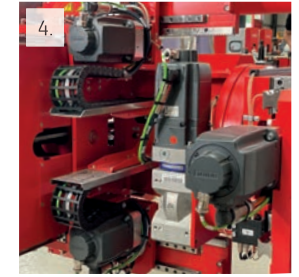
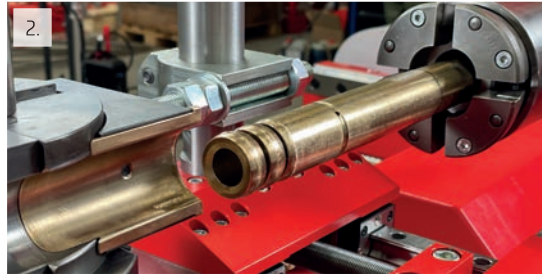
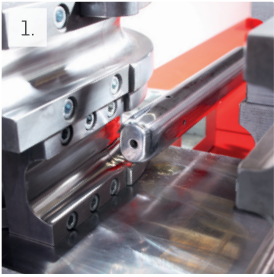
OPTIONAL EQUIPMENT:

- Usable length 6.5 ft, 10 ft, 15 ft, 20 ft
- Repeated gripping
- Push bending of large bending radii
- Boosting function (Centerline booster)
- Cutting during bending process
- Automated loading
- Positioning of weld seam
- Carriage for wiper die
- Safety cover & scanner
- Direct import 3D models (.stp files)



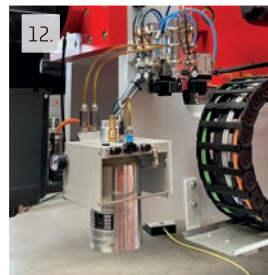
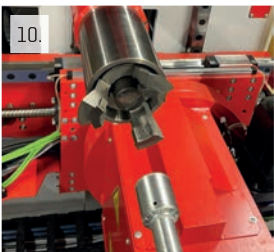
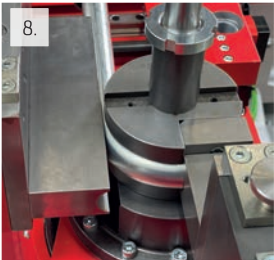
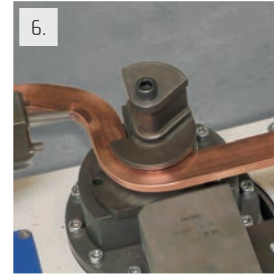
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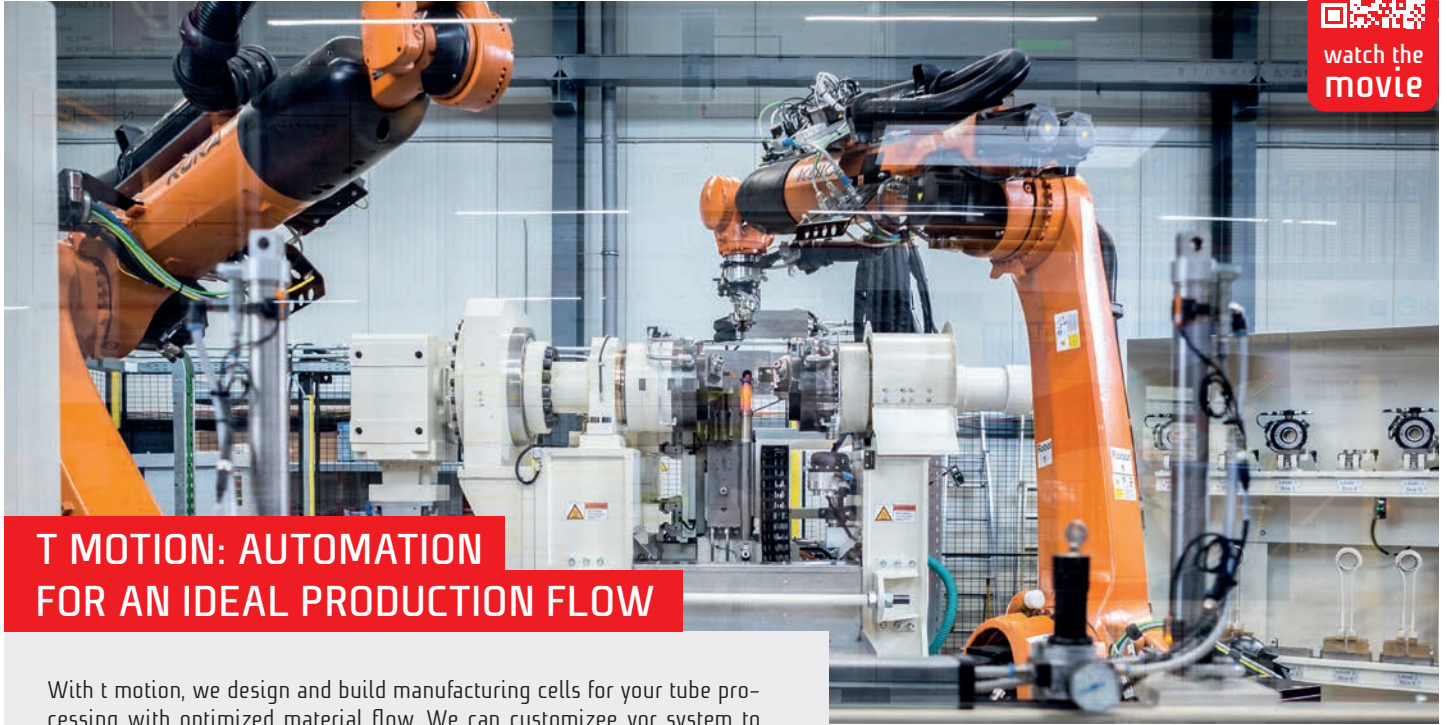
BASIC & OPTIONAL EQUIPMENT:

1. Mandrels in different contours or materials
2. Wiper die, mandrel and chuck with segment collets
3. Push bending function
4. Powerful servo motors
5. Bend tools for tubes with already formed tube ends
6. Specific contoured tools for bending of wire or square material
7. Integrated cutting device
8. Following pressure die
9. 360° rotating bending head right/left
10. Bending of end-formed tubes
11. Bend without mandrel for small tube diameters
12. Central lubrication
13. Powerful control unit
14. Hand scanner for loading bending programs





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T MOTION: AUTOMATION FOR AN IDEAL PRODUCTION FLOW

With t motion, we design and build manufacturing cells for your tube processing with optimized material flow. We can customize your system to meet your requirements and fit your facility. With more than 25 years of experience in automation, we can provide you the solution for tubes at the highest level.

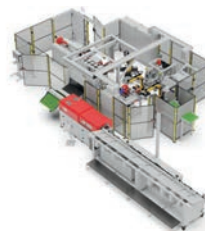
We can include product marking, as well as optical, contactless camera control systems for comprehensive control of geometries or surfaces. The option to punch holes can also be integrated, as well as transfer lines to achieve the shortest possible cycle times, or systems for loading and controlled unloading.

Plug in and Produce – With t motion, you are production-ready from the start and flexible enough to switch from one part to another.

Customizable – Further process steps, like loading and unloading systems or additional tube processing tasks, can be easily integrated.

Industry 4.0 – Interfaces with data caption systems for consumption and operation enable the digitalization and evaluation of the data.

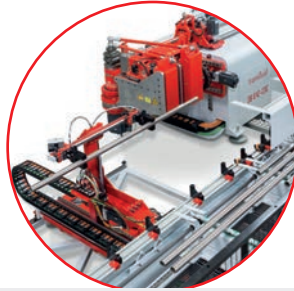
Fast and accurate – The high degree of automation means fast cycle times and less waste.



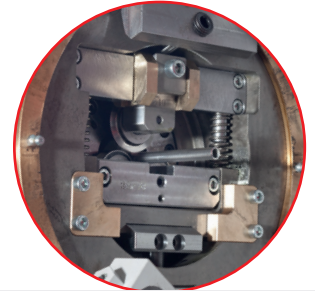
T MOTION - PRODUCTION CELL COPPER HVAC COMPONENTS



t motion - Punch



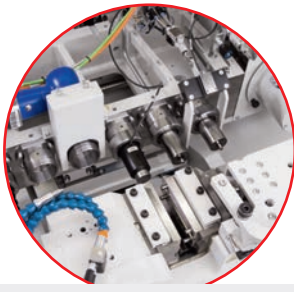
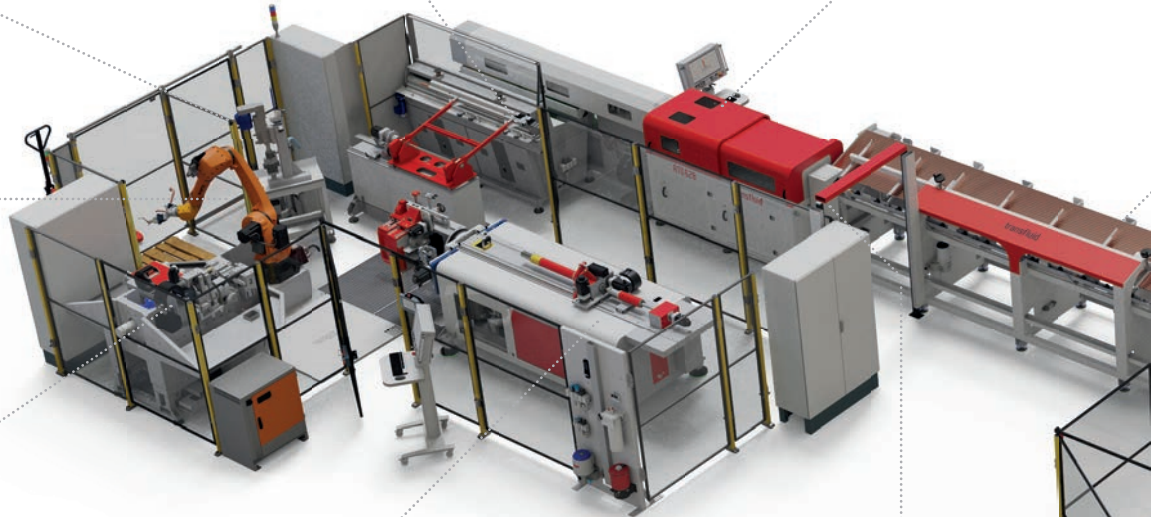
t motion - Loading table & Swivel conveyor



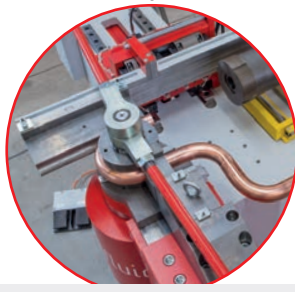
t cut - RTO-chipless orbital cutting machine



t motion - Handling robot



t form - Axial forming machine



t bend - Mandrel bending machine



t motion - Laser scanner



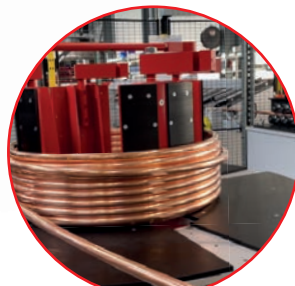
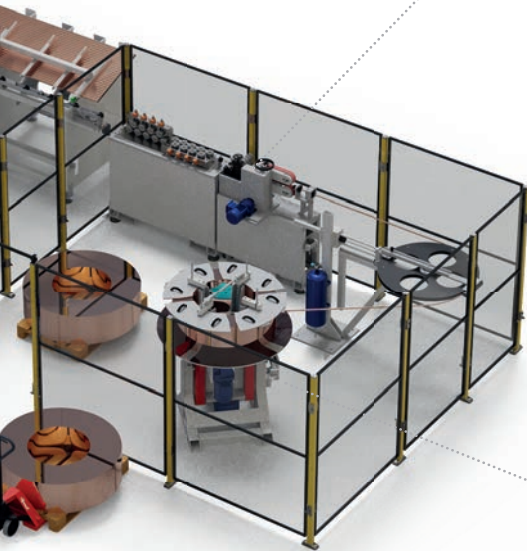
t motion – Belt step conveyor



t motion – Straightening, & Calibration unit



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t motion – Decoiler

T MOTION Automated manufacturing

In a real-life project, nine different transfluid machines and a handling robot were connected to form a production unit. However, the system was not designed to build just one component but seven- with varying geometries, lengths and tube diameters (from 1/2" to 1 1/16").

Bending, punching, deburring, and various types of end forms were required.

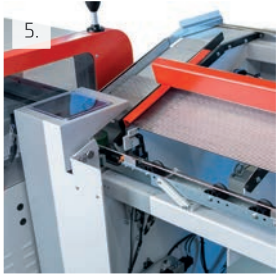
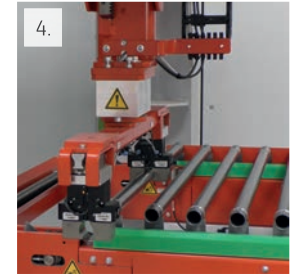
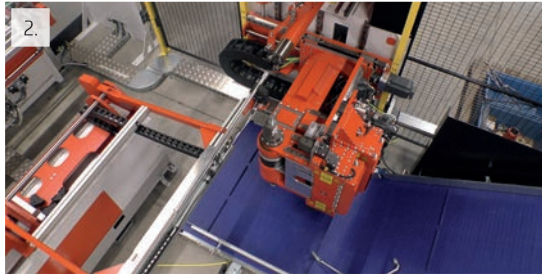
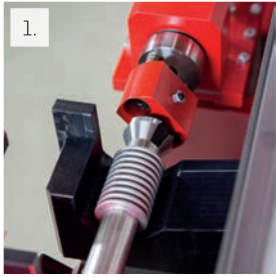
This variety called for different loading systems. Diameters of 1/4" - 1/2" can be fed directly into the process from a coil and straightened prior to cutting. A loading table feeds larger-diameter tubes into the cutting machine.

This variety called for different loading systems. Diameters of 1/4" - 1/2" can be fed directly into the process from a coil and freed from ovality and curvature via a 3-stage straightening unit. Larger tube diameters are brought into the production process from bars, with a length of up to 5 m via a loading table and, like the coil versions, fed into the orbital tube separation system RTO 628. The chipless orbital cutting machine cuts tubes cleanly and transfers them directly into the subsequent process. To ensure fast cycle times, it also has a sorting device for tubes of up to 8 different lengths. This allows cutting of different parts to be included in the sequence, so production can continue while the feed and cutting systems are switched to different sizes. This minimizes downtime.

The bending programs can then be called up in the subsequent process via QR codes lasered onto the tubes. It is also possible to change the bending geometry for tubes of the same diameter during the operation. In this way, even small series or individual pieces can be produced without stopping.

The heart of the system is the CNC-controlled bending machine optimized for efficiency and flexibility. Equipped with a rotatable bending head, it can accommodate multiple bend tools and a punching tool at the same time. The bending programs can then be called up using QR codes lasered onto the tubes. The bending geometry can be changed for tubes of the same diameter during the operation. In this way, small series or individual pieces can be produced without interruption production. When changing tube sizes, the mandrel can be changed in under two minutes with our quick-disconnect system. Using a handling robot, the bent tubes are transferred to an axial forming machine, which gives the tube ends the perfect shape. Finally, the robot places the finished part in a container for transport.

- Reduction of staff retention
- Increase in productivity by approx. 60%
- Consistent quality
- Reduction of rework
- Reduction of the space requirement by approx. 50%

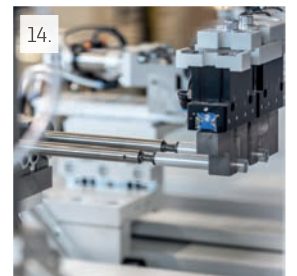
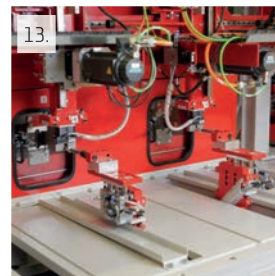
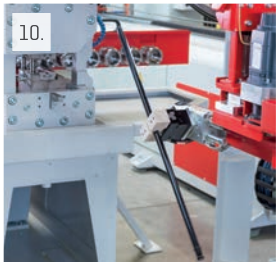
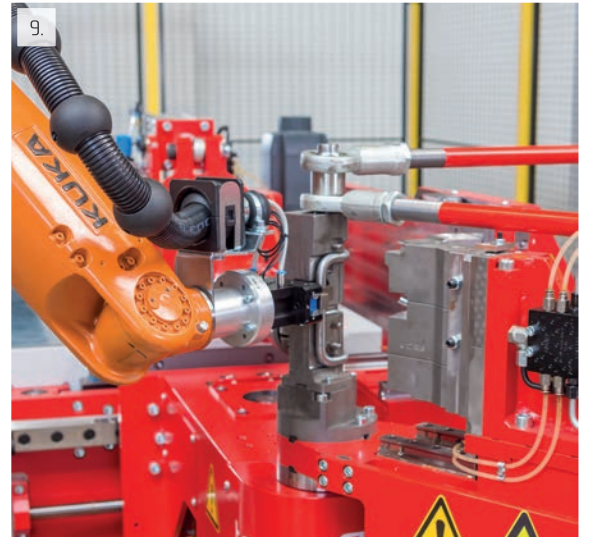
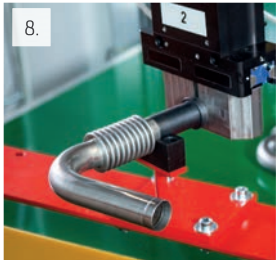
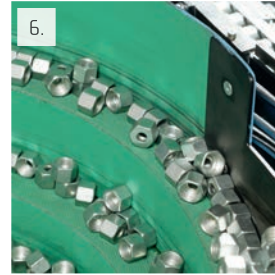


LOADING SYSTEMS:

1. Alignment station
2. Swivel arm feeder
3. Conveyor feeder
4. Chain feeder
5. Loading tables
6. Bowl feeder
7. Step feeder

HANDLING AND GRIPPER SYSTEMS:

8. Outer gripper
9. Handling robots
10. Rotating module
11. Overfloor handling
12. Overfloor handling
13. Underfloor handling
14. Inner and outer gripper



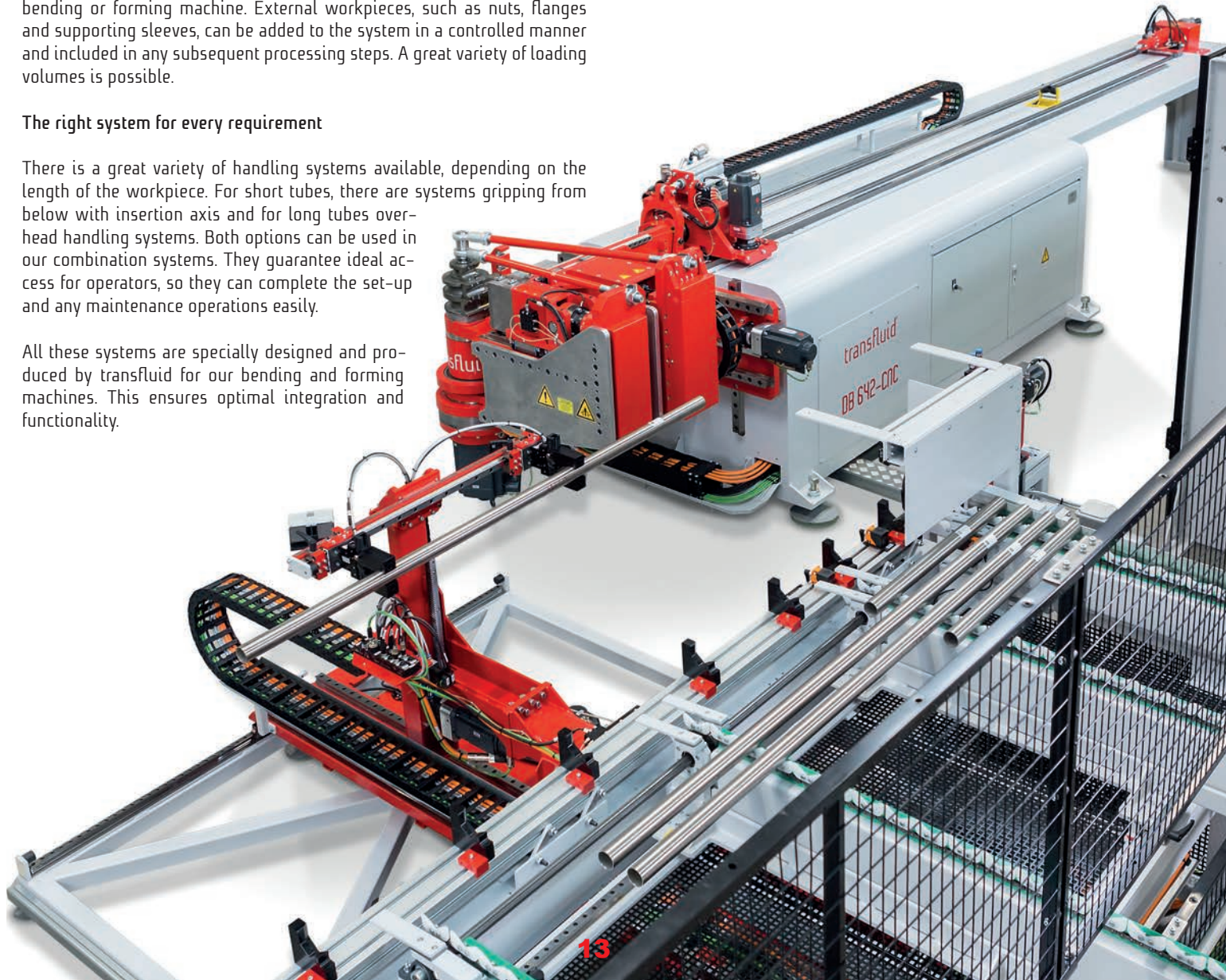
LOADING & UNLOADING SYSTEMS DESIGNED AND MANUFACTURED BY transfluid®

We offer a great variety of loading systems for all the machines, depending on the material, tube diameter and tube length. Tubes that have already been formed and have added components can also be loaded. The tube can be automatically adjusted to the proper orientation before loading into the bending or forming machine. External workpieces, such as nuts, flanges and supporting sleeves, can be added to the system in a controlled manner and included in any subsequent processing steps. A great variety of loading volumes is possible.

The right system for every requirement

There is a great variety of handling systems available, depending on the length of the workpiece. For short tubes, there are systems gripping from below with insertion axis and for long tubes overhead handling systems. Both options can be used in our combination systems. They guarantee ideal access for operators, so they can complete the set-up and any maintenance operations easily.

All these systems are specially designed and produced by transfluid for our bending and forming machines. This ensures optimal integration and functionality.



T FORM - AXIAL FORMING MACHINES

ACCURATE FORMING WITH FAST TOOL CHANGE.

Our type REB axial forming machines, with almost 300.000 lbs of compressive force, effortlessly master complex geometries. With up to 6 forming steps in combination with an additional clamping unit they will satisfy almost all requirements. The operation is simple and intuitive with a touch panel. The sequence control makes each axis of the machines individually programmable.

We offer the option to equip our systems with electric or hydraulic-numerical drives. These forming processes can be completed stepwise in transfer systems to achieve very short cycle times. Simultaneous axis movements ensure fast production processes and an efficient and highly dynamic production.

AVAILABLE MACHINE SIZES

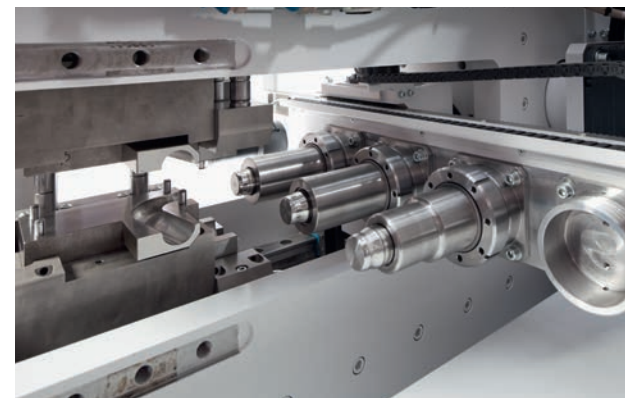
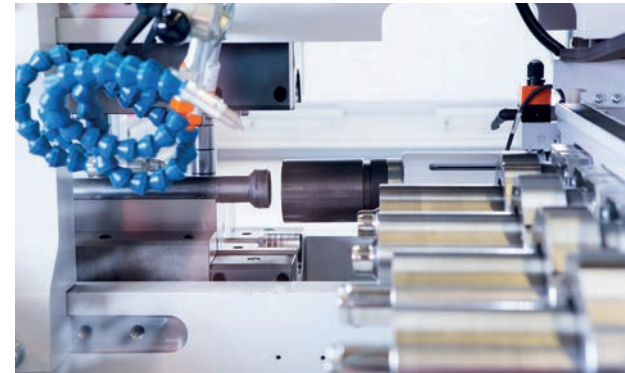
| Model | Pipe- ϕ | Forming length | Cycle time/Stage |
|---------|---------------|----------------|------------------|
| REB 420 | 3/16" - 3/4" | 2 3/8" | 2 - 3 Sec. |
| REB 632 | 1/4" - 1 1/4" | 3 1/8" | 2,5 - 3,5 Sec. |
| REB 645 | 1/4" - 1 3/4" | 3.5" | 3 - 5 Sec. |
| REB 660 | 1/4" - 2 3/8" | 7.0" | 5 - 8 Sec. |



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EQUIPMENT OPTIONS

- Servo-electric control of forming axis
- Up to additional 6 forming steps
- Supplementary clamping device
- Microlubrication system
- Tool encoding
- Tool recognition
- Loading and positioning of components





T FORM - COMBINATION MACHINES AXIAL FORMING AND ROLLING- ALL IN ONE

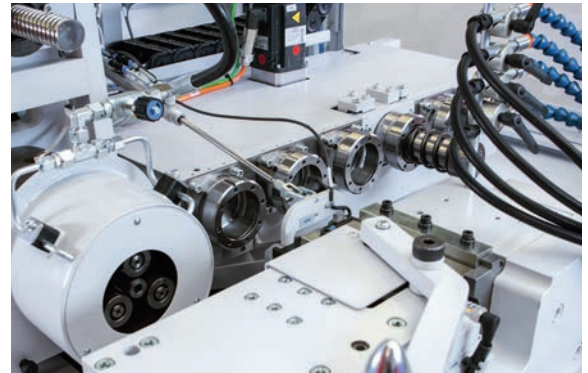
For the optimum processing of your parts we combine our transfluid axial forming and rolling forming machines. The additional clamping unit makes even extreme forming feasible in one work sequence. The cutting before axial tube forming is also possible. Which saves you valuable time.

A strong partnership: axial forming and rolling forming

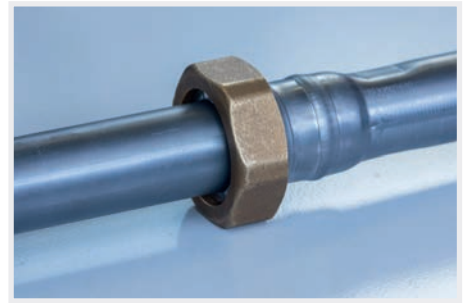
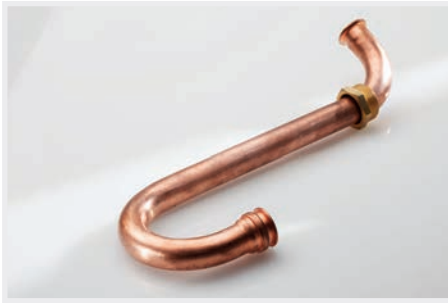
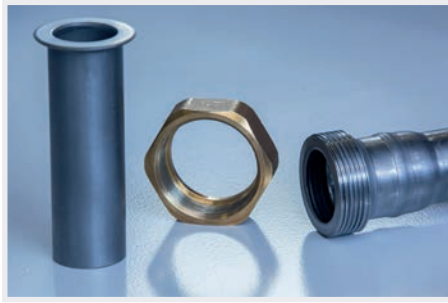
Our t form combination machine is the perfect union of axial and rolling tube processing, with up to 6 axial forming steps, two rolling forming stations, two powered tool holders for flange orientation, and an additional clamping unit. The horizontal clamping system makes the processing of bent tube geometries possible.

EQUIPMENT OPTIONS

- Up to 6 additional forming steps
- Additional roll forming stations
- Roll forming unit with free-form function and CNC control
- Additional clamping units
- Microlubrication system
- Automatic release
- Feeding of external workpieces
- Positioning of the flaring/workpieces with servo-electric rotation of the tools
- Holder for rotating tools (deburring, camfering, facing, rolling)



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T FORM - ROLLFORMING MACHINES TYP SRM- ALL OPTIONS IN ONE MACHINE

Forming - Cutting - Retrimming - Thread Rolling. Our roller burnishing technology increases the possibilities of forming tubes with minimal tooling. All drives are servo-electrically driven and CNC-controlled.

Different tool versions expand the processing possibilities for chipless cutting or post-bend cutting. The machines can produce internal and external profiles simultaneously thanks to a special tool head (inside/outside).

AVAILABLE MACHINE SIZES

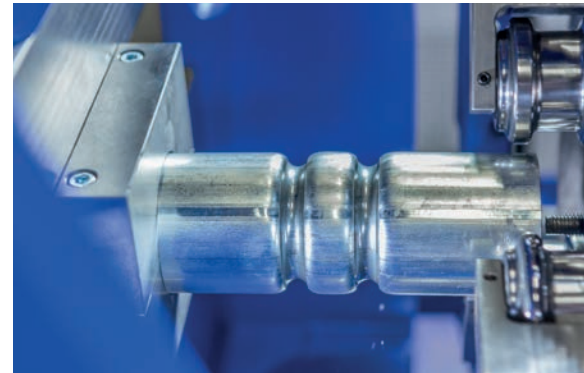
| Model | Pipe- ϕ | Wall thickness max. | Cycle time |
|----------|----------------|---------------------|-------------|
| SRM 622 | 3/16" - 7/8" | .035" | 4 - 10 Sec. |
| SRM 1565 | 5/16" - 2 1/2" | .058" | 8 - 14 Sec. |

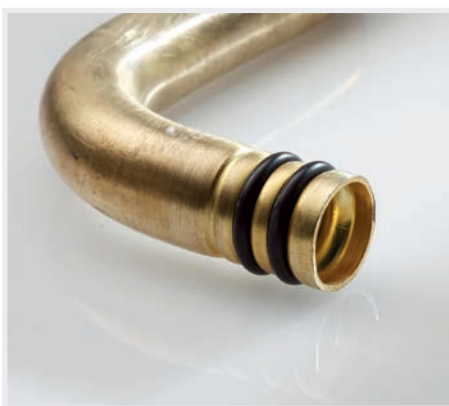
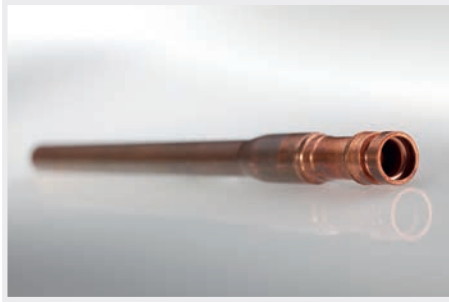


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EQUIPMENT OPTIONS:

- Processing unit with radial and axial servo-electric advancement
- Rollforming unit with push bending through CNC control
- Ejector for controlled ejection of the remnants
- Microlubrication systems
- Coded tools
- Belt filter system
- Stored setting parameters
- Safety enclosure including light barriers
- Safety device two-hand operation
- Remote diagnostic system





T FORM - TYPE UMR ROLLFORMING MACHINES

Powerful and fast. The type UMR forming machines use smart operating technology to achieve perfect mirror-like surfaces. Automatic forming programs can be easily loaded and adjusted.

When producing flares with 20°-90° angles, with a clamping length of 1 x D, the machine achieves perfect sealing surfaces. Flaring up to 90° can be produced in a single cycle. Tools change is extremely fast. With the appropriate tools, the machine can also close tube ends.

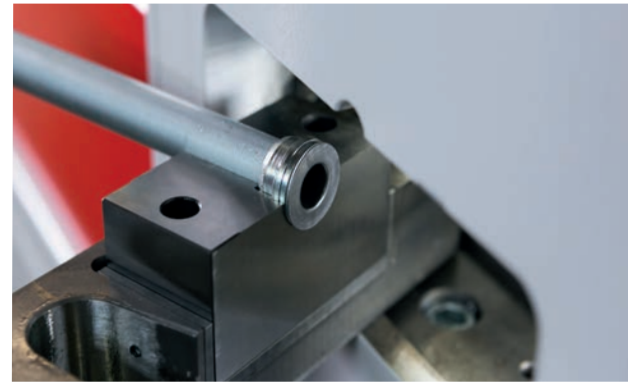
AVAILABLE MACHINE SIZES

| Model | Pipe- ϕ | Wall thickness max. | Cycle time |
|---------|----------------|---------------------|-------------|
| UMR 628 | 1/4" - 1 1/16" | .095" | 4 - 10 Sec. |
| UMR 642 | 1/4" - 1 5/8" | .148" | 4 - 15 Sec. |

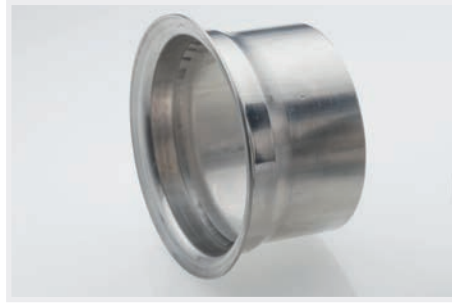


EQUIPMENT OPTIONS:

- Automatic release
- Microlubrication system
- Processing of support rings
- Remote diagnostics



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T FORM – Collaring machine AM-854

Proven manufacturing process economically reinvented. In order to optimize the collaring of tubes, we at transfluid put a lot of development work into our SRM type rolling forming machines.

transfluid® has created a solution that makes collaring possible with standardized tools that are freely available on the market.

This significantly reduces the cost of changing wear parts and ensures manufacturer-independent procurement. The transfluid® AM-854 necking machine can be used both as a manually operated stand-alone solution and as part of a production line.

The advantages of this technology are manifold. For example, in contrast to a T-fitting connection, only one weld is required. Outlets can be set tighter and the probability of leaks is reduced by two thirds. .

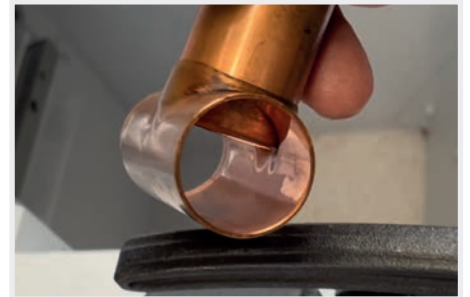
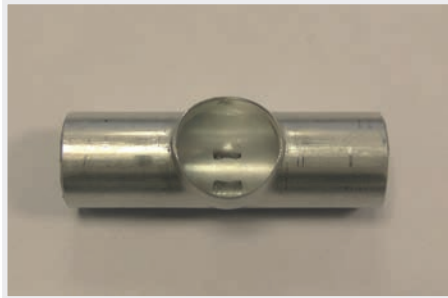
EQUIPMENT OPTIONS:

- Accommodating standard tools (drills, milling heads)
- Control panel with touchscreen color display
- Automatic release
- Microlubrication systems
- For the production of T- outlets for soldered and welded connections on straight and bent pipes
- Remote diagnostics
- Safety hood
- Suitable for pipes made of deformable materials (steel, stainless steel, aluminum, copper, copper-nickel)



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T CUT - CHIPLESS ORBITAL CUTTING MACHINES

Made for precision. Our chipless orbital cutting lines enable precise cutting results. Your tubes can be formed or bent directly afterwards. This saves time and costs, as does the special software for cutting quantity optimization.

AVAILABLE MACHINE SIZES

| Model | Pipe- ϕ | Wall thickness max. | Cycle time |
|---------|---------------|---------------------|----------------|
| RTO 628 | 1/4" - 1 1/8" | .072" | 2,2 - 8,0 Sec. |
| RTO 650 | 1/4" - 2" | .095" | 2,2 - 8,0 Sec. |



EQUIPMENT OPTIONS:

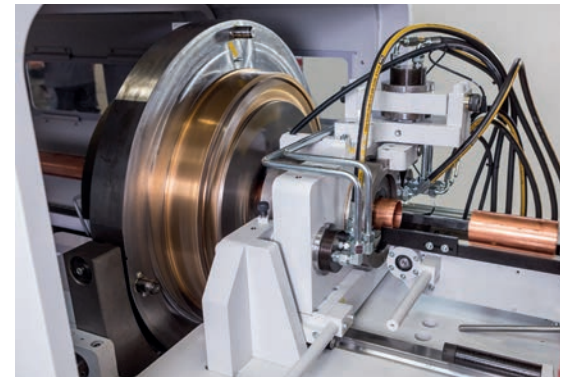
- Special software to optimize number of cuts
- Marking systems

Different tube loading concepts:

- Decoiler with pulling unit for tube coils
- Straightening unit for different tube diameters and straightness requirements
- Loading table for straight tubes
- Belt feeding systems for long straight tubes with large diameters.
- Step belt feeding systems for straight tubes with small diameters.

Flexible release:

- Separate, controlled release for cut workpiece and scrap
- Sorting system for up to eight cut lengths
- Direct transfer to next step in the process



watch the
movie

T PROJECT - SOFTWARE: VIRTUAL SUPPORT FOR HIGHER EFFICIENCY

Fewer steps to the finished workpiece: With t project, you can see all the variables of the bending process before starting production. Even complex bending geometries can be planned and executed in a material-adapted and collision-free manner. The virtual bending simulation determines exact bending times and cutting lengths and checks tube geometries for feasibility in advance.

Tube data and bending results are documented with accuracy, and they can then be replicated 100%. The common interfaces are available for the import and export of data and connection to PDA or ERP over the network.

Our solution for your individual requirements

We have developed four versions of our t project software, which can be used as single or network versions. t project can be integrated with the company's internal security system for optimum data security. Customer-specific modifications, expansions or interfaces are readily possible.

t project Basic

Input and calculation of tube processes

- Direct conversion of isometrics into bending data
- Automatic calculation correction values and over-bending parameters
- The dimension of the spatial diagonal from the beginning of the pipe A to the end of the pipe B enables the operator to easily check the bent part manually.
- The software can interface with measuring devices and CAD and Office programs. Supported file formats include IGES, STEP, JT and PCF.



t project Professional

Input and calculation of tube processes, including collision testing

- All the features of t project Basic
- Necessary tube length extensions are detected and added
- Additional production safety: the collision test will determine the feasibility of the tube geometry before the actual bending process, which prevents collisions with the machine itself or its surroundings
- The software will suggest alternative options in case of predicted collisions
- The software takes all the measurements for the collision test from the CAD model of the bending machine
- Surrounding features in the room can also be included in the collision test (pillars, shelves, floor etc.)
- It is also possible to run simulations with tubes that already have flanges or other end-forms.

t project Draft

Tablet version for mobile use

t project PM-N

Project management software

Our portfolio of machines

t bend – Robotic bending machines



t bend – Mandrel bending machines with servohydraulic motors



t bend – Fully electric mandrel bending machines



t bend – Fully electric mandrel bending machines – 360° rotating bending head right/left



t bend – Fitting bender



t bend – Compact mandrel bending machines



t bend – Mobile bending machine



t form – UMR Rollforming machines



t form – AM Collaring machine



t cut – RTO Chipless orbital cutting machines



t form – REB Axial forming machines



t form – SRM Rollforming machines



t form – REB/SRM Combination machines



t work – Tube chamfering machines – Pre-assembly machines – Flaring machines – Tube deburring machines – Electro-hydraulic drive unit





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The solution for tubes. **t**

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