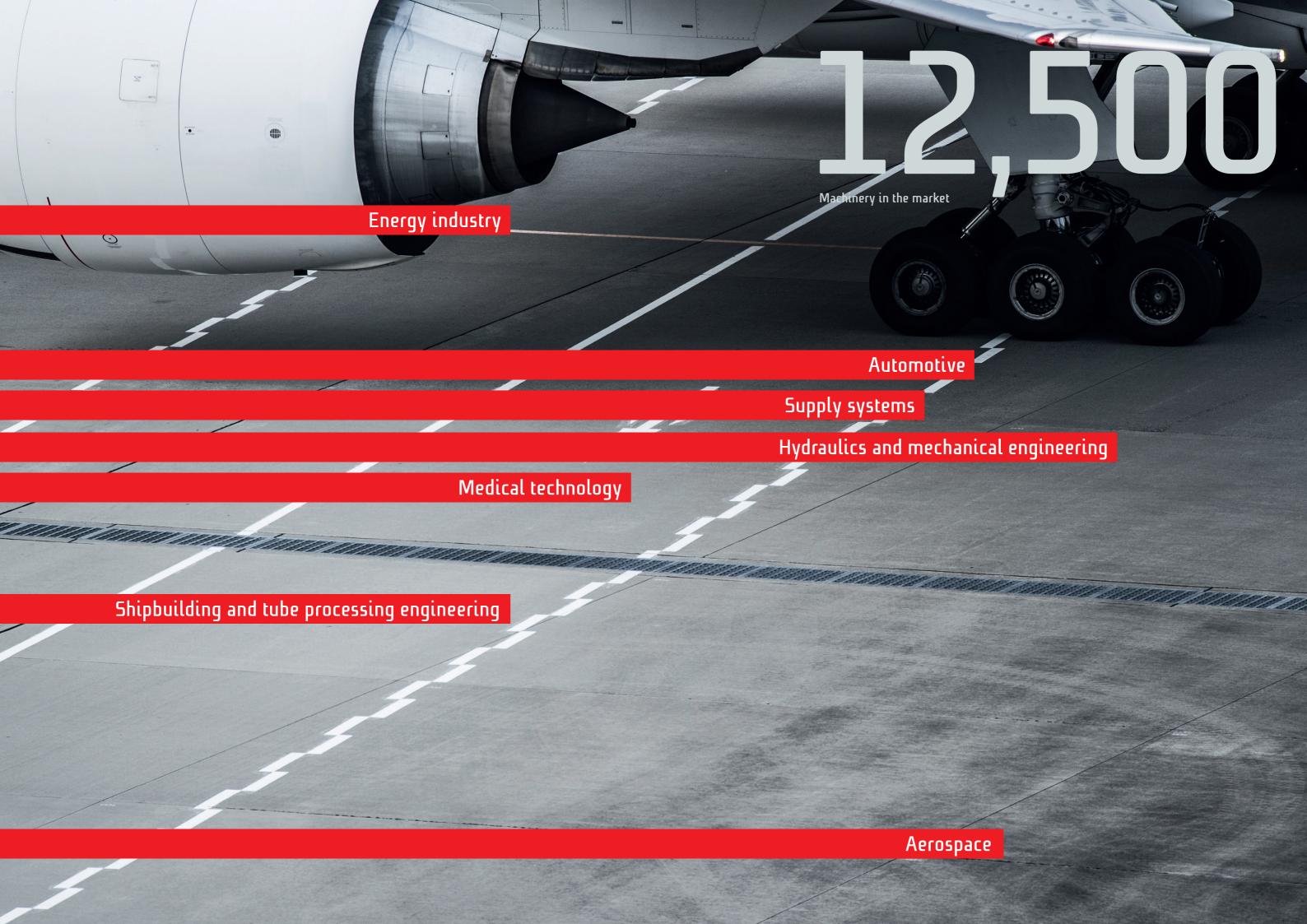








**transfluid**The solution for tubes.



## Whoever builds products for the world market

needs machines that make the best out of visions.

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 level. For your requirements and even more complex challenges, for individual units or serial production in consistently high quality - with custom, high-tech developments or our high-performance machine standards: transfluid® has the solution to advance your ideas.





>> Starting on page 6



form

>> Starting on page 18





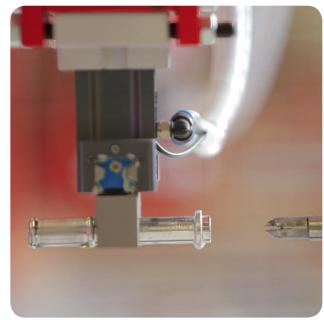


>> Starting on page 30





>> Starting on page 38







>> Starting on page 42



#### High-tech to achieve the best results with unlimited bending possibilities.

From the value-creating details to large dimensions, you always achieve the perfect bend with transfluid®. Our bending technology provides the better solution at the highest level. Compact machines for mobile use, semi- or fully-automatic CNC mandrel bending machines with linear handling systems or robots offer you proven safety that pays off.

Our tube bending machines provide top results with optionally available hydraulic or electrical drives. And our intelligent transfluid®-software t project makes your bending processes even more efficient.





#### DB 642-CNC-R/L-VE







## CNC mandrel bending machines with fully-automatic control

#### DB 2080-CNC

DB 415-CNC	4-15 mm Ø	semi-electric
DB 622-CNC	6 – 22 mm Ø	semi/fully electri
DB 630-CNC	6 – 30 mm Ø	fully-electric
DB 650-CNC	6-50,1 mm Ø	fully-electric
DB 2080-CNC	20 – 80 mm Ø	fully-electric
DB 20100-CNC	20-101,6 mm Ø	fully-electric
DB 40127-CNC	40 – 127,3 mm Ø	fully-electric

#### Precise, powerful and fast

Easy to operate and freely programmable via CNC sequence control. With a compact design and extremely short set up time, our advanced CNC bending machines offer outstanding flexibility. Fully electric or semi electric drive to meet your highest demands.

#### **Equipment versions:**

- multiple bending levels
- free forming of large bending radii
- Centerline Booster
- right/left bending
- automatic loading
- weld seam detection





Easily operated with





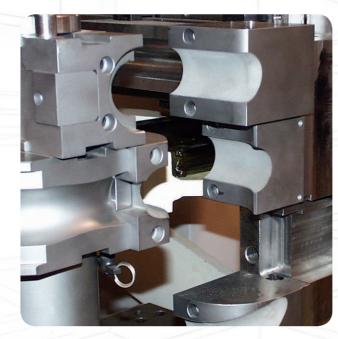






#### for all transfluid® CNC tube bending machines

Automatic tool change systems optimise the bending process specific to the user. To reduce the wall thinning and to realize short clamping lengths a Centerline Booster is useful. Tubes with already weld on flanges can be bend as well to have a greater efficiency.



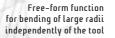
Multi-level tool



"What drives us? Giving your vision the perfect form."

Gerd Nöker, Technical Sales Manager















#### DB 40120-CNC

DB 40120-CNC	20-120 mm Ø	semi-electric
DB 40139-CNC	40−140 mm Ø	semi-electric
DB 40168-CNC	40-168 mm Ø	semi-electric
DB 40220-CNC	40 – 220 mm Ø	semi-electric
DB 60275-CNC	60 – 275 mm Ø	semi-electric
DB 80330-CNC	80 – 325 mm Ø	semi-electric

#### Strong, flexible and efficient

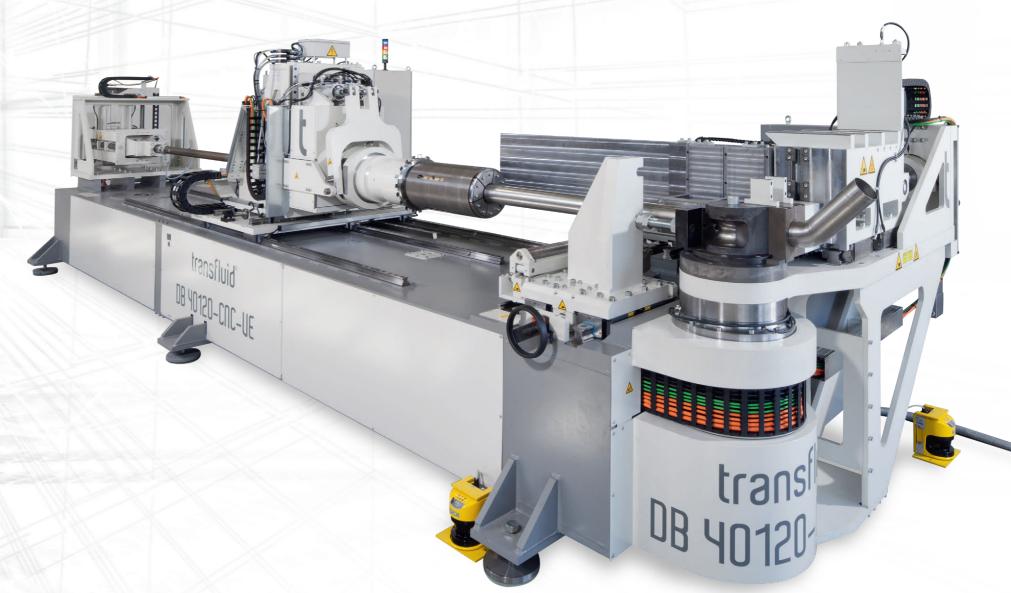
Our CNC mandrel bending machines are a powerful solution for precision production of thin-walled and thick-walled tubes in all materials. Tubes can be bent impressively fast in large dimensions for exhaust technology and shipbuilding. Extremely short set up times, partly under 10 minutes are possible.













## High-performance bending machines for individual bends

#### AB 6-50

AB 6-25	4 – 25 mm Ø	semi/fully electric
AB 6-50	4 – 50 mm Ø	semi/fully electric
AB 6-72	20 – 76 mm Ø	semi/fully electric

High efficiency: As production accelerators, our highperformance bending machine produces individual bends for custom production, providing profitable efficiency with high speed in your production.

#### semi/fully electric DB 630-HP 6 – 30 mm Ø DB 650-HP 6-50 mm Ø semi/fully electric DB 2076-HP 6 – 76 mm Ø semi/fully electric semi/fully electric DB 40104-HP 40-104 mm Ø 40-139 (168) mm Ø semi/fully electric DB 40139-HP 40-168 (204) mm Ø semi/fully electric

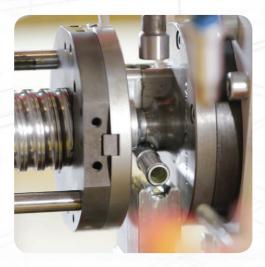
For individual bends with bending radii between 1 x D and 1,500 mm: You can also produce with very short clamping lengths in extremely short cycle times.

#### **Equipment versions:**

- vertical or horizontal bending direction
- with sequence control for Individual programming
- with front adapter to support the clamping action
- for straight, short components
- automatic loading and unloading systems
- with part and contour recognition



Radii of up to 1,500 mm with a precisely



Automatically opening tools for free unloading of bent parts



"With our systems, we provide high end technology and improve your production."

15

Benedikt Hümmler, Managing Director



## Passion for form

#### What drives transfluid®

Launched as a two-man company in 1988, today in a modern production indispensable: Our passion for complex challenges has made us grown. Producing systems for keyindustries all over the world with this background is a proof that passion is worthwile.

1988

founded



"Our customers work for the future. For us, that means that we continuously drive advancement of new technology."







Ludger Bludau, Managing Director







#### Forming innovations

Our high-tech solutions give your tubes and tube ends the best form to ensure that your ideas create value. As an individual forming process or a supplement to bending. Fast tool change, easy operation and implementation of complex geometries or tool-independent forming ensure that your processes are efficient.







## Axial forming machines

#### REB 632

Customized

1111111

REB 632 6 – 32 mm Ø REB 645 6 – 45 mm Ø REB 660 6 – 60 mm Ø forming force 64 kN forming force 98 kN forming force 147 kN forming force 240 kN forming forces of up to 1,300 kN

#### Precise forming with fast tool-changing

Our axial forming machines of the type REB enable extremely complex geometries with an extremely high deformation degree. With up to six forming steps and supplementary clamping unit, these systems meet almost any demand. We integrate rolling units for your specific forms.

The simple operation takes place via touch panel, including data storage. Machine parameters and machining sequences are managed here. A sequence control makes every movement of the relevant forming level user-friendly and individually programmable. We can optionally equip these systems with electric or hydraulic numeric drives. These forming processes can be designed incrementally in transfer systems for extremely short cycle times.











Safe and efficient forming instead of soldering or welding



# Rolling forming machines Type SRM

#### SRM 1565

SRM 622 4 – 22 mm Ø SRM 1565 15 – 65 mm Ø SRM 40127 40 – 127,3 mm Ø SRM 50176 50 – 176 mm Ø

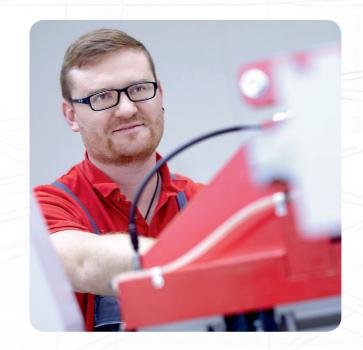


Exact end forming shapes and perfect surfaces

### For seal elements or sharp-edged contours and for perfect surfaces

Our rolling technology offers you entirely new possibilities for forming. All drives are electrical servo drives and can be CNC controlled if necessary. This enables tool-independent forming. All adjustable parameters are stored. This saves time, because elaborate adjustment work is not necessary. The machines can form from the outside in or from the inside out.

With diverse tool versions, chipless cutting or cutting after bending can be done. It is also possible to use a forming head that simultaneously operates with an inner and outer roller. In addition, the sequence control makes every movement for each forming step user-friendly and individually programmable.









Tool-independent forming



# Rolling forming machines Type UMR

#### UMR 628

UMR 628 6 - 28 mm Ø
UMR 642 6 - 42 mm Ø
UMR 30115 30 - 115 mm Ø
UMR 40220 40 - 220 mm Ø
UMR 60325 60 - 325 mm Ø



#### Flaring of up to 90° in a single work step

Our roll-forming solution ensures perfect sealing surfaces with flaring between 20° and 90° and with clamping lengths of approx. 1 x D. Tube ends can be closed using appropriate tools. And tool changes are carried out extremely fast.

The versatile system for forming tube diameters of up to 325 mm works practically independently of tools with a controlled, freely programmable flaring cone.







Detail picture of 90° flaring





REB 645-5 SRM 622

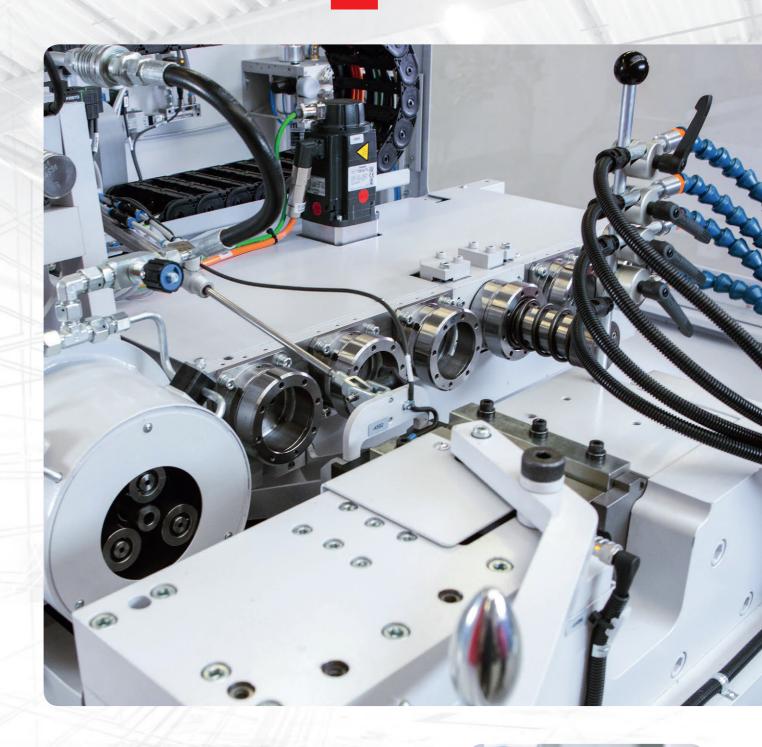
#### Strong connection: axial and rolling forming

We have combined different advantages of our forming processes in a solution to your individual requirements – particularly axial compression and roll forming. We offer both in a combination machine or as a transfer system in which the machining takes place in succession.



"When production requires complex demands and concrete results, transfluid® offers the right solution."

Stefanie Flaeper, Managing Director





Complete forming operation in one clamping process

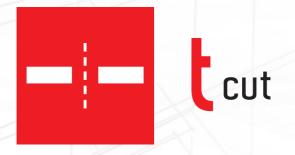
## Forming the future together.

#### With a team that loves progress.

191 employees worldwide stand for what we put into our machines: Advancement, perfection, high solution expertise and passion for innovative engineering. Standard, even with our special solutions.







#### Perfect cuts with maximum precision

Your production is made even faster and more efficient with our clean and exact cutting processes. Save material and time spent on follow-up work with chip-free cutting processes. The t cut tube cutting machines make it possible for your t cut quantities of up to 1,800 tubes per hour.

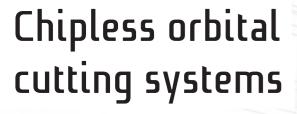
Moreover, our software for cut quantity optimisation provides a better ROI. A magazine is available for loading of bar material, as well as a version with direct loading from the coil with a straightening line.



## t cut

Cutting head for exact, low-burr and clean





#### RTO 628

RTO 628 6 – 28 mm orbital cutting processes
RTO 650 6 – 50,1 mm orbital cutting processes

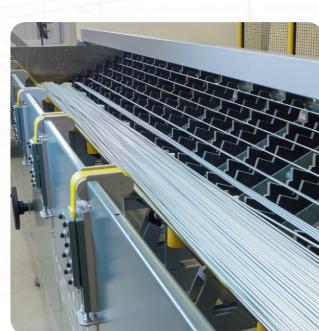
#### Continue operating immediately

The precise cutting results of our chipless orbital cutting systems allow the forming on the cut surface immediately after the cutting process. Tensile stress is applied to the tubes during the cutting process with different torques depending on the size. Consequently, controlled influence of the cut result is ensured.

#### **Equipment versions:**

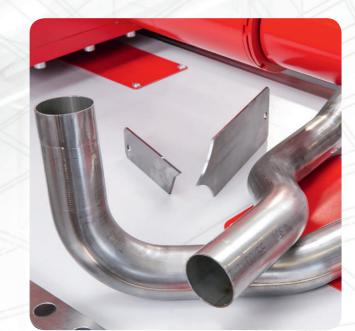
- cut quantities up to 1,600 units/hour
- cut length optimization for minimization of rest length
- from the coil with straightening system or with loading magazine for bar material
- controlled ejection of multiple cut segments





Step belt conveyors, also optimally suitable for small, long tubes







Innovative knife geometries produce perfect cutting results.

## Knife cutting methods

Tvn R

11/1/1/

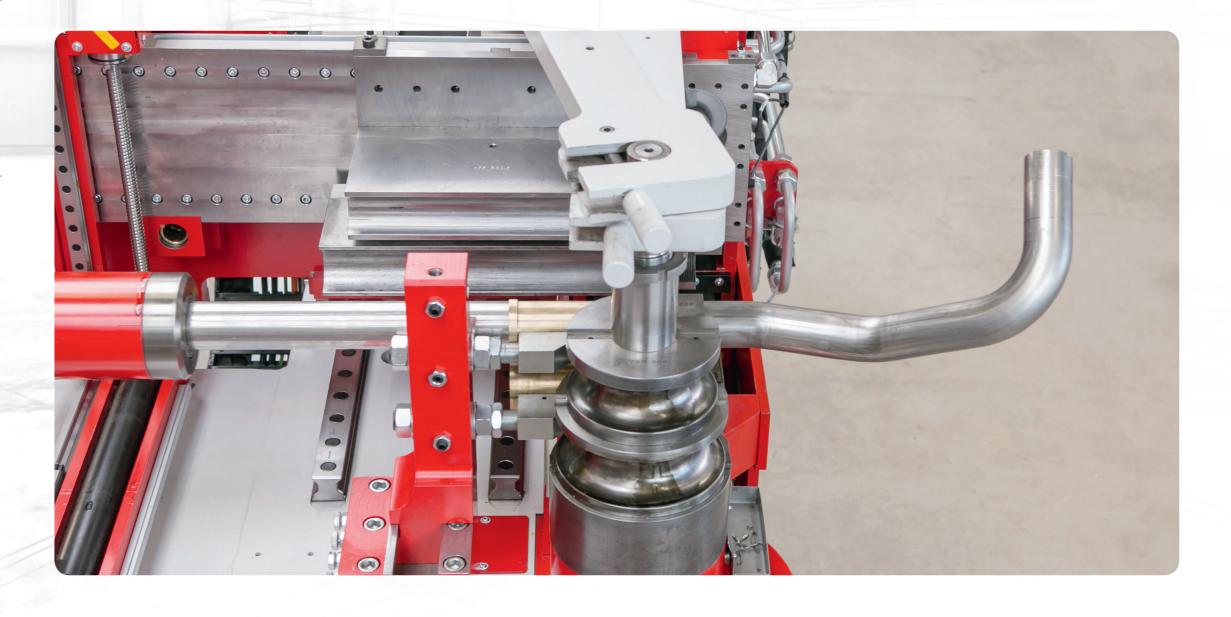
#### Exact cutting of straight and bent tube geometries

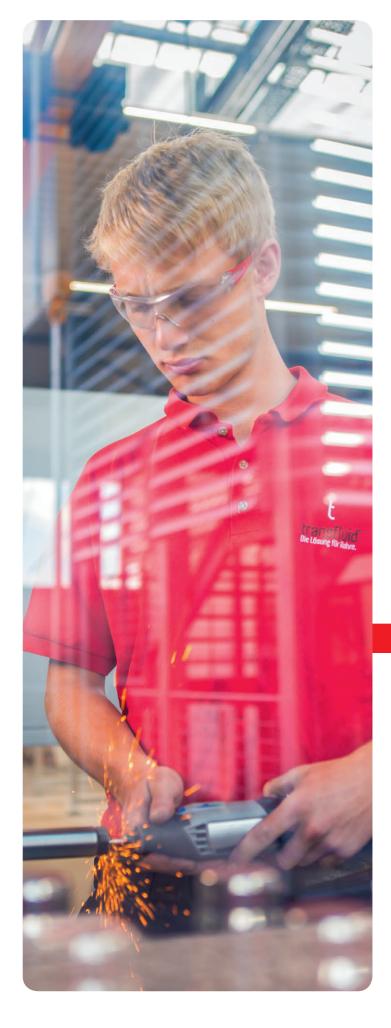
Shearing of tubes precisely. Our solutions provide perpendicular and sharp-edged cuts on straight and bent tubes with two blades. The process safely detects the accumulating chips.

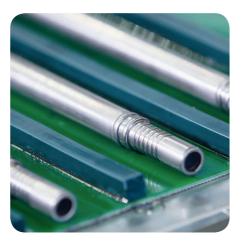
### Cutting as stand alone or on board of the bending machine

This very effective cutting process can be installed in our bending machines with consequent cost and time reduction. For demanding requirements to cut already bended tubes, two knives are in use and an internal mandrel is improving the process. For modified routines it is possible to make diagonal cut on the tube.

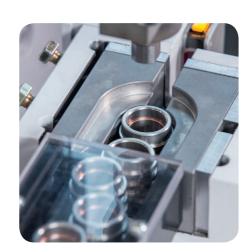
What is more the cutting machine is also as a stand alone unit available to reach a perfect flexibility all the time.













## Progress included

#### Be ready for the future with transfluid®

The industry is in upheaval. Digital production, networked operation and Industry 4.0 are the challenges facing us. As a brand that shapes progress, we also rely on future-oriented integration for our systems. Whether it applies to automation, software or networking – we work continuously to give "4.0" the perfect form.



#### Automation for perfect processes

We do the planning for you:

The complete production cells are adapted to your requirements, including creation of layouts – for the perfect material flow.

Available on request in combination with:

Product marking and optical, contact-free camera control systems for 100% control of geometries or surfaces. The option for punching holes can also be integrated as transfer systems for minimum cycle times or systems for loading and for controlled unloading – for customised automation.



You will also find all of our t motion solutions online. Visit: www.transfluid.net







#### Production cell

#### From forming to the bending robot

Our t motion production cells create capacities and outstanding process safety. For consistently excellent quality of your components. We combine our high-tech expertise with effective, fine-tuned systems:

- optical measurement of the geometry
- handling (linear or by robot)
- marking systems
- punching and hole-cutting
- process data recording and visualisation
- weld seam detection control
- automatic part supply
- controlled loading and unloading systems
- automatic 8 times tool changer
- fully electric with CNC bending
- bending robot

With your transfluid® production cells, you have unlimited automated possibilities for precise and high-efficiency production processes at your disposal. We find the ideal solution for you tailored to the challenges of your sector, your markets and your individual requirements in the future.



Robots can be used for efficient handling or assume additional bending operations.



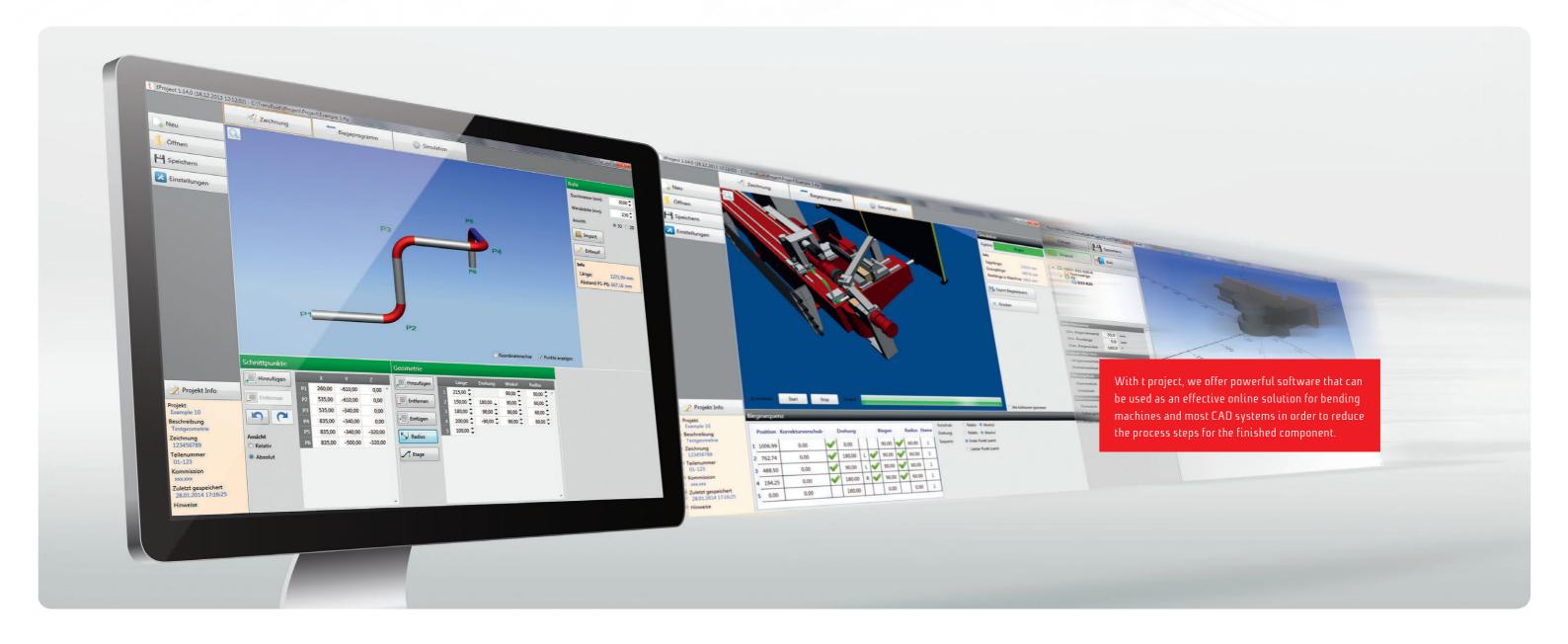




#### Powerful software. Secure planning.

Benefit from the intuitive production security of t project. Determine the bending times, exact cutting lengths and document the tube data. With our software, tube geometries can be tested for feasibility before the actual bending. Collisions with the machine, the tools and other elements are thereby eliminated. All common interfaces are available for the importing and exporting of data and networking with systems like BDE and ERP.

The software determines which bends should be bent on which head for right/left bending machines. Length additions from forming processes are also considered automatically. If flanges are welded on the tube on both sides before the bending process, the software calculates the appropriate position. And, of course, they can also be used for free-form processes and for multi-level machines.



"For us, efficiency means developing cost-effectiveness from technological advantages. It is a part of every one of our solutions."

Burkhard Tigges, Managing Director





## Forming partnerships from connections

#### We think ahead. This is what helps our customers succeed.

Our work is give and take. Our motivation is the partnership with our customers. We take your ideas as a challenge.

What we give you: The knowledge of technologies and services that shape progress as solutions. Only those who create something new will advance. As a technology leader, we are fully committed to providing new innovations.

Progress is our passion. So you get ahead.

34



transfluid® Maschinenbau GmbH

Hünegräben 20 – 22 57392 Schmallenberg

Tel.: +49 29 72 / 97 15 - 0 Fax.: +49 29 72 / 97 15 - 11

info@transfluid.de www.transfluid.net