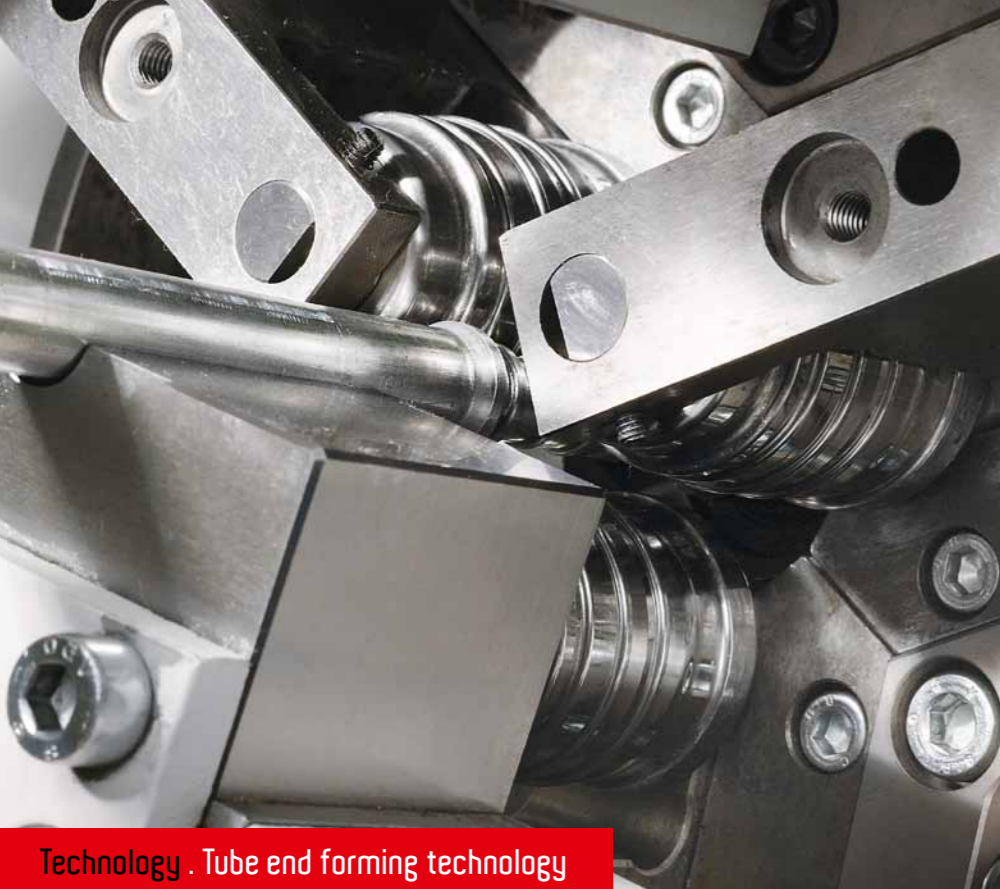


Technology
Tube end forming
technology
(continued)

Field report
Belz Treppenbau

**Keeping the
goal in sight:**
transfluid[®] is staying on track through
the ups and downs of the economy



Just in time(s)

Editorial . Edition 02 . 11



Dear readers,

two years ago, the world was headed unexpectedly and unabated into an economic crisis, which for many resulted in a frighteningly rapid downturn. Even at that time, there were "watchdogs", the so-called ratings agencies. However, most of them only recognised the crisis of 2009 when it was already all too obvious to all right-thinking people.

These agencies still exist today. Their ratings seem untransparent, and sometimes it's hard to resist the impression that their conclusions are not objective, but rather they have their own motivations. Countries, currencies and even companies are all subjected to a ratings process, by politically willed "watchdogs" who have become out of control - this is a quite valid critique.

Nowadays it is they that really have power over the world economy. With their opinion, formed behind closed doors, they set the tone and no-one is immune to their declarations. With power comes responsibility. However, it can also be misused. It would not be the first time in world history.

Considering the current difficulties with the euro; the downgrading of the USA's debt rating after the raising of the debt ceiling (which was basically a matter of course under previous presidents); as well as the pressure exercised on the Eurozone (which does not have the level of debt of the USA by a long shot), isn't it appropriate here to talk of misuse of power? This is especially the case when banks and shady financial investors are at the same time making highly profitable deals on the decline of states and their people.

Do we have to live with it while, as in 2009, financiers destroy everything that others have worked for? Isn't it finally time for international political institutions to rework their regulations on the world of finance? At the moment, it seems that we are destined to watch as the next wave of the crisis rolls towards us. The stock exchanges are already showing the warning signs. Billions in taxpayers money are again being offered up, and financiers are making a handsome profit.

We know our value as an enterprise. And whoever exercises power with responsibility, as we do, to them belongs the future.

Gerd Nöker
Managing Director

Technology . Tube end forming technology

Field report . Belz Treppenbau

Inhalt

- 02 Contents | The team . Anniversaries
- 03 Editorial . Just in time(s)
- 04 Cover story . Tackling the crisis head-on
- 05 ticker | News
- 06 Field report . Belz Treppenbau
- 07 t notes . Happy Aua
- 08 Technology . Tube end forming technology
- 12 time(s) check . Belgium

The team

A special thank you to our co-workers for their loyalty, commitment and exceptional performance.

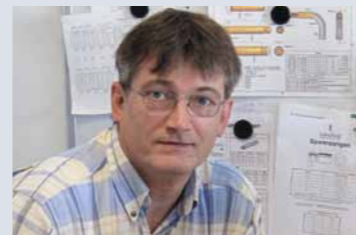
10 years of service

> **Michael Eichner**, who joined us on 01.07.2001, born on 09.10.1969, trained Industrial Clerk with responsibility for Financial Accounting and Personnel.



Michael Eichner, 10 years

> **Norbert Wessels**, who joined us on 04.09.2001, born on 29.03.1957, trained Automotive and Airframe Mechanic. Responsible for design in the area of end forming machines.



Norbert Wessels, 10 years

Getting down to work

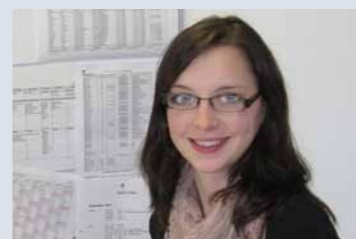
We give a warm welcome to our new trainees at transfuid® and are pleased about the new strengths which they add to our team. In the photo (from left to right): Mr Tigges, Mr Schmidt, **Johannes Gierse** (Mechatronic Engineer), **Tabea Sperlich** (Industrial Clerk), **Phillip Göddecke** (Mechatronic Engineer), **Phillip Flaeper** (Mechanic)



Managing director and training officer with the new trainees

We wish them every success!

Congratulations to Ms **Anna Bernhardt** on successfully completing her traineeship as an Industrial Clerk. We look forward to continuing to work with her in the Order Processing Centre!



Anna Bernhardt



time(s) check . Belgium

Tackling the crisis head-on

Title story . transfluid® places trust in robust delivery processes



Demand determines the market. It's an incontrovertible fact. If the markets are always moving faster – as is the case today – as a supplier of optimal solutions we must be able to react more quickly. The same goes for our suppliers. However, sometimes the economy reaches heights where the air gets extremely thin for certain suppliers. This is a shame, because we live in a time in which personal dedication is well rewarded by the markets. So then, let's tackle the problems and move faster!

An economic downturn has seldom been so rapid or drastic as that of 2008/09. Having said this, the economic upswing also took considerably longer after earlier periods of recession. In 2009, transfluid only recorded a minimal fall in turnover, thanks to our great team. Even at that time, we were taking on new people in a targeted manner, a policy which we have consistently continued. For us, it was a logical step, as we are working for better times.

With a focus on the future and on upturn, at that same time we signed

framework agreements with some of our core suppliers, who provide us for instance with electrical drives and

Machines which arrive in your production facility on schedule and satisfied customers – this is our objective.

hydraulic and bearing systems. Everything seemed to be in place for the next "high season". But, however well you prepare, sometimes things work

out differently than you thought. In spite of all the foresight and our own efforts, some parts of the supplier markets collapsed. At the end of 2010, important key components could only be obtained with extremely long lead times. In

some cases, we had to prepare for delivery delays of up to 26 weeks. Drops in quality and service levels also suddenly became apparent – ob-

vious material deficiencies, order confirmations which took two months to turn up, even complete suspensions of deliveries had to be accepted.

During good times, struggling with such difficulties was a paradoxical situation for us. However, it was also grounds enough to do precisely what the market was demanding: react quickly to retain a good standard and to improve upon it. We continually adjusted our delivery times, re-sorted and optimised our supplier portfolio, and developed some solutions to help our customers reach their goals more quickly, in spite of the tough situation. And we still worked to master the

hurdles involved in the supplier situation – some of which were hard even for us to overcome – to the best of our ability and with our customers in mind.

We want our customers to be satisfied and take delivery of their new



machines on schedule. Thanks to our clearly stated will to develop the best solutions for our customers, as well as to our commitment on a daily basis to put this will into action, we achieved it too. The situation could conceivably improve in the weeks ahead. Until that time, we would ask for your understanding, if we do hit such a bottleneck. As your proven partner, we will do everything within our power to overcome that situation as well. Until then, the message remains: tackle the problems and focus on the future!

ticker



EMO Hannover 2011

> 19.-24.09.2011
> Hall 14 / Stand B45
We look forward to your visit!

News

> **Hola:** In June, Innovation Days were held by transfluid® for the first time exclusively with Spanish participants.

> **All the best:** The transfluid® office in Bangkok has been strengthened by the addition of new members of staff.



Thannarong Vasunirachorn Sasithorn Kunprasert Theerawoot Norkhom

Creativity around every corner

Field report . Belz Treppenbau – forming luxury

From top to bottom, it is the comfortable and safe way to conquer new heights. Its stability lends it safety. Its shape can wow someone and even make spaces more attractive, if taken beyond quality into the realms of expert design. This is what gives a staircase its value.

The northern German specialists at Belz Treppenbau apply their expert knowledge and abilities in the trade with passion, in order to realise the personal wishes of their customers with their staircases and banisters. Anything is possible: for the home, in the garden, for businesses or industrial applications. At their company headquarters in Schwanewede, half way between the city of Bremen and coastal Bremerhaven, this family-led firm has also chosen to specialise in an obvious and highly particular set of challenges; the construction of stairs for apartment buildings, villas, high-rises and yachts. In such situations, every project is a one-off.

Even in other areas, Belz places value on achieving the maximum in quality. This means that their repertoire encompasses not only solid wooden stairs or modern staircase structures with stainless steel banisters, but also balcony railings, fences and special projects such as ornate stainless steel washbasins, lamps or fountains.



Company founder Peter Belz, who manages the company along with his sons Jens and Thomas and daughter Michaela finishes these exclusive staircases with high-quality stainless steel banisters. The stair manufacturer relies on a DB 20101K pipe bending machine from transfluid® for this purpose. This semi-automatic bending machine enables the reproducible manufacturing of handrails of differing geometries with optimal bending quality. Pipes with an external diameter up to 101.6 mm, and even oval-shaped pipes, can be shaped without any problem. The machine is suited to a maximum pipe length of 4,500 mm.

A synchronously running counter bearing ensures, particularly in the case of stainless steel pipes, that the best possible quality is achieved for outdoor applications. Bends with narrow radii of 1.5 x pipe external diameter can be reliably produced. We are happy to hear about the creative and flexible use of our technology and wish this family business continued inventiveness in the future.

Belz Treppenbau GmbH & Co. KG
Reiterschanze 27
28790 Schwanewede/Neuenkirchen
www.belz-treppenbau.de
info@belz-treppenbau.de



Happy Aua

t notes



When people from the Sauerland region of Germany encounter wild animals, it can sometimes end in venomous surprises. But maybe we should start at the beginning: It was intended as a successful business trip to far-away India, and everything passed off without a hitch. After a safe arrival, the two members of our sales team visited some customers in various cities in this South Asian country. The visits were successfully concluded.

Back in Chennai, a city of millions, nothing too eventful could really happen, or so they thought. The hotel was lovely and the people warm and friendly. They spent their hard-earned evening after a long day of work on the terrace behind the hotel, with a cold beer, seeing to the paperwork. Suddenly a member of the hotel staff walked by with a soup tureen, a stick and a wire snare in his hand. "Funny", thought the two businessmen and proceeded to watch what happened. After a brief time to get his bearings, the hotel worker began running along hedges and bushes, banging loudly on the soup tureen. The remark "Oh, he's looking for a snake" only got a brief smile from one of the transfluid® employees. The other already had his feet up on a free seat for safety. Eventually, however, night fell and the day came to an end without interventions from any dangerous reptiles.

The next morning before their flight home, they located the terrace again. "Oh look, he's still banging on that pot. Perhaps it's something like breaking plates for good luck", they thought to themselves. One proceeded to discount what they had heard about the snake. The other put up his feet in recognition of the warning. This again received a scant smile from the first, which was quickly wiped off his face when a bright green, metre-long snake suddenly darted past the table. Luckily, both of them were spared an attack – one having suffered a bit of fright and the other with a mischievous, knowing smile on his face.

After their adventure, they went to the restaurant for refreshment, before then starting their journey home with this conclusion: In Sauerland most wild animals have four legs and are fortunately harmless!

How to

Technology . A digression on tube end forming technology (continued)



You are now well acquainted with the possibilities and particular features of axial tube end forming from our last t time(s) issue. Time now to cast our eye over a second forming procedure.



SRM 622
Bead rolling machine
for tubes up to 22 mm

Rotary tube end forming

Roll forming often complements axial forming, though it can also be used to create its own discrete shaping forms. Rolling is frequently used to increase the surface quality in forming processes and to produce polished surfaces. Sharp-angled forms, which cannot be produced axially (or only with great difficulty) are relatively simple to create by rolling. Even complex and highly structured geometries can be produced in this way.

This ensures a geometric concentricity of +/- 0.01. The clamping surfaces are usually substantially shorter than for axial forming.

Roll forming is also used on so-called combination machines. This is useful if axial forming will be carried out,

followed by rolling, as the entire forming process can then be performed in one clamping position.

In contrast to axial tube forming, the design of the machine for roll forming is not dependent upon either the geometry or the force, but exclusively on the size of the tube being processed.

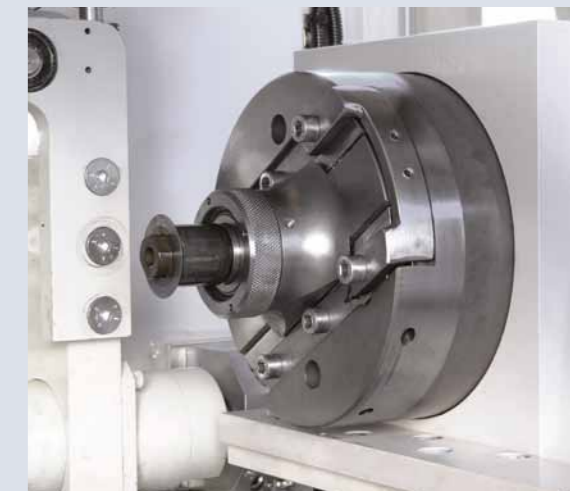
This process is not always suitable for axial expansion. The internal diameter must be large enough that it is possible to use a tool to roll from the inside to the outside. This is usually the case at diameters > 15 mm. In order to guarantee lasting deformation, the degree of deformation during the rolling process must also be outside of the elastic range of the material.

Standard sizes for transfluid® rotary end-forming machines:

- > For tube diameter 6-22 mm: SRM 622-E (300-1000 rpm)
- > For tube diameter 15-50 mm: SRM 1550-E (100-500 rpm)
- > For tube diameter 40-115 mm: SRM 40115-E (40-280 rpm)

Mode of operation of the rotary endforming machines

The workpiece is positioned against a stop and the clamping device closes.



The roller head is then positioned axially via a servo motor and a ball screw. Its position is freely programmable. The roller head, controlled by a conical system, is then closed. This position is also freely programmable. The closing speed and duration are programmed according to the geometry and the material. In the case of new products, only the tool needs replacing. All process parameters are programmed and can be easily called up. Manual settings are not necessary.

In addition to rolling from outside to inside and from inside to outside, these machines can also cut in both directions. Particularly subsequent cutting followed by shaping is often very economical in such cases. When it comes to forms with functional surfaces on the inside and outside, it is also possible to roll both sides at the same time.

In all these cases, the process is dependent on the particular tool. The processing time is dependent on the

form and is mostly between 8 and 12 seconds. It is however also possible to produce complex geometries regardless of the tool which is used. If the machine is equipped with a CNC control system, it works in principle like a controlled lathe. However instead of the turning tool, it uses rollers. This makes it possible, for instance, to reduce small stainless steel tubes and simultaneously form them. Thus different geometries and tube sizes can be formed with a single tool.

Useful additional equipment

A suitable lubrication device contributes to achieving a good forming result and good surface properties, as well as to extending tool life.

For steel and stainless steel, it makes sense to use a microlubrication device. This makes it possible to apply a minimal quantity of lubricant, in a targeted manner, to the relevant points. If alu-



REB 632-SRM Combination machine, with six axial forming stages and a rotary forming unit



- > Improving surface quality
- > Cutting off excess length

Special machines for producing flaring

Our type-UMR rotary flaring machines have been developed to produce beading between 20° and 90°. This machine model produces a perfect sealing surface from a short clamping length of just 1xD. Even weld seams can be levelled out. Beading up to 90° can be produced in one step by a tumbling motion of the tool and tool changes can be performed in next to no time.

ver, this is also partially dependent on the forming geometry. If the clamping lengths between bends and the forming location are too short, form clamping pieces can be used.

If the forms to be produced are tool-dependent, corresponding forming rollers are required. It is not possible for any wear to occur to these rollers during this process. The cutting tools are composed of several parts to enable worn components to be replaced.

minium tubes are being rolled, pressure flushing with an emulsion is wise. Without recirculating lubrication, oxidated particles may appear, which has a negative impact on surface quality.

To clean the lubricating emulsion, the pressure flushing devices have two reversible filters. The benefits: If a filter has to be replaced, the second filter can be used, and production can continue without interruption. To filter out coarse particles of dirt, a belt filter can also be used. This is fitted upstream of the fine filters, thus increasing their service life.

Typical rotary forming processes:

- > Sharp-angled forming
- > Complex and heavily structured geometries

Standard sizes for transfluid® rotary flaring machines, type UMR:

- > For tube diameter 6–28 mm: UMR 628 (603 rpm)
- > For tube diameter 6–42 mm: UMR 642 (200 rpm)
- > For tube diameter 6–65 mm: UMR 665 (95 rpm)
- > For tube diameter 30–115 mm: UMR 30115 (70 rpm)
- > For tube diameter 40–220 mm: UMR 40220 (60 rpm)

The tools:

A clamping jaw is required for both the type-SRM bead rolling machine and the type-UMR rotary flaring machine, for each diameter. How-



UMR 628
Rotary flaring machine for diameters up to 28 mm



Particular features and limits of this technology:

- > The degree of forming often presents a limit.
- > Additional components cannot be applied.
- > The material is cold hardened.
- > The tube wall thickness is lower in the vicinity of the form.
- > Reducing over a long distance is particularly critical for stainless steel tubes.

Do you want to know more? Or perhaps you would like to complement your knowledge on this and the topics already covered by attending a workshop. If so, we would be delighted to hear from you!

Gerd Nöker
Sales/Marketing
Tel.: +49 29 72 / 97 15 - 15
gnoeker@transfluid.de

At the heart of Europe

time(s) check . A kingdom for a good partner



Antwerp, Ghent and Gullegem: we have arrived in Belgium. The country has some eleven million inhabitants, is home to Brussels – the beating heart of Europe – and shows pronounced industrial activity everywhere. This includes many capable small and medium-sized enterprises, and among them METANOX bvba.

It is our proven distribution partner in the Belgian market, and can be found in beautiful Gullegem, in West Flanders. The highly qualified sales team of this experienced and renowned specialist is known quantity throughout the land. Just like us, other companies also value the outstanding performance of METANOX bvba. In addition to our entire range of transfluid® products, these experts are also in charge of a special range of sheet metal forming machines. This means they have an extremely varied range of products to offer – from well-established brand-name products, via conventional systems, and right up to CNC controlled machines.

As a perfect complement to selling these products, METANOX bvba offers a professional and effective After Sales Service. Such intensive support ensures that customer get the most out of their machines. This includes service 24 hours a day, guaranteed. Thanks to the outstanding commitment demonstrated by this Belgian specialist distributor, we have a presence in the market nationwide and are able to supply the widest possible array of sectors of industry. This includes, among others, manufacturers of agricultural machinery, utility vehicles, automotive suppliers and other sectors involved in industrial production.

We are delighted to have had an extremely strong distribution and service partner on our side in METANOX bvba for many years now, and look forward to many years of continued success together.



METANOX bvba

Founded: 1997

Employees: 7

Representative for:

- > transfluid®
- > Durma
- > Euromac
- > Koike
- > Davi
- > Salvagnini
- > Carif
- > Posmac
- > Euram

Driemasten 85
B-8560 Gullegem
Belgium

Phone: +32 056 / 4199 94

Fax: +32 056 / 40 14 77

info@metanox.be

www.metanox.be



t time(s)
Edition 02 . 11

publisher and editorial team:
transfluid® Maschinenbau GmbH

Hünegräben 20-22
D-57392 Schmallenberg

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

info@transfluid.de
www.transfluid.de

design & typesetting:
PSV MARKETING GMBH

t
transfluid®
tube processing machines