Made for Motion KTR

KTR Company News

Out of the fix with a clamp
New: the KTR-STOP® NC hydraulic clamping and brake system

How does one:
– keep machine tool positioning axes in place more precisely than ever before?
– reduce vibrations and axial forces in a smarter way?
– increase stability and manufacturing accuracy?
To get to the bottom of these questions, our engineers had to go soul-searching. And they eventually came up with the solution – the new KTR-STOP® NC hydraulic clamping and brake system. To make sure that nothing gets jammed in production processes, this system clamps at the precise spot with the right force. And should engine failure or a drop in pressure occur, it also helps one out of the fix – by braking. So there's nothing you have to worry about in the future!

Out of the fix with a clamp

New: the KTR-STOP® NC hydraulic clamping and brake system

Each precision drive has to decide between speed and accuracy: the faster a machine runs, the greater the risk of manufacturing defects, imbalances, system failures or even loss of production. This dilemma has now been resolved: you can literally get your positioning axes to grasp the situation – with the new KTR-STOP® NC hydraulic clamping and brake system.

Dual safety for greater longevity

The KTR-STOP® NC passive clamping and brake system takes the shafts of ball screws, linear drives or rod guides into its robust, hydraulically activated clamping bushes and, by doing so, holds tool slides and tool tables precisely in position. By very carefully releasing the clamping force, the rotation of the ball screw or shaft is decelerated as needed – as rapidly as possible yet as slowly as necessary. The additional clamping with KTR-STOP® NC increases the system stiffness, reduces vibrations and improves manufacturing accuracy. But to be doubly safe, KTR has thought ahead and equipped its technology with a reliable fail-safe function: should an unforeseen engine failure or a drop in pressure in the operational hydraulics occur, the fail-safe function activates in within milliseconds, taking over the function of a powerful brake – as hinted in the name KTR-STOP®! So besides clamping high torques directly on the ball screw for instance, the KTR-STOP® NC also holds axial forces when used on rod guides in its function as a safety system. In this way the entire drive train is safeguarded from potential damage.

KTR-STOP® NC

Multi-functional use

The space-saving KTR-STOP® NC double-function system can be installed as an integrated solution between engine and spindle or as a plug-in system at the end of the spindle. Thanks to its multifunctional qualities, the new clamping system is not just limited to linear drives. It is also a very promising as a holding system in completely different areas: in hoists, lift tables or hydraulic lifts as well as in safety gears or locking mechanisms. This turns the new KTR-STOP® NC into an ideal solution for every application – be it a classical machine tool, in general engineering or even automation.

Compact powerhouse

The new clamping and brake system is available in size 32 for shaft dimensions between 18 mm and 25 mm. The performance level covers holding torques of up to a maximum of 110 Nm and holding forces of up to 8,800 N: its dimensions are compact at just 96 mm x 96 mm x 86 mm with a weight of only 5.5 kg. Further sizes with higher performance levels are in the pipeline. For more information on the new KTR-STOP® NC system, please click here. Or better still, do the KTR LIVE STOP – at either Motek in Stuttgart or at EMO in Milan (see page 6).

Characteristics

- Passive clamping and brake system with fail-safe function
- Absorbs axial loads
- Reduces vibrations
- Hydraulically released system
- Usable as a plug-in system
- Multifunctional use

Areas of application

- **Machine tools and automation:**
  - positioning and feed axes, e.g. ball screws
  - rod guides
- **Power transmission:**
  - feed cylinders
- **General engineering:**
  - hoists, hydraulic presses
  - rod, piston and shaft clamping
  - lift tables, e.g. scissor lift tables
  - hydraulic lifts
- **Other:**
  - safety gears
  - locking mechanisms
  - systems requiring an additional safety device

KTR-STOP® NC

‚C' makes the difference

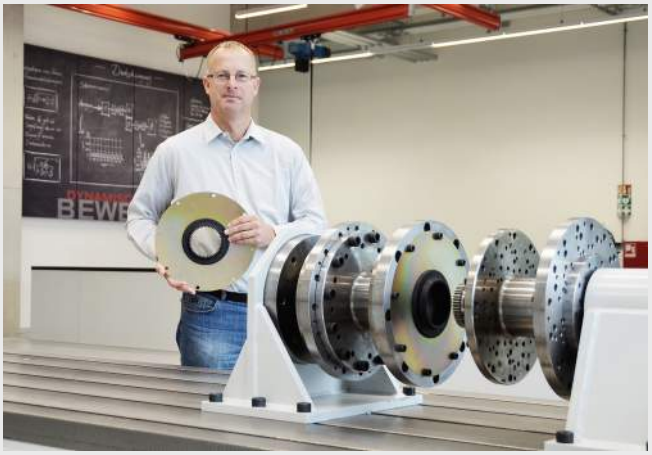
Andreas Hücker on the advantages of the BoWex® FLE-PAC

Editor (E):
Andreas Hücker – please be so kind to introduce yourself to our readers.

Andreas Hücker (AH):
I'm the product manager in charge of the BoWex® coupling family. Although I took over this position when my predecessor retired just over a year ago, I began with the KTR BoWex® team nearly 18 years ago – directly after my studies. So I know the products and applications like the back of my hand!

E:
Let's talk about flange couplings. Over the last couple of years, the BoWex® FLE-PAC has been expanding the KTR product portfolio. What' the reason behind this?

AH:
To be precise, the BoWex® FLE-PAC is a derivative of the well-known BoWex® FLE-PA.
‚PA' stands for polyamide and the ‚C' in ‚PAC' refers to the carbon fibre-reinforced polymer used in it.



Andreas Hücker – KTR Product Manager
E-mail: a.huecker@ktr.com

E:
Why did you develop a carbon version?

AH:
There were a whole number of reasons. For a start the FLE-PAC features a completely different design where we use a steel flange that is injected onto the toothing. The main benefit is that with specially dimensioned flywheels, we can do without an adapter and so save costs and considerable space. When it comes to construction machines in particular, the installation space is often very limited.

E:
Would it not have been possible to use the conventional polyamide for this purpose? Why a carbon flange?

AH:
Sure we do use the time-proven polyamide – but as an option we combine the steel flange with it to make use of the advantage this solution offers from the space perspective. At the same time though, we are seeing an increased demand for couplings with higher life expectancy. And the material combination of the carbon flange and the BoWex® steel hub proves ideal for this purpose. This is confirmed by both our test-bench results and our customers' field tests.

E:
But isn't the new coupling more expensive?

AH:
Yes – carbon itself does cost more. But as we have reduced the required material by using a composite, this is hardly noticeable. On the other hand the life-cycle costs decrease significantly, so in many cases the PAC version is the more cost-effective solution despite the higher purchase price. And besides, a longer service life means more satisfied end users!

E:
How would you sum up the advantages of the BoWex® FLE-PAC?

AH:
The BoWex® FLE-PAC offers a more compact design, is adjustable in a more flexible way and lasts longer.

E:
Which are the best fields of application for this coupling?

AH:
Flange couplings are primarily employed in construction or agricultural machinery, including forestry equipment and municipal vehicles. What matters here is whether hydrostatic drives or drives with smaller or lighter pump gearboxes are involved. With the former, couplings should never be torsionally rigid. As soon as the mass on the load side increases, for example in transmissions, we use vibration analysis to test whether the highly flexible BoWex® ELASTIC should be deployed. Other customers solely require monobloc couplings with their hydrostatic drives and we fulfil this requirement with the MONOLASTIC®. So we have the right coupling for every possible application.

E:
How does one find one's bearings with so many technically similar versions?

AH:
That's very simple! Just ask one of our 24 subsidiary companies spread all over the world.
Or contact me directly at
a.huecker@ktr.com
I'll be very happy to give you the right advice!

BoWex® FLE-PAC

Couple, measure and clamp.
With new production series and sizes

TOOLFLEX®: size 55, made from aluminium

Bellows made from stainless steel and hubs from aluminium: this combination in unison with high torsional stiffness and a low mass moment of inertia is the TOOLFLEX® metal bellow coupling's show-stopper! Reason enough to offer you this innovative aluminium-steel combination with immediate effect in size 55 which to date has only been available with steel hubs. As is the case with all larger TOOLFLEX® series, bellow and hub are joined using a flare fitting that guarantees a safe and temperature-resistant connection to the bellow. This in turn ensures optimal compensation for axial, radial and angular displacements. It is the perfect solution for maintenance-free application at high ambient temperatures – for example in production engineering or automation engineering.

TOOLFLEX® size 55, made of aluminium

- backlash-free, torsionally stiff metal bellow coupling
- coupling hubs made of aluminium
- maintenance-free
- non-failsafe
- ambient temperatures of up to 200°C feasible
- torques up to 340 Nm

TOOLFLEX®

DATAFLEX® new production series in three sizes

No matter whether associated with test bench technologies, process control or machine monitoring – modern drive technologies are unimaginable without precision measurement of torque and speed. However the data obtained was not far-reaching enough for KTR's engineers: the latest series of the DATAFLEX® torque-measuring shaft additionally captures the rotation angle and the direction of rotation – all in all four measurement parameters in one.
And thanks to state-of-the-art electronic components, the results are even more exact than before, rendering a measurement inaccuracy of less than 0.1% of the final value. Normally such precision is coupled with a high price, but not with the new DATAFLEX® which wins over with its good price-performance ratio. The new precision measuring shaft is now available in sizes 16, 32 and 42.

DATAFLEX® 16/32/42

- Measuring range: between 10 Nm and 5,000 Nm depending on the size
- Inaccuracy of measurement is< 0.1% of the final value
- 10,000 measurements per second
- Double-channel speed measurement
- Direct voltage output for speed
- Space-saving combination with RADEX®-NC servo laminae coupling

DATAFLEX®

CLAMPEX® new sizes and selection guide

This is where we've got good news! KTR has added a number of new sizes to its clamping element product portfolio. The largest CLAMPEX® clamping set – KTR 100 – now measures 1,000 mm x 1,110 mm and transmits torques of up to 3,017,100 Nm – ideal for powerful drives with high alternating loads. In our current catalogue, all new sizes can be found where there is a ‚new'. And so as to make sure you find the right shaft-to-hub connection for your needs, the new CLAMPEX® selection guide on **catalogue page 262** gets you where you want even faster!

CLAMPEX®

- Backlash-free shaft-to-hub connection
- Simultaneous transmission of torque and axial force
- Material savings through small shaft and hub dimensions
- Simple assembly and dismantling with ordinary tools
- Transmissible torques between 2 Nm and 7,394,000 Nm

CLAMPEX®

KTR is expanding.
In Rheine, internationally and into the future.

KTR is aiming high. With Project KTR 400, the company is targeting an annual turnover of €400 million in the short term. So as to reach this aspiring objective, KTR is not holding back on liberal investments for research and development, expanding their international locations as well as in training new staff with best possible qualifications. And KTR is well on its way!

The new Power Transmission Centre (PTC) in Rheine
22 April 2015 was the day – the day the new PTC was inaugurated.

„Innovation is the driving force of industry."
(quote from Professor Josef Gerstner, CEO KTR at the inauguration of the new Power Transmission Centre on 22 April). For more information click here.

The guests – including dignitaries such as local district administrator Thomas Kubendorff and Dr. Reinhold Festge, President of the German Engineering Association (VDMA) – witnessed the official opening of KTR's ultramodern facility. This 8,800 m² centre not only houses the Research & Development unit – one of the most forward-looking in North Rhine-Westphalia – but also Quality and Innovation Management, Measurement Engineering and Electronics Development sections. It is additionally home to an assembly shop with up-to-the-minute workplaces for development and assembly.

Up to speed: the test benches in the new PTC in Rheine

But the company has not stopped there: 25 hydraulic and electronic test benches are located in the PTC for our engineers enabling them to master every imaginable test they need to carry out! And as a reminder of our professional doctrine, placards with the words precision, movement, elasticity and perfection are strikingly displayed on the building's inner walls to spurn on our innovators. Similar to the inside of a well-made drive, all necessary disciplines are very closely interlocked enabling the monitoring of the demanding construction processes even more efficiently for the future. The new PTC has been KTR's largest investment in its 56 year company history.

KTR anniversaries in France and Benelux
Although our roots are strongest in Rheine, we have branched out across the world. Determined subsidiaries are needed that go about their work with the same intention, motivation and precision. Take, for example, our French colleagues in the picturesque village of Dardilly some ten kilometres northwest of Lyon. This year they are celebrating their twentieth anniversary. Starting in 1995 with just two employees, their present-day staff of 16 argue the case for the French-speaking world. In 2000 KTR France took over direct sales to dealers. Eight years later, initial contacts in North Africa were established and in 2013 KTR's first office in Algeria was opened. So as to mark their progress, the French team will visit Berlin for a large celebration in September this year.

KTR Benelux also set a new milestone in their 15-year history. 1 July 2015 saw the ground-breaking ceremony for the new office building in Hengelo in the Netherlands: at 11 o'clock the first cornerstone was lowered into the earth to the applause of the invited guests. We are convinced that this will herald a fruitful start for the expansion of our business in the Benelux countries. And there's no time to be lost as the move into the new office building is already planned for next spring!

Into the future with new apprentices
The best technologies in the most advanced development centres are doomed without people. The better each person is trained, the more he or she will contribute to the growth of our family business. And this is good reason for KTR to systematically give our junior staff a skilled training. We are currently happy to be able to integrate nine new apprentices into our ranks from August 2015. If this sounds interesting click here to read more about training and current job offers at KTR.

From left to right: Moritz Schürmann, stockholder Dr. Mareike Tacke, Dennis Vossel, Nico Evers, Niklas Kestering, Alina Röhe, Hanna Redder, Lars Hesping, Raphael Kemner, HR manager Holger Klinge, Sophie Albers

Career-Website

Experience our innovations live!

September

15 - 18 September 2015
HUSUM WIND / Husum, Germany
Hall: 5
Stand: 5C04

September

17 - 27 September 2015
IAA / Frankfurt, Germany
Hall: 4.0
Stand: D07

November

24 - 26 November 2015
SPS/IPC DRIVE
Nuremberg, Germany
Halle: 3
Stand: 3-269

October

5 - 8 October 2015
Motek
Stuttgart, Germany
Hall: 8
Stand: 8204

November

10 - 14 November 2015
AGRITECHNICA
Hanover, Germany
Hall: 16
Stand C40

October

5 - 10 October 2015
EMO
Milan, Italy
Hall: 9
Stand: B16

Overview trade fairs