

Made for Motion



## **KTR in Automation and Machine Tools**

Drive Technology  
Brake Systems  
Hydraulic Components  
Cooling Systems

[www.ktr.com](http://www.ktr.com)



## **KTR – the best expertise for your machine tool.**

It's a common belief that you can either do a job quickly or you can do it precisely. But we offer a third option: do it with KTR. With the right components, you can be both quick and precise whenever the need arises – such as high speed and precise positioning systems.

If we take a brief look at the project manuals of various servomotor manufacturers, we can see how successful KTR is – particularly where ROTEX® GS has been offered as a standard solution for servo drives. While this makes us proud, it does not make us complacent. We are always expanding our product range and developing better solutions for our clients' special requirements.

Yet another task that we do quickly and precisely.



# Providing the right connections for over 50 years.

## Creatively ensuring your success

KTR is always one step ahead in keeping things moving. As a result, today we are a leading manufacturer of high-quality drive technology, braking systems, cooling systems and hydraulic components. If you are looking for a partner to provide reliable, durable drives for your machine tools and automation technology, we are at your service. If you wish, we will even come and advise you at your premises.

It all began with a pioneering combination in 1959 when our engineers merged plastic and steel for the first time, revolutionising the time-tested curved tooth coupling design with the creation of our BoWex® coupling. The ROTEX® followed shortly after and went on to become the DIN standard - specifically for the machine tool industry as the ROTEX GS®. KTR's capacity for innovation has been practically unstoppable ever since. Today we offer a virtually unlimited product range of well over 20,000 different couplings and other drive assemblies.

What if you are still unable to find a suitable product in our portfolio? No problem. We see ourselves not only as a supplier but also as a problem solver. This includes finding the optimum, most cost-effective solutions for customer applications. To be more precise, KTR produces more than 20,000 custom developed products and product variants on behalf of clients every year. Take it from us: we've got the coupling solutions to keep your project moving.

## Teamwork from the outset

We offer quality long before the product is even delivered. If you wish, our sales staff and application engineers will assist you right from the early planning stage of your project. Simply call us. With just one click you can find all the necessary product information plus a CAD library, installation instructions and much more at [www.ktr.com](http://www.ktr.com).

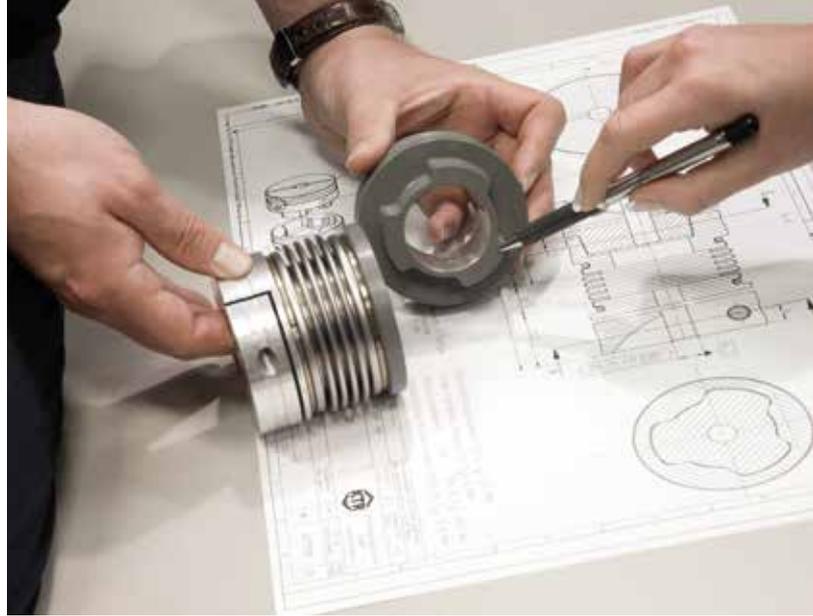
Once on our website, you can start to shop straight away if you are looking for standard products for your machine tools and automation technology. Simply use the calculation program to verify which component is the right one for your specific drive system. Our SAP data hub ensures fast delivery. It allows direct communication with other systems, thus guaranteeing short response times, including orders.





## Combining opposites.

Speed and precision, flexibility and reliability, high performance and cost-effectiveness: these are all conflicting characteristics that need to be provided with utmost reliability. Whenever it is essential to meet such differing requirements, two things are clear. Firstly, we are talking about the automation sector. Secondly, you need KTR couplings and brakes as these components are as varied as their areas of use.



### Positioning technology

One thing is crucial for positioning drives in machine tools and linear axes in automation: it is important that optimum dynamics and precise movement are able to coexist. Choosing the right coupling is essential in such systems since it affects how the whole system behaves. KTR offers you different backlash-free coupling models such as jaw, lamina and bellow-type couplings. Furthermore, all servo couplings can also be combined with the very lightweight, backlash-free safety clutch SYNTEX®-NC.

As basic rule, we recommend our jaw coupling ROTEX® GS as the standard solution for ball screws with inclines of  $h < 40$  mm, to ensure optimum vibration damping and torsional rigidity. In fact, the axial plug in GS does this so successfully that different servomotor manufacturers recommend this coupling for its optimum drive characteristics and capacity to prevent unwanted vibrations. We can only agree.

Our bellow-type and steel lamina couplings TOOLFLEX® and RADEX®-NC are the best choice when inclines are relatively steep. These couplings feature a torsional rigidity which is up to ten times greater than the torsionally flexible ROTEX® GS. Both are all-metal couplings and thus also suitable for high temperatures.

### Main spindles

Being a variable component, the ROTEX® GS also provides a reliable driving force for main spindles with tension ring hubs, suitable for peripheral speeds up to 50 m/s. If speed is of the essence, the ROTEX® GS P is ideal for delivering driving force. Specially developed for short drilling spindles, this component is truly in its element at peripheral speeds of 80 m/s or more. If high torsional rigidity is also required, the RADEX®-NC or the TOOLFLEX® is the perfect choice, while the steel lamina coupling RADEX®-N can be used for high torques. All couplings are also available in an intermediate shaft design. The intermediate piece can be made of ultralight CFRP, electrically insulating GRP or high-strength aluminium.

### Backlash-free and low-backlash gears

The ROTEX® GS is also recommended for medium or high transmission ratios in low-backlash planetary gears. Thanks to its axial plug-socket connection, the ROTEX® GS can even be fitted easily into critical applications. The RADEX®-NC and the TOOLFLEX® are the best choice for lower transmission ratios. The TOOLFLEX® is also available with different flange mounts in its CF version and can be either a one-, two- or three-ridge bellow-type coupling in its short versions.

# Problem-free automation.

Whether you are looking for a specialist coupling or an all-rounder, such as the versatile ROTEX® GS, you will find the right component for any requirement at KTR. If we happen not to offer what you need, we see it as a welcome challenge to develop a coupling tailored precisely to your needs.

## The ROTEX® GS

is a backlash-free jaw coupling, allowing movement in positioning engineering and main spindle drives. Although it features vibration-damping qualities, it is still sufficiently torsion-proof to ensure that accuracy is not diminished, even in highly dynamic servo drives. The ROTEX® GS is also available in a tension ring version for high friction coefficients and revolution speeds.

## The ROTEX® GS P

was specially developed for short drilling spindles on multi-spindle drilling heads. The integrated tensioning system for the highly precise, backlash-free shaft coupling is completely made of steel. This coupling allows you to work at extremely fast rates. With peripheral speeds of 80 m/s and more, it is ideal for main HSC spindle drives with high revolutions. Its quality ensures that it easily complies with DIN 69002.

## The TOOLFLEX®

never fails to impress as a backlash-free, torsionally rigid bellow-type coupling with a force-fit bellow-hub joint and a frictionally engaged clamping hub. It also delivers optimum speeds at high temperatures. Available in manufactured size 16 or higher with a nominal torque  $T_{KN} = 5 \text{ Nm}$ , the TOOLFLEX® is suitable for temperatures up to 280 degrees celcius. It is also available in other structural shapes, such as the short design with a flange mount - featured in the TOOLFLEX® CF. The axial plug-in TOOLFLEX® PI offers optimum torsional rigidity while also providing axial plug-socket connection, which cuts installation times and reduces costs.

## The RADEX®-NC

functions as a backlash-free lamina coupling specially developed for servo technology. Its stainless spring steel laminae ensure that it is extremely torsionally rigid, yet elastic when it bends. While aluminium hubs deliver a low mass moment of inertia, in its double-gimbal version, it also reliably compensates for radial displacement with low restoring forces.

## The SYNTEX®-NC

acts as a 'bodyguard' for positioning drives. This backlash-free safety clutch is extremely light and therefore ideal for use in dynamic drives. The SYNTEX®-NC is often used in combination with one of the aforementioned servo couplings or with tooth belt discs.

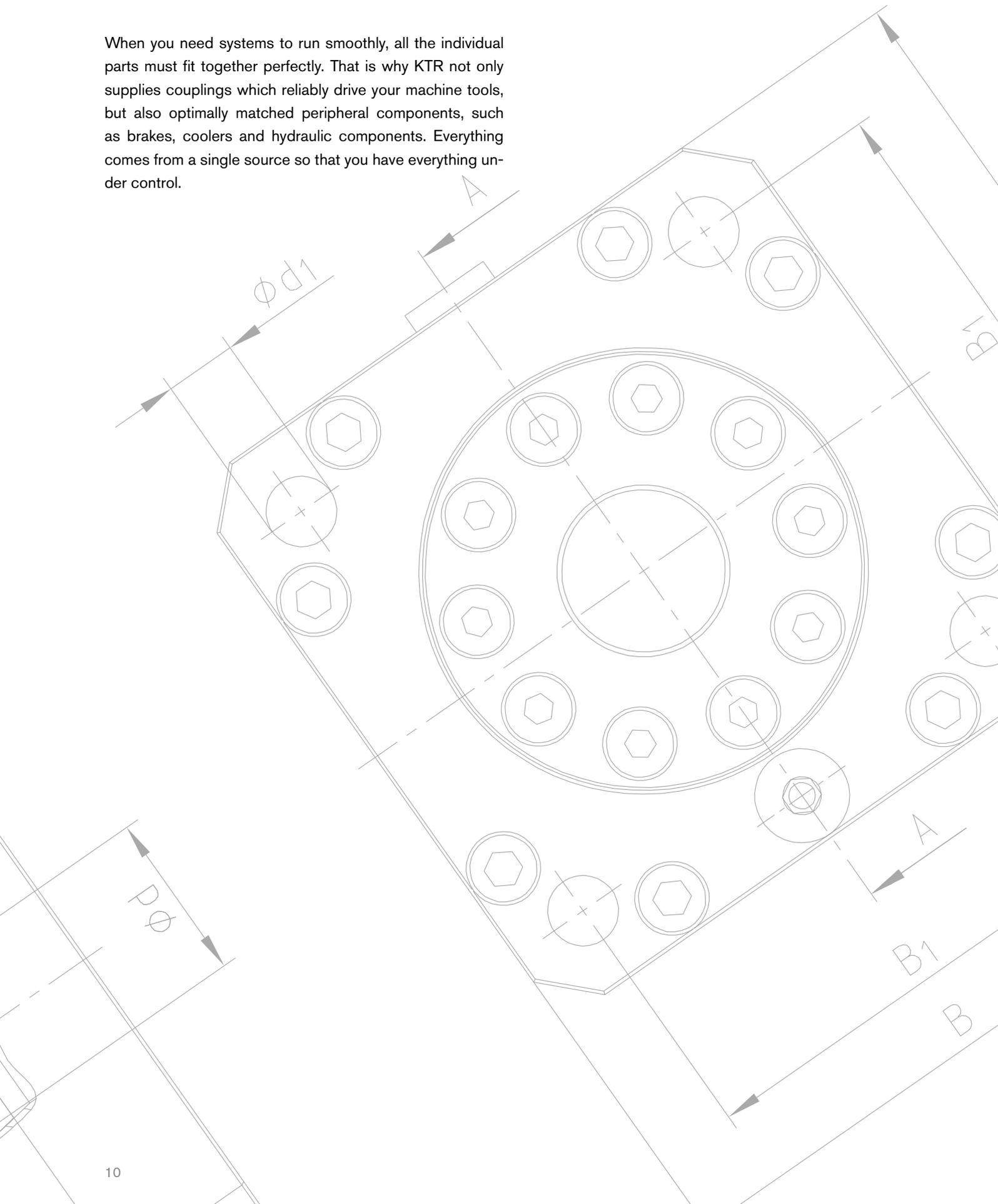
## The COUNTEX®

is extremely accurate as a shaft encoder coupling when precisely reproduced positions are required in measurement and control systems. Its active, double-gimbal principle reduces restoring forces to a minimum. Compact dimensions, an axial plug-socket connection for blind installation and a highly temperature-resistant spacer ensure it is the ideal link between the rotary encoder and the motor.



## Systematic drive with KTR components.

When you need systems to run smoothly, all the individual parts must fit together perfectly. That is why KTR not only supplies couplings which reliably drive your machine tools, but also optimally matched peripheral components, such as brakes, coolers and hydraulic components. Everything comes from a single source so that you have everything under control.





### **Braking system:**

KTR-STOP® NC is a passive braking and clamping system that secures vertical ball roller spindles. The NC can also be retrofit, thus ensuring all current machinery directives are met and potential injuries are prevented. Integrated into existing drives for positioning axles, the NC generates a clamping or braking force on a cylindrical piston rod or shaft and is installed either next to the coupling or at the end of the ball roller spindle. The extra safety that it provides is not limited to the clamping force and the integrated fail-safe function; as a safety system, KTR-STOP® NC absorbs axial loads, thus also protecting the entire drivetrain against damage. Thanks to its multifunctional range of uses, this passive clamping system can also be used in machine tools and automated systems without any difficulty.



### **Cooling system:**

Temperatures increase wherever heavy work is performed. To ensure that heat is dissipated in a controlled fashion, KTR offers a variety of cooling systems, from oil-air and oil-water coolers to combination coolers. These include the new high-performance cooler OAC eco, which only supplies as much cooling air as required at any given time thanks to sensors.



### **Hydraulic components:**

Hydraulics set things in motion. KTR's current standard range covers nearly all requirements: pump brackets, absorbers, tanks, temperature regulation and monitoring, and much more. Naturally, KTR also supplies exclusive special sizes and custom-built models, made to measure and made to your requirements.

# PRODUCT OVERVIEW FOR AUTOMATION AND MACHINE TOOLS

					
Product		ROTEX®	ROTEX® GS	TOOLFLEX®	RADEX®-NC
Machine tools	Positioning units		■	■	■
	Overload protection				
	Linear braking and clamping systems				
	Main spindle drives		■		
	Tool changers			■	■
	Span conveyor belts	■			
	Hydraulic units	■			
	Coolant pumps	■			
Encoder drives		■	■		
Robotik & Automation	Positioning units		■	■	■
	Encoder drives		■	■	
	Overload protection				
Drive technology	Rotary tables		■	■	■
	Backlash-free gears		■	■	■
	Lifting spindles	■	■	■	■

							
RADEX®-N	COUNTEX®	SYNTEX®	SYNTEX®-NC	KTR SI Compact	KTR-STOP® NC	Hydraulic components	Oil tanks
			■	■	■		
			■	■			
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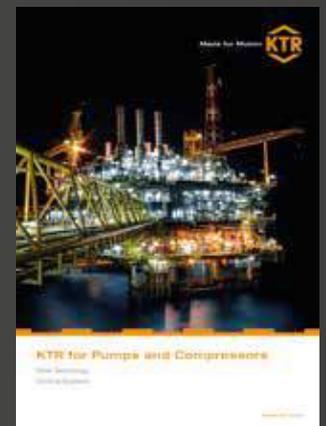
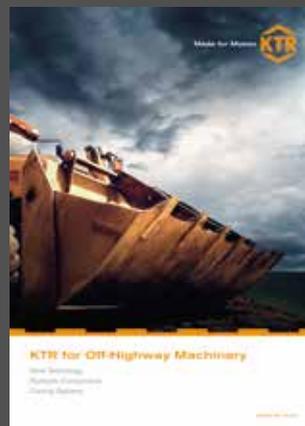
# Overview of literature

The KTR product portfolio is as varied as its areas of use, whether you require the perfect power transmission system, effective brakes, space-saving cooling systems or precision hydraulics on land, water or high in the air. These catalogues and brochures offer an overview. Available at [www.ktr.com](http://www.ktr.com)

## Product catalogues



## Individual sector brochures





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