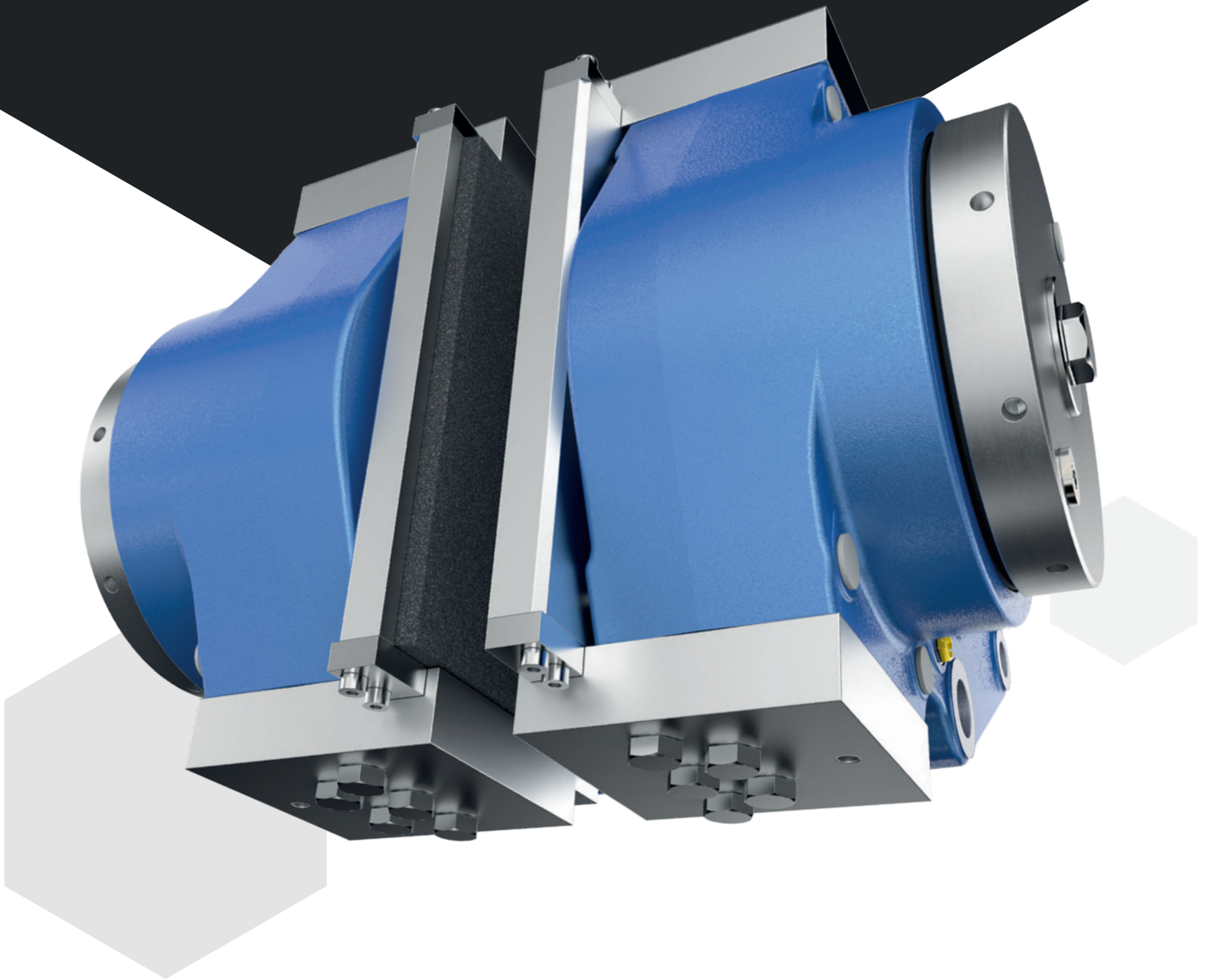


Made for Motion



Brake systems

KTR-STOP®
EMB-STOP
SBT Systems

2026/27
www.ktr.com



Quality signed and sealed



Certificates

Highest quality is our standard. That is why we have our products and processes certified by independent bodies.

Product certificates

Our drive components dispose of approvals from leading classification societies (DNV, GL, ABS) for maritime applications as well as ATEX and UKEX certifications for use in potentially explosive areas.

Quality management

Being one of the first companies in the field of drive technology, KTR has been certified in accordance with ISO 9001 since 1993 already. Our environmental management complies with ISO 14001.

Assembly instructions

Properly assembled - long service life. The correct assembly is decisive for the operativeness and service life of our products. Our detailed assembly instructions guide you step by step through the process supporting you to avoid errors. Observe all safety instructions.

Have you misplaced the assembly instructions? No problem. Download all assembly instructions from our website free of charge. After selecting the product and the preferred language, all available documents will be clearly displayed to you.

Order 24/7 – easily and transparently

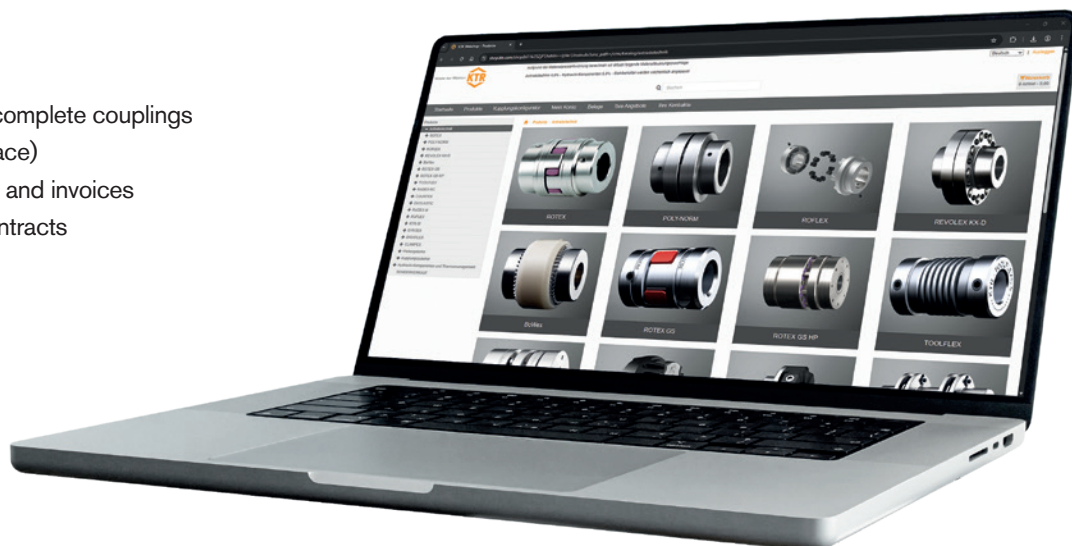
Registered customers can place orders in our online shop around the clock benefitting from numerous functions. Check availabilities in real time, track your shipments and download all documents as pdf.

Register now!



Your benefits

- Subassemblies configurator for complete couplings
- Tracking of shipments (track & trace)
- Download of order confirmations and invoices
- Direct reference to offers and contracts



DID YOU KNOW ...

that couplings, hydraulic components and coolers are part of our scope of supply, too?
Details are available at ktr.com.



POSSIBLE COMBINATIONS

Our brake systems can be combined with our drive components.

Perfect in Combination with our
COUPLINGS





The Competence Center for Brake Systems: That is where KTR brakes learn to grip better.

Opposites attract: the brake portfolio of the drive specialist

Driving and braking technology: What most companies consider as opposites, KTR estimates as an ideal supplement. Many years ago KTR started to project and distribute brakes. But you trust most in those things you developed yourselves. That is why KTR was not satisfied with distribution only, but made use of its decades of know-how and engineering experience to considerably improve the hydraulic brake system in many respects. By taking over EM Brake

Systems in 2013, electromechanical brake systems have meanwhile completed KTR's portfolio. As a result KTR is in a position to provide the ideal brake system for every demand. Driving and braking technology from one single source - the customers are in good hands with KTR.

**„What can actually not
be slowed down? Our
innovative capacity.“**

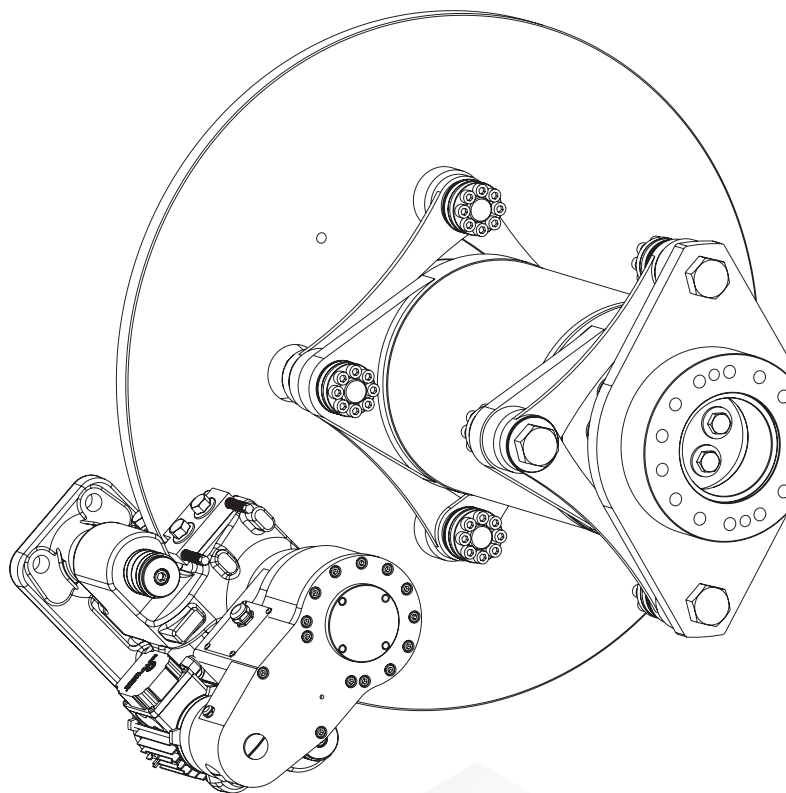
Dr. Norbert Partmann, KTR Brake Systems



An innovative ambience for innovative ideas

KTR-STOP® and EMB-STOP - these two brake systems have been consolidated since 2014. We are specifically proud of the location: the „Competence Center for Brake Systems“. It is located in Schloß Holte-Stukenbrock in East Westphalia and the head office of the new KTR Brake Systems GmbH.

By the way: The Competence Center well deserves its name. Since KTR develops all measures dealing with brake systems in these state-of-the-art premises. The brake components of both series are developed, designed and tested here. A special cryogenic cooling chamber allows for tests even with temperatures down to -50 °C making the brakes ready for wind and weather in this way.





Drive technology and
shaft connections

Brake systems

Cooling systems

Hydraulic components



**KTR worldwide – Our worldwide
locations for quality and service.**

○ Headquarter (Rheine / Germany)

● 24 subsidiaries

90 sales partners

More than 1,200 employees worldwide

KTR Systems - Solutions across industries for a global market.

As a future-oriented and innovative knowledge partner for our customers, we are actively shaping the technological future. By consciously responding to the needs of our customers and a profound understanding of their technology, we are able to develop solutions across all industries. We always strive for excellence and optimise existing approaches. And that since 1959.

PART OF EXCELLENCE

Our philosophy of "PART OF EXCELLENCE" is reflected in every single component and service we provide. With our expertise and innovation, we achieve top performance together with our customers. With over 500 employees at its headquarters in Rheine, more than 1,200 employees worldwide, 24 subsidiaries and over 90 sales partners, KTR is at home in industrial markets on every continent. **As a leading manufacturer of high-quality drive technology, brake and cooling systems as well as hydraulic components**, KTR is a reliable partner for all companies that want to keep moving. As a leading expert in these fields, we take pride in offering our versatile solutions in the following industry:



Wherever motion is essential, we have the right answer.

Drive technology and shaft connections



Mechanical components are and will remain essential in drive technology. The industry's demands on components grow continuously: energy efficiency, power density, ease of servicing and electrification. Our portfolio includes couplings and torque limiters, clamping sets and universal joints as well as torque measuring shafts.



Discover more on ktr.com



Brake systems



Our hydraulic and electromechanical brake systems are globally used in various industries. Customer preference and parameters of the application decide upon the selection of the right brake.



Discover more on ktr.com



Hydraulic components



For almost 50 years we have provided the industry with a continuously growing range of hydraulic components from our in-house development and manufacturing: accurate selection, high-quality processing, quick availability.



Discover more on ktr.com



Cooling systems



As a customised product or standard solution, multimediate or oil/air cooler, for mobile machines or stationary hydraulics, optionally available as a marine or ATEX version, powerful and efficient.



Discover more on ktr.com



PART OF EXCELLENCE



Energy



Construction machinery



Agriculture



Oil & Gas



Automation



Machine Tools



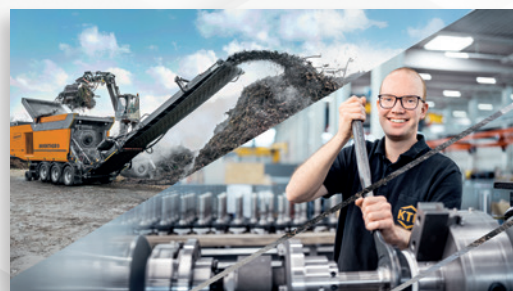
Hydraulics



Gearboxes



Transportation



Recycling

SUMMARY OF PRODUCTS/INDUSTRIES

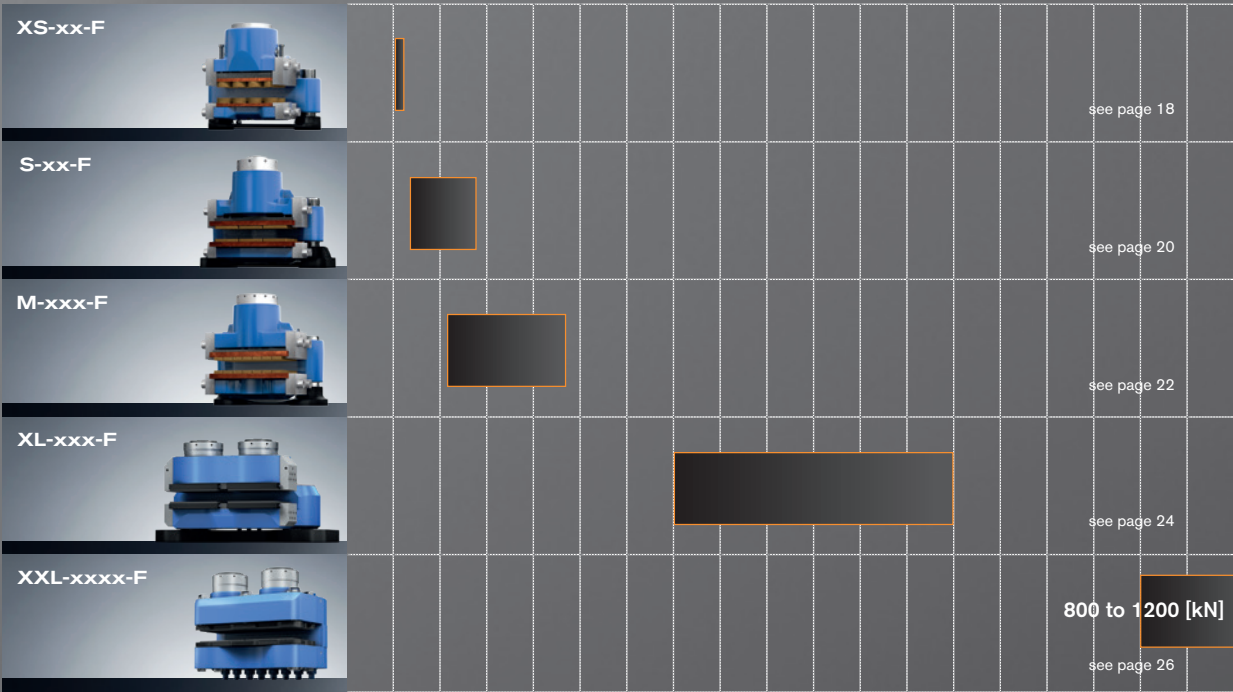
	WIND POWER			CONSTRUCTION AND AGRICULTURAL MACHINERY			PUMPS AND COMPRESSORS			INDOOR MATERIALS HANDLING					
	Gearless wind turbines	Wind turbines	Local power grids	Excavators	Road rollers	Crushers	Combine harvesters	Tank spreaders	Compressors	Pumps	Cooling towers	Conveying and storage	Food processing machinery	Packaging machinery	
															
PASSIVE FLOATING CALIPER BRAKES															
Hydraulic brake system															
KTR-STOP® XS-xx-F	■	■			■						■		■		
KTR-STOP® S-xx-F	■	■			■						■		■		
KTR-STOP® M-xxx-F	■	■													
KTR-STOP® XL-xxx-F															
KTR-STOP® XXL-xxx-F															
Electromechanical brake system															
EMB-STOP XS-P-xx-F	■	■									■		■		
EMB-STOP S-P-xx-F Soft-Braking	■	■									■		■		
EMB-STOP S-P-xx-F Fast-Braking											■		■		
EMB-STOP M-P-xx-F Fast-Braking											■		■		
ACTIVE FLOATING CALIPER BRAKES															
Hydraulic brake system															
KTR-STOP® XS-A-F	■	■									■				
KTR-STOP® S-A-F	■	■									■				
KTR-STOP® M-A-F	■	■									■				
Electromechanical brake system															
EMB-STOP XS-A-xx-F	■	■									■				
EMB-STOP S-A-xx-F	■	■									■				
EMB-STOP L-A-xxx-F	■	■									■				
PASSIVE FIXED CALIPER BRAKES															
Hydraulic brake system															
KTR-STOP® XS-xx					■						■		■		
KTR-STOP® S-xx					■						■		■		
KTR-STOP® M-xxx															
KTR-STOP® L-light-xxx															
KTR-STOP® L-xxx															
KTR-STOP® XL-xxx															
ACTIVE FIXED CALIPER BRAKE															
Hydraulic brake system															
KTR-STOP® M-D	■	■													
KTR-STOP® L-light-A															
YAW BRAKES															
Hydraulic brake system															
KTR-STOP® YAW XS	■	■			■						■				
KTR-STOP® YAW S	■	■			■						■				
KTR-STOP® YAW M	■	■			■						■				
KTR-STOP® YAW L	■	■			■						■				
THRUSTER BRAKES															
Electrohydraulic brake system															
KTR-STOP® TB S															
KTR-STOP® TB T															
Electrohydraulic thrusters															
KTR-STOP® TB thruster															
STOP-BLOCK-TURN-SYSTEM															
SBT System															
Electrical control systems															
IntelliRamp®															
EMB-STOP Control Box	■	■									■				
ROTOR LOCK															
Hydraulic system															
KTR-STOP® RL S	■	■													
KTR-STOP® RL M	■	■													
Electromechanical system															
EMB-STOP RL S	■	■													
EMB-STOP RL M	■	■													
HUBS WITH BRAKE DISKS															
KTR-STOP® NBS					■						■		■		

Clamping forces of brake systems

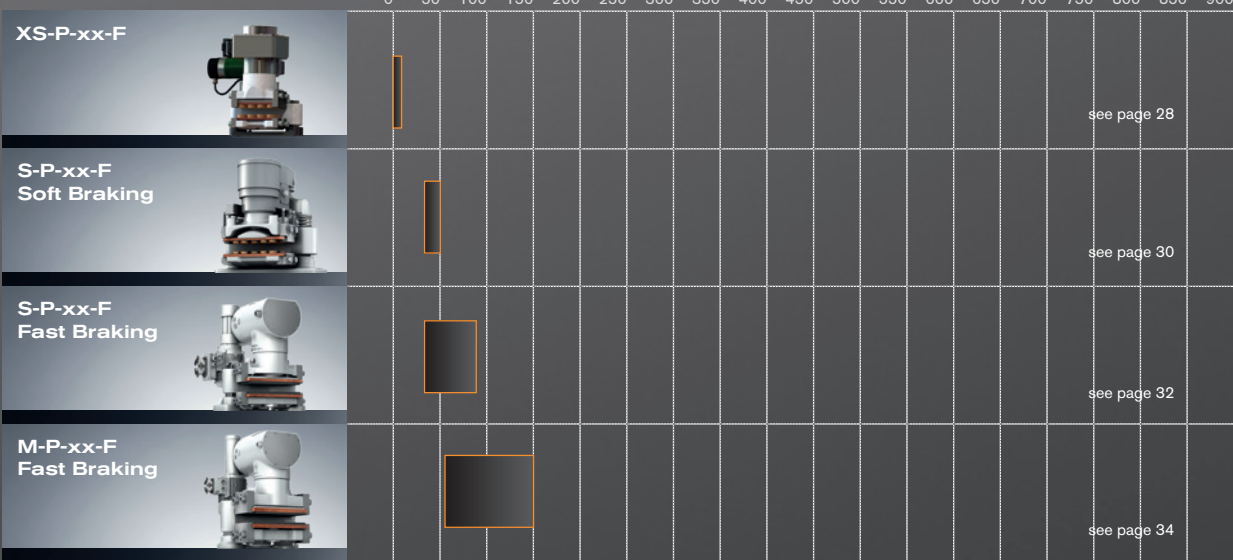
Passive floating caliper brakes

Clamping forces [kN]

Hydraulic KTR-STOP®



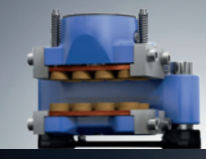
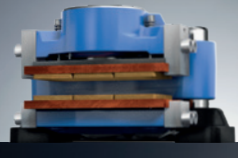
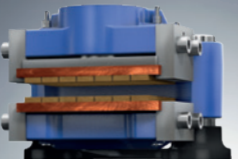
Electromechanical EMB-STOP



Active floating caliper brakes

Clamping forces [kN]

Hydraulic KTR-STOP®

	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
XS-A-F 																			
S-A-F 																			
M-A-F 																			

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see page 40

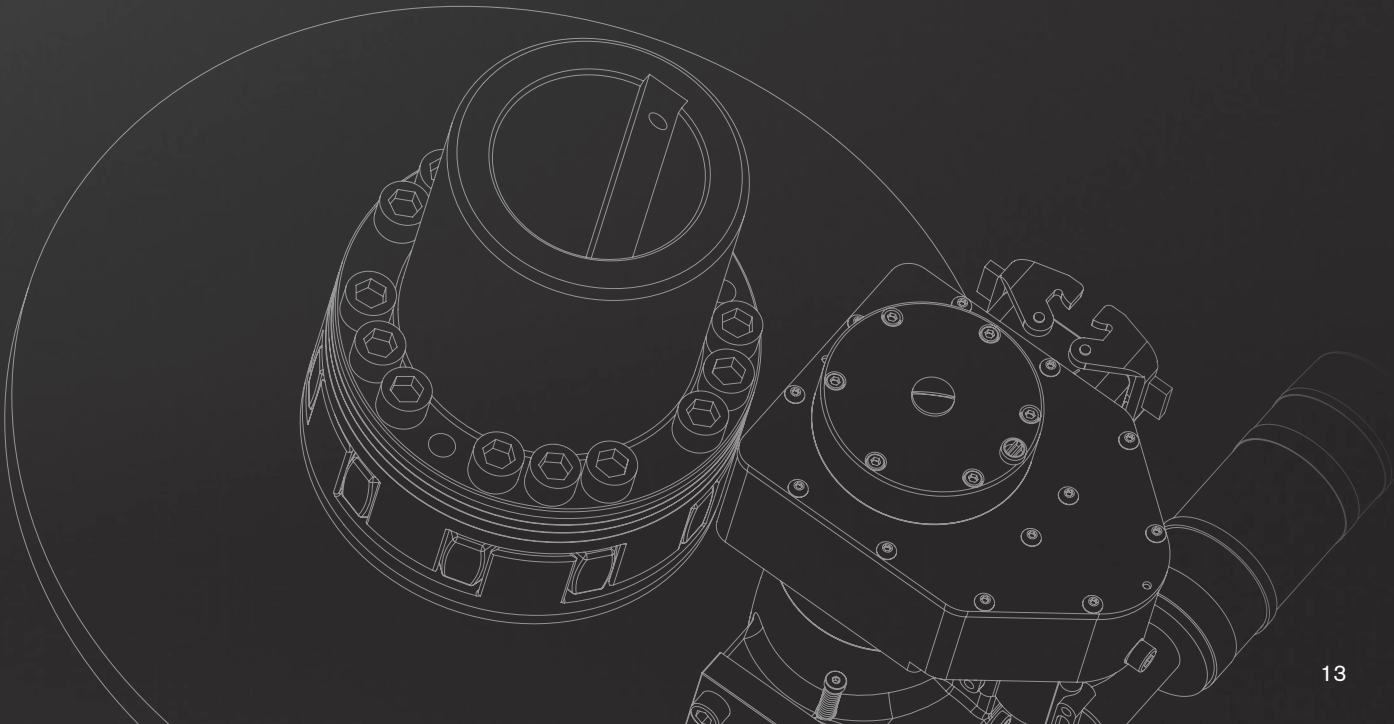
Electromechanical EMB-STOP

	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
XS-A-xx-F 																			
S-A-xx-F 																			
L-A-xx-F 																			

see page 42

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see page 46



Clamping forces of brake systems

Passive fixed caliper brakes

Clamping forces [kN]

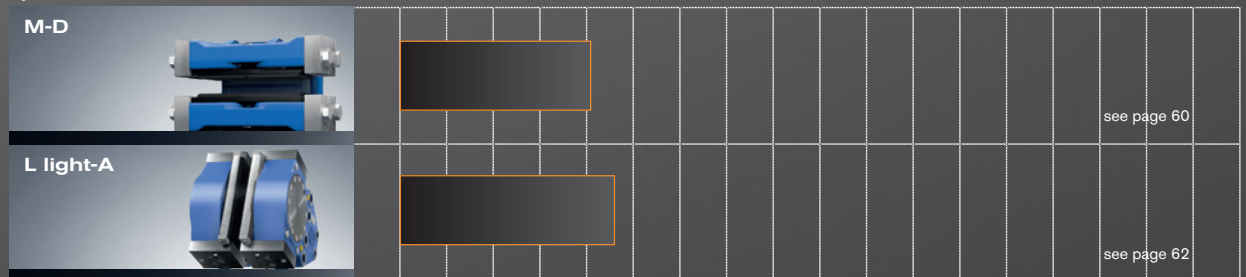
Hydraulic KTR-STOP®



Active fixed caliper brake

Clamping forces [kN]

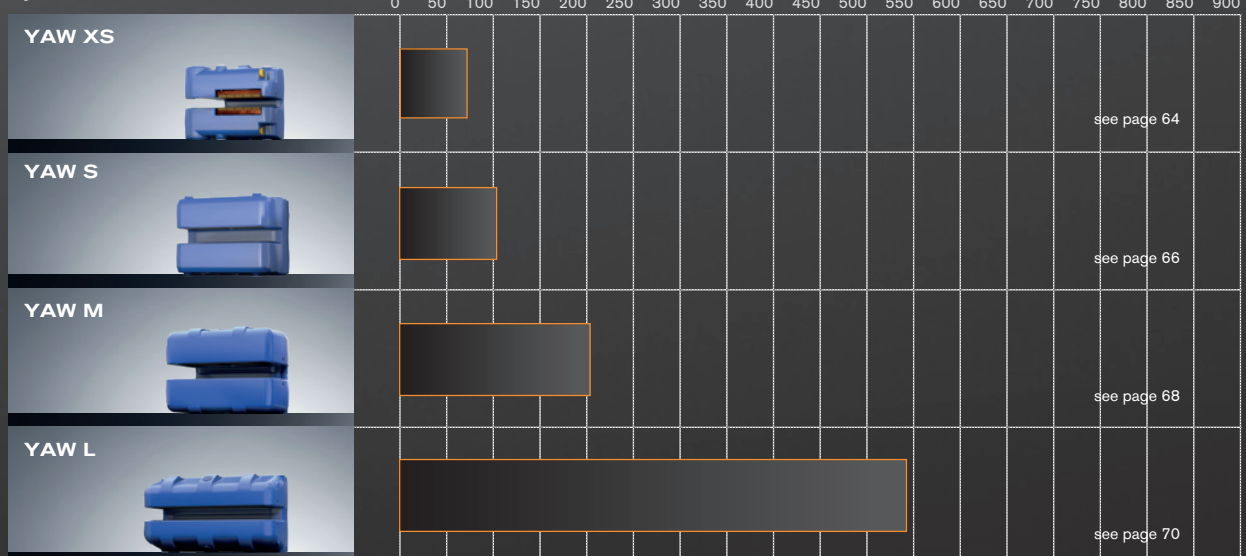
Hydraulic KTR-STOP®



Yaw brakes

Clamping forces [kN]

Hydraulic KTR-STOP®

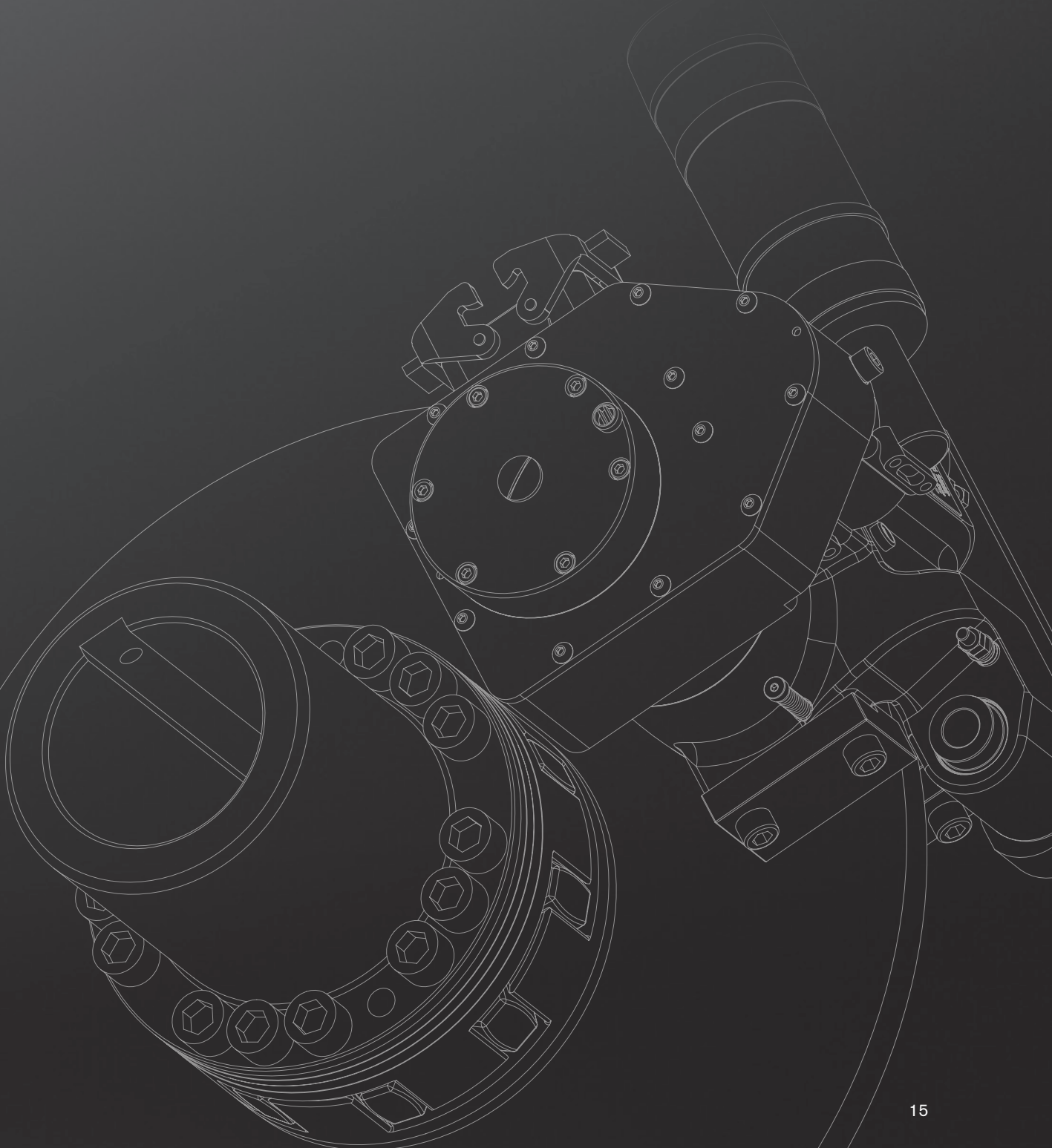


Thruster brakes

Braking torque [kNm]

Electrohydraulic KTR-STOP® TB

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
TB S 	see page 72																		
TB T 	see page 74																		



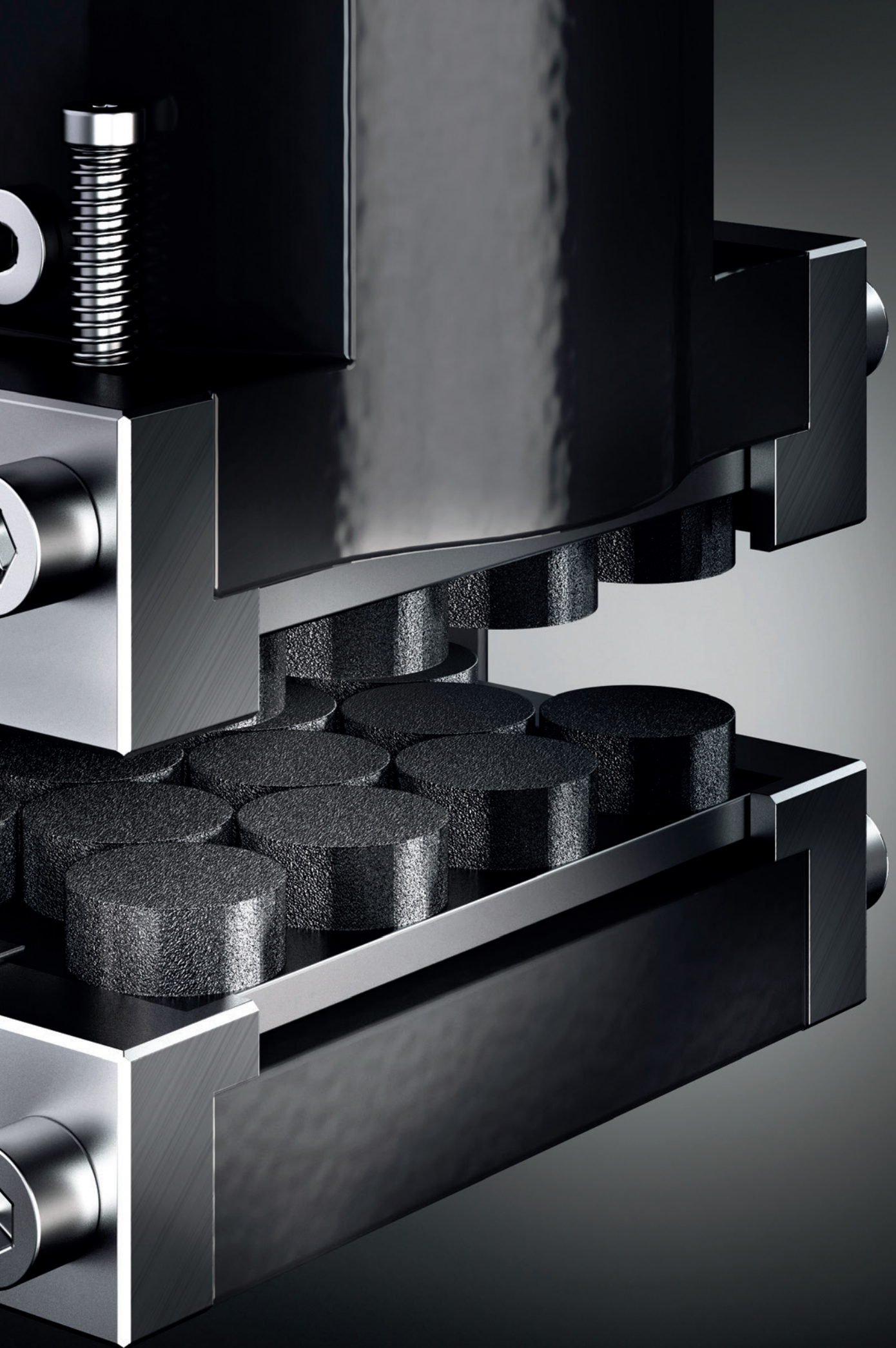


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ACTIVE FLOATING CALIPER BRAKES

Hydraulic brake system

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Electromechanical brake system

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PASSIVE FIXED CALIPER BRAKES

Hydraulic brake system

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ACTIVE FIXED CALIPER BRAKE

Hydraulic brake system

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YAW BRAKES

Hydraulic brake system

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THRUSTER BRAKES

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ROTOR LOCK

Hydraulic system

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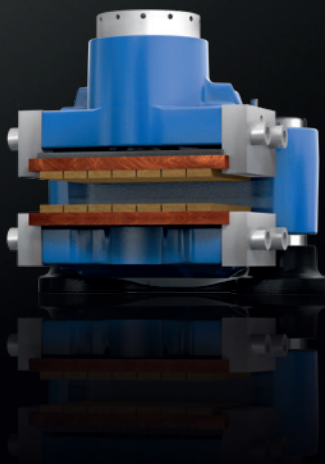
Electromechanical system

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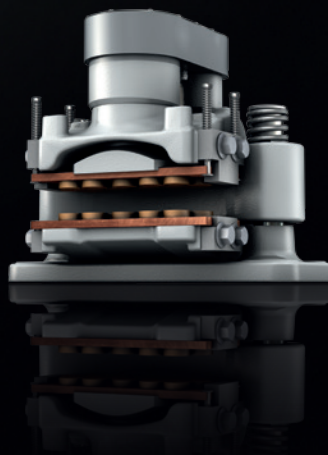
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KTR-STOP®



EMB-STOP



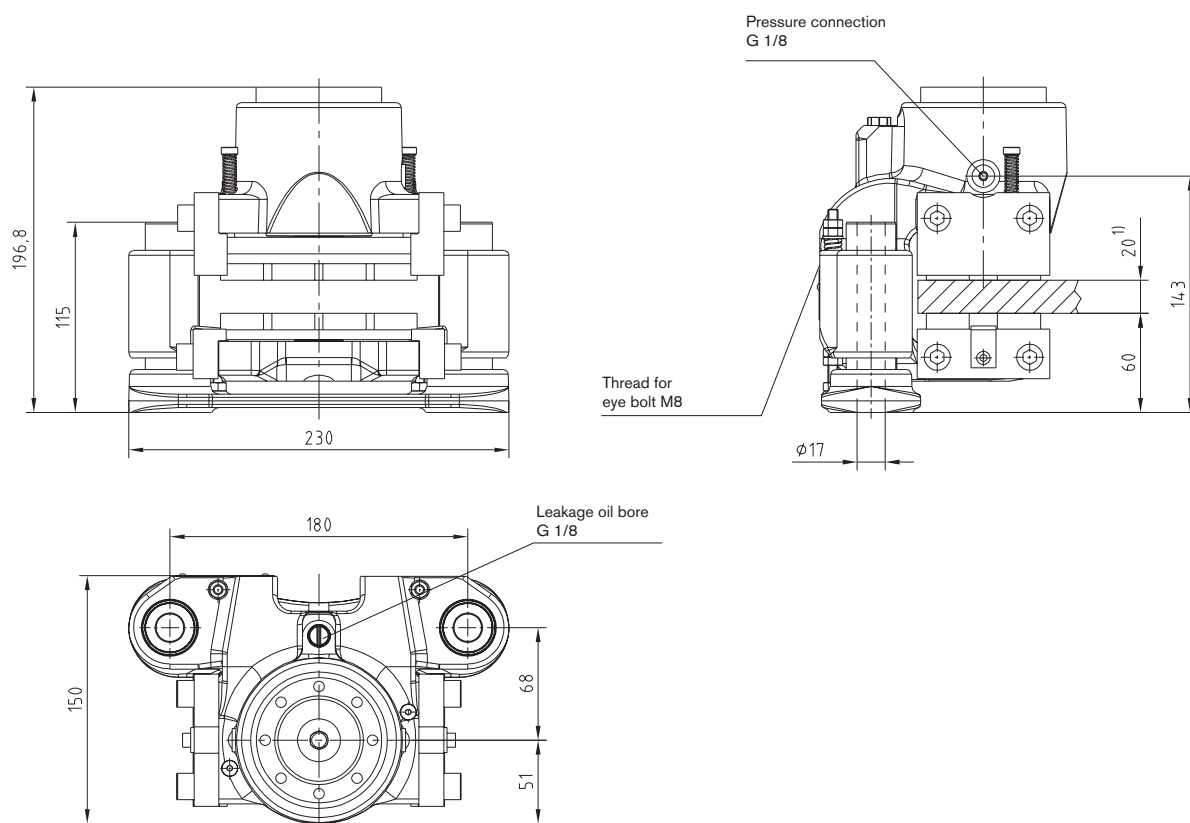
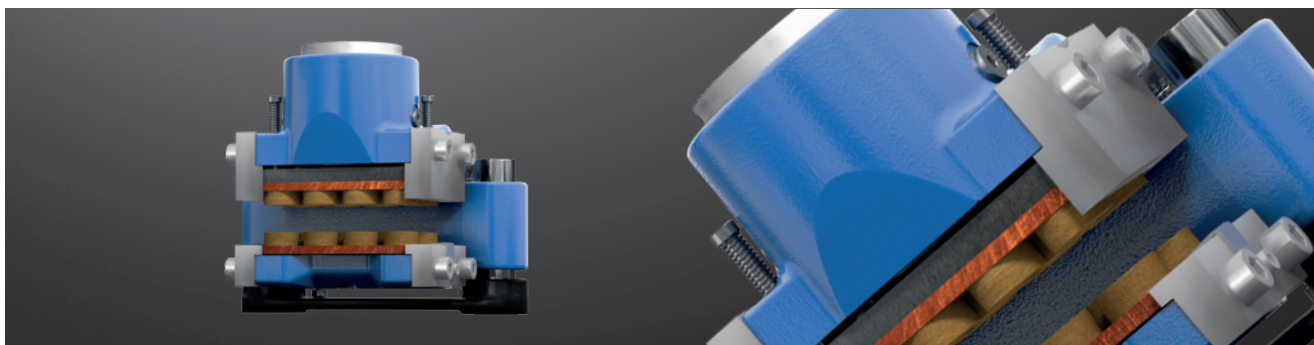
IntelliRamp®



KTR-STOP® XS-xx-F

Passive floating caliper brakes

Hydraulic brake system



KTR-STOP® XS-xx-F			
Total weight ¹⁾	Approx. 18 kg	Max. operating pressure	200 bars
Width of brake pad	70 mm	Thickness of brake disk ³⁾	20 mm, 30 mm
Surface per brake pad	organic	Pressure connection	G 1/8
	sinter	Leakage oil bore	G 1/8
Max. wear per brake pad	5 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	5 mm
Total brake piston surface - complete brake	11 cm ²	Min. diameter of brake disk ØDA	300 mm
Volume with 1 mm stroke - complete brake	1.1 cm ³	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Ordering example:	KTR-STOP®	XS	-	6	-	F	B	-	20
	KTR brake	Size of brake	Clamping force	Floater	Variant	Thickness of brake disk			

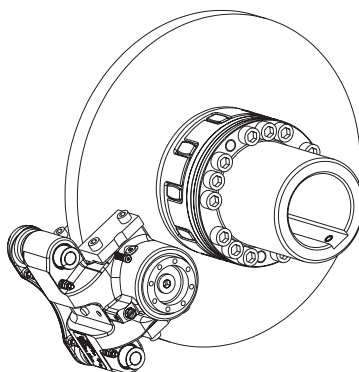
Brake types						
Brake type	Clamping force F _C [kN]	Loss of power ³⁾ [%]	Opening pressure [bar]	Braking torque [Nm] with brake disk Ø [mm]		
				315	560	800
KTR-STOP® XS-2-F	2	11.0	30	180	370	570
KTR-STOP® XS-3-F	3	5.5	40	270	560	850
KTR-STOP® XS-4-F	4	3.0	50	360	750	1140
KTR-STOP® XS-5-F	5	8.5	70	450	940	1420
KTR-STOP® XS-6-F	6	6.5	80	540	1130	1710
KTR-STOP® XS-7-F	7	4.5	90	640	1320	1990
KTR-STOP® XS-8-F	8	16.5	120	730	1510	2280
KTR-STOP® XS-9-F	9	12.0	130	820	1700	2570
KTR-STOP® XS-10-F	10	10.0	140	910	1890	2850
KTR-STOP® XS-11-F	11	8.5	150	1000	2080	3140
KTR-STOP® XS-12-F	12	11.0	160	1090	2270	3420
KTR-STOP® XS-13-F	13	9.5	170	1190	2460	3710
KTR-STOP® XS-14-F	14	8.5	180	1280	2650	3990
KTR-STOP® XS-15-F	15	8.0	190	1370	2840	4280

³⁾ With a stroke of 1 mm (0.5 mm wear of brake pad on each side)

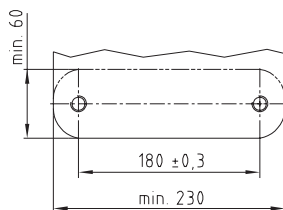
Calculation of brake disk

$$D_{C \max.} = D_A - 195$$

$$D_{ay} = D_A - 86$$



Connection dimensions of brake

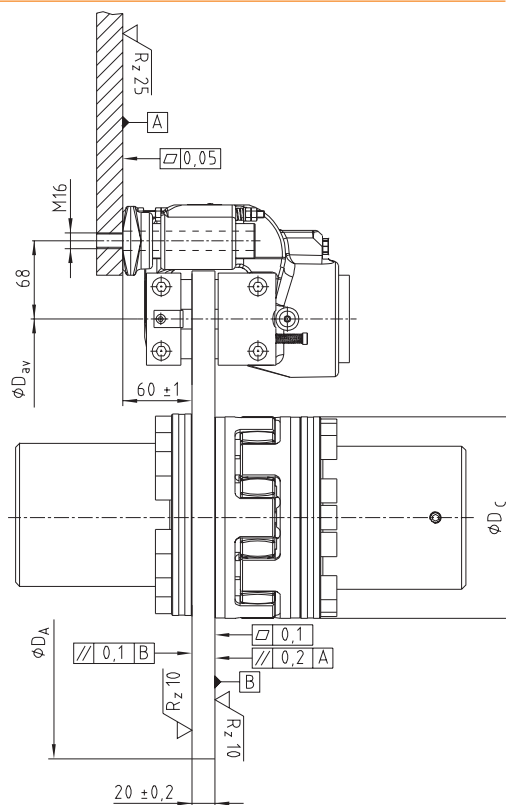


$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

$$F_b = \text{Braking force [kN]}$$
$$F_C = \text{Clamping force [kN]}$$
$$M_b = \text{Braking torque [kNm]}$$

z = Number of brakes

$$D_{av} = \text{Effective diameter of brake [m]}$$


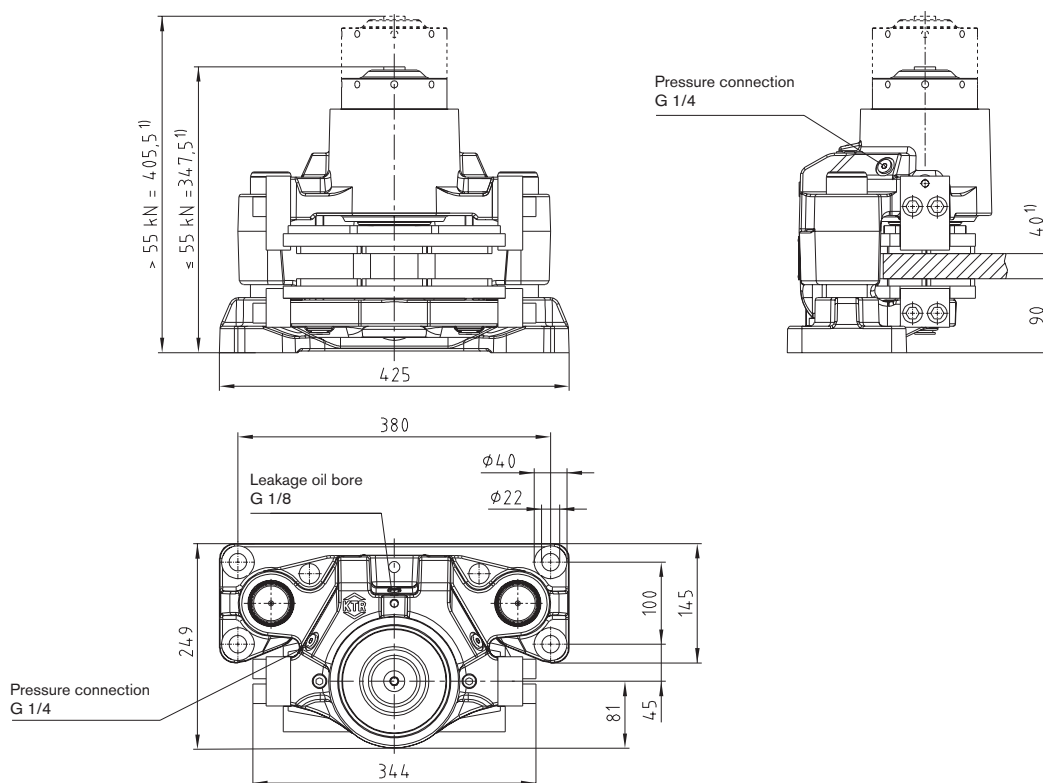
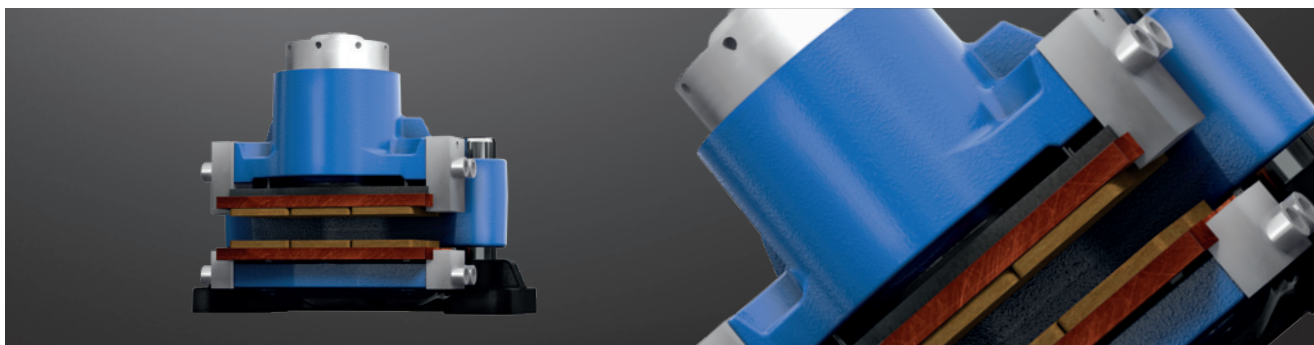
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® S-xx-F

Passive floating caliper brakes

Hydraulic brake system



KTR-STOP® S-xx-F			
Total weight 10 - 55 kN	Approx. 90 kg ¹⁾	Max. operating pressure	200 bars
Total weight 60 - 80 kN	Approx. 95 kg ¹⁾	Thickness of brake disk ³⁾	20 mm, 30 mm, 40 mm
Width of brake pad	125 mm	Pressure connection	G 1/4
Surface per brake pad	organic 28,700 mm ² sinter 26,800 mm ²	Leakage oil bore	G 1/8
Max. wear per brake pad	6 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	10 mm
Total brake piston surface - complete brake	69 cm ²	Min. diameter of brake disk ØDA	500 mm
Volume with 1 mm stroke - complete brake	6.9 cm ³	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

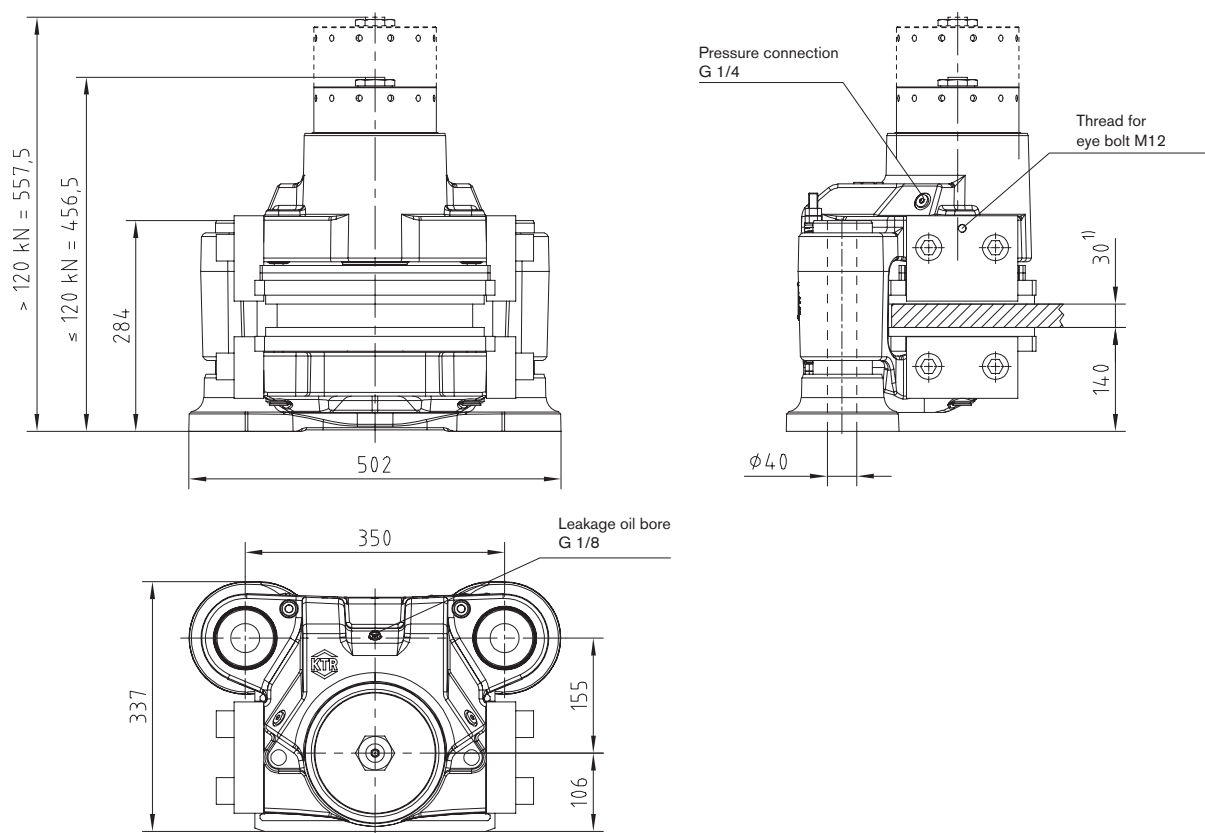
³⁾ Other thickness of brake disk available on request.

Ordering example:	KTR-STOP®	S	-	40	-	F	B	-	30
	KTR brake	Size of brake	Clamping force	Floater	Variant	Thickness of brake disk			

KTR-STOP® M-xxx-F

Passive floating caliper brakes

Hydraulic brake system



KTR-STOP® M-xxx-F			
Total weight ≤ 120 kN	Approx. 220 kg ¹⁾	Max. operating pressure	200 bars
Total weight 125 - 180 kN	Approx. 235 kg ¹⁾	Thickness of brake disk ³⁾	30 mm, 40 mm, 50 mm
Width of brake pad	200 mm	Pressure connection	G 1/4
Surface per brake pad	organic	Leakage oil bore	G 1/8
	sinter	Floating range on axes - towards mounting surface	5 mm
Max. wear per brake pad	8 mm	Floating range on axes - away from mounting surface	below 120 kN = 10 mm
Rated coefficient of friction ²⁾	μ = 0.4		above 120 kN = 5 mm
Total brake piston surface - complete brake	137.4 cm ²	Min. diameter of brake disk ØDA	800 mm
Volume with 1 mm stroke - complete brake	13.74 cm ³	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

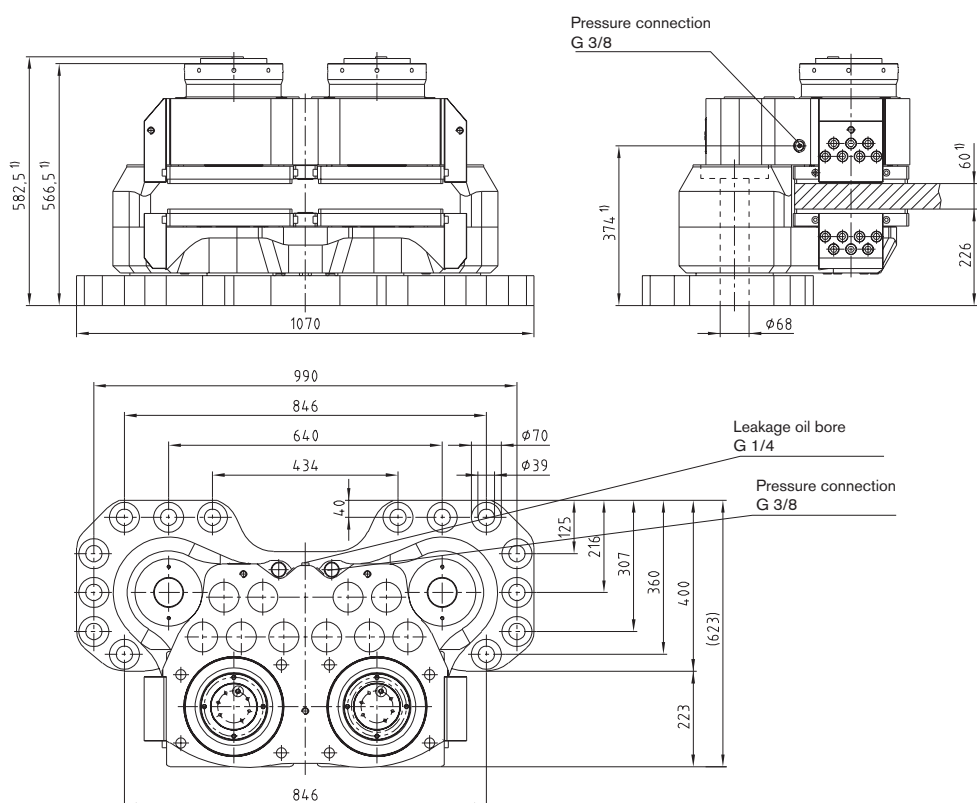
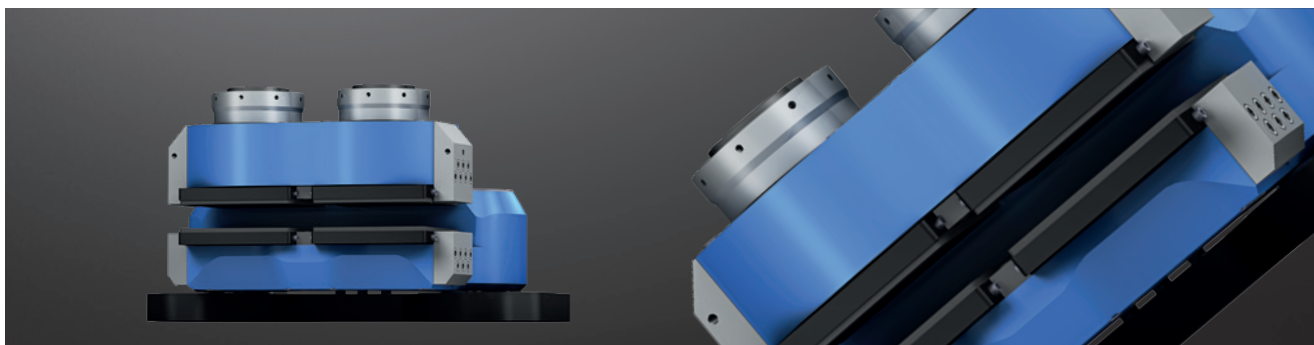
³⁾ Other thickness of brake disk available on request.

Ordering example:	KTR-STOP®	M	-	100	-	F	B	-	40
	KTR brake	Size of brake	Clamping force	Floater	Variant	Thickness of brake disk			

KTR-STOP® XL-xxx-F

Passive floating caliper brakes

Hydraulic brake system



KTR-STOP® XL-xxx-F			
Total weight	Approx. 1080 kg ¹⁾	Thickness of brake disk ³⁾	40 mm, 60 mm, 80 mm
Width of brake pad	270 mm	Pressure connection	G 3/8
Surface of each brake pad (organic/sinter)	76,800 mm ²	Leakage oil bore	G 1/4
Max. wear per brake pad	6 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	10 mm
Total brake piston surface - complete brake	452 cm ²	Min. diameter of brake disk ØDA	1,500 mm
Volume with 1 mm stroke - complete brake	45.2 cm ³	Operating temperature	-20 °C to +50 °C
Max. operating pressure	200 bars		

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

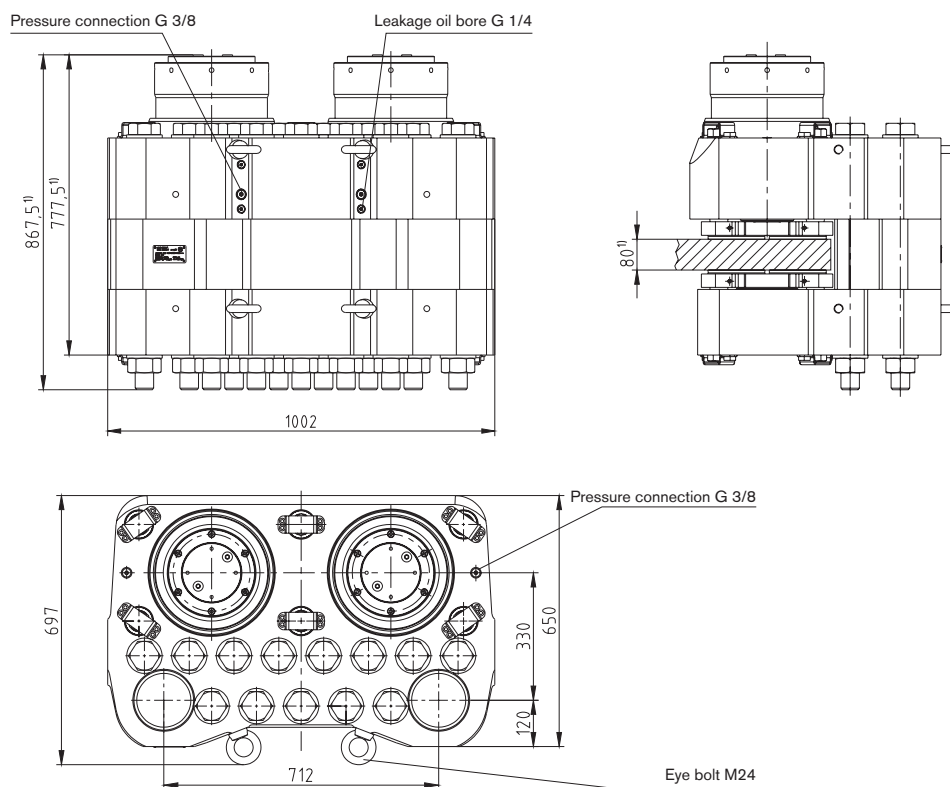
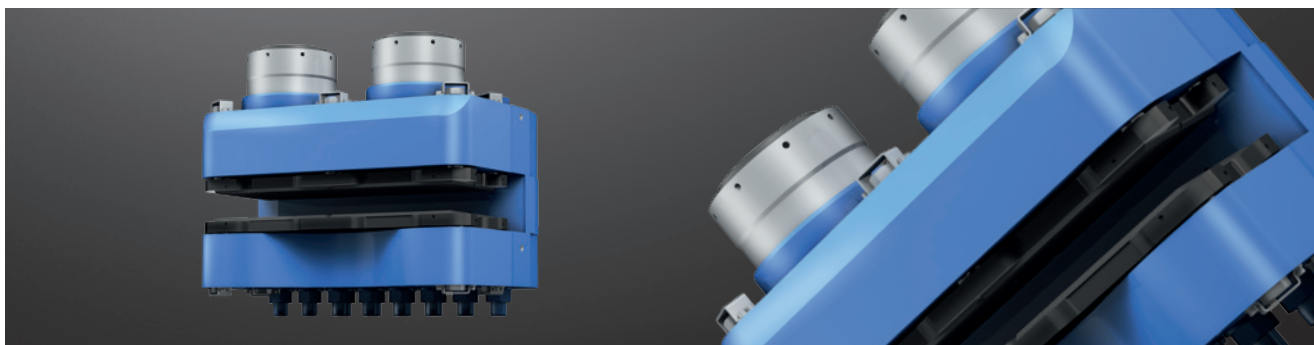
³⁾ Other thickness of brake disk available on request.

Ordering example:	KTR-STOP®	XL	-	600	-	F	A	-	60
	KTR brake	Size of brake	Clamping force	Floater	Variant	Thickness of brake disk			

KTR-STOP® XXL-xxxx-F

Passive floating caliper brakes

Hydraulic brake system



KTR-STOP® XXL-xxxx-F			
Total weight	Approx. 2200 kg	Volume with 1 mm stroke - complete brake	92.4 cm³
Width of brake pad	340 mm	Max. operating pressure	220 bars
Surface per brake pad	organic	Thickness of brake disk ³⁾	60 mm, 80 mm, 100 mm, 120 mm
	sinter metal	Pressure connection	G 3/8
Max. wear per brake pad	8 mm	Leakage oil bore	G 1/4
Rated coefficient of friction ²⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	6,000 mm
Total brake piston surface - complete brake	924 cm²	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Ordering
example:

KTR-STOP®	XXL	-	1000	-	F	A	-	80
KTR brake	Size of brake	Clamping force	Floater	Variant	Thickness of brake disk			

Brake types			
Brake type ³⁾	Clamping force F_C [kN]	Loss of power ⁴⁾ [%]	Opening pressure [bar]
KTR-STOP® XXL-800-F	800	6	125
KTR-STOP® XXL-1000-F	1000	4.5	150
KTR-STOP® XXL-1200-F	1200	4	175

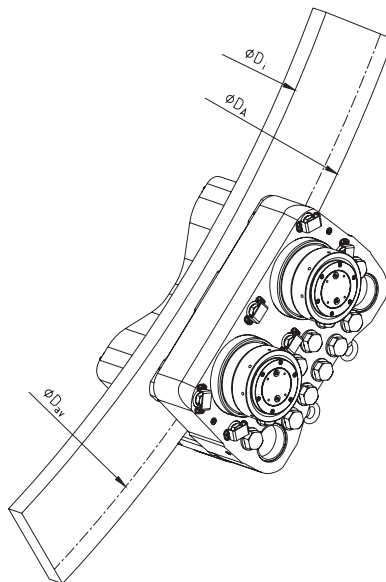
³⁾ Other brake types on request

⁴⁾ With a stroke of 1 mm (0.5 mm wear of brake pad on each side)

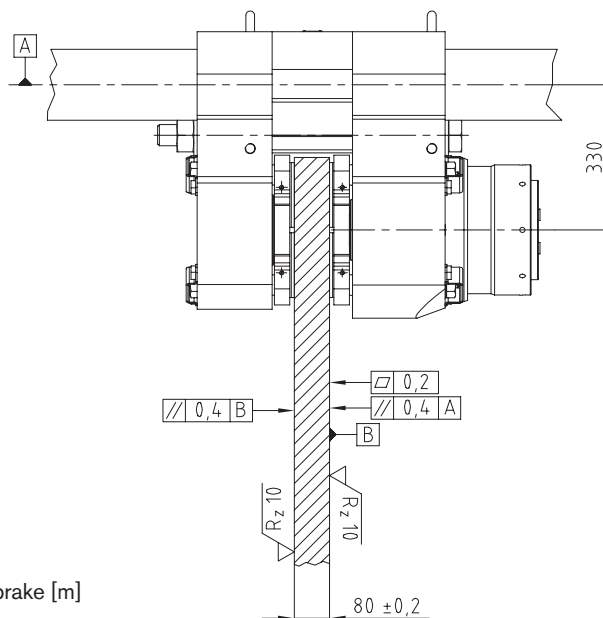
Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 780$$

$$D_{av} = D_A - 330$$



Connection dimensions of brake



$$F_b = F_C \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]
 F_C = Clamping force [kN]
 M_b = Braking torque [kNm]
 z = Number of brakes
 D_{av} = Effective diameter of brake [m]

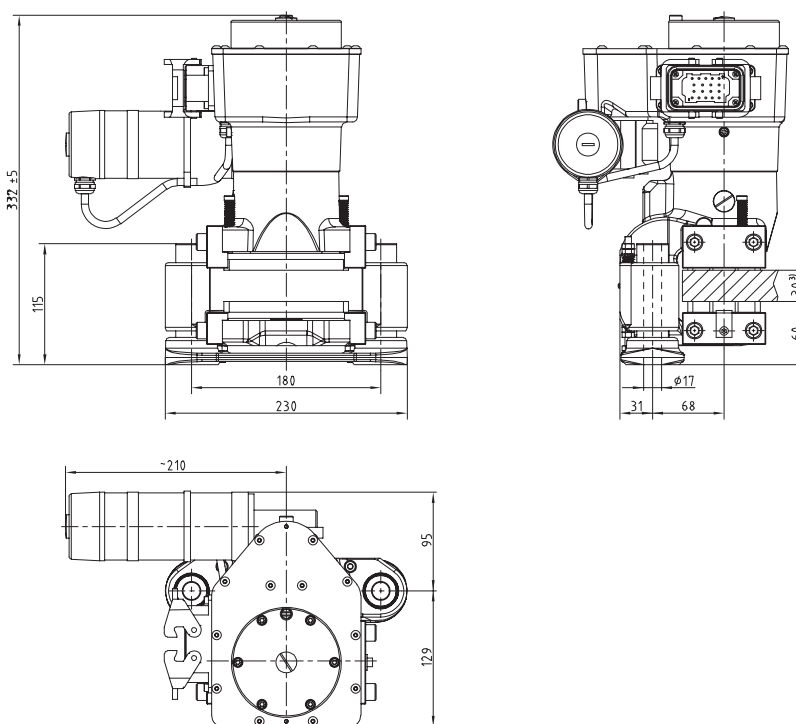
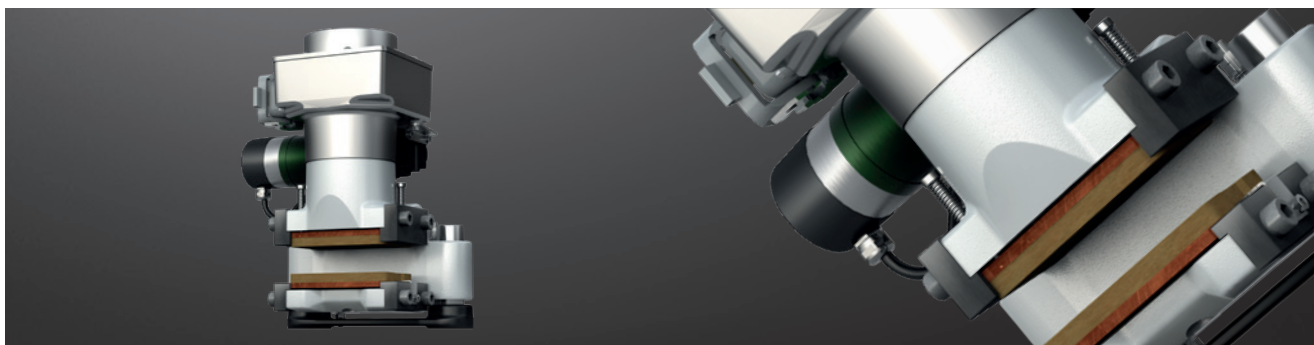
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

EMB-STOP XS-P-xx-F

Passive floating caliper brakes

Electromechanical brake system



EMB-STOP XS-P-xx-F			
Total weight ¹⁾	Approx. 28 kg	Floating range on axes - away from mounting surface	5 mm
Width of brake pad	70 mm	Min. diameter of brake disk ØDA	300 mm
Surface per brake pad	organic 8,000 mm ²	Operating temperature	-20 °C to +50 °C
	sinter metal 5,800 mm ²	Closing time	< 0.2 s
Max. wear per brake pad	5 mm	Release time	3.5 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Size of industrial connector	Han 10B / Han 18EE (male)
Min. clamping force	6 kN	Motor power	140 W
Max. clamping force	12 kN	Motor voltage	400 VAC, 50 Hz
Power loss with 1 mm stroke (0.5 per side) ⁴⁾	~ 10%	Limit switch signals, standard	Released, wear
Thickness of brake disk ³⁾	20 mm, 30 mm	Power of safety coupling - keeping the brake open	22 W @ 24 VDC
Floating range on axes - towards mounting surface	5 mm		

¹⁾ Weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

⁴⁾ Each depending on the clamping force.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

EMB-STOP	XS	-	P	-	12	-	F	B	-	30
EMB brake	Size of brake		Passive		Clamping force		Floater	Variant		Thickness of brake disk



$$D_{av} = D_A - 86$$

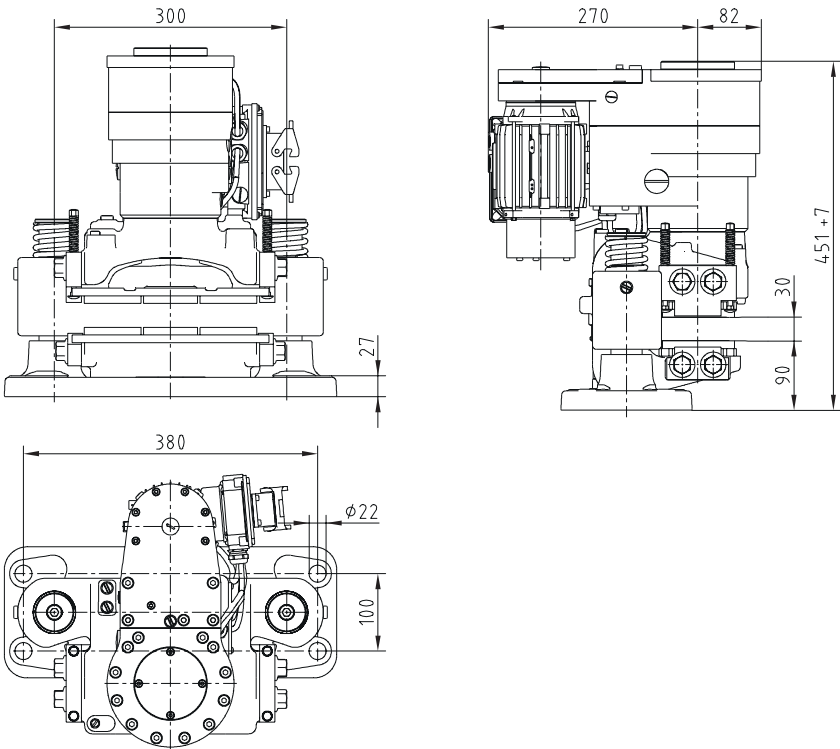
Technical drawing of a mechanical assembly, showing a cross-section of a pump or motor unit mounted on a base. The drawing includes dimensions for diameters (ϕD_{av} , ϕD_c), lengths (68, 60 ± 1 , 20 ± 0.2), and surface finish requirements ($R_z 25$, $R_z 10$, 0.05, 0.1, 0.2). A section line A-A is indicated.

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

EMB-STOP S-P-xx-F Soft-Braking

Passive floating caliper brakes

Electromechanical brake system



EMB-STOP S-P-xx-F Soft-Braking			
Total weight ¹⁾	Approx. 93 kg	Floating range on axes - away from mounting surface	2 mm
Width of brake pad	95 mm	Min. diameter of brake disk ØDA	500 mm
Surface per brake pad	organic 19,500 mm ²	Operating temperature	-15 °C to +50 °C
	sinter metal 14,500 mm ²	Closing time	0.5 s
Max. wear per brake pad	5 mm	Release time	3 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Size of industrial connector	Han 10B / Han 18EE (male)
Min. clamping force	30 kN	Motor power	260 W
Max. clamping force	55 kN	Motor voltage	400 VAC, 50 Hz
Power loss with 1 mm stroke (0.5 per side) ⁴⁾	~ 10%	Limit switch signals, standard	Released, wear
Thickness of brake disk ³⁾	30 mm, 40 mm	Power of safety coupling - keeping the brake open	20 W @ 24 VDC
Floating range on axes - towards mounting surface	2 mm		

¹⁾ Weight depending on thickness of brake disk.
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.
⁴⁾ Each depending on the clamping force.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

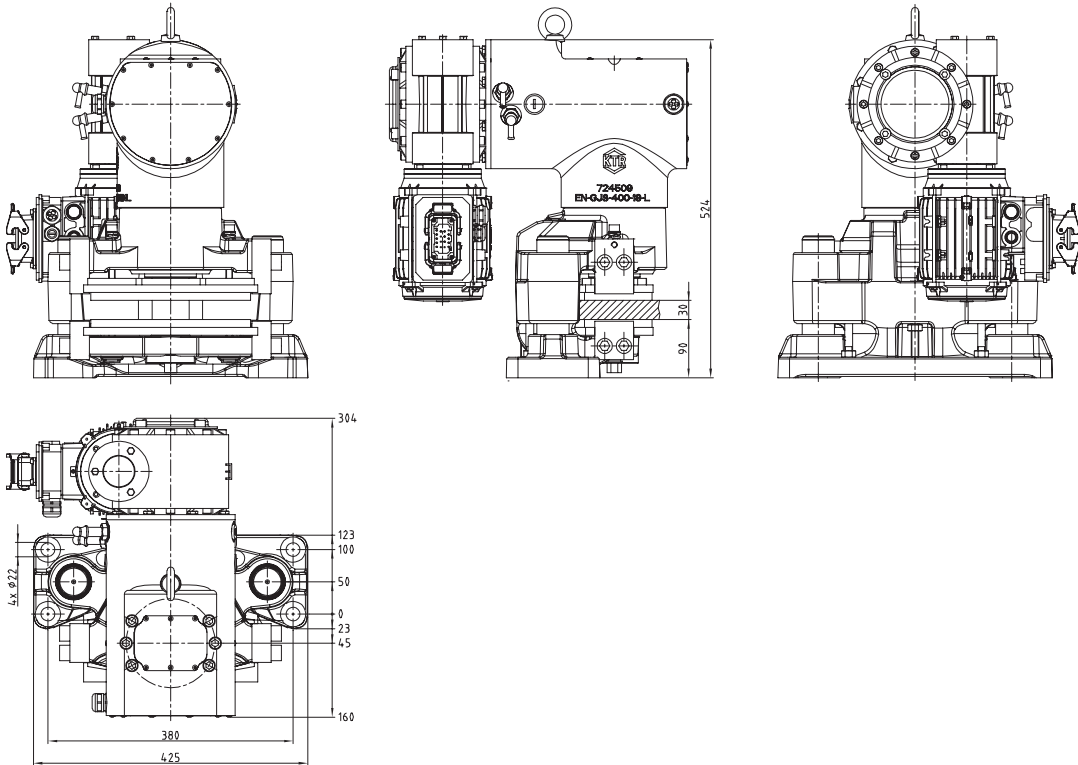
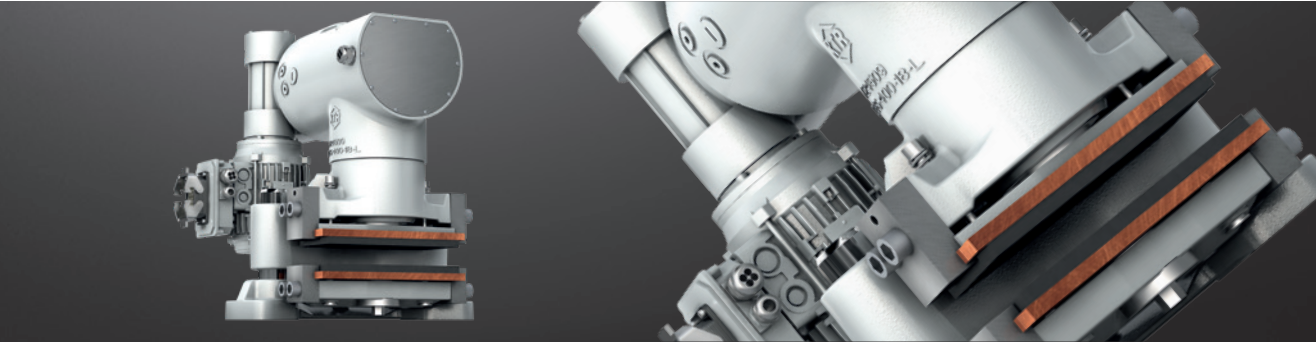
- F_b = Braking force [kN]
- F_c = Clamping force [kN]
- M_b = Braking torque [kNm]
- z = Number of brakes
- D_{av} = Effective diameter of brake [m]

Ordering example:	EMB-STOP	S	-	P	-	50	-	F	B	-	30
	EMB brake	Size of brake		Passive		Clamping force		Floater	Variant		Thickness of brake disk

EMB-STOP S-P-xx-F Fast-Braking

Passive floating caliper brakes

Electromechanical brake system



EMB-STOP S-P-xx-F Fast-Braking			
Total weight ¹⁾	Approx. 170 kg	Floating range on axes - away from mounting surface	5 mm
Width of brake pad	110 mm	Min. diameter of brake disk ØDA	500 mm
Surface per brake pad	organic	Operating temperature	-30 °C to +50 °C
	sinter metal	Closing time	< 0.2 s
Max. wear per brake pad	5 mm	Release time	< 0.5 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Size of industrial connector	Han 10B / Han 18EE (male)
Min. clamping force	30 kN	Motor power	1.1 kW
Max. clamping force	80 kN	Motor voltage	400 VAC, 50 Hz
Power loss with 1 mm stroke (0.5 per side) ⁴⁾	~ 10%	Limit switch signals, standard	Released, wear
Thickness of brake disk ³⁾	30 mm, 40 mm	Power of safety coupling - keeping the brake open	80 W @ 24 VDC
Floating range on axes - towards mounting surface	5 mm		

¹⁾ Weight depending on thickness of brake disk.
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.
⁴⁾ Each depending on the clamping force.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

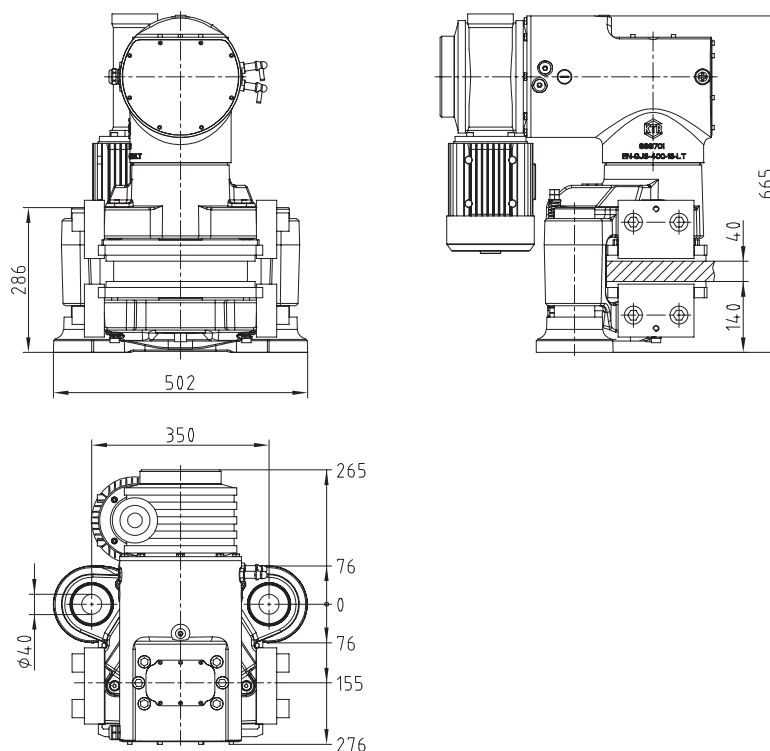
F_b = Braking force [kN]
 F_c = Clamping force [kN]
 M_b = Braking torque [kNm]
 z = Number of brakes
 D_{av} = Effective diameter of brake [m]

Ordering example:	EMB-STOP	S	-	P	-	50	-	F	B	-	30
	EMB brake	Size of brake	Passive	Clamping force	Floater	Variant	Thickness of brake disk				

EMB-STOP M-P-xxx-F Fast Braking

Passive floating caliper brakes

Electromechanical brake system



EMB-STOP M-P-xxx-F Fast Braking				
Total weight ¹⁾	Approx. 345 kg	Floating range on axes - away from mounting surface	5 mm	
Width of brake pad	200 mm	Min. diameter of brake disk ØDA	800 mm	
Surface per brake pad	organic	Operating temperature	-30 °C to +50 °C	
	sinter metal	Closing time	< 0.2 s	
Max. wear per brake pad	8 mm	Release time	< 0.5 s	
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Size of industrial connector	Han 10B / Han 18EE (male)	
Min. clamping force	60 kN	Motor power	1.5 kW	
Max. clamping force	150 kN	Motor voltage	400 VAC, 50 Hz	
Power loss with 1 mm stroke (0.5 per side) ⁴⁾	~ 10%	Limit switch signals, standard	Released, wear	
Thickness of brake disk ³⁾	30 mm, 40 mm, 50 mm	Power of safety coupling - keeping the brake open	100 W @ 24 VDC	
Floating range on axes - towards mounting surface	5 mm			

¹⁾ Weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

⁴⁾ Each depending on the clamping force.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

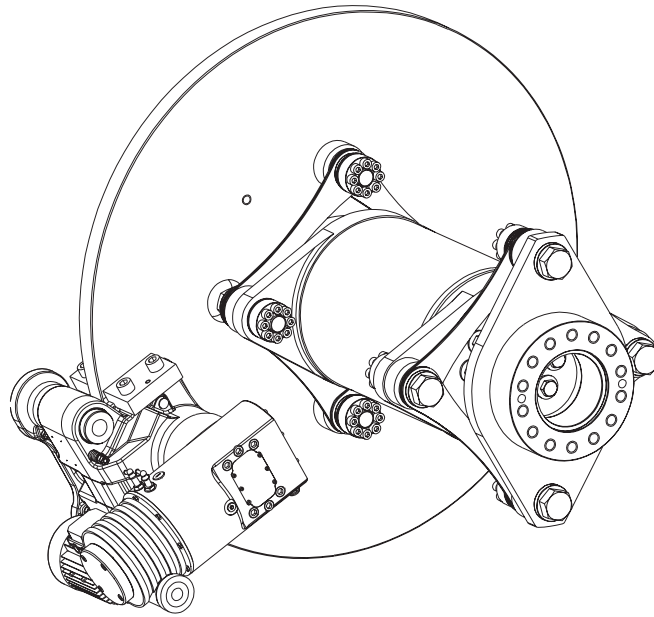
M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

EMB-STOP	M	-	P	-	50	-	F	B	-	30
EMB brake	Size of brake	Passive	Clamping force	Floater	Variant	Thickness of brake disk				

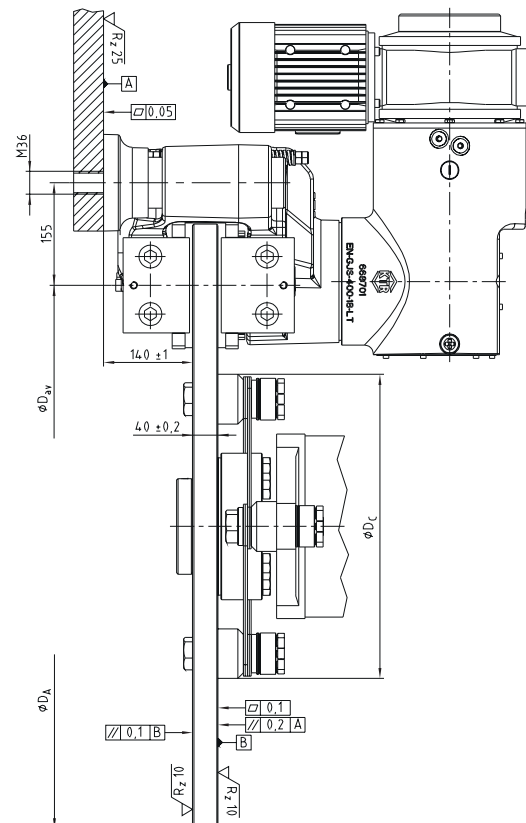
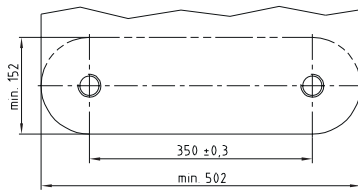


Calculation of brake disk

$$D_{av} = D_A - 200$$

$$D_{C \text{ max.}} = D_A - 420$$

Connection dimensions of brake



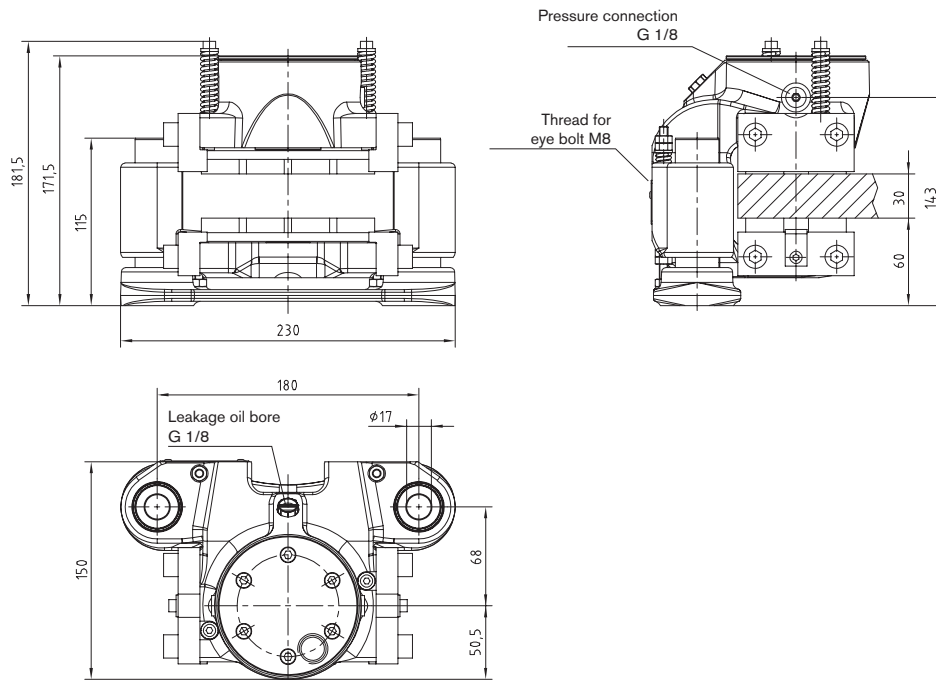
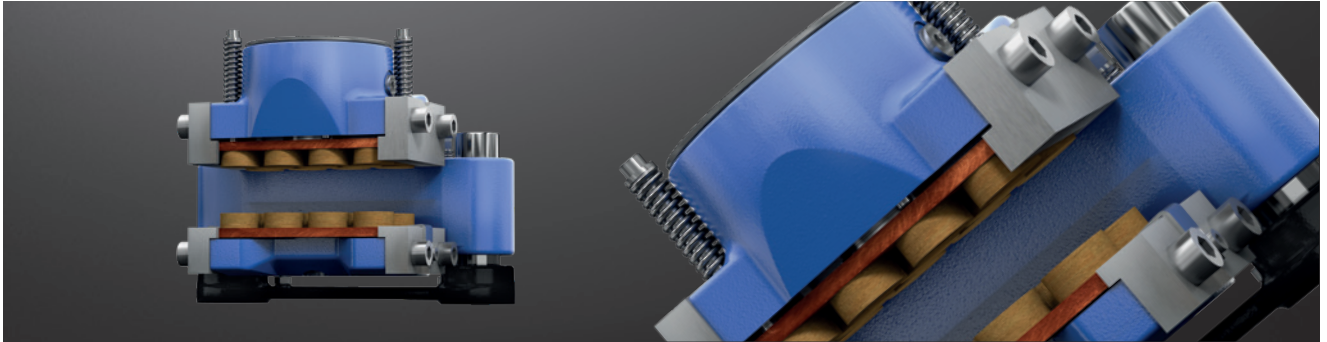
Optional

- Various colours available
- Sensor indicating wear of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® XS-A-F

Active floating caliper brakes

Hydraulic brake system



KTR-STOP® XS-A-F			
Total weight	Approx. 18 kg ¹⁾	Max. operating pressure	105 bars
Width of brake pad	70 mm	Thickness of brake disk ³⁾	20 mm, 30 mm
Surface per brake pad	organic sinter	Pressure connection	G 1/8
	8,000 mm ² 5,800 mm ²	Leakage oil bore	G 1/8
Max. wear per brake pad	5 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	5 mm
Total brake piston surface - complete brake	15.9 cm ²	Min. diameter of brake disk ØDA	300 mm
Volume with 1 mm stroke - complete brake	1.59 cm ³	Operating temperature	-20 °C to +50 °C
Max. clamping force	16.5 kN		

¹⁾ Weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Braking torque [Nm] with brake disk Ø [mm]			
Brake disk Ø [mm]	315	560	800
Braking torque [Nm]	1510	3120	4710

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

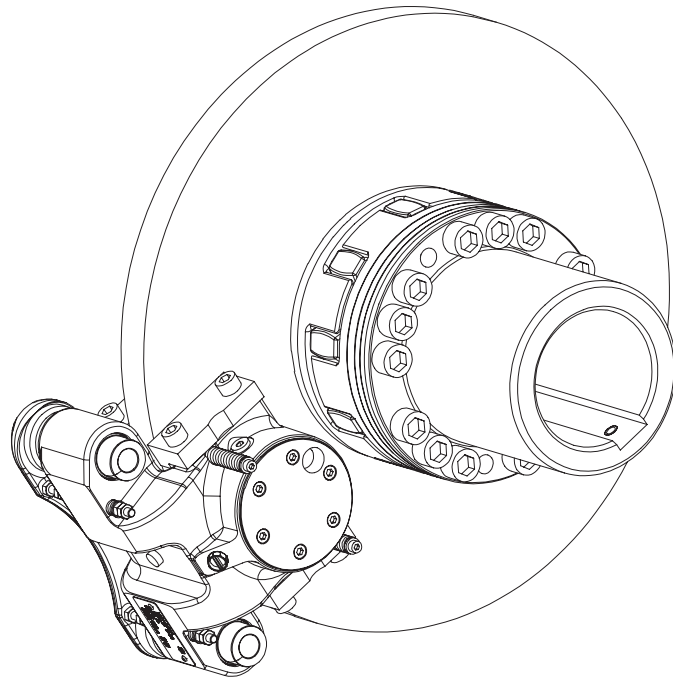
M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

KTR-STOP®	XS	-	A	-	F	B	-	30
KTR brake	Size of brake		Active		Floater	Variant		Thickness of brake disk

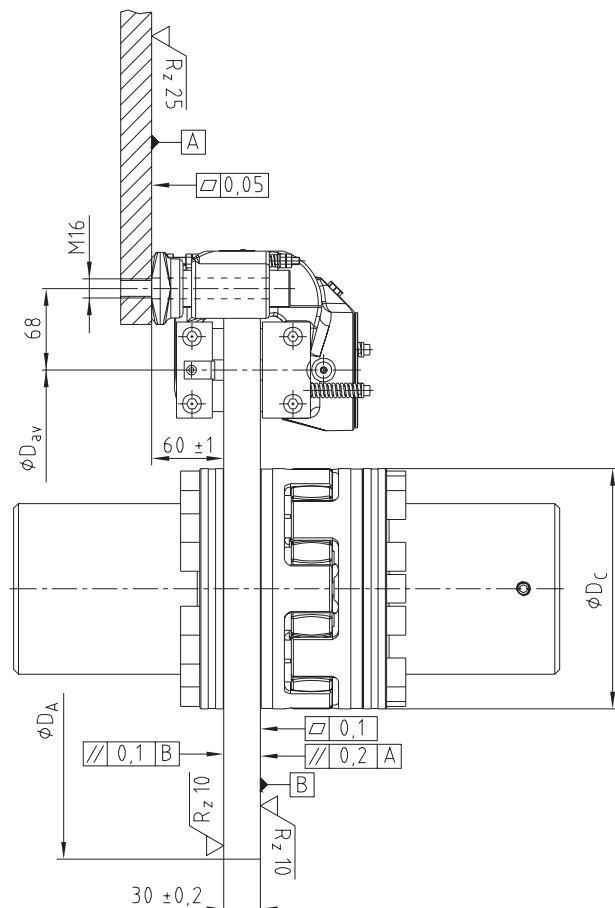
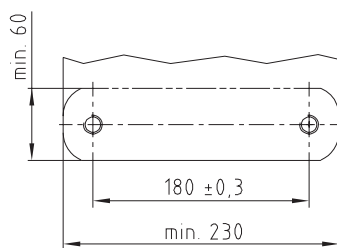


Calculation of brake disk

$$D_{C \max.} = D_A - 195$$

$$D_{av} = D_A - 86$$

Connection dimensions of brake



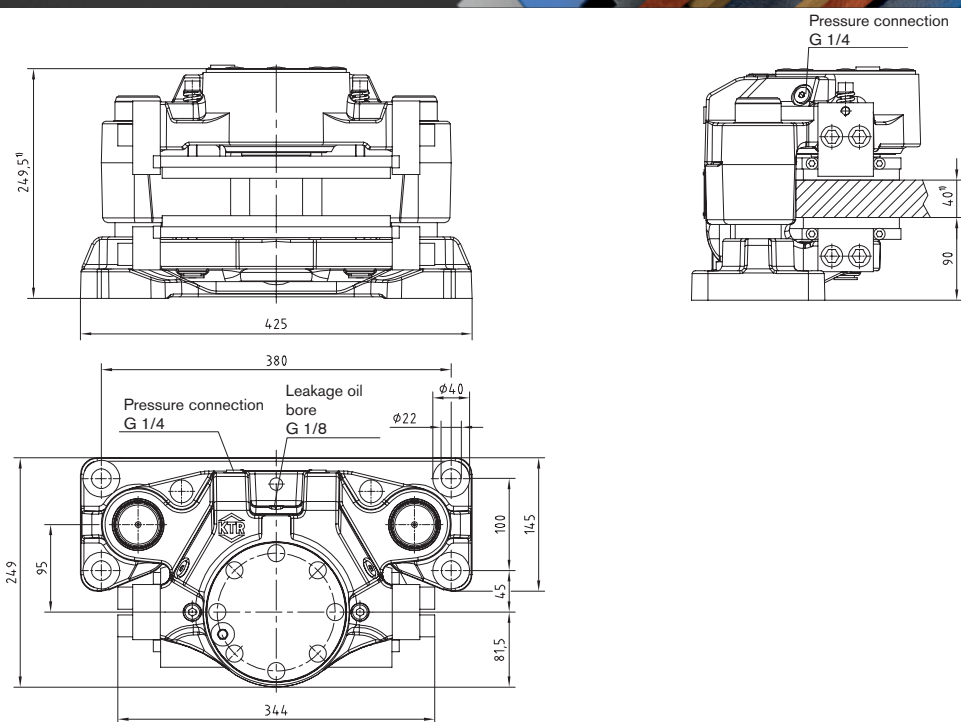
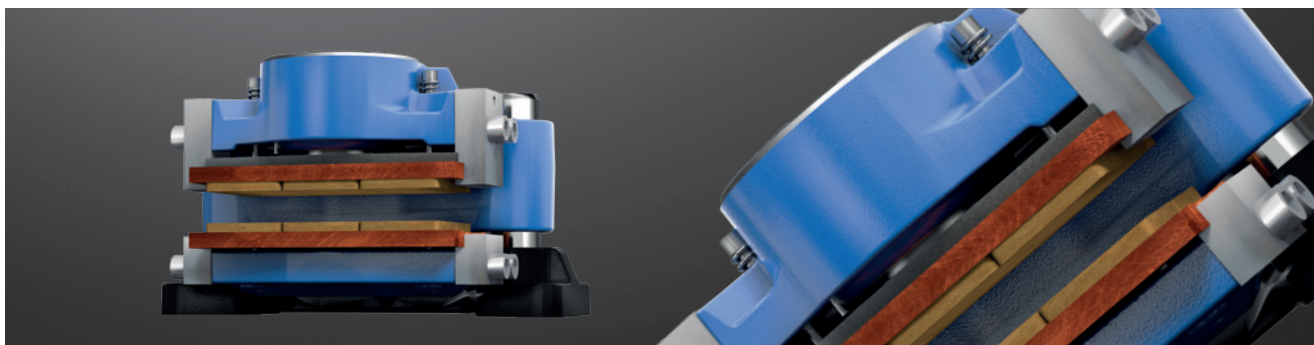
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® S-A-F

Active floating caliper brakes

Hydraulic brake system



KTR-STOP® S-A-F			
Total weight	Approx. 76 kg ¹⁾	Max. operating pressure	125 bars
Width of brake pad	125 mm	Thickness of brake disk ³⁾	20 mm, 30 mm, 40 mm
Surface per brake pad	organic sinter	Pressure connection	G 1/4
	28,700 mm ² 26,800 mm ²	Leakage oil bore	G 1/8
Max. wear per brake pad	6 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	10 mm
Total brake piston surface - complete brake	44.2 cm ²	Min. diameter of brake disk ØDA	500 mm
Volume with 1 mm stroke - complete brake	4.42 cm ³	Operating temperature	-20 °C to +50 °C
Max. clamping force	55 kN		

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Braking torque [Nm] with brake disk Ø [mm]			
Brake disk Ø [mm]	500	710	1000
Braking torque [Nm]	8100	12700	19100

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

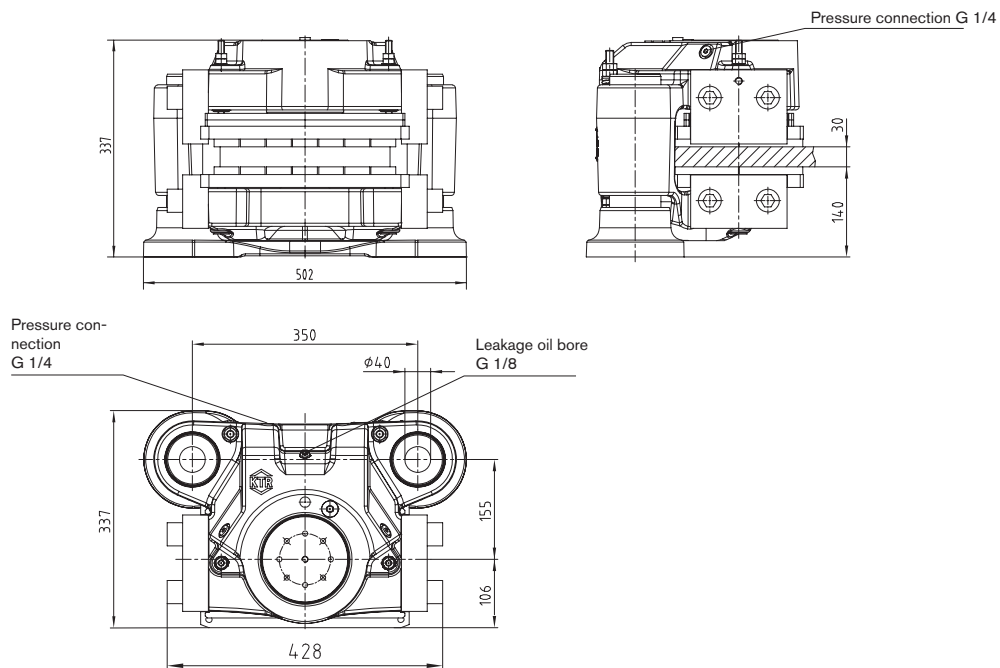
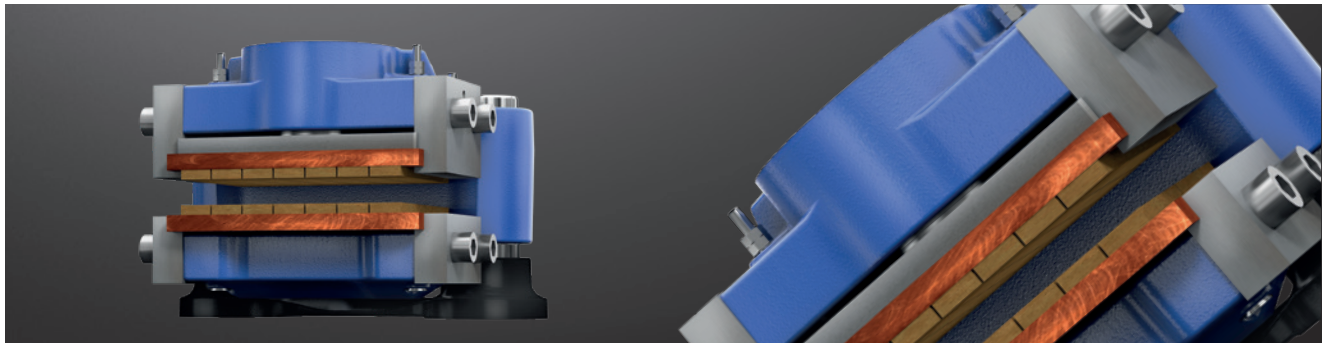
Ordering example:

KTR-STOP®	S	-	A	-	F	B	-	30
KTR brake	Size of brake		Active		Floater	Variant		Thickness of brake disk

KTR-STOP® M-A-F

Active floating caliper brakes

Hydraulic brake system



KTR-STOP® M-A-F			
Total weight	Approx. 235 kg ¹⁾	Max. operating pressure	115 bars
Width of brake pad	200 mm	Thickness of brake disk ³⁾	30 mm, 40 mm, 50 mm
Surface per brake pad	organic	Pressure connection	G 1/4
	sinter	Leakage oil bore	G 1/8
Max. wear per brake pad	8 mm	Floating range on axes - towards mounting surface	5 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Floating range on axes - away from mounting surface	10 mm
Total brake piston surface - complete brake	113 cm ²	Min. diameter of brake disk ØDA	800 mm
Volume with 1 mm stroke - complete brake	11.3 cm ³	Operating temperature	-20 °C to +50 °C
Max. clamping force	130 kN		

¹⁾ Weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Braking torque [Nm] with brake disk Ø [mm]			
Brake disk Ø [mm]	800	1500	2000
Braking torque [Nm]	31200	67600	93600

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

KTR-STOP®	M	-	A	-	F	B	-	40
KTR brake	Size of brake		Active		Floater	Variant		Thickness of brake disk



$$D_{av} = D_A - 200$$

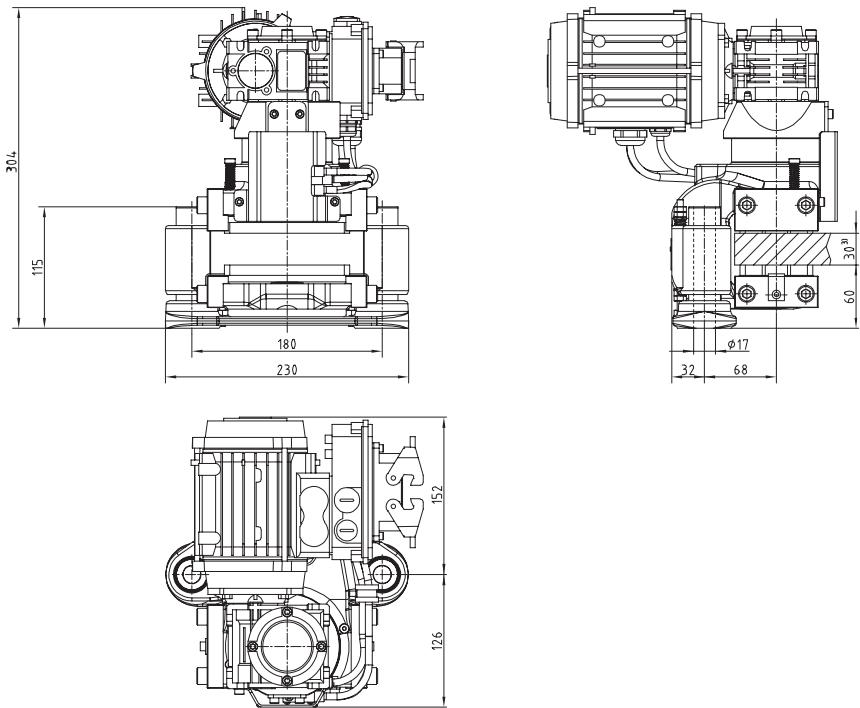
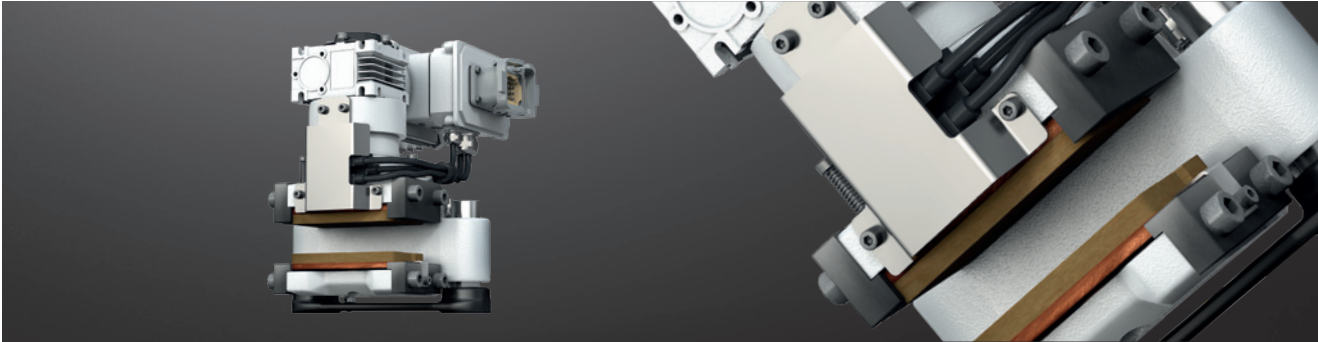


- For continuously updated data refer to our online catalogue at www.ktr.com

EMB-STOP XS-A-xx-F

Active floating caliper brakes

Electromechanical brake system



EMB-STOP XS-A-xx-F			
Total weight ¹⁾	Approx. 30 kg	Floating range on axes - away from mounting surface	5 mm
Width of brake pad	70 mm	Min. diameter of brake disk ØDA	300 mm
Surface per brake pad	organic	Operating temperature	-15 °C to +50 °C
	sinter metal	Closing time	1.8 s
Max. wear per brake pad	5mm	Release time	1.8 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Size of industrial connector	Han 10B / Han 18EE (male)
Min. clamping force	6 kN	Motor power	120 W
Max. clamping force	14 kN	Motor voltage	400 VAC, 50 Hz
Thickness of brake disk ³⁾	20 mm, 30 mm	Limit switch signals, standard	Released, braked, wear
Floating range on axes - towards mounting surface	5 mm		

¹⁾ Weight depending on thickness of brake disk.
²⁾ The coefficient of friction each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.

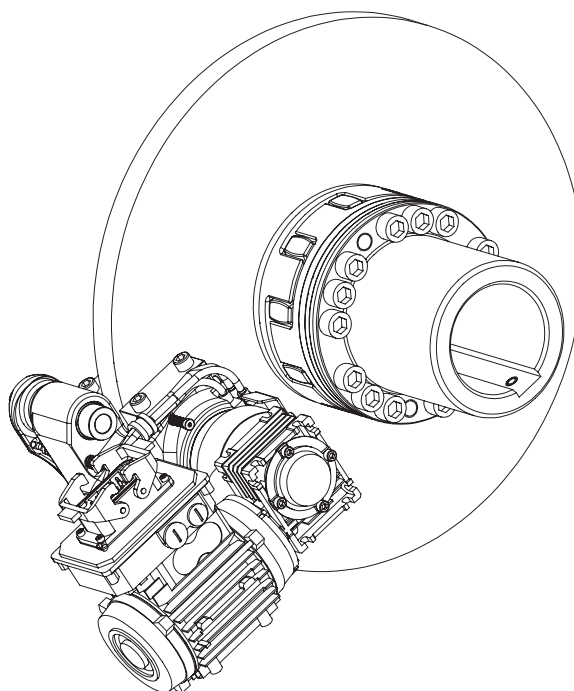
Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]
 F_c = Clamping force [kN]
 M_b = Braking torque [kNm]
 z = Number of brakes
 D_{av} = Effective diameter of brake [m]

Ordering example:	EMB-STOP	XS	A	12	F	B	30
	EMB brake	Size of brake	Active	Clamping force	Floater	Variant	Thickness of brake disk

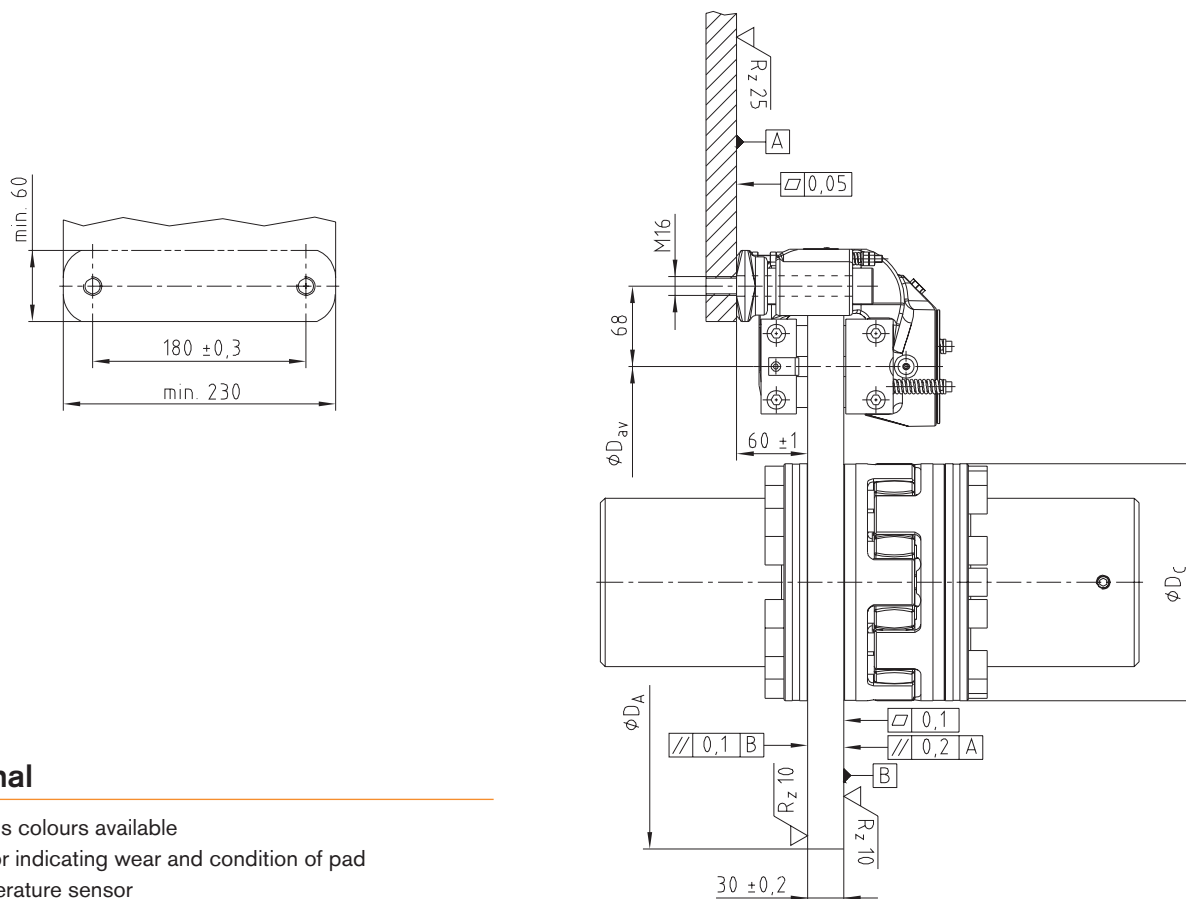


Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 195$$

$$D_{av} = D_A - 86$$

Connection dimensions of brake



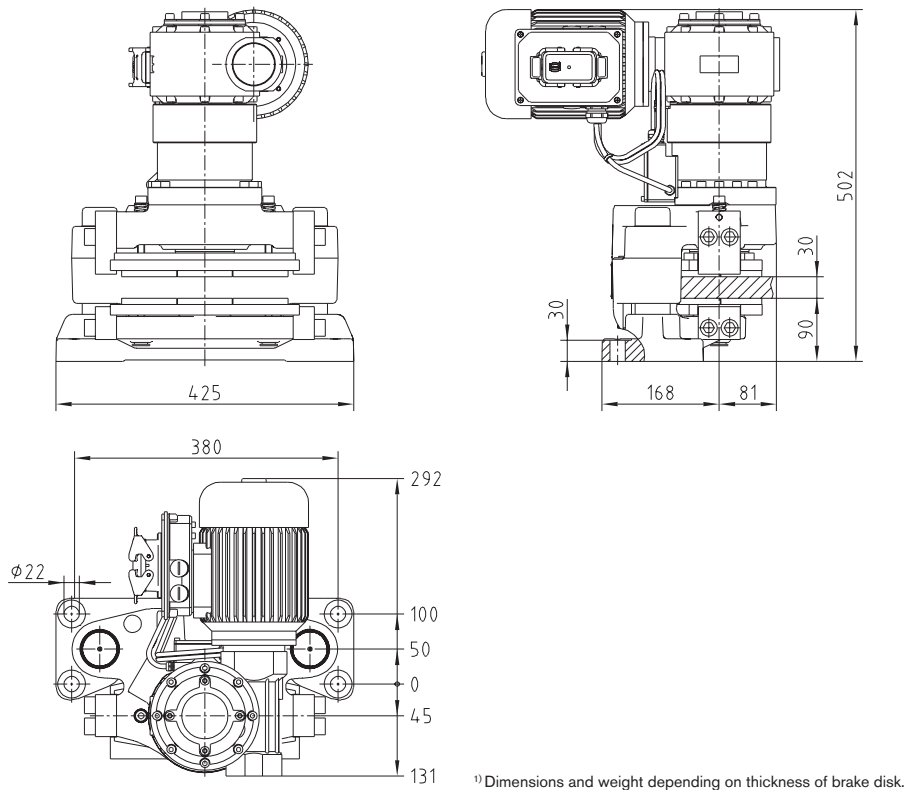
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

EMB-STOP S-A-xx-F

Active floating caliper brakes

Electromechanical brake system



¹⁾ Dimensions and weight depending on thickness of brake disk.

EMB-STOP S-A-xx-F			
Total weight ¹⁾	Approx. 112 kg	Floating range on axes - away from mounting surface	5 mm
Width of brake pad	120 mm	Min. diameter of brake disk ØDA	500 mm
Surface per brake pad	organic 26,800 mm ² sinter metal 26,800 mm ²	Operating temperature	-30 °C to +50 °C
Max. wear per brake pad	5mm	Closing time	2.5 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Release time	2.5 s
Min. clamping force	30 kN	Size of industrial connector	Han 10B / Han 18EE (male)
Max. clamping force	65 kN	Motor power	1.35 kW
Thickness of brake disk ³⁾	30 mm, 40 mm	Motor voltage	400 VAC, 50 Hz
Floating range on axes - towards mounting surface	5 mm	Limit switch signals, standard	Released, braked, wear

¹⁾ Weight depending on thickness of brake disk.
²⁾ The coefficient of friction each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

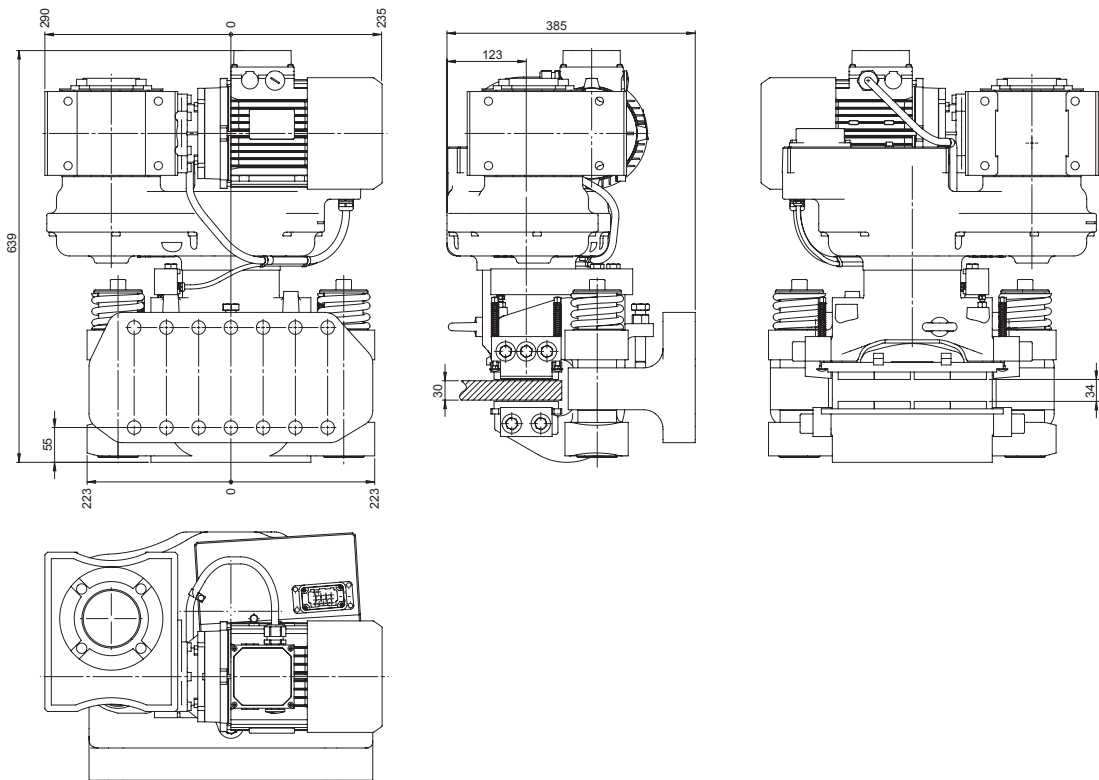
- F_b = Braking force [kN]
 F_c = Clamping force [kN]
 M_b = Braking torque [kNm]
 z = Number of brakes
 D_{av} = Effective diameter of brake [m]

Ordering example:	EMB-STOP	S	A	50	F	B	30
	EMB brake	Size of brake	Active	Clamping force	Floater	Variant	Thickness of brake disk

EMB-STOP L-A-xxx-F

Active floating caliper brakes

Electromechanical brake system



EMB-STOP L-A-xxx-F			
Total weight ¹⁾	Approx. 235 kg	Floating range on axes - away from mounting surface	5 mm
Width of brake pad	100 mm	Min. diameter of brake disk ØDA	900 mm
Surface per brake pad	organic 22,400 mm ² sinter metal 22,400 mm ²	Operating temperature	-30 °C to +50 °C
Max. wear per brake pad	8mm	Closing time	3 s
Coefficient of friction of pad, nominal value ²⁾	μ = 0.4	Release time	3 s
Min. clamping force	125 kN	Size of industrial connector	Han 10B / Han 18EE (male)
Max. clamping force	375 kN	Motor power	1.5 kW
Thickness of brake disk ³⁾	30 mm, 40 mm, 50 mm	Motor voltage	400 VAC, 50 Hz
Floating range on axes - towards mounting surface	5 mm	Limit switch signals, standard	Released, braked, wear

¹⁾ Weight depending on thickness of brake disk.
²⁾ The coefficient of friction each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.

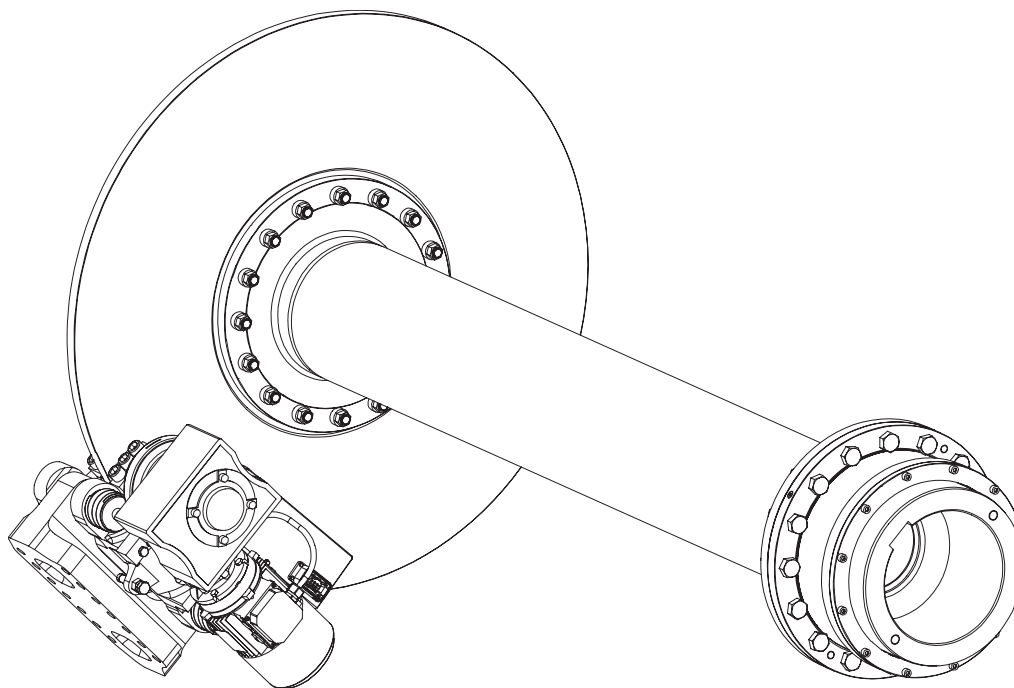
Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

- F_b = Braking force [kN]
 F_c = Clamping force [kN]
 M_b = Braking torque [kNm]
 z = Number of brakes
 D_{av} = Effective diameter of brake [m]

Ordering example:	EMB-STOP	L	A	375	F	A	30
	EMB brake	Size of brake	Active	Clamping force	Floater	Variant	Thickness of brake disk



Calculation of brake disk

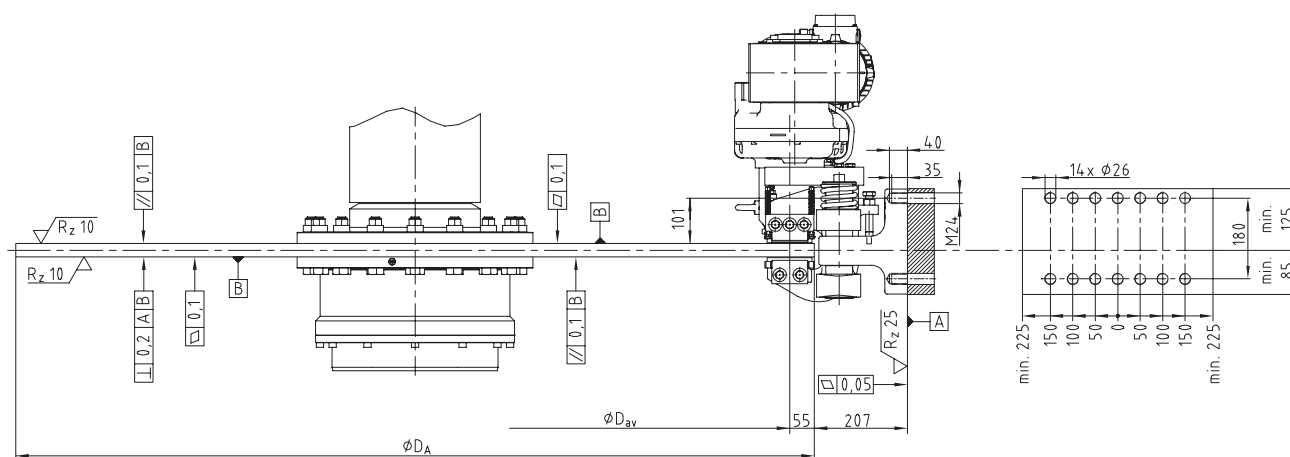
$\varnothing D_A \leq 1800 \text{ mm}$

$$D_{av} = D_A - 130$$

$\varnothing D_A > 1800 \text{ mm}$

$$D_{av} = D_A - 120$$

Connection dimensions of brake



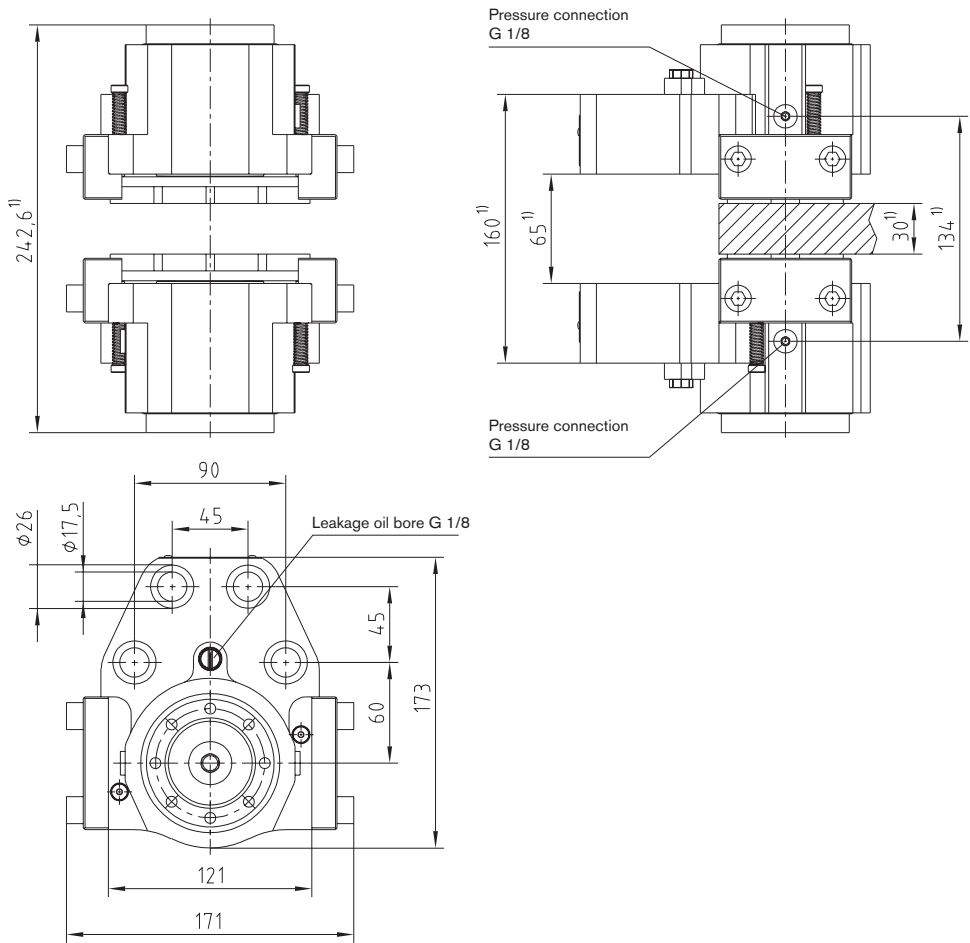
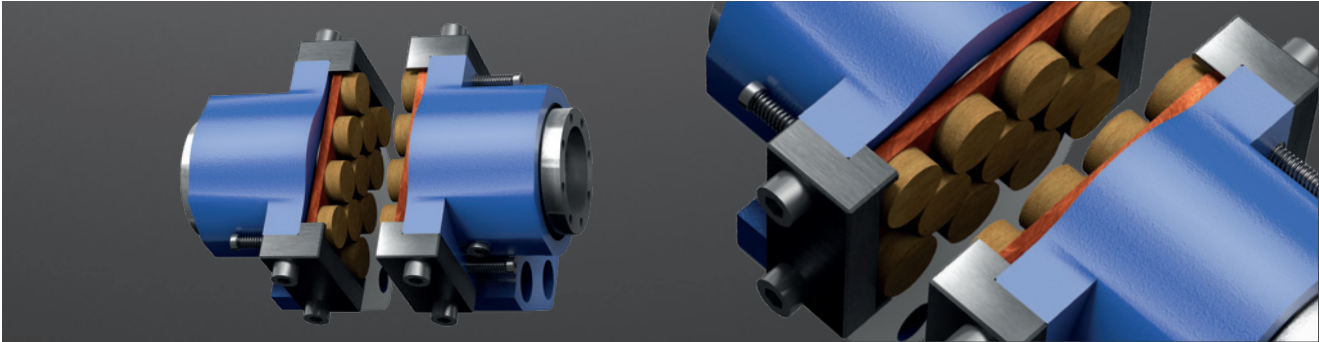
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® XS-xx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® XS-xx			
Total weight	Approx. 20 kg	Volume with 1 mm stroke - complete brake	2.2 cm³
Width of brake pad	70 mm	Max. operating pressure	200 bars
Surface per brake pad	organic	Min. thickness of brake disk	20 mm
	sinter	Pressure connection	G 1/8
Max. wear per brake pad	5 mm	Leakage oil bore	G 1/8
Rated coefficient of friction ²⁾	μ = 0.4	Min. diameter of brake disk ØDA	300 mm
Total brake piston surface - complete brake	22 cm²	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions depending on thickness of brake disk.
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®	XS	6	A	30	65
	KTR brake	Size of brake	Clamping force	Variant	Thickness of brake disk	Thickness of stand

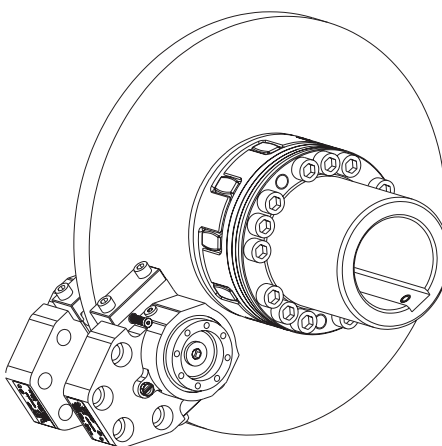
Brake types						
Brake type	Clamping force F_C [kN]	Loss of power ³⁾ [%]	Opening pressure [bar]	Braking torque [Nm] with brake disk Ø [mm]		
				315	560	800
KTR-STOP® XS-2	2	11.0	30	180	370	570
KTR-STOP® XS-3	3	5.5	40	270	560	850
KTR-STOP® XS-4	4	3.0	50	360	750	1140
KTR-STOP® XS-5	5	8.5	70	450	940	1420
KTR-STOP® XS-6	6	6.5	80	540	1130	1710
KTR-STOP® XS-7	7	4.5	90	640	1320	1990
KTR-STOP® XS-8	8	16.5	120	730	1510	2280
KTR-STOP® XS-9	9	12.0	130	820	1700	2570
KTR-STOP® XS-10	10	10.0	140	910	1890	2850
KTR-STOP® XS-11	11	8.5	150	1000	2080	3140
KTR-STOP® XS-12	12	11.0	160	1090	2270	3420
KTR-STOP® XS-13	13	9.5	170	1190	2460	3710
KTR-STOP® XS-14	14	8.5	180	1280	2650	3990
KTR-STOP® XS-15	15	8.0	190	1370	2840	4280

³⁾ With a stroke of 1 mm (1 mm wear of brake pad)

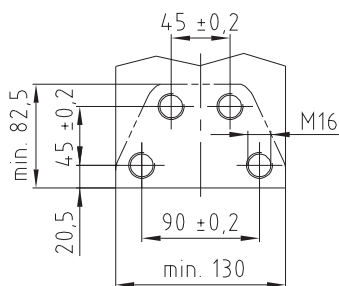
Calculation of brake disk

$$D_{C \max.} = D_A - 195$$

$$D_{av} = D_A - 86$$



Connection dimensions of brake



$$F_b = F_C \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

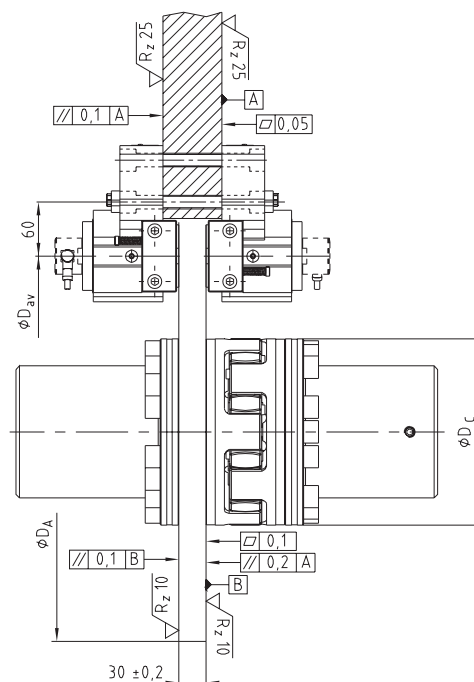
F_b = Braking force [kN]

F_C = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]



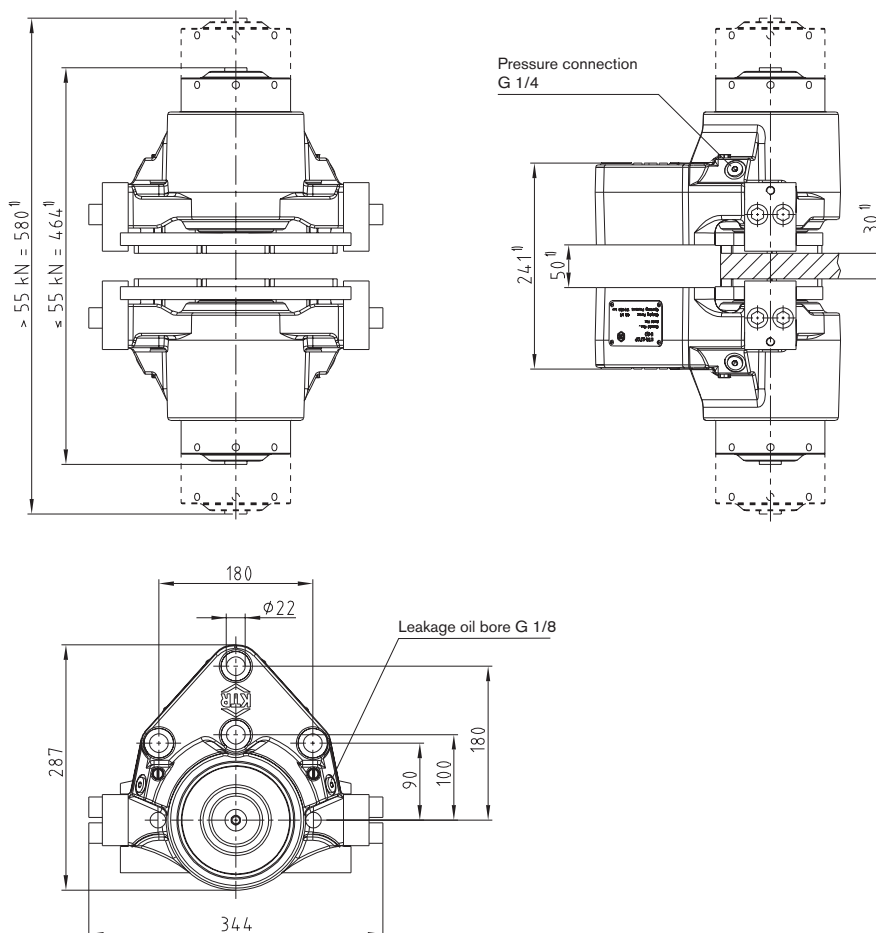
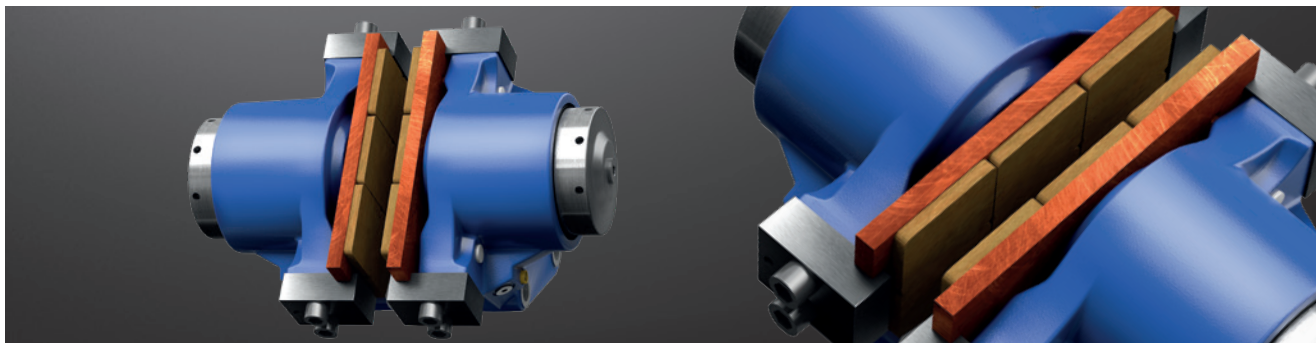
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® S-xx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® S-xx			
Total weight 10 - 55 kN	Approx. 95 kg	Volume with 1 mm stroke - complete brake	13.8 cm³
Total weight 60 - 80 kN	Approx. 100 kg	Max. operating pressure	200 bars
Width of brake pad	125 mm	Min. thickness of brake disk	20 mm
Surface per brake pad	organic	Pressure connection	G 1/4
	sinter	Leakage oil bore	G 1/8
Max. wear per brake pad	6 mm	Min. diameter of brake disk ØDA	500 mm
Rated coefficient of friction ²⁾	μ = 0.4	Operating temperature	-20 °C to +50 °C
Total brake piston surface - complete brake	138 cm²		

¹⁾ Dimensions depending on thickness of brake disk.

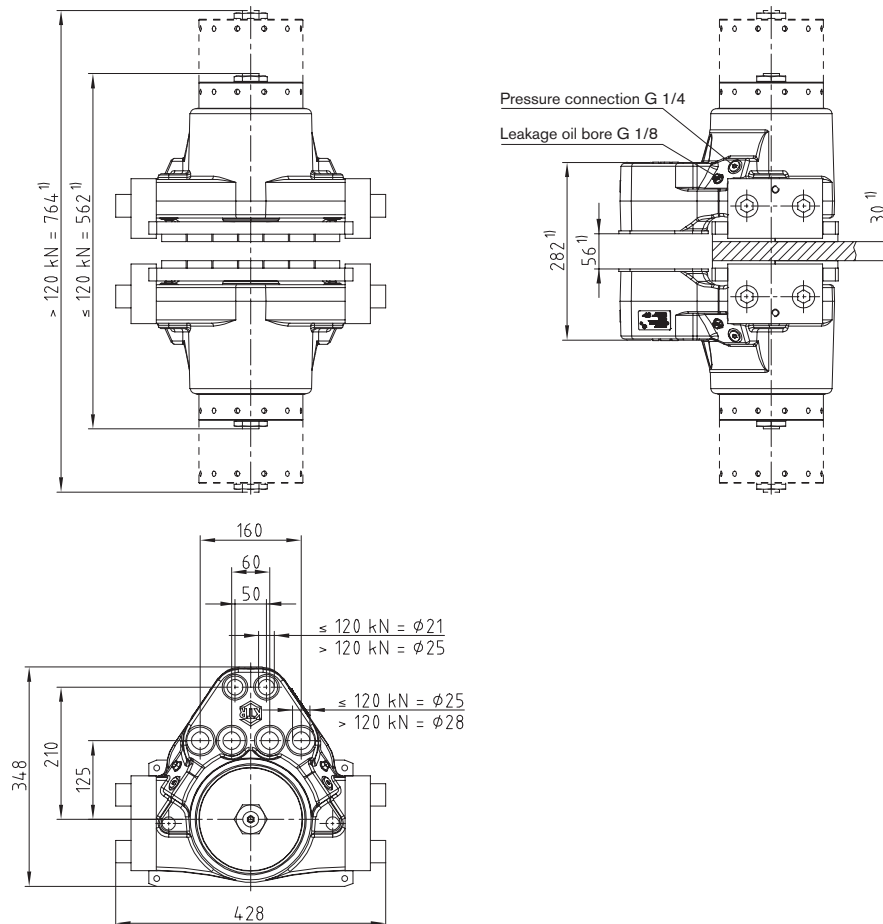
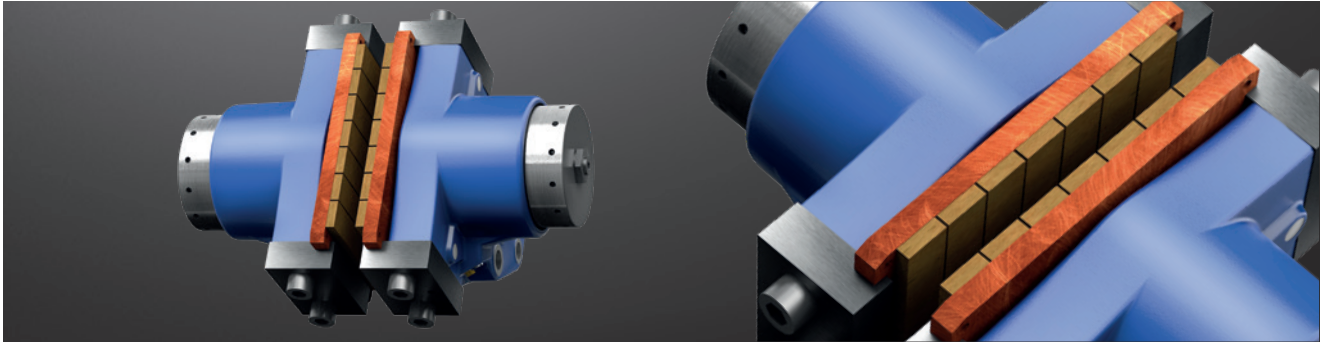
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®		S		40		B		- 30		- 50	
	KTR brake	Size of brake	Clamping force		Variant		Thickness of brake disk		Thickness of stand			

KTR-STOP® M-xxx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® M-xxx			
Total weight ≤ 120 kN	Approx. 200 kg	Volume with 1 mm stroke - complete brake	27.48 cm³
Total weight 125 - 180 kN	Approx. 215 kg	Max. operating pressure	200 bars
Width of brake pad	200 mm	Min. thickness of brake disk	30 mm
Surface per brake pad	organic	Pressure connection	G 1/4
	sinter	Leakage oil bore	G 1/8
Max. wear per brake pad	10 mm	Min. diameter of brake disk ØDA	800 mm
Rated coefficient of friction ²⁾	μ = 0.4	Operating temperature	-20 °C to +50 °C
Total brake piston surface - complete brake	274.8 cm²		

¹⁾ Dimensions depending on thickness of brake disk.

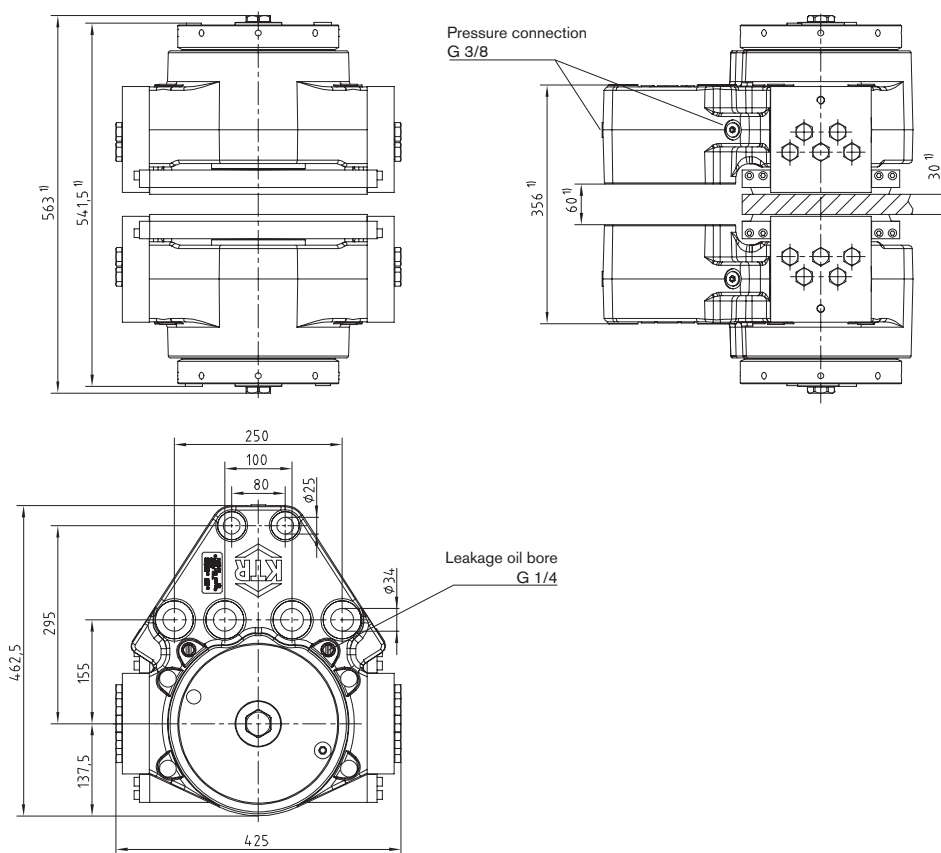
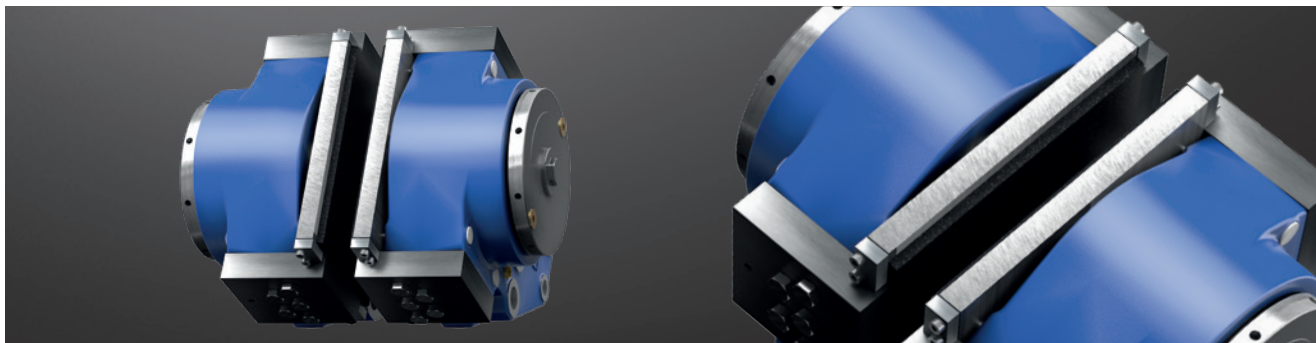
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®	M	-	100	B	-	40	-	66
	KTR brake	Size of brake	Clamping force	Variant	Thickness of brake disk	Thickness of stand			

KTR-STOP® L light-xxx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® L light-xxx			
Total weight	Approx. 312 kg	Max. operating pressure	200 bars
Width of brake pad	324 mm	Min. thickness of brake disk	30 mm
Surface per brake pad	65,600 mm ²	Pressure connection	G 3/8
Max. wear per brake pad	10 mm	Leakage oil bore	G 1/4
Rated coefficient of friction ²⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	1000 mm
Total brake piston surface - complete brake	279.2 cm ²	Operating temperature	-20 °C to +50 °C
Volume with 1 mm stroke - complete brake	27.92 cm ³		

¹⁾ Dimensions depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®	L light	200	A	30	-	60
	KTR brake	Size of brake	Clamping force	Variant	Thickness of brake disk		Thickness of stand

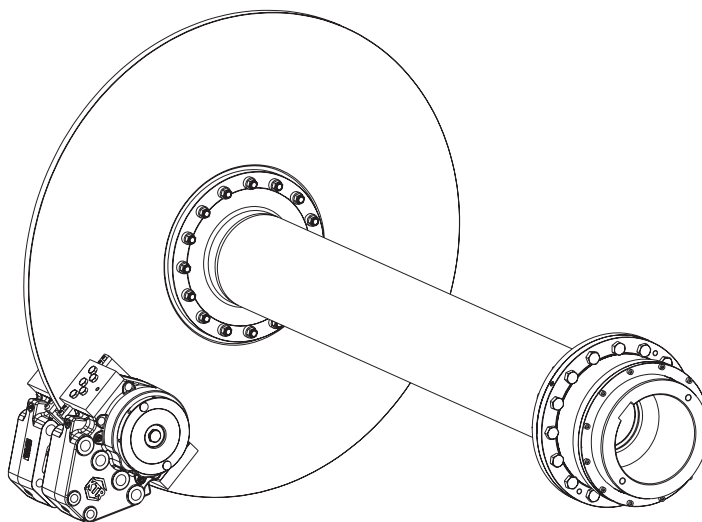
Brake types						
Brake type	Clamping force F_C [kN]	Loss of power ⁴⁾ [%]	Opening pressure [bar]	Braking torque [Nm] with brake disk Ø [mm]		
				1000	2000	3000
KTR-STOP® L light-100	100	4.0	95	30800	70800	110800
KTR-STOP® L light-120	120	3.5	105	36900	84900	132900
KTR-STOP® L light-140	140	8.5	130	43100	99100	155100
KTR-STOP® L light-160	160	8.0	170	49200	113200	177200
KTR-STOP® L light-180	180	8.0	175	55400	127400	199400
KTR-STOP® L light-200	200	7.5	185	61600	141600	221600
KTR-STOP® L light-220	220	6.5	200	67700	155700	243700

⁴⁾ With a stroke of 1 mm (1 mm wear of brake pad)

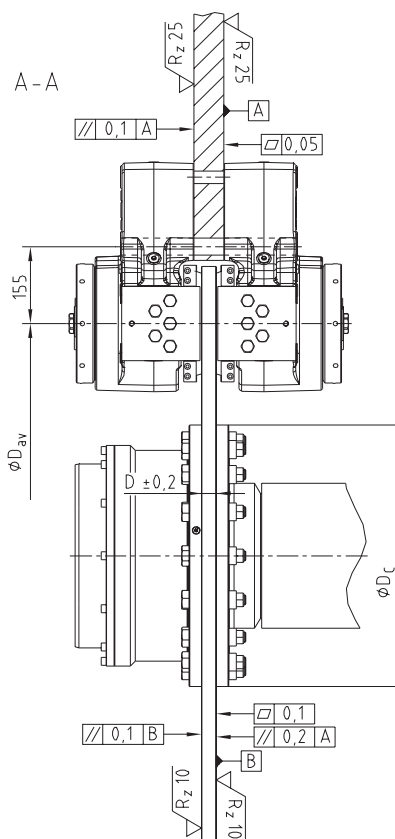
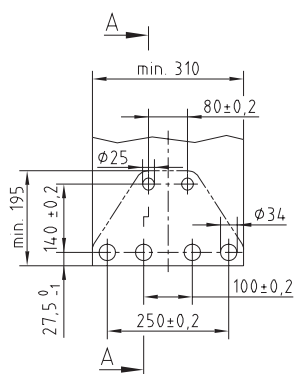
Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 510$$

$$D_{av} = D_A - 220$$



Connection dimensions of brake



$$F_b = F_C \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_C = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

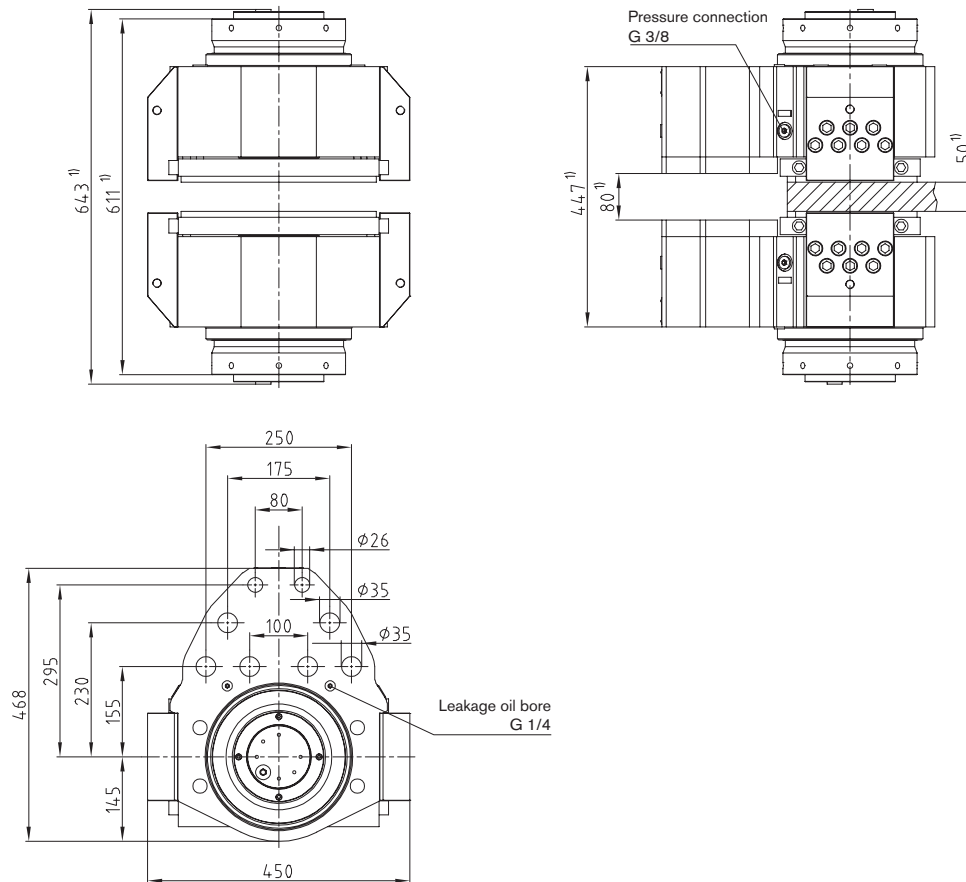
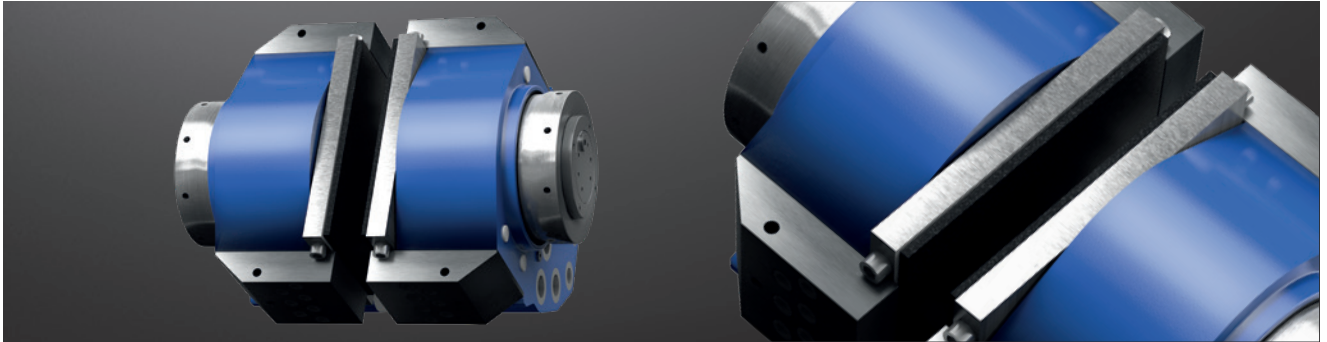
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® L-xxx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® L-xxx			
Total weight	Approx. 455 kg	Max. operating pressure	200 bars
Width of brake pad	240 mm	Min. thickness of brake disk	30 mm
Surface of each brake pad (organic)	73,100 mm ²	Pressure connection	G 3/8
Max. wear per brake pad	6 mm	Leakage oil bore	G 1/4
Rated coefficient of friction ¹⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	1000 mm
Total brake piston surface - complete brake	452 cm ²	Operating temperature	-20 °C to +50 °C
Volume with 1 mm stroke - complete brake	45.2 cm ³		

¹⁾ Dimensions depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®		L		200		A		50		-		80	
	KTR brake	Size of brake	Clamping force	Variant	Thickness of brake disk	Thickness of stand								

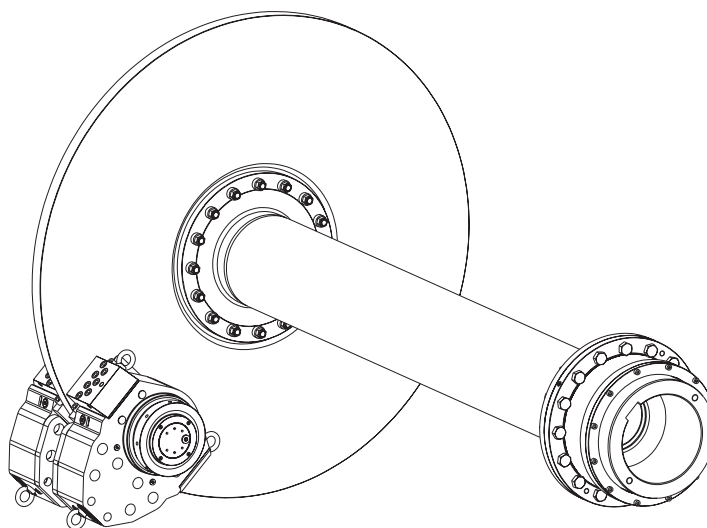
Brake types						
Brake type	Clamping force F_C [kN]	Loss of power ³⁾ [%]	Opening pressure [bar]	Braking torque [Nm] with brake disk Ø [mm]		
				1000	2000	3000
KTR-STOP® L 200	200	4.5	120	61000	141000	221000
KTR-STOP® L 250	250	7.5	160	77000	177000	277000
KTR-STOP® L 300	300	6.0	180	92000	212000	332000

³⁾ With a stroke of 1 mm (1 mm wear of brake pad)

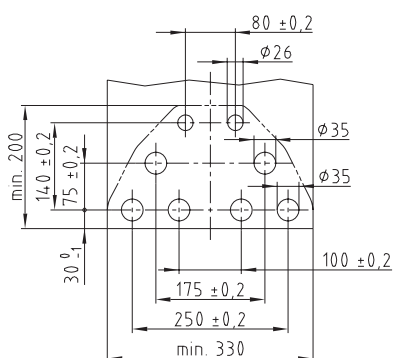
Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 570$$

$$D_{av} = D_A - 230$$



Connection dimensions of brake



$$F_b = F_C \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

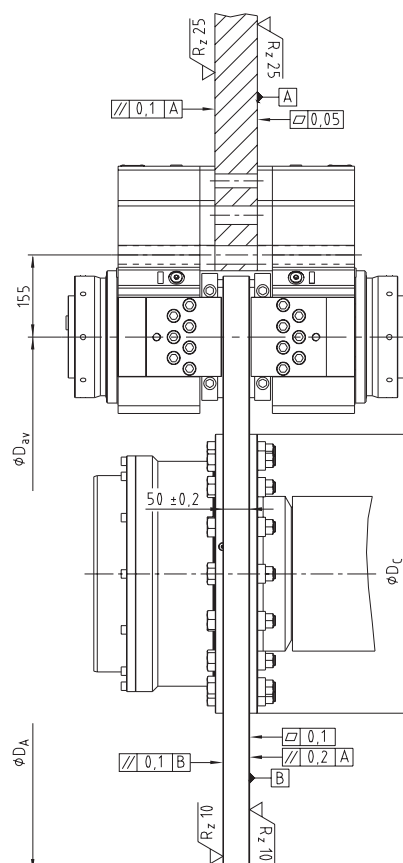
F_b = Braking force [kN]

F_C = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]



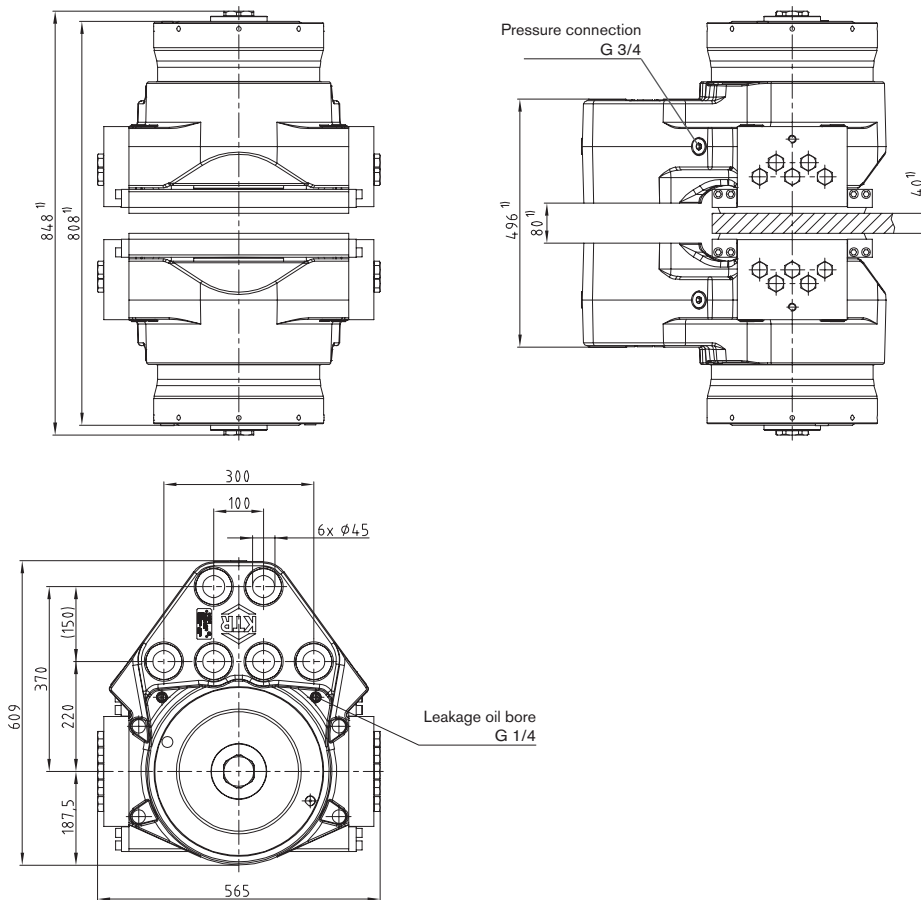
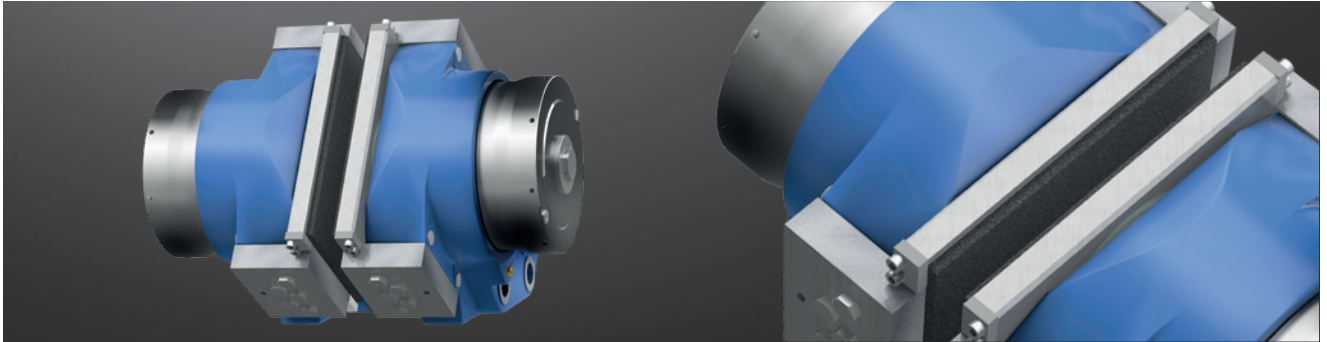
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® XL-xxx

Passive fixed caliper brakes

Hydraulic brake system



KTR-STOP® XL-xxx			
Total weight	Approx. 823 kg	Max. operating pressure	200 bars
Width of brake pad	290 mm	Min. thickness of brake disk	40 mm
Surface of each brake pad (organic)	126300 mm ²	Pressure connection	G 3/4
Max. wear per brake pad	10 mm	Leakage oil bore	G 1/4
Rated coefficient of friction ¹⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	1500 mm
Total brake piston surface - complete brake	848 cm ²	Operating temperature	-20 °C to +50 °C
Volume with 1 mm stroke - complete brake	84.8 cm ³		

¹⁾ Dimensions depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

Ordering example:	KTR-STOP®		XL		250		B		40		-		80	
	KTR brake		Size of brake		Clamping force		Variant		Thickness of brake disk		Thickness of stand			

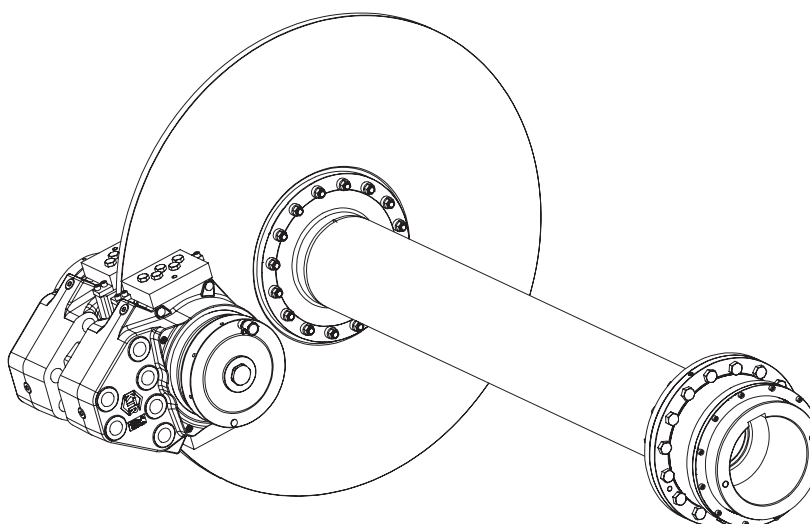
Brake types						
Brake type	Clamping force F_C [kN]	Loss of power ³⁾ [%]	Opening pressure [bar]	Braking torque [Nm] with brake disk Ø [mm]		
				1500	2500	3500
KTR-STOP® XL-250	250	6.2	80	117000	217000	317000
KTR-STOP® XL-300	300	6.5	90	140400	260400	380400
KTR-STOP® XL-350	350	7.0	110	163800	303800	443800
KTR-STOP® XL-400	400	6.1	120	187200	347200	507200
KTR-STOP® XL-450	450	6.4	140	210600	390600	570600
KTR-STOP® XL-500	500	5.5	160	234000	434000	634000

³⁾ With a stroke of 1 mm (1 mm wear of brake pad)

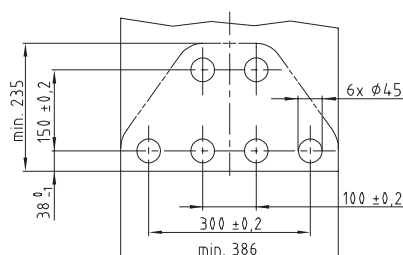
Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 670$$

$$D_{av} = D_A - 330$$



Connection dimensions of brake



$$F_b = F_C \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

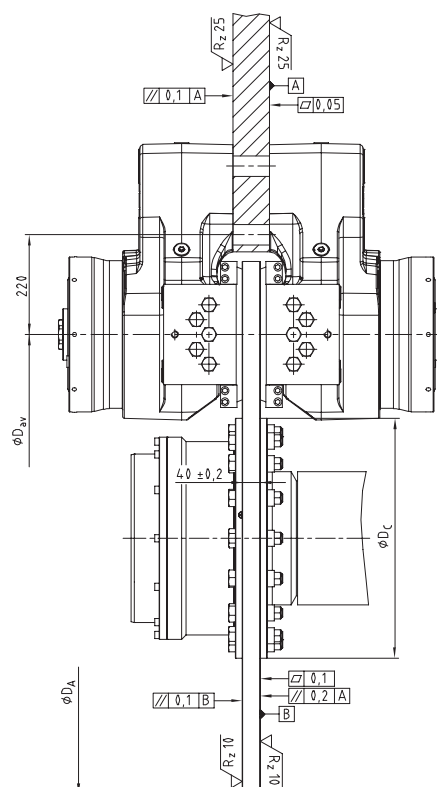
F_b = Braking force [kN]

F_C = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]



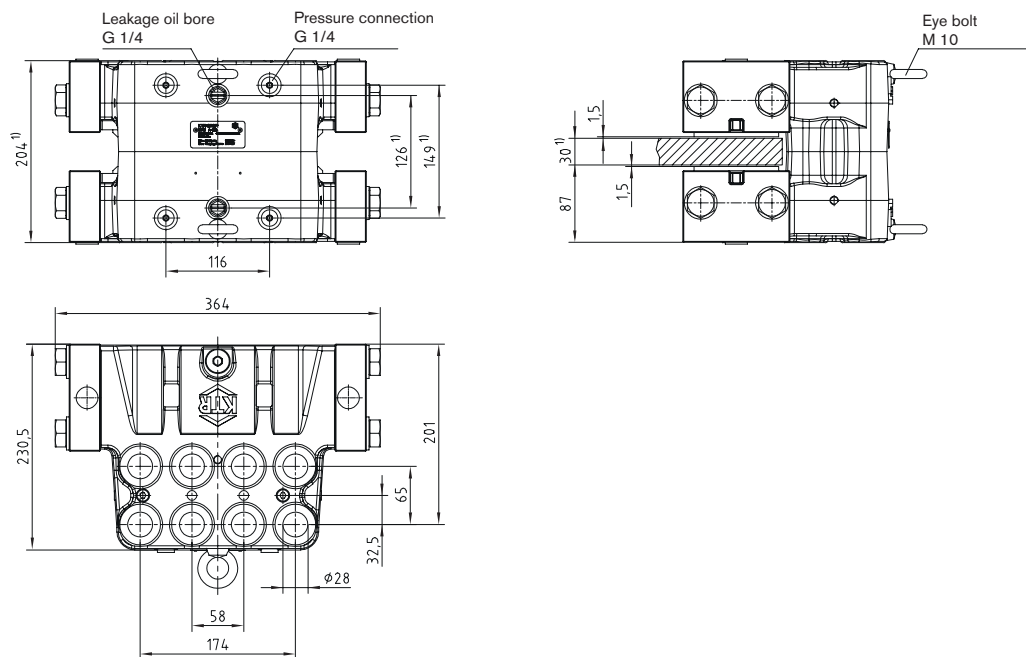
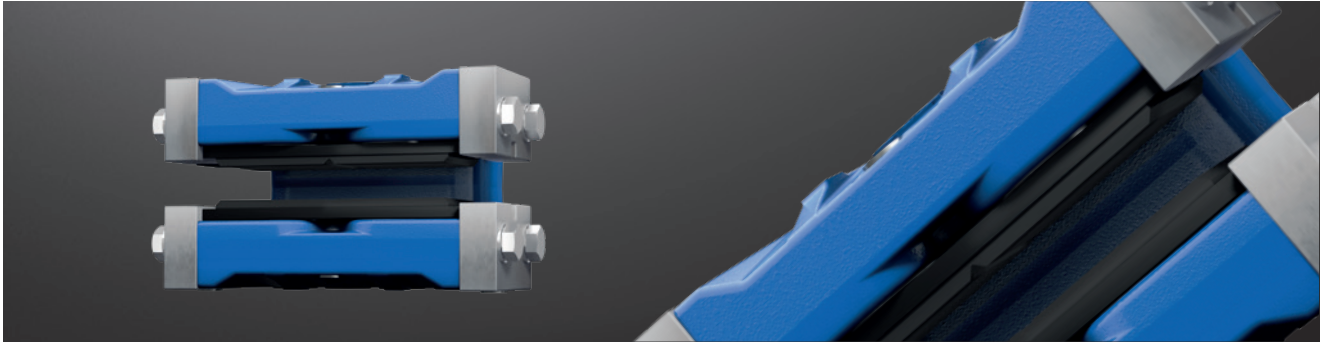
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® M-D

Active fixed caliper brakes

Hydraulic brake system



KTR-STOP® M-D			
Total weight	Approx. 72.5 kg ¹⁾	Max. clamping force	203 kN
Width of brake pad	110 mm	Max. operating pressure	160 bars
Surface per brake pad organic	26,000 mm ²	Thickness of brake disk ³⁾	30 mm, 40 mm
Max. wear per brake pad	6 mm (material: organic)	Pressure connection	G 1/4
Rated coefficient of friction ²⁾	$\mu = 0.4$	Leakage oil bore	G 1/4
Total brake piston surface - complete brake	254 cm ²	Min. diameter of brake disk ØDA	800 mm
Volume with 1 mm stroke - complete brake	25.4 cm ³	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Braking torque [Nm] with brake disk Ø [mm]			
Brake disk Ø [mm]	800	1500	2000
Braking torque [Nm]	56500	113300	153900

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

KTR-STOP®	M-D	B	-	30
KTR brake	Size of brake	Variant	Thickness of brake disk	

$$D_{C \text{ max.}} = D_A - 235$$
$$D_{av} = D_A - 104$$

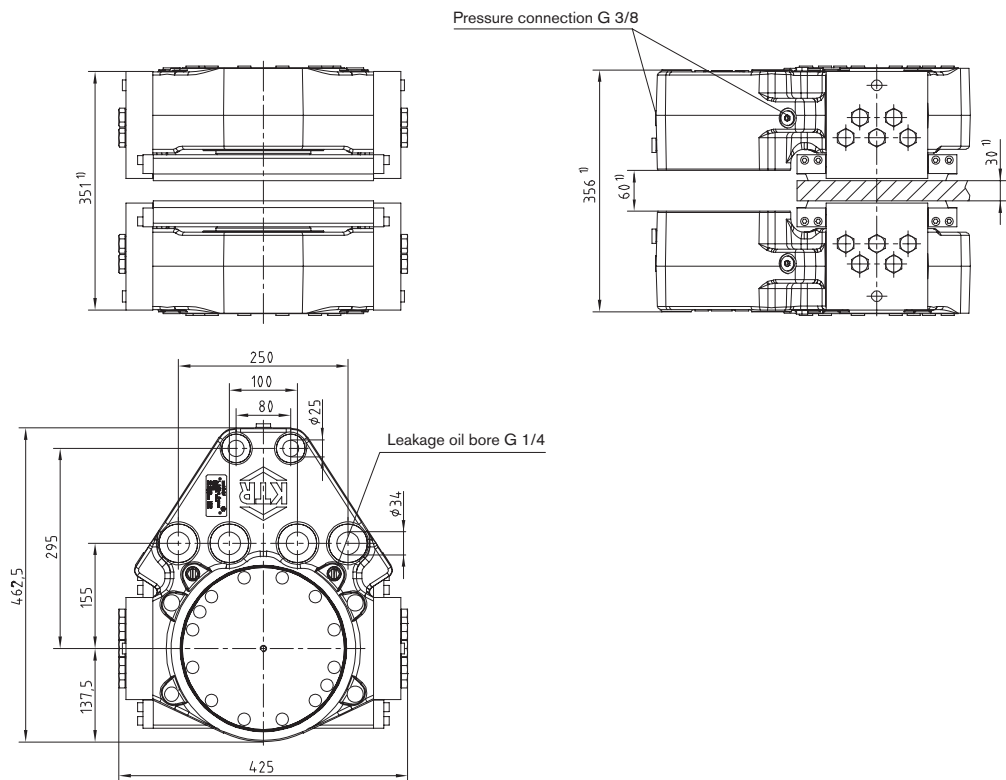
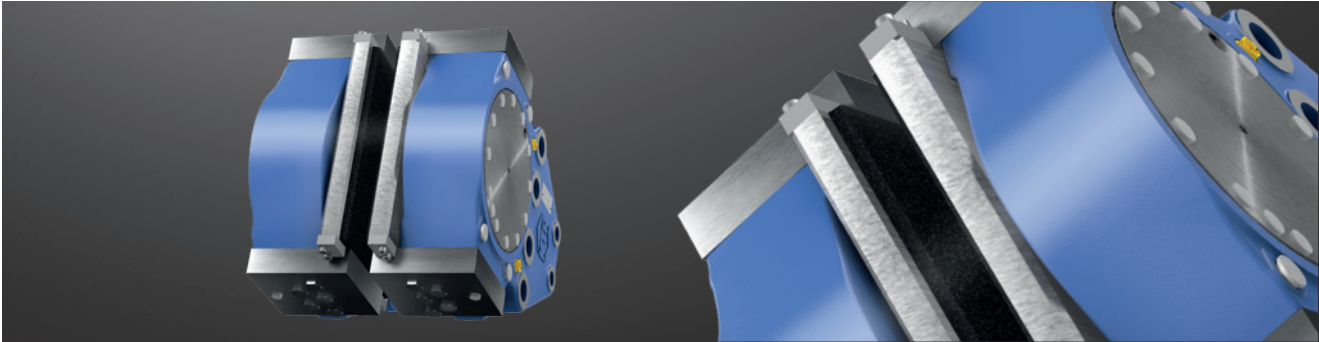

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad



KTR-STOP® L light-A

Active fixed caliper brakes

Hydraulic brake system



KTR-STOP® L light-A			
Total weight	Approx. 270 kg	Max. clamping force	230 kN
Width of brake pad	324 mm	Max. operating pressure	150 bars
Surface per brake pad	65,600 mm ²	Min. thickness of brake disk	30 mm
Max. wear per brake pad	10 mm	Pressure connection	G 3/8
Rated coefficient of friction ²⁾	$\mu = 0.4$	Leakage oil bore	G 1/4
Total brake piston surface - complete brake	308 cm ²	Min. diameter of brake disk ØDA	1000 mm
Volume with 1 mm stroke - complete brake	30.8 cm ³	Operating temperature	-20 °C to +50 °C

¹⁾ Dimensions depending on thickness of brake disk.
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

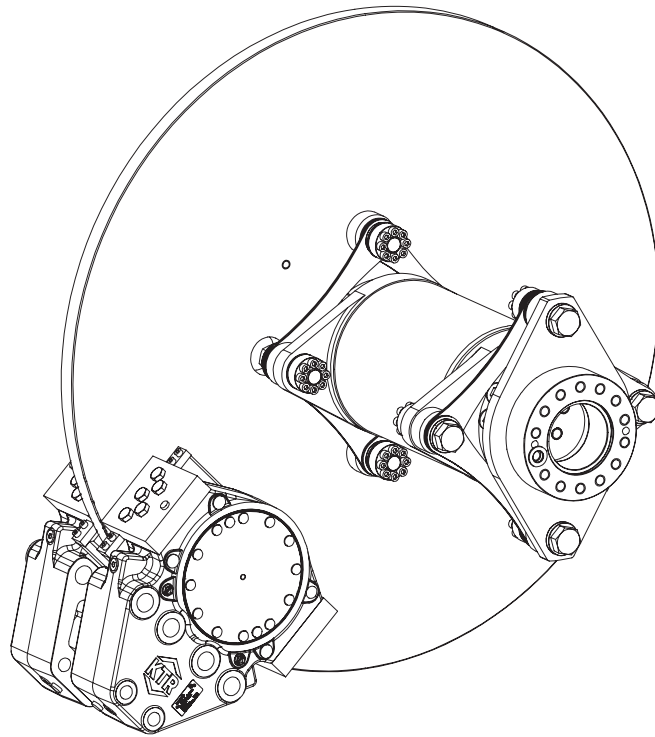
Braking torque [Nm] with brake disk Ø [mm]			
Brake disk Ø [mm]	1000	2000	3000
Braking torque [Nm]	71760	163760	255760

Ordering example:	KTR-STOP®	L light-A	A	30	-	60
	KTR brake	Size of brake	Variant	Thickness of brake disk		Thickness of stand

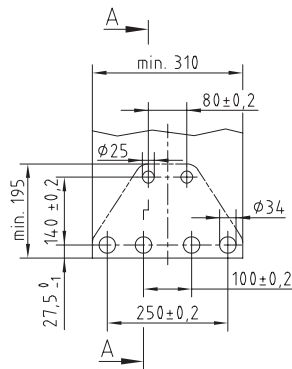
Calculation of brake disk

$$D_{C \max.} = D_A - 510$$

$$D_{av} = D_A - 220$$



Connection dimensions of brake



$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

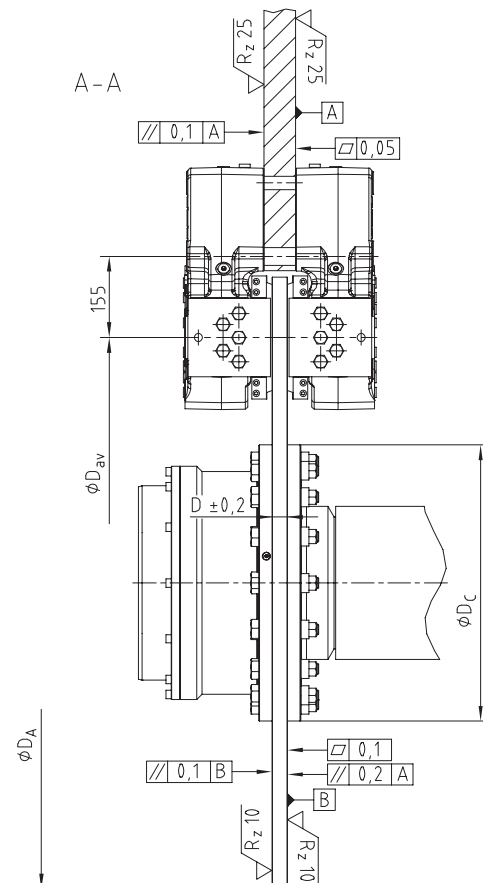
M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]

Optional

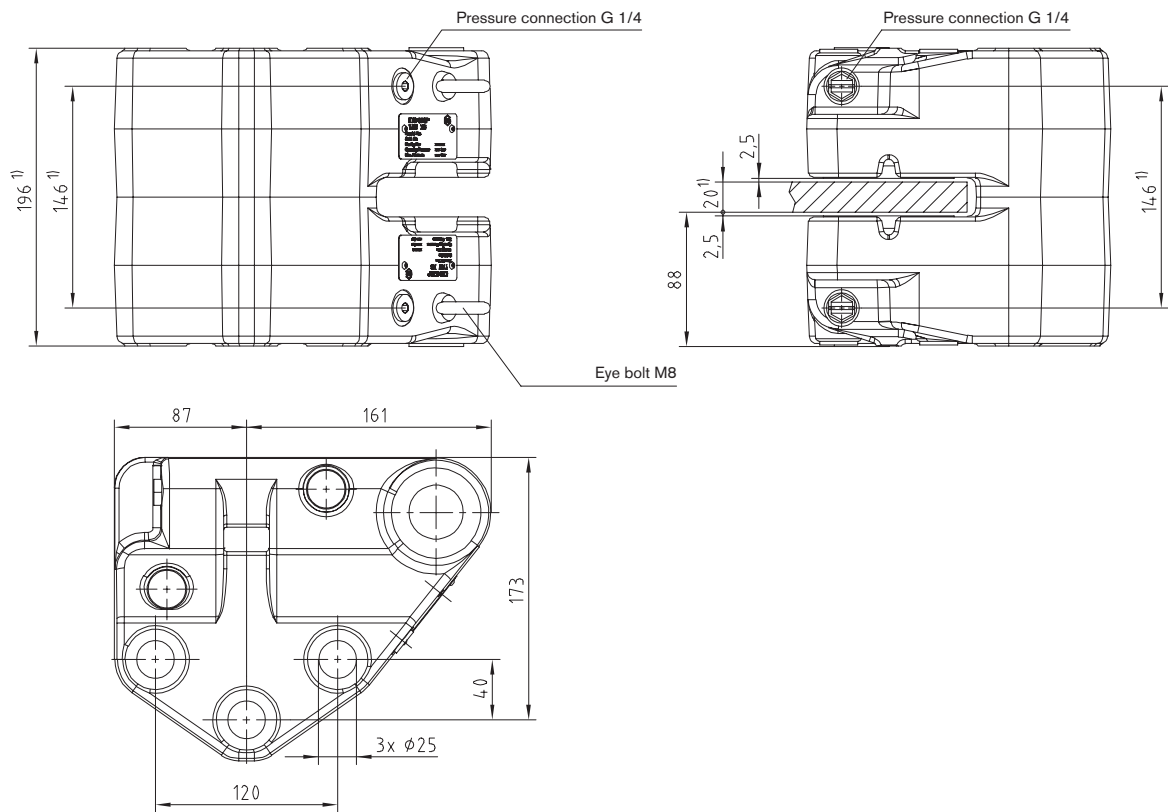
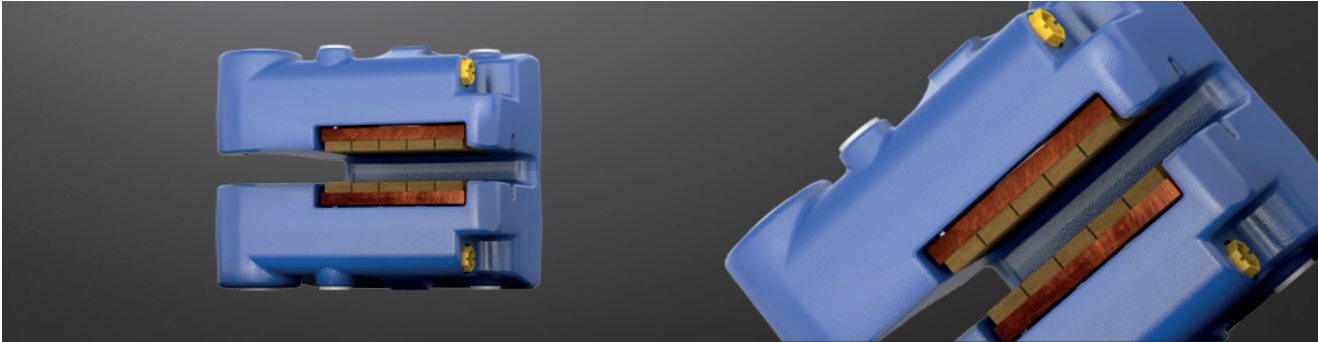
- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad



KTR-STOP® YAW XS

Yaw brakes

Hydraulic brake system



KTR-STOP® YAW XS			
Total weight	Approx. 42 kg ¹⁾	Max. clamping force	71 kN
Width of brake pad	86 mm	Max. operating pressure	160 bars
Surface per brake pad	9500 mm ²	Thickness of brake disk ³⁾	20 mm
Max. wear per brake pad	6 mm (material: organic)	Pressure connection	G 1/4
Rated coefficient of friction ²⁾	μ = 0.4	Min. diameter of brake disk ØDA	500 mm
Total brake piston surface - complete brake	88 cm ²	Operating temperature	-30 °C to +50 °C
Volume with 1 mm stroke - complete brake	8.8 cm ³		

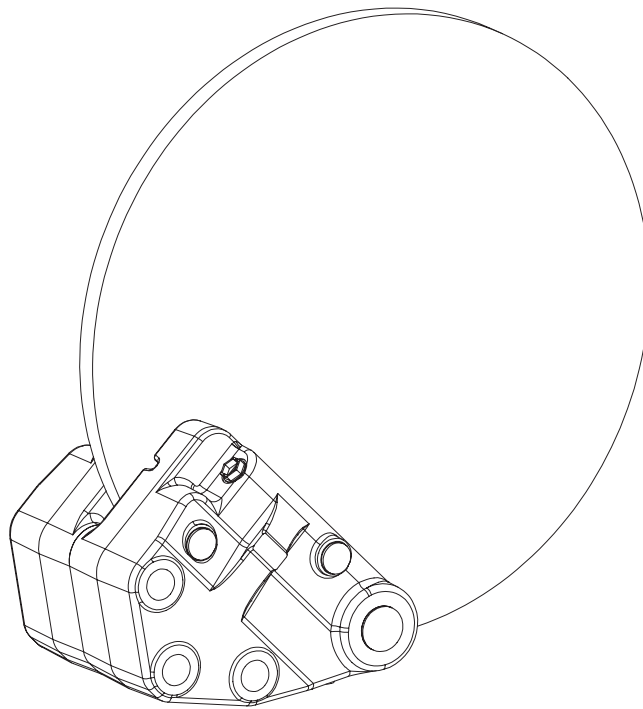
¹⁾ Dimensions depending on thickness of brake disk.
²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.
³⁾ Other thickness of brake disk available on request.

Ordering example:	KTR-STOP®	YAW XS	B	20
	KTR brake	Size of brake	Variant	Thickness of brake disk

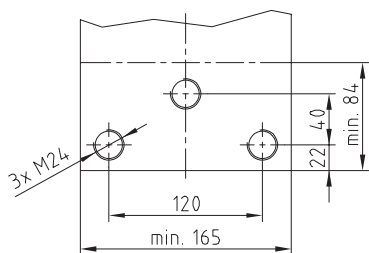
Calculation of brake disk

$$D_{C \text{ max.}} = D_A - 240$$

$$D_{av} = D_A - 114$$



Connection dimensions of brake



$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

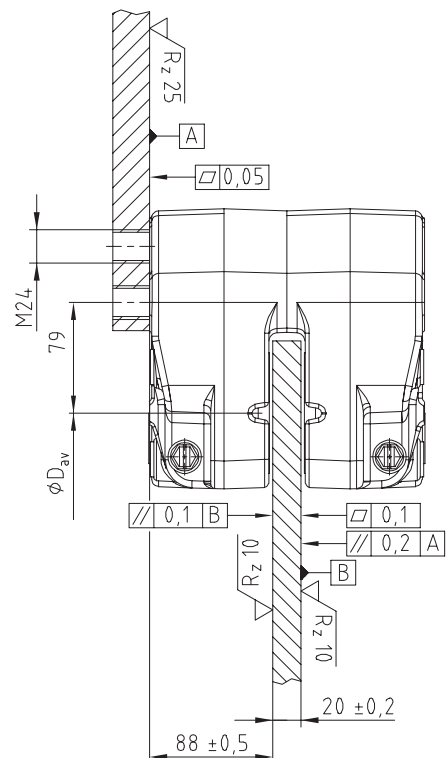
F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

z = Number of brakes

D_{av} = Effective diameter of brake [m]



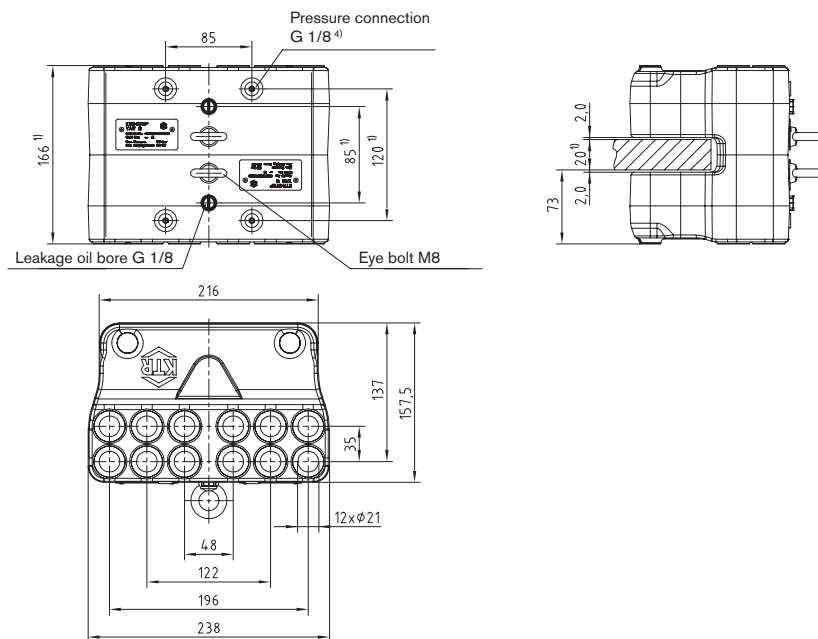
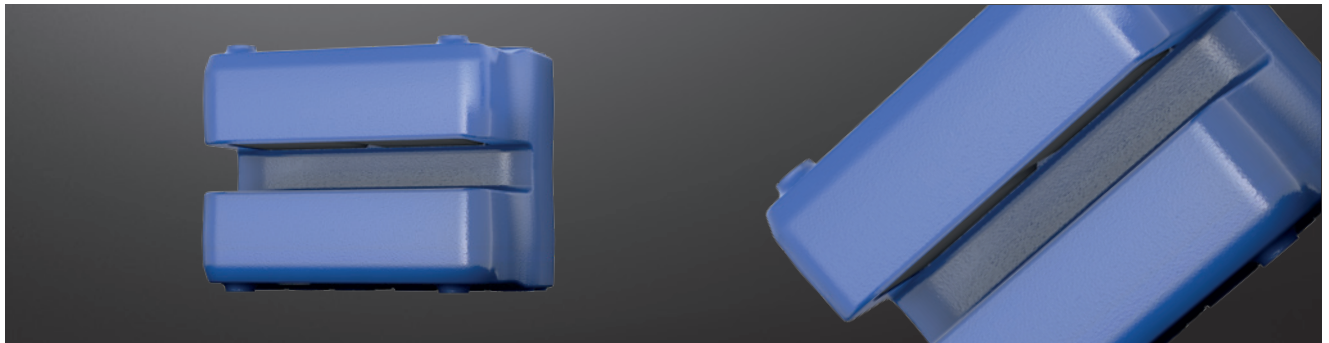
Optional

- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad

KTR-STOP® YAW S

Yaw brakes

Hydraulic brake system



KTR-STOP® YAW S			
Total weight	Approx. 29.5 kg ¹⁾	Max. clamping force	106 kN
Width of brake pad	70 mm	Max. operating pressure (up to $\mu = 0.4$)	160 bars
Surface per brake pad	10,400 mm ²	Thickness of brake disk ³⁾	20 mm
Max. wear per brake pad	6 mm (material: organic)	External assembly of brake	400 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	700 mm
Total brake piston surface - complete brake	133 cm ²	Internal assembly of brake	700 mm
Volume with 1 mm stroke - complete brake	13.3 cm ³	Min. diameter of brake disk ØDi	-20 °C to +50 °C
Pressure connection	G 1/8	Operating temperature	
Leakage oil bore	G 1/8		

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

⁴⁾ Other positions of pressure connections available.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

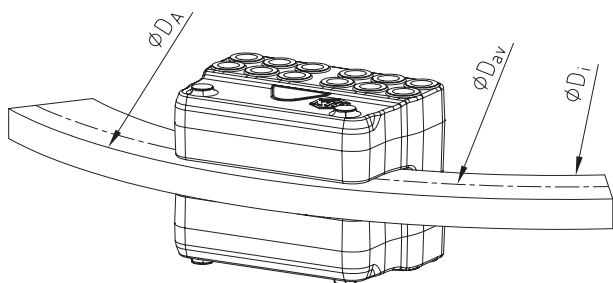
z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering
example:

KTR-STOP®	YAW S	B	-	20
KTR brake	Size of brake	Variant	Thickness of brake disk	

Internal assembly of brake



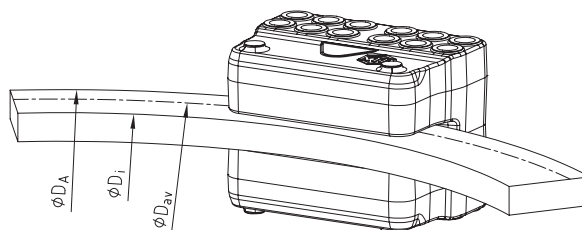
Calculation of brake disk

$$D_{i \min.} = \sqrt{D_{av}^2 - 140 \cdot D_{av} + 44900}$$

$$D_{av} = \sqrt{D_i^2 - 40000} + 70$$

$$D_{A \min.} = D_i + 170$$

External assembly of brake

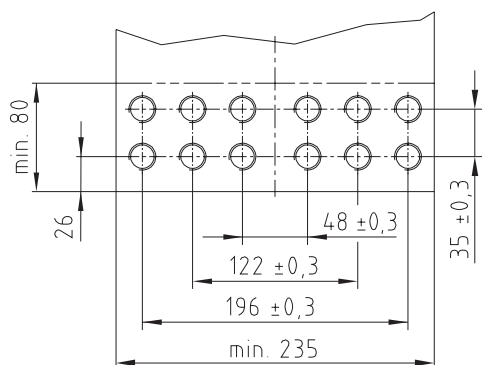


Calculation of brake disk

$$D_{av} = D_A - 70$$

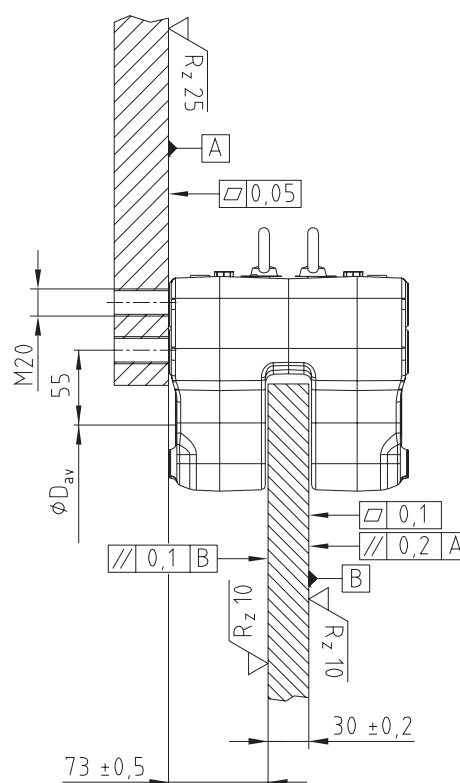
$$D_{i \max.} = D_A - 175$$

Connection dimensions of brake



Optional

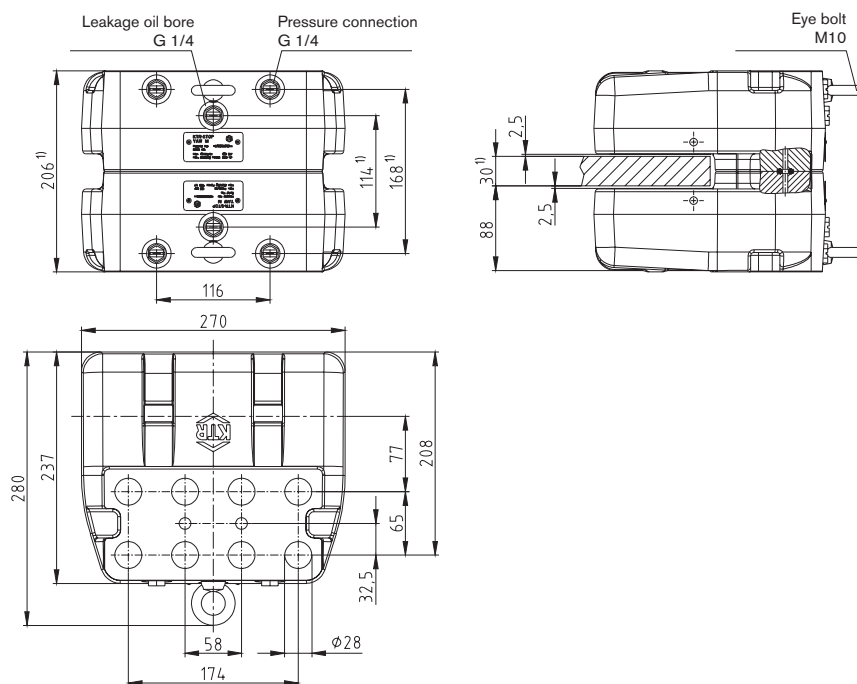
- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad



KTR-STOP® YAW M

Yaw brakes

Hydraulic brake system



KTR-STOP® YAW M			
Total weight	Approx. 63 kg ¹⁾	Max. clamping force	203 kN
Width of brake pad	108 mm	Max. operating pressure (up to $\mu = 0.4$)	160 bars
Surface per brake pad	20,300 mm ²	Thickness of brake disk ³⁾	30 mm
Max. wear per brake pad	7 mm (material: organic)	External assembly of brake	500 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	
Total brake piston surface - complete brake	254 cm ²	Internal assembly of brake	900 mm
Volume with 1 mm stroke - complete brake	25.4 cm ³	Min. diameter of brake disk ØD _i	
Pressure connection	G 1/4	Operating temperature	-20 °C to +50 °C
Leakage oil bore	G 1/4		

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

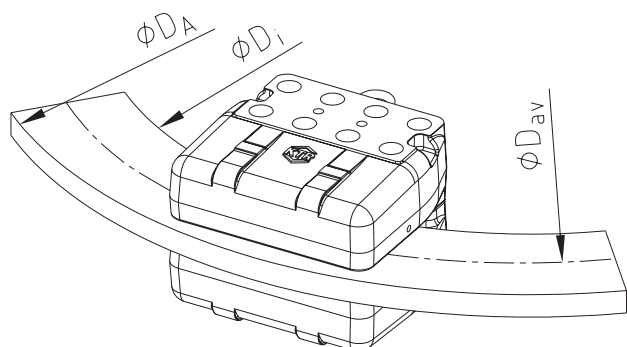
z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering
example:

KTR-STOP®	YAW M	B	-	30
KTR brake	Size of brake	Variant	Thickness of brake disk	

Internal assembly of brake



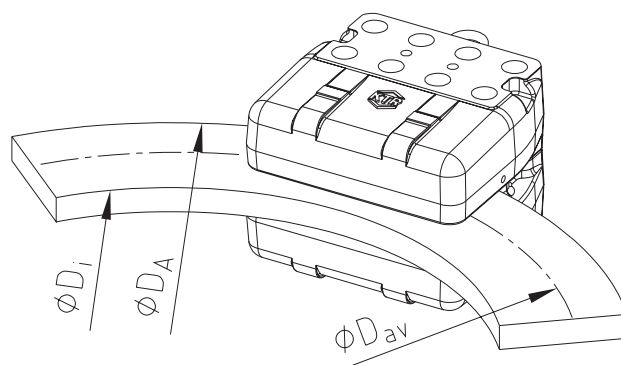
Calculation of brake disk

$$D_{i \text{ min.}} = \sqrt{D_{av}^2 - 200 \cdot D_{av} + 46000}$$

$$D_{av} = \sqrt{D_i^2 - 36000} + 100$$

$$D_A \text{ min.} = D_i + 250$$

External assembly of brake

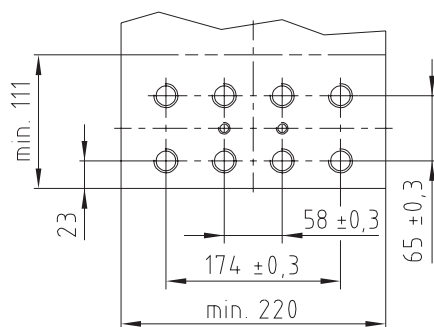


Calculation of brake disk

$$D_{av} = D_A - 102$$

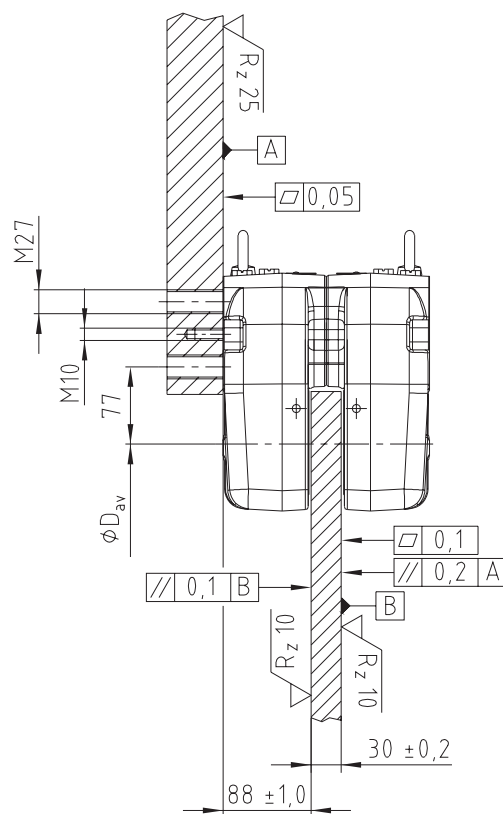
$$D_{i \text{ max.}} = D_A - 240$$

Connection dimensions of brake



Optional

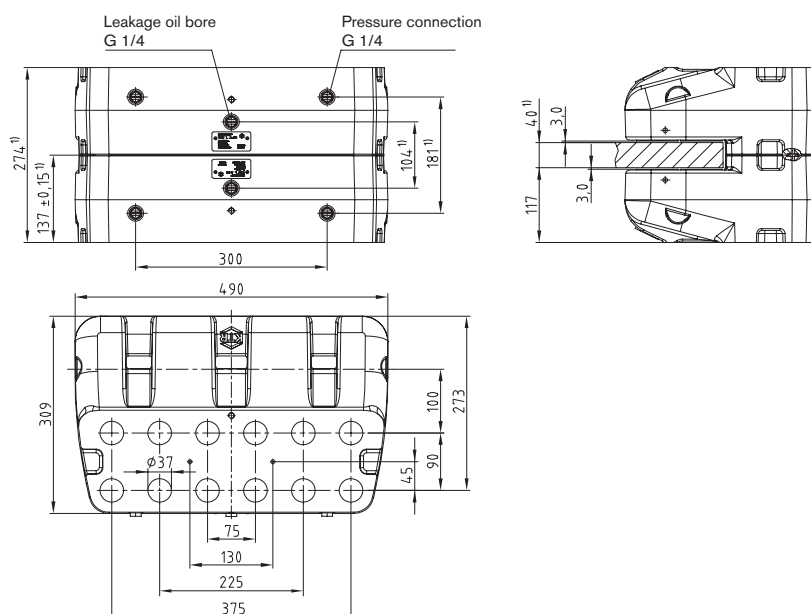
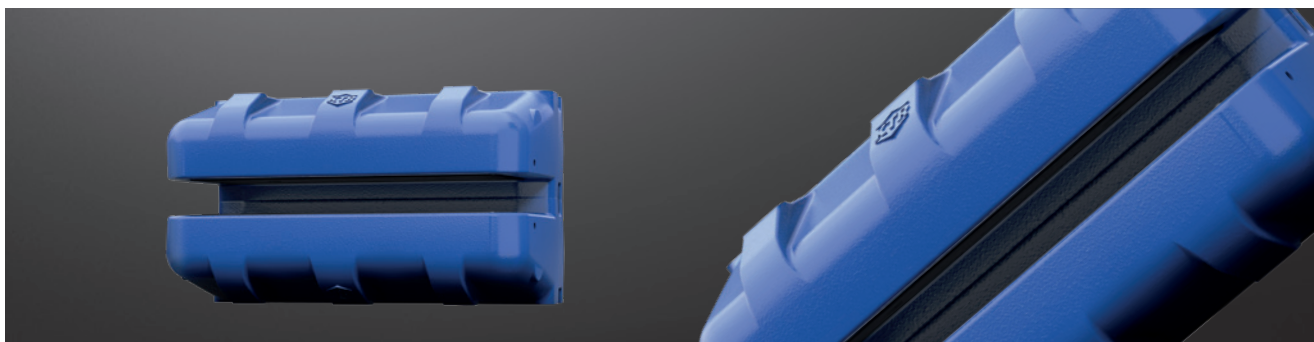
- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad



KTR-STOP® YAW L

Yaw brakes

Hydraulic brake system



KTR-STOP® YAW L			
Total weight	Approx. 176 kg ¹⁾	Max. clamping force	542 kN
Width of brake pad	138 mm	Max. operating pressure (up to $\mu = 0.4$)	160 bars
Surface per brake pad	58,000 mm ²	Thickness of brake disk ³⁾	40 mm
Max. wear per brake pad	7 mm (material: organic)	External assembly of brake	2000 mm
Rated coefficient of friction ²⁾	$\mu = 0.4$	Min. diameter of brake disk ØDA	
Total brake piston surface - complete brake	678 cm ²	Internal assembly of brake	2500 mm
Volume with 1 mm stroke - complete brake	67.8 cm ³	Min. diameter of brake disk ØD _i	
Pressure connection	G 1/4	Operating temperature	-20 °C to +50 °C
Leakage oil bore	G 1/4		

¹⁾ Dimensions and weight depending on thickness of brake disk.

²⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

³⁾ Other thickness of brake disk available on request.

Calculation of braking force/braking torque

$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot \frac{D_{av}}{2}$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

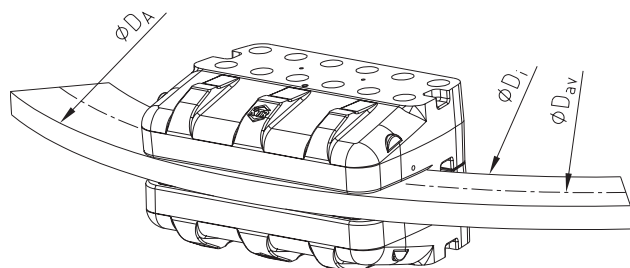
z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering
example:

KTR-STOP®	YAW L	A	-	40
KTR brake	Size of brake	Variant	Thickness of brake disk	

Internal assembly of brake



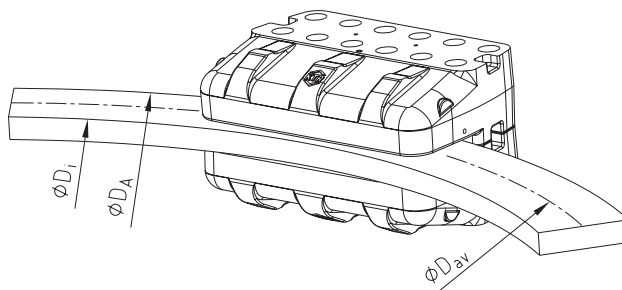
Calculation of brake disk

$$D_{i \text{ min. }} = \sqrt{D_{av}^2 - 270 \cdot D_{av} + 200000}$$

$$D_{av} = \sqrt{D_i^2 - 180000} + 135$$

$$D_A \text{ min. } = D_i + 320$$

External assembly of brake

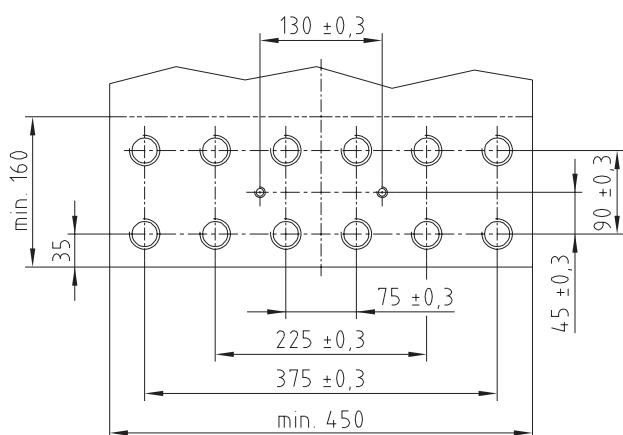


Calculation of brake disk

$$D_{av} = D_A - 136$$

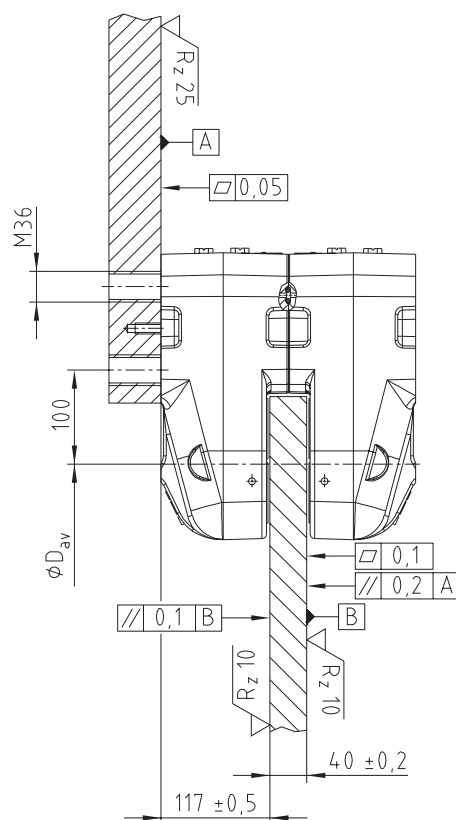
$$D_{i \text{ max. }} = D_A - 320$$

Connection dimensions of brake



Optional

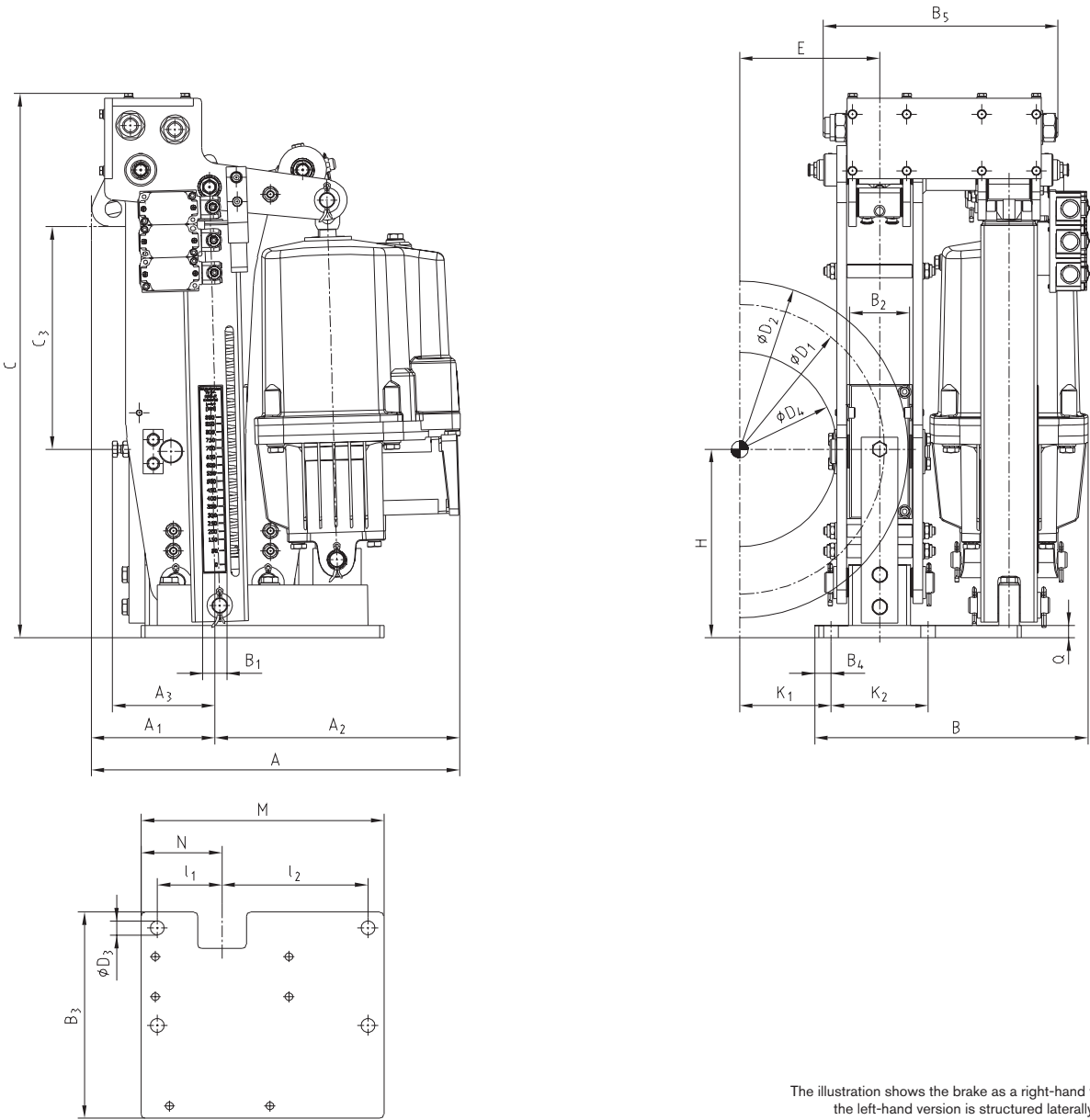
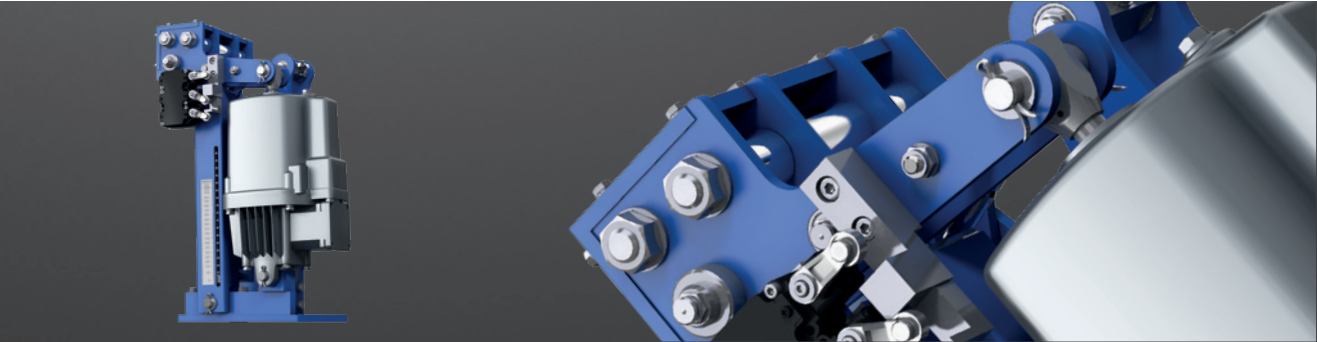
- Various colours available
- Sensor indicating wear and condition of pad
- Temperature sensor
- Alternative materials of brake pad



KTR-STOP® TB S

Disk brakes

Electrohydraulic brake system



The illustration shows the brake as a right-hand version R;
the left-hand version is structured laterally reversed

Ordering example:	KTR-STOP® TB	S1	Ed 500/60	R
	KTR brake	Size	Thruster	Type

Product features

- Disk brakes available as a right-hand and left-hand version
- Disk brakes in accordance with the industry standard
- The fully enclosed spiral element improves protection against damage and dirt
- Adjustable braking torque

Optional

- Automatic wear adjustment
- Manual thruster
- Limit switch brake condition and wear of pad
- Decelerated damping
- Alternative pad materials
- Relubricated bearing points
- Special painting
- Other options available: please consult with KTR.

Applications

- Cranes/hoists
- Conveyors
- Steel mills
- Materials handling

Size S1																		
Thruster	Dimensions [mm]																	
	A _{max}	A1 _{max}	A2 _{max}	A3	B _{max}	B3	B4	B5 _{max}	C _{max}	C3	D3	H	I1	I2	K2	M	N	Q
Ed 230/50	470		275		325					255								
Ed 300/50	470	195	275	140	325	255	20	330	690	255	18	230	80	180	120	300	100	15
Ed 500/60	500		305		345					260								
Ed 800/60	500		305		345					260								
Brake disk										Brake pad			Weight		Max. braking torque in Nm, μ = 0.4 ¹⁾			
Size	Dimensions [mm]								AB [cm ²]	[kg] ²⁾	Ed 230/50	Ed 300/50	Ed 500/60	Ed 800/60				
	D2	B1	D1	D4 _{max}	E	K1	B2											
S1	315	30	237	120	118	58	76	105	60	360	460	890	1420					
S1	355	30	277	160	138	78	76	105	60	420	535	1040	1660					
S1	400	30	322	205	160	100	76	105	60	490	625	1210	1930					
S1	450	30	372	255	185	125	76	105	60	565	720	1400	2225					
S1	500	30	422	305	210	150	76	105	60	645	815	1585	2525					
S1	560	30	482	365	240	180	76	105	60	735	935	1815	2885					
S1	630	30	552	435	275	215	76	105	60	840	1070	2075	3305					

Size S2																		
Thruster	Dimensions [mm]																	
	A _{max}	A1 _{max}	A2 _{max}	A3	B _{max}	B3	B4	B5 _{max}	C _{max}	C3	D3	H	I ₁	I ₂	K ₂	M	N	Q
Ed 500/60																		
Ed 800/60																		
Ed 1250/60	615	255	360	175	385	300	20	390	890	340	22	280	130	130	140	300	150	18
Ed 2000/60																		
Brake disk										Brake pad			Weight		Max. braking torque in Nm, μ = 0.4 ¹⁾			
Size	Dimensions [mm]								AB [cm ²]	[kg] ²⁾	Ed 500/60	Ed 800/60	Ed 1250/60	Ed 2000/60				
	D ₂	B1	D ₁	D4 _{max}	E	K ₁	B ₂											
S2	450	30	359	196	173	105	100	193	130	1200	1985	3005	4465					
S2	500	30	409	246	198	130	100	193	130	1370	2260	3425	5090					
S2	560	30	469	306	228	160	100	193	130	1570	2595	3925	5835					
S2	630	30	539	376	263	195	100	193	130	1805	2980	4510	6705					
S2	710	30	619	456	303	235	100	193	130	2075	3425	5180	7700					
S2	800	30	709	546	348	280	100	193	130	2375	3925	5935	8820					

Size S3																		
Thruster	Dimensions [mm]																	
	A _{max}	A1 _{max}	A2 _{max}	A3	B _{max}	B3	B4	B5 _{max}	C _{max}	C3	D3	H	I ₁	I ₂	K ₂	M	N	Q
Ed 1250/60																		
Ed 2000/60																		
Ed 3000/60	620	285	335	240	470	370	30	470	1110	495	27	370	180	180	160	450	225	22
Ed 3000/120																		
Brake disk										Brake pad			Weight		Max. braking torque in Nm, μ = 0.4 ¹⁾			
Size	Dimensions [mm]								AB [cm ²]	[kg] ²⁾	Ed 1250/60	Ed 2000/60	Ed 3000/60	Ed 3000/120				
	D ₂	B1	D ₁	D4 _{max}	E	K ₁	B ₂											
S3	630	30	520	305	245	163	135	346	265	4125	6010	10230	11655					
S3	710	30	600	385	285	203	135	346	265	4755	6935	11805	13450					
S3	800	30	690	475	330	248	135	346	265	5470	7975	13575	15465					
S3	900	30	790	575	380	298	135	346	265	6265	9130	15545	17710					
S3	1000	30	890	675	441	355	125	309	265	7055	10290	17515	19950					
S3	1250	30	1140	925	566	480	125	309	265	9040	13180	22435	25555					

¹⁾ Air gap per side approx. 1.25 mm for size S1 and approx. 1.5 mm for size S2 and S3.

The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

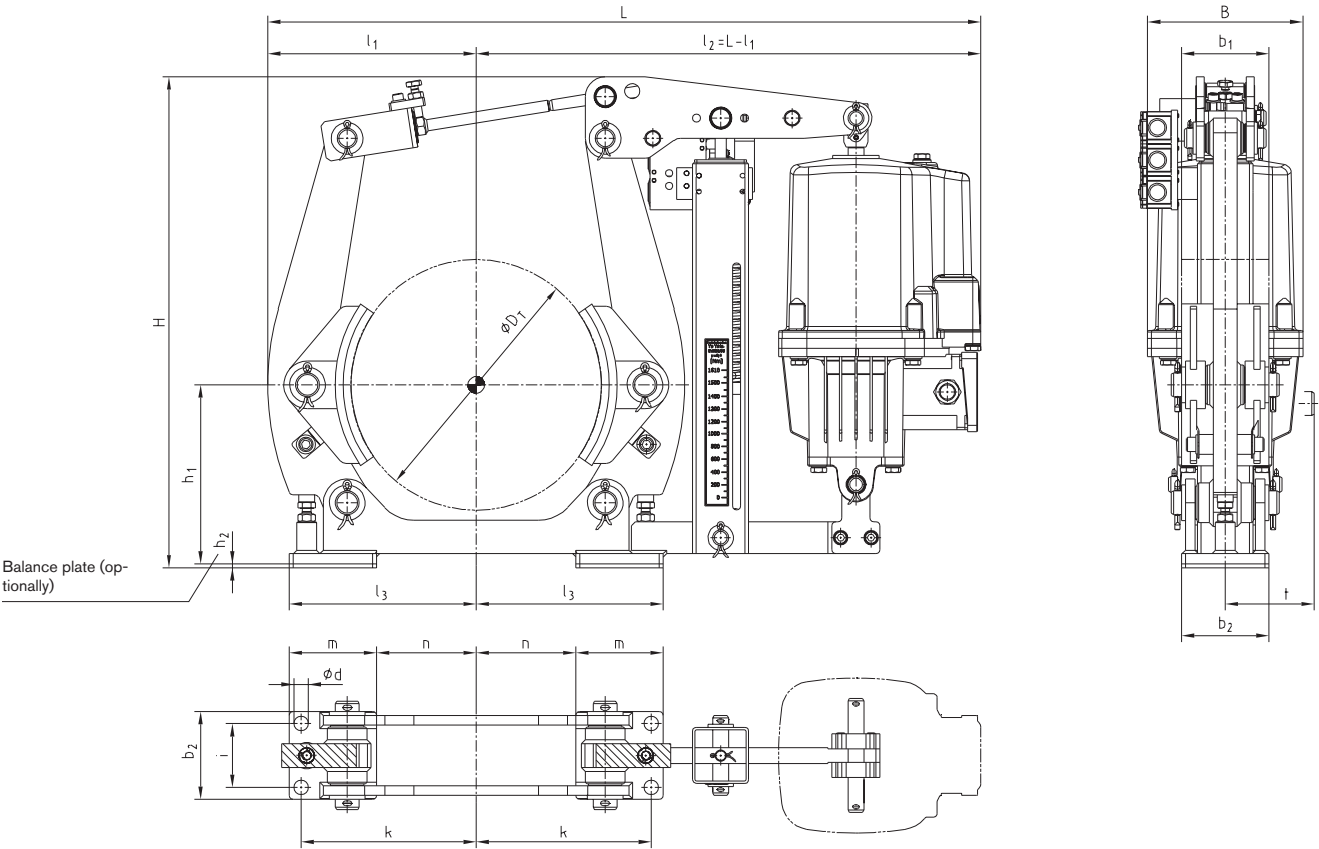
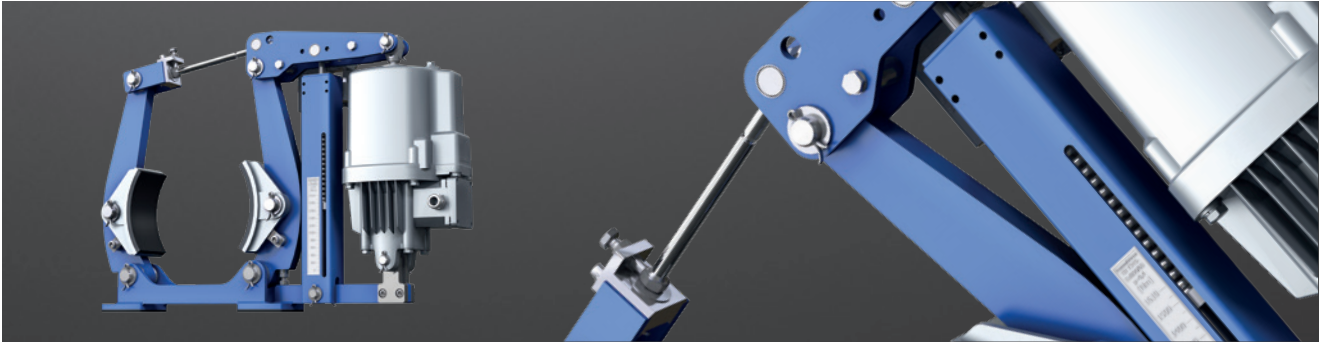
²⁾ Without thruster

For technical data of KTR-STOP® TB thruster see page 48/49.

KTR-STOP® TB T

Drum brakes

Electrohydraulic brake system



Ordering example:	KTR-STOP® TB	T315	Ed 500/60
	KTR brake	Size	Thruster

Product features

- Type of drum brakes acc. to DIN 15435
- The fully enclosed spiral element improves protection against damage and dirt
- Adjustable braking torque

Optional

- Automatic wear adjustment
- Manual thruster
- Limit switch brake condition and wear of pad
- Decelerated damping
- Alternative pad materials
- Relubricated bearing points
- Special painting
- Other options available: please consult with KTR.

Applications

- Cranes/hoists
- Conveyors
- Steel mills
- Materials handling

Drum brake																																
DT [mm]	Thruster acc. to DIN 15430	Braking torque ¹⁾ Nm for μ = 0.4	Dimensions [mm]															m ²⁾ [kg]														
			B	b1	b2	d	H	h1	h2	L	l ₁	l ₃	i	k	m	n	t															
200	Ed 230/50 Ed 300/50	50 - 300 50 - 420	160	75	80	14	475	155	5	660	180	165	55	145	80	85	117	26														
250	Ed 230/50 Ed 300/50 Ed 500/60	50 - 300 50 - 425 80 - 800	160 195	95	100	18	570	185	5	730 770	210	195	65	180	100	95	135	35														
	Ed 230/50 Ed 300/50 Ed 500/60 Ed 800/60	80 - 375 80 - 525 120 - 940 120 - 1610	160 195							118								110	18	650	225	5	875 910	265	235	80	220	110	125	166	54 55	
	Ed 230/50 Ed 300/50 Ed 500/60 Ed 800/60	120 - 375 120 - 525 200 - 940 200 - 1610	160 195																				150								140	22
Ed 230/50 Ed 300/50 Ed 500/60 Ed 800/60 Ed 1250/60 Ed 2000/60	120 - 375 120 - 525 200 - 940 200 - 1610 200 - 2580 200 - 4000	160 195 240	190	180	22	880	330	10	1195		395	350	130	325	180	170	245															
Ed 500/60 Ed 800/60 Ed 1250/60 Ed 2000/60 Ed 3000/60	250 - 1250 250 - 2080 250 - 3200 250 - 5000 250 - 7300	195 240																														
Ed 1250/60 Ed 2000/60 Ed 3000/60	350 - 3200 350 - 5000 350 - 7600	240																														
Ed 1250/60 Ed 2000/60 Ed 3000/60	450 - 3600 450 - 5600 450 - 8600	240								265								240	27	1120	460	10	1500	540	500	190	450	240	260	345	240	
Ed 3000/120	1000 - 10000																															

¹⁾ The friction coefficient each depends on the application resp. material of the brake pad; please consult with KTR.

²⁾ Without thruster

For technical data of KTR-STOP® TB thruster see page 48/49.

KTR-STOP® TB THRUSTER

according to DIN 15430

Electrohydraulic thrusters



Description of product:

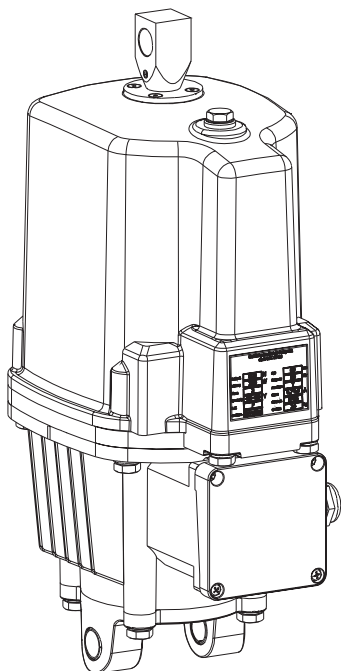
Electrohydraulic thrusters are compact systems closed on the outside that mainly consist of an electric motor and a hydraulic unit. When switched on the electric motor in the lower section of the housing is driving the pump wheel of the hydraulic pump on top. The generated hydrodynamic pressure takes effect on a piston extending the piston rod to the end-of-stroke position. When switching off the current or in the event of power failure the pump stops pumping, the oil pressure drops quickly and the piston rod returns into its original position.

To make sure that the piston returns particularly fast, it is possible to either install a return spring (similar to a brake spring) in the housing of the thruster, load the piston rod with an external force or install a quick lowering switch.

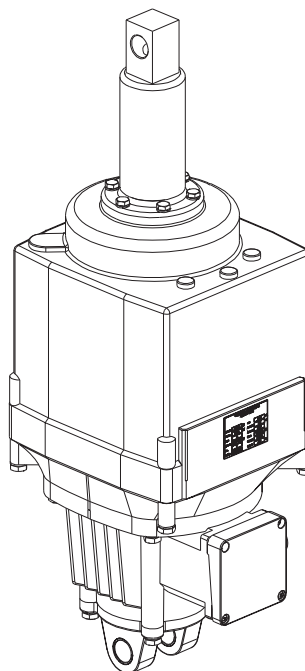
The hydraulic section with the tank is located in a closed housing. The oil level can be externally inspected and filled up through the oil filler hole. Electrohydraulic thrusters are supplied ready for assembly and painted and are provided with oil filling. They must be fastened via pins in the bores of the base fork and in the piston rod head.

The piston stroke is either defined by a limitation in the device's housing or by an external attachment on the assembly.

KTR-STOP® TB thruster
Ed 800/60



KTR-STOP® TB thruster
Ed 3000/120



Features of thrusters

- Thrusters depending on size from 230 N to 4500 N
- Piston strokes from 50 mm to 120 mm with serial devices, longer strokes up to 155 mm in a special version
- Solid design, therefore specifically suitable for highly stressed and harsh operating conditions
- Any motor rotation direction, since the vane type pump pumps in any rotating direction
- Normally all thrusters can be loaded up to 2000 switches per hour
- For continuous switching 100 % ED (mode of operation S1 - VDE 0530)
- Resistant to voltage fluctuations
- All devices are provided with a bipolar rotary current cage motor, protection class IP66 and insulation class F according to VDE 0530, limit temperature of motor 150 °C
- Piston stroke and lowering time adjustable by installation of a globe respectively lowering valve
- Standard design for rotary current 400V, 50 Hz- resp. for 500V, 50 Hz. All other rotary current voltages and frequencies are available. Motor terminal boxes are equipped with waterproof cable gland M25x1.5
- Additional return springs respectively brake springs can be installed in all devices
- Suitable with standard oil filling for ambient temperatures from -25 °C to +50 °C; with special oils and heating for temperatures down to -40 °C
- Up to ambient temperatures of 50 °C all thrusters are approved for 100 % ED (mode of operation S1 - VDE 0530)
- All devices suitable for standard brake control (e. g. reducing the hoist motor speed to approx. 20 % of the rated speed). In this case additional damping springs are required
- Every device can be mounted vertically, diagonally or horizontally and is almost maintenance-free
- If requested, all thrusters can be supplied with limit switches mounted

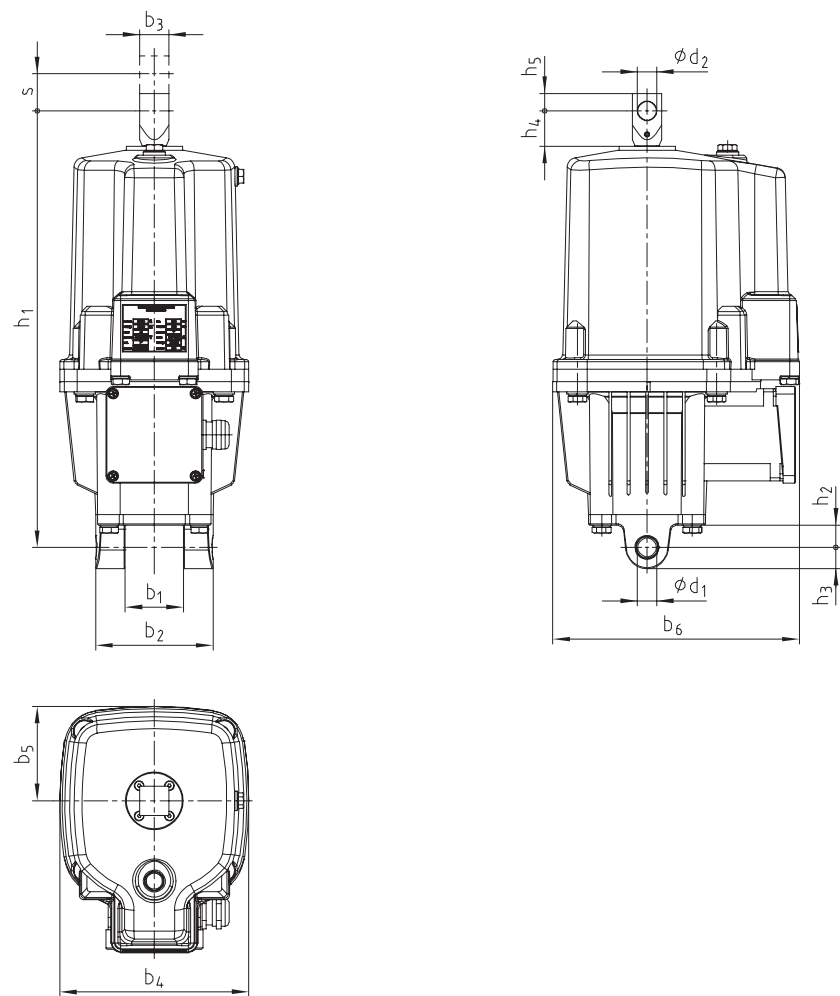
Extra equipment:

- Limit switch (mechanical or inductive)
- Lowering and globe valve - for infinitely variable extension of lifting and lowering times
- Quick switch - in case if standard lowering time of the piston is too long
- Brake spring (spring type c) for generating the braking force
- Damping spring (spring type d) for damping the aperiodic stabilising of the brake (only effective in combination with a spring type c)
- Heating for use with temperatures mainly below -25 °C

KTR-STOP® TB THRUSTER

according to DIN 15430

Electrohydraulic thrusters

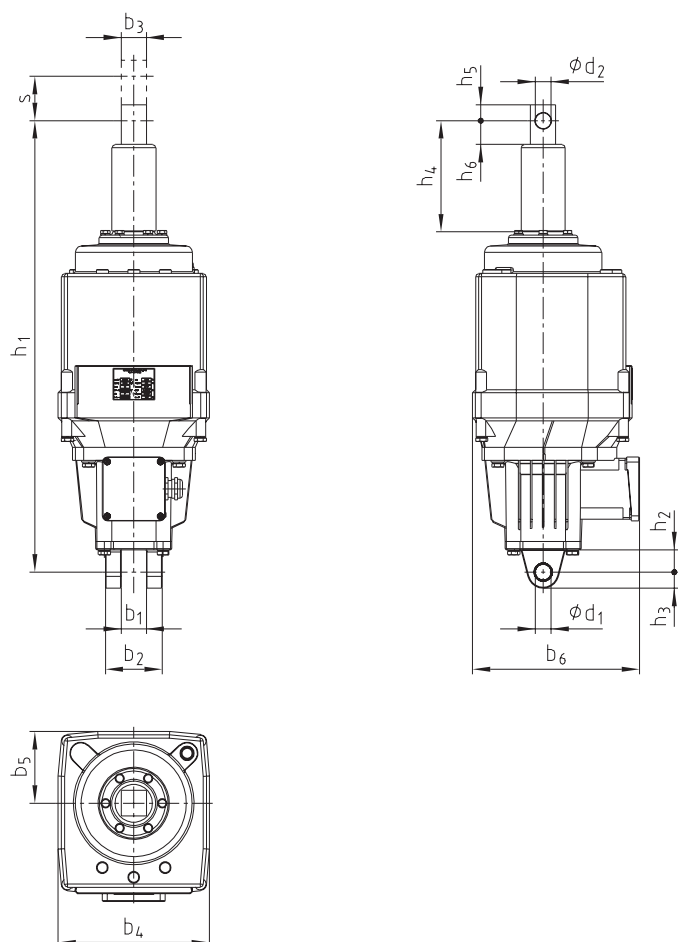


KTR-STOP® TB thruster														
Size	Dimensions [mm]													
	s	b1	b2	b3	b4	b5	b6	d1 ²⁾	d2 ¹⁾	h1	h2	h3	h4	h5
Ed 230/50	50	40	80	20	160	80	200	16	16	286	20	16	26	12
Ed 300/50	50	40	80	25	160	80	197	16	16	370	18	16	34	15
Ed 500/60	60	60	120	30	195	97	254	20	20	435	23	22	36	18
Ed 800/60	60	60	120	30	195	97	254	20	20	450	23	22	36	18

¹⁾ Tolerance: +0.1
²⁾ Tolerance: +0.15/+0.25

Technical data							
Size	Power [N]	Stroke [mm]	Rated frequency [Hz]	Rated voltage [V]	Rated current [A]	Rated power [W]	Weight [kg]
Ed 230/50	230	50	50	230/400	0.9/0.6	165	10
Ed 300/50	300	50	50	230/400	1.0/0.7	200	14
Ed 500/60	500	60	50	230/400	1.0/0.7	210	23
Ed 800/60	800	60	50	230/400	2.1/1.2	330	24

Ordering example:	KTR-STOP® TB	Ed 800/60
	KTR thruster	Size



KTR-STOP® TB thruster															
Size	Dimensions [mm]														
	s	b1	b2	b3	b4	b5	b6	d1 ²⁾	d2 ¹⁾	h1	h2	h3	h4	h5	h6
Ed 1250/60	60	40	90	40	240	112	260	25	25	645	35	25	117	25	38
Ed 1250/120	120	40	90	40	240	112	260	25	25	705	35	25	177	25	38
Ed 2000/60	60	40	90	40	240	112	260	25	25	645	35	25	117	25	38
Ed 2000/120	120	40	90	40	240	112	260	25	25	705	35	25	177	25	38
Ed 3000/60	60	40	90	40	240	112	260	25	25	645	35	25	117	25	38
Ed 3000/120	120	40	90	40	240	112	260	25	25	705	35	25	177	25	38
Ed 4000/60	60	40	90	40	240	112	260	25	25	645	35	25	117	25	38
Ed 4000/120	120	40	90	40	240	112	260	25	25	705	35	25	177	25	38
Ed 4500/60	60	40	90	40	240	112	260	25	25	645	35	25	117	25	38
Ed 4500/120	120	40	90	40	240	112	260	25	25	705	35	25	177	25	38

¹⁾ Tolerance: +0.1

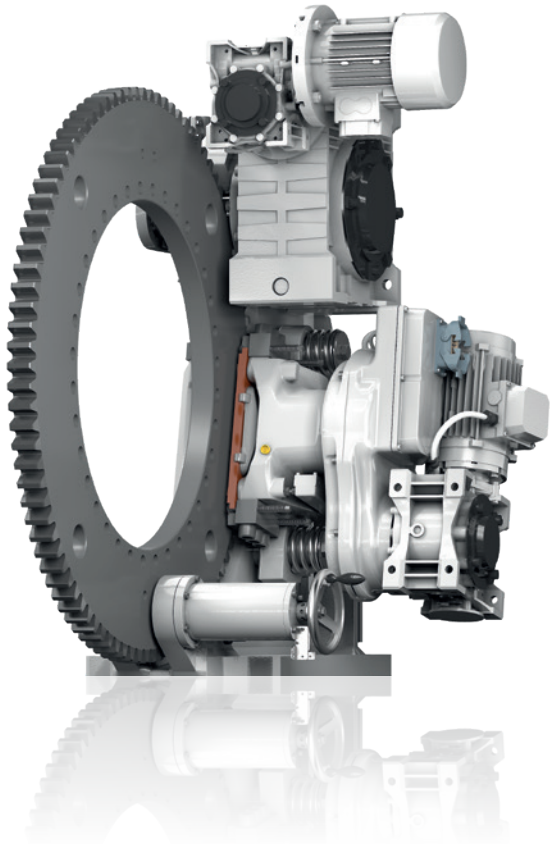
²⁾ Tolerance: +0.15/+0.25

Technical data							
Size	Power [N]	Stroke [mm]	Rated frequency [Hz]	Rated voltage [V]	Rated current [A]	Rated power [W]	Weight [kg]
Ed 1250/60	1250	60	50	230/400	2.1/1.2	330	39
Ed 1250/120	1250	120	50	230/400	2.1/1.2	330	39
Ed 2000/60	2000	60	50	230/400	2.2/1.3	450	39
Ed 2000/120	2000	120	50	230/400	2.2/1.3	450	39
Ed 3000/60	3000	60	50	230/400	2.4/1.4	550	40
Ed 3000/120	3000	120	50	230/400	2.4/1.4	550	40
Ed 4000/60	4000	60	50	230/400	2.6/1.5	650	40
Ed 4000/120	4000	120	50	230/400	2.6/1.5	650	40
Ed 4500/60	4500	60	50	230/400	2.6/1.7	650	40
Ed 4500/120	4500	120	50	230/400	2.6/1.7	650	40

Ordering
example:

KTR-STOP® TB	Ed 3000/120
KTR thruster	Size

SBT Systems



STOP-BLOCK-TURN systems for ship propulsion and industrial applications: For drive trains in all performance ranges.

Description of product

The SBT systems of KTR are often used on propeller shafts in marine applications: ranging from small yachts through working and supply vessels to large cruise liners. Other applications for our SBTs are industrial applications such as ball mills, shredders, etc.

The functions:

»STOP = braking«, »BLOCK = mechanical blocking« and »TURN« = turning the drive shafts can optionally be performed either separately or in any combinations.

Our broad system construction kit provides high flexibility resulting in a tailor-made overall solution for the drive train. The brakes, locking pins and turn devices can be combined as required. Here the individual functions can be driven both electrically, hydraulically or purely mechanically. This depends on the individual customer requests. We provide you with an overall solution of the specified components including control unit, hydraulic power pack, brake disk, etc. along with training and service as requested.

Features

- Turning torques up to 500 kNm
- Blocking torques up to 2000 kNm
- Braking torques up to 1000 kNm
- Back-up limit switch for condition monitoring
- Supply voltages adaptable for drives or HPU
- Mechanical manual emergency operation of components
- High-quality corrosion protection of all components

Control (optional)

The control unit is selected according to its function and complies with the high standards of classification societies and certification authorities. The system with hydraulic brakes allows to optionally include the hydraulic power pack in the control cabinet. We are familiar with noise reduction elements for low-noise applications or rope damping elements for applications subject to shock load. The components of an SBT system are logically linked within a control unit to ensure safe and failure-free operation of the different functions. This applies both with the local control and with the remote control - for example from the bridge or the machine operator's cabin.

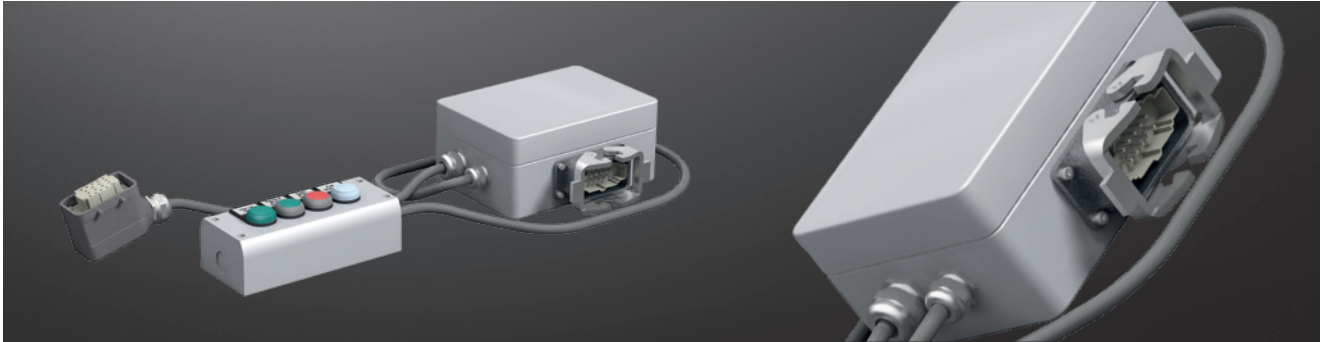
For current data refer to our online catalogue at www.ktr.com



EMB-STOP Control Box

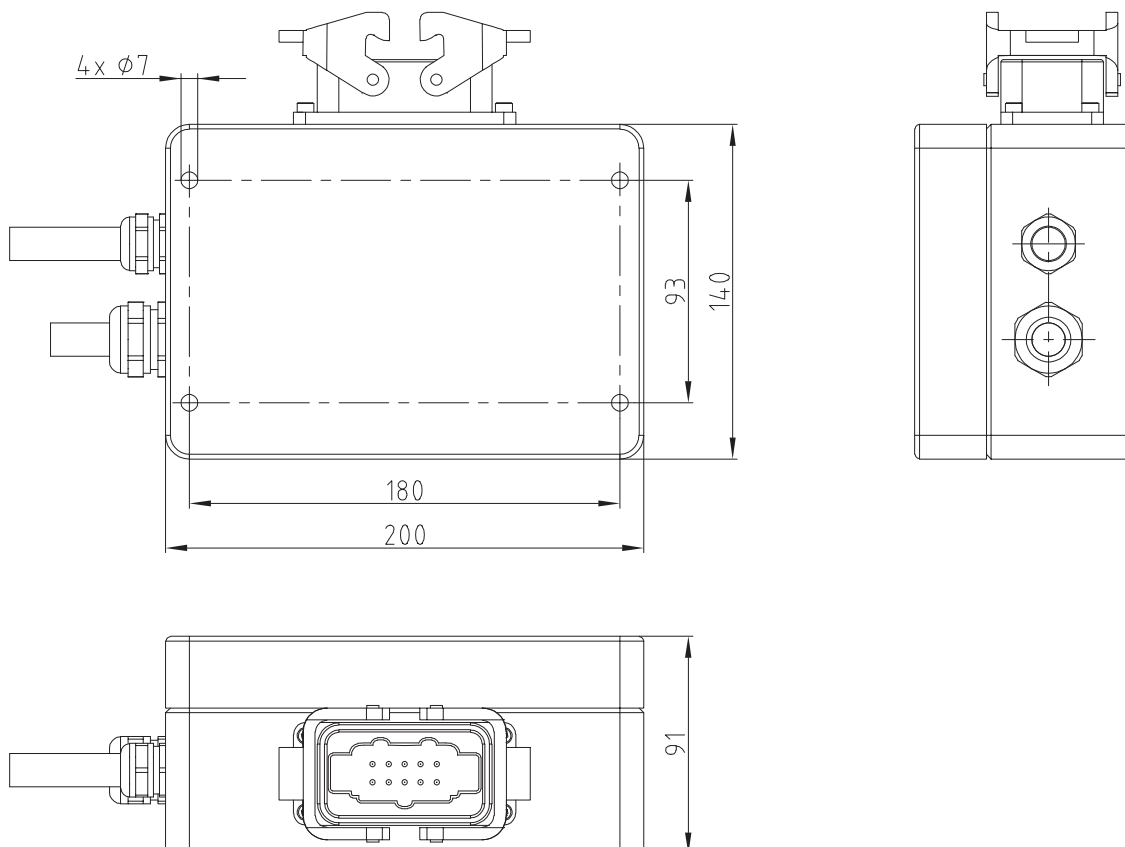
Electronic control system

Description of product



The EMB-STOP Control Box can be used for active and passive electromechanical brakes type EMB-STOP. It forms a simplifying interface between the customer's control and the brake EMB-STOP.

- Simple interface between control and brake → Plug & Play
- Available for active and passive EMB-STOP brakes
- Optionally available with handheld panel → Releasing and applying a brake directly at the source
- Signal control for customised controls
- Control voltage: 24 VDC
- Motor voltage: up to 480 VAC with 50 Hz/60 Hz
- Relays for potential-free status signals of a brake: brake applied, brake released, wear of brake pad



Description of product

IntelliRamp® is an electronic control system allowing for accurate braking processes via program control. In conjunction with IntelliRamp® our brakes are therefore suitable for use in sophisticated applications:



- Ramp-supported braking process
 - Continuous deceleration operation
 - Continuous time operation
 - Continuous speed operation
- Overspeed monitoring
- Reverse lock

Operation and structure

The IntelliRamp® system controls the clamping force of the brake and the resulting braking force infinitely. This allows to control both hydraulic and electromechanical brakes sensitively complying with the operating instructions. The core of the system is the control computer with its touchscreen. It takes over all functions of calculation and monitoring that are necessary for controlling the brake systems. In addition IntelliRamp® controls and monitors the function of the power pack with a hydraulic brake system. For that purpose parameters like oil level, oil temperature and hydraulic pressure are recorded by the system. The overall system, among other things, has an uninterruptible power supply to allow for performing a full braking ramp in case of power failure. This will allow you to keep the full control of your brake system even with critical conditions of the machine while preventing damages from your machine.

Operation

The control system is operated via touchscreen with menu navigation. Other relays are not necessary which increases the availability and reliability of IntelliRamp® considerably. It goes without saying that many standard bus systems (e. g. Profibus, EtherCAT, etc.) are available as options for your communication as well.

Ramp-supported braking process

The ramp-supported braking process is activated by a signal safe from cable break. The process is performed via a closed control circuit covering speed versus time. Since a proportional control is not concerned here, the system is safe from power breakdown, i. e. it will work even if the power supply fails. The ramp is defined by a rated speed and a braking time considering this speed.

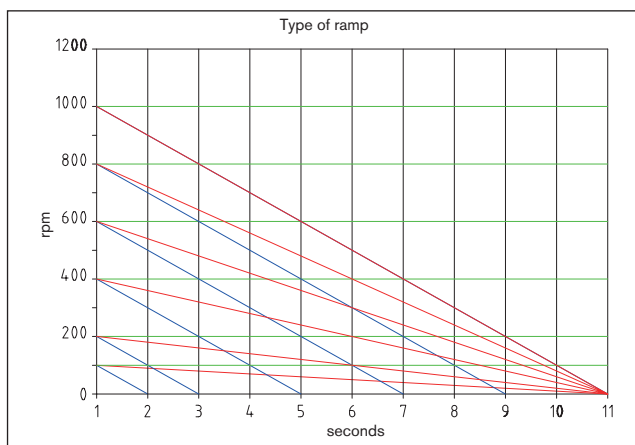
Since a speed which is almost zero cannot be accurately measured any longer, a braking process exists increasing the braking power to achieve the full figure from a certain speed within a period to be defined.

For the ramp a tolerance range is defined which a control is performed in. Falling below this range the brake releases, exceeding this range the brake applies fully. The tolerance range can be flexibly defined. The more precise the definition, the more accurate is the control, but at the same time the more nervous is the reaction.

To avoid impacts in the beginning of the braking process, the control automatically calculates the braking pressure that is theoretically necessary to reach the required ramp. This prevents too fierce braking.

IntelliRamp® allows to use three brake ramps which can each be individually programmed and which can be started irrespective of each other.

Scheme of the ramp-supported braking process



— Continuous deceleration:

With a higher speed the braking cycle takes longer, with a low speed it takes shorter.

— Continuous time operation

The same time is always maintained. Thus, the brake is engaged more strongly if the speed is higher.

— Continuous speed control:

An option to keep the device at a constant speed via the brake only.

Function

Overspeed monitoring:

Triggering the excessive speed reacts flexibly with defined excessive speed barriers. Two values can be defined by which either a message is given to the PLC, a brake ramp is triggered or an emergency stop is activated immediately without performing any control of this braking process. The excessive speed control can be switched on and off.

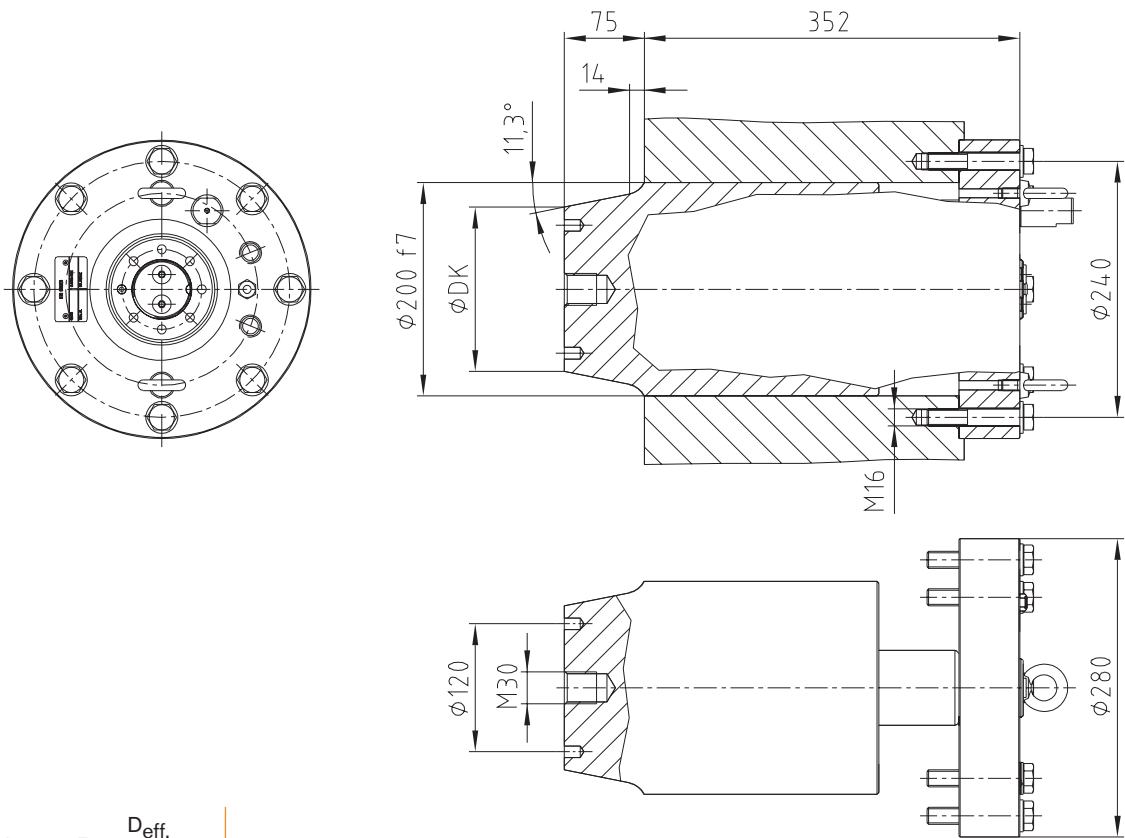
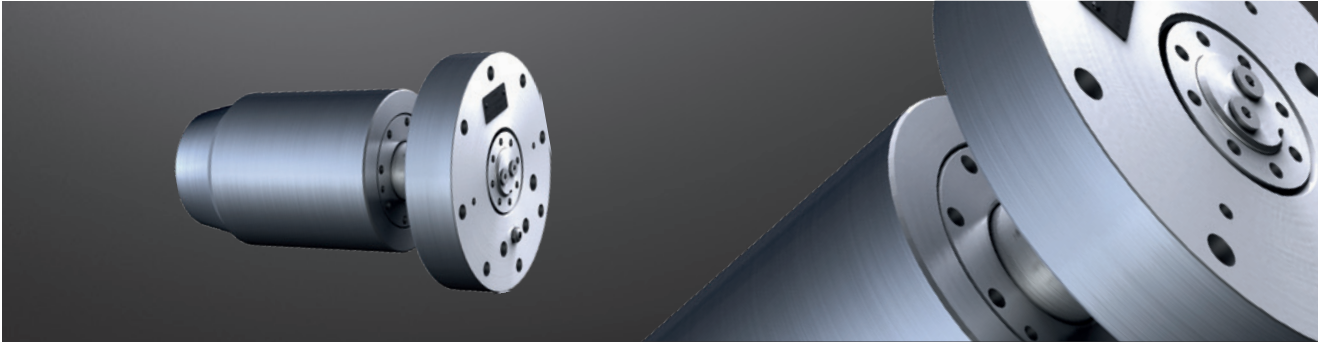
Reverse lock:

It allows for controlling the speed. In case of an unauthorised rotational motion of the system a braking process is activated or starting of the machine is prevented. A definition of the number of starts preventing a reset if the number is exceeded is to prevent the device from reversing in case of a fracture of the drive.

KTR-STOP® RL S

Rotor Lock

Hydraulic system



$$M_L = z \cdot F_L \cdot \frac{D_{eff.}}{2}$$

F_L = Shear force [kN]

M_L = Holding torque [kNm]

z = Number of Rotor Lock

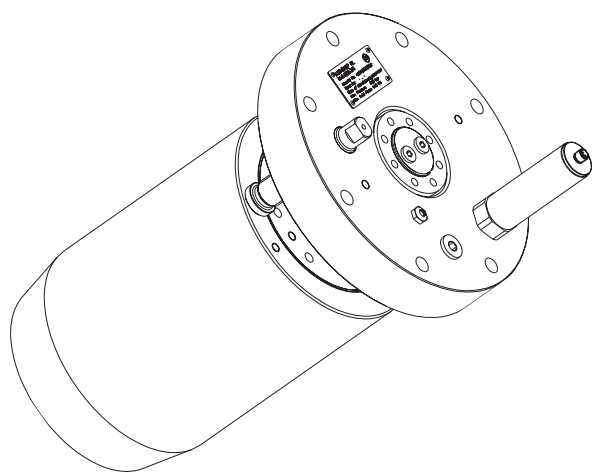
$D_{eff.}$ = Pitch circle diameter of locking disk [m]

KTR-STOP® RL S			
Weight	Approx. 90 kg	Piston diameter	120 mm
Max. stroke	80 mm	Piston surface fore stroke	113.10 cm²
Max. shear force ¹⁾	2000 kN	Piston surface back stroke	74.61 cm²
Max. operating pressure	250 bars	Oil volume per 1 mm stroke	11.3 cm³
Max. force fore stroke F+	283 kN	Oil volume with 75 mm stroke (full stroke)	848.2 cm³
Max. force back stroke F-	187 kN	Pressure connection	G 1/4

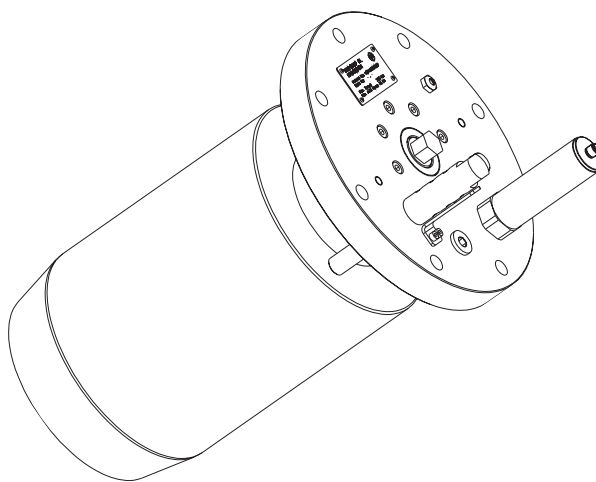
¹⁾ Please note that the shear force refers to the Rotor Lock only.

Ordering example:	KTR-STOP® RL	S	-	A	-	295	-	154
	KTR Rotor Lock	Rotor Lock size		Variant		Mounting length		Small taper diameter

Hydraulic version

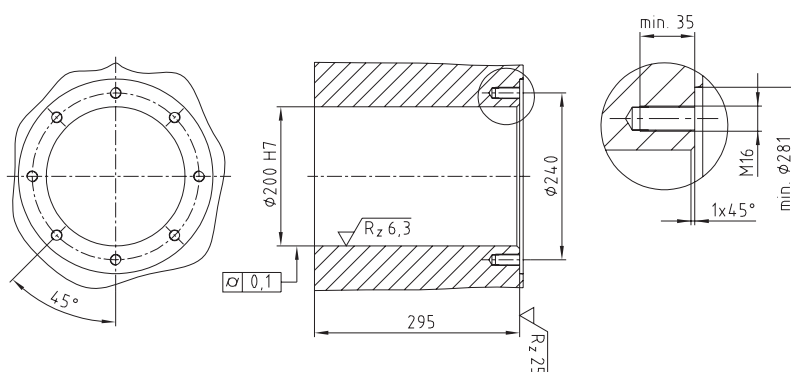


Mechanical version

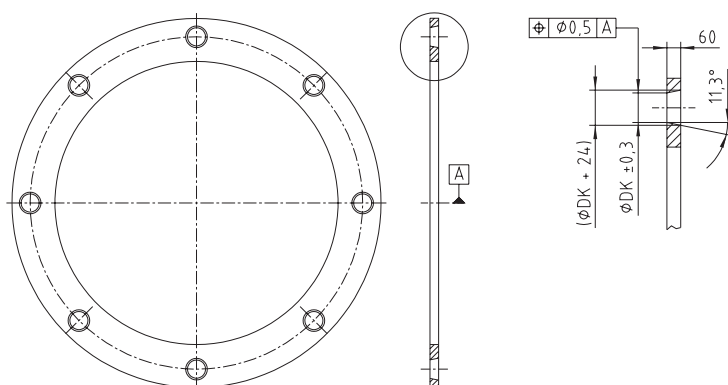


Connection dimensions of brake

Housing



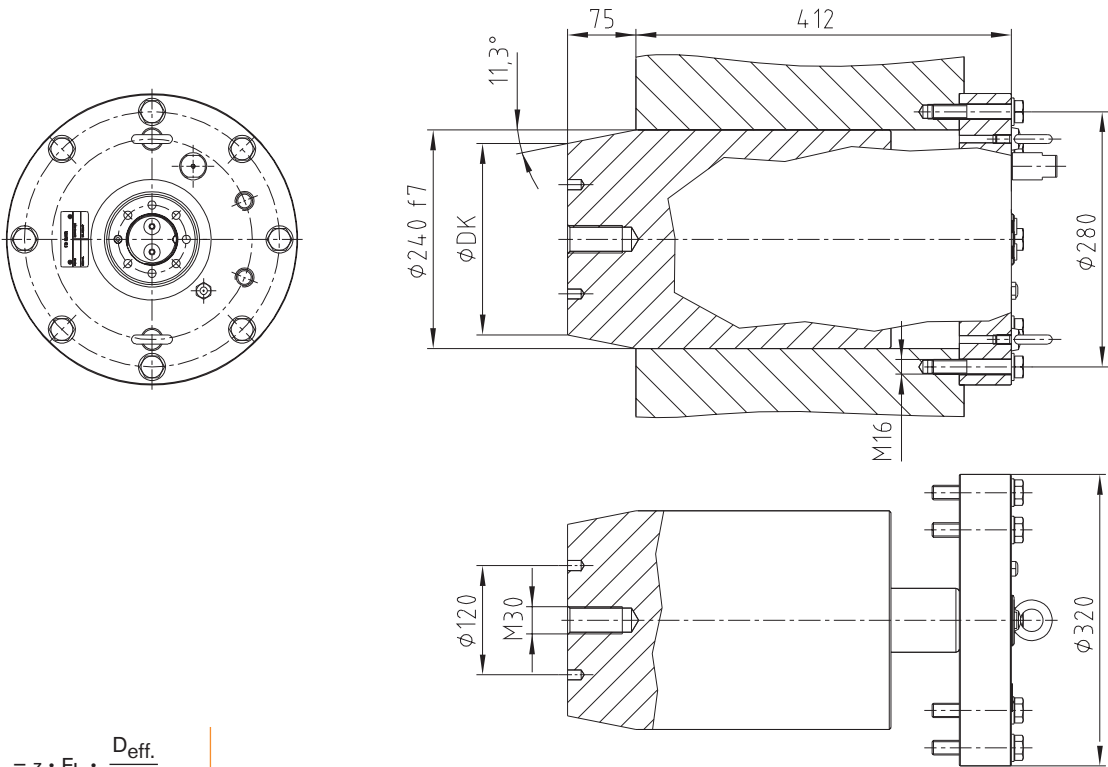
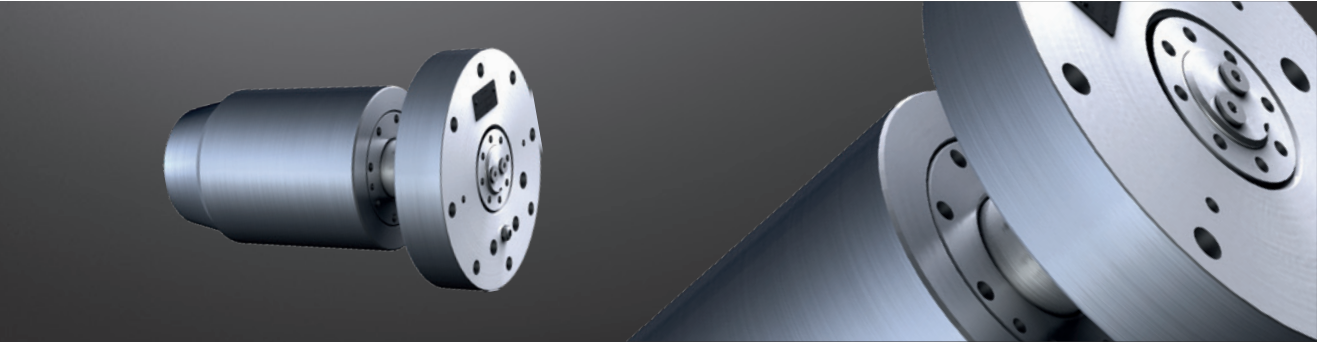
Locking disk



KTR-STOP® RL M

Rotor Lock

Hydraulic system



$$M_L = z \cdot F_L \cdot \frac{D_{eff.}}{2}$$

F_L = Shear force [kN]

M_L = Holding torque [kNm]

z = Number of Rotor Lock

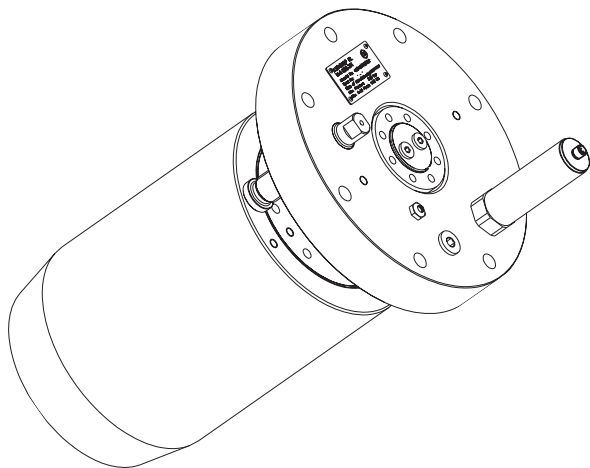
$D_{eff.}$ = Pitch circle diameter of locking disk [m]

KTR-STOP® RL M			
Weight	Approx. 150 kg	Piston diameter	120 mm
Max. stroke	80 mm	Piston surface fore stroke	113.10 cm²
Max. shear force ¹⁾	4000 kN	Piston surface back stroke	74.61 cm²
Max. operating pressure	250 bars	Oil volume per 1 mm stroke	11.3 cm³
Max. force fore stroke F+	283 kN	Oil volume with 75 mm stroke (full stroke)	848.2 cm³
Max. force back stroke F-	187 kN	Pressure connection	G 1/4

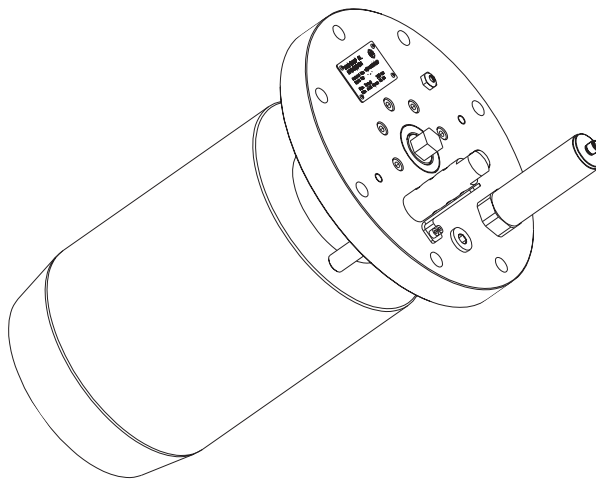
¹⁾ Please note that the shear force refers to the Rotor Lock only.

Ordering example:	KTR-STOP® RL	M	-	A	-	365	-	214
	KTR Rotor Lock	Rotor Lock size		Variant		Mounting length		Small taper diameter

Hydraulic version

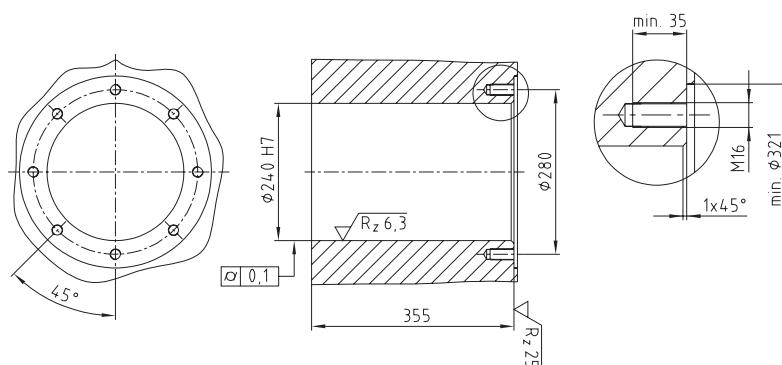


Mechanical version

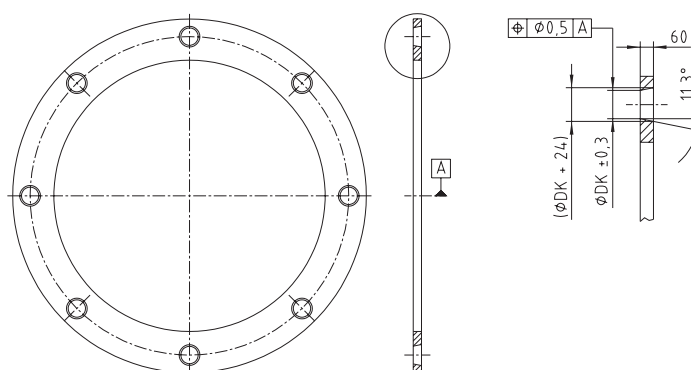


Connection dimensions of brake

Housing



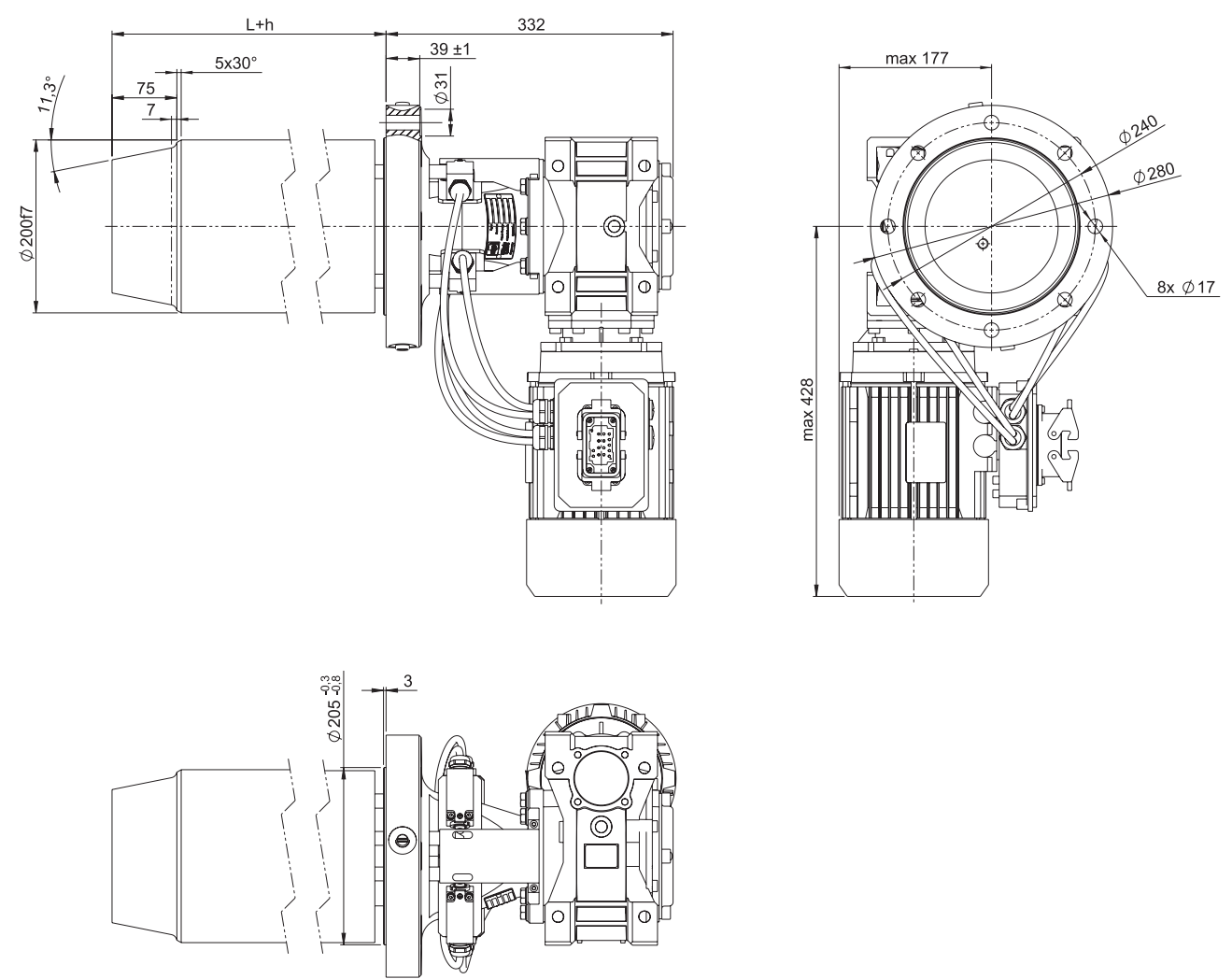
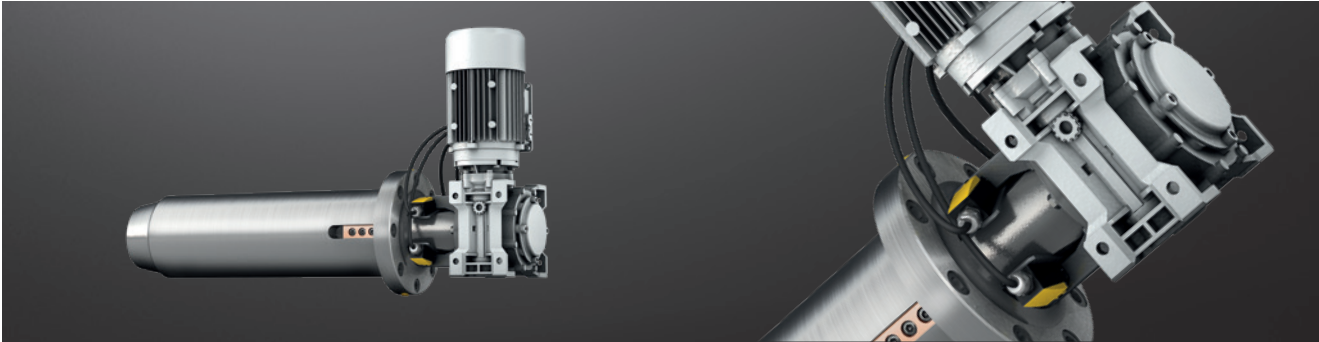
Locking disk



EMB-STOP RL S

Rotor Lock

Electromechanical system

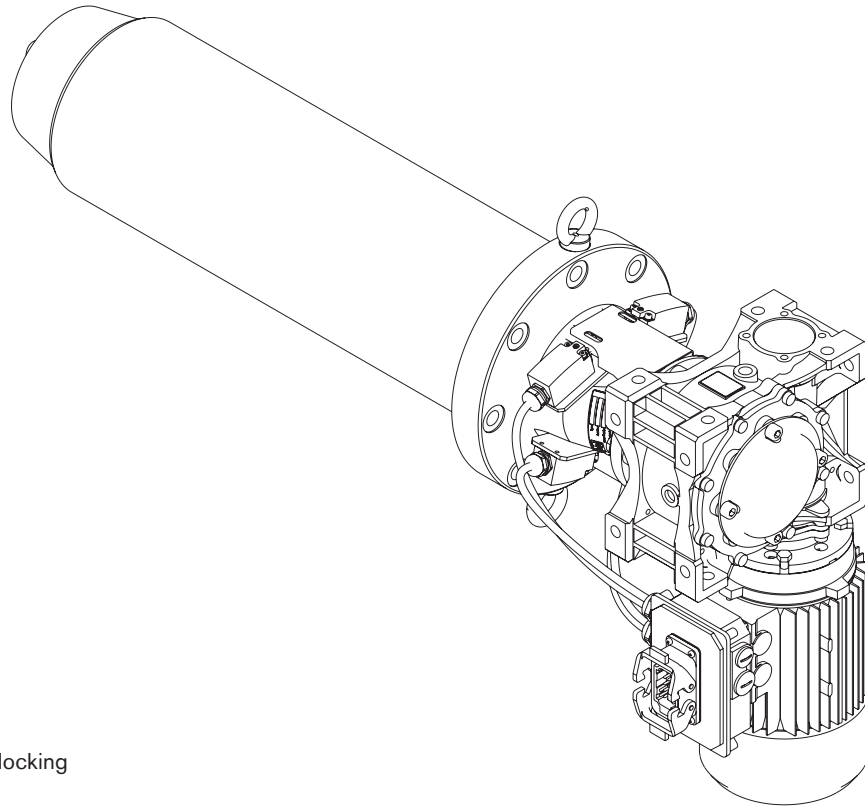


EMB-STOP RL S			
Max. stroke	75 mm	Motor power	1100 W
Max. shear force ¹⁾	2000 kN	Motor voltage	400 VAC, 50 Hz
Pressure force, axial F+	160 kN	Voltage of electrical signals	230 VAC/24 VDC
Tensile force, axial F-	160 kN	Speed with 50 Hz	160 mm/min.
Total weight, approx. ²⁾	150 kg	Size of industrial connector	Han 10B / Han 18EE (male)
Limit switch signals, standard	locked, unlocked		

¹⁾ Please note that the shear force refers to the Rotor Lock only.

²⁾ Weight with L = 355.

Ordering example:	EMB-STOP RL	S	E	355	CON
	EMB Rotor Lock	Rotor Lock size	Electrical operation	Mounting length (L)	Contact form (see table)



$$M_L = z \cdot F_L \cdot \frac{D_{\text{eff.}}}{2}$$

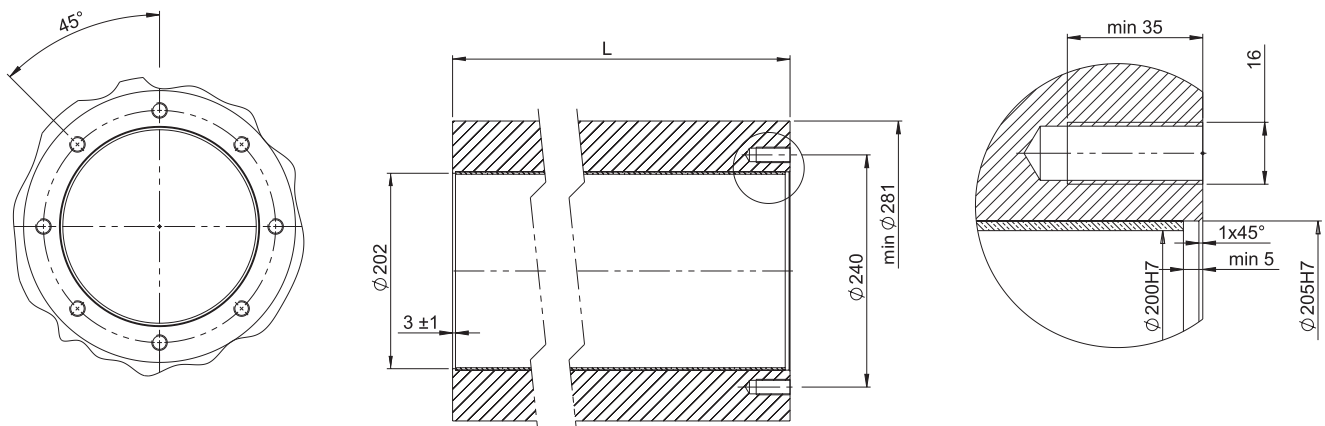
F_L = Shear force [kN]

M_L = Holding torque [kNm]

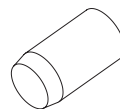
z = Number of Rotor Lock

$D_{\text{eff.}}$ = Pitch circle diameter of locking disk [m]

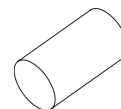
Connection dimensions of brake



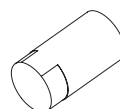
Contact form	xxx
taper	CON
coradial	COR
cylindrical	CYL
trapezoid	TRA



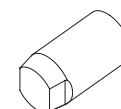
taper



cylindrical



coradial

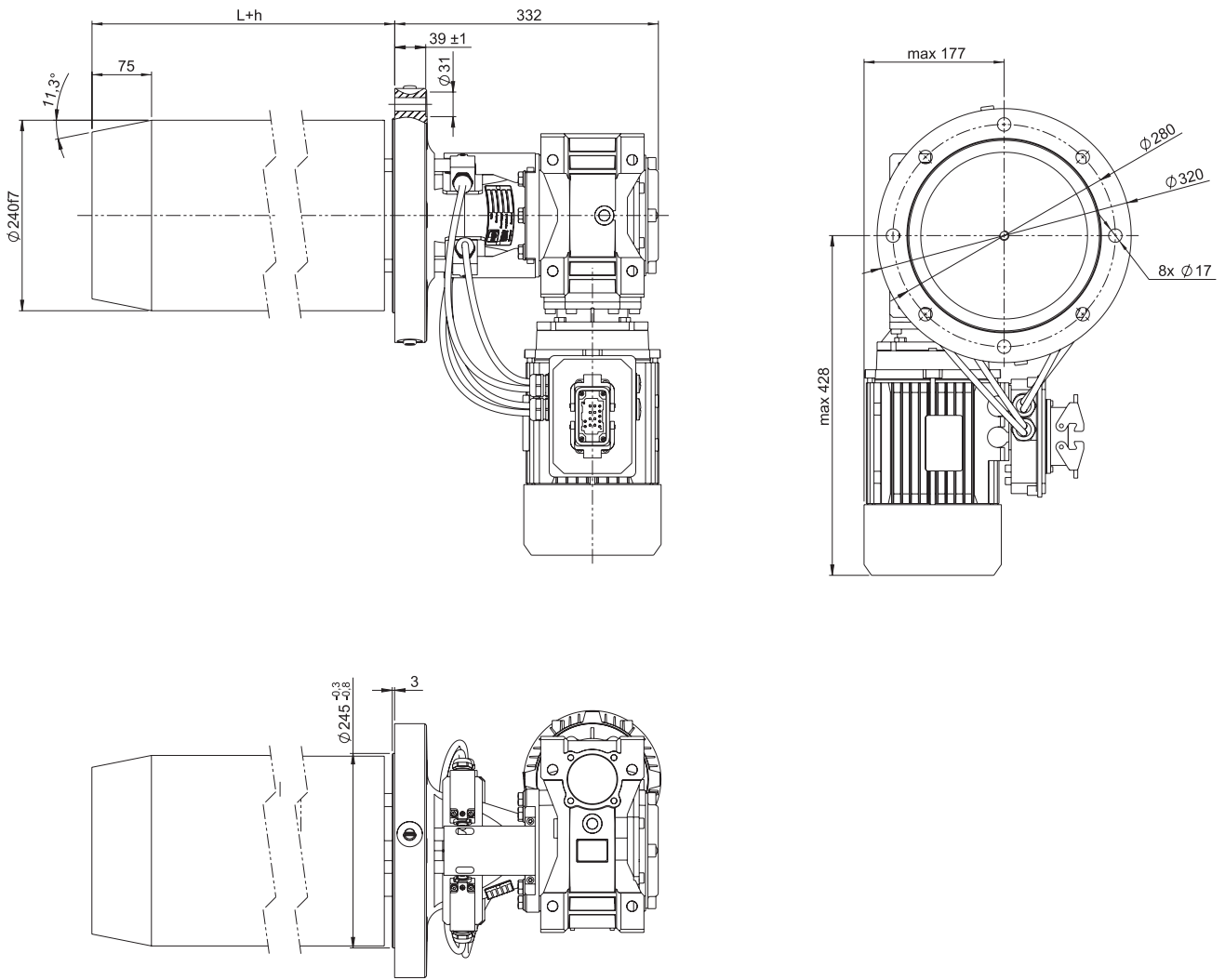


trapezoid

EMB-STOP RL M

Rotor Lock

Electromechanical system

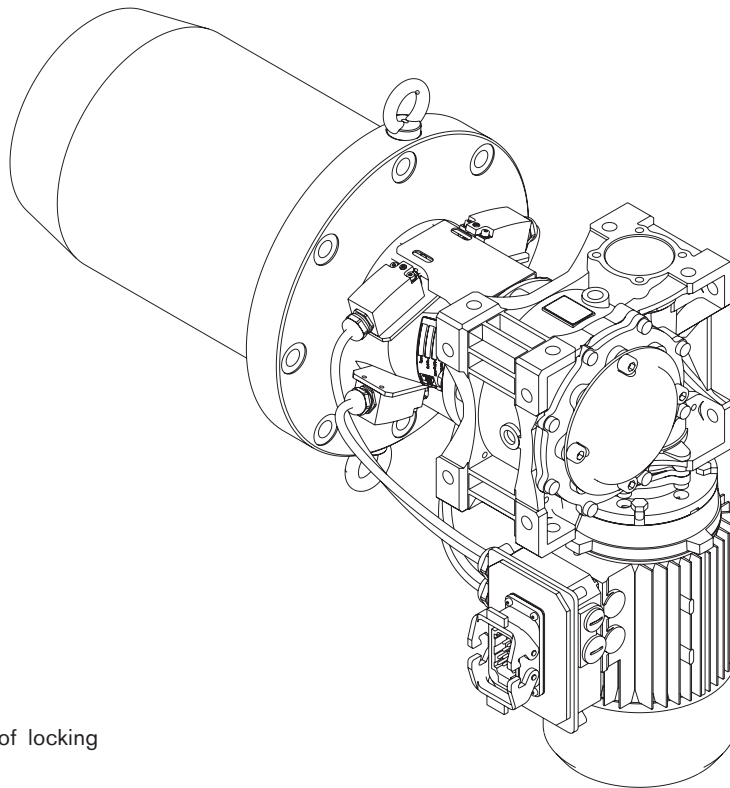


EMB-STOP RL M			
Max. stroke	75 mm	Motor power	1100 W
Max. shear force ¹⁾	4000 kN	Motor voltage	400 VAC, 50 Hz
Pressure force, axial F+	160 kN	Voltage of electrical signals	230 VAC/24 VDC
Tensile force, axial F-	160 kN	Speed with 50 Hz	160 mm/min.
Total weight, approx. ²⁾	190 kg	Size of industrial connector	Han 10B / Han 18EE (male)
Limit switch signals, standard	locked, unlocked		

¹⁾ Please note that the shear force refers to the Rotor Lock only.

²⁾ Weight with L = 355.

Ordering example:	EMB-STOP RL	M	E	355	CON
	EMB Rotor Lock	Rotor Lock size	Electrical operation	Mounting length (L)	Contact form (see table)



$$M_L = z \cdot F_L \cdot \frac{D_{\text{eff.}}}{2}$$

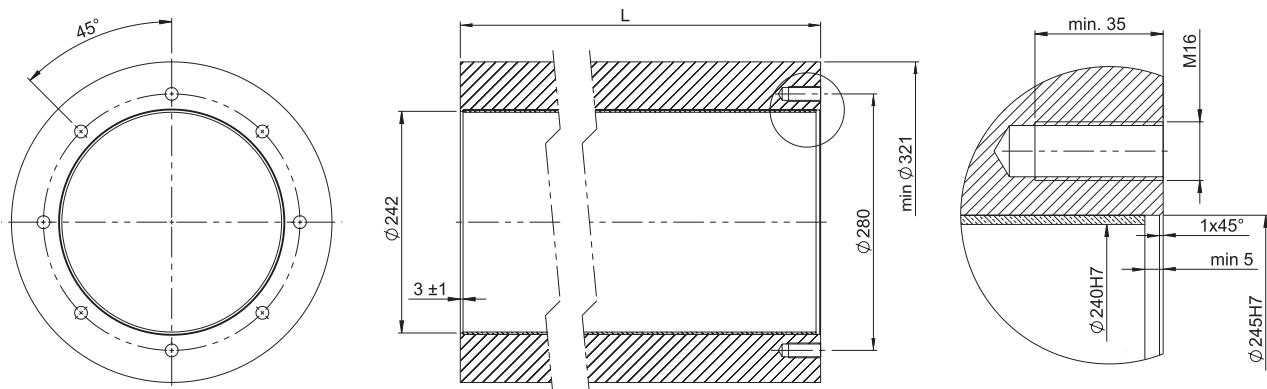
F_L = Shear force [kN]

M_L = Holding torque [kNm]

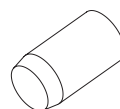
z = Number of Rotor Lock

$D_{\text{eff.}}$ = Pitch circle diameter of locking disk [m]

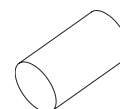
Connection dimensions of brake



Contact form	xxx
taper	CON
coradial	COR
cylindrical	CYL
trapezoid	TRA



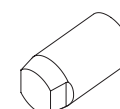
taper



cylindrical



coradial

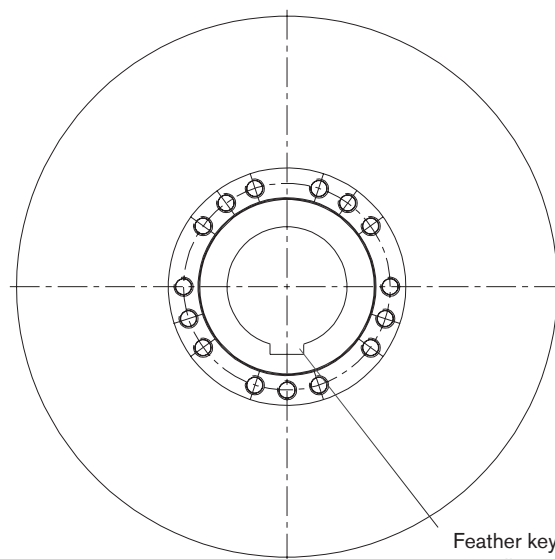
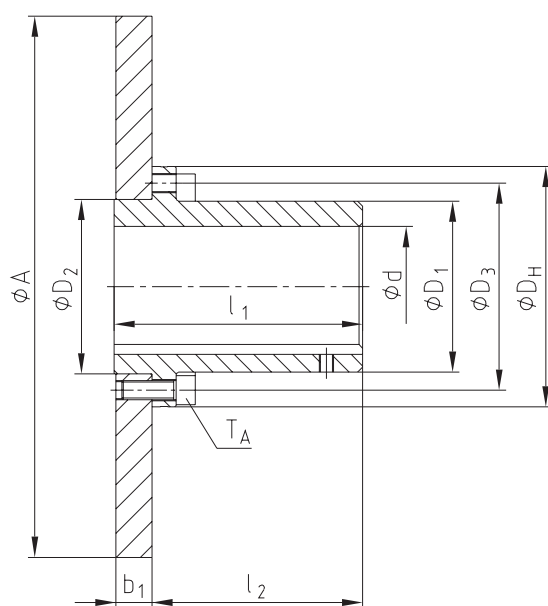
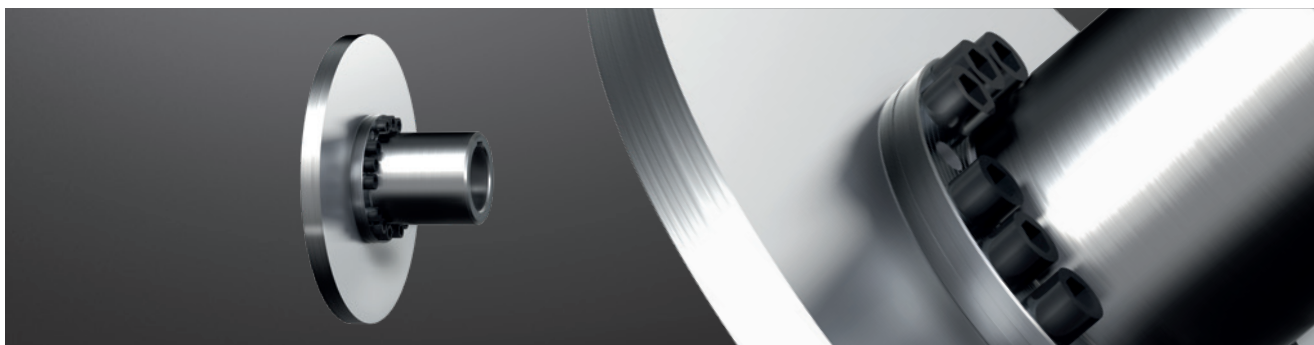


trapezoid

KTR-STOP® NBS

Hubs with brake disks

Description of product



Feather keyway
according to DIN
6885 sheet 1

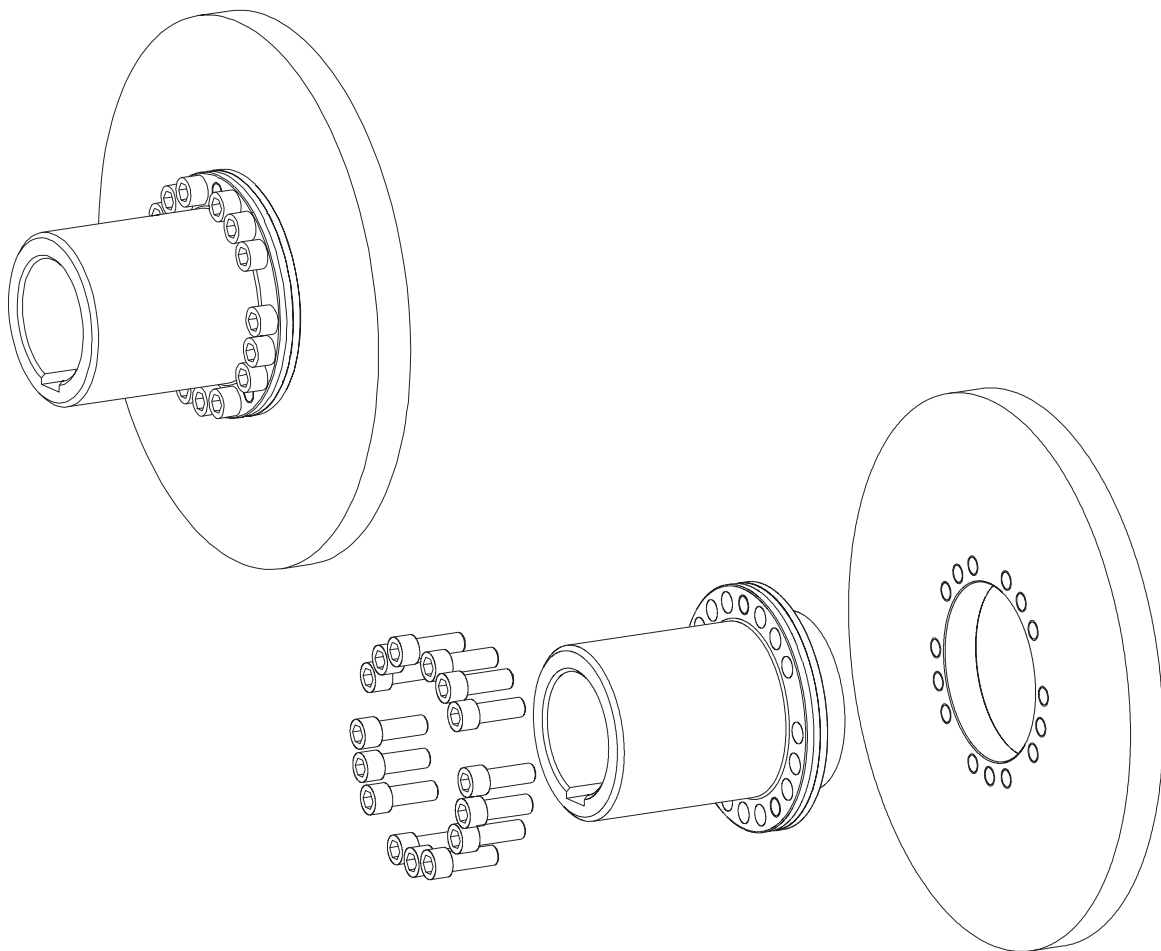
KTR-STOP® NBS													
Size	Dimensions [mm]								Cap screws DIN EN ISO 4762				Max. braking torque ¹⁾ [Nm]
	Finish bore d		DH	D ₁	D ₂	D ₃	l ₁	l ₂	Thread M	z = number	pitch	Tightening torque T _A [Nm]	
	min.	max.											
65	22	65	135	94	96	116	166	135	M 10	12	16x22.5°	67	3000
75	30	75	160	108	112	136	166.5	135	M 12	15		115	6700
90	40	100	200	142	145	172	206.5	175	M 16	15		290	16000
100	46	110	225	158	165	195	206.5	175	M 16	15		290	18700
110	60	125	255	178	180	218	212	180	M 20	15	20x18°	560	32700
125	60	145	290	206	215	252	212	180	M 20	15		560	38100
140	60	165	320	235	245	282	252.5	220	M 20	15		560	42700
								210 ²⁾			560	42700	
160	80	190	370	270	280	325	252.5	220	M 24	15		970	75200
								210 ²⁾				970	75200
180	85	220	420	315	330	375	252.5	210 ²⁾	M 24	18		24x15°	970

¹⁾ Referring to screw connection of brake disk; the shaft-hub-connection must be inspected separately by the customer.

²⁾ Dimensions with a width of brake disk b₁ of 40 mm.

Ordering
example:

KTR-STOP® NBS 110	800x30	Ø100
Type/size	Brake disk ØAxb ₁	Bore d



Weights and mass moments of inertia									
Size	65	75	90	100	110	125	140	160	180
Brake disk ØAx _{b1}	Weight ¹⁾ [kg]								
	Mass moment of inertia ¹⁾ [kgm ²]								
355x30	25.6								
	0.349								
400x30	31.4	33.4							
	0.556	0.566							
450x30	38.7	40.6	49.3						
	0.885	0.895	1.009						
500x30		48.7	58.1	59.0	64.1				
		1.354	1.506	1.439	1.511				
560x30			69.9	69.9	75.0				
			2.335	2.204	2.277				
630x30			85.3	84.1	89.2	96.6			
			3.703	3.468	3.540	3.681			
710x30					107.5	115.0	129.6	145.4	168.2
					5.603	5.743	6.002	6.490	7.390
800x30						138.2	152.8	168.6	191.4
						9.063	9.322	9.810	10.710
900x30							181.8	197.7	220.5
							14.586	15.073	15.973
900x40							224.3	239.0	260.0
							19.225	19.690	20.543
1000x40							267.6	282.2	303.2
							29.016	29.481	30.335

¹⁾ Mass moment of inertia/weight of hub with brake disk referring to maximum bore.



Headquarters:

KTR Systems GmbH
Carl-Zeiss-Straße 25
D-48432 Rheine
Phone: +49 5971 798-0
Fax: +49 5971 798-698
and 798-450
E-mail: mail@ktr.com
Internet: www.ktr.com

KTR Brake Systems GmbH
Competence Center for Brake Systems
Zur Brinke 14
D-33758 Schloß Holte-Stukenbrock
Phone: +49 5207 99161-0

Head of Sales
Lino Gioroglou
Phone: +49 5207 991 61-72
Mobile: +49 160 90 58 97 41
E-mail: l.gioroglou@ktr.com

Sales representative industrial brakes
Adam Krzykowski
Mobile: +49 172 58 59 44 8
E-mail: a.krzykowski@ktr.com

KTR worldwide:

Algeria

KTR Algérie
Phone: +213 661 92 24 00
Phone: +33 4 78 64 54 66
E-Mail: ktr-dz@ktr.com

Brazil

KTR do Brasil Ltda
Rua Apucarana, 454
Bairro Emiliano Perneta
Pinhais – PR – Cep: 83324-450
Phone: +55 41 36 69 57 13
E-Mail: ktr-br@ktr.com

Chile

KTR Systems Chile SpA
Av. La Vilana 18501,
Bodega B-8
9380000 Lampa /
Santiago de Chile
Mobile: +56 93 372 15 59
E-Mail: ktr-cl@ktr.com

China

KTR Power Transmission Systems
(Zhejiang) Co., Ltd.
No. 3077, Xinda Road,
Daqiao Town, Nanhu District,
Jiaxing City, Zhejiang Province
Phone: +86 0573 8260 1800
E-Mail: ktr-cn@ktr.com

Czech Republic

KTR CR, spol. s r.o.
Brněnská 559
569 43 Jevíčko
Czech Republic
Phone: +420 461 325 014
E-Mail: ktr-cz@ktr.com

Denmark

KTR Systems Danmark ApS
Vejlssøvej 51, Bygning N
8600 Silkeborg
Phone: +45 39 39 10 50
E-Mail: ktr-dk@ktr.com

Finland

KTR Finland OY
Tiistinniityntie 4
FIN-02230 Espoo
Phone: +358 2 07 41 46 10
E-Mail: ktr-fi@ktr.com

France

KTR France SAS
5 chemin de la Brocardière
CS 71359
F-69573 DARDILLY CEDEX
Phone: +33 4 78 64 54 66
E-Mail: ktr-fr@ktr.com

India

KTR Couplings (India) Pvt. Ltd.,
T - 36 / 37 / 38 / 39, MIDC Bhosari,
Pune Maharashtra 411026
Phone: +91 20 27 12 73 24/25
Fax: +91 20 27 12 73 23
E-Mail: ktr-in@ktr.com;
india.sales@ktr.com

Italy

KTR Systems GmbH
Sede Secondaria Italia
Via Augusto Pulega 1/c
I - 40133 Bologna (BO)
Phone: +39 051 613 32 32
Fax: +39 051 298 55 77
E-Mail: ktr-it@ktr.com

Japan

KTR Japan Co., Ltd.
c/o The Sumitomo Warehouse Co., Ltd.
Kobe Branch, Chuo Logistics Center L-6
7-14 Minatojima, Chuo-ku, Kobe City,
Hyogo 650-0045 Japan

Phone: +81 78 381 84 01
Fax: +81 78 945 85 60
E-Mail: ktr-jp@ktr.com

Korea

KTR Korea Ltd.
#604, Songwon bldg., 89-10,
Galmaejungang-ro, Guri-si,
Gyeonggi-do, 11901 Korea

Phone: +82 3 15 69 45 10
Fax: +82 3 15 69 45 25
E-Mail: ktr-kr@ktr.com

Netherlands / Belgium / Luxembourg

KTR Benelux B. V.
Oosterveldsingel 3
7558 PJ Hengel (O)
Phone: +31 74 25 53 68 0
E-Mail: ktr-nl@ktr.com

Norway

KTR Systems Norge AS
Lahaugmoveien 81
N-2013 Skjetten
Phone: +47 64 83 54 90
E-Mail: ktr-no@ktr.com

Poland

KTR-Polska Sp. z o.o.
ul. Miłkowskiego 7/LU6
30-349 Kraków
Phone: +48 12 268 00 66
E-Mail: ktr-pl@ktr.com

Singapore

KTR Systems Singapore Pte. Ltd.
2 Venture Drive
#13-02 Vision Exchange
Singapore 608526
Phone: +65 69 04 12 32
Mobile: +65 96 33 66 92
E-Mail: a.low@ktr.com

South Africa

KTR Couplings SA (Pty) Ltd.
28 Spartan Road, Spartan Ext. 21,
Kempton Park, Johannesburg,
Gauteng
Phone: +27 87 260 6263/4
Mobile: +27 82 922 4365
E-Mail: ktr-za@ktr.com

Spain and Portugal

KTR Systems GmbH
Estartetxe, nº 5-Oficina 322
E-48940 Leioa (Vizcaya)
Phone: +34 9 44 80 39 09
E-Mail: ktr-es@ktr.com

Sweden

KTR Sverige AB
Kivra: 556585-4071
S-106 31 Stockholm
Phone: +46 8 6250290
E-Mail: info.se@ktr.com

Switzerland

KTR Systems Schweiz AG
Bahnstr. 60
CH-8105 Regensdorf
Phone: +41 43 311 15 55
Fax: +41 43 311 15 56
E-Mail: ktr-ch@ktr.com

Taiwan

KTR Taiwan Ltd.
No. 30-1, Gongyequ 36th Rd., Xitun Dist.,
Taichung City 40768, Taiwan (R.O.C)
Phone: +886 4 23 59 32 78
Fax: +886 4 23 59 75 78
E-Mail: ktr-tw@ktr.com

Turkey

KTR Turkey
Güç Aktarma Sistemleri San.Tic.Ltd.Sti.
Sti. Kayışdağı Cad. No: 117/2
34758 Atasehir -İstanbul
Phone: +90 216 574 37 80
E-Mail: ktr-tr@ktr.com

United Kingdom

Robert House,
Unit 7, Acorn Business Park
Woodseats Close
Sheffield, South Yorkshire
United Kingdom, S8 0TB
Phone: +44 11 42 58 77 57
Fax: +44 11 42 58 77 40
E-Mail: ktr-uk@ktr.com

USA

KTR Corporation
122 Anchor Road
Michigan City, Indiana 46360
Phone: +1 2 19 8 72 91 00
Fax: +1 2 19 8 72 91 50
E-Mail: ktr-us@ktr.com

Summary of literature

No matter if a perfect drive, a brake that takes effect, space-saving cooling or accurate hydraulics is required, if on land, by sea or at an airy height - KTR's product portfolio is just as manifold as its applications. The following catalogues and leaflets provide an overview. Available at www.ktr.com

Product catalogues



ATEX leaflet



Company leaflet



Headquarters

KTR Systems GmbH

Carl-Zeiss-Straße 25

D-48432 Rheine

Phone: +49 5971 798-0

Fax: +49 5971 798-698 or 798-450

E-mail: mail@ktr.com

Internet: www.ktr.com

KTR Brake Systems GmbH

Competence Center for Brake Systems

D-33758 Schloß Holte-Stukenbrock

Phone: +49 5207 99 161-0

Fax: +49 5207 99 161-11

E-mail: info_kbs@ktr.com

Internet: www.ktr-brake-systems.com

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