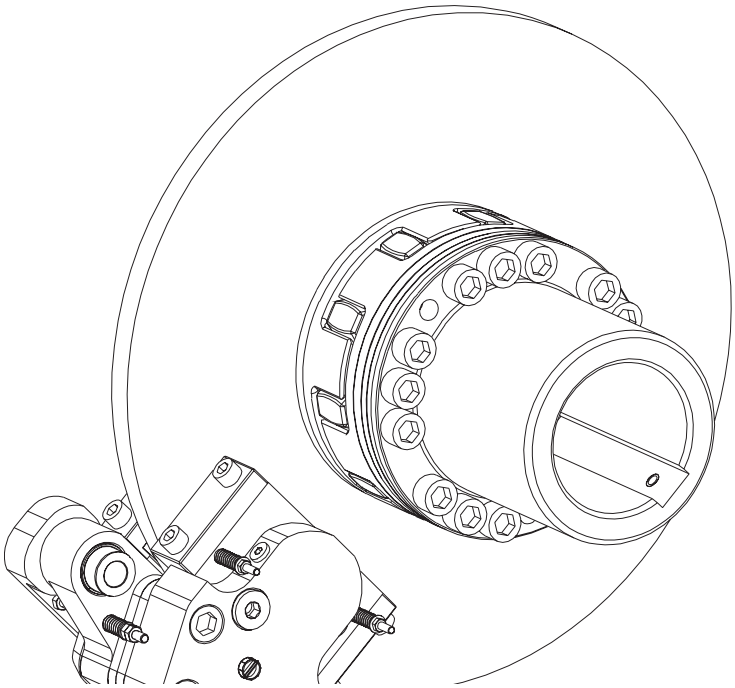
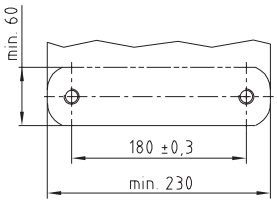


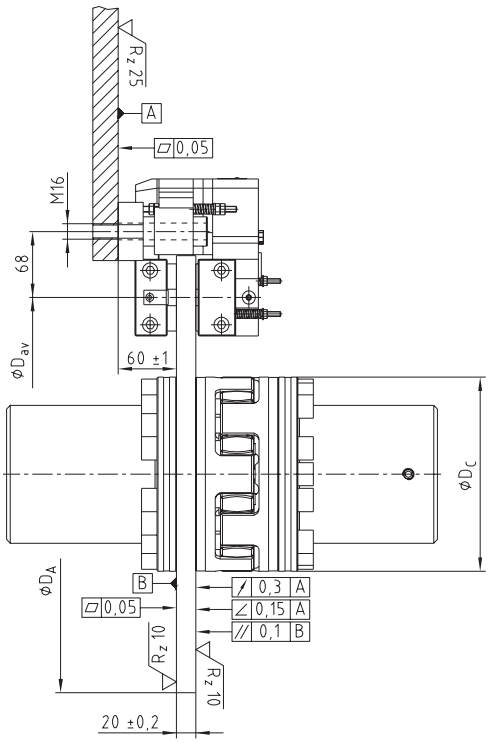
Calculation of brake disk

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

$D_{av} = D_A - 86$

Connection dimensions of brake



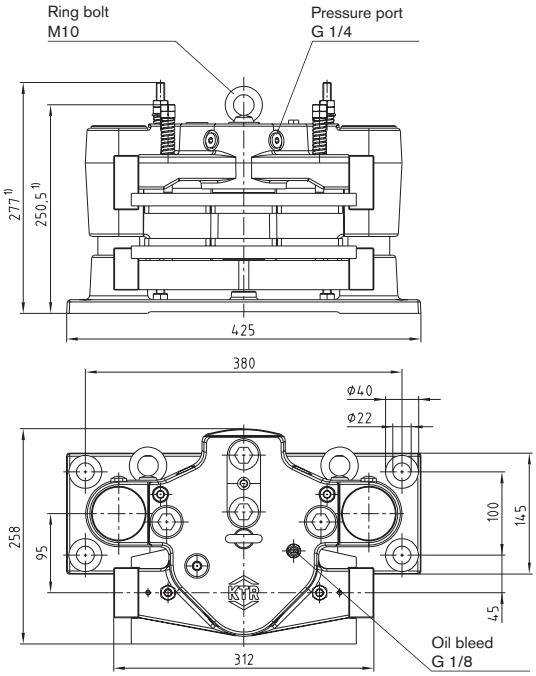


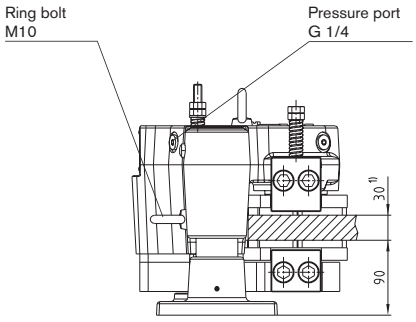
Optional

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

KTR-STOP® S-A-F
Active floating caliper brakes

Hydraulic brake system





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

KTR-STOP® S-A-F			
Total weight	approx. 76 kg 1)	Max. clamping force	55 kN
Width of brake pad	125 mm	Max. operating pressure	125 bar
Surface of each brake pad organic	28.700 mm²	Thickness of brake disk	20 mm - 40 mm
powder metal	26.800 mm²	Pressure port	G 1/4
Max. wear of each brake pad	6 mm	Oil bleed	G 1/8
Nominal coefficient of friction 2)	μ = 0,4	Backlash on axles - towards mounting surface	5 mm
Total brake piston surface - complete brake	44,2 cm²	Backlash on axles - away from mounting surface	10 mm
Volume with 1 mm stroke - complete brake	4,42 cm³	Min. diameter of brake disk ØD$_A$	500 mm
		Operation temperature	-20 °C to +50 °C

2) The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

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

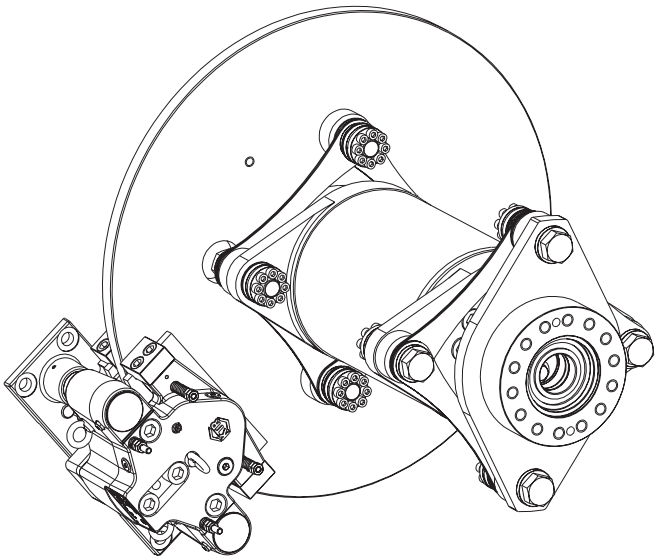
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

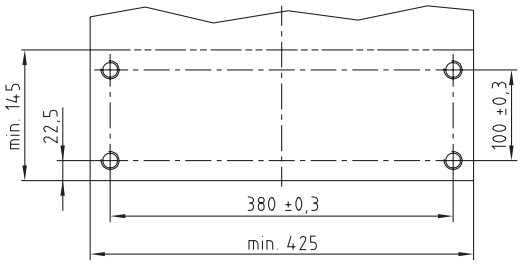
KTR-STOP®	S	-	A	-	F	A	-	30
KTR brake	Size of brake		Active		Floater	Option		Thickness of brake disk

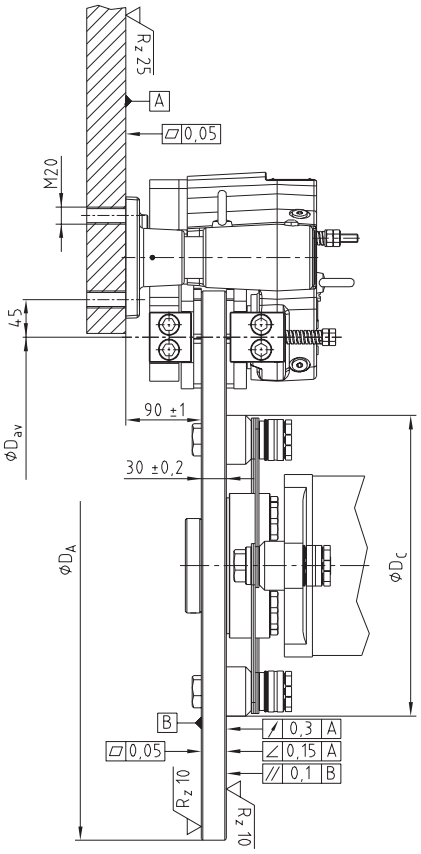


Calculation of brake disk

up to $ØD_A$ = 1000 mm	from $ØD_A$ = 1000 mm to $ØD_A$ = 1800 mm	from $ØD_A$ = 1800 mm
$D_{C\ max.} = D_A - 260$	$D_{C\ max.} = D_A - 250$	$D_{C\ max.} = D_A - 240$
$D_{av} = D_A - 130$	$D_{av} = D_A - 120$	$D_{av} = D_A - 110$

Connection dimensions of brake



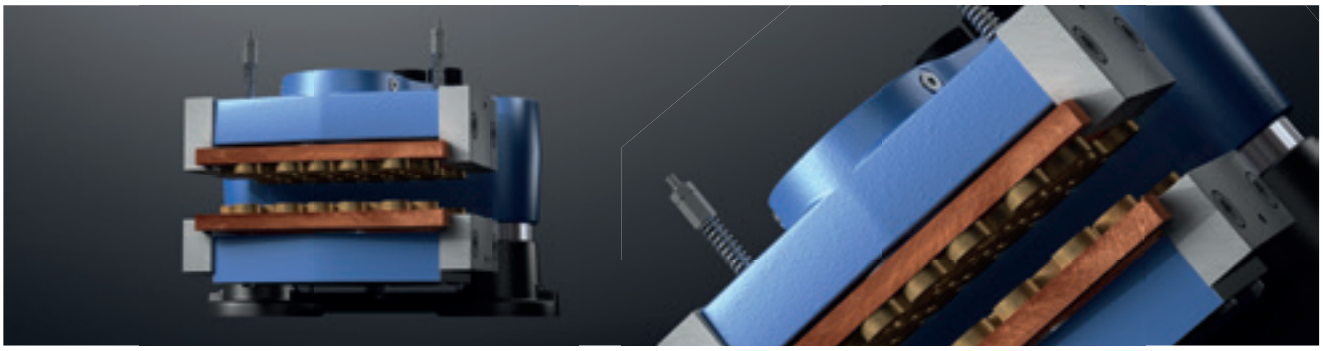


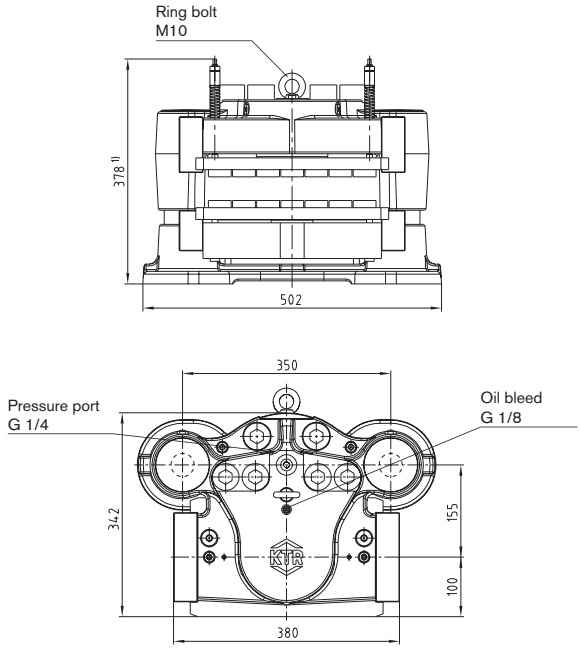
Optional

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

KTR-STOP® M-A-F
Active floating caliper brakes

Hydraulic brake system





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

KTR-STOP® M-A-F			
Total weight	approx. 172 kg 1)	Max. clamping force	130 kN
Width of brake pad	200 mm	Max. operating pressure	115 bar
Surface of each brake pad organic	57.900 mm²	Thickness of brake disk	25 mm - 50 mm
powder metal	53.500 mm²	Pressure port	G 1/4
Max. wear of each brake pad	8 mm	Oil bleed	G 1/8
Nominal coefficient of friction 2)	μ = 0,4	Backlash on axles - towards mounting surface	5 mm
Total brake piston surface - complete brake	113 cm²	Backlash on axles - away from mounting surface	10 mm
Volume with 1 mm stroke - complete brake	11,3 cm³	Min. diameter of brake disk ØD$_A$	800 mm
		Operation temperature	-20 °C to +50 °C

2) The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

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

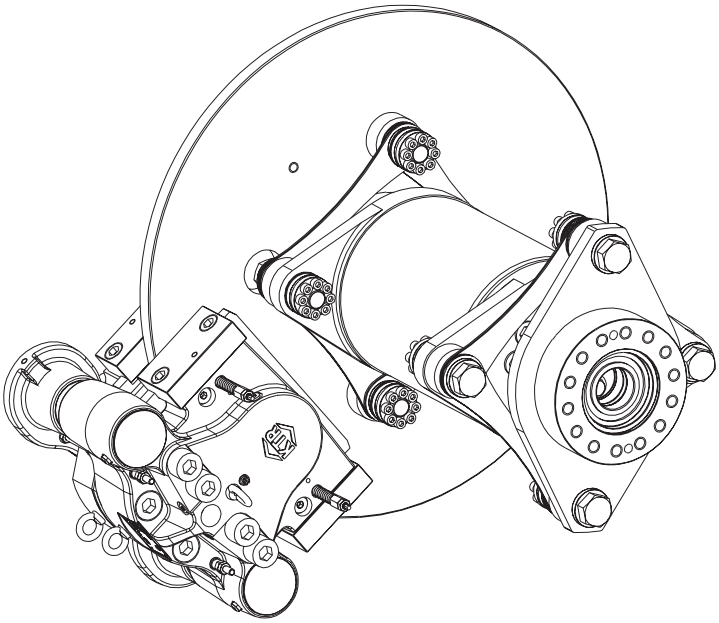
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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	A	-	40
KTR brake	Size of brake		Active		Floater	Option		Thickness of brake disk

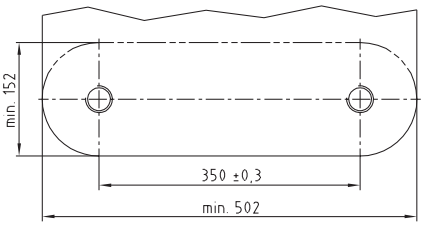


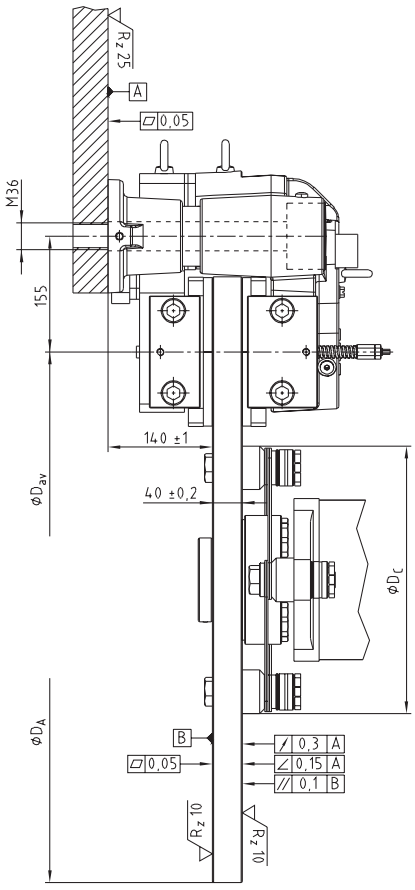
Calculation of brake disk

$D_{C\ max.} = D_A - 410$

$D_{av} = D_A - 200$

Connection dimensions of brake



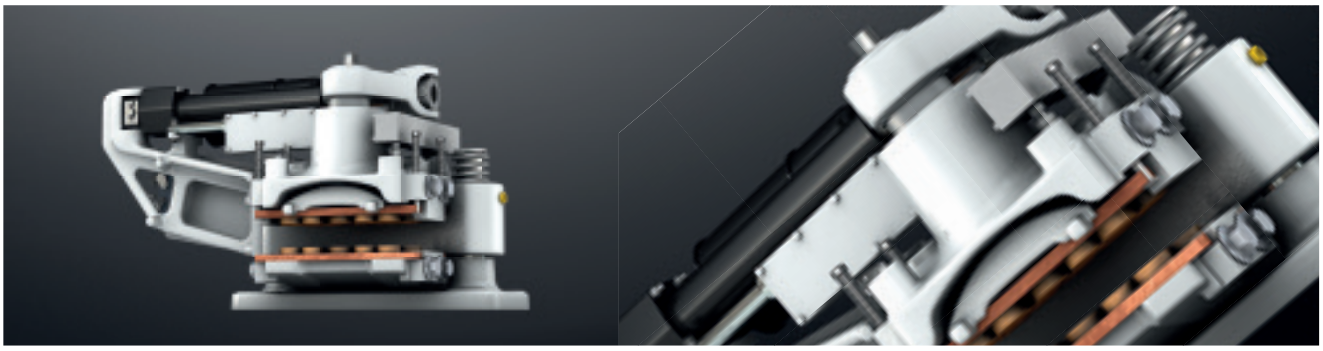


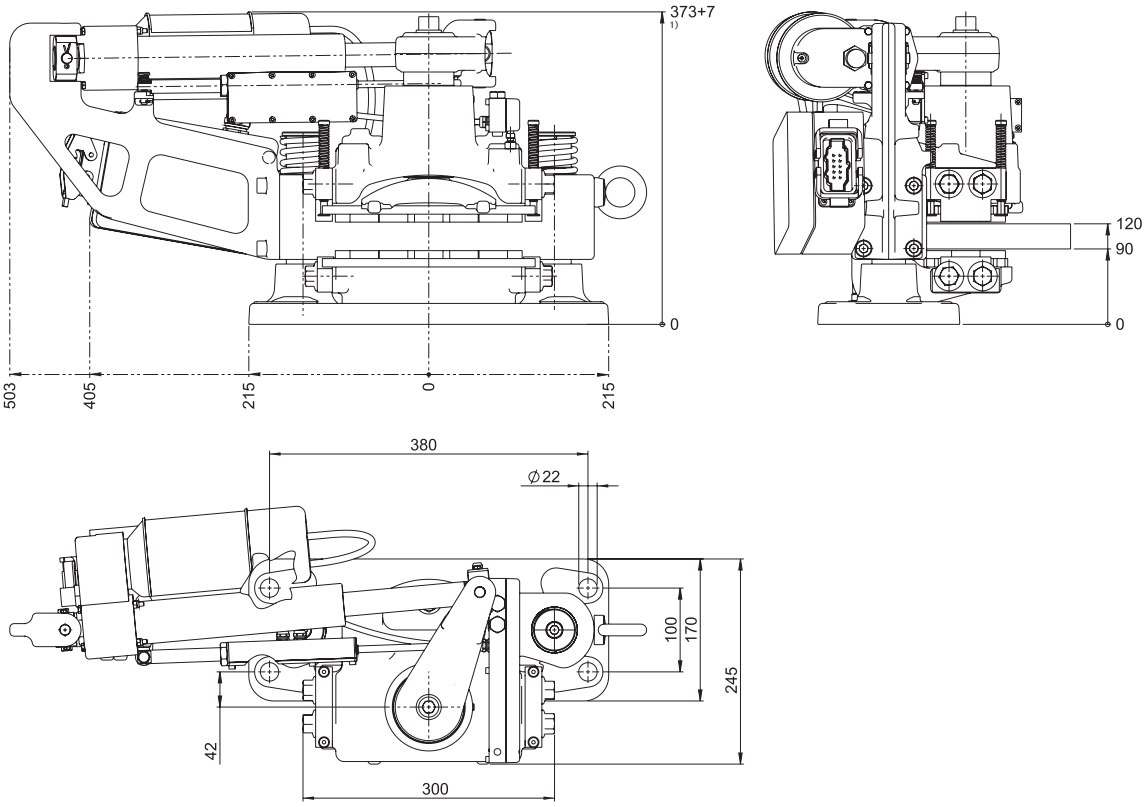
Optional

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

EMB-STOP S-A-xx-F Lever
Active floating caliper brakes

Electromechanical brake system





EMB-STOP S-A-xx-F Lever	
Total weight	90 kg
Thickness of brake disk	25 - 35 mm
Wear of pad on each side (max.)	4 mm
Coefficient of friction of pad, nominal value [2]	μ = 0,4
Clamping force, min.	30 kN
Clamping force, max.	60 kN
Operating temperature range	-30 to +50 °C
Motor output	300 W
Motor voltage	230 VAC
Voltage of electric signals	230 VAC / 24 VDC

[1] Tolerances depending on air gap.
[2] The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

Calculation of braking force/braking torque

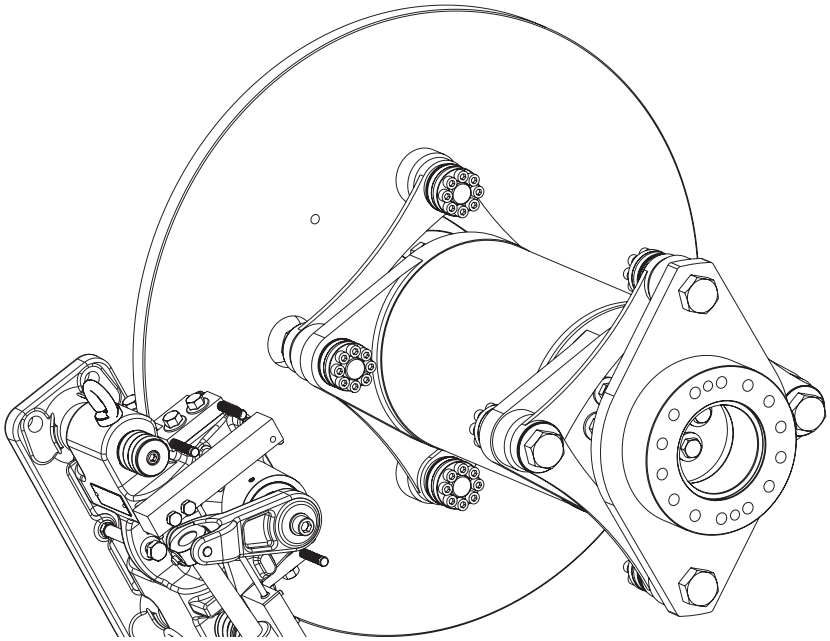
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

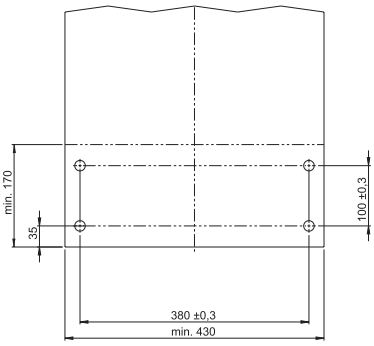
EMB-STOP	S	-	A	-	50	-	F	L	-	30
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk

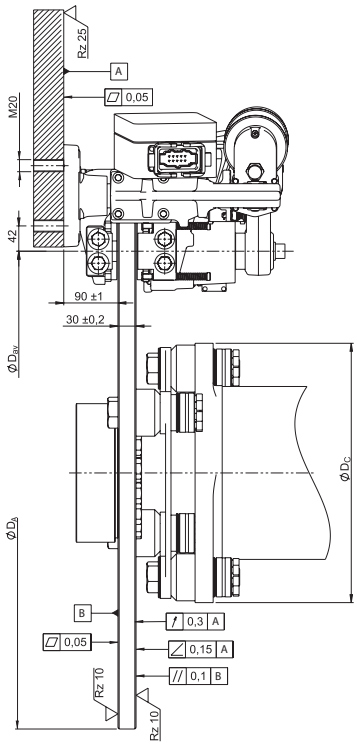


Calculation of brake disk

$ØD_A$ = 500 ... 1000 mm	$ØD_A$ = 1000 ... 1800 mm	$ØD_A$ = 1800 ... 3000 mm
$D_{C\ max.} = D_A - 130$	$D_{C\ max.} = D_A - 110$	$D_{C\ max.} = D_A - 105$

Connection dimensions of brake



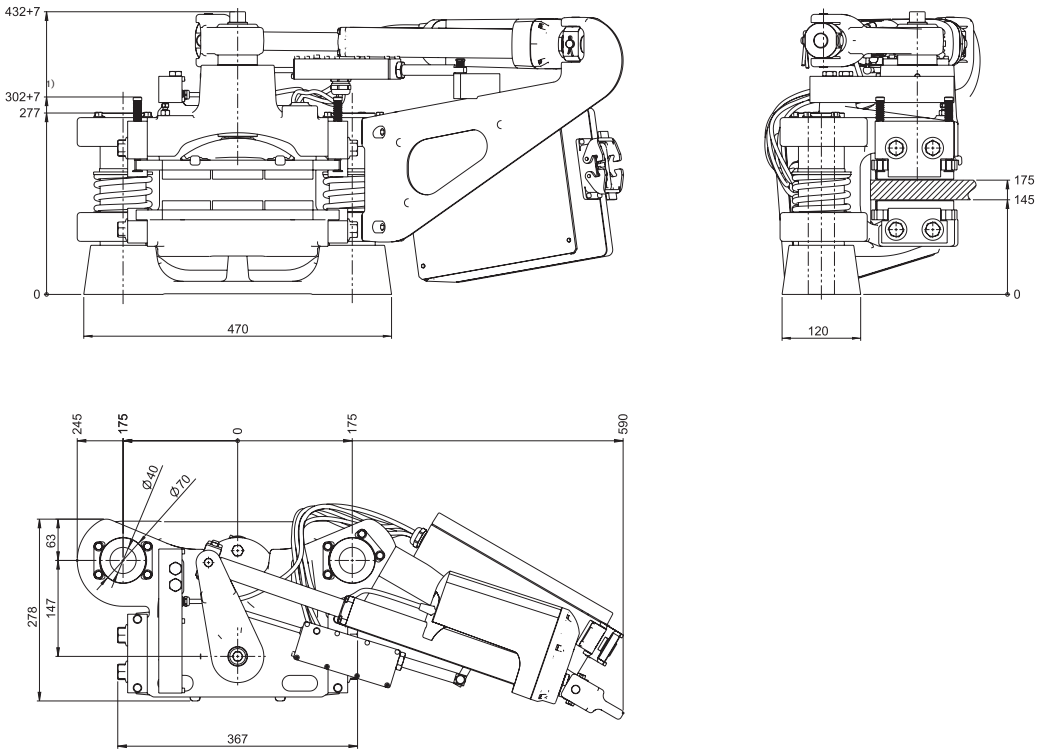


Optional

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

EMB-STOP M-A-xx-F Lever
Active floating caliper brakes

Electromechanical brake system



EMB-STOP M-A-xx-F Lever	
Total weight	115 kg
Thickness of brake disk	25 - 35 mm
Wear of pad on each side (max.)	4 mm
Coefficient of friction of pad, nominal value [2]	μ = 0,4
Clamping force, min.	80 kN
Clamping force, max.	125 kN
Operating temperature range	-30 to +50 °C
Motor output	300 W
Motor voltage	24 VDC
Voltage of electric signals	230 VAC / 24 VDC

[1] Tolerances depending on air gap.
[2] The coefficient of friction each depends on the application or material of the brake, respectively. Please consult with KTR.

Calculation of braking force/braking torque

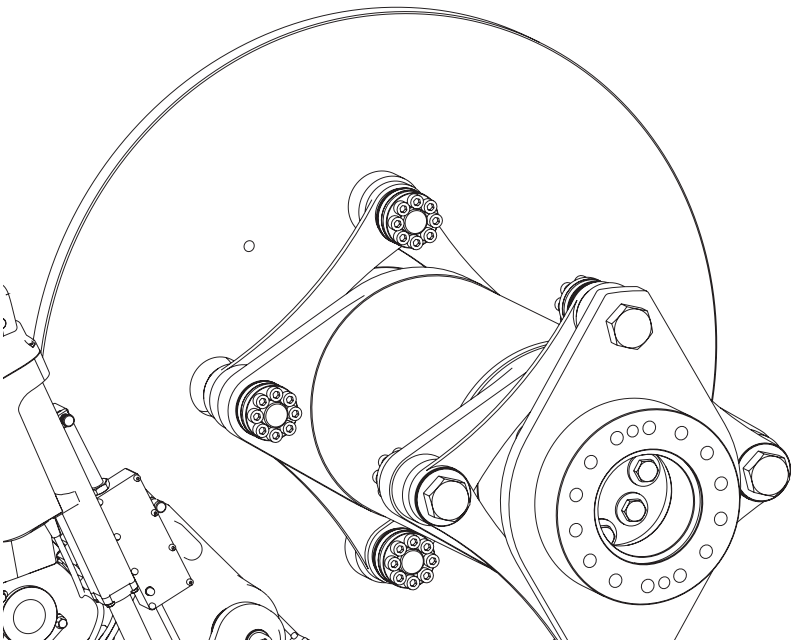
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

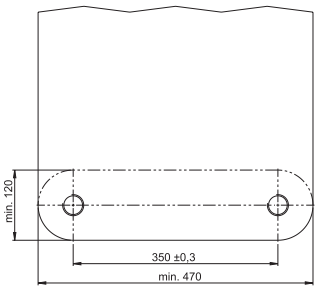
EMB-STOP	M	-	A	-	125	-	F	L	-	35
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk

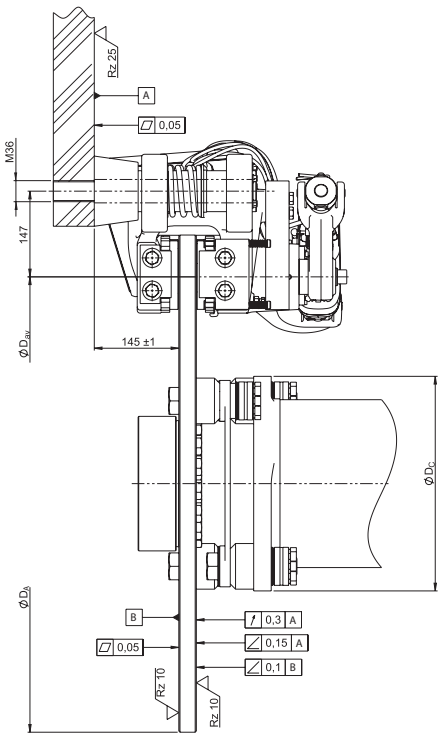


Calculation of brake disk
$ØD_A \geq 800$ mm

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

Connection dimensions of brake



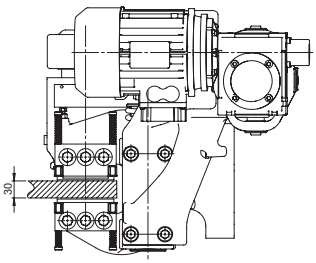


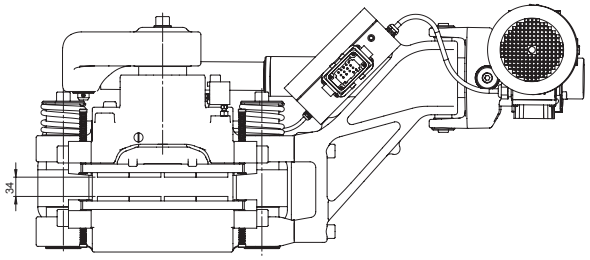
Optional

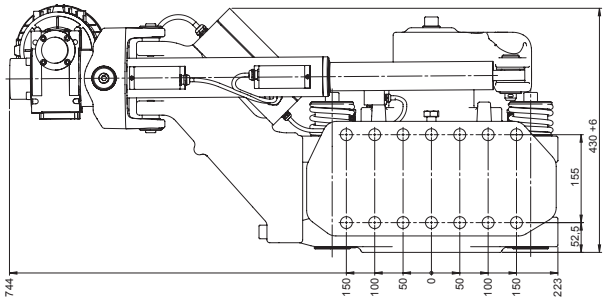
- Various colours available
- Sensor indicating wear of pad and condition
- Temperature sensor
- Alternative materials of brake pad

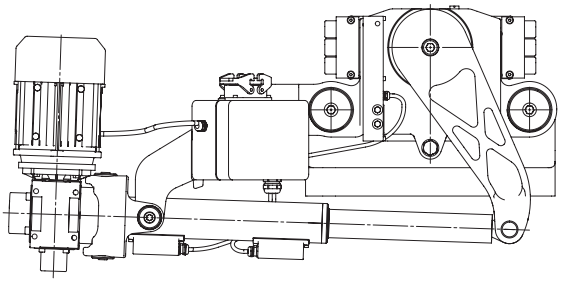
EMB-STOP L-A-xx-F Lever
Active floating caliper brakes

Electromechanical brake system









EMB-STOP L-A-xx-F Lever	
Total weight	280 kg
Thickness of brake disk	25 - 40 mm
Wear of pad on each side (max.)	5 mm
Coefficient of friction of pad, nominal value [2]	μ = 0,4
Clamping force, min.	125 kN
Clamping force, max.	375 kN
Operating temperature range	-30 to +50 °C
Motor output	1100 W
Motor voltage	400 VAC
Voltage of electric signals	230 VAC / 24 VDC

[1] Tolerances depending on air gap.
[2] The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

Calculation of braking force/braking torque

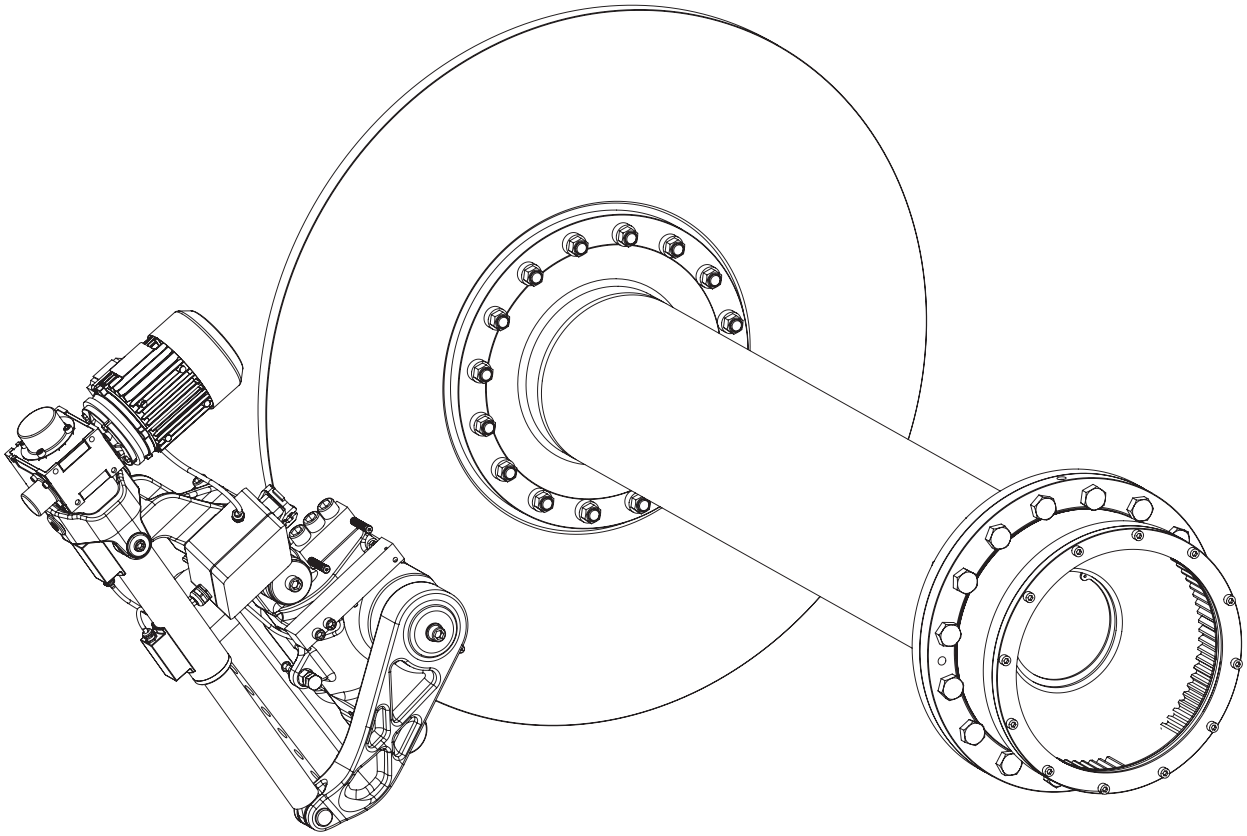
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

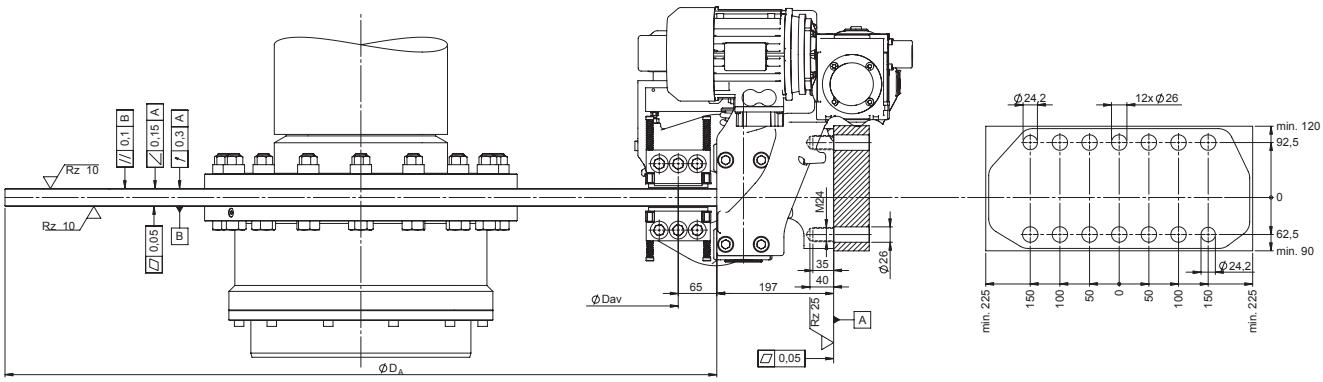
EMB-STOP	L	-	A	-	380	-	F	L	-	30
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk



Calculation of brake disk

$ØD_A \leq 1800$ mm	$ØD_A > 1800$ mm
$D_{av} = D_A - 130$	$D_{av} = D_A - 120$

Connection dimensions of brake

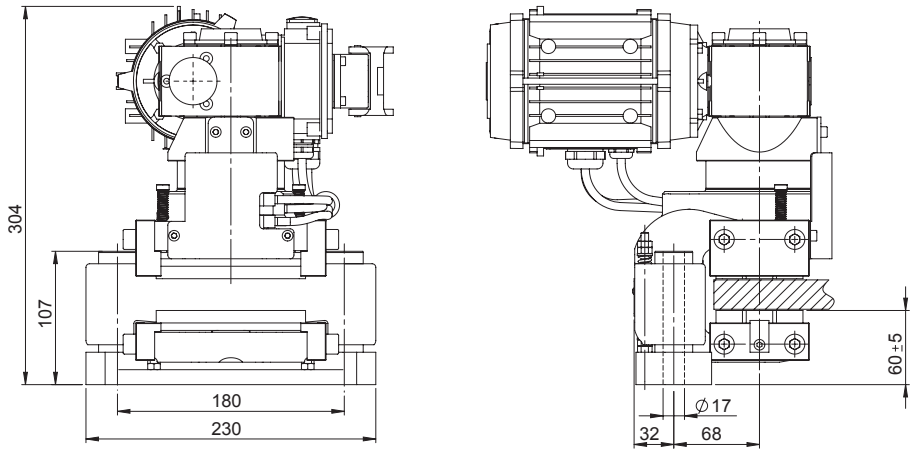


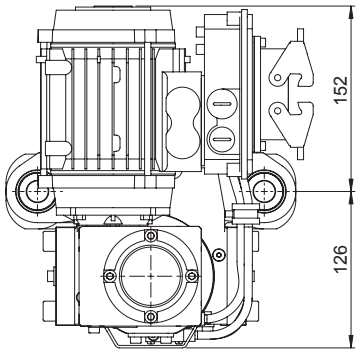
Optional

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

EMB-STOP XS-A-xx-F
Active floating caliper brakes

Electromechanical brake system





EMB-STOP XS-A-xx-F				
Total weight		approx. 25 kg	Thickness of brake disk	20 mm - 30 mm
Width of brake pad		70 mm	Operating voltage	400 VAC, 50 Hz
Surface of each brake pad	organic	8.000 mm²	Size of industrial connector	Han10B / HAN18EE (male)
	powder metal	5.800 mm²	Backlash on axles - towards mounting surface	5 mm
Wear of pad on each side (max.)		5 mm	Backlash on axles - away from mounting surface	5 mm
Coefficient of friction of pad, nominal value [2)]		μ = 0,4	Min. diameter of brake disk $Ø^{DA}$	300 mm
Max. clamping force		12 kN	Operation temperature	-20 °C ... +50 °C

[2)] The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

Calculation of braking force/braking torque

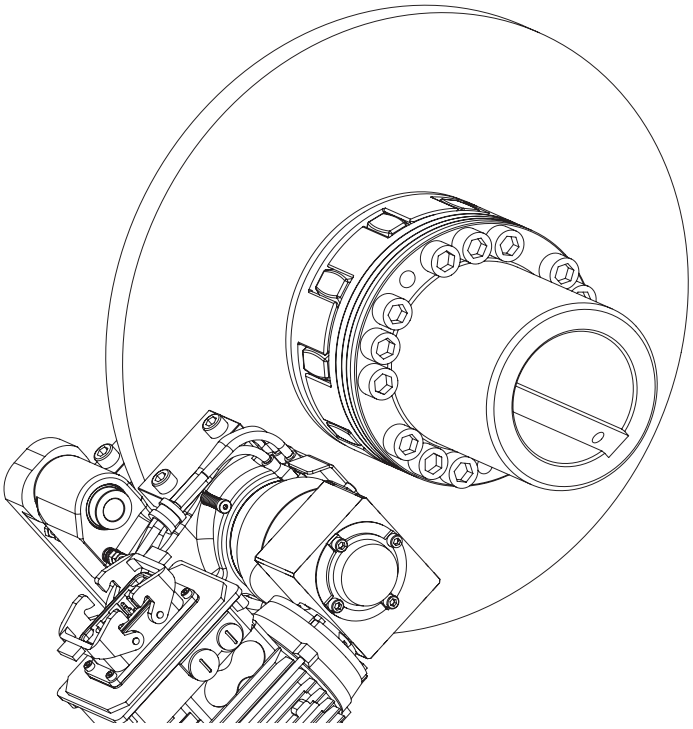
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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		A	-	30
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)		Option		Thickness of brake disk

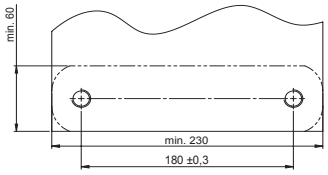


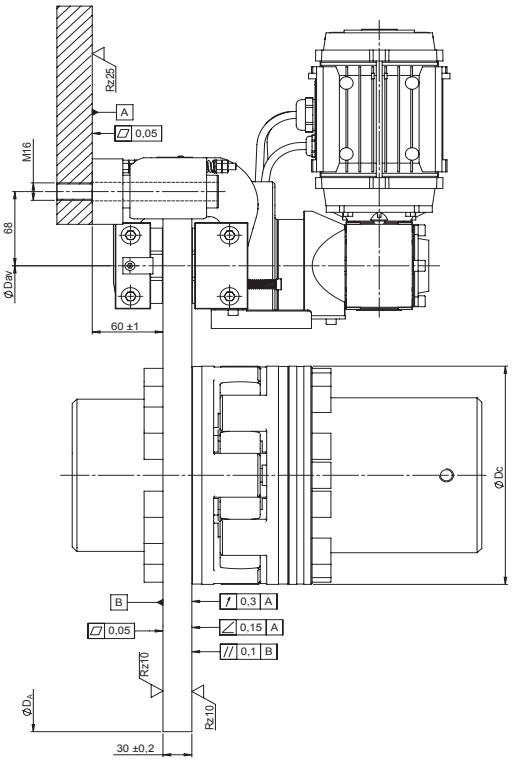
Calculation of brake disk

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

$D_{av} = D_A - 86$

Connection dimensions of brake



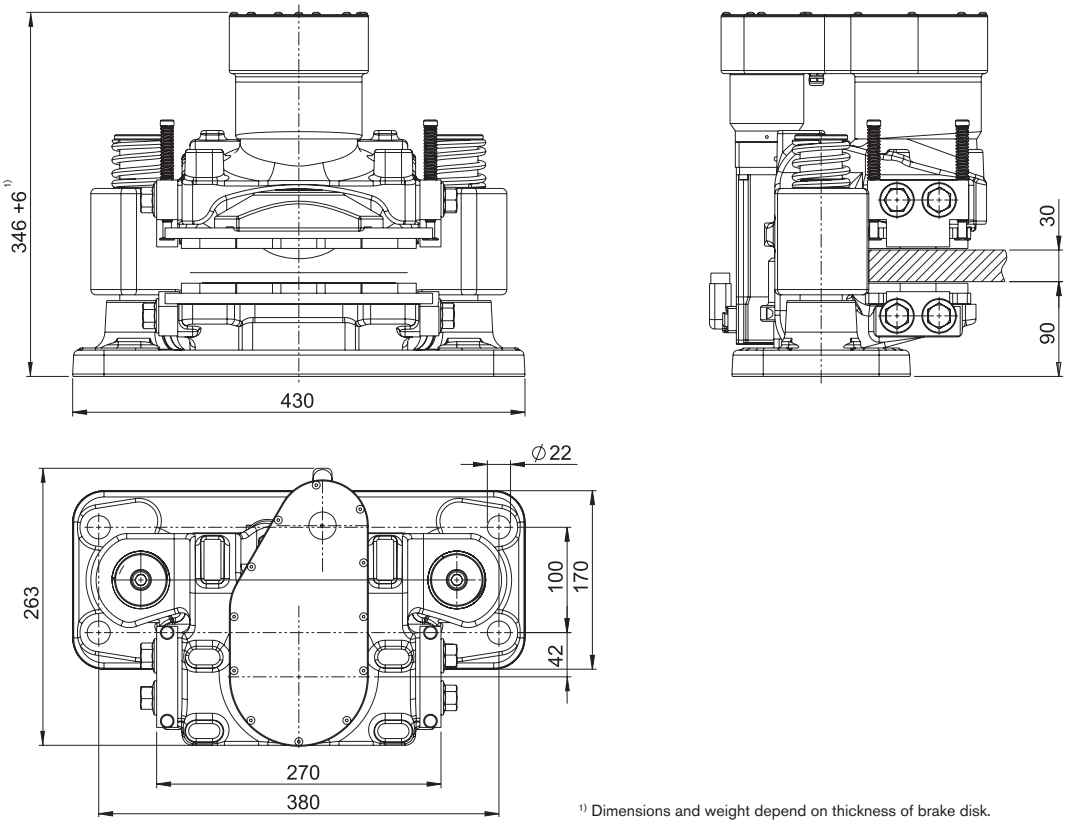


Optional

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

EMB-STOP S-A-xx-F
Active floating caliper brakes

Electromechanical brake system



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

EMB-STOP S-A-xx-F	
Total weight	90 kg
Thickness of brake disk	25 - 35 mm
Wear of pad on each side (max.)	4 mm
Coefficient of friction of pad, nominal value 2)	μ = 0,4
Clamping force, min.	30 kN
Clamping force, max.	60 kN
Operating temperature range	-30 to +50 °C
Motor output	250 W
Motor voltage	400 VAC
Voltage of electric signals	230 VAC / 24 VDC

2) The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

Calculation of braking force/braking torque

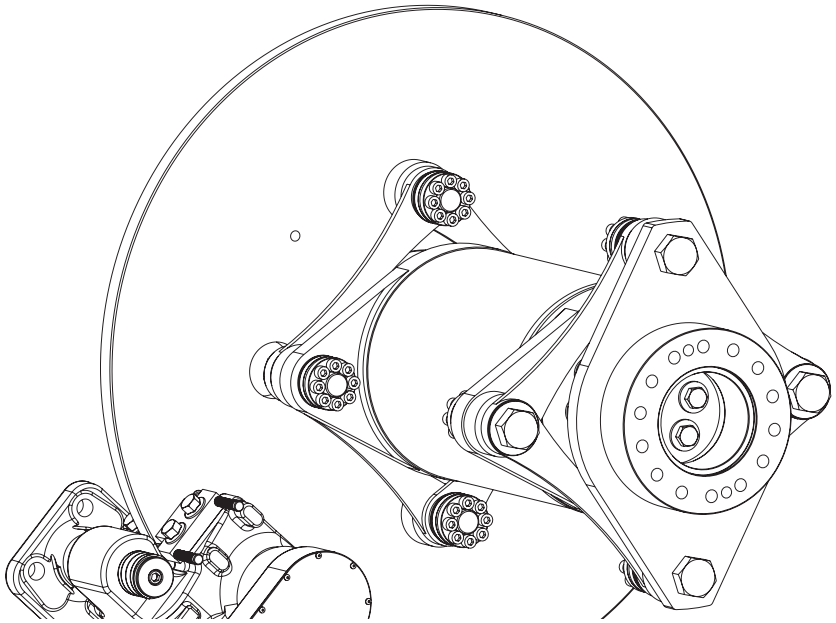
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

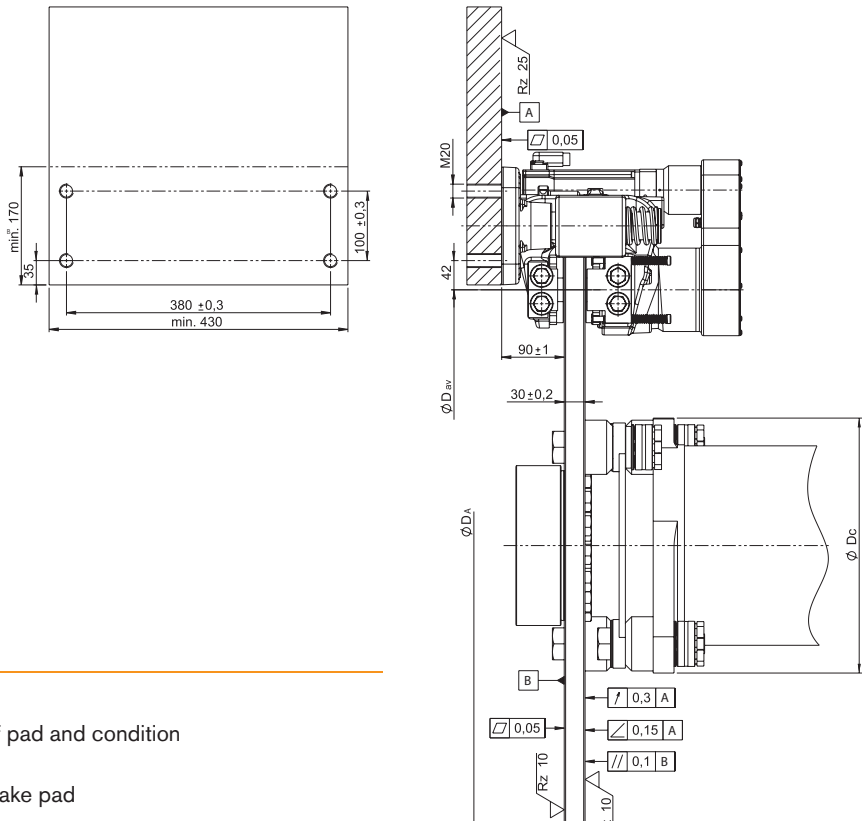
EMB-STOP	S	-	A	-	50	-	F	A	-	30
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk



Calculation of brake disk

$ØD_A$ = 500 ... 1000 mm	$ØD_A$ = 1000 ... 1800 mm	$ØD_A$ = 1800 mm
$D_{av} = D_A - 130$	$D_{av} = D_A - 110$	$D_{av} = D_A - 105$

Connection dimensions of brake

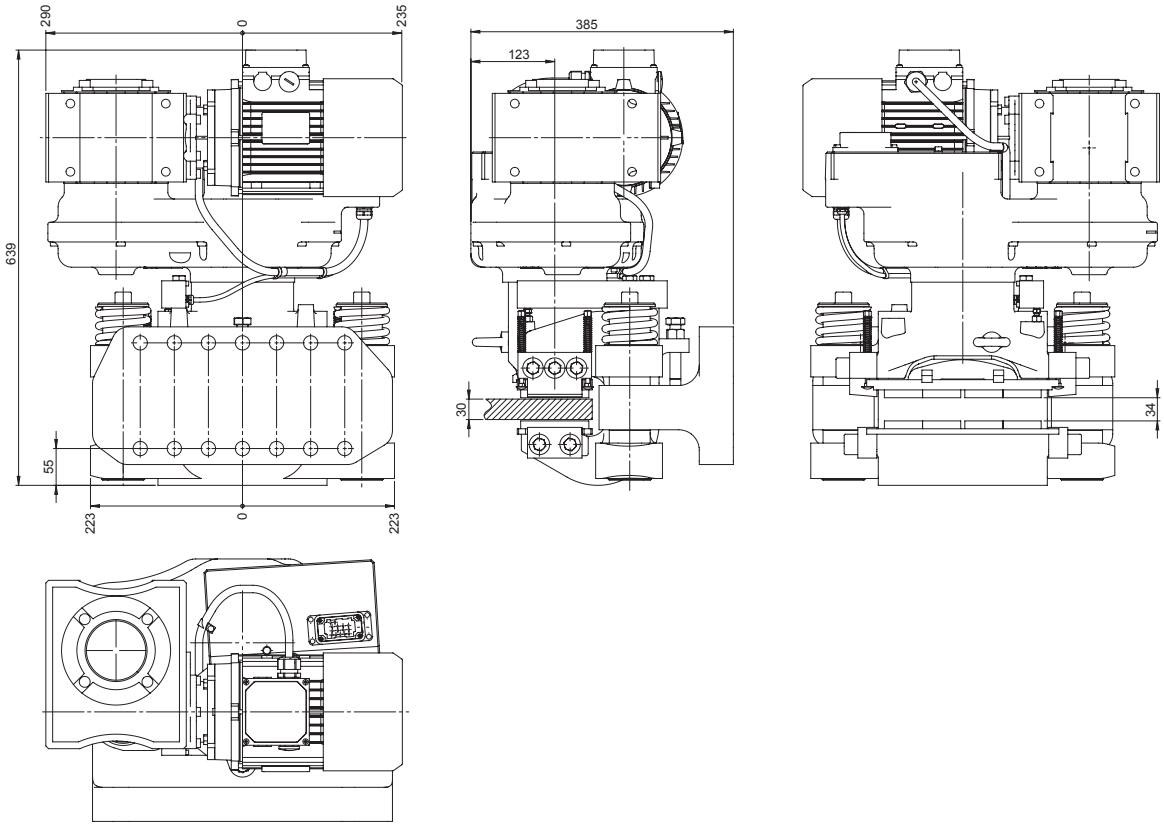


Optional

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

EMB-STOP L-A-xx-F
Active floating caliper brakes

Electromechanical brake system



EMB-STOP L-A-xx-F	
Total weight	235 kg
Thickness of brake disk	25 - 40 mm
Wear of pad on each side (max.)	8 mm
Coefficient of friction of pad, nominal value [2)]	μ = 0,4
Clamping force, min.	125 kN
Clamping force, max.	375 kN
Operating temperature range	-30 to +50 °C
Motor output	1500 W
Motor voltage	400 VAC
Voltage of electric signals	230 VAC / 24 VDC

[2)] The coefficient of friction each depends on the application or material of the brake, respectively. Please consult with KTR.

Calculation of braking force/braking torque

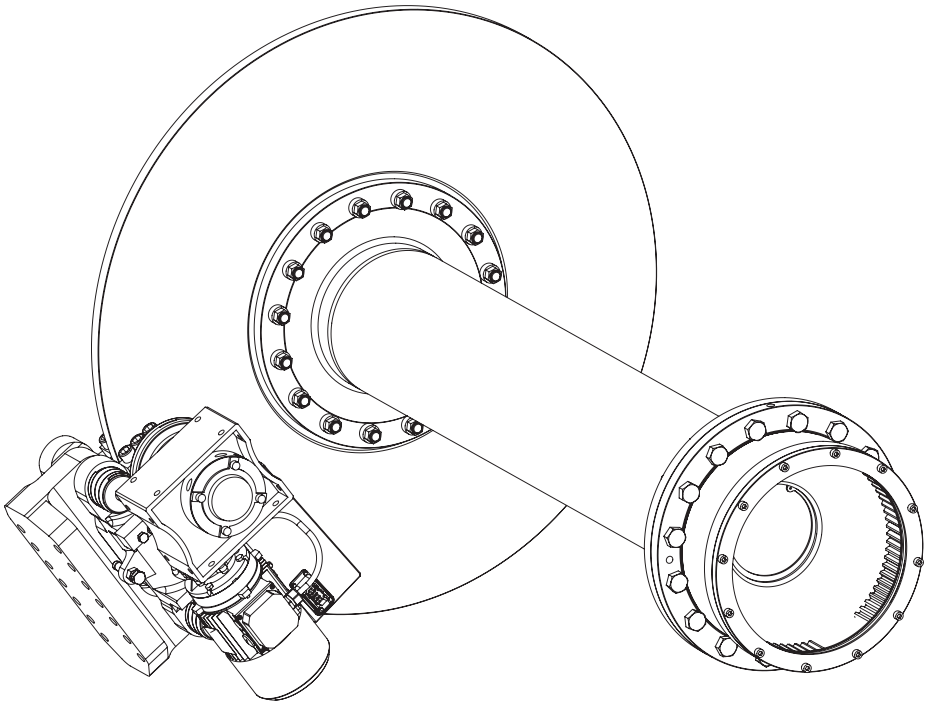
$$F_b = F_c \cdot 2 \cdot \mu$$

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

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:

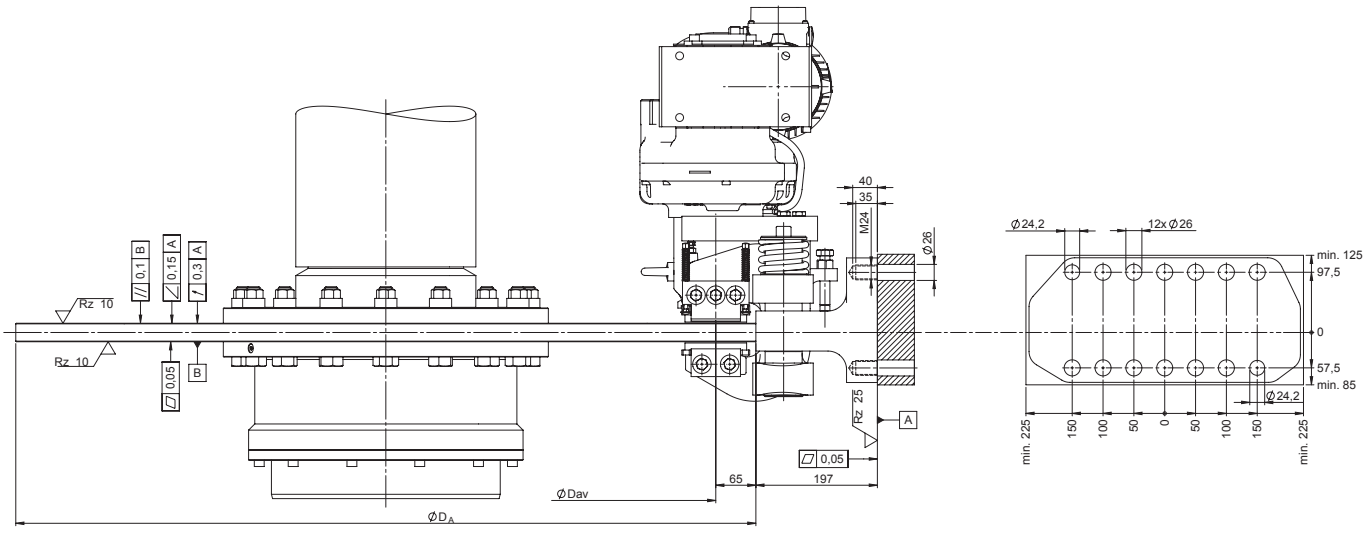
EMB-STOP	L	-	A	-	380	-	F	A	-	30
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk



Calculation of brake disk

$ØD_A \leq 1800$ mm	$ØD_A > 1800$ mm
$D_{av} = D_A - 130$	$D_{av} = D_A - 120$

Connection dimensions of brake

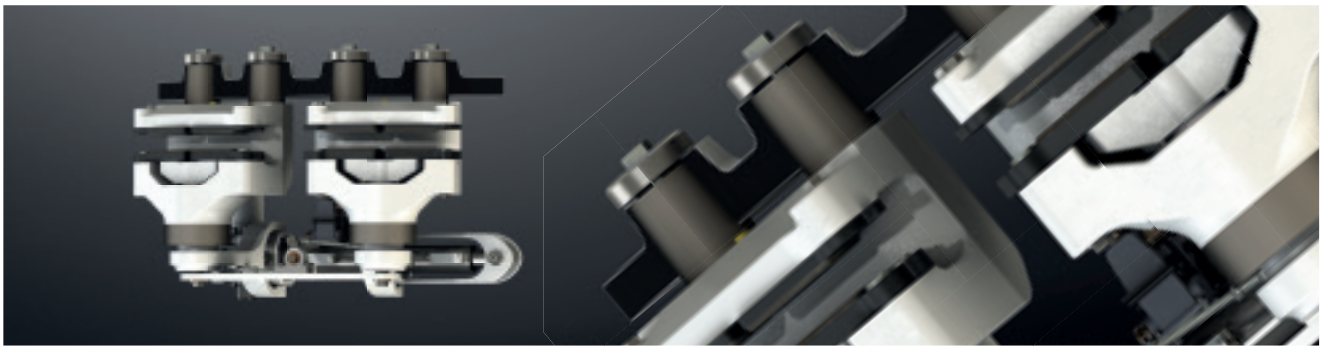


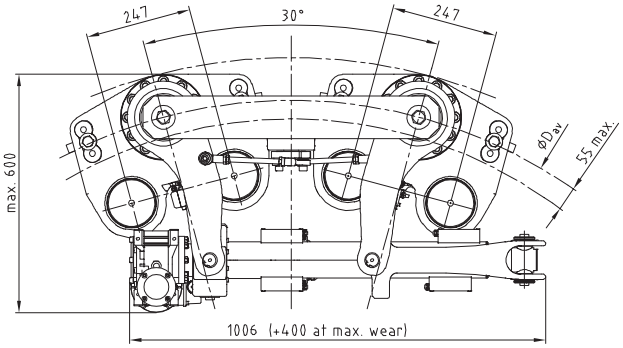
Optional

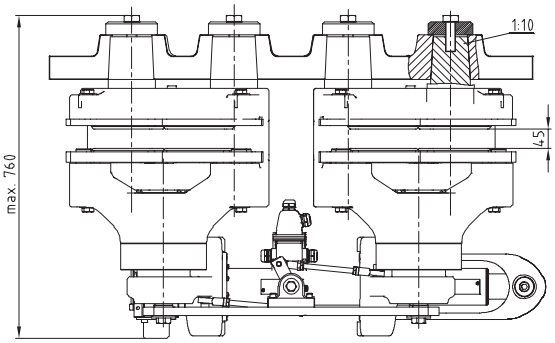
- Various colours available
- Sensor indicating wear of pad and condition
- Temperature sensor
- Alternative materials of brake pad

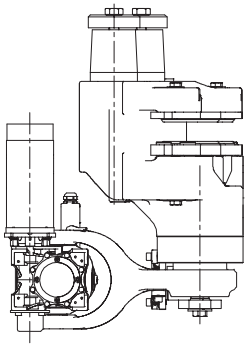
EMB-STOP 2L-A-xx-F Lever
Active floating caliper brakes

Electromechanical brake system









Einbauvorschlag. Andere Einbaumöglichkeiten auf Anfrage.

EMB-STOP 2L-A-xx-F Lever	
Total weight	600 kg
Thickness of brake disk	30 – 45 mm
Wear of pad on each side (max.)	3 mm
Coefficient of friction of pad, nominal value [1]	μ = 0,4
Clamping force, min.	500 kN (=2×250 kN)
Clamping force, max.	700 kN (=2×350 kN)
Operating temperature range	-30 to +50°C
Motor output	3000 W
Motor voltage [2]	24 VDC
Voltage of electric signals	230 VAC / 24 VDC

[1] The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.
[2] Other supply voltages on request

Calculation of braking force/braking torque

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

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

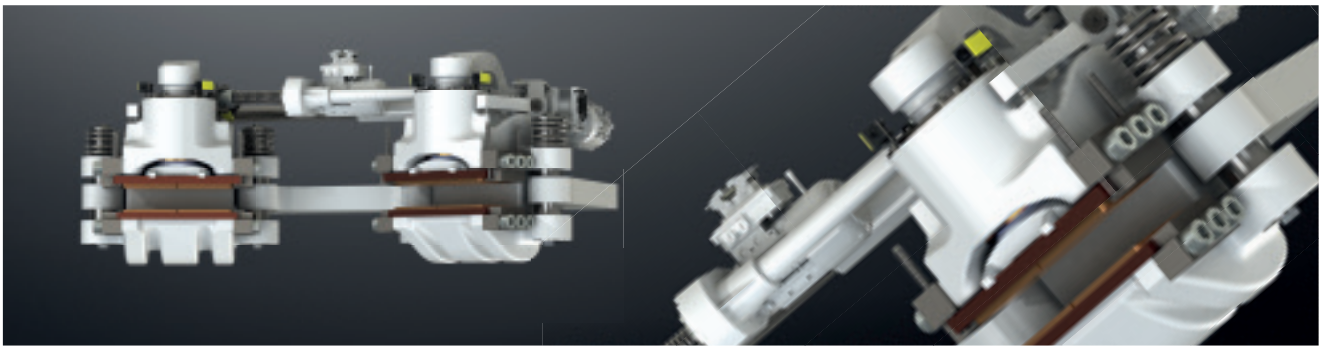
F_b = Braking force [kN]
F_c = Clamping force [kN]
M_b = Braking torque [kNm]
z = Number of brakes
D_{av} = Effective diameter of brake [m]

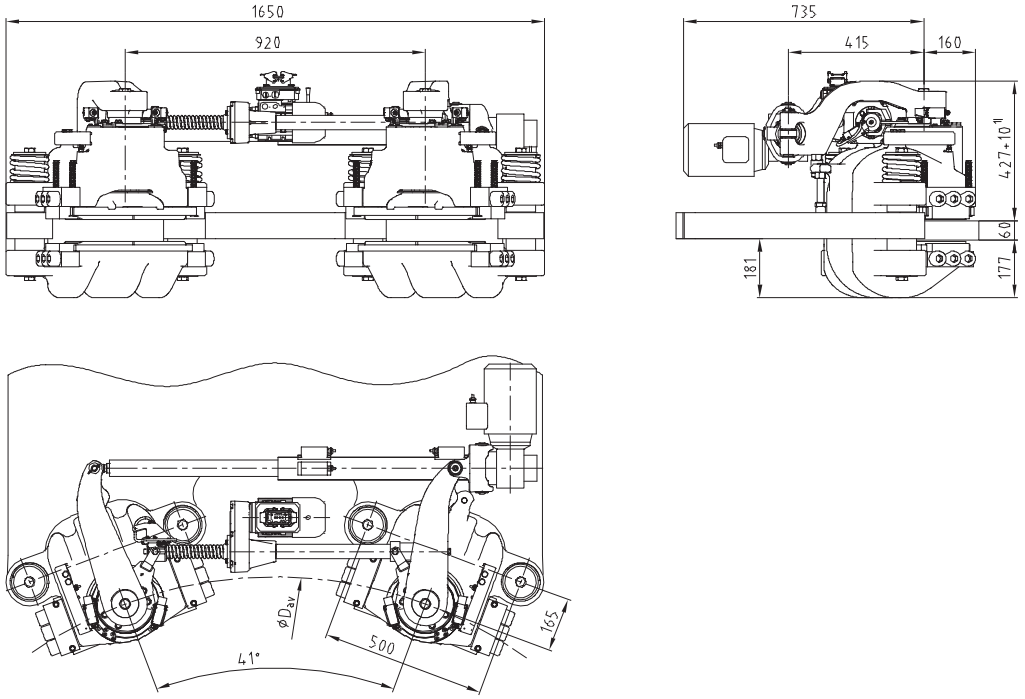
Ordering example:

EMB-STOP	2L	-	A	-	700	-	F	L	-	45
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk

EMB-STOP 2XL-A-xx-F Lever
Active floating caliper brakes

Electromechanical brake system





[1] Toleranzen abhängig vom Lüftspiel
Einbauvorschlag. Andere Einbaumöglichkeiten auf Anfrage.

EMB-STOP 2XL-A-xx-F Lever	
Total weight	950 kg
Thickness of brake disk	50 – 60 mm
Wear of pad on each side (max.)	4 mm
Max. air gap on each side	4 mm
Coefficient of friction of pad, nominal value [2]	μ = 0,4
Clamping force, min.	800 kN (=2×400 kN)
Clamping force, max.	1600 kN (=2×800 kN)
Operating temperature range	-20 to +50°C
Connected load	3000 W
Motor voltage	400 VAC @ 50Hz
Voltage of electric signals	24 VDC

[2] The coefficient of friction each depends on the application or material of the brake, respectively. Please consult with KTR.

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	2XL	-	A	-	1600	-	F	L	-	60
EMB brake	Size of brake		Active		Clamping force		Floating caliper („Floater“)	Option		Thickness of brake disk

IntelliRamp®
Electronic control system

Description of product

IntelliRamp® is an electronic control system allowing for program-controlled, accurate braking processes. Being combined with IntelliRamp® our brakes are therefore suitable for the use in sophisticated applications:

- Ramp-supported braking process
  - Continuous deceleration operation
  - Continuous time operation
  - Continuous speed operation
- Excessive speed monitoring
- Reverse lock
- Joystick control
- Online remote operation

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 heart of the system is the control computer with its touchscreeen. It takes over all operations 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, too. For that purpose characteristic figures like oil level, oil temperature and hydraulic pressure are recorded by the system. The overall system, among others, has an uninterruptible power supply to allow for performing a full braking cycle 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 touch screen 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

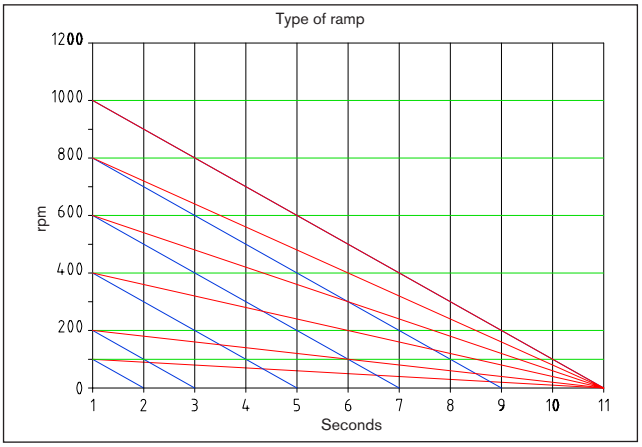
The ramp-supported braking process is activated by a signal safe from cable break. The process is performed via a closed control circuit covering speed versus time. Since a proportional control is not concerned here, the system is safe from power breakdown, i. e. it will work even if the power supply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

Since a speed which is almost zero cannot be measured accurately 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 unlocks, exceeding this range the brake locks fully. The tolerance range can be defined flexibly. The more precise the definition, the more accurate is the control , but at the same time the more nervous is the reaction.

In order to avoid impacts in the beginning of the braking process, the control automatically calculates the braking pressure that is theoretically necessary to reach the ramp required. This prevents too fierce braking.
IntelliRamp® allows to use three brake ramps which can each be programmed individually and which can be started irrespective of each other.

Scheme of the ramp-supported braking process



— Continuous deceleration:
With a higher speed the braking cycly takes longer, with a lower speed it takes shorter.
— Continuous time operation:
The same time is always kept which means that the brake engages further if the speed is higher.
— Continuous speed control:
An option to keep the device at a constant speed via the brake only.

Operation

Excessive speed monitoring:
The action of excessive speed reacts flexibly within defined excessive speed barriers. Two values can be defined by which either a message is given to the PLC, a brake ramp is activated 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.

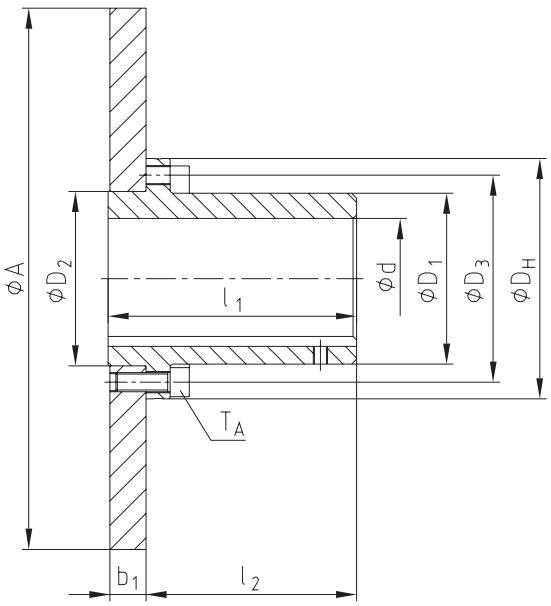
Reverse lock:
It allows for controlling the speed. In case of an unauthorised rotational direction of the system a braking process is activated or the starting of the machine is prevented. A definition of the number of starts preventing a re-start if the number is exceeded is to prevent the device from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

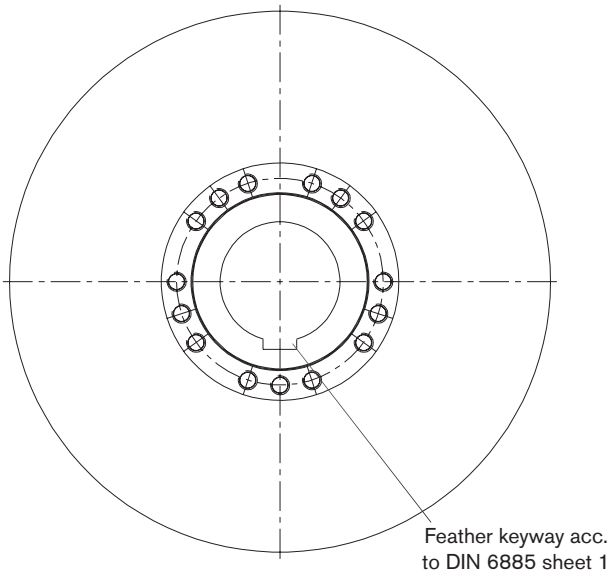
Joystick control:
This is an option to use the brake, as an example, like a car brake. The more the joystick travels, the more the brake engages.

Online remote operation:
The online remote operation allows both to call the status of the control via a network and to interfere. There is the option to program the control from a place far away.

KTR-STOP® NBS
Hubs with brake disks

Description of product



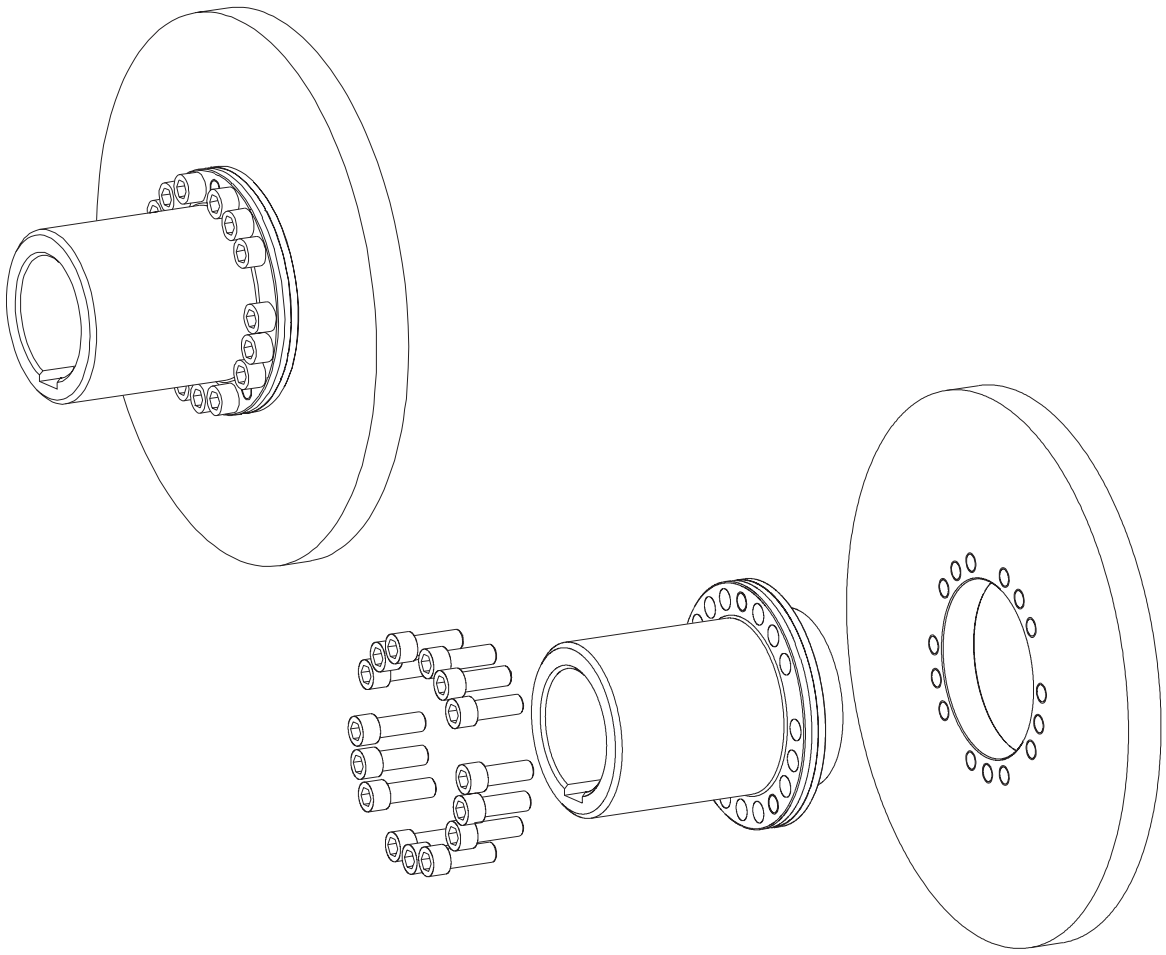


KTR-STOP® NBS													
Size	Dimensions [mm]								Screws DIN EN ISO 4762				Max. braking torque [Nm] 1)
	Finish bore d		D_H	D_1	D_2	D_3	l_1	l_2	Thread M	Number z	Pitch	Tightening torque T_A [Nm]	
	min.	max.											
65	22	65	135	94	96	116	166	135	M10	12	16x22,5°	67	3000
75	30	75	160	108	112	136	166,5	135	M12	15		115	6700
90	40	100	200	142	145	172	206,5	175	M16	15		290	16000
100	46	110	225	158	165	195	206,5	175	M16	15		290	18700
110	60	125	255	178	180	218	212	180	M20	15		560	32700
125	60	145	290	206	215	252	212	180	M20	15	20x18°	560	38100
140	60	165	320	235	245	282	252,5	220	M20	15		560	42700
								210 2)				560	42700
160	80	190	370	270	280	325	252,5	220	M24	15		970	75200
								210 2)				970	75200
180	85	220	420	315	330	375	252,5	210 2)	M24	18	24x15°	970	10400

1) Referring to screw connection of brake disk; the shaft-hub-connection has to be investigated separately by the customer.
2) Dimension with a width of brake disk b_1 of 40 mm.

Ordering example:

KTR-STOP® NBS 110	800x30	Ø100
Type/size	Brake disk Axb$_1$	Bore d

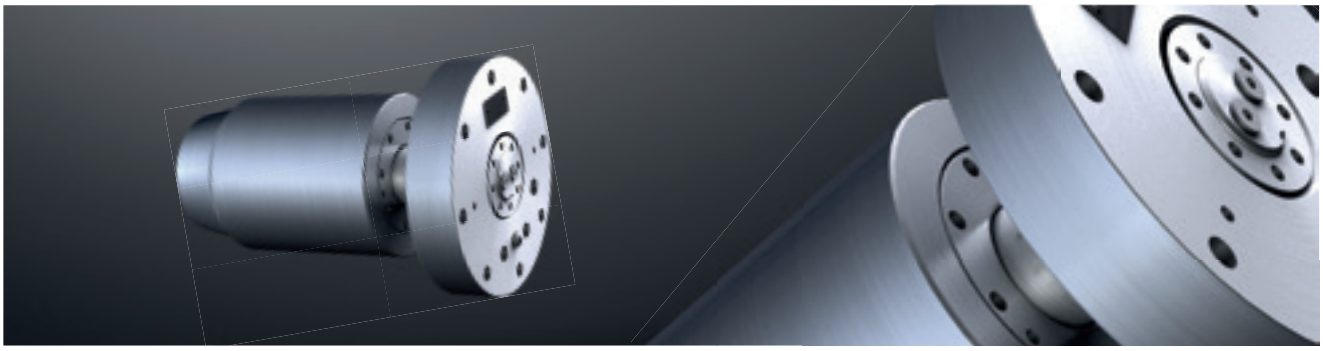


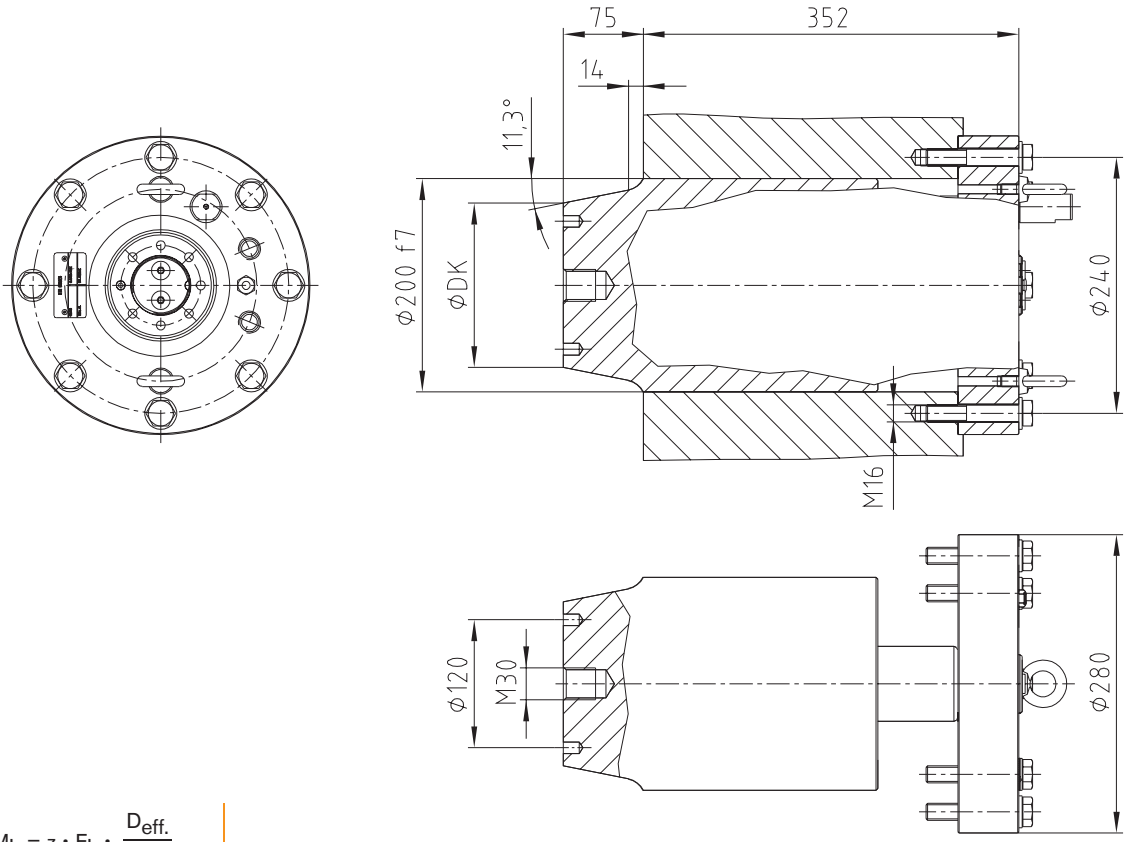
Size / Brake disk ØAxb$_1$	Weight [kg] of hub with brake disk [1] — Mass moment of inertia [kgm²]								
	65	75	90	100	110	125	140	160	180
355x30	25,6								
	0,349								
400x30	31,4	33,4							
	0,556	0,566							
450x30	38,7	40,6	49,3						
	0,885	0,895	1,009						
500x30		48,7	58,1	59,0	64,1				
		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 of hub with brake disk referring to maximum bore.

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 = Lock torque [kNm]

z = Number of Rotor Lock

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

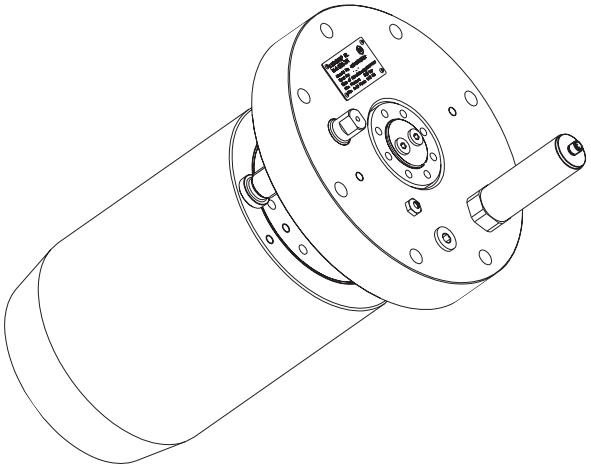
KTR-STOP® RL S			
Weight	ca. 90 kg	Piston diameter	120 mm
Max. stroke	80 mm	Piston surface fore stroke	113,10 cm²
Max. lateral force [1]	2000 kN	Piston surface back stroke	74,61 cm²
Max. operating pressure	250 bar	Oil volume per 1 mm stroke	11,3 cm³
Max. force fore stroke F+	283 kN	Oil volume with 75 mm stroke (full stroke)	848,2 cm³
Max. force back stroke F-	187 kN	Pressure port	G 1/4

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

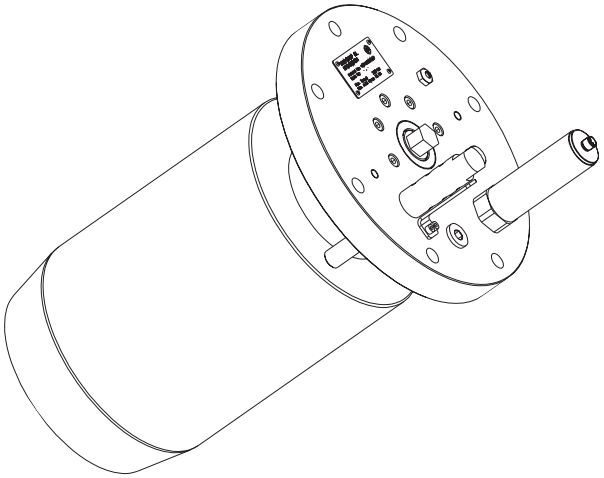
Ordering example:

KTR-STOP® RL	S	-	A	-	295	-	154
KTR Rotor Lock	Rotor Lock size		Option		Mounting length		Small taper diameter

Hydraulic version

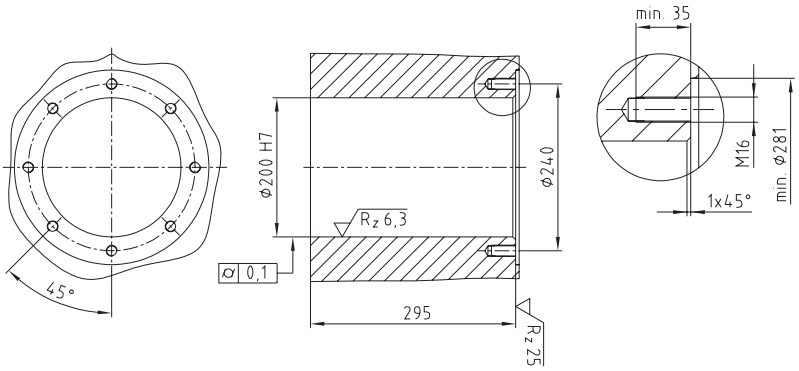


Mechanical version

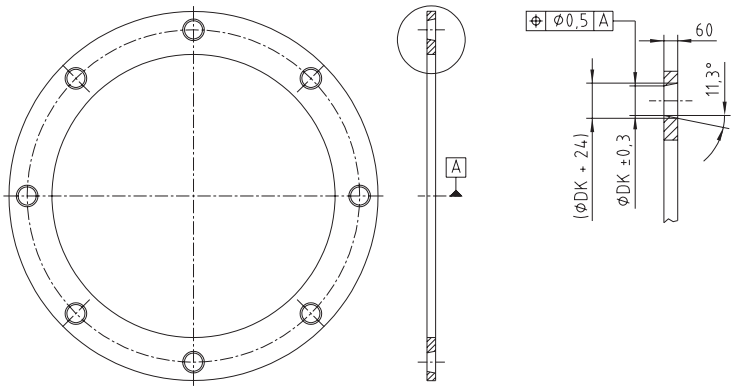


Connection dimensions

Housing

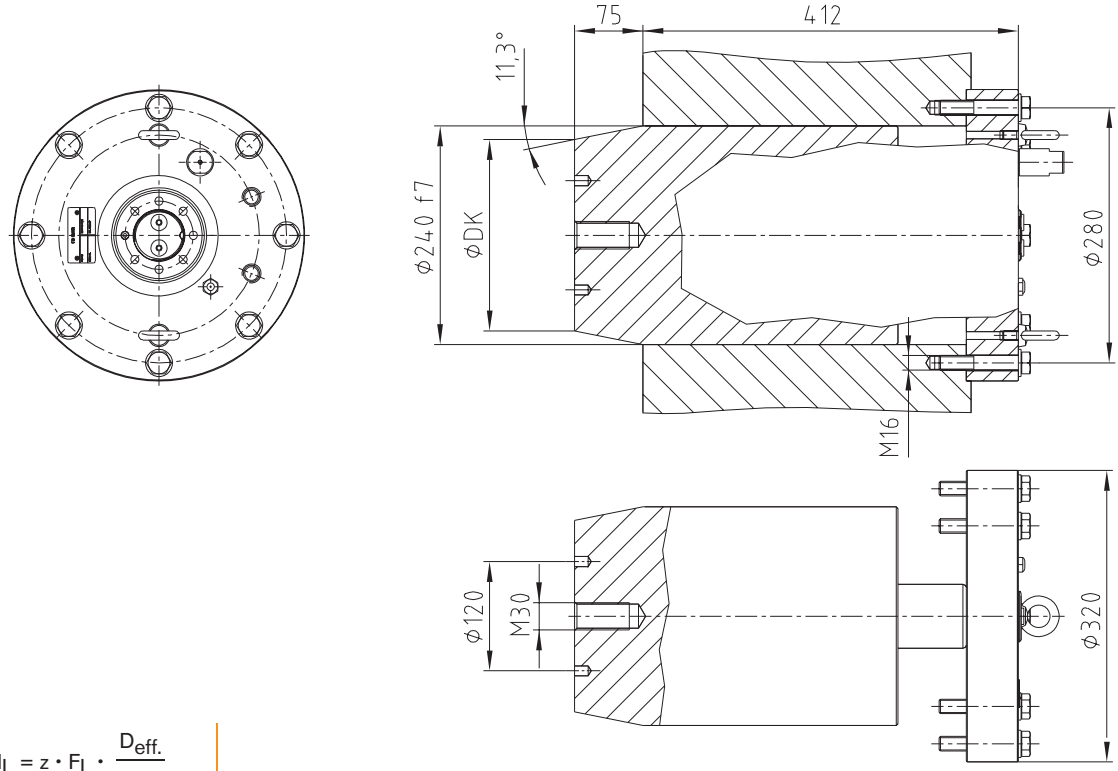


Locking disk



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 = Lock torque [kNm]

z = Number of Rotor Lock

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

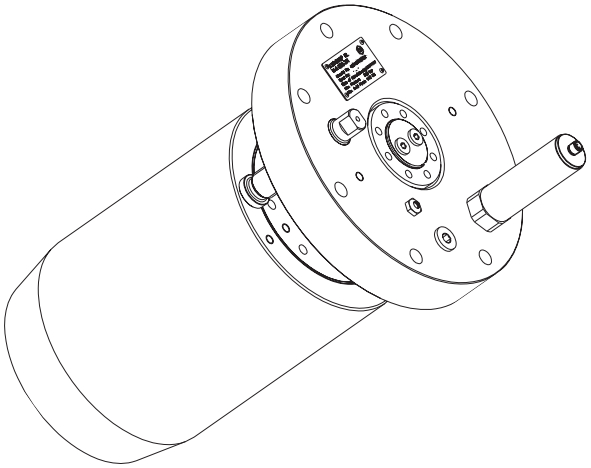
KTR-STOP® RL M			
Weight	approx. 150 kg	Piston diameter	120 mm
Max. stroke	80 mm	Piston surface fore stroke	113,10 cm²
Max. lateral force [1]	4000 kN	Piston surface back stroke	74,61 cm²
Max. operating pressure	250 bar	Oil volume per 1 mm stroke	11,3 cm³
Max. force fore stroke F+	283 kN	Oil volume with 75 mm stroke (full stroke)	848,2 cm³
Max. force back stroke F-	187 kN	Pressure port	G 1/4

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

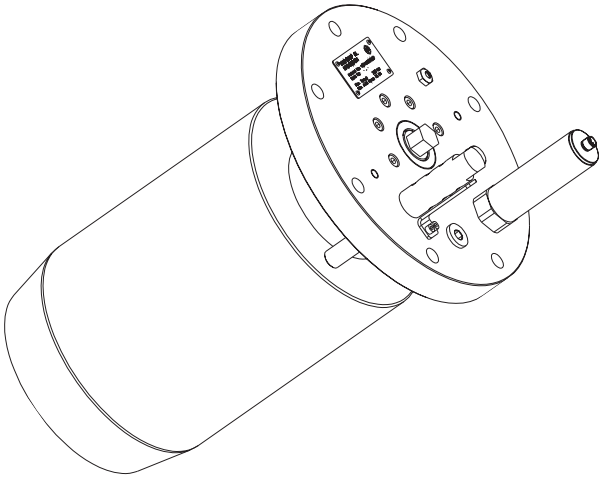
Ordering example:

KTR-STOP® RL	M	-	A	-	365	-	214
KTR Rotor Lock	Rotor Lock size		Option		Mounting length		Small taper diameter

Hydraulic version

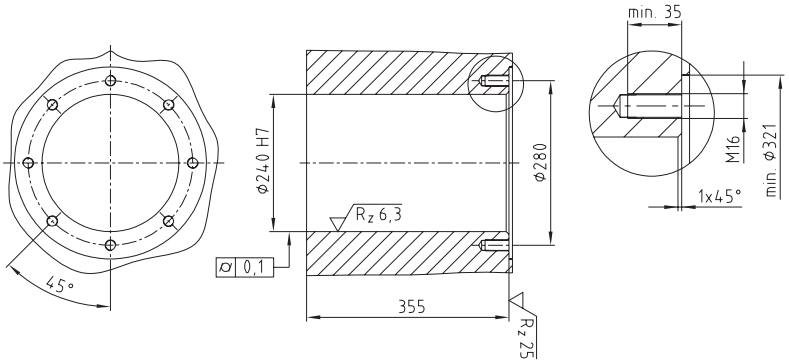


Mechanical version

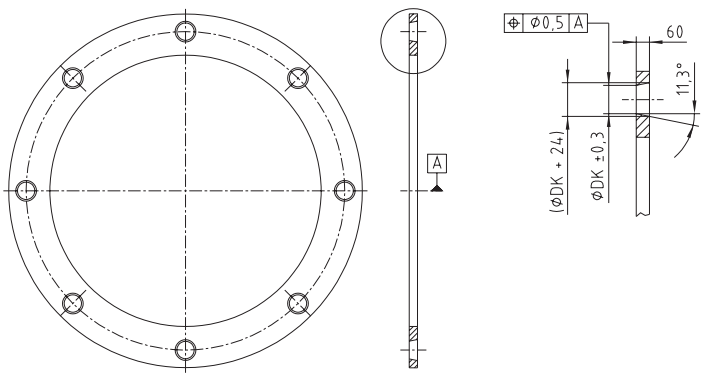


Connection dimensions

Housing

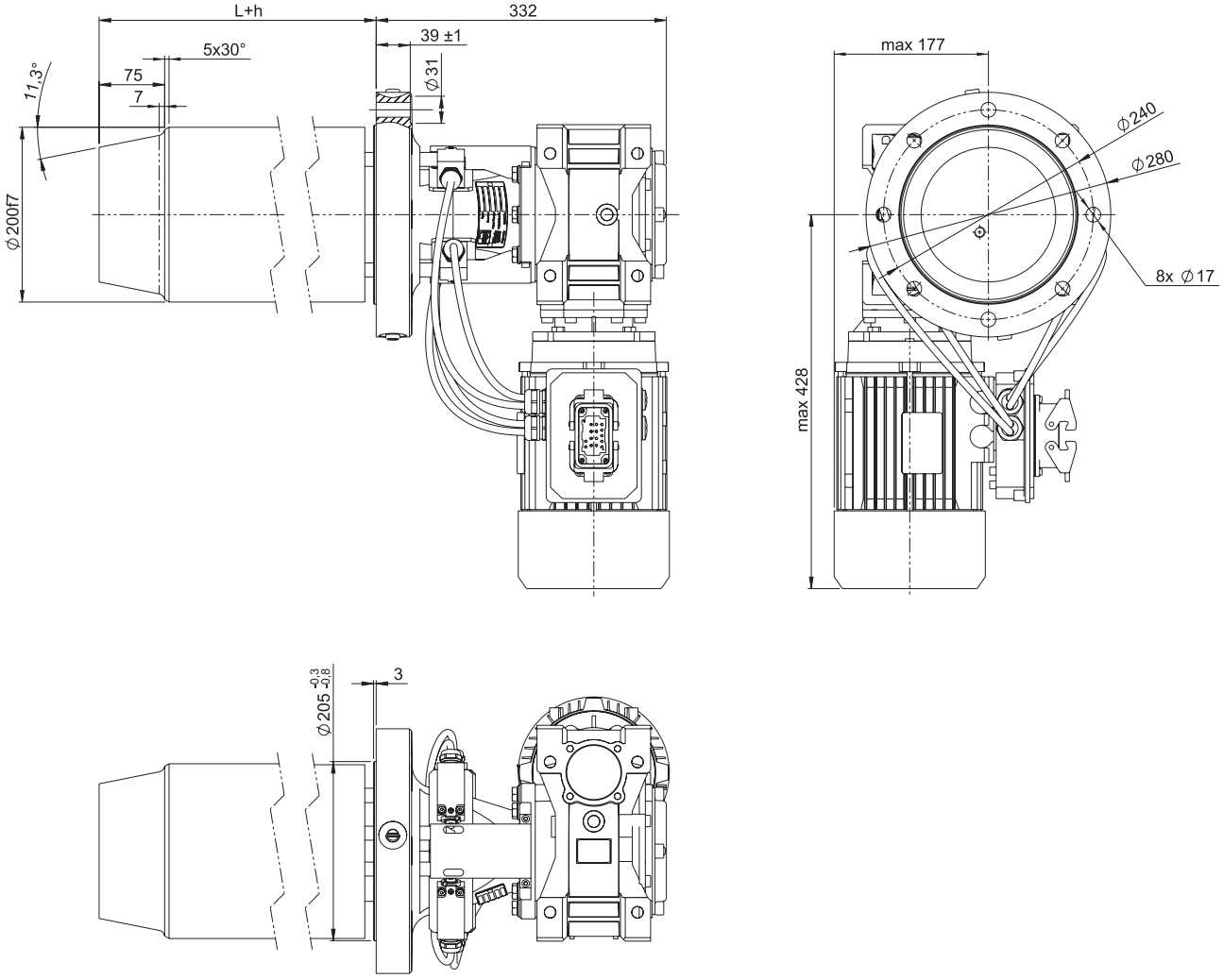


Locking disk



EMB-STOP RL S
Rotor Lock

Electromechanical system

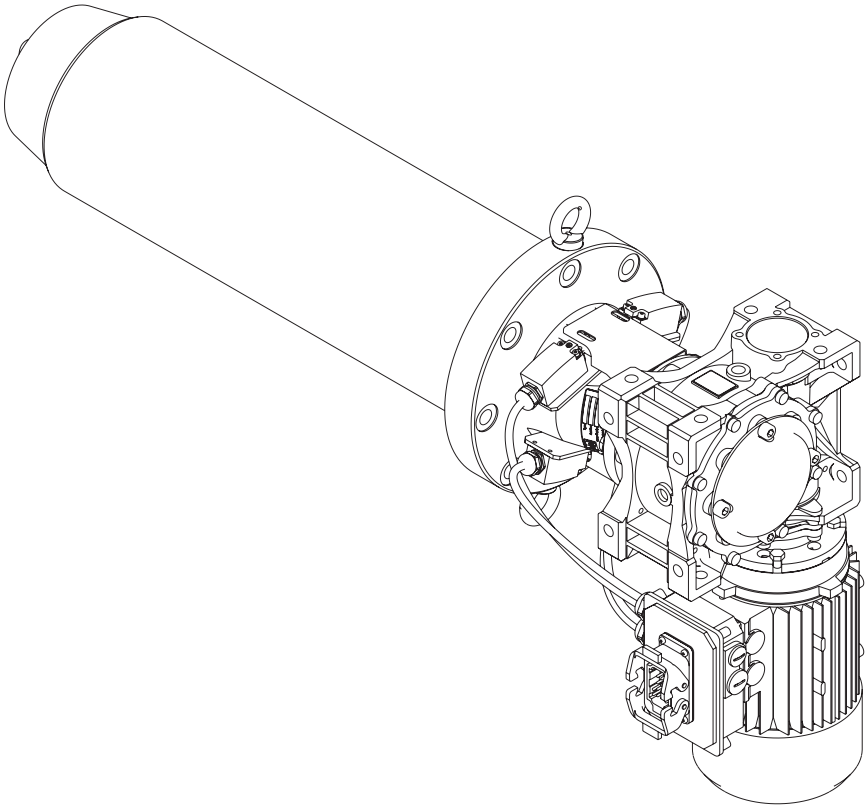


EMB-STOP RL S			
Stroke, max. (h)	75 mm	Motor output	1100 W
lateral force, max.[1]	2000 kN	Motor voltage	230 / 400 VAC
Pressure force, axial F+	160 kN	Voltage of electric signals	230 VAC / 24 VDC
Tensile force, axial F–	160 kN	Speed with 50 Hz	160 mm/min.
Total weight, ca.[2]	150 kg	Size of industrial connector	Han10B / HAN18EE (male)

[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	-	697	-	CON
EMB Rotor Lock	Rotor Lock size		Electric operation		Mounting length (L)		Contact form (see table)



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

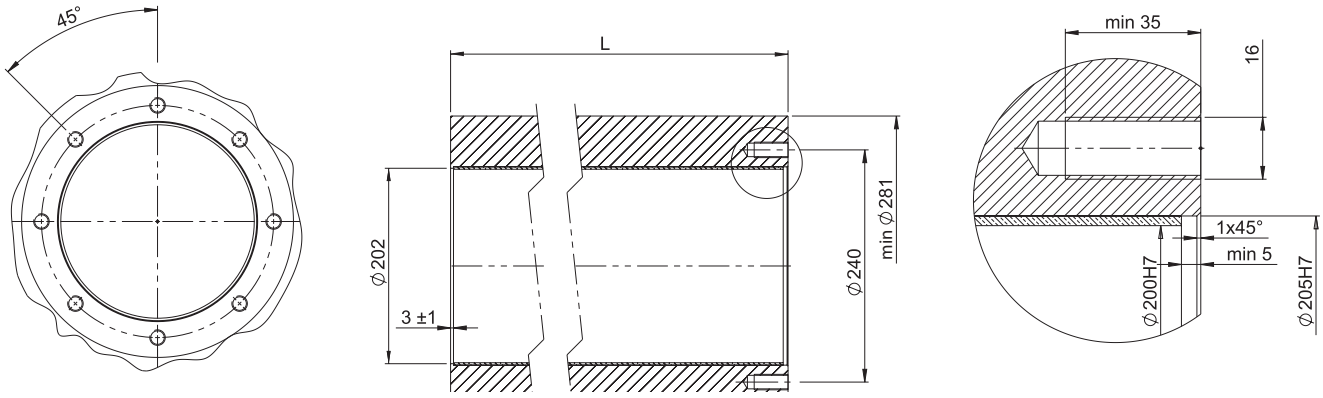
F_L = Shear force [kN]

M_L = Lock torque [kNm]

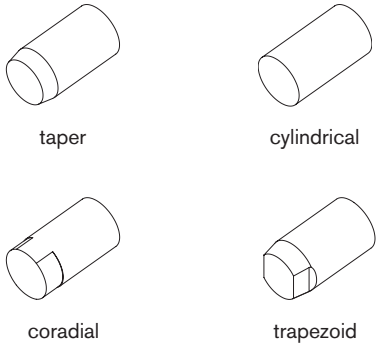
z = Number of Rotor Lock

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

Connection dimensions

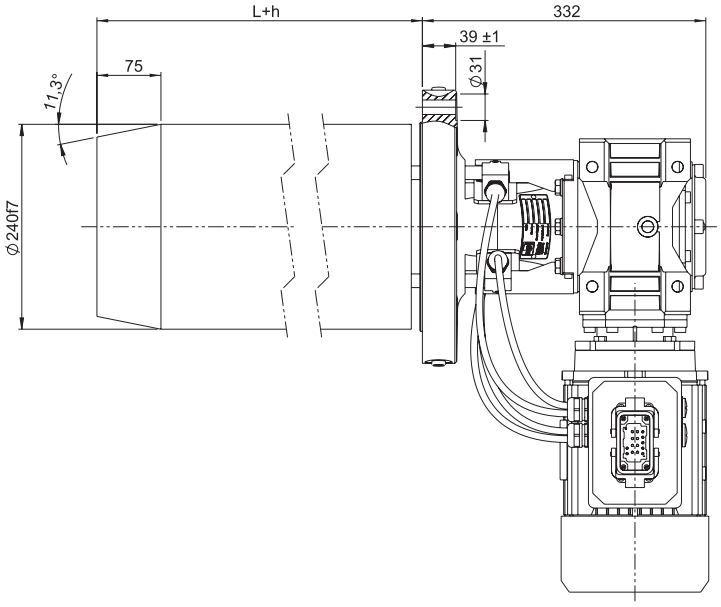


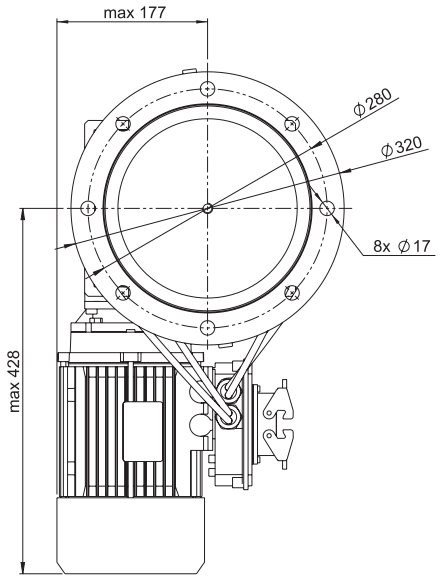
Type of contact	xxx
taper	CON
coradial	COR
cylindrical	CYL
trapezoid	TRA

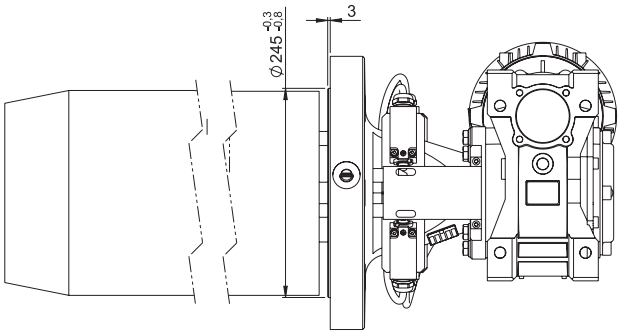


EMB-STOP RL M
Rotor Lock

Electromechanical system





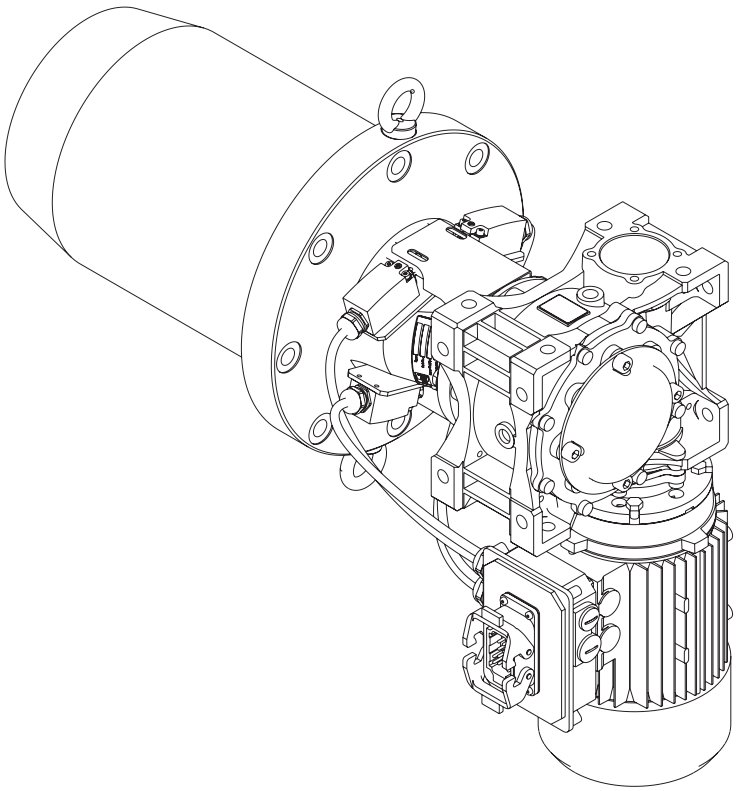


EMB-STOP RL M			
Stroke, max. (h)	75 mm	Motor output	1100 W
Lateral force, max.[1]	4000 kN	Motor voltage	400 VAC
Pressure force, axial F+	160 kN	Voltage of electric signals	230 VAC / 24 VDC
Tensile force, axial F–	160 kN	Speed with 50Hz	160 mm/min.
Total weight, ca.[2]	190 kg	Size of industrial connector	Han10B / HAN18EE (male)

[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		Electric operation		Mounting length (L)		Contact form (see table)



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

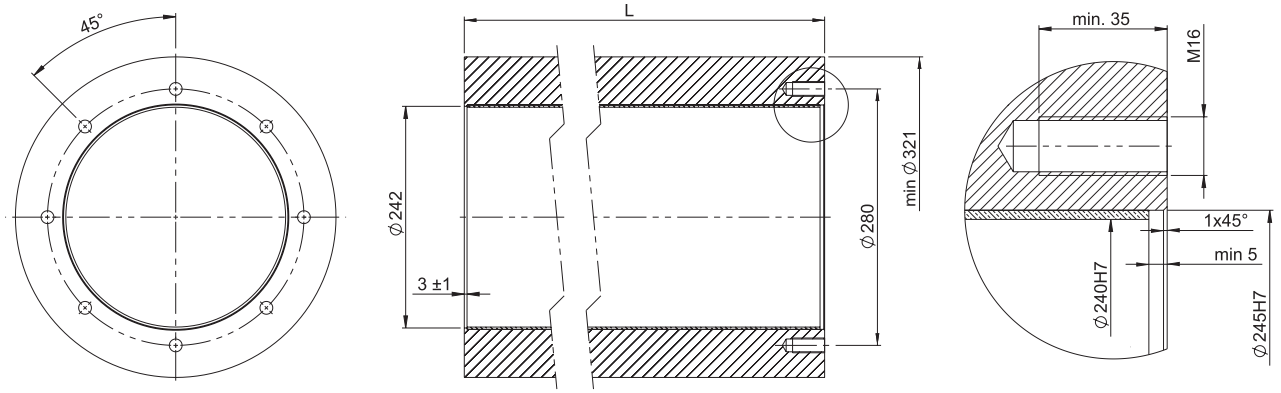
F_L = Shear force [kN]

M_L = Lock torque [kNm]

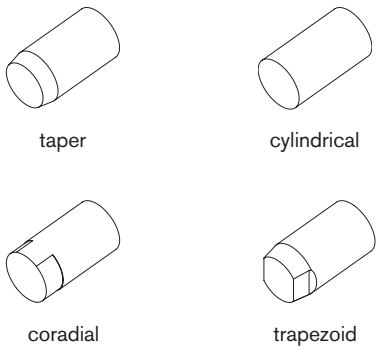
z = Number of Rotor Lock

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

Connection dimensions

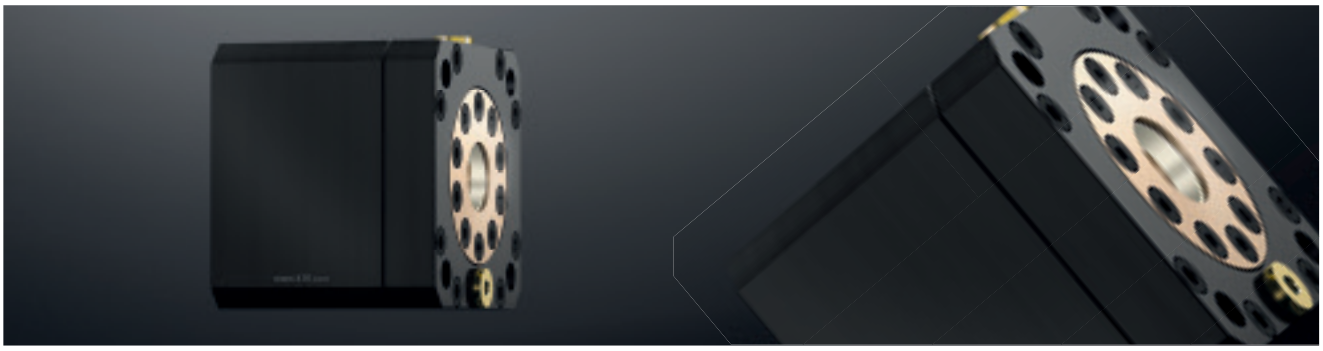


Type of contact	xxx
taper	CON
coradial	COR
cylindrical	CYL
trapezoid	TRA



KTR-STOP® NC
Hydraulic clamping system

Safety clamping and braking system



Description of product:

The KTR-STOP® NC series is a passive clamping and braking system. It serves for generating a clamping/braking force respectively clamping/braking torque on a cylindrical piston rod or shaft. The result is a deceleration of the torsional rotation or holding at standstill.

Applications:

Machine tool
- Ball screws / positioning axles
- Rod guides

Drive technology
- Feed cylinders

General engineering
- Hoists, hydraulic presses
- Clamping of rods, pistons, shafts
- Lifting tables / scissor lifting tables
- Hydraulic lifts / hydraulic lifting devices

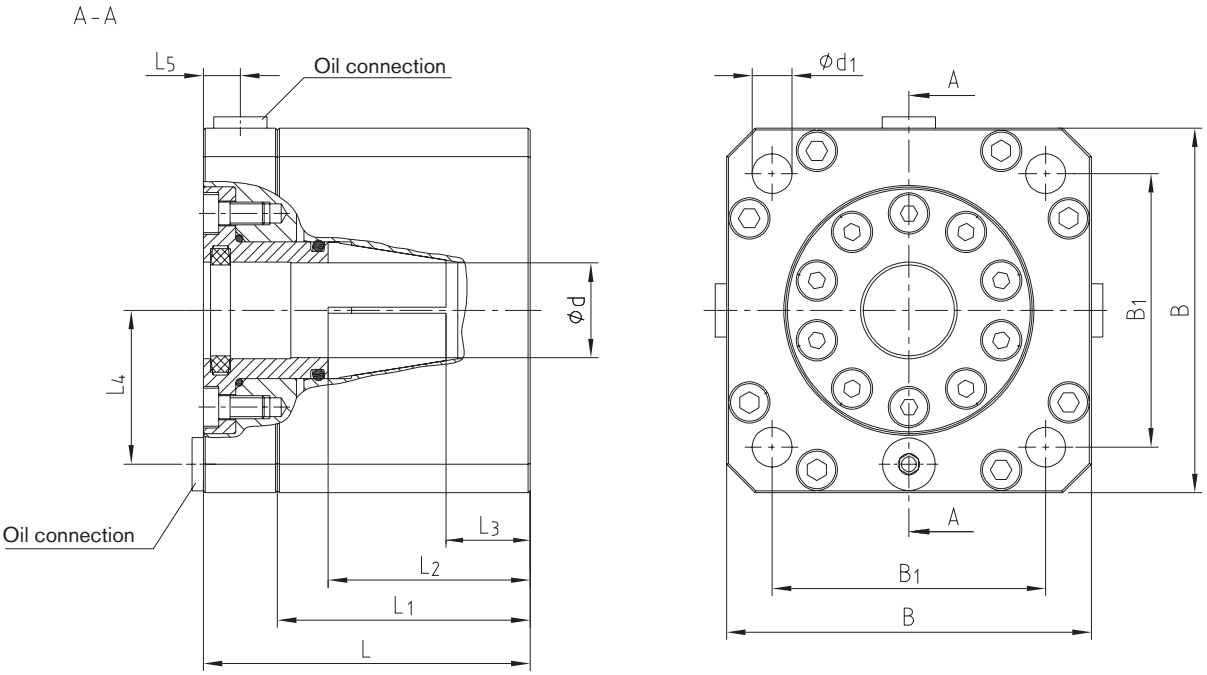
General
- Safety catches
- Blocking systems
- Systems that require additional securing

Product features:

- Passive clamping and braking system with fail-safe function
- System hydraulically released
- Compensating for axial load and torques
- Reduction of vibrations by increasing stiffness in spindle drives
- Clamping bush can be replaced
- Can be applied as an integrated solution or as a plug-in system
- Multifunctional applications (machine tools, general engineering,…)
- Clamping unlimited in time due to spring pressure storage
- Energy-efficient due to de-energized locking with unpressurized condition → spring pressure storage
- No generation of heat
- Operating principle of frictional connection

Ordering example:

KTR-STOP® NC	32	-	20	100 bar
Description	Size		Shaft diameter	Opening pressure



	KTR-STOP® NC [1]																		
	Size	Dimensions [mm]										Weight	Oil connection	"Open oil filling"	Opening pressure 50 bar		Opening pressure 70 bar		Opening pressure 100 bar	
															Holding torque[3]	"Axial lock force"[3]	Holding torque[3]	"Axial lock force"[3]	Holding torque[3]	"Axial lock force"[3]
		d[2]	d_1	B	B_1	L	L_1	L_2	L_3	L_4	L_5	[kg]	[/]	[dm³]	[Nm]	[N]	[Nm]	[N]	[Nm]	[N]
		12													12,5		16,5		27,5	
		15													15,5		20,5		34,5	
NEW	25	18	9	80x80	56,5	75	58	44,5	17,5	–	8,5	3,25	G 1/8	0,0055	18,5	2100	25	2750	41	4600
		20													20,5		27,5		45	
		22													22,5		30		50	
		18													35,5		50		75	
		20													40		56		83	
	32	22	10,5	96x96	72	86	66,5	53	19	40,5	10	5,25	G 1/8	0,011	43,5	4000	62	5600	91,5	8400
		24													47,5		67,5		100	
		25													50		70		105	
		22													60,5		97,5		120	
		24													66		105		130	
		25													69		110		135	
		28													77		125		155	
NEW	40	30	10,5	120x120	89	108	87,5	60	28	50	9,75	10	G 1/8	0,0137	82,5	5500	132,5	9000	165	11000
		32													88		142,5		175	
		34													93,5		150		185	
		35													96,5		155		190	
		36													100		160		200	
		25													130		200		300	
		28													145		225		335	
		30													155		240		355	
		32													165		257,5		380	
NEW	50	34	13,5	150x150	110	125	103,5	70	29	60	9,75	19	G 1/4	0,0311	175	10500	275	16250	405	24000
		35													182,5		280		415	
		36													190		290		430	
		38													200		305		450	
		40													210		325		475	
		36													205		365		530	
		38													215		385		560	
		40													230		405		590	
		42													240		425		615	
		44													250		445		645	
NEW	63	45	17,5	180x180	140	140	110	83,75	24,75	75	15	29,6	G 1/4	0,0498	255	11500	455	20500	660	29500
		46													265		465		675	
		48													275		485		705	
		50													285		505		735	
		52													300		525		765	
		54													310		545		795	
		55													315		555		810	

[1] All figures specified in the catalogue refer to a fit pair for shaft k6; bush D8; for other specifications see page 72
[2] Other bores on request
[3] Referring to a friction coefficient of μ =0.12

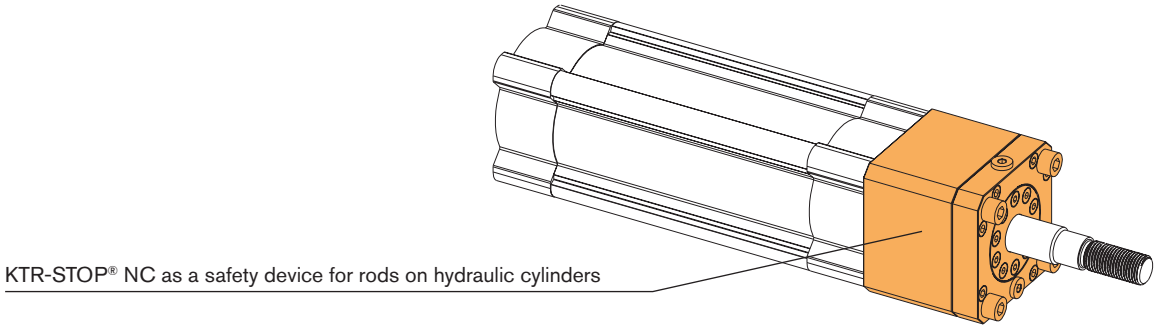
In addition to the standard portfolio customized solutions are available on request.

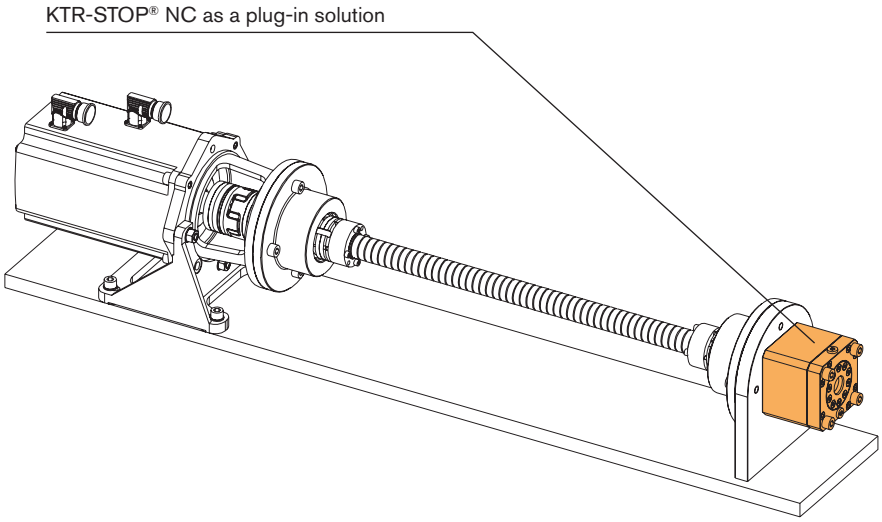
KTR-STOP® NC
Hydraulic clamping system

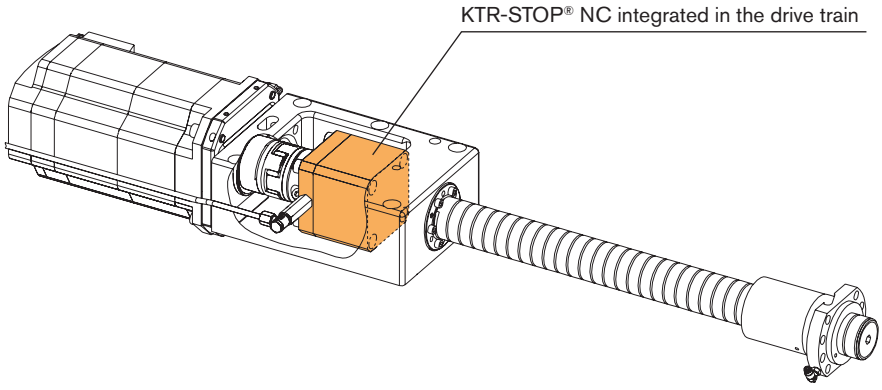
Safety clamping and braking system

Demands on piston rod / ball screw		
	Steel, hard chrome plated	Hardened steel
Layer thickness	min. 20 µm	-
Hardness	-	min. HRC 60
Surface quality	Ra < 0,4 µm	
Yield point R_e	>. 400 N/mm²	
Tolerance of diameter	k6	

Examples of application and assembly:







Any questions? Please contact us.

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