

**ELEPHANT BRAKES**  
BY RIETSCHOTEN



# INDUSTRIAL DISC BRAKES

## Catalogue

# Elephant Brakes by Rietschoten

Strong like an elephant. Smart like an elephant.

Wherever industrial motion needs braking, Elephant Brakes have been reliably at work for over 50 years. Since 1972, our work has focused solely on braking systems. Thanks to the modular construction of our systems and a wellplanned modular design system, braking solutions are possible for practically every demand. Our disc brakes are manufactured in the highest quality according to the standards of a DIN EN ISO 9001-certified quality assurance system. Elephant Brakes are distinguished by their compact size, quick response time, high reliability and outstanding braking power.

## Contact

If you are not sure which department is the right one, feel free to contact the following number:

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















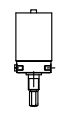











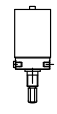










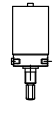










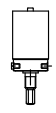
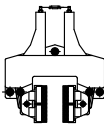








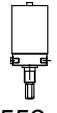

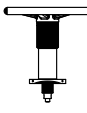
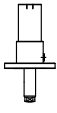
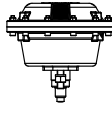
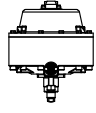
Web: [www.elephantbrakes.com](http://www.elephantbrakes.com)

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The brakes shown in this catalogue are standard series. Due to our modularity a variety of combinations of brake calipers and actuators are available upon request. Feel free to contact us!

CALIPER	ACTUATOR										
 R&H 050 R&H 051	 098	 100	 402	 102	 103						
 R&H 100	 096	 098	 099	 101	 102	 103	 105	 250	 405 / 406	 550 / 560	
 R&H 200	 096	 098	 099	 102	 103	 105	 107	 250 / 251	 405 / 406	 412	 550 / 552
 R&H 250	 098	 099	 102	 103	 105	 107	 250 / 251	 405 / 406	 412	 550 / 552	
 R&H 215-245	 098	 099	 102	 103	 105	 107	 250 / 251	 405 / 406	 412	 550 / 552	
 R&H 300	 098	 103	 105	 107	 106 / 108	 250 / 251	 405 / 406	 412	 550 / 552 / 563		
 R&H 350	 090	 204 / 205	 135	 435							

ATEX is the name commonly given to the framework for controlling explosive atmospheres and the standards of equipment, also for non-electronic components like mechanical friction brakes, and protective systems used in them. It is based on the requirements of the European Directive 2014/34/EU.

**A product is subject to the ATEX guideline during:**

- usage in explosive atmosphere under atmospheric conditions (temperatures of -20°C to 60°C and pressures of 0,8 to 1,1 bar)
- generation, transmission, storage, transformation of energy
- existing, active ignition source on device itself

Employers must classify areas where hazardous explosive atmospheres may occur into zones. A typical explosive atmosphere is a mixture of dangerous substances with air in the form of gases, vapors, mist or dust in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

**For application emergency braking, web-tension and holding duty**

Classification of the brake system acc.:

**EX II 2 D/G c T1...T6**

**Cat. 2 D/G zone 21 or 1**

Compared to devices that generate a defined operating temperature, the category of a mechanical friction brake depends on the application parameters (T1...T6). ATEX conformity is only confirmed by the use of friction material T544 in conjunction with disc material EN-GJS-400-15.

Depending on the application, our brake calipers are equipped with a special monitoring unit and, if necessary, a switching amplifier that allows the brake lever position to be monitored. The switching amplifier must be installed in the safe area. In addition, a signal wire in loop construction is inserted in the brake pads. This signal is also integrated in the switching amplifier. For defined brake lever alignment, depending on the mounting position, the brake calipers are fitted with an additional inclined mounting kit.

area classification / devices, protection systems			
	permanent, long periods of time, frequent	occasionally normal operation	not or momentary normal operation
gases, vapors, mist	<b>Zone 0 • Cat. 1 G</b> previous requirement for zone 0	<b>Zone 1 • Cat. 1 / 2 G</b> previous requirement for zone 0, 1	<b>Zone 2 • Cat. 1 / 2 / 3 G</b> previous requirement for zone 0, 1, 2
dust	<b>Zone 20 • Cat. 1 D</b> previous requirement for zone 10	<b>Zone 21 • Cat. 1 / 2 D</b> previous requirement for zone 10	<b>Zone 22 • Cat. 1 / 2 / 3 D</b> previous requirement for zone 10, 11

source: TÜV Saarland

### 1. SELECTION PROCEDURES FOR INDUSTRIAL DISC BRAKES

The Elephant Brakes modular system with its finely graduated brake disc diameters and brake caliper sizes makes it possible to optimally match the individual elements and adapt them to the required operating conditions such as power and braking torque.

Please note that the following calculation bases serve the roughly design of a brake system and can not take into account all the factors required for the design.

Please let us know the technical data relevant to your application using the „Data sheet for disc brake design“ (see page 12). On the basis of this application-specific data, we will make an optimal design of the brake system for you and make you a non-binding offer.

#### 1.1 Used formula symbols

$T_{Br}$	braking torque [Nm]
$T_{Br req.}$	required braking torque [Nm]
$T_{mot}$	motor torque [Nm]
$W_{Br}$	friction work of the brake [kJ]
$P_{mot}$	motor power [kW]
$P_{Br}$	braking power [kW]
$P_{Br d}$	recommended max. braking power acc. to diagram [kW]
$P_C$	continuous slip braking power [kW]
$P_{Cd}$	recommended max. braking power per brake caliper with continuous slip acc. to diagram [kW]
$P_{Cc}$	recommended max. braking power per brake caliper, continuous slip brake [kW]
$N$	trailing [rotation]
$n$	rotational speed [min <sup>-1</sup> ]
$\omega$	angular frequency [sec <sup>-1</sup> ]
$t_{Br}$	braking time [s]
$m$	mass [kg]

$r$	inner radius [m]
$R$	outer radius [m]
$h$	height [m]
$D$	diameter big [m]
$d$	diameter small [m]
$D_s$	outer diameter of brake disc [m]
$J$	mass moment of inertia [kgm <sup>2</sup> ]
$J_R$	reduced mass moment of inertia [kgm <sup>2</sup> ]
$v$	haul-off speed, circumferential speed [m/s]
$a_v$	acceleration (decelerated) [m/s <sup>2</sup> ]
$Z$	tension at unwinder [N]
$F_{Br req.}$	required braking force at rail [N]
$F_{Br.}$	braking force [N]
$s$	stopping distance [m]
$\rho$	density [kg/m <sup>3</sup> ]

### 2. MOTOR BRAKE

If it does not depend on an exact braking time and if large switching frequencies are not to be expected (switching frequency <10 stops / h), then the braking torque can be simplified with 1,5 to 2,5 times of the rated motor torque.

#### 2.1

$$T_{\text{mot.}} = \frac{P_{\text{mot.}} \cdot 9550}{n}$$

$$\|T_{\text{Br req.}} = 1,5 - 2,5 T_{\text{mot.}}\|$$

#### 2.2 Rough calculation

$$\|T_{\text{Br req.}} = \frac{P_{\text{mot.}}}{n} \cdot 20.000\|$$

### 3.0 STOP BRAKE FOR ROTATING MASSES

#### 3.1 Rotating masses

##### 3.1.1

$$\|T_{\text{Br req.}} = \frac{\sum J \cdot \Delta\omega}{t_{\text{Br}}} = \frac{\sum J \cdot \Delta n}{9,55 \cdot t_{\text{Br}}}\|$$

$$\Delta\omega = \omega_1 - \omega_2$$

$$\Delta n = n_1 - n_2$$

for stop brake

$$\omega_2 = 0$$

$$n_2 = 0$$

##### 3.1.2

$$t_{\text{Br}} = \frac{\sum J \cdot \Delta\omega}{T_{\text{Br}}} = \frac{\sum J \cdot \Delta n}{9,55 \cdot T_{\text{Br}}}$$

##### 3.1.3 Trailing N

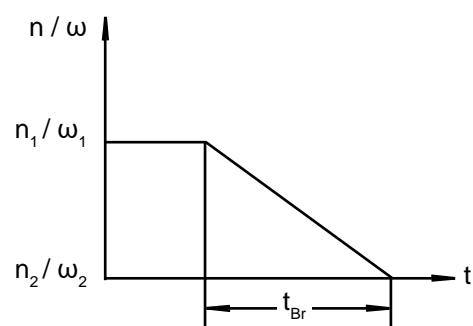
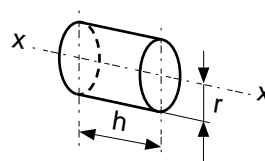
$$N = \frac{\Delta n}{2} \cdot \frac{t_{\text{Br}}}{60}$$

#### 3.2 Calculation of the mass moment of inertia

$$J = \frac{GD^2}{4} \quad GD^2 = \text{centrifugal moment [kp m}^2\text{]}$$

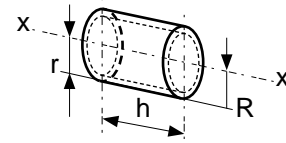
##### 3.2.1 Plain cylinder

$$J_x = \frac{1}{2} mr^2 = \frac{1}{4} \rho \pi r^4 \cdot h$$



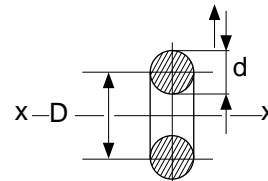
### 3.2.2 Hollow cylinder

$$J_x = \frac{1}{2} m (R^2 + r^2) = \frac{1}{2} \rho \cdot \pi h (R^4 - r^4)$$



### 3.2.3 Ring

$$J_x = 0,25m (D^2 + 0,75d^2) = 0,0625 \rho \pi^2 D d^2 (D^2 + 0,75d^2)$$



### 3.2.4 Mass reduction (gear)

$$J_R = \left[ J_1 + J_2 \left( \frac{\omega_2}{\omega_1} \right)^2 + J_3 \left( \frac{\omega_3}{\omega_1} \right)^2 \dots J_n \left( \frac{\omega_n}{\omega_1} \right)^2 \right]$$

## 4.0 TRANSLATIONALLY MOVING MASSES

### 4.1 Vehicles (braking at the wheel shaft)

Calculation of the mass moment of inertia J generated by the linearly moved mass.

#### 4.1.1

$T_{Br req.}$  < transferable moment between wheel and ground or between wheel and rail!

$$J = m \cdot \frac{v^2}{\omega^2} = m \cdot \frac{v^2}{\eta^2} \cdot 91,19$$

### 4.2 Braking of linearly moving masses

Brake on the rail instead of the brake disc

#### 4.2.1

$$\|F_{Br req.} = m \cdot a_v\|$$

#### 4.2.2

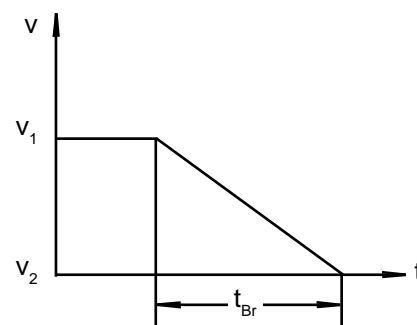
$$a_v = \frac{v}{t_{Br}} = \frac{2s}{t_{Br}^2} = \frac{v^2}{2s}$$

#### 4.2.3

$$S = \frac{v \cdot t_{Br}}{2} = \frac{a_v \cdot t_{Br}^2}{2} = \frac{v^2}{2a_v}$$

#### 4.2.4

$$t_{Br} = \sqrt{\frac{2s}{a_v}} = \frac{v}{a_v} = \frac{2s}{v}$$



$v_2 = 0$



### 4.2.5

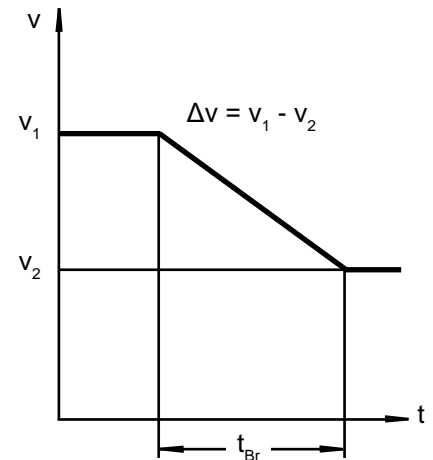
$$a_v = \frac{v_1 - v_2}{t_{Br}} = \frac{\Delta v}{t_{Br}} = \frac{v_1^2 - v_2^2}{2s}$$

### 4.2.6

$$s = \frac{t_{Br}}{2} (v_1 + v_2) = v_1 t_{Br} + \frac{1}{2} a_v t_{Br}^2$$

### 4.2.7

$$t_{Br} = \frac{v_1 - v_2}{a_v} = \frac{\Delta v}{a_v} = \frac{2s}{v_1 + v_2}$$



## 5.0 BRAKING FORCE OF A BRAKE CALIPER

The braking force of a brake caliper - determined from the caliper-specific torque diagrams - results with sufficient accuracy:  $T_{Br}$  in the selected pressure range of the caliper divided by 1/2 diameter of the largest brake disc specified in the diagram.

### 5.1

$$\left\| F_{Br} = \frac{T_{Br}}{0,5 Ds \text{ max.}} \right\|$$

## 6.0 ENERGY AND POWER OF THE BRAKE

### 6.1 Friction energy per braking

$$W_{Br} = \frac{\Delta n}{1,91 \cdot 10^4} M_{Br} \cdot t_{Br} = \frac{\Delta n^2 \cdot J}{0,18 \cdot 10^6}$$

### 6.2 Average braking power

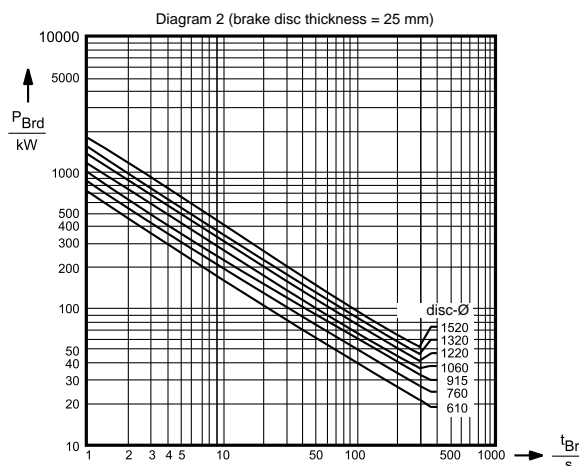
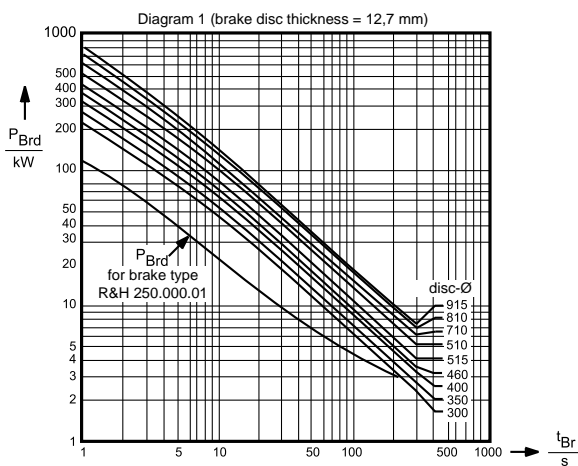
$$\left\| P_{Br} = \frac{W_{Br}}{t_{Br}} = \frac{\Delta n^2 \cdot J}{0,18 \cdot 10^6 \cdot t_{Br}} \right\|$$

### 6.3 Permissible power absorption of the brake caliper and disc

The frictional heat occurring during braking naturally heats the brake discs and brake calipers. For safety and wear reasons, each brake caliper or disc may only be heated up to a certain temperature, which depends on the indicated braking power. Diagrams 1 and 2 show the maximum recommended braking performance of 12,7 mm and 25 mm discs as a function of braking time as well as the recommended maximum braking performance of a Type R&H 250.000.01 brake caliper for braking.

**Under special conditions, these values are quite surpassable. We would like to ask you to contact us in these special cases.**

$$P_{Br} < P_{Br d}$$



## 7.0 CONTINUOUS SLIP BRAKE

### 7.1 Calculation of braking torques

#### 7.1.1

$$\|T_{Br req. max.} = \frac{D}{2} \cdot Z\|$$

#### 7.1.2

$$\|T_{Br req. min.} = \frac{d}{2} \cdot Z\|$$

### 7.2 Calculation of the braking power of continuous slip brakes

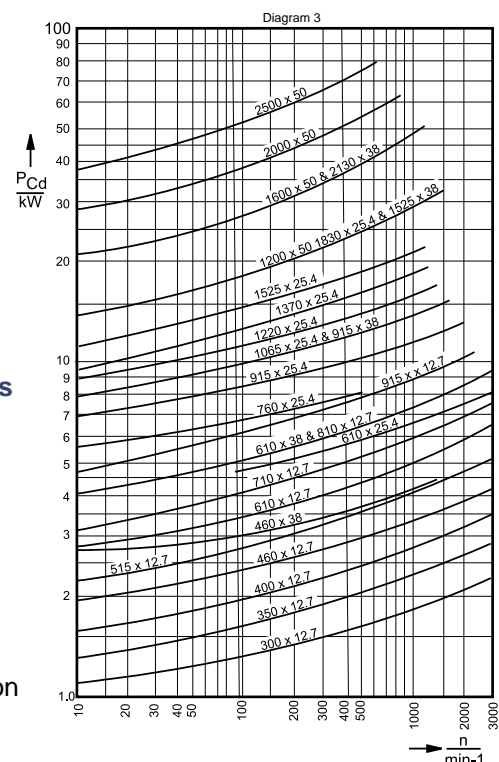
#### 7.2.1

$$\|P_C = \frac{Z \cdot v}{1000}\|$$

#### 7.2.2

$$\|P_C \leq P_{Cd}\|$$

$P_{Cd}$  = max. Recommended continuous braking power depending on the speed of the brake disc (see diagram 3).



### 7.3 Permissible continuous power $P_{DZ}$ of the brake caliper

The maximum continuous power recommended for a brake caliper is:

Type	$P_{DZ}$
R&H 100.000.01	2,5 - 3 kW
R&H 200.000.01	2,5 - 3 kW
R&H 250.000.01	2,5 - 3 kW
R&H 215.000.01	4 kW
R&H 225.000.01	
R&H 230.000.01	
R&H 245.000.01	
R&H 250.000.02	5 - 6 kW
R&H 300.000.04	10 - 12 kW
R&H 350.000.01	14 kW

### 8.0 BRAKE PADS

Quality	Mixture	Coefficient of friction	max. temp. [°C]
J 755	sintered metal	0,4	850
C 1203	high rubber content	0,4	250
544	standard	0,3	350
570	graphited	0,2	200
C 3002	highly graphited	0,15	200

In order to minimize the wear of the brake pads and the environmental impact, the peripheral speeds of the brake disc should not exceed the following values.

#### 8.1

$$\frac{V_{u \max.} \text{ for standard pad}}{V_{u \max.}} = 3000 \text{ m/min. } 50 \text{ m/sec.}$$

#### 8.2

$$\frac{V_{u \min.} \text{ for standard pad}}{V_{u \min.}} 1,5 \text{ m/min. } = 0,025 \text{ m/sec. (to avoid the slip-stitch effect, this value must not be undercut)}$$

***In exceptional cases where these recommended guide values are exceeded or undercut, we ask you to contact us, specifying the application-specific technical data.***



# Questionnaire

for brake selection



To download this page as a PDF, please use the QR code.

Name: \_\_\_\_\_ Dept.: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_ Zip Code / City: \_\_\_\_\_

Phone: \_\_\_\_\_ E-Mail: \_\_\_\_\_

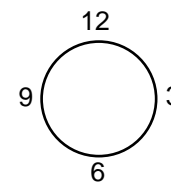
**Brake application:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Shaft direction:**

horizontal   
 vertical

**Position of the brake(s) at the brake disc:**



preferred:  
3 h or 9 h

**Actuation:**

mechanic       pneumatic       hydraulic       spring-applied

hydr. released  
 pneum. released  
 elektr. released

**Web tension:**

- max. winding diameter	D =	mm
- min. winding diameter	d =	mm
- web tension min. / max.	Z =	N
- tension speed min. / max.	V =	/ m/s
- duration of operation	Ed =	min./h
- disc diameter min. / max.	Ø =	/ mm

**Stop and / or holding brake:**

- rotation speed	n =	1/min
- braking time	t =	sek.
- inertia	J =	kgm <sup>2</sup>
- brake operations / hour	T =	1/hour
- disc diameter min. / max.	Ø =	/ mm
- motor power	P =	kW

Specific requirements:


Estimated delivery date:

Anticipated requirement:

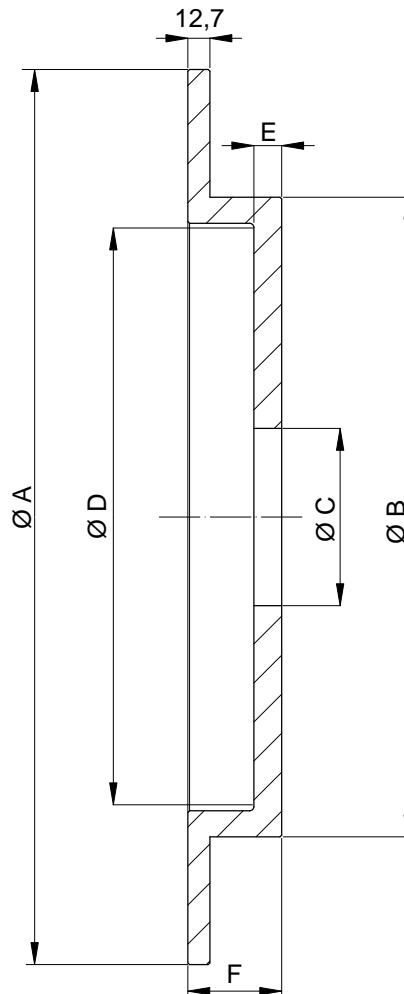
Send the completed form by fax: +49 (0) 511 - 37207-77 or e-mail: [contact@elephantbrakes.com](mailto:contact@elephantbrakes.com)

**Elephant Brakes by Rietschoten Germany. Strong like an elephant. Smart like an elephant.**

Deutsche van Rietschoten & Houwens GmbH · Junkersstraße 12 · 30179 Hannover · [www.elephantbrakes.com](http://www.elephantbrakes.com)



brake discs,  
hubs,  
couplings,  
clamping elements



Material: EN-GJS-400-15

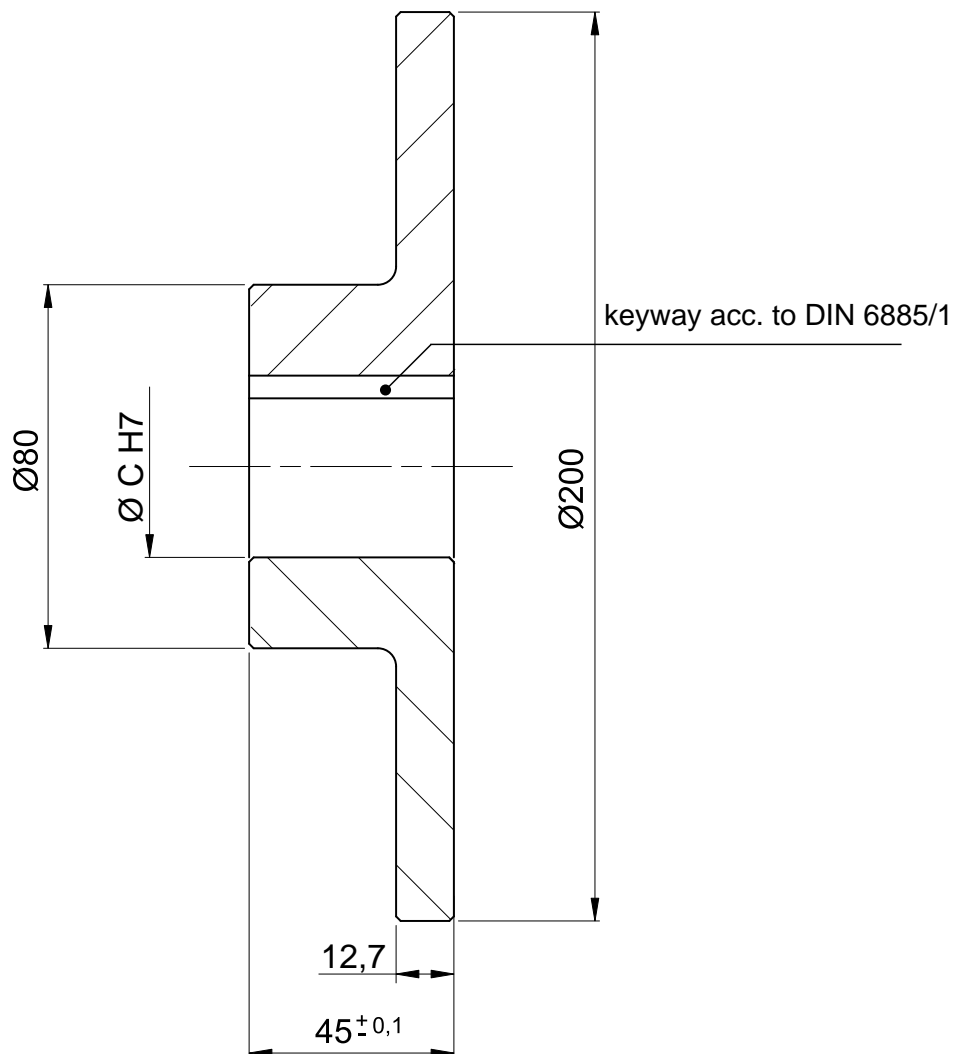
C = pilot bore

Nomi- nal-Ø [mm]	Item-No.	Part-No.	Ø A [mm]	Ø B [mm]	Ø C [mm]	Ø D [mm]	E [mm]	F [mm]	J [kgm <sup>2</sup> ]	Mass [kg]
915	502.091.001	<b>10027</b>	915	760	250	718	25	54	11,0	110
810	502.081.001	<b>10026</b>	812	660	102	616			6,5	87
710	502.071.001	<b>10024</b>	711	565		527	19		3,1	51
610	502.061.001	<b>10017</b>	610	464		434	16		1,6	34,2
515	502.051.001	<b>10015</b>	514	368		338			0,8	23,2
460	502.046.001	<b>10011</b>	457	311		281	13		0,5	18,2
400	502.040.001	<b>10009</b>	406	260		235			0,3	13
350	502.035.001	<b>10007</b>	356	210	60	185	16		0,2	10,9
300	502.030.001	<b>10005</b>	300	181	51	157	13	41	0,1	7
250	502.025.001	<b>10002</b>	250	128	30	112	6	36	0,035	4

**NOTE:**

disc w/o centre bore

Part-No.: 10831

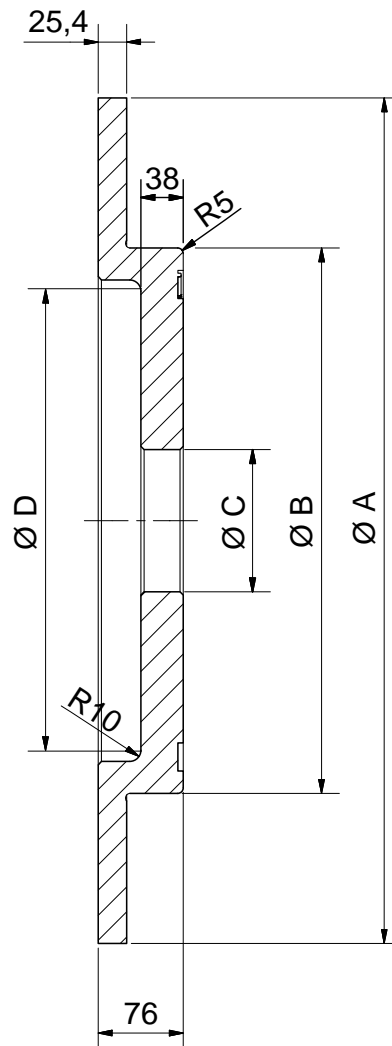


Dimension C acc. to customer requirements max. Ø 60

Edges 1,5 x 45° chamfered

Material: EN-GJS-400-15

Mass: 4 kg (w/o centre bore)

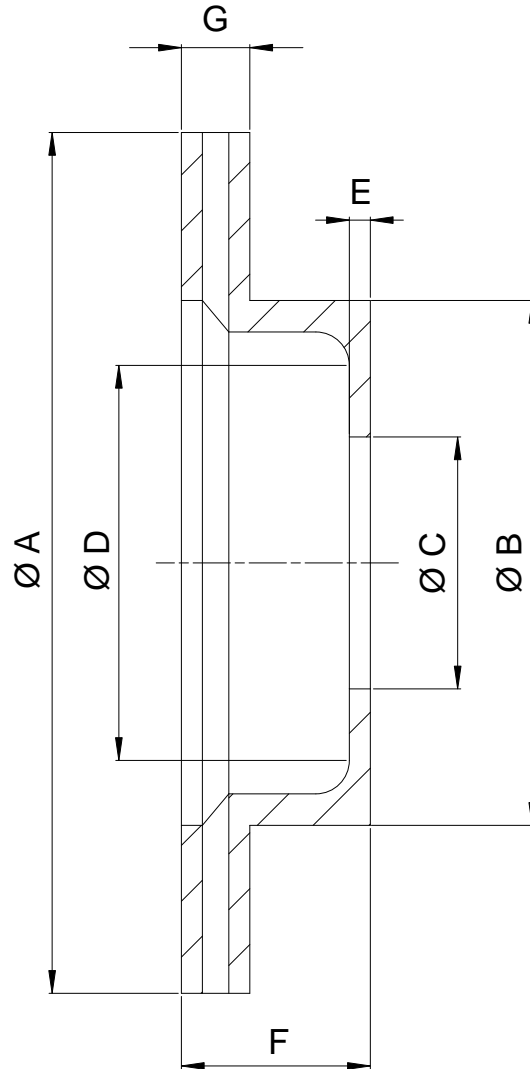


Material: EN-GJS-400-15

C = pilot bore

<i>Part-No.</i>	Ø A [mm]	Ø B [mm]	Ø C [mm]	Ø D [mm]	J [kgm <sup>2</sup> ]	Mass [kg]
<b>10751</b>	1820	1523	915	1463	249	533
<b>10032</b>	1520	1220	450	1160	123	401
<b>10031</b>	1220	915	240	855	50	278
<b>10029</b>	1000	732		682	22,4	186
<b>10028</b>	915	647		587	16,2	150
<b>10331</b>	810	542	127	482	9,7	130
<b>11465</b>	755	487		420	6,6	107
<b>10025</b>	700	432		372	5	90
<b>10018</b>	610	343		283	2,9	67,2



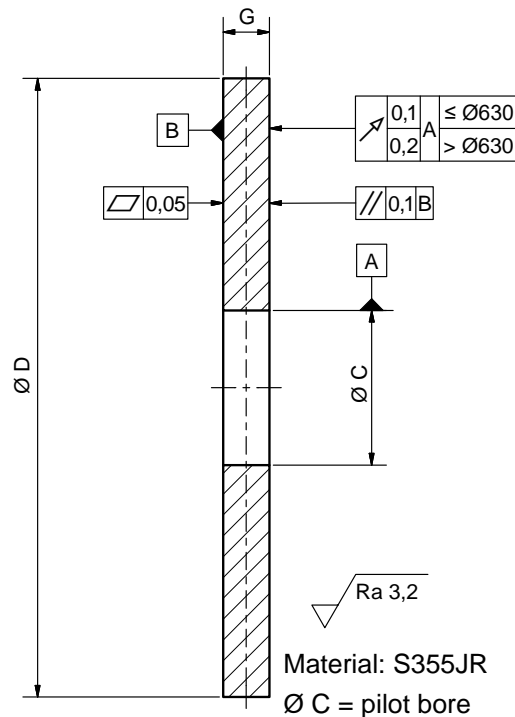


Material: EN-GJS-400-15

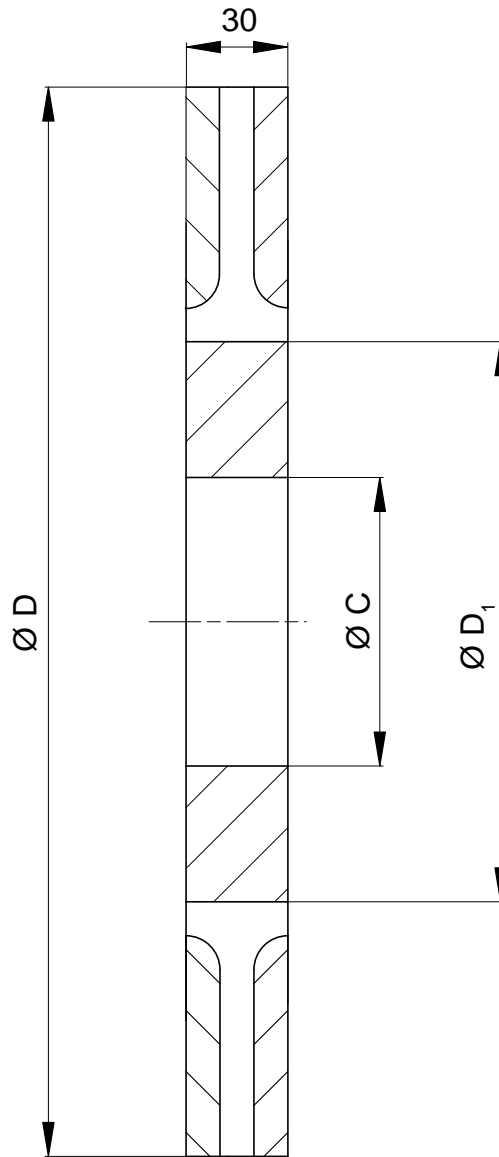
C = pilot bore

Nomi- nal-Ø [mm]	Item-No.	Part-No.	Ø A [mm]	Ø B [mm]	Ø C [mm]	Ø D [mm]	E [mm]	F [mm]	G [mm]	J [kgm <sup>2</sup> ]	Mass [kg]
610	504.061.001	<b>10019</b>	610	404	127	374	22	60	25,4	1,95	41
460	504.046.001	<b>10012</b>	457	311	102	286	16			0,65	21,5
270*	504.027.001	<b>10003</b>	270	140	88	127	8	59	22	0,06	5,8

\*w/ 5 x Ø10,5 mm bolt circle: Ø108

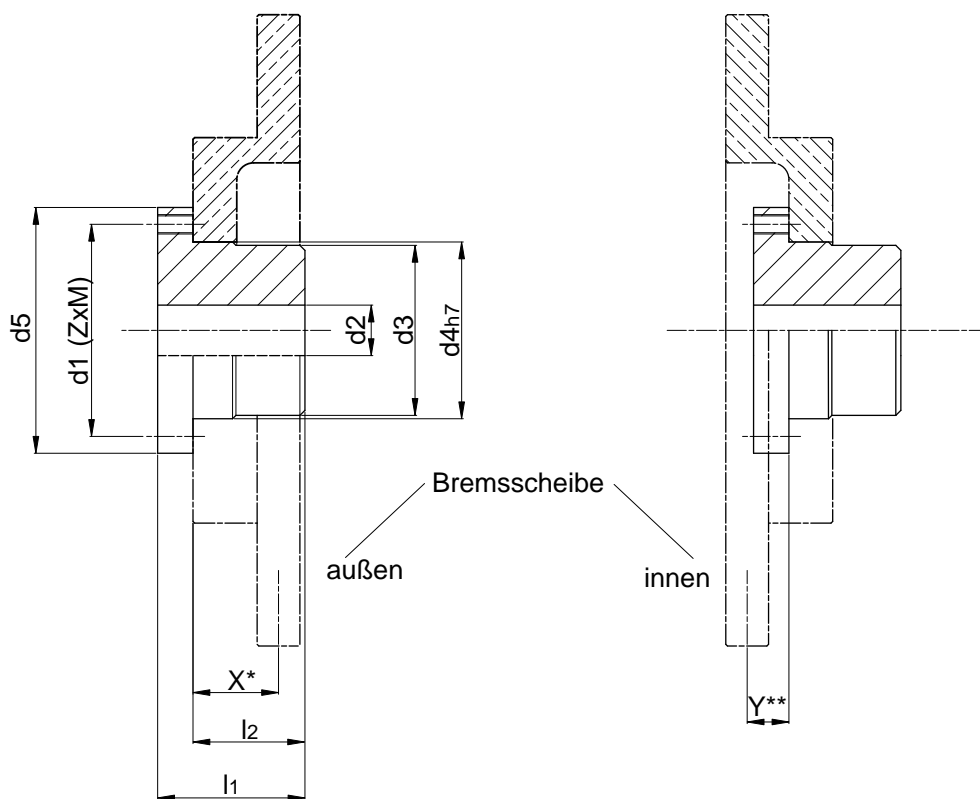


<b>Part-No.</b>	<b>Ø C [mm]</b>	<b>Ø D [mm]</b>	<b>G [mm]</b>	<b>J [kgm<sup>2</sup>]</b>	<b>Mass [kg]</b>
<b>12805</b>	50	250	15	0,045	5,5
<b>11055</b>		315		0,045	9,0
<b>12806</b>		30	0,228	18,0	
<b>11056</b>	75	355	15	0,184	11,2
<b>12809</b>			30	0,368	22,4
<b>11057</b>	100	400	15	0,298	14,0
<b>12811</b>			30	0,595	28,0
<b>11058</b>		450	15	0,475	17,9
<b>12813</b>			30	0,95	35,8
<b>11059</b>		500	15	0,725	22,3
<b>12815</b>			30	1,45	44,6
<b>12816</b>	125	560	15	1,14	27,7
<b>12817</b>			30	2,28	55,5
<b>11061</b>		630	15	1,83	35,5
<b>12819</b>			30	3,66	71,0
<b>12820</b>		710	15	2,96	45,5
<b>12821</b>			30	5,91	91,0
<b>12822</b>	150	800	15	4,76	57,5
<b>12823</b>			30	9,52	115,0
<b>12824</b>		900	30	15,26	146,6
<b>12825</b>	200	1000	30	23,23	178,7



Material: EN-GJS-400-15

Nominal- $\varnothing$ [mm]	<i>Part-No.</i>	$\varnothing D$ [mm]	$\varnothing C$ [mm]	$\varnothing D_1$ [mm]	Mass [kg]
315	<b>11062</b>	315	85	145	11
355	<b>11063</b>	355	105	185	13
400	<b>11064</b>	395	115	230	18,2
450	<b>11065</b>	445	120	276	23,2
500	<b>11066</b>	495	140	326	27
550	<b>11067</b>	550	170	380	31
630	<b>11068</b>	625		450	44



**NOTE:**  
for R&H  
brake discs

$$X^* = F - G/2$$

$$Y^{**} = F - G/2 - E$$

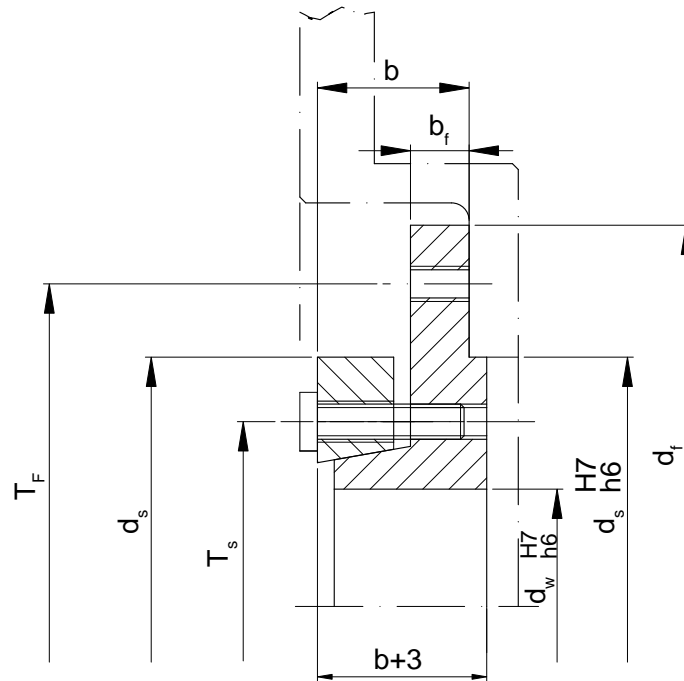
Material: S 355 / C 35

Hubs on request with finish bore (acc. to ISO-H7) and keyway (acc. to DIN 6885/1 available).

Size	Item No.	Part-No.	Mass [kg]	J [kgm <sup>2</sup> ]	for brake disc sizes [mm]
V	601.380.001	<b>10752</b>	190	3,9	Ø810 - Ø1600
IV	601.242.001	<b>10154</b>	54	0,68	Ø515*** - Ø810
III	601.147.001	<b>10153</b>	15,5	0,18	Ø400 - Ø810
II	601.105.001	<b>10152</b>	7	0,04	Ø300 - Ø610
I	601.055.001	<b>10151</b>	1	0,003	Ø250 und Ø300

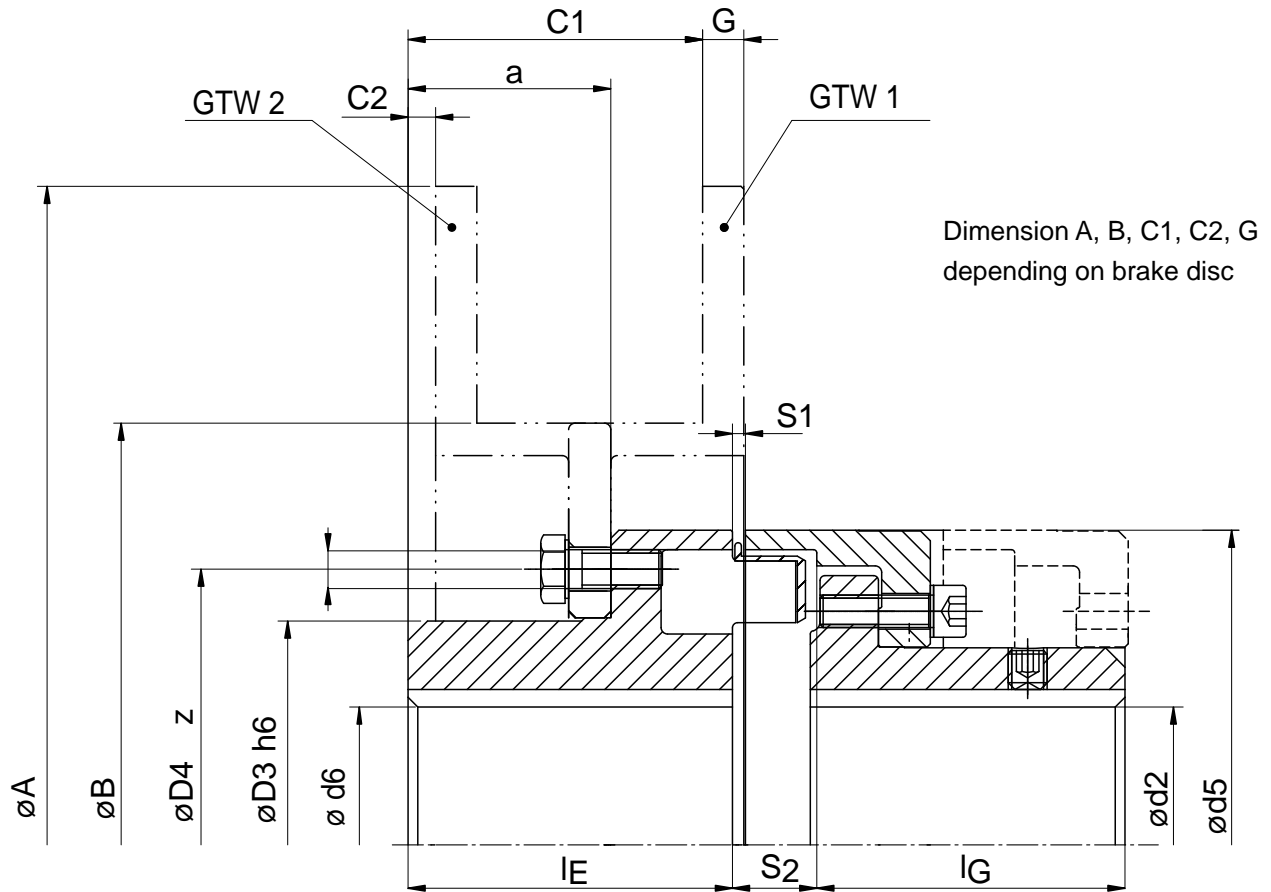
\*\*\*not Ø610 x 25,4

Size	Item No.	d1 [mm]	d2 [mm]	d3 [mm]	d4 [mm]	d5 [mm]	l1 [mm]	l2 [mm]	Z [mm]	M
V	601.380.001	405	110 - 230	368	370	438	240	200	24	M 20
IV	601.242.001	274	100 - 150	241	242	308	176	143	11	M 16
III	601.147.001	175	60 - 95	146	147	200	117	93,5	10	M 12
II	601.105.001	126	28 - 65	104,5	105	146	87	66,5	8	M 10
I	601.055.001	69	12 - 35	54,5	55	81	49	38,5	5	M 6



Part-No.	$M_t$ [Nm]	$d_w$ [mm]	$d_f$ [mm]	$b$ [mm]	$d_s$ [mm]	$T_s$ [mm]	$Z_s$	$M_{As}$ [Nm]	$T_F$ [mm]	$Z_F$	$M_{AF}$ [Nm]	$b_f$ [mm]	Mass [kg]			
<b>12855</b>	310	30	105	23	70	54	6/M 6	12	90	4/M 6	12	8	1			
<b>12963</b>	450	35	110		75	59	7/M 6		95	5/M 6			1,1			
<b>12964</b>	645	40	130	26	85	64	8/M 6		110	4/M 8	30	10	1,3			
<b>12965</b>	850	45	135		90	68	9/M 6		115	4/M 8			1,4			
<b>12966</b>	1100	50	140	27	95	73	10/M 6		120	5/M 8			1,7			
<b>12967</b>	1375	55	150		105	78	11/M 6		130	5/M 8			1,9			
<b>12868</b>	1725	60	155	28	110	84	12/M 6		135	6/M 8			2			
<b>12968</b>	1940	65	170	30	125	95	7/M 8		150	7/M 8			2,6			
<b>12955</b>	2500	70	180		135	100	8/M 8		160	8/M 8			3,1			
<b>12791</b>	3000	75	195	34	140	105	9/M 8		30	170			6/M 10	59	12	3,6
<b>12969</b>	3650	80	200		145	110	10/M 8			175			7/M 10			4,1
<b>12970</b>	4150	85	210	37	155	118	11/M 8			185			7/M 10			4,8
<b>12971</b>	4950	90	215		160	123	12/M 8	190		8/M 10			5,4			
<b>12883</b>	7350	100	235	40	180	138	10/M 10	59		210			10/M 10			5,7

**Attention: Note the pilot bore C when using cranked brake discs!**



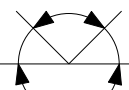
Part-No.	ø d5 [mm]	TKN [Nm]	Tk <sub>max</sub> [Nm]	N <sub>max</sub> [min <sup>-1</sup> ]	max. ø d2 [mm]	max. ø d6 [mm]	l <sub>E</sub> [mm]	l <sub>G</sub> [mm]	a [mm]	S <sub>1</sub> [mm]	S <sub>2</sub> [mm]	D3 H7/h6 [mm]	D4 [mm]	z	M	m [kg]	J [kgm <sup>2</sup> ]
12391	112	150	310	6000	46	42	60	58	38,5	3,5 ± 1,0	15 ± 1,0	69	87	6	M 8	5	0,006
12392	128	250	500	5000	53	52	70	68	45,5	3,5 ± 1,0	16 ± 1,0	86	106			7,9	0,012
12786	148	390	800	4500	65	58	80	78	52,5	3,5 ± 1,0	18 ± 1,0	95	120		M 10	12,3	0,022
12794	168	630	1.300	4000	75	72	90	87	56,5	3,5 ± 1,5	21 ± 1,0	120	145	8	M 10	18,3	0,049
12795	194	1.050	2.200	3500	85	85	100	97	62,5	3,5 ± 1,5	24 ± 1,5	140	170			26,7	0,096
12796	214	1.500	3.100	3000	95	92	110	107	68,5	4,0 ± 2,0	26 ± 1,5	155	185	9	M 12	35,5	0,160
12393	240	2.400	4.800	2750	100	102	120	117	75,5	4,0 ± 2,0	30 ± 2,0	170	200			45,6	0,263
12300	265	3.700	7.500	2500	115	120	140	137	90,5	5,5 ± 2,5	33 ± 2,5	200	230	10	M 12	65,7	0,457
12977	295	4.900	10.000	2250	130	130	150	147	98,5	8,0 ± 2,5	37 ± 2,5	220	260			83,9	0,736
12394	330	6.400	13.000	2000	135	150	160	156	104,5	8,0 ± 2,5	40 ± 2,5	250	280			M 16	126
11463	370	8.900	18.200	1750	160	170	180	176	118,5	8,0 ± 2,5	43 ± 2,5	280	320	11	M 16	177	2,288
12395	415	13.200	27.000	1500	180	185	200	196	135,5	8,0 ± 2,5	45 ± 2,5	310	350			249	4

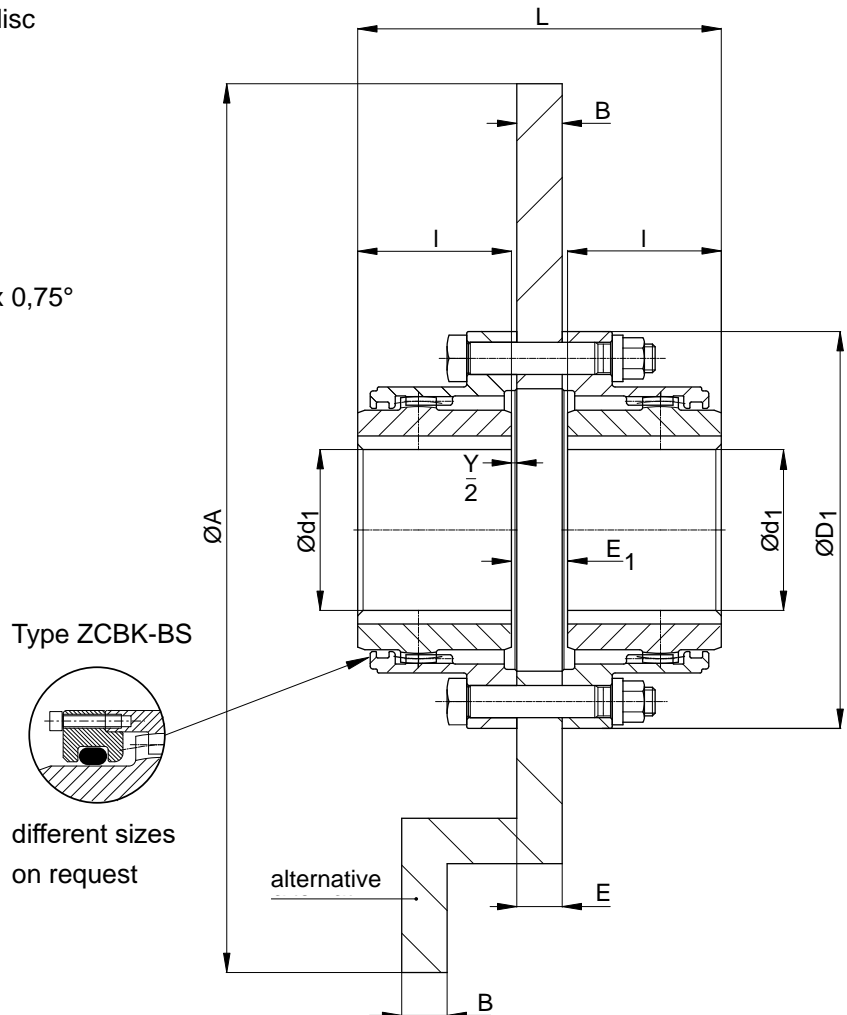
Dimensions A, B depending on brake disc

Dimension E1 = B + y or E + y

Dimension L = 2l + E1

$Tk_{max} = 2 \times Tkn$

Angular misalignment   $2 \times 0,75^\circ$

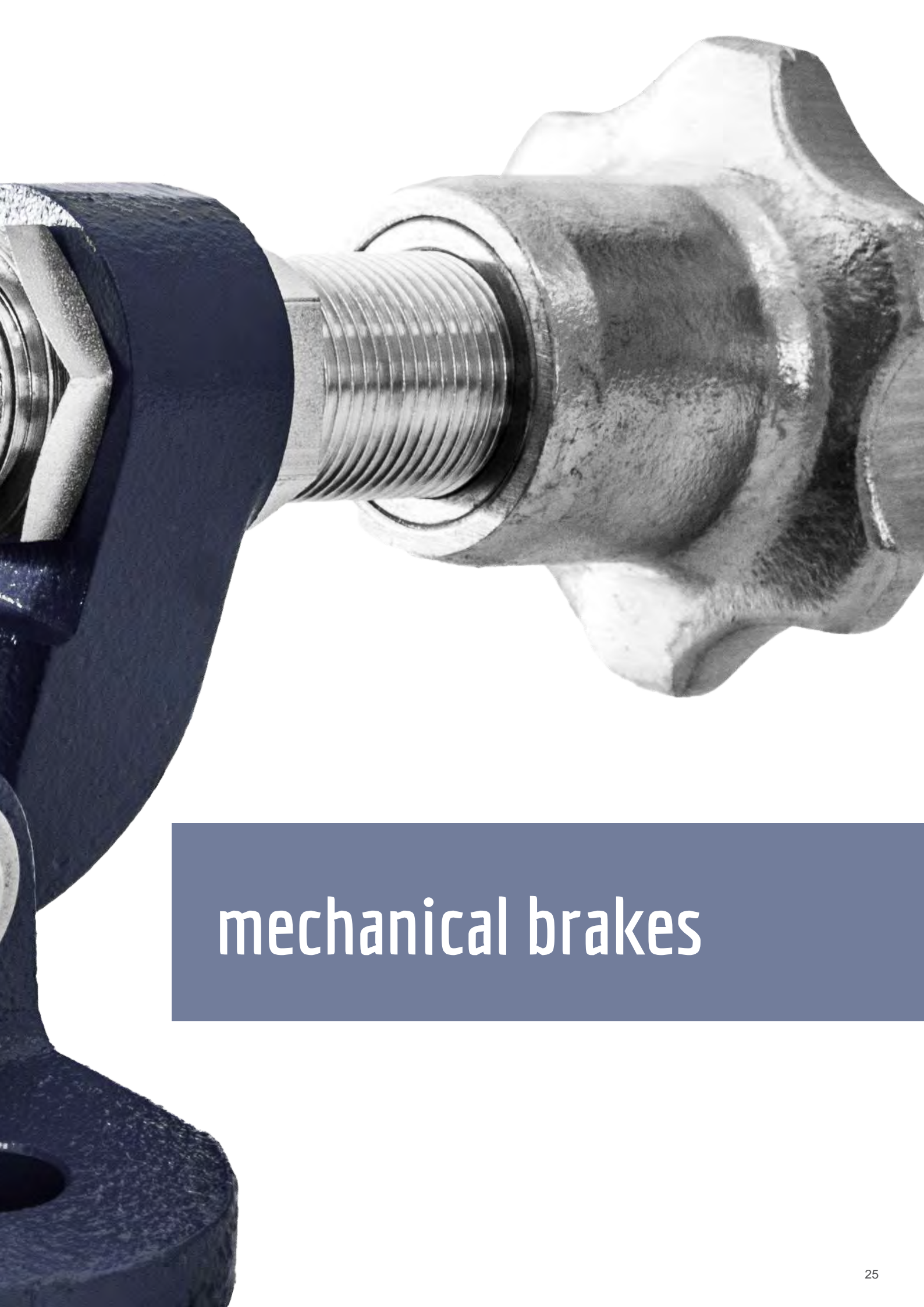


Part-No.	Size	TKN [Nm]	radial misalign-ment [mm]	$n_{max}$ [ $min^{-1}$ ]	d1 min - max [mm]	D1 [mm]	A min (cranked) [mm]	y [mm]	l [mm]	Mass [kg]	J (w/o bd) [ $kgm^2$ ]
<b>12556</b>	ZCAK-BS 111	1750	0,42	6000	0 - 50	111	250	3	43	4	0,004
<b>12557</b>	ZCAK-BS 152	2750	0,51	4600	0 - 60	152	300		50	8,4	0,018
<b>12558</b>	ZCAK-BS 178	5500	0,66	4200	0 - 75	178	350		62	14,1	0,040
<b>12559</b>	ZCAK-BS 213	8500	0,77	4000	0 - 95	213	400	5	76	24,8	0,102
<b>12560</b>	ZCAK-BS 240	13500	0,99	3850	0 - 110	240	460		90	36,4	0,187
<b>12561</b>	ZCAK-BS 280	22000	1,15	3700	60 - 130	280	460	6	105	58	0,407
<b>12562</b>	ZCAK-BS 318	35000	1,33	3200	70 - 155	318	515		120	87	0,801
<b>12563</b>	ZCAK-BS 346	43000	1,5	2900	85 - 170	346	610	8	135	113,7	1,248
<b>12564</b>	ZCAK-BS 389	68000	1,75	2600	95 - 190	389	610		150	163,1	2,370

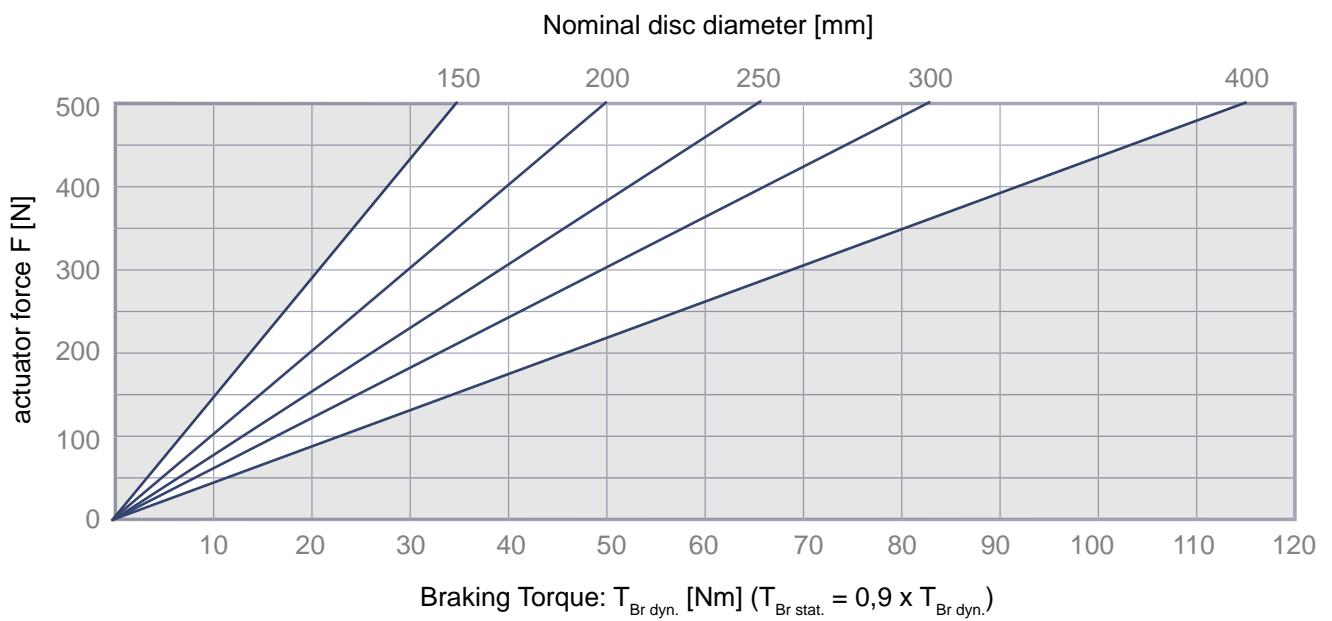


105  
FG





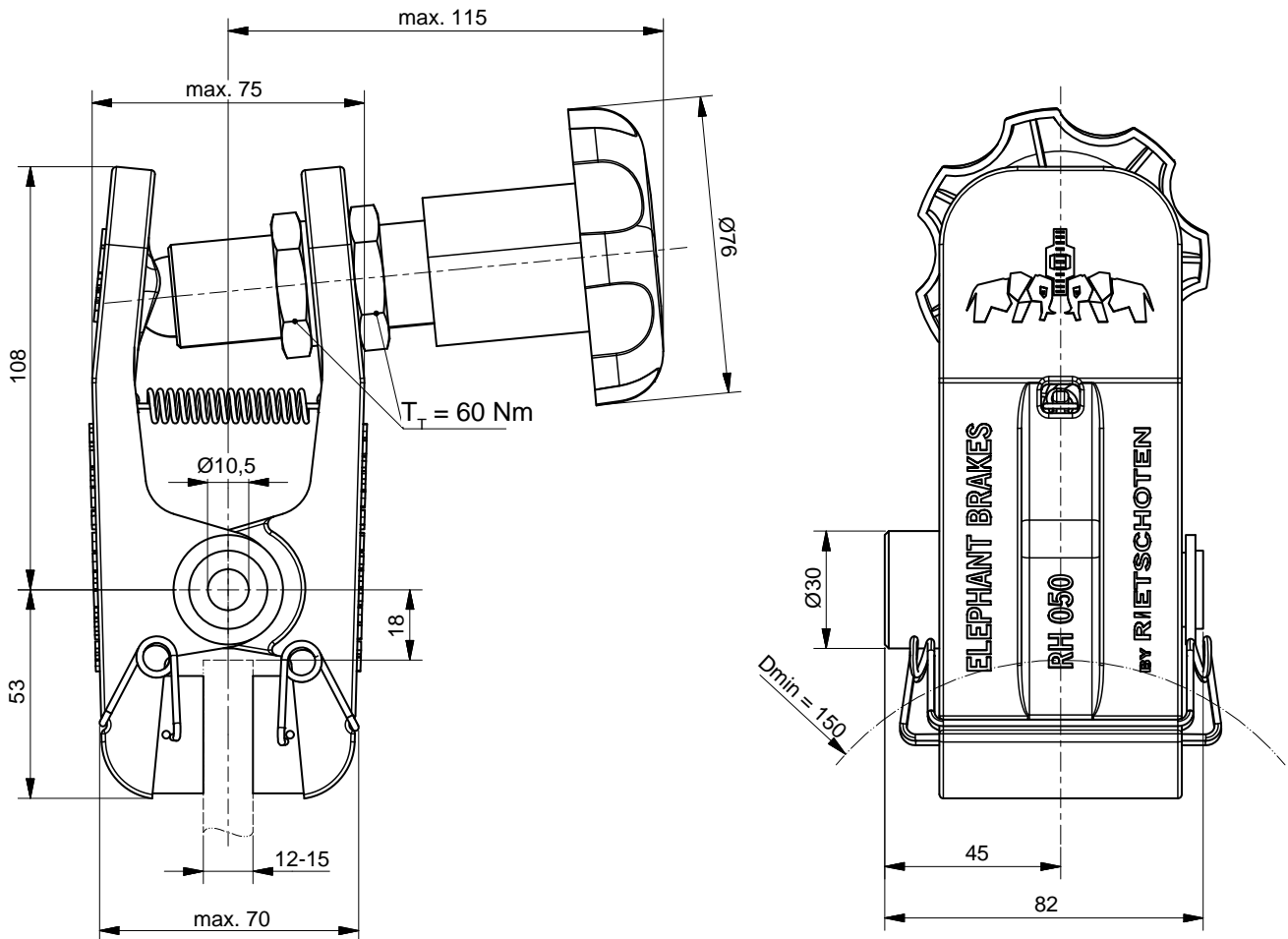
# mechanical brakes



Mass: 1,5 kg  
1 turn  $\approx$  160 N

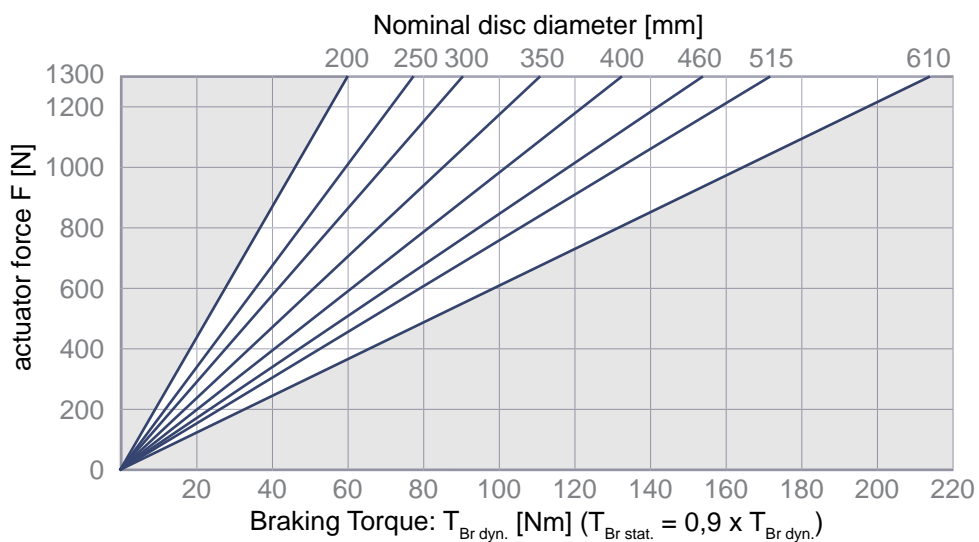
**Elephant Brakes by Rietschoten Germany. Strong like an elephant. Smart like an elephant.**

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Mounting position is horizontal. Please get in touch if different.

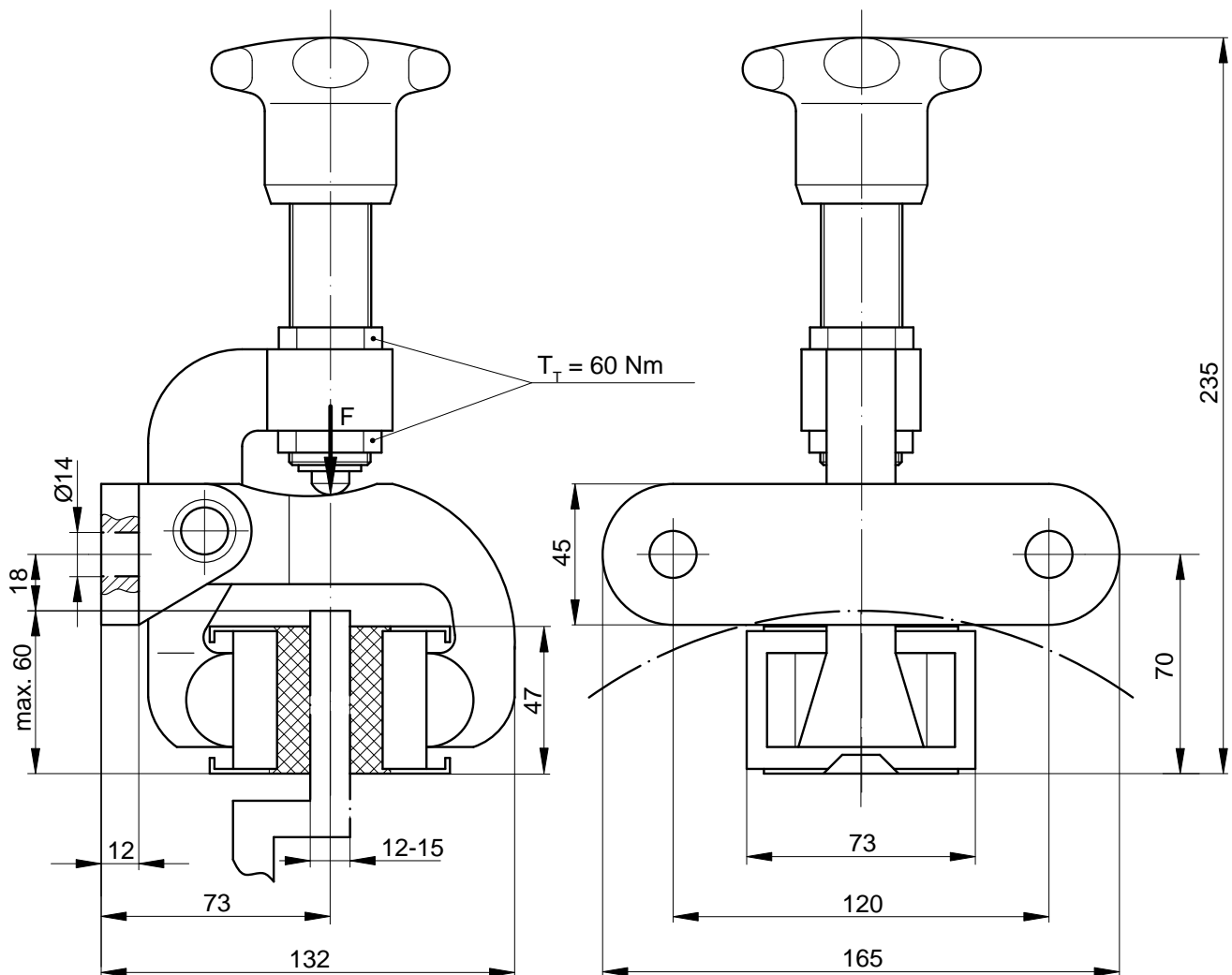
A right hand mounted actuator is standard – left hand mounted please state with order.



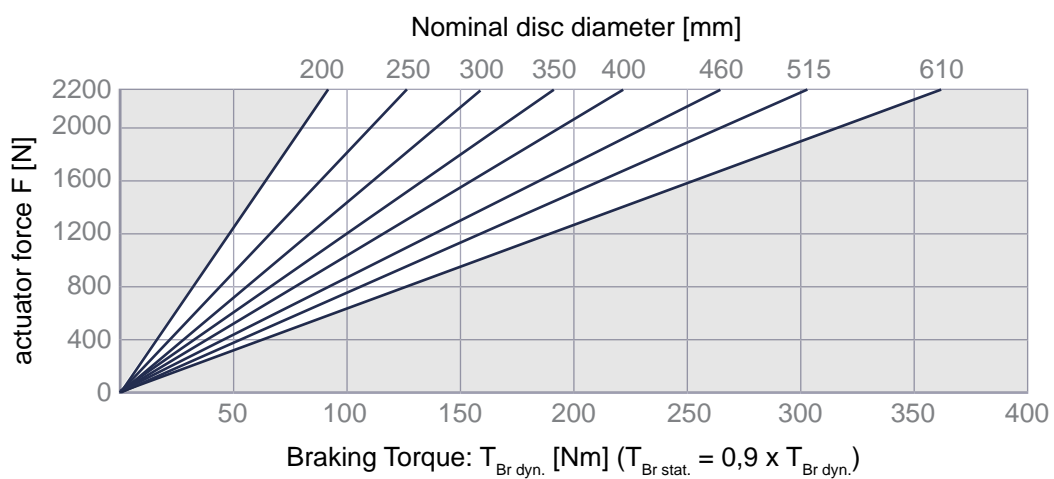
Mass: 3,3 kg  
1 turn  $\approx$  160 N

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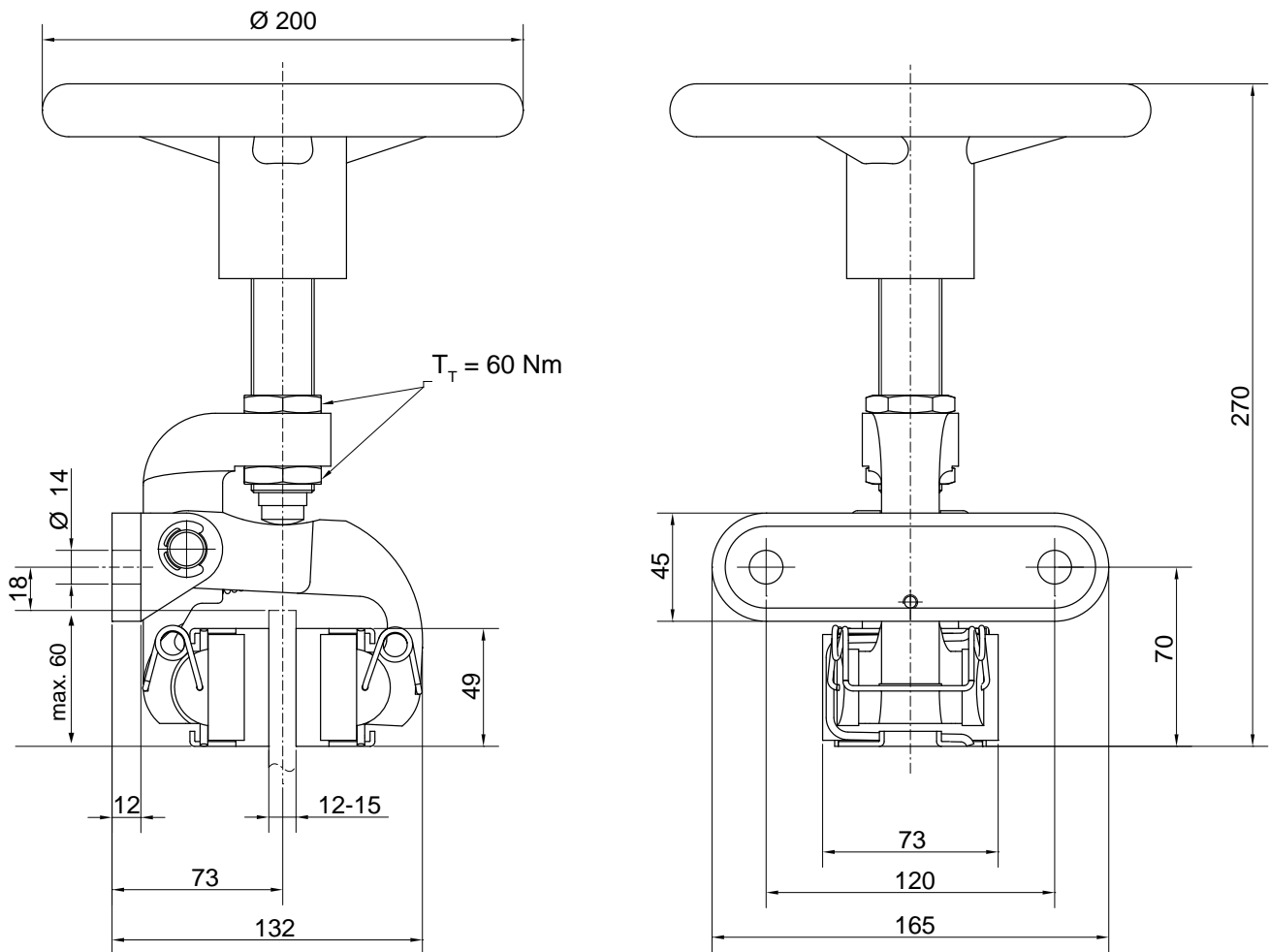
Mounting position is horizontal. Please get in touch if different.



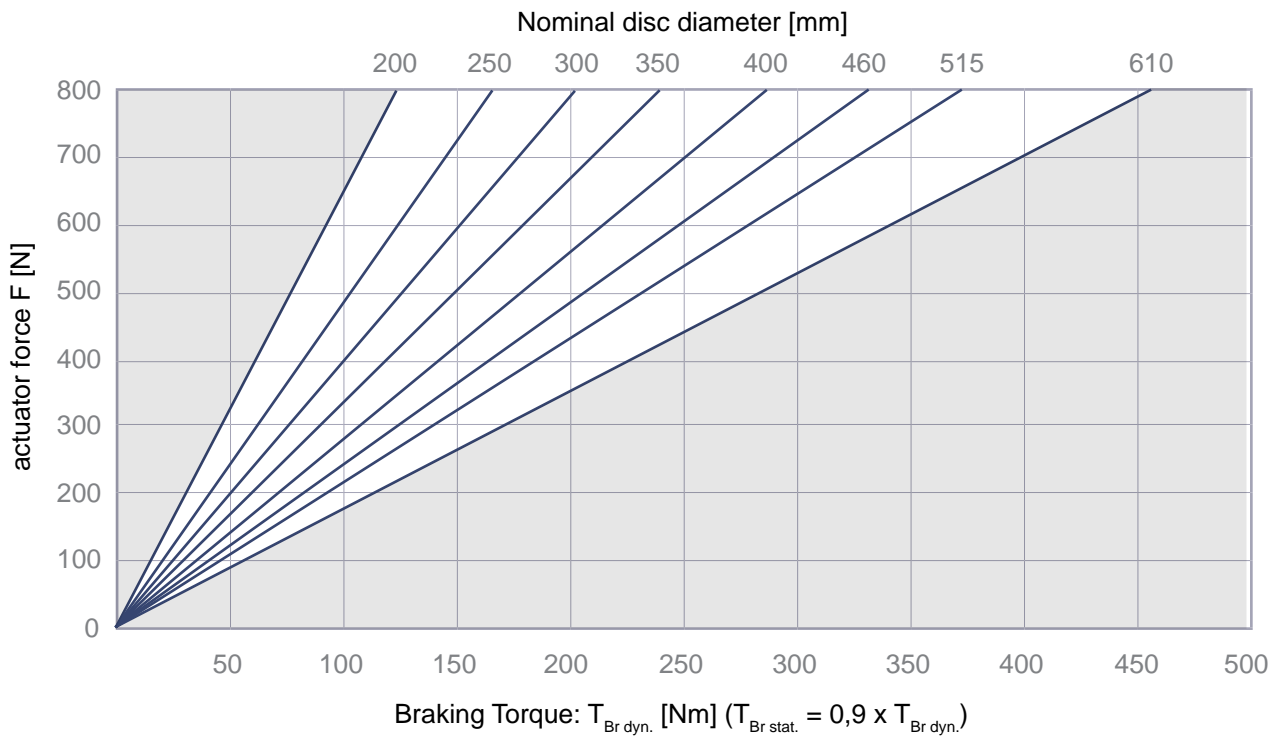
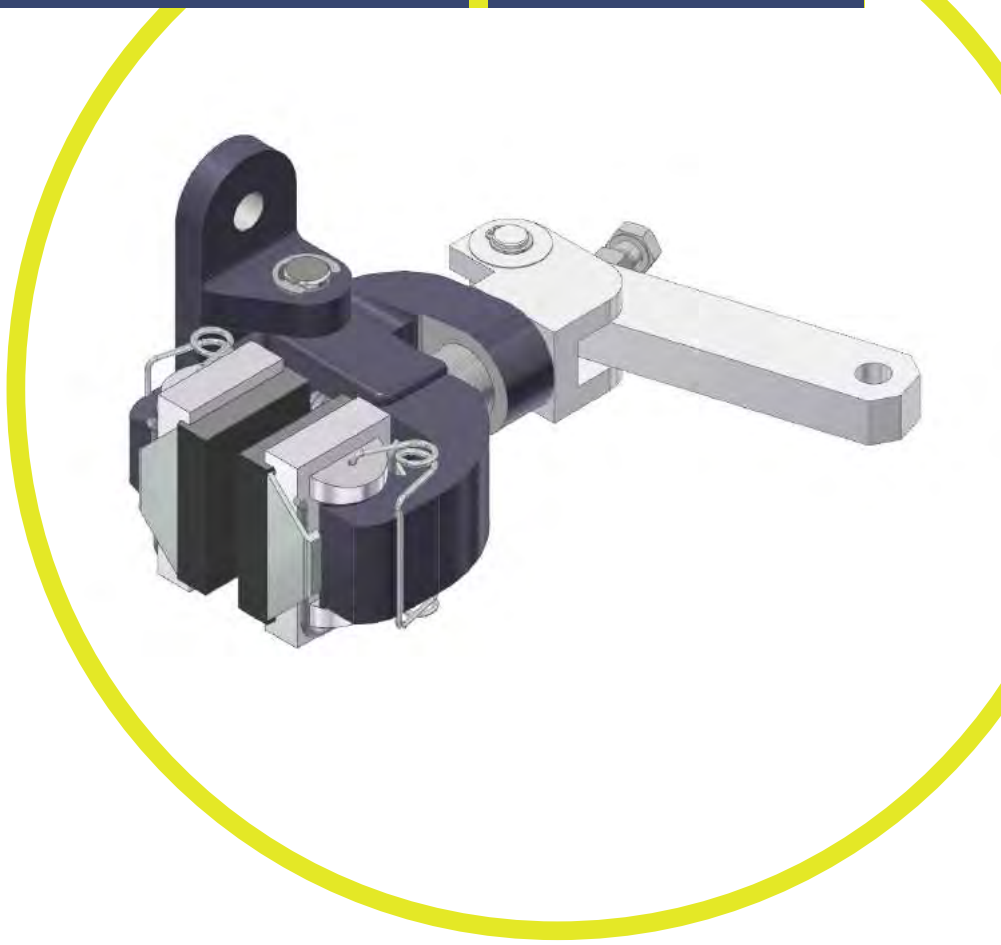
Mass: 4,3 kg  
1 turn  $\approx$  260 N

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Mounting position is horizontal. Please get in touch if different.

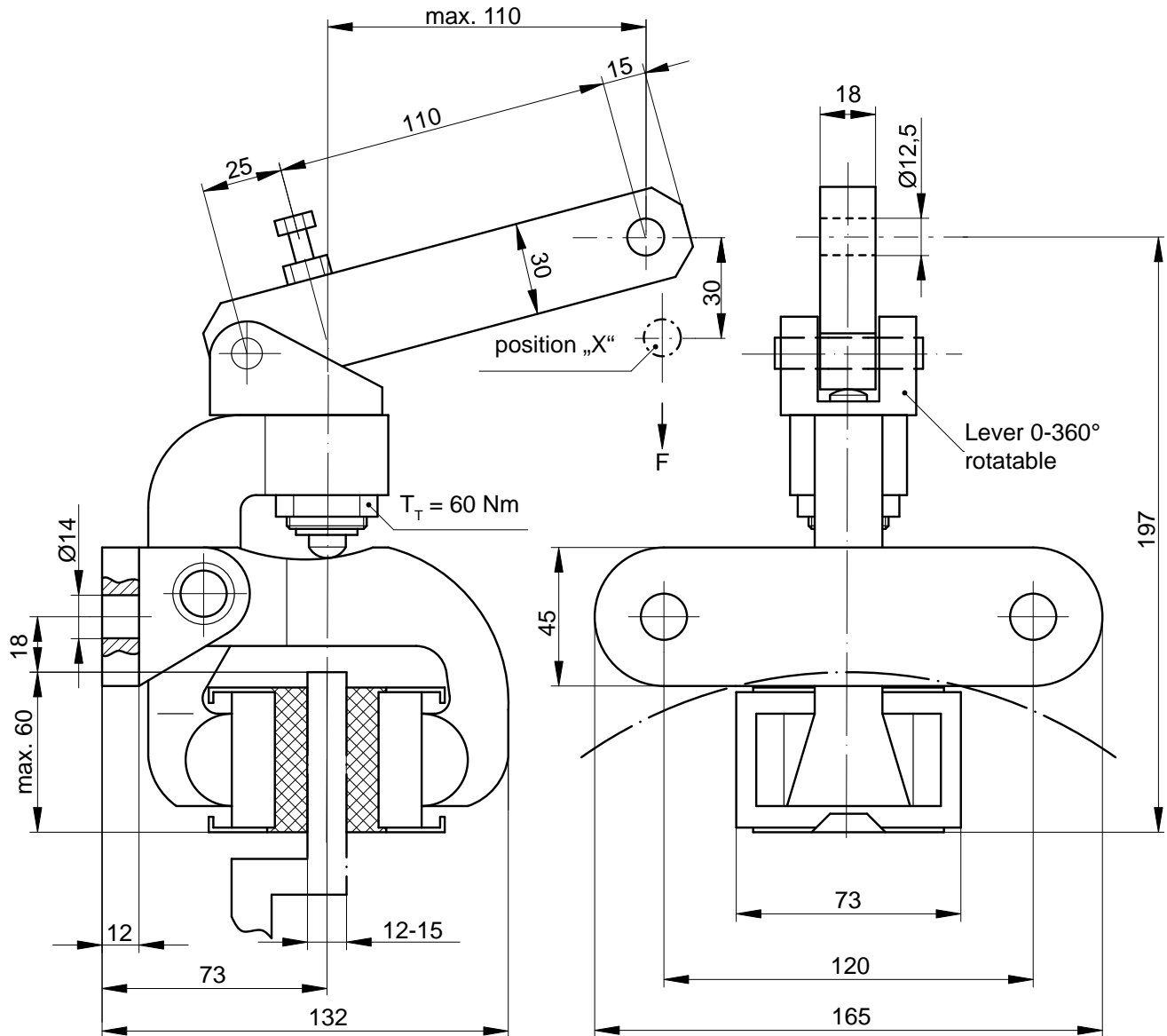


Mass: 3,7 kg

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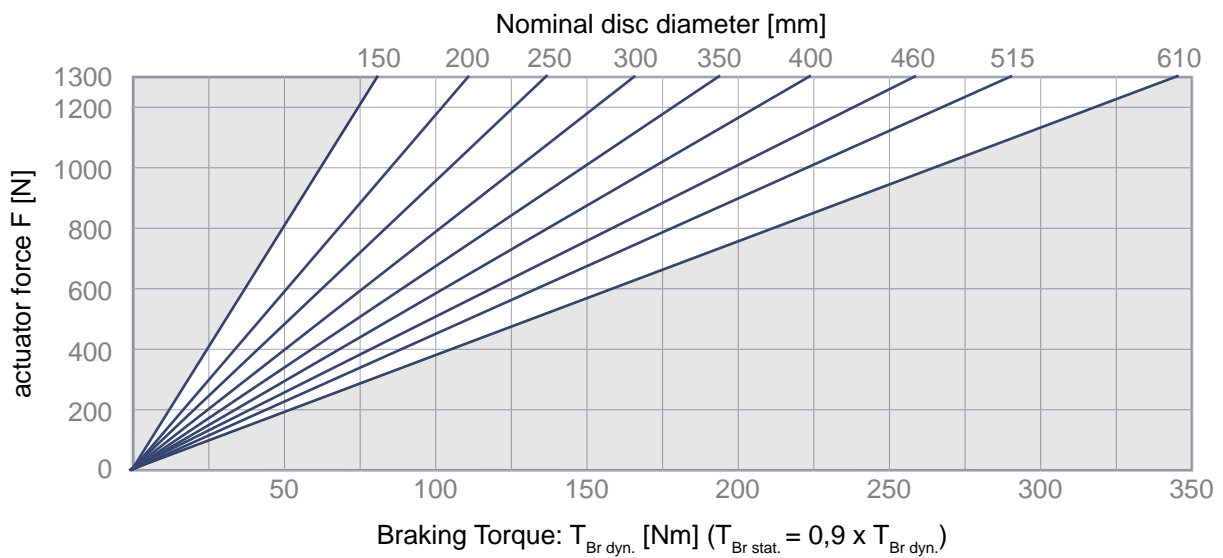
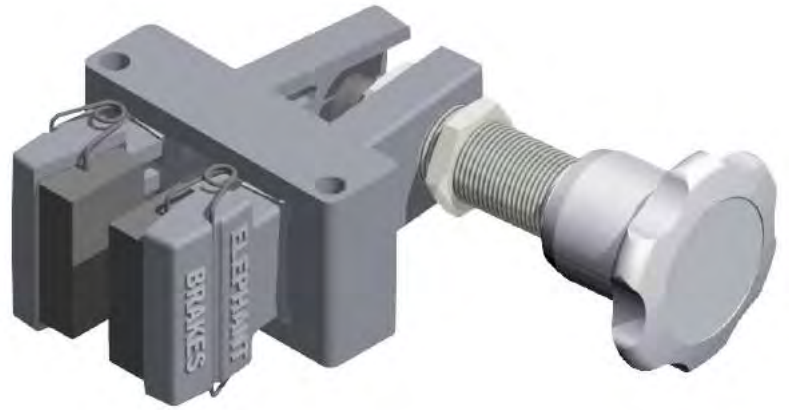
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Mounting position is horizontal. Please get in touch if different.

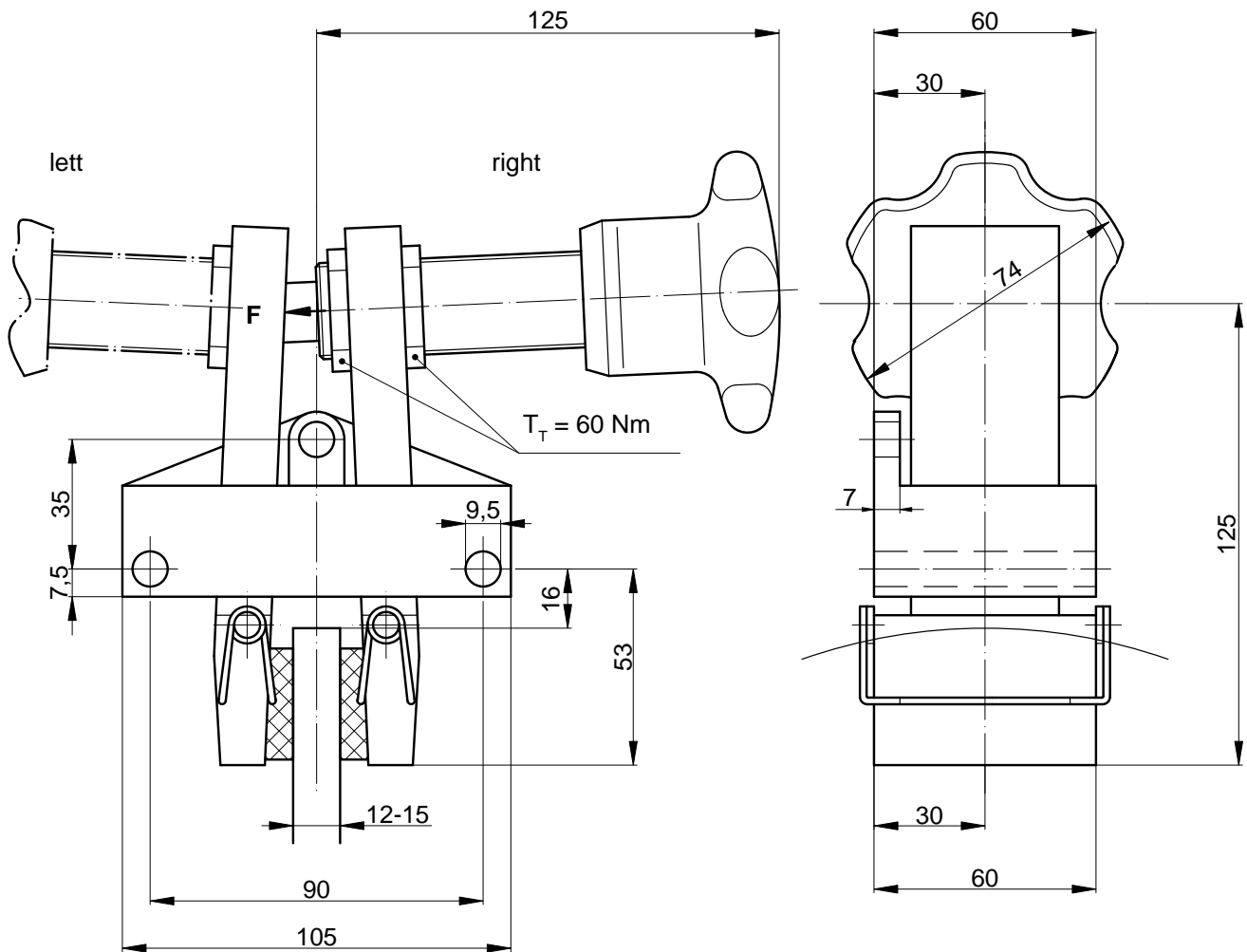
A readjustment will be necessary if position „X“ is reached.



Mass: 1,2 kg  
1 turn  $\approx$  160 N

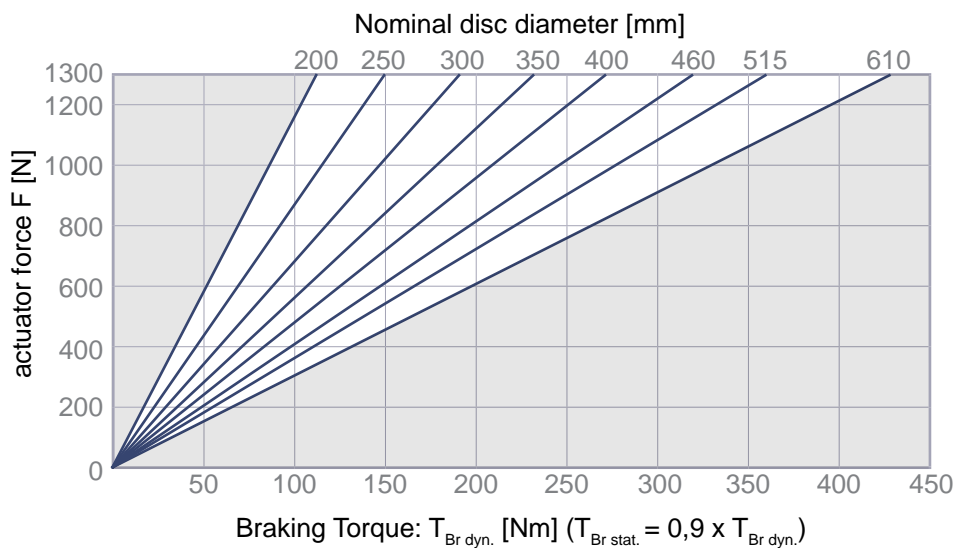
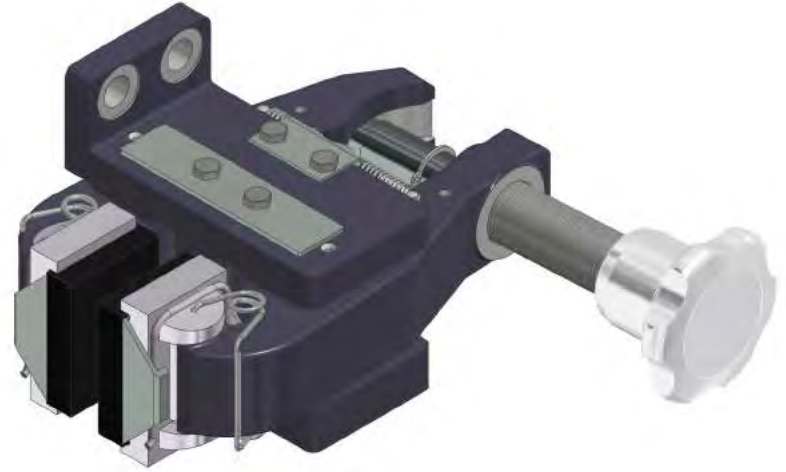
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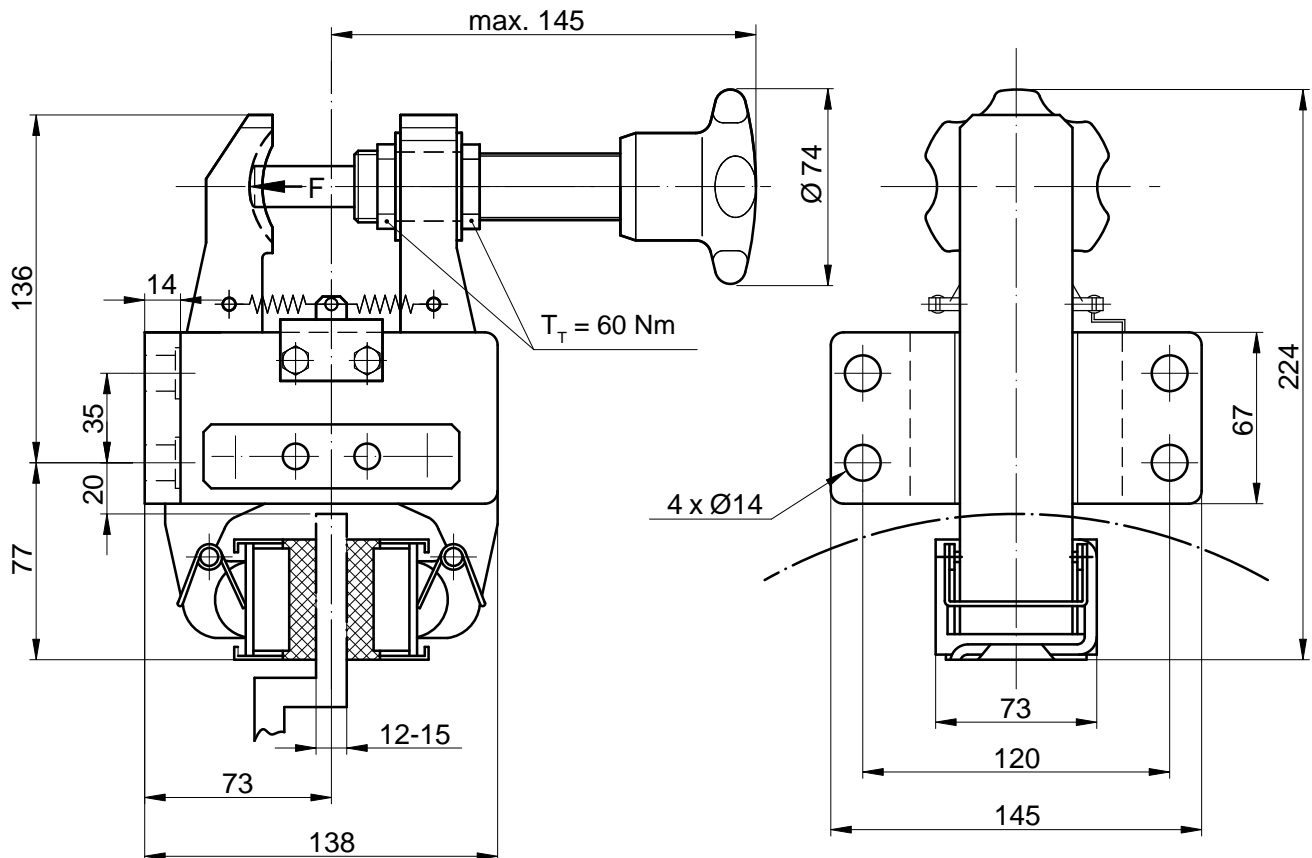


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – left hand mounted please state with order.

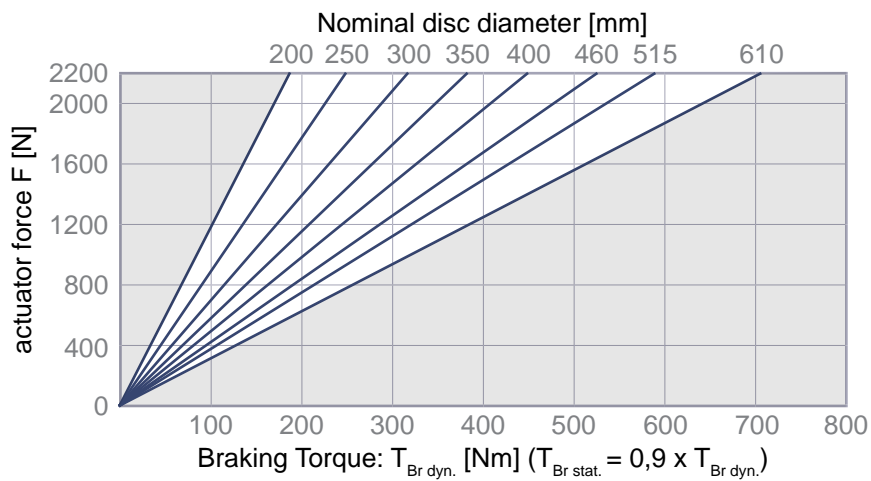
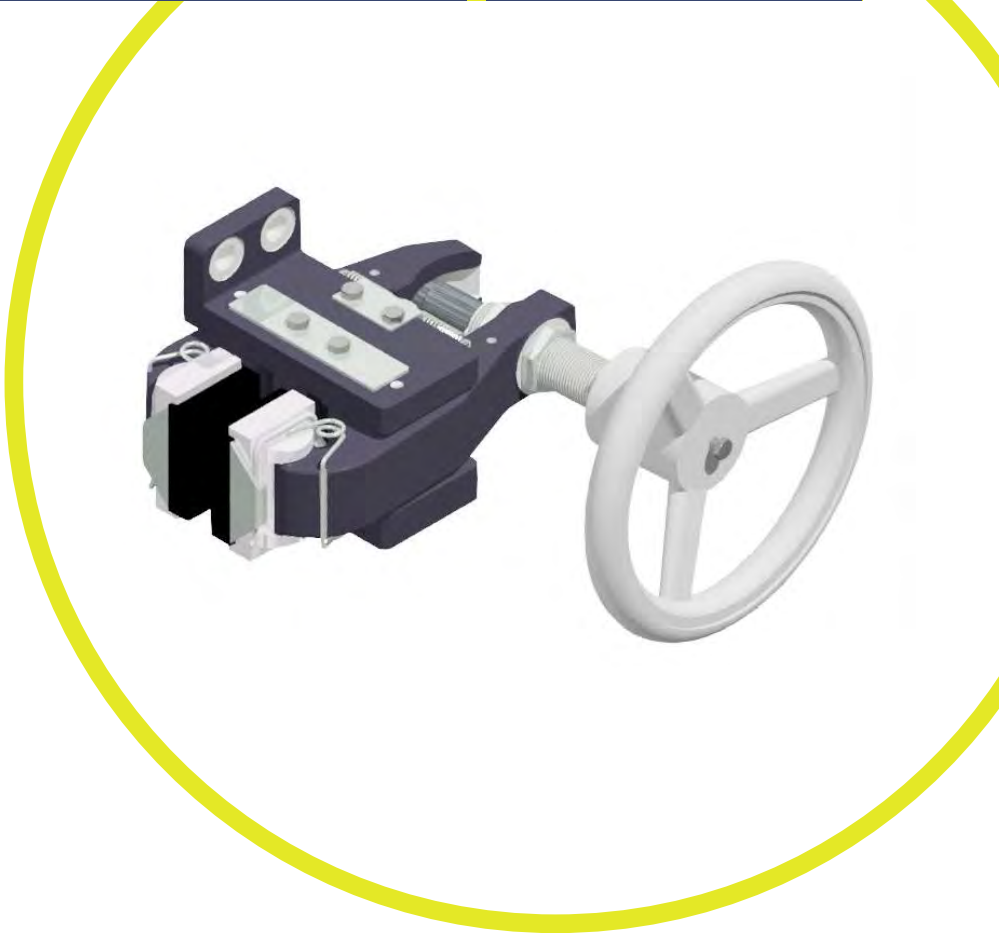


Mass: 7,9 kg  
1 turn  $\approx$  160 N

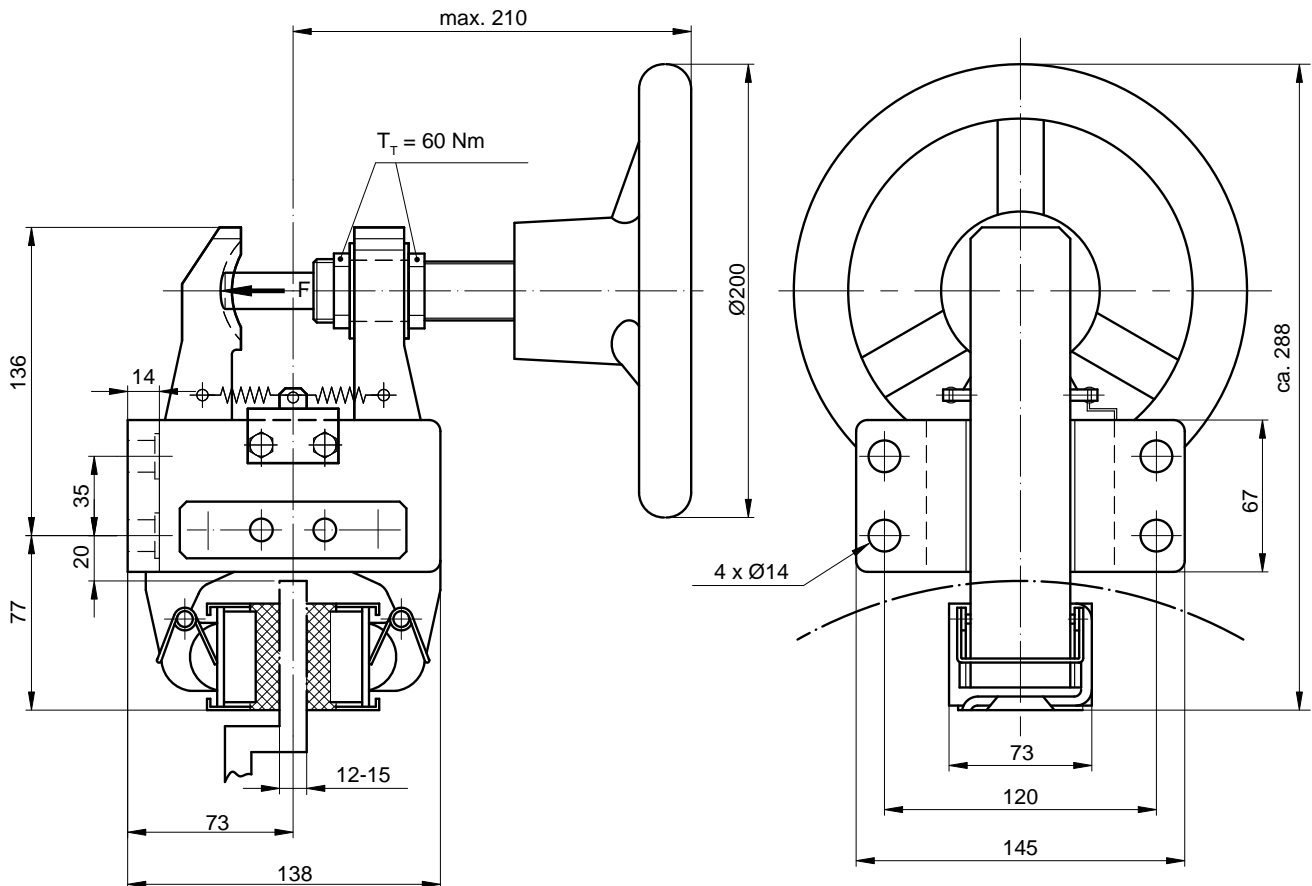


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

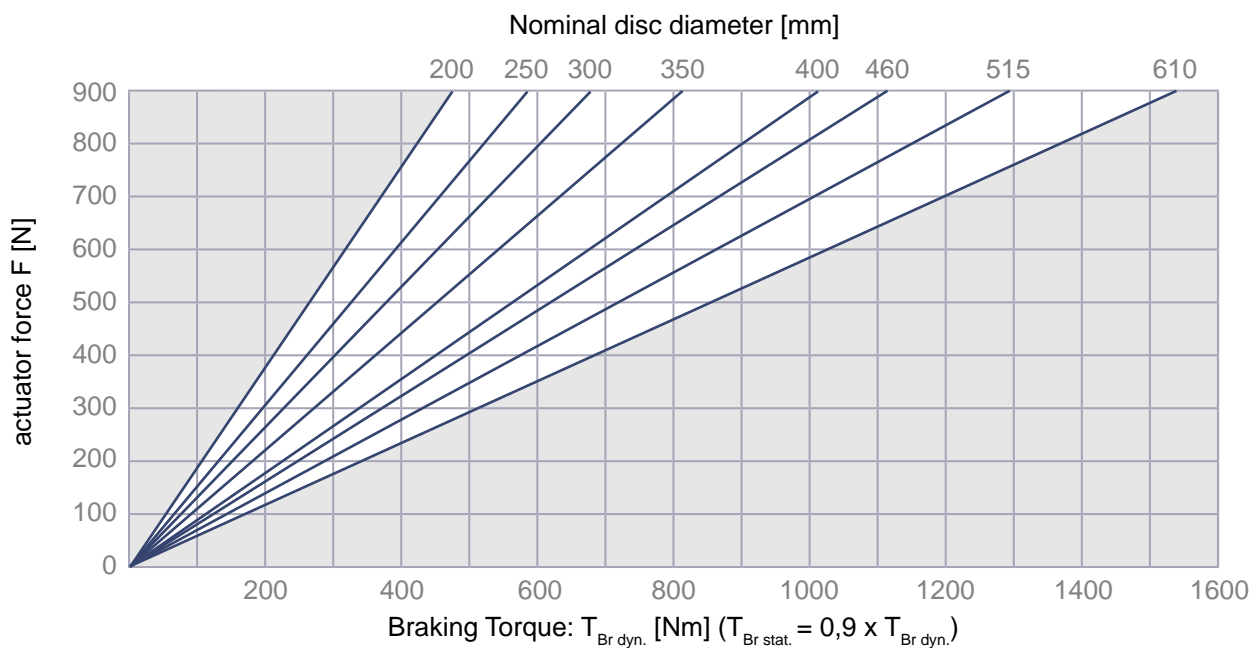


Mass: 9,3 kg  
1 turn  $\approx$  260 N



Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

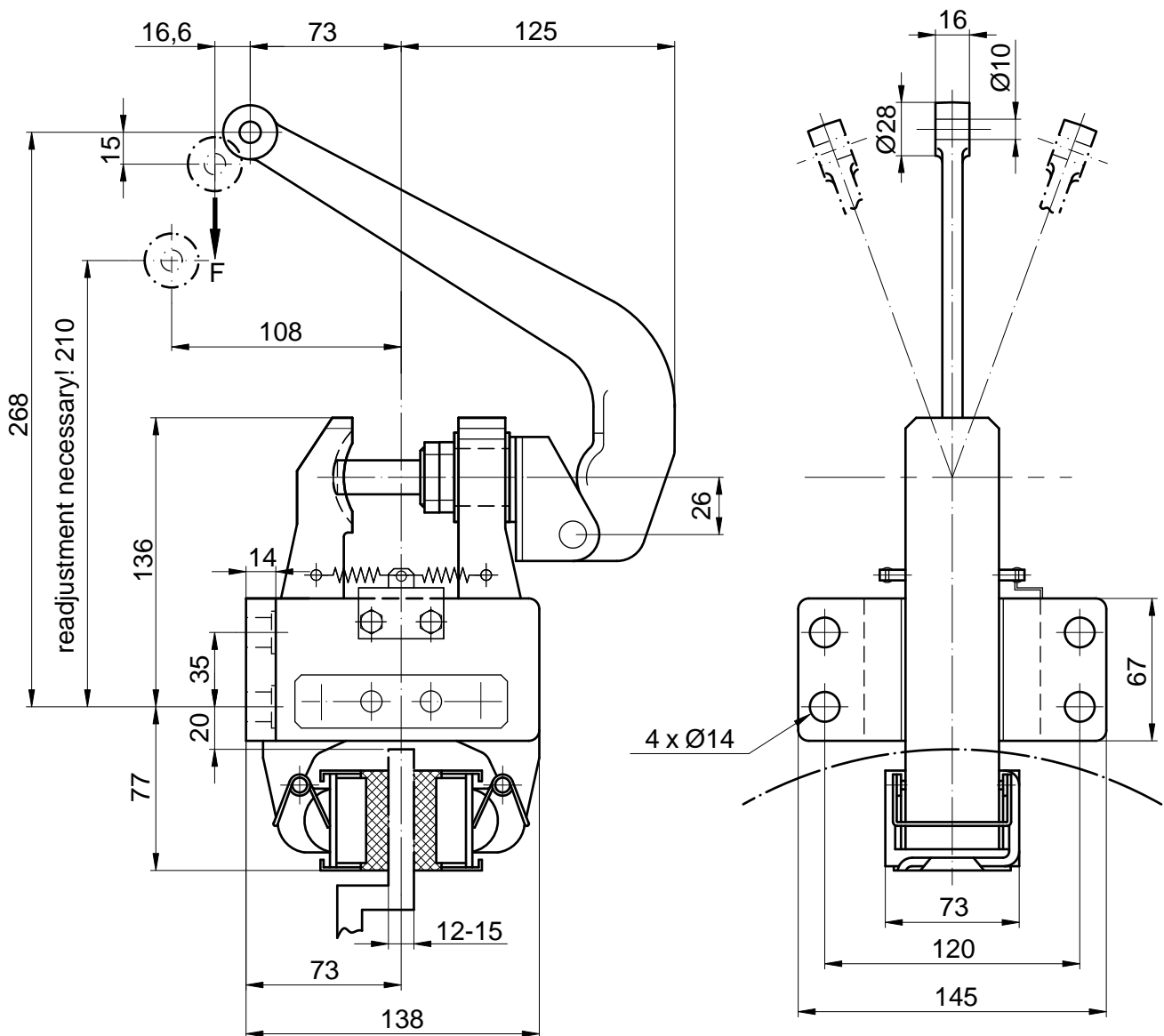


Mass: 8,6 kg

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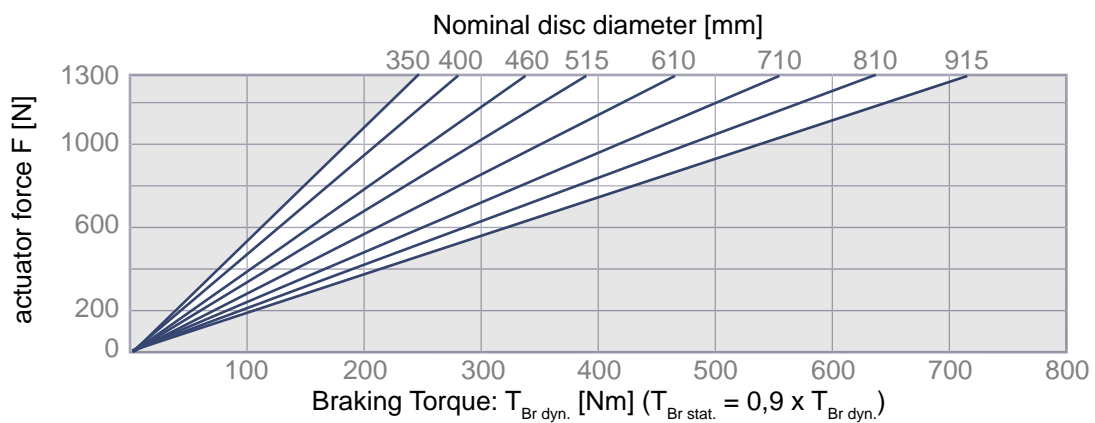
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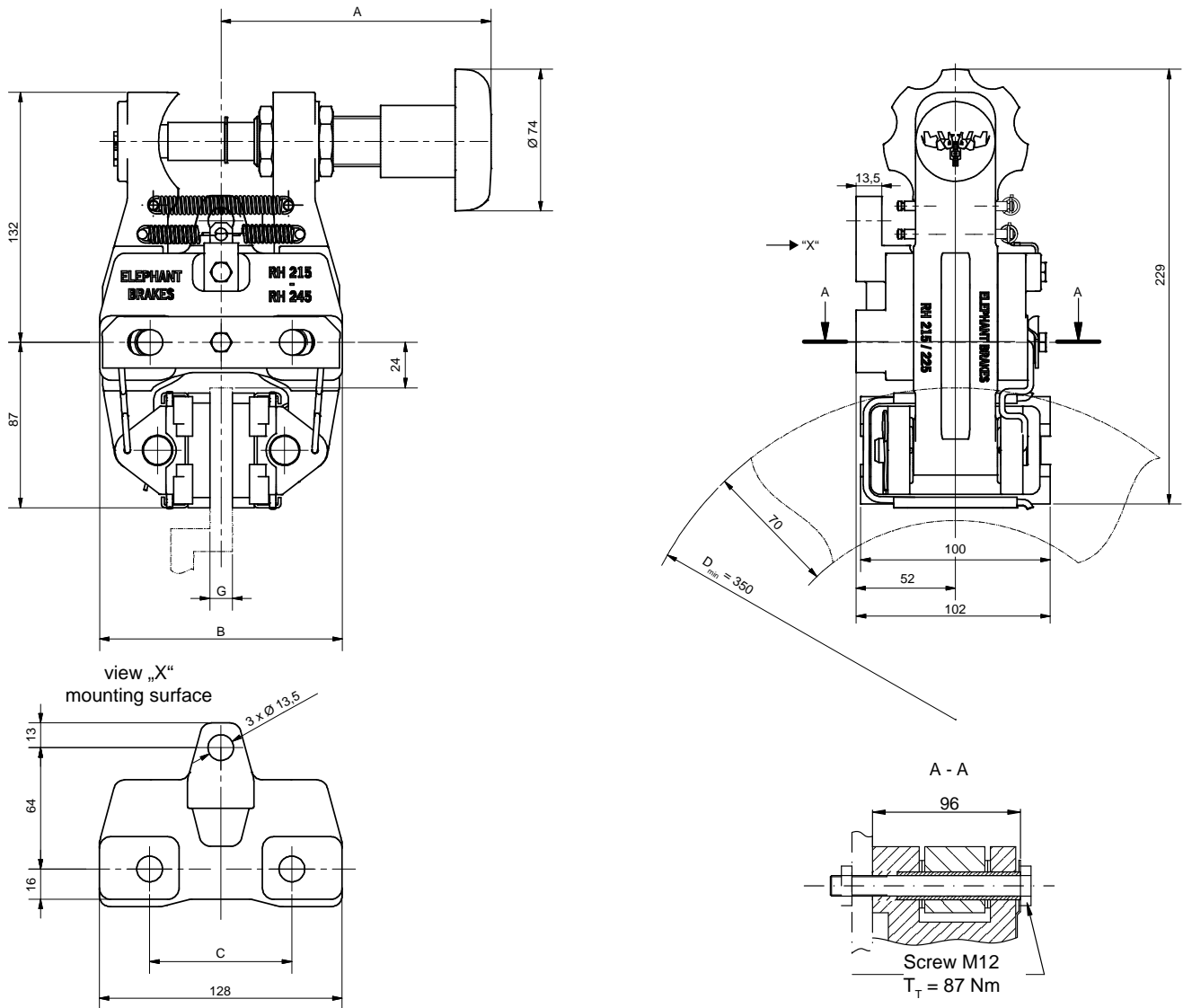


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.



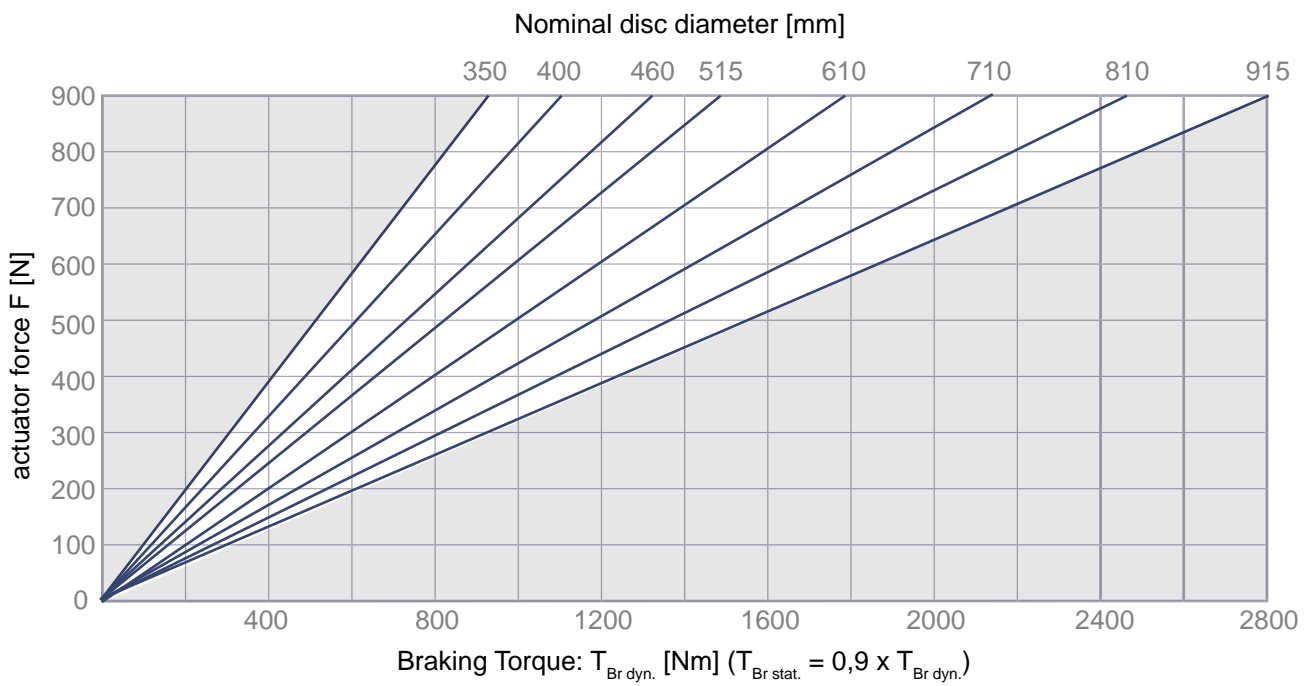
1 turn  $\approx$  160 N

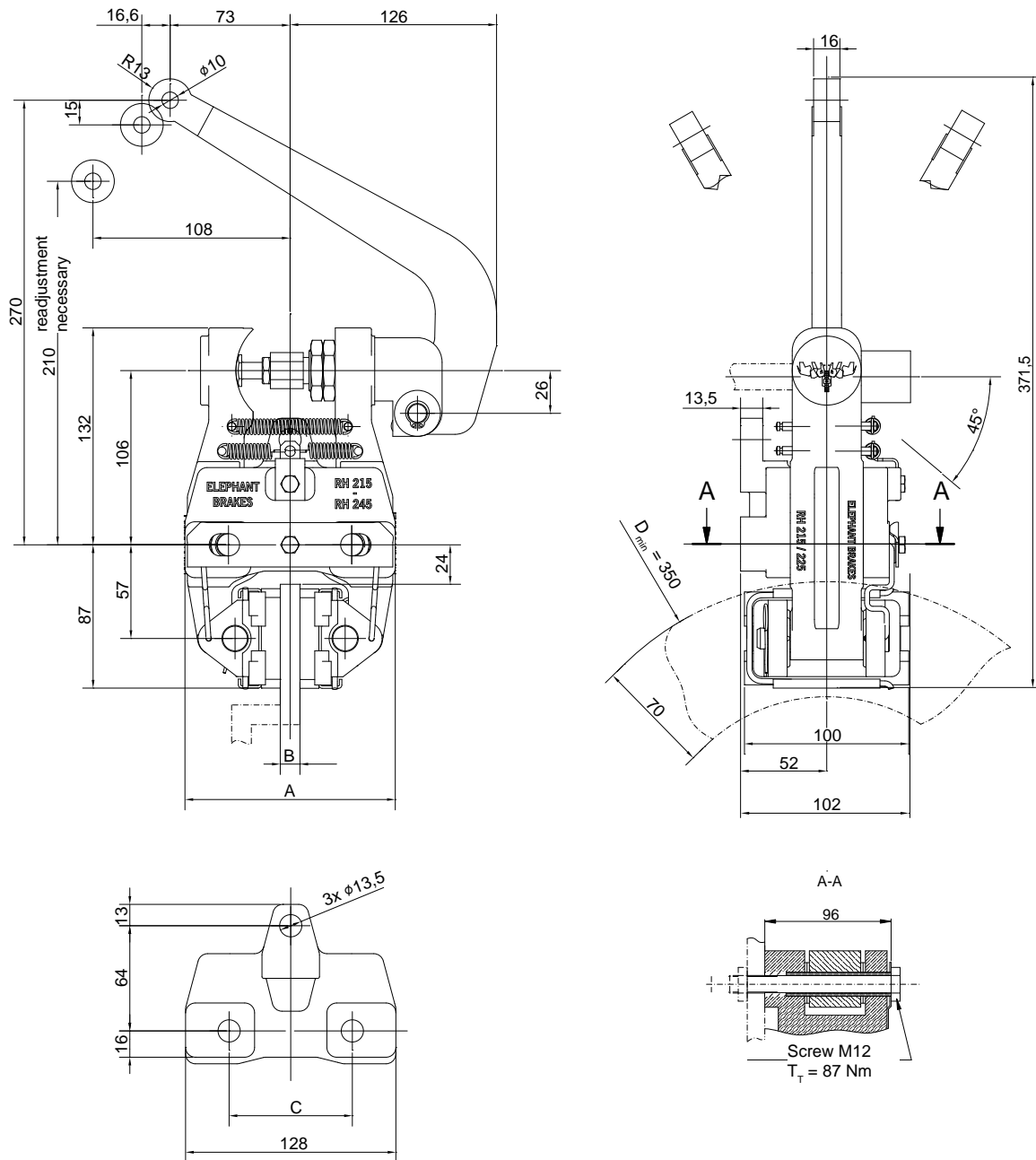


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	B [mm]	C [mm]	G [mm]	Mass [kg]
R&H 215.098.01	<b>10682</b>	144	130	75	12-15	8,3
R&H 225.098.01	<b>11141</b>	150	140	84	25,4	
R&H 230.098.01	<b>10702</b>	153	144	75	30	8,5

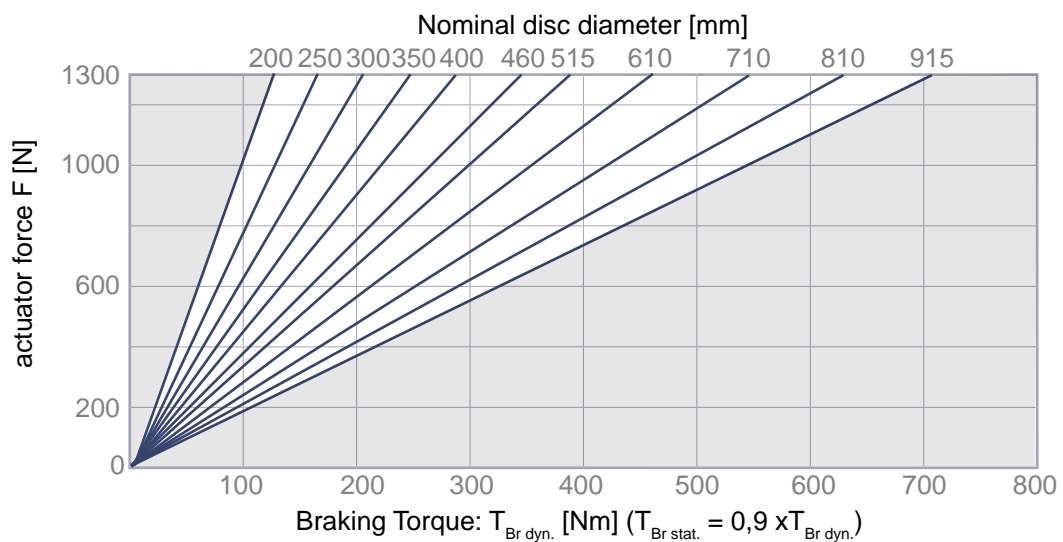




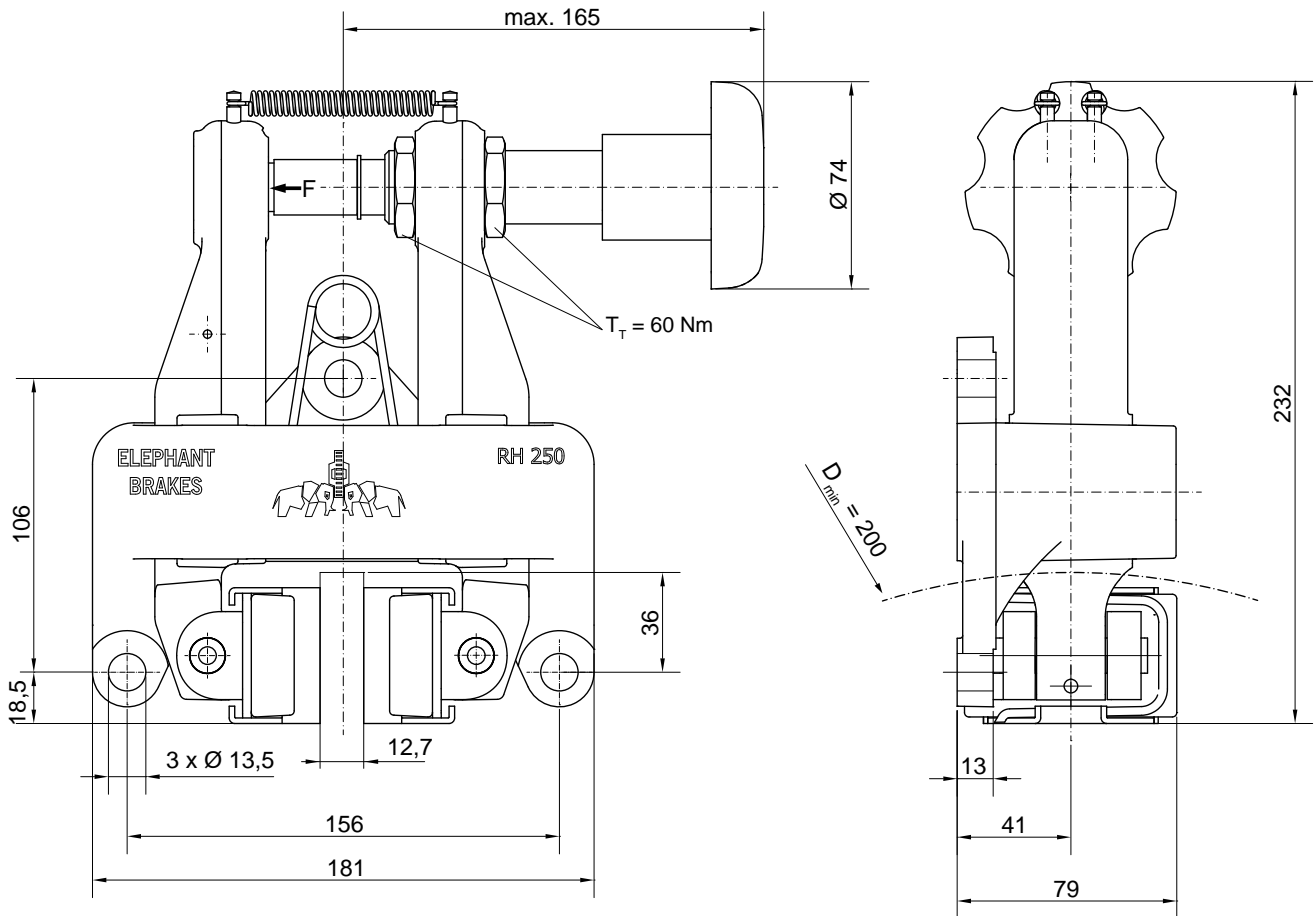
Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	B [mm]	C [mm]	Mass [kg]
R&H 215.099.01	<b>10681</b>	130	12-15	75	9,1
R&H 225.099.01	<b>11112</b>	140	25,4	84	
R&H 230.099.01	<b>10701</b>	144	30	75	9,3
R&H 245.099.01	<b>13246</b>	154	45	84	

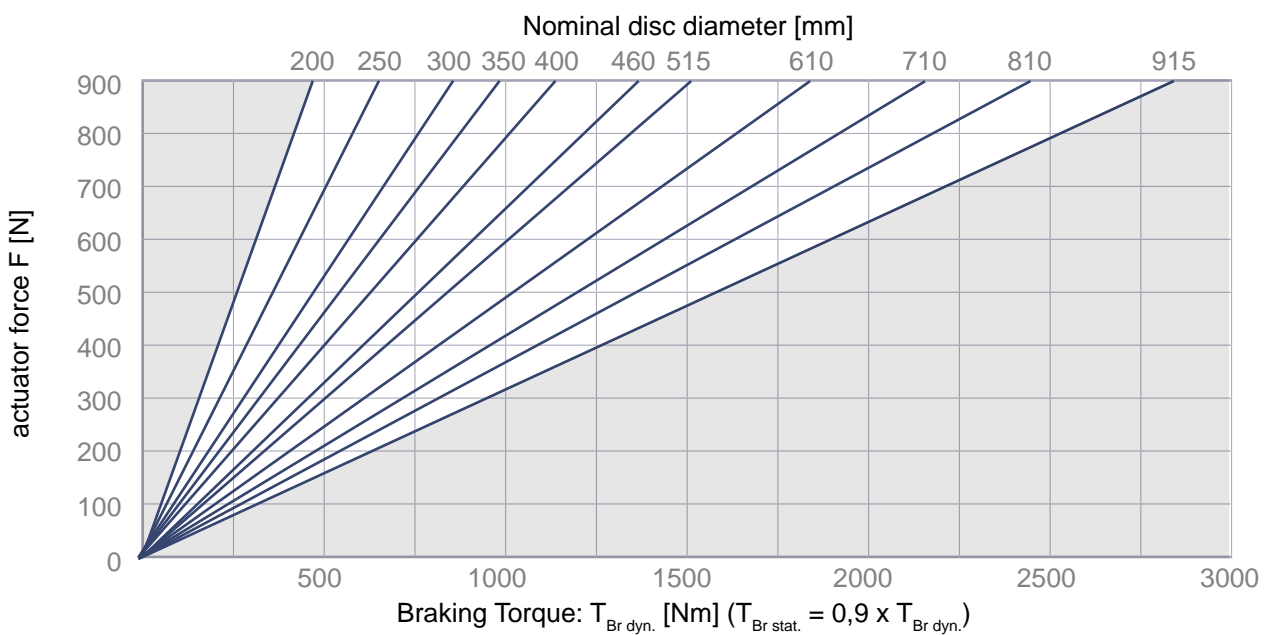


Mass: 7,1 kg  
1 turn  $\approx$  160 N



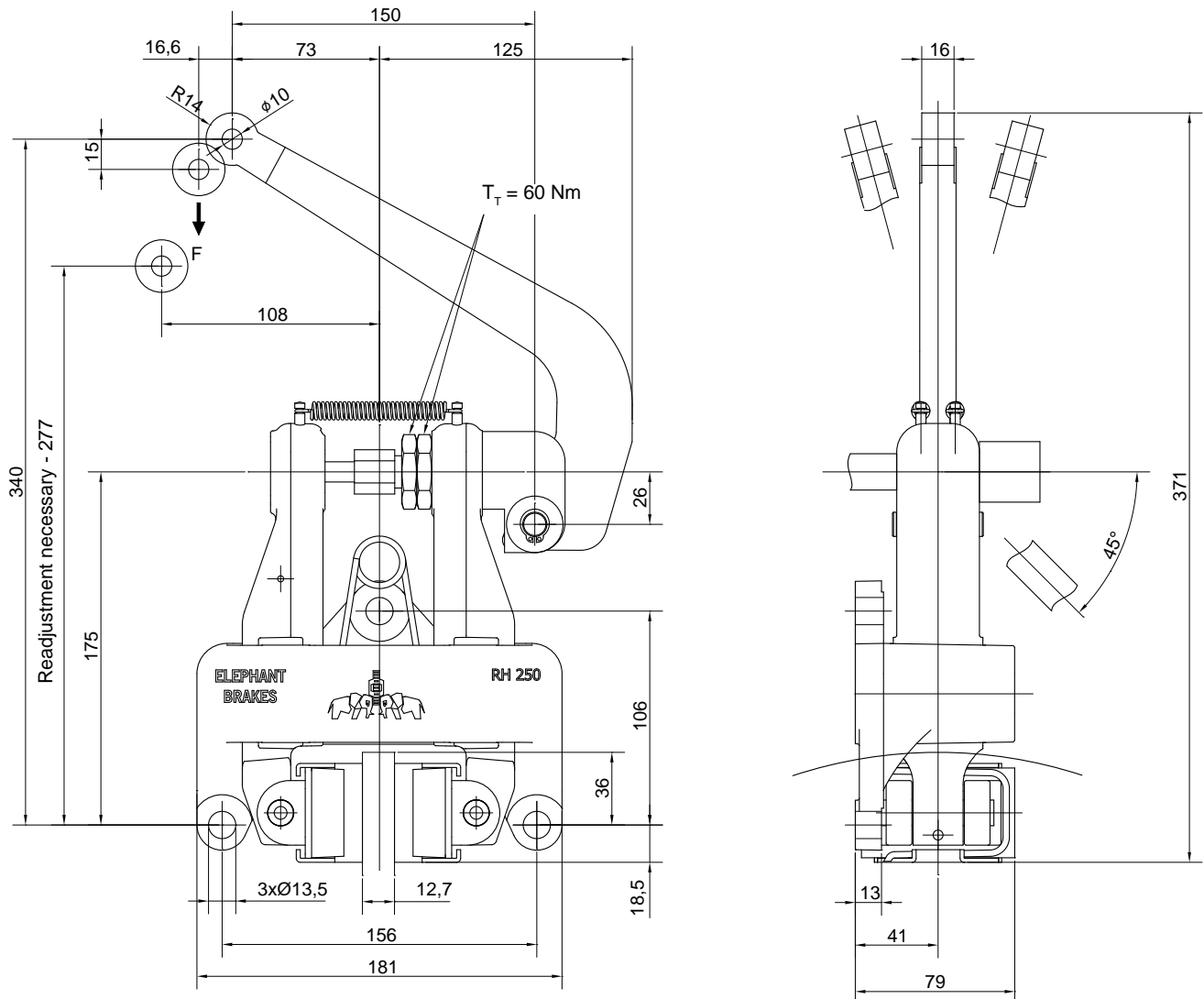
Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – left hand mounted please state with order.



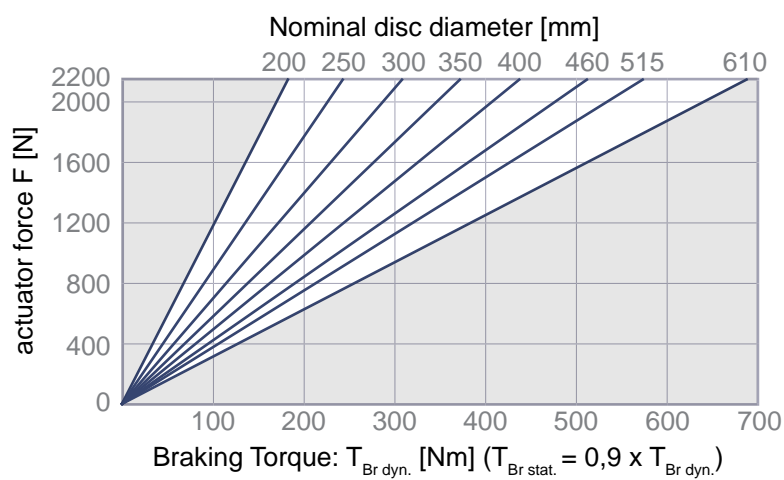
Mass: 7,9 kg





Mounting position is horizontal. Please get in touch if different.

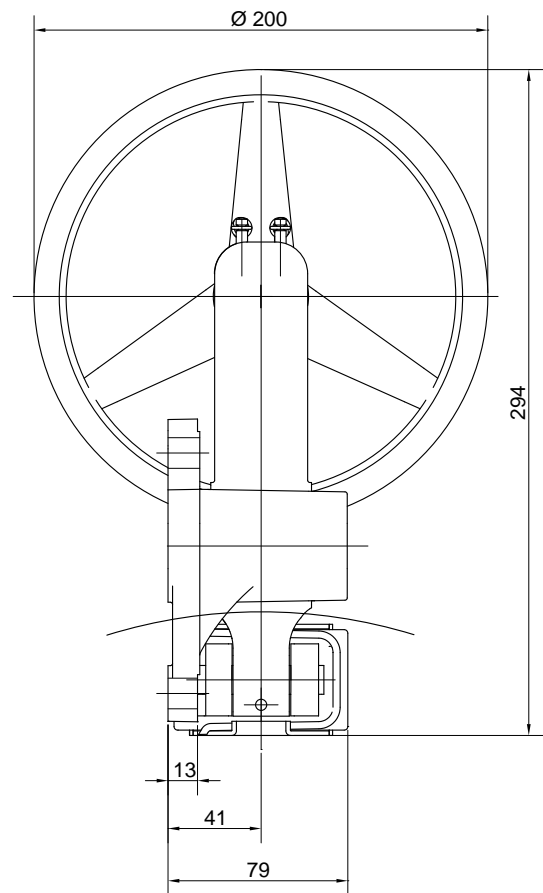
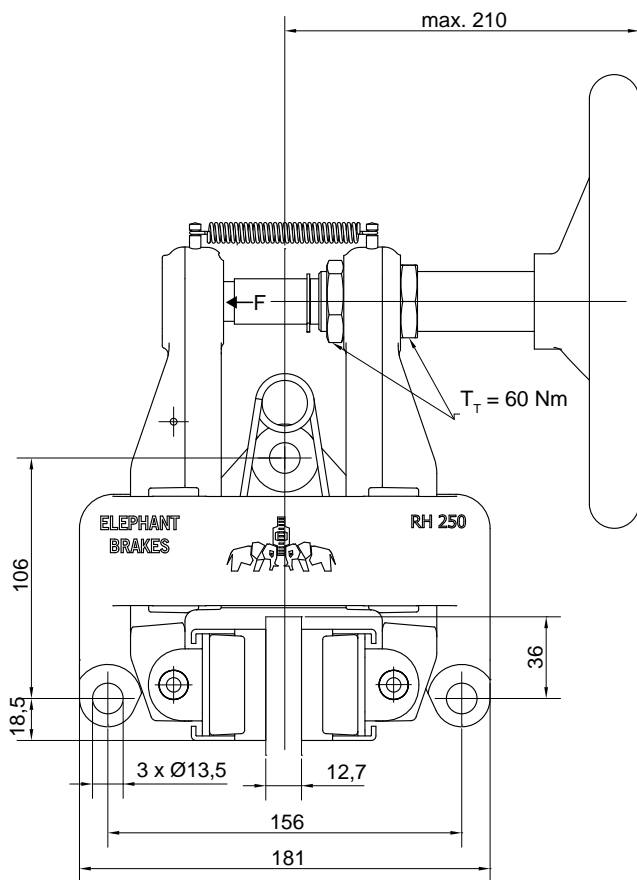
A right hand mounted actuator is standard – left hand mounted please state with order.



Mass: 8 kg  
1 turn  $\approx$  260 N

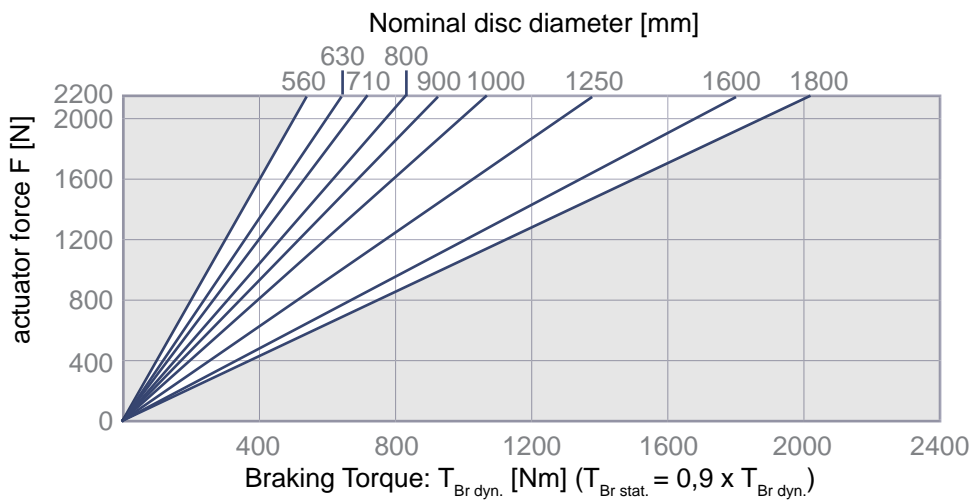
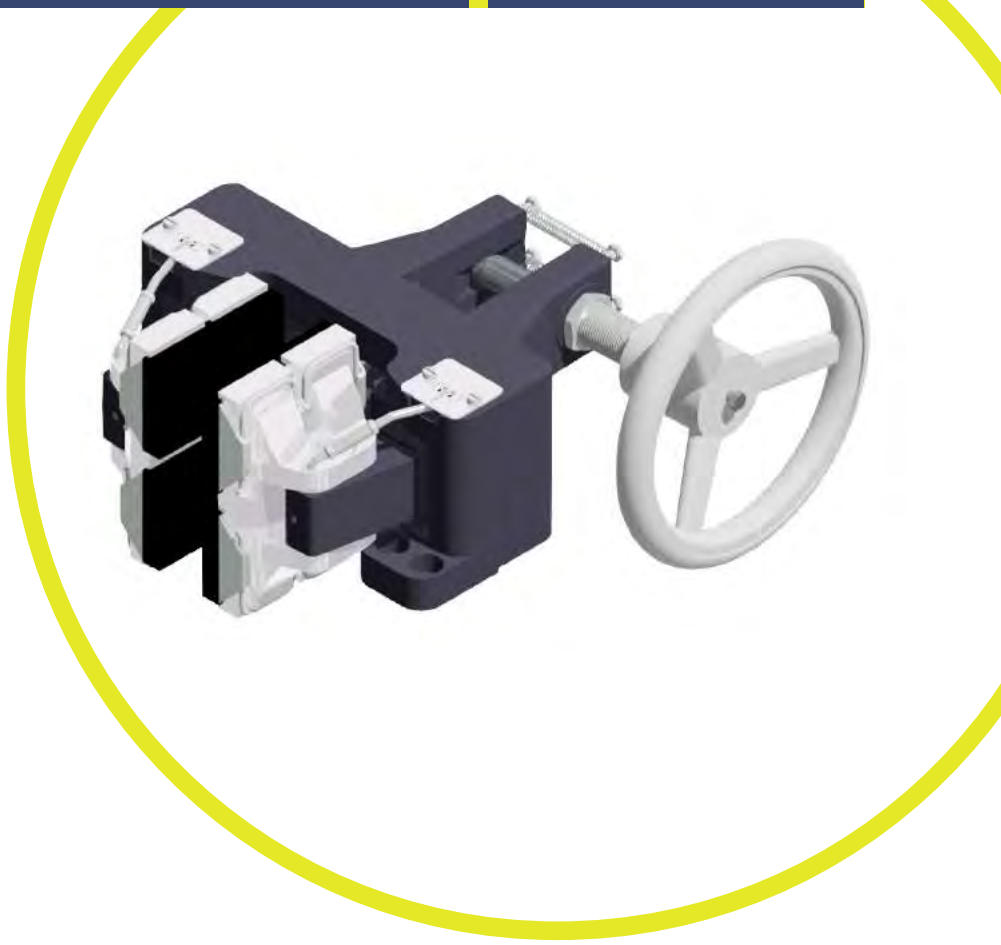
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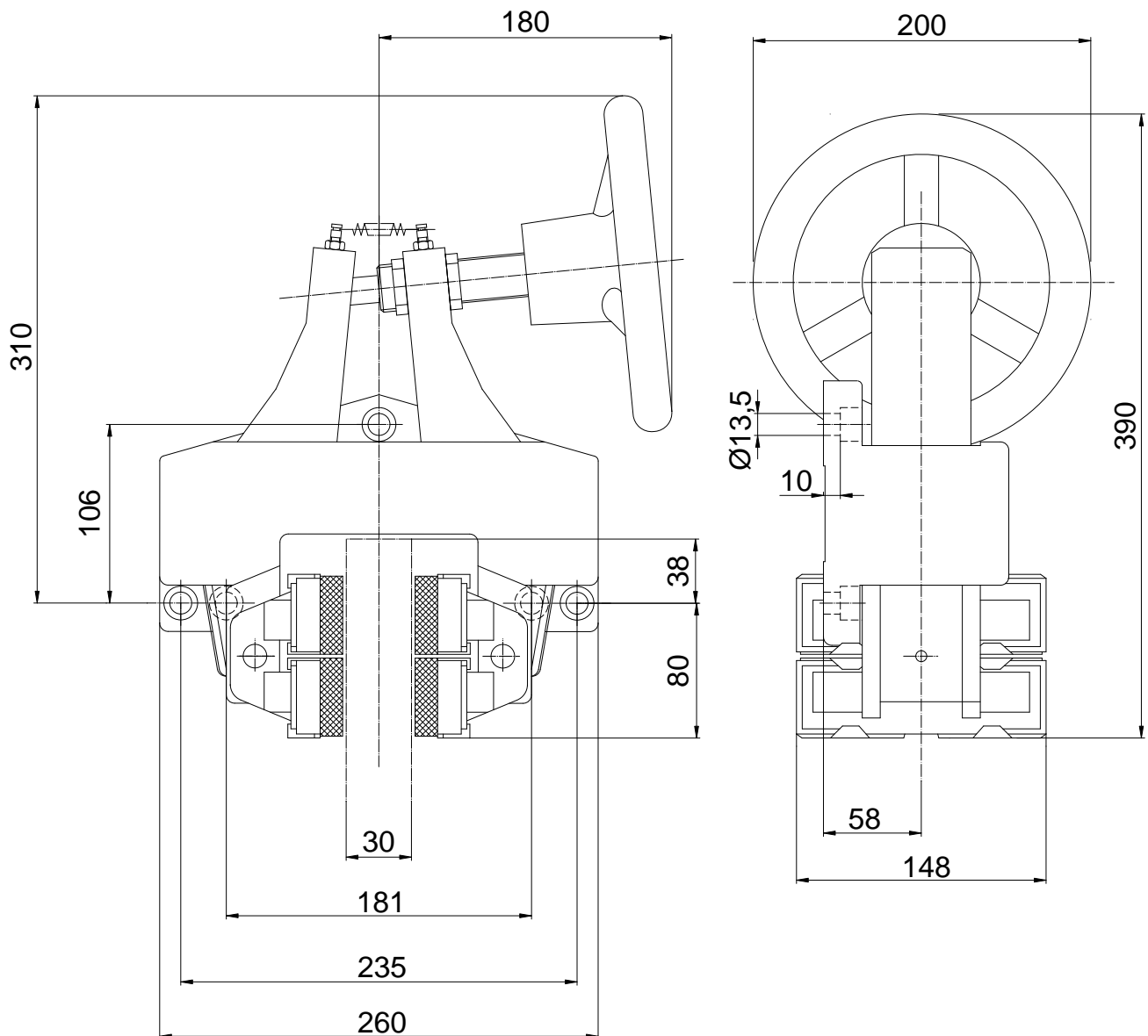


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – left hand mounted please state with order.

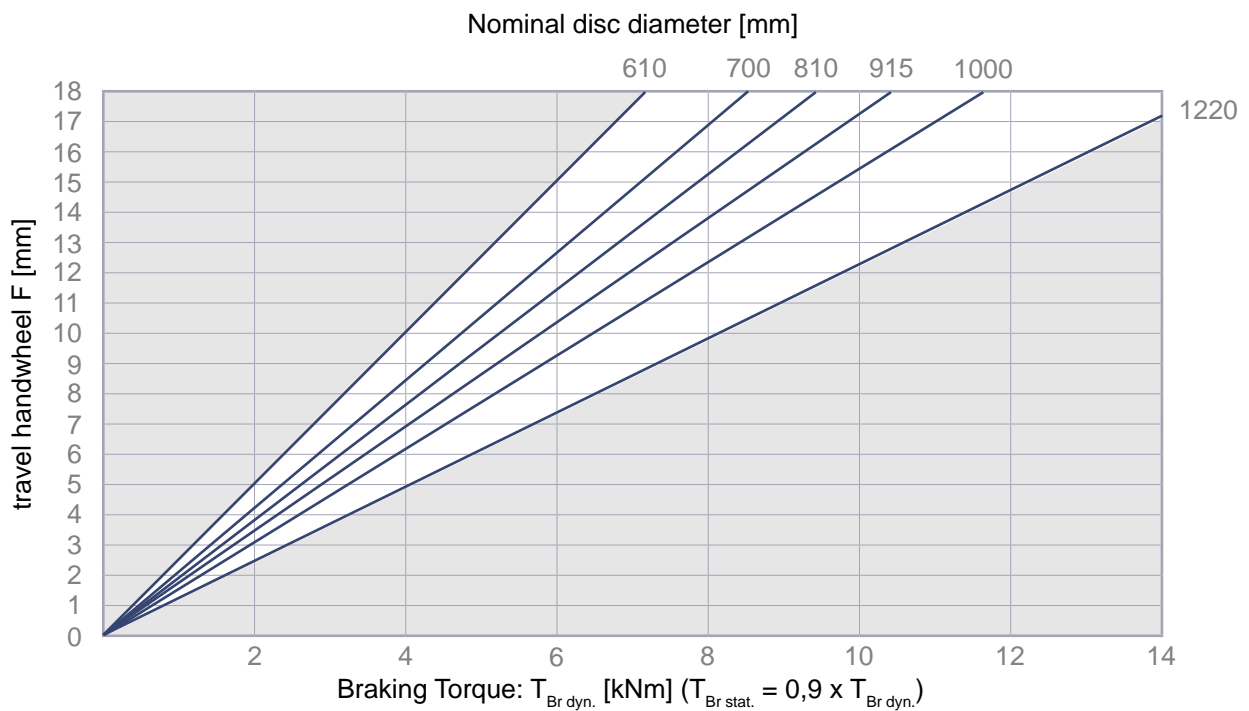


Mass: 21 kg  
1 turn  $\approx$  260 N



Mounting position is horizontal. Please get in touch if different.

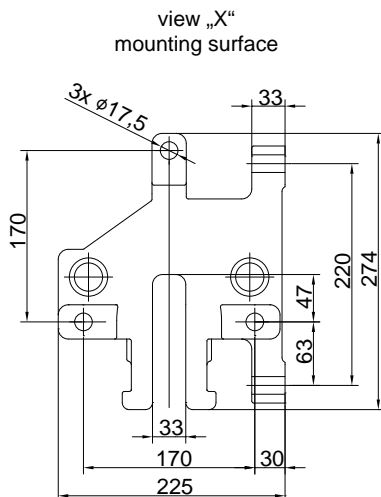
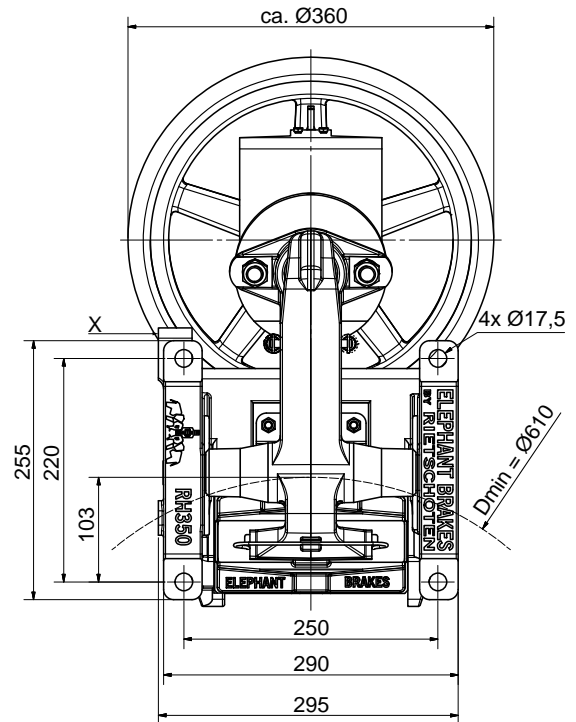
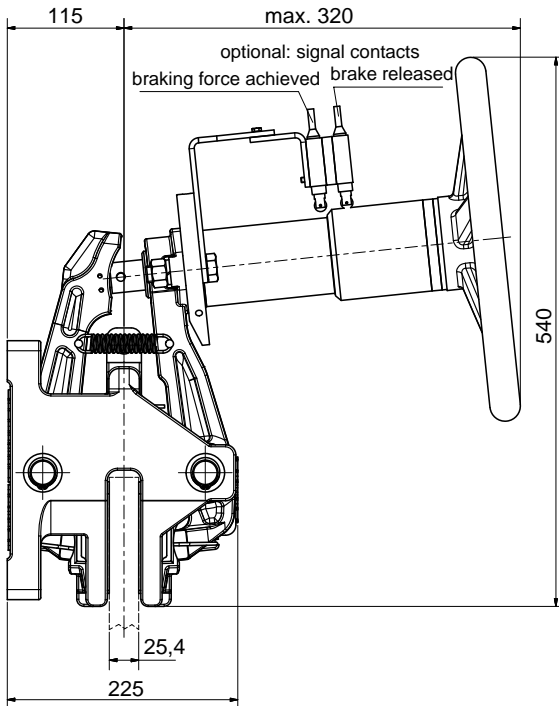
A right hand mounted actuator is standard – left hand mounted please state with order.



Mass: 55,5 kg

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Mounting position is horizontal. Please get in touch if different.

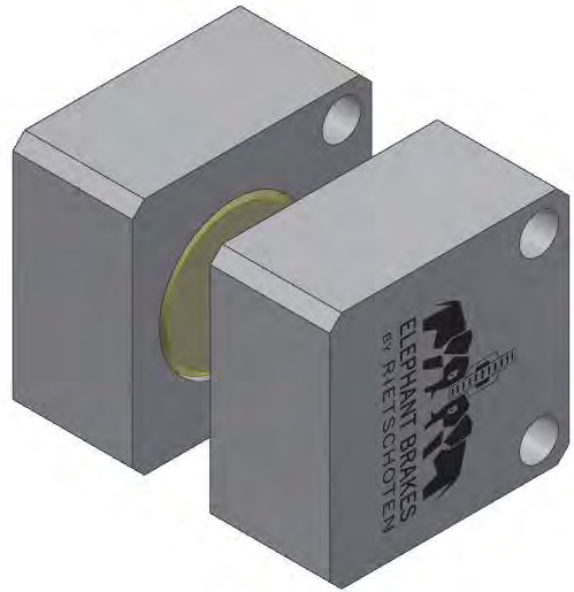
A right hand mounted actuator is standard – left hand mounted please state with order.



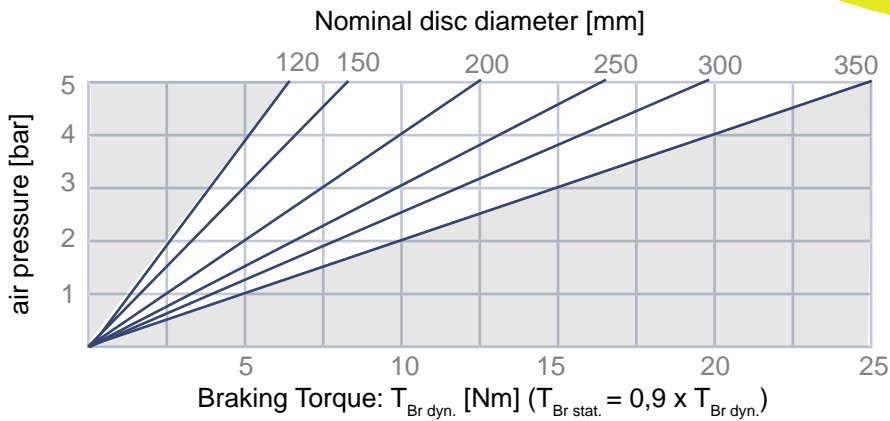




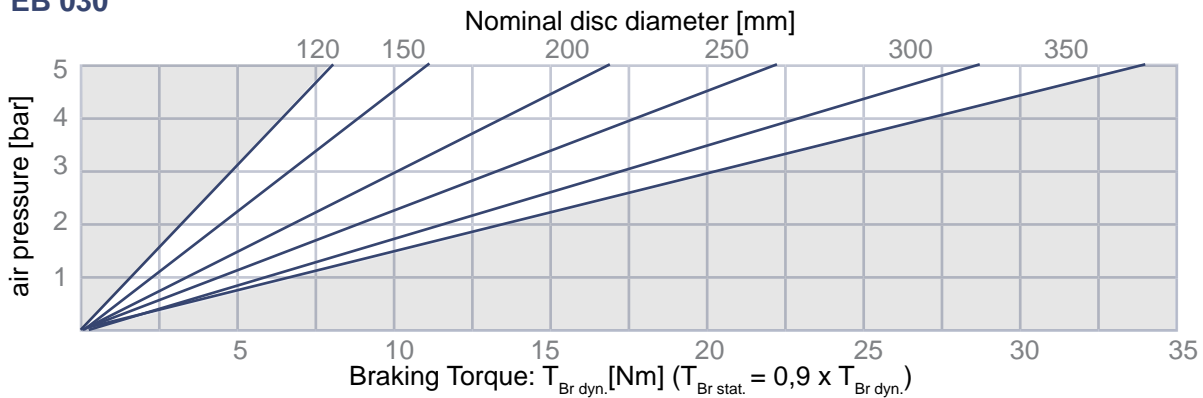
# pneumatically applied brakes



## EB 025

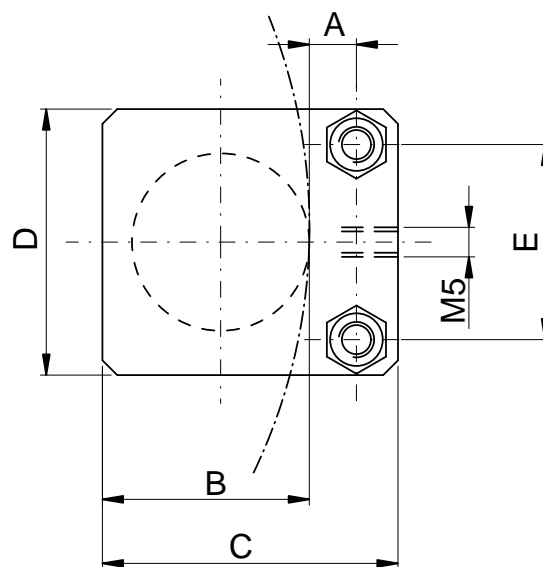
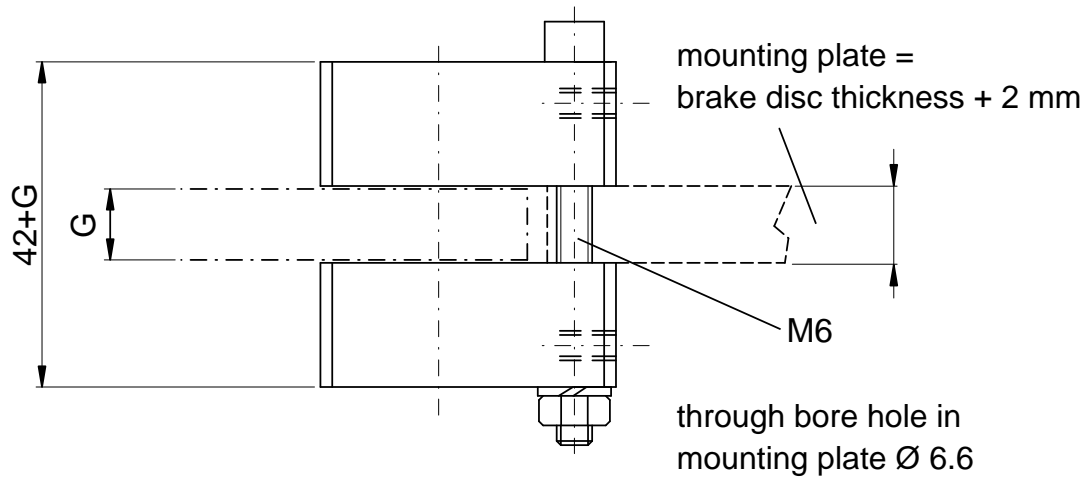


## EB 030



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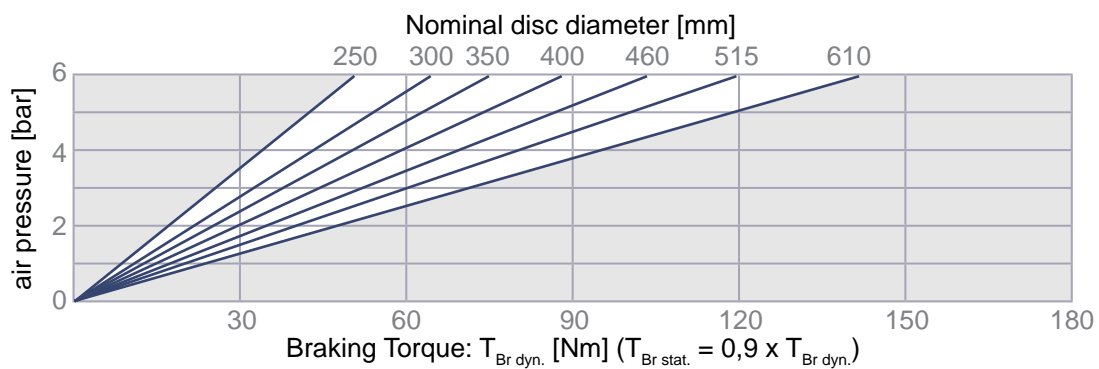


Type	Part-No.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Mass [kg]
EB 025	<b>10927</b>	6	29	40	40	30	0,14
EB 030	<b>11471</b>	8	35	50	45	33	0,15

**NOTE:**

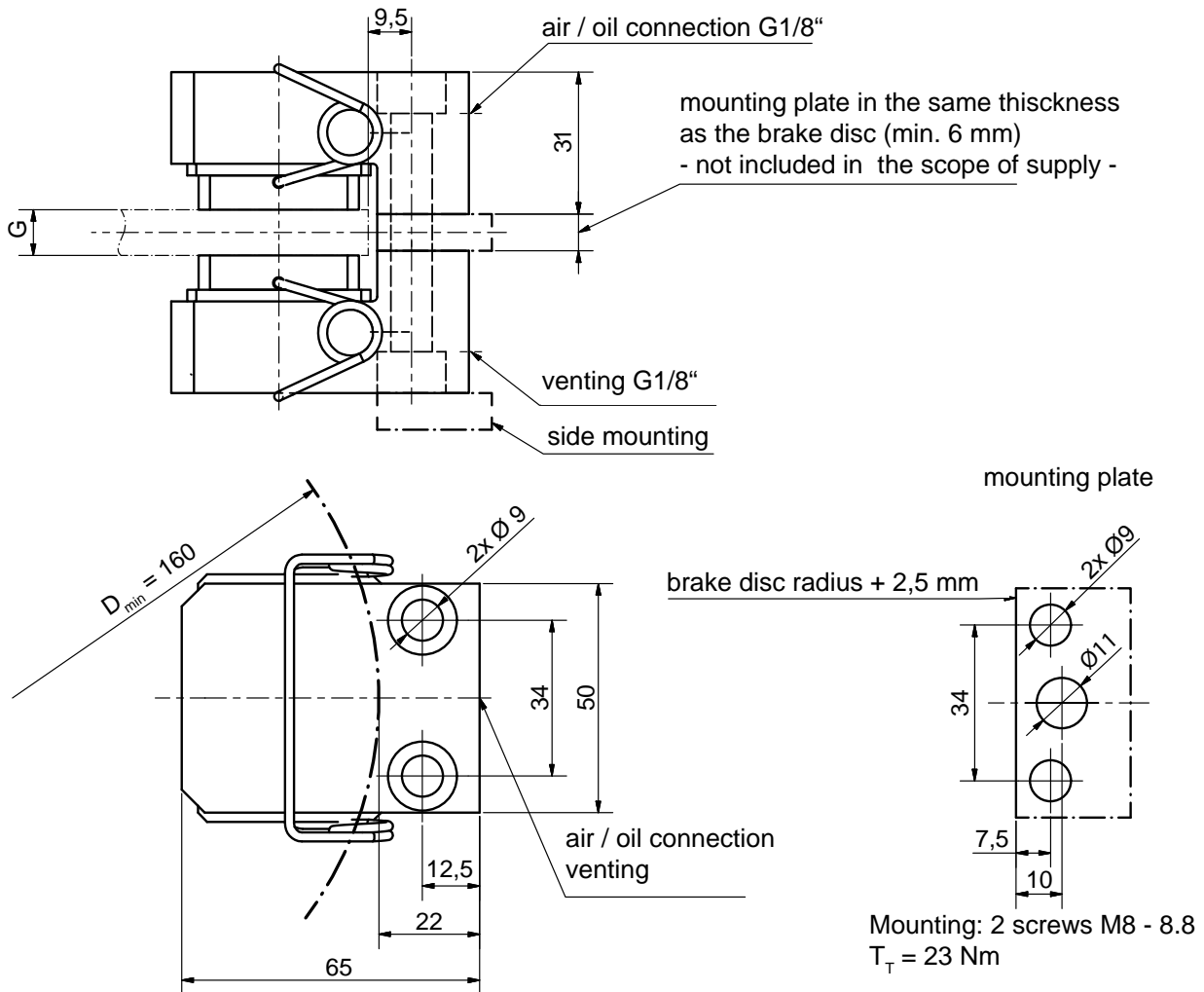
Also hydraulically applied  
usable.

*See page 123*



$p_{max.}$ : 8 bar

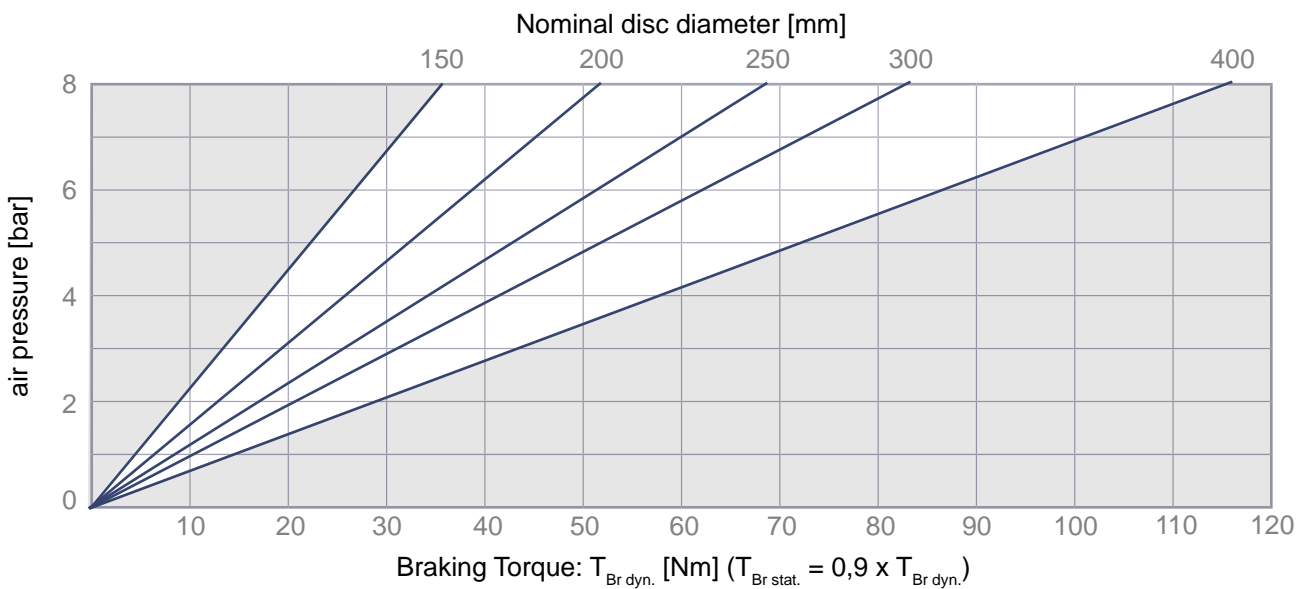
*hydraulically applied  $p_{max.}$ : 20 bar*



For G = 8 mm: EB 108, **Part-No. 12294**

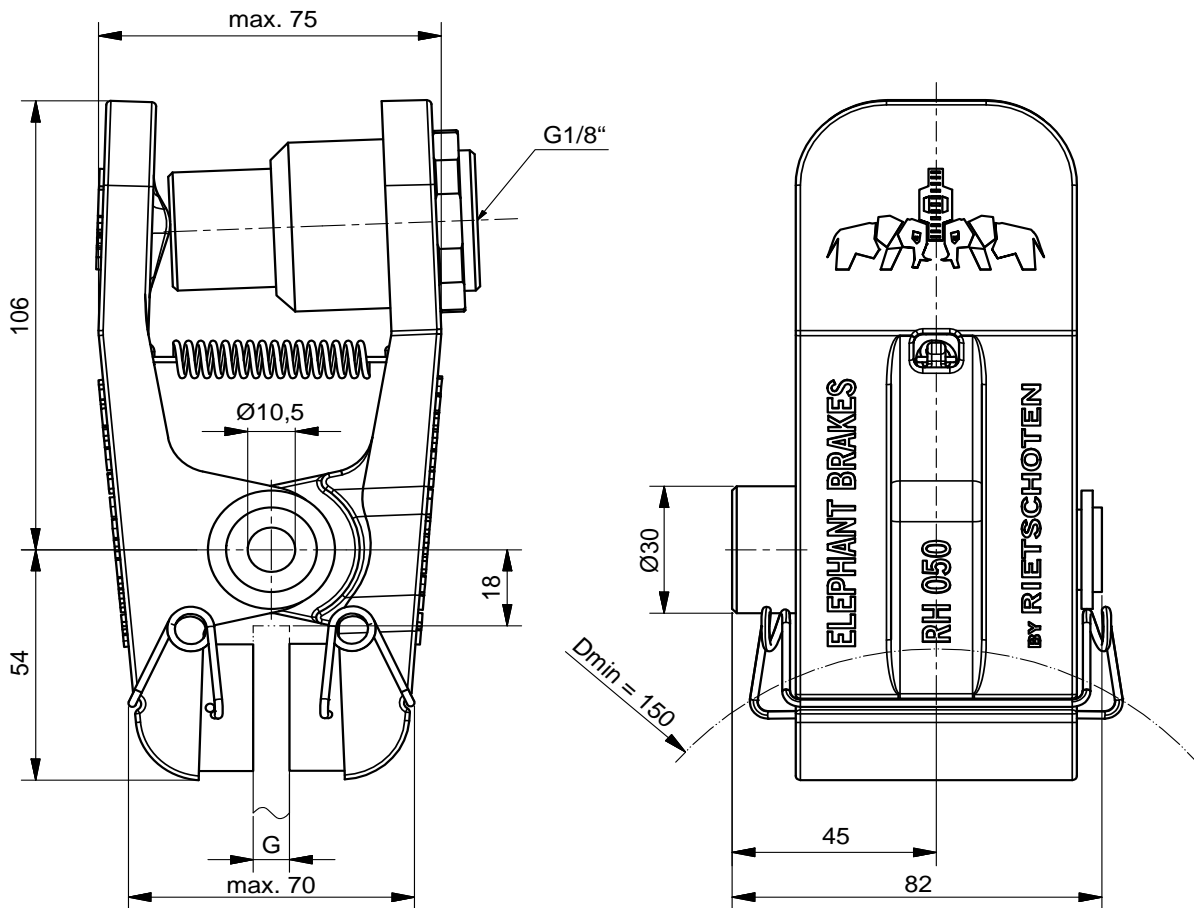
For G = 15 mm: EB 115, **Part-No. 10811**

*Further disc thicknesses and mounting plates for side mounting on request*



Mass: 1 kg

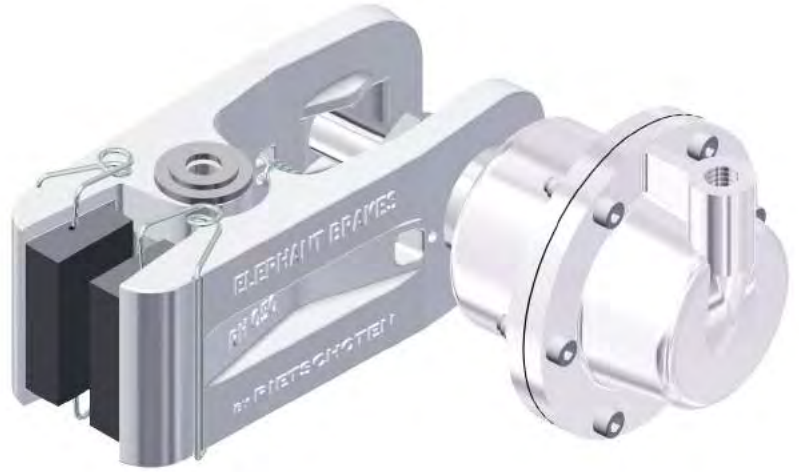
V / stroke: 0,02 dm<sup>3</sup>



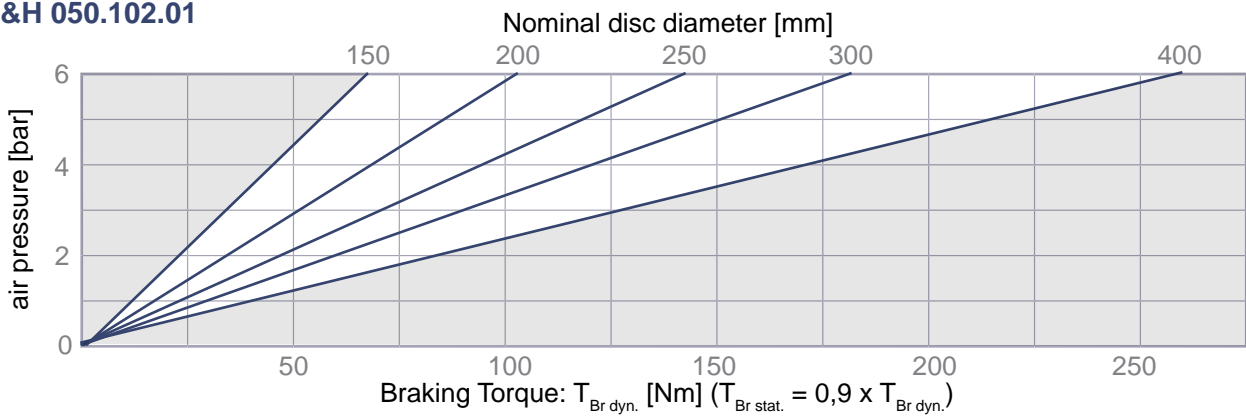
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

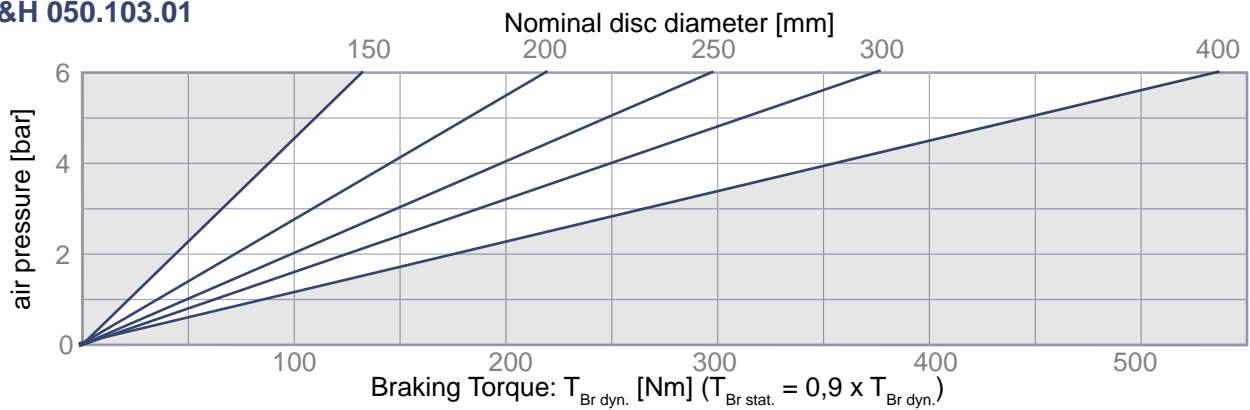
Type	Part-No.	G [mm]
R&H 051.100.08	<b>12504</b>	8
R&H 051.100.13	<b>12934</b>	12,7



## R&H 050.102.01



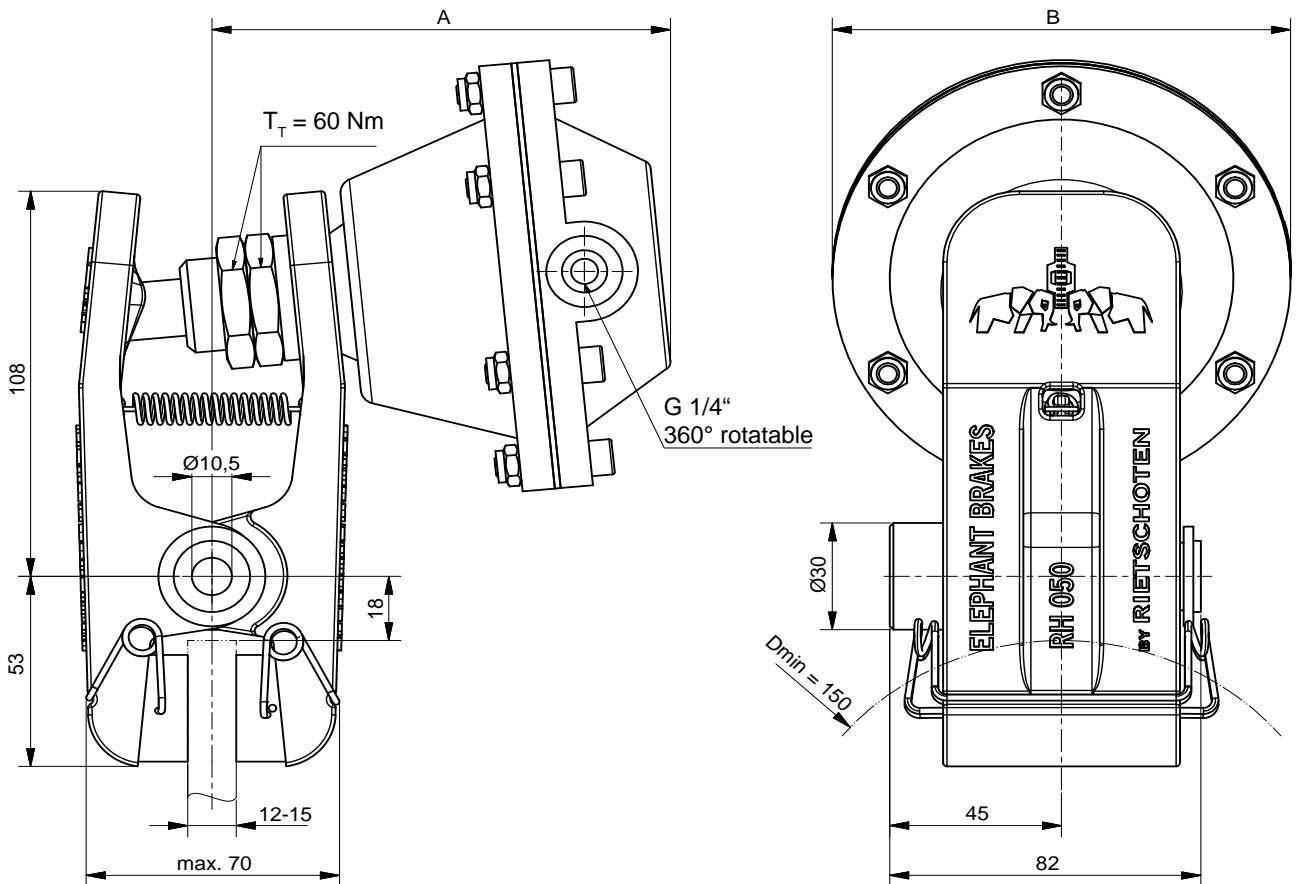
## R&H 050.103.01



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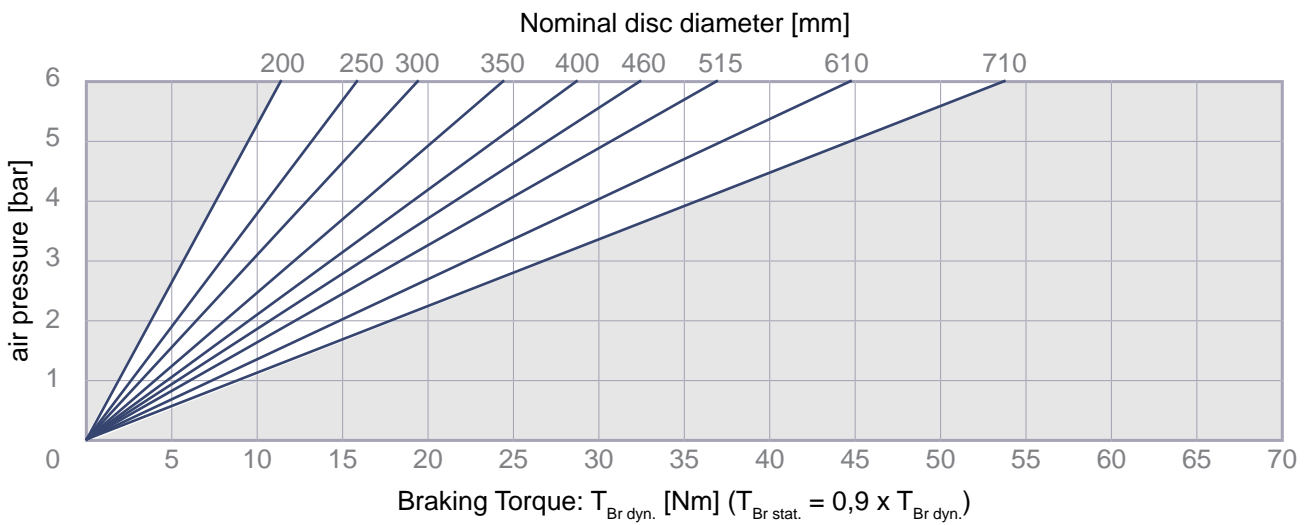
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

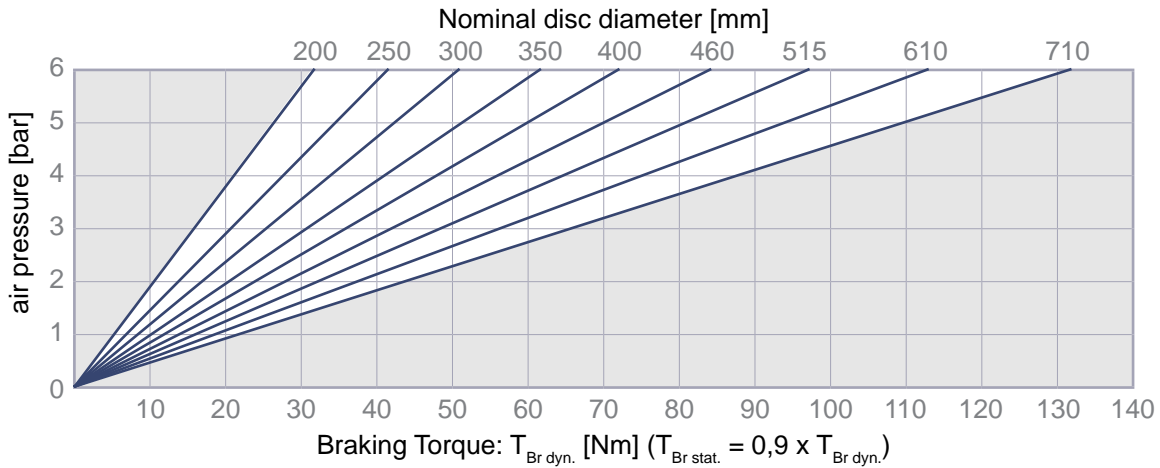
Type	Part-No.	A [mm]	Ø B [mm]	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 050.102.01	<b>11230</b>	145	97	0,07	1,7
R&H 050.103.01	<b>11093</b>	120	120	0,15	2



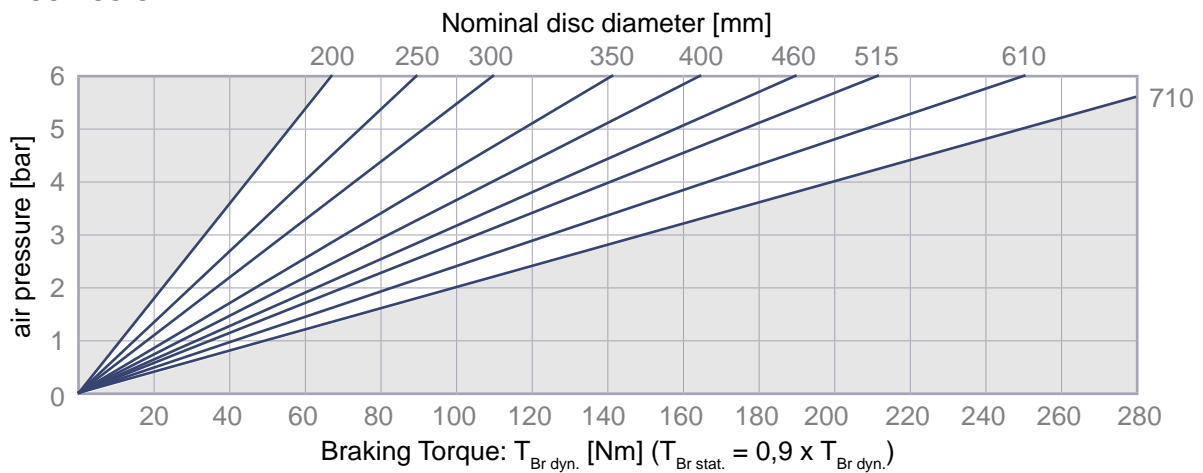
## R&H 100.101.01



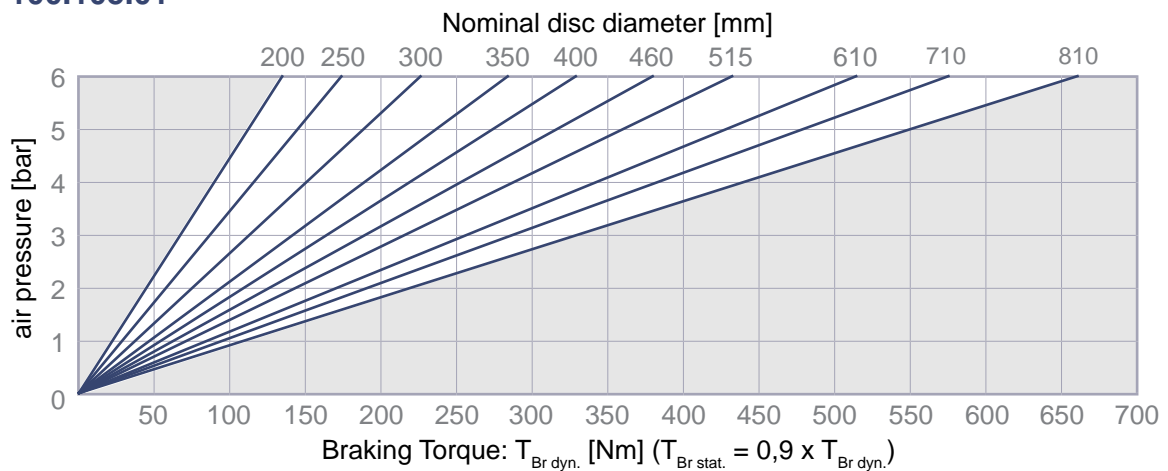
## R&H 100.102.01

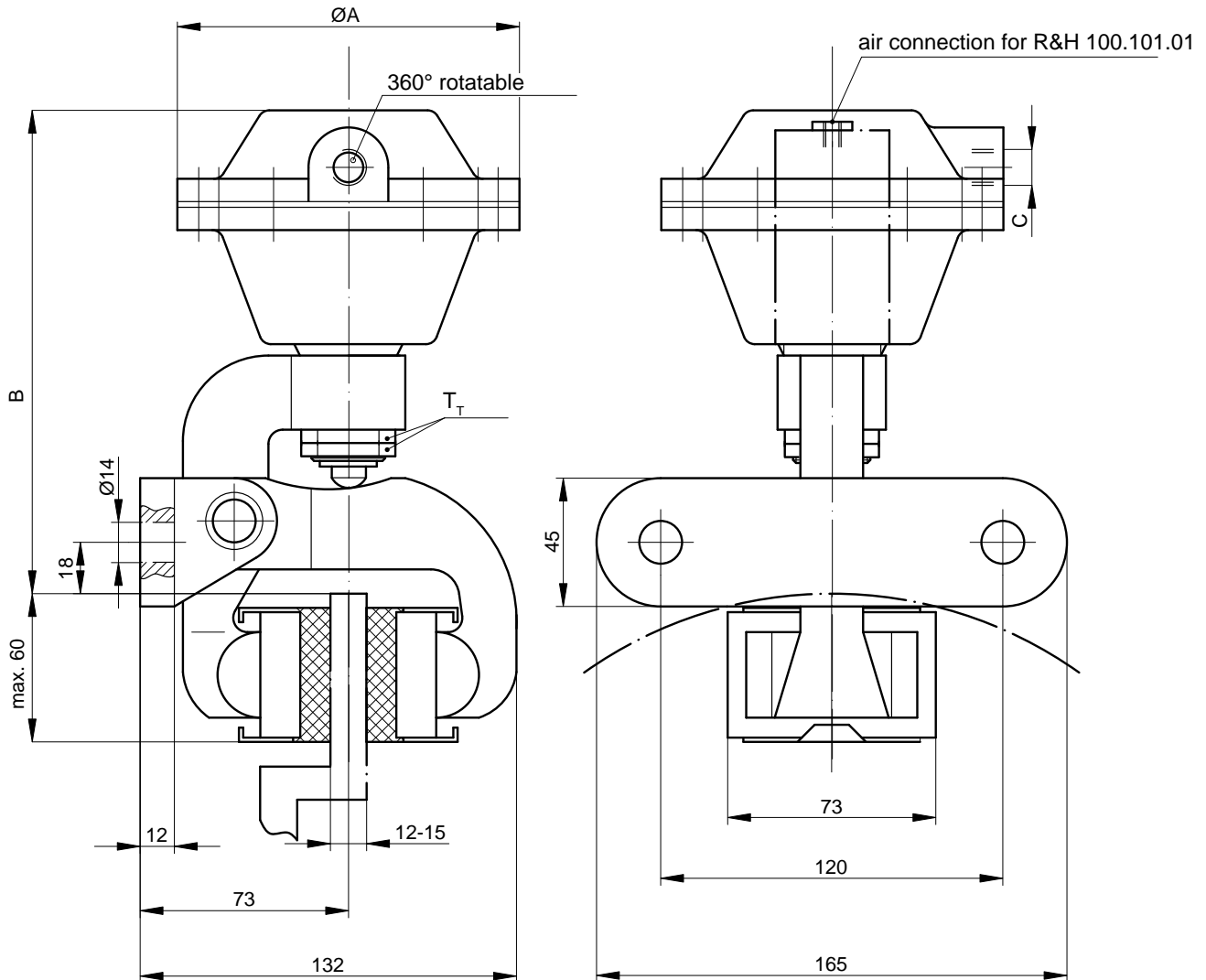


## R&H 100.103.01



## R&H 100.105.01



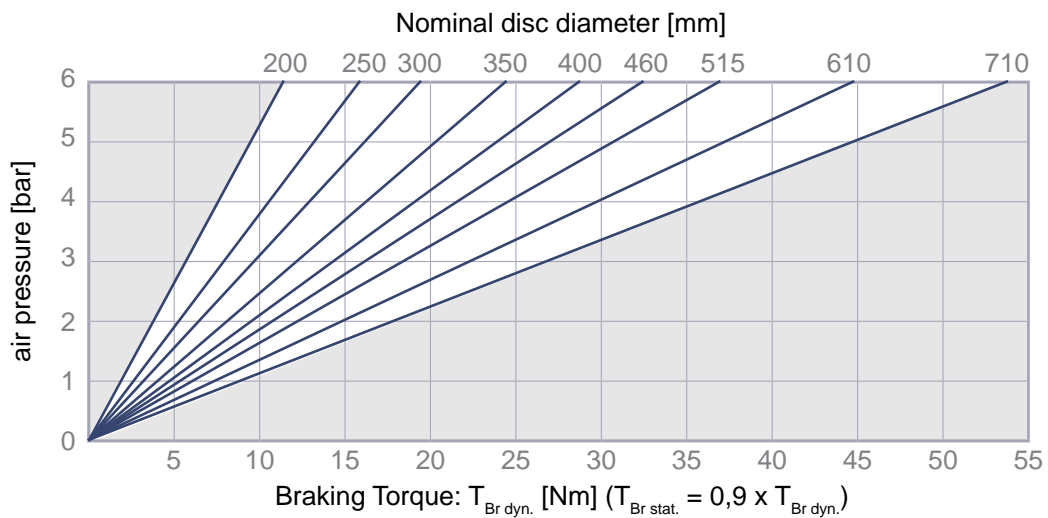


Mounting position is horizontal. Please get in touch if different.

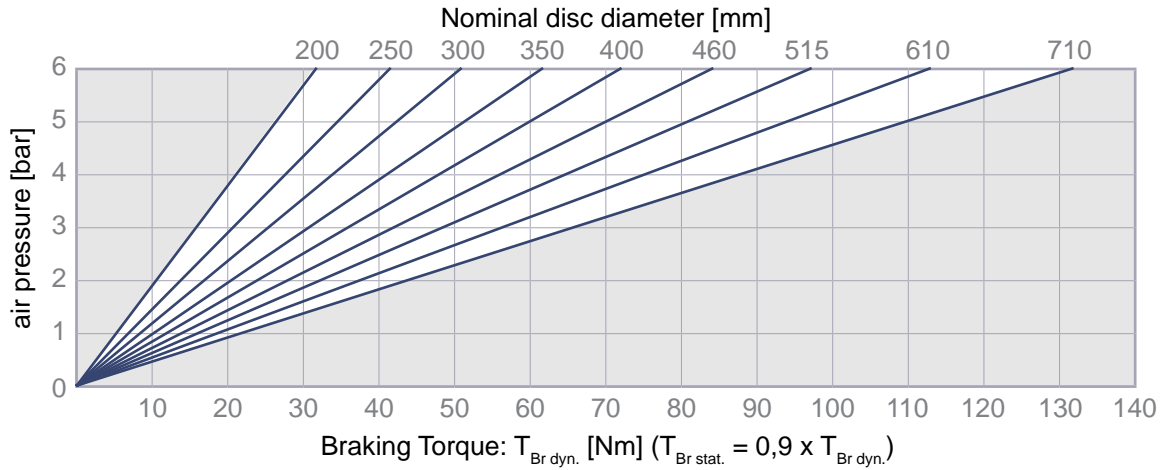
Type	Part-No.	Mass [kg]	ØA [mm]	B [mm]	C	V / stroke [dm <sup>3</sup> ]	T <sub>T</sub> [Nm]
R&H 100.101.01	<b>10389</b>	3,1	40	170	G1/4"	0,04	15
R&H 100.102.01	<b>10390</b>	3,6	97	185		0,07	60
R&H 100.103.01	<b>10388</b>	4	120	175		0,15	
R&H 100.105.01	<b>10386</b>	4,3	144	180	G3/8"	0,30	



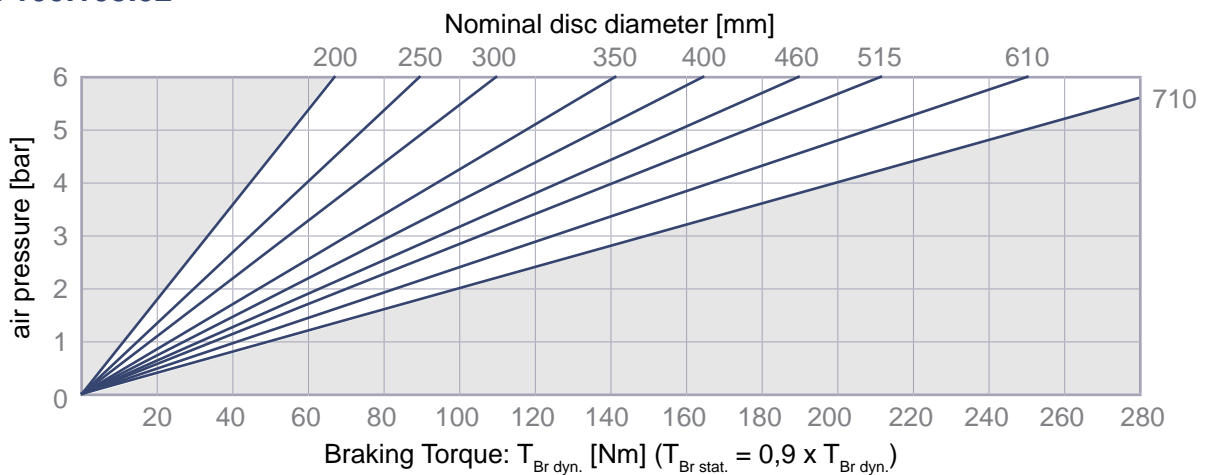
## R&H 100.101.02



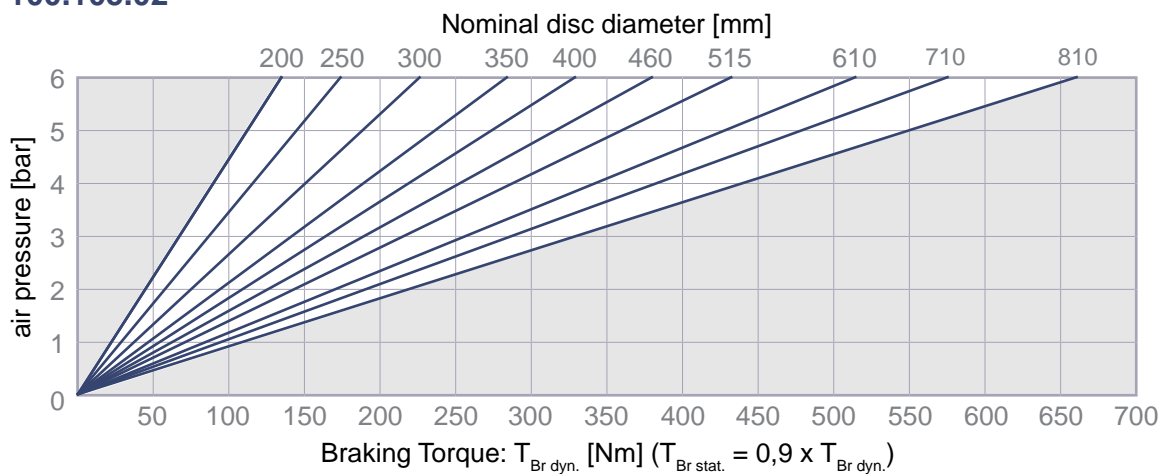
## R&H 100.102.02

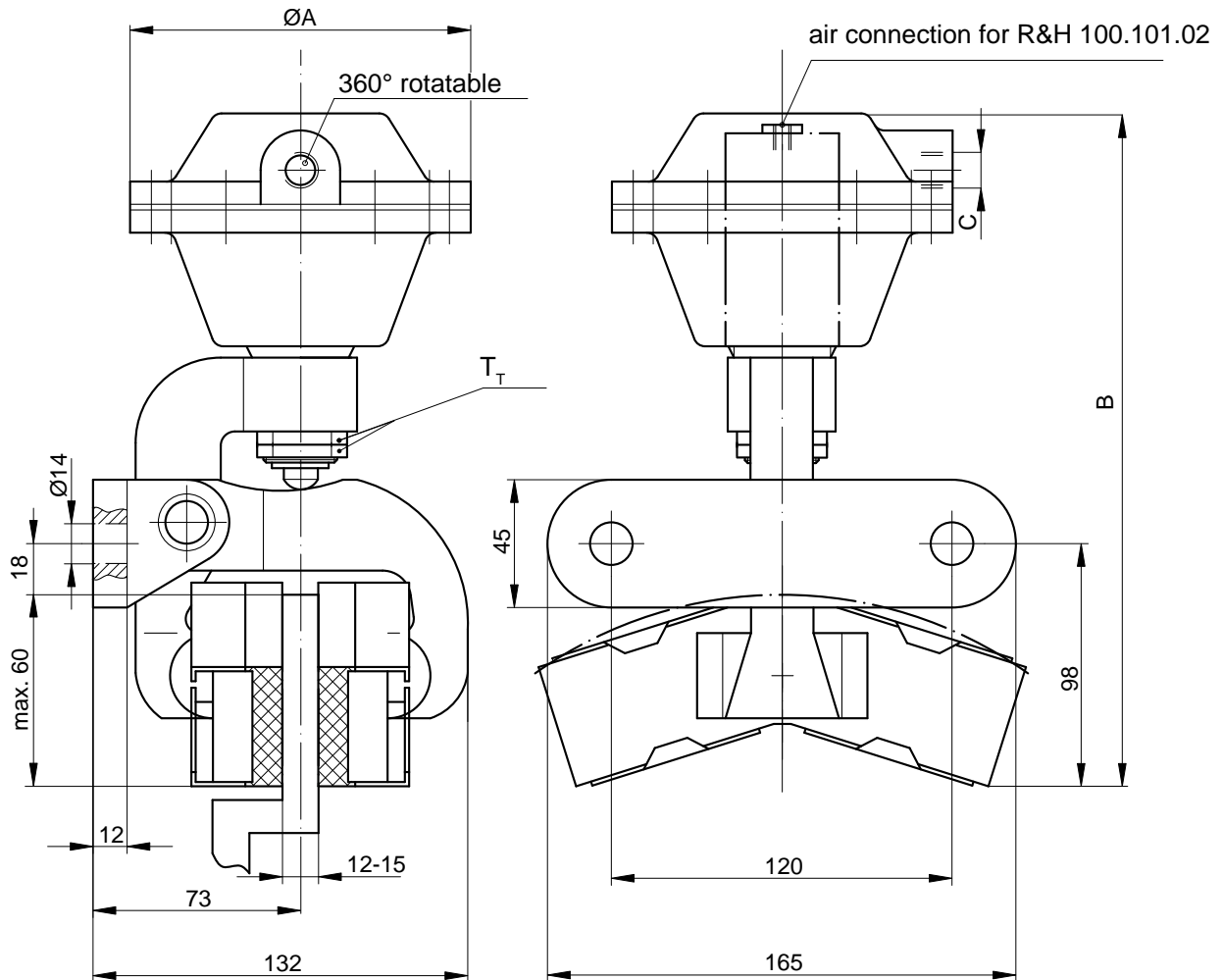


## R&H 100.103.02



## R&H 100.105.02



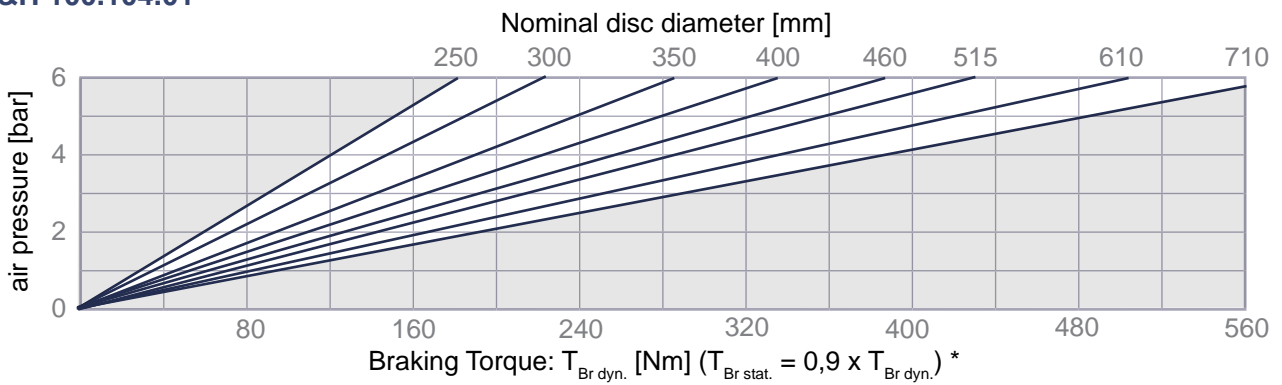


Mounting position is horizontal. Please get in touch if different.

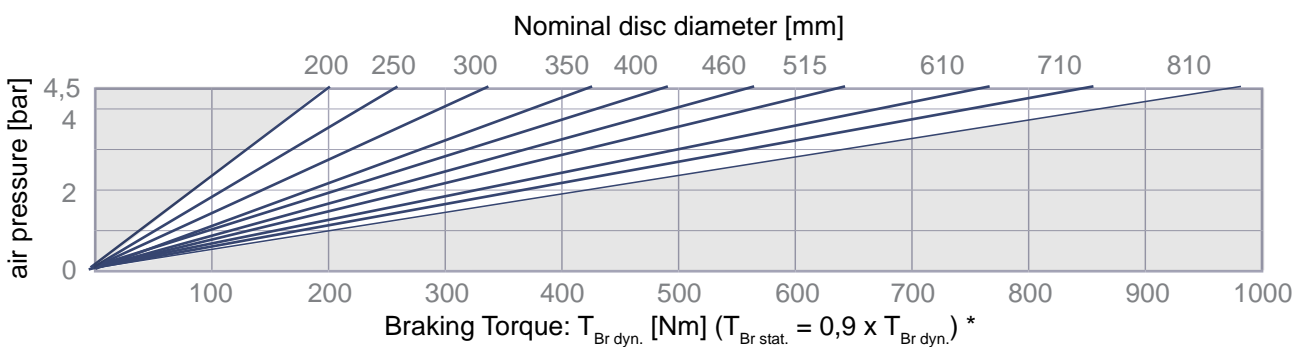
Type	Part-No.	Mass [kg]	ØA [mm]	B [mm]	C	V/stroke [dm <sup>3</sup> ]	T <sub>T</sub> [Nm]
R&H 100.101.02	<b>10781</b>	3,6	40	245	G1/4"	0,04	15
R&H 100.102.02	<b>10782</b>	4,1	97	253		0,07	60
R&H 100.103.02	<b>10783</b>	4,4	120	240		0,15	
R&H 100.105.02	<b>10784</b>	4,9	144			G3/8"	0,30



## R&H 100.104.01

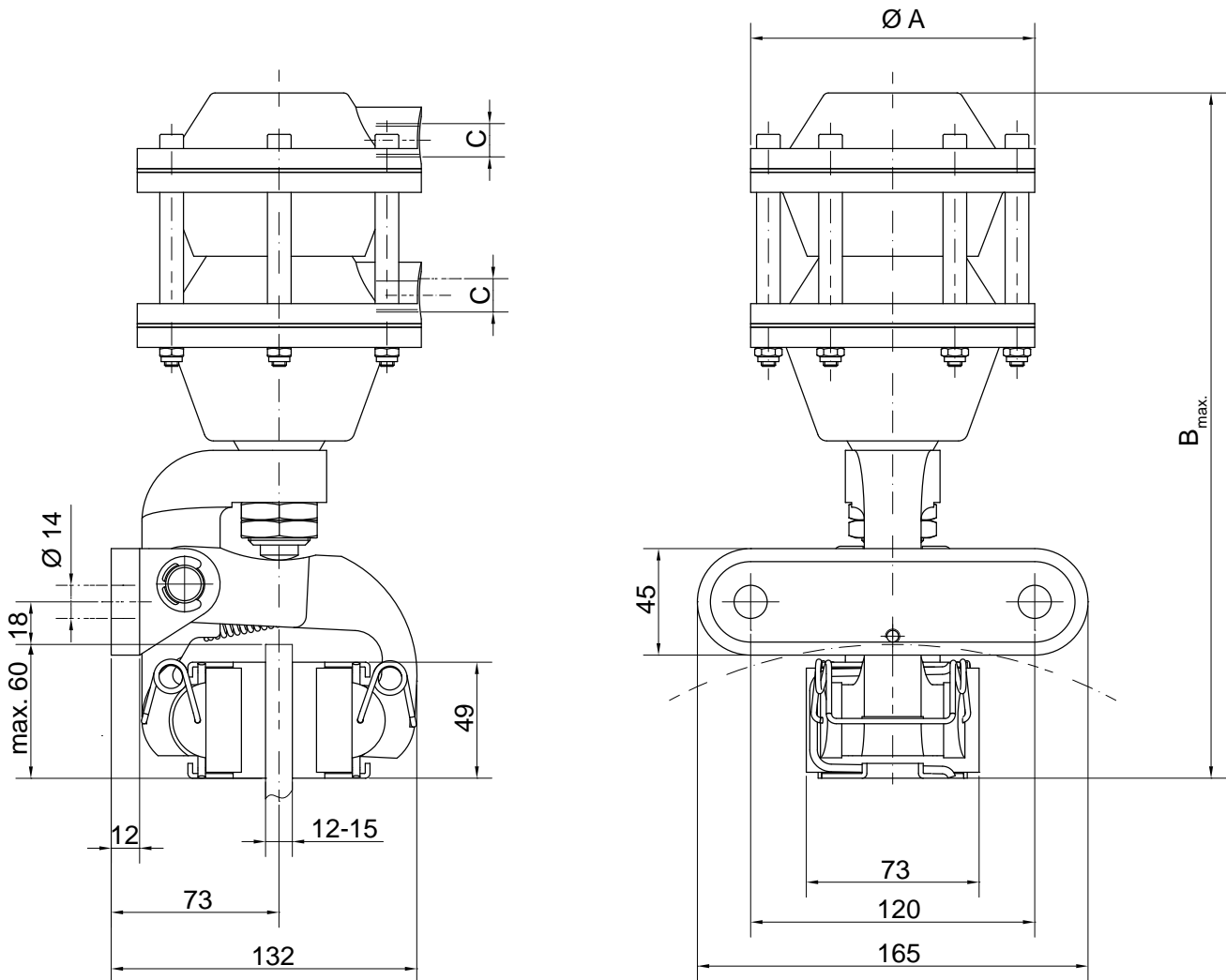


## R&H 100.106.01



\* using one chamber  $T_{Br\ dyn.} \times 0,5$



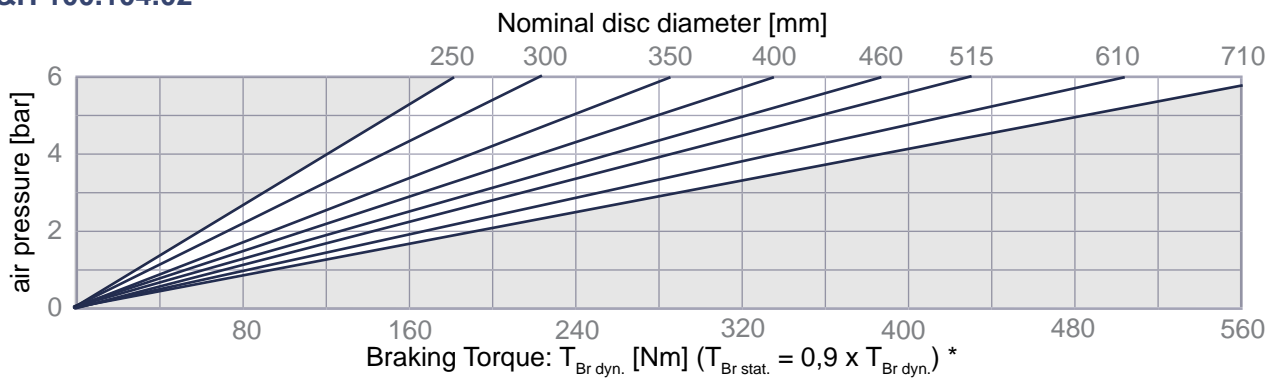


Mounting position is horizontal. Please get in touch if different.

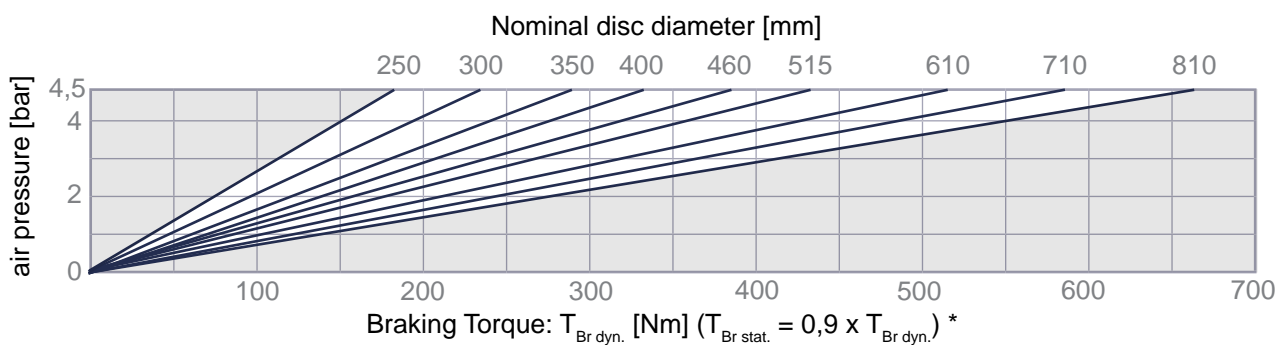
Type	Part-No.	Ø A [mm]	B [mm]	C	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 100.104.01	<b>10560</b>	120	290	2 x G1/4"	2 x 0,15	4,6
R&H 100.106.01	<b>10387</b>	144		2 x G3/8"	2 x 0,30	5,4



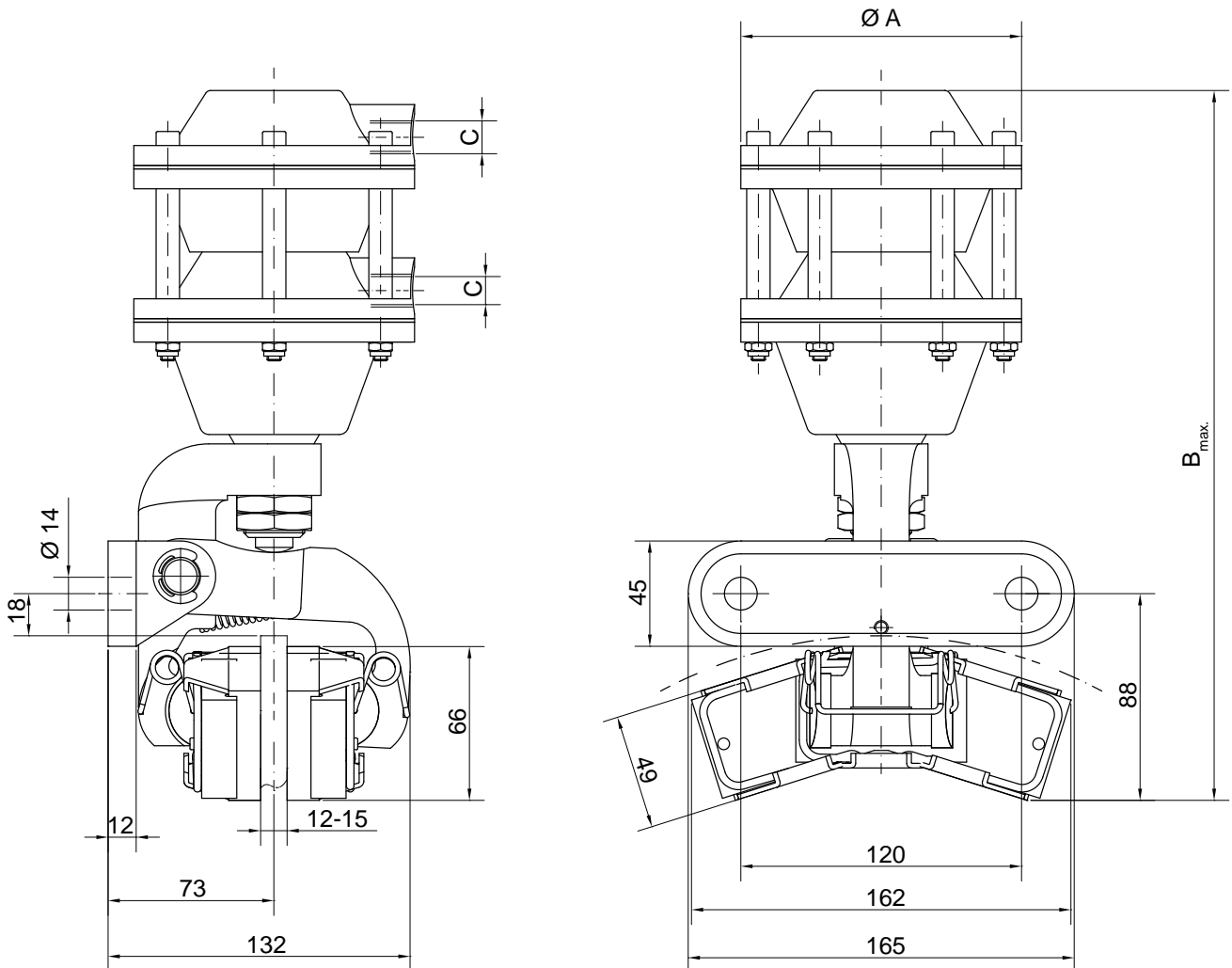
## R&H 100.104.02



## R&H 100.106.02

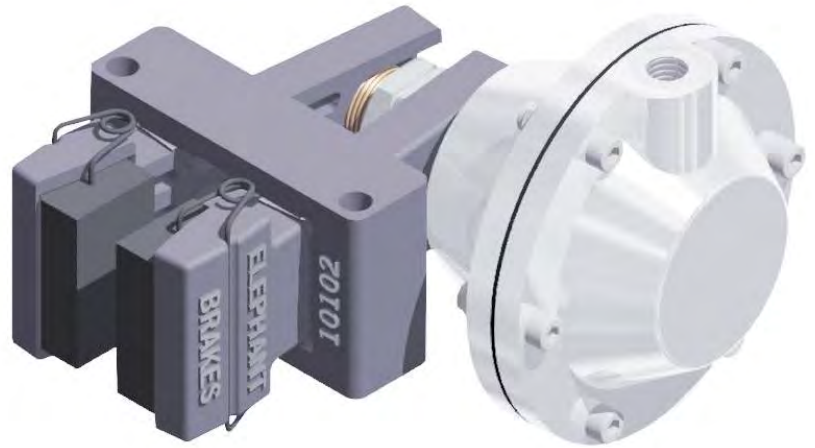


\* using one chamber  $T_{Br\ dyn.} \times 0,5$

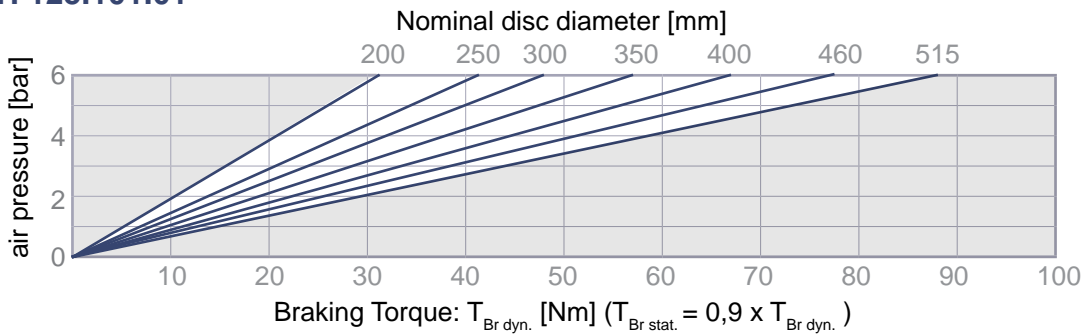


Mounting position is horizontal. Please get in touch if different.

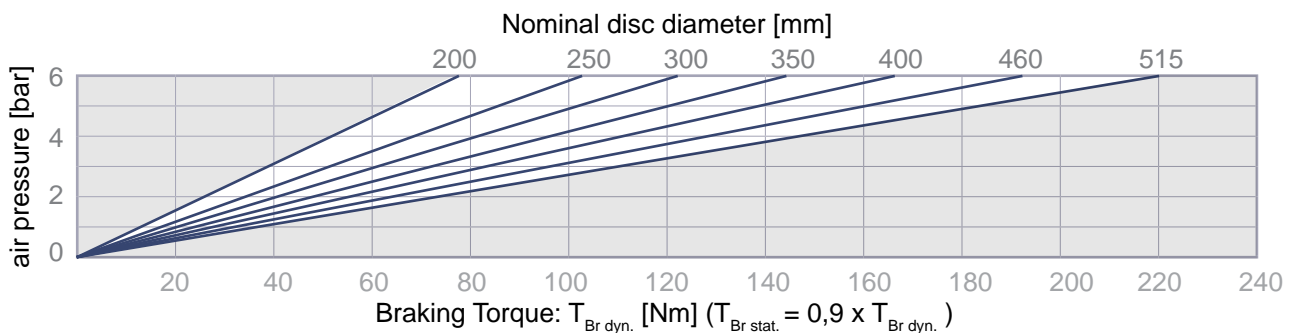
Type	Part-No.	Ø A [mm]	B [mm]	C	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 100.104.02	<b>10917</b>	120	304	2 x G1/4"	2 x 0,15	4,6
R&H 100.106.02	<b>10916</b>	144		2 x G3/8"	2 x 0,30	5,4



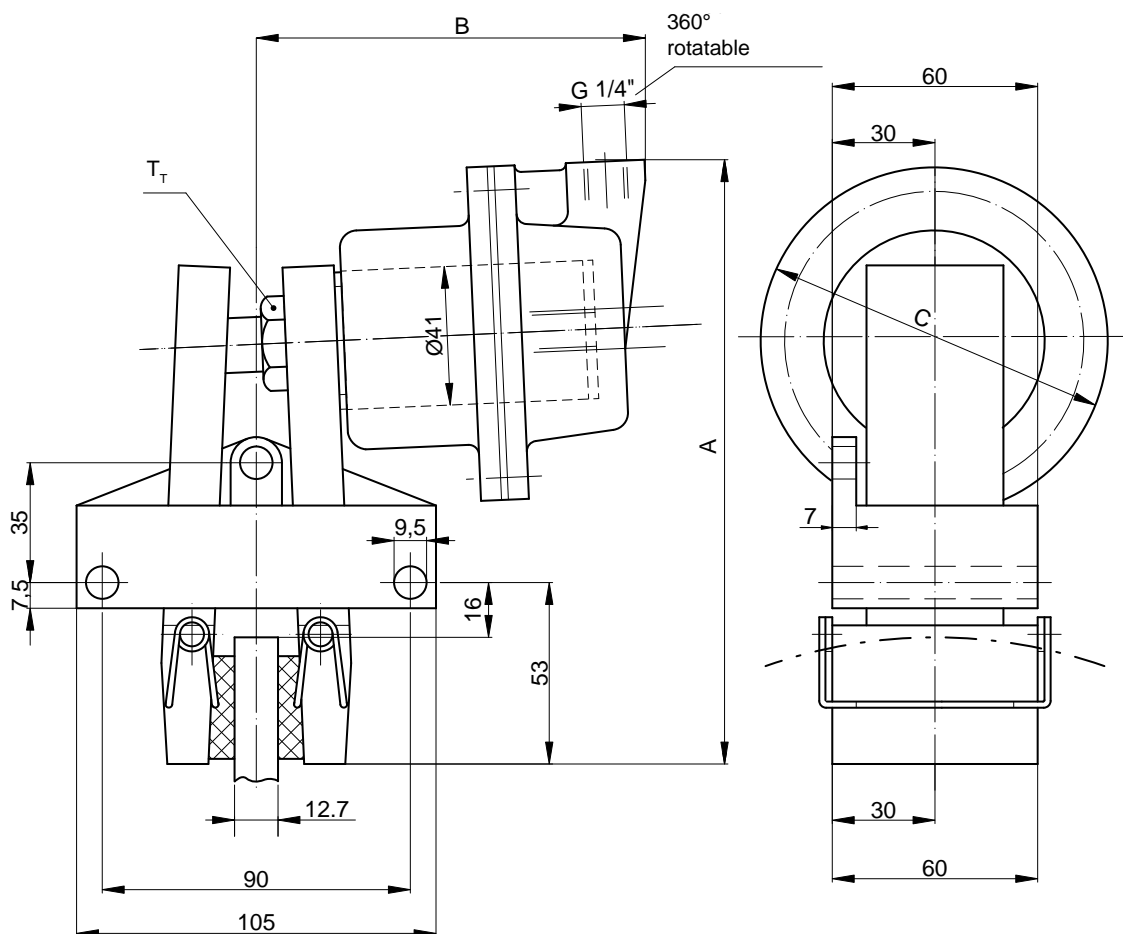
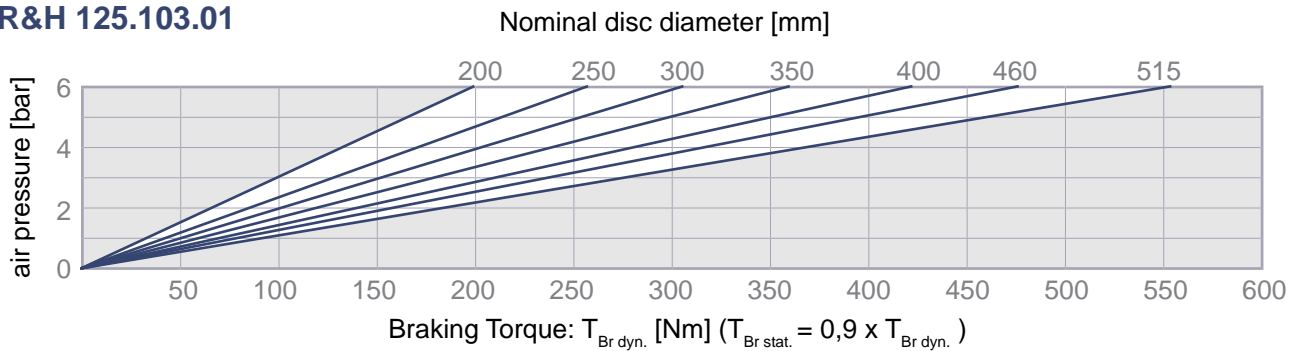
## R&H 125.101.01



## R&H 125.102.01



## R&H 125.103.01



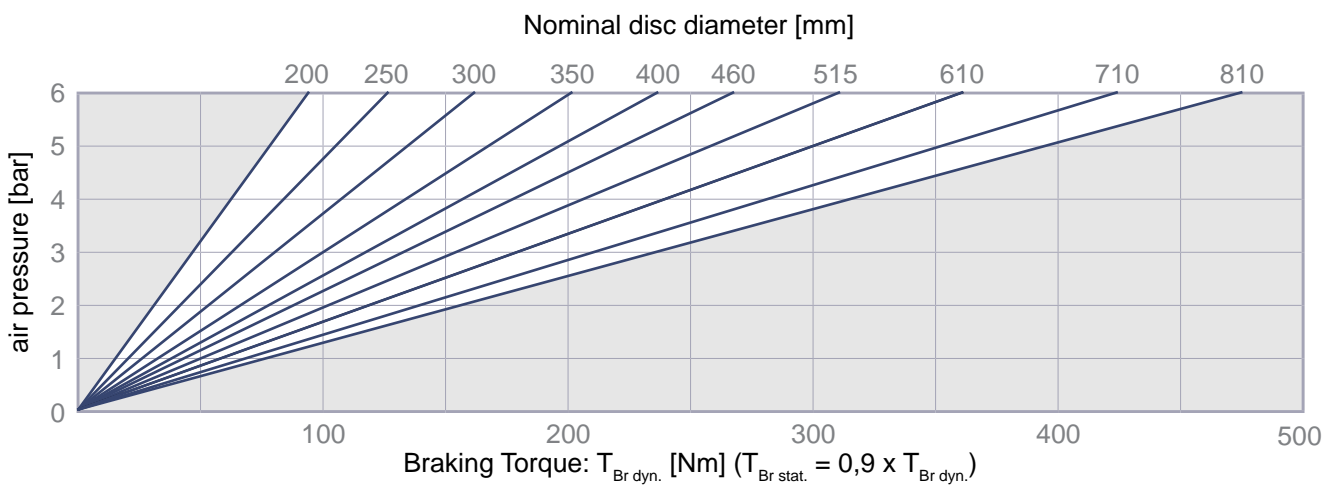
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

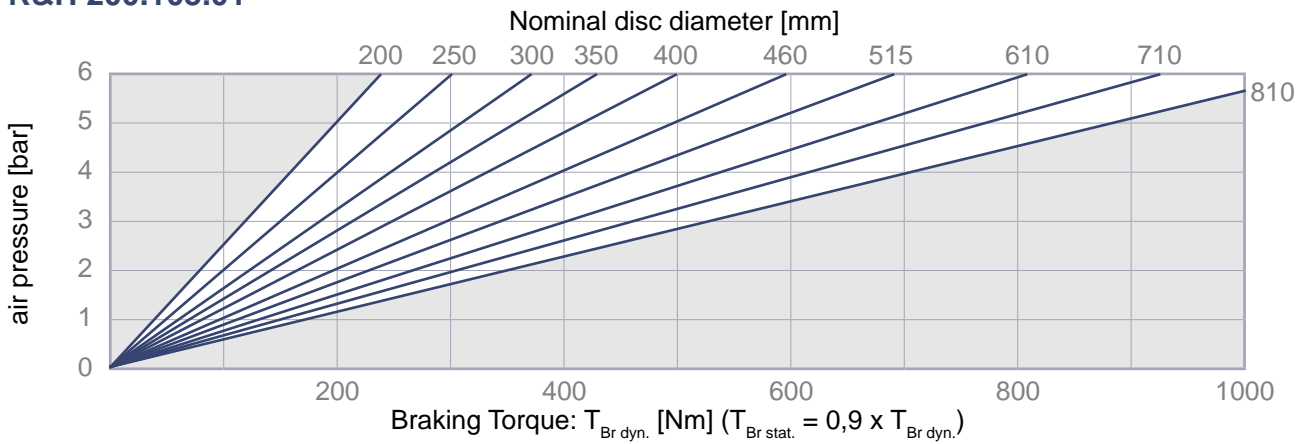
Type	Part-No.	Mass [kg]	A [mm]	B [mm]	C	V / stroke [dm <sup>3</sup> ]	T <sub>T</sub> [Nm]
R&H 125.101.01	<b>10104</b>	1	150	100	41	0,04	15
R&H 125.102.01	<b>10105</b>	1,5	170	120	97	0,07	60
R&H 125.103.01	<b>10103</b>	1,8	183	110	120	0,15	



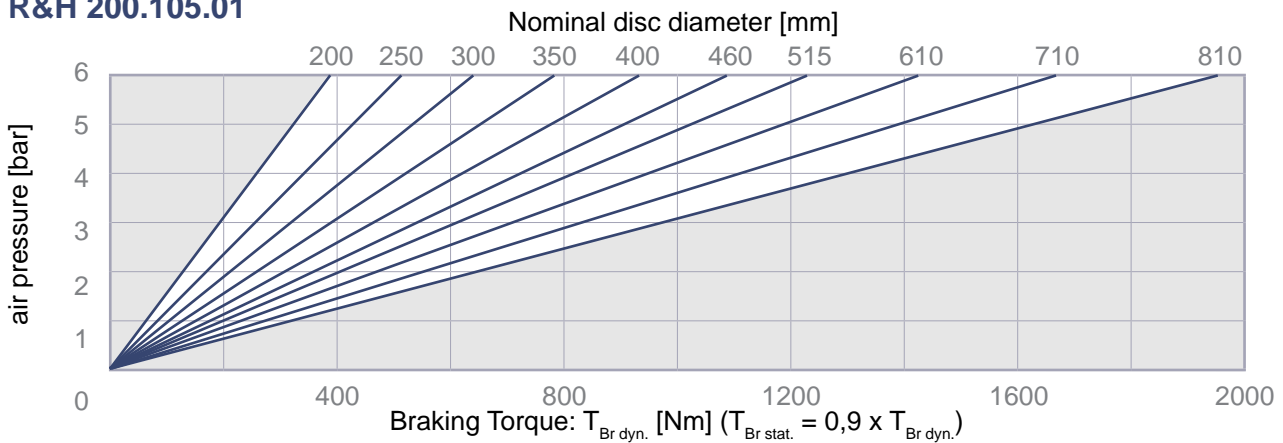
## R&H 200.102.01



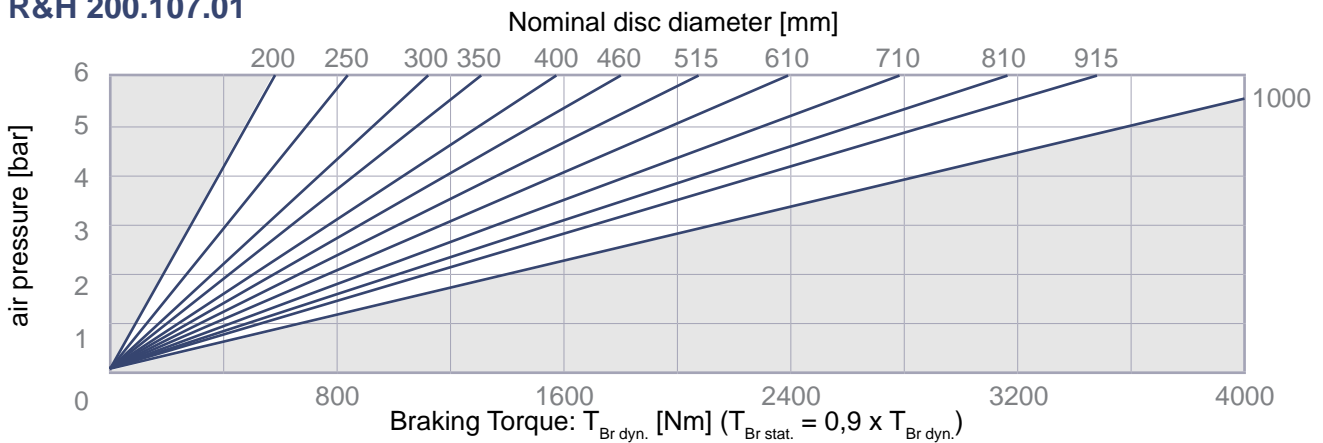
## R&H 200.103.01

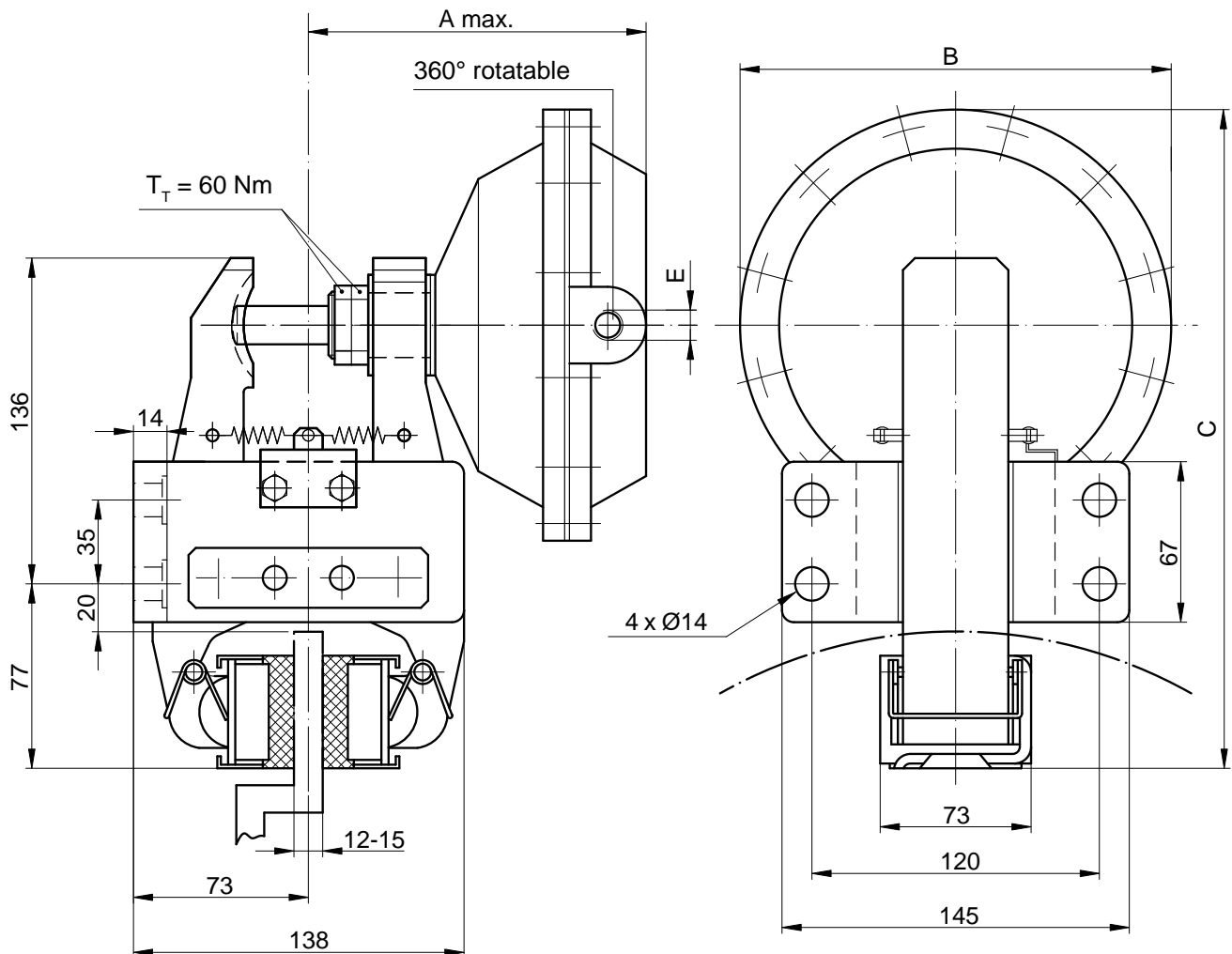


## R&H 200.105.01



## R&H 200.107.01





Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

Type	Part-No.	A [mm]	$\varnothing B$ [mm]	C [mm]	E	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 200.102.01	<b>11145</b>	155	97	236	G 1/4"	0,07	8,2
R&H 200.103.01	<b>11148</b>	151	120	248		0,15	8,6
R&H 200.105.01	<b>11151</b>		144	260	G 3/8"	0,30	8,8
R&H 200.107.01	<b>11154</b>	165	180	278		0,43	9,6

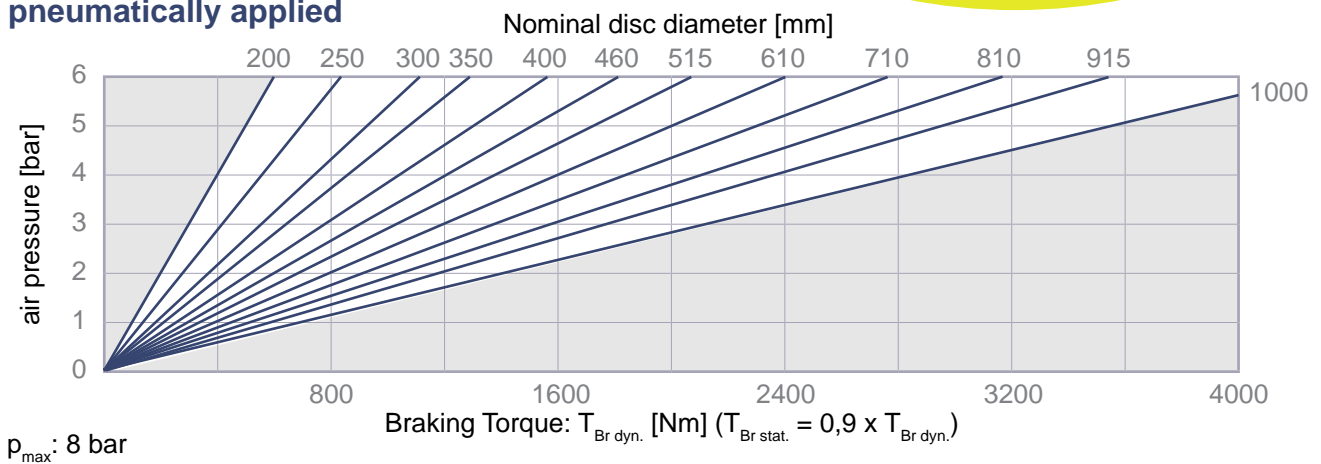


**NOTE:**

Also spring-applied,  
pneumatically released  
usable



**pneumatically applied**



**spring-applied, pneumatically released**

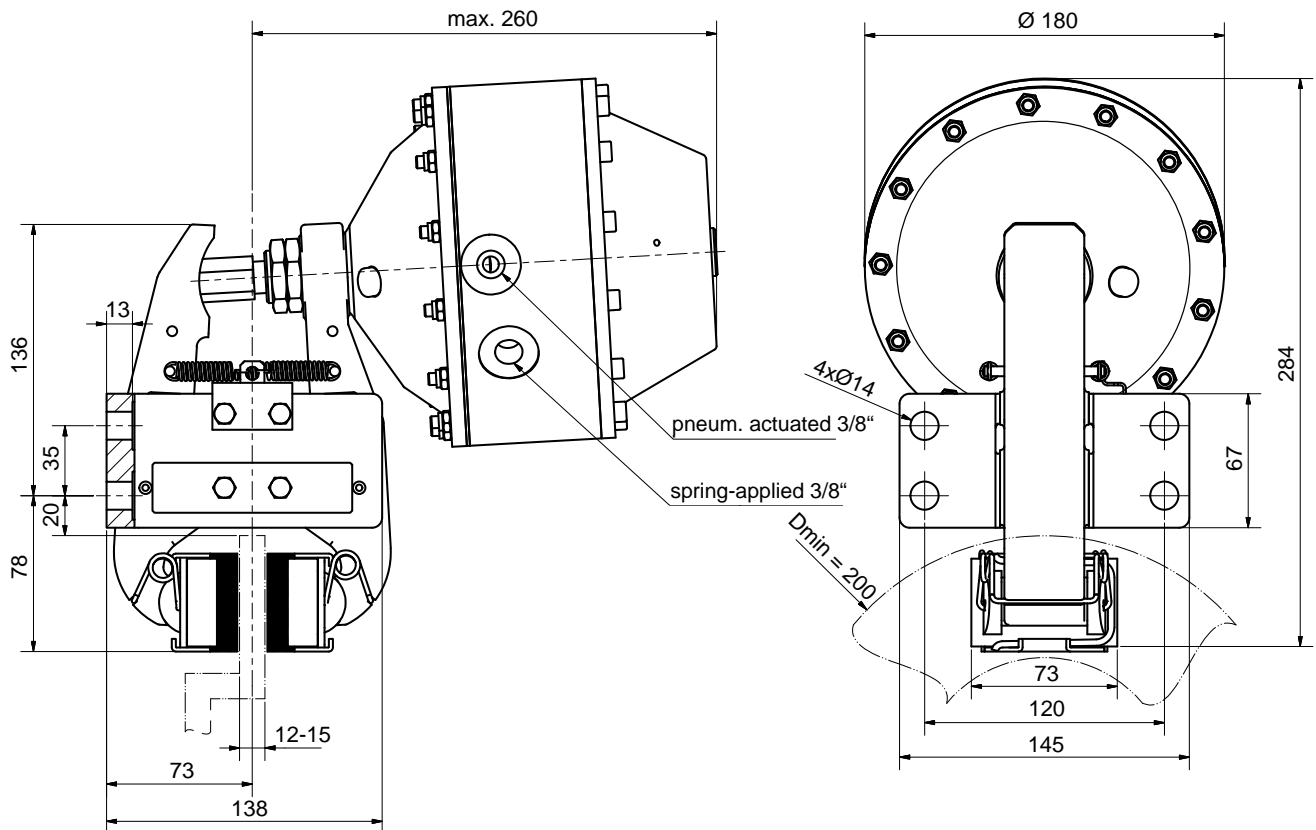
Nominal disc diameter [mm]										
200	250	300	350	400	460	515	610	710	810	915
Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
550	775	925	1050	1250	1400	1650	2000	2300	2600	3000

$p_{min}$ : 5 bar

$p_{max}$ : 10 bar

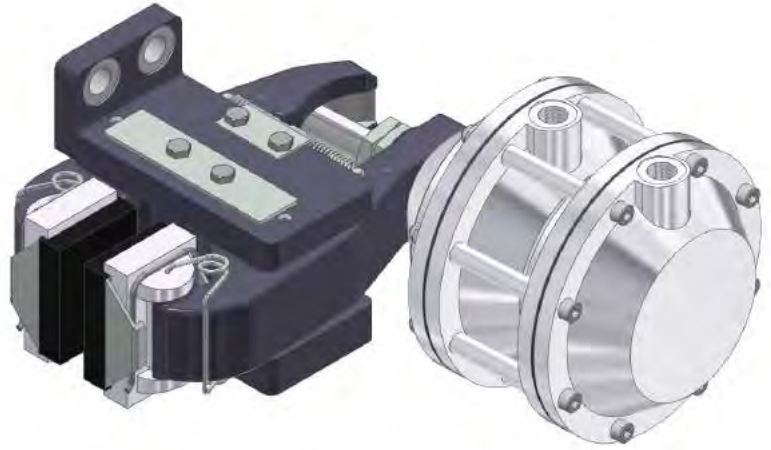
V / stroke: 0,22 dm<sup>3</sup>

Mass: 16,5 kg

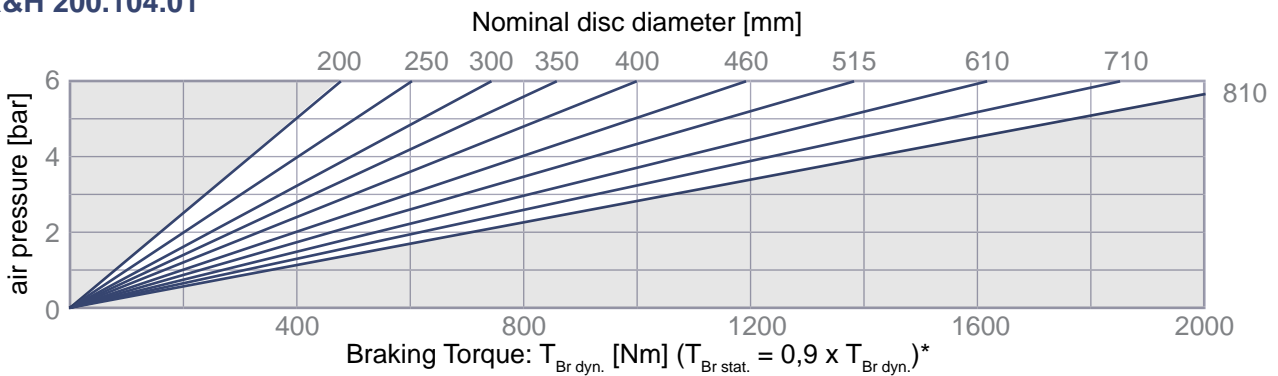


Mounting position is horizontal. Please get in touch if different.

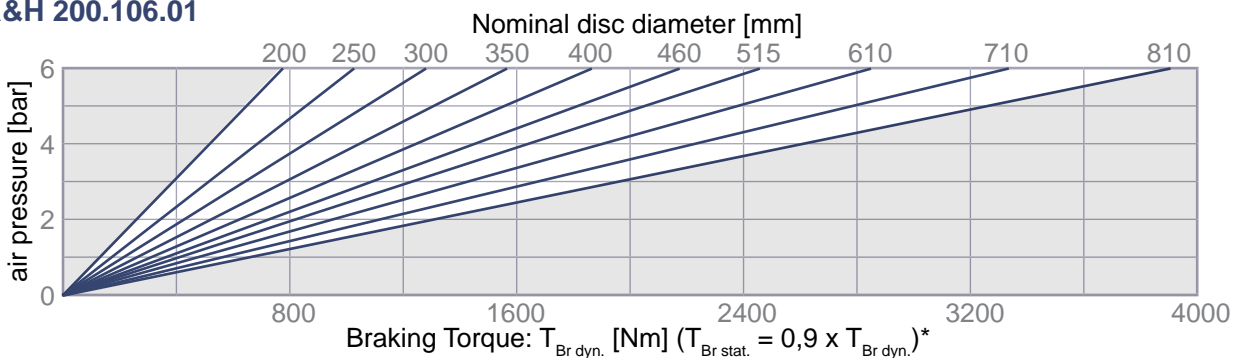
A right hand mounted actuator is standard – „flange side“ mounted please state with order.



## R&H 200.104.01



## R&H 200.106.01

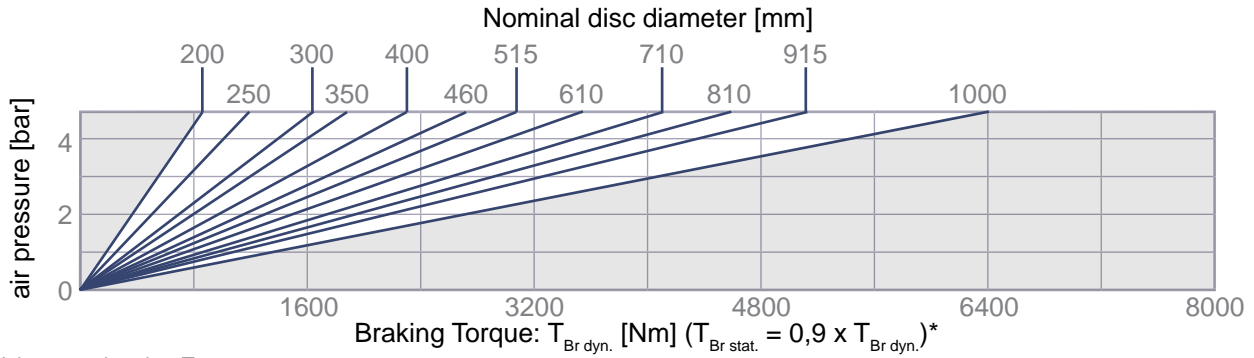


\* Using one chamber  $T_{Br\ dyn.} \times 0,5$

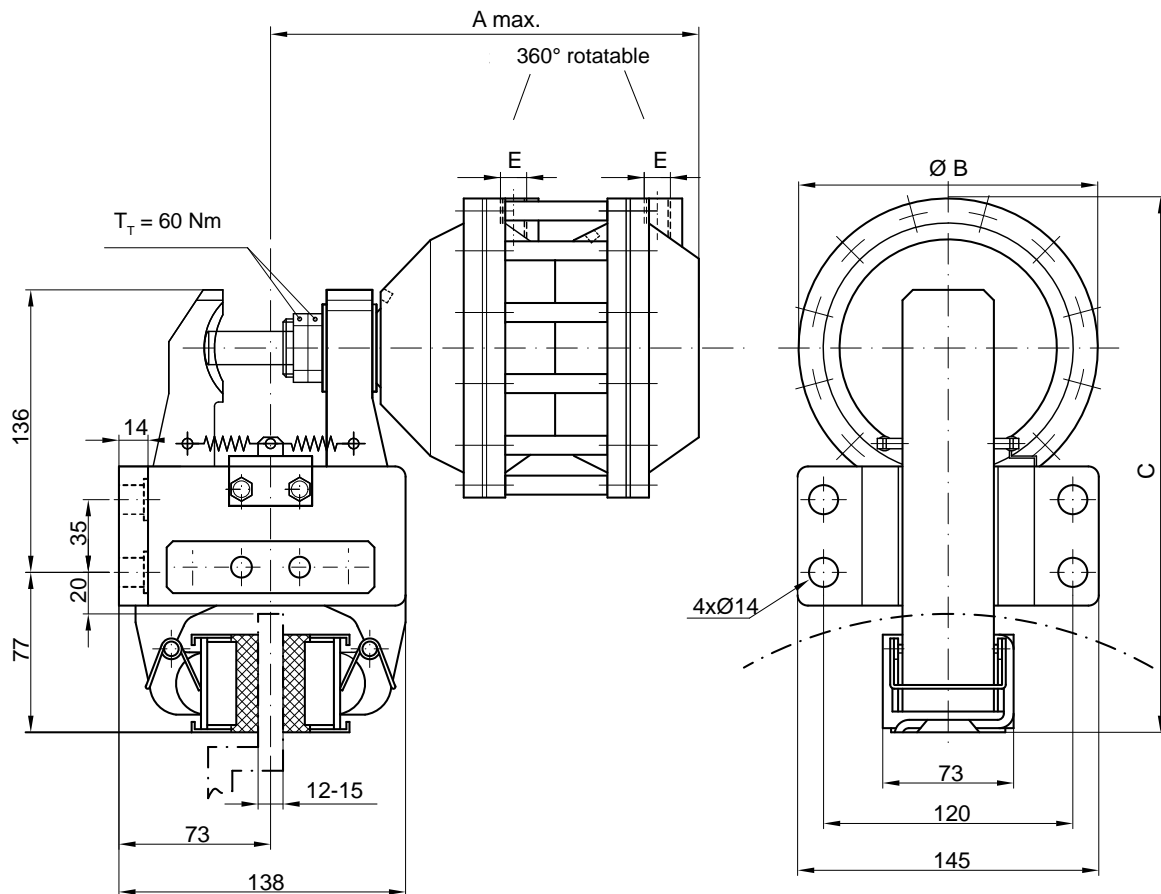
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## R&H 200.108.01



\* Using one chamber  $T_{Br\ dyn.} \times 0,5$



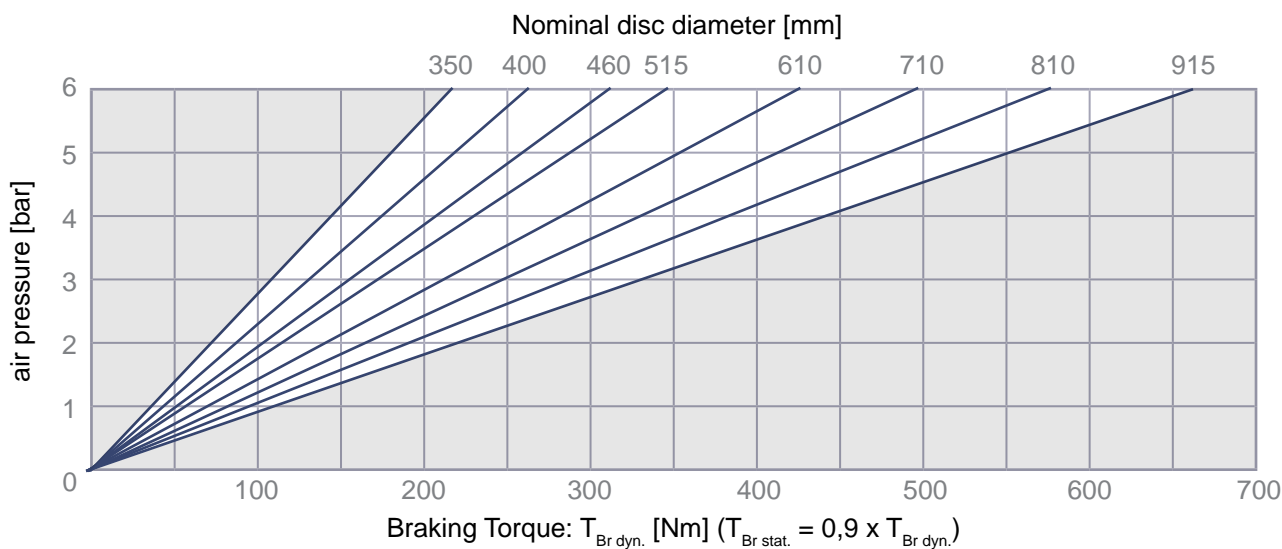
Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

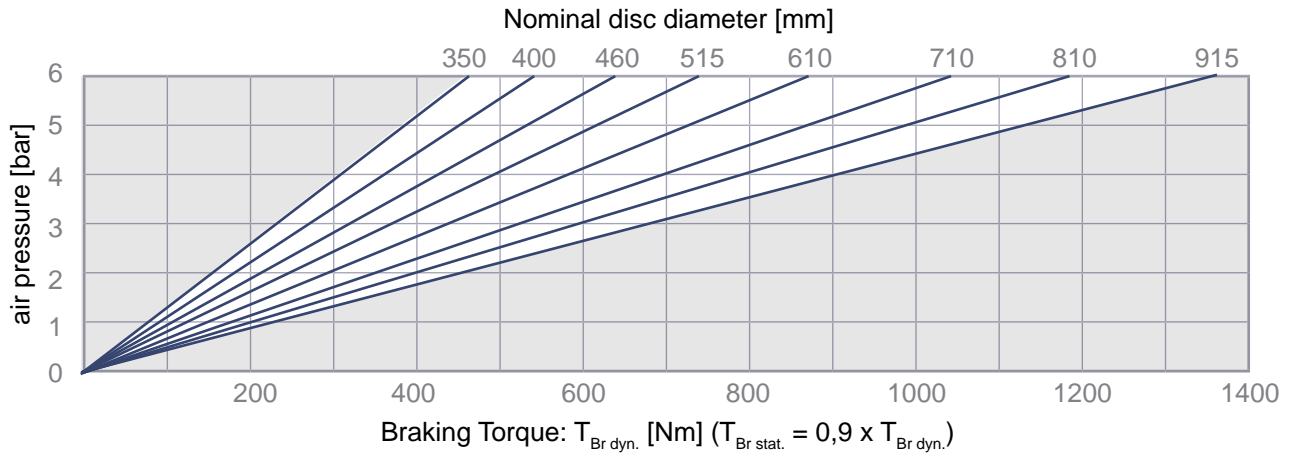
Type	Part-No.	A [mm]	ØB [mm]	C [mm]	E	V / stroke [dm³]	Mass [kg]
R&H 200.104.01	<b>11155</b>	212	120	248	G 1/4"	2 x 0,15	9,2
R&H 200.106.01	<b>11156</b>	214	144	260	G 3/8"	2 x 0,30	9,9
R&H 200.108.01	<b>12586</b>	218	180	278		2 x 0,43	10,7



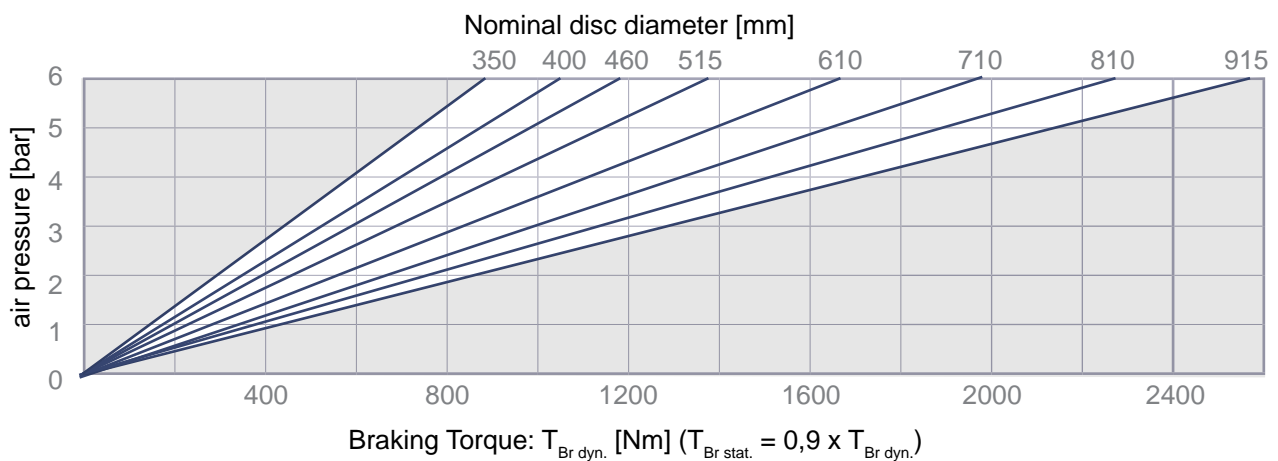
## R&H 215.102.01 / R&H 225.102.01 / R&H 230.102.01



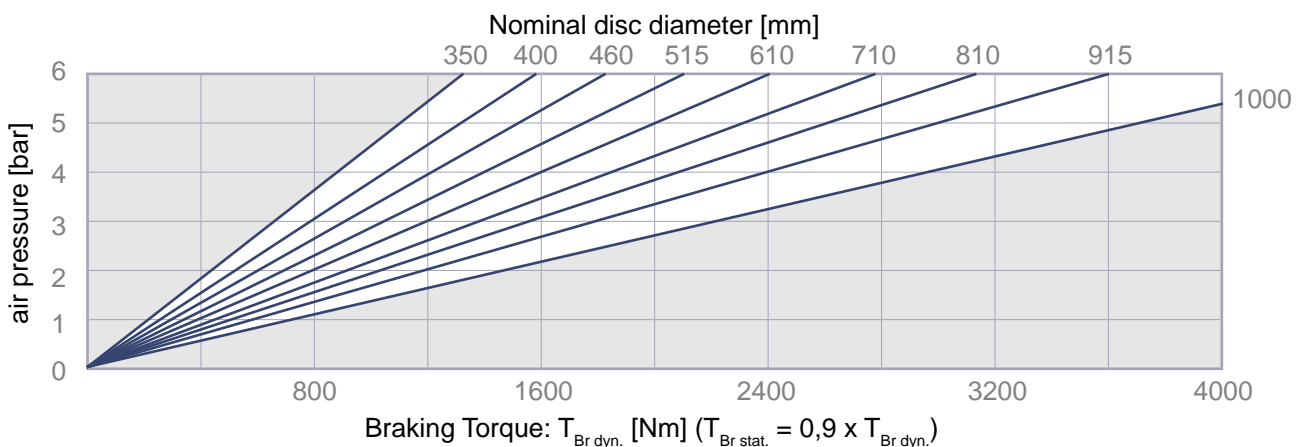
## R&H 215.103.01 / R&H 225.103.01 / R&H 230.103.01

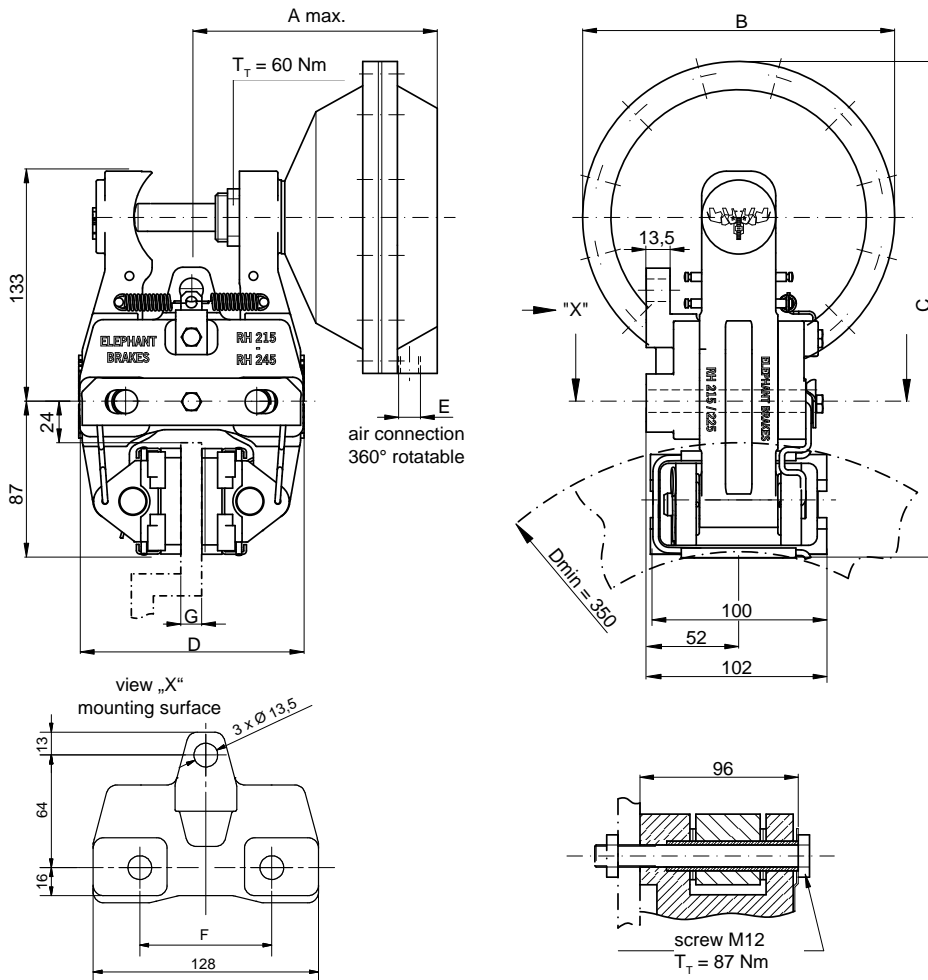


## R&H 215.105.01 / R&H 225.105.01 / R&H 230.105.01 / R&H 245.105.01



## R&H 215.107.01 / R&H 225.107.01 / R&H 230.107.01 / R&H 245.107.01

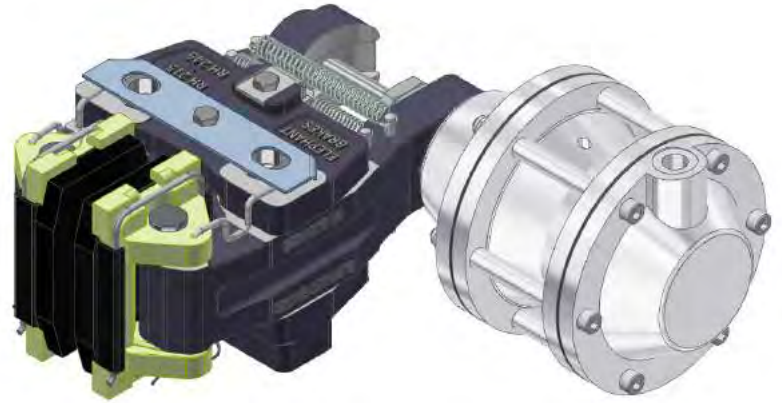




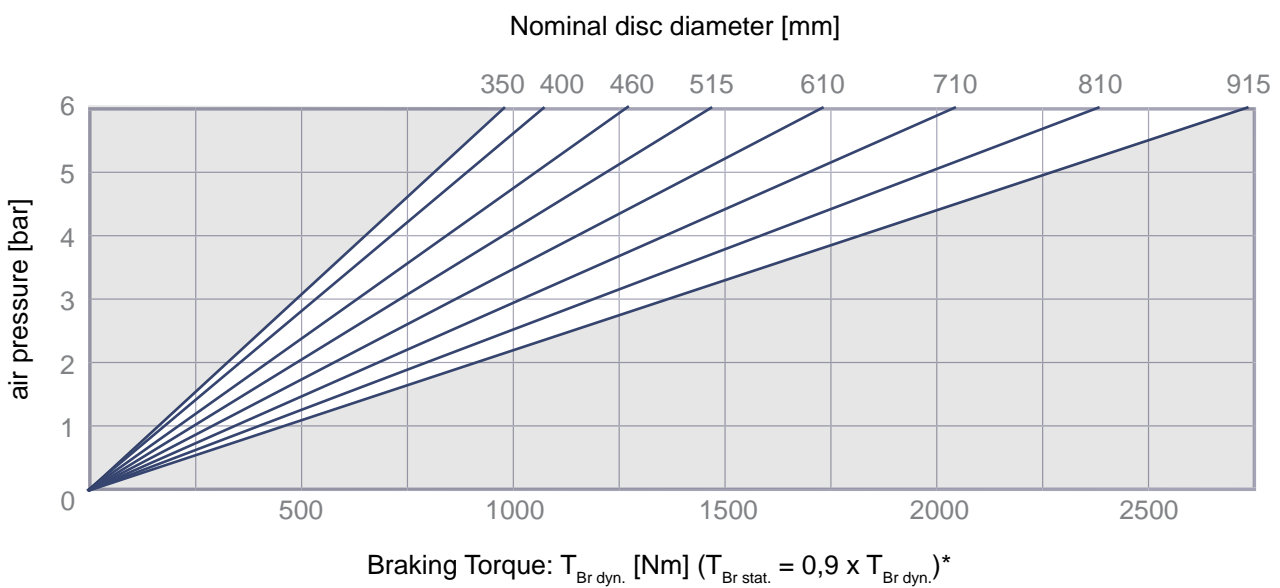
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	Ø B [mm]	C [mm]	D [mm]	E	F [mm]	G [mm]	V/stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 215.102.01	<b>10684</b>	154	97	241	130	G 1/4"	75	12-15	0,07	8,6
R&H 225.102.01	<b>11086</b>	156			140		84	25,4		
R&H 230.102.01	<b>10704</b>	157			144		75	30		
R&H 215.103.01	<b>10685</b>	156	120	252	130	G 1/4"	75	12-15	0,15	8,7
R&H 225.103.01	<b>11087</b>	157			140		84	25,4		
R&H 230.103.01	<b>10705</b>	157			144		75	30		
R&H 215.105.01	<b>10687</b>	159	144	264	130	G 3/8"	75	12-15	0,30	9,1
R&H 225.105.01	<b>11088</b>				140		84	25,4		
R&H 230.105.01	<b>10707</b>				144		75	30		
R&H 245.105.01	<b>14349</b>	156	180	282	154	G 3/8"	84	45	0,43	9,3
R&H 215.107.01	<b>10689</b>	164			130		75	12-15		
R&H 225.107.01	<b>11089</b>				140		84	25,4		
R&H 230.107.01	<b>10709</b>		144	75	30					
R&H 245.107.01	<b>13428</b>	161			154		84	45		10,1

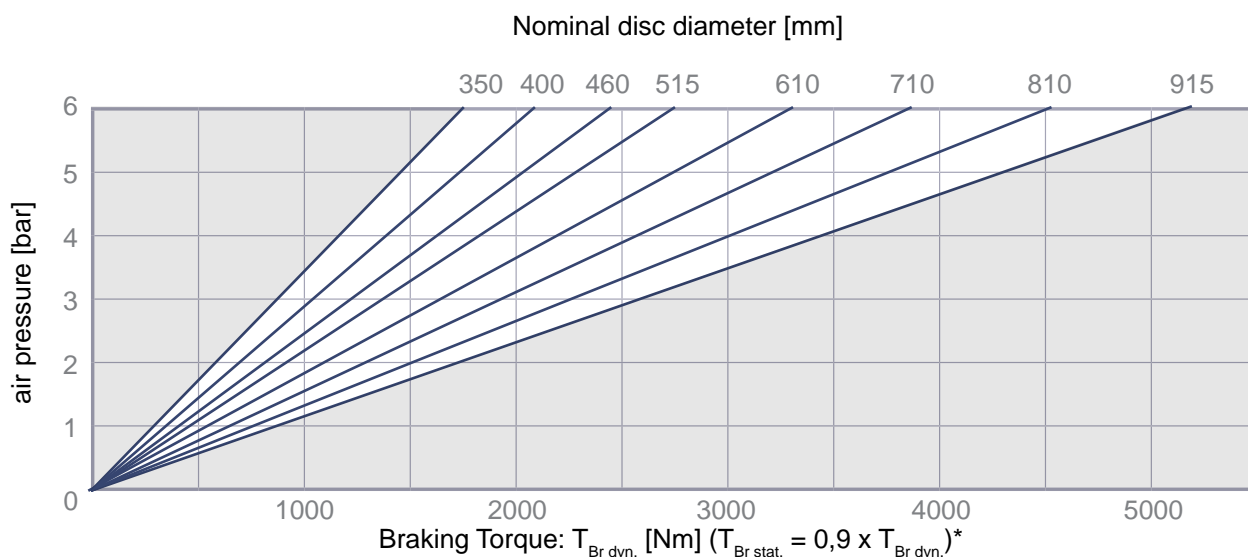


## R&H 215.104.01 / R&H 230.104.01

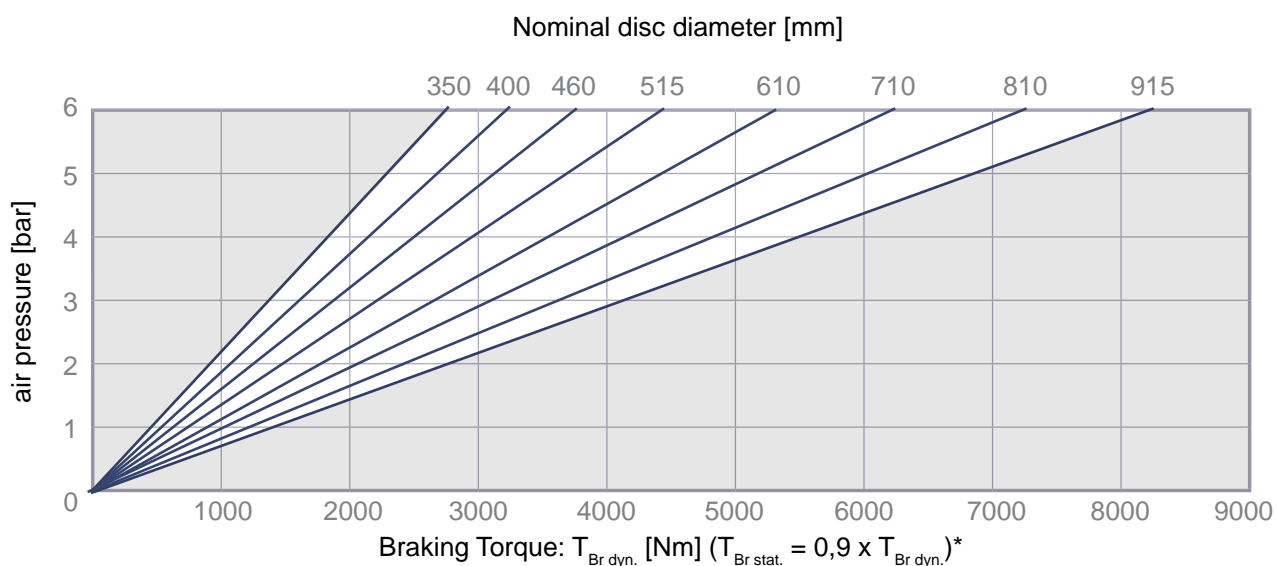




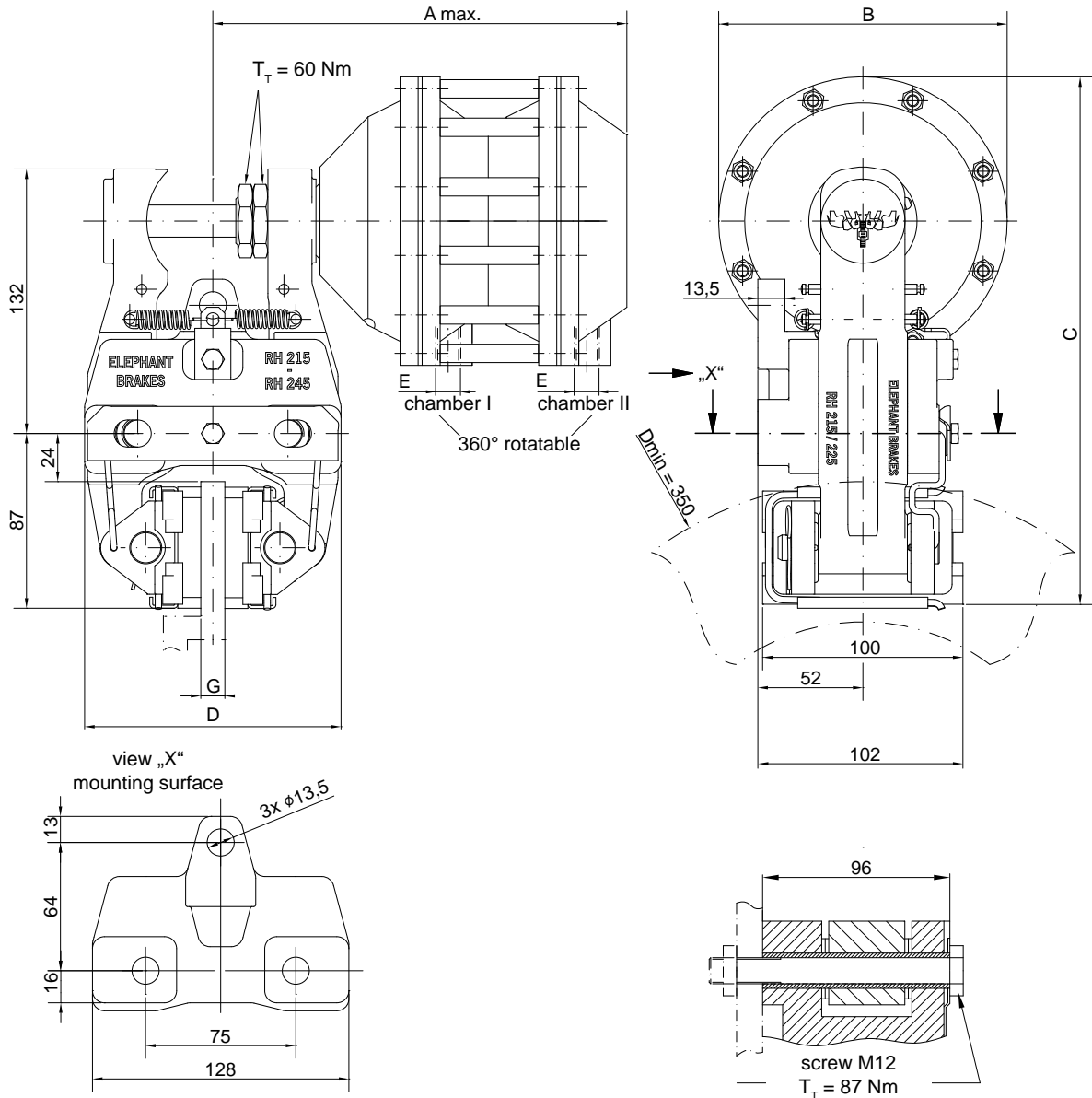
## R&H 215.106.01 / R&H 230.106.01



## R&H 215.108.01 / R&H 230.108.01



\* using one chamber  $T_{Br\ dyn.} \times 0,5$



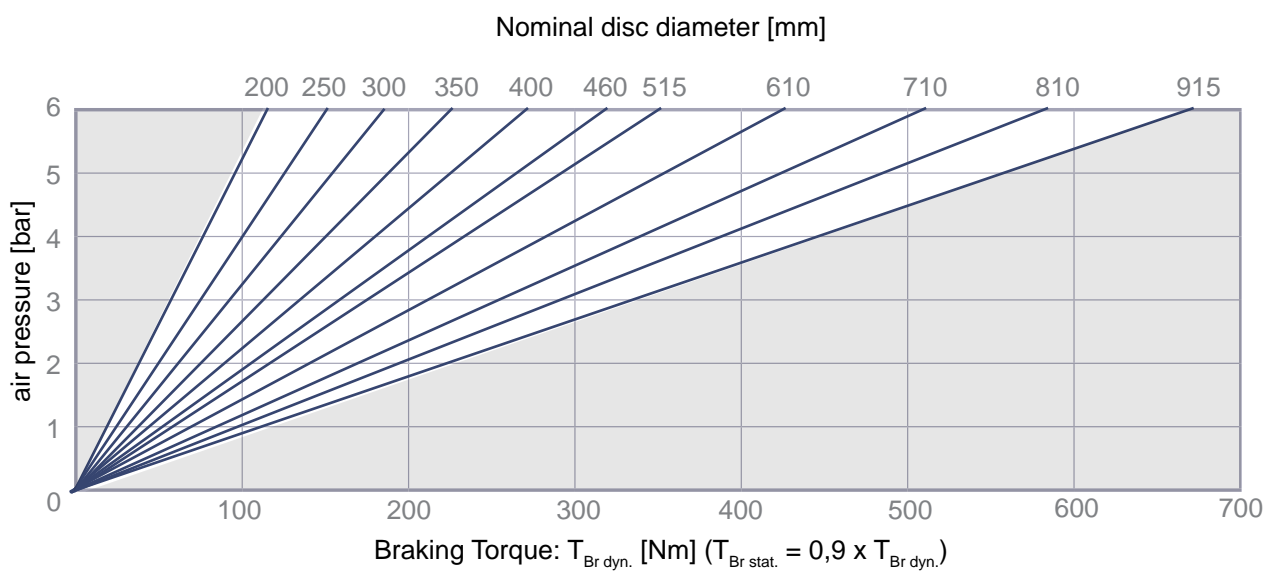
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

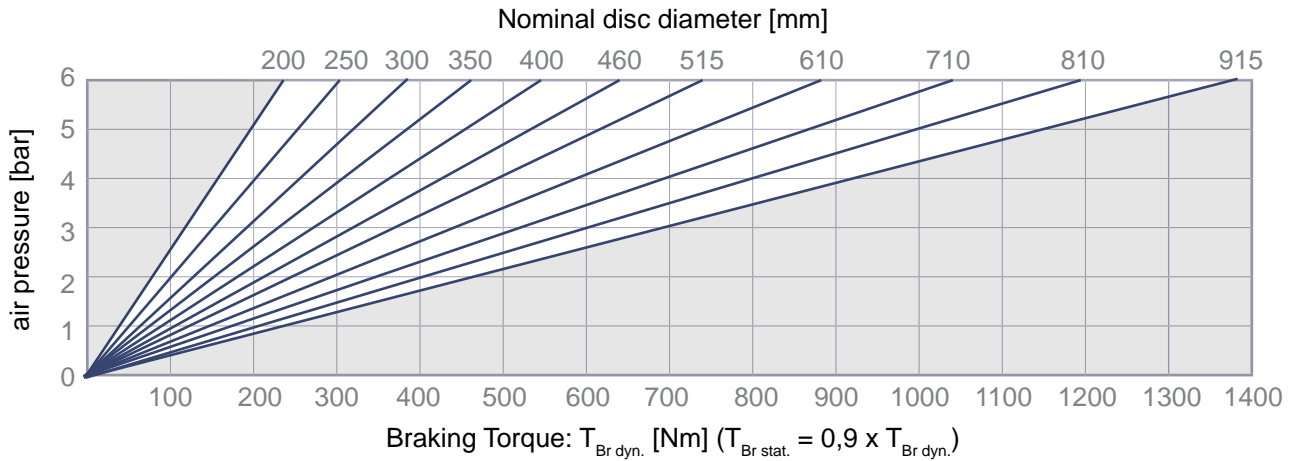
Type	Part-No.	A	Ø B [mm]	C [mm]	D [mm]	E	G [mm]	max. V/stroke [dm³]	Mass [kg]
R&H 215.104.01	<b>10686</b>	215	120	253	130	2 x G 1/4"	12-15	2 x 0,15	9,7
R&H 230.104.01	<b>10706</b>	217					30		9,9
R&H 215.106.01	<b>10688</b>	217	144	265	130	2 x G 3/8"	12-15	2 x 0,30	10,4
R&H 230.106.01	<b>10708</b>	218					30		10,6
R&H 215.108.01	<b>10690</b>	221	180	283	130	2 x G 3/8"	12-15	2 x 0,43	11,9
R&H 230.108.01	<b>10710</b>	222					30		12,1



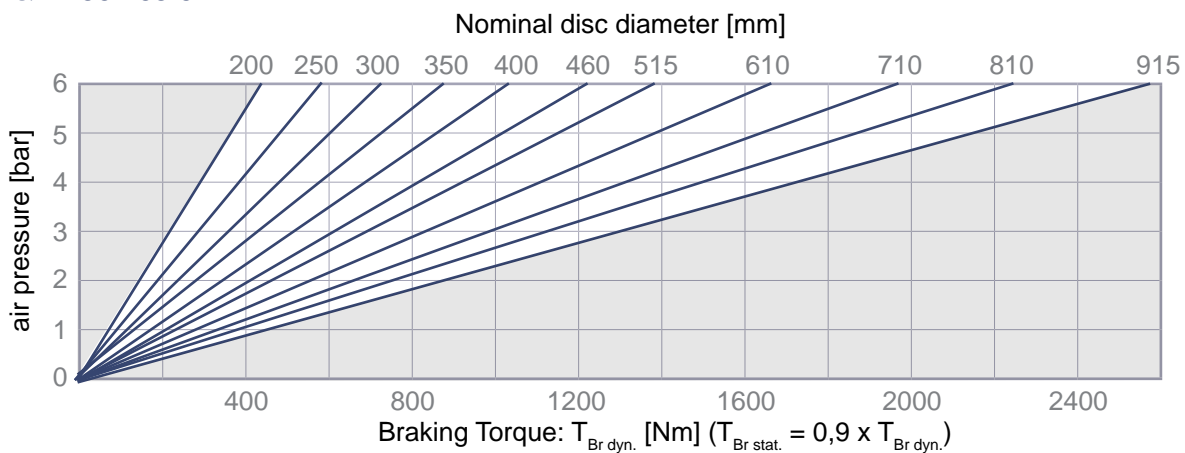
## R&H 250.102.01



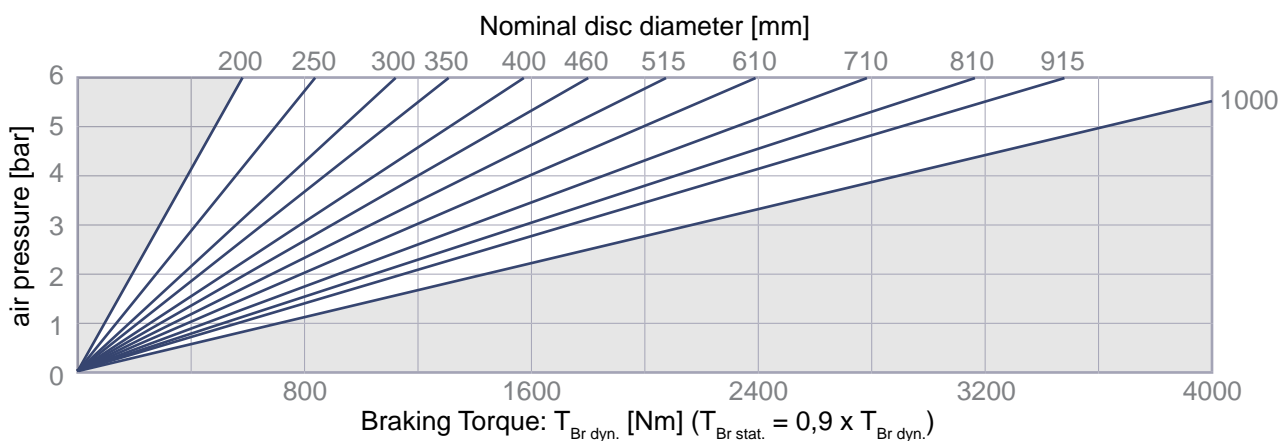
## R&H 250.103.01

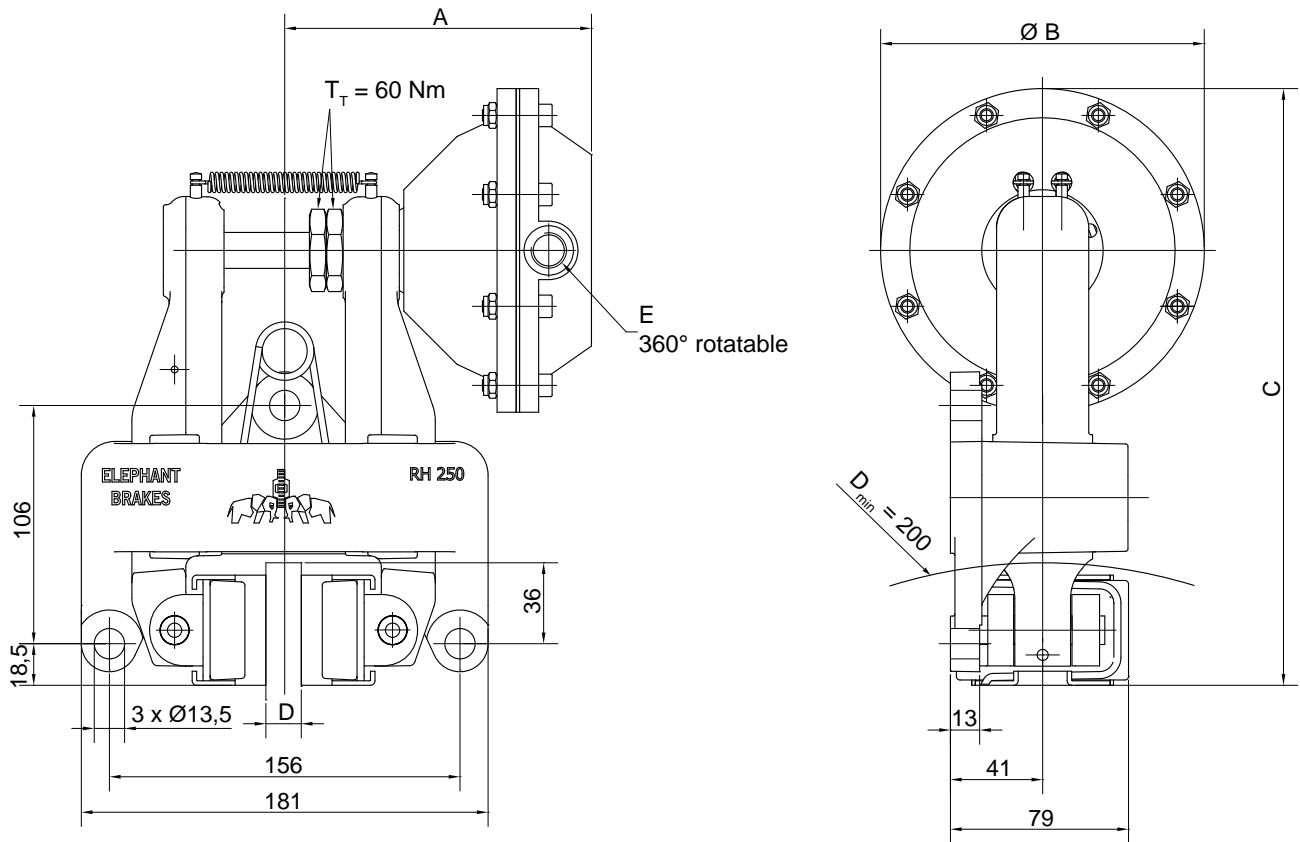


## R&H 250.105.01



## R&H 250.107.01





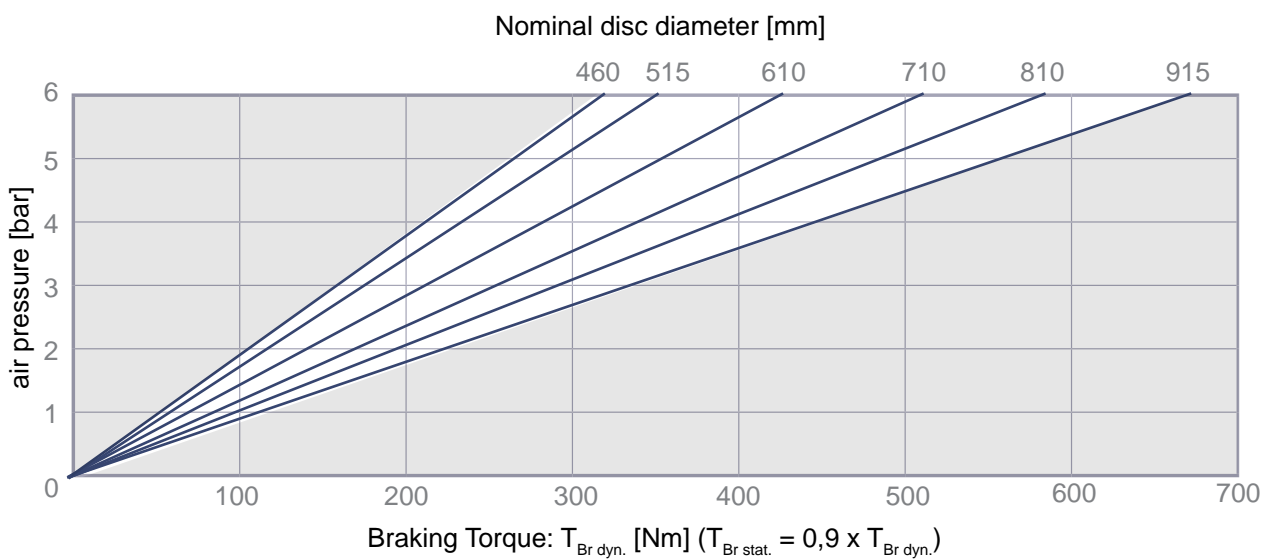
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

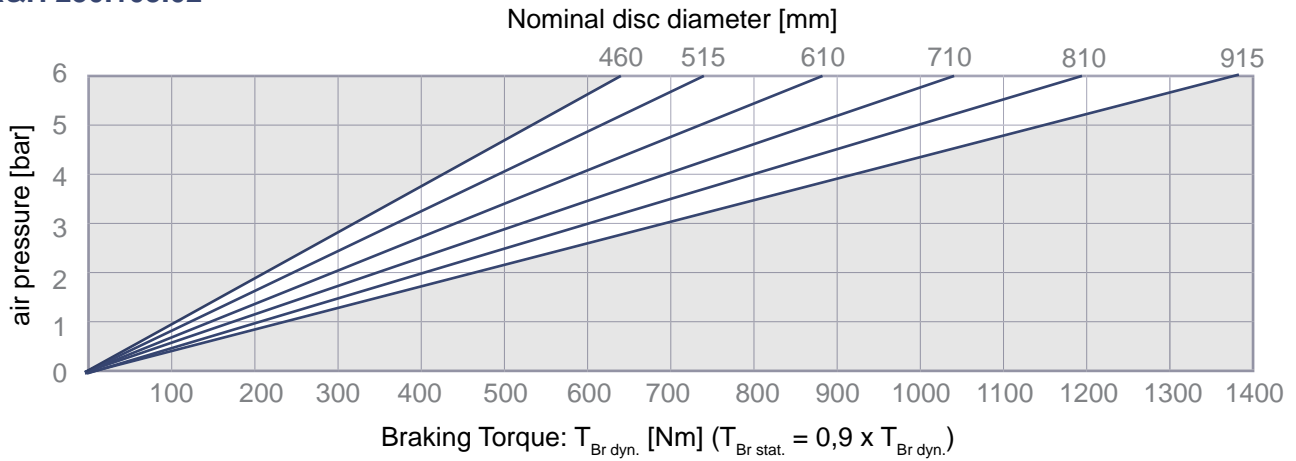
Type	Part-No.	A [mm]	B [mm]	C [mm]	D [mm]	E	V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 250.102.01	<b>10059</b>	160	97	242	12,7	G 1/4"	0,07	7,4
R&H 250.102.01 short.	<b>10060</b>	157			25,4			
R&H 250.103.01	<b>10050</b>	150	120	254	12,7		0,15	7,5
R&H 250.103.01 short.	<b>10051</b>	147			25,4			
R&H 250.105.01	<b>10038</b>	150	144	266	12,7	G 3/8"	0,30	7,9
R&H 250.105.01 short.	<b>10039</b>	147			25,4			
R&H 250.107.01	<b>10046</b>	160	180	284	12,7		0,43	8,7
R&H 250.107.01 short.	<b>10047</b>	157			25,4			



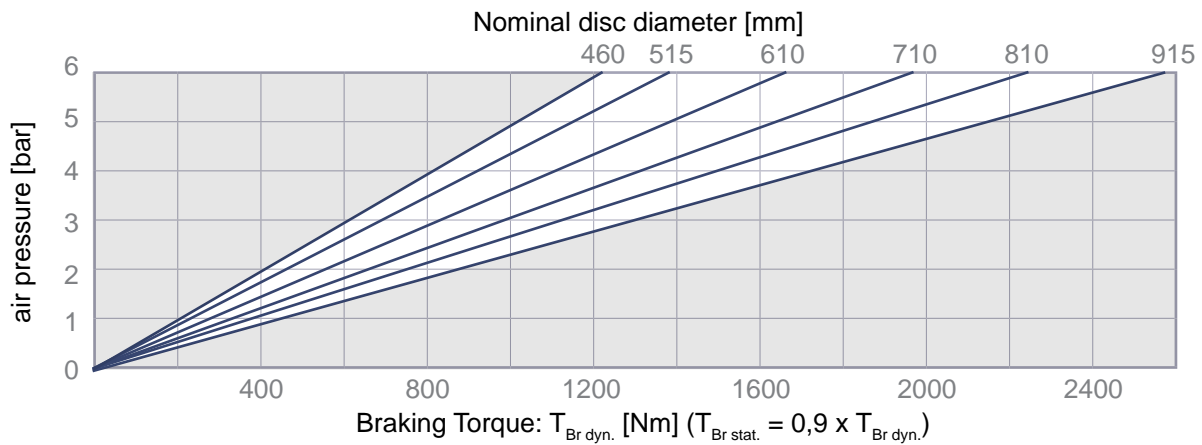
## R&H 250.102.02



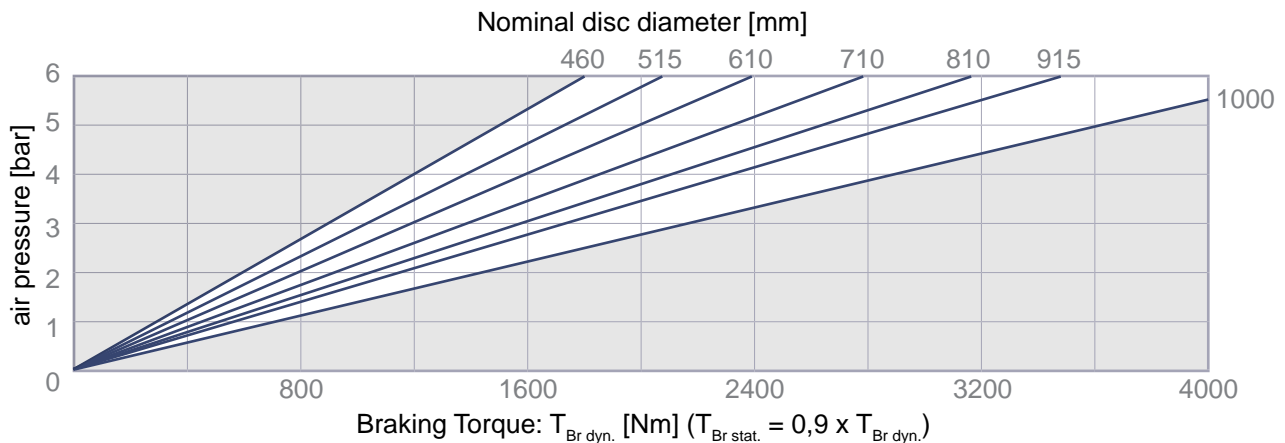
## R&H 250.103.02

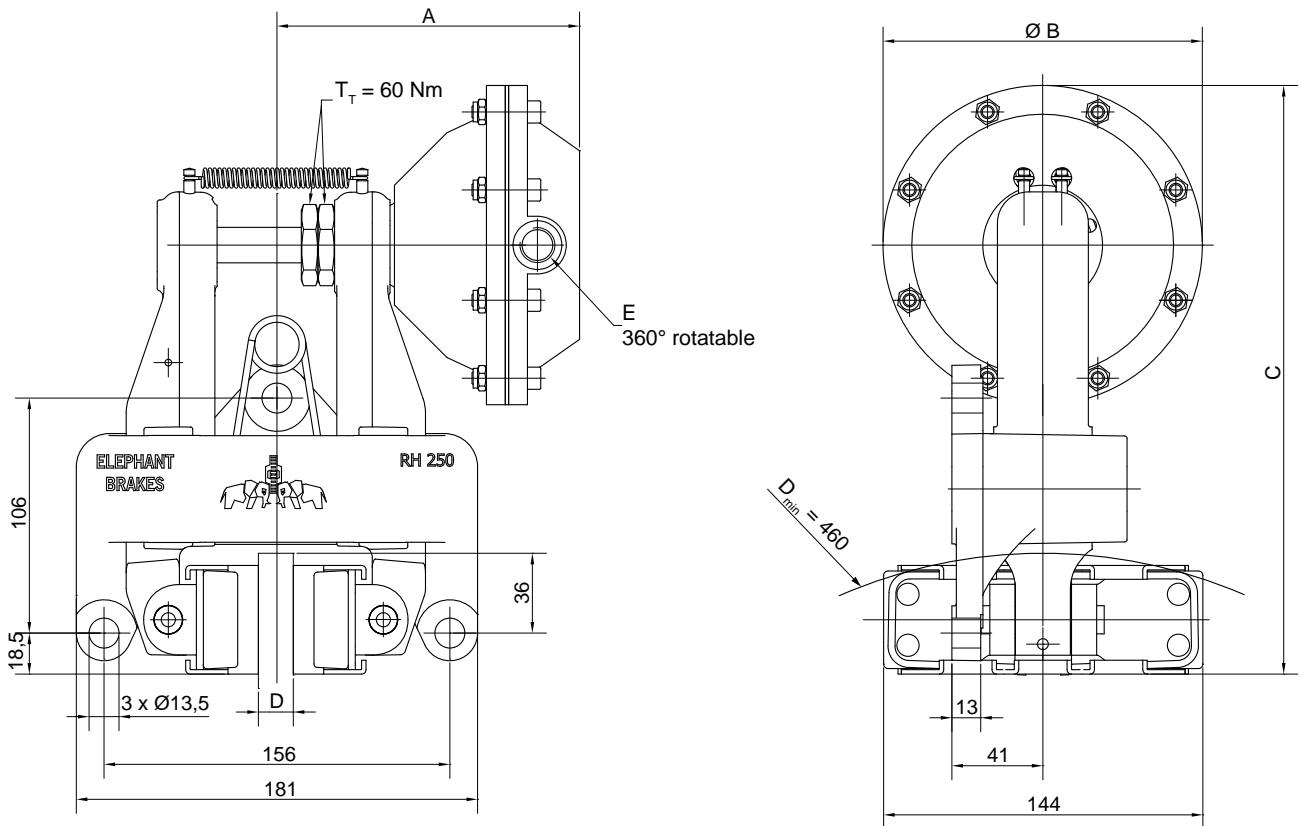


## R&H 250.105.02



## R&H 250.107.02



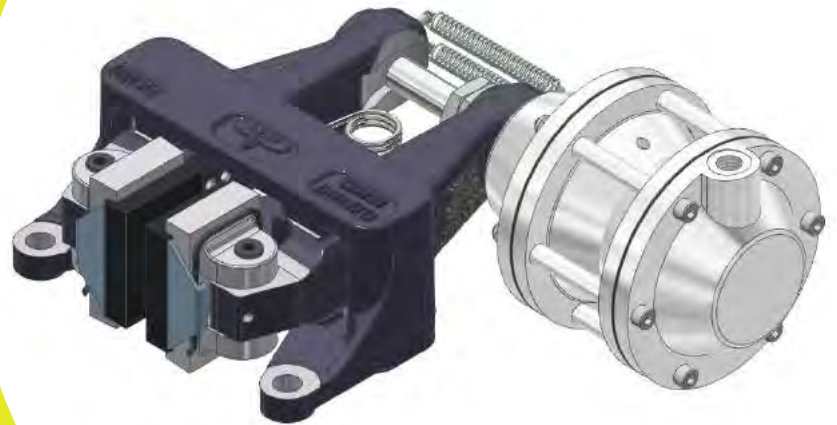


Mounting position is horizontal. Please get in touch if different.

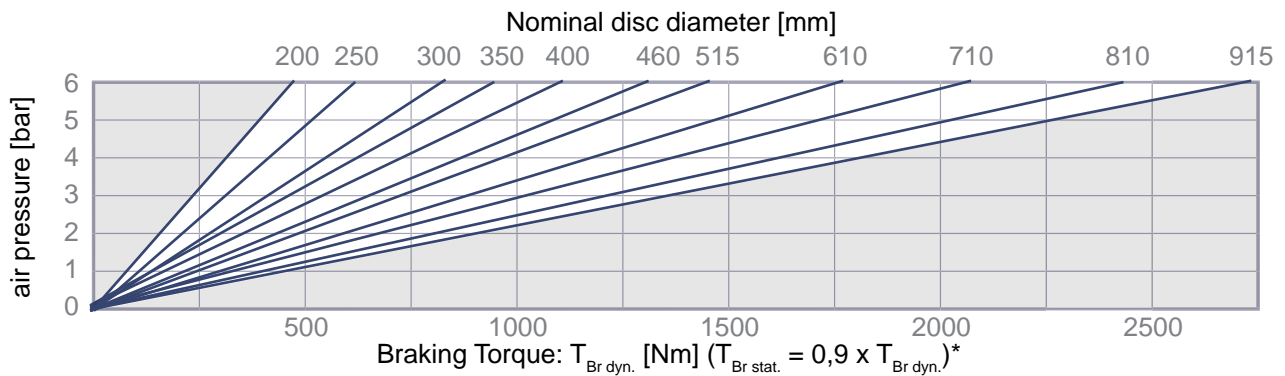
A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	B [mm]	C [mm]	D [mm]	E	V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 250.102.02	<b>10061</b>	160	97	242	12,7	G 1/4"	0,07	7,9
R&H 250.102.02 short.	<b>10062</b>	157			25,4			
R&H 250.103.02	<b>10052</b>	150	120	254	12,7		0,15	8
R&H 250.103.02 short.	<b>10053</b>	147			25,4			
R&H 250.105.02	<b>10040</b>	150	144	266	12,7	G 3/8"	0,30	8,4
R&H 250.105.02 short.	<b>10041</b>	147			25,4			
R&H 250.107.02	<b>10048</b>	160	180	284	12,7		0,43	9,2
R&H 250.107.02 short.	<b>10049</b>	157			25,4			

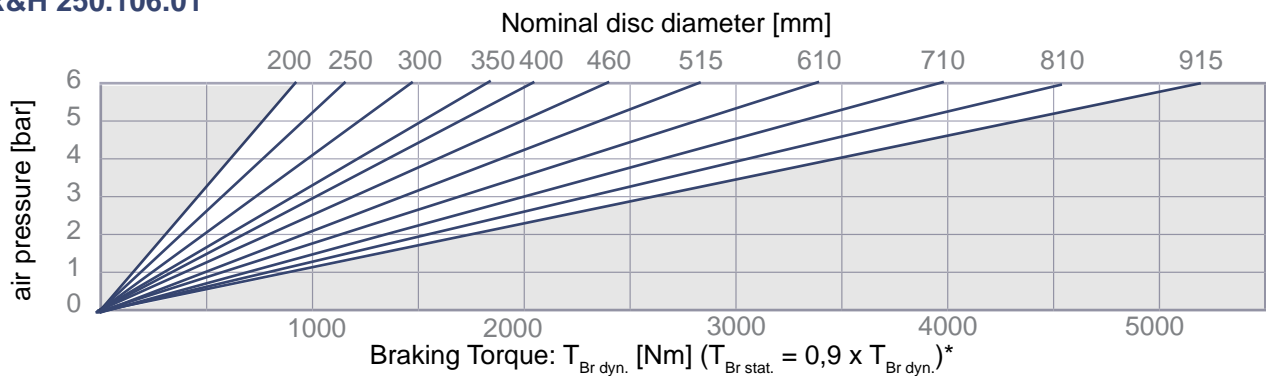




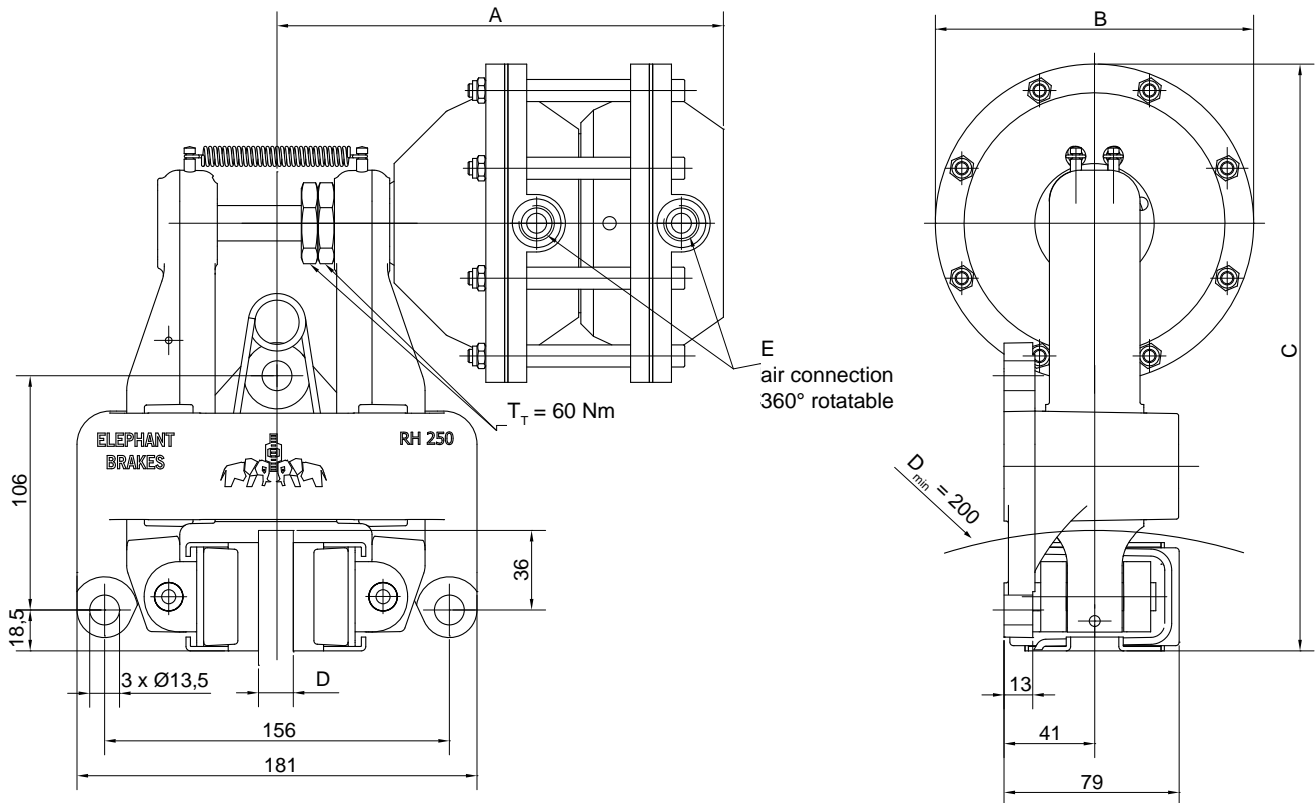
## R&H 250.104.01



## R&H 250.106.01



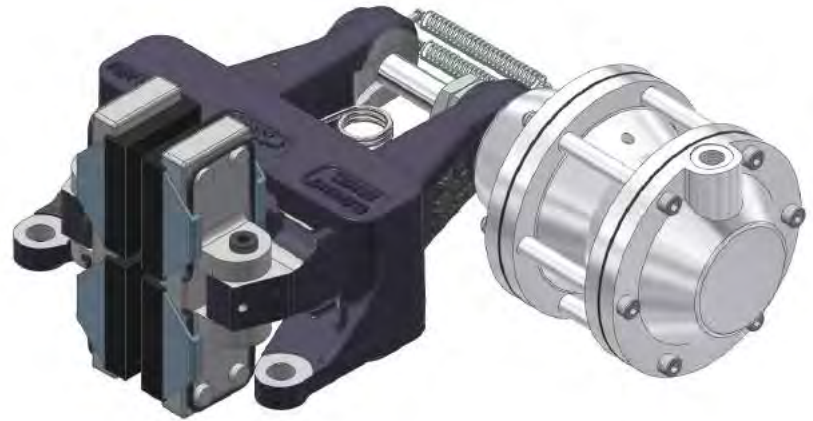
\* using one chamber  $T_{Br\ dyn.} \times 0,5$



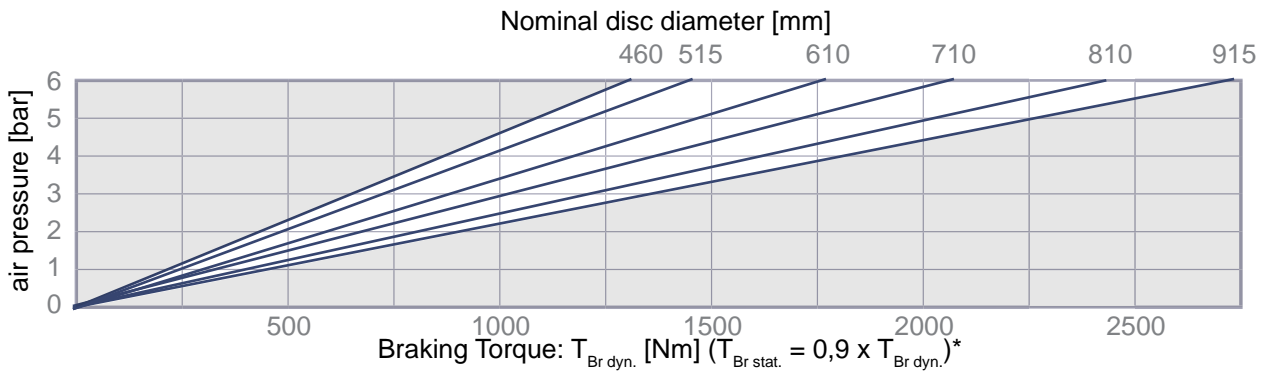
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

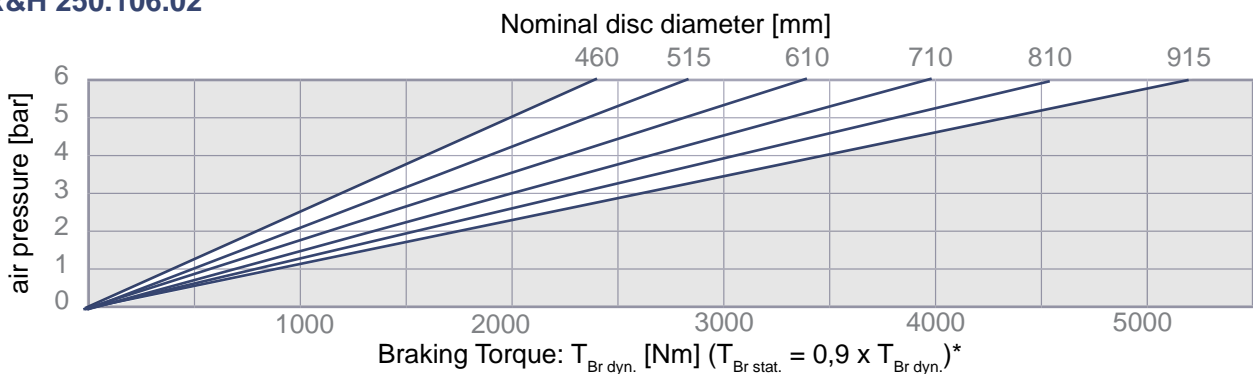
Type	Part-No.	A [mm]	Ø B [mm]	C [mm]	D [mm]	E	V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 250.104.01	<b>10054</b>	228	120	254	12,7	2 x G 1/4"	2 x 0,07	8,5
R&H 250.104.01 short.	<b>10055</b>	225			25,4			
R&H 250.106.01	<b>10042</b>	228	144	266	12,7	2 x G 3/8"	2 x 0,15	9,2
R&H 250.106.01 short.	<b>10043</b>	225			25,4			



## R&H 250.104.02



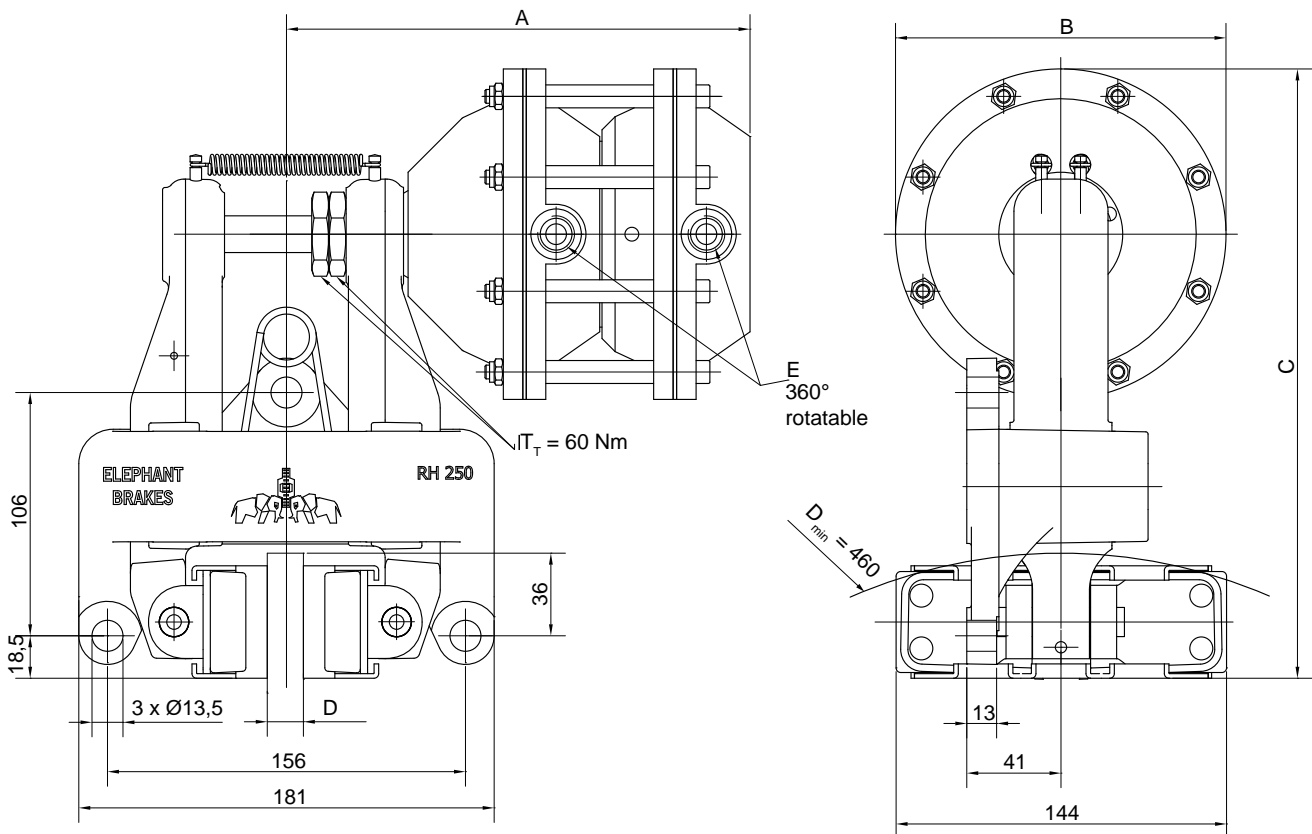
## R&H 250.106.02



\* using one chamber  $T_{Br\ dyn.} \times 0,5$

**Elephant Brakes by Rietschoten Germany. Strong like an elephant. Smart like an elephant.**

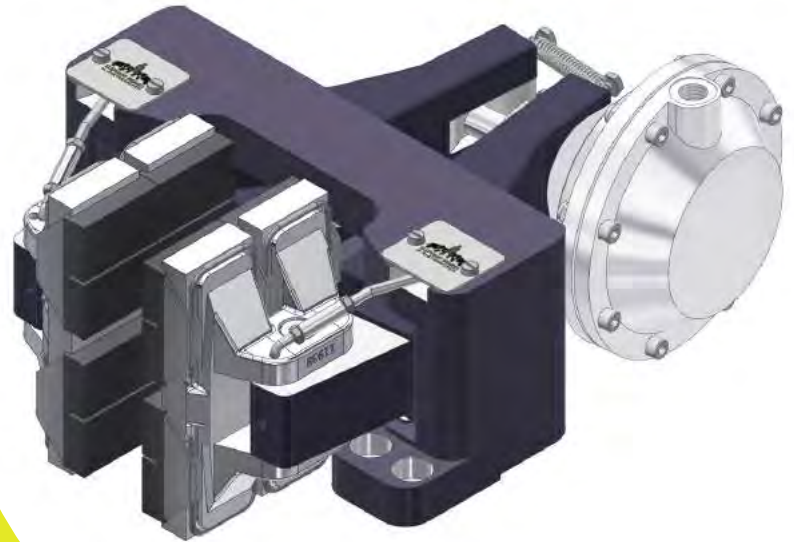
Deutsche van Rietschoten & Houwens GmbH · Junkersstraße 12 · 30179 Hannover · [www.elephantbrakes.com](http://www.elephantbrakes.com)



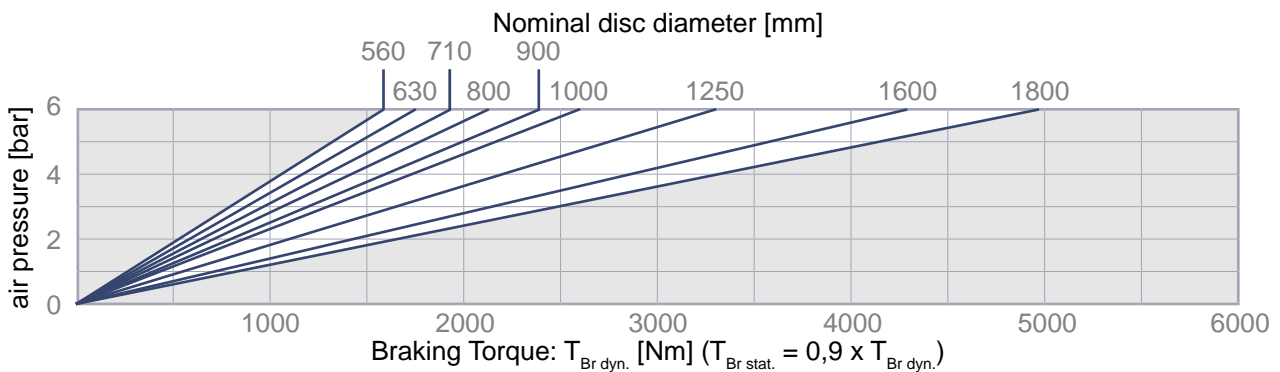
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

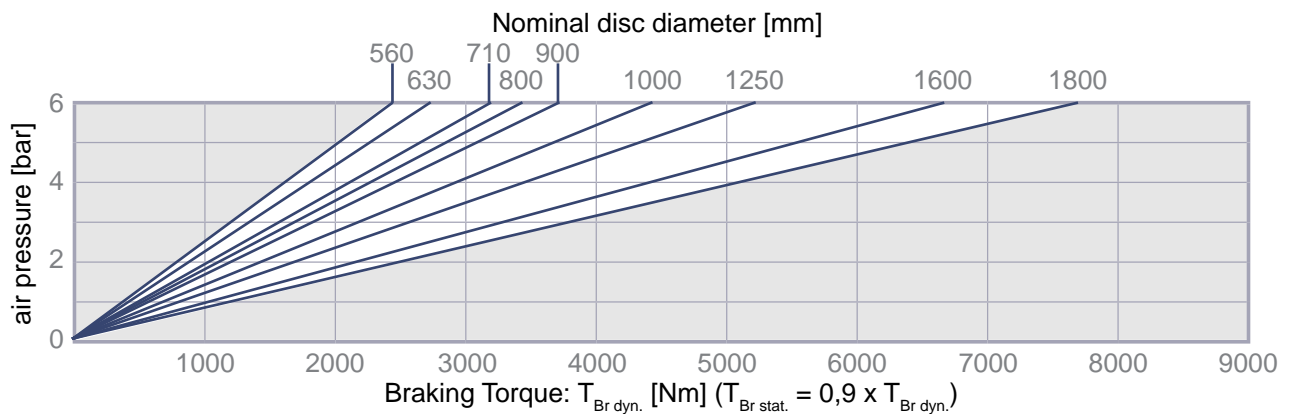
Type	Part-No.	A [mm]	B [mm]	C [mm]	D [mm]	E	V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 250.104.02	<b>10056</b>	228	120	254	12,7	2 x G 1/4"	2 x 0,07	9,1
R&H 250.104.02 short.	<b>10057</b>	225			25,4			
R&H 250.106.02	<b>10044</b>	228	144	266	12,7	2 x G 3/8"	2 x 0,15	9,8
R&H 250.106.02 short.	<b>10045</b>	225			25,4			

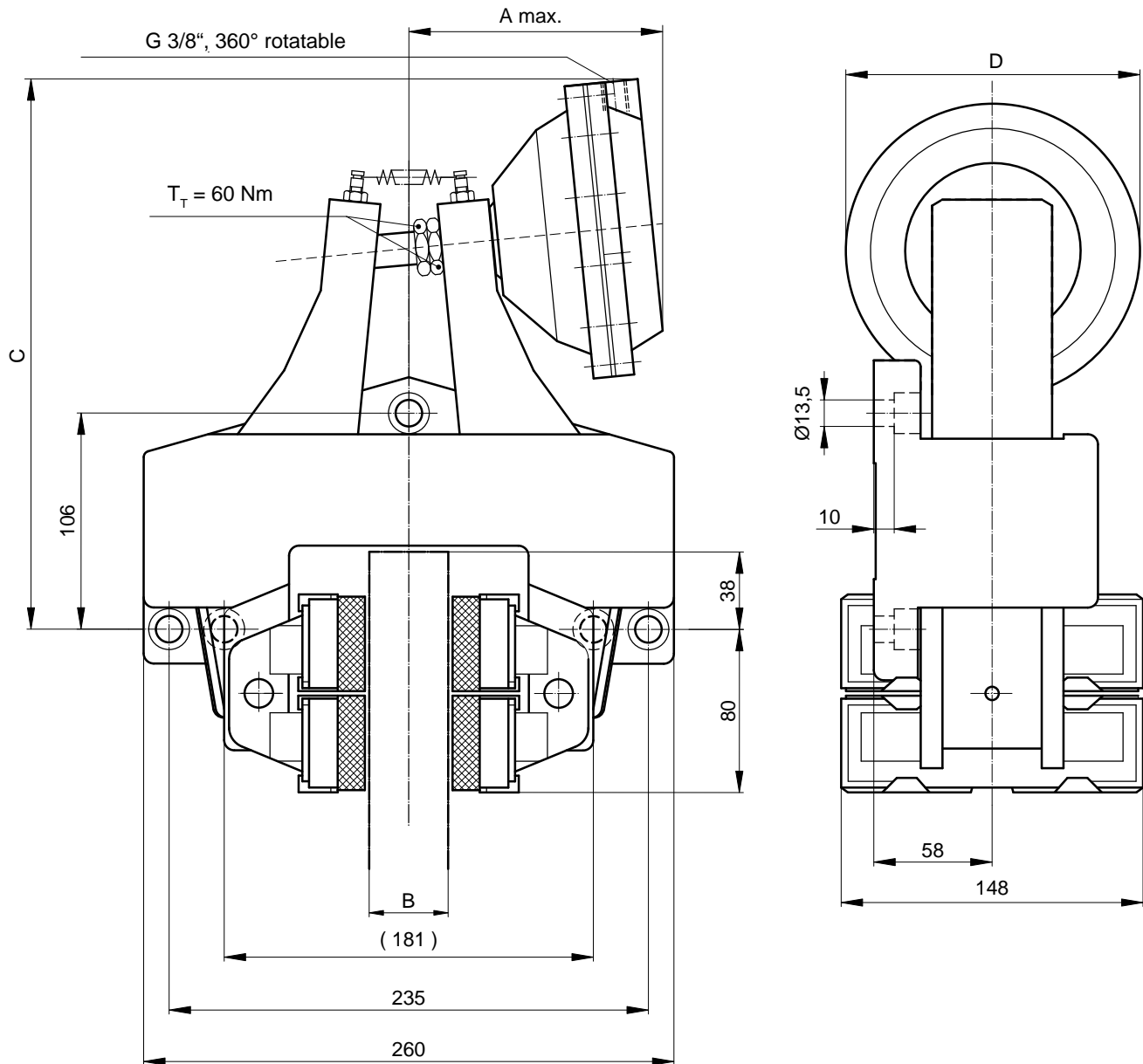


### R&H 300.105.04 / R&H 300.105.04 short.



### R&H 300.107.04 / R&H 300.107.04 short.

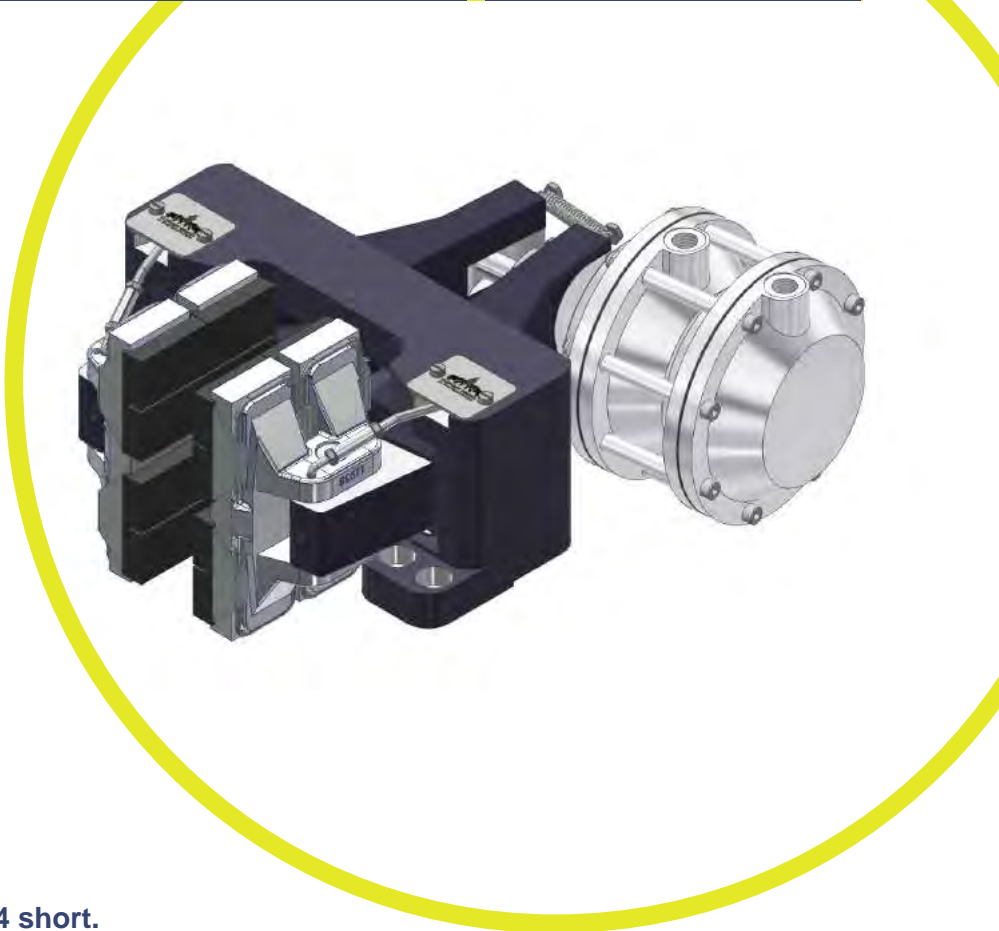




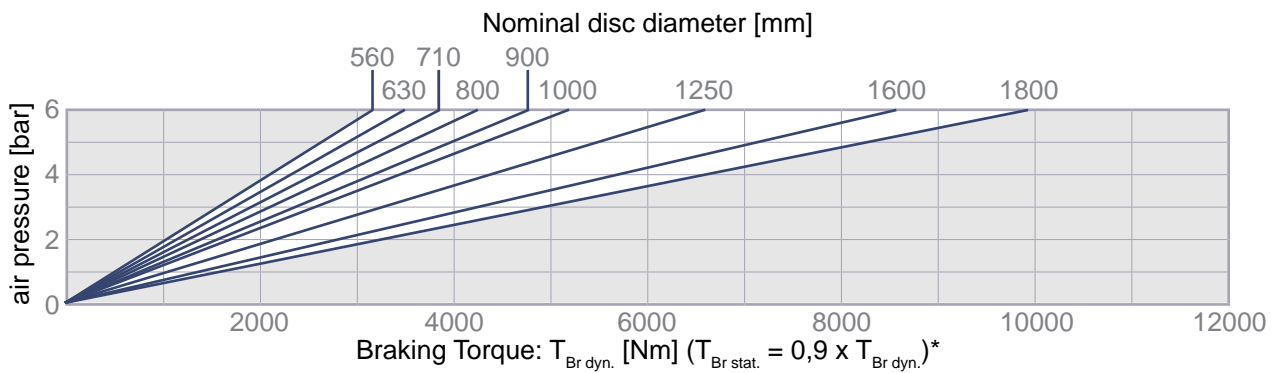
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

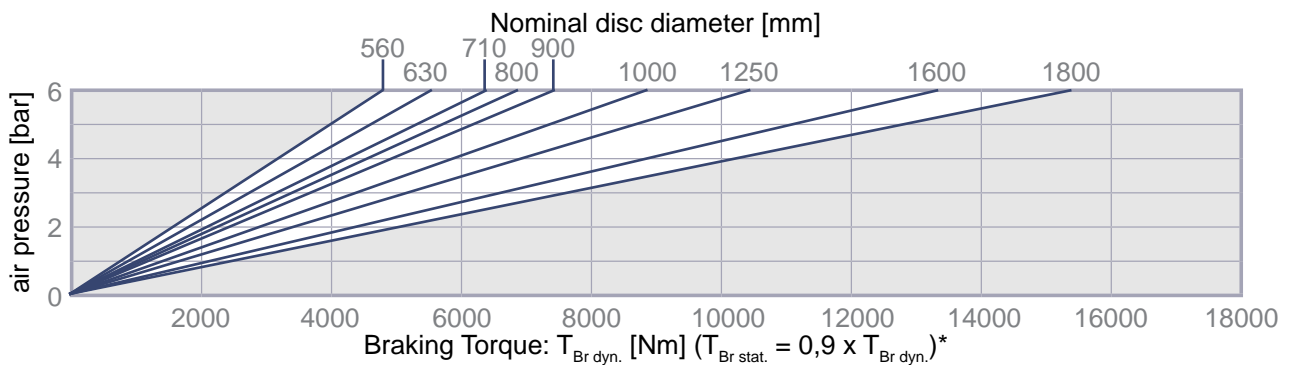
Type	Part-No.	A <sub>max.</sub> [mm]	B [mm]	C [mm]	D [mm]	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 300.105.04	<b>11785</b>	155	30	260	144	0,30	23,2
R&H 300.105.04 short.	<b>11786</b>	145	38	270			
R&H 300.107.04	<b>11787</b>	160	30	280	180	0,42	24
R&H 300.107.04 short.	<b>11788</b>	150	38	290			



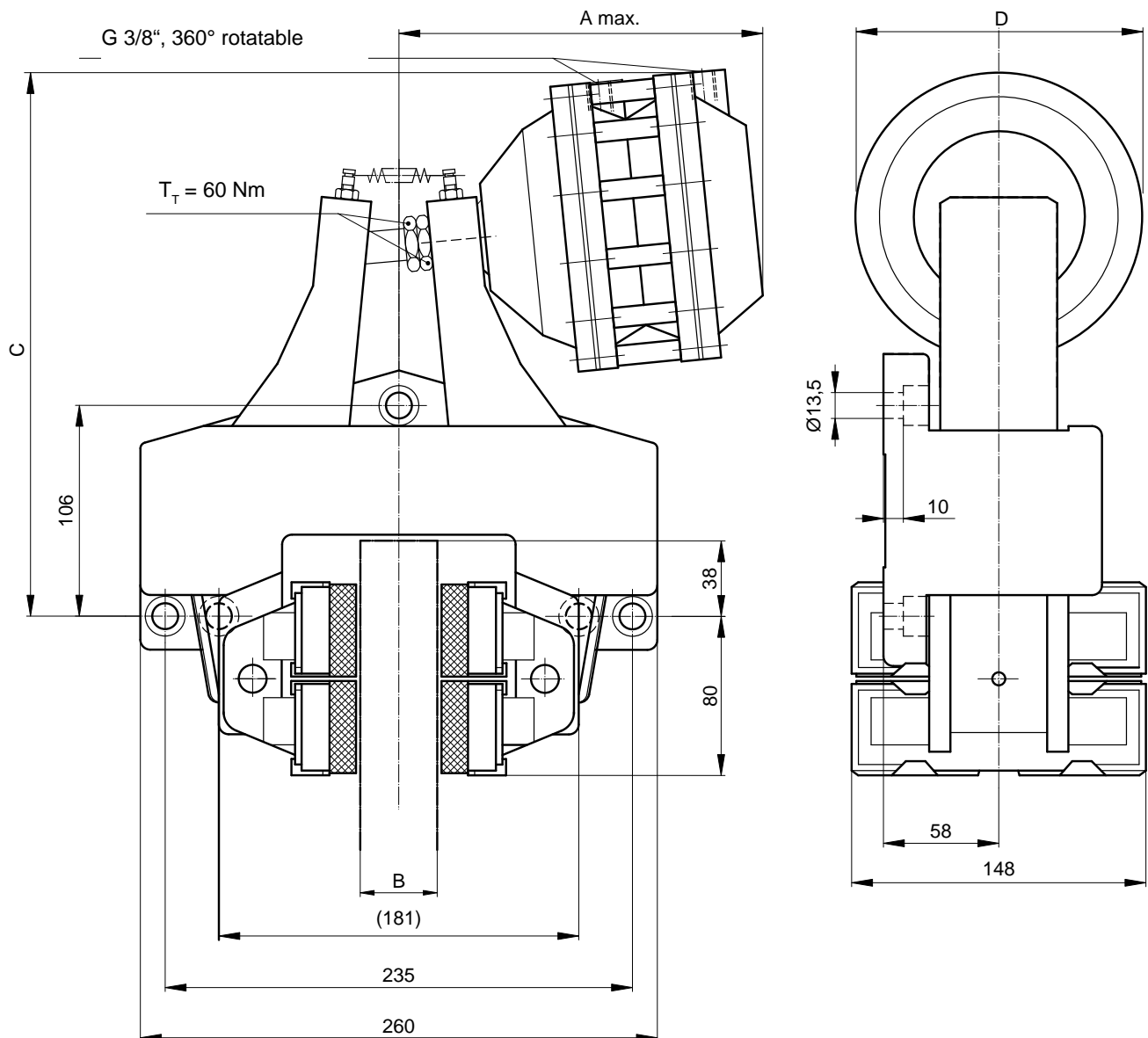
### R&H 300.106.04 / R&H 300.106.04 short.



### R&H 300.108.04 / R&H 300.108.04 short.



\* using one chamber  $T_{Br\ dyn.} \times 0,5$

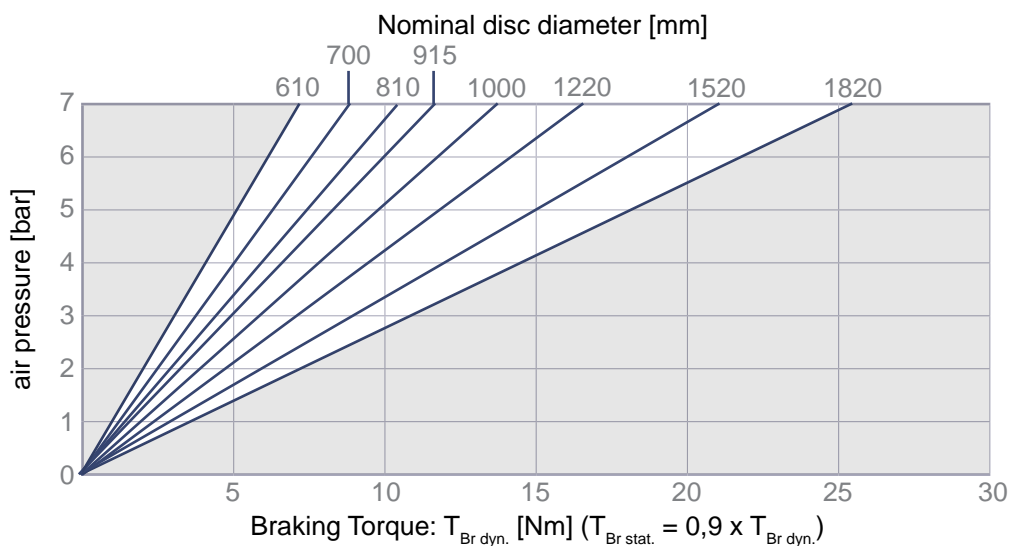


Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	$A_{\text{max}}$ [mm]	B [mm]	C [mm]	D [mm]	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 300.106.04	<b>11765</b>	220	30	264	144	0,30	24,5
R&H 300.106.04 short.	<b>11766</b>	210	38	274		0,30	
R&H 300.108.04	<b>11767</b>	225	30	284	180	0,42	26
R&H 300.108.04 short.	<b>11768</b>	215	38	294		0,42	

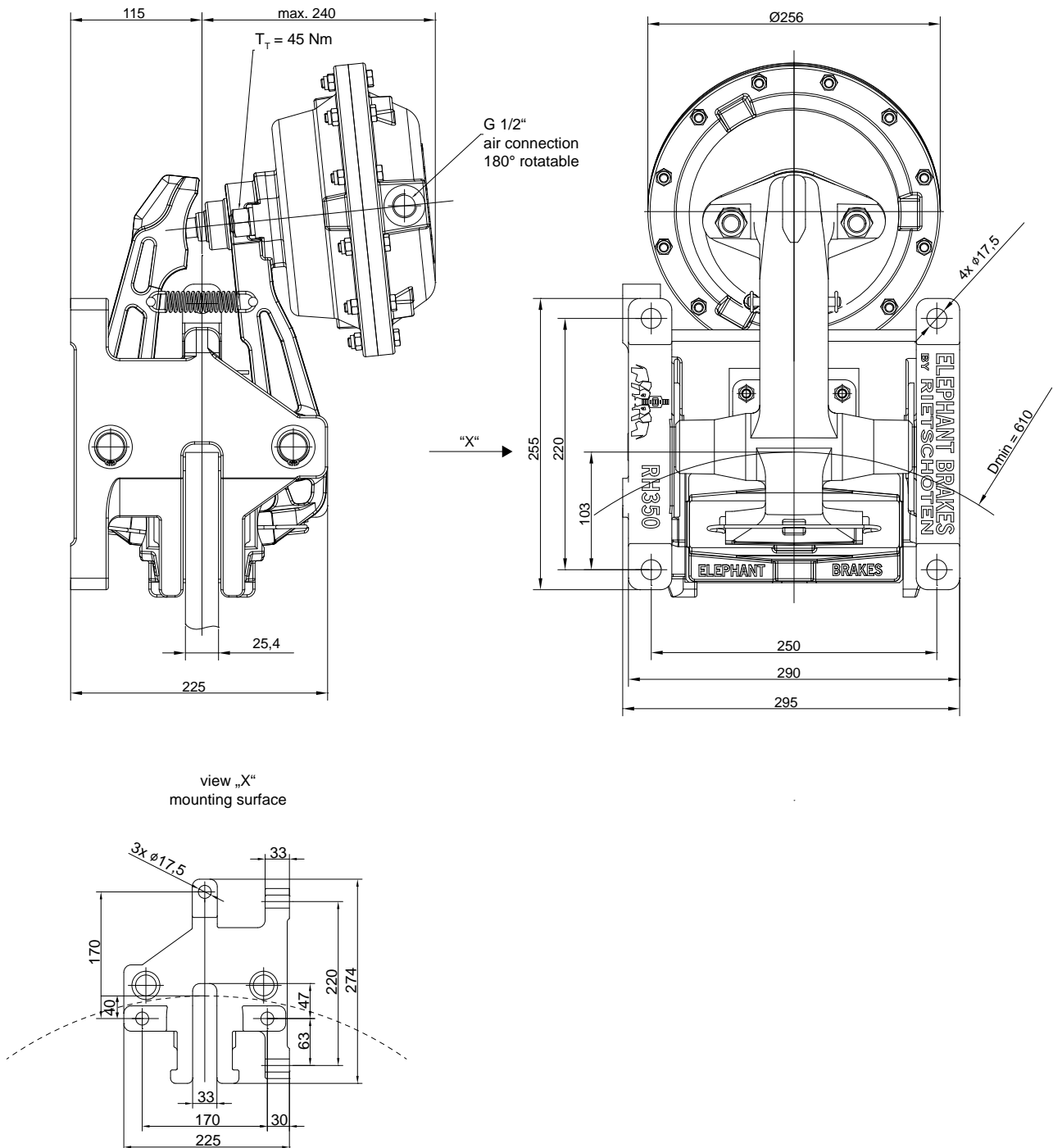




Mass: 49,7 kg

V / stroke: 2 dm<sup>3</sup>

pneumatically applied



Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

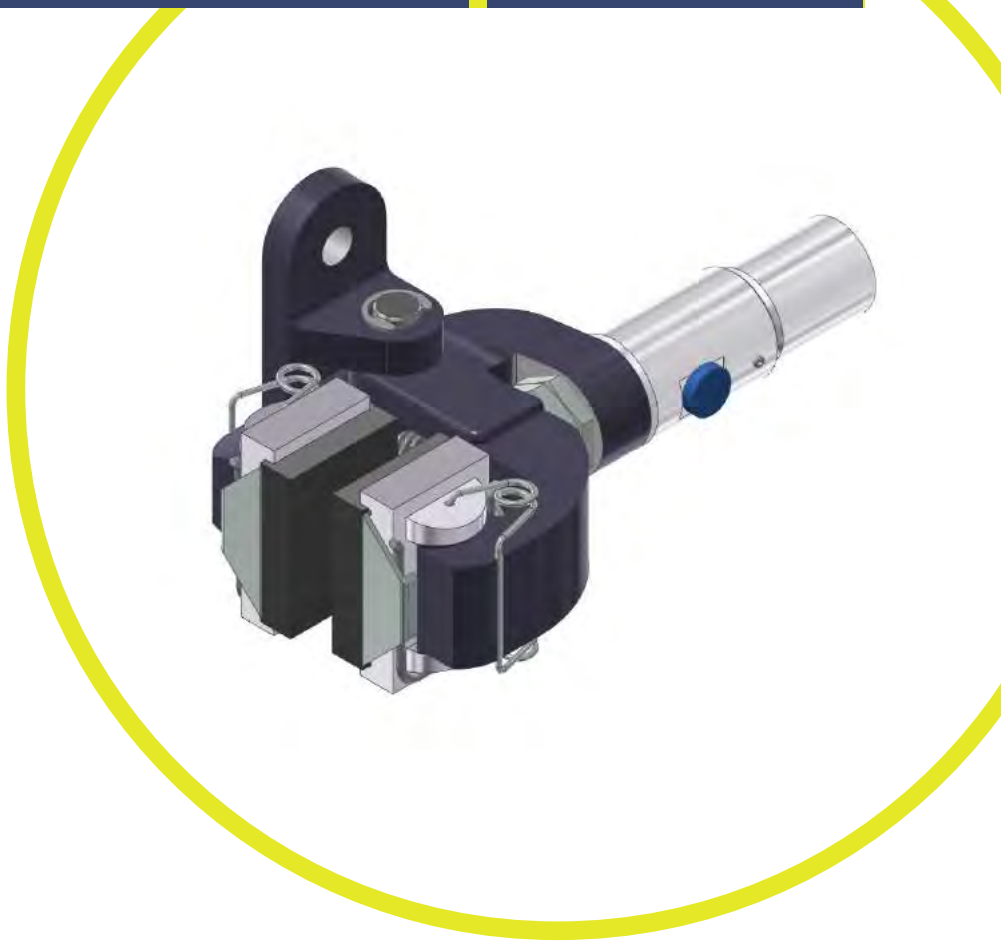


# hydraulically applied brakes

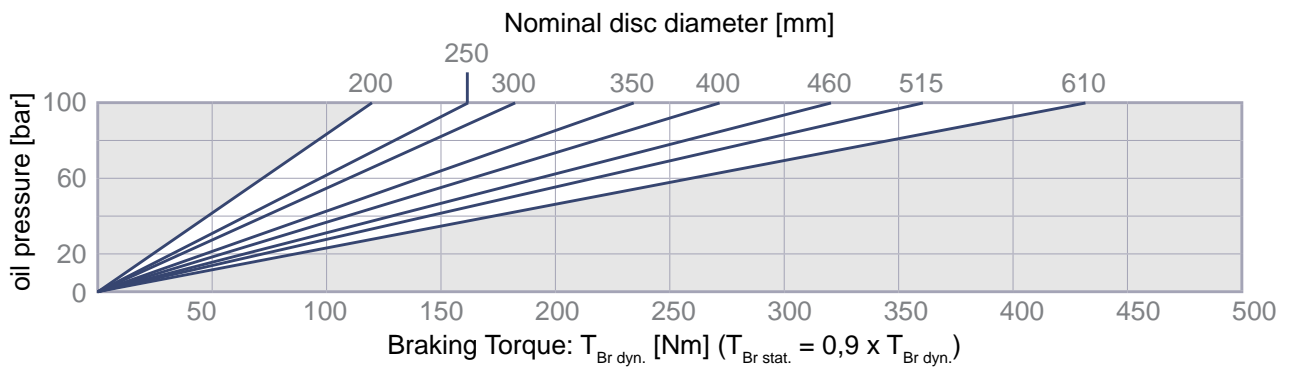
This list makes no claim to completeness. It has been compiled in accordance with the manufacturer recommendations. The manufacturers are listed in alphabetical order, making no implications about the product quality.

<b>Producer</b>	<b>Name</b>	<b>Kin. viscosity at 40° C [mm<sup>2</sup>/s = cSt]</b>
ARAL	ARAL ÖL VITAM-GF46	46
AVIA	RCL 32	32
BP	BP Energol HLP 46	47,4
DEFROL	DEFROL I SO-VG46/ -68	46 / 68
ESSO	NUTO H 46	44
FINA	FINA Hydran 68 ( HLP )	68
FUCHS DEA	Plantohyd*	47,4
MOBIL	Mobil DTE 26	64
TEXACO	Texaco Oil HDB 68	46

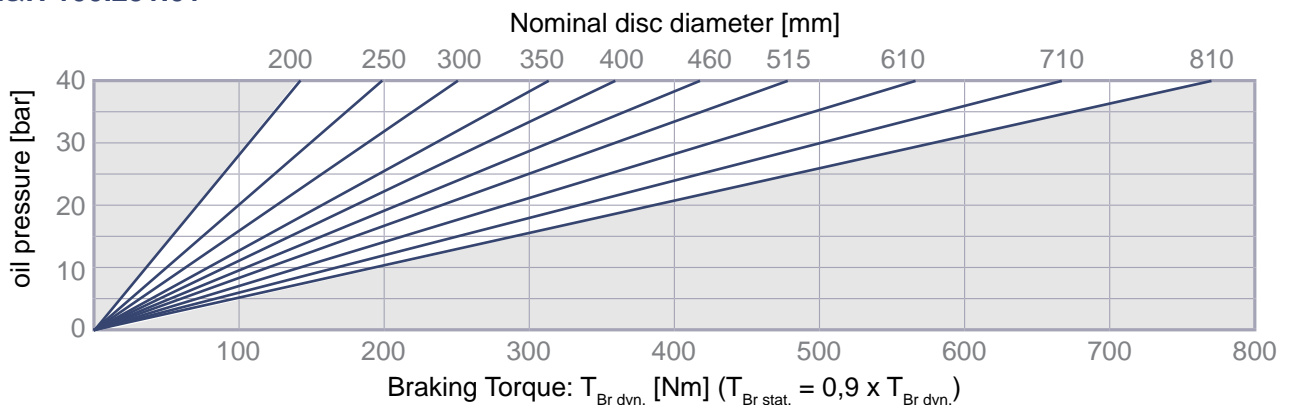
\* bio-degradable

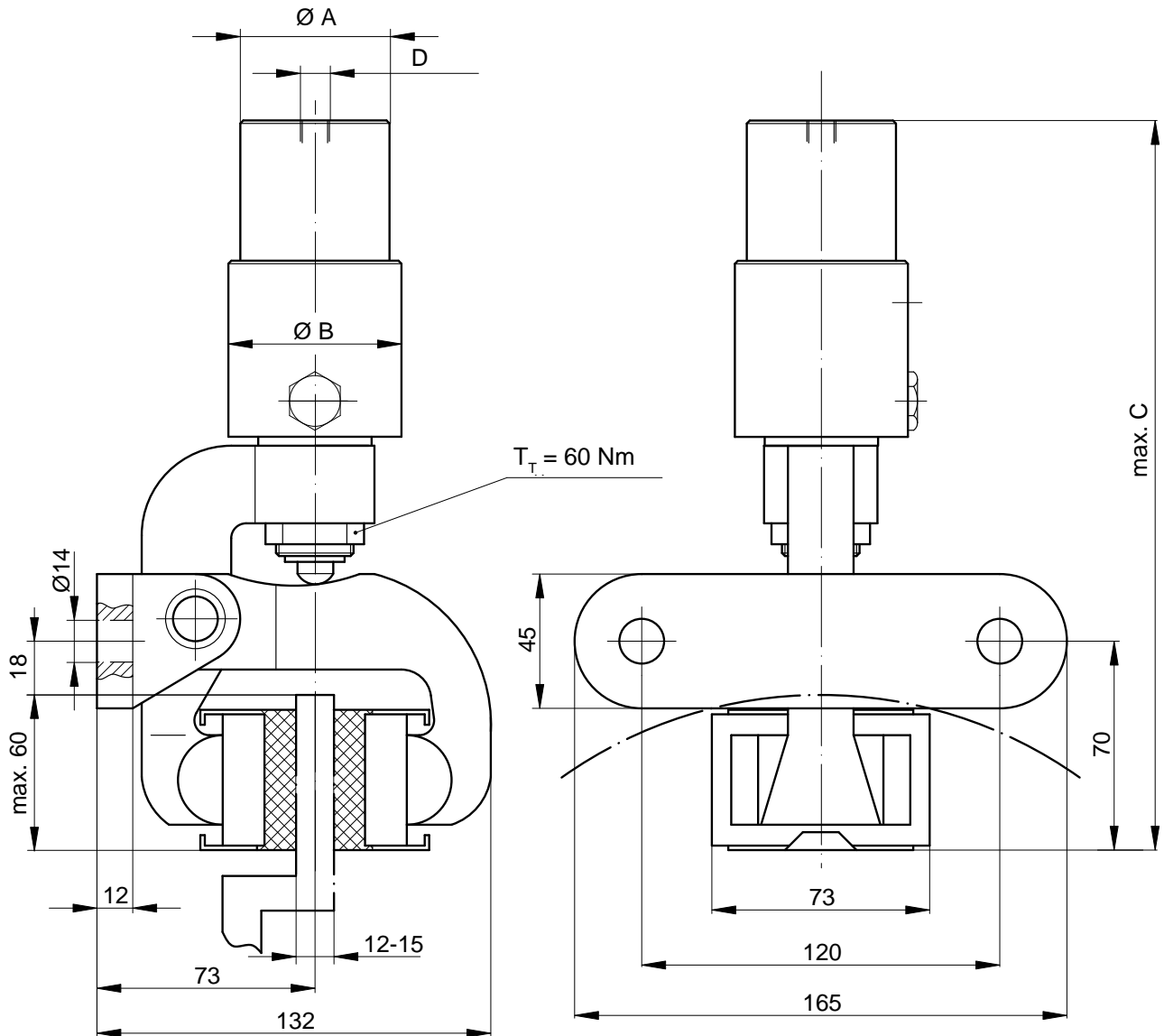


## R&H 100.250.01



## R&H 100.251.01

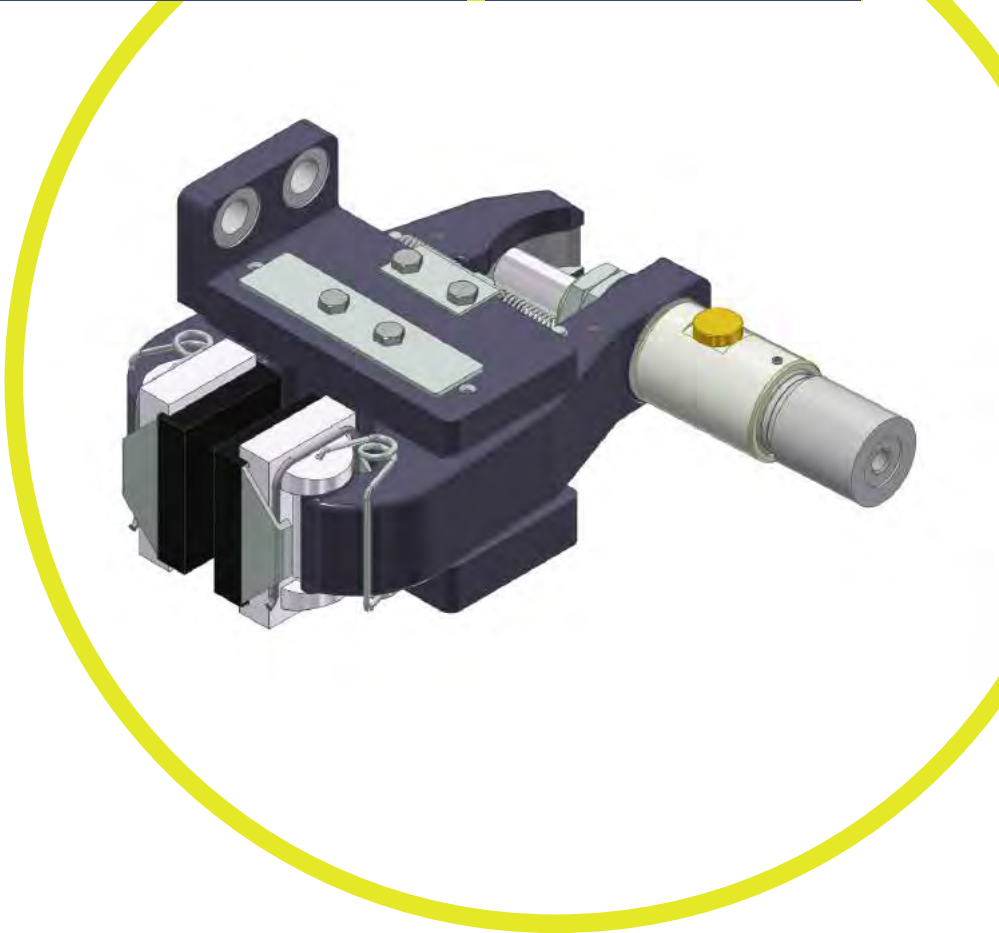




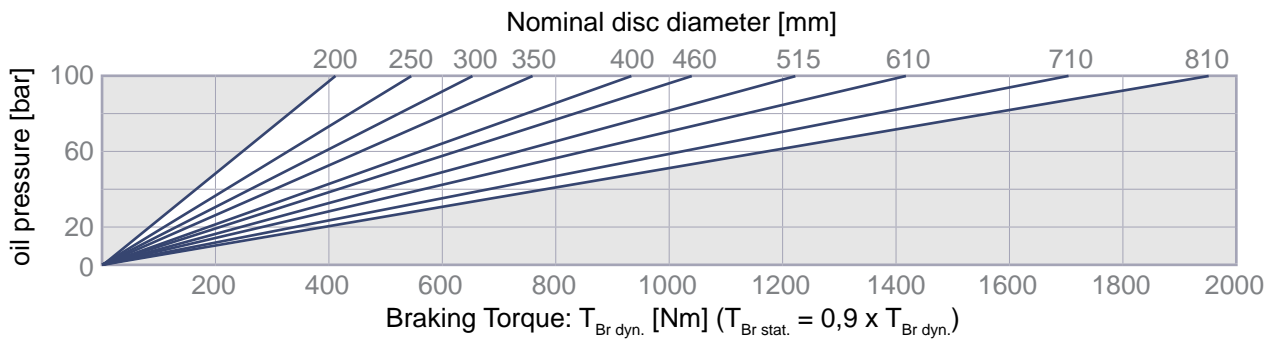
Mounting position is horizontal. Please get in touch if different.

Type	<b>Part-No.</b>	$\varnothing A$ [mm]	$\varnothing B$ [mm]	max. C [mm]	D	max. oil demand per braking [cm <sup>3</sup> ]	Mass [kg]
R&H 100.250.01	<b>10391</b>	32	40	254	G 1/8"	20	3,8
R&H 100.251.01	<b>10392</b>	50	58	245	G 1/4"	50,4	4,4

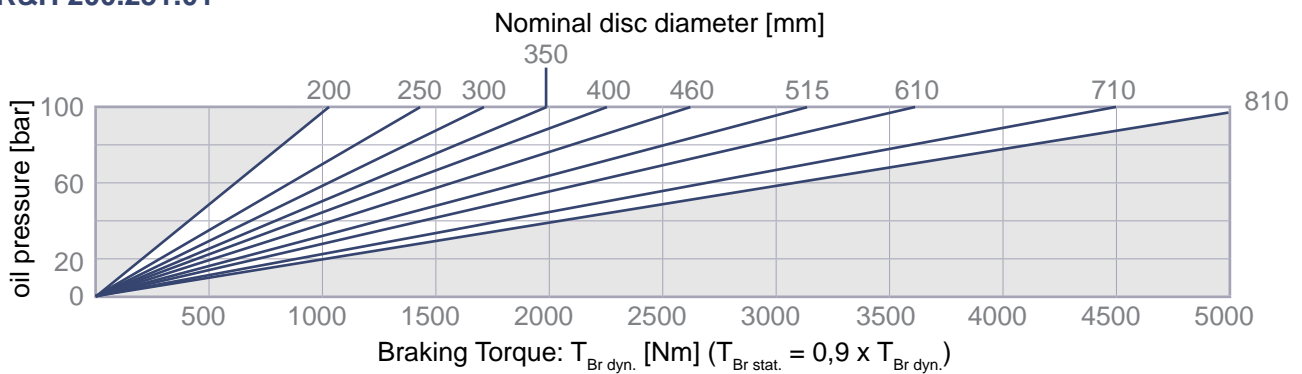
**For use with mineral oil.**

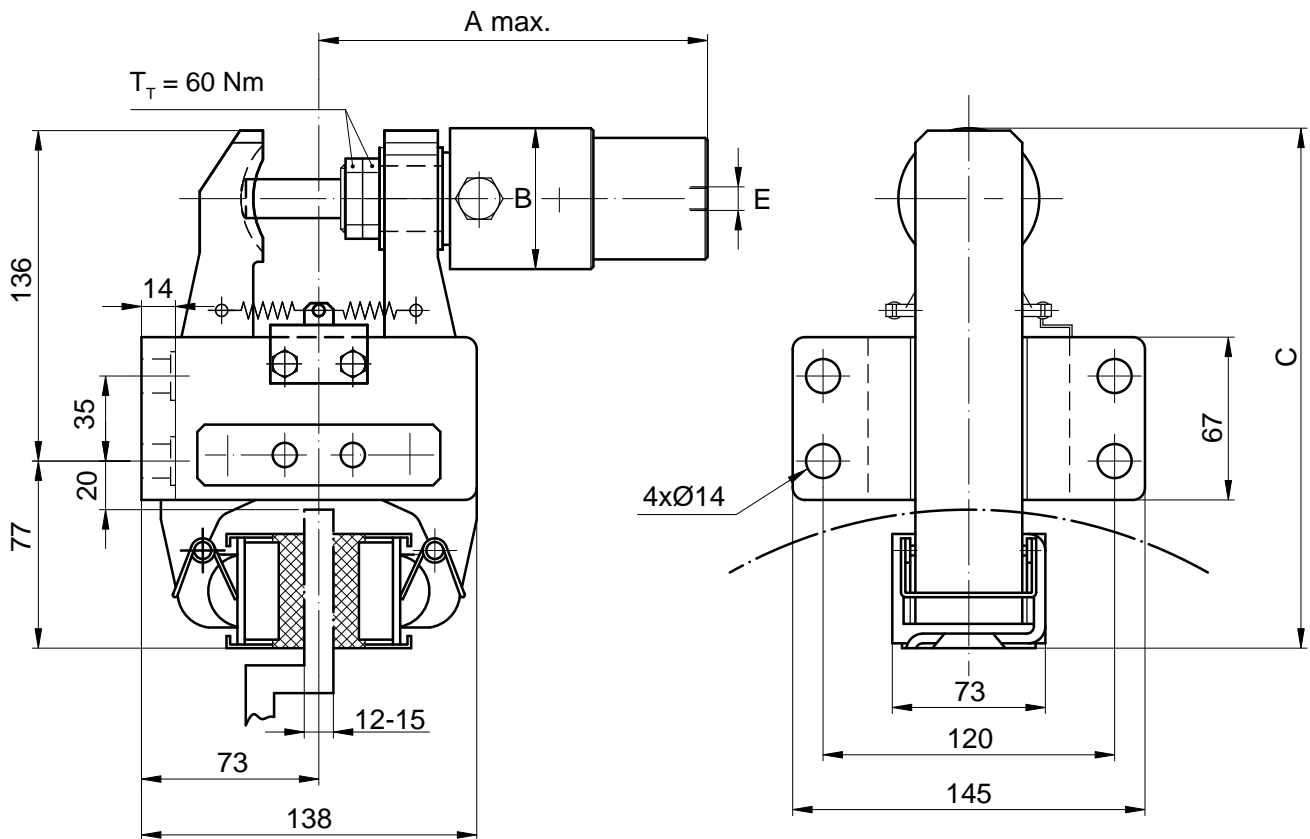


## R&H 200.250.01



## R&H 200.251.01





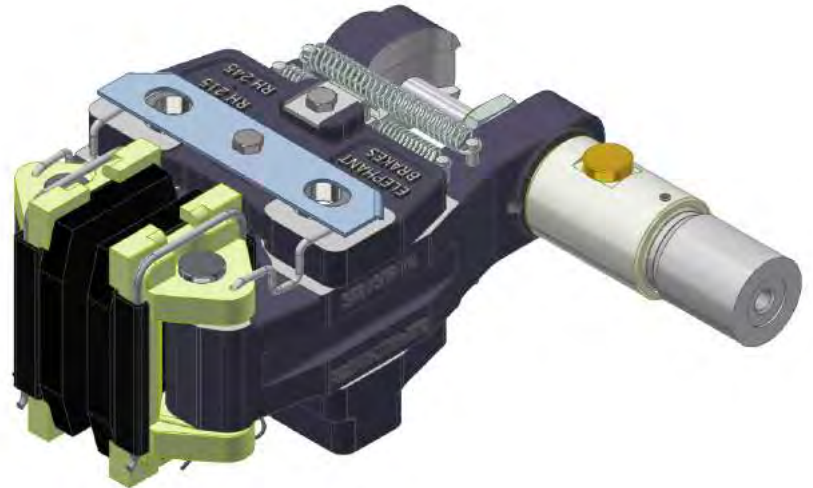
Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

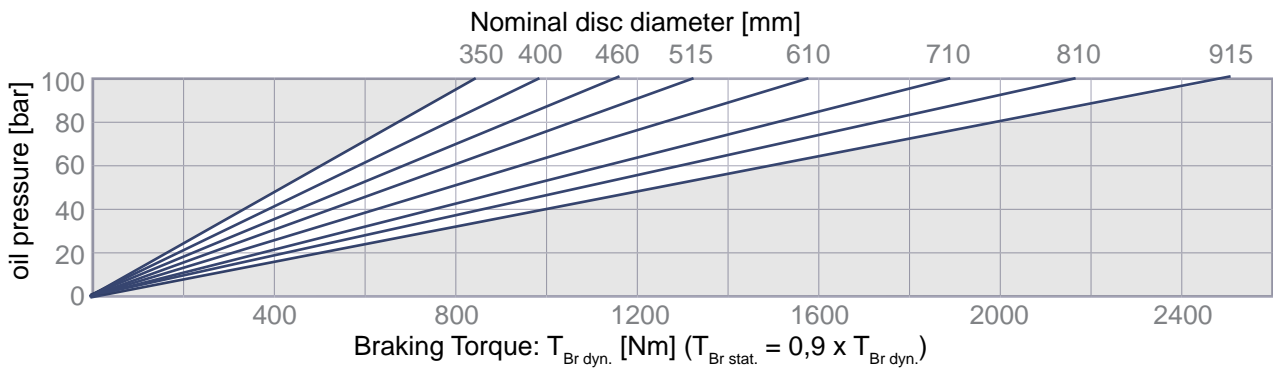
Type	Part-No.	A [mm]	Ø B [mm]	C [mm]	E	V / stroke [cm³]	Mass [kg]
R&H 200.250.01	<b>11149</b>	184	40	213	G 1/8"	20	8,4
R&H 200.251.01	<b>11150</b>	175	58	216	G 1/4"	50	9,1

**For use with mineral oil.**

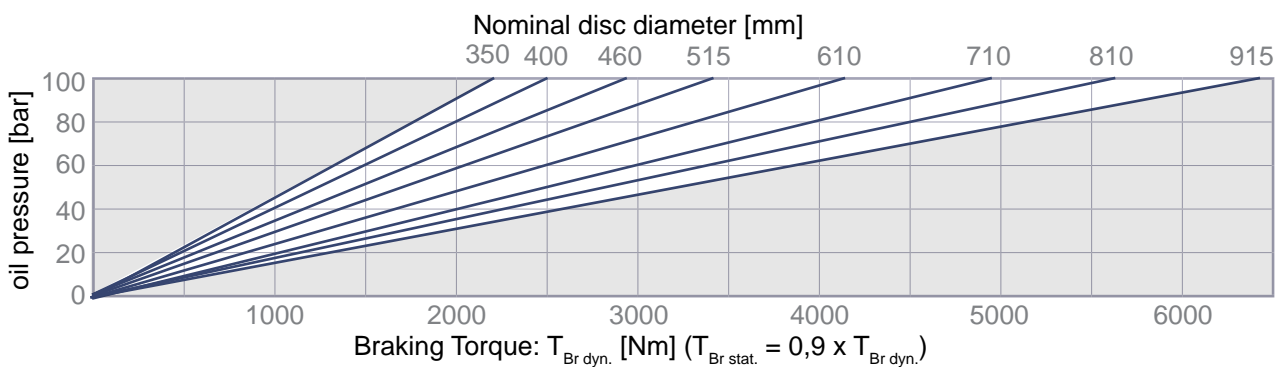


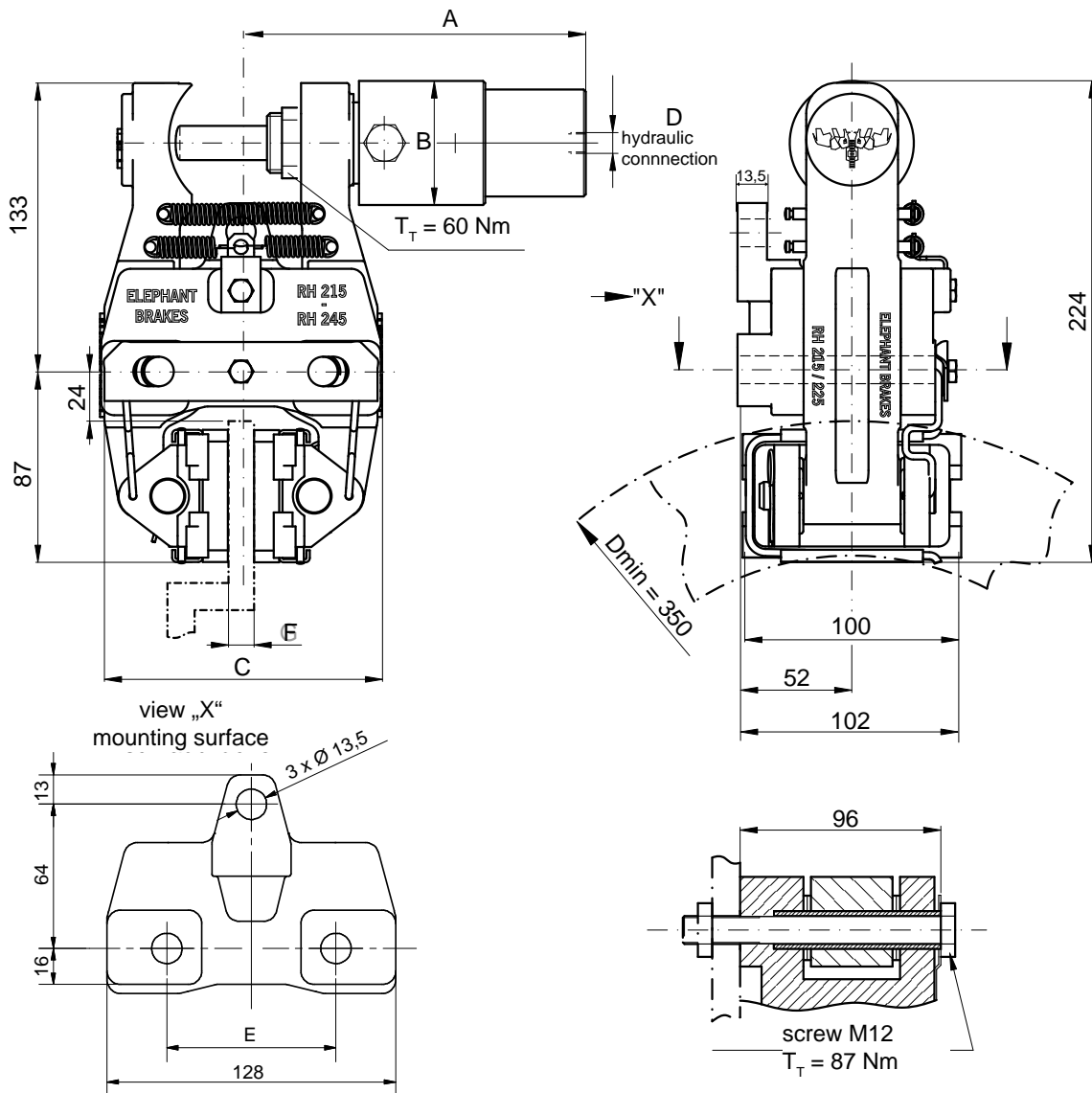


### R&H 215.250.01 / R&H 225.250.01 / R&H 230.250.01



### R&H 215.251.01 / R&H 225.251.01 / R&H 230.251.01





Mounting position is horizontal. Please get in touch if different.

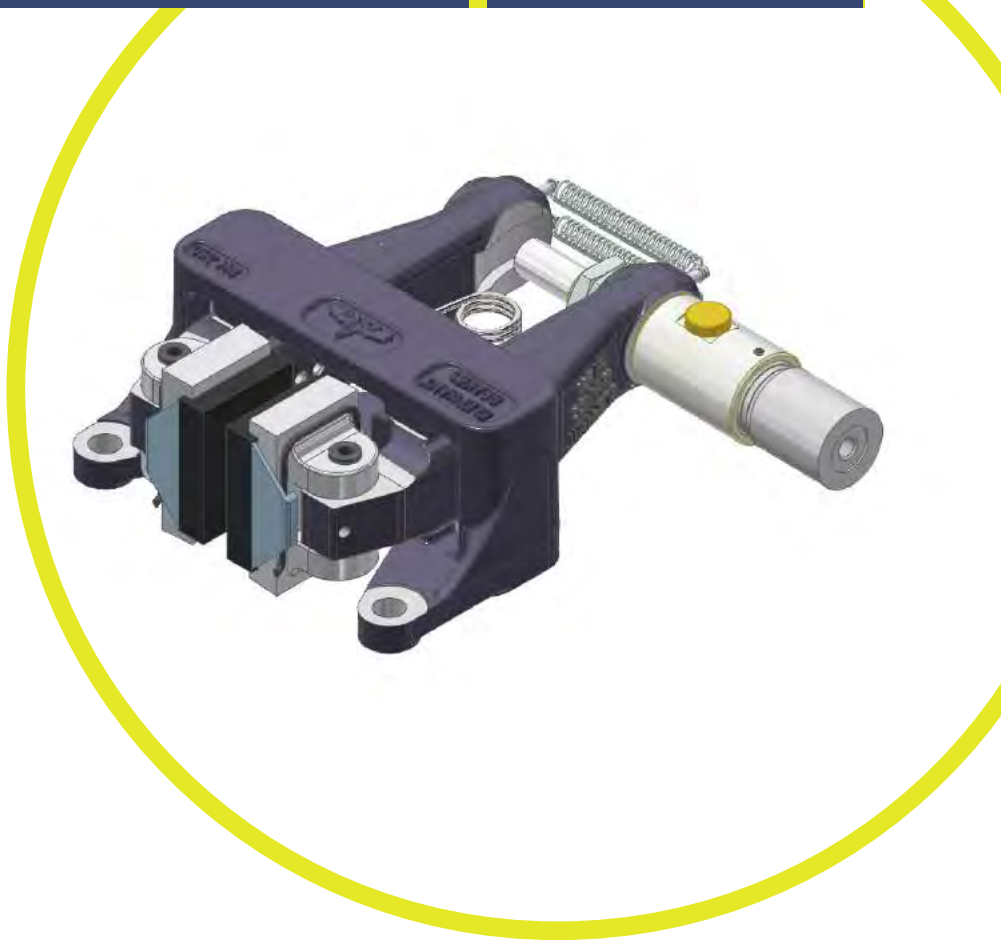
A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	Ø B [mm]	C [mm]	D	E [mm]	F [mm]	max. V/stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 215.250.01	<b>10691</b>	195	40	130	G 1/8"	75	12-15	20	8,7
R&H 225.250.01	<b>11096</b>	199		140		84	25,4		
R&H 230.250.01	<b>10711</b>	195		144		75	30		
R&H 215.251.01	<b>10692</b>	185	58	130	G 1/4"	75	12-15	50	9,4
R&H 225.251.01	<b>11097</b>	189		140		84	25,4		
R&H 230.251.01	<b>10712</b>	185		144		75	30		

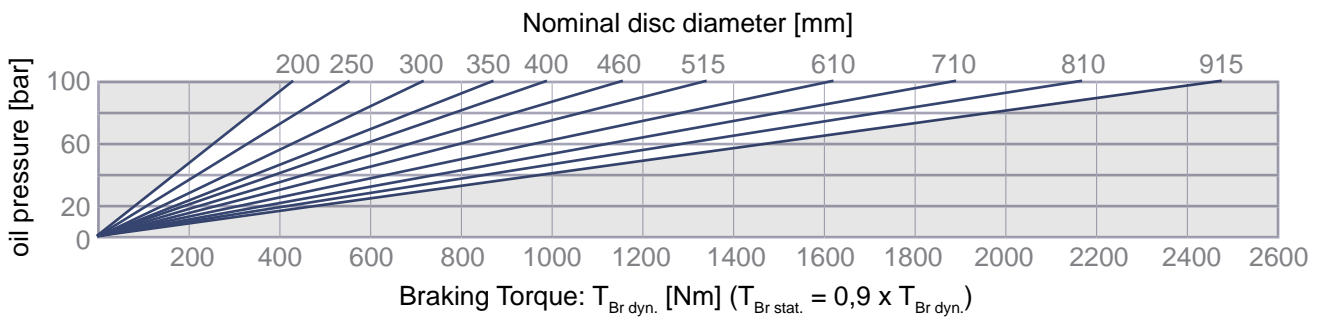
**For use with mineral oil.**

**Elephant Brakes by Rietschoten Germany. Strong like an elephant. Smart like an elephant.**

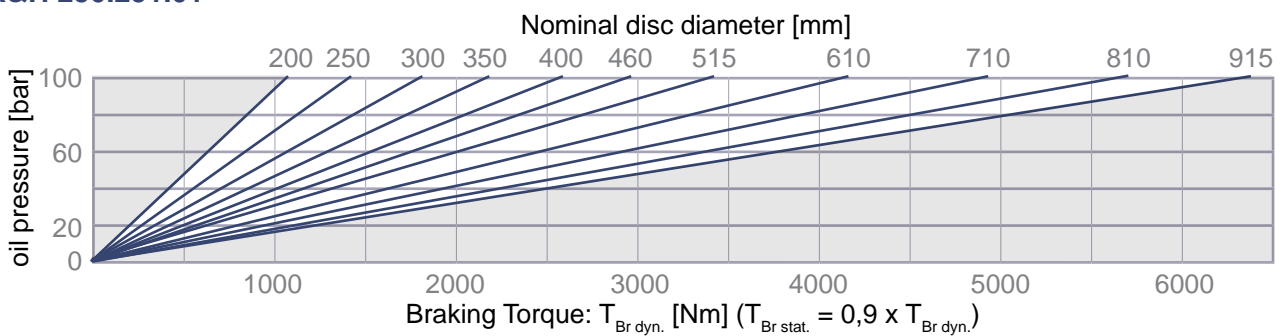
Deutsche van Rietschoten & Houwens GmbH · Junkersstraße 12 · 30179 Hannover · [www.elephantbrakes.com](http://www.elephantbrakes.com)

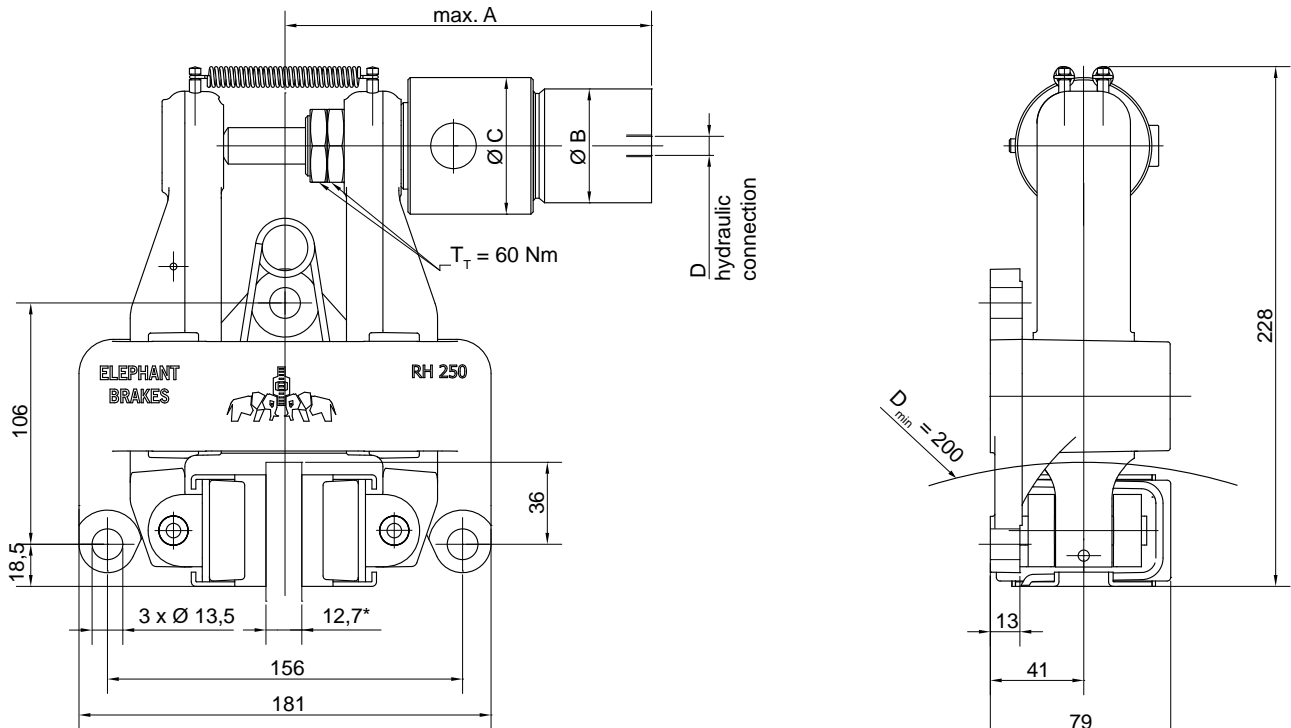


## R&H 250.250.01



## R&H 250.251.01





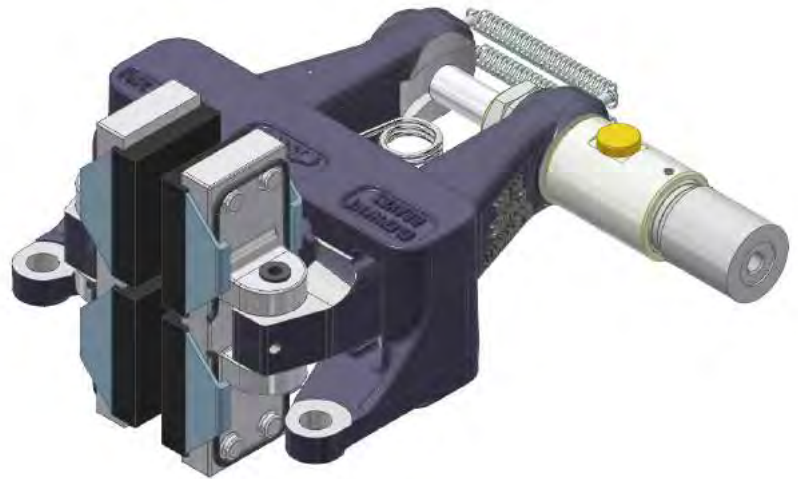
\*optional 25,4

Mounting position is horizontal. Please get in touch if different.

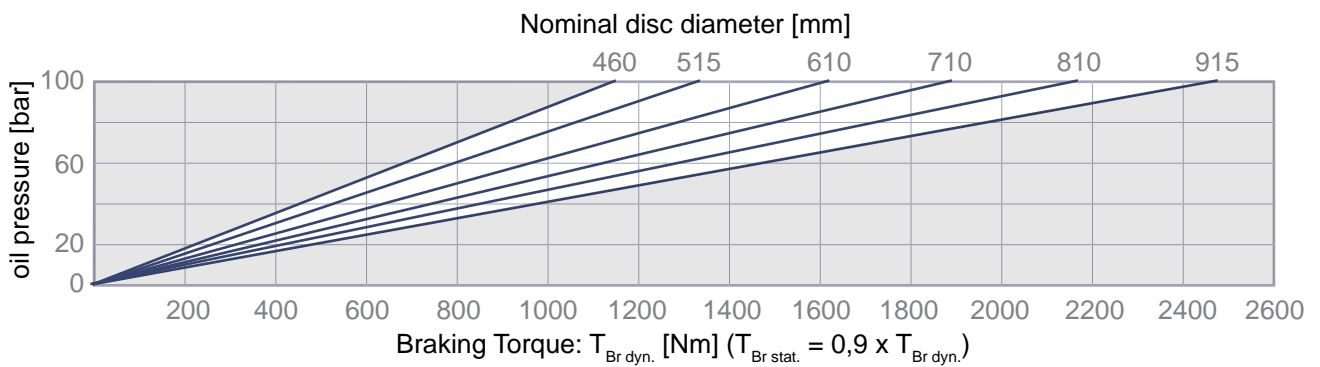
A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	max. A [mm]	Ø B [mm]	Ø C [mm]	D	max. oil demand per braking [cm <sup>3</sup> ]	Mass [kg]
R&H 250.250.01	<b>10070</b>	190	32	40	G 1/8"	15,7	7,5
R&H 250.251.01	<b>10073</b>	183	50	58	G 1/4"	50,4	8,2

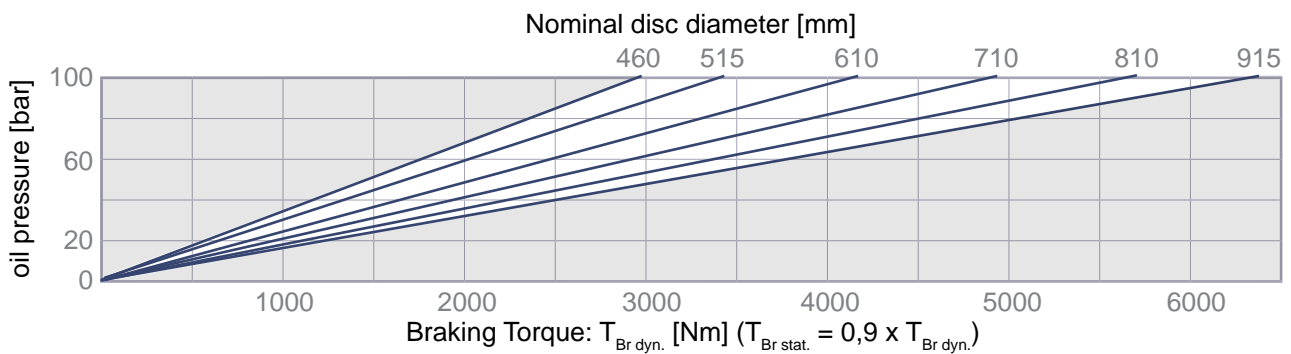
**For use with mineral oil.**

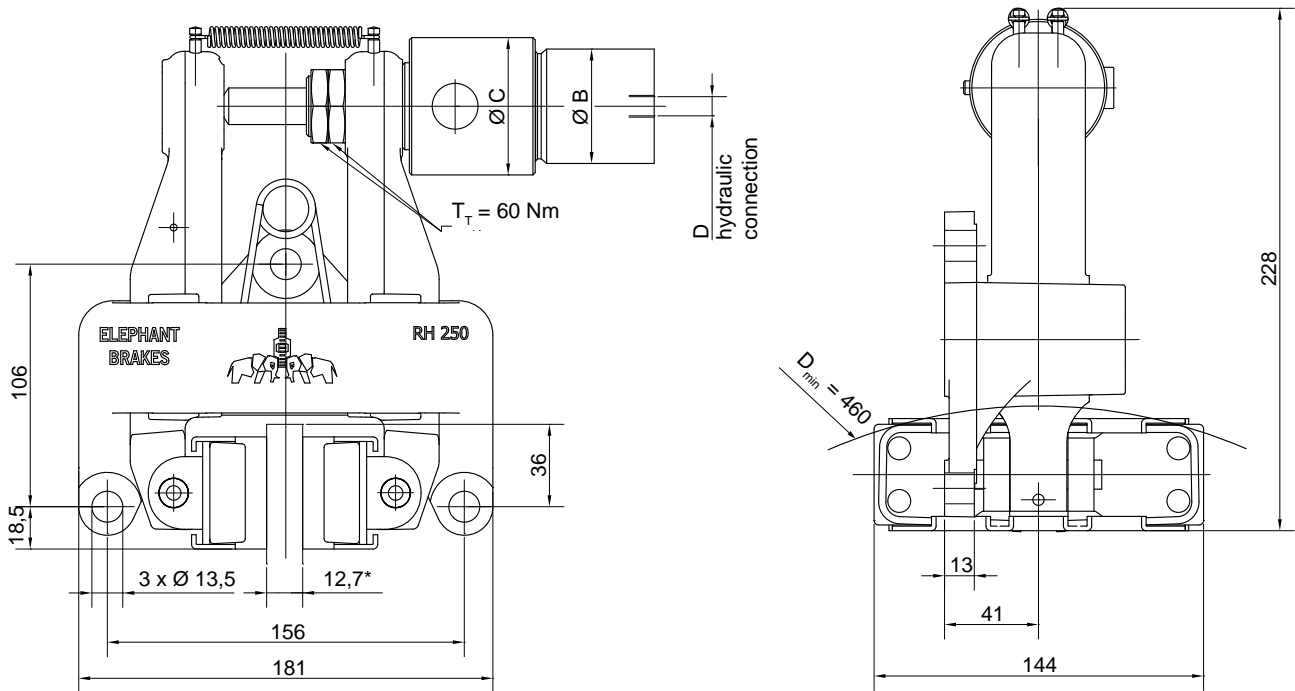


## R&H 250.250.02



## R&H 250.251.02





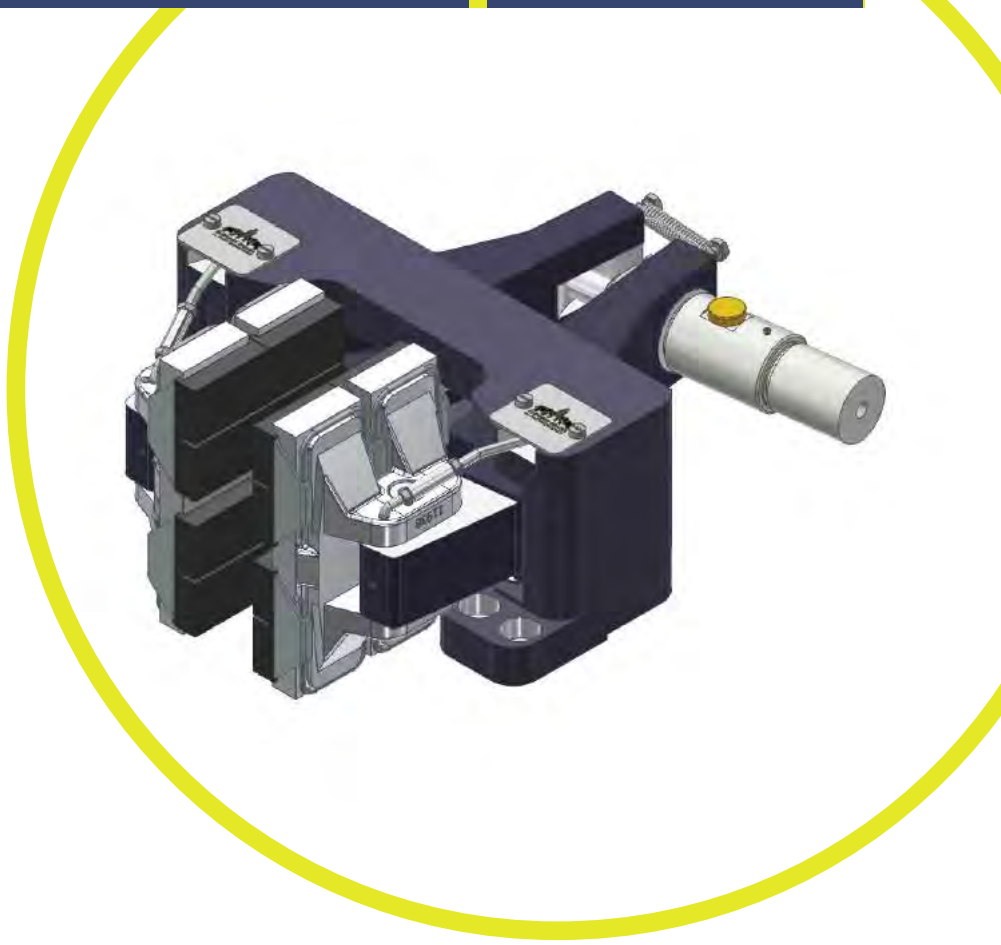
\*optional 25,4

Mounting position is horizontal. Please get in touch if different.

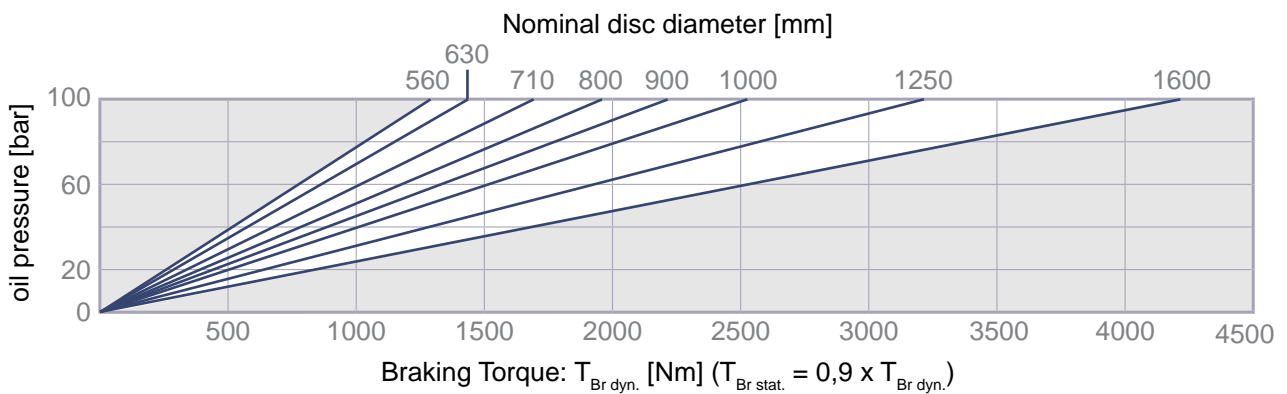
A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	max. A [mm]	Ø B [mm]	Ø C [mm]	D	max. oil demand per braking [cm <sup>3</sup> ]	Mass [kg]
R&H 250.250.02	<b>10072</b>	190	32	40	G 1/8"	15,7	8
R&H 250.251.02	<b>10074</b>	183	50	58	G 1/4"	50,4	8,7

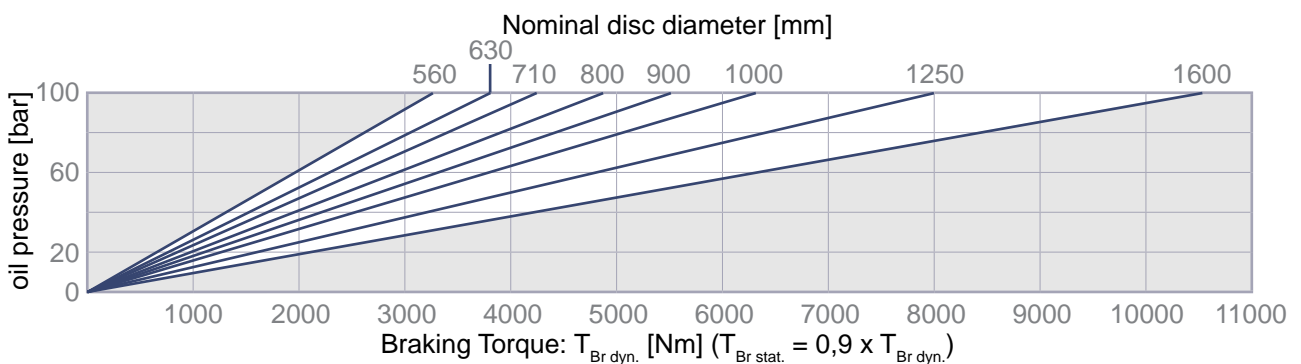
**For use with mineral oil.**



## R&H 300.250.04

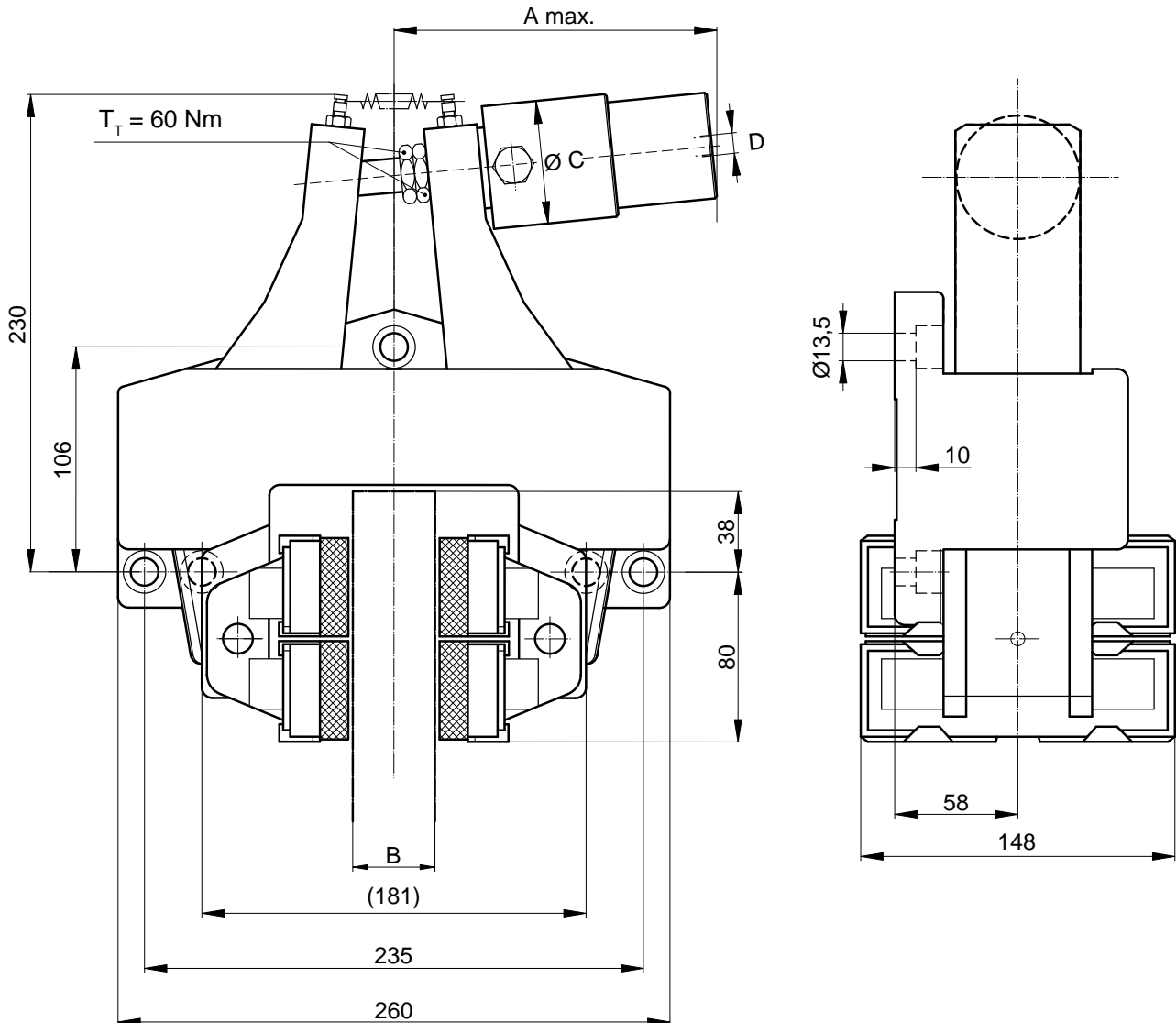


## R&H 300.251.04 / R&H 300.251.04 short.



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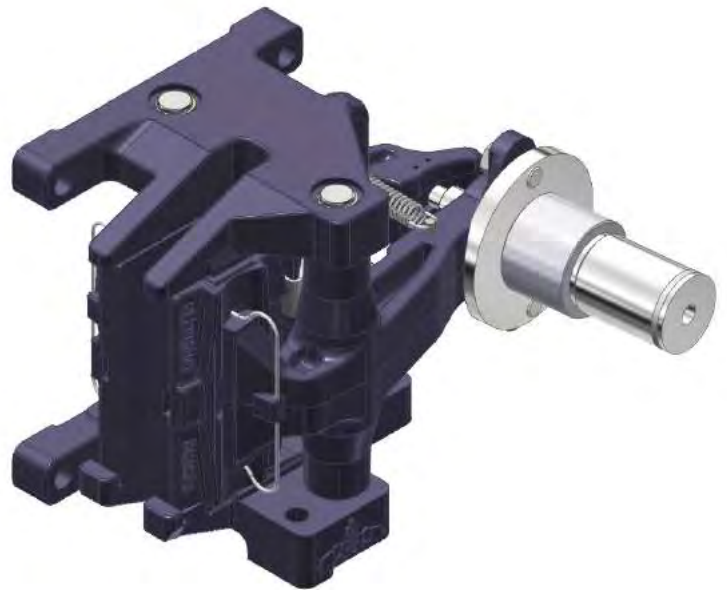
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

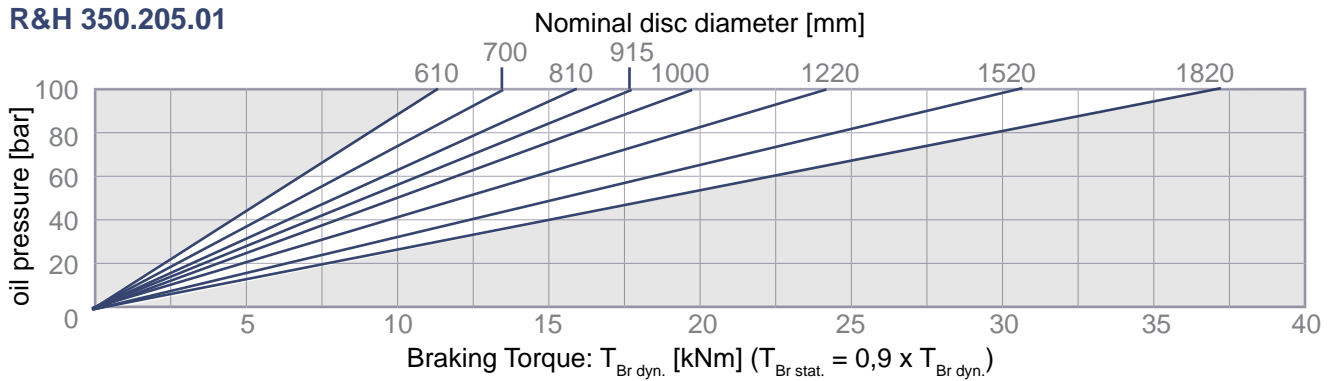
Type	Part-No.	A [mm]	B [mm]	Ø C [mm]	D	max. V / stroke cm <sup>3</sup>	Mass [kg]
R&H 300.250.04	<b>12749</b>	180	30	40	G 1/8"	20	23
R&H 300.251.04	<b>12750</b>	170		58	G 1/4"	50	23,5
R&H 300.251.04 short.	<b>13451</b>	160	38				

**For use with mineral oil.**

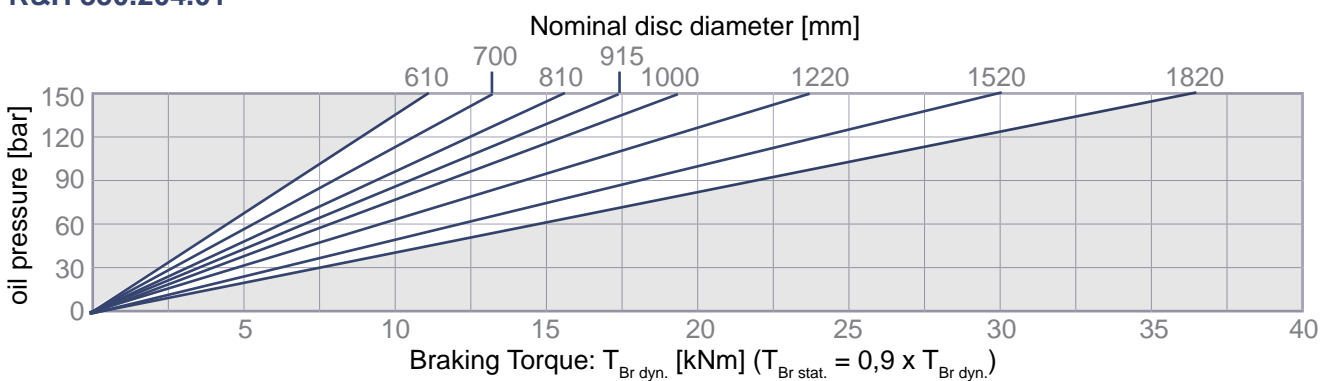


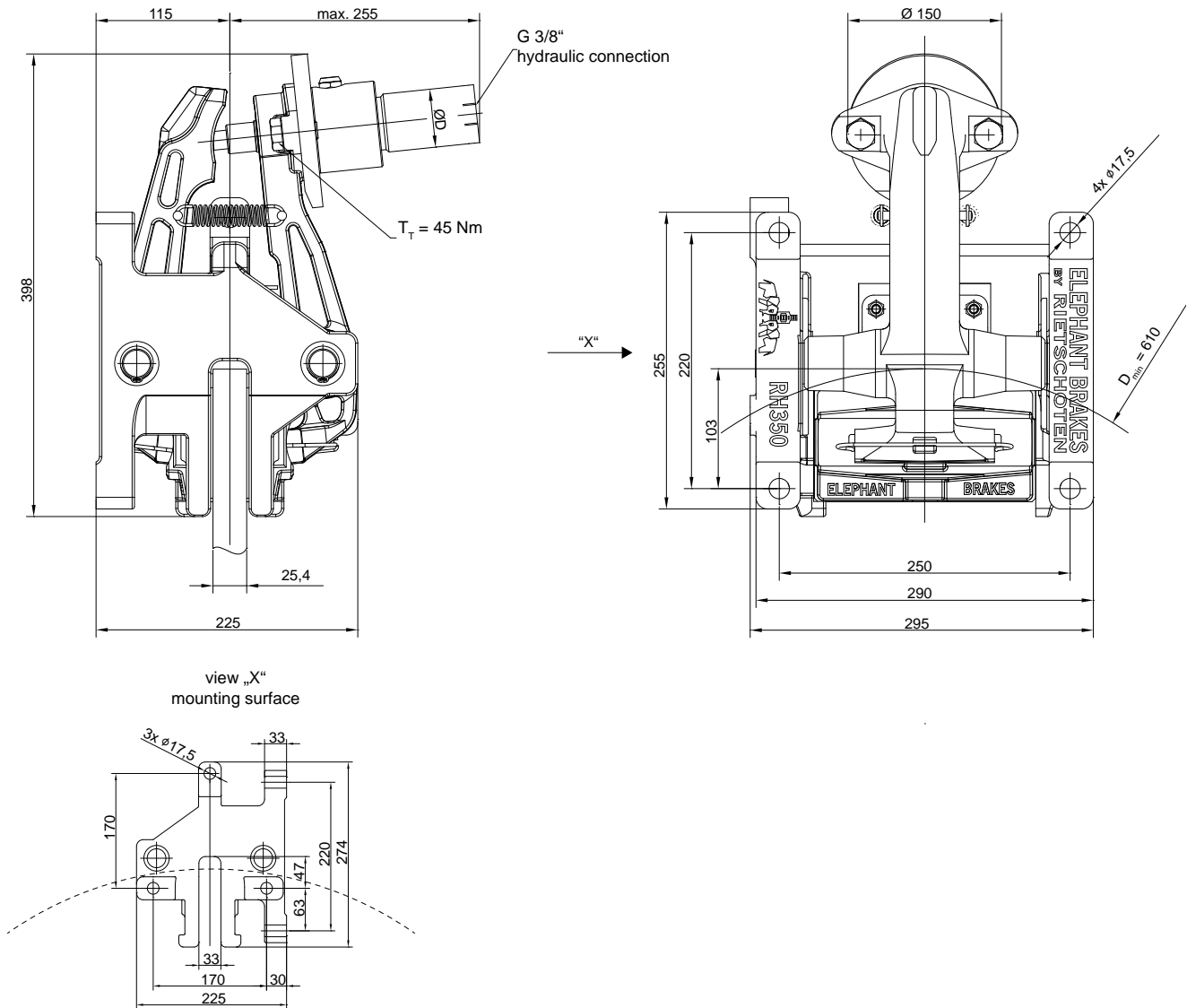


## R&H 350.205.01



## R&H 350.204.01





Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

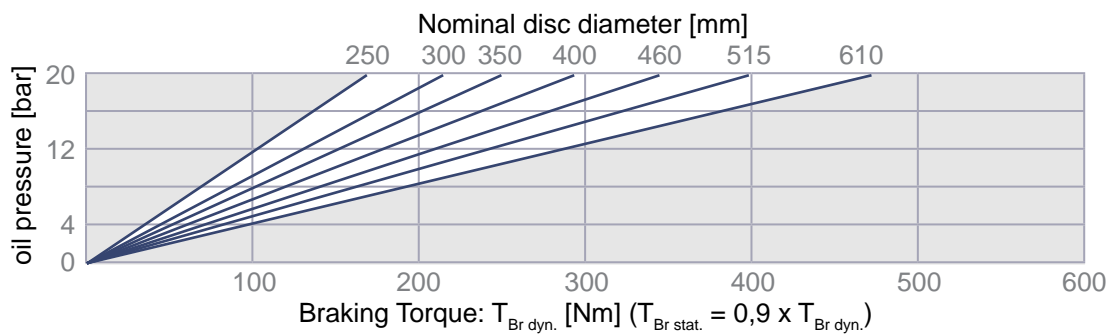
Type	Part-No.	D [mm]	$p_{\text{max}}$	max. V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 350.204.01	<b>11228</b>	50	150	90	48
R&H 350.205.01	<b>10451</b>	60	100	140	

**For use with mineral oil.**

**NOTE:**

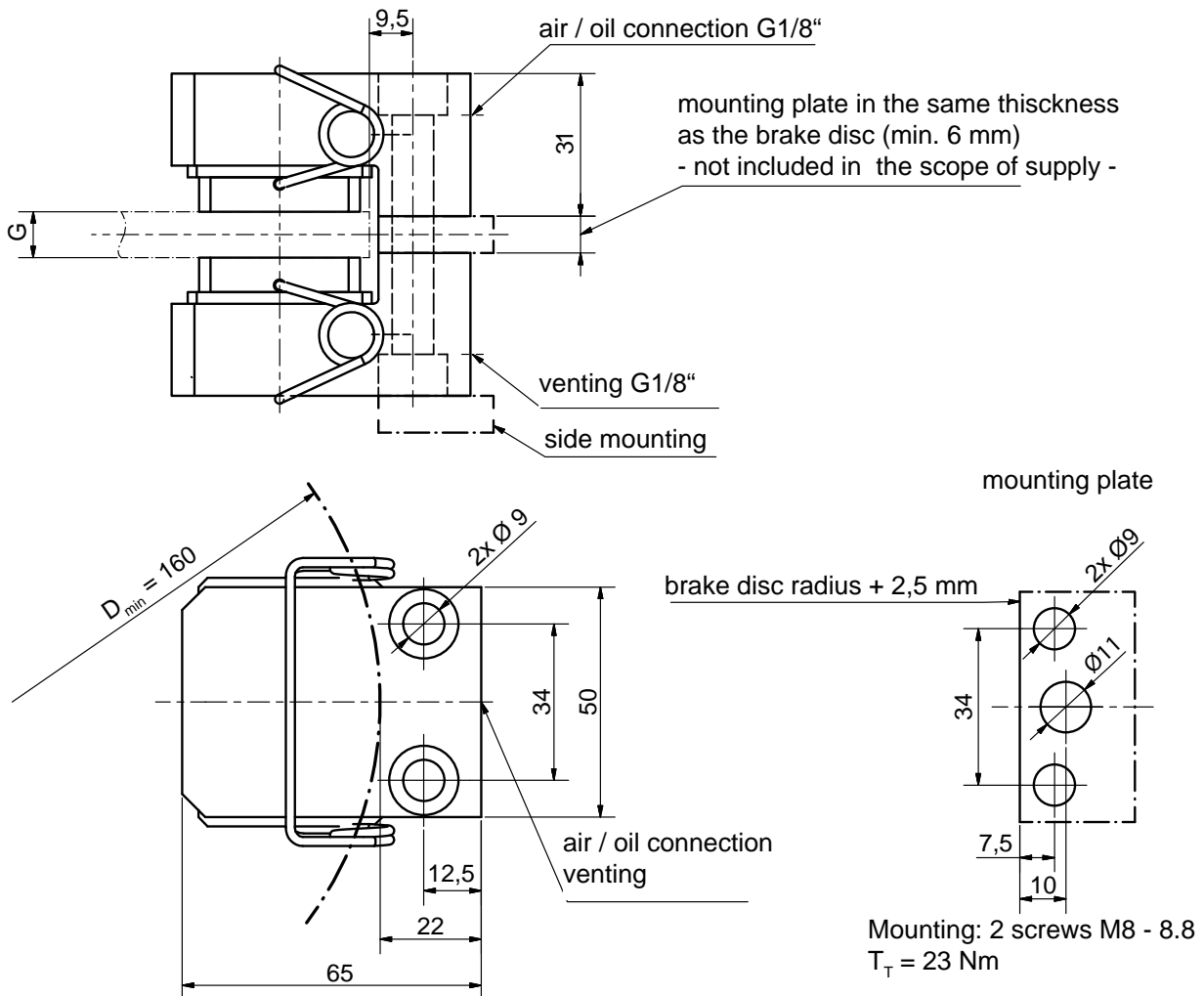
Also pneumatically applied usable.

*See page 60*



$p_{max}$ : 20 bar

*pneumatically applied  $p_{max}$ : 8 bar*

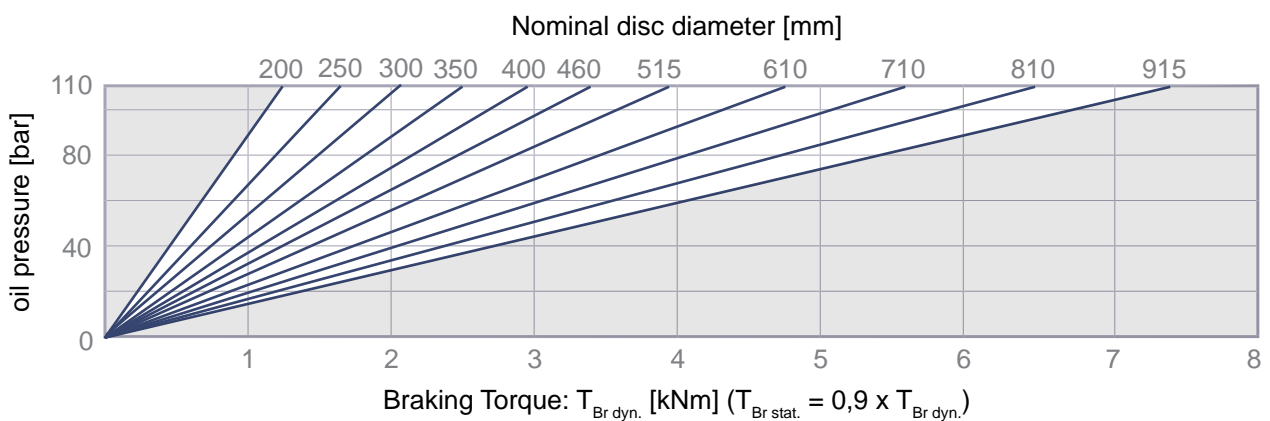


For G = 8 mm: EB 108, **Part-No. 12294**

For G = 15 mm: EB 115, **Part-No. 10811**

*Further disc thicknesses and mounting plates for side mounting on request*

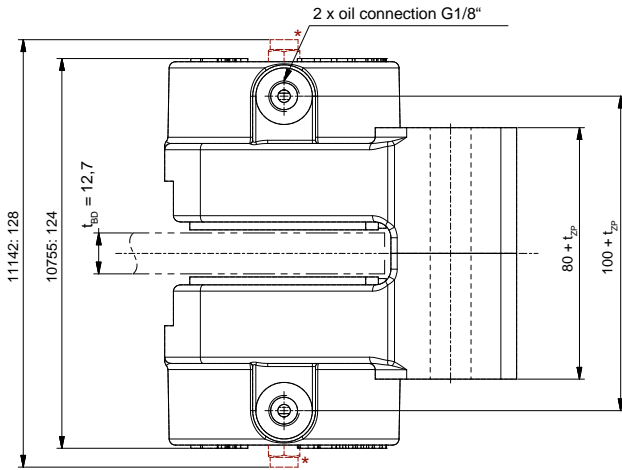
**For use with mineral oil.**



$p_{max.}$ : 110 bar

$-20^{\circ}\text{C} \leq T_{amb} \leq 40^{\circ}\text{C}$

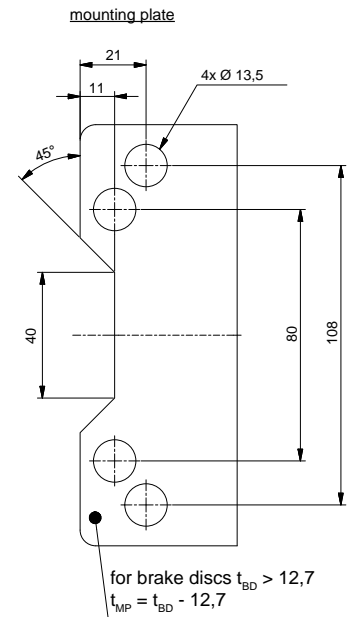
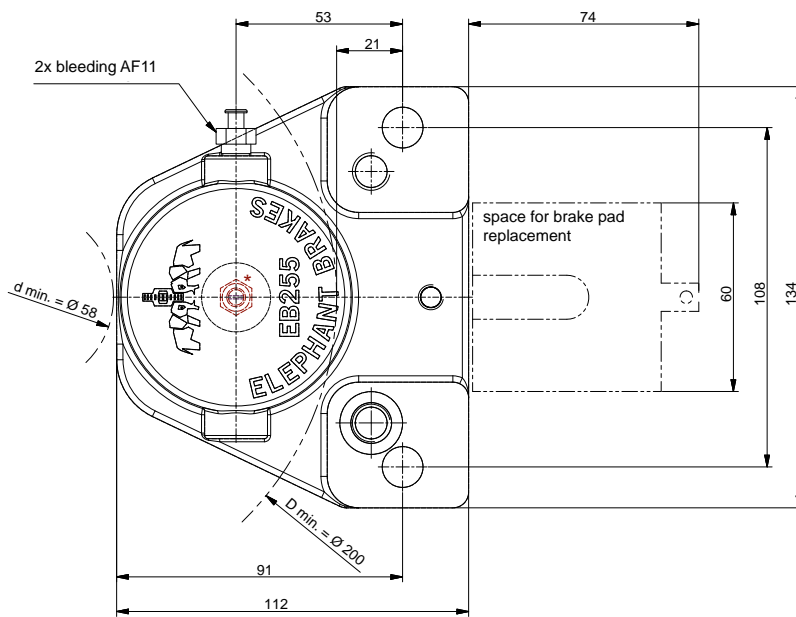
Mass: 5,6 kg



Mounting kit:

2 x cap screw ISO 4762 – M12 x  $(60 + t_{MP})$  – 12.9

2 x screw – M12 x  $(100 + t_{MP})$  – 12.9

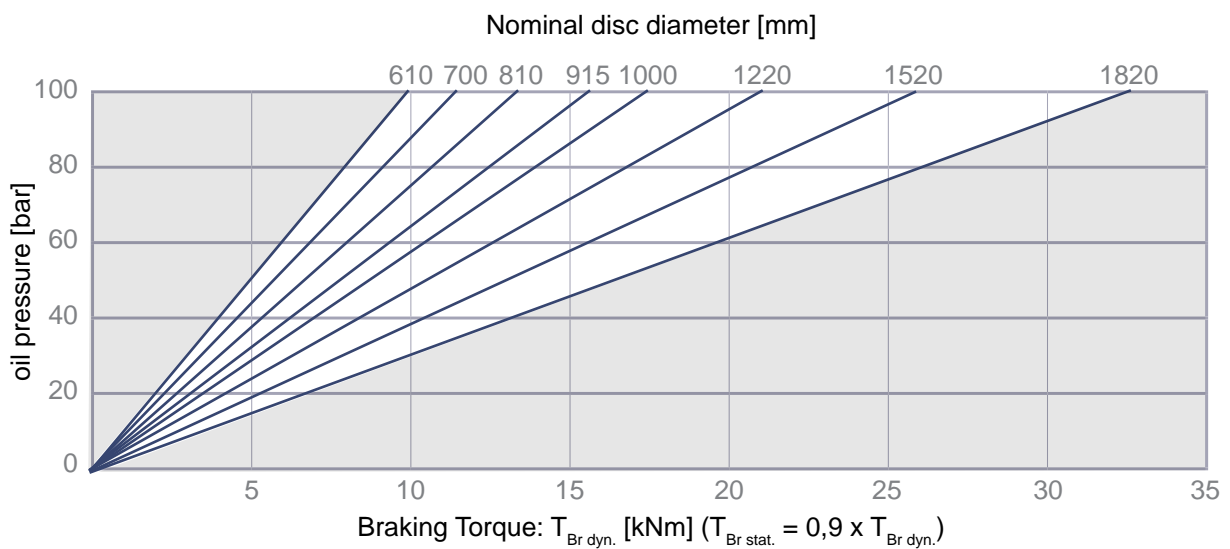


\* active piston retraction

For use with hydraulic oil HLP46 according to DIN 51524-2.  
HFC and bio-degradable oils on request.

EB 255 – **Part-No. 10755**

EB 255 with active piston retraction – **Part-No. 11142**

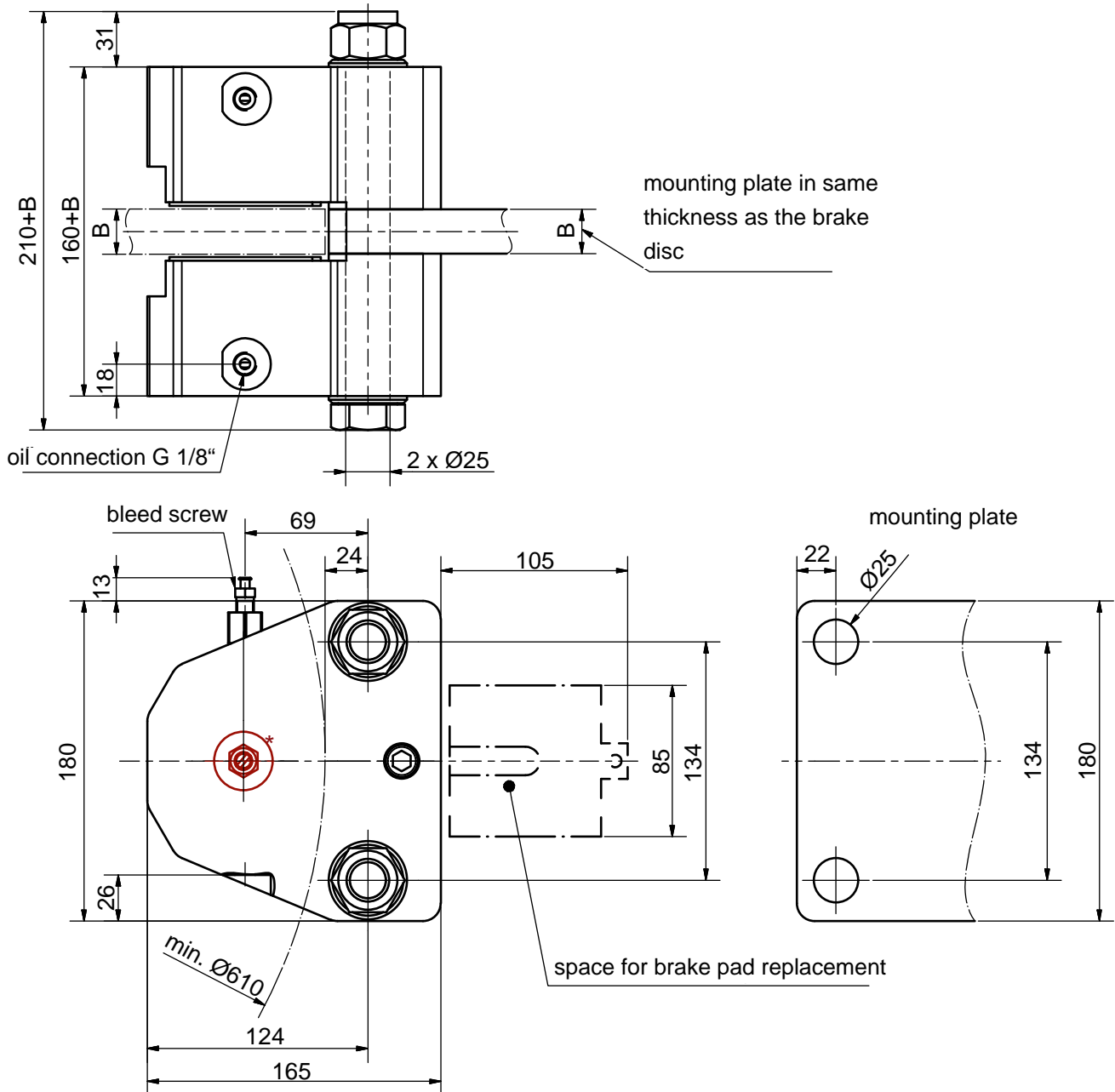


max. oil demand per braking: 0,1 l

brake pad surface: 142 cm<sup>2</sup>

$p_{max}$ : 100 bar

Mass: 24,5 kg



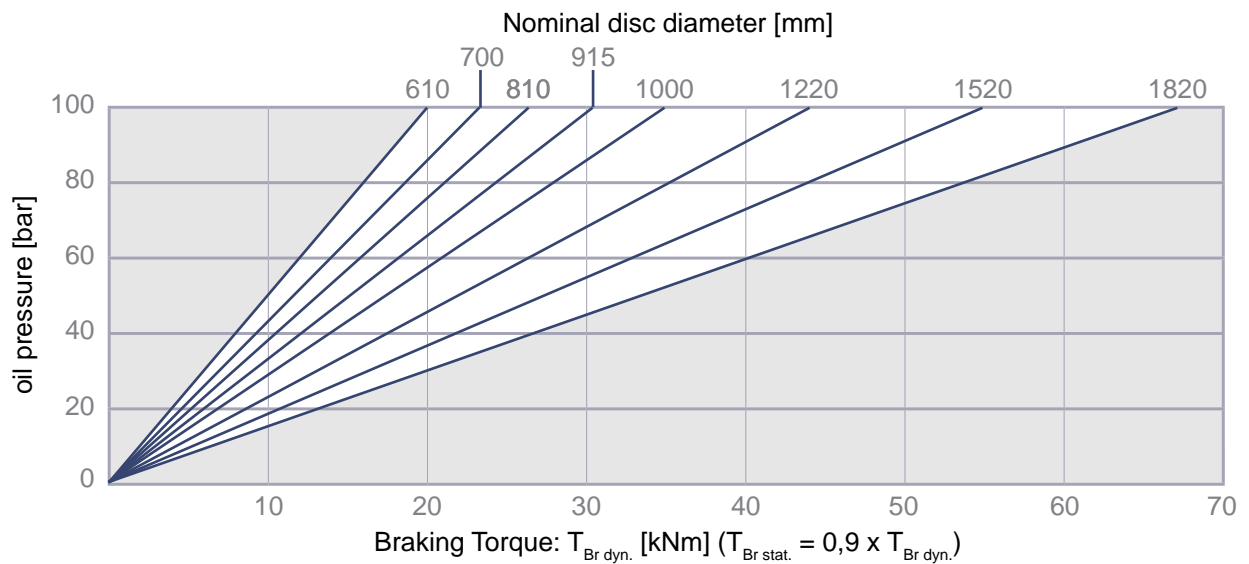
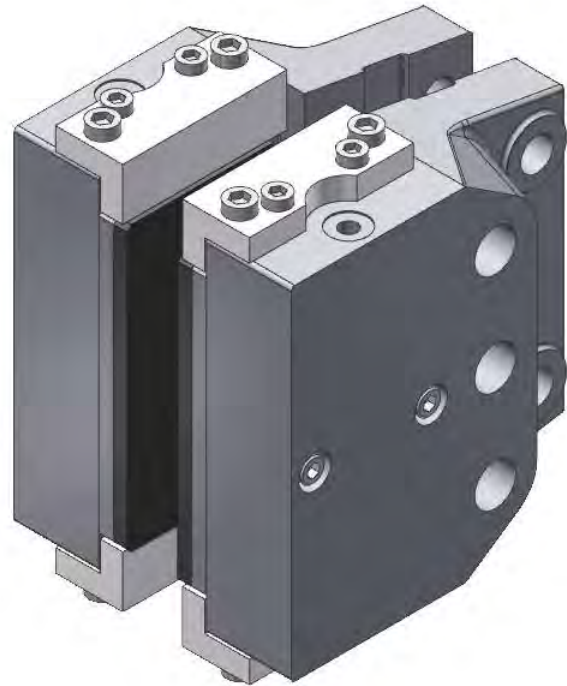
\* active piston retraction

EB 285 – **Part-No. 10926**

EB 285 w/ active piston retraction – **Part-No. 11244**

**For use with mineral oil.**



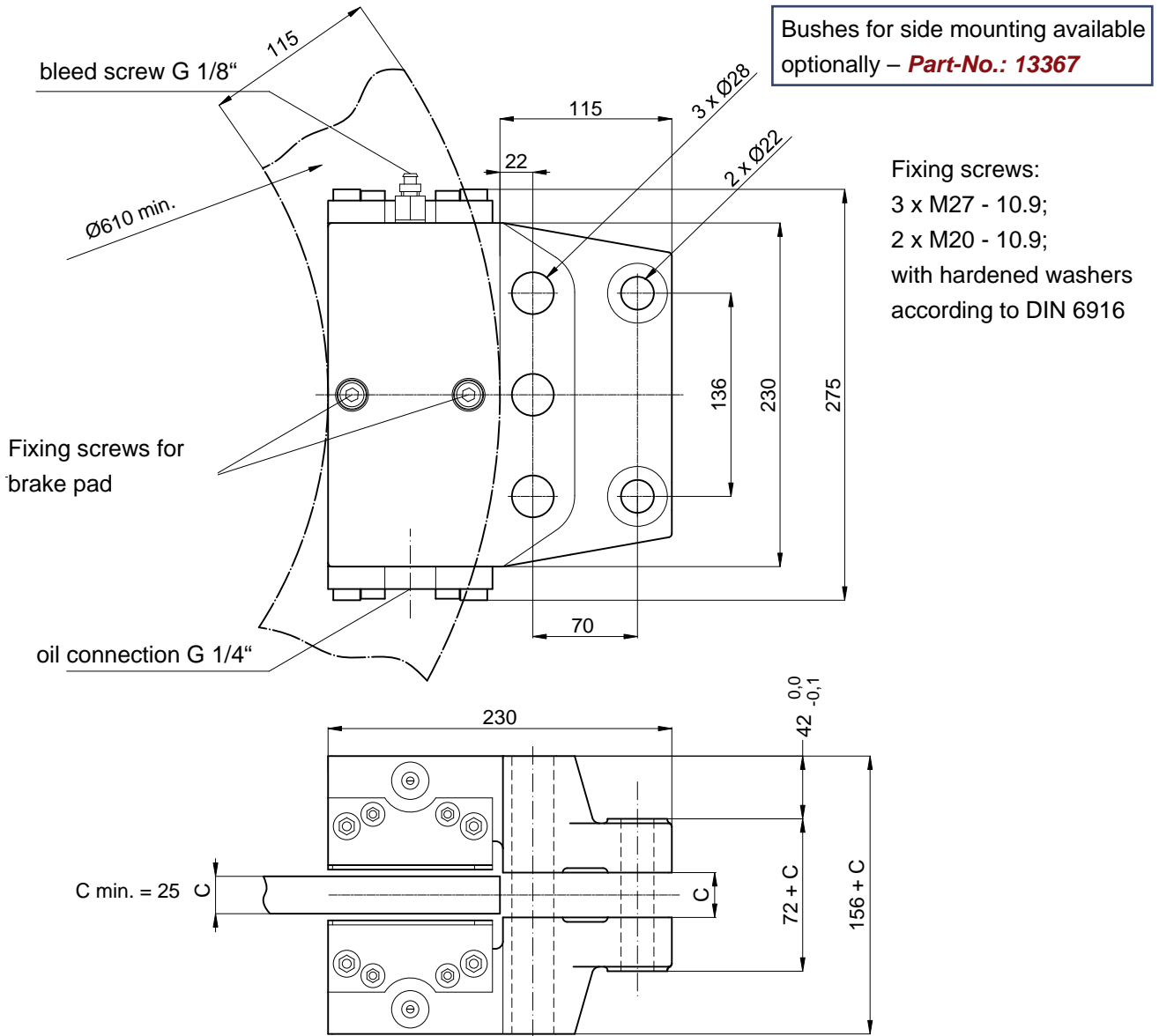


max. oil demand per switching cycle: 200 cm<sup>3</sup>

brake pad surface: 408 cm<sup>2</sup>

$p_{max.}$ : 150 bar (100 bar for side mounting)

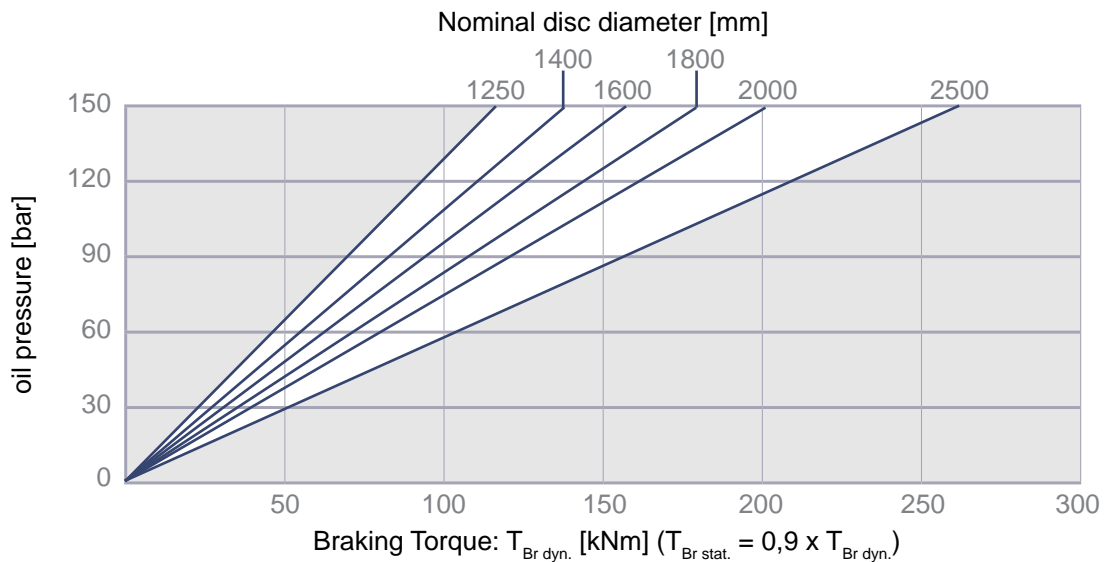
Mass: 48 kg



**For use with mineral oil.**

**NOTE:**

Available soon!

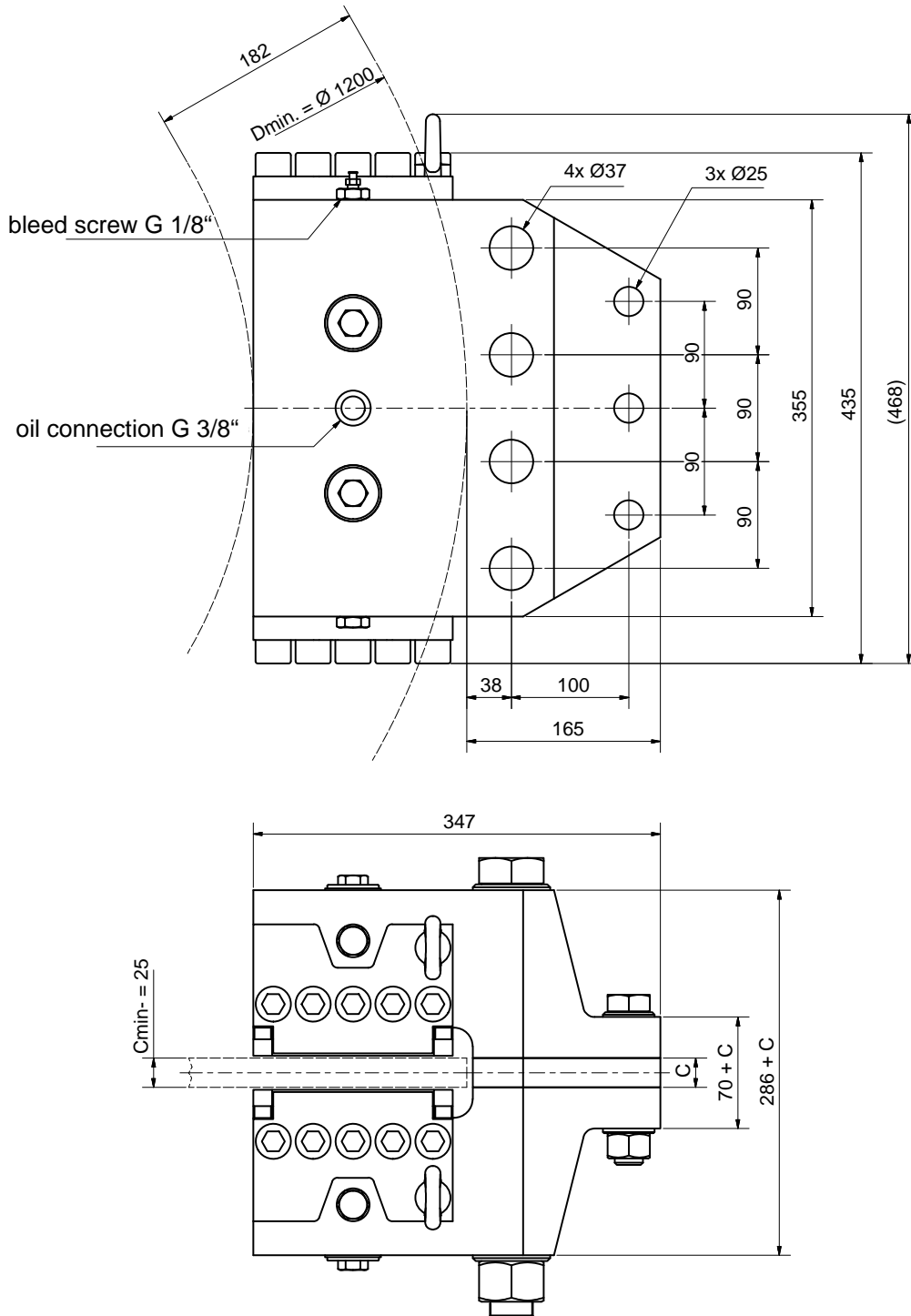


Oil demand at 2 mm stroke: 46 cm<sup>3</sup> per caliper half

Brake pad surface: 583 cm<sup>2</sup> per caliper half

$p_{max.}$ : 150 bar

Mass: 234 kg



Fixing screws:  
4 x M36 - 8.8;  
3 x M24 - 8.8;  
with hardened washers  
according to DIN 6916

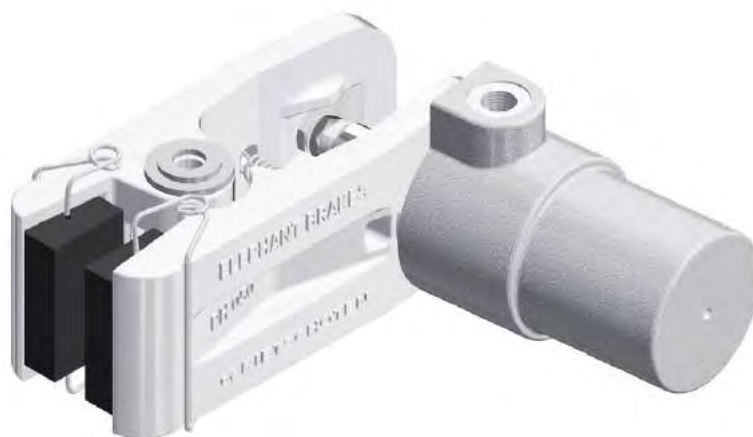
**For use with mineral oil.**

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



spring-applied, pneumatically released brakes



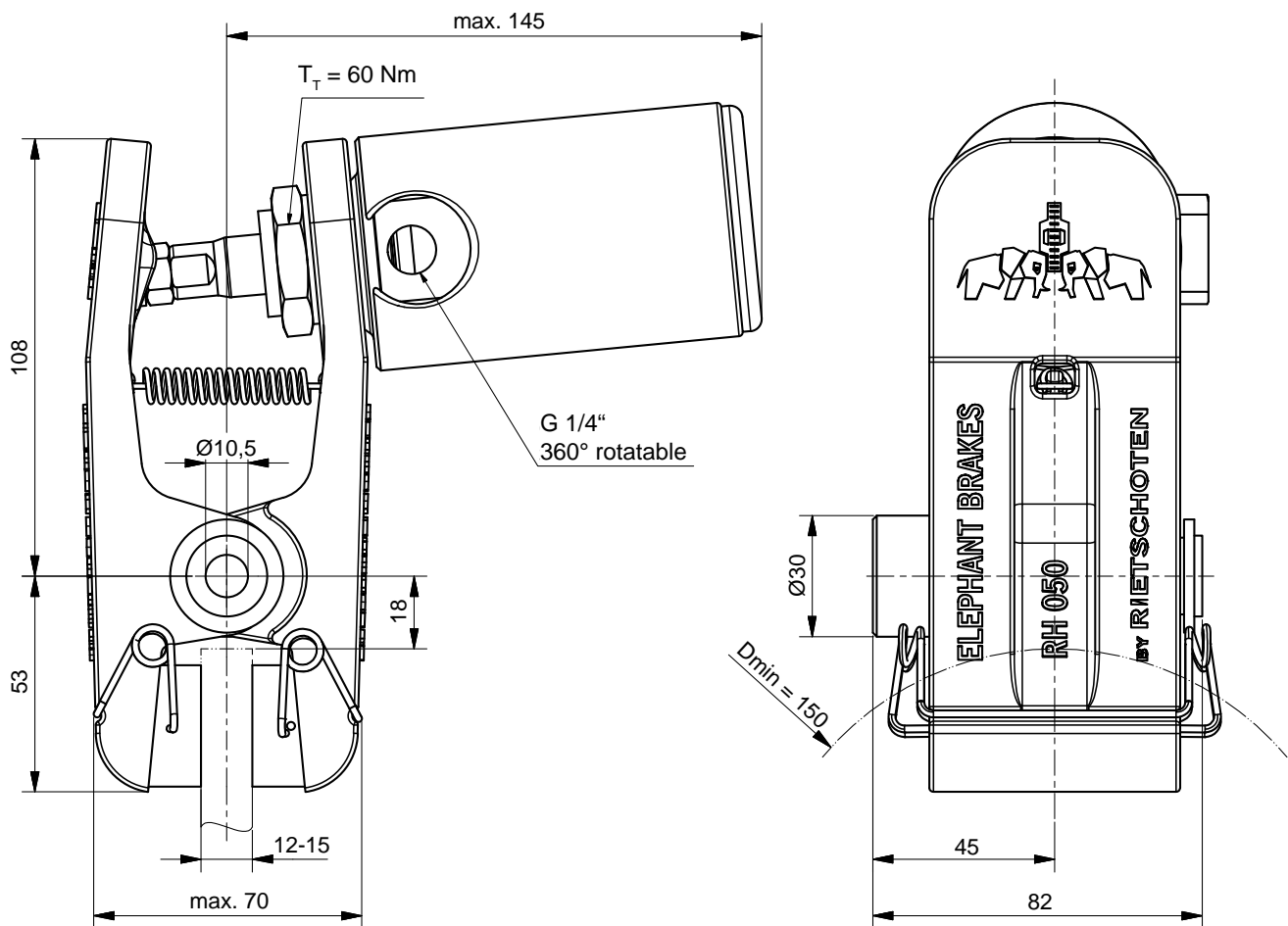
Nominal disc diameter [mm]					
150	200	250	300	400	460
Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )					
60	80	110	130	180	210

$p_{min}$ : 5 bar

$p_{max}$ : 8 bar

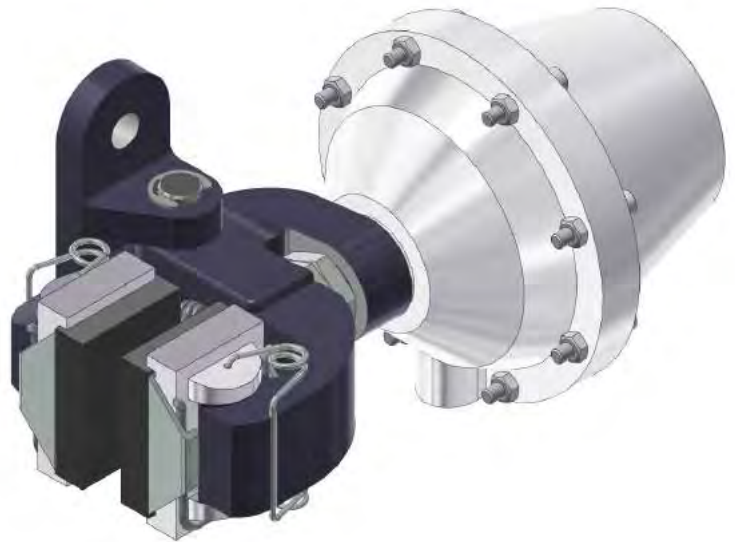
V / stroke: 0,015 dm<sup>3</sup>

Mass: 1,7 kg



Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.



### R&H 100.405.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	90	130	160	190	220	260	290	350	410	470	540
<b>66%</b>	60	80	105	125	145	170	190	230	270	310	355
<b>33%</b>	30	40	50	60	70	85	95	115	135	155	180

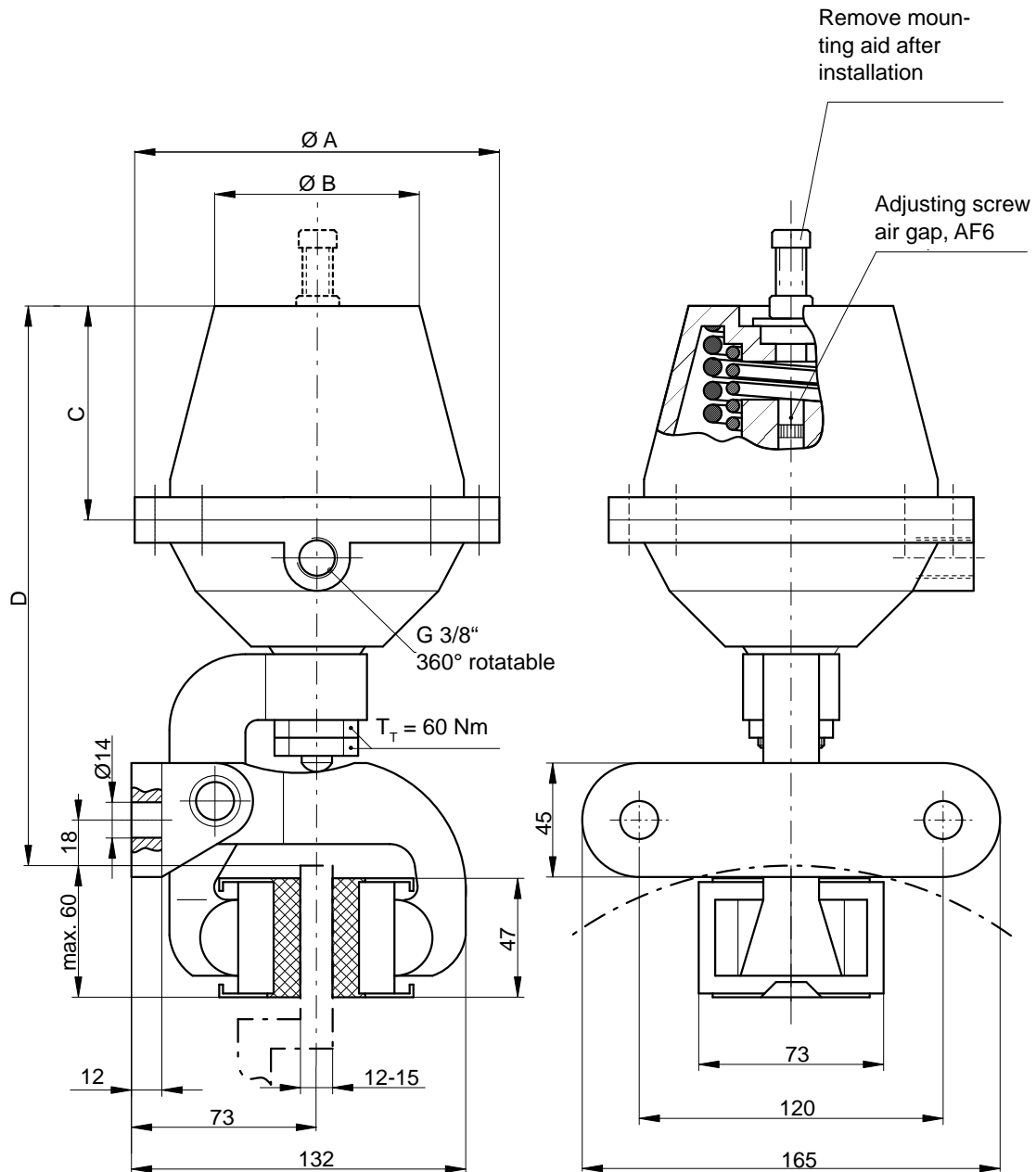
### R&H 100.406.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	160	220	270	325	380	445	505	610	715	825	940
<b>66%</b>	105	145	180	215	250	295	335	400	470	545	620
<b>33%</b>	50	70	90	110	125	145	165	200	235	270	310

$p_{min}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

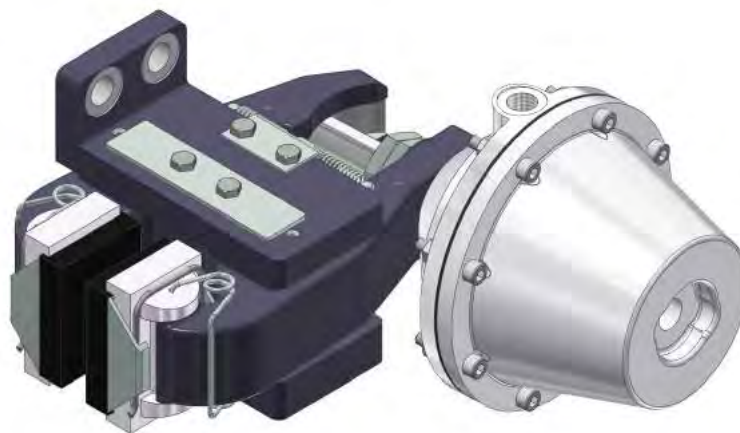
$p_{max}$ : 10 bar





Mounting position is horizontal. Please get in touch if different.

Type	Part-No.	Ø A [mm]	Ø B [mm]	C [mm]	D <sub>max.</sub> [mm]	Mass [kg]	V / stroke [dm <sup>3</sup> ]
<b>R&amp;H 100.405.01</b>	<b>11847</b>	144	81	82,5	225	6,2	0,12
R&H 100.405.01 66%	<b>13199</b>						
R&H 100.405.01 33%	<b>13200</b>						
<b>R&amp;H 100.406.01</b>	<b>11848</b>	180	110	97,5	245	7,7	0,43
R&H 100.406.01 66%	<b>13201</b>						
R&H 100.406.01 33%	<b>13202</b>						



### R&H 200.405.01

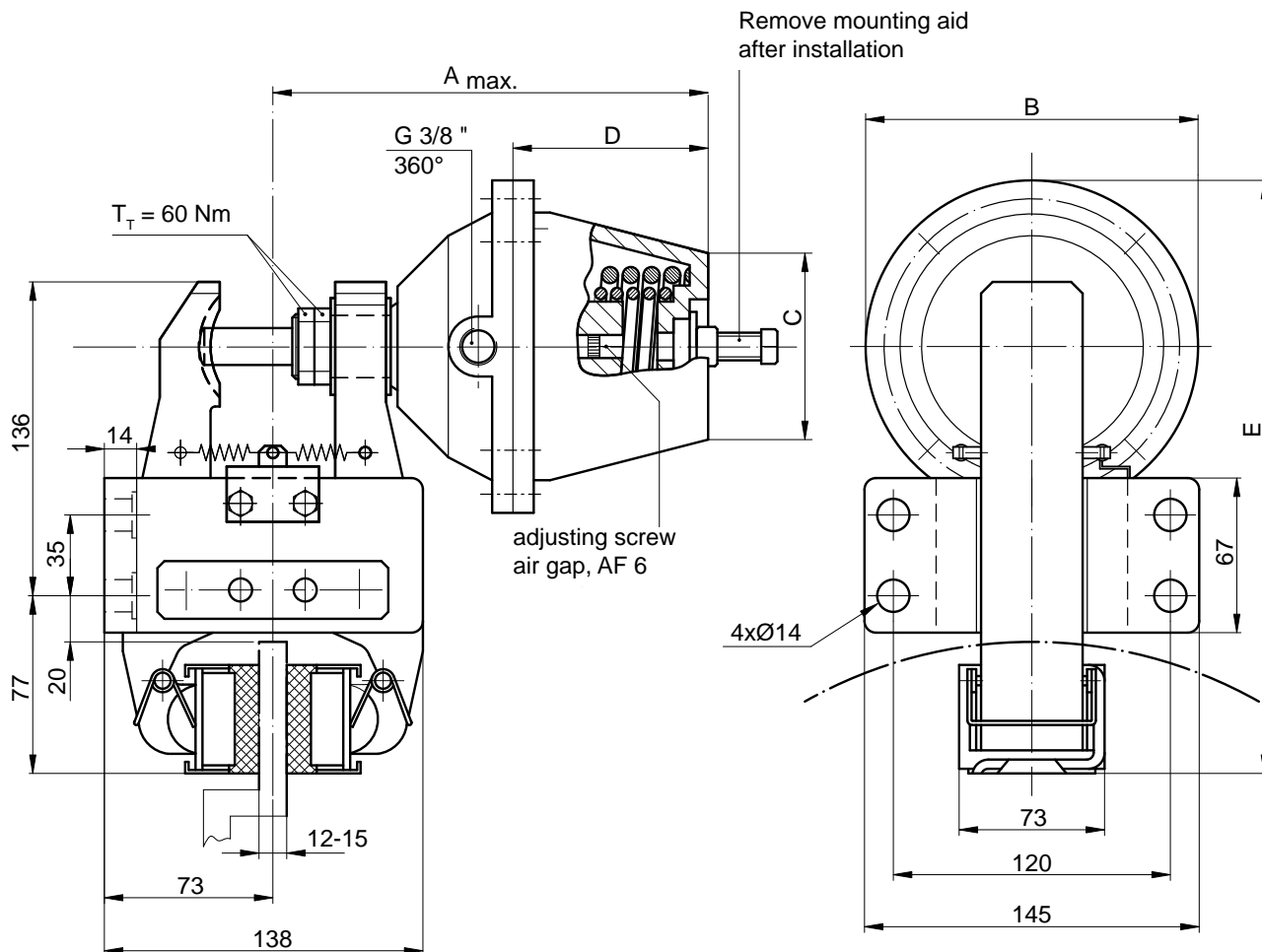
spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	235	315	390	470	550	645	730	880	1040	1195	1350
<b>66%</b>	155	210	260	310	365	425	480	580	685	790	890
<b>33%</b>	80	105	130	155	180	210	240	290	345	395	445

### R&H 200.406.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	415	555	685	825	970	1135	1285	1550	1830	2100	2390
<b>66%</b>	275	365	450	545	640	750	850	1025	1210	1385	1575
<b>33%</b>	135	185	225	270	320	375	425	510	605	695	790

$p_{min}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

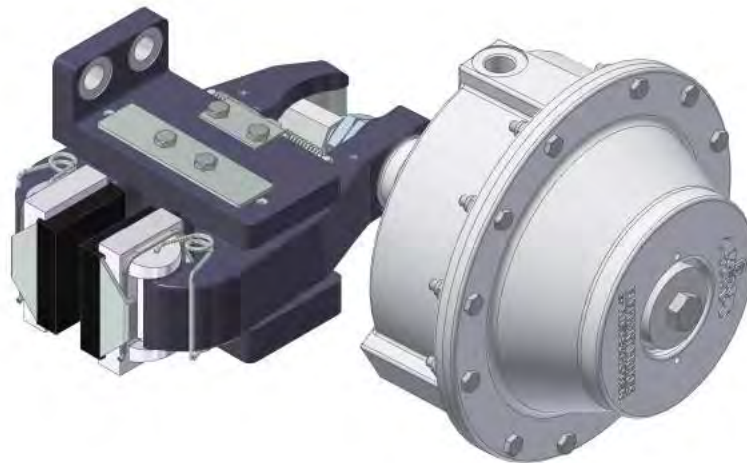
$p_{max}$ : 10 bar



Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

Type	Part-No.	A max. [mm]	Ø B [mm]	Ø C [mm]	D [mm]	E [mm]	V / stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 200.405.01	<b>11849</b>	200	144	81	82,5	260	0,12	10,4
R&H 200.405.01 66%	<b>13212</b>							
R&H 200.405.01 33%	<b>13213</b>							
R&H 200.406.01	<b>11850</b>	230	180	110	97,5	278	0,43	11,9
R&H 200.406.01 66%	<b>13224</b>							
R&H 200.406.01 33%	<b>13225</b>							



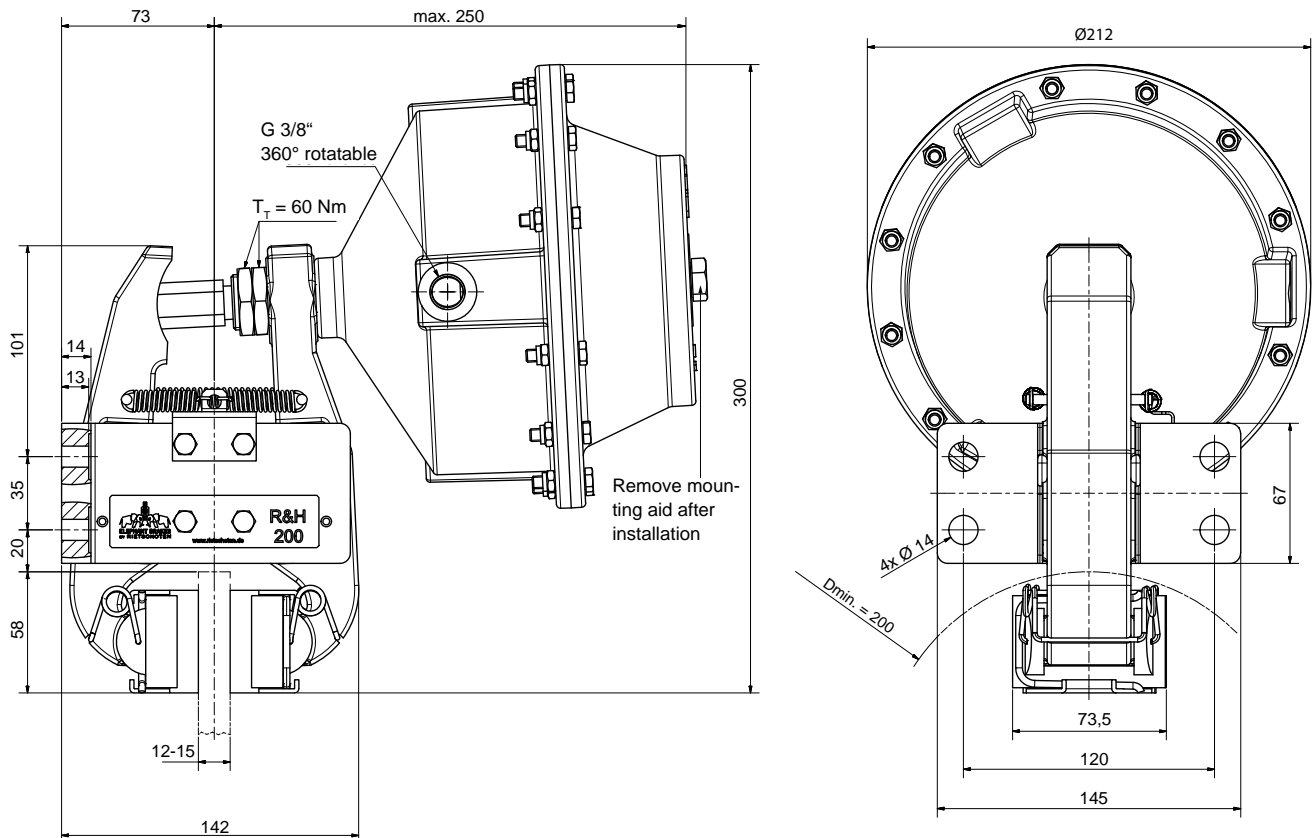
Type	Part-No.	Nominal disc diameter [mm]										
		200	250	300	350	400	460	515	610	710	810	915
		Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>R&amp;H 200.412.01</b>	<b>14569</b>	660	910	1160	1410	1660	1960	2230	2700	3200	3690	4220
<b>R&amp;H 200.412.01 66%</b>	<b>14569-66</b>	440	600	770	930	1090	1290	1470	1780	2110	2440	2780
<b>R&amp;H 200.412.01 33%</b>	<b>14569-33</b>	220	300	380	470	550	650	740	890	1060	1220	1390

$p_{min}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

$p_{max}$ : 10 bar

V / stroke: 0,4 dm<sup>3</sup>

Mass: 15 kg



Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

**NOTE:**

Also pneumatically applied usable



**spring-applied, pneumatically released**

Nominal disc diameter [mm]										
200	250	300	350	400	460	515	610	710	810	915
Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
550	775	925	1050	1250	1400	1650	2000	2300	2600	3000

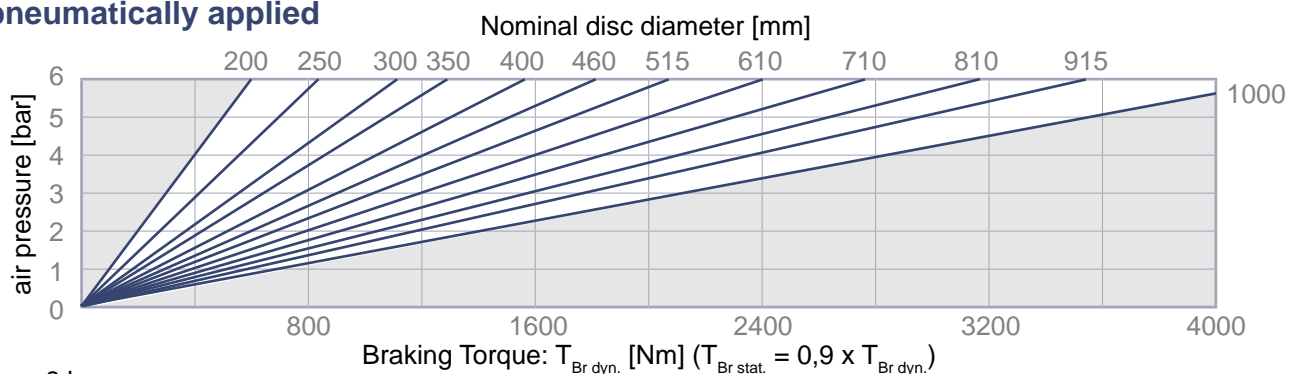
$p_{min}$ : 5 bar

$p_{max}$ : 10 bar

V / stroke: 0,22 dm<sup>3</sup>

Mass: 16,5 kg

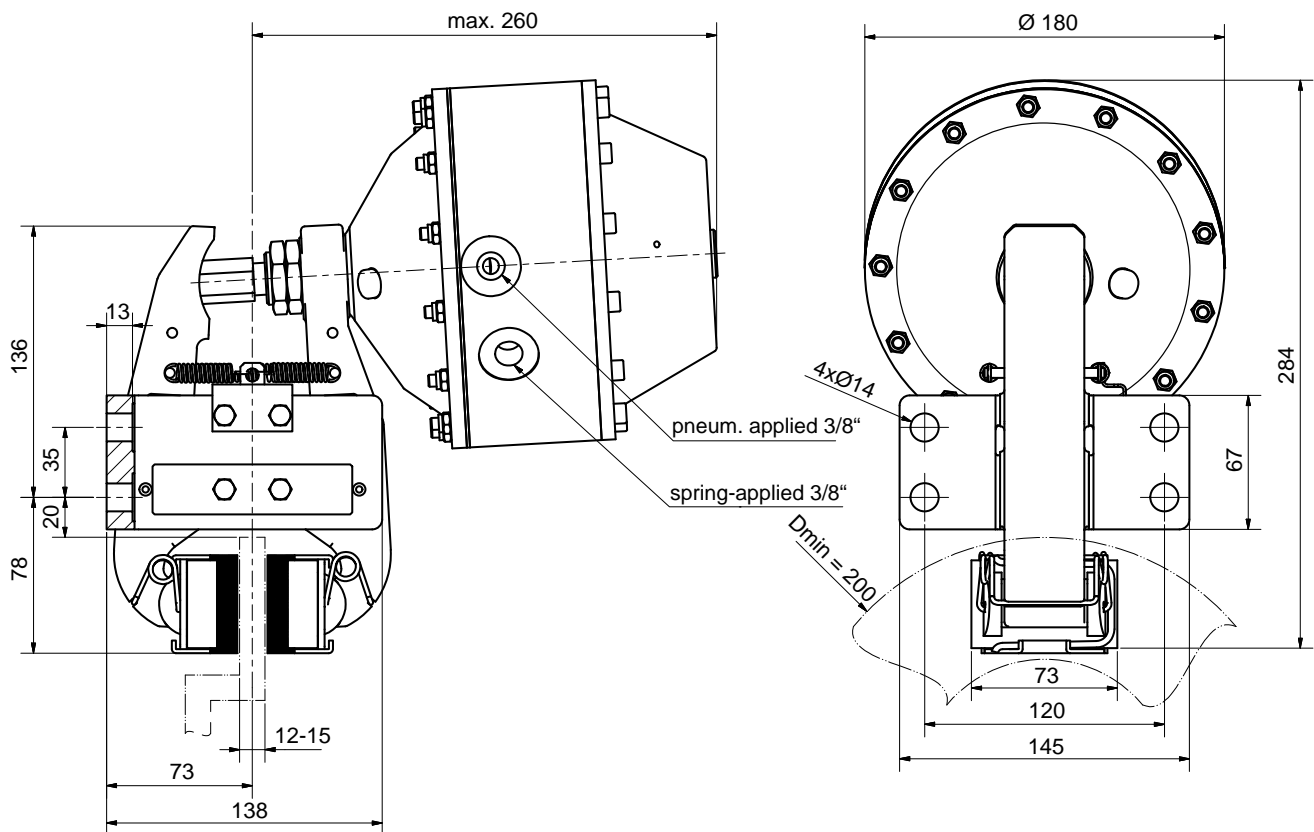
**pneumatically applied**



$p_{max}$ : 8 bar

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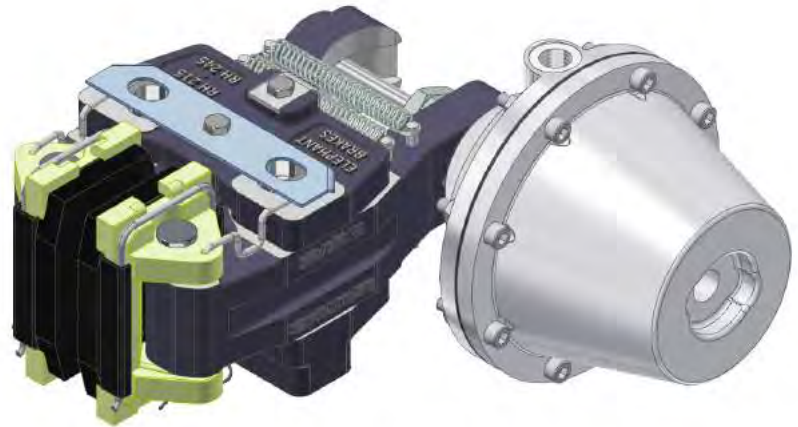


Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



### R&H 215.405.01 / R&H 225.405.01 / R&H 230.405.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	235	315	390	470	550	645	730	880	1040	1195	1350
<b>66%</b>	155	210	260	310	365	425	480	580	685	790	890
<b>33%</b>	80	105	130	155	180	210	240	290	345	395	445

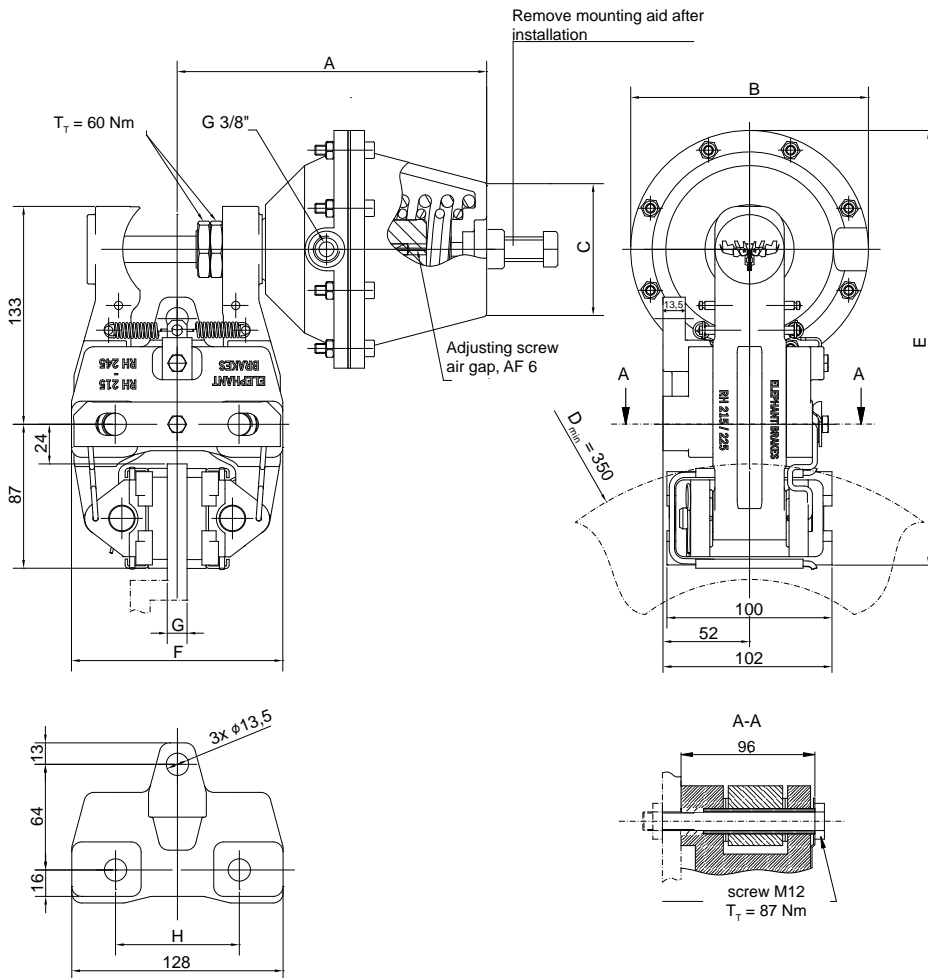
### R&H 215.406.01 / R&H 225.406.01 / R&H 230.406.01 / R&H 245.406.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	415	555	685	825	970	1135	1285	1550	1830	2100	2390
<b>66%</b>	275	365	450	545	640	750	850	1025	1210	1385	1575
<b>33%</b>	135	185	225	270	320	375	425	510	605	695	790

$p_{min.}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

$p_{max.}$ : 10 bar





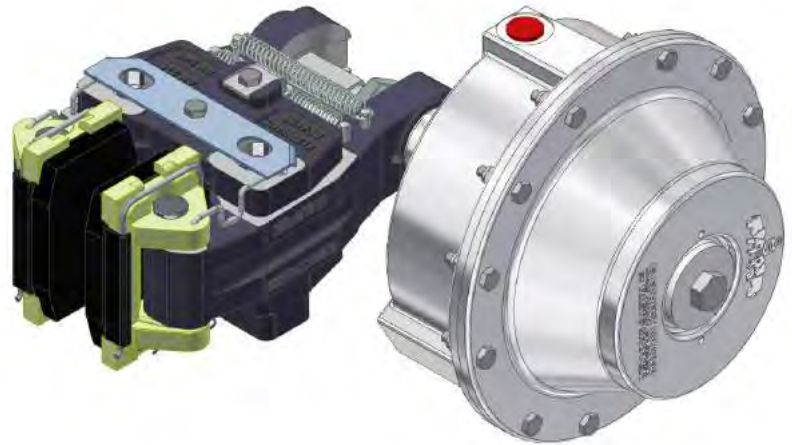
Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

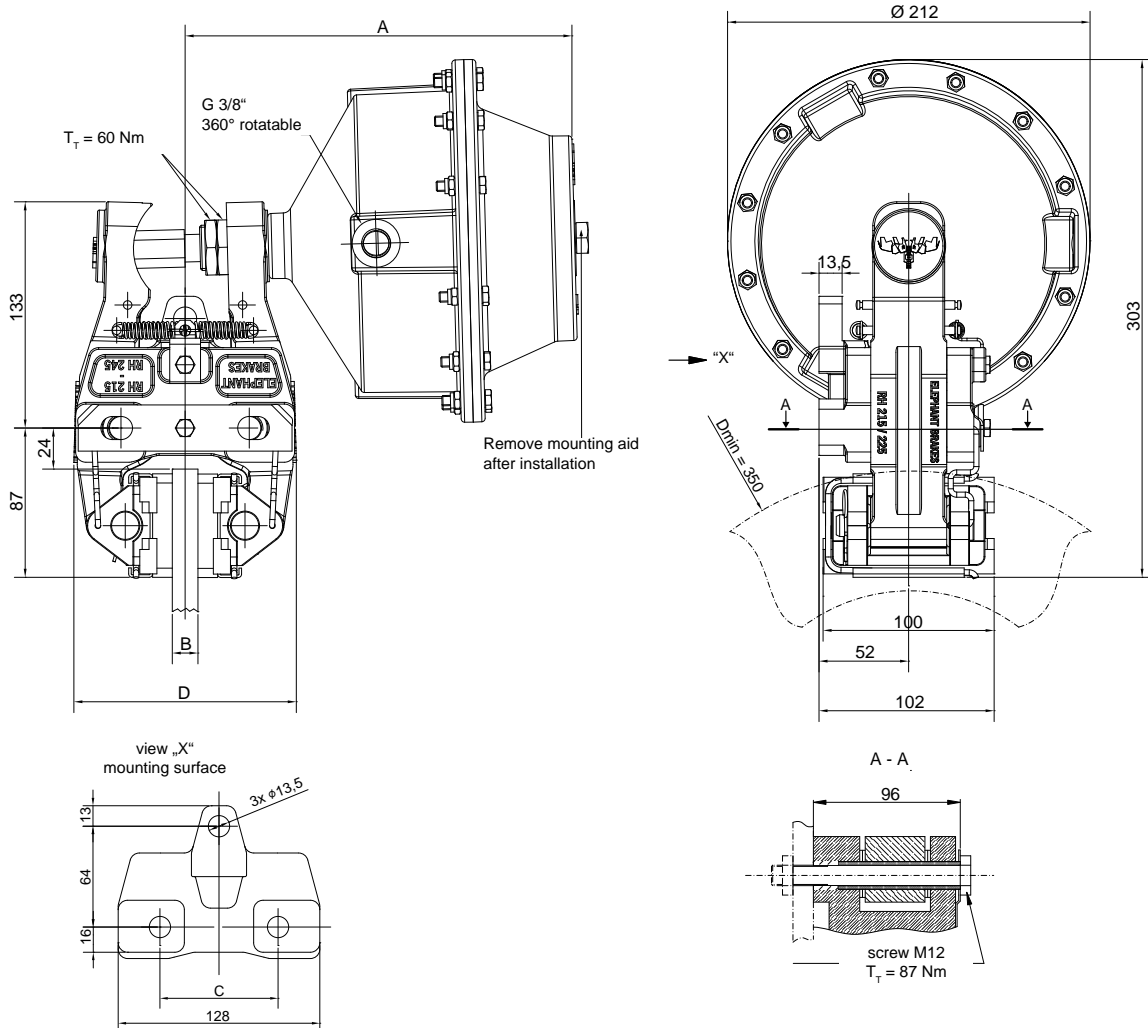
Type	Part-No.	A max. [mm]	Ø B [mm]	Ø C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	V / stroke [dm³]	Mass [kg]
<b>R&amp;H 215.405.01 100%</b>	<b>11860</b>	200	144	81	265	130	12-15	75	0,12	10,3
R&H 215.405.01 66%	13216									
R&H 215.405.01 33%	13217									
<b>R&amp;H 225.405.01 100%</b>	<b>11861</b>	205	144	81	265	140	25,4	84	0,12	10,5
R&H 225.405.01 66%	13218									
R&H 225.405.01 33%	13219									
<b>R&amp;H 230.405.01 100%</b>	<b>11862</b>	200	180	110	281	144	30	75	0,43	12
R&H 230.405.01 66%	13220									
R&H 230.405.01 33%	13221									
<b>R&amp;H 215.406.01 100%</b>	<b>11863</b>	230	180	110	281	130	12-15	75	0,43	12
R&H 215.406.01 66%	13230									
R&H 215.406.01 33%	13231									
<b>R&amp;H 225.406.01 100%</b>	<b>11864</b>	235	180	110	281	140	25,4	84	0,43	12,2
R&H 225.406.01 66%	13232									
R&H 225.406.01 33%	13233									
<b>R&amp;H 230.406.01 100%</b>	<b>11865</b>	230	180	110	281	144	30	75	0,43	12,2
R&H 230.406.01 66%	13234									
R&H 230.406.01 33%	13235									
<b>R&amp;H 245.406.01 100%</b>	<b>13925</b>	235	180	110	281	154	45	84	0,43	12,2

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



spring force	Nominal disc diameter [mm]							
	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
<b>100%</b>	1410	1660	1960	2230	2700	3200	3700	4220
<b>66%</b>	930	1100	1290	1470	1780	2110	2440	2780
<b>33%</b>	470	550	650	740	890	1060	1220	1390



Mounting position is horizontal. Please get in touch if different.

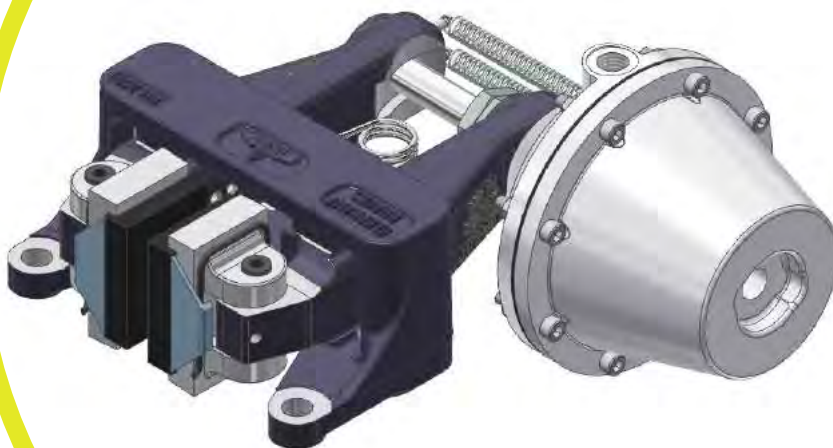
A right hand mounted thruster is standard – left hand mounted please state with order.

Type*	Part-No.	A [mm]	B [mm]	C [mm]	D [mm]	p <sub>min</sub> [bar]	p <sub>max</sub> [bar]	V / stroke [dm <sup>3</sup> ]	Mass [kg]	
R&H 215.412.01	<b>14615</b>	225	12 - 15	75	130	5	10	0,4	14,2	
R&H 215.412.01 66%	<b>14808</b>					3,3				
R&H 225.412.01	<b>14621</b>	230	25,4	84	140	5				14,4
R&H 230.412.01	<b>14622</b>	233	30	75	144					
R&H 245.412.01	<b>14623</b>	240	45	84	154					

\* more spring forces available on request

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



### R&H 250.405.01

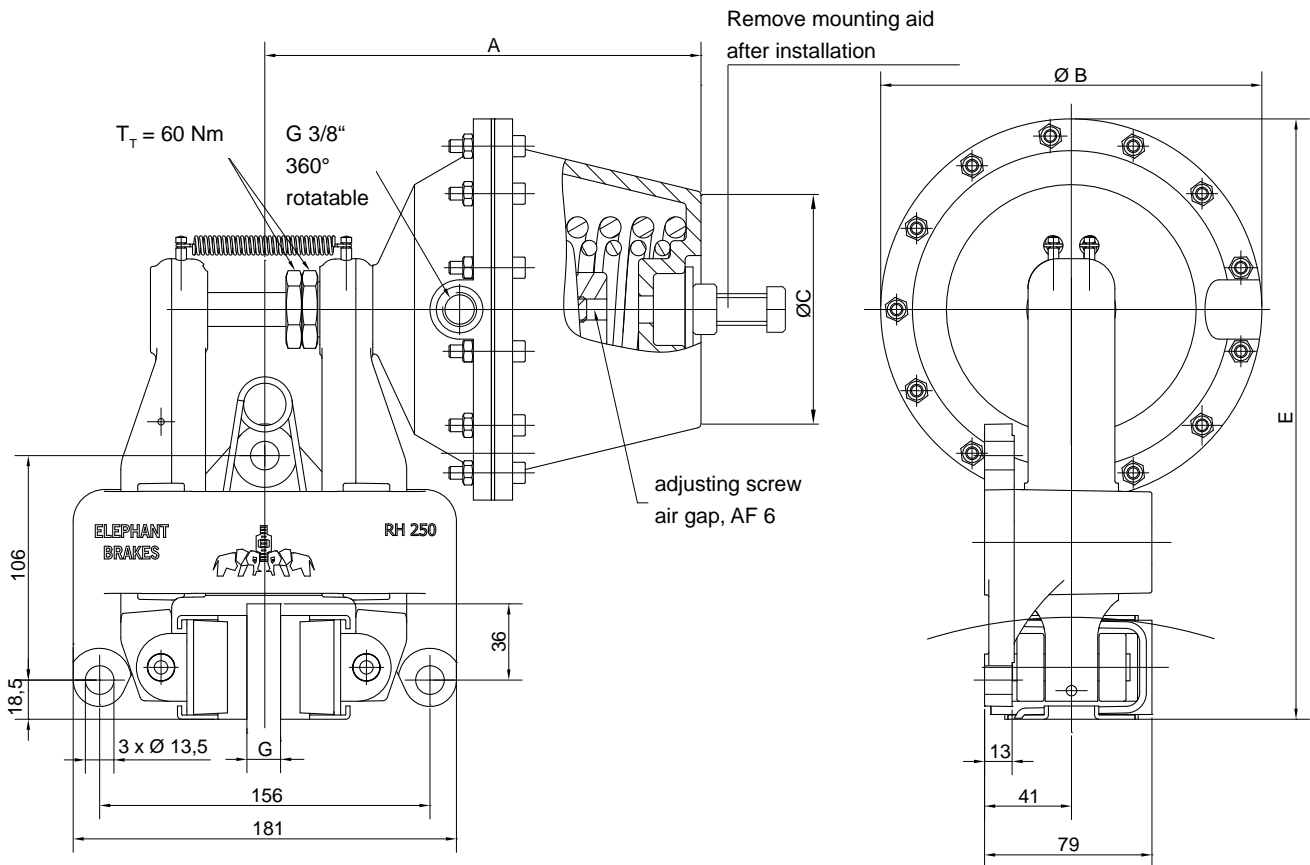
spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	<b>Braking Torque: <math>T_{Br\ dyn.}</math> [Nm] (<math>T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}</math>)</b>										
<b>100%</b>	235	315	390	470	550	645	730	880	1040	1195	1350
<b>66%</b>	155	210	260	310	365	425	480	580	685	790	890
<b>33%</b>	80	105	130	155	180	210	240	290	345	395	445

### R&H 250.406.01

spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	<b>Braking Torque: <math>T_{Br\ dyn.}</math> [Nm] (<math>T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}</math>)</b>										
<b>100%</b>	415	555	685	825	970	1135	1285	1550	1830	2100	2390
<b>66%</b>	275	365	450	545	640	750	850	1025	1210	1385	1575
<b>33%</b>	135	185	225	270	320	375	425	510	605	695	790

$p_{min.}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

$p_{max.}$ : 10 bar



Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A max. [mm]	Ø B [mm]	Ø C [mm]	E [mm]	G [mm]	V/stroke [dm <sup>3</sup> ]	Mass [kg]
<b>R&amp;H 250.405.01 100%</b>	<b>11845</b>	205	144	81	266	12,7	0,12	9,5
R&H 250.405.01 66%	<b>13214</b>							
R&H 250.405.01 33%	<b>13215</b>							
<b>R&amp;H 250.406.01 100%</b>	<b>11846</b>	230	180	110	284	12,7	0,43	11,0
R&H 250.406.01 66%	<b>13228</b>							
R&H 250.406.01 33%	<b>13229</b>							
<b>R&amp;H 250.405.01 short. 100%</b>	<b>13209</b>	205	144	81	266	25,4	0,12	9,5
R&H 250.405.01 short. 66%	<b>13210</b>							
R&H 250.405.01 short. 33%	<b>13211</b>							
<b>R&amp;H 250.406.01 short. 100%</b>	<b>12571</b>	230	180	110	284	25,4	0,43	11,0
R&H 250.406.01 short. 66%	<b>13222</b>							
R&H 250.406.01 short. 33%	<b>13223</b>							

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



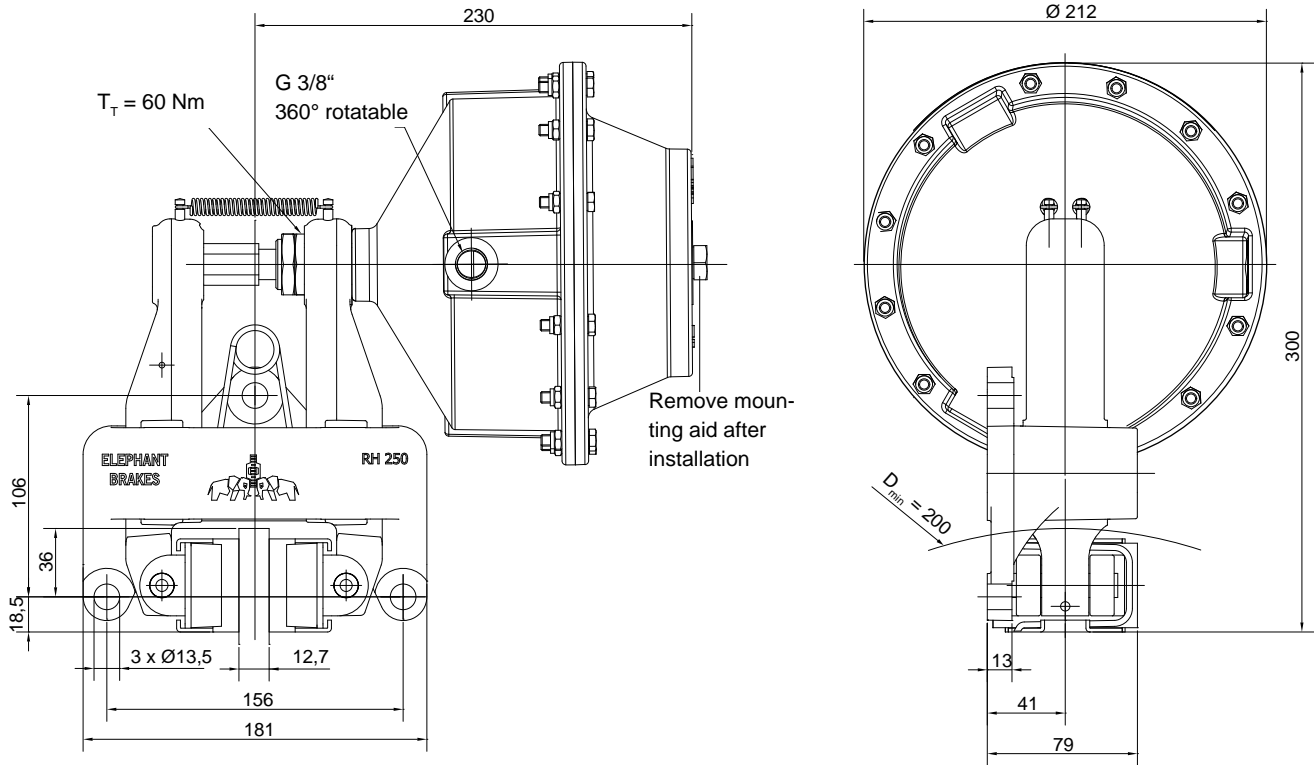
spring force	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>100%</b>	690	930	1170	1410	1660	1950	2220	2680	3160	3650	4160
<b>66%</b>	450	610	770	930	1090	1290	1460	1770	2090	2410	2740
<b>33%</b>	230	310	390	470	550	640	730	880	1040	1200	1370

$p_{min.}$ : 5 bar (100%) / 3,3 (66%) / 1,7 (33%)

$p_{max.}$ : 10 bar

max. V / stroke: 0,4 dm<sup>3</sup>

Mass: 13,9 kg

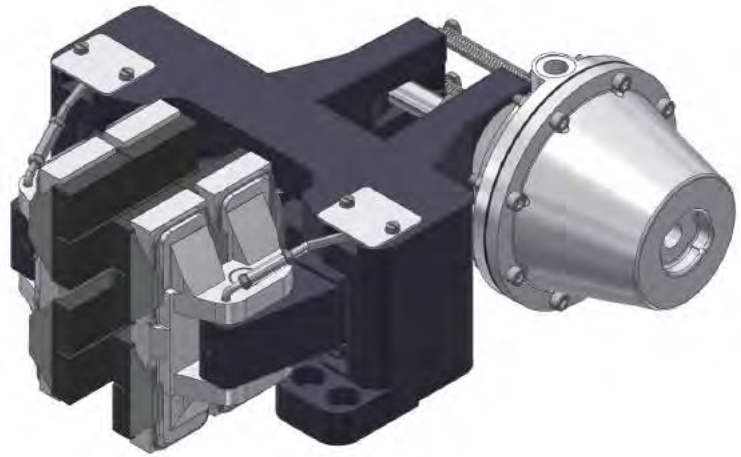


Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

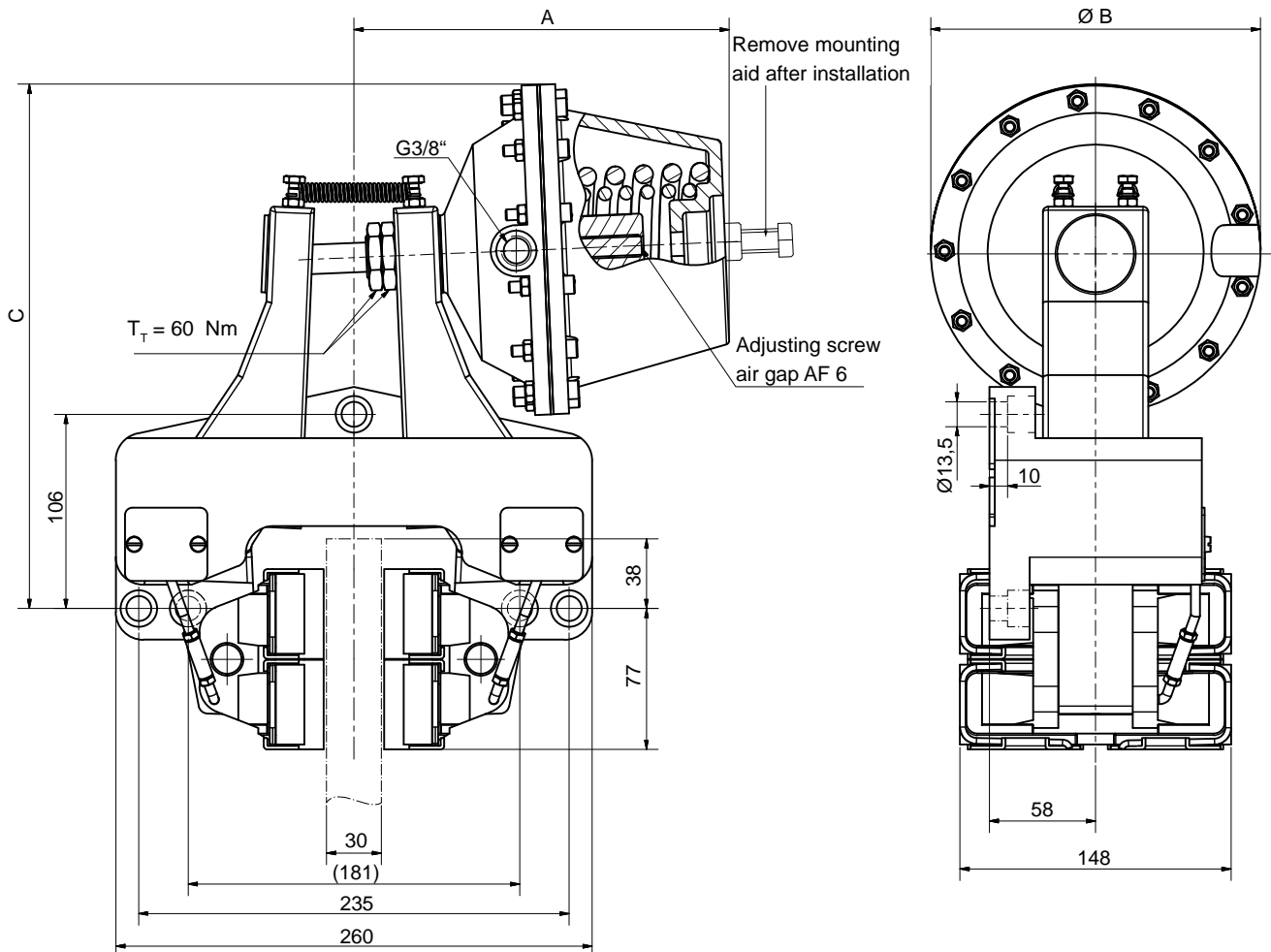
**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



	Nominal disc diameter [mm]								
	560	630	710	800	900	1000	1250	1600	1800
Type	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )								
R&H 300.405.04	720	830	960	1100	1250	1410	1800	2350	2660
R&H 300.406.04	1270	1460	1690	1940	2200	2480	3170	4170	4680
R&H 300.406.04 66%	840	965	1115	1280	1450	1635	2090	2750	3090
R&H 300.406.04 33%	420	480	560	640	725	820	1045	1375	1545





Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	Ø B [mm]	C [mm]	p <sub>min.</sub> [mm]	p <sub>max.</sub> [mm]	V/stroke [dm <sup>3</sup> ]	Mass [kg]
R&H 300.405.04	<b>12313</b>	210	144	270	5	10	0,12	23
R&H 300.406.04	<b>12765</b>						0,43	24,5
R&H 300.406.04 66%	<b>13226</b>	240	180	285	3,3			
R&H 300.406.04 33%	<b>13227</b>				1,7			

**NOTE:**

Optionally, an automatic pad wear adjustment is available. Please get in touch with us.



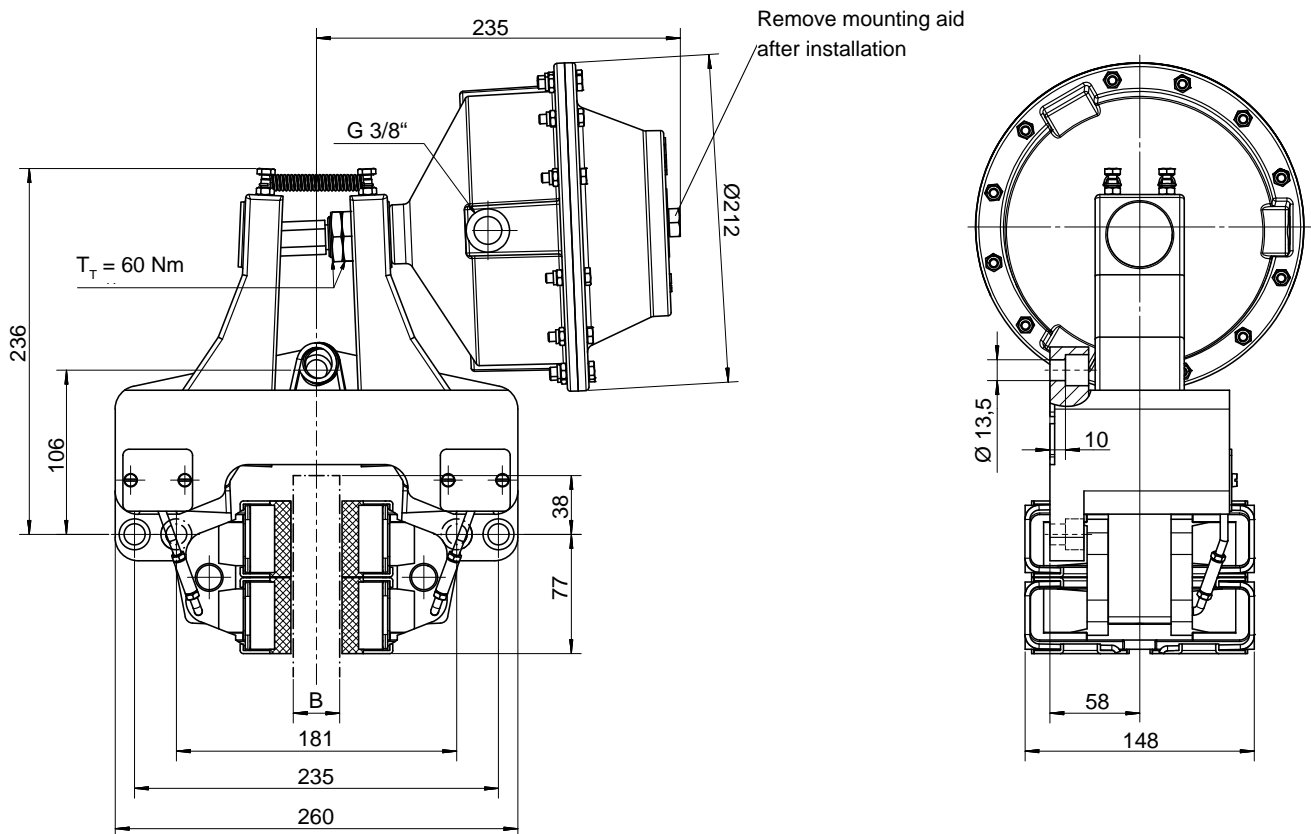
spring force	Nominal disc diameter [mm]								
	560	630	710	800	900	1000	1250	1600	1800
	<b>Braking Torque: <math>T_{Br\ dyn.}</math> [Nm] (<math>T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}</math>)</b>								
<b>100%</b>	2140	2520	2850	3280	3750	4230	5420	7080	8030
<b>66%</b>	1410	1660	1880	2160	2480	2790	3580	4670	5300
<b>33%</b>	710	830	940	1080	1240	1400	1790	2340	2650

$p_{min.}$ : 5 bar (100%) / 3,3 bar (66%) / 1,7 bar (33%)

$p_{max.}$ : 10 bar

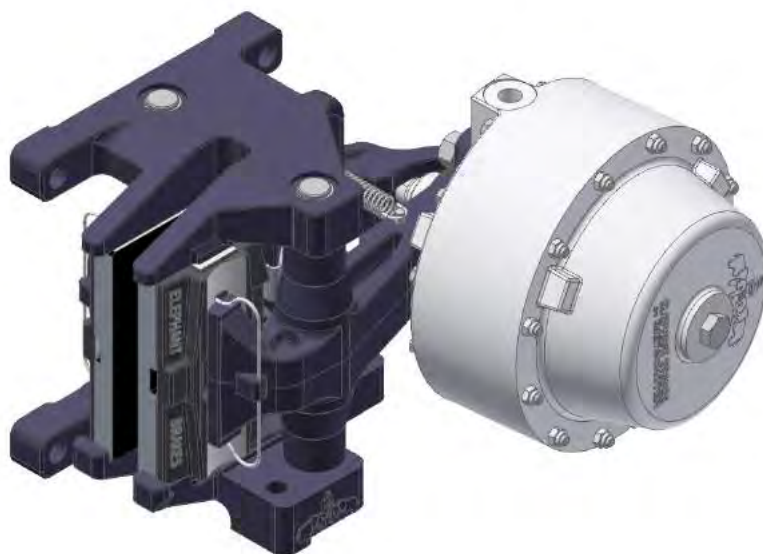
max. V / stroke: 0,4 dm<sup>3</sup>

Mass: 27 kg



Mounting position is horizontal. Please get in touch if different.

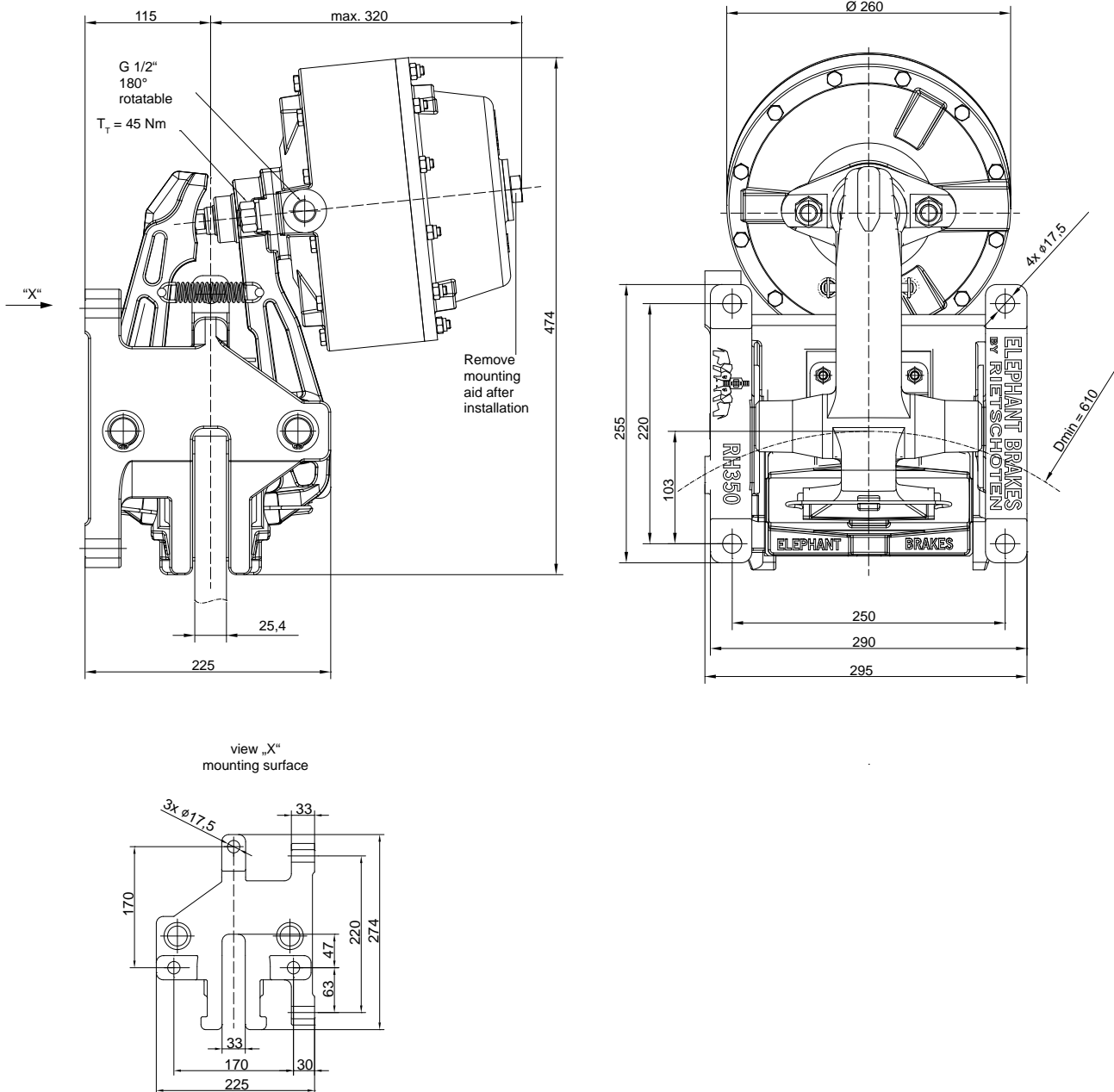
A right hand mounted thruster is standard – left hand mounted please state with order.



Type	Part-No.	p <sub>min</sub> [bar]	Mass [kg]	Nominal disc diameter [mm]							
				610	700	810	915	1000	1220	1520	1820
				Braking Torque: T <sub>Br dyn.</sub> [Nm] (T <sub>Br stat.</sub> = 0,9 x T <sub>Br dyn.</sub> )							
R&H 350.435.01	<b>14593</b>	5	61,7	7750	9150	10850	12480	13800	17200	21850	26500
R&H 350.435.01 83%	<b>14593-83</b>	4,2	60,8	6430	7595	9005	10360	11455	14275	18135	21995
R&H 350.435.01 71%	<b>14593-71</b>	3,6	59,8	5500	6495	7705	8860	9800	12210	15515	18815
R&H 350.435.01 55%	<b>14593-55</b>	2,8	58,9	4260	5030	5970	6865	7590	9460	12020	14575

p<sub>max</sub>: 10 bar

V / stroke: 2,5 dm<sup>3</sup>



Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.



A close-up photograph of a blue industrial brake component. The component is cylindrical and features several metal fittings, including a large hexagonal nut and a smaller bolt. A yellow cap is visible on the right side of the component. The background is white.

spring-applied, hydraulically  
released brakes



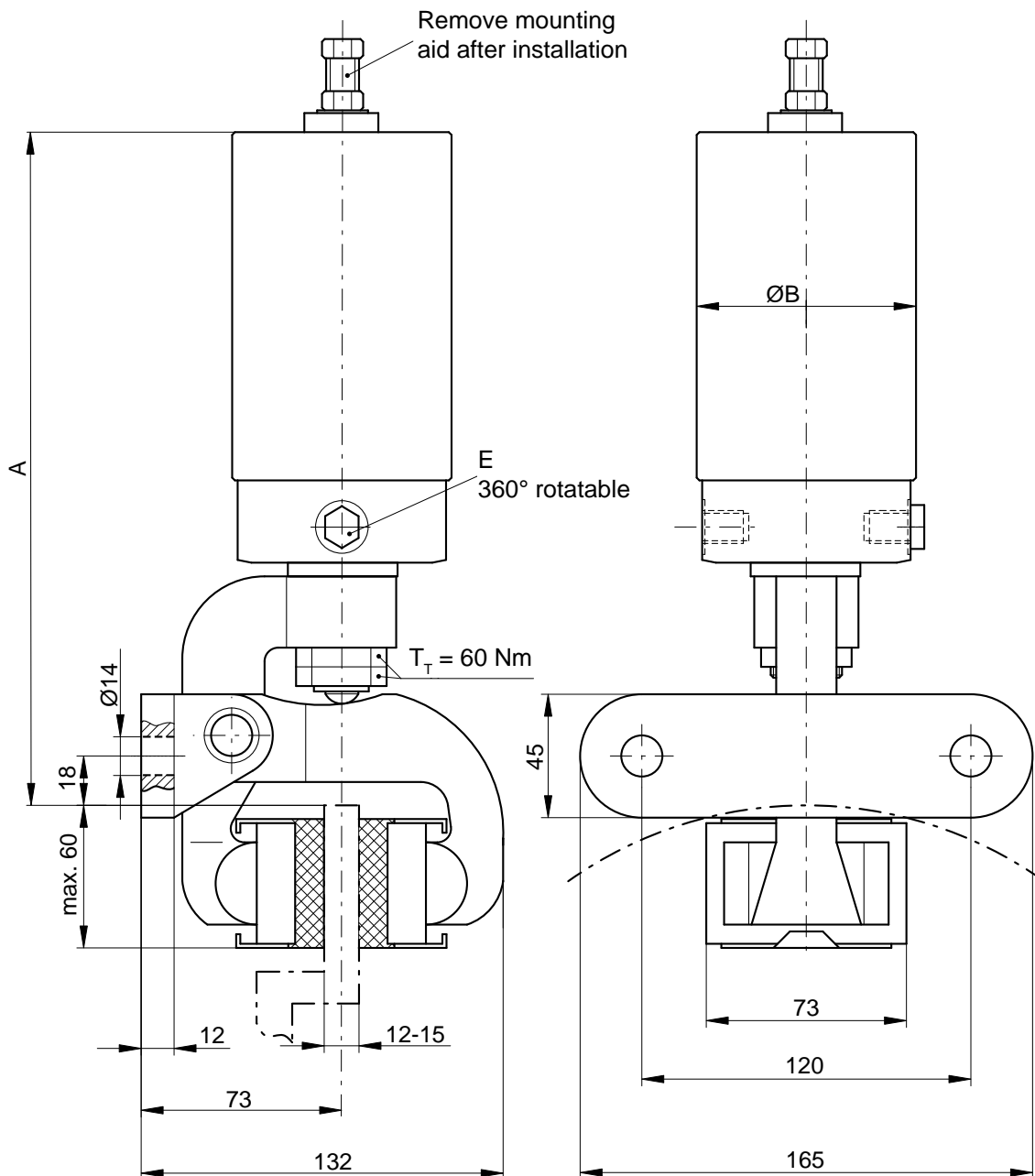
### R&H 100.560.01

Nominal disc diameter [mm]							
250	300	350	400	460	515	610	710
Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
120	150	180	210	240	275	330	390

### R&H 100.550.01

Nominal disc diameter [mm]							
250	300	350	400	460	515	610	710
Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
190	235	280	330	375	430	515	610





Mounting position is horizontal. Please get in touch if different.

Type	Part-No.	A [mm]	$\text{Ø} B$ [mm]	E	$p_{\text{min.}}$ [mm]	$p_{\text{max.}}$ [mm]	max. oil demand [cm <sup>3</sup> ]	Mass [kg]
R&H 100.560.01	<b>12072</b>	260	80	G 1/8"	40	160	15	9
R&H 100.550.01	<b>12100</b>	305	95	G 1/4"	55			11

## Brake Type R&H 200.5XX.01

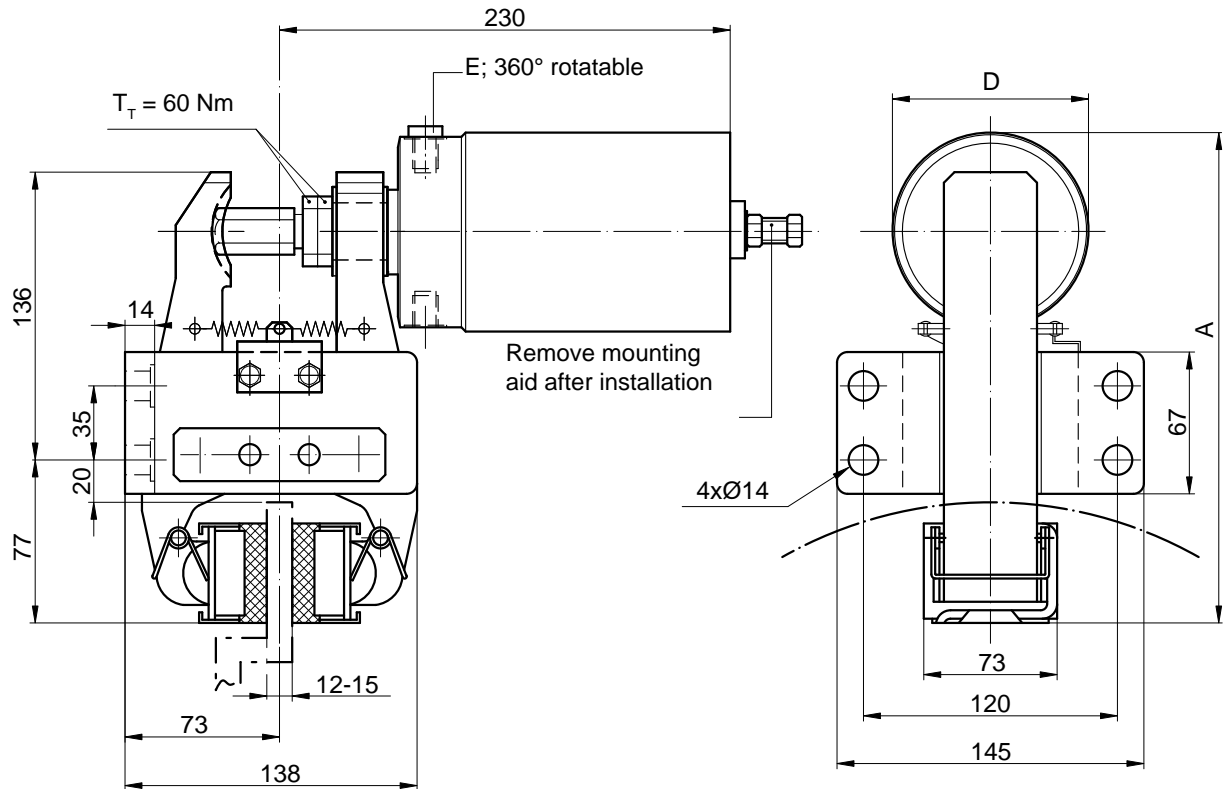
spring-applied, hydraulically released



	Nominal disc diameter [mm]									
	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )									
<b>R&amp;H 200.562.01</b>	140	180	210	250	290	330	400	470	540	620
<b>R&amp;H 200.560.01</b>	475	590	710	830	970	1100	1330	1565	1800	2050
<b>R&amp;H 200.550.01</b>	625	780	940	1090	1280	1450	1750	2060	2370	2690
<b>R&amp;H 200.551.01</b>	850	1070	1280	1490	1750	1990	2400	2830	3260	3700
<b>R&amp;H 200.552.01</b>	1300	1620	1950	2270	2660	3020	3640	4290	4940	5620

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Mounting position is horizontal. Please get in touch if different.

A right hand mounted actuator is standard – „flange side“ mounted please state with order.

Type	Part-No.	D [mm]	A [mm]	E	p <sub>min</sub> [bar]	p <sub>max</sub> [bar]	max. V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 200.562.01	<b>13597</b>	80	227	G 1/8"	20	160	25	14
R&H 200.560.01	<b>11294</b>				40			
R&H 200.550.01	<b>11291</b>	95	234	G 1/4"	55			16
R&H 200.551.01	<b>11292</b>				65			
R&H 200.552.01	<b>11293</b>				100			

## Brake Type R&H 2XX.5XX.01

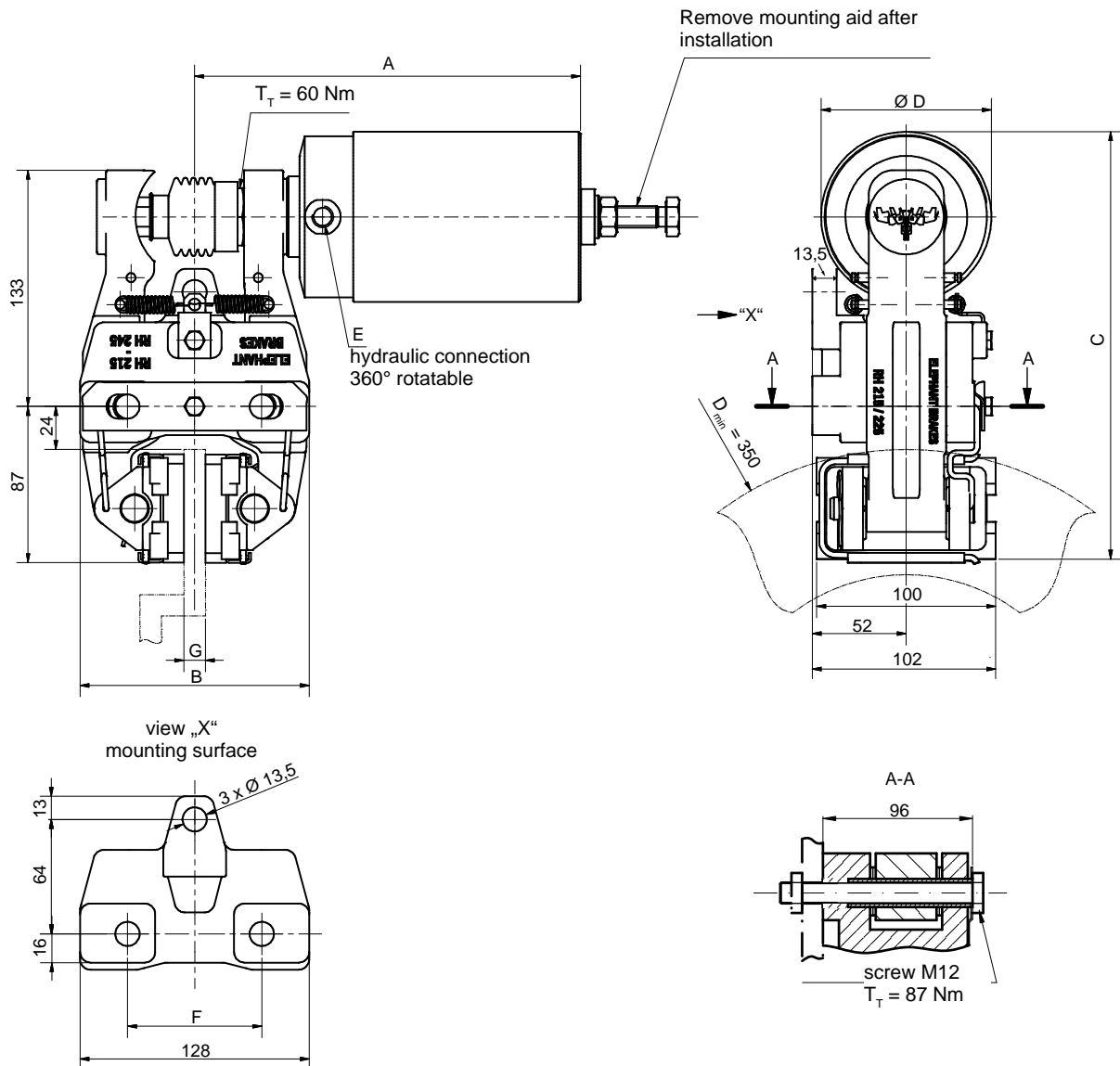
spring-applied, hydraulically released



	Nominal disc diameter [mm]							
	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
R&H 215.560.01 R&H 225.560.01 R&H 230.560.01	710	830	970	1100	1330	1565	1800	2050
R&H 215.550.01	940	1090	1280	1450	1750	2060	2370	2690
R&H 215.551.01	1280	1490	1750	1990	2400	2830	3260	3700
R&H 215.552.01 R&H 225.552.01 R&H 230.552.01 R&H 245.552.01	1950	2270	2660	3020	3640	4290	4940	5620

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Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	$p_{\min}$	$p_{\max}$	A [mm]	B [mm]	C [mm]	$\varnothing D$ [mm]	E	F [mm]	G [mm]	Mass [kg]	
R&H 215.560.01	<b>12275</b>	40	160	230	130	238	80	G 1/8"	75	12-15	13,2	
R&H 225.560.01	<b>14216</b>			235	140				248	84		25,4
R&H 230.560.01	<b>12642</b>			235	144				30	13,4		
R&H 215.550.01	<b>12276</b>	55		230	130	245	95	G 1/4"	75	12-15	15,7	
R&H 215.551.01	<b>12277</b>	65		235	140	255			84	25,4	15,1	
R&H 215.552.01	<b>12278</b>	100							144	245	75	30
R&H 225.552.01	<b>12948</b>						84	45				
R&H 230.552.01	<b>12804</b>			75	30	15,3						
R&H 245.552.01	<b>14141</b>				154	250						

## Brake Type R&H 250.5XX.01

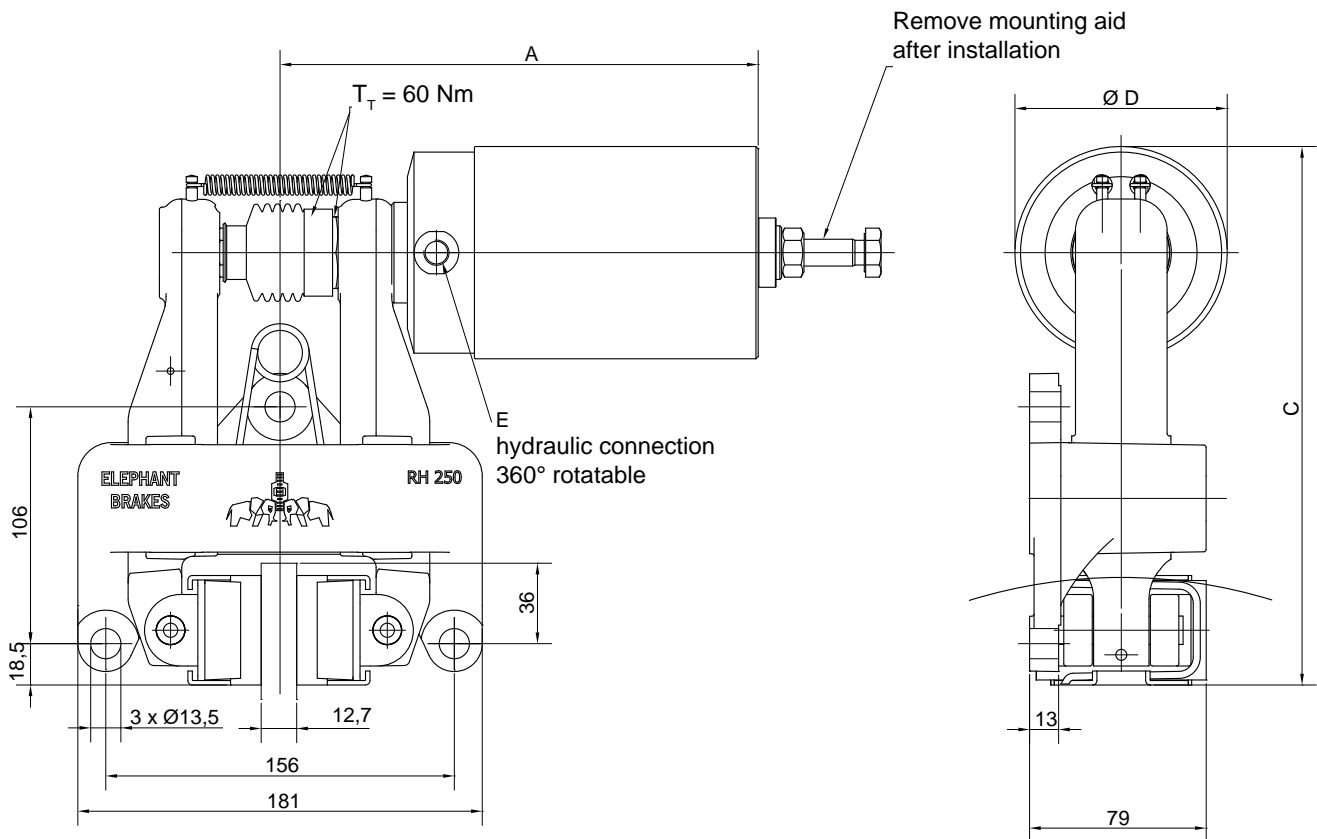
spring-applied, hydraulically released



	Nominal disc diameter [mm]										
	200	250	300	350	400	460	515	610	710	810	915
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )										
<b>R&amp;H 250.560.01</b> <b>R&amp;H 250.560.01 HP</b>	350	475	590	710	830	970	1100	1330	1565	1800	2050
<b>R&amp;H 250.550.01</b> <b>R&amp;H 250.550.01 HP</b>	490	625	780	940	1090	1280	1450	1750	2060	2370	2690
<b>R&amp;H 250.551.01</b>	660	850	1070	1280	1490	1750	1990	2400	2830	3260	3700

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Mounting position is horizontal. Please get in touch if different.

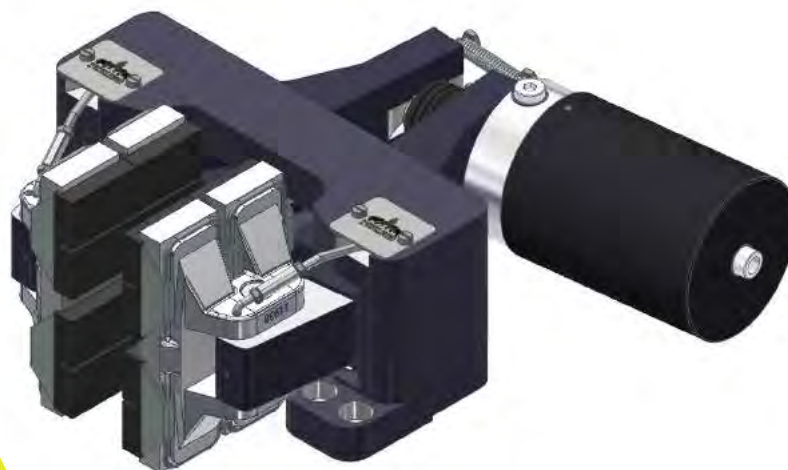
A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	A [mm]	C [mm]	D [mm]	E	p <sub>min</sub> [bar]	p <sub>max</sub> [bar]	Mass [kg]
R&H 250.560.01	<b>11843</b>	233	234	80	G 1/8"	40	160	12
R&H 250.550.01	<b>12129</b>	240	241	95	G 1/4"	55		14,5
R&H 250.551.01	<b>12130</b>					65	14	
R&H 250.560.01 High Pressure	<b>14179</b>	233	234	80	G 1/8"	55	210	12
R&H 250.550.01 High Pressure	<b>14176</b>	240	241	95	G 1/4"	75		14,5

max. oil demand: 25 cm<sup>3</sup>

## Brake Type R&H 300.5XX.04

spring-applied, hydraulically released

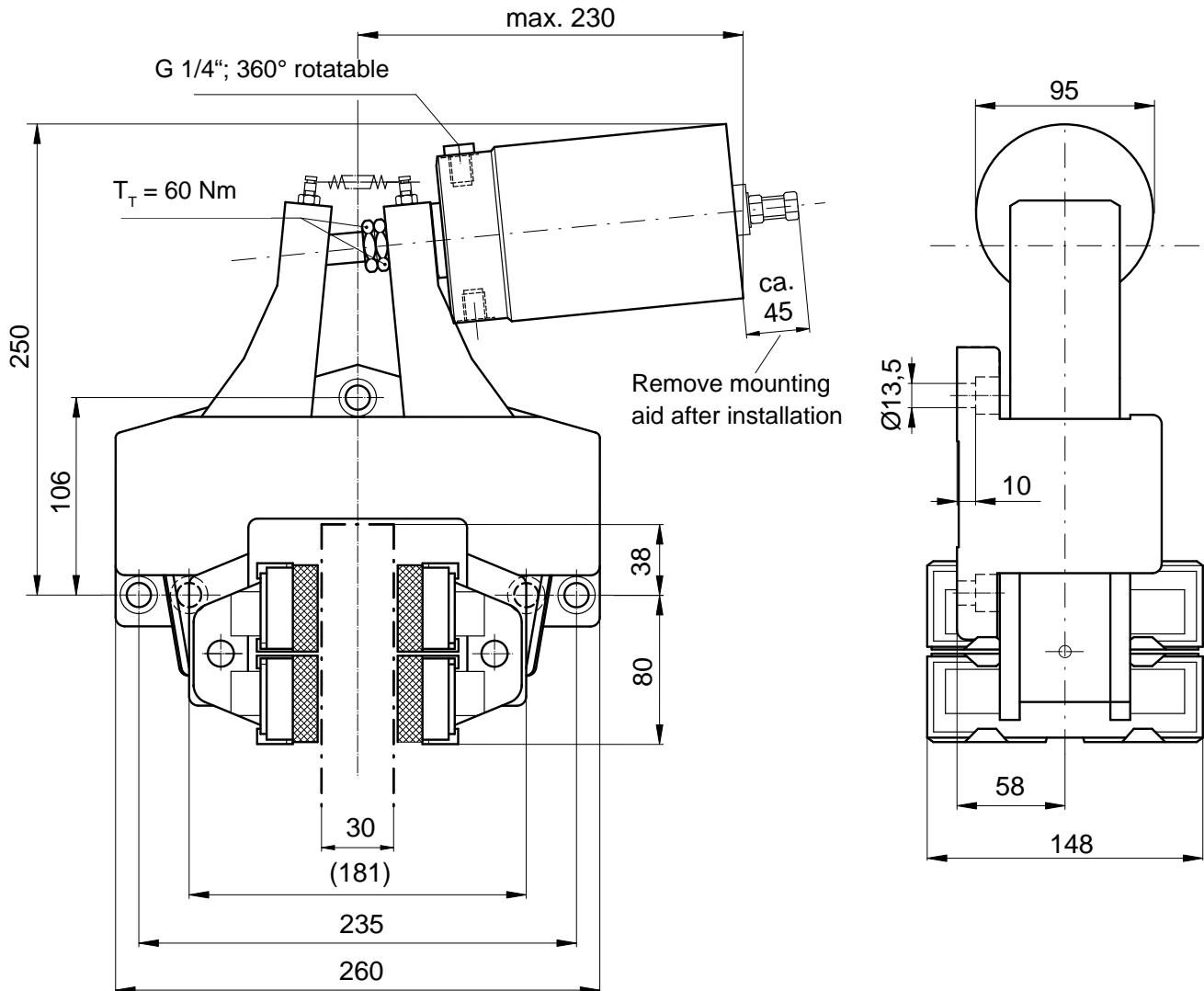


	Nominal disc diameter [mm]							
	560	630	710	800	900	1000	1250	1600
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
R&H 300.551.04	1970	2270	2600	3000	3420	3850	4920	6400
R&H 300.552.04 R&H 300.552.04 HP	2980	3440	3940	4550	5180	5830	7450	9700
R&H 300.563.04	3530	4080	4670	5390	6140	6900	8830	11500

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Mounting position is horizontal. Please get in touch if different.

A right hand mounted thruster is standard – left hand mounted please state with order.

Type	Part-No.	$p_{\min}$ [bar]	$p_{\max}$ [bar]	max. V / stroke [cm <sup>3</sup> ]	Mass [kg]
R&H 300.551.04	<b>12260</b>	65	160	25	29
R&H 300.552.04	<b>12261</b>	100			
R&H 300.552.04 High Pressure	<b>14259</b>	135	210		
R&H 300.563.04	<b>12256</b>	130	160		

## Brake Type EBS 001

spring-applied, hydraulically released

**NOTE:**

Available soon!



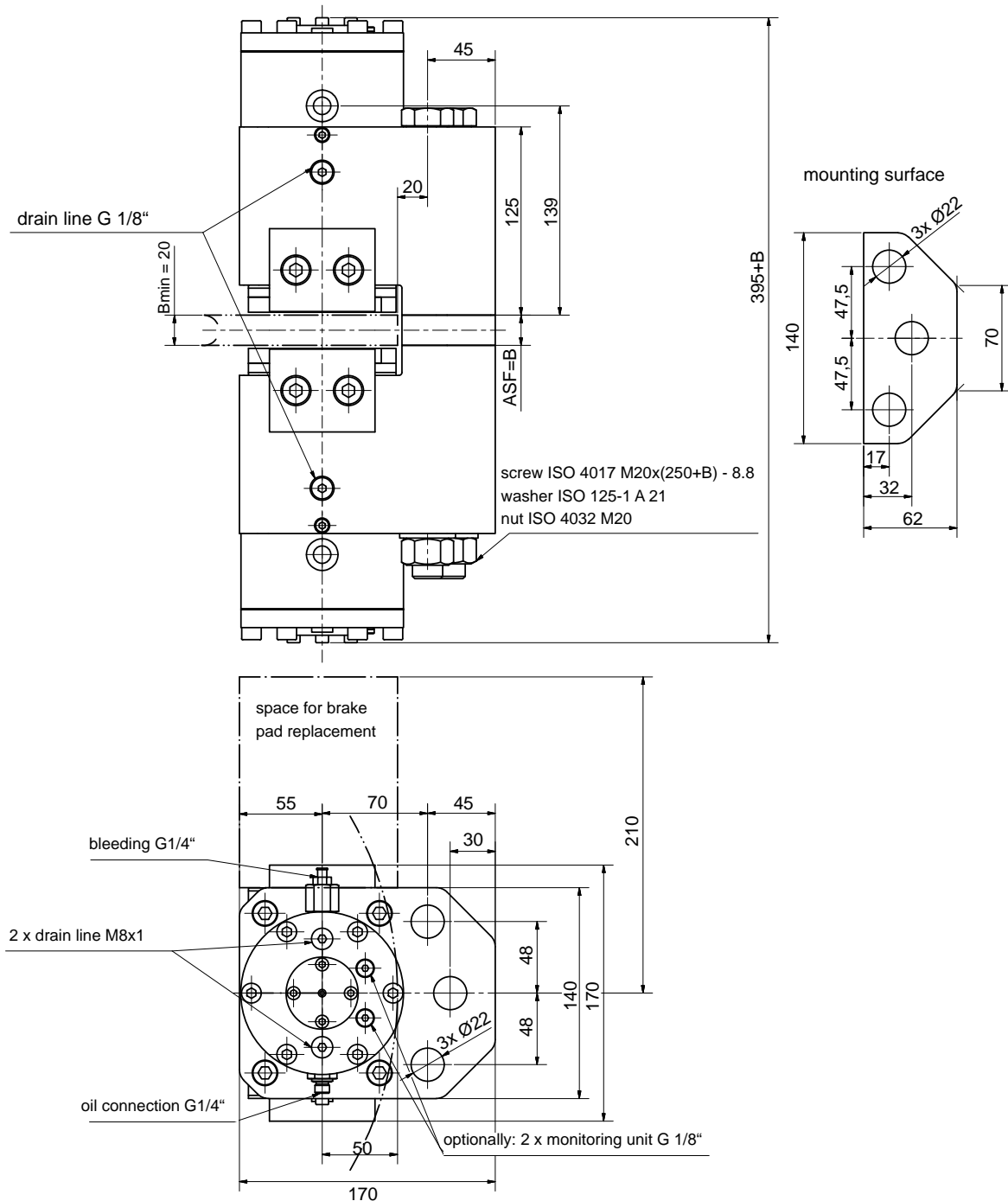
Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]  
 eff. disc radius = (0,5 x brake disc o/d [m]) - 0,98 m

Type	<i>Part-No.</i>	Braking force [kN]	Loss of force per 1 mm stroke [%]	$P_{min.}$ [bar]	$P_{max.}$ [bar]
EBS 001 – 30	<b>60099-30</b>	30	8	135	200
EBS 001 – 22	<b>60099-22</b>	22	9	114	160
EBS 001 – 15	<b>60099-15</b>	15	8	77	120

Oil demand at 2 mm air gap: 12,3 cm<sup>3</sup>

Brake suitable for mounting on brake discs according to DIN 15432 Dmin.  $\varnothing \geq 500$  mm

Mass: 22,5 kg per caliper half (total mass: 45 kg)



Fixing screws and nuts are not scope of supply!

Min. quality of fixing materials: 8.8

## Brake Type EBS 002

spring-applied, hydraulically released



Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]  
 eff. disc radius = (0,5 x brake disc o/d [m]) - 0,078 m

Type	<i>Part-No.</i>	Braking force [kN]	Loss of force per 1 mm stroke [%]	$P_{min.}$ [bar]	$P_{max.}$ [bar]
EBS 002 – 50	<b>60096-50</b>	50	9	134	180
EBS 002 – 46	<b>60096-46</b>	46	10	125	171
EBS 002 – 41	<b>60096-41</b>	41	6,6	106	162
EBS 002 – 39	<b>60096-39</b>	39	7,5	100	146
EBS 002 – 36	<b>60096-36</b>	36	8,5	95	141
EBS 002 – 31	<b>60096-31</b>	31	8,2	73	119
EBS 002 – 29	<b>60096-29</b>	29	9,2	64	110

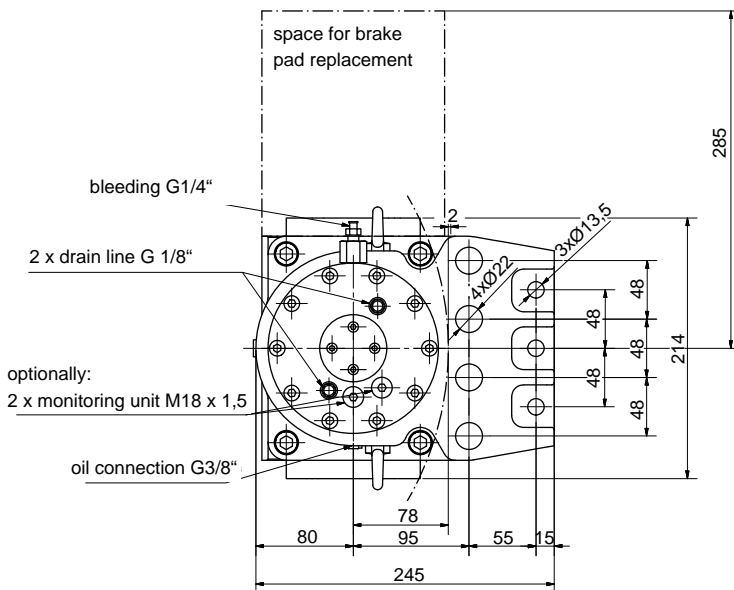
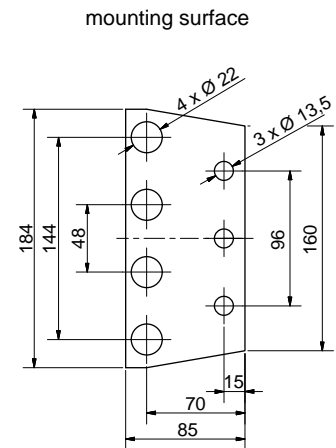
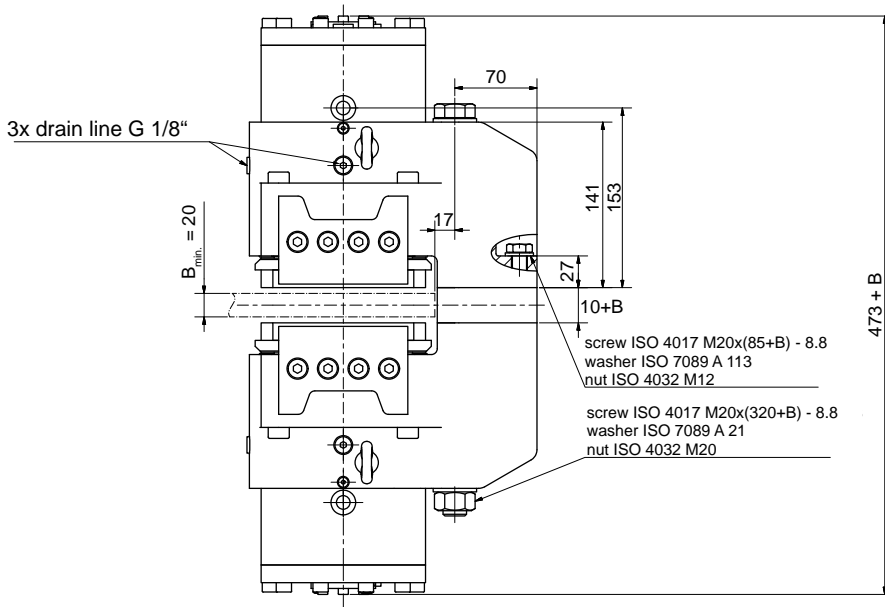
Oil demand at 2 mm air gap: 27 cm<sup>3</sup>

Brake suitable for mounting on brake discs according to DIN 15432 Dmin.  $\varnothing \geq 500$  mm

Mass: 45 kg per caliper half (total mass: 90 kg)

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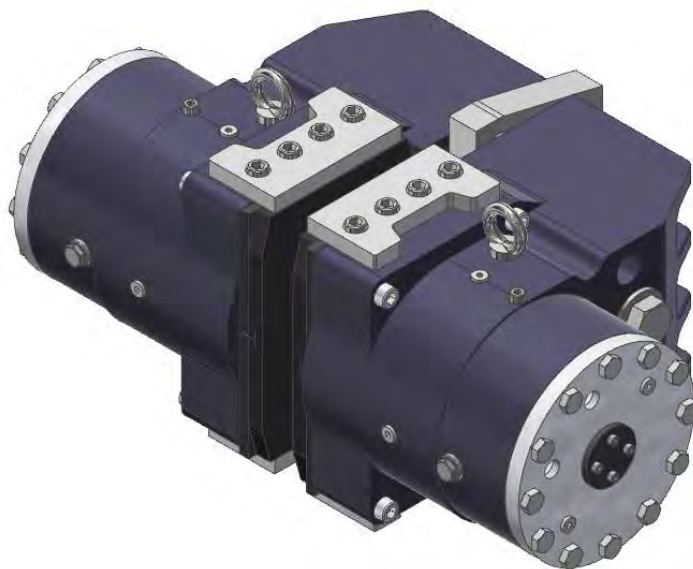
Deutsche van Rietschoten & Houwens GmbH · Junkersstraße 12 · 30179 Hannover · [www.elephantbrakes.com](http://www.elephantbrakes.com)



Fixing screws and nuts are not scope of supply!  
Min. quality of fixing materials: 8.8

## Brake Type EBS 004

spring-applied, hydraulically released



Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]  
 eff. disc radius = (0,5 x brake disc o/d [m]) - 0,095 m

Type	<i>Part-No.</i>	Braking force [kN]	Loss of force per 1 mm stroke [%]	$p_{min.}$ [bar]	$p_{max.}$ [bar]
EBS 004 – 104	<b>60095-104</b>	104	8	130	180
EBS 004 – 96	<b>60095-96</b>	96	9	122	172
EBS 004 – 88	<b>60095-88</b>	88	10,2	114	164
EBS 004 – 80	<b>60095-80</b>	80	11,8	106	156
EBS 004 – 72	<b>60095-72</b>	72	13,9	97	147
EBS 004 – 62	<b>60095-62</b>	62	16,9	88	138
EBS 004 – 56	<b>60095-56</b>	56	6	68	118
EBS 004 – 53	<b>60095-53</b>	53	6,7	65	115
EBS 004 – 49	<b>60095-49</b>	49	7,6	62	112

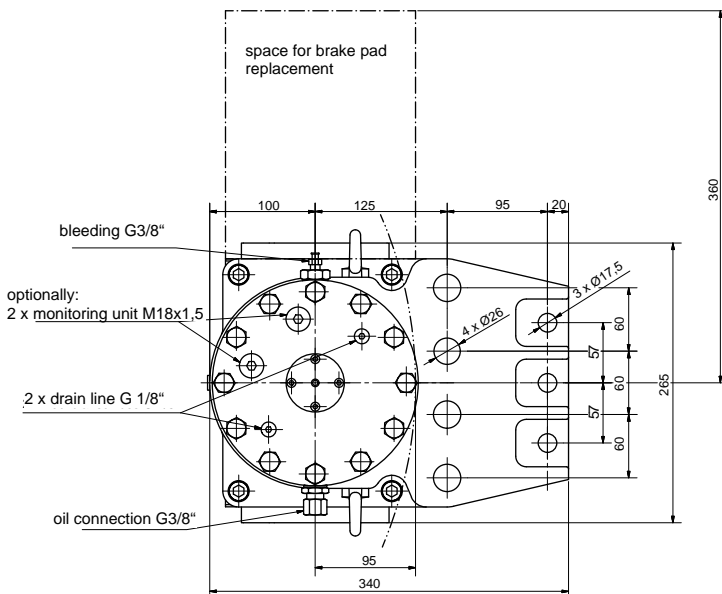
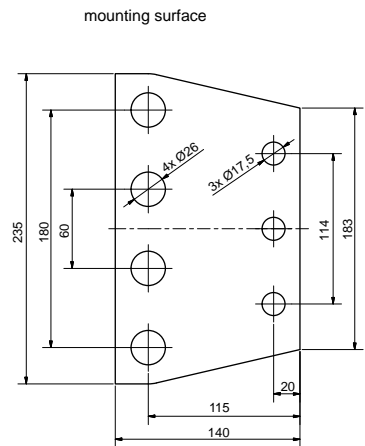
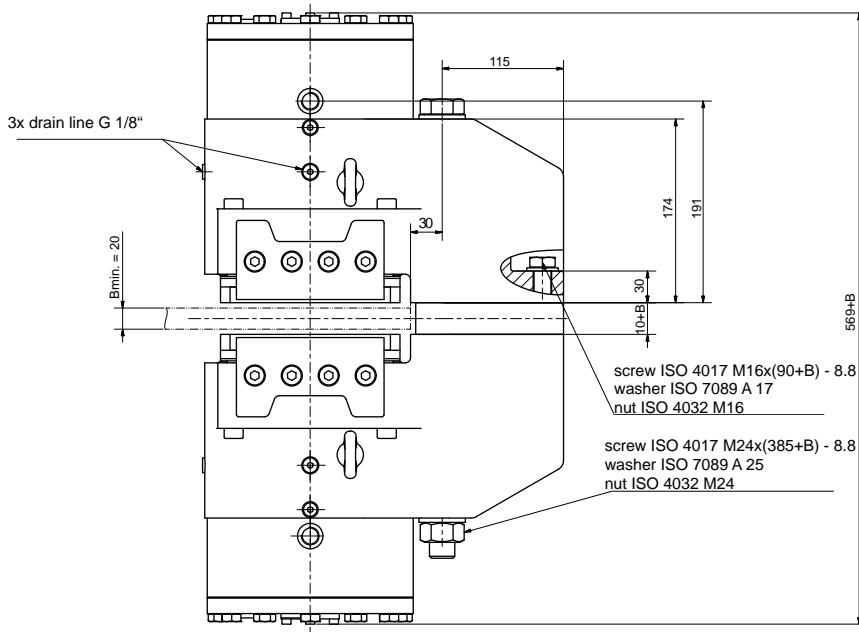
Oil demand at 2 mm air gap: 56 cm<sup>3</sup>

Brake suitable for mounting on brake discs according to DIN 15432 Dmin.  $\varnothing \geq 800$  mm

Mass: 95 kg per caliper half (total mass: 190 kg)

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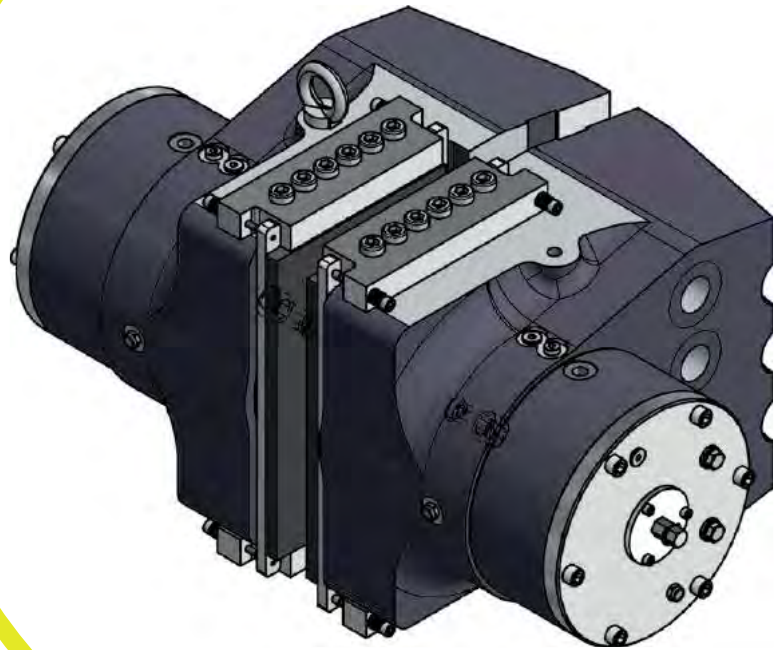
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Threaded bolts, fixing screws and nuts are not scope of supply!  
Min. quality of fixing materials: 8.8

**NOTE:**

Available soon!



Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]

eff. disc radius =  $(0,5 \times \text{brake disc o/d [m]}) - 0,12 \text{ m}$

Braking force: 200 kN

$p_{min.}$ : 110 bar

$p_{max.}$ : 150 bar

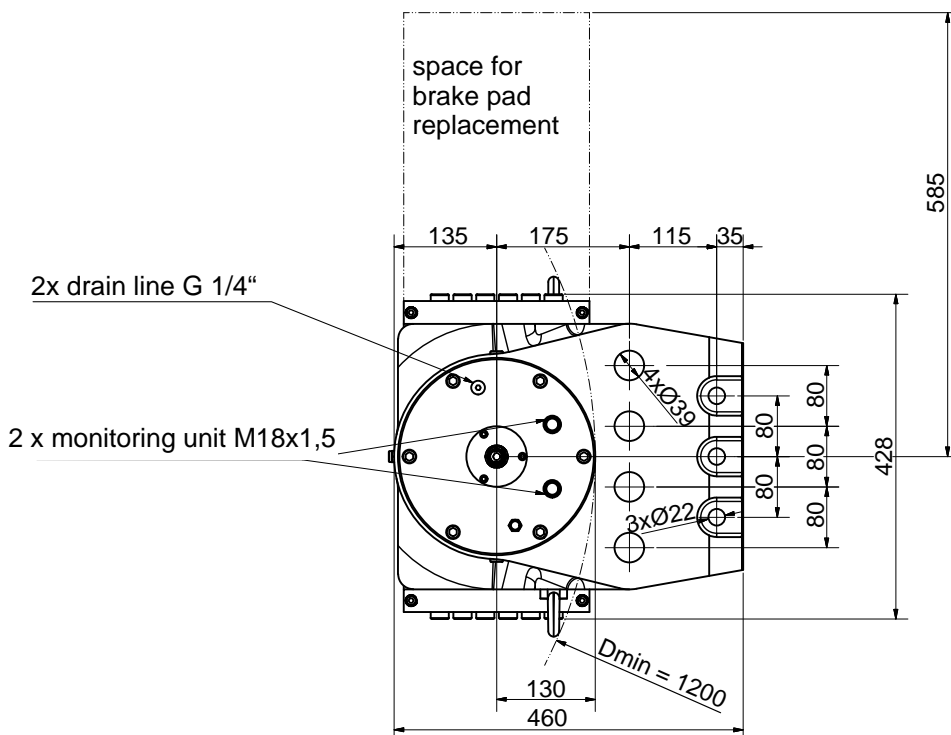
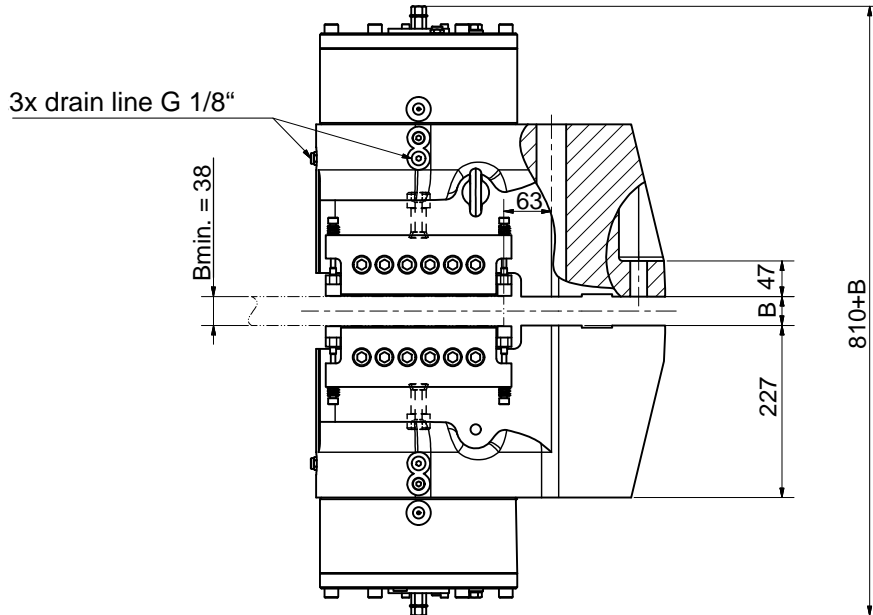
Brake pad surface  $A_B$ : 870 cm<sup>2</sup>

Oil demand at 2 mm air gap (per side): 100 cm<sup>3</sup>

Brake suitable for mounting on brake discs according to DIN 15432 Dmin.  $\varnothing \geq 1200 \text{ mm}$

Mass: 523 kg



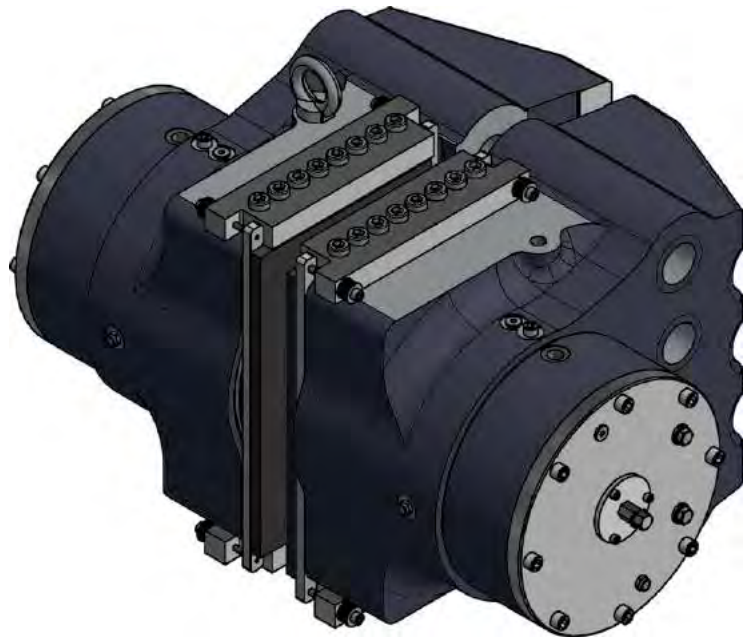


Threaded bolts, fixing screws and nuts are not scope of supply!

Min. quality of fixing materials: 12.9

**NOTE:**

Available soon!



Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]  
 eff. disc radius = (0,5 x brake disc o/d [m]) - 0,15 m

Braking force: 400 kN

$p_{min.}$ : 170 bar

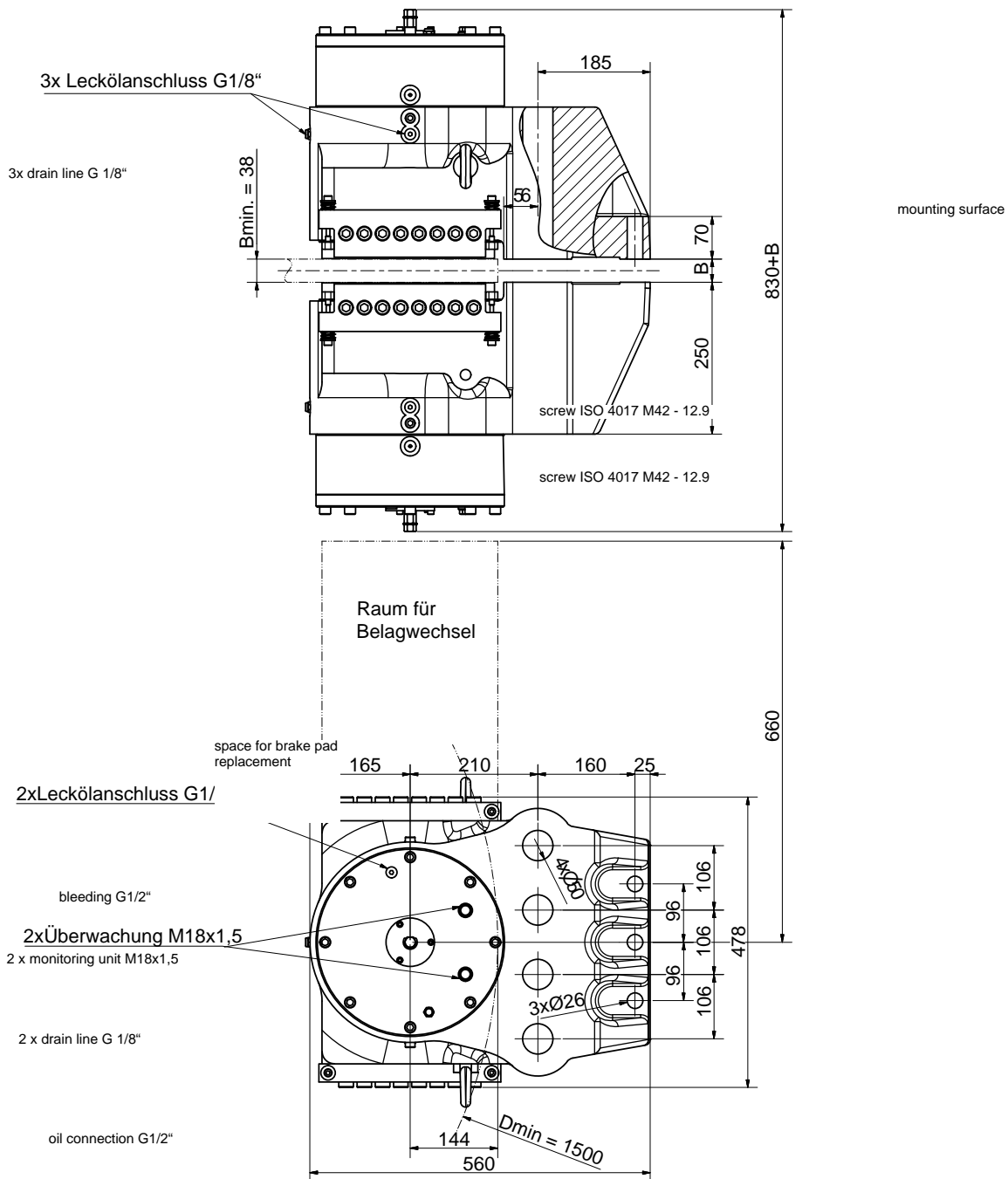
$p_{max.}$ : 235 bar

Brake pad surface  $A_B$ : 1240 cm<sup>2</sup>

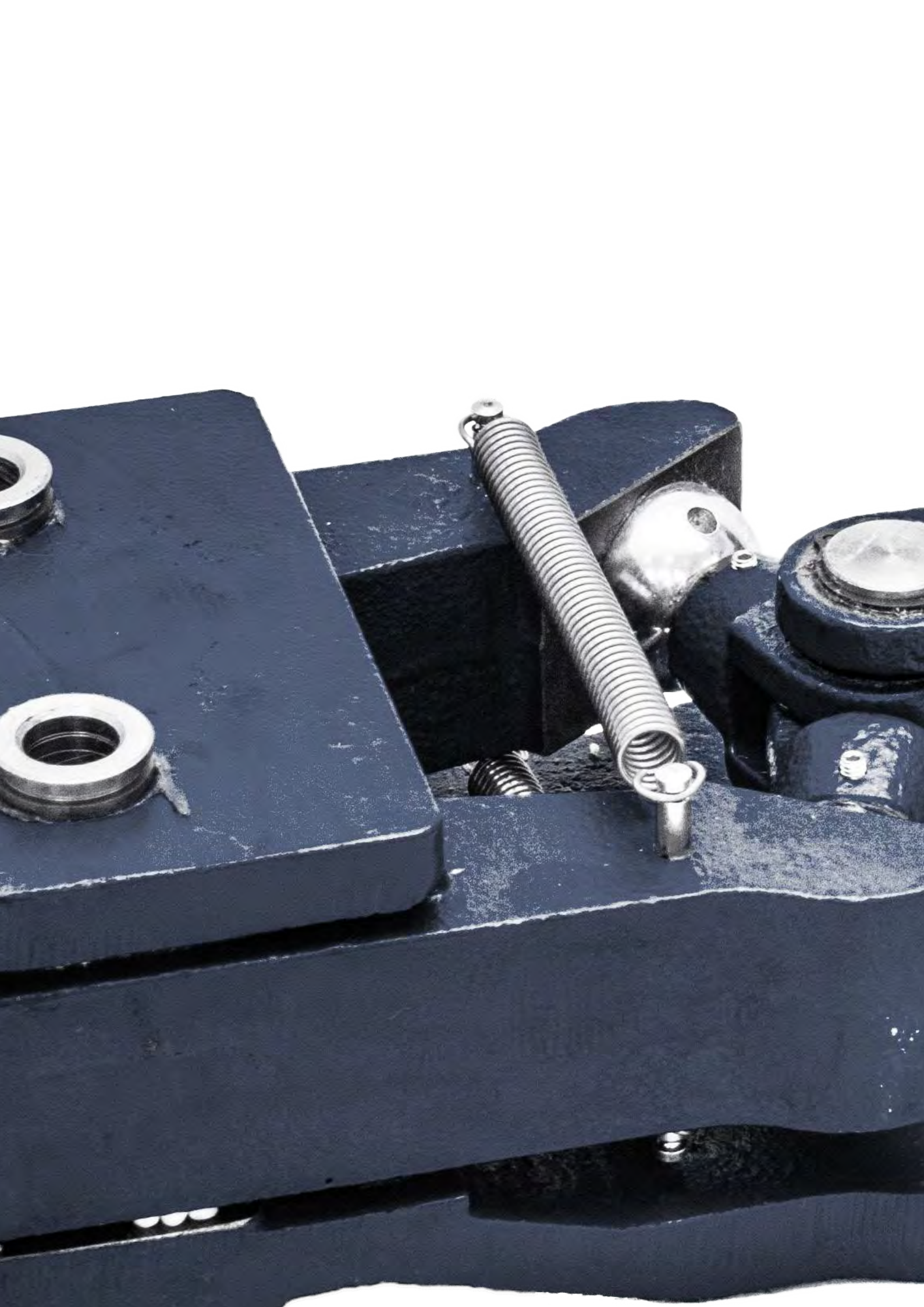
Oil demand at 2 mm air gap (per side): 94 cm<sup>3</sup>

Brake suitable for mounting on brake discs according to DIN 15432 Dmin.  $\varnothing \geq 1500$  mm

Mass: 690 kg



Threaded bolts, fixing screws and nuts are not scope of supply!  
Min. quality of fixing materials: 12.9

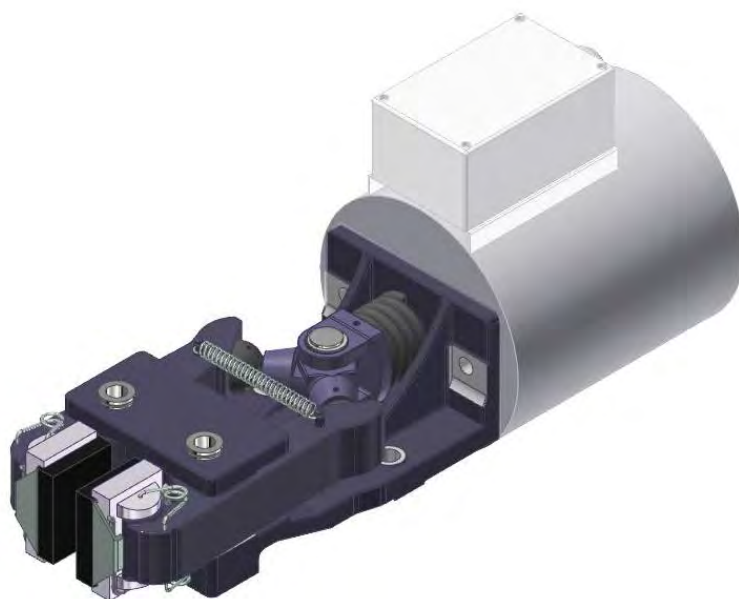




spring-applied, electrically  
released brakes

## Brake Type EMS

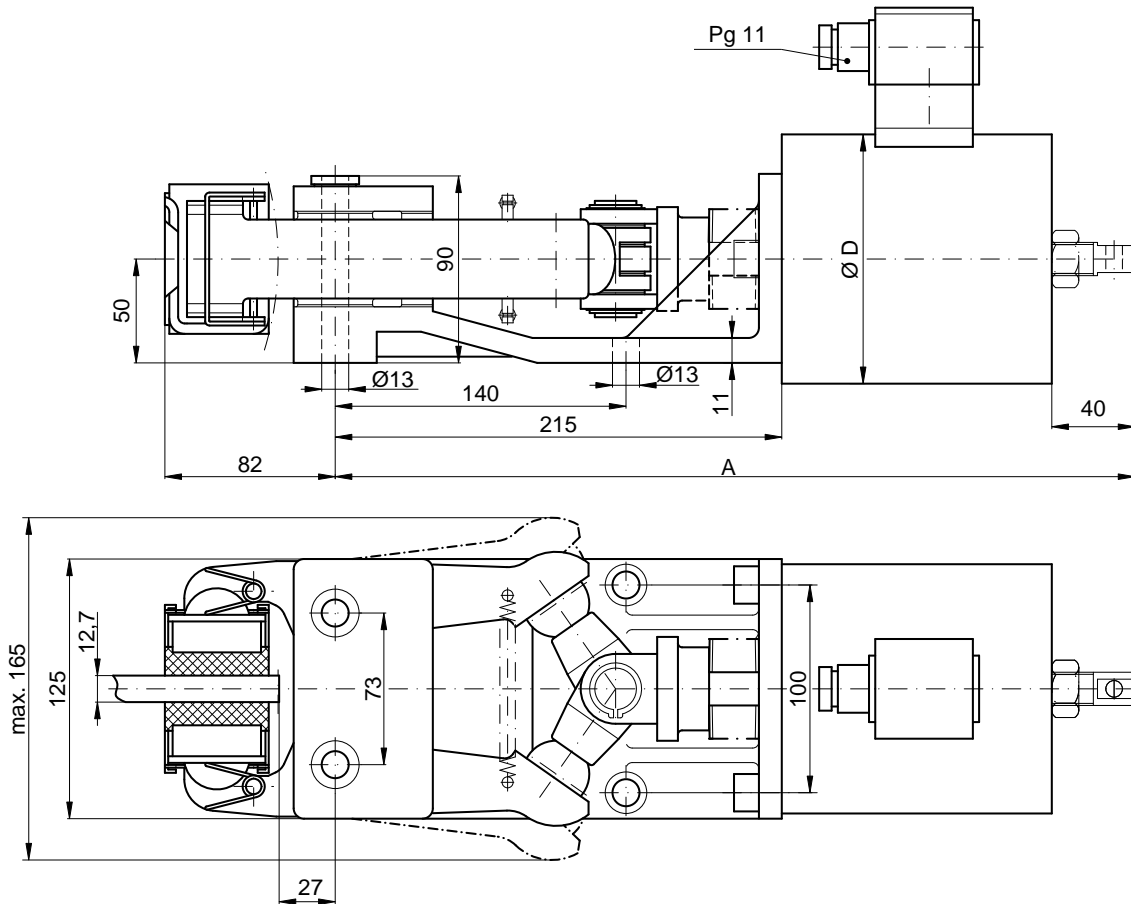
spring-applied, electrically released



	Nominal disc diameter [mm]							
	200	250	300	350	400	460	515	610
	Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
<b>EMS 120</b>	40	55	70	90	105	120	135	160
<b>EMS 140</b>	75	100	125	155	180	215	240	280
<b>EMS 170</b>	130	175	220	275	320	370	420	490
<b>EMS 170 S</b>	220	290	360	430	510	590	670	780

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Type	Part-No.	D [mm]	A [mm]	P [W]	I max. [A]	Mass [kg]
EMS 120	<b>11251</b>	120	385	52	0,25	21
EMS 140	<b>11252</b>	137	410	80	0,39	27
EMS 170	<b>11253</b>	165	443	95	0,46	40
EMS 170 S	<b>11700</b>			280 / 70	1,35 / 0,68	

Type of protection: IP 65

Duty cycle ED: 100 %

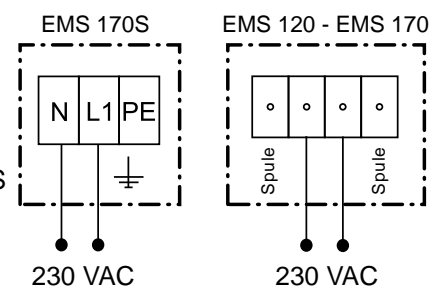
Supply voltage: 230 VAC, 50/60 Hz (other on request)

Admissible switching frequency EMS170S: max. 240 / h

Brake application time: 600 ms for EMS 120 - 170 / 180 ms for EMS 170 S

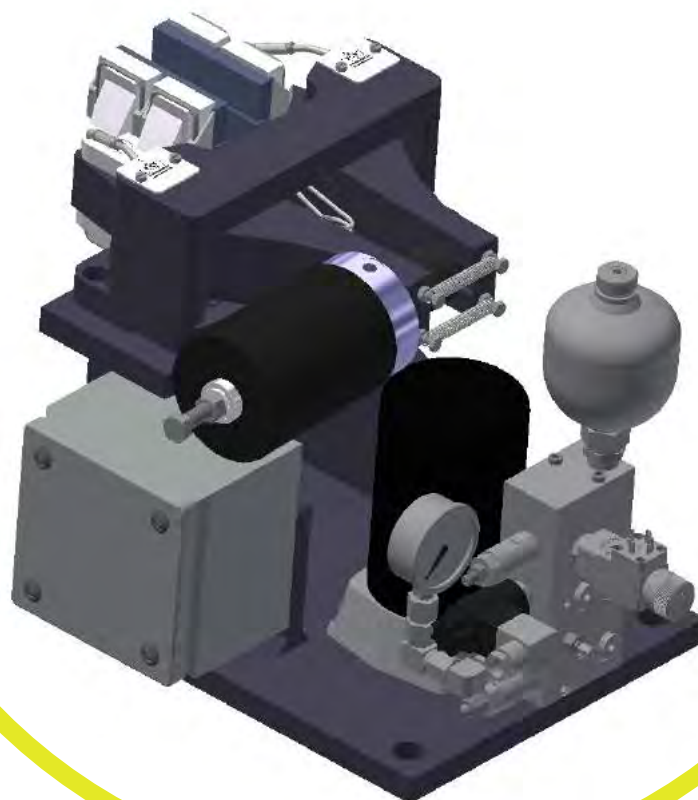
Brake release time: 350 ms

Ambient temperature: 40° C



**NOTE:**

Configuration according to customer needs possible!



Type	Part-No.	Nominal disc diameter [mm]							
		560	630	710	800	900	1000	1250	1600
		Braking Torque: $T_{Br\ dyn.}$ [Nm] ( $T_{Br\ stat.} = 0,9 \times T_{Br\ dyn.}$ )							
R&H 300.551.04	<b>50933</b>	1970	2270	2600	3000	3420	3850	4920	6400
R&H 300.552.04	<b>50436</b>	2980	3440	3940	4550	5180	5830	7450	9700
R&H 300.563.04	<b>50437</b>	3530	4080	4670	5390	6140	6900	8830	11500

Operating voltage:

Standard: 380-420 VAC 50 Hz / 440-480 VAC 60 Hz

Power input: 0,3 kW

Switching frequency: max. 30/min.

Brake release time: 150 ms

Brake application time: 70 - 100 ms

Control voltage:

E-valve : 24 VDC, 26 W

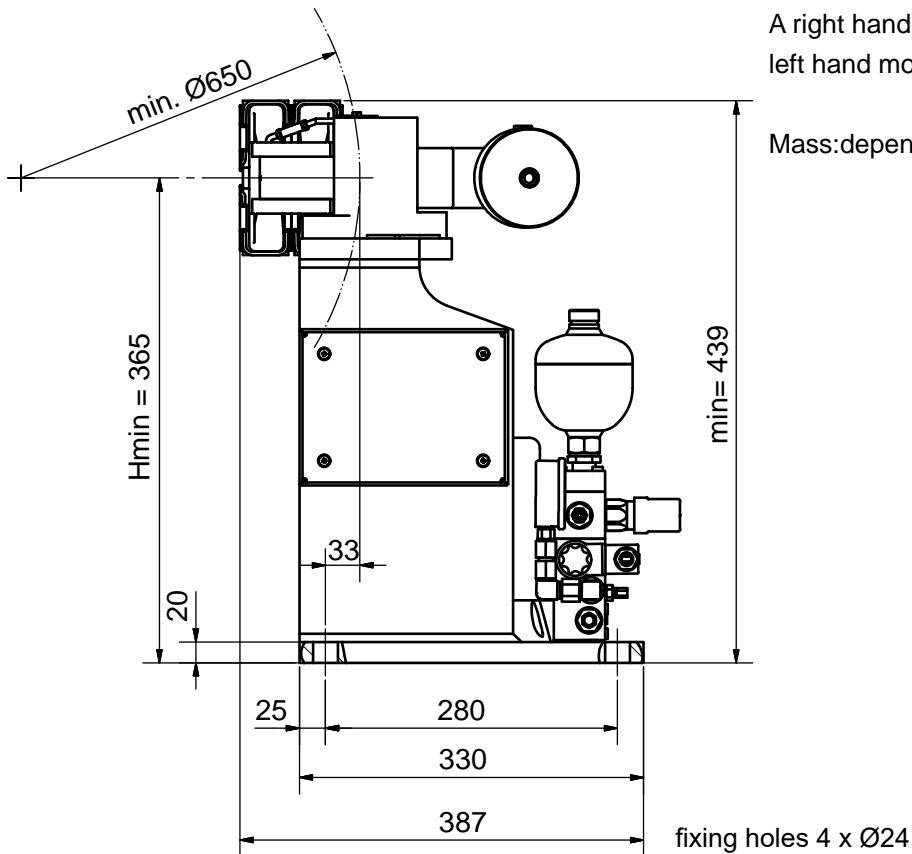
alternative: 230 VAC, 26 W

Type of protection: IP 54

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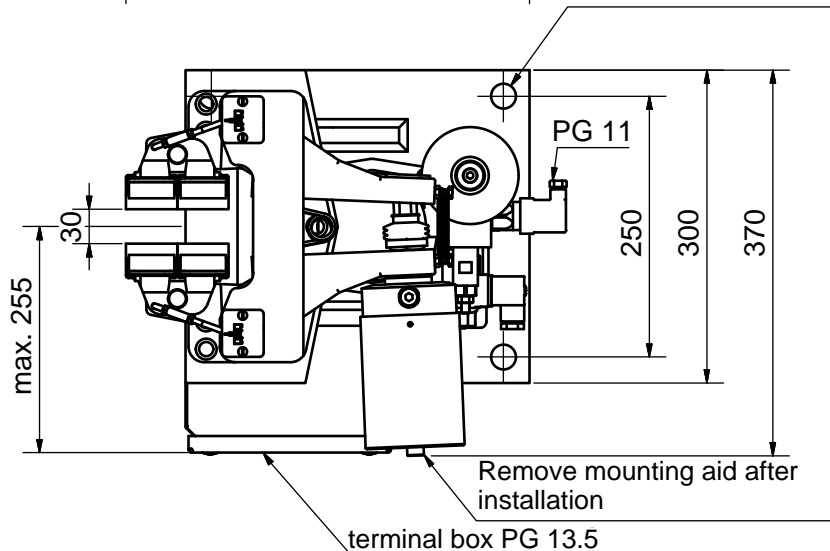
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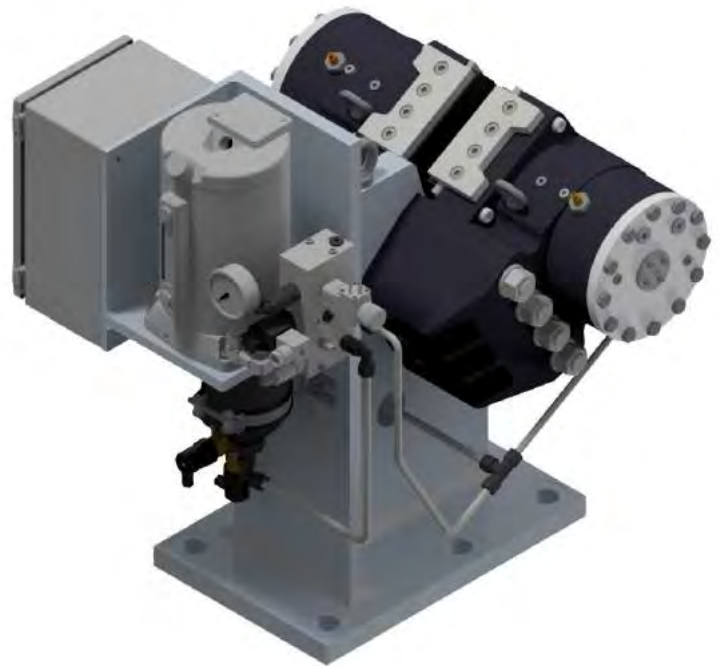
A right hand mounted thruster is standard – left hand mounted please state with order.

Mass: depending on axle height approx. 50 kg



**NOTE:**

Configuration according to customer needs possible!



Braking torque  $T_{Br}$  [kNm] = Braking force [kN] x eff. disc radius [m]

eff. disc radius = (0,5 x brake disc o/d [m]) - 0,095 m

Braking force: 104 kN

Loss of force per 1 mm stroke: 8%

Mass: depending on axle height approx. 330 kg

Operating voltage: 380-420 VAC 50 Hz / 440-480 VAC 60 Hz

Power input: 0,7 kW,  $\cos \Phi = 0,8$  (50 Hz) / 0,8 kW,  $\cos \Phi = 0,8$  (60 Hz)

Switching frequency: 240/h

Brake release time: 0,3 s

Brake application time: 0,2 s

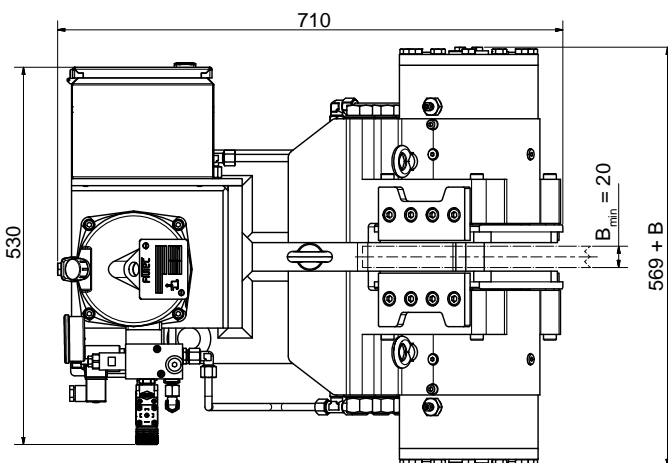
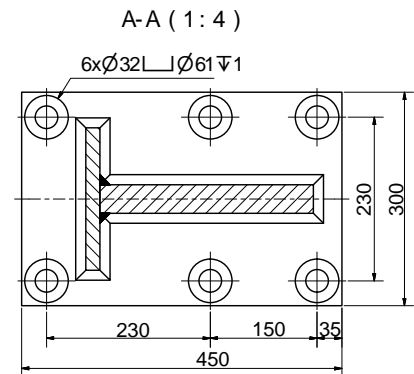
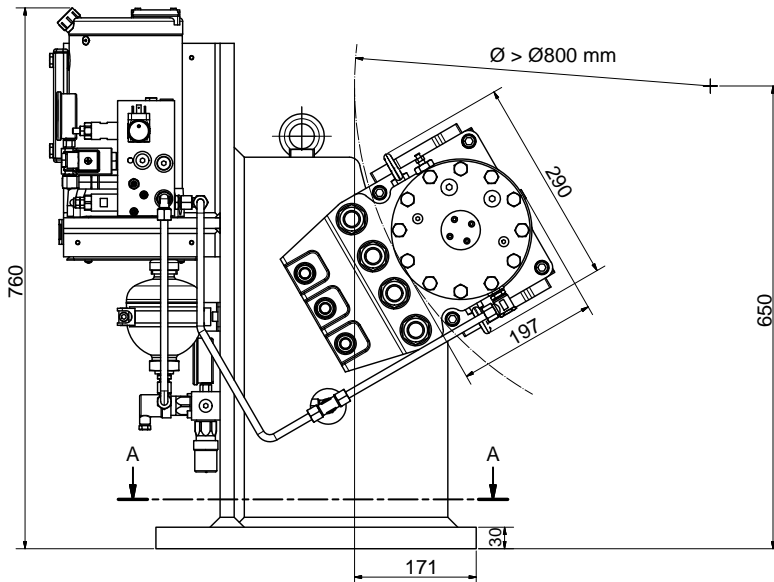
Control voltage:

E-valve: 24 VDC

alternative: 230 VAC 50 Hz / 120 Vac 60 Hz

Type of protection: IP 54

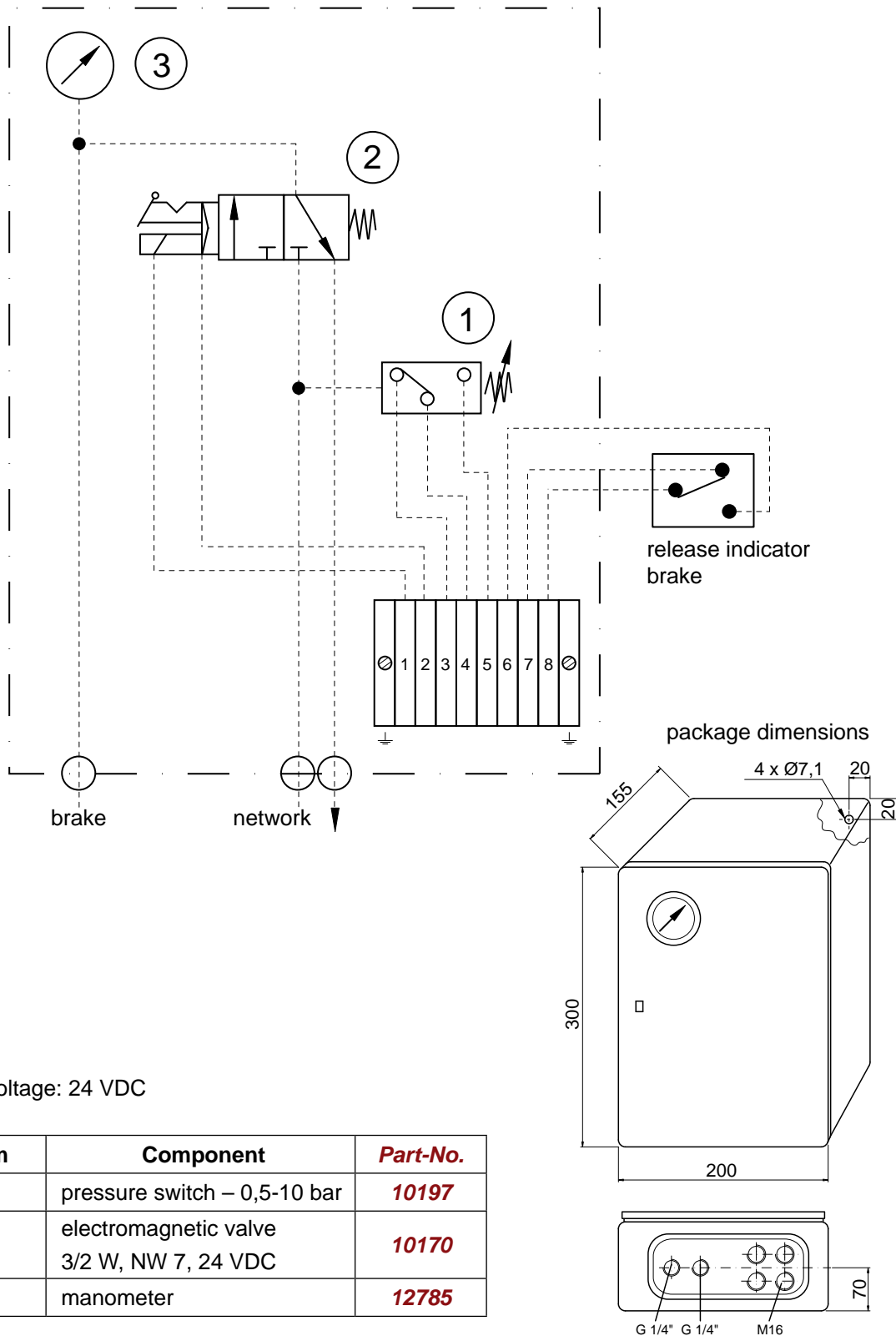
*Different operating and control voltages on request. Wear adjustment and monitoring units can be retrofitted.*





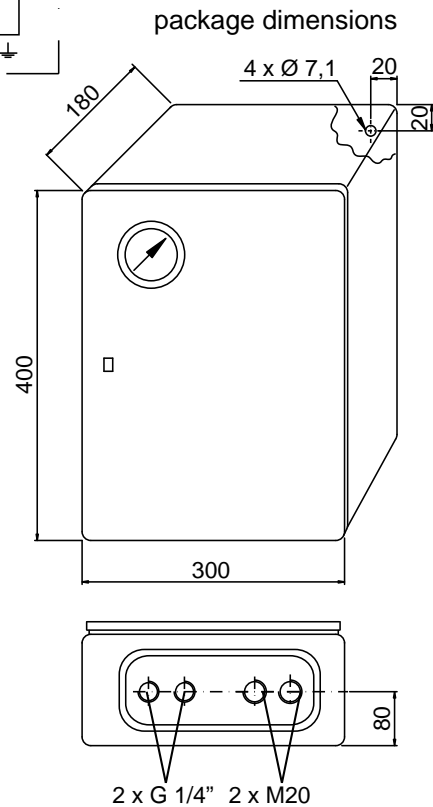
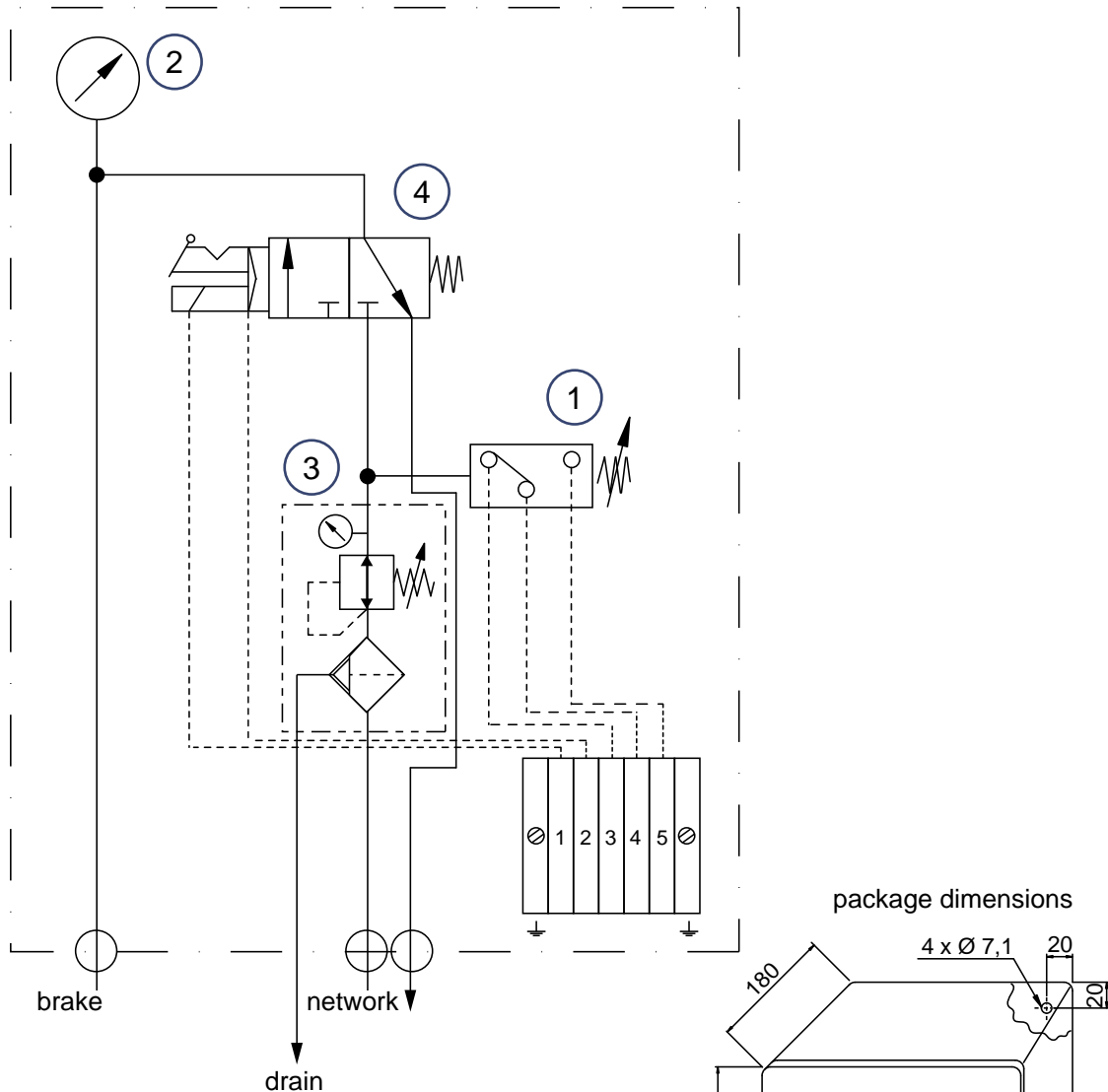


control units

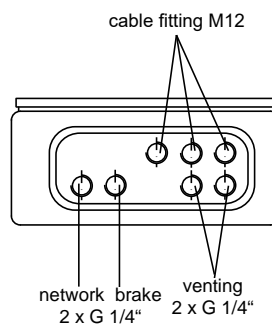
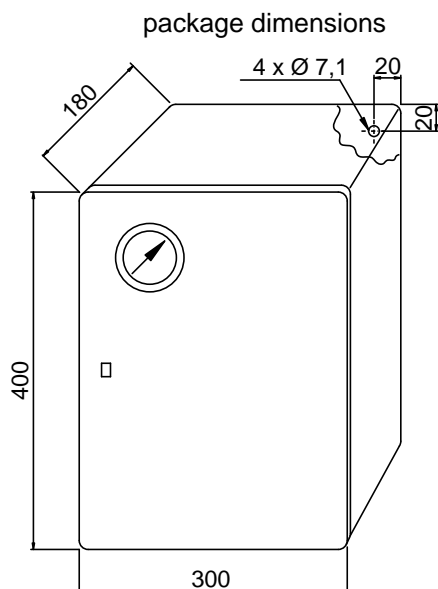
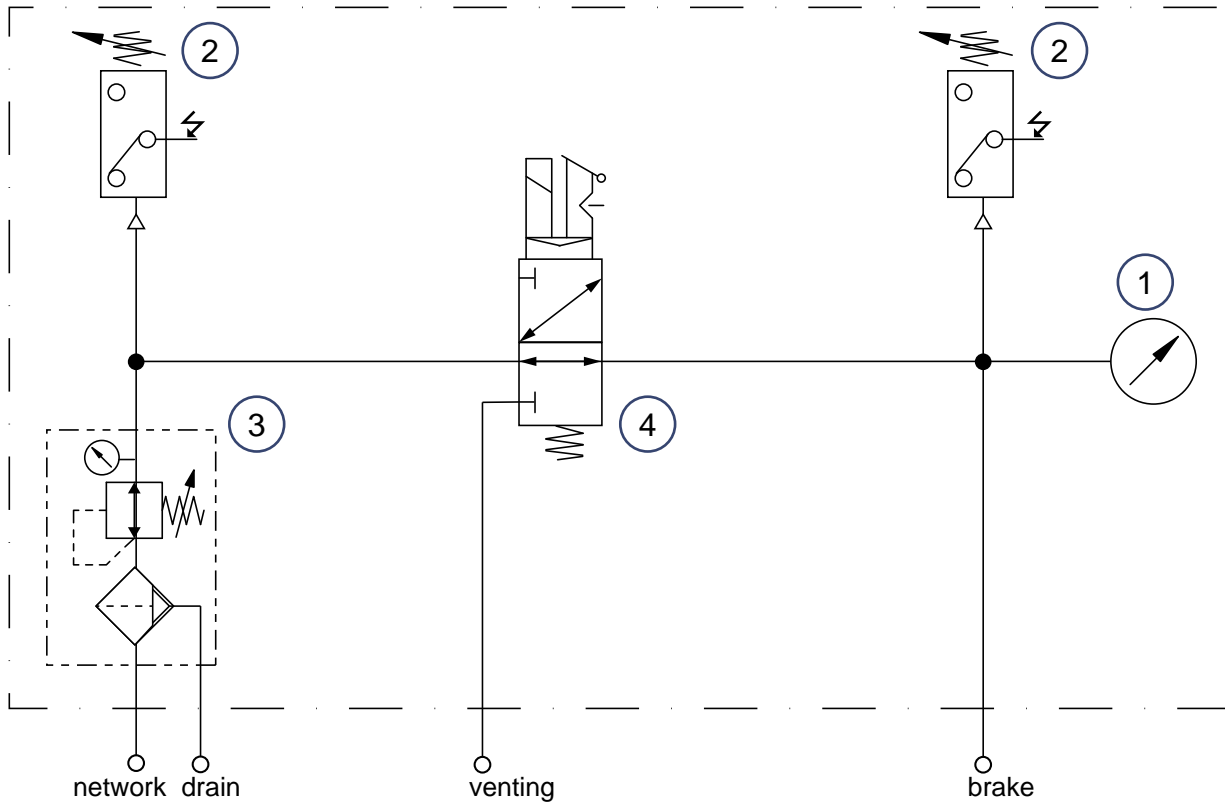


Valve voltage: 24 VDC

Item	Component	Part-No.
1	pressure switch – 0,5-10 bar	<b>10197</b>
2	electromagnetic valve 3/2 W, NW 7, 24 VDC	<b>10170</b>
3	manometer	<b>12785</b>

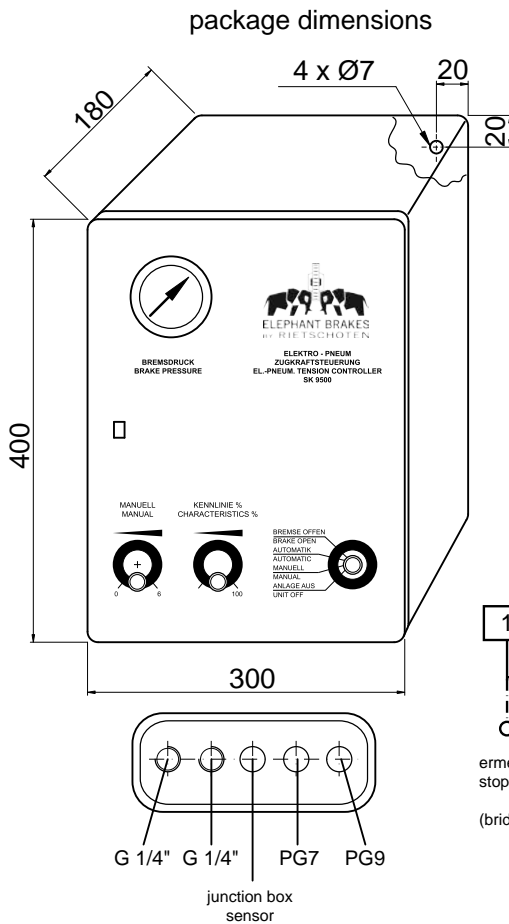


Item	Component	Part-No.
1	pressure switch – 0,5-10 bar	<b>14297</b>
2	manometer	<b>12785</b>
3	pressure regulation with filter oiler	<b>13986</b>
4	3/2-way-valve	<b>13311</b>



Item	Component	Part-No.
1	manometer	<b>10195</b>
2	pressure switch – 0,5 - 10 bar	<b>10197</b>
3	pressure regulation with filter oiler	<b>13986</b>
4	electromagnetic valve	<b>10170</b>





### TECHNICAL DATA (standard – other on request):

Input: air pressure max. 6,5 bar (oil free air 50 µ or better)

Output: brake pressure 0 - 6 bar

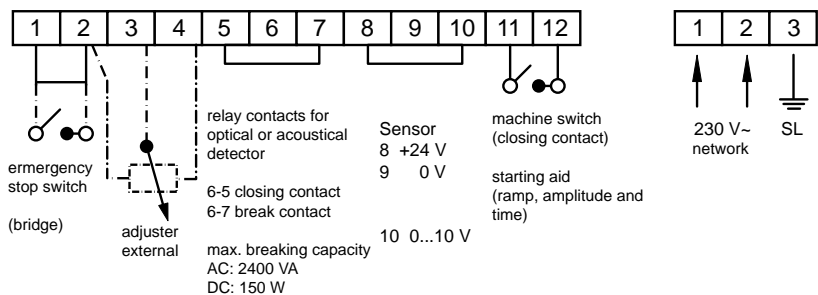
Power supply: 230 VAC (+10 %) 50 / 60 Hz

Power consumption: 15 VA

### ADDITIONAL FUNCTION:

- manual pressure control (switch position: manual)
- pressure regulator automatic
- emergency stop
- residual roll detection
- starting aid
- attenuator pads

### terminal diagram



### MODE OF OPERATION:

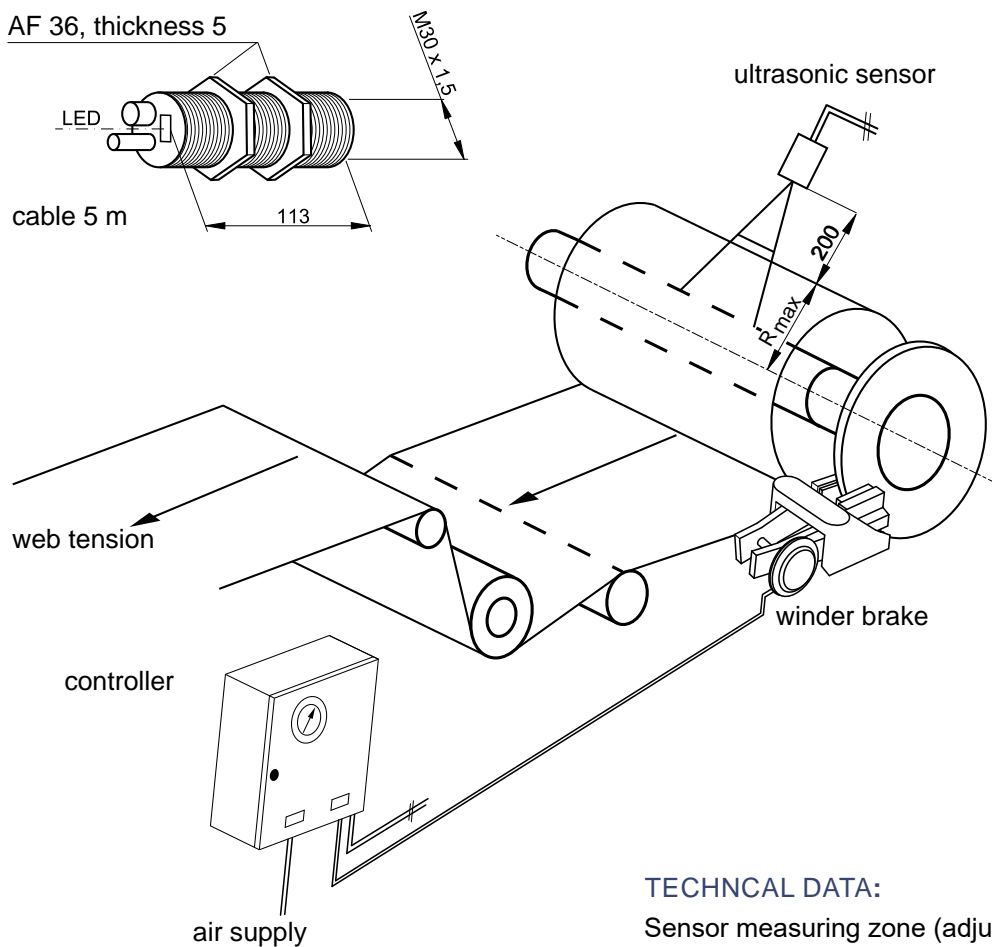
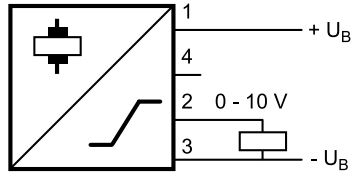
The electro-pneumatic tension control adjusts the operating pressure of pneumatically applied braking systems with decreasing reel diameter. An ultrasonic sensor detects the distance to the respective reel and sends a proportional signal to the tension controller.

The electro-pneumatic convertor converts this signal into a adequate pressure which is applied to the brakes, allowing for consistent tension of the material during the entire winding process.

The braking force can be adjusted between 25 and 100 % by means of an adjuster. By switching it is possible to connect a manual control voltage. Another option allows a brake bleeding.

Also integrated is a ramp starting function with adjustable time and amplitude, facilitated by a closing machine switch (functional or wiping contact) when activating the unit. With an uneven winding process, additional dampers can be switched on.

The device has an adjustable end pressure switch for the remaining roll. Furthermore, with the help of a potential-free changeover contact, the remaining role can be reported optically or acoustically.



#### TECHNCAL DATA:

Sensor measuring zone (adjustable):

0,20 m - 2,00 m – **Part-No.: 12511**

0,03 m - 0,50 m – **Part-No.: 12633**

Aperture angle of the sound beam: ca. 5°

Linearity:  $\leq 0,1$  % of the terminal value

Converter frequency: 175 kHz

Analog signal output: 0...10 V

Protection type: IP 65

Ambient temperature: -25°C bis +70°C



accessories

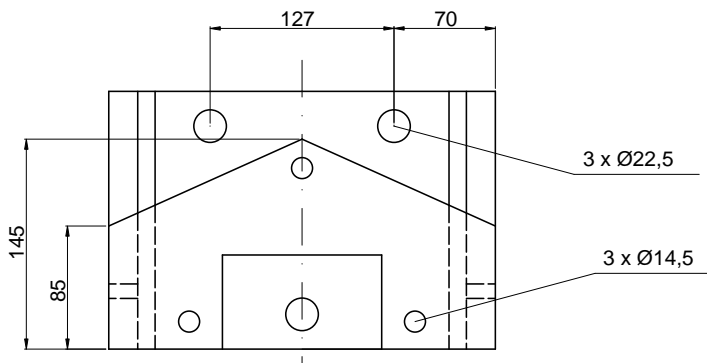
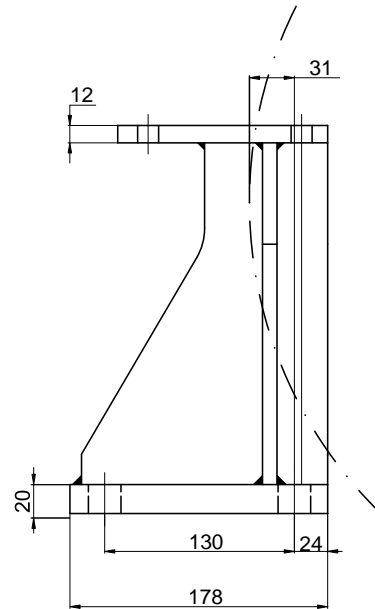
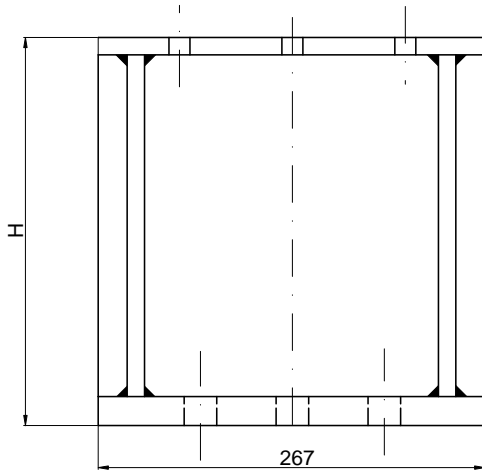
## PART NUMBERS

**H = 248 mm: 10144**

**H to 300 mm: 10843**

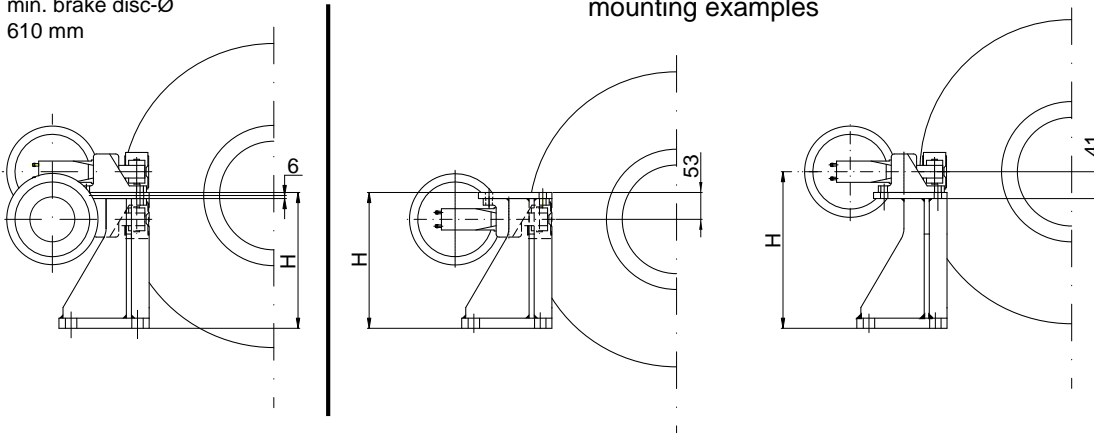
**H to 600 mm: 10822**

**H to 800 mm: 10821**



min. brake disc-Ø  
610 mm

mounting examples



# Pedestal

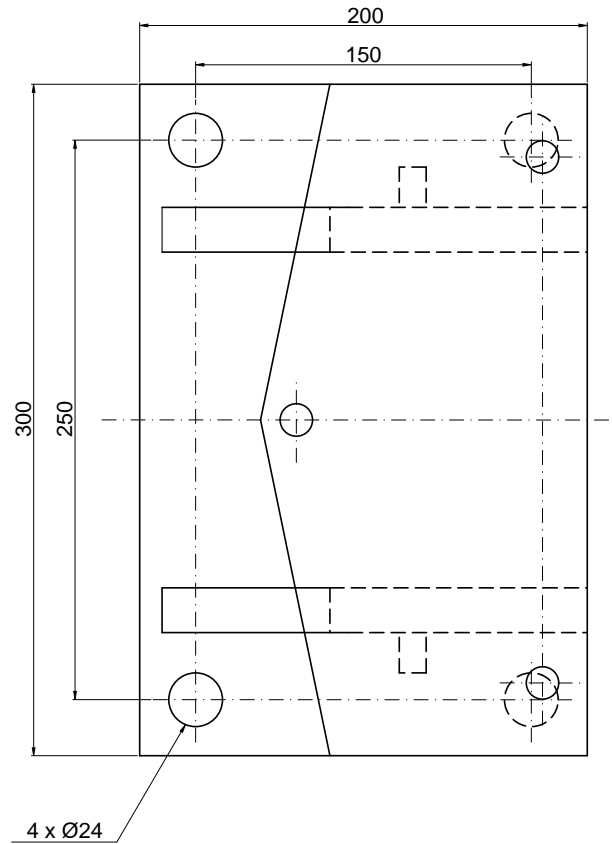
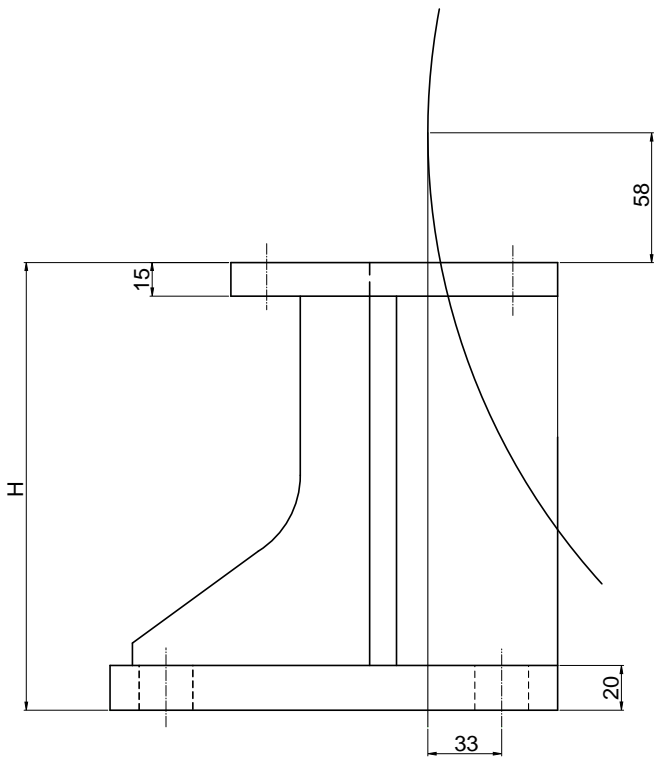
for Brake Type R&H 300

**PART NUMBERS**

**H to 300 mm: 12686**

**H to 500 mm: 12687**

**H to 800 mm: 12688**

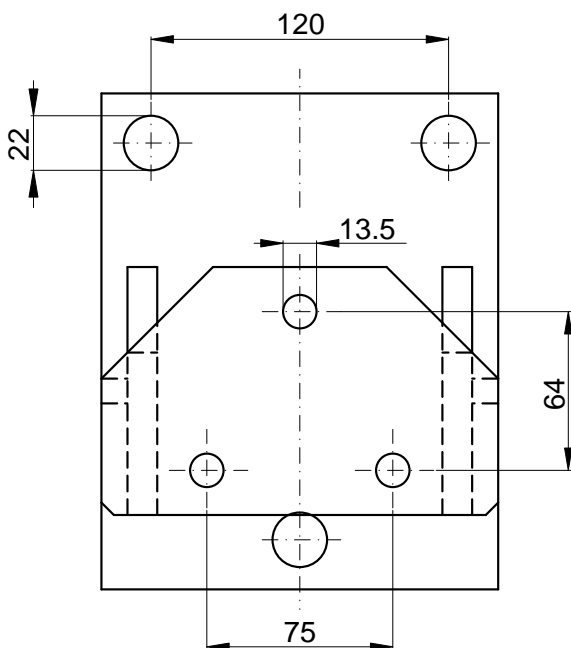
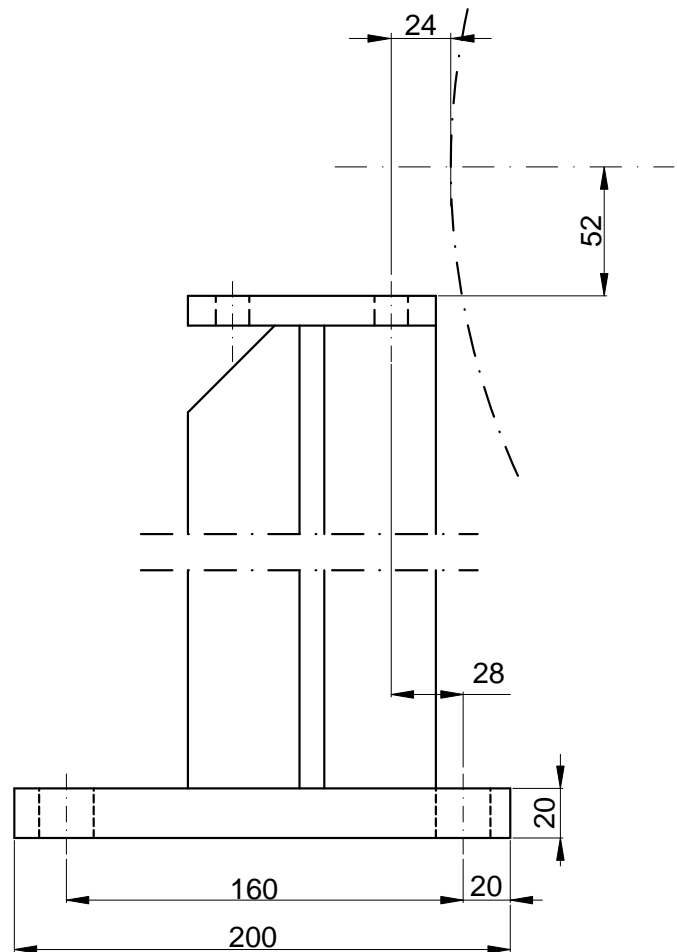
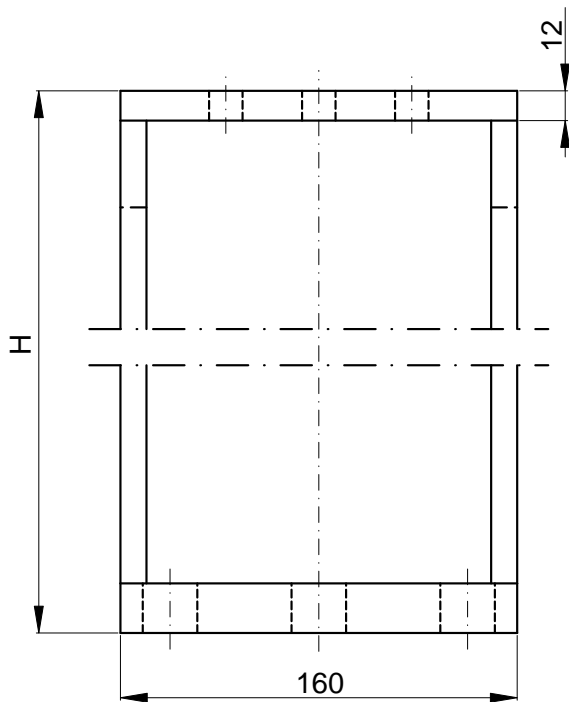


### PART NUMBERS

*H to 300 mm: 11550*

*H to 500 mm: 11551*

*H to 800 mm: 11552*



**PART NUMBERS**

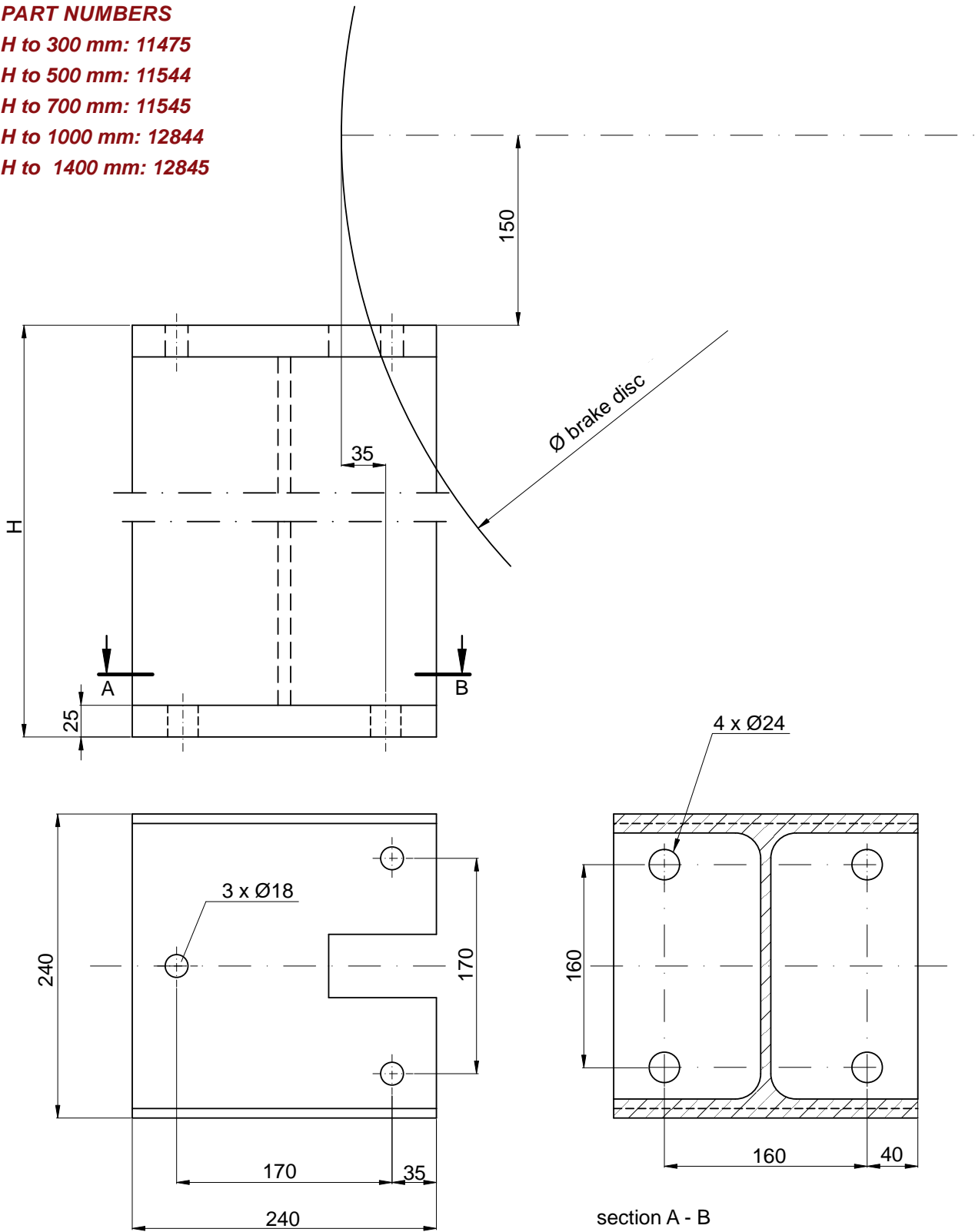
*H to 300 mm: 11475*

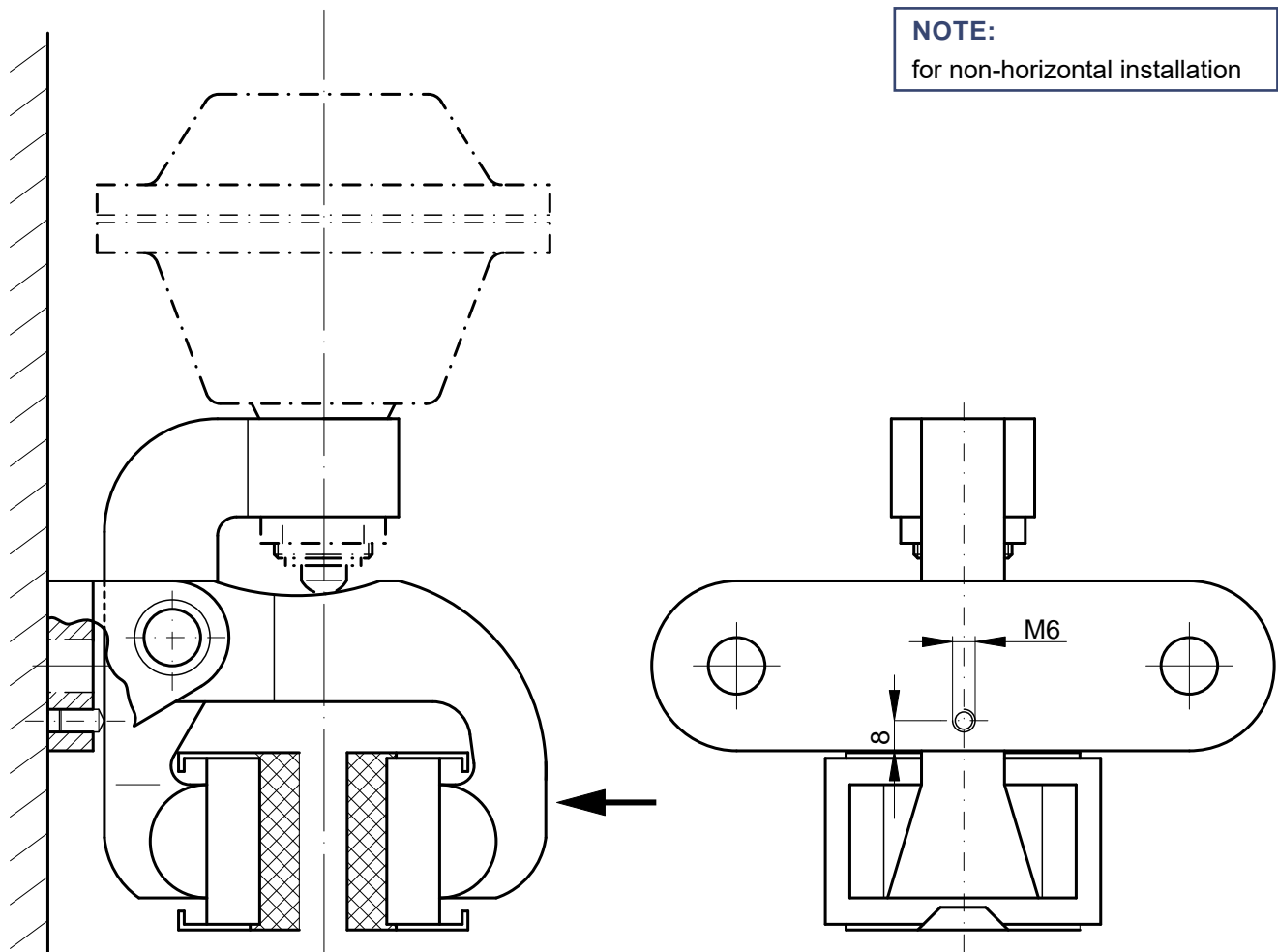
*H to 500 mm: 11544*

*H to 700 mm: 11545*

*H to 1000 mm: 12844*

*H to 1400 mm: 12845*





**NOTE:**

for non-horizontal installation

The brake caliper type R&H 100 is preferably mounted on a horizontal brake disc axis in the position 3 h or 9 h. In the case of a deviation from this installation position of more than 10° and in the case of vertical brake disc axis, it must be prevented that a brake pad is unintentionally pressed against the brake disc by the weight of the brake thruster.

Depending on the mounting direction and the resulting torque from the thruster weight, the brake caliper must be intercepted by the adjusting screw or the counter lever (see arrow).

**!** Secure the set screw M6 x 10 DIN 913 (Part-No. 11672) with Loctite after adjustment.



**NOTE:**

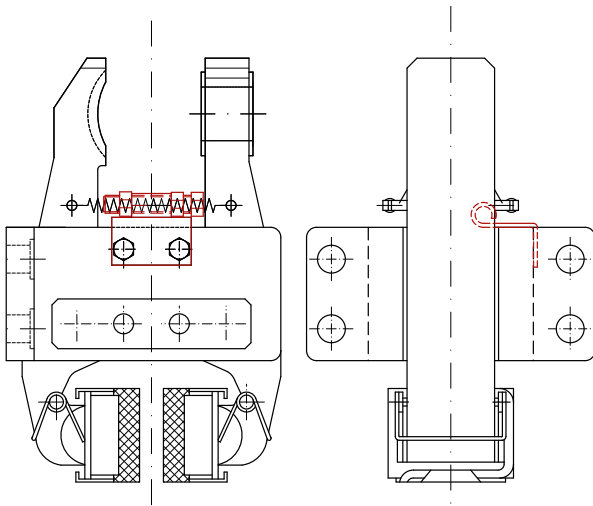
for non-horizontal installation

The R&H brake calipers are preferably mounted on a horizontal brake disc axis in the position 3 h or 9 h. In the case of a deviation from this installation position of more than 10° and in the case of vertical brake disc axis, it is absolutely necessary to use an inclined mounting kit. It prevents a brake pad from constantly coming in contact with the brake disc as a result of the brake caliper's asymmetry.

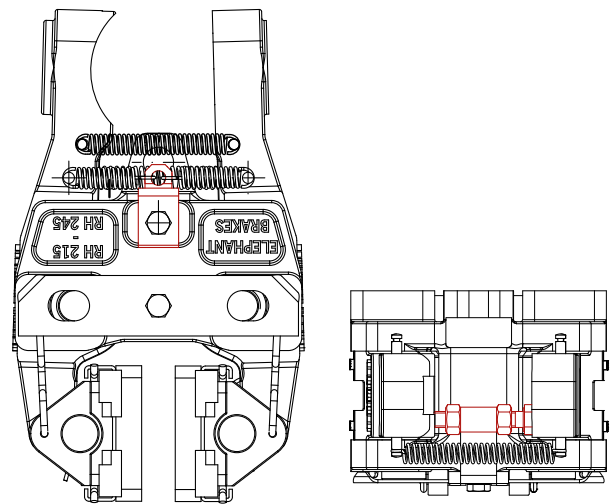
For a vertical brake disc axis choose an installation position where the thruster is positioned as far as possible above the brake caliper.

In the case of an arrangement with a „downward thruster“, the use of additional return springs may be required due to the mass of the thruster.

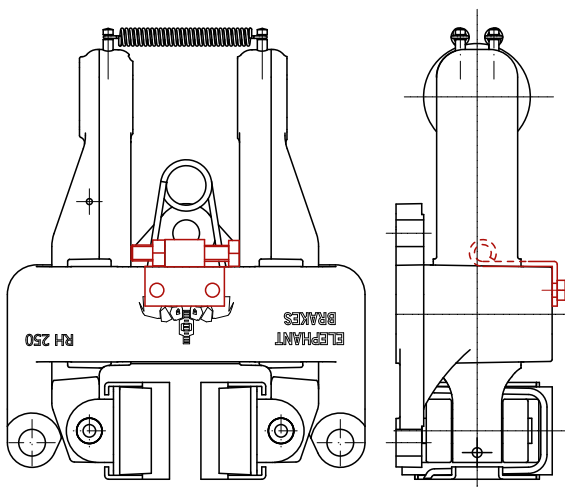
**R&H 200 – Part-No. 11296**



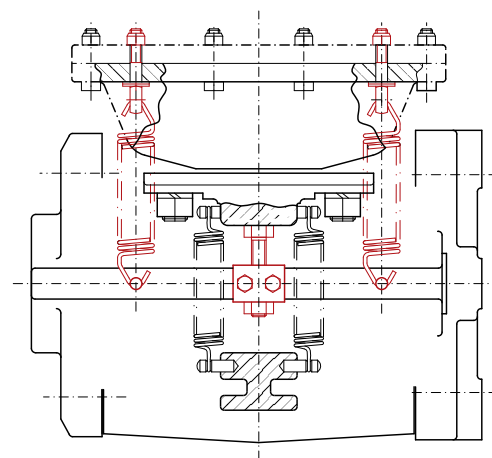
**R&H 215 - 245 – Part-No. 10087**

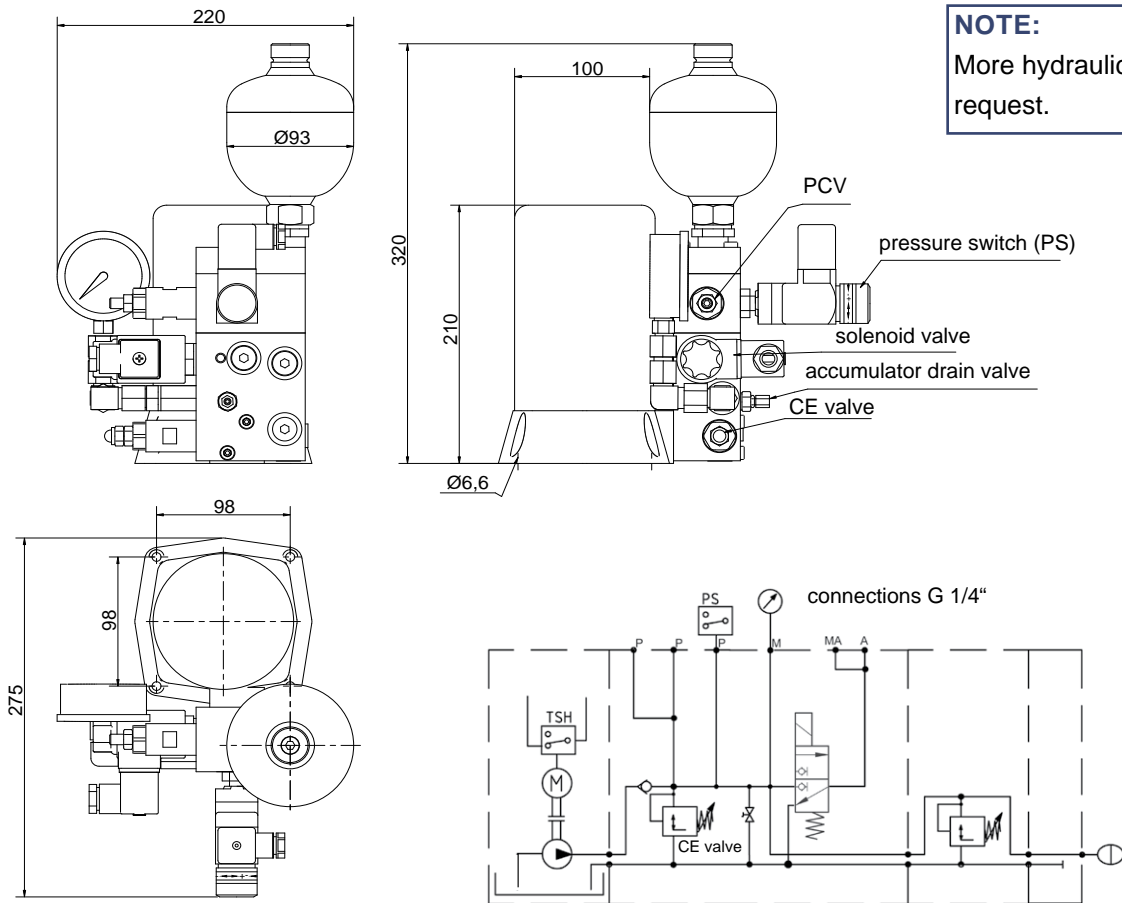


**R&H 250 / R&H 300 – Part-No. 13109**



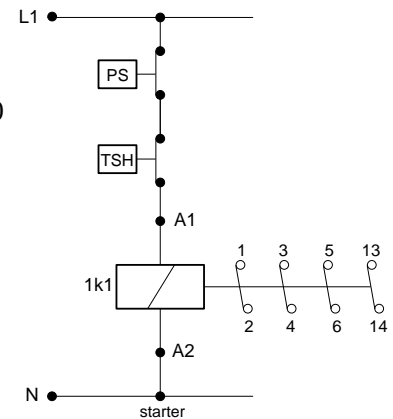
**R&H 350 – Part-No. 10379 or 14641**





**NOTE:**  
More hydraulic units on request.

- Displacement: 1,25 l/min
  - Nominal pressure: adjustable up to 160 bar
  - Filling volume: 1,1 l
  - Supply voltage: 380-420 VAC 50Hz//440-480 VAC 60 Hz
  - Type of protection: DIN 40050 - IP 54, w/ completely mounted unit
  - Type of connection: Cable – 1,5 m
  - Solenoid valve voltage: 24 VDC standard, by request 230 VAC 50 Hz // 120 VAC 60 Hz
  - $P_{Agg.}$ : 0,28kW,  $\cos \varphi = 0,72$
  - $I_{Nenn.}$ : 1,5 A
  - $P_{Vent.}$ : 26 W
  - Mode of operation: Temporary duty S2, intermittent duty S3 acc. to VDE 0530
  - Mass (w/o oil): HP0... 12,2 kg
  - Installation position: vertical, breather and connecting cable on top
  - Direction of rotation: at will
  - Ambient temperature: -20°C to +40°C
  - Mounting: Mounting holes on the unit base for M6 screws
  - Hydraulic fluid: Hydraulik oil acc. to DIN 51524 HLP or HLPD
  - Pressure temperature range: -20°C up to +80°C
- Only use filtered hydraulic oil 25µm absolut.**



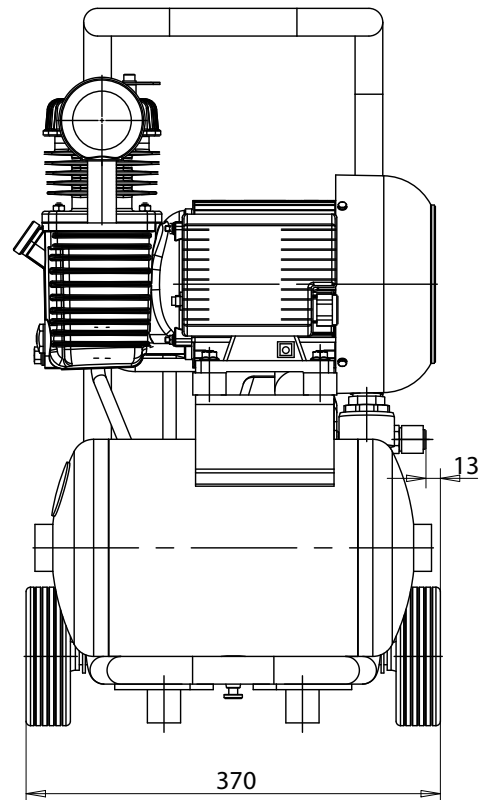
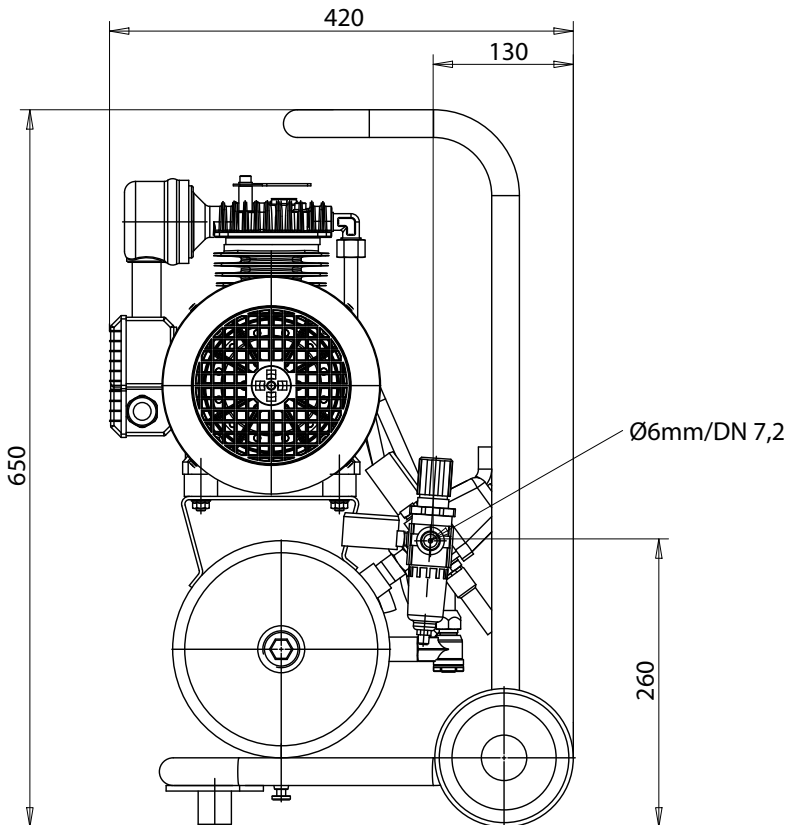
For reasons of thermal load, units of the HP series may only be used in temporary intermittent duty.

**Elephant Brakes by Rietschoten Germany. Strong like an elephant. Smart like an elephant.**

Deutsche van Rietschoten & Houwens GmbH · Junkersstraße 12 · 30179 Hannover · www.elephantbrakes.com

**NOTE:**

Replacement for type  
Eco-Mini since 04.'07



### Technical data

Inlet capacity: 210 l/min  
 Filling volume: 140 l/min  
 Max. pressure: 10 bar  
 Electrical connection (50 Hz): 230 V AC  
 Motor power: 1,5 kW  
 Hose connection: 6 mm  
 Mass: 29 kg  
 Tank volume: 10 l  
 Sound pressure level: 67 dB(A)  
 Duty cycle: 60 %

### Equipment

- Inlet filter with damper
- Manometer
- Safety valve
- Check valve
- Self-stopping hose coupling with plug-in sleeve
- Inside plastic-coated vessel
- Vessel drain cock
- Pressure switch for automatic operation
- Motor protection switch, mounted
- 3 m connection cable

*Bigger units deliverable by request*

**DEUTSCHE  
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