

Quality. Safety. Efficiency.
Only Quality is economical in the long run



Sicherheitsbremse
Caliper Scheibenbremsen SCFH

Safety Brake
Caliper Disc Brakes SCFH



Technische Daten / Zeichnung
technical data / drawing
150520

PROTECT YOUR HOIST SYSTEM

Reduction of maintenance costs
and failures



Concerning hoists with safety brakes at the board disc of the rope drum significant loads in the hoist gearing may appear.

As a result of different reaction times of service brakes on the motor shaft and safety brakes push-like gearing torques of 10 times the nominal torque can be the effect. These push-like loads can be of negative influence on the bearing lifetime and consequently on the gearing lifetime.



service brake
drum-, disc or band brake

+



TURBO Control system
reduction of the reaction time of
electro-hydraulically thrusters

+



Safety brake Caliper
type SCFH 4

Reaction times of service brakes and safety brakes at the board disc of the rope drum should be more or less equal.

Using an electro-hydraulic thruster for the service brakes (brakes between motor and gearing) the application of the patented TURBO control system of RFT is recommended.

This control system for electro-hydraulic thrusters allows dead times of about 150 ms. Reaction times to be realized by this are comparable to dead times for

safety brakes at the board disc of the rope drum. As a result mentioned push-like top gearing torques cannot act in a range described above. The TURBO control system can be used in combination with any thruster.

In addition the control system may be equipped with an uninterruptible power supply (USV) to realize equal reaction times in case of power off and an emergency load lowering.



Disc Brake Caliper SCFH

Direct acting, hydraulic release.



page 1 of 4

Nielandstraße 53 * D-58300 Wetter



Operating Principle

- Spring applied braking force
- Hydraulic release
- Fail Safe (if power fails the brake applies)

Arrangement

- Direct acting without linkages
- Fixed, not floating

Notable Features

- High braking torque, direction of rotation independent
- Supplied ready assembled, with pre-tensioned braking springs
- Two identical halves, and can be mounted in any position
- Manual adjustment for brake wear. Air-gap adjustable in the range of 1 to 3 mm
- standard low wear sintered pads with $\mu = 0,4$
- Encapsulated hydraulic system. The hydraulic piston is fitted behind the spring-pack, away from the friction zone. As a result the hydraulic seals and fluid are not subjected to braking heat, and no cooling is required to achieve reliable long term sealing and operation.

Disc Brake Caliper SCFH

Direct acting, hydraulic release.



page 2 of 4

Nielandstraße 53 * D-58300 Wetter

Options and Accessories:

- Monitoring switches to indicate brake open, brake closed, brake lining wear
- Manual release, using a hand pump on the Hydraulic Power Pack
- Hydraulic Power Pack, which can also be configured to operate multiple calipers
- Special versions for very high or very low temperatures
- Hydraulic systems with hardly inflammable or biodegradable hydraulic fluids
- Brake discs either with hub or flange mounting

Technical Data

Performance Data:

Size	Spring Pack	Pad force F_{an} per cylinder at airgap (s)			Brake Pad		Hydraulic Release Pressure [bar] ³⁾	weight [kg] ²⁾
		s = 1 mm	s = 2 mm	s = 3 mm	Friction Coeff. μ ¹⁾	Surface area [cm ²]		
SCFH-1 - 80	80	85,5 kN	76,6 kN	68,3 kN	0,4	132	180	85
SCFH-1 - 60	60	57,9 kN	54,3 kN	50,7 kN	0,4	132	120	85
SCFH-1 - 50	50	51,2 kN	49,3 kN	47,4 kN	0,4	132	100	85
SCFH-1 - 40	40	39,9 kN	38,5 kN	37,2 kN	0,4	132	85	85
SCFH-1 - 30	30	30,1 kN	29,0 kN	28,0 kN	0,4	132	60	85
SCFH-1 - 20	20	20,0 kN	19,6 kN	19,3 kN	0,4	132	45	85
SCFH-3 - 240	240	255 kN	240 kN	222 kN	0,4	320	200	280
SCFH-3 - 120	120	123 kN	120 kN	116 kN	0,4	320	100	280
SCFH-4 - 400	400	435 kN	400 kN	365 kN	0,4	570	215	540
SCFH-4 - 300	300	321 kN	300 kN	278 kN	0,4	570	155	540

1) Various factors can affect the friction coefficient μ , including surface speed, contact pressure, thermal loading, contact surface condition, brake disc material and environmental conditions. For brake selection, those factors should be considered in addition to the guidelines given in DIN 15434.

The given braking torques are valid for dynamic braking with heat generation, and rubbing speed up to 25 m/s for organic pads, or 60 m/s for sintered pads. The service temperature of organic pads should not exceed 250 °C, and sintered pads should not exceed 600 °C. The values indicated refer to the brake discs out of steel, for divergent materials low limiting values can be necessary

2) Mass of caliper without mounting pedestal or hydraulic power pack

3) Max. allowable hydraulic pressure: 250 bar.

Tel.: +49 - (0) 23 35 / 80 29 - 0
Fax: +49 - (0) 23 35 / 80 29 - 29

eMail: info@roemer-foerdertechnik.de
Internet: www.roemer-foerdertechnik.de

Modifications reserved - 150429

Disc Brake Caliper SCFH

Direct acting, hydraulic release.



Nielandstraße 53 * D-58300 Wetter

Determining the Brake Torque:

The effective brake torque of a complete brake caliper is calculated using the following formula

$$T_{Br} = \mu \cdot F_{an} \cdot D1$$

The effective diameter D1 can be found using the formula below on this page.

Alternatively, the effective braking torque can be taken from the displayed diagram.

Combinations of multiple calipers are possible to get a wide range of contact force.

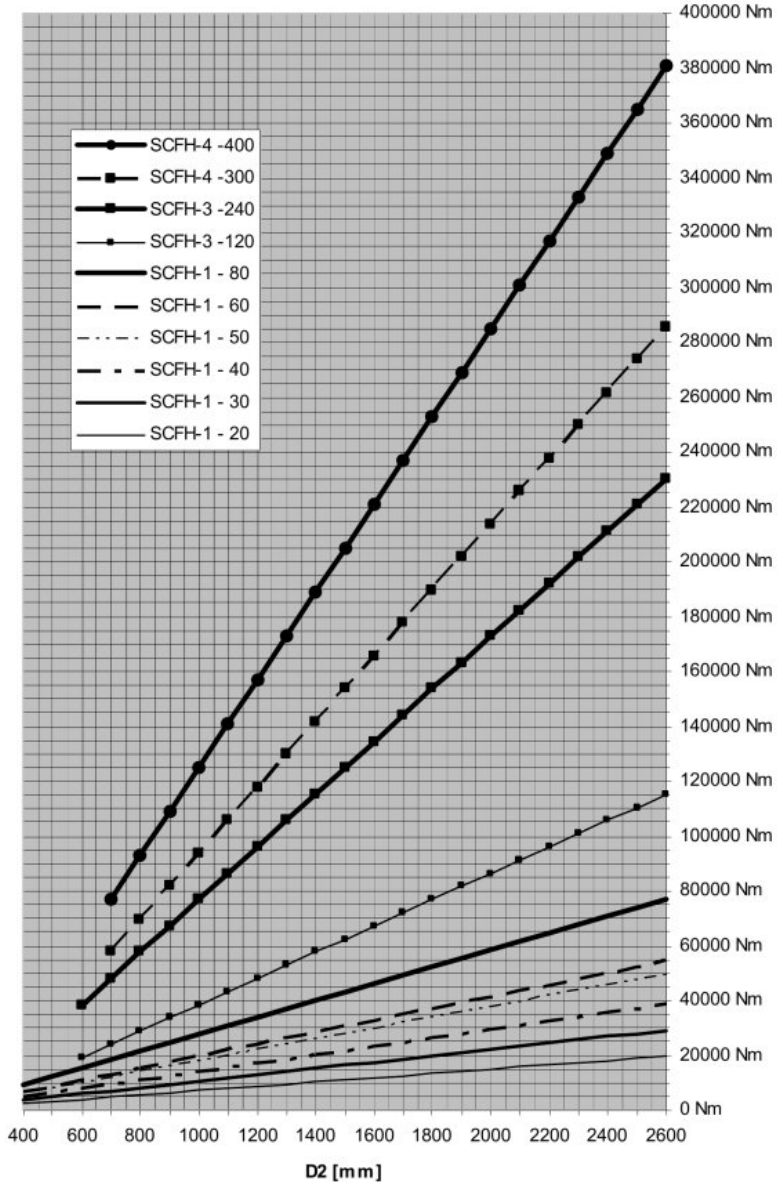


Example:

4 x SCFH - 3 => 960 kN contact force for s = 2 mm airgap

- 1 x SCFH-1-80 => 77 kN
- 1 x SCFH-3-120 => 120 kN
- 2 x SCFH-1-80 => 154 kN
- 1 x SCFH-3-240 => 240 kN
- 4 x SCFH-1-80 => 308 kN
- 2 x SCFH-3-240 => 480 kN
- 2 x SCFH-4-400 => 800 kN
- 4 x SCFH-3-240 => 960 kN

Special Design and combinations on request!



Dimensions dependent on the brake disc:

Size	D2	B1	B _{max}	B3	B6	D1	D4 _{max}
SCFH-1			620 + B1	532 + B1	40 + B1	D2 - 92	D2 - 215
SCFH-3			810 + B1	692 + B1	60 + B1	D2 - 200	D2 - 440
SCFH-4			950 + B1	825 + B1	70 + B1	D2 - 220	D2 - 490

Brake disc outer diameter D2, and disc thickness B1 are customer supplied dimensions.

Size	A	A1	A2	A3	A5	A6	A7	B2	B4	B5	C	C2	C3	C6	D3	G	M
SCFH-1	213	106	107	120	15	40	80	100	302	55	270	210	182	70	27 (6x)	G3/8	M24 (8.8)
SCFH-3	390	220	170	180	12	35	135	200	405	70	360	300	270	75	31 (8x)	G3/8	M30 (8.8)
SCFH-4	440	240	200	180	12	55	155	225	475	94	480	410	310	100	38 (8x)	G1/2	M36 (8.8)

Tel.: +49 - (0) 23 35 / 80 29 - 0
Fax: +49 - (0) 23 35 / 80 29 - 29

eMail: info@roemer-foerdertechnik.de
Internet: www.roemer-foerdertechnik.de

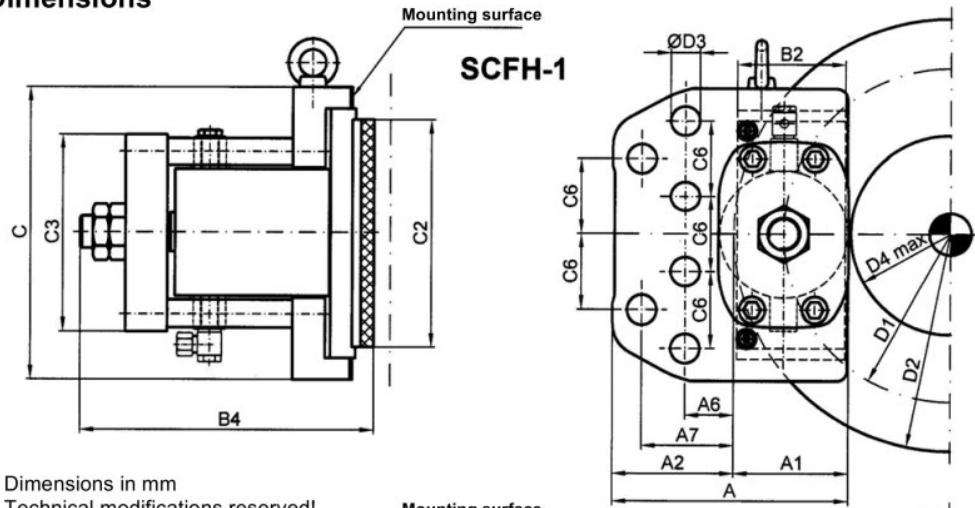
Modifications reserved - 150429

Disc Brake Caliper SCFH

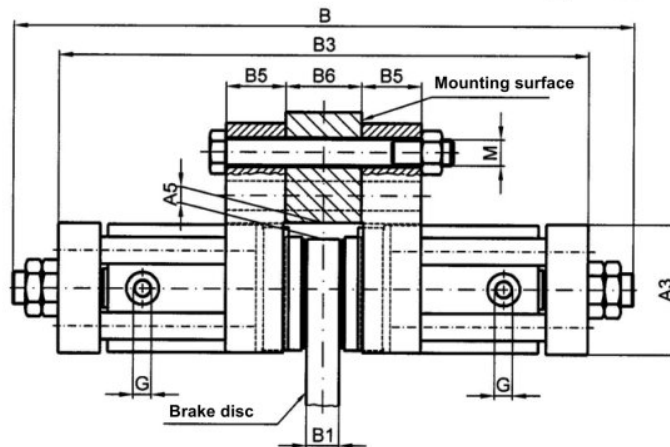
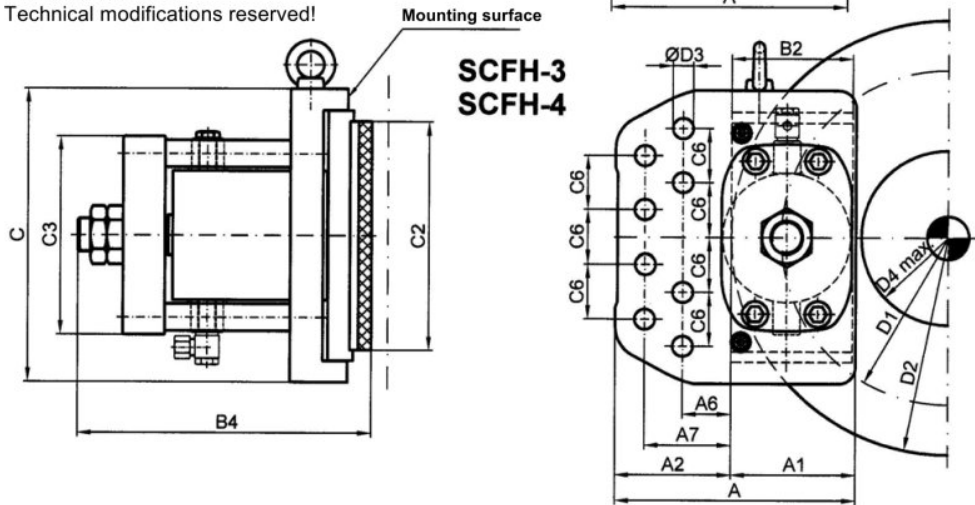
Direct acting, hydraulic release.



Dimensions



Dimensions in mm
Technical modifications reserved!



Tel.: +49 - (0) 23 35 / 80 29 - 0
Fax: +49 - (0) 23 35 / 80 29 - 29

eMail: info@roemer-foerdertechnik.de
Internet: www.roemer-foerdertechnik.de

Modifications reserved - 150429