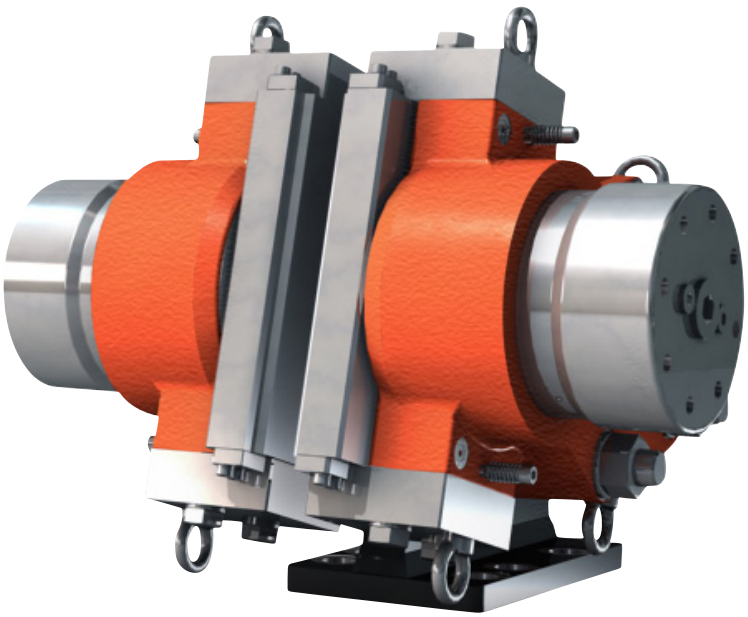
Svendborg Brakes

GLOBAL
LEADING
EXPERTS

Disc Brake: BSFK 500 DUALspring

Name: DEB-0500-027-DS-MAR
Date: 23.01.2012
Revision: A



TECHNICAL DATA AND CALCULATION FUNDAMENTALS

CALIPER TYPE	CLAMPING FORCE [1] [N]		BRAKING FORCE [2]	LOSS OF FORCE PER 1MM	OPERATING PRESSURE [3]	BALANCING PRESSURE [1] MIN	PAD SURFACE PRESSURE [4]
	MIN	MAX	[N]	[%]	MPa	MPa	[N/mm²]
BSFK 520	200,000	220,000	160,000	5.5	13.5	8.57	3.07 - 3.05
BSFK 523	230,000	250,000	184,000	6.5	14.0	9.86	3.48 - 3.45
BSFK 525	250,000	270,000	200,000	5.5	14.5	10.72	3.76 - 3.73
BSFK 527	270,000	295,000	216,000	5.0	15.5	11.58	4.11 - 4.07
BSFK 530[5]	300,000	320,000	240,000	12.5	19.0	12.86	4.46 - 4.42
BSFK 535[5]	350,000	380,000	280,000	10.0	21.0	15.00	5.30 - 5.25

[1] All figures are based on 1 mm air gap (Each side)
[2] Braking force is based on a min clamping force, nominal coefficient of friction μ = 0.4 and 2 brake surfaces.
[3] The operating pressure is the minimum needed for operating the brake
[4] Pad pressure for organic / sintered pads respectively (based on max. clamping force)
[5] Not recommended for general usage

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Specification

BRAKING TORQUE

The braking torque M_B is calculated from following formula where:
a is the number of brakes acting on the disc
F_B is the braking force according to table above [N] or calculated from formula
D_0 is the brake disc outer diameter [m]
The actual braking torque may vary depending on adjustment of brake and friction coefficient.

$$M_B = a \cdot F_B \cdot \frac{(D_0 - 0{,}23)}{2} \text{ [Nm]}$$

$$F_B = F_C \cdot 2 \cdot \mu$$

CALCULATION FUNDAMENTALS

	DUALSPRING
Weight of caliper without bracket:	Approx. 420 kg
Overall dimensions:	720 x 472 x 490 mm
Pad width (width for heat calculation):	230 mm (205 mm)
Pad area: (organic)	71,750 mm^2 (*)
Max. wear of pad: (organic)	10 mm (*) "(=47mm thick)"
Pad area: (sintered)	72,400 mm^2 (*)
Max. wear of pad: (sintered)	10 mm (*) "(=47mm thick)"
Nominal coefficient of friction:	μ = 0.4
Total piston area - each caliper half:	233 cm^2
Total piston area - each caliper:	466 cm^2
Volume for each caliper at 1 mm stroke:	47 cm^3
Volume for each caliper at 3 mm stroke:	140 cm^3
Actuating time (guide value for calculation):	0.4sec
Pressure connection/port:	3/8" BSP
Drain connection port:	1/4" BSP
Recommended pipe size:	16/12 mm
Maximum operating pressure	23.0 MPa
Operating temperature range - general	from -20°C to +70°C

(For temperatures outside this range contact Svendborg Brakes)

(*) On each brake pad.