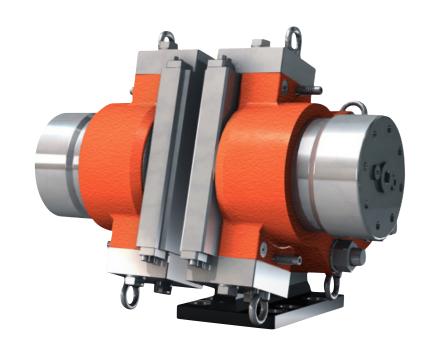


## **Disc Brake: BSFK 500 DUALspring**

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 <sup>1)</sup> MIN	PAD SURFACE PRESSURE <sup>4)</sup>
	MIN	MAX	[N]	[%]	MPa	MPa	[N/mm <sup>2</sup> ]
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 <sup>5)</sup>	300,000	320,000	240,000	12.5	19.0	12.86	4.46 - 4.42
BSFK 535 <sup>5)</sup>	350,000	380,000	280,000	10.0	21.0	15.00	5.30 - 5.25

<sup>1)</sup> All figures are based on 1 mm air gap (Each side)

<sup>&</sup>lt;sup>2)</sup> Braking force is based on a min clamping force, nominal coefficient of friction  $\mu$  = 0.4 and 2 brake surfaces.

<sup>&</sup>lt;sup>3)</sup> The operating pressure is the minimum needed for operating the brake

<sup>&</sup>lt;sup>4)</sup> Pad pressure for organic / sintered pads respectively (based on max. clamping force)

<sup>5)</sup> Not recommended for general usage



### **Disc Brake: BSFK 500 DUALspring**

#### **Specification**

#### BRAKING TORQUE

The braking torque  $M_{_{\rm R}}$  is calculated from following formula where:

a is the number of brakes acting on the disc

F<sub>B</sub> is the braking force according to table above [N] or calculated from formula

**D**<sub>o</sub> is the brake disc outer diameter [m]

The actual braking torque may vary depending on adjustment of brake and friction coefficient.

$$M_B = a \cdot F_B \cdot \frac{(D_0 - 0.23)}{2}$$
 [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 mm² (\*)

Max. wear of pad: (organic) 10 mm (\*) "(=47mm thick)"

Pad area: (sintered) 72,400 mm<sup>2</sup> (\*)

Max. wear of pad: (sintered) 10 mm (\*) "(=47mm thick)"

Nominal coefficient of friction:  $\mu = 0.4$ Total piston area - each caliper half:  $233 \text{ cm}^2$ Total piston area - each caliper: 466 cm<sup>2</sup>  $47 \text{ cm}^3$ Volume for each caliper at 1 mm stroke: Volume for each caliper at 3 mm stroke: 140 cm<sup>3</sup> 0.4sec Actuating time (guide value for calculation): Pressure connection/port: 3/8" BSP Drain connection port: 1/4" BSP 16/12 mm Recommended pipe size: 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.