

## **Disc Brake: BSFG 400 DUALspring**

Name: DEB-0400-001-DS-MAR Date: 24.04.2007

Revision: A



TECHNICAL
DATA AND
CALCULATION
FUNDAMENTALS

CALIPER TYPE	CLAMPING FORCE 1) [N]		BRAKING FORCE 3)	LOSS OF FORCE PER 1MM	OPERATING PRESSURE 3)	PAD SURFACE PRESSURE 1)	PAD SURFACE PRESSURE 4)
	MIN	MAX	[N]	[%]	MPa	MPa	[N/mm <sup>2</sup> ]
BSFG 403	34,300	38,400	27,500	7.0	7.0	4.60	0.61
BSFG 405	55,900	62,600	45,000	6.0	10.5	7.50	0.99
BSFG 408	80,100	89,700	64,000	6.0	14.5	10.74	1.42
BSFG 412 <sup>5)</sup>	120,000	134,000	96,000	9.0	22.0	16.09	2.13

<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 pads (based on max. clamping force)

 $<sup>^{\</sup>rm 5)}$  Not recommended for general usage - special high pressure version



## **Disc Brake: BSFG 400 DUALspring**

### **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<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.

$$M_B = a \cdot F_B \cdot \frac{(D_0 - 0.22)}{2}$$
 [Nm]

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

# CALCULATION FUNDAMENTALS

#### **DUALSPRING**

Weight of caliper without bracket: Approx. 280 kg
Overall dimensions 520 x 570 x 590 mm

Pad width (width for heat calculation): 220 mm

Pad area: (organic) 63,000 mm<sup>2</sup> (\*)

Max. wear of pad: (organic) "11 mm (\*) (=14 mm thick - lining)"

Nominal coefficient of friction: 74.5 cm<sup>2</sup> Total piston area - each caliper half: Total piston area - each caliper: 149 cm<sup>2</sup> Volume for each caliper at 1 mm stroke:  $15 \text{ cm}^3$ Volume for each caliper at 3 mm stroke:  $45 \text{ cm}^3$ Actuating time (quide value for calculation): 0.4 sec Pressure connection/port: 3/8" BSP 1/4" BSP Drain connection port: 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.