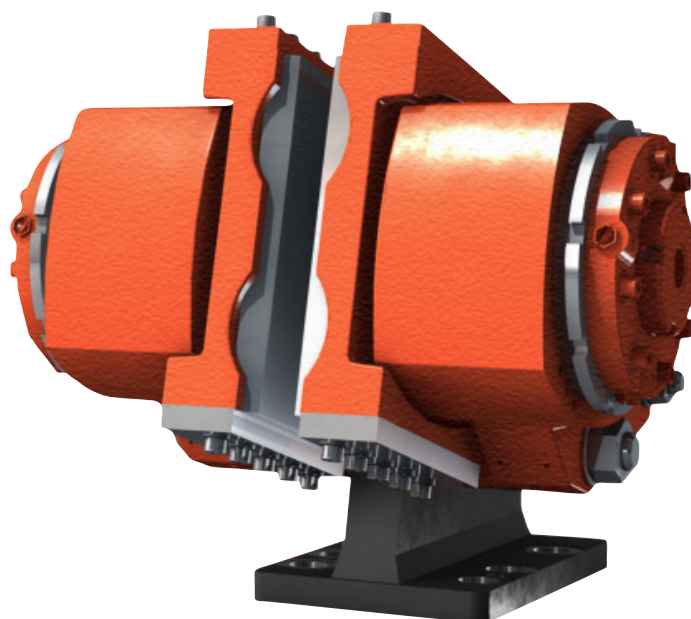


## Disc Brake: BSFG 400 DUALspring

Name: DEB-0400-001-DS-MAR

Date: 24.04.2007

Revision: A



### TECHNICAL DATA AND CALCULATION FUNDAMENTALS

| CALIPER<br>TYPE        | CLAMPING FORCE <sup>1)</sup><br>[N] |         | BRAKING<br>FORCE <sup>3)</sup><br>[N] | LOSS OF<br>FORCE<br>PER 1MM<br>[%] | OPERATING<br>PRESSURE <sup>3)</sup><br>MPa | PAD<br>SURFACE<br>PRESSURE <sup>1)</sup> | PAD<br>SURFACE<br>PRESSURE <sup>4)</sup> |
|------------------------|-------------------------------------|---------|---------------------------------------|------------------------------------|--|--|--|
|                        | MIN                                 | MAX     |                                       |                                    |  | 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>2)</sup> Braking force is based on a min clamping force, nominal coefficient of friction  $\mu = 0.4$  and 2 brake surfaces.

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

<sup>4)</sup> Pad pressure for organic pads (based on max. clamping force)

<sup>5)</sup> 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

$F_B$  is the braking force according to table above [N] or calculated from formula

$D_o$  is the brake disc outer diameter [m]

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

$$M_B = a \cdot F_B \cdot \frac{(D_o - 0,22)}{2} \text{ [Nm]}$$

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

### 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:              | $\mu = 0.4$                         |
| Total piston area - each caliper half:        | 74.5 cm <sup>2</sup>                |
| Total piston area - each caliper:             | 149 cm <sup>2</sup>                 |
| Volume for each caliper at 1 mm stroke:       | 15 cm <sup>3</sup>                  |
| Volume for each caliper at 3 mm stroke:       | 45 cm <sup>3</sup>                  |
| Actuating time (guide value for calculation): | 0.4 sec                             |
| 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.