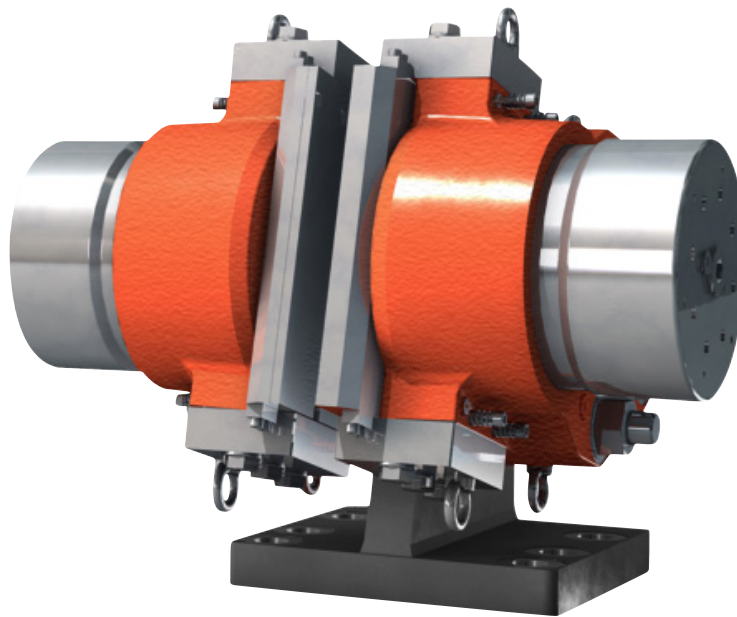


# Disc Brake: BSFB 600 DUALspring

Name: DEB-0600-016-DS-MAR

Date: 24.05.2012

Revision: A



## TECHNICAL DATA AND CALCULATION FUNDAMENTALS

| CALIPER<br>TYPE | CLAMPING FORCE <sup>1)</sup><br>[N] |         | BRAKING<br>FORCE <sup>2)</sup><br>[N] | LOSS OF<br>FORCE<br>PER 1MM<br>[%] | OPERATING<br>PRESSURE <sup>3)</sup><br>MPa | BALANCING<br>PRESSURE <sup>1)</sup><br>MIN<br>MPa | PAD<br>SURFACE<br>PRESSURE <sup>4)</sup><br>[N/mm <sup>2</sup> ] |
|-----------------|-------------------------------------|---------|---------------------------------------|------------------------------------|--|---|--|
|                 | MIN                                 | MAX     |                                       |                                    |  |   |  |
| BSFB 630        | 300,000                             | 320,000 | 240,000                               | 4.5                                | 11.0                                       | 7.23  | 2.71 - 3.05  |
| BSFB 635        | 350,000                             | 380,000 | 280,000                               | 5.5                                | 12.5                                       | 8.44  | 3.05 - 3.22  |
| BSFB 640        | 400,000                             | 430,000 | 320,000                               | 4.5                                | 13.5                                       | 9.65  | 3.64 - 4.10  |
| BSFB 645        | 450,000                             | 490,000 | 360,000                               | 8.5                                | 16.0                                       | 10.85   | 3.81 - 4.29  |
| BSFB 650        | 500,000                             | 540,000 | 400,000                               | 7.5                                | 17.5                                       | 12.06   | 4.58 - 5.14  |

<sup>1)</sup> All figures are based on 2 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 / sintered pads respectively (based on max. clamping force)

# Disc Brake: BSFB 600 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.

$$M_B = a \cdot F_B \cdot \frac{(D_o - 0,3)}{2} \text{ [Nm]}$$

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

### CALCULATION FUNDAMENTALS

#### DUALSPRING

|   |                             |
|---|-----------------------------|
| Weight of caliper without bracket:            | Approx. 765 kg              |
| Overall dimensions:                           | 584 x 565 x 797 mm          |
| Pad width (width for heat calculation):       | 300 mm                      |
| Pad area: (organic)                           | 118,000 mm <sup>2</sup> (*) |
| Max. wear of pad: (organic)                   | 10 mm (*) "(=37 mm thick)"  |
| Pad area: (sintered)                          | 105,000 mm <sup>2</sup> (*) |
| Max. wear of pad: (sintered)                  | 10 mm (*) "(=37 mm thick)"  |
| Nominal coefficient of friction:              | $\mu = 0.4$                 |
| Total piston area - each caliper half:        | 415 cm <sup>2</sup>         |
| Total piston area - each caliper:             | 830 cm <sup>2</sup>         |
| Volume for each caliper at 1 mm stroke:       | 83 cm <sup>3</sup>          |
| Volume for each caliper at 3 mm stroke:       | 249 cm <sup>3</sup>         |
| Actuating time (guide value for calculation): | 0.3 - 0,5 sec               |
| Pressure connection/port:                     | 1/2" BSP                    |
| Drain connection port:                        | 1/4" BSP                    |
| Recommended pipe size:                        | 16 mm                       |
| Maximum operating pressure                    | 18.5 MPa                    |
| Operating temperature range - general         | from -20°C to +70°C         |

(For temperatures outside this range contact Svendborg Brakes)

(C=disc thickness)

(\*) On each brake pad.