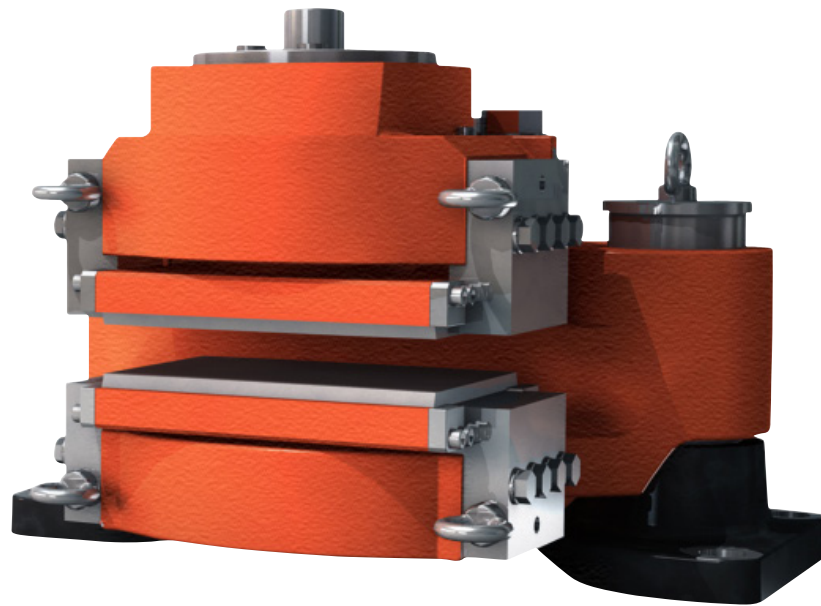


# Disc Brake: BSFH 500 MONOspring

Name: DEB-0500-001-MS-MAR

Date: 23.01.2012

Revision: G



## TECHNICAL DATA AND CALCULATION FUNDAMENTALS

CALIPER TYPE	CLAMPING FORCE <sup>1)</sup> [N]		BRAKING FORCE <sup>2)</sup> [N]	LOSS OF FORCE PER 1MM [%]	OPERATING PRESSURE <sup>3)</sup> MPa	BALANCING PRESSURE <sup>1)</sup> MIN MPa	PAD SURFACE PRESSURE <sup>4)</sup> [N/mm <sup>2</sup> ]
	MIN	MAX					
BSFH 507	70,000	74,000	56,000	9.0	8.0	4.82	1.17 - 1.70
BSFH 508	80,000	85,000	64,000	7.0	8.5	5.51	1.35 - 1.95
BSFH 509	90,000	95,000	72,000	6.0	9.0	6.20	1.51 - 2.18
BSFH 510	100,000	105,000	80,000	5.0	10.0	6.89	1.67 - 2.41
BSFH 511	110,000	115,000	88,000	4.5	11.0	7.58	1.83 - 2.64
BSFH 512	120,000	130,000	96,000	8.0	12.0	8.26	2.06 - 2.98
BSFH 514	140,000	153,000	112,000	7.0	14.0	9.64	2.42 - 3.51
BSFH 515	150,000	164,000	120,000	6.0	14.5	10.33	2.60 - 3.76
BSFH 516	160,000	175,000	128,000	6.0	15.0	11.02	2.78 - 4.01
BSFH 520	200,000	218,000	160,000	10.0	19.0	13.77	3.46 - 5.00

<sup>1)</sup> All figures are based on 1 mm air gab. (Total)

<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)

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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

$D_o$  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

#### MONOSPRING

Weight of caliper without bracket:	Approx. 500 kg
Overall dimensions:	720 x 540 x 470 mm
Pad width (width for heat calculation):	220 mm
Pad area: (organic)	63,000 mm <sup>2</sup> (*)
Max. wear of pad: (organic)	5 mm (*) "(=42 mm thick incl. brake shoe)"
Pad area: (sintered)	43,600 mm <sup>2</sup> (*)
Max. wear of pad: (sintered)	5 mm (*) "(=42 mm thick incl. brake shoe)"
Nominal coefficient of friction:	$\mu = 0.4$
Total piston area - each caliper half:	145 cm <sup>2</sup>
Total piston area - each caliper:	145 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.