

DATA SHEET

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TECHNICAL DATA AND CALCULATION FUNDAMENTALS FOR DISC BRAKE – BSFI D3000 (DOUBLE PISTON)

Caliper type	Clamping force ¹⁾		Braking force ²⁾ [N]	Loss of force per 1mm [%]	Operating pressure ³⁾ [MPa]	Balancing pressure ⁴⁾		Piston travel ⁴⁾ [mm]	Max air gap ⁵⁾ [mm]	Pad surface pressure ⁶⁾ [N/mm ²]
	MIN [N]	MAX [N]				Min [MPa]	Max [MPa]			
BSFI D3000-140	140.000	154.000	112.000	4	11,5	7,96	8,75	1	3	2,5
BSFI D3000-156	156.000	162.000	124.800	4	12,0	8,87	9,20	1	3	2,8
BSFI D3000-160	160.000	176.000	128.000	7	13,0	9,10	10,00	1	3	2,8
BSFI D3000-170	170.000	186.000	136.000	7	14,0	9,67	10,57	1	3	3,0
BSFI D3000-180	180.000	197.000	144.000	13	14,5	10,24	11,19	1	3	3,2
BSFI D3000-200	200.000	218.000	160.000	11	16,0	11,37	12,39	1	3	3,5
BSFI D3000-212	212.000	224.000	169.600	6	17,0	12,06	12,73	1	3	3,6
BSFI D3000-220	220.000	238.000	176.000	10	17,5	12,51	13,52	1	3	3,8
BSFI D3000-240	240.000	260.000	192.000	9	19,0	13,65	14,77	1	3	4,2

- ¹⁾ All figures are based on 1mm air gap (Dual spring: Each side – Mono Spring: Total) and 2 spring packs.
²⁾ Braking force (F_B) is based on the minimum clamping force (F_C), nominal coefficient of friction of $\mu = 0.4$ and 2 brake surfaces.
³⁾ The operating pressure is the minimum needed for operating the brake
⁴⁾ The piston travel at which the pressure limits is measured – the nominal pressure limits is identical to balancing pressure values.
⁵⁾ Maximum recommended air gap depending on wear.
⁶⁾ Pad pressure for organic pads (at max. clamping force).

BRAKING TORQUE

The braking torque M_B calculated from following formula:

a is number of brakes acting on the disc

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

D_o is brake disc outer diameter [m]

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

$$M_B = a \cdot F_B \cdot \frac{(D_o - 0,156)}{2} [Nm]$$

$$F_B = F_C \cdot 2 \cdot \mu [N]$$

CALCULATION FUNDAMENTALS

Disc thickness:

Weight of calliper (incl. pads/bolts – excl. bracket):

Overall dimensions HxDxW (approx):

Pad width:

Pad thickness for new pad (organic):

Pad area (organic):

Max. wear of pad (organic):

Nominal coefficient of friction:

Total piston area – each calliper half:

Total piston area – each calliper:

Volume for each calliper at 1 mm stroke:

Volume for each calliper at 3 mm stroke:

Actuating time (guide value for calculation):

Pressure connection size (P-port):

Drain connection size (L-port):

Drain connection size (A-port):

Recommended pipe size:

Max operating pressure:

Operating temperature range:

Dual Spring (DS)

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450kg

557x440x450(+C) mm

148mm

30 mm

56,500 mm² (*)

8 mm (*) (=22mm thick)

$\mu = 0.4$

2x88 cm² = 176 cm²

4x88 cm² = 352 cm²

35,2 cm³

106,6 cm³

0,3 sec.

G1/4, ISO 228

G1/8, ISO 228

G1/4, ISO 228

10/8 mm

23.0 MPa

from -20 to +70°C

(For temperatures outside this range contact Svendborg Brakes)

Mono Spring (MS)

26-77mm

515-560kg

716x441x392(+C) mm

148 mm

30 mm

56,500 mm² (*)

5 mm (*) (=25mm thick)

$\mu = 0.4$

2x88 cm² = 176 cm²

2x88 cm² = 176 cm²

17,6 cm³

52,8 cm³

0,3 sec.

G1/4, ISO 228

G1/8, ISO 228

G1/4, ISO 228

10/8 mm

23.0 MPa

from -20 to +70°C

(C = Brake disc thickness)

(*) On each brake pad – thickness stated is minimum thickness before replacement