

### Spring applied, pressure released disc brake

Dellner Bubenzer model SKP 180S spring applied, hydraulically released disc brake offers a reliable and safe method of braking linear or rotary motion.

The brake consists of two symmetrical cylinder housings and can be supplied with or without a support.

Each housing has two cylindrical guide pins that transmit the tangential braking force from the brake lining to the brake housing and support. As a result, any radial forces on the brake pistons are minimized which contributes to longer brake life.

Four springs in each housing retract the brake pads from the disc when pressure is applied.

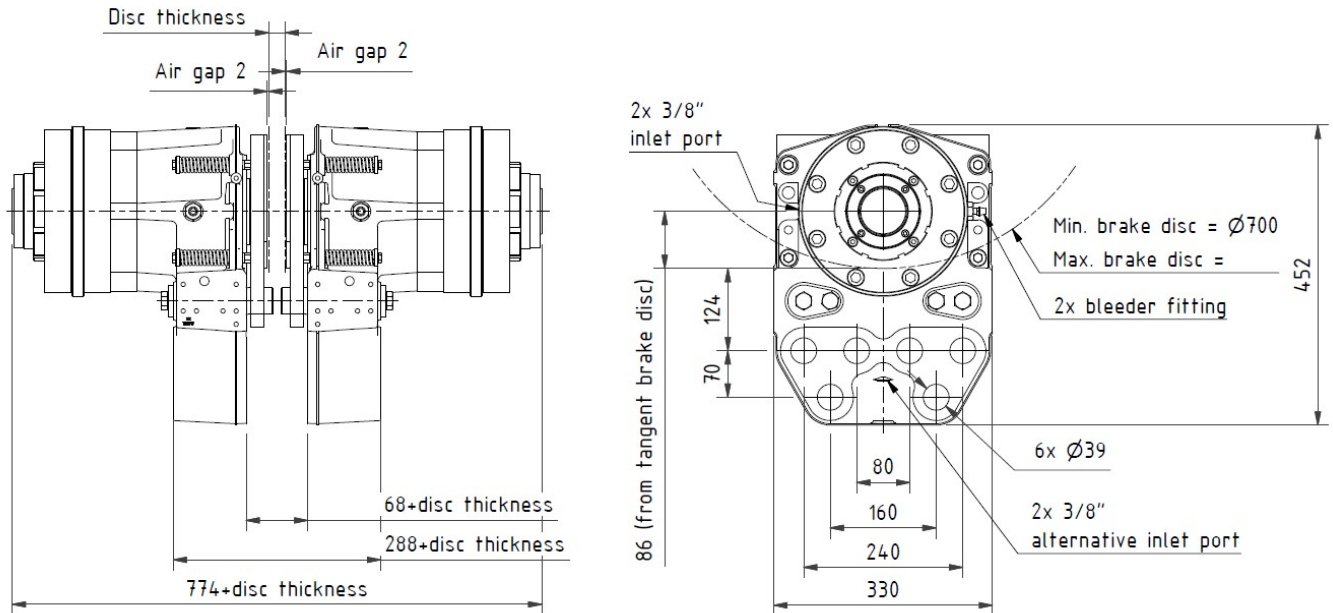
The SKP 180S allows a brake pad lining wear of up to 3 mm before replacement is required, which could be a lifetime's use in applications where the brakes are purely used statically and/or in emergency situations. The brake piston extends through the rear lock nut to give an easy, visual way to tell when replacement is needed. The SKP 180 series also includes the SKP 180A, where disc spring packs can be adjusted to compensate for lining wear.



Model	Tangential braking force F		Releasing pressure [bar] <sup>4)</sup>	Balancing pressure [bar] <sup>5)</sup>	Airgap between brake disc and lining		Estimated life of disc spring pack		Weight [kg]
	[N] <sup>1)</sup>				[mm]		[no. of strokes]		
	max. <sup>2)</sup>	min. <sup>3)</sup>			max. <sup>6)</sup>	min. <sup>7)</sup>	max. <sup>8)</sup>	min. <sup>9)</sup>	
SKP 180S-100	141 000	80 100	130	95	2x 2,0	2x 4,0	> 2x10 <sup>6</sup>	646 000	325
SKP 180S-130	170 300	111 000	155	115	2x 2,0	2x 4,0	> 2x10 <sup>6</sup>	205 000	325
SKP 180S-170	208 300	150 900	180	140	2x 2,0	2x 4,0	1 590 000	40 000	325
SKP 180S-190	226 800	170 300	190	155	2x 2,0	2x 4,0	593 000	12 900	325

NOTE: All sizes within range has a total friction area of 1200 cm<sup>2</sup> / total allowable wear volume of 1200 cm<sup>3</sup>

- 1) Calculated with an average frictional coefficient  $\mu=0,42$ . Consideration has not been taken for external factors.
- 2) Braking force with correctly adjusted disc spring pack.
- 3) Braking force with maximum recommended air gap before adjustment is needed.
- 4) Pressure to fully release brake.
- 5) Nominal pressure to balance an adjusted brake.
- 6) Air gap for correctly adjusted brake.
- 7) Maximum recommended air gap before adjustment is needed.
- 8) Valid for minimum spring pack compression.
- 9) Valid for maximum spring pack compression.



Maximum Shaft flange diameter = Brake Disc diameter  $\varnothing D$  – 440 mm

## TORQUES

The braking torque is calculated from the following formula:

$$M_{brake} = \frac{F \times (D_s - 2h)}{2}$$

q = number of brakes  
 F1 = braking force according to the table on page 1 [N]  
 p = pressure [bar]  
 Ds = brake disc diameter [m]  
 h = distance disc periphery to piston center [m] (SKP 180: 0,086)

Model	Tangential braking force F [N] <sup>1)</sup>		Disc diameter D <sub>s</sub> [mm]							
	max. <sup>2)</sup>	min. <sup>3)</sup>	ø800	ø1000	ø1200	ø1500	ø1800	ø2000	ø2250	ø2500
SKP 180S-100	141 000	80 100	25 100	33 100	41 100	53 100	65 200	73 200	83 200	93 200
		111 000	44 200	58 300	72 400	93 600	114 700	128 800	146 400	164 100
SKP 180S-130	170 300	150 900	34 800	45 900	57 000	73 700	90 300	101 400	115 300	129 200
		208 300	53 400	70 500	87 500	113 000	138 600	155 600	176 900	198 200
SKP 180S-170	208 300	170 300	47 300	62 400	77 500	100 100	122 800	137 900	156 700	175 600
		226 800	65 400	86 200	107 000	138 300	169 500	190 300	216 400	242 400
SKP 180S-190	226 800	170 300	53 400	70 500	87 500	113 000	138 600	155 600	176 900	198 200
		226 800	71 200	93 800	116 500	150 500	184 600	207 200	235 600	263 900

1) Calculated with an average frictional coefficient  $\mu=0,42$ . Consideration has not been taken for external factors.

2) Braking force with correctly adjusted disc spring pack.

3) Braking force with maximum recommended air gap before adjustment is needed.

## OPTIONS

- Proximity switches for on/off, pad wear or "time to adjust" indication.
- Terminal box for switches.
- Protection cover for indicators.
- Tube connection set (connects the two cylinders to one connection point).
- Supports in different configurations.
- Brake pads in alternative materials.
- Seals in alternative materials.
- Customer specific colour.

## SUITABLE APPLICATIONS

The Dellner Bubenzer models SKP are suitable wherever safety brakes are needed, for example in the following types of applications:

Cranes  
Winches

Conveyors  
Wind mills

Emergency stops  
Parking applications

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