

Spring-Applied Single-Disc Brake

Ready for fitting
for D. C. operation
for dry running

This spring-operated brake is a device intended for dry running, where the dynamic effect of an electromagnetic field is exploited to compensate the braking effect produced by the spring. The brake grips in absence of current and releases under current.

If necessary, it is possible to eliminate the braking effect mechanically by means of an additional hand release.

CE

The brake complies to the regulations for low tension 73/23/EWG. The observance of the EMV regulation 89/336/EWG is to be ensured by the user through corresponding switching devices and/or controls. When using the recommended BINDER fittings, refer to the corresponding Technical Information Sheet for the observance of the respective EMV regulations.

The products have been manufactured and tested in accordance to DIN VDE 0580 October 1994.

When using the brakes, please observe the „General Technical Information“ (please refer to current BINDER catalogue regarding „Drive Engineering“) and to the „Operating Instructions 76 431.. A00“.

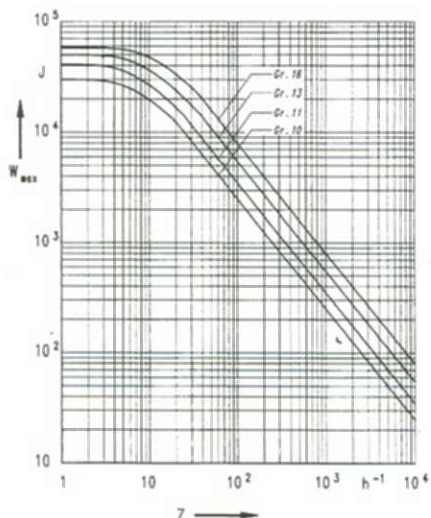
Technical Data

The times are valid for D.C.-controlled switching under operating temperature, nominal tension and nominal air gap. The values given are average values, underlying straying. In case of A.C.-controlled switching, the coupling time t_1 will increase its value approx. by six.

The time from the switching on of the current up to the reduction of the torque to 10% of the nominal torque M_2 represents the disconnection time t_2 .

The coupling time t_1 is the time starting with the disconnection of the current up to reaching the switchable nominal torque M_2 .

Maximum switching effort per switching operation W_{max} in relation to the switching number per hour Z (values valid for $n = 1500 \text{ min}^{-1}$)



Protection

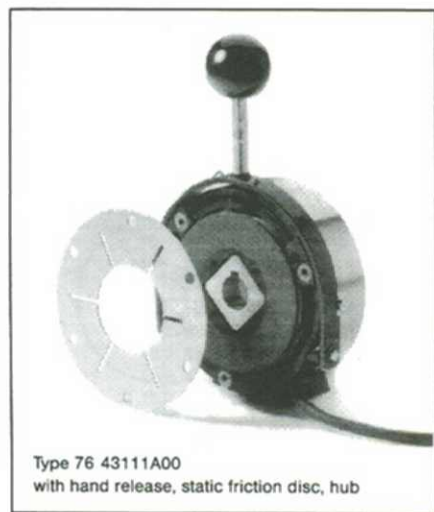
IP 44 (when mounted under motor fan cowl)

Standard nominal voltage:

24 V - , 102 V - , 178 V - , 205 V -
Other nominal voltages are available at extra cost.

The maximum switching energy P_{max} is the switching effort that can be achieved by the brake within one hour. Please refer to the diagram for the values of the maximum switching effort per switching operation W_{max} . The values of P_{max} and W_{max} are reference values and are valid for the integration between the B-end shield and the motor fan.

The values given for the nominal torque M_2 will be reached in a run-in state at operating temperature and during dry running.



Type 76 43111A00
with hand release, static friction disc, hub

Insulation Class: F

Accessories:

Hand release, static friction disc, fixing bolts.

Subject to design modifications.

Please observe ordering data.

The values of the switching torque M_1 depend on the speed. The torque will be reduced on oily or greasy friction surfaces.

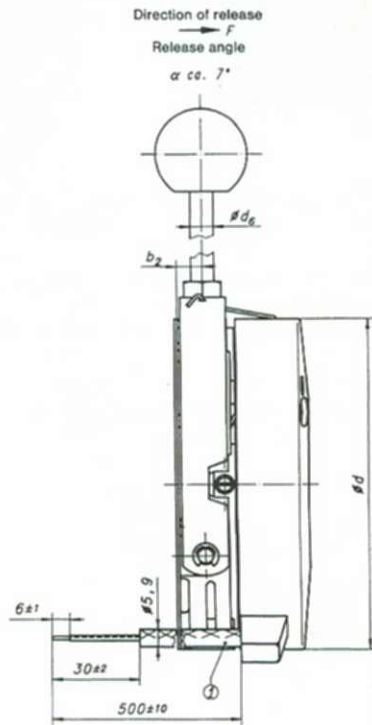
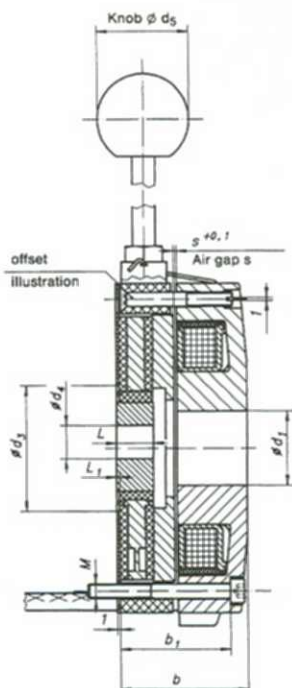
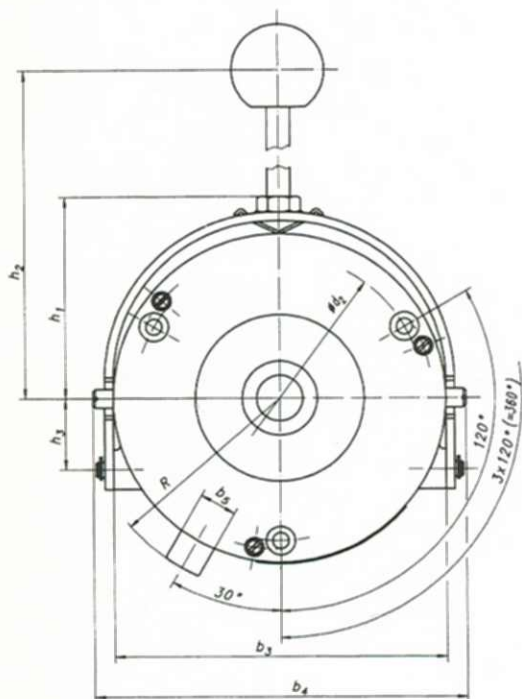
The nominal torque M_2 can possibly be reduced by up to 20% if the motor is not run-in.

All technical data are valid for mounting on horizontal shafts. In case of vertical mounting, please contact manufacturer.

Size	Nominal torque M_2 ($n = 250 \text{ min}^{-1}$) Nm	Max. revolution n_{max} min^{-1}	Max. switching energy P_{max} kJ/h	Nominal energy P_N W	Response times		Inertia torque Hub and friction disc J kgcm ²	Weight m kg	Service life (reference value) W_{tot} MJ
					Coupling time t_1 ms	Disconnection time t_2 ms			
10	10	5400	250	25	30	60	1.22	1.4	128
11	20	5400	350	30	40	70	1.75	2.1	340
13	40	4000	550	40	50	110	5	3.3	450
16	80	3500	800	55	95	130	14	5.6	950

The service life values (W_{tot}) listed in the reference tables are valid for three adjustments of the brake.

Dimensions (mm)



① Cable 2 x 0.5 mm², solder-coated ends

Sz.	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₆	b	b ₁	b ₂	b ₃	b ₄	b ₅	h ₁	h ₂	h ₃	R	L	L ₁	s	s _{max} ³⁾	M	F N
10	102	30	88	42	11 ¹⁾ /22 ²⁾	32	8	42	37	8	102	114.5	13	63	117	25	61.5	13	0..1	0.25	0.5	3 x M5	ca. 70
11	115	26	100	42	13 ¹⁾ /22 ²⁾	32	8	44	38	9	115	129	13	70	124	25	68.5	13	0..1	0.25	0.6	3 x M5	ca. 120
13	137	44	120	67	22 ¹⁾ /35 ²⁾	32	8	53	48	10	137	150	13	83.5	138	25	80	14	0..1	0.35	0.7	3 x M6	ca. 180
16	165	60	150	78	30 ¹⁾ /44 ²⁾	32	8	62	57	11	165	177	13	99	153	25	94.5	17	0..1	0.35	0.8	3 x M6	ca. 250

¹⁾ Min. bore with key groove according to DIN 6885, Sheet 1, groove JS 9

²⁾ Max. bore with key groove according to DIN 6885, Shett 1, groove JS 9, and with feather key supporting on entire length. Shaft to ISO tolerance k6. (¹⁾ und ²⁾).

³⁾ Max. air gap until adjustment or exchange of friction disc.

Ordering Example

Spring-applied single-disc brake

76 431 A00/ V-

Size according to reference table

Coil tension

(standard 24, 102, 178, 205)

Other values than "standard" only possible at additional cost.

Ordering Example

Hub

76 431 A00901/ H7

Size according to reference table

Bore diameter in mm (standard)

Size 10: ϕ 15, ϕ 18, ϕ 20

Size 11: ϕ 15, ϕ 20, ϕ 22

Size 13: ϕ 22, ϕ 25, ϕ 30

Size 16: ϕ 30, ϕ 35, ϕ 40

Groove according to DIN 6885, Sheet 1 JS9

or primary bore = GB

Accessories

Size	Static friction disc with protection against corrosion		Hand release	Fixing bolts Screw	Tightness	Order no.	Number per brake
	with protection against corrosion	without protection against corrosion					
10	73 43110A01001	73 44110A00001	76 43110A01940	DIN 912 - M5 x 50 - 8.8	6 Nm	304 026	3
11	73 43111A01001	73 44111A00001	76 43111A01940	DIN 912 - M5 x 50 - 8.8	6 Nm	304 026	3
13	73 43113A01001	73 44113D00001	76 43113A01940	DIN 912 - M5 x 60 - 10.9	9 Nm	304 039	3
16	73 43116A01001	73 44116A00001	76 43116A01940	DIN 912 - M6 x 70 - 8.8	10 Nm	304 053	3