BINDER CLUTCHES & BRAKES

SPRING-APPLIED SINGLE-DISC BRAKE

76 43108H00
76 431..H00

POWER OF MAGNETISM AND PARTNERSHIP

VARIO LINE

Contents

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Product line information

BINDER CLUTCHES & BRAKES

The VARIO LINE is comprised of DC operated spring-applied single-disc brakes. Due to the great variety of brakes included in this line, the products can be ideally tailored to specific applications.

Electromagnetically operated spring-applied brakes generate the braking torque when voltage is removed. The braking effect can be neutralised by the electromagnetic force or by an additional hand release feature. The fitting dimensions and brake sizes within the VARIO LINE are specifically tailored to IEC motors.

Versions

76 43108H00	torque range 1 - 4 Nm DC adjustable torque
76 431..H00	torque range 4 - 400 Nm DC adjustable torque

Applications

- Machining equipment
- DC motors
- Material handling vehicles
- Gear motors
- Equipment manufacturing industry
- Handling technology
- Lifting and materials handling technology
- IEC three-phase motors
- Medical technology
- Paper-making and printing machines
- Wheelchairs
- Textile machines
- Gate drives
- …

Information on technical data included in the data sheets

The information provided in the operating instructions must be strictly adhered to when designing a machine (e.g. motor) and when using the brakes. The brakes are manufactured and tested in compliance with DIN VDE 0580 requirements. The insulation materials used conform with thermal class F norms. Operation of the brake as a pure holding brake without friction work is only permitted after prior consultation with the manufacturer. The specified times apply to the following conditions: seperate switching of the brake, operating temperature, rated voltage, and rated air gap. All values are mean values that are subject to variation. In the case of AC brake switching, the coupling time t_1 is substantially longer. Wmax (maximum switching energy) is the switching energy that must not be exceeded during braking operations at max. 1500 rpm. Braking operations at >1500 rpm lead to a substantial reduction in the maximum admissible switching energy per switching operation. Such operations are only permitted after prior consultation with the manufacturer. The maximum switching power P_{max} is the switching energy W that can be converted by the brake per hour. In the case of applications where the number of switching operations per hour is greater than 1 (Z>1), the diagram (W_{max} as a function of the number of switching operations per hour Z) shown in the operating instructions applies. The P_{max} and W_{max} values are approximate values; they apply to applications where the brake is installed between the B-face end shield of the motor and the motor fan. The specified rated torques M_2 characterise the torque level of the brakes. Depending on the application of the brake, the switching torque M_1 and the transmissible torque M_4 may differ from the specified M_2 values. The switching torque M_1 depends on the speed (rpm). If the friction surfaces are contaminated with oil, grease or dirt the transferable torque M_4 and the switching torque M_1 may drop.

All technical data is subject to the running-in process of the brake being completed. Vertical operation of the brake is only permitted after prior consultation with the manufacturer.

Data sheet

VARIO LINE

SPRING-APPLIED SINGLE-DISC BRAKE
DC

Version	76 43108H00
Standard rated voltages	24V, 102V, 178V, 205V DC
Protection	IP 55 (if installed under motor fan hood) IP 65 (with accessories and if installed under motor fan hood)
Thermal class	F
Rated torques	1 - 4 Nm
Accessories (options)	friction plate, hand release feature, mounting screws, protective cover, screw plugs, sealing rings

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 76 43108H00 must be strictly observed.

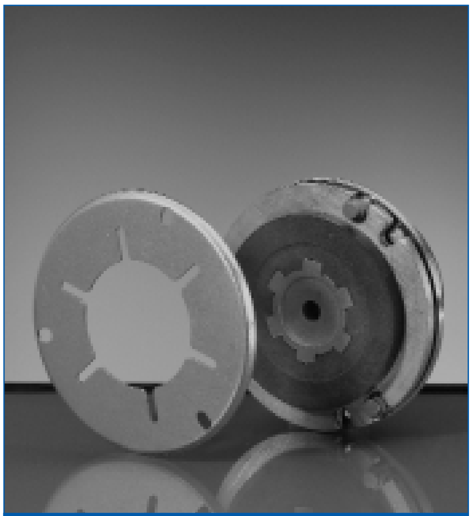


Photo: 76 43108H00

Technical data

Size	Rated torque range (standard)	Max. reachable rated torque with fully screwed in adjustment ring	Max. speed	Max. switching power	Max. switching energy (Z=1)	Rated power	Response times on	Response times off	Moment of inertia hub and friction disc	Weight	Service life (approx.)
	M_2	$M_{2\ max}$	n_{max}	P_{max}	W_{max}	P_N	t_1	t_2	J	m	W_{tot}
	[Nm]	[Nm]	[rpm]	[kJ/h]	[kJ]	[W]	[ms]	[ms]	[$kgcm^2$]	[kg]	[MJ]
08	1 - 4	5	10 000	200	50	23.5	18	30	0.32	0.61	50

The service life values (W_{tot}) specified in the table refer to the maximum rated torque (standard) and apply if the brake is adjusted twice.

Ordering data (to be fully specified)

SPRING-APPLIED SINGLE-DISC BRAKE
Please specify requested version

1 Mounting pitch circle diameter
- ☐ pitch circle diameter Ø 72 mm
- ☐ pitch circle diameter Ø 75 mm

2 Corrosion protection
- ☐ with corrosion protection
- ☐ without corrosion protection

3 Coil voltage (standard 24 V, 102 V, 178 V, 205 V)
Voltage: ______ V DC

4 Rated torque M_2 (standard)
Size 08: 4 Nm
Rated torque M_2: ______ Nm

HUB

1 Corrosion protection
- ☐ with corrosion protection
- ☐ without corrosion protection

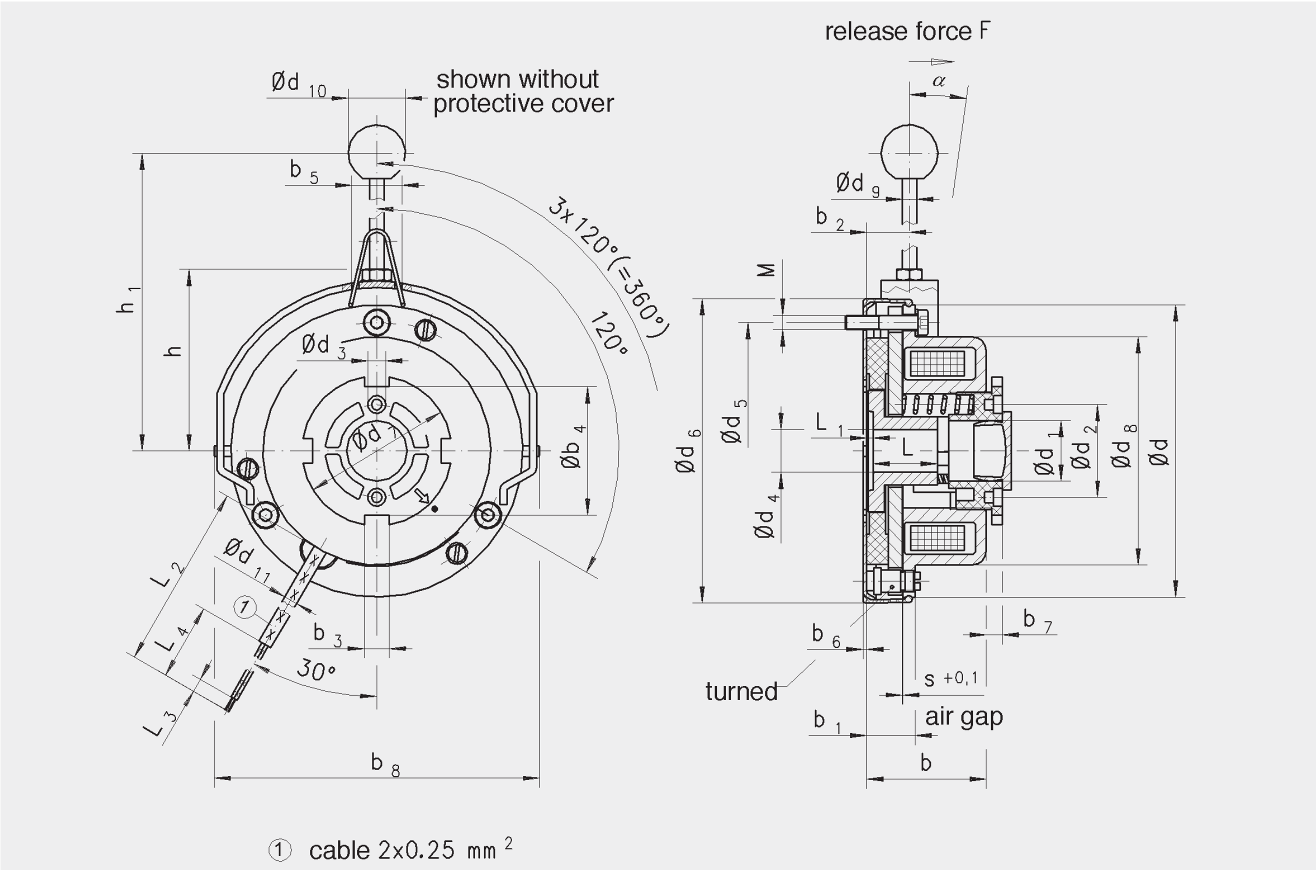
2 Bore diameter (standard), groove JS9 as per DIN 6885, sheet 1 / sheet 3

Size 08: Ø 10, Ø 12, Ø 15 mm

Bore diameter: ______ mm

☐ or pilot bore

Dimensions (mm)



Size	d	d_1	d_2	d_3	d_4 (H7)	d_5	d_6	d_7	d_8	d_9	d_{10}	d_{11}	b	b_1	b_2	b_3
08	82	17	26	5	9[1)] / 15[2)]	72 / 75	85.5	42	64	4	16	3.8	33.5	13.7	12	7

Size	b_4	b_5	b_6	b_7	b_8	h	h_1	L	L_1	L_2	L_3	L_4	s	s_{max} [3)]	M	F [4)] [N]	α
08	36	14	1	3-6	91.5	51	90	18	1.8	400	6	30	0.2	0.5	3xM4	30	ca. 2°

[1)] Min. bore with keyway JS9 as per DIN 6885, sheet 1.
[2)] Max. bore with keyway JS9 as per DIN 6885, sheet 1.
Shaft ISO fitting k6. ([1)],[2)])

[3)] Max. air gap referred to max. rated torque (standard) up to brake adjustment or friction disc replacement.
[4)] Release force F (approx.) referred to max. rated torque (standard).

Accessories

Size	Friction plate	Hand release feature	Mounting screws				Protective cover [5)]		Sealing ring [6)]	Screw plugs
			Screw	Rated torque	Material number	Screws per brake	without hand release	with hand release		
08	76 43108A0004	76 43108A01940	DIN 7984-M4 x 25-8.8	3 Nm	304 510	3	76 43108A00005	76 43108A01005	326 000	412 817

[5)] Friction plate required
[6)] 3 sealing rings for mounting screws

KENDRION
POWER TRANSMISSION

Data sheet

VARIO LINE

SPRING-APPLIED SINGLE-DISC BRAKE
DC

Version	76 431..H00
Standard rated voltages	24V, 102V, 178V, 205V DC
Protection	IP 55 (if installed under motor fan hood) IP 65 (with accessories and if installed under motor fan hood)
Thermal class	F
Rated torques	4-400 Nm
Accessories (options)	friction plate/flange, hand release feature, mounting screws, protective cover, screw plugs, sealing rings

Specification subject to change without notice.
The "General technical information" and the "Operating instructions" 76 431..H00 must be strictly observed.

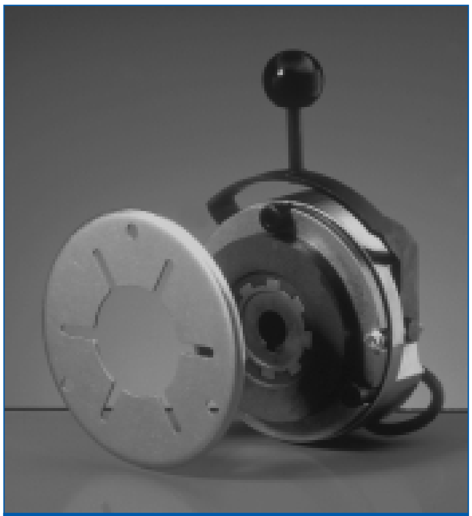


Photo: 76 43110H00

Technical data

Size	Rated torque range (standard) M_2 [Nm]	Max. reachable rated torque with fully scr-ewed in adjusting ring $M_{2\,max}$ [Nm]	Max. speed n_{max} [rpm]	Max. switching power P_{max} [kJ/h]	Max. swit-ching energy (Z=1) W_{max} [kJ]	Rated power P_N [W]	Response times on t_1 [ms]	Response times off t_2 [ms]	Moment of inertia hub and friction disc J [kgcm^2]	Weight m [kg]	Service life (approx.) W_{tot} [MJ]
10	4 - 8	10	3500	320	30	26	20	95	1.2	1.3	127
11	8 - 16	20	3500	430	41	30	30	80	2	2.8	210
13	16 - 32	40	3500	650	50	40	45	90	6	3.7	210
14	30 - 60	65	3500	800	55	53	85	85	8	5.7	310
16	40 - 80	100	3500	1000	58	55	90	190	16	8.4	410
19	80 - 150	170	3000	1200	65	80	130	270	38	13.1	550
24	150 - 240	300	3000	1400	80	110	225	235	108	22	1200
29	280 - 400	600	3000	1600	275	130	115	560	230	36	760

The service life values (W_{tot}) specified in the table refer to the maximum rated torque (standard).

Ordering data (to be fully specified)

SPRING-APPLIED SINGLE-DISC BRAKE
Please specify requested version

1 Size (10, 11, 13, 14, 16, 19, 24, 29)
Size: ______

2 Coil voltage (standard 24 V, 102 V, 178 V, 205 V)
Voltage: ______ V DC

3 Optional hand release feature
☐ with optional hand release ☐ without optional hand release

4 Corrosion protection
☐ Corrosion protection (enhanced) ☐ Corrosion protection (standard)

5 Rated torque M_2 (standard)
Size 10: 8 Nm
Size 11: 16 Nm
Size 13: 32 Nm
Size 14: 60 Nm
Size 16: 80 Nm
Size 19: 150 Nm
Size 24: 240 Nm
Size 29: 400 Nm
Rated torque M_2: ______ Nm

HUB

1 Size (10, 11, 13, 14, 16 19, 24, 29)
Size: ______

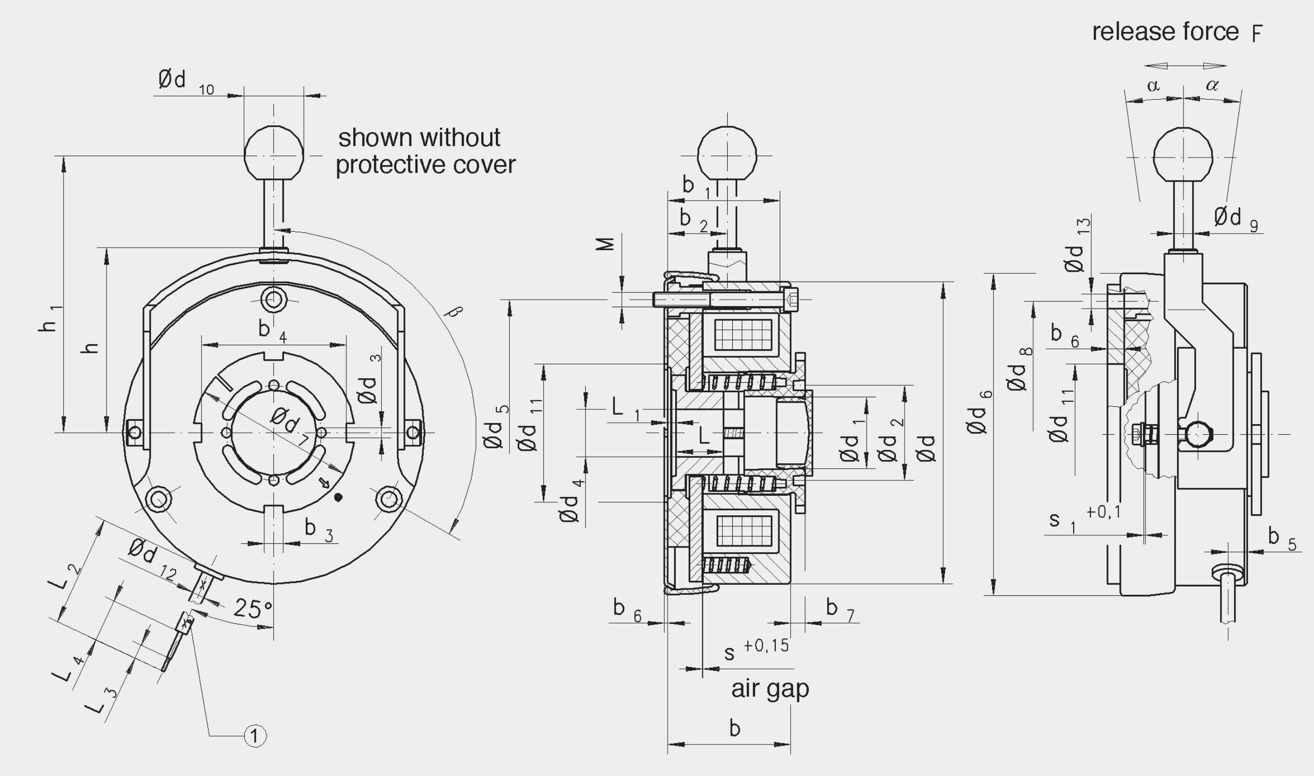
2 Corrosion protection
☐ Corrosion protection (enhanced) ☐ Corrosion protection (standard)

3 Bore diameter (standard), groove JS9 as per DIN 6885, sheet 1
Size 10: Ø 15, Ø 18, Ø 20 mm
Size 11: Ø 15, Ø 20, Ø 22 mm
Size 13: Ø 22, Ø 25, Ø 30 mm
Size 14: Ø 20, Ø 25, Ø 30 mm
Size 16: Ø 25, Ø 30, Ø 35 mm
Size 19: Ø 30, Ø 40, Ø 45 mm
Size 24: Ø 40, Ø 45, Ø 50 mm
Size 29: Ø 40, Ø 45, Ø 60 mm

Bore diameter: ______ mm

☐ or pilot bore

Dimensions (mm)



① cable 2x0.56 mm²

Size	d	d_1	d_2	d_3	d_4(H7)	d_5	d_6 ca.	d_7	d_8	d_9	d_{10}	d_{11}	d_{12}	d_{13}	b	b_1	b_2	b_3 [4]	b_4 [4]	b_5	b_6	b_7	h	h_1	L	L_1	L_2	L_3	L_4	s	s_{max} [3]	s_1	M	F [5] [N]	α ca.	β
10	100	24	35	5	11[1]/20[2]	90	111	60	-	6	25	44	5.2	-	42	38.5	18	8	53	7	1.5	3.5-6.5	62	115	20	2.5	400	6	30	0.2	0.8	1	3xM5	25	10°	3x120°
11	127	30	40	4.2	13[1]/23[2]	112	136	68	-	8	25	58	5.2	-	52	47.5	25	8	61	8	1.5	4.0-8.0	78	125	20	3.5	400	6	30	0.2	0.95	1	3xM6	30	10°	3x120°
13	147	35	50	5.2	18[1]/30[2]	132	159	82	-	8	32	70	5.2	-	55.5	52	22	10	74	8	1.5	5.0-10.0	86	140	25	3	400	6	30	0.25	0.8	1.25	3xM6	60	10°	3x120°
14	164	35	50	5.2	18[1]/30[2]	145	179	82	-	10	40	61	5.2	-	61.5	55.5	28.5	10	74	8	1.5	5.0-10.0	96.5	152.5	30	3	400	6	30	0.3	0.9	1.5	3xM8	110	10°	3x120°
16	188	45.5	60	5	25[1]/40[2]	170	203	102	-	10	40	61	5.2	-	70	65	25	10	94	8	1.5	5.5-11.5	110	175	30	3	600	6	30	0.35	1.2	1.5	3xM8	130	10°	3x120°
19	215	51	75	6	30[1]/45[2]	196	230	116	100	10	40	77	5.2	9 6x60°	83	70.5	29	10	108	13	1.5	6.0-14.5	134	210	35	4	600	6	30	0.35	1.5	1.5	6xM8	200	10°	6x60°
24	252	69.5	124	10.1	35[1]/60[2]	230	268	156	120	14	40	90	5.2	11 6x60°	97	89	36	-	-	17	1.5	7.0-15	148	230	40	5	750	6	30	0.4	1.5	2	6xM10	270	10°	6x60°
29	302	89	124	10	40[1]/70[2]	278	321	156	278	14	40	120	5.2	11 6x60°	107	100	57.5	-	-	13.5	12.5	7.0-13.5	175	445	50	4.5	700	6	30	0.45	1.5	2.5	6xM10	200	10°	6x60°

[1]) Min. bore with feather key groove JS9 as per DIN 6885, sheet 1.
[2]) Max. bore with feather key groove JS9 as per DIN 6885, sheet 1.
Supporting feather key over entire length. Shaft ISO fitting k6. ([1],[2])
[3]) Max. air gap referred to max. rated torque (standard) up to friction disc replacement.
[4]) Except for sizes 24 and 29.
[5]) Release force F (approx.) referred to max. rated torque (standard).

Accessories

Size	Friction plate/flange[6]	Hand release feature	Mounting screws				Protective cover [7]	Screw plugs	Sealing ring	
			Screw	Rated torque	Material number	Screws per brake			Order number	Rings per brake
10	76 43110H00004	76 43110H00940	ISO 4762 - M5 x 45	6 Nm	304 065	3	76 43110H00005	412 859	326 005	3
11	76 43111H00004	76 43111H00940	ISO 4762 - M6 x 55	10 Nm	304 051	3	76 43111H00005	412 842	326 006	3
13	76 43113H00004	76 43113H00940	ISO 4762 - M6x 60	10 Nm	304 052	3	76 43113H00005	412 843	326 006	3
14	76 43114H00004	76 43114H00940	ISO 4762 - M8x 70	25 Nm	304 078	3	71 10116A3013	412 843	326 007	3
16	76 43116H00004	76 43116H00940	ISO 4762 - M8 x 75	25 Nm	304 079	3	76 43116H00005	412 860	326 007	3
19	76 43119H00024	76 43119H00940	ISO 4762 - M8 x 80[8]	25 Nm	304 080	6	76 43119H00005	412 841	326 007	6
24	76 43124H00024	76 43124H00940	ISO 4762 - M10x 100[8]	40 Nm	304 117	6	76 43124H00005	412 885	326 008	6
29	76 43129H00024	76 43129H00940	ISO 4762 - M10x 110[8]	40 Nm	304 118	6	76 43129H00005	-	326 008	6

[6]) Sizes 10 - 16: friction plate; sizes 19 - 29: flange.
[7]) Friction plate or flange required.
Operation of hand release feature only possible in the direction opposite the mounting surface.
[8]) Screw length if no flange is used.

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