



Vario Line

Spring pressure single-disc brake

76 431..H00



Kendrion – the brake experts

As a solution provider, Kendrion develops, produces and markets innovative and high-quality electromagnetic and mechatronic systems and components for customers all over the world.

In the Industrial Drive Systems business unit, electromagnetic brakes and clutches are developed and produced for industrial drive engineering. They are used for the accelerating, braking, positioning, holding and securing of movable drive components and loads. Areas of application for our brakes and clutches are primarily in the areas of robotic and automatic control engineering, machine tool and production machinery as well as medical technology and material handling.

Our main site is located in Villingen in the Black Forest, Germany. Industrial Drive Systems can also rely on additional production sites and subsidiaries in Aerzen (Germany), China, Great Britain and Italy, as well as numerous sales partners all over the world.

Tradition and progress

The long-established BINDER brand laid the foundations for the successful development of Industrial Drive Systems. In the year 1911, Wilhelm Binder founded his company and began at the start of the 1920s with the development and production of electromagnetic components. In 1997, the company was taken over by the Dutch group Schuttersveld N.V., today Kendrion N.V..

The former magneta GmbH & Co. KG belongs to the Kendrion Group since 2010. As the present Kendrion (Aerzen) GmbH, the innovative company continues to develop and produce electromagnetic clutches and brakes along with magnetic particle clutches and brakes at its site in Aerzen.

Kobra greensigned safety brakes

As the first company, we at Kendrion developed safety brakes that contribute to the well-being of the environment in two separate ways. The reduced energy consumption was just as important to us as the ecology in the entire value-creation process. The KOBRA (Kendrion Optimised Brake) spring-applied safety brake is the impressive result, and the pioneer product of the Kendrion greensigned strategy.

Kendrion – We magnetise the world!

www.kendrion.com



About the Vario Line

The Vario Line includes spring pressure single-disc brakes for direct current which can be matched to the individual application due to a wide range of variants. Electromagnetically operated spring pressure brakes generate the braking torque when the

current is switched off. The braking effect can be neutralized by means of the electromagnetic force or an additionally mounted hand release. Fitting dimensions and the grading of the type series of the Vario Line are matched to IEC-motors.

Versions

76 431..H00

Torque range 1 – 600 Nm
DC
Adjustable torque

Certification



Norms

DIN VDE 0580

Data sheets – General information

The Operating Instructions must be strictly observed during the set-up of the machine (e.g. motor) and during the start-up, operation and maintenance of the brakes. The state-of-the-art brakes have been designed, built and tested in accordance with the requirements of DIN VDE 0580 concerning electromagnetic devices and components. Additional information on technical specifications given in the data sheets is included in the operating instructions.

Applications

Machining equipment

DC motors

Material handling vehicles

Gear motors

Equipment manufacturing

Handling technology

Lifting and conveying technology

IEC three-phase motors

Medical engineering

Papier- und Druckmaschinen

Paper-making and printing machines

Textile machines



Spring pressure single-disc brake DC

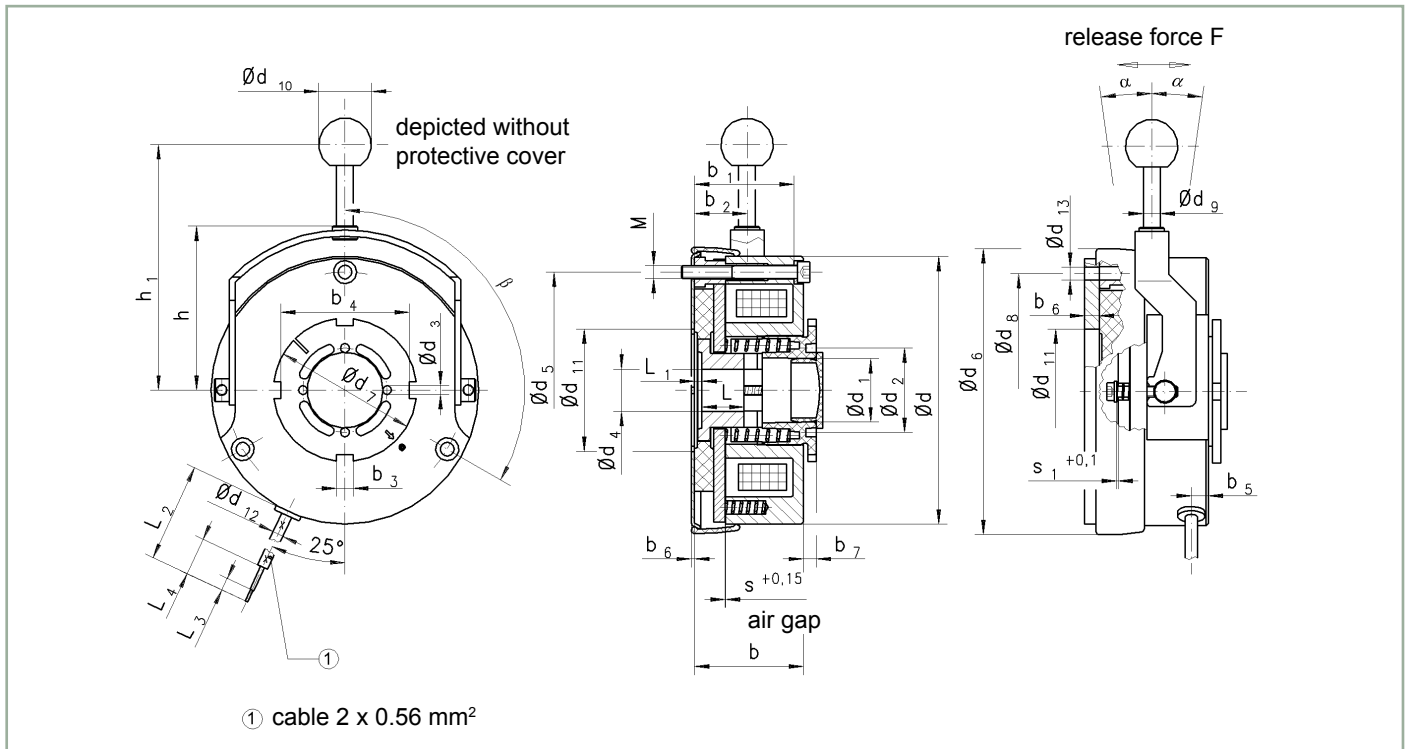
Version	76 431..H00
Standard rated voltages	24 V, 102 V, 178 V, 205 V DC Other standard rated voltages on request.
Protection	IP 55 (if installed under motor fan cowl) IP 65 (with accessories and if installed under motor fan cowl)
Thermal class	F
Rated torques	1 - 600 Nm
Accessories (options)	Friction plate / fl ange, hand release, mounting screws, protective cover, sealing plug, sealing ring
Note	Design subject to change without notice. Please observe the "General Technical Information on Data Sheets" and the operating instructions 76 431..H00.

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		Moment of inertia driver and friction disc	Weight
							On	Off		
	M ₂ [Nm]	M _{2 max} [Nm]	n _{max} [min ⁻¹]	P _{max} [kJ/h]	W _{max} [kJ]	P _N [W]	t ₁ [ms]	t ₂ [ms]	J [kgcm ²]	m [kg]
08	1 – 5	6	10000	200	25	23.5	18	30	0.32	0.61
10	4 – 10	12	3500	320	30	26	20	95	1.2	1.3
11	8 – 20	23	3500	430	41	30	30	80	2	2.8
13	16 – 32	40	3500	650	50	40	45	90	6	3.7
14	30 – 60	65	3500	800	55	53	85	85	8	5.7
16	40 – 80	100	3500	1000	58	55	90	190	16	8.4
19	80 – 150	170	3000	1200	65	80	130	270	38	13.1
24	150 – 240	300	3000	1400	80	110	225	235	108	22
29	280 – 400	600	3000	1600	275	130	115	560	230	36

The maximum switching energy (Wmax) specified in the table refer to the maximum rated torque (standard).

Dimensions [mm]



Size	d	d ₁	d ₂	d ₃	d ₄ (H7)	d ₅	d ₅ 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⁾
08	82	17	26	5	9 ¹⁾ /15 ²⁾	72	85.5	42	64	4	16	3.8	–	–	7	13.7	12	7	36
10	100	24	35	5	11 ¹⁾ /20 ²⁾	90	111	60	–	6	25	44	5.2	–	42	38.5	18	8	53
11	127	30	40	4.2	13 ¹⁾ /23 ²⁾	112	136	68	–	8	25	58	5.2	–	52	47.5	25	8	61
13	147	35	50	5.2	18 ¹⁾ /30 ²⁾	132	159	82	–	8	32	70	5.2	–	55.5	52	22	10	74
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
16	188	45.5	60	5	25 ¹⁾ /40 ²⁾	170	203	102	–	10	40	61	5.2	–	70	65	25	10	94
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
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	–	–
29	302	89	124	10	40 ¹⁾ /70 ²⁾	278	321	156	278	14	40	120	5.2	11 6x60°	107	100	57.5	–	–

Size	b ₅	b ₆	b ₇	b ₈	h	h ₁	L	L ₁	L ₂	L ₃	L ₄	s	s _{max} ³⁾	s ₁	M	F ⁵⁾ [N]	α	β
08	14	1	3-6	91.5	51	90	18	1.8	400	6	30	0.2	0.5	–	3xM4	30	ca. 2°	–
10	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	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	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	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	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	13	11	6.0-14.5	–	134	210	35	4	600	6	30	0.35	1.5	1.7	6xM8	200	10°	6x60°
24	17	11	7.0-15.0	–	148	230	40	5	750	6	30	0.4	1.5	2	6xM10	270	10°	6x60°
29	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 acc. DIN 6885, sheet 1.

²⁾ Max. bore with feather key groove JS9 acc. DIN 6885, sheet 1.
Feather key supporting on total length. Shaft ISO fitting k6 (¹⁾,²⁾

³⁾ Max. air gap relating to max. rated torque (standard) up to replacement of friction disc.

⁴⁾ Not with sizes 24 and 29.

⁵⁾ Release force F (approx.) relating to max. rated torque (standard). Hand lifting only possible against the mounting surface.

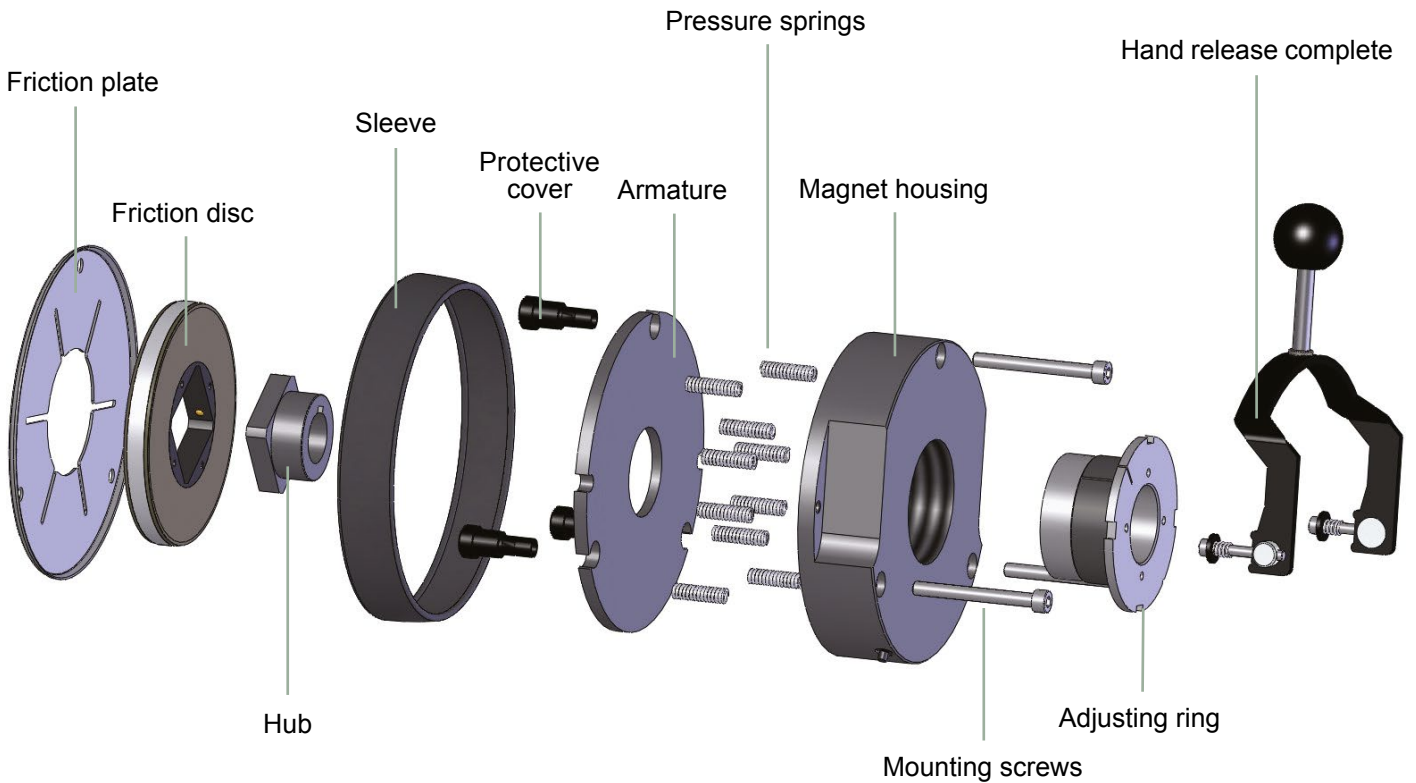
Accessories

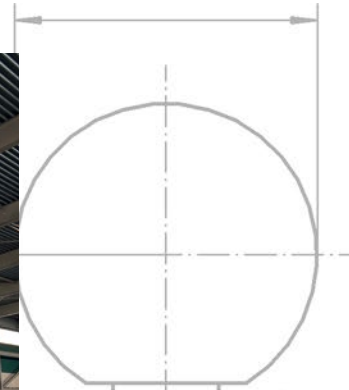
Size	Friction plate / flange ⁶⁾	Hand release	Mounting screws				Protective cover ⁸⁾	Sealing plug	Sealing ring	
			Screw	Tightening torque	Order no.	Screws per brake			Order no.	Rings per brake
08	76 43108A0004	76 43108A01940	DIN 7984 - M4 x 25-8.8	3 Nm	304 510	3	76 43108A00005 (ohne Handlüftung) 76 43108A01005 (mit Handlüftung)	412 817	326 000	3
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 - M6 x 60	10 Nm	304 052	3	76 43113H00005	412 843	326 006	3
14	76 43114H00004	76 43114H00940	ISO 4762 - M8 x 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 ⁷⁾	25 Nm	304 080	6	76 43119H00005	412 841	326 007	6
24	76 43124H00024	76 43124H00940	ISO 4762 - M10 x 100 ⁷⁾	40 Nm	304 117	6	76 43124H00005	412 885	326 008	6
29	76 43129H00024	76 43129H00940	ISO 4762 - M10 x 110 ⁷⁾	40 Nm	304 118	6	76 43129H00005	-	326 008	6

⁶⁾ Sizes 10 to 16: friction plate, sizes 19 to 29: flange.

⁷⁾ Screw length without use of flange.

⁸⁾ Friction plate resp. flange are required.





INDIVIDUAL CUSTOMER SOLUTIONS

Customer-Specific Applications

- Based on existing standard platforms
- From minor to major adaptations
- According to specific customer requirements

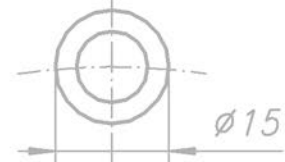
Customized Solutions and Applications

- Comprehensive design of new devices according to individual customer requirements

Complete Solutions

- Based on the individual solutions mentioned above
- Our brakes and clutches in combination with our electronic accessories

10



Ø15

64

44

20

74

84

7

Ød H7



INDUSTRIAL

WE MAGNETISE THE WORLD

Kendrion (Villingen) GmbH
Wilhelm-Binder-Strasse 4-6
78048 Villingen-Schwenningen
Germany
Tel: +49 7721 877-0
Fax: +49 7721 877-1462
sales-ids@kendrion.com
www.kendrion.com