

KENDRION



KENDRION SOLUTIONS

Vario Line

Spring pressure single-disc brake
76 431..H00

PRECISION. SAFETY. MOTION.

Kendrion – The brake experts

As a solution provider, Kendrion develops, produces and markets innovative and high-quality electromagnetic and mechatronic systems and components for industrial and automotive applications. Kendrion is very serious about its commitment to addressing the technical challenges of the future. Which is why the responsible use of resources along the entire value chain, and trustworthy business practices, are deeply ingrained in our corporate culture.

The right brakes for every situation

The Industrial Drive Systems business unit develops and produces electromagnetic brakes and clutches for industrial drive engineering. They are used for the accelerating, braking, positioning, holding and securing of movable drive components and loads. The areas of application for our brakes and clutches are primarily in robotics and automation technology, machine tool and production machinery, as well as in medical technology and material handling. 'Servo Line', our newly designed spring-applied brake for servo motors, completes our product portfolio, enabling us to provide the ideal solution for any application.

Worldwide availability

The headquarters of Industrial Drive Systems is located in Villingen within Germany's Black Forest. However, the business unit can also rely on additional production sites and subsidiaries in Aerzen (Germany), China, the UK and Italy, as well as numerous sales partners all over the world.

Tradition and progress

It was the long-established BINDER brand that laid the foundations for the successful development of Industrial Drive Systems. Wilhelm Binder founded his company in 1911, and during the early 1920s he began developing and manufacturing electromagnetic components. In 1997, the business was taken over by Dutch group Schuttersveld N.V., today Kendrion N.V.

The former magneta GmbH & Co. KG has been part of the Kendrion Group since 2010. Now known as Kendrion (Aerzen) GmbH, this innovative company continues to develop and produce permanent magnet brakes for small motors, electromagnetic clutches and brakes at its site in Aerzen, along with magnetic particle clutches and brakes.

www.kendrion-ids.com



Safety with trusted brakes



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

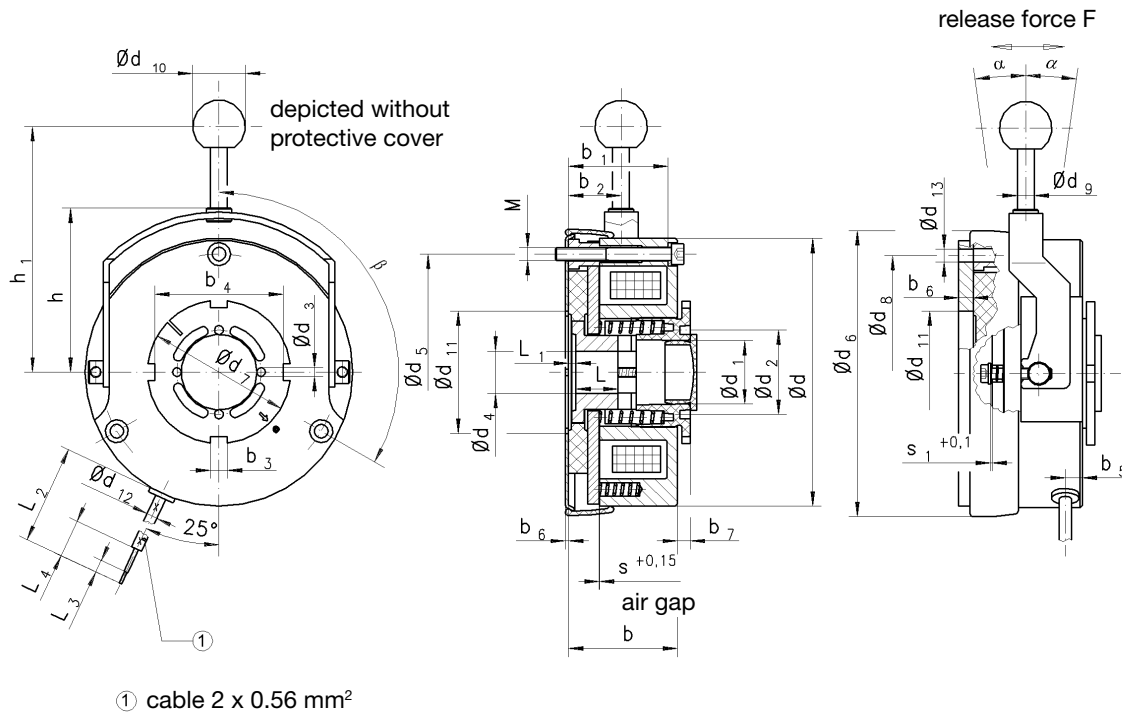
Version	76 431..H00
Standard rated voltages	24 V, 102 V, 178 V, 205 V DC Other standard rated voltages on request.
Protection	IP 55 (if installed under motor fan cowl) IP 65 (with accessories and if installed under motor fan cowl)
Thermal class	F
Rated torques	1 – 600 Nm
Accessories (options)	Friction plate / flange, 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 (W_{max}) specified in the table refer to the maximum rated torque (standard).



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⁾
08	82	17	26	5	9 ¹⁾ /15 ²⁾	72	85.5	42	–	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	196	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	230	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	5.5-13	–	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	–	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.

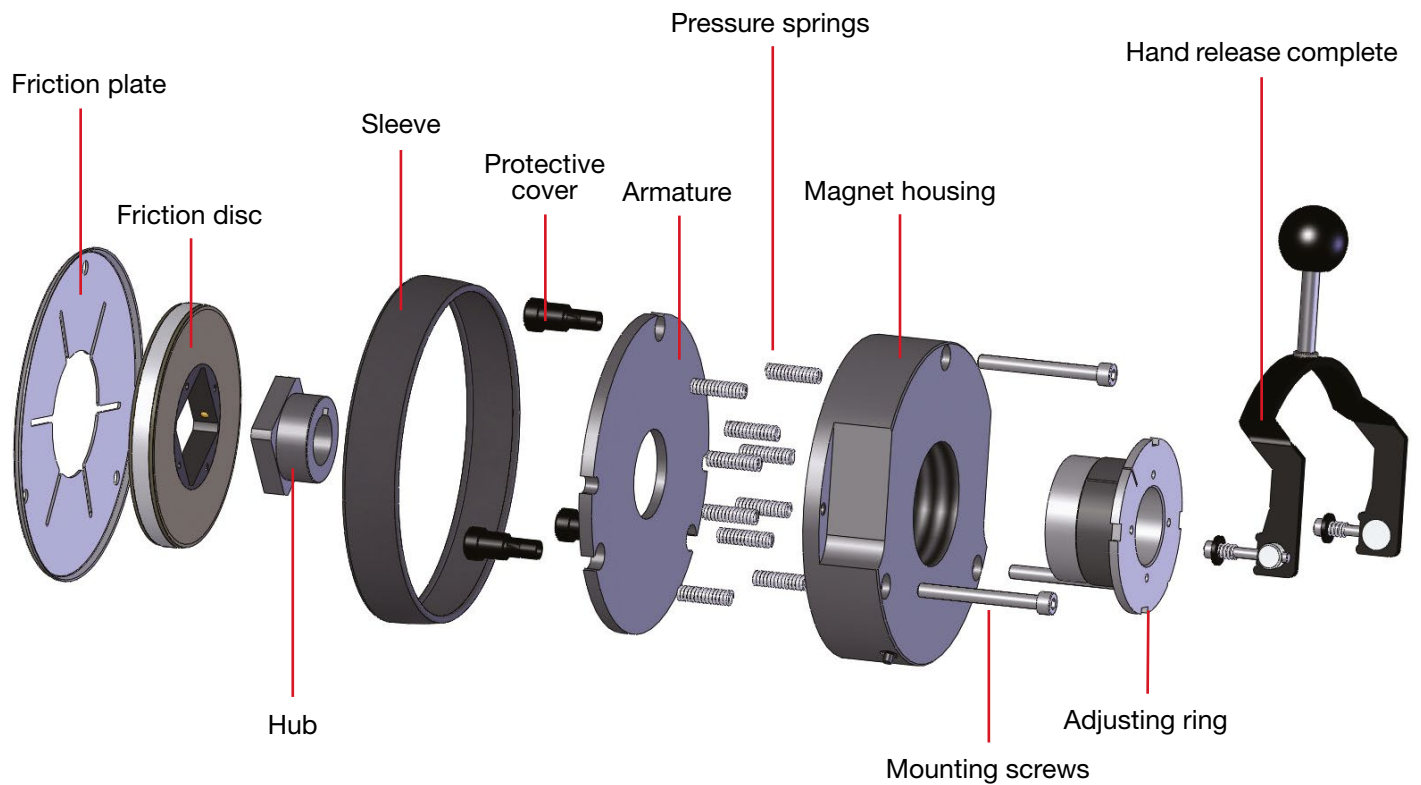
⁵⁾ Release force F (approx.) relating to max. rated torque (standard). Hand lifting only possible against the mounting surface.

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.



Contact us

We'll find the right product for your application!

Automation solutions have become indispensable in both industry and our everyday lives. Mechatronics helps achieve further expansion of these solutions, and increases the range of applications. In many cases, electromagnetic brakes meet the necessary safety requirements, allowing loads to be securely held and ensuring safe braking in an emergency.

Catering to different market demands while also ensuring product standardisation is a challenge that Kendrion relishes. Customised solutions can be developed and manufactured on the basis of an existing portfolio of products, the prerequisite being the analysis and understanding of industry-specific customer requirements. With the right product range and a high level of expertise in automation technology, robotics, machine building and elevator engineering, Kendrion Industrial Drive Systems is your dependable partner, providing the ideal individual brake solution for any application.



Individual customer solutions
Specially tailored to your needs

Kendrion (Villingen) GmbH

Wilhelm-Binder-Strasse 4-6
78048 Villingen-Schwenningen
Germany

T +49 7721 877-0
F +49 7721 877-1462

sales-ids@kendrion.com
www.kendrion-ids.com

