

KENDRION



KENDRION SOLUTIONS

Active Clutch Line

Electromagnetic single-surface clutch

86 011..E00, 86 021..E00

86 051..E00, 86 053..E00

PRECISION. SAFETY. MOTION.

Kendrion – The brake experts

Kendrion stands for high-precision electromagnetic actuator systems and components for passenger cars, commercial vehicles and industrial applications. We are the trusted partner of some of the world's market leaders in the automotive and industrial segments when it comes to designing and producing complex components and customised solutions. Rooted in Germany, headquartered in the Netherlands and listed on the Amsterdam stock exchange, our expertise extends across Europe to the Americas and Asia.

Tradition and progress

More than one hundred years after the company was founded by Wilhelm Binder, Kendrion is ideally equipped for the challenges and tasks of the future. The company has always held a strong position in the market and is expanding its activities all over the world. In the field of electromagnetism, Kendrion stands for highest quality, innovation and precision.

Areas of application for brakes and clutches

The Kendrion business unit Industrial Drive Systems develops and produces electromagnetic brakes and clutches for industrial drive technology. They are used to accelerate, brake, position, hold and secure moving drive components and loads. Areas of applications for the brakes and clutches can be found mainly in robotics and automation, conveyor technology, tooling machines and production engineering, medical technology and elevator technology.

Worldwide availability

The main location is in Villingen-Schwenningen in southern Germany. However, Industrial Drive Systems has further development and production sites as well as a worldwide sales network at its disposal.

We will find the right brake for your application!



Safety with trusted brakes



About the Active Clutch Line

The Active Clutch Line is comprised of DC operated single-disc clutches without slip ring, characterised by the fact that the dynamic effect of an electromagnetic field is used for torque transmission (electromagnetically engaged clutches). Active Clutch Line products ensure reliable

clutch release with zero residual torque in any mounting position and zero backlash during torque transmission. These clutches require little if any maintenance throughout their service span. The achievable switching power depends on the clutch version employed.

Versions

86 011..E00

torque range 0.2 - 150 Nm
DC
front mounting

86 021..E00

torque range 0.2 - 150 Nm
DC
flange mounting

86 051..E00

torque range 0.2 - 2.2 Nm
DC
shaft mounting

86 053..E00

torque range 5 - 150 Nm
DC
shaft mounting with connecting terminal

Upon request, the brake can be supplied with variable armature systems (shaft coupling).

Applications

Automotive technology

Equipment manufacturing industry

Handling technology

Building installations

Building installations

Packaging machinery ...

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.

Electromagnetic single-surface clutch

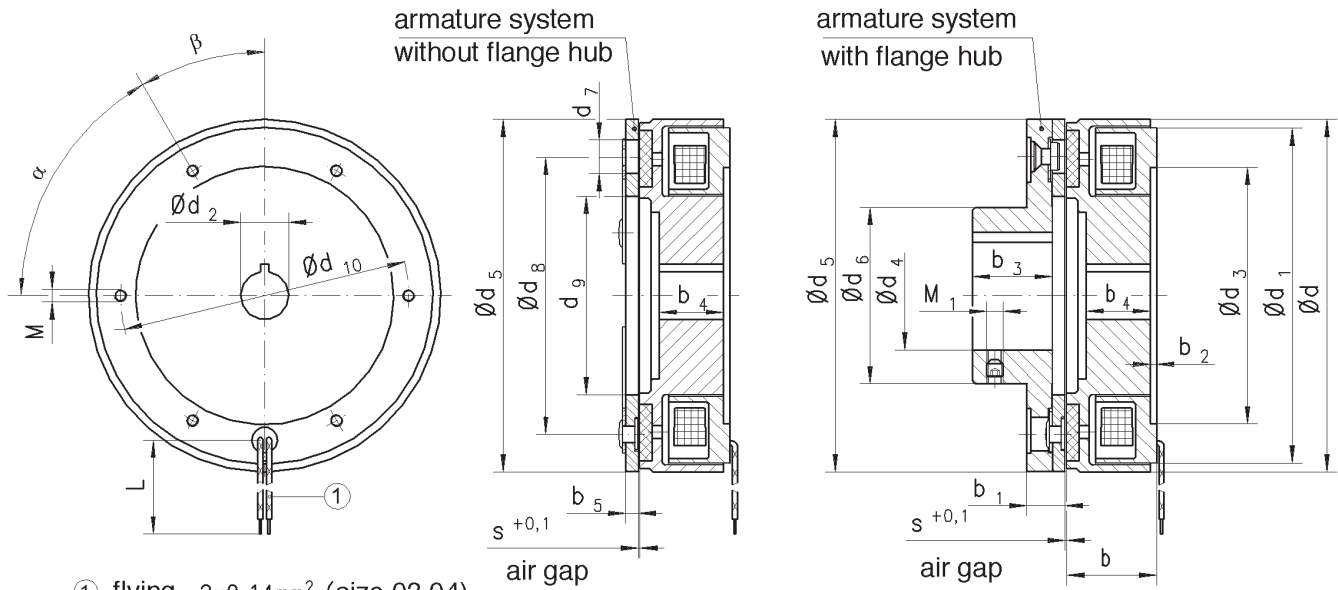
DC

Version	86 011..E00 - front mounting
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torque	0.2 - 150 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 011..E00 must be strictly observed.



Technical data

Size	Rated torque	Max. speed	Max. switching power	Max. switching energy (Z = 1)	Rated power	Response times		Moment of inertia		Weight (without flange hub)
						Coupling time	Disconnection time	Armature (without flange hub)	Magnet system	
						M_2 [Nm]	n_{max} [rpm]	P_{max} [kJ/h]	W_{max} [kJ]	
03	0.2	16000	65	0.9	6	13	12	0.01	0.06	0.06
04	1	12000	100	1.6	8	15	16	0.05	0.17	0.15
06	2.2	10000	160	4.5	10	15	18	0.22	0.55	0.35
07	5	8000	250	6	12	25	25	0.65	2.45	0.65
09	11	6000	350	11	17	45	38	2.1	7	1.15
11	21	4800	500	30	22	70	40	5.7	20	2
14	60	3600	700	53	35	110	65	20	36	4
17	80	3000	1000	80	40	110	70	48	85	7.4
21	150	2500	1300	110	45	150	90	97	217	11



- ① flying leads
- 2x0.14mm² (size 03.04)
 - 2x0.25mm² (size 06.07)
 - 2x0.50mm² (size 09)
 - 2x1.00mm² (size 11.14.17)
 - 2x0.82mm² (size 21)

Size	d	d ₁ (h7)	d ₂ (H7)	d ₃ (H7)	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉	d ₁₀	b	b ₁
03	28	26	5 ¹⁾ / 6 ²⁾	16	5 ¹⁾ / 6 ²⁾	28	14	5/2x180°	19.5	12	22	15	5
04	39.5	37	5 ¹⁾ / 12 ²⁾	28	6 ¹⁾ / 8 ²⁾	39.5	16	7/2x180°	29	17	32.5	17.5	6
06	56	53	6 ¹⁾ / 20 ²⁾	42	6 ¹⁾ / 15 ²⁾	56	24	7/3x120°	46	28	48	19	8
07	70	66.5	10 ¹⁾ / 30 ²⁾	55	10 ¹⁾ / 20 ²⁾	70	30	8.5/3x120°	60	37	61	23	9.5
09	90	85.5	10 ¹⁾ / 40 ²⁾	68	10 ¹⁾ / 30 ²⁾	90	40	10.5/3x120°	76	46	75	24.5	12
11	110	104	15 ¹⁾ / 50 ²⁾	80	15 ¹⁾ / 35 ²⁾	110	50	12/3x120°	95	59	90	28	14
14	140	134	20 ¹⁾ / 70 ²⁾	110	20 ¹⁾ / 48 ²⁾	140	70	16/3x120°	120	75	120	33.5	16
17	175	167	20 ¹⁾ / 70 ²⁾	125	20 ¹⁾ / 68 ²⁾	170	86	16/3x120°	135	88	140	42.5	16
21	210	200	25 ¹⁾ / 80 ²⁾	150	25 ¹⁾ / 80 ²⁾	202	105	18/3x120°	158	114	167	43	19

Size	b ₂	b ₃	b ₄	b ₅	L	s	s _{max}	M	M ₁	α	β
03	1	10	9	2	400	0.2	0.3	4xM2/3tief	2xM3	4x90°	45°
04	2	15	10	2.5	400	0.2	0.5	6xM2/3tief	2xM3	6x60°	30°
06	2	17	12	3	400	0.2	0.5	6xM3/4tief	2xM4	6x60°	30°
07	2	20	15	3.5	400	0.2	0.5	6xM3/5tief	2xM4	6x60°	30°
09	2	25	17	4	400	0.3	0.75	6xM3/5tief	2xM5	6x60°	30°
11	2	30	20	5	400	0.3	0.75	6xM4/6tief	2xM6	6x60°	30°
14	2.5	40	24	6.5	400	0.3	0.75	6xM5/8tief	2xM8	6x60°	30°
17	2.5	42	39	6.5	400	0.3	0.75	6xM6/8tief	2xM8	6x60°	30°
21	3	45	39	7	400	0.4	1	6xM8/8tief	2xM10	6x60°	30°

¹⁾ Min. bore.

²⁾ Max. bore.

Electromagnetic single-surface clutch

DC

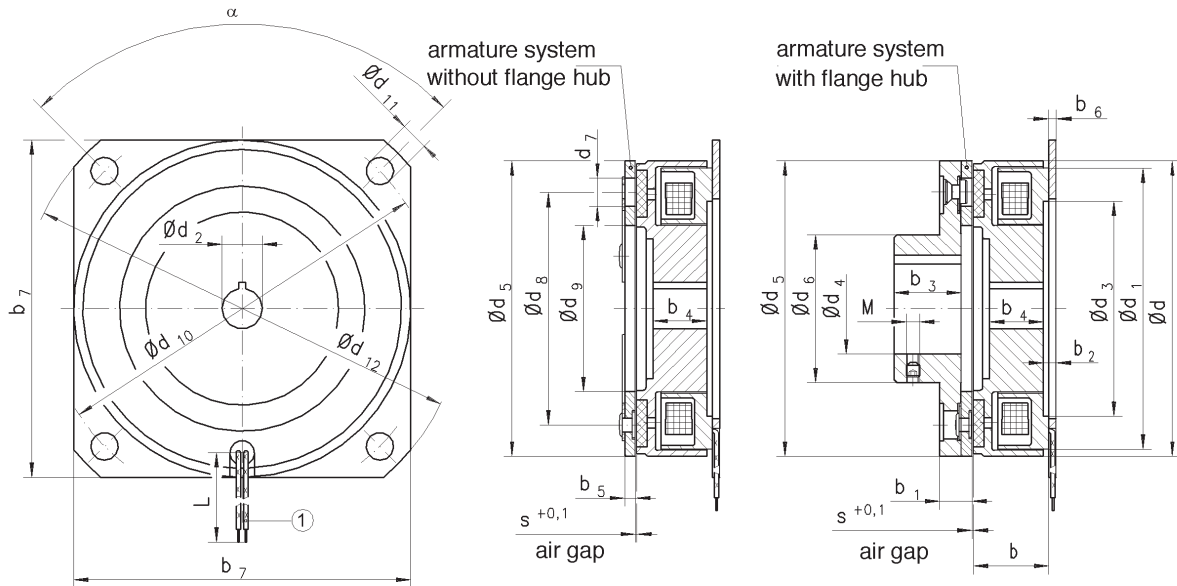
Version	86 021..E00 - flange mounting
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torques	0.2 - 150 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 021..E00 must be strictly observed.



Technical data

Size	Rated torque	Max. speed	Max. switching power	Max. switching energy (Z = 1)	Rated power	Response times		Moment of inertia		Weight (without flange hub)
						Coupling time	Disconnection time	Armature (without flange hub)	Magnet system	
						M_2 [Nm]	n_{max} [rpm]	P_{max} [kJ/h]	W_{max} [kJ]	
03	0.2	16000	65	0.9	6	13	12	0.01	0.06	0.06
04	1	12000	100	1.6	8	15	16	0.05	0.17	0.15
06	2.2	10000	160	4.5	10	15	18	0.22	0.55	0.35
07	5	8000	250	6	12	25	25	0.65	2.45	0.65
09	11	6000	350	11	17	45	38	2.1	7	1.15
11	21	4800	500	30	22	70	40	5.7	20	2
14	60	3600	700	53	35	110	65	20	36	4
17	80	3000	1000	80	40	110	70	48	85	7.4
21	150	2500	1300	110	45	150	90	97	217	11

Dimensions [mm]



- ① flying leads
- 2x0.14mm² (size 03.04)
 - 2x0.25mm² (size 06.07)
 - 2x0.50mm² (size 09)
 - 2x1.00mm² (size 11.14.17)
 - 2x0.82mm² (size 21)

Size	d	d ₁ (h7)	d ₂ (H7)	d ₃ (H7)	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉	d ₁₀	d ₁₁	d ₁₂
03	28	26	5 ¹⁾ / 6 ²⁾	16	5 ¹⁾ / 6 ²⁾	28	14	5/2x180°	19.5	12	33.5	2.6	38.5
04	39.5	37	5 ¹⁾ / 12 ²⁾	28	6 ¹⁾ / 8 ²⁾	39.5	16	7/2x180°	29	17	54	3.5	62.5
06	56	53	6 ¹⁾ / 20 ²⁾	42	6 ¹⁾ / 15 ²⁾	56	24	7/3x120°	46	28	65	4.5	75.5
07	70	66.5	10 ¹⁾ / 30 ²⁾	55	10 ¹⁾ / 20 ²⁾	70	30	8.5/3x120°	60	37	79.5	5.5	89.5
09	90	85.5	10 ¹⁾ / 40 ²⁾	68	10 ¹⁾ / 30 ²⁾	90	40	10.5/3x120°	76	46	102	6.5	115.5
11	110	104	15 ¹⁾ / 50 ²⁾	80	15 ¹⁾ / 35 ²⁾	110	50	12/3x120°	95	59	127	9	143.5
14	140	134	20 ¹⁾ / 70 ²⁾	110	20 ¹⁾ / 48 ²⁾	140	70	16/3x120°	120	75	155	9	170.5
17	175	167	20 ¹⁾ / 70 ²⁾	125	20 ¹⁾ / 68 ²⁾	170	86	16/3x120°	135	88	185	9	200
21	210	200	25 ¹⁾ / 80 ²⁾	150	25 ¹⁾ / 80 ²⁾	202	105	18/3x120°	158	114	215	9	230

Size	b	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	L	s	s _{max}	M	α
03	15	5	2.5	10	9	2	1.5	28	400	0.2	0.3	2xM3	4x90°
04	17.5	6	4	15	10	2.5	2	45	400	0.2	0.5	2xM3	4x90°
06	19	8	4	17	12	3	2	56	400	0.2	0.5	2xM4	4x90°
07	23	9.5	4.5	20	15	3.5	2.5	70	400	0.2	0.5	2xM4	4x90°
09	24.5	12	4.5	25	17	4	2.5	90	400	0.3	0.75	2xM5	4x90°
11	28	14	5	30	20	5	3	110	400	0.3	0.75	2xM6	4x90°
14	33.5	16	6.5	40	24	6.5	4	140	400	0.3	0.75	2xM8	4x90°
17	42.5	16	7	42	39	6.5	4.5	-	400	0.3	0.75	2xM8	4x90°
21	43	19	8	45	39	7	5	-	400	0.4	1	2xM10	4x90°

¹⁾ Min. bore.

²⁾ Max. bore.

Electromagnetic single-surface clutch

DC

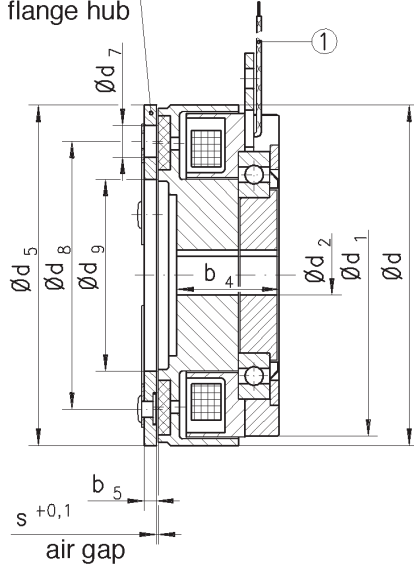
Version	86 051..E00 - shaft mounting
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torques	0.2 - 2.2 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 051..E00 must be strictly observed.



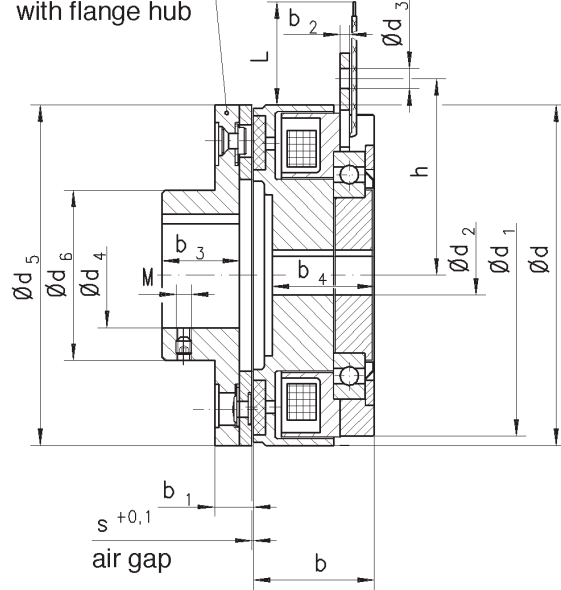
Technical data

Size	Rated torque	Max. speed	Max. switching power	Max. switching energy (Z = 1)	Rated power	Response times		Moment of inertia		Weight (without flange hub)
						Coupling time	Disconnection time	Armature (without flange hub)	Magnet system	
						M_2 [Nm]	n_{max} [rpm]	P_{max} [kJ/h]	W_{max} [kJ]	
03	0.2	16000	65	0.9	6	13	12	0.01	0.06	0.06
04	1	12000	100	1.6	8	15	16	0.05	0.17	0.15
06	2.2	10000	160	4.5	10	15	18	0.22	0.55	0.35

armature system
without flange hub



armature system
with flange hub



① flying leads $2 \times 0.14 \text{ mm}^2$ (size 03.04)
leads $2 \times 0.25 \text{ mm}^2$ (size 06)

Size	d	d ₁	d ₂ (H7)	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉
03	28	26	5	4.2	5 ¹⁾ / 6 ²⁾	28	14	5/2x180°	19.5	12
04	39.5	37	5 ¹⁾ / 8 ²⁾	4.2	5 ¹⁾ / 8 ²⁾	39.5	16	7/2x180°	29	17
06	56	53	6 ¹⁾ / 12 ²⁾	4.2	6 ¹⁾ / 15 ²⁾	56	24	7/3x120°	46	28

Size	b	b ₁	b ₂	b ₃	b ₄	b ₅	h	L	s	s _{max}	M
03	20	5	1.5	10	14	2	19.2	400	0.2	0.45	2xM3
04	24.5	6	1.5	15	19	2.5	24.8	400	0.2	0.5	2xM3
06	27.5	8	1.5	17	22.5	3	32.8	400	0.2	0.5	2xM3

¹⁾ Min. bore.

²⁾ Max. bore.

Elektromagnetic single-surface clutch

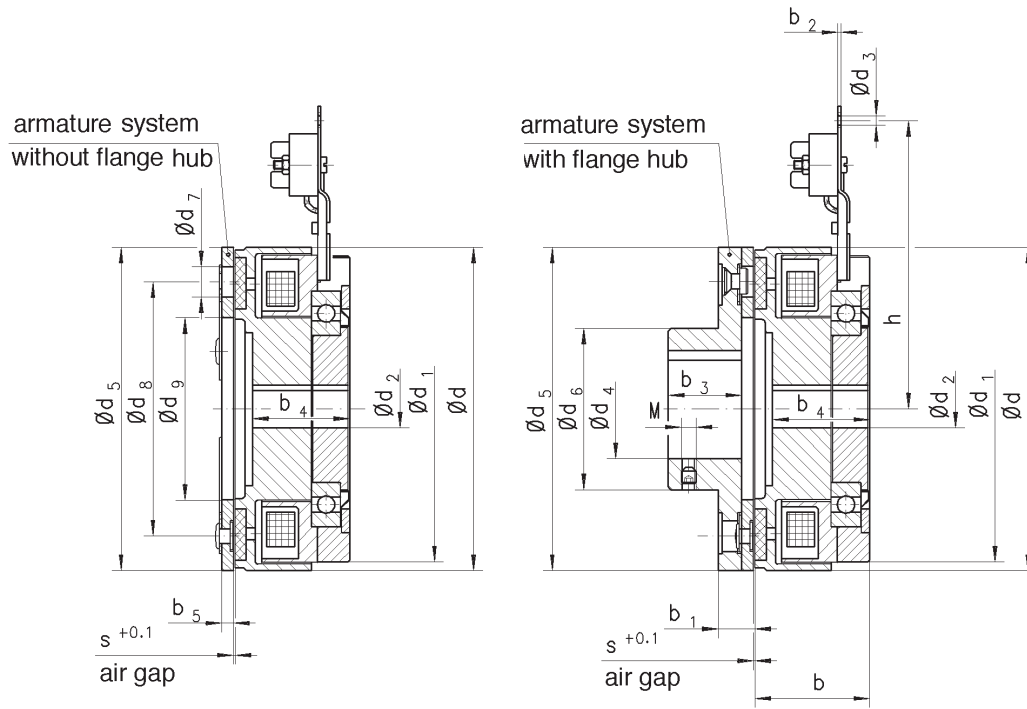
DC

Version	86 053..E00 - shaft mounting with connection terminal
Standard rated voltages	24 V DC
Protection	IP 00
Thermal class	F
Rated torques	5 - 150 Nm
Note	Specification subject to change without notice. The „General technical information“ and the „Operating instructions“ 86 053..E00 must be strictly observed.



Technical data

Size	Rated torque	Max. speed	Max. switching power	Max. switching energy (Z = 1)	Rated torque	Response times		Moment of inertia		Weight (without flange hub)
						Coupling time	Disconnection time	Armature (without flange hub)	Magnet system	
						t_1 [ms]	t_2 [ms]	J [kgcm ²]	J [kgcm ²]	
	M_2 [Nm]	n_{max} [rpm]	P_{max} [kJ/h]	W_{max} [kJ]	P_N [W]			J [kgcm ²]	J [kgcm ²]	m [kg]
07	5	8000	250	6	12	25	25	0.65	2.45	0.65
09	11	6000	350	11	17	45	38	2.1	7	1.15
11	21	4800	500	30	22	70	40	5.7	20	2
14	60	3600	700	53	35	110	65	20	36	4
17	80	3000	1000	80	40	110	70	48	85	7.4
21	150	2500	1300	110	45	150	90	97	217	11



Size	d	d ₁	d ₂ (H7)	d ₃	d ₄ (H7)	d ₅	d ₆	d ₇	d ₈	d ₉
07	70	66.5	10 ¹⁾ / 22 ²⁾	5	10 ¹⁾ / 20 ²⁾	70	30	8.5/3x120°	60	37
09	90	85.5	10 ¹⁾ / 28 ²⁾	5	10 ¹⁾ / 30 ²⁾	90	40	10.5/3x120°	76	46
11	110	104	15 ¹⁾ / 38 ²⁾	5	15 ¹⁾ / 35 ²⁾	110	50	12/3x120°	95	59
14	140	134	20 ¹⁾ / 55 ²⁾	5	20 ¹⁾ / 48 ²⁾	140	70	16/3x120°	120	75
17	175	167	20 ¹⁾ / 65 ²⁾	5	20 ¹⁾ / 68 ²⁾	170	86	16/3x120°	135	88
21	210	200	25 ¹⁾ / 80 ²⁾	5	25 ¹⁾ / 80 ²⁾	202	105	18/3x120°	158	114

Size	b	b ₁	b ₂	b ₃	b ₄	b ₅	h	s	s _{max}	M
07	32.5	9.5	1	20	26.5	3.5	82	0.2	0.5	2xM4
09	34	12	1	25	28.5	4	89	0.3	0.75	2xM5
11	38.5	14	1	30	32.5	5	97.5	0.3	0.75	2xM6
14	47	16	1	40	40	6.5	111.5	0.3	0.75	2xM8
17	57	16	1	42	56	6.5	124.5	0.3	0.75	2xM8
21	60.5	19	1	45	59.5	7	149.5	0.4	1	2xM10

¹⁾ Min. bore.

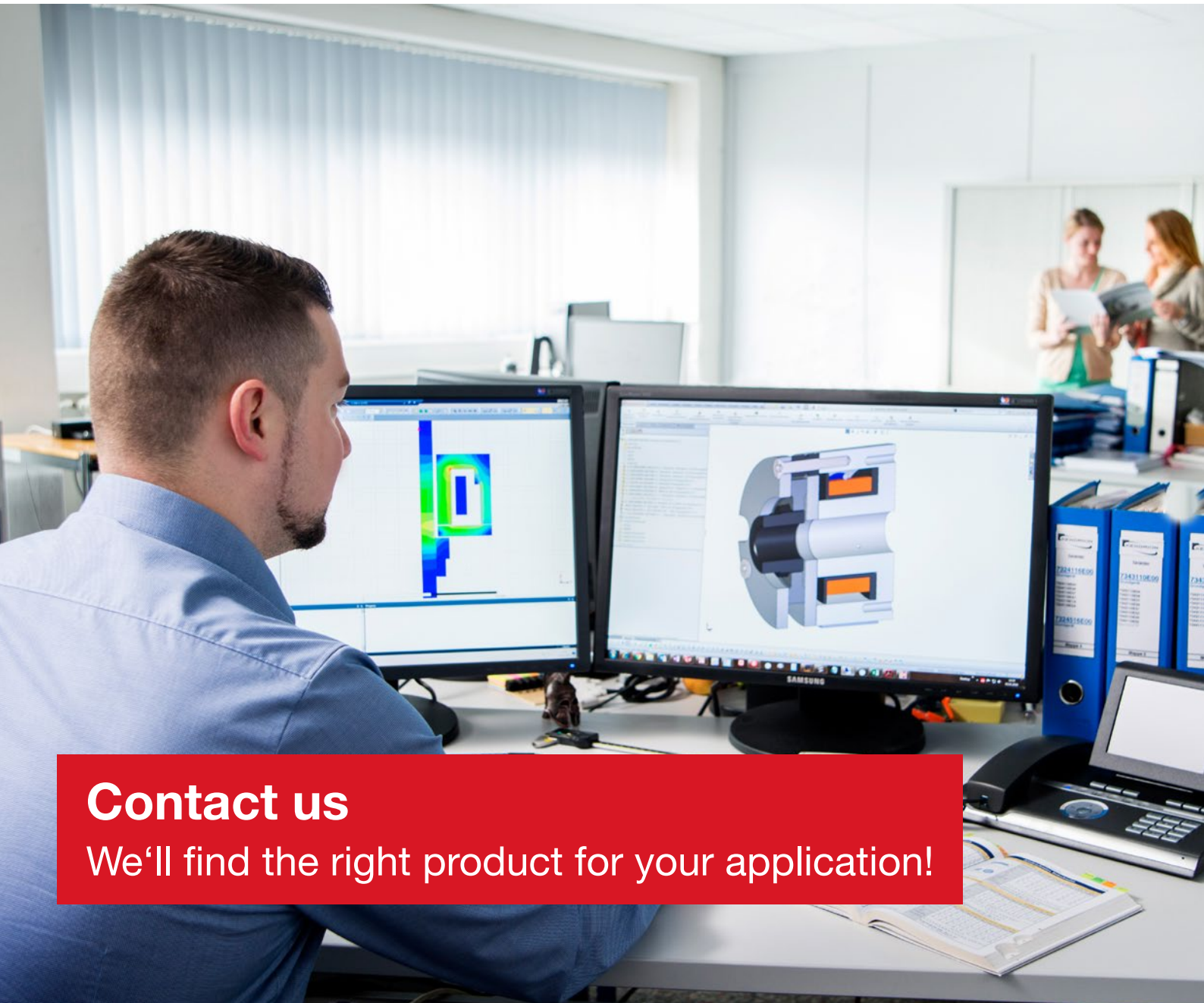
²⁾ Max. bore.

Individual customer solutions

Specially tailored to your needs

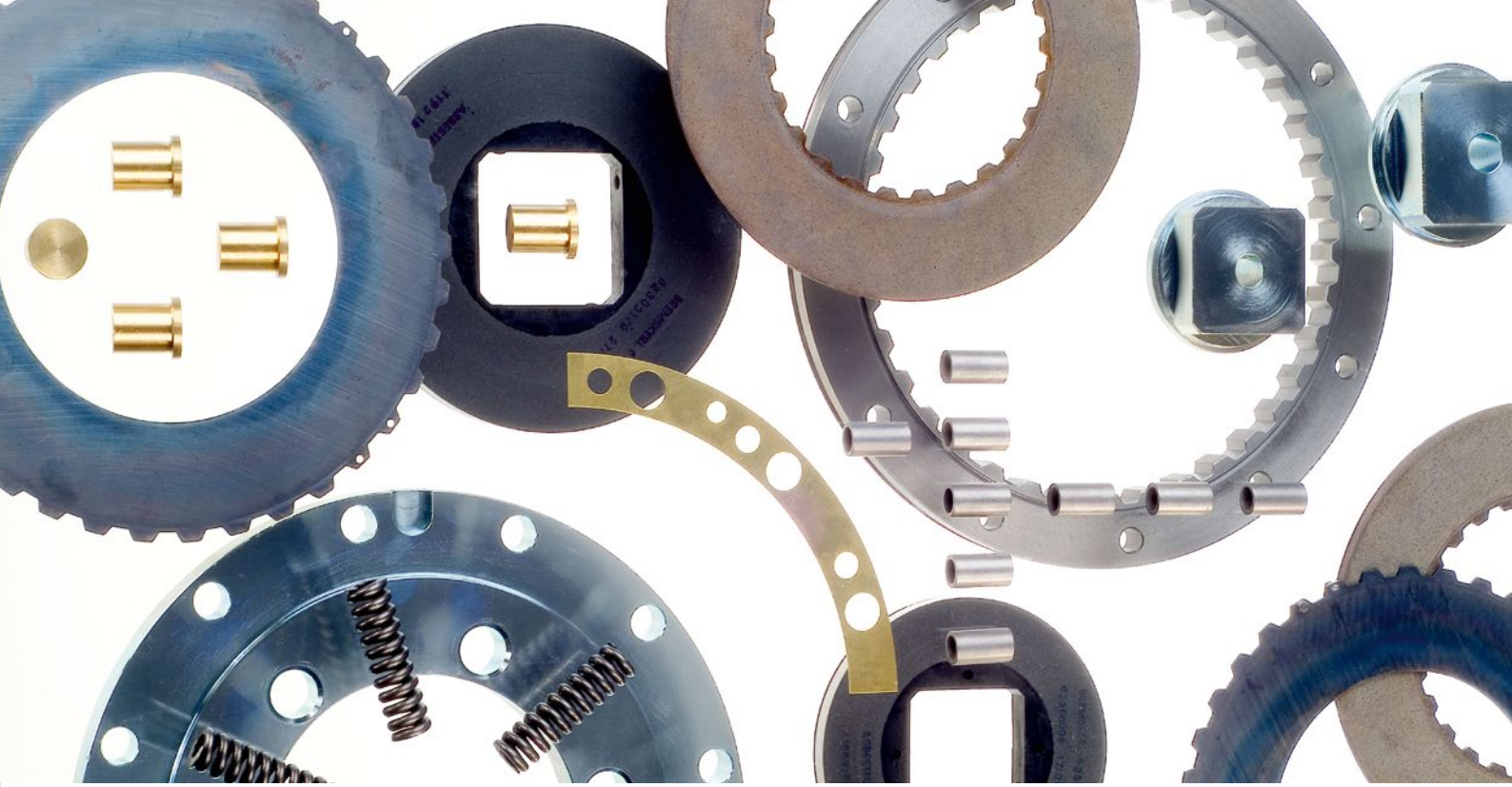
Automation solutions have become indispensable in both industry and our everyday lives. Mechatronics helps achieve further expansion of these solutions, and increases the range of applications. In many cases, electromagnetic brakes meet the necessary safety requirements, allowing loads to be securely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

Catering to different market demands while also ensuring product standardization is a challenge that Kendrion relishes. Customized 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.



Contact us

We'll find the right product for your application!



Branded replacement parts from Kendrion

Much more than mere effort

Perfect operation and excellent functionality of your machine are only possible with original spare parts from Kendrion.

If you place top priority on long-term product safety and flawless functionality you should always use original Kendrion spare parts and replacement equipment. These high-quality tested products can only be obtained directly from Kendrion. Our worldwide service network ensures availability around the globe.

Reliable spare parts supply is just one of our key strengths. Our flexible manufacturing capabilities and strong logistics management as well as the in-depth know-how of our service-driven personnel ensure fast and competent assistance in any situation.

Our customers appreciate the excellent reliability of original Kendrion spare parts because they offer uncompromising compatibility and ensure full functionality of the equipment in which they are used.

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