EagleBurgmann
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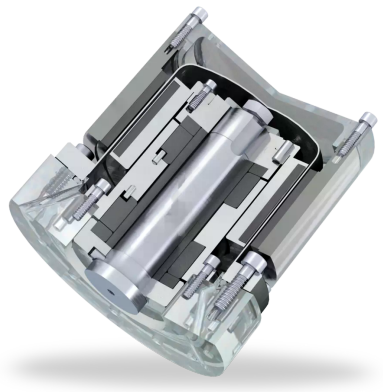
RELY ON EXCELLENCE

eMAK

Magnetic Couplings | Couplings



Features

Magnetic couplings (MAK) are a hermetic, low-maintenance sealing solution for pumps, agitators, and aerators. Dangerous or precious media remains isolated in the closed system circuit. In turn, nothing penetrates to contaminate the medium.

- For standard applications up to 25 bar
- Available from stock
- Single-walled can
- Product-lubricated sliding bearing included (optional)
- High performing
- Energy efficient
- Highly reliable and maintenance-free

Functional description

Power is transmitted contact-free by magnets from the drive shaft to the product-contacting output shaft. Between the two rotating parts is the containment can, the sealing element, which is bolted to the container. It separates the product space from the atmosphere and hermetically seals it statically.

Advantages

With the eMAK, there is now a new efficiency standard for magnetic couplings. A special design in combination with a special can as well as high-performance magnets make this magnetic coupling particularly powerful. This means that pumps, for example, can be built much more compactly. The eMAK is specially designed for standard applications up to 25 bar and is available from stock.

- Hermetically sealed / leakage-free
- High-strength, corrosion-resistant can made of Inconel®
- High-performance magnets of Samarium cobalt
- Maintenance-free in trouble-free operation
- Product lubricated sliding bearing (optional); no need for a supply system
- Easy switch to the new eMAK series
- Available from stock
- Special configuration tool (online) for easy seal design

Operating range

Shaft diameter: d = ... 40 mm (1,57")
Pressure: p = 25 bar (363 PSI)
Temperature: t = -40 °C ... +250 °C (-40 °F ... +482 °F) (SmCo)

- Samarium cobalt (SmCo/MA3) max. +250 °C (+482 °F)

Speed: n = 3,600 min-1

Chemical resistance: pH 0 ... 14

Viscosity: 0.3 ... 5,000 mPas (SiC)

Torque: max. 434 Nm

Solids: max. 0.1 mm; max. 5 % by weight; grain hardness max. 700 HV

Materials

Sliding faces: Silicon carbide SiC (Q1),
Magnets: SmCo (MA3),
NdFeB (MA8)
Metal parts: CrNiMO steel 1.4404 (G), CrNiMo steel 1.4462 (G1), Inconel®

Standards and approvals

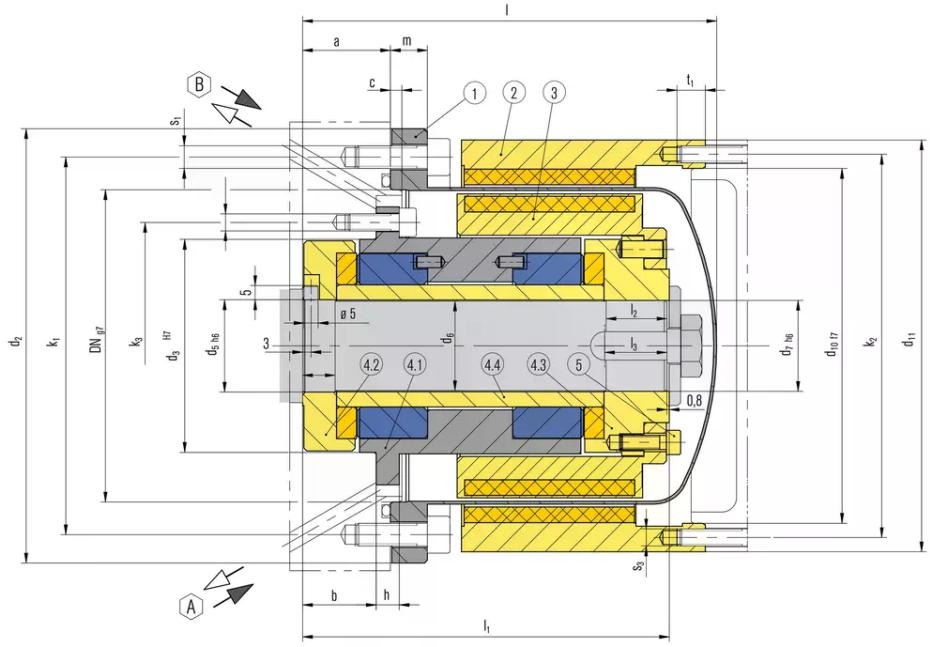
- ISO 15783
- ISO 5199
- EN 22858
- ISO 2858
- ATEX Zone 1, 2
- FDA
- Compliant to TA Luft (German Clean Air Act)

Recommended applications

- Chemical industry
- Refining technology
- Pharmaceutical industry
- Food processing industry
- CCUS
- Hydrogen
- Power generation
- Pumps
- Mixers, agitators
- Aerators
- Blowers
- Autoclaves

eagleburgmann.com
info@eagleburgmann.com

All technical specifications are based on extensive tests and our many years of experience. The diversity of possible applications means, however, that they can serve only as guide values.
We must be notified of the exact conditions of application before we can provide any guarantee for a specific case. Subject to change.



Item	Description
1	Can
2	Outer rotor with magnets
3	Inner rotor with magnets
4.1	Radial bearing
4.2	Axial bearing
4.3	Axial Bearing
4.4	Shaft sleeve
5	Cap srew

Charts

Static break-away torque (Nm)

DN 75 110 135 165
No. of poles 10 16 20 24
Material MA3 MA3 MA3 MA3
Magnet length in cm 2 14 31
4 31 75 106 164
6 48 115 176 254
8 227 341
10 434

Static break-away torque [Nm] at room temperature. Magnet material: Samarium-Kobalt (SmCo/MA3) max. +250 °C (+482 °F)

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Dimensions

eMAK	d_{10}	d_{11}	Number of threads	Thread diameter	Thread depth	k_2
75	90	110	4	M6	10	100
110	125	145	8	M6	10	135
135	150	170	8	M6	10	160
165	178	198	12	M6	10	188

Outer rotor Dimensions in millimeter

eMAK	DIN	DNL	d3	d5	d6	b	e	l1	l2	h
75	75	22	44	16,5	15,8	21	8	103,5	30	7
110	110	43	75	32,5	31,5	26	11	129,3	21	8
135	135	43	75	32,5	31,5	26	11	139,3	21	8
165	165	55	92	40,5	39,5	27	12	170,3	31	10
eMAK	k3	Number of S2	S2	d7	l	t (5)	t1 (groove depth shaft)	u (key depth)	Number of keys	
75	55	5	M5	16	25	18	3	5	1	
110	87	5	M6	32	22	35	5	10	1	
135	87	5	M6	32	22	35	5	10	2	
165	103	5	M6	40	32	45	5	12	2	

Bearing arrangement Dimensions in millimeter

eMAK	DIN	LK	L	DN	d2	a	c	m	k1	Number of s1	s1
75	75	2-6	119	75	118	17	4	13	100	8	M8
110	110	2-6	146	110	153	31	4	13	133	12	M8
135	135	4-8	156	135	178	17	4	14	158	16	M8
165	165	4-10	192	163,5	218	17	5	16	192	12	M10

Can Dimensions in millimeter

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