EagleBurgmann
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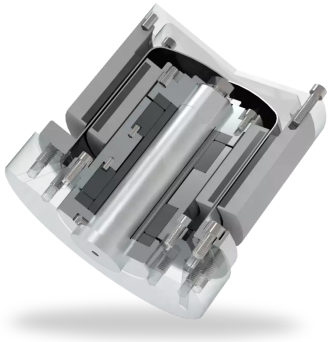
RELY ON EXCELLENCE

MAK66

Magnetic Couplings | Couplings



Features

Magnetic couplings (MAK) are a hermetic sealing solution for pumps and agitators. Dangerous or precious media remains isolated in the closed system circuit.

Functional description

The power transmission occurs contact-free through magnets from the drive shaft to the product wetted output shaft. Between the two rotating parts is the can wich is bolted to the container.

Notes

Different variants are available to meet specific requirements:

- Coolable or heatable bearing arrangements
- Vertical drive with dry running roller bearing
- High temperature variant
- Without bearing

Can variants:

- Double wall
- High pressure can
- Ceramic, PEEK carbon fiber, Titanium cans

Advantages

- Magnetic coupling for standard applications
- Hermetically sealed
- No contact of torque transmitting elements
- No maintenance necessary
- Hastelloy® or Inconel® can for high performance
- High efficient can optional
- Product lubricated sliding bearing included

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),
+120 °C (+248 °F) (NdFeB)
Speed: n = 3,600 min-1
Chemical resistance: pH 0 ... 14
Viscosity: 0.3 ... 5,000 mPas (SiC)
Torque: max. 462 Nm
Solids: max. 0.1 mm; max. 5 % by weight; grain hardness max. 700 HV

Materials

Sliding faces: Silicon carbide SiC (Q1), Carbon silicon impregnated SiC-C-Si (Q3), Carbon graphite resin impregnated (B)
Magnets: Samarium Cobalt (MA3), Neodymium-Iron-Boron (MA8)
Metal parts: CrNiMO steel 1.4571 (G), CrNiMo steel 1.4462 (G1), Hastelloy® C-4 2.4610 (M), Inconel® 625 2.4856 (T3)

Standards and approvals

- Compliant to TA Luft (German Clean Air Act)

Recommended applications

- Chemical industry
- Oil and gas industry
- Refining technology
- Pharmaceutical industry
- Food processing industry
- CCUS
- Power generation
- Centrifugal pumps
- Gear pumps
- Top drive mixers/agitators
- Fans
- Blowers
- Autoclaves

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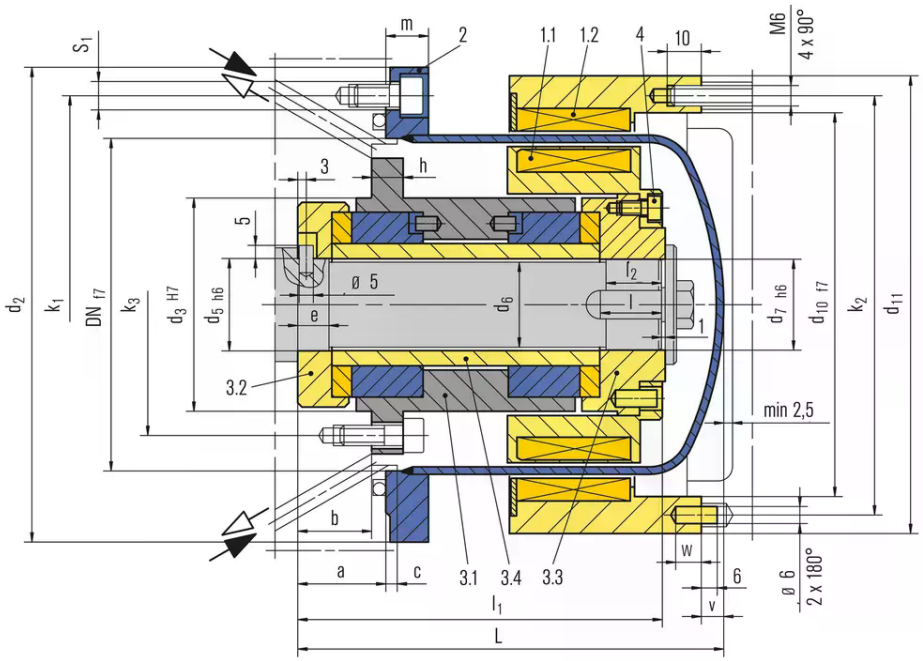

Item	Description
1	Coupling
1.1	Inner rotor
1.2	Outer rotor
2	Can
3	Bearing assembly
3.1	Radial journal bearing
3.2	Axial journal bearing
3.3	Axial journal bearing
3.4	Shaft sleeve
4	HSH cap screw

Installation, details, options

Static break-away torque (Nm)

DN 60 75 110 135 165
No. of poles 8 10 16 20 24
Material MA3 MA8 MA3 MA8 MA3 MA8 MA3 MA8 MA3 MA8
Magnet length in cm 2 8,4 10,5 11,5 15,5 27 35
4 18 21,9 25 33,5 59 78 90 126 137 180
6 27 33,8 37,5 51 90 126 145 192 210 275
8 200 260 294 382
10 373 485
Static break-away torque [Nm] at room temperature. Magnet material: MA3 = SmCo, MA8 = NdFeB

Product variants

Static break-away torque (Nm)

DN	****	60	75	110	135	165
No. of poles		8	10	16	20	24
Material		MA3	MA8	MA3	MA8	MA3
Magnet length in cm	2	8.4	10.5	11.5	15.5	27
4	18	21.9	25	33.5	59	78
6	27	33.8	37.5	51	90	126
8						
10						

Static break-away torque [Nm] at room temperature. Magnet material: MA3 = SmCo, MA8 = NdFeB

Ceramic and PEEK carbon fiber can variants

Containment shell (can) versions in ceramic or carbon fiber reinforced PEEK material provide efficiency gains in magnetic couplings by reducing eddy current losses to zero.

Operating limits
Ceramic can: pressure up to 25 bar (363 PSI), temperature up to 350°C (662 °F)
PEEK can: pressure up to 40 bar (580 PSI), temperature up to 150°C (302 °F)

Other limits are available on request

Dimensions

d_{10}	d_{11}	V	W	k_2
90	110	0	5	100
125	145	4	5	135
150	170	4	5	160
178	198	5	8	188

Outer rotor Dimensions in millimeter

DN	DNL	d3	d5	d6	b	e	l1	l2	h	k3	d7	l	t	u
75	22	44	16.5	15.8	21	8	103	29	7	55	16	16	18	5
110	43	75	32.5	31.5	26	11	128.5	20	8	87	32	22	35	10
135	43	75	32.5	31.5	26	11	138.5	20	8	87	32	22	35	10
165	55	92	40.5	39.5	27	12	169.5	30	10	103	40	32	46	12

Bearing arrangement Dimensions in millimeter

DN	LK	L	d1	d2	a	c	m	k1	s1
75	2-6	119	75	118	17	4	13	100	9
110	2-6	146	110	153	31	4	13	133	9
135	4-8	156	135	178	17	4	14	158	9
165	4-10	187	163.5	218	17	5	16	192	11

Can Dimensions in millimeter