MAGNETIC COUPLINGS
TYPES AND OPERATING DESCRIPTION

General information

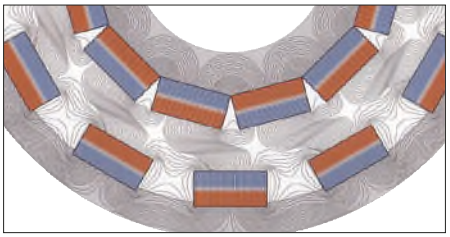
General description

MINEX®-S magnetic couplings transmit the torque without contact through magnetic forces between the internal and external rotor. They ensure a hermetic seperation between driving and driven side in pumps and agitators sealing critical liquids and gases reliably. As a result they prevent serious leakages operating as a reliable alternative to usual dynamic shaft seals.

Internal rotor

External rotor

Run of flux lines



Operation/structure

The coupling consists of an external and an internal rotor. The external rotor has high-quality, permanent magnets of changing polarity on the inner side and the internal rotor has them on the outside.
The external rotor is normally fixed on the drive side and the magnets are glued in the keyways. The magnets of the internal rotor on the driven side are fully encapsulated.

Torque transmission

In their non-operative states the north and south poles of the rotors are opposite to each other and the magnetic field is completely symmetric. It is only when the rotors are twisted that the magnetic field lines are moved, hence the torque is transmitted through the air gap. Then there is a synchronous operation under a constant torsion angle.
If the maximum coupling torque and the maximum torsion angle are exceeded, the power transmission is interrupted.

Containment shroud

Sealing function

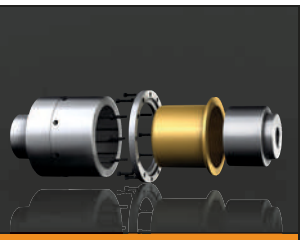
The containment shroud that is fixed to the housing separates internal and external rotor from each other.
It ensures a completely leak-proof separation of product and atmosphere.
The sealing is achieved statically, e. g. with a flat seal or an O-ring, thus eliminating the need to use dynamically loaded sealing elements.
As a standard KTR supplies both metallic and non-metallic containment shrouds.
The metallic types cover the widest application range, yet causing eddy current losses which might require cooling measures.
If eddy current losses can be definitely excluded, the energy-efficient alternative materials PEEK and ceramics are available.

Use in potentially explosive atmospheres

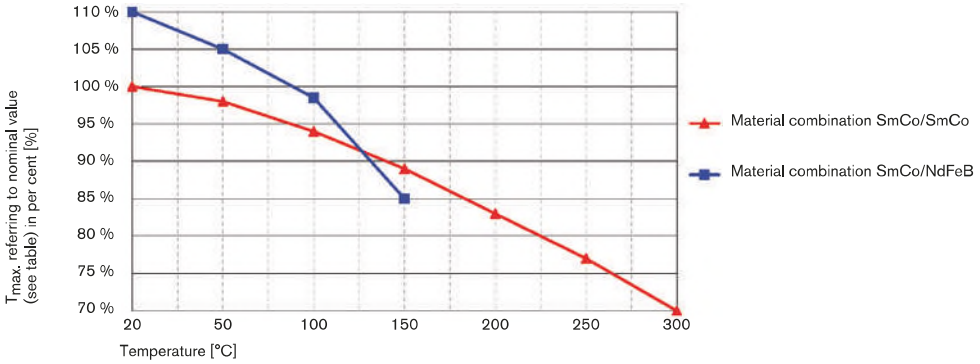
MINEX® couplings are suitable for power transmission in drives in potentially explosive atmospheres. The types with metallic, ceramic and PEEK containment shrouds are assessed and approved as components of category II according to EU directive 2014/34/EU and thus suitable for the use in potentially explosive atmospheres of zone 2G.

Please read through our information included in the respective Type Examination Certificate and the operating and mounting instructions at **www.ktr.com**.

Properties of magnetic couplings

			
Product	**Type with metallic containment shroud**	**Type with containment shroud made of PEEK**	**Type with containment shroud made of oxide ceramics**
Type	Permanent-magnetic synchronous coupling		
Properties			
Permanent-magnetic	●	●	●
Contactless	●	●	●
Maintenance-free	●	●	●
Torsionally flexible	●	●	●
Low vibrations	●	●	●
Special features/applications			
	Most common type Covering the widest performance range Particularly suitable for pump drives/ Applications with liquids High t_{max} [°C] and p_{max} [bar]	No eddy current losses Energy-efficient and economic Particularly suitable for dry running For low demands on t_{max} [°C] and p_{max} [bar]	High t_{max} [°C] and p_{max} [bar]
Torque range T_{KN} [Nm]			
Max.	1,000	370	550
Max. pressure resistance [bar]			
p_{max}.	Up to 90 bar depending on size	Up to 16 bar depending on size	Up to 25 bar depending on size
Geometries			
Shaft diameter min./max. [mm]	Ø5 pilot bored	Ø5 pilot bored	Ø5 pilot bored
Max. temperature resistance [°C]			
t_{max}.	150/300 depending on magnet material	130	300
Certifications/type examinations			
ATEX	●	CFRP reinforcement: ● / GRP reinforcement:	●
	For further details see catalogue pages 218 - 221	For further details see catalogue pages 222 - 223	For further details see catalogue pages 224 - 225

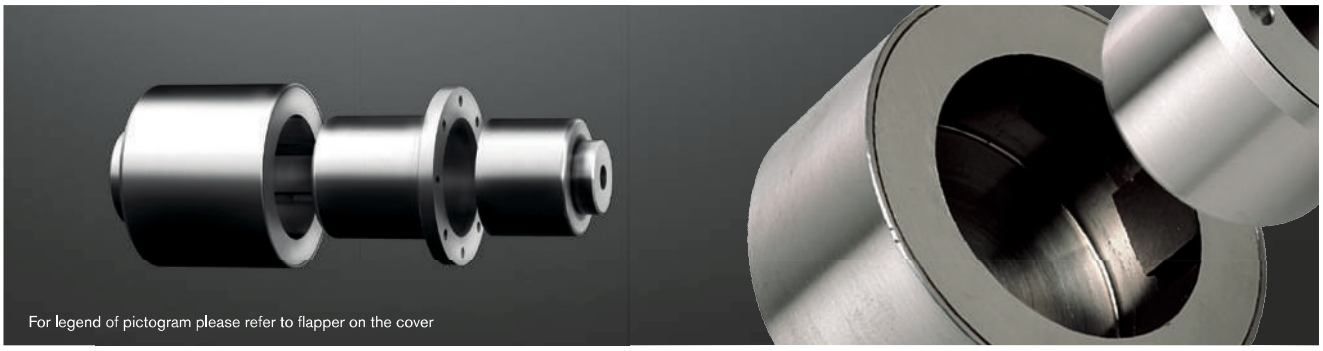
Torque reduction with temperature increase

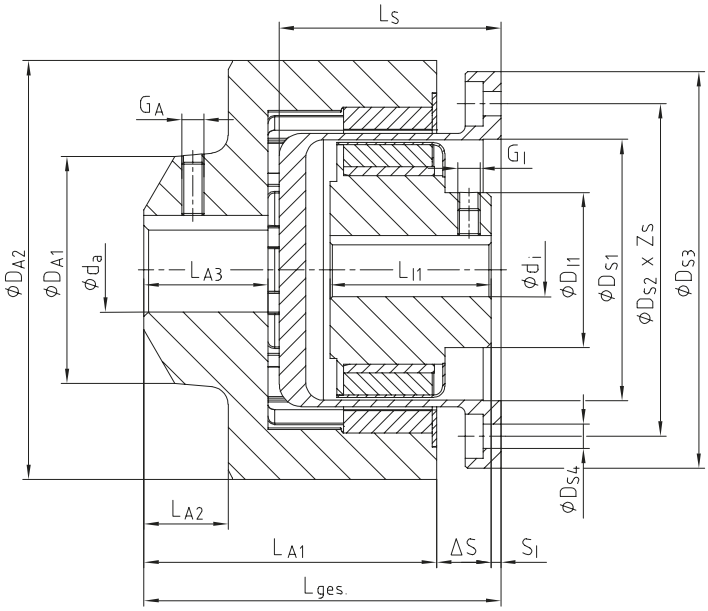


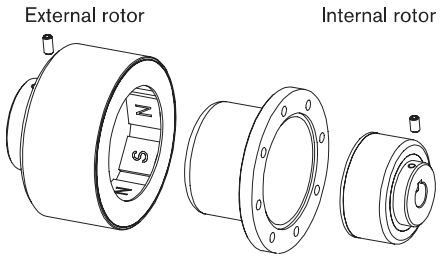
Temporary torque reduction with increased temperature for alternative material combinations [%].

Please note:
KTR recommends to use NdFeB magnets for the external rotor, provided that the operating temperature falls below 150 °C.

Containment shroud – material stainless steel







Containment shroud

Technical data – Internal rotor and containment shroud														
Size	$T_{K\ max}$ [Nm] with 20 °C	Dimensions [mm]												
		Internal rotor							Containment shroud					
		Finish bore [1] d_i		D_{I1}	L_{I1}	GI	S_I		D_{S1}	D_{S2}	D_{S3}	D_{S4}	Z_S	L_S
		Min.	Max.				Min.	Max.						
SA 22/4	0.15	5	9	20	20	M3	2.0	2.0	21.5	38	46	4.5	8	29
SA 34/10	1	5	12	20	22	M3	2.0	5.5	34	46	55	4.5	4	30.5
SA 46/6	3	8	16	28	33	M4	6.5	7.0	46	64	78	4.5	8	45
SA 60/8	7	12	22	35	36.3	M5	1.7	5.5	59	75	89	5.5	8	50
SB 60/8	14			36	56	M5	0.0	4.0						70.3

Technical data – External rotor and general											
Size	Dimensions [mm]										
	External rotor								General		
	Finish bore [1] d_a		D_{A1}	D_{A2}	G_A	L_{A1}	L_{A2}	L_{A3}	ΔS	L_{total}	
	Min.	Max.								Min.	Max.
SA 22/4	5	11	18	38	M4	35	8.5	11	5	42	42
SA 34/10	5	14	22	53	M4	38.8	10.5	13	5.3	46	49.5
SA 46/6	5	24	40	69.5	M5	53	16	22	9	69	69.5
SA 60/8	9	32	50	94.5	M6	66	19	28	12	80	83.3
SB 60/8	9	38			M8	93.3	15	30		105.2	109.2

[1] Bores H7 with keyway to DIN 6885 sheet 1 [JS9]

Ordering example:

MINEX® SA 60/8	NdFeB	d_i Ø20 mm	d_a Ø24 mm
Coupling size	NdFeB – $t_{max.}$ = 150 °C Sm2Co17 – $t_{max.}$ = 300 °C	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)	

Examples of application

MINEX® couplings with containment shroud made of stainless steel are the most common type for pump drives and other applications with liquids in the lower performance range. Subject to their high resistance to pressure and temperature they cover a wide application range. The magnetic rotors are available from stock in an unbored or pilot bored design. If requested, the parts can be finish bored according to ISO fit H7 and provided with feather keyway to DIN 6885 sheet 1 [JS9].
Inside the rotating magnetic field metallic containment shrouds generally cause losses of eddy current which are converted into heat and which may require cooling measures. On applications with pumps the heat generated can basically be dissipated by the medium to be pumped. If higher pressure resistance than covered by the KTR standard is required, KTR provide for customized special solutions.

Typical applications: gear pumps, centrifugal pumps, screw spindle pumps, agitators, PU foaming lines

Use in potentially explosive atmospheres

MINEX® couplings with containment shroud made of stainless steel are suitable for power transmission in drives in potentially explosive atmospheres. They are assessed and approved as components of category II according to EU directive 2014/34/EU and thus suitable for the use in potentially explosive atmospheres of zone 2G.

Ex II 2G c IIC T X

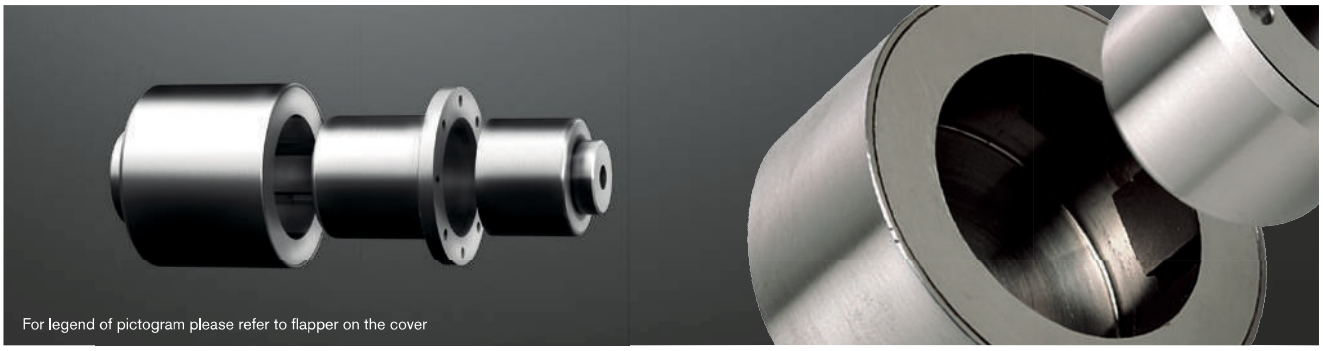
If the couplings operate in potentially explosive atmospheres, the user has to provide for special measures. Please read through our information included in the respective Type Examination Certificate and the operating and assembly instructions at **www.ktr.com**.

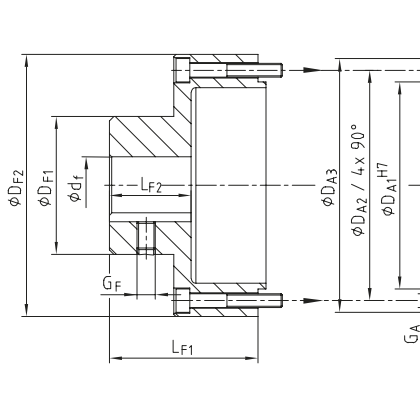
Technical data – Materials, temperature and pressure resistance

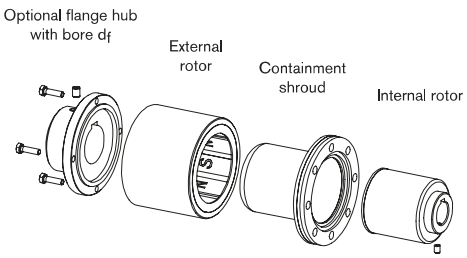
Size	$T_{K\ max}$ [Nm] with 20 °C	Internal rotor			Containment shroud			External rotor (+ flange hub optionally)		
		Standard material		Max. temperature	Standard material		Max. pressure	Standard material		Max. temperature
		Hub	Magnets	$t_{max.}$ [°C]	Hub	Cont. shroud	$P_N/P_{max.}$ [bar]	Hub	Magnets	$t_{max.}$ [°C]
SA 22/4	0.15	1.4462	NdFeB	150	1.4571	1.4571	60/90	S355J2	NdFeB	150
SA 34/10	1	1.4462	NdFeB	150	1.4571	1.4571	16/24	S355J2	NdFeB	150
SA 46/6	3	1.4571	Sm2Co17	300	1.4571	1.4571	16/24	S355J2	Sm2Co17	300
SA 60/8	7	1.4571	Sm2Co17	300	1.4571	1.4571	40/60	S355J2	Sm2Co17*	300
SB 60/8	14	1.4571	Sm2Co17	300	1.4571	1.4571	40/60	S355J2	Sm2Co17*	300

*) External rotor alternatively available with magnets made of NdFeB ($t_{max.}$ = 150 °C)

Containment shroud – material Hastelloy







Technical data – Materials, temperature and pressure resistance

Size	$T_{K\ max}$ [Nm] with 20 °C	Internal rotor			Containment shroud			External rotor (+ flange hub optionally)		
		Standard material		Max. temperature	Standard material		Max. pressure	Standard material		Max. temperature
		Hub	Magnets	$t_{max.}$ [°C]	Hub	Cont. shroud	$P_N/P_{max.}$ [bar]	Hub	Magnets	$t_{max.}$ [°C]
SA 75/10	10	1.4571	Sm2Co17	300	1.4571	2.4602**	25/37.5	S355J2	Sm2Co17*	300
SB 75/10	24	1.4571	Sm2Co17	300	1.4571	2.4602**	25/37.5	S355J2	Sm2Co17*	300
SC 75/10	40	1.4571	Sm2Co17	300	1.4571	2.4602**	25/37.5	S355J2	Sm2Co17*	300
SA 110/16	25	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SB 110/16	60	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SC 110/16	95	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SB 135/20	100	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SC 135/20	145	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SD 135/20	200	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17*	300
SC 165/24	210	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17	300
SD 165/24	280	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17	300
SE 165/24	370	1.4571	Sm2Co17	300	1.4571	2.4856	25/37.5	S355J2	Sm2Co17	300
SD 200/30	430	1.4571	Sm2Co17	300	1.4571	2.4856	16/24	S355J2	Sm2Co17	300
SE 200/30	550	1.4571	Sm2Co17	300	1.4571	2.4856	16/24	S355J2	Sm2Co17	300
SD 250/38	670	1.4571	Sm2Co17	300	1.4571	2.4856	16/24	S355J2	Sm2Co17	300
SE 250/38	820	1.4571	Sm2Co17	300	1.4571	2.4856	16/24	S355J2	Sm2Co17	300
SF 250/38	1000	1.4571	Sm2Co17	300	1.4571	2.4856	16/24	S355J2	Sm2Co17	300

*) External rotor alternatively available with magnets made of NdFeB ($t_{max.}$ = 150 °C)
**) Containment shroud size 75 alternatively available made of stainless steel 1.4571 (P_N/P_{max} = 16/24 bar)

Ordering example:

MINEX® SB 75/10	NdFeB	d_i Ø20 mm	d_a Ø24 mm	Hastelloy
Coupling size	NdFeB – $t_{max.}$ = 150 °C Sm2Co17 – $t_{max.}$ = 300 °C	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)		Containment shroud type stainl. steel 1.4571 or Hastelloy

Examples of application

MINEX® couplings with containment shroud made of Hastelloy are the most common type for pump drives and other applications with liquids in the average and higher performance range. Subject to their high resistance to pressure and temperature they cover a wide application range.
Inside the rotating magnetic field metallic containment shrouds generally cause losses of eddy current which are converted into heat and which may require cooling measures. On applications with pumps the heat generated can basically be dissipated by the medium to be pumped. If higher pressure resistance than covered by the KTR standard is required, KTR provide for customized special solutions.

Typical applications: gear pumps, centrifugal pumps, screw spindle pumps, agitators, PU foaming lines

Use in potentially explosive atmospheres

MINEX® couplings with containment shroud made of Hastelloy are suitable for power transmission in drives used in potentially explosive atmospheres. They are assessed and approved as components of category II according to EU directive 2014/34/EU and thus suitable for the use in potentially explosive atmospheres of zone 2G.

Ex II 2G c IIC T X

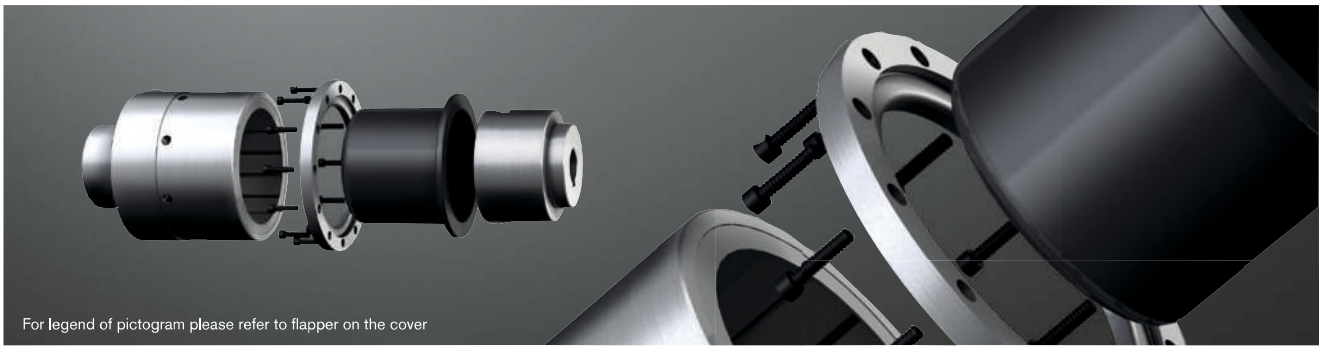
If the couplings operate in potentially explosive atmospheres, the user has to provide for special measures. Please read through our information included in the respective Type Examination Certificate and the operating and assembly instructions at **www.ktr.com**.

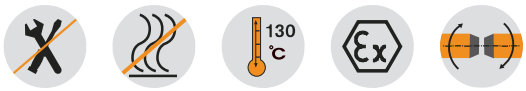
Technical data – External rotor and general

Size	Dimensions [mm]																												
	Internal rotor							Containment shroud						External rotor					Flange hub						General				
	Finish bore [1]		D_{I1}	L_{I1}	G_I	S_I		D_{S1}	D_{S2}	D_{S3}	D_{S4}	Z_S	L_S	D_{A1}	D_{A2}	D_{A3}	L_{A1}	G_A	$d_{f\,max.}$	D_{F1}	D_{F2}	L_{F1}	L_{F2}	G_F	ΔS	Total length [2] (with flange hub)				
	$d_{i\,min.}$	$d_{i\,max.}$				Min.	Max.																			Min.	Max.		
SA 75/10				39.5			46.5										41.3								12.2	140	164.5		
SB 75/10	12	32	45	58	M6	4	26.5	75	100	118	9	8	102	90	100	110	61.3	M6	42	60	114	64.5	35.5	M8		142			
SC 75/10				80			4.0										83.8								14.2	166.5	166.5		
SA 110/16				45			55.0										41.3									177.5			
SB 110/16	14	55	80	65	M8	4	35.0	110	133	153	9	12	115	126	135	145	61.3	M6	55	85	150	99.5	59.5	M10	18.7	183.5	214.5		
SC 110/16				85			15.0										81.3									203.5			
SB 135/20				65			50.5										70.3								18.2	190.5	204.5		
SC 135/20	20	70	90	85	M10	4	30.5	135	158	178	9	16	139	150	160	170	90.3	M6	70	100	170	65.5	48.5	M12					
SD 135/20				110			8.0										110.3								20.7	200.5			
SC 165/24				85			61.5										90.3								18.2	233			
SD 165/24	24	80	110	110	M12	6	39.0	163.5	192	218	11	12	170	180	188	198	110.3	M6	75	110	198	77	60	M16	20.7		247		
SE 165/24				130			19.0										130.3									234			
SD 200/30				135			24.0										130.3								25.7	282	300		
SE 200/30	38	90	130		M16	6		200	252	278	11	12	180	212	222	232		M6	80	120	232	120	98	M12					
SD 250/38				115			46.0										110.3									282			
SE 250/38	38	100	165	135	M16	6	26.0	255	285	315	13.5	12	182	272	282	292	130.3	M6	100	150	300	140	93	M16	25.7	302	322		
SF 250/38				155			6.0										150.3									322			

[1] Bores H7 with keyway to DIN 6885 sheet 1 [JS9]
[2] Total length without flange hub = L_S

Containment shroud – material PEEK





Technical data – Internal rotor and containment shroud

Size	$T_{K\ max}$ [Nm] with 20 °C	Dimensions [mm]												
		Internal rotor							Containment shroud					
		Finish bore [1] d_i		D_{I1}	L_{I1}	G_I	S_I		D_{S1}	D_{S2}	D_{S3}	D_{S4}	Z_S	$L_S = L_{total}$
		Min.	Max.				Min.	Max.						
SA 75/10	10				39.5		8.5	54.5						108
SB 75/10	24	12	32	45	58	M6		34.5	99.9	115	135	9	8	
SC 75/10	40				80		5.5	10.0						
SA 110/16	30				45			46.0						115
SB 110/16	70	14	55	80	65	M8	4	26.0	140	151	168	9	12	
SC 110/16	100				85			6.0						
SB 135/20	110				65			48.0						144
SC 135/20	155	20	70	90	85	M10	4	28.0	157	167	180	5.5	12	
SD 135/20	210				110			4.0						
SC 165/24	220				85		4	32.0						156
SD 165/24	300	24	80	110	110	M12		8.0	196	210	225	6.6	12	
SE 165/24	390				130		-5	-5.0						165

Technical data – External rotor, flange hub and general

Size	Dimensions [mm]													
	External rotor					Flange hub						General		
	D_{A1}	D_{A2}	D_{A3}	L_{A1}	G_A	Max. finish bore [1] d_f	D_{F1}	D_{F2}	L_{F1}	L_{F2}	G_F	ΔS	Total length [2] (with flange hub)	
													Min.	Max.
SA 75/10				41.3								12.2	148.5	172.5
SB 75/10	90	100	110	61.3	M6	42	60	114	64.5	35.5	M8		148.5	172.5
SC 75/10				83.8								14.2	168	172.5
SA 110/16				41.3									165.5	193.5
SB 110/16	130	138	150	61.3	M6	55	85	153	87.5	45.5	M10	18.7	172.5	193.5
SC 110/16				81.3									191.5	193.5
SB 135/20				70.3								18.2	216	225.5
SC 135/20	158	167	176	90.3	M6	70	100	176	89	67	M12		216	225.5
SD 135/20				110.3								20.7	224	224
SC 165/24				90.3								18.5	231	234.8
SD 165/24	186	195	204	110.3	M6	75	110	204	94	70	M16	21	231	233.3
SE 165/24				130.3									254.3	254.3

[1] Bores H7 with keyway to DIN 6885 sheet 1 [JS9] [2] Total length without flange hub = L_S

Technical data

Size	$T_{K\ max}$ [Nm] with 20 °C	Internal rotor		Containment shroud				External rotor (+ flange hub optionally)	
		Standard material		Standard material		Max. pressure	Max. temperature	Standard material	
		Hub	Magnets	Hub	Cont. shroud	$P_N/P_{max.}$ [bar]	$t_{max.}$ [°C]	Hub	Magnets
SA 75/10	10	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SB 75/10	24	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SC 75/10	40	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SA 110/16	30	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SB 110/16	70	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SC 110/16	100	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SB 135/20	110	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SC 135/20	155	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SD 135/20	210	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SC 165/24	220	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SD 165/24	300	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB
SE 165/24	390	1.4571	Sm2Co17	Aluminium	PEEK	see table	see table	S355J2	NdFeB

Ordering example:

MINEX® SB 75/10	NdFeB	d_i Ø20 mm	d_a Ø24 mm	PEEK
Coupling size	NdFeB – $t_{max.}$ = 150 °C Sm2Co17 – $t_{max.}$ = 300 °C	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)		Containment shroud type

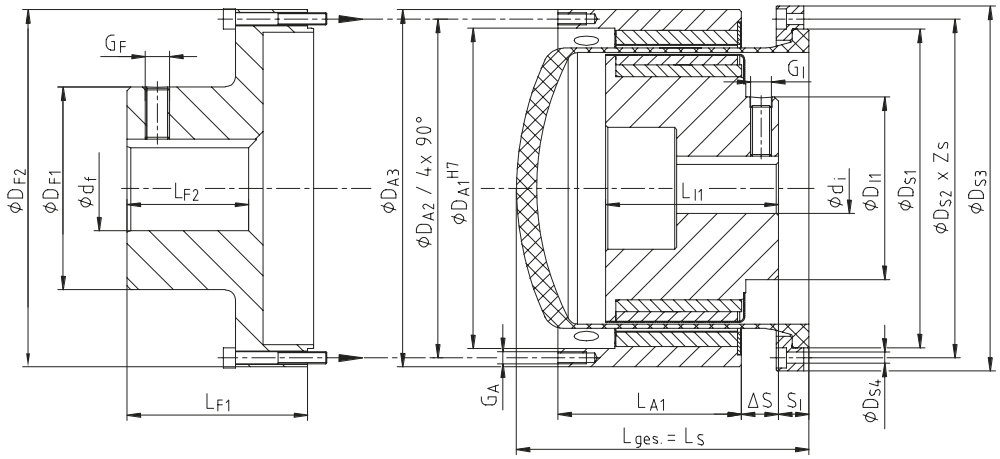
Examples of application

MINEX® couplings with containment shroud made of PEEK are an economic, energy-efficient alternative to the metallic types. They do not generate any eddy current losses and as a result do not generate any heat so that usually expensive cooling measures can be done without. Moreover, they are characterized by low susceptibility to fracture, low weight and easy handling. They are ideally suitable for applications with low demands on temperature and pressure resistance.

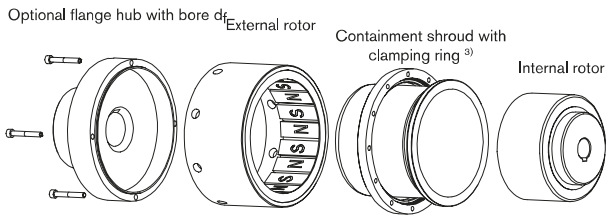
Typical applications: vacuum pumps, fan drives, compressors, agitators, PU foaming lines

Depending on pressure and temperature resistance

Temperature [°C]	Perm. nominal/testing pressure	
	P_N [bar]	$P_{max.}$ [bar]
40	14	21
70	13	19.5
100	12	18
130	10	15



$S_A = S_I + \Delta S$



3) Containment shroud size 75 also available as a one-piece design!

Use in potentially explosive atmospheres

MINEX® couplings with containment shrouds made of carbon fibre reinforced PEEK are suitable for power transmission in drives in potentially explosive atmospheres. They are assessed and approved as components of category II according to EU directive 2014/34/EU and thus suitable for the use in potentially explosive atmospheres of zone 2G.

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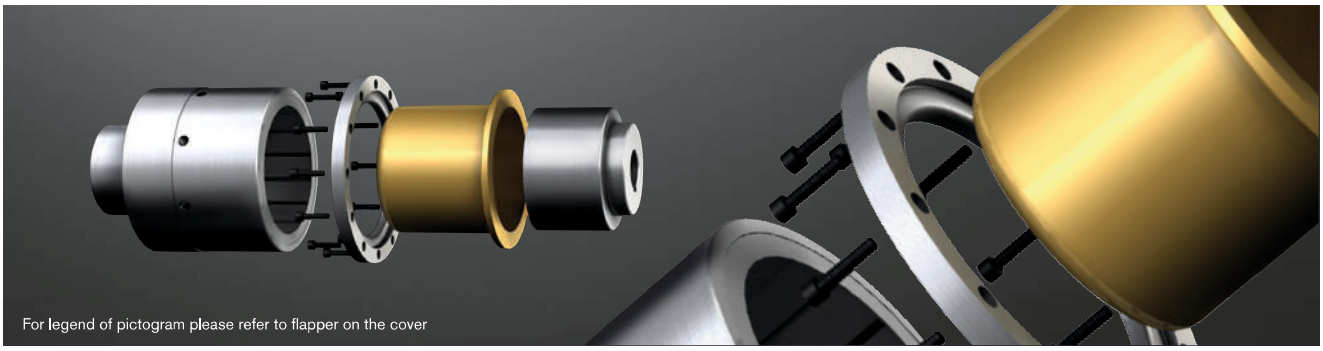
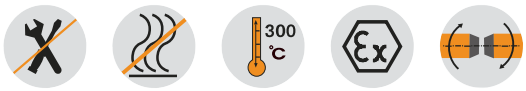
If the couplings operate in potentially explosive atmospheres, the user has to provide for special measures. Please read through our information included in the respective Type Examination Certificate and the operating and assembly instructions at **www.ktr.com.**

Containment shroud – material oxide ceramics





Technical data – Internal rotor and containment shroud

Size	$T_{K\ max}$ [Nm] with 20 °C	Dimensions [mm]												
		Internal rotor							Containment shroud					
		Finish bore [1] d_i		D_{I1}	L_{I1}	G_I	S_I		D_{S1}	D_{S2}	D_{S3}	D_{S4}	Z_S	$L_S = L_{total}$
		Min.	Max.				Min.	Max.						
SA 110/16	30				45			48.0						
SB 110/16	70	14	55	72	65	M8	4	28.0	132	151	168	9	12	115
SC 110/16	100				85			9.0						
SB 135/20	110				65			46.5						
SC 135/20	155	20	70	90	85	M10	4	26.5	157	167	180	5.5	12	143
SD 135/20	210				110			4.0						
SC 165/24	220				85			28.0						150
SD 165/24	300	24	90	110	110	M12	4	4.0	196	210	225	6.6	12	
SE 165/24	390				130			17.0						185
SD 200/30	430	38	90	130	135	M16	4	4.0	229	246	265	9	12	185
SE 200/30	550													

Technical data – External rotor, flange hub and general

Size	Dimensions [mm]													
	External rotor					Flange hub						General		
	D_{A1}	D_{A2}	D_{A3}	L_{A1}	G_A	Max. finish bore [1] d_f	D_{F1}	D_{F2}	L_{F1}	L_{F2}	G_F	ΔS	Total length [2] (with flange hub)	
													Min.	Max.
SA 110/16				41.3									165.5	195.5
SB 110/16	130	138	150	61.3	M6	55	85	153	87.5	45.5	M10	18.7	171.5	195.5
SC 110/16				81.3									191.5	196.5
SB 135/20				70.3								18.2	215	224
SC 135/20	158	167	176	90.3	M6	70	100	176	89	67	M12		215	224
SD 135/20				110.3								20.7	220	220
SC 165/24				90.3								18.5	225	230.5
SD 165/24	186	195	204	110.3	M6	75	110	204	94	70	M16	20.7	229	229
SE 165/24				130.3									260	260
SD 200/30	220	230	240	130.3	M6	80	120	240	120	88	M16	25.7	280	280
SE 200/30														

[1] Bores H7 with keyway to DIN 6885 sheet 1 [JS9]
[2] Total length without flange hub = L_S

Technical data

Size	$T_{K\ max}$ [Nm] with 20 °C	Internal rotor			Containment shroud			External rotor (+ flange hub optionally)		
		Standard material		Max. temperature	Standard material		Max. pressure	Standard material		Max. temperature
		Hub	Magnets	$t_{max.}$ [°C]	Hub	Cont. shroud	$P_N/P_{max.}$ [bar]	Hub	Magnets	$t_{max.}$ [°C]
SA 110/16	25	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SB 110/16	60	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SC 110/16	95	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SB 135/20	100	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SC 135/20	145	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SD 135/20	200	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SC 165/24	210	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SD 165/24	280	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SE 165/24	370	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SD 200/30	430	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300
SE 200/30	550	1.4571	Sm2Co17	300	Aluminium	ZrO2MgO	25/37.5	S355J2	Sm2Co17	300

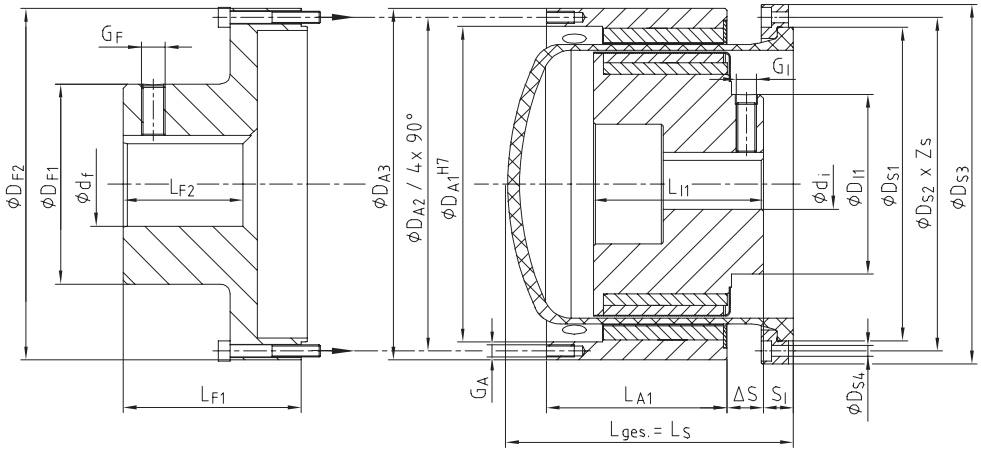
Ordering example:

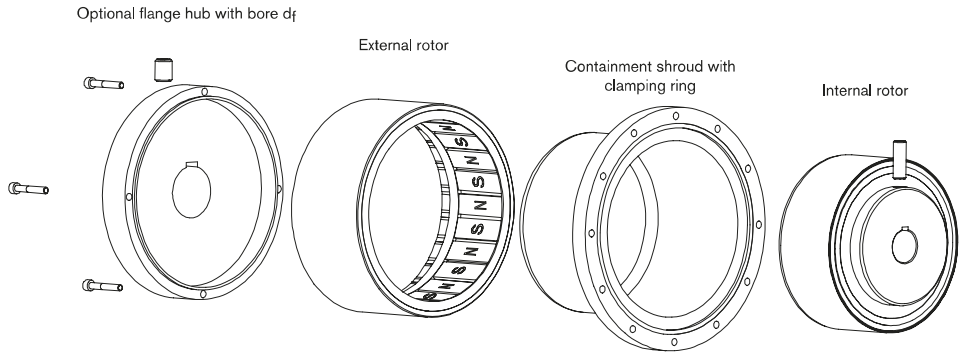
MINEX® SB 135/20	NdFeB	d_i Ø20 mm	d_a Ø24 mm	Oxide ceramics ZrO_2MgO
Coupling size	NdFeB – $t_{max.}$ = 150 °C Sm2Co17 – $t_{max.}$ = 300 °C	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)		Containment shroud type

Examples of application

Like with the types with containment shroud made of PEEK, MINEX® couplings with containment shroud made of ceramics are an economic, energy-efficient alternative to the metallic types. Again they do not generate any eddy current losses and as a result do not generate any heat so that usually expensive cooling measures can be done without. Compared to PEEK, the containment shrouds made of ceramics are characterized by higher resistance to pressure and an excellent temperature resistance.

Typical applications: vacuum pumps, fan drives, compressors, agitators, PU foaming lines





Use in potentially explosive atmospheres

MINEX® couplings with containment shrouds made of oxide ceramics are suitable for power transmission in drives in potentially explosive atmospheres. They are assessed and approved as components of category II according to EU directive 2014/34/EU and thus suitable for the use in potentially explosive atmospheres of zone 2G.

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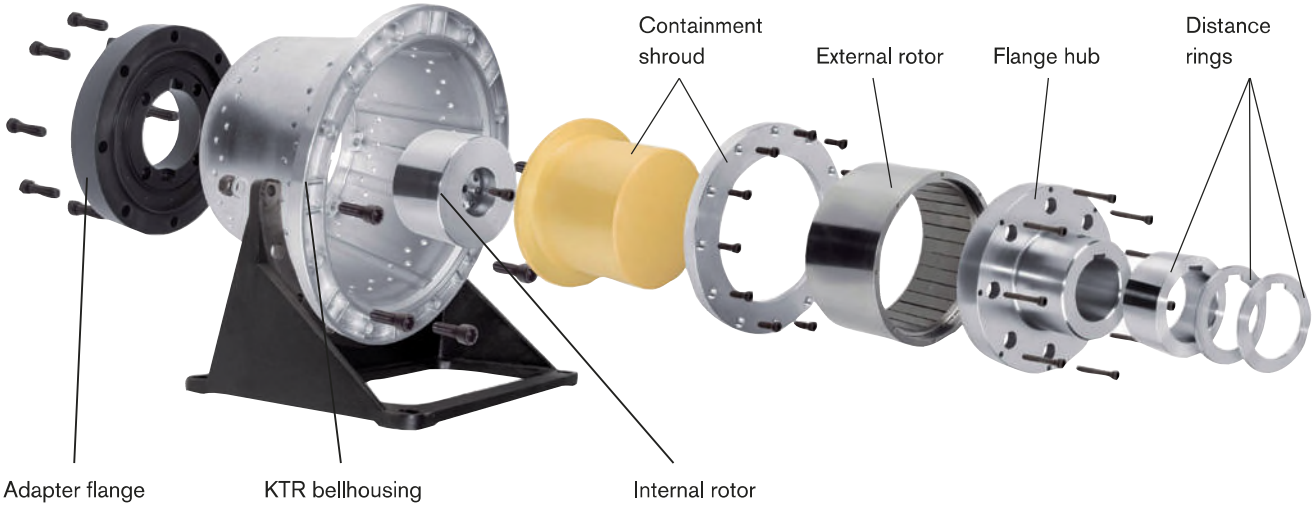
Please read through our information included in the respective Type Examination Certificate and the operating and assembly instructions at **www.ktr.com**.

Conversion kits and customized subassemblies



On request KTR provide customized solutions in combination with KTR hydraulic components, allowing to easily retrofit existing systems by MINEX®-S.

Conversion kits for PUR foaming processes

When conveying and proportioning the media polyol and isocyanate in the processing plants for PUR, ambient air has to be prevented from penetrating into the process, since otherwise adverse reactions may be generated.
For a reliable sealing of such drives KTR provides standard conversion kits, among others for axial piston pumps type REXROTH A2VK and ROTARY POWER C series offering the following benefits:

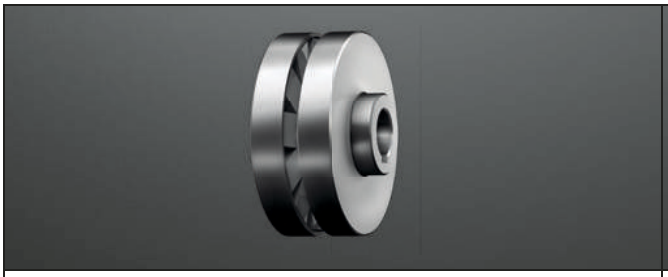
- Maintenance-free operation
- Standstill periods are considerably reduced
- No more problems with sealing
- Better efficiency and process reliability

The subassemblies are available for all motor-pump-combinations and in various materials.

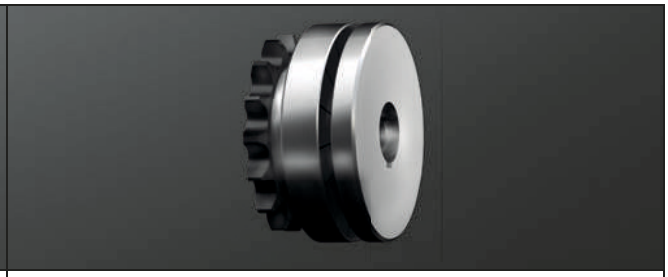
Maintenance-free sealing of proportioning pumps for polyde and isocyanate in high-pressure reaction casting machines

Pump data		Motor data (4 poles, n=1500 rpm)			Coupling data		
Pump	Type	Engine	Power [kW]	Torque T_N	Size	Max. torque $T_{K\,max}$	Bellhousing
REXROTH A2VK	A2VK-12	132 S	5.5	35 Nm	SB 110/16	60 Nm	PL 300/13/...
		132 M	7.5	48 Nm	SC 110/16	95 Nm	
		160 M	11	70 Nm	SC 135/20	145 Nm	PL 350/7...
	A2VK-28	160 M	11	70 Nm	SC 135/20	145 Nm	
		160 L	15	96 Nm	SD 135/20	200 Nm	
		180 M	18.5	118 Nm	SD 135/20	200 Nm	
	A2VK-55	160 L	15	96 Nm	SC 165/24	210 Nm	PL 350/7/...
		180 M	18.5	118 Nm	SC 165/24	210 Nm	
		180 L	22	144 Nm	SD 165/24	280 Nm	PL350/7/...
		200 L	30	196 Nm	SE 165/24	280 Nm	PL400/5/...
		225 S/M	37/45	240/292 Nm	SE 165/24	370 Nm	PL450/3/...
	A2VK-107	225 S/M	37/45	240/292 Nm	SE 165/24	370 Nm	PL400/5/...
ROTARY POWER C-Range	C 01	100L	2.2	14 Nm	SB 75/10	24 Nm	PK 250/13/...
	C 04	132 M	7.5	48 Nm	SC 110/16	95 Nm	PL300/13/...
	C 07	132 S	5.5	35 Nm	SB 110/16	60 Nm	PL300/13/...
		132 M	7.5	48 Nm	SC 110/16	95 Nm	PL300/13/...
	C20	160 L	15	96 Nm	SD 135/20	200 Nm	PL 350/7/...
		180 M	18.5	118 Nm	SD 135/20	200 Nm	PL 350/7/...

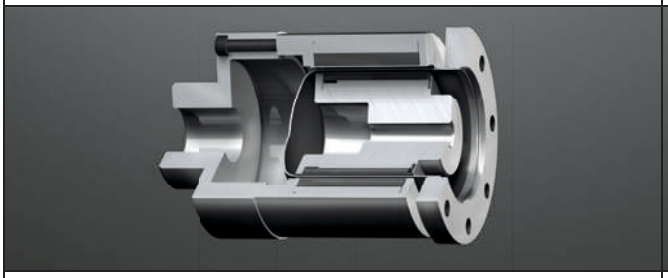
Other types



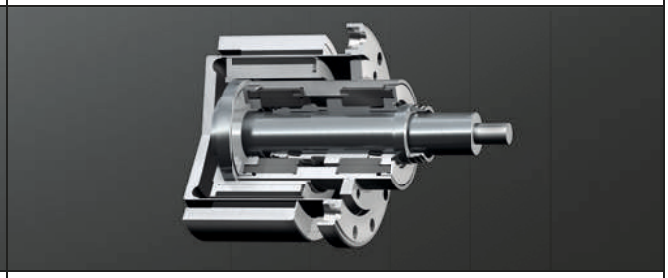
Disk coupling
With this type the magnets are arranged opposite to each other in axial direction. This type becomes relevant if there is only little axial mounting space and a flat separating wall between the rotors is requested.



Hysteresis coupling MINEX®-H
Different from the MINEX®-S magnetic coupling this type switches to slipping operation once the maximum transmittable torque has been achieved, while it continues to transmit Tmax as a holding torque. Applications: roller conveyors, winder drives, etc.



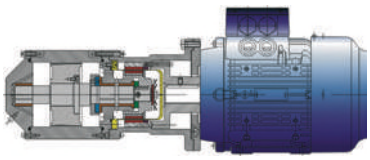
MINEX®-S fully made of stainless steel
If requested, KTR supplies MINEX®-S fully made of stainless steel. The magnets of the external rotor are encapsulated just like with the internal rotor. Applications: roller conveyors, winder drives, etc.



Customized special solutions
If requested, KTR supplies MINEX®-S in combination with the slide bearing required for the driven shaft.

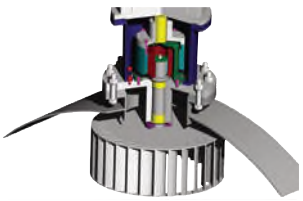
Use of MINEX®-S on a small centrifugal pump

MINEX®-S for sealing homogenizers for heavy oil processing in marine operation



Retrofitting of a gear pump with MINEX® SA 75/10, bellhousing PK 200/30, foot flange and damping rod

MINEX®-S for sealing of autoclaves (T.B.M./STERICHEM) in laboratories and hospitals



Technical data for coupling selection/selection of components

Motor type	_____	Pump type	_____
Driving power	_____ kW	Speed	_____ rpm
Pressure	_____ bar	Temperature	_____ °C
Viscosity of medium	_____ mm²/s	Max. perm. dimensions	_____ ØD x L_{total}