POLY-NORM®
Short torsionally flexible shaft coupling

REVOLEX® KX
Torsionally flexible pin & bush coupling

POLY
Torsionally flexible coupling, not failsafe

Made for Motion KTR

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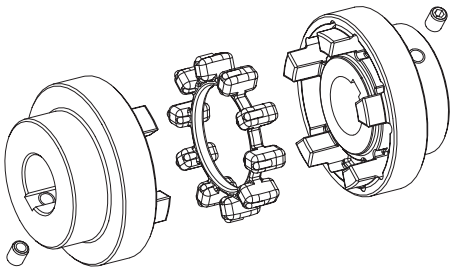
Coupling description

General description

The POLY-NORM® coupling is a torsionally flexible, shear type shaft coupling. It has an axial plug-in design with a unique short over all length. The POLY-NORM® can be used in nearly all types of machinery and is ideal for the pump industry.

The POLY-NORM® coupling compensates for shaft misalignment of all kinds and safely transmits the torque.



Function/Design

The coupling consists of two hubs, with fingers separated by elastomeric elements. The hubs are assembled blindly plugging the hub fingers into each other axially and the elastomer ring is trapped in a groove between both coupling hubs. The compact POLY-NORM® coupling transmits torque with the elastomer in compression.

Shaft misalignments, vibrations and shock loads are effectively absorbed by the POLY-NORM®.

The coupling is maintenance-free and used in general machinery, the pump industry and in compressors. Torques of up to 26,800 Nm are stocked in 17 different sizes and 7 designs. In addition to the standard coupling models, flange drop out center and spacer options are available in many variations.

Explosion-proof use

POLY-NORM® couplings are suitable for the use in drives in hazardous areas. The couplings are certified according to EC Standard 94/9/EC (ATEX 95) and belong to category 2G/2D, are confirmed and thus suitable for the use in hazardous areas of zone 1, 2, 21 and 22. Please read our information in the respective Type Examination Certificate and the operating and mounting instructions under www.ktr.com.

Variety of Options

The coupling can be adapted to many applications due to the many options that are possible with the building block arrangement. The POLY-NORM® components of a given model can be mixed and matched with each other to obtain different shaft distances using the same basic component.

On request, we can provide customized variations of the POLY-NORM® to fit your needs – for example, our POLY-NORM® overload coupling with RUFLEX® torque limiter. Just ask us!

Coupling selection

Selection of the POLY-NORM® coupling meets the DIN 740 part 2 specification. The coupling must be sized such that the coupling rated nominal torque is not exceeded in any operating condition. A comparison must be made between the application torque vs. the rating of the coupling. The selection process for torsionally flexible shaft couplings is described in detail in the ROTEX® catalogue which can be used for POLY-NORM® couplings as well. The torques T_{KN}/T_{Kmax} mentioned refer to the elastomer ring. The shaft-hub-connection has to be investigated by the customer.

Service factor S_t for temperature				
	-30 °C +30 °C	+40 °C	+60 °C	+80 °C
S_t	1,0	1,2	1,4	1,8

Service factor S_Z for starting frequency				
starting frequency/h	100	200	400	800
S_Z	1,0	1,2	1,4	1,6

Service factor S_A/S_L for shocks	
	S_A/S_L
gentle shocks	1,5
average shocks	1,8
heavy shocks	2,5

Example of calculation – Pump drive with three-phase motor

Given: Details of driving side

Power	P = 75 kW	
Speed	n = 1485 rpm	
Mass moment of inertia	J_A = 1,06 kgm²	→ S_A = 1,5
Starting frequency	z = 6 $^1/_h$	→ S_z = 1,0
Ambient temperature	= + 60 °C	→ S_t = 1,4

Given: Details of driving side

Pump

Nominal torque	T_{LN} = 400 Nm	
Peak torque [1]	T_{LS} = 300 Nm	[1] Peak value with shock load
Mass moment of inertia	J_L = 2,3 kgm²	→ S_L = 1,5

Calculation

● Rated driving torque

$$T_{AN}\ [Nm] = 9550 \bullet \frac{P_{AN}[kW]}{n_{AN}\ [rpm]}$$

$$T_{AN} = 9550 \bullet \frac{75\ kW}{1485\ rpm} = \underline{484\ Nm}$$

Coupling selection

● Load produced by rated torque:

$$T_{KN} \geq T_{AN} \bullet S_t$$

$$T_{KN} \geq 484Nm \bullet 1,4 = \underline{678\ Nm}$$

Selected: POLY-NORM® AR Size 75:

T_{KN} = 850 Nm

$T_{K\ max}$ = 1700 Nm

● Load produced by torque shocks:

$T_{K\ max} \geq T_S \bullet S_z \bullet S_t$

Drive-sided shock
$T_S = T_{AS} \bullet M_A \bullet S_A$

● Driving torque:

$T_{AS} = 2 \bullet T_{AN}$

$= 2 \bullet 484\ Nm = 968\ Nm$

$$M_A = \frac{J_L}{(J_A + J_L)} = \frac{2,3\ kgm^2}{(1,06kgm^2 + 2,3\ kgm^2)} = \underline{0,68}$$

T_S = 968 Nm • 0,68 • 1,5 = <u>987 Nm</u>

$T_{K\ max} \geq$ 987 Nm • 1 • 1,4 = <u>1381Nm</u>

$T_{K\ max}$ with 1700 Nm ≥ 1381 Nm ✓

$T_{K\ max} \geq T_S \bullet S_z \bullet S_t$

Shock on driven side
$T_S = T_{LS} \bullet M_L \bullet S_L$

$$M_A = \frac{J_A}{(J_L + J_A)} = \frac{1,06\ kgm^2}{(2,3\ kgm^2 + 1,06\ kgm^2)} = \underline{0,32}$$

T_S = 300 Nm • 0,32 • 1,5 = 144 Nm

$T_{K\ max} \geq$ 144 Nm • 1,0 • 1,4 + 400 Nm • 1,4 = 762 Nm

$T_{K\ max}$ with 1700 Nm ≥ 762 Nm ✓

Technical data

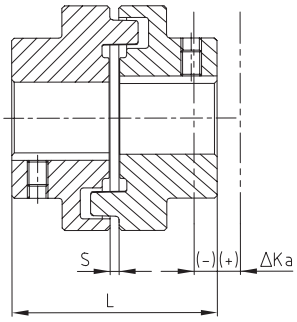
POLY-NORM® Technical data

Size	Torque [Nm]			Max. speed [rpm] at V = 35 m/s	Twisting angle with		Torsion spring stiffness C_{dyn} [Nm/rad]				Max. permissible displacement [mm] [1]		
	Nominal T_{KN}	Max. $T_{Kmax.}$	Alternating T_{KW}		T_{KN}	T_{Kmax}	1,0 T_{KN}	0,75 T_{KN}	0,5 T_{KN}	0,25 T_{KN}	Axial ΔKa	Radial ΔKr	Angular ΔKw
28	40	80	16	9650	4,5	6,0	5200	3318	1867	897	± 1,0	0,20	1,2
32	60	120	24	8550			7820	4989	2821	1349	± 1,0	0,25	1,4
38	90	180	36	7650			13540	8639	4885	2336	± 1,0	0,25	1,5
42	150	300	60	6950			26250	16748	9471	4528	± 1,0	0,25	1,7
48	220	440	88	6300			29896	19074	10786	5157	± 1,5	0,30	1,8
55	300	600	120	5650			38500	24563	13891	6641	± 1,5	0,30	2,0
60	410	820	164	5150	4,0	5,5	67600	43129	23200	11661	± 1,5	0,30	2,2
65	550	1100	220	4750			81800	52188	26994	14111	± 1,5	0,35	2,4
75	850	1700	340	4200			122900	78410	40557	21200	± 1,5	0,40	2,7
85	1350	2700	540	3650			243045	155063	74858	41925	± 1,5	0,40	3,0
90	2000	4000	800	3300			361571	230682	111364	62371	± 1,5	0,45	3,4
100	2900	5800	1160	2950			548200	349752	168846	94565	± 3,0	0,50	3,9
110	3900	7800	1560	2650			792300	505487	244028	136672	± 3,0	0,60	4,3
125	5500	11000	2200	2350	2,5	3,5	1023240	652827	315158	176509	± 3,0	0,60	4,8
140	7200	14400	2880	2100			1640430	1046594	508533	282974	± 3,0	0,60	5,5
160	10000	20000	4000	1900			2090930	1334013	648188	360685	± 3,0	0,65	6,1
180	13400	26800	5360	1650			2670700	1703907	827917	460696	± 3,0	0,65	6,0

[1] Displacement at n = 1500 rpm.
Angular and radial displacement can occur at the same time. The sum of all displacements must not exceed the figures set forth in the table. Couplings may be dynamically balanced on request. (Semi-wedge balancing G 6,3 with 1500 rpm). For circumferential speeds exceeding V = 20 m/s we would recommend dynamic balancing.

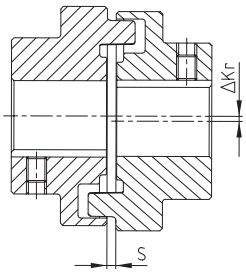
Displacements

Axial displacement ΔKa

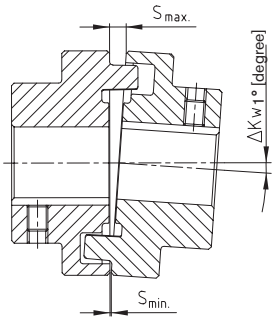


$L_{max./min} = L + \Delta Ka$ [mm]

Radial displacement ΔKr



Angular displacement ΔKw



$\Delta Kw = S_{max.} - S_{min.}$ [mm]

Assembly Guidelines

During assembly, the coupling halves must be mounted in a way that the coupling hub faces are flush to the end of the shafts. The alignment of the shafts must be adjusted that radial and the angular displacements are minimal. The life of the coupling and bearings is extended by precise alignment. Steps must be taken to ensure that the alignment will not change during all operating conditions. Shaft displacements which cannot be avoided must not exceed the figures indicated in the table. Angular and radial displacements can occur at the same time but the sum of these displacements must not exceed the figures set forth in the table above. See the KTR mounting instructions, KTR standard 49510 at our homepage www.ktr.com.

General information about the elastomer

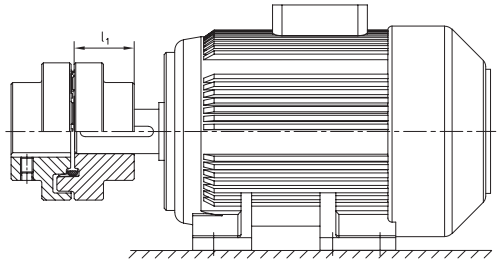
Material/Hardness	Perbunan [NBR]/78 Shore-A
Permanent temperature range [°C]	- 30 to + 80
Max. temperature (short time) [°C]	- 50 to + 120
Applications	General machine construction
	Pump industry
	ATEX applications
	Chemical industry
	Applications of average elasticity
Resistant to	Gasoline, diesel
	Acids, bases
	Tropics
	(Salt-) Water (hot/cold)
	Oils, greases
	Propane, butane
	Natural gas, city gas

Elastomer ring NBR 78 Shore-A

Elastomer ring Viton

Elastomeres Viton [FKM] 60 Shore-A for the high-temperature range

Selection of standard IEC motors



POLY-NORM® couplings for standard IEC motors, protection IP 54/IP 55 (elastomer ring 78 Shore-A)

A. C. motor 50 Hz			Motor output n = 3000 rpm 2-pole		POLY-NORM® coupling size	Motor output n = 1500 rpm 4-pole		POLY-NORM® coupling size	Motor output n = 1000 rpm 6-pole		POLY-NORM® coupling size	Motor output n = 750 rpm 8-pole		POLY-NORM® coupling size
Size	Shaft end dxl [mm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]	
	2-pole	4,6,8 pole												
56	9 x 20		0,09	0,32		0,06	0,43		0,037	0,43				
			0,12	0,41		0,09	0,64		0,045	0,52				
63	11 x 23		0,18	0,62		0,12	0,88		0,06	0,7				
			0,25	0,86		0,18	1,3		0,09	1,1				
71	14 x 30		0,37	1,3		0,25	1,8		0,18	2		0,09	1,4	
			0,55	1,9		0,37	2,5		0,25	2,8		0,12	1,8	
80	19 x 40		0,75	2,5	**28/32**	0,55	3,7	**28/32**	0,37	3,9	**28/32**	0,18	2,5	**28/32**
			1,1	3,7		0,75	5,1		0,55	5,8		0,25	3,5	
90S	24 x 50		1,5	5		1,1	7,5		0,75	8		0,37	5,3	
90L			2,2	7,4		1,5	10		1,1	12		0,55	7,9	
100L	28 x 60		3	9,8		2,2	15		1,5	15		0,75	11	
						3	20					1,1	16	
112M			4	13		4	27		2,2	22		1,5	21	
132S	38 x 80		5,5	18		5,5	36		3	30		2,2	30	
			7,5	25	**38**			**38**			**38**			**38**
132M						7,5	49		4	40		3	40	
									5,5	55				
160M	42 x 110		11	36		11	72		7,5	75	**42**	4	54	**42**
			15	49	**42**			**42**				5,5	74	
160L			18,5	60		15	98		11	109		7,5	100	
180M	48 x 110		22	71	**48**	18,5	121	**48**			**48**			**48**
180L						22	144		15	148		11	145	
200L	55 x 110		30	97		30	196	55	18,5	181	**55**	15	198	**55**
			37	120	**55**				22	215				
225S	55 x 110	60 x 140				37	240	**60**			**60**	18,5	244	**60**
225M			45	145		45	292		30	293		22	290	
250M	60 x 140	65 x 140	55	177	**60**	55	356	**65**	37	361	**65**	30	392	**65**
280S	65 x 140	75 x 140	75	241		75	484	**75**	45	438	**75**	37	483	**75**
280M			90	289	**65**	90	581		55	535		45	587	
315S		80 x 170	110	353		110	707	**85**	75	727	**85**	55	712	**85**
315M			132	423	**75**	132	849		90	873		75	971	
			160	513		160	1030		110	1070	**90**	90	1170	**90**
315L			200	641		200	1290	**90**	132	1280		110	1420	
					85				160	1550	**100**	132	1710	**100**
315		85 x 170	250	802		250	1600	**100**	200	1930		160	2070	
			315	1010		315	2020		250	2410	**110**	200	2580	**110**
			355	1140	**90**	355	2280	**110**	315	3040	**125**	250	3220	**125**
355	75 x 140	95 x 170	400	1280		400	2570		400	3850		315	4060	
			500	1600		500	3210				**140**			**140**
			560	1790	**100**	560	3580	**125**	450	4330		355	4570	
400	80 x 170	110 x 210	630	2020		630	4030		500	4810		400	5150	
			710	2270	**110**	710	4540	**140**	560	5390	**160**	450	5790	**160**
			800	2560		800	5120		630	6060		500	6420	
450	90 x 170	120 x 200	900	2880	**125**	900	5760	**160**	710	6830	**180**	560	7190	**180**
			1000	3200		1000	6400		800	7690		630	8090	

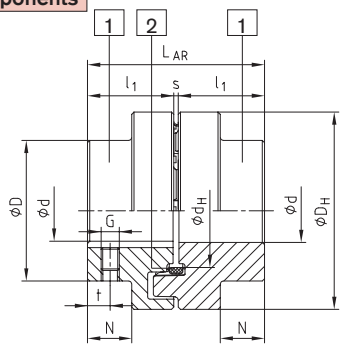
The arrangement of couplings is valid for an ambient temperature of up to + 30 °C. For the selection there is a minimum safety factor of 2 of the max. coupling torque ($T_{KMax.}$). A detailed arrangement is possible according to catalogue, page 52. Drives with periodical torque curves must be selected according to DIN 740 part 2. If requested, KTR will make the selection.

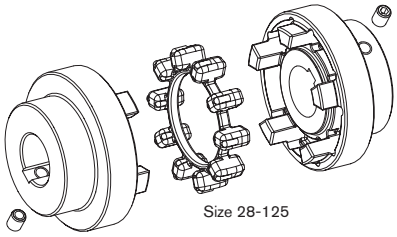
The coupling selection assumes normal operating conditions. Torque T = nominal torque according to Siemens catalogue M 11 · 1994/95.

Type AR

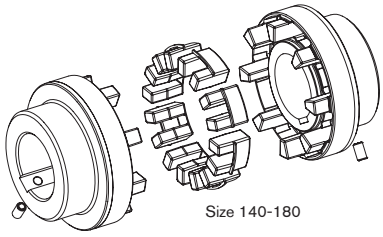
- Torsionally flexible, reduces vibrations
- Failsafe
- Maintenance-free
- Very short design
- Axial plug-in
- According to DIN 740
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)
- Detailed mounting instructions and further information available at www.ktr.com

Components





Size 28-125



Size 140-180

1 = Standard hub
2 = Elastomer ring

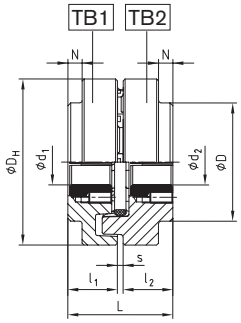
Componets:
Type AR
(GJL)
(NBR 78 Sh-A)

POLY-NORM® Type AR

Size	Elastomer ring (part 2) [1] Torque [Nm]		Max. finish-bore Ø d [2]	Dimensions [mm] General							Thread for setscrew [2]		Mass moment of inerrtia [kgm²] [3]	AR [3] Weight [kg]
	T_{KN}	$T_{K\,max.}$		L_{AR}	l_1	s	D_H	D	d_H	N	G	t		
28	40	80	30	59	28	3	69	46	36,5	12	M5	7	0,0004	0,9
32	60	120	35	68	32	4	78	53	41,5	14	M8	7	0,0008	1,4
38	90	180	40	80	38	4	87	62	50	19,5	M8	10	0,0016	2,0
42	150	300	45	88	42	4	96	69	55,5	20	M8	10	0,0026	2,7
48	220	440	50	101	48	5	106	78	64	24	M8	15	0,0042	3,7
55	300	600	60	115	55	5	118	90	73	29	M8	14	0,0070	5,5
60	410	820	65	125	60	5	129	97	81	33	M8	15	0,0112	6,9
65	550	1100	70	135	65	5	140	105	86	36	M10	20	0,0174	8,8
75	850	1700	80	155	75	5	158	123	100	42,5	M10	20	0,028	13,5
85	1350	2700	90	175	85	5	182	139	116	48,5	M10	25	0,052	19,5
90	2000	4000	95	185	90	5	200	148	128	49	M12	25	0,090	23,2
100	2900	5800	110	206	100	6	224	165	143	55	M12	25	0,160	31,9
110	3900	7800	50-120	226	110	6	250	185	158	60	M16	30	0,317	38,0
125	5500	11000	55-140	256	125	6	280	210	178	70	M16	35	0,570	55,2
140	7200	14400	65-155	286	140	6	315	235	216	76,5	M20	35	1,030	92,6
160	10000	20000	75-175	326	160	6	350	265	246	94,5	M20	45	1,746	126,9
180	13400	26800	75-200	366	180	6	400	300	290	111,5	M20	50	3,239	181,8

[1] Standard material perbunane (NBR) 78 Shore A, size 140 - 180 double tooth elastomers, selection see page 52
[2] Bore H7 with keyway DIN 6885 sheet 1 [JS9] and threads for setscrews on the feather keyway.
[3] Refer to medium bore

Components



POLY-NORM® with taper clamping sleeve

	Size	Taper clamping sleeve	Dimensions [mm] max. $d_1; d_2$	$l_1; l_2$	Fixing screws [1] for taper sleeve Size [Inch]	Length [mm]	SW [mm]	T_A [Nm]
	32	1108	25	25,5	1/4"	13	3	5,7
NEW	42	1210	32	31,0	3/8"	16	5	20
	48	1610	40	30,0	3/16"	16	5	20
		1615	40	42,5	3/8"	16	5	20
	60	2012	50	38,5	7/16"	22	6	31
NEW	65	2517	60	62,5	1/2"	25	6	49

	Size	Taper clamping sleeve	Dimensions [mm] max. $d_1; d_2$	$l_1; l_2$	Fixing screws [1] for taper sleeve Size [Inch]	Length [mm]	SW [mm]	T_A [Nm]
	75	2517	60	52,5	1/2"	25	6	49
	85	2517	60	46,5	1/2"	25	6	49
NEW	3030	75	82	5/8"	32	8	90	
	90	3020	75	52,0	5/8"	32	8	92
	100	3535	90	98,0	1/2"	38	10	115
	125	4040	100	111,5	5/8"	45	12	172

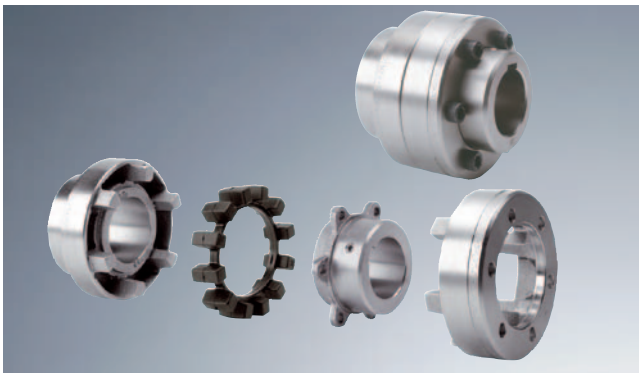
[1] 2 fixing screws except for 3535/4040 3 fixing screws.

Coupling design TB 1 Cam-sided screwing TB 2 Collar-sided screwing
Combination possible Please ask for our seperate data sheet M407045

Order form:

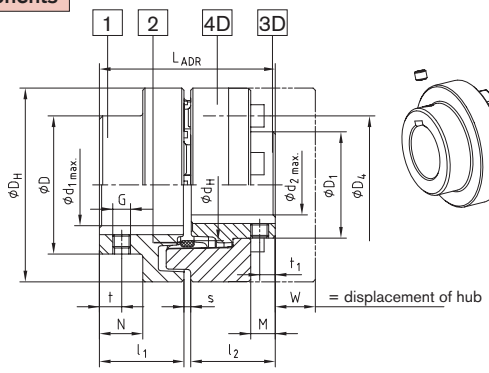
POLY-NORM® 38	AR	Ø38	Ø30
Coupling size	Type	Finish bore	Finish bore

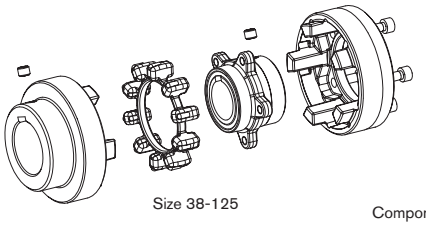
Type ADR (3-part design)



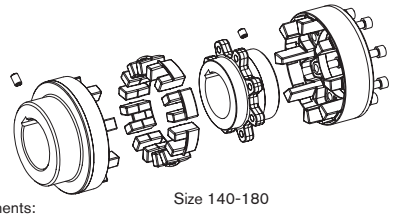
- Torsionally flexible, reduces vibrations
- Elastomer ring can be exchanged in assembled condition
- Failsafe
- Maintenance-free
- Short design
- Axial plug-in
- According to DIN 740
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)
- Detailed mounting instructions and further information available at www.ktr.com

Components





Size 38-125



Size 140-180

Components:

Type ADR (3-part)

1	=	Standard hub*	(GJL)
2	=	Elastomer ring	(NBR 78 Sh-A)
3D	=	Flange hub	(GJS)
4D	=	Cam ring	(GJL)

* To be preferably used drive-sided

POLY-NORM® Type ADR

Size	Elastomer ring torque [Nm] 1)		Dimensions [mm]															
			Max. finish bore 2)		General										Thread for setscrew			
	T_{KN}	$T_{Kmax.}$	d_1	d_2	L_{ADR}	l_1/l_2	s	D_H	D	D_1	d_H	N	M	W	G	t	t_1	T_A [Nm]
38	90	180	40	34	80	38	4	87	62	48	50	19,5	11,0	12	M8	10	7	10
42	150	300	45	38	88	42	4	96	69	54	55,5	20	12,0	16	M8	10	7	10
48	220	440	50	44	101	48	5	106	78	62	64	24	13,7	16	M8	15	7	10
55	300	600	60	50	115	55	5	118	90	72	73	29	18,7	15	M8	14	14	10
60	410	820	65	56	125	60	5	129	97	80	81	33	22,2	14	M8	15	15	10
65	550	1100	70	60	135	65	5	140	105	86	86	36	26,7	11	M10	20	20	17
75	850	1700	80	68	155	75	5	158	123	98	100	42,5	27,8	16	M10	20	20	17
85	1350	2700	90	78	175	85	5	182	139	112	116	48,5	33,7	18	M10	25	25	17
90	2000	4000	95	85	185	90	5	200	148	122	128	49	31,5	26	M12	25	25	40
100	2900	5800	110	95	206	100	6	224	165	136	143	55	37,5	28	M12	25	25	40
110	3900	7800	50-120	105	226	110	6	250	185	150	158	60	39,5	30	M16	30	30	80
125	5500	11000	55-140	115	256	125	6	280	210	168	178	70	48,0	35	M16	35	35	80
140	7200	14400	65-155	55-135	286	140	6	315	235	195	216	76,5	47,0	59	M20	35	35	140
160	10000	20000	75-175	65-155	326	160	6	350	265	225	246	94,5	65,0	43	M20	45	45	140
180	13400	26800	75-200	65-175	366	180	6	400	300	255	290	111,5	79,0	33	M20	50	50	140

1) Standard material perbunane (NBR) 78 Shore A, size 140 - 180 double tooth elastomers, selection page 52

2) Bore H7 with keyway to DIN 6885 sheet 1(JS9) with thread for set screws

Classification of cap crews DIN EN ISO 4762–12.9

Size	M x l [mm]	Number z	Separation z x angle	D_4 [mm]	T_A [Nm] 3)	Size	M x l [mm]	Number z	Separation z x angle	D_4 [mm]	T_A [Nm] 3)
38	M6x16	5	5x72	62	10	**90**	M16x30	6	6x60	149	210
42	M8x16	5	5x72	69	25	**100**	M16x30	6	6x60	163	210
48	M8x20	6	6x60	78	25	**110**	M16x40	8	8x45	183	210
55	M8x20	6	6x60	88	25	**125**	M20x40	8	8x45	202	410
60	M8x20	6	6x60	98	25	**140**	M20x50	8	8x45	237	410
65	M10x20	6	6x60	104	49	**160**	M20x55	9	9x40	267	410
75	M10x25	6	6x60	120	49	**180**	M20x60	10	10x36	304	410
85	M12x25	6	6x60	138	86						

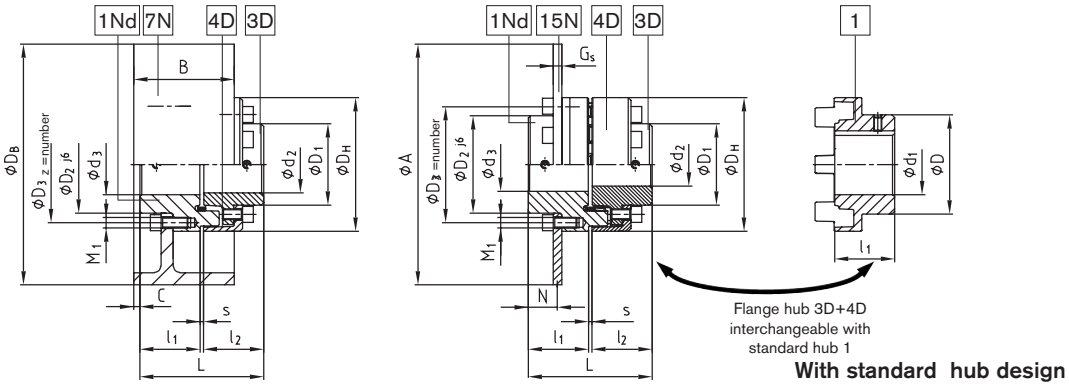
Order form:

POLY-NORM® 65	ADR	d_1 = Ø55	d_2 = Ø60
Coupling size	Type	Finish bore part 1	Finish bore part 3D

Type BTA and SBA with Brake drum/Brake disk for brake stop

- Shaft coupling POLY-NORM® ADR-BTA with brake drum to be mounted to external drum brakes with double shoes according to DIN 15431/15435
- Shaft coupling POLY-NORM® ADR-SBA with disk for braking calipers
- Each coupling type to be combined with various sizes of brake drum disks (see selection)
- The brake drum or brake disk has to be placed onto the shaft end with the biggest mass moment of inertia
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9

Components



Brake drum design ADR-BTA | **Brake disk design ADR-SBA** | **With standard hub design AR-BTA or AR-SBA**

POLY-NORM® type AR-BTA, AR-SBA, ADR-BTA and ADR-SBA

Size	Elastomer ring torque [Nm] 1)		Dimensions [mm]												
				Finish bore max.											
	T_{KN}	$T_{Kmax.}$	D; D_1	d_1	d_2	d_3	D_H	D_2	D_3	z	M_1	l_1; l_2	s	L
38	90	180	For dimension diameter ØD, ØD_1 please see our company catalogue on page 55 and 56.	40	34	38	87	61	75	5 x 72°	M6	38	4	80
42	150	300		45	38	42	96	68	82	5 x 72°	M8	42	4	90
48	220	440		50	44	48	106	77	92	6 x 60°	M8	48	5	101
55	300	600		60	50	55	118	88	104	6 x 60°	M8	55	5	115
60	410	820		65	56	60	129	96	114	6 x 60°	M8	60	5	125
65	550	1100		70	60	65	140	104	122	6 x 60°	M10	65	5	135
75	850	1700		80	68	75	158	121	140	6 x 60°	M10	75	5	155
85	1350	2700		90	78	85	182	137	160	6 x 60°	M12	85	5	175
90	2000	4000		95	85	90	200	146	174	6 x 60°	M16	90	5	185
100	2900	5800		110	95	100	224	164	195	6 x 60°	M16	100	6	206
110	3900	7800		50-120	105	50-110	250	184	218	8 x 45°	M16	110	6	226
125	5500	11000		55-140	115	55-125	280	208	245	8 x 45°	M20	125	6	256
140	7200	14400		65-155	55-135	65-140	315	233	276	8 x 45°	M20	140	6	286
160	10000	20000		75-175	65-155	75-160	350	263	308	9 x 40°	M20	160	6	326
180	13400	26800		75-200	65-175	75-180	400	298	349	10 x 36°	M20	180	6	366

POLY-NORM® BTA

POLY-NORM® Size 2) / D_BxB Brake drum	Dimensions [mm] C															Speed rpm with v= 60 m/s 3)
	38	42	48	55	60	65	75	85	90	100	110	125	140	160	180	
160x60	4															7150
200x75	9	8	4													5725
250x95	17	16	20	7	3	0										4575
315x118		25	21	16	12	9	2,5	-3,5								3625
400x150			34	28	25	22	15,5	9,5	9	3						2850
500x190									18	12	-2					2275
630x236											20	13	-4			1800
710x265												24	7	-11		1600

POLY-NORM® SBA

POLY-NORM® Size 2) / Brake disk	Dimensions [mm] N															Speed rpm with v= 60 m/s 3)
	38	42	48	55	60	65	75	85	90	100	110	125	140	160	180	
200x12,5	13,75															5725
250x12,5	13,75	14,75	18,75													4575
315x16		13	17	22	26	29	35,5									3625
400x16			17	22	26	29	35,5	41,5	42	48						2850
500x16				22	26	29	35,5	41,5	42	48	54	64				2275
630x20										46	52	62	69	86		1800
710x20										46	52	62	69	86	104	1600
800x25										43,5	49,5	59,5	66,5	83,5	101,5	1425
900x25											49,5	59,5	66,5	83,5	101,5	1250

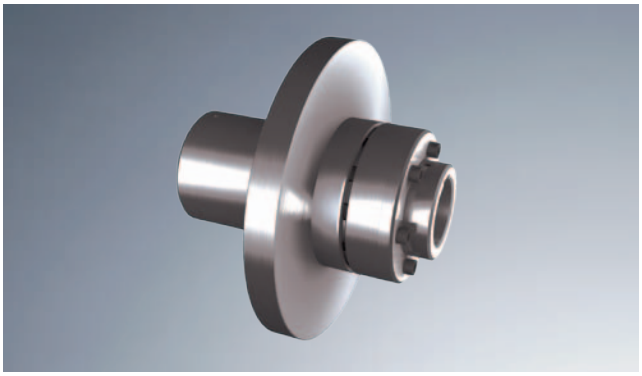
1) Standard material Perbunan [NBR], selection see page 52
2) Steel
3) Dynamical balancing necessary

Futher sizes on request

Order form:

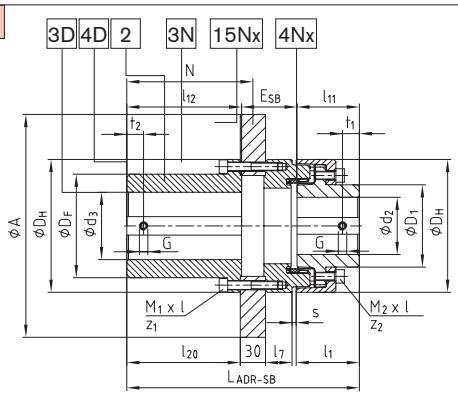
POLY-NORM® 38	ADR-BTA	Ø200 x 75	d_2 - Ø32 NnD	d_3 - Ø25 NnD
Coupling size	Type	Ø brake drum	Component with finish bore	Component with finish bore

Type ADR-SB with Brake disk for brake stop

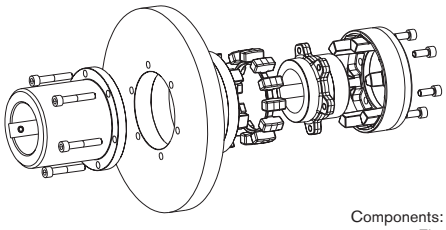


- Shaft coupling Poly-Norm ADR-SB with disk for brake calipers
- Each coupling type to be combined with various sizes of brake disks
- Elastomer ring, driving flange and brake disk to be replaced while being assembled
- The brake disk has to be placed onto the shaft end with the biggest mass moment of inertia
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9

Components



Type ADR-SB with brake disk



Components:
2 = Elastomer ring
3D = Flange hub
4D = Cam ring
3N = Driving flange
15Nx = Brake disk
4Nx = Coupling flange

POLY-NORM® Type ADR-SB

Size	Elastomer ring torque [Nm] 1)		Max. finish bore [mm]		Dimensions [mm]												Thread for setscrew		
	T_{KN}	T_{Kmax}	d_2	d_3	D_H	N	l_2	s	l_{11}	l_{12}	D_F	l_7	l_{20}	L_{ADR-SB}	D_1	E	G	t_1/t_2	T_A [Nm]
55	300	600	50	60	118	150	55	5	54,7	136,5	88	24,0	135	249,0	72	57,8	M8	15	10
60	410	820	56	65	129	150	50	5	59,2	136,5	97	25,0	135	255,0	80	59,3	M8	20	10
65	550	1100	60	70	140	150	65	5	63,7	136,5	105	26,5	135	261,5	86	61,3	M10	20	17
75	850	1700	68	80	158	150	75	5	74,0	136,5	123	31,5	135	276,5	98	66,0	M10	20	17
85	1350	2700	78	90	182	150	85	5	84,7	136,5	139	35,0	135	290,0	112	68,8	M10	25	17
90	2000	4000	85	100	200	150	90	5	89,5	136,5	148	39,5	135	299,5	122	73,5	M12	25	40
100	2900	5800	95	110	224	190	100	6	95,5	177,0	165	43,0	175	354,0	136	81,5	M12	25	40
110	3900	7800	105	120	250	190	110	6	105,5	177,0	185	48,0	175	369,0	150	86,5	M16	30	80
125	5500	11000	115	140	280	195	125	6	120,5	182,0	210	53,0	180	394,0	168	91,5	M16	35	80
140	7200	14400	135	160	315	195	140	6	130,0	182,0	235	60,5	180	416,5	195	104,5	M20	35	140
160	10000	20000	155	180	350	195	160	6	150,0	182,0	265	62,5	180	438,5	225	106,5	M20	45	140

Classification of brake disks and cap screws

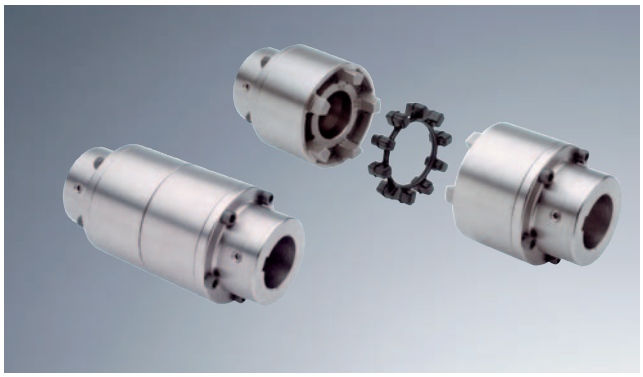
Size	ØA brake disk [mm]/ thickness 30 mm 2) 3)	Cap screws DIN EN ISO 4762 for brake disk			Cap screws DIN EN ISO 4762 for flange hub/cam ring		
		M_1 x l	number z_1	Tightening torque T_A [Nm]	M_2 x l	number z_2	Tightening torque T_A [Nm]
55	250 — 450	M8x20	6	10	M8x20	6	25
60	250 — 500	M8x20	6	10	M8x20	6	25
65	315 — 500	M8x55	6	35	M10x20	6	49
75	315 — 560	M10x60	6	69	M10x25	6	49
85	355 — 560	M10x60	6	69	M12x25	6	86
90	400 — 710	M12x65	6	120	M16x30	6	210
100	400 — 800	M12x65	6	120	M16x30	6	210
110	450 — 900	M16x75	8	295	M16x40	8	210
125	450 — 900	M16x75	8	295	M20x40	8	410
140	500 — 900	M20x80	8	410	M20x50	8	410
160	560 — 900	M20x90	9	410	M20x55	9	410

1) Standard material Perbunan (NBR) 78 Shore-A, selection page 52
2) Steel
3) For circumferential speeds exceeding 20 m/s (referring to the outside diameter Ø D_H) dynamic balancing is necessary. Maximum circumferential speed = 60 m/s (referring to the brake disk diameter ØA)

Order form:

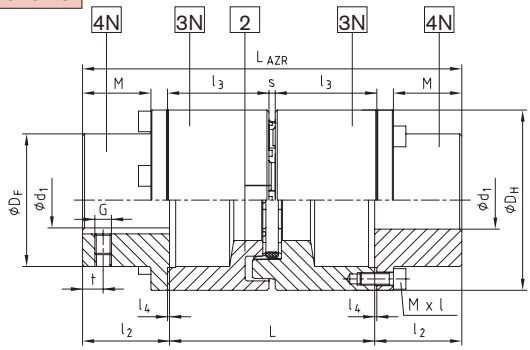
POLY-NORM® 75	ADR-SB	Ø500 x 30	3D d_1 - Ø60 NnD	4Nx d_2 - Ø70 NnD
Coupling size	Type	Brake disk ØA/width	Component with finish bore	Component with finish bore

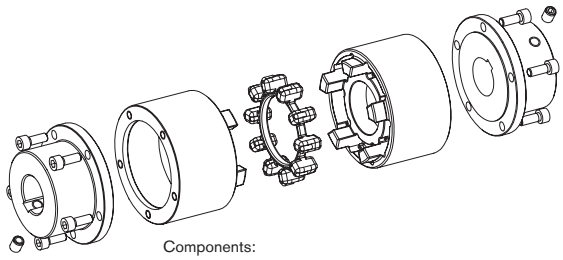
Type AZR



- Connection of long shaft gaps with spacers
- Enables a change of the elastomer without disassembly of the drive and the driven components.
- No movement of driver and driven components is necessary for disassembly of pump thrust bearing.
- Custom designs are available (AZVR)
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)
- Detailed mounting instructions and further information available at www.ktr.com

Components





Components:
Type AZR

2	=	Elastomer ring	(NBR 78 Sh-A)
3N	=	Driving flange	(GJS)
4N	=	Coupling flange	(Steel)

POLY-NORM® Type AZR

Size	Drop out center length L [mm] *	Elastomer ring (p. 2) [1] torque [Nm] T_{KN}	T_{Kmax}	Max. finish bore [2] Ø d_1	Dimensions [mm] General L_{AZR}	l_2	l_3	s	l_4	D_H	D_F	M	Mxl	T_A [Nm]	Thread for setscrew [2] G	t	Mass moment of inertia [3] [kgm²]	AZR Weight [3] [kg]
28	100	40	80	30	170	35	49,5	3	1	69	46	26	M6x18	14	M5	7	0,0020	2,4
	140				210		69,5										0,0030	2,9
32	100	60	120	35	170	35	49	4	1	78	53	26	M6x18	14	M8	7	0,0042	3,2
	140				210		69										0,0062	3,9
38	100	90	180	40	184	42	49	4	1	87	62	33	M6x20	14	M8	10	0,0048	4,3
	140				224		69										0,0068	5,1
42	100	150	300	45	190	45	49	4	1	96	69	35	M6x20	14	M8	10	0,0094	5,1
	140				230		69										0,0128	6,0
48	100	220	440	50	204	52	49	5	1,5	106	78	41,5	M6x20	14	M8	15	0,0170	6,6
	140				244		69										0,0216	7,5
	100				210		49										0,0188	9,4
55	140	300	600	60	250	55	69	5	1,5	118	88	43,5	M8x25	35	M8	14	0,0240	10,8
	180				290		89										0,0232	12,2
	100				220		49										0,0326	11,2
60	140	410	820	65	260	60	69	5	1,5	129	97	47,5	M8x25	35	M8	15	0,0414	13,0
	180				300		89										0,0504	14,6
	100				230		49										0,0564	14,0
65	140	550	1100	70	270	65	69	5	1,5	140	105	51,5	M8x25	35	M10	20	0,0730	15,8
	180				310		89										0,0894	17,5
	140				290		69										0,0824	23,2
75	180	850	1700	80	330	75	89	5	1,5	158	123	60,5	M10x30	69	M10	20	0,1008	25,6
	250				400		124										0,1332	29,8
	140				310		69										0,1570	32,1
85	180	1350	2700	90	350	85	89	5	1,5	182	139	69,5	M10x30	69	M10	25	0,1658	35,2
	250				420		124										0,1812	40,7
	140				320		69										0,2466	38,2
90	180	2000	4000	100	360	90	89	5	1,5	200	148	73,5	M12x35	120	M12	25	0,2880	42,2
	250				430		124										0,3566	49,3
	140				340		69										0,3988	50,0
100	180	2900	5800	110	380	100	89	6	2	224	165	83	M12x35	120	M12	25	0,4450	54,8
	250				450		124										0,5465	63,2

[1] Standard material Perbunan (NBR) 78 Shore-A, selection page 52 [2] Bore H7 with keyway DIN 6885 sheet 1 [JS9] and threads for setscrews on the feather keyway.
[3] Refer to medium bore
*For other extendable lengthes (L=120/160/195/215) it is possible to combine two driving flanges 3N with various lengthes (as an example: driving flanges POLY-NORM® 85 for extendable length 140 and 250 result in an extendable length of 195 mm (140 mm + 250 mm = 390 mm 390 mm/2 = 195 mm).

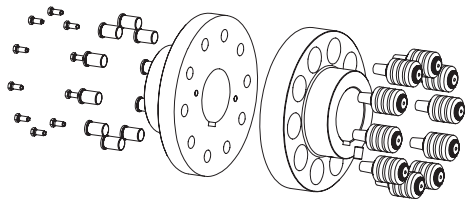
Order form:

POLY-NORM® 42	AZR	140	Ø38	Ø42
Coupling size	Type	Drop out center lenght L	Finish bore	Finish bore

Coupling description

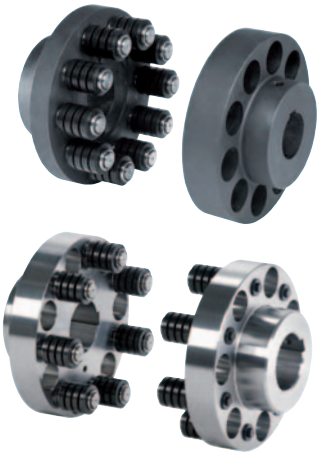
General description

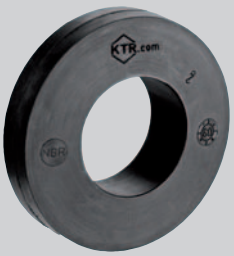
REVOLEX® KX is a torsionally flexible, failsafe pin & bush coupling. It can be plugged in axially and is characterized by its short design. In addition, REVOLEX® KX allows for an easy disassembly of the elastomer rings including the pins while being assembly. Taking into account the transmittable torque, REVOLEX® KX is based on the POLY-NORM® coupling.
The REVOLEX® KX coupling compensates for every kind of shaft misalignment while transmitting the torque safely.



Operation/Arrangement

The coupling consists of two hubs. The torque is transmitted via the steel pins with their taper elastomer rings.
As a result all kinds of shaft misalignment, for example caused by inaccurate alignment of the driving or driven elements, is compensated for reliably and vibrations and shocks are compensated for excellently.
The coupling is maintenance-free and is used in general engineering and the pump industry, conveyor technology, etc. For an optimum adjustment to the different applications, 21-off sizes are available covering torques up to 1.220.000 Nm. Apart from the standard programme customized solutions are available.



General information about the elastomer ring			
Material	Perbunan (NBR)	Natural rubber (NR)	Perbunan (NBR)
Hardness	80 Shore-A	80 Shore-A	80 Shore-A
Permanent temperature range [°C]	- 30 to +80	- 50 to +70	- 30 to +80
Max. temperature (short-term) [°C]	- 50 to +120	–	–
Colour	black	black	blue
Application	STANDARD	Temperatures below zero	Electrically insulating, e. g. ropeway drives
			

Explosion-proof use

REVOLEX® KX couplings are suitable for the use in drives in hazardous areas. The couplings are certified according to EC Standard 94/9/EC (ATEX 95) and belong to category 2G/2D, are confirmed and thus suitable for the use in hazardous areas of zone 1, 2, 21 and 22. Please read our information in the respective Type Examination Certificate and the operating and mounting instructions under www.ktr.com.

Coupling selection

The selection of the REVOLEX® KX coupling has to be dimensioned in a way that the permissible coupling load is not exceeded with any operating condition. For this purpose a comparison between the loads that arise and the permissible coupling parameters has to be performed. The torques T_{KN}/T_{Kmax} mentioned refer to the connection of pins. The shaft-hub-connection needs to be investigated from the part of the customer.

1 **Drives without periodical torsional vibrations**
e. g. centrifugal pumps, fans, screw compressors, etc.
The coupling is selected taking into account the rated torques T_{KN} and maximum torque $T_{K\,max}$.

1.1 **Load by rated torque**
Bestimmung des effektiven Nenndrehmomentes T_N der Arbeitsmaschine.
Determination of the actual rated torque T_N of the machine.

$$T_N\ [Nm] = 9550 \bullet \frac{P_{AN/LN}\ [kW]}{n\ [rpm]}$$

$$T_{KN} \geq T_N \bullet S_B \bullet S_t$$

Taking into account the operating factor S_B and the temperature factor S_t, the permissible rated torque T_{KN} of the coupling has to be at least as high as the rated torque T_N of the machine.

1.2 **Taking into account short-term shocks**
As an example: for the start-up or braking of drives two times the rated torque of the coupling is admitted for up to 10 times an hour.

$$T_{K\,max} \geq 2 \bullet T_{KN}$$

1.3 **Determination of the factor S_B**
see table It is necessary to consult with the engineering department of KTR if:

- the operating speed is close to the critical speed (page 63)
- the ambient temperature exceeds 80 °C
- more than 10 starts per hour are performed

2. **Drives with periodical torsional vibrations.**
For drives subject to high torsional vibrations, e. g. diesel engines, piston compressors, piston pumps, generators, etc., it is necessary to perform a torsional vibration calculation to ensure a safe operation. If requested, we perform the torsional vibration calculation and the coupling selection in our company. For necessary details please see KTR standard 20004.

Description	Symbol	Definition or explanation
Rated torque of coupling	T_{KN}	Torque that can continuously be transmitted over the entire permissible speed range
Maximum torque of coupling	$T_{K\,max}$	Torque that can be transmitted as dynamic load ≥ 10^5 times or 5 x 10^4 as vibratory load, respectively, during the entire operating life of the coupling
Vibratory torque of coupling	T_{KW}	Torque amplitude of the permissible periodical torque fluctuation with a frequency of 10 Hz and a basic load of T_{KN} or dynamic load up to T_{KN}, respectively
Rated torque of machine	T_N	Stationary rated torque on the coupling

Service factor S_t for temperature				
	-30 °C +30 °C	+40 °C	+60 °C	+80 °C
S_t	1,0	1,2	1,4	1,8

Permissible load on feather key of the coupling hub
The shaft-hub-connection has to be verified by the customer.
Permissible surface pressure according to DIN 6892 (method C).

Cast iron GJL	225 N/mm²
material nodular iron GJS	225 N/mm²
material steel	250 N/mm²
for other steel materials p_{zul} =	0,9 • R_e ($R_{p0.2}$)

Example of calculation:

Kneading machine drive with rotary current motor

Details of machine on driving side:

Rotary current	motor size 560
Motor power	P = 1000 kW
Speed	n = 991 rpm

General details:

Ambient temperature	= +40 °C

Coupling selection:
Load by rated torque:

$$T_N = 9550 \bullet \frac{1000\ kW}{991\ rpm} = 9636{,}7\ Nm$$

Operating factor S_B = 1,75 (see page 62)
Temperature factor S_t = 1,2 (see table)

Calculation of coupling torque:

$$T_{KN} \geq T_N \bullet 1{,}75 \bullet 1{,}2 = 20237\ Nm$$

→ **Selected: REVOLEX® KX-170**

Coupling selection

The operating factors listed are based on experiences estimating the operating behaviour of driving and driven combinations. For a periodic impulse of the machine or driving or braking of big masses it is necessary to perform a selection in accordance with DIN 740.

Operating factor S_B	
Agitator	
Light liquid	1,00
Viscous liquid	1,25
Liquid with constant density	1,25
Liquid with variable density	1,50
Liquid mixed with solids	1,75
Compressors	
Rotary compressors	1,00
Rotary compressors	1,25
Construction machines	
Manoeuvre winches	1,25
Swing gears	1,25
Miscellaneous winches	1,50
Filters, cable winches	1,75
Multi-bucket excavators	1,75
Running gears (caterpillars)	1,75
Impellers	1,75
Cutter heads	1,75
Cutter drives	2,00
Construction lifts	1,25
Concrete mixers	1,25
Road machines	1,25
Conveyors	
Bucket elevators	1,50
Freight lifts	1,75
Hauling winches	1,25
Apron conveyors	1,25
Rubber belt conveyors (bulk)	1,25
Boom plate bucket conveyors	1,25
Rotary conveyors	1,25
Steel plate conveyors	1,25
Worm conveyors	1,25
Steel belt conveyors	1,25
Conveyors	1,75
Rubber belt conveyor (piece goods)	1,75
Inclined lifts	1,75
Shaking slides	2,00
Fans, ventilators and blowers	
Centrifugal fans	1,75
Industrial fans	1,75
Rotary blowers	1,75
Fans (axial / radial)	1,75
Fans for cooling towers	1,75
Induced draught ventilators	1,75
Filters	
Screening drums	1,50
Food-processing industry	
Sugarcane harvesters	1,25
Sugar-beet harvesters	1,25
Sugar-beet washing	1,25
Kneading machines	1,75
Sugarcane breakers	1,75
Sugarcane mills	1,75
Generators	
Frequency converters	1,75
Generators	1,75
Lifters/cranes	
Luffing gears	1,00
Swing and sliding gears	1,25
Running gears	1,75
Lifting gears	1,75
Machine tools	
Scissors	1,25
Dressing rollers	1,50
Bending machines	1,50
Hole punching machines	1,75

Operating factor S_B	
Machine tools	
Levelling machines	1,75
Hammers	1,75
Presses	1,75
Forging presses	1,75
Metal industry	
Plate tilters	1,25
Wire pulls	1,25
Winders	1,25
Crawlersr	1,25
Roller levellers	1,25
Winding drums	1,50
Wire drawing machines	1,75
Roller tables (light)	1,75
Plate shears	1,75
Block pushers	1,75
Blooming and slabbing	1,75
De-scalers	1,75
Cold rolling mills	1,75
Billet shears	1,75
Plugging machines	1,75
Continuous casting machines	1,75
Shifting devices	1,75
Roller tables (heavy)	2,00
Mills	
Centrifugal mills	1,75
Beater mills	1,75
Autogenous mills	1,75
Hammer and ball mills	2,00
Mixers	
Constant density	1,50
Variable density	1,75
Oil industry	
Filter presses for paraffin	1,50
Rotary furnaces	1,75
Paper machines	
Couch rolls	1,75
Calenders	1,75
Wet presses	1,75
Pumps	
Rotary pumps (light liquid)	1,00
Rotary pumps (viscous liquid)	1,25
Gear and vane pumps	1,25
Screw type pumps	1,50
Piston pumps, plunger pumps and press pumps	2,00
Rubber & nylon	
Rubber calenders and rolling mills	1,75
Mixers	1,75
Extruders	1,75
Kneading machines	1,75
Sewage plants	
Rakes	1,00
Spiral pumps	1,25
Concentrators	1,25
Mixers	1,25
Aerators	1,75
Textile industry	
Winders	1,25
Printing and dyeing machines	1,25
Tanning barrels	1,25
Shredders	1,50
Woodworking machinery	
Planing machines	1,25
Barking machines	1,75
Saw frames	1,75

Technical data

REVOLEX® KX Technical data

Size	Torque [Nm] NBR 80 Sh-A			Casted material		Steel		Dyn. Torsion spring stiffness			
	Nominal T_{KN}	Max. $T_{Kmax.}$	Alternating T_{KW}	Max. speed [rpm] at V = 35 m/s	Max. bore [mm]	Max. speed [rpm] at V = 60 m/s	Max. bore [mm]	0,25xT_{KN} [Nm/rad]	0,50xT_{KN} [Nm/rad]	0,75xT_{KN} [Nm/rad]	1,00xT_{KN} [Nm/rad]
KX 105	6485	12970	2594	2000	110/125	3475	120/135	$1{,}053x10^6$	$1{,}545x10^6$	$2{,}225x10^6$	$3{,}060x10^6$
KX 120	10080	20160	4032	1800	125/145	3100	140/155	$1{,}242x10^6$	$1{,}675x10^6$	$2{,}350x10^6$	$3{,}167x10^6$
KX 135	14030	28060	5612	1600	140/150	2725	160/165	$1{,}728x10^6$	$2{,}331x10^6$	$3{,}270x10^6$	$4{,}407x10^6$
KX 150	17960	35920	7184	1450	160	2500	185	$2{,}213x10^6$	$2{,}985x10^6$	$4{,}187x10^6$	$5{,}643x10^6$
KX 170	26360	52720	10544	1250	180	2150	220	$3{,}250x10^6$	$4{,}480x10^6$	$7{,}500x10^6$	$9{,}970x10^6$
KX 190	36160	72320	14464	1100	205	1900	245	$4{,}458x10^6$	$6{,}145x10^6$	$1{,}029x10^7$	$1{,}367x10^7$
KX 215	48160	96320	19264	1000	230	1725	275	$5{,}938x10^6$	$8{,}185x10^6$	$1{,}370x10^7$	$1{,}822x10^7$
KX 240	65740	131480	26296	900	250	1550	310	$7{,}850x10^6$	$1{,}675x10^7$	$2{,}575x10^7$	$3{,}465x10^7$
KX 265	91480	182960	36592	800	285	1375	350	$1{,}092x10^7$	$2{,}331x10^7$	$3{,}583x10^7$	$4{,}822x10^7$
KX 280	123530	247060	49412	720	315	1225	385	$1{,}475x10^7$	$3{,}147x10^7$	$4{,}838x10^7$	$6{,}511x10^7$
KX 305	152840	305680	61136	675	330	1150	405	$1{,}830x10^7$	$3{,}904x10^7$	$6{,}002x10^7$	$8{,}076x10^7$
KX 330	188470	376940	75388	625	355	1075	435	$2{,}250x10^7$	$4{,}802x10^7$	$7{,}382x10^7$	$9{,}934x10^7$
KX 355	230110	460220	92044	–	–	975	465	$2{,}748x10^7$	$5{,}863x10^7$	$9{,}013x10^7$	$1{,}213x10^8$
KX 370	302500	605000	121000	–	–	900	550	$3{,}614x10^7$	$7{,}712x10^7$	$1{,}186x10^8$	$1{,}595x10^8$

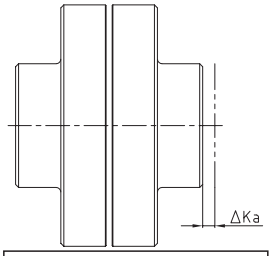
REVOLEX® KX-D Technical data

	Size	Torque [Nm] NBR 80 Sh-A			Casted material		Steel		Dyn. Torsion spring stiffness			
		Nominal T_{KN}	Max. $T_{Kmax.}$	Alternating T_{KW}	Max. speed [rpm] at V = 35 m/s	Max. bore [mm]	Max. speed [rpm] at V = 60 m/s	Max. bore [mm]	0,25xT_{KN} [Nm/rad]	0,50xT_{KN} [Nm/rad]	0,75xT_{KN} [Nm/rad]	1,00xT_{KN} [Nm/rad]
NEW	KX-D 75	3800	7600	1520	–	–	4500	90	$0{,}641x10^6$	$0{,}941x10^6$	$1{,}355x10^6$	$1{,}864x10^6$
NEW	KX-D 85	5000	10000	2000	–	–	4175	100	$0{,}834x10^6$	$1{,}224x10^6$	$1{,}763x10^6$	$2{,}425x10^6$
NEW	KX-D 95	6600	13200	2640	–	–	3845	110	$1{,}077x10^6$	$1{,}580x10^6$	$2{,}277x10^6$	$3{,}131x10^6$
	KX-D 105	8650	17300	3460	2000	110	3475	120	$1{,}404x10^6$	$2{,}060x10^6$	$2{,}967x10^6$	$4{,}081x10^6$
	KX-D 120	14110	28220	5640	1800	125	3100	140	$1{,}742x10^6$	$2{,}350x10^6$	$3{,}297x10^6$	$4{,}443x10^6$
	KX-D 135	18690	37380	7476	1600	140	2725	160	$2{,}304x10^6$	$3{,}108x10^6$	$4{,}360x10^6$	$5{,}876x10^6$
	KX-D 150	23100	46200	9240	1450	160	2500	185	$2{,}880x10^6$	$3{,}885x10^6$	$5{,}450x10^6$	$7{,}345x10^6$
	KX-D 170	36900	73800	14760	1250	180	2150	220	$4{,}550x10^6$	$6{,}272x10^6$	$1{,}050x10^7$	$1{,}396x10^7$
	KX-D 190	48210	96420	19284	1100	205	1900	245	$5{,}980x10^6$	$8{,}243x10^6$	$1{,}380x10^7$	$1{,}834x10^7$
	KX-D 215	61900	123800	24760	1000	230	1725	275	$7{,}634x10^6$	$1{,}052x10^7$	$1{,}762x10^7$	$2{,}342x10^7$
	KX-D 240	92030	184060	36812	900	250	1550	310	$1{,}101x10^7$	$2{,}350x10^7$	$3{,}613x10^7$	$4{,}861x10^7$
	KX-D 265	121900	243800	48760	800	285	1375	350	$1{,}456x10^7$	$3{,}108x10^7$	$4{,}778x10^7$	$6{,}429x10^7$
	KX-D 280	158800	317600	63520	720	315	1225	385	$1{,}896x10^7$	$4{,}047x10^7$	$6{,}221x10^7$	$8{,}371x10^7$
	KX-D 305	191060	382120	76424	675	330	1150	405	$2{,}287x10^7$	$4{,}880x10^7$	$7{,}502x10^7$	$1{,}009x10^8$
	KX-D 330	251200	502400	100480	625	355	1075	435	$3{,}001x10^7$	$6{,}403x10^7$	$9{,}843x10^7$	$1{,}324x10^8$
	KX-D 355	299100	598200	119640	575	380	975	465	$3{,}572x10^7$	$7{,}622x10^7$	$1{,}172x10^8$	$1{,}577x10^8$
	KX-D 370	377800	755600	151120	535	450	900	550	$4{,}518x10^7$	$9{,}640x10^7$	$1{,}482x10^8$	$1{,}994x10^8$
	KX-D 470	510000	1020000	204000	–	–	855		$6{,}325x10^7$	$1{,}350x10^8$	$2{,}075x10^8$	$2{,}208x10^8$
	KX-D 520	715000	1430000	286000	–	–	740		$8{,}832x10^7$	$1{,}885x10^8$	$2{,}897x10^8$	$3{,}083x10^8$
	KX-D 590	950000	1900000	380000	–	–	660		$1{,}177x10^8$	$2{,}5107x10^8$	$3{,}859x10^8$	$4{,}107x10^8$
	KX-D 650	1220000	2440000	488000	–	–	590		$1{,}512x10^8$	$3{,}226x10^8$	$4{,}959x10^8$	$5{,}277x10^8$

Couplings may be dynamically balanced on request (semi-spline balancing G 6,3 with speed acc. customer's specifications). For peripheral speeds exceeding V = 30 m/sec., we would recommend dynamically balancing.

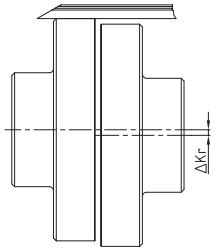
Displacements

Axial displacement ΔKa

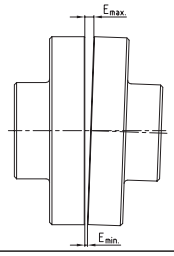


$L_{max./min} = L + \Delta Ka$ [mm]

Radial displacement ΔKr



Angular displacement ΔKw



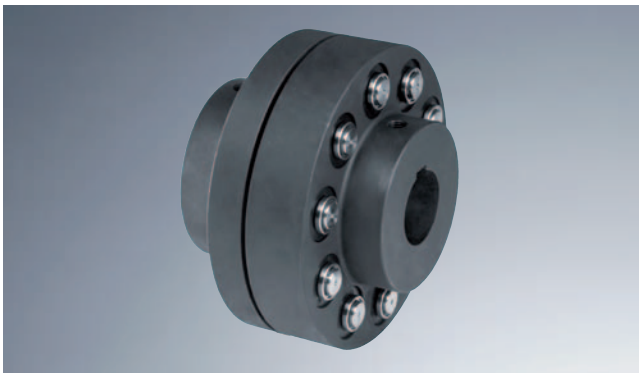
$\Delta Kw = E_{max.} - E_{min.}$ [mm]

Displacements

Size (KX and KX-D)		75	85	95	105	120	135	150	170	190	215	240	265	280	305	330	355	370	470	520	590	650
Max. axial displacement ΔKa [mm]		±1,5	±1,5	±1,5	±2	±2	±2	±2	±2,5	±2,5	±2,5	±2,5	±2,5	±2,5	±2,5	±4	±4	±4	±4	±4	±4	±4
Max. radial displacement ΔKr [mm] or max. angualr displacement ΔKw [mm] at speed n	250 rpm	0,95	1,1	1,1	1,2	1,3	1,4	1,5	1,7	1,9	2,0	2,2	2,5	2,7	2,9	3,1	3,3	3,5	3,8	4,4	4,9	5,4
	500 rpm	0,70	0,80	0,80	0,9	0,9	1,0	1,1	1,2	1,3	1,4	1,6	1,7	1,9	2,0	2,2	2,3	2,5	2,8	3,1	3,5	3,8
	750 rpm	0,60	0,65	0,65	0,7	0,8	0,8	0,9	1,0	1,1	1,2	1,3	1,4	1,6	1,7	1,8	1,9	2,0	2,2	2,4	–	–
	1000 rpm	0,50	0,55	0,55	0,6	0,7	0,7	0,8	0,9	0,9	1,0	1,1	1,2	1,4	1,4	1,5	1,7	1,8	–	–	–	–
	1500 rpm	0,40	0,45	0,45	0,5	0,5	0,6	0,6	0,7	0,8	0,8	0,9	1,0	–	–	–	–	–	–	–	–	–
	2000 rpm	0,35	0,40	0,40	0,4	0,5	0,5	0,5	0,6	0,7	–	–	–	–	–	–	–	–	–	–	–	–
	3000 rpm	0,30	0,35	0,35	0,4	0,4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

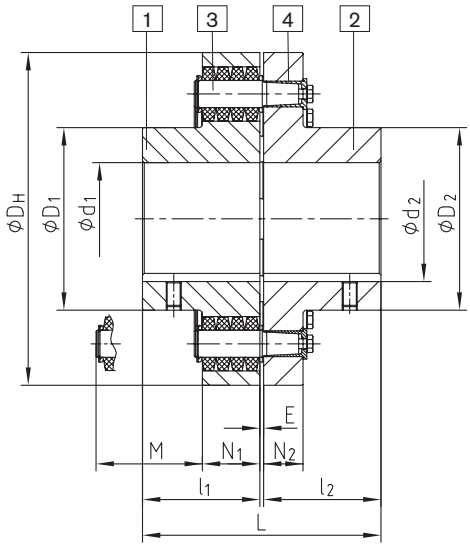
Assembly instructions
The permissible misalignment figures of the flexible REVOLEX® KX couplings mentioned are general standard values, taking into account the coupling load up to the rated torque T_{KN} of the coupling and as well as an ambient temperature of + 30° C. The displacement figures may only be used separately - if various kinds of displacement arise in parallel, the displacement figures may only be used proportionately. For the assembly of the coupling please make sure that the distance dimension E is adhered to accurately to make sure that the coupling remains flexible during operation. See KTR assembly instructions, KTR standard 49410 at our homepage www.ktr.com.

Type KX – casted materials –

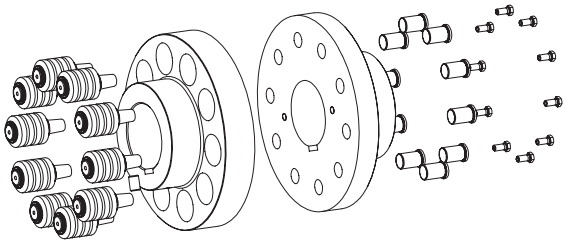


- Vibration-reducing, short design
- Radial assembly/disassembly
- Axial plug-in, failsafe
- All-side machining Ü good dynamical features
- Protected surfaces
- Standard hub material GJL (GJS or steel on request)
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)

Components



Components
Type KX
1 = Hub part 1
2 = Hub part 2
3 = Complete pin
4 = KX sleeve (hardened and corrosion-resistant)



REVOLEX® KX																
Size	Torques [1] [Nm]		max. speed [2] [rpm]	Finish bore [min. - max.]		Dimensions [mm]									Moment of inertia [3] [kgm²]	Approx. weight [3] [kg]
	T_{KN}	$T_{Kmax.}$		d_1	d_2	L	l_1; l_2	E	D_H	D_1	D_2	N_1	N_2	M*		
KX 105	6485	12970	2000	34-110	34-125	237	117	3	330	180	202	56	30	76	0,771	62
KX 120	10080	20160	1800	50-125	50-145	270	132	6	370	206	232	76	46	100	1,611	96
KX 135	14030	28060	1600	70-140	70-150	300	147	6	419	230	240	76	46	100	2,685	123
KX 150	17960	35920	1450	82-160		336	165	6	457	256	260	76	46	100	3,887	162
KX 170	26360	52720	1250	95-180		382	188	6	533	292	292	92	63	130	9,165	273
KX 190	36160	72320	1100	110-205		428	211	6	597	330	330	92	63	130	14,765	360
KX 215	48160	96320	1000	125-230		480	237	6	660	368	368	92	63	145	22,771	465
KX 240	65740	131480	900	140-250		534	264	6	737	407	407	122	76	167	43,484	695
KX 265	91480	182960	800	160-285		590	292	6	826	457	457	122	76	170	70,143	910
KX 280	123530	247060	720	180-315		628	311	6	927	508	508	122	76	189	112,637	1183
KX 305	152840	305680	675	180-330		654	324	6	991	533	533	122	76	202	146,974	1369
KX 330	188470	376940	625	200-355		666	330	6	1067	572	572	122	76	208	198,005	1598

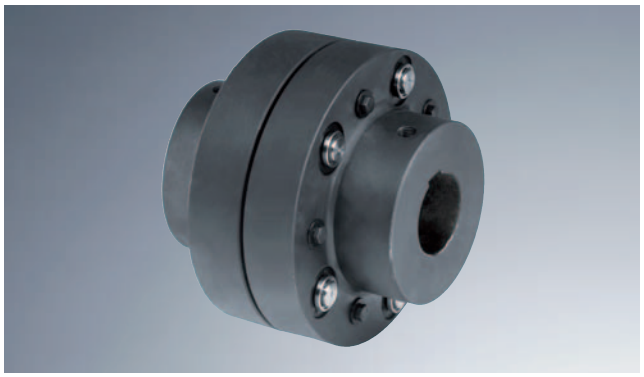
* Drop-out center dimension
[1] Standard material NBR 80 Shore-A, selection see page 61
[2] Higher speeds on request
[3] Relating to max. bore
Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9. If requested, coupling is dynamically balanced (semi-wedge balancing G 6,3; speed as per customer's details). For circumferential speeds exceeding 30 m/s we would recommend dynamic balancing.

■ = with pilot bore available from stock

Order form:

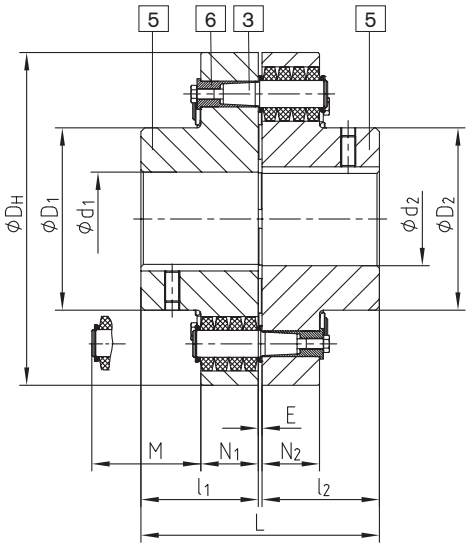
REVOLEX® KX 170	GJL	part 1 Ø120	part 2 Ø150
Coupling type/size	Material	Finish bore	Finish bore

Type KX-D – casted materials –

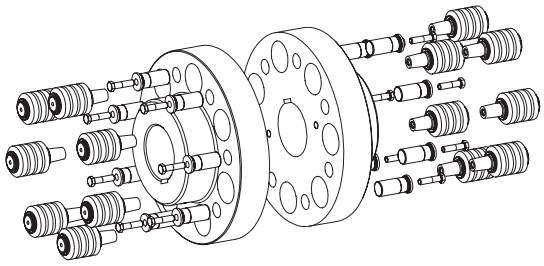


- Vibration-reducing, short design, protected surfacees
- Radial assembly/disassembly
- Axial plug-in, failsafe
- All-side machining Ü good dynamical features
- Standard hub material GJL (GJS on request)
- Pins are arranged alternately
- Increase of transmittable torque by up to 40 % compared to REVOLEX® KX
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)

Components



Components
Type KX-D
5 = Hub part 5
3 = Complete pin
6 = KX-D sleeve (hardened and corrosion-resistant)



REVOLEX® KX-D													
Size	Torque [1] [Nm]		Max. speed [2] [rpm]	Finish bore [min. - max.]	Dimensions [mm]							Moment of inertia [3]	Approx. weight [3]
	T_{KN}	$T_{Kmax.}$		d_1; d_2	L	l_1; l_2	E	D_H	D_1; D_2	N_1; N_2	M*	[kgm²]	[kg]
KX-D 105	8650	17300	2000	34-110	237	117	3	330	180	56	76	0,907	68
KX-D 120	14110	28220	1800	50-125	270	132	6	370	206	76	100	1,867	108
KX-D 135	18690	37380	1600	70-140	300	147	6	419	230	76	100	3,144	145
KX-D 150	23100	46200	1450	82-160	336	165	6	457	256	76	100	4,573	180
KX-D 170	36900	73800	1250	95-180	382	188	6	533	292	92	130	10,259	291
KX-D 190	48210	96420	1100	110-205	428	211	6	597	330	92	130	16,601	385
KX-D 215	61900	123800	1000	125-230	480	237	6	660	368	92	130	25,495	498
KX-D 240	92030	184060	900	140-250	534	264	6	737	407	122	170	50,147	760
KX-D 265	121900	243800	800	160-285	590	292	6	826	457	122	170	80,796	997
KX-D 280	158800	317600	720	180-315	628	311	6	927	508	122	170	129,979	1301
KX-D 305	191060	382120	675	180-330	654	324	6	991	533	122	170	170,016	1509
KX-D 330	251200	502400	625	200-355	666	330	6	1067	572	122	170	227,451	1755
KX-D 355	299100	598200	575	225-380	718	356	6	1156	610	122	170	338,145	2275
KX-D 370	377800	755600	535	225-450	770	382	6	1250	720	122	170	492,353	2853

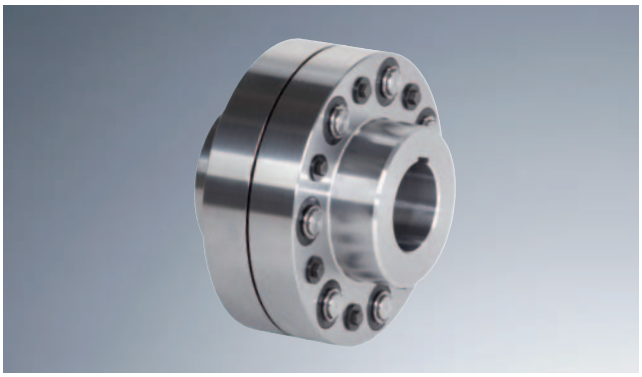
* Drop-out center dimension
[1] Standard material NBR 80 Shore-A, selection see page 61
[2] Higher speeds on request
[3] Relating to max. bore
Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9. If requested, coupling is dynamically balanced (semi-wedge balancing G 6,3; speed as per customer's details). For circumferential speeds exceeding 30 m/s we would recommend dynamic balancing.

■ = with pilot bore available from stock

Order form:

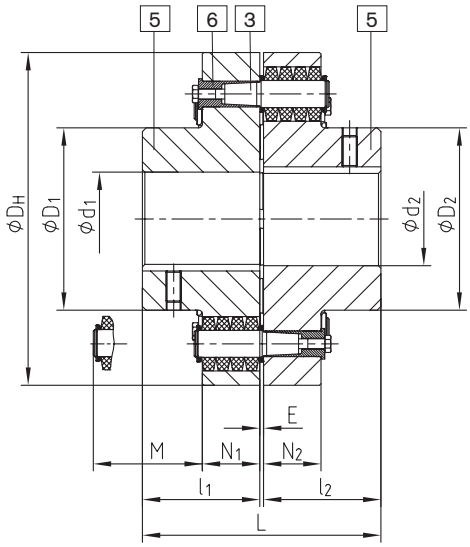
REVOLEX® KX-D 170	GJL	Ø120	Ø150
Coupling type/size	Material	Finish bore	Finish bore

Type KX-D – material steel –

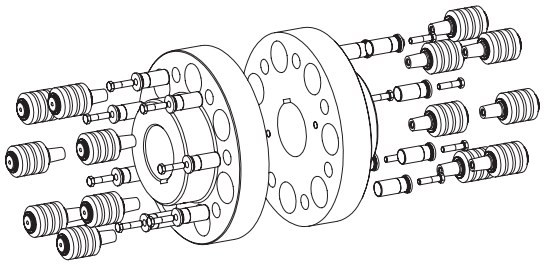


- Reducing vibrations, short design, protected surfaces
- Radial assembly/disassembly, axial plug-in, failsafe
- All-side machining Ü good dynamical features
- Hubs from steel, specifically suitable for drive elements subject to high loads or high circumferential speeds
- Particularly suitable for drive components with high loads and high speeds due to hub material steel
- Pins are arranged alternately
- Increase of transmittable torque by up to 40 % compared to REVOLEX® KX
- Ⓔx Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)

Components



Components
Type KX-D
5 = Hub part 5
3 = Complete pin
6 = KX-D sleeve (hardened and corrosion-resistant)



	REVOLEX® KX-D												
	Size	Torque [1] [Nm]		Max. speed [2] [rpm]	Finish bore [min. - max.]	Dimensions [mm]							Moment of inertia [3]	Approx. weight [3]
		T_{KN}	$T_{Kmax.}$		$d_1; d_2$	L	$l_1; l_2$	E	D_H	$D_1; D_2$	$N_1; N_2$	M*	[kgm²]	[kg]
NEW	KX-D 75	3800	7600	4500	0-90	193	95	3	225	136	56	76	0,325	39
NEW	KX-D 85	5000	10000	4175	0-100	213	105	3	274	152	56	76	0,440	46
NEW	KX-D 95	6600	13200	3825	0-110	227	112	3	298	168	56	76	0,624	56
	KX-D 105	8650	17300	3475	0-120	237	117	3	330	180	56	76	0,907	80
	KX-D 120	14110	28220	3100	0-140	270	132	6	370	206	76	100	1,867	124
	KX-D 135	18690	37380	2725	70-160	300	147	6	419	230	76	100	3,144	165
	KX-D 150	23100	46200	2500	82-185	336	165	6	457	256	76	100	4,573	205
	KX-D 170	36900	73800	2150	95-220	382	188	6	533	292	92	130	10,259	322
	KX-D 190	48210	96420	1900	110-245	428	211	6	597	330	92	130	16,601	431
	KX-D 215	61900	123800	1725	125-275	480	237	6	660	368	92	130	25,495	559
	KX-D 240	92030	184060	1550	140-310	534	264	6	737	407	122	170	50,147	833
	KX-D 265	121900	243800	1375	160-350	590	292	6	826	457	122	170	80,796	1099
	KX-D 280	158800	317600	1225	180-385	628	311	6	927	508	122	170	129,979	1436
	KX-D 305	191060	382120	1150	180-405	654	324	6	991	533	122	170	170,016	1669
	KX-D 330	251200	502400	1075	200-435	666	330	6	1067	572	122	170	227,451	1954
	KX-D 355	299100	598200	975	225-465	718	356	6	1156	610	122	170	338,145	1967
	KX-D 370	377800	755600	900	225-550	770	382	6	1250	720	122	170	492,353	2367
	KX-D 470	510000	1020000	870	240-470 [4]	969 [4]	480 [4]	9	1340	705 [4]	164	220	734,260	3775
	KX-D 520	715000	1430000	760	240-520 [4]	1089 [4]	540 [4]	9	1540	780 [4]	164	220	1264,725	5155
	KX-D 590	950000	1900000	680	260-590 [4]	1212 [4]	600 [4]	12	1735	885 [4]	164	220	2081,885	6895
	KX-D 650	1220000	2440000	610	280-650 [4]	1332 [4]	660 [4]	12	1935	975 [4]	164	220	3228,297	8893

* Drop-out center dimension
[1] Standard material NBR 80 Shore-A, selection see page 61
[2] Higher speeds on request
[3] Relating to max. bore
[4] Variable according to customer's requests

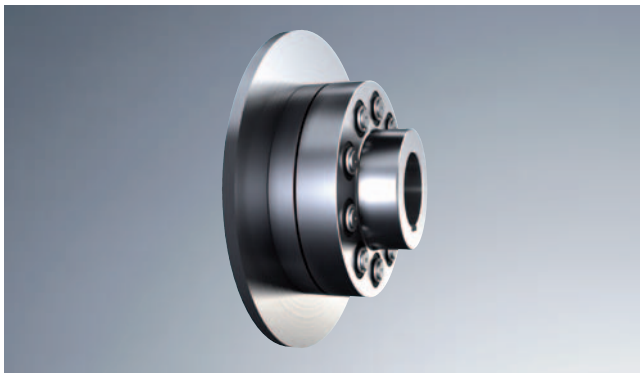
Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9. If requested, coupling is dynamically balanced (semi-wedge balancing G 6,3; speed as per customer's details). For circumferential speeds exceeding 30 m/s we would recommend dynamic balancing.

■ = with pilot bore available from stock

Order form:

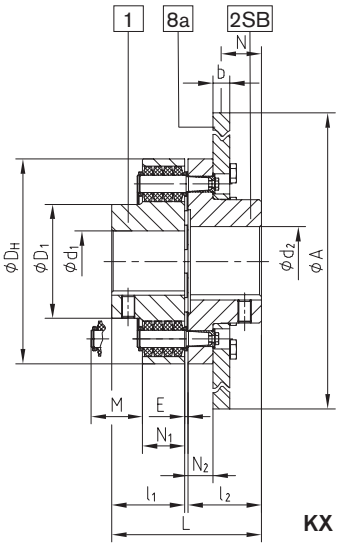
REVOLEX® KX-D 170	Steel	Ø120	Ø150
Coupling type/size	Material	Finish bore	Finish bore

Type KX and KX-D with disk brake

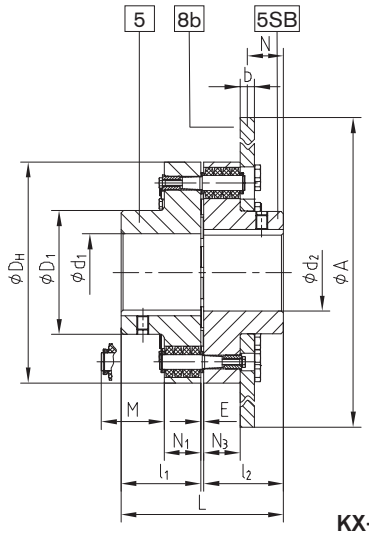


- Shaft coupling with disk brake
- The maximum brake torque must not exceed the maximum torque of the coupling
- The disk brake has to be placed onto the shaft end with the biggest mass moment of inertia
- Radial assembly/disassembly
- Axial plug-in, failsafe
- Pins can be replaced while being assembled
- All-side machining Ü good dynamical features
- Examples of applications are large fans, turbine drives, belt conveyor drives, etc.

Components



KX



KX-D

REVOLEX® KX and KX-D Type SB

Size	Torque [1] [Nm] KX		Torque [1] [Nm] KX-D		Finish bore KX GJL [min. - max.]		Finish bore KX-D [min. - max.] GJL	Steel	Dimensions [mm]								
	T_{KN}	$T_{Kmax.}$	T_{KN}	$T_{Kmax.}$	d_1	d_2	d_1; d_2	d_1; d_2	L	l_1; l_2	E	D_H	D_1	N_1	N_2	N_3	M*
105	6485	12970	8650	17300	34-110	34-125	34-110	0-120	237	117	3	330	180	56	29	55	76
120	10080	20160	14110	28220	50-125	50-145	50-125	0-140	270	132	6	370	206	76	45	75	100
135	14030	28060	18690	37380	70-140	70-150	70-140	70-160	300	147	6	419	230	76	45	75	100
150	17960	35920	23100	46200	82-160		82-160	82-185	336	165	6	457	256	76	45	75	100
170	26360	52720	36900	73800	95-180		95-180	95-220	382	188	6	533	292	92	62	91	130
190	36160	72320	48210	96420	110-205		110-205	110-245	428	211	6	597	330	92	62	91	130
215	48160	96320	61900	123800	125-230		125-230	125-275	480	237	6	660	368	92	62	91	145
240	65740	131480	92030	184060	140-250		140-250	140-310	534	264	6	737	407	122	75	121	167

* Drop-out center dimension
[1] Standard material NBR 80 Shore-A, selection see page 61
[2] Higher speeds on request
[3] Relating to max. bore
Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9. If requested, coupling is dynamically balanced (semi-wedge balancing G 6,3; speed as per customer's details). For circumferential speeds exceeding 30 m/s (referring to outside diameter ØA) we would recommend dynamic balancing.

Selection of coupling/disk brake dimension "N"

Size	Brake disk ØA x b [3]											
	Ø560x30		Ø630x30		Ø710x30		Ø800x30		Ø900x30		Ø1000x30	
	KX	KX-D	KX	KX-D	KX	KX-D	KX	KX-D	KX	KX-D	KX	KX-D
105	73	47	73	47								
120	72	42	72	42								
135			87	57	87	57						
150					105	75	105	75				
170					111	82	111	82				
190							134	105	134	105		
215							160	131	160	131	160	131
240							174	128	174	128	174	128

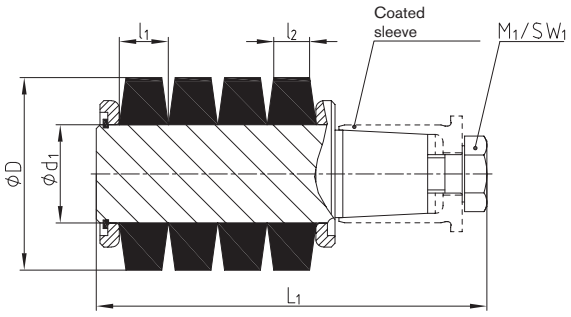
[3] Maximum circumferential speed = 60 m/s referring to maximum outside diameter

Order form:

REVOLEX® KX 170	SB	Ø710x30	1 - Ø120	2SB - Ø150
Coupling type/size	Type	Disk brake	Finish bore	Finish bore

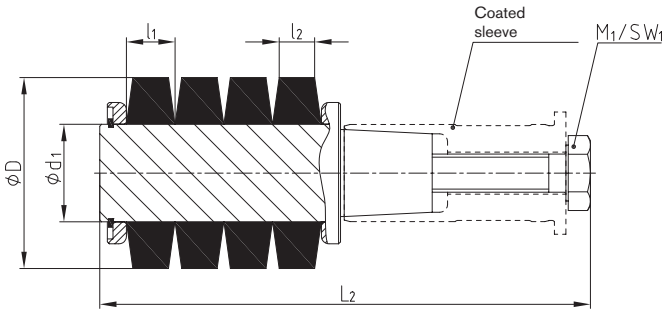
Technical data pin

KX



Taper pin design B

KX-D



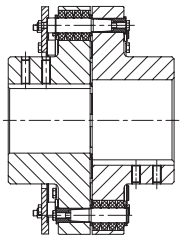
Taper pin design B

Technical data

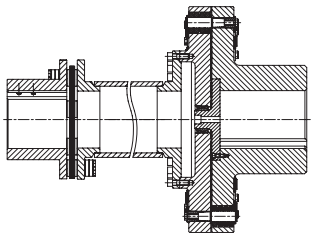
Size	Pin			Component 3.2			Component 3.1b			Component 3.4b		Tightening torque
	Size	Number		Elastomer ring NBR 80 Shore A			Pin			Screw DIN EN ISO 4017		
		KX	KX-D	D	l_1	l_2	d_1	L_1	L_2	M_1	SW_1	T_A [Nm]
KX 75	3	-	10									
KX 85	3	-	12	50,0	12,7	9,0	25,40	101	116	M10	16	67
KX 95	3	-	14									
KX 105	3	12	16									
KX 120	4	10	14									
KX 135	4	12	16	63,0	17,8	12,5	30,60	147,5	158,5	M12	18	115
KX 150	4	14	18									
KX 170	5	10	14									
KX 190	5	12	16	85,5	22,9	15,2	43,20	190	205	M16	24	290
KX 215	5	14	18									
KX 240	6	10	14									
KX 265	6	12	16									
KX 280	6	14	18									
KX 305	6	16	20	113,7	30,5	20,3	58,40	242	255	M24	36	970
KX 330	6	18	24									
KX 355	6	20	26									
KX 370	6	24	30									

Futher types

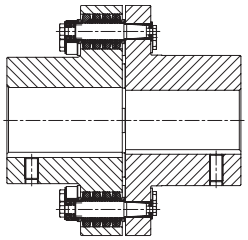
Type AB
with limited axial backlash



Intermediate shaft type
with RADEX®-N

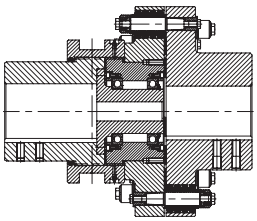


Backlash-free type

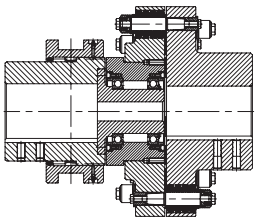


Type KX-D SD
shiftable

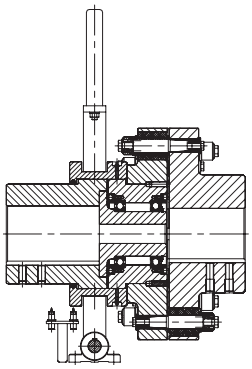
connected



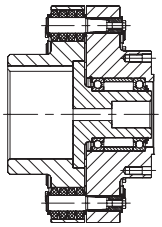
separated



Type KX-D SD
shiftable with shiftable linkage



Type KX-D
with cardan shaft connection



POLY
Torsionally flexible, shear type coupling

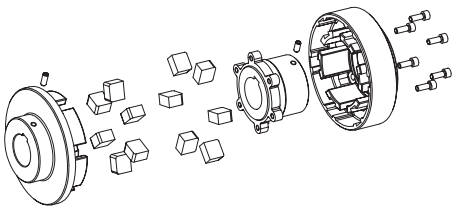
Made for Motion KTR

Coupling description

General description:

The POLY coupling is a torsionally flexible, not failsafe coupling for general machinery. It is assembled by axially pluging the hubs into each other and has excellent dampening characteristics. Its unique features are the flexible elastomeric elements that are located in both coupling halves.

The POLY advantage – A much greater number of flexible elements and thus a larger effective mass of the elastomer to accept vibration and to dissipate the heat caused by torsional vibrations when compared to similar competitive couplings with elements only in one half.



Coupling selection

The coupling selection must be done on the base POLY-NORM® or ROTEX®.

Function/Design

The coupling consists of 2 hubs with fingers that are separated by elastomeric elements which are assembled by axial blind plug-in to each other. Elastomer elements are placed into the slots of both coupling hubs. Torque is transmitted in a compact design. Shaft misalignments, vibrations and shock loads are effectively absorbed by the POLY coupling.

The coupling is maintenance-free and used in general machinery, the pump industry and in compressors. The Poly coupling handles torque ranges of up to 9000 Nm and is stocked in 15 different sizes and 3 designs for immediate availability. In addition to our standard coupling models, a variety of flange, drop out center and spacer options are available.

Explosion-proof use

POLY couplings are suitable for the use in drives in hazardous areas. The couplings are certified according to EC Standard 94/9/EC (ATEX 95) and belong to category 2G/2D, are confirmed and thus suitable for the use in hazardous areas of zone 1, 2, 21 and 22. Please read our information in the respective Type Examination Certificate and the operating and mounting instructions under www.ktr.com.

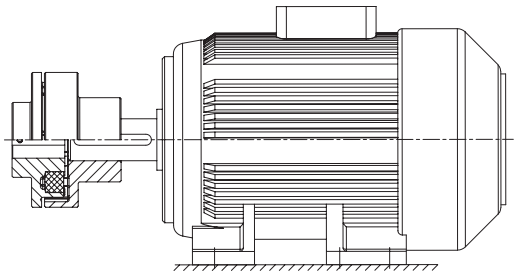
Variation of components

The coupling can be adapted to many applications due to the many options that are possible with the building block arrangement. The POLY components of a given model can be mixed and matched with each other to obtain different shaft distances using the same basic component.

General information about the elastomer packing

Standard Material/Hardness	Perbunan [NBR] / 92 Shore-A
Permanent temperature range [°C]	- 30 to + 80
Max. temperature (short time) [°C]	- 50 to + 120
Applications	ATEX applications Chemical industry Mining General machine construction Applications of average elasticity
Resistant to	Gasoline, diesel Acids, bases Tropics (Salt-) Water (hot/cold) Oils, greases Propane, butane Natural gas, city gas

Selection of standard IEC motors



POLY couplings for standard IEC motors, protection IP 54/IP 55

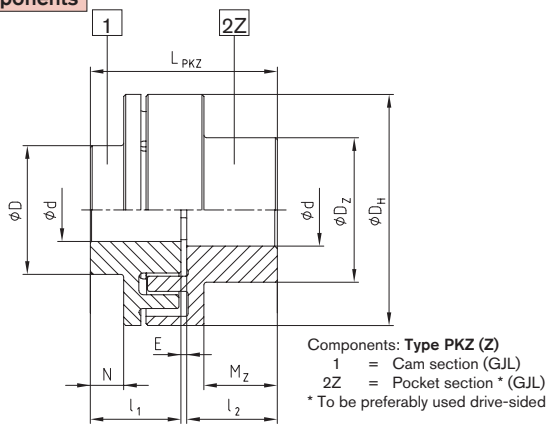
A. C. motor 50 Hz			Motor output n = 3000 rpm 2-pole		POLY coupling size	Motor output n = 1500 rpm 4-pole		POLY coupling size	Motor output n = 1000 rpm 6-pole		POLY coupling size	Motor output n = 750 rpm 8-pole		POLY coupling size
Size	Shaft end dxl [mm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]	
	2-pole	4,6,8 pole												
56	9 x 20		0,09	0,32		0,06	0,43		0,037	0,43				
			0,12	0,41		0,09	0,64		0,045	0,52				
63	11 x 23		0,18	0,62		0,12	0,88		0,06	0,7				
			0,25	0,86	8	0,18	1,3	8	0,09	1,1	8			8
71	14 x 30		0,37	1,3		0,25	1,8		0,18	2		0,09	1,4	
			0,55	1,9		0,37	2,5		0,25	2,8		0,12	1,8	
80	19 x 40		0,75	2,5		0,55	3,7		0,37	3,9		0,18	2,5	
			1,1	3,7		0,75	5,1		0,55	5,8		0,25	3,5	
90S	24 x 50		1,5	5		1,1	7,5		0,75	8		0,37	5,3	
90L			2,2	7,4		1,5	10		1,1	12		0,55	7,9	
100L	28 x 60		3	9,8	9	2,2	15	9	1,5	15	9	0,75	11	9
						3	20					1,1	16	
112M			4	13		4	27		2,2	22		1,5	21	
132S	38 x 80		5,5	18		5,5	36		3	30		2,2	30	
			7,5	25	10			10			10			10
132M						7,5	49		4	40		3	40	
									5,5	55				
160M	42 x 110		11	36		11	72		7,5	75		4	54	
			15	49	12			12				5,5	74	
160L			18,5	60		15	98		11	109	14	7,5	100	14
180M	48 x 110		22	71		18,5	121	14						
180L						22	144		15	148		11	145	
200L	55 x 110		30	97		30	196	15	18,5	181	15	15	198	15
			37	120	15				22	215				
225S	55 x 110	60 x 140				37	240	17				18,5	244	17
225M			45	145		45	292	19	30	293	19	22	290	19
250M	60 x 140	65 x 140	55	177	17	55	356		37	361		30	392	
280S	65 x 140	75 x 140	75	241		75	484	20	45	438	20	37	483	20
280M			90	289	19*	90	581		55	535		45	587	
315S		80 x 170	110	353		110	707	22	75	727	22	55	712	22
315M			132	423	20*	132	849	25	90	873	25	75	971	25
			160	513		160	1030		110	1070		90	1170	
315L			200	641		200	1290		132	1280	28	110	1420	28
					22*			28	160	1550		132	1710	
315		85 x 170	250	802		250	1600		200	1930		160	2070	30
			315	1010		315	2020		250	2410	30	200	2580	
			355	1140		355	2280	30						35
355	75 x 140	95 x 170	400	1280		400	2570		315	3040		250	3220	
			500	1600		500	3210		400	3850	35	315	4060	
			560	1790		560	3580	35	450	4330		355	4570	
400	80 x 170	110 x 210	630	2020		630	4030		500	4810		400	5150	40
			710	2270		710	4540		560	5390	40	450	5790	
			800	2560		800	5120	40	630	6060		500	6420	
450	90 x 170	120 x 210	900	2880		900	5760							
			1000	3200		1000	6400							

The coupling is selected for an ambient temperature of up to + 30 °C. The coupling was selected for the normal operation. The respective couplings have a minimum operating factor of f min. = 1,35. Drives with periodical torque courses must be selected according to DIN 740 part 2. On request the selection is made by KTR.
Torque T = nominal torque according to Siemens catalogue M 11 · 1994/95.
* dynamical balancing is necessary

Type PKZ (2-part design) and PKD (3-part design)

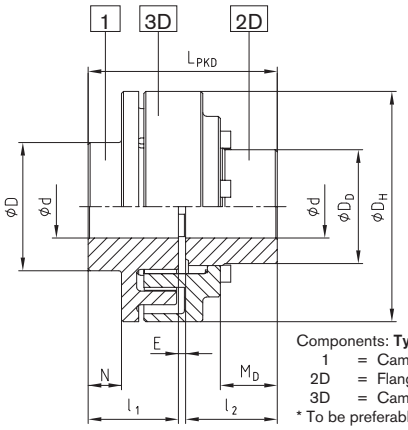
- Torsionally flexible / maintenance-free
- Reduced vibrations
- Shear type
- Axial plug-in assembly
- Short overall length / minimum distance between shafts
- In PKD the elastomer elements can be changed without moving driver or driven
- ⟨Ex⟩ Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)
- Detailed mounting instructions and further information available at www.ktr.com

Components



Components: **Type PKZ (Z)**
1 = Cam section (GJL)
2Z = Pocket section * (GJL)
* To be preferably used drive-sided

Type PKZ (Z) – (Size 8 to 30)



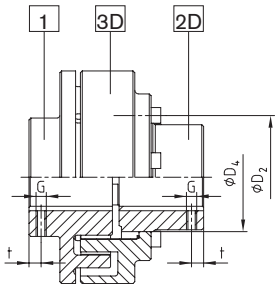
Components: **Type PKD (D)**
1 = Cam section * (GJL)
2D = Flange hub (GJS/steel)
3D = Cam ring (GJL)
* To be preferably used drive-sided

Type PKD (D) – (Size 15 to 40)

POLY PKZ and PKD

Size	Nominal torque [1] T_{KN} [Nm]	Max. speed [2] n [rpm]	Max. Finish bore Ød [mm]			Dimensions [mm]												Thread of setscrew			Weight [3] [kg]
			part 1	part 2Z	part 2D	D_H	D	D_Z	D_D	L_1; l_2	M_Z	M_D	N	E	D_2	D_4(H7/h7)	$L_{PKZ/PKD}$	G	t	T_A [Nm]	
8 (Z)	42	5000	20	28	—	86	43	50	—	35	25	—	3	3	—	—	73	M5	18	2	1,7
9 (Z)	72	5000	28	38	—	97	55	65	—	41	30	—	7	3	—	—	85	M8	23	10	2,7
10 (Z)	100	5000	32	42	—	107	60	70	—	45	35	—	10	4	—	—	94	M8	27	10	3,5
12 (Z)	170	5000	38	48	—	131	70	80	—	55	43	—	12	4	—	—	114	M8	30	10	5,4
14 (Z)	210	4800	45	55	—	142	80	93	—	60	46	—	17	4	—	—	124	M8	10	10	7,6
15 (Z;D)	320	4300	50	60	50	157	90	100	74,5	65	52	35	22	4	92	75	134	M8	15	10	8,6
17 (Z;D)	400	3800	60	65	60	176	100	110	87	70	56	40	25	4	106	90	144	M8	15	10	12
19 (Z;D)	660	3500	75	75	70	195	125	125	106	75	64	45	30	4	126	107	154	M8	15	10	18
20 (Z;D)	820	3300	65	75	70	205	115	127	98	80	65	45	23	4	123	105	164	M8	15	10	20
22 (Z)	1100	3000	85	85	90	224	140	140	129	90	75	59	39	4	150	130	184	M10	20	17	25
25 (Z;D)	1600	2700	90	90	95	257	150	150	138	100	84	60	44	5	162	140	205	M12	20	40	35
28 (Z;D)	2500	2350	100	100	100	288	165	165	154	110	90	65	45	5	178	160	225	M12	20	40	53
30 (Z;D)	3950	2200	110	110	110	308	180	180	165	130	108	75	58,5	5	202	170	265	M16	20	80	66
35 (D)	6100	1850	130	—	140	373	210	—	209	160	—	95	69	5	240	210	325	M16	25	80	125
40 (D)	9000	1600	145	—	160	423	240	—	238	180	—	115	85	5	275	240	365	M16	25	80	180

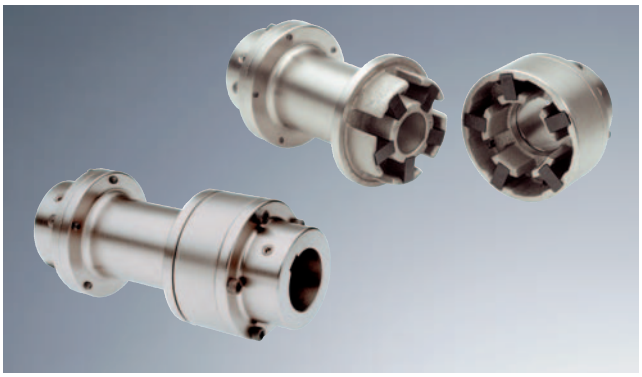
[1] Maximal torque $T_{Kmax} = T_{KN} \times 2$; Standard material Perbunan (NBR) 92 Shore-A; Standard hub material: GJL
[2] For v = 30 m/sec. For peripheral speeds exceeding v = 30 m/sec. we recommend a dynamical balancing;
[3] Refer to medium bore



Order form:

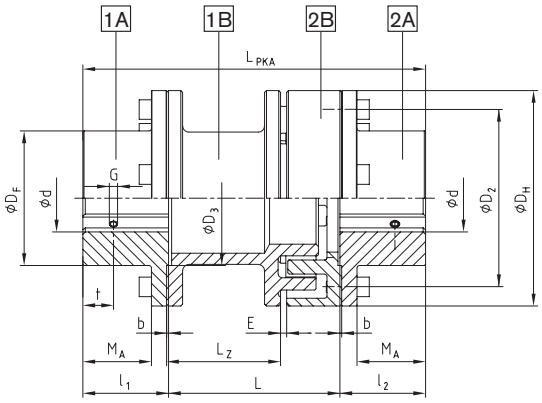
POLY	PKD	28	d_1 Ø90	d_2 Ø80
Coupling	Type	Size	Finish bore part 1	Finish bore part 2

Type PKA (dismountable coupling)



- Torsionally flexible, maintenance-free
- Vibration-reducing
- Not failsafe
- Axial plug-in
- Short design / low shaft distance dimension
- In the PKD the elastomer packages can be exchanged in ex-embled state
- Ex Approved according to EC Standard 94/9/EC (Explosion Certificate ATEX 95)
- Detailed mounting instructions and further information available at www.ktr.com

Components



Components: **Type PKA**
1A/2A = Coupling flange (steel)
1B = Spacer (GJL)
2B = Driving flange (GJL)
1A and 1B to be preferably used drive-sided

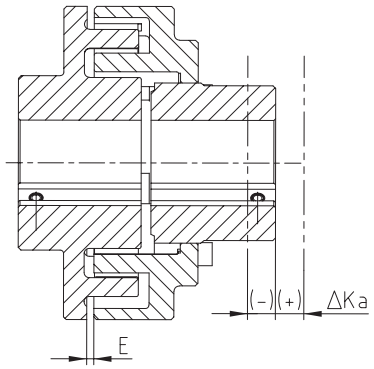
POLY Type PKA

Size	Nominal-torque T_{KN} [Nm]	Max. speed n [rpm]	Finish bore $d_{max.}$ [mm] part 1A/2A	Dimensions [mm]												Thread of setscrew			Weight [kg]
				D_H	D_F	D_2	D_3	l_1, l_2	b	M_A	E	L	L_{PKA}	L_Z	G	t	T_A [Nm]	
8	42	5000	38	86	55	70	60	35	1,5	25,5	3	100	170	66	M5	15	2	3,04
9	72	5000	45	97	70	85	70	41	1,5	30,5	3	100	182	63	M8	15	10	4,26
												140	222	103				4,66
10	100	5000	50	107	78	93	80	46	1,5	35,5	4	100	192	61	M8	20	10	5,42
												140	232	101				5,88
12	170	5000	60	131	95	113	90	55	1,5	43,0	4	100	210	55	M8	20	10	9,49
												140	250	95				10,15
												100	220	54				11,46
14	210	4800	70	142	105	125	100	60	1,5	48,0	4	140	260	94	M8	25	10	12,23
												180	300	134				13,01
15	320	4300	70	157	110	135	110	65	1,5	49,5	4	140	270	93	M8	25	10	15,63
												180	310	133				16,50
												100	240	53				18,79
17	400	3800	80	176	125	150	110	70	1,5	54,5	4	140	280	93	M8	25	10	19,60
												180	320	133				20,41
20	820	3300	100	205	150	175	130	80	2,0	61,0	4	140	300	81	M8	30	10	30,96
												180	340	121				32,18
												140	340	81				54,73
25	1600	2700	125	257	195	225	150	100	2,0	81,0	5	180	380	121	M12	40	40	56,50
												250	450	191				59,60

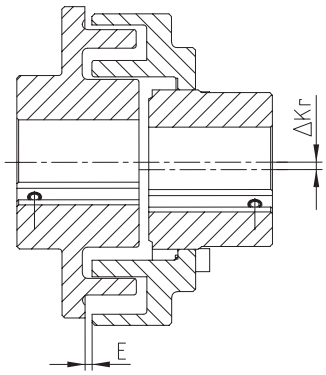
Order form:

POLY	PKA	15	140	Ø38	Ø40
Coupling	Type	Size	Dismountable L	Finish bore part 1A	Finish bore part 2A

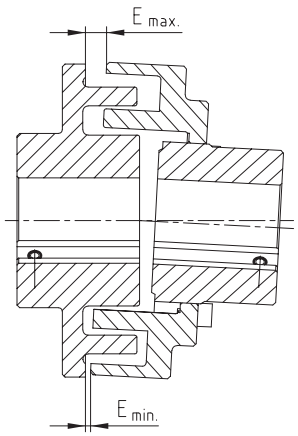
Displacements — Elastomer elements — Screws



Axial displacement



Radial displacement



Angular displacement

$\Delta K_w = E_{max.} - E_{min.}$ [mm]

Radial and angular displacements can occur simultaneously.
The combined sum $V = \Delta K_r + (E_{max.} - E_{min.})$ must not exceed the values listed in table .

Displacements [mm]																
Couplingsize		8	9	10	12	14	15	17	19	20	22	25	28	30	35	40
Max. axial displacement ΔK_a [mm]		±1	±1	±1	±2	±2	±2	±2	±2	±2	±2	±2	±2	±2	±3	±3
Max. radial displacement ΔK_r or	n = 750 rpm	0,8	0,8	0,8	0,8	0,8	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,2	1,2	1,2
max. angular displacement ΔK_w	n = 1000 rpm	0,7	0,7	0,7	0,7	0,7	0,9	0,9	0,9	0,9	0,9	0,9	0,9	1,1	1,1	1,1
or sum V	n = 1500 rpm	0,5	0,5	0,5	0,5	0,5	0,7	0,7	0,7	0,7	0,7	0,7	0,7	0,7	0,9	0,9

Elastomer elements NBR (cuboid)																
Couplingsize		8	9	10	12	14	15	17	19	20	22	25	28	30	35	40
Element size		1			2		3		3a	4	3b	4	5	6Ü	7Ü	8
Number of elements		8	10	10	10	10	12	12	12	12	16	16	16	16	20	20
Dimensions of elastomer	b	18,4			24,9		27,2		27,7	34,9	26,9	34,9	40	43,3	45,7	52,1
elements	t	10			15,3		16,1		18,4	19,6	18,4	19,6	22,2	28,6	25,0	28,6
b x t x h [mm]	h	18,9			23,9		24,6		26,8	34,6	29,6	34,6	40,6	41,1	60,0	59,7

Type PKD — Dimension cyl. screw DIN EN ISO 4762																
Couplingsize		8	9	10	12	14	15	17	19	20	22	25	28	30	35	40
Screw size	M	—	—	—	—	—	M8	M8	M8	M10	M8	M10	M10	M12	M12	M16
	l	—	—	—	—	—	30	25	25	30	30	30	40	40	55	55
Number		—	—	—	—	—	6	6	6	6	8	8	8	8	10	10
Tigthening torque T_A [Nm]		—	—	—	—	—	25	25	25	25	25	49	49	86	86	295
Type PKA — Dimension cyl. screw DIN EN ISO 4762																
Screw size	M	M6	M6	M6	M8	M8	M10	M10	—	M10	—	M10	—	—	—	—
	l	16	18	18	20	20	25	25	—	30	—	30	—	—	—	—
Number		4	5	5	5	5	6	6	—	6	—	8	—	—	—	—
Tigthening torque T_A [Nm]		10	10	10	25	25	49	49	—	49	—	49	—	—	—	—

Standard bore H7 with keyway DIN 6885 sheet 1 [JS9] and threads for setscrews on the feather keyway.
Please see our detailed mounting instructions at our website www.ktr.com.