

# FLEXIBLE JAW AND PIN & BUSH COUPLINGS

## TYPES AND OPERATING DESCRIPTION

### Properties of flexible jaw and pin & bush couplings

				
Product	ROTEX®	POLY-NORM®	POLY	REVOLEX®
Type	Torsionally flexible jaw-type coupling			Torsionally flexible pin & bush coupling
<b>Properties</b>				
Torsionally flexible	●	●	●	●
Damping vibrations	●	●	●	●
Maintenance-free	●	●	●	●
Axial plug-in	●	●	●	●
Shear type			●	
Fail-safe	●	●		●
Compensating for misalignment	●	●	●	●
<b>Types</b>				
Variant diversity	very high	average	average	high
Special features	Extensive basic programme available from stock while customized solutions can be realized	Basic programme available from stock	Basic programme available from stock	Extensive programme, ideal for customized solutions, for applications with high performances
Applications/core industries	Manifold applications, applicable in all industries	Pump industry, industrial gearboxes	Chemical pumps, high-pressure pumps,...	Industrial gearboxes, conveyor systems, industrial fans, rope-ways, agitators, generators, ...
Surface	All-over machining, very good dynamic properties	Shell surface machined	Shell surface machined	All-over machining, very good dynamic properties
<b>Torque range TKN [Nm]</b>				
Min.	1	40	42	3800
Max.	35.000	67.000	6.100	1.220.000
<b>Max. circumferential speed v [m/s]</b>				
Cast EN-GJL (dynamic balancing)	35	35	35	35
Steel + cast EN-GJS (dynamic balancing)	60			60
<b>Hub materials available</b>				
Steel (semi-finished product) » customized solutions available	●			●
Cast iron (GJL) » subject to mould	●	●	●	●
Nodular iron (GJS) » subject to mould	●	○		○
Aluminium semi-finished product (Al-H) » customized solution available	●			
Aluminium diecast (Al-D)	●			
Stainless steel	●			
Corrosion-protected types	●	○	○	○
<b>Spiders / elastomers</b>				
Material	T-PUR, PA, PEEK, Hytrel, ...	NBR (up to size 180) T-PUR (from size 200)	NBR	NR, NBR NBR electrically insulating
Degree of hardness	flexible to torsionally rigid	flexible	flexible	flexible
Temperature range in °C, min. / max. (standard)	- 50 / + 120	- 30 / + 80	- 30 / + 80	- 30 / + 80
Temperaturbereich in °C, min. / max. (Sonder)	- 50 / + 250	- 30 / + 80	- 30 / + 80	- 50 / + 80

● ≈ Standard  
○ ≈ On request

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### Product finder of jaw and pin & bush couplings

				
Product	ROTEX®	POLY-NORM®	POLY	REVOLEX®
Type	Torsionally flexible jaw-type coupling			Torsionally flexible pin & bush coupling
<b>Geometries</b>				
Design	compact	short	short	short
Mass moment of inertia	low	average	high	average
Shaft distance dimension	low / average	low	low	low
<b>Types (extract)</b>				
Elastomers can be disassembled radially » with no need of displacing driving/driven side	AFN, A-H, S-H, ZR, DF, DNF, CF-H	ADR, ADR-SB	PKD	standard
Intermediate shaft types » bridging larger shaft distances	ZR, ZWN	-	-	customized
Standard spacers 100 mm to 250 mm	ZS-DKM-H	AZR	PKA	customized
Shaft-to-shaft connection	standard	standard	standard	standard
Flange-to-shaft connection	CF, CFN	-	-	customized
Flange-to-flange connection » particularly short mounting lengths	DF, DNF	-	-	customized
Double-cardanic » compensating for big displacements » lower restoring forces	ZS-DKM-H, ZR, ZWN	-	-	-
<b>Certifications/type examinations</b>				
ATEX 	●	●	●	●
UL-listed 	●			
GOST R/ GOST TR 	●	●	●	●
DNV/GL 	●			●
ABS 	●			○
Bureau Veritas 	●			○
LR 	○			○
RS CLASS 	○			○
CCS 	○			○

● ≈ Standard  
○ ≈ On request

ROTEX®

POLY-NORM®

POLY

REVOLEX®

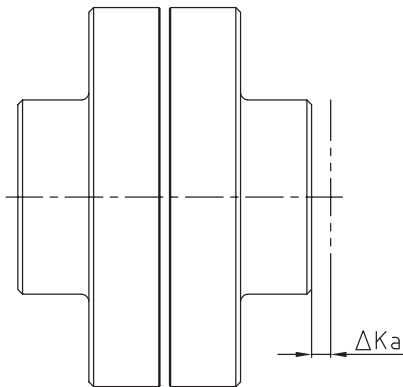
# REVOLEX® Flexible pin & bush coupling

## Technical data

REVOLEX® KX-D Technical data											
Size	Torque [Nm] NBR 80 Sh-A			GJL		Steel		Dyn. torsion spring stiffness [Nm/rad]			
	Rated T <sub>KN</sub>	Max. T <sub>Kmax.</sub>	Vibratory T <sub>KW</sub>	Max. speed [rpm] with V=35 m/s	Max. bore [mm]	Max. speed [rpm] with V=60 m/s	Max. bore [mm]	0.25xT <sub>KN</sub>	0.50xT <sub>KN</sub>	0.75xT <sub>KN</sub>	1.00xT <sub>KN</sub>
KX-D 75	3800	7600	1520	-	-	4500	90	0,641x10 <sup>6</sup>	0,941x10 <sup>6</sup>	1,355x10 <sup>6</sup>	1,864x10 <sup>6</sup>
KX-D 85	5000	10000	2000	-	-	4175	100	0,834x10 <sup>6</sup>	1,224x10 <sup>6</sup>	1,763x10 <sup>6</sup>	2,425x10 <sup>6</sup>
KX-D 95	6600	13200	2640	-	-	3845	110	1,077x10 <sup>6</sup>	1,580x10 <sup>6</sup>	2,277x10 <sup>6</sup>	3,131x10 <sup>6</sup>
KX-D 105	8650	17300	3460	2000	110	3475	120	1,404x10 <sup>6</sup>	2,060x10 <sup>6</sup>	2,967x10 <sup>6</sup>	4,081x10 <sup>6</sup>
KX-D 120	14110	28220	5640	1800	125	3100	140	1,742x10 <sup>6</sup>	2,350x10 <sup>6</sup>	3,297x10 <sup>6</sup>	4,443x10 <sup>6</sup>
KX-D 135	18690	37380	7476	1600	140	2725	160	2,304x10 <sup>6</sup>	3,108x10 <sup>6</sup>	4,360x10 <sup>6</sup>	5,876x10 <sup>6</sup>
KX-D 150	23100	46200	9240	1450	160	2500	185	2,880x10 <sup>6</sup>	3,885x10 <sup>6</sup>	5,450x10 <sup>6</sup>	7,345x10 <sup>6</sup>
KX-D 170	36900	73800	14760	1250	180	2150	220	4,550x10 <sup>6</sup>	6,272x10 <sup>6</sup>	1,050x10 <sup>7</sup>	1,396x10 <sup>7</sup>
KX-D 190	48210	96420	19284	1100	205	1900	245	5,980x10 <sup>6</sup>	8,243x10 <sup>6</sup>	1,380x10 <sup>7</sup>	1,834x10 <sup>7</sup>
KX-D 215	61900	123800	24760	1000	230	1725	275	7,634x10 <sup>6</sup>	1,052x10 <sup>7</sup>	1,762x10 <sup>7</sup>	2,342x10 <sup>7</sup>
KX-D 240	92030	184060	36812	900	250	1550	310	1,101x10 <sup>7</sup>	2,350x10 <sup>7</sup>	3,613x10 <sup>7</sup>	4,861x10 <sup>7</sup>
KX-D 265	121900	243800	48760	800	285	1375	350	1,456x10 <sup>7</sup>	3,108x10 <sup>7</sup>	4,778x10 <sup>7</sup>	6,429x10 <sup>7</sup>
KX-D 280	158800	317600	63520	720	315	1225	385	1,896x10 <sup>7</sup>	4,047x10 <sup>7</sup>	6,221x10 <sup>7</sup>	8,371x10 <sup>7</sup>
KX-D 305	191060	382120	76424	675	330	1150	405	2,287x10 <sup>7</sup>	4,880x10 <sup>7</sup>	7,502x10 <sup>7</sup>	1,009x10 <sup>8</sup>
KX-D 330	251200	502400	100480	625	355	1075	435	3,001x10 <sup>7</sup>	6,403x10 <sup>7</sup>	9,843x10 <sup>7</sup>	1,327x10 <sup>8</sup>
KX-D 355	300000	600000	120000	575	380	975	450	3,572x10 <sup>7</sup>	7,622x10 <sup>7</sup>	1,172x10 <sup>8</sup>	1,577x10 <sup>8</sup>
KX-D 370	400000	800000	160000	535	450	900	530	4,518x10 <sup>7</sup>	9,640x10 <sup>7</sup>	1,482x10 <sup>8</sup>	1,994x10 <sup>8</sup>
KX-D 470	510000	1020000	204000	-	-	855	520	6,325x10 <sup>7</sup>	1,350x10 <sup>8</sup>	2,075x10 <sup>8</sup>	2,208x10 <sup>8</sup>
KX-D 520	715000	1430000	286000	-	-	740	acc. to customer's request	8,832x10 <sup>7</sup>	1,885x10 <sup>8</sup>	2,897x10 <sup>8</sup>	3,083x10 <sup>8</sup>
KX-D 590	950000	1900000	380000	-	-	660	acc. to customer's request	1,177x10 <sup>8</sup>	2,5107x10 <sup>8</sup>	3,859x10 <sup>8</sup>	4,107x10 <sup>8</sup>
KX-D 650	1220000	2440000	488000	-	-	590	acc. to customer's request	1,512x10 <sup>8</sup>	3,226x10 <sup>8</sup>	4,959x10 <sup>8</sup>	5,277x10 <sup>8</sup>

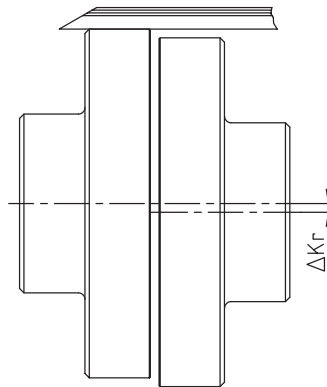
If requested, coupling is dynamically balanced (semi-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding V = 30 m/s, we would recommend dynamic balancing.

Axial displacement  $\Delta K_a$

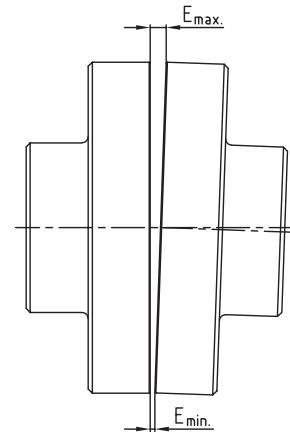


$$L_{\text{max./min}} = L + \Delta K_a \text{ [mm]}$$

Radial displacement  $\Delta K_r$



Angular displacement  $\Delta K_w$



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

		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 displacements $\Delta K_a$ [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 $\Delta K_r$ [mm] or max. angular displacements $\Delta K_w$ [mm] with 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 above-mentioned permissible displacement figures of the flexible REVOLEX® KX couplings are standard values, considering the coupling load up to the rated torque T<sub>KN</sub> of the coupling and an ambient temperature of + 30 °C. Care should be taken to maintain the distance dimension E accurately in order to allow for axial clearance of the coupling while in operation. See KTR mounting instructions, KTR standard 49410 at our homepage [www.ktr.com](http://www.ktr.com).

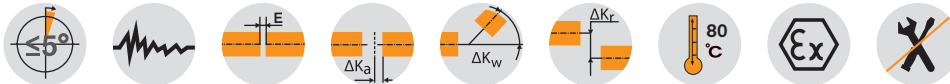
# REVOLEX® KX-D

## Flexible pin & bush coupling

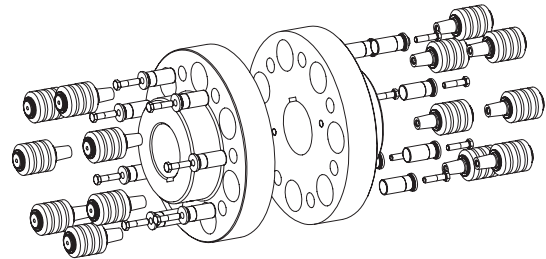
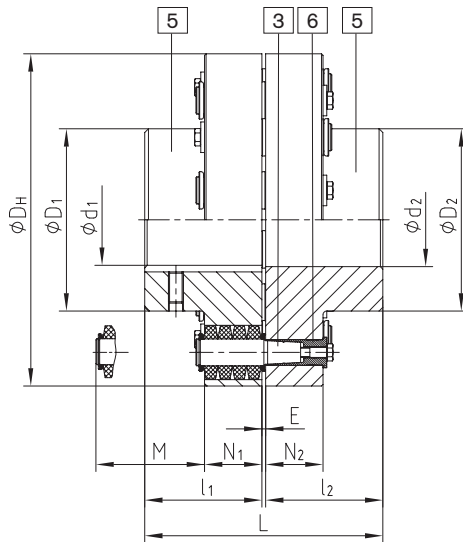
### Casted material



For legend of pictogram please refer to flapper on the cover



### Components



Components type KX-D  
 5 = Hub part 5  
 3 = Pins complete  
 6 = KX-D sleeve (hardened and corrosion-resistant)

### REVOLEX® Type KX-D

Size	Torque <sup>1)</sup> [Nm]		Max. speed <sup>2)</sup> [rpm]	Finish bore [min. - max.] d <sub>1</sub> ; d <sub>2</sub>	Dimensions [mm]						Mass moments of inertia <sup>3)</sup> [kgm <sup>2</sup> ]	Approx. weight <sup>3)</sup> [kg]	
	T <sub>KN</sub>	T <sub>Kmax.</sub>			L	l <sub>1</sub> ; l <sub>2</sub>	E	D <sub>H</sub>	D <sub>1</sub> ; D <sub>2</sub>	N <sub>1</sub> ; N <sub>2</sub>			M*
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	300000	600000	575	225-450	721	356	9	1156	610	164	220	415,259	2263
KX-D 370	400000	800000	535	225-530	773	382	9	1250	720	164	220	586,686	2701

\* Drop-out center dimension

<sup>1)</sup> Standard material NBR 80 Shore-A, please observe selection on page 14 et seqq.

<sup>2)</sup> Higher speeds on request.

<sup>3)</sup> Relating to max. bore

Finish bore acc. to ISO fit H7, feather keyway acc. to DIN 6885 sheet 1 - JS9.

If requested, coupling is dynamically balanced (semi-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding V = 30 m/s, we would recommend dynamic balancing.

■ = vorgebohrt ab Lager lieferbar

### Ordering example:

REVOLEX® KX-D 170	GJL	Ø120	Ø150
Size and type of coupling	Material	Finish bore	Finish bore

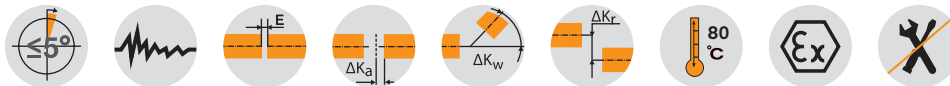
# REVOLEX® KX-D

## Flexible pin & bush coupling

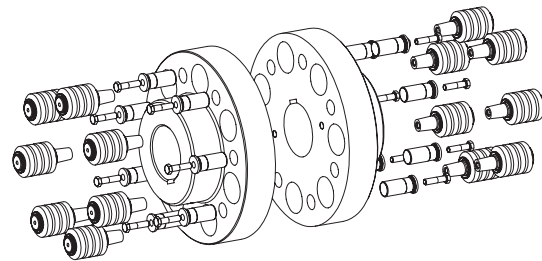
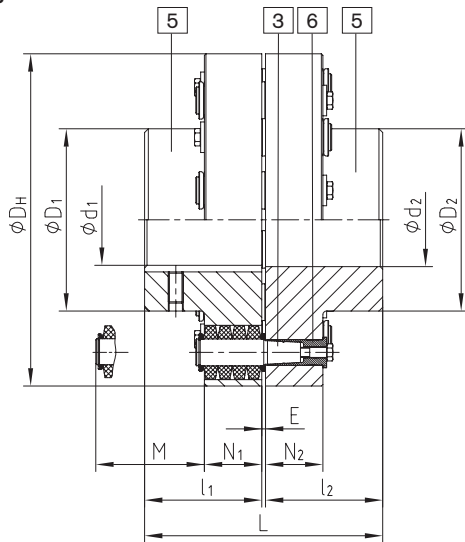
### Material steel



For legend of pictogram please refer to flapper on the cover



### Components



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

### REVOLEX® Type KX-D

Size	Torque <sup>1)</sup> [Nm]		Max. speed <sup>2)</sup> [rpm]	Finish bore [min. - max.]	Dimensions [mm]							Mass moments of inertia <sup>3)</sup> [kgm <sup>2</sup> ]	Approx. weight <sup>3)</sup> [kg]
	TKN	TKmax.			d1; d2	L	l1; l2	E	DH	D1; D2	N1; N2		
KX-D 75	3800	7600	4500	0-90	193	95	3	255	136	56	76	0,325	39
KX-D 85	5000	10000	4175	0-100	213	105	3	274	152	56	76	0,440	46
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	300000	600000	975	225-450	721	356	9	1156	610	164	220	415,259	2451
KX-D 370	400000	800000	900	225-530	773	382	9	1250	720	164	220	584,686	2925
KX-D 470	510000	1020000	855	240-520	969 <sup>4)</sup>	480 <sup>4)</sup>	9	1340	705 <sup>4)</sup>	164	220	785,489	3631
KX-D 520	715000	1430000	760	240-520 <sup>4)</sup>	1089 <sup>4)</sup>	540 <sup>4)</sup>	9	1540	780 <sup>4)</sup>	164	220	1264,725	5155
KX-D 590	950000	1900000	680	260-590 <sup>4)</sup>	1212 <sup>4)</sup>	600 <sup>4)</sup>	12	1735	885 <sup>4)</sup>	164	220	2081,885	6895
KX-D 650	1220000	2440000	610	280-650 <sup>4)</sup>	1332 <sup>4)</sup>	660 <sup>4)</sup>	12	1935	975 <sup>4)</sup>	164	220	3228,297	8893

\* Drop-out center dimension <sup>1)</sup> Standard material NBR 80 Shore-A, for selection see page 14 et seqq. <sup>2)</sup> Higher speeds on request. <sup>3)</sup> Relating to max. bore <sup>4)</sup> Variable according to customer's requests. Finish bore acc. to ISO fit H7, feather keyway acc. to DIN 6885 sheet 1 - JS9. If requested, coupling is dynamically balanced (semi-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding V = 30 m/s, we would recommend dyn. balancing.

■ = predrilled in stock

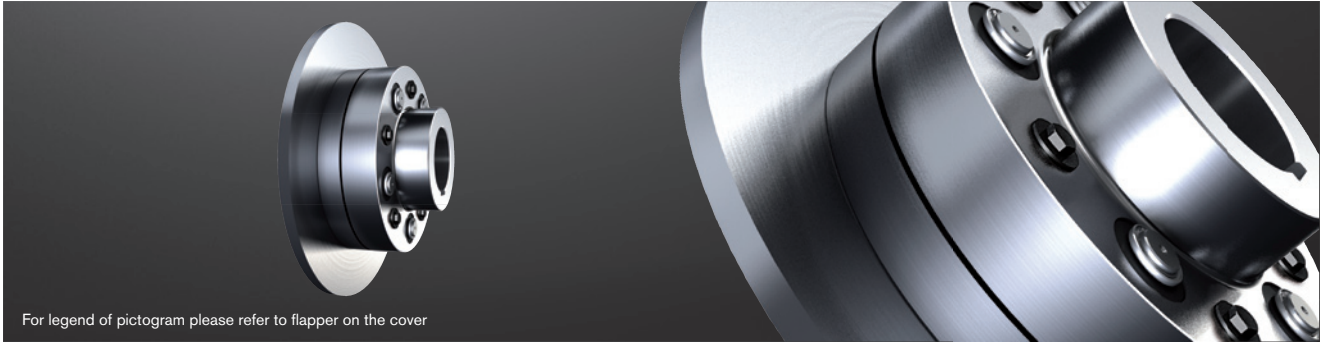
### Ordering example:

REVOLEX® KX-D 170	Stahl	Ø120	Ø150
Size and type of coupling	Material	Finish bore	Finish bore

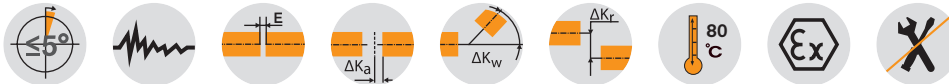
# REVOLEX® KX-D SB

## Flexible pin & bush coupling

With brake disk



For legend of pictogram please refer to flapper on the cover



REVOLEX® KX-D Type SB

Size	Torque <sup>1)</sup> [Nm] KX-D		Finish bore KX-D [min. - max.]		Dimensions [mm]								
	TKN	T <sub>Kmax.</sub>	GJL d <sub>1</sub> ; d <sub>2</sub>	Steel d <sub>1</sub> ; d <sub>2</sub>	L	l <sub>1</sub> ; l <sub>2</sub>	E	D <sub>H</sub>	D <sub>1</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	M*
105	8650	17300	34-110	0-120	237	117	3	330	180	56	29	55	76
120	14110	28220	50-125	0-140	270	132	6	370	206	76	45	75	100
135	18690	37380	70-140	70-160	300	147	6	419	230	76	45	75	100
150	23100	46200	82-160	82-185	336	165	6	457	256	76	45	75	100
170	36900	73800	95-180	95-220	382	188	6	533	292	92	62	91	130
190	48210	96420	110-205	110-245	428	211	6	597	330	92	62	91	130
215	61900	123800	125-230	125-275	480	237	6	660	368	92	62	91	145
240	92030	184060	140-250	140-310	534	264	6	737	407	122	75	121	167

Selection of coupling/brake disk dimension "N"

Size	Brake disk ØA x b <sup>3)</sup>					
	Ø 560 x 30	Ø 630 x 30	Ø 710 x 30	Ø 800 x 30	Ø 900 x 30	Ø 1000 x 30
	KX-D	KX-D	KX-D	KX-D	KX-D	KX-D
105	47	47				
120	42	42				
135		57	57			
150			75	75		
170			82	82		
190				105	105	
215				131	131	131
240				128	128	128

\* Drop-out center dimension

<sup>1)</sup> Standard material NBR 80 Shore-A, for selection see page 14 et seqq. <sup>2)</sup> Higher speeds on request.

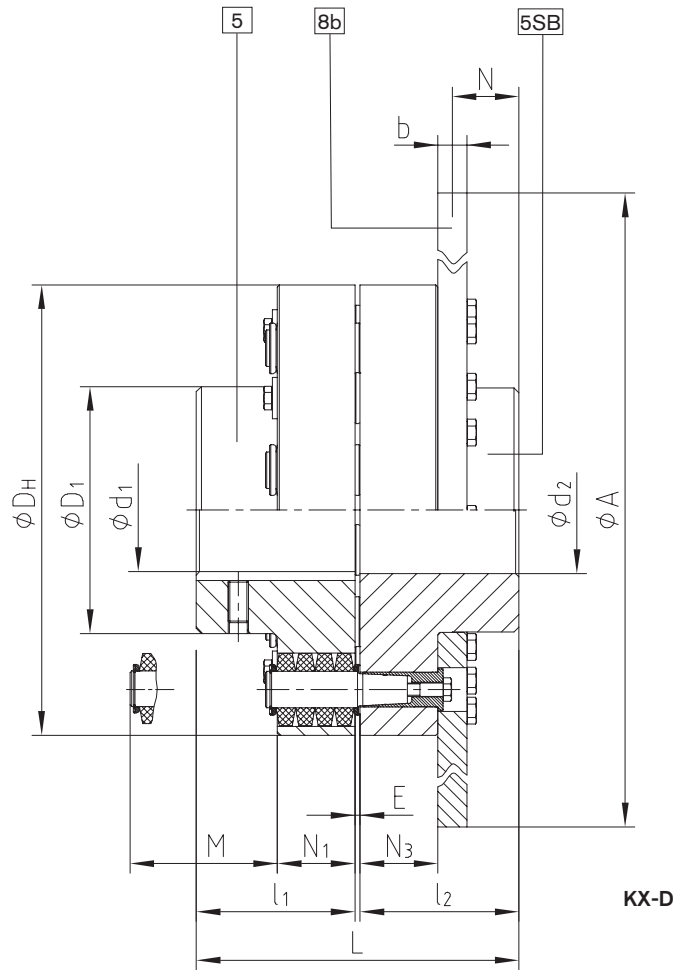
<sup>3)</sup> Maximum circumferential speed = 60 m/s referring to maximum outside diameter.

Finish bore according to ISO fit H7, feather keyway acc. to DIN 6885 sheet 1 - JS9.

If requested, coupling is dynamically balanced (semi-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding 30 m/s (referring to outside diameter ØA) we would recommend dynamic balancing.

Ordering  
example:

REVOLEX® KX 170	SB	Ø710x30	1 - Ø120	2SB - Ø150
Size and type of coupling	Type	Brake disk	Finish bore	Finish bore

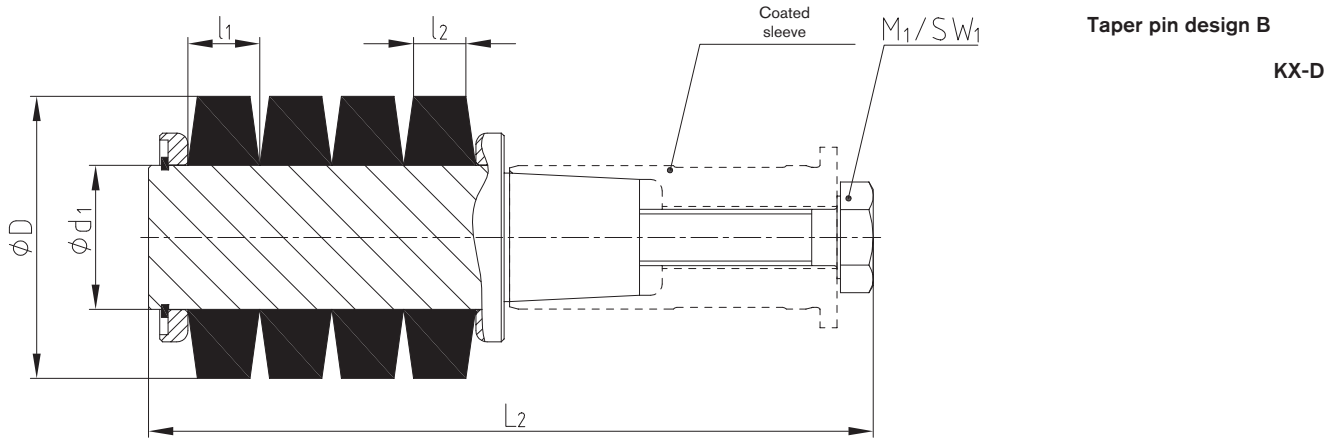




# REVOLEX® KX-D

## Flexible pin & bush couplings



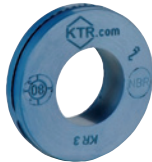
### Technical data of pins



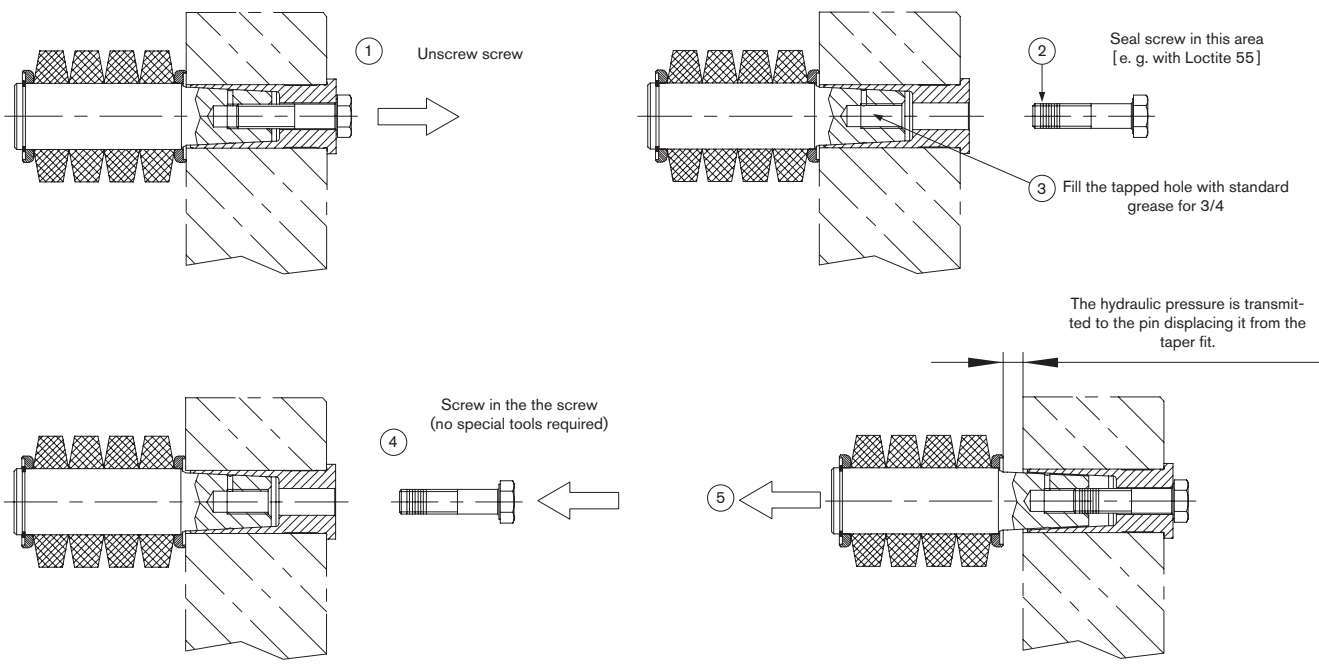
#### Technical data

Size	Pin		Component 3.2			Component 3.1b			Component 3.4b		Tightening torque $T_A$ [Nm]
	Size	No. z	Elastomer ring NBR 80 Shore A			Pin			Screw DIN 931/933		
		KX-D	D	$l_1$	$l_2$	$d_1$	$L_1$	$L_2$	$M_1$	$SW_1$	
75	3	10									
85	3	12									
95	3	14	50,0	12,7	9,0	25,40	103	129	M10	16	67
105	3	16									
120	4	14									
135	4	16	63,0	17,8	12,5	30,60	147,5	178	M12	18	115
150	4	18									
170	5	14									
190	5	16	85,5	22,9	15,2	43,20	191	220	M16	24	290
215	5	18									
240	6	14									
265	6	16									
280	6	18	113,7	30,5	20,3	58,40	244	290	M24	36	970
305	6	20									
330	6	24									
355	7	16									
370	7	20	150	41	28	75	-	387	M30	46	1950
470	7	22									

#### General information on the elastomer rings

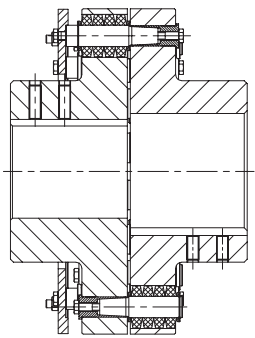
Material	Perbunan (NBR)	Natural rubber (NR)	Perbunan (NBR)
Spider hardness	80 Shore-A	80 Shore-A	80 Shore-A
Permanent temperature range [°C]	- 30 to +80	- 50 to +70	- 30 to +80
Max. temperature (short-term) [°C]	- 50 to +120	-	-
Colour	black	black	blue
Operating range	STANDARD	Temperatures below zero	Electrically insulating and backlash-free, e. g. ropeway drives
			

Assembly/disassembly

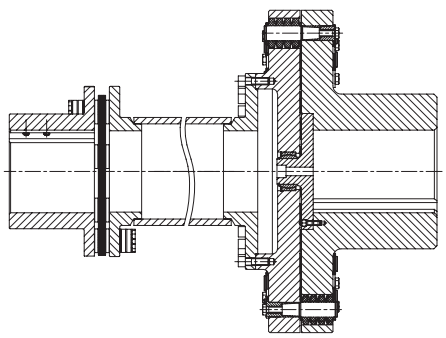


Other types

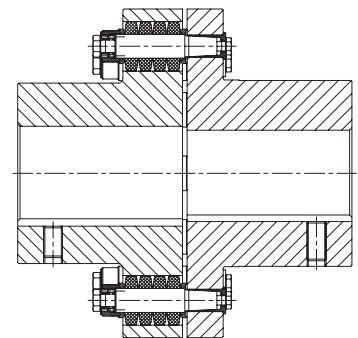
Type AB with limited axial backlash



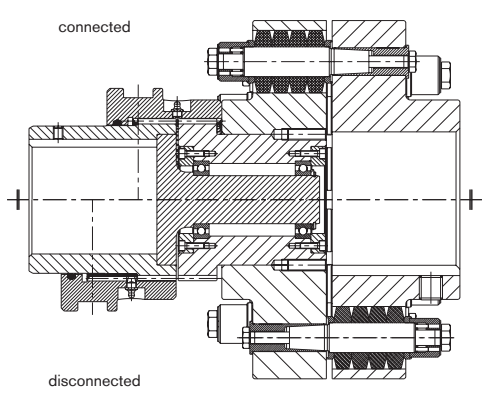
Intermediate shaft type with RADEX®-N



Backlash-free type



Type KX-D SD shiftable with shiftable linkage



Type KX-D with cardan shaft connection

