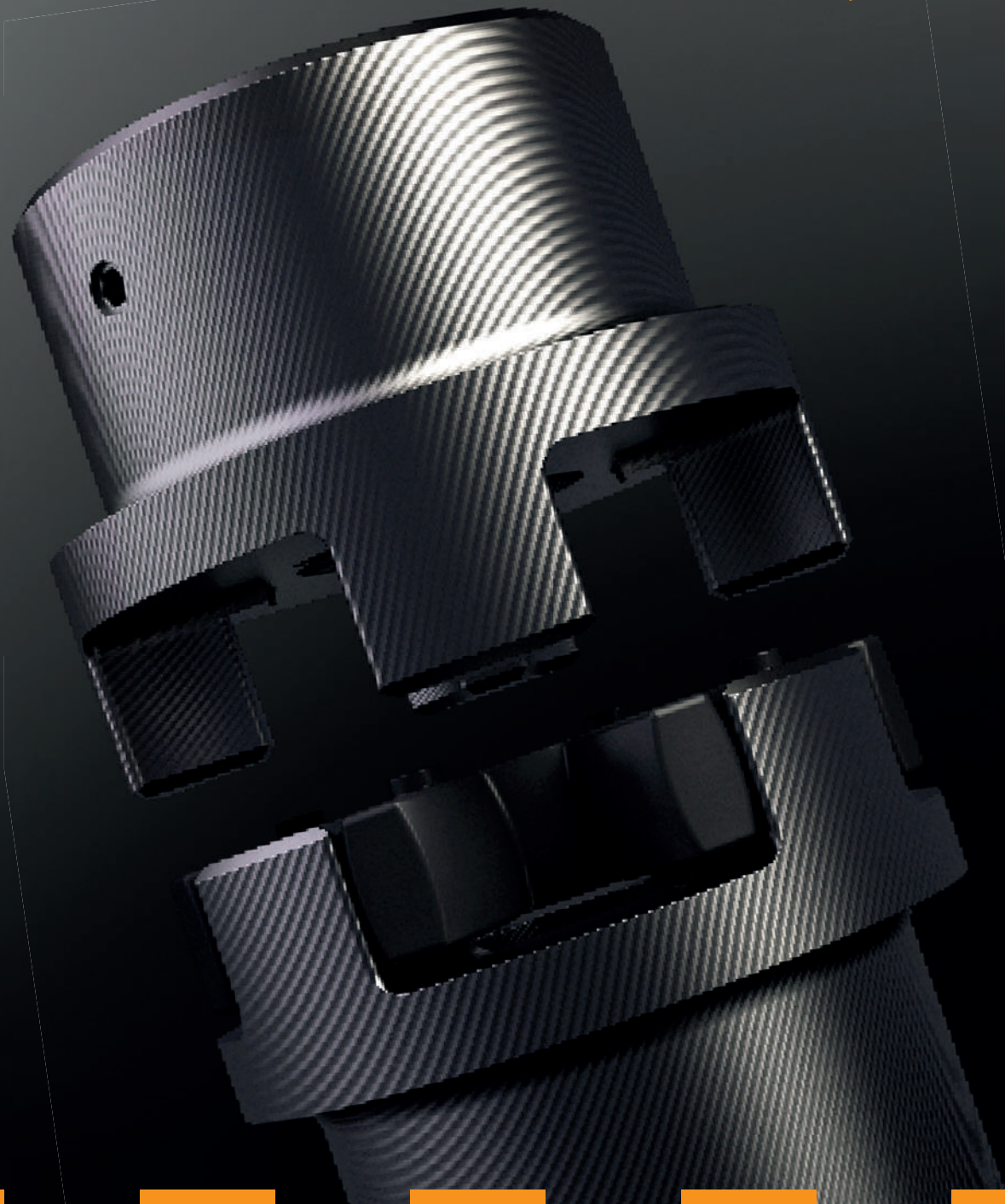


Made for Motion



## Cross section

- Couplings
- Torque limiters
- Clamping elements
- Torque measuring systems

## FUTURE WITH A SYSTEM.

KTR have consistently continued to extend their expertise in building systems over the past few decades. Today we are a leading manufacturer providing solutions with highest quality standards in the fields of drive technology, brake and cooling systems as well as hydraulic components to our global business partners.

So what would be more obvious than adapting our company name to this development? KTR Kupplungstechnik GmbH has become KTR Systems GmbH.

The change of name takes account of the growing diversity of our performance range demonstrating the global markets and our customers that we are prepared to take over just more responsibility in machines and plants.

## THAT'S WHAT IT IS ALL ABOUT.

KTR has set things in motion for more than 60 years. And since you can go far if you move a lot, KTR has meanwhile become a worldwide leader in the range of drive and fluid technology for industrial applications. Every year several millions of couplings covering a weight from 5 grams to 2 tons or more come off the assembly in KTR performing reliably even under harshest conditions – on all continents of the earth.

**„Innovation & tradition are the key components of our product portfolio and KTR's corporate culture“**

Nicola Warning, CEO of KTR

# EXPERIENCE MAKES THE DIFFERENCE.

Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials on the one hand allowing for an increase of torques and on the other hand an increase of pressure resistance.

Pin & bush coupling: starting on page 20  
REVOLEX®

Steel lamina coupling: starting on page 32  
RADEX®-N

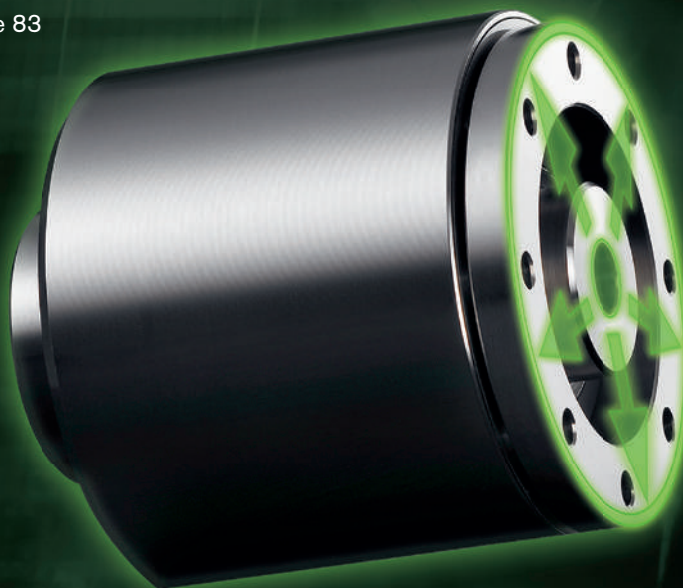
Flange coupling: starting on page 82  
BoWex® FLE-PAC,  
BoWex® ELASTIC®,  
MONOLASTIC®



## TORQUE INCREASE



Magnetic coupling: starting on page 83  
MINEX®-S



## HIGHER PRESSURE RESISTANCE





# Cross section

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Other types	49		

# ROTEX®

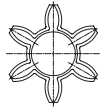
## Flexible jaw couplings

### Properties of standard spiders

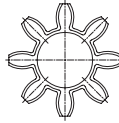
ROTEX® 14



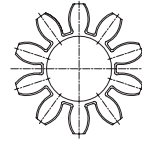
ROTEX® 19



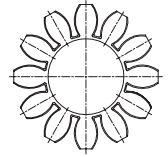
ROTEX® 24 - 65



ROTEX® 75 - 160







ROTEX® 180




#### Degree of hardness



Spider type (Shore hardness)	92 Shore A (T-PUR®)	92 Shore A
	 T-PUR®	
Size	14 to 180	14 to 90
Material	T-PUR®	Polyurethane (PUR)
Permissible temperature range		
Permanent temperature	-50 °C to +120 °C	-40 °C to +90 °C
Short-term temperature	-50 °C to +150 °C	-50 °C to +120 °C
Features	<ul style="list-style-type: none"> <li>- significantly higher service life expectancy</li> <li>- very good temperature resistance</li> <li>- improved damping of vibrations</li> <li>- good damping, average flexibility</li> <li>- suitable for all hub materials</li> </ul>	<ul style="list-style-type: none"> <li>- good damping, average flexibility</li> <li>- suitable for all hub materials</li> </ul>

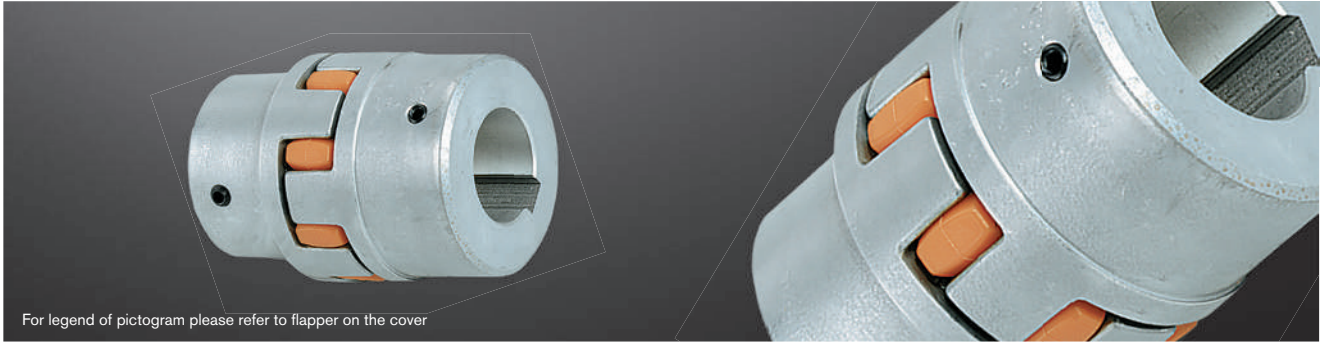
Spider type (Shore hardness)	98 Shore A (T-PUR®) <sup>1)</sup>	98 Shore A <sup>1)</sup>
	 T-PUR®	
Size	14 to 180	14 to 90
Material	T-PUR®	Polyurethane (PUR)
Permissible temperature range		
Permanent temperature	-50 °C to +120 °C	-30 °C to +90 °C
Short-term temperature	-50 °C to +150 °C	-40 °C to +120 °C
Features	<ul style="list-style-type: none"> <li>- significantly higher service life expectancy</li> <li>- very good temperature resistance</li> <li>- improved damping of vibrations</li> <li>- transmission of high torques with average damping</li> <li>- recommended hub material: steel, GJL and GJS</li> </ul>	<ul style="list-style-type: none"> <li>- transmission of high torques with average damping</li> <li>- recommended hub material: steel, GJL and GJS</li> </ul>

Spider type (Shore hardness)	64 Shore D (T-PUR®)
	 T-PUR®
Size	14 to 180
Material	T-PUR®
Permissible temperature range	
Permanent temperature	-50 °C to +120 °C
Short-term temperature	-50 °C to +150 °C
Features	<ul style="list-style-type: none"> <li>- significantly higher service life expectancy</li> <li>- very good temperature resistance</li> <li>- improved damping of vibrations</li> <li>- transmission of very high torques with low damping</li> <li>- recommended hub material: steel and GJS</li> </ul>

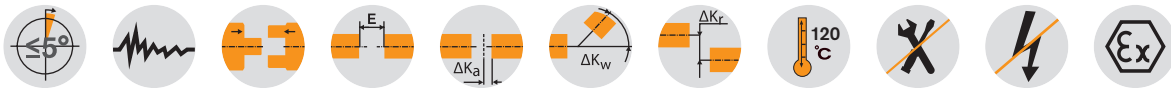


# ROTEX® Standard Flexible jaw couplings

Material aluminium + cast + powder metal



For legend of pictogram please refer to flapper on the cover



ROTEX® Powder metal steel (Sint)																			
Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General													
					L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]			
14	1a	7.5	12.5	16	0-16	35	11	13	10	1.5	30	10	30	-	M4	5	1.5		
19	1a	10	17	21	0-24	66	25	16	12	2.0	40	18	40	-	M5	10	2		
24	1a	35	60	75	0-28	78	30	18	14	2.0	56	27	40	-	M5	10	2		

ROTEX® Aluminium diecast (Al-D)																			
Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General													
					L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]			
19	1	10	17	-	6-19	66	25	16	12	2	41	18	32	20	M5	10	2		
	19-24				41														
24	1	35	60	-	9-24	78	30	18	14	2	56	27	40	24	M5	10	2		
	22-28				56														
28	1	95	160	-	10-28	90	35	20	15	2.5	66	30	48	28	M8	15	10		
	28-38				66														

ROTEX® Aluminium (Al-H)																			
Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General													
					L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]			
5	1a	0.5	0.9	-	0-6	15	5	5	4	0.5	10	-	-	-	M2	2.5	-		
7	1a	1.2	2.0	2.4	0-7	22	7	8	6	1.0	14	-	-	-	M3	3.5	-		
9	1a	3.0	5.0	6.0	0-11	30	10	10	8	1.0	20	7.2	-	-	M4	5	1.5		
12	1a	5.0	9.0	12	0-12	34	11	12	10	1.0	25	8.5	-	-	M4	5	1.5		
14	1a	7.5	12.5	16	0-16	35	11	13	10	1.5	30	10.5	-	-	M4	5	1.5		
19	1a	10	17	26	0-24	66	25	16	12	2.0	40	18	-	-	M5	10	2		
24	1a	35	60	75	0-28	78	30	18	14	2.0	55	27	-	-	M5	10	2		
28	1a	95	160	200	0-38	90	35	20	15	2.5	65	30	-	-	M8	15	10		
38	1a	190	325	405	0-45	114	45	24	18	3.0	80	38	-	-	M8	15	10		
42	1a	265	450	560	0-55	126	50	26	20	3.0	95	46	-	-	M8	20	10		
48	1a	310	525	655	0-62	140	56	28	21	3.0	105	51	-	-	M8	20	10		

The coupling is provided with a ROTEX® GS spider as a standard (ROTEX® standard spider available, if requested).

ROTEX® Cast iron (GJL)																			
Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General													
					L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]			
38	1a	190	325	405	12-40	114	45	24	18	3	80	38	66	37	M8	15	10		
	38-48				78														
42	1b	265	450	560	12-48	126	50	26	20	3	95	46	75	40	M8	20	10		
	14-45				94														
48	1b	310	525	655	14-55	176	75	28	21	3.5	105	51	85	45	M8	20	10		
	15-52				104														
55	1	410	685	825	15-62	188	80	30	22	4	120	60	85	52	M10	20	17		
	20-60				118														
65	1	625	940	1175	22-70	185	75	35	26	4.5	135	68	115	61	M10	20	17		
75	1	1280	1920	2400	30-80	210	85	40	30	5	160	80	135	69	M10	25	17		
90	1	2400	3600	4500	40-100	245	100	45	34	5.5	200	100	160	81	M12	30	40		

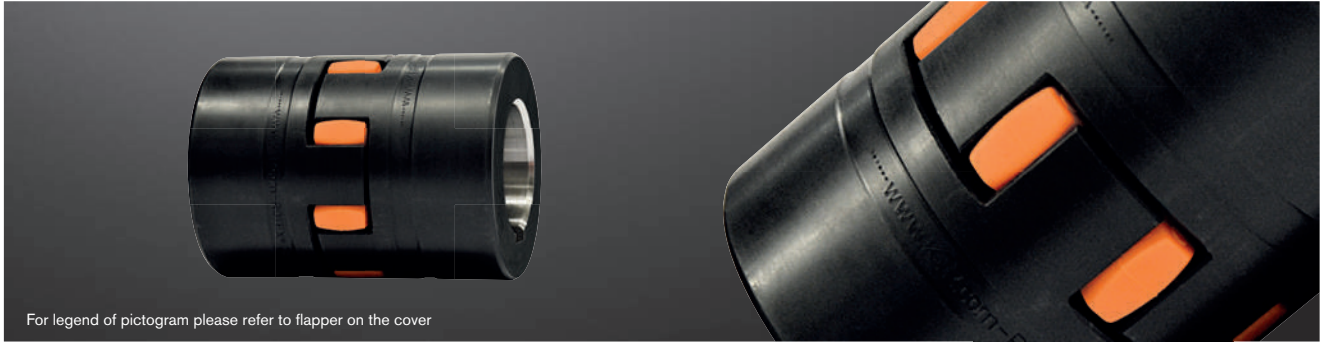
ROTEX® Nodular iron (GJS)																			
Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General													
					L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]			
100	1	3300	4950	6185	50-115	270	110	50	38	6	225	113	180	89	M12	30	40		
110	1	4800	7200	9000	60-125	295	120	55	42	6.5	255	127	200	96	M16	35	80		
125	1	6650	10000	12500	60-145	340	140	60	46	7	290	147	230	112	M16	40	80		
140	1	8550	12800	16000	60-160	375	155	65	50	7.5	320	165	255	124	M20	45	140		
160	1	12800	19200	24000	80-185	425	175	75	57	9	370	190	290	140	M20	50	140		
180	1	18650	28000	35000	85-200	475	195	85	64	10.5	420	220	325	156	M20	50	140		

■ = Unless any material is specified in the order, it is defined with the calculation/order.

<sup>1)</sup> Maximum torque of the coupling T<sub>K max</sub> = rated torque of the coupling T<sub>K rated</sub> x 2. For selection please see catalogue "Drive Technology" on page 14 et seqq.

Ordering example:	ROTEX® 38	GJL	92 ShA	1a	Ø 45	1	Ø 25
	Coupling size	Material	Spider hardness	Component	Finish bore	Component	Finish bore





For legend of pictogram please refer to flapper on the cover

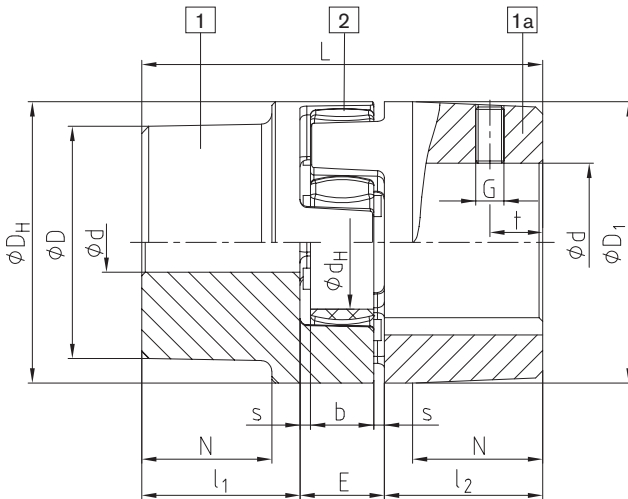


**ROTEX® with CDP coating <sup>1)</sup>**

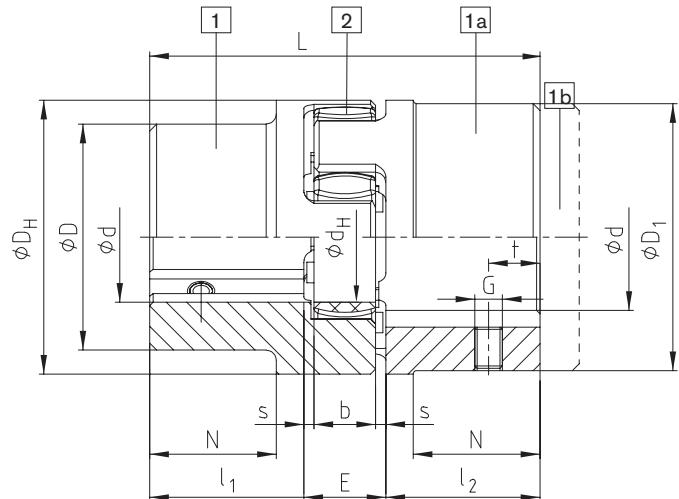
Size	Component	Spider (component 2) Rated torque [Nm]			Finish bore d (min. - max.)	Dimensions [mm]													
		92 ShA	98 ShA	64 ShD		General											Thread for setscrews		
						L	l <sub>1</sub> , l <sub>2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N	G	t	T <sub>A</sub> [Nm]		
19	1a	10	17	21	0-25	66	25	16	12	2	40	18	40	-	M5	10	2		
24	1a	35	60	75	0-35	78	30	18	14	2	55	27	55	-	M5	10	2		
28	1a	95	160	200	0-40	90	35	20	15	2.5	65	30	65	-	M8	15	10		
38	1	190	325	405	0-48	114	45	24	18	3	80	38	70	27	M8	15	10		
42	1	265	450	560	0-55	126	50	26	20	3	95	46	85	28	M8	20	10		
48	1	310	525	655	0-62	140	56	28	21	3.5	105	51	95	32	M8	20	10		
55	1	410	685	825	0-74	160	65	30	22	4	120	60	110	37	M10	20	17		
65	1	625	940	1175	0-80	185	75	35	26	4.5	135	68	115	47	M10	20	17		
75	1	1280	1920	2400	0-95	210	85	40	30	5	160	80	135	53	M10	25	17		
90	1	2400	3600	4500	0-110	245	100	45	34	5.5	200	100	160	62	M12	25	40		
100	1	3300	4950	6185	0-115	270	110	50	38	6	225	113	180	89	M12	30	40		
110	1	4800	7200	9000	0-125	295	120	55	42	6.5	255	127	200	96	M16	35	80		
125	1	6650	10000	12500	60-145	340	140	60	46	7	290	147	230	112	M16	40	80		

<sup>1)</sup> Corrosion protection class acc. to DIN EN ISO 12944: Min. C4, heavy-long

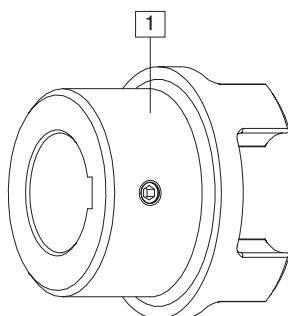
**Components**



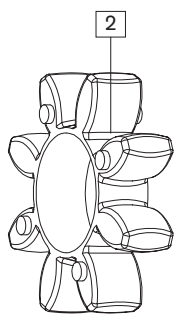
AI-D (thread opposite the keyway)



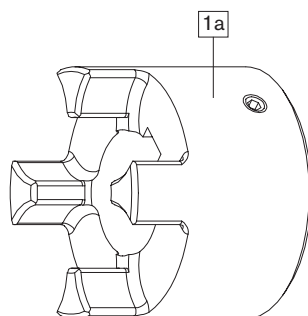
GJL / GJS (thread on the keyway)



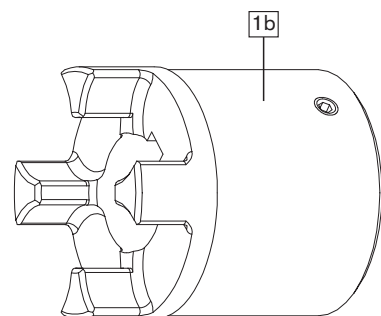
Standard hub



Spider



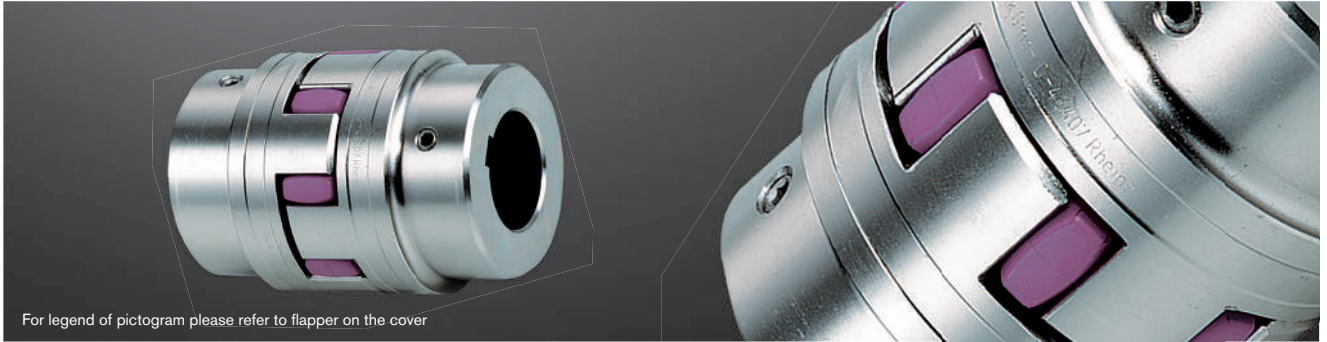
Large hub



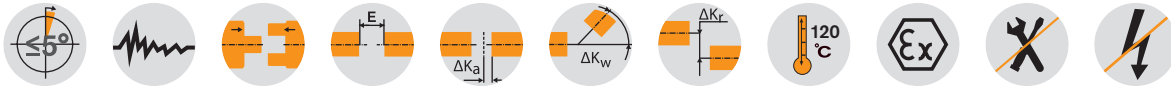
Large hub lengthened

# ROTEX® Standard Flexible jaw couplings

## Material steel/stainless steel



For legend of pictogram please refer to flapper on the cover



### ROTEX® Steel (St)

Size	Component	Spider <sup>1)</sup> (component 2) Rated torque [Nm]			Finish bore d (min. - max.)	Dimensions [mm]											Thread for setscrews		
		92 ShA	98 ShA	64 ShD		General											G	t	T <sub>A</sub> [Nm]
						L	l <sub>1, 2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N					
14	1a	7.5	12.5	16	0-16	35	11	13	10	1.5	30	10	30	—	M4	5	1.5		
	50					18.5													
19	1a	10	17	21	0-25	66	25	16	12	2	40	18	40	—	M5	10	2		
	90					37													
24	1a	35	60	75	0-35	78	30	18	14	2	55	27	55	—	M5	10	2		
	118					50													
28	1a	95	160	200	0-40	90	35	20	15	2.5	65	30	65	—	M8	15	10		
	140					60													
38	1	190	325	405	0-48	114	45	24	18	3	80	38	70	27	M8	15	10		
	164					70	80						—						
42	1	265	450	560	0-55	126	50	26	20	3	95	46	85	28	M8	20	10		
	176					75	95						—						
48	1	310	525	655	0-62	140	56	28	21	3.5	105	51	95	32	M8	20	10		
	188					80	105						—						
55	1	410	685	825	0-75	160	65	30	22	4	120	60	110	37	M10	20	17		
	210					90	120						—						
65	1	625	940	1175	0-80	185	75	35	26	4.5	135	68	115	47	M10	20	17		
	235					100	135						—						
75	1	1280	1920	2400	0-95	210	85	40	30	5	160	80	135	53	M10	25	17		
	260					110	160						—						
90	1	2400	3600	4500	0-110	245	100	45	34	5.5	200	100	160	62	M12	30	40		
	295					125	200						—						
100	1	3300	4950	6185	0-115	270	110	50	38	6	225	113	180	89	M12	30	40		
110	1	4800	7200	9000	0-125	295	120	55	42	6.5	255	127	200	96	M16	35	80		
125	1	6650	10000	12500	60-145	340	140	60	46	7	290	147	230	112	M16	40	80		
140	1	8550	12800	16000	60-160	375	155	65	50	7.5	320	165	255	124	M20	45	140		
160	1	12800	19200	24000	80-185	425	175	75	57	9	370	190	290	140	M20	50	140		
180	1	18650	28000	35000	85-200	475	195	85	64	10.5	420	220	325	156	M20	50	140		

■ = Unless any material is specified in the order, it is defined with the calculation/order.

<sup>1)</sup> Maximum torque of the coupling T<sub>K max</sub> = rated torque of the coupling T<sub>K rated</sub> x 2. For selection please see catalogue "Drive Technology" on page 14 et seqq.

### ROTEX® Stainless steel

Size	Material	Spider (component 2) Rated torque [Nm]			Finish bore d (min. - max.)	Dimensions [mm]											Thread for setscrews		
		92 ShA	98 ShA	64 ShD		General											G	t	T <sub>A</sub> [Nm]
						L	l <sub>1, 2</sub>	E	b	s	D <sub>H</sub>	d <sub>H</sub>	D	N					
19	1.4305	10	17	21	0-25	66	25	16	12	2	40	18	40	-	M5	10	2		
24	1.4571	35	60	75	0-35	78	30	18	14	2	55	27	55	-	M5	10	2		
28	1.4305	95	160	200	0-40	90	35	20	15	2.5	65	30	65	-	M8	15	10		
38	1.4571	190	325	405	0-48	114	45	24	18	3	80	38	80	27	M8	15	10		
42	1.4305	265	450	560	0-55	126	50	26	20	3	95	46	95	28	M8	20	10		
48	1.4571	310	525	655	0-62	140	56	28	21	3.5	105	51	105	32	M8	20	10		

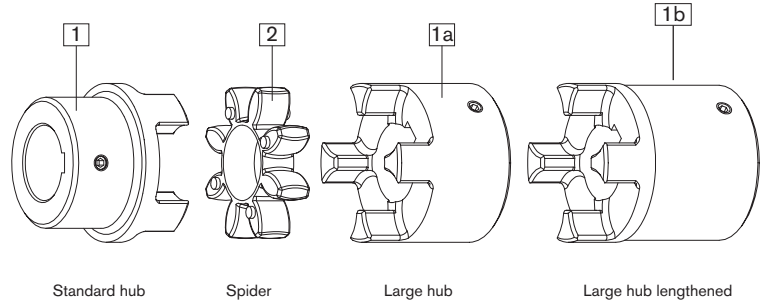
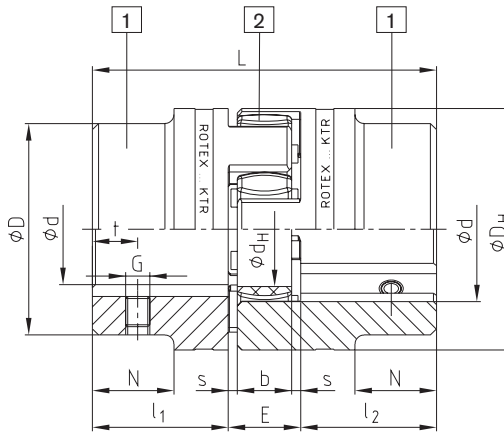
Ordering  
example:

ROTEX® 38	St	92 ShA	1 - Ø45	1 - Ø25
Coupling size	Material	Spider hardness	Component Finish bore	Component Finish bore

# ROTEX® Flexible jaw couplings

## DIN EN 10204 - 3.1 and 3.2 material test certificate

### Components



Steel (thread on the keyway)

ROTEX® Coupling hubs with test certificate <sup>1)</sup>				
Size	Component	Material <sup>2)</sup>	Inspection certificate acc. to DIN EN 10204	Notch impact strength
19	1a	S355 <sup>2)</sup>	3.1	>=27 J
24	1a	S355 <sup>2)</sup>	3.1	>=27 J
28	1a	S355 <sup>2)</sup>	3.1	>=27 J
38	1a	S355 <sup>2)</sup>	3.1	>=27 J
42	1	S355 <sup>2)</sup>	3.1	>=27 J
48	1	S355 <sup>2)</sup>	3.1	>=27 J
55	1	S355 <sup>2)</sup>	3.1	>=27 J
65	1	S355 <sup>2)</sup>	3.1	>=27 J
75	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
90	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
100	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
110	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
120	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
140	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
160	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		
180	1	S355 <sup>2)</sup>	3.1/3.2	>=27 J
		42CrMoS4+QT <sup>3)</sup>		

<sup>1)</sup> S355 suitable for feather key connections, 42CrMoS4+QT for oil press-fits

<sup>2)</sup> Notch impact strength with -40 °C

<sup>3)</sup> Notch impact strength with -20 °C

### Marine programme:

Hub materials S355J2+N and 42CrMo4+QT acc. to DIN EN 10204 - 3.1+3.2, size 75 - 180 available from stock.



## UL



### Use in fire pumps

ROTEX® couplings comply with the specifications of NFPA 20 standard for the installation of stationary pumps for fire protection and due to completion of the endurance tests required they also comply with the specifications of UL 448A, flexible couplings and connection shafts for stationary fire pumps.

Sizes available:



ROTEX® UL Listed								
Size	Component	Material	Spider (component 2) Rated torque [Nm] 92 ShA	Dimensions [mm]				
				Finish bore d (min. - max.)	L	l <sub>1,2</sub>	E	D <sub>H</sub>
42	1	St	265	18-55	126	50	26	95
55	1	St	410	24-74	160	65	30	120
65	1	St	625	24-80	185	75	35	135
75	1	St	1280	24-95	210	85	40	160
90	1	St	2400	30-110	245	100	45	200

\* for complete dimensions see table on page 36

# ROTEX® Flexible jaw couplings

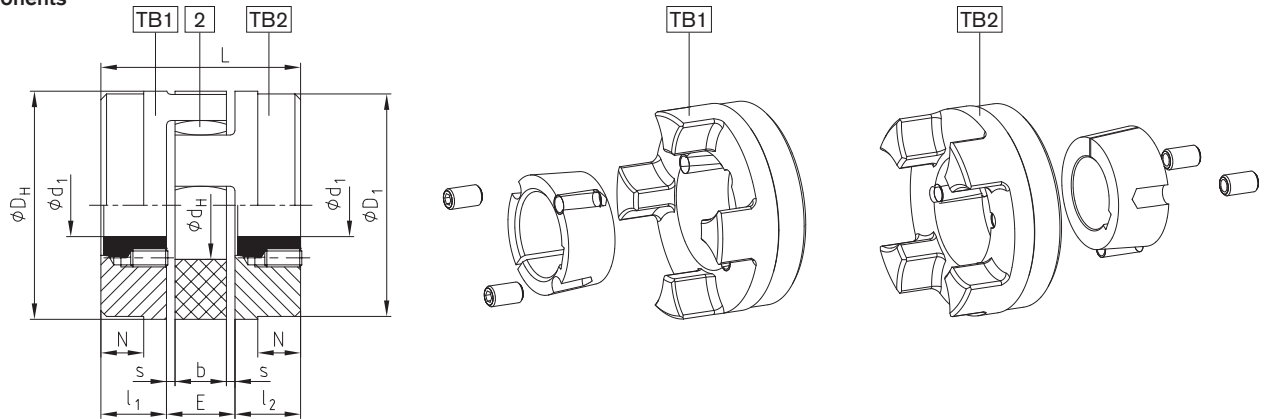
## Taper clamping sleeve



For legend of pictogram please refer to flapper on the cover



### Components



### ROTEX® Shaft coupling for taper clamping sleeve

Size	Taper clamping sleeve	Dimensions [mm]									Fastening screws for taper clamping sleeves				
		$l_1, l_2$	E	s	b	L	N	$D_H$	$D_1$	$d_H$	Size [Inch] <sup>1)</sup>	Length [mm]	Quantity	$T_A$ [Nm]	
24	1008	22	18	2.0	14	62	–	55	55	27	1/4"	13	2	5.7	
28	1108	23	20	2.5	15	66	–	65	65	30	1/4"	13	2	5.7	
38	1108	23	24	3.0	18	70	15	80	78	38	1/4"	13	2	5.7	
42	1610	26	26	3.0	20	78	16	95	94	46	3/8"	16	2	20	
48	1615	39	28	3.5	21	106	28	105	104	51	3/8"	16	2	20	
55	2012	33	30	4.0	22	96	20	120	118	60	7/16"	22	2	31	
65	2012	33	35	4.5	26	101	19	135	115	68	7/16"	22	2	31	
75	2517	52	40	5.0	30	144	36	160	158	80	1/2"	25	2	49	
	5/8"										32	92			
90	3020	52	45	5.5	34	149	33	200	160	100	3/8"	32	2	92	
100	3535	90	50	6	38	230	69	225	180	113	1/2"	49	3	113	
125	4545	114	60	7.0	46	288	86	290	230	147	3/4"	49	3	192	

### Taper clamping sleeve

Size	Summary of bore dimensions $d_1$ [mm], H7 fit-feather keyway acc. to DIN 6885 sheet 1																		
1008	Ø10	Ø11	Ø12	Ø14	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25								
1108	Ø10	Ø11	Ø12	Ø14	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28 <sup>2)</sup>							
1610	Ø14	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42 <sup>2)</sup>				
1615	Ø14	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42 <sup>2)</sup>				
2012	Ø14	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	
2517	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60
3020	Ø25	Ø28	Ø30	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60	Ø65	Ø70	Ø75				
3535	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60	Ø65	Ø70	Ø75	Ø80	Ø85	Ø90				
4545	Ø55	Ø60	Ø65	Ø70	Ø75	Ø80	Ø85	Ø90	Ø95	Ø100	Ø105	Ø110							

• Available for type TB2 only

<sup>1)</sup> 1. BSW thread

Coupling type TB1/TB2, TB1/TB1 and TB2/TB2 possible.

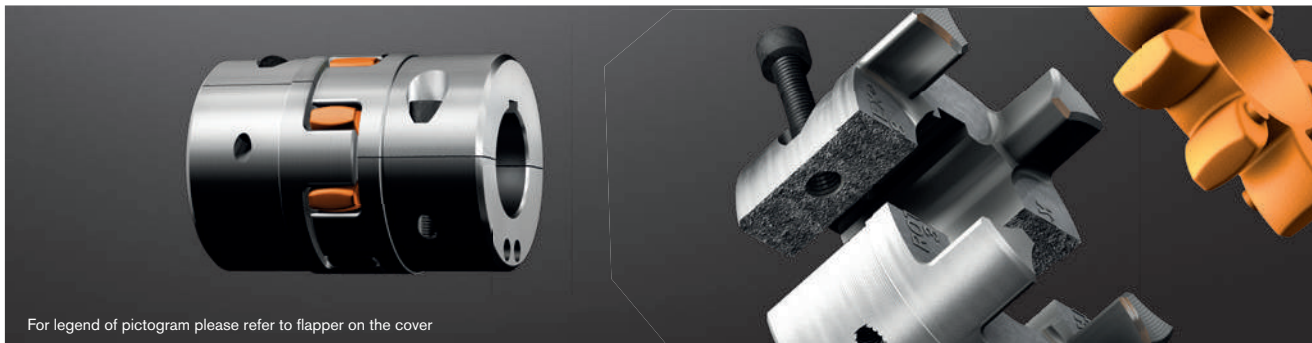
Please order our separate dimension sheet (M373054).

<sup>2)</sup> Bores with feather keyway (flat design) acc. to DIN 6885 sheet 3

Ordering example:	ROTEX® 38	92 ShA	1108	TB1 - Ø 24		TB2 - Ø 22	
	Coupling size	Spider hardness	Taper clamping sleeve	Hub design	Finish bore	Hub design	Finish bore

# ROTEX® S-H Flexible jaw couplings

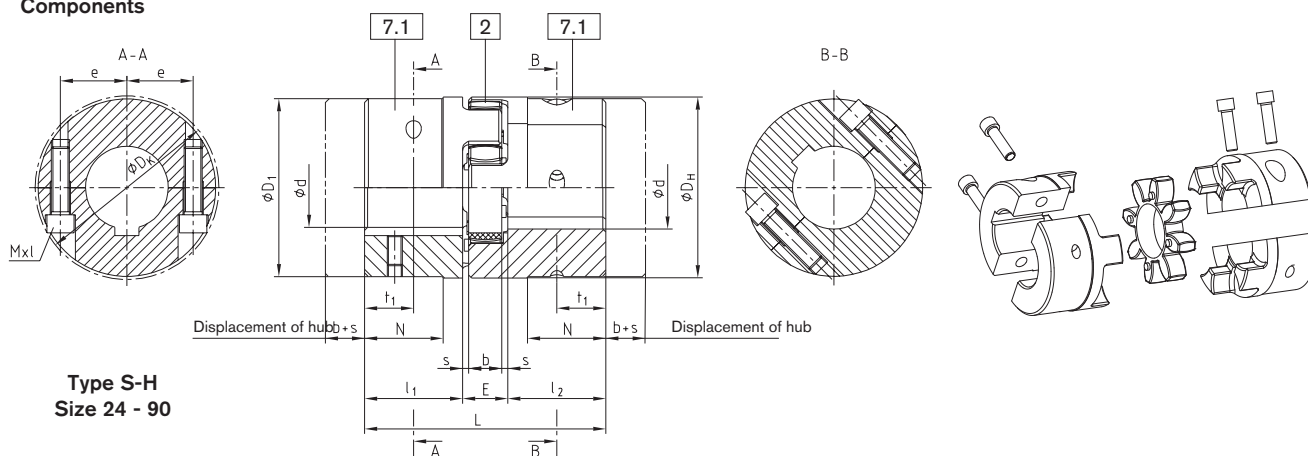
## Drop-out center design coupling with SPLIT hubs



For legend of pictogram please refer to flapper on the cover



### Components



### ROTEX® Type S-H Powder metal steel (Sint)

Size	Finish bore d		Dimensions [mm]													Cap screws DIN EN ISO 4762	
	Min.	Max.	L	$l_1, l_2$	E	b	s	DH	D1	DK	N	e	$t_1$	$t_2$	G	Mxl	Tightening torque $T_A$ [Nm]
24	0	24	78	30	18	14	2	55	-	57.5	-	20	15	10	M5	M6x20	14
28	0	38	90	35	20	15	2.5	65	-	73	-	25	17.5	15	M8	M8x25	34

### ROTEX® Type S-H Cast iron (GJL)

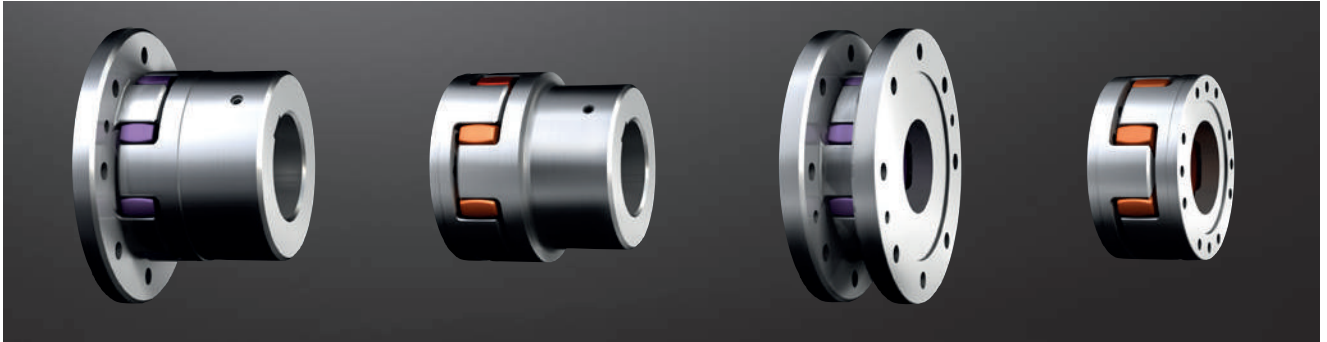
Size	Finish bore d		Dimensions [mm]													Cap screws DIN EN ISO 4762	
	Min.	Max.	L	$l_1, l_2$	E	b	s	DH	D1	DK	N	e	$t_1$	$t_2$	G	Mxl	Tightening torque $T_A$ [Nm]
38	24	45	114	45	24	18	3	80	78	83.5	37	30	22.5	15	M8	M8x30	34
42	24	55	126	50	26	20	3	95	94	97	40	30	25	M10x35		67	
48	24	60	140	56	28	21	3.5	105	104	108.5	45	35	28	20	M12x40	115	
55	24	70	160	65	30	22	4	120	118	122	52	40	32.5		M12x45	115	
65	24	70	185	75	35	26	4.5	135	115	123.5	61	45	37.5	M10	M12x45	115	
	70	80							135	132.5		50					
75	40	80	210	85	40	30	5	160	135	147	69	51	42.5	25	M16x50	290	
	80	90							160	158		57					
90	40	90	245	100	45	34	5.5	200	160	176	81	60	50	30	M12	M20x60	560
	90	110							200	197		72					

7.1 = SPLIT hub with feather keyway

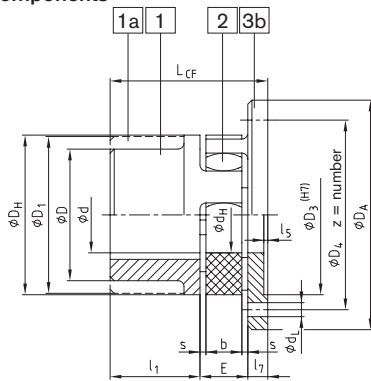
Ordering example:	ROTEX® 38	S-H	98 ShA	7.1	Ø38	7.1	Ø30
	Coupling size	Type	Spider hardness	Hub design	Finish bore	Hub design	Finish bore

# ROTEX® CF, CFN, DF and DFN Flexible jaw couplings

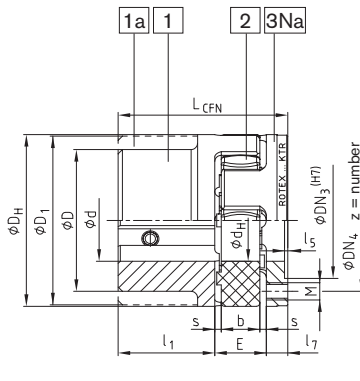
## Flange programme



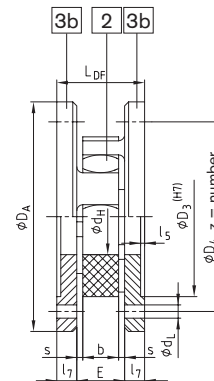
### Components



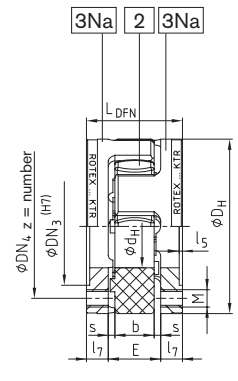
Type CF



Type CFN



Type DF



Type DFN

### ROTEX® Type CF, CFN and DF, DFN

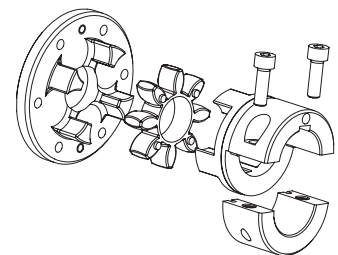
Size	d, D, D <sub>1</sub>	Dimensions general [mm]							Dimensions CF and DF [mm]							Dimensions CFN and DFN [mm]							
		D <sub>H</sub>	d <sub>H</sub>	l <sub>1</sub>	E	s	b	l <sub>5</sub>	l <sub>7</sub>	D <sub>A</sub>	D <sub>3</sub>	D <sub>4</sub>	z	d <sub>L</sub>	L <sub>CF</sub>	L <sub>DF</sub>	DN <sub>3</sub>	DN <sub>4</sub>	M	z	Pitch	L <sub>CFN</sub>	L <sub>DFN</sub>
24		55	27	30	18	2.0	14	1.5	8	80	55	65	5	4.5	56	34	36	45	M5	8		56	34
28		65	30	35	20	2.5	15	1.5	10	100	65	80	6	6.6	65	40	44	54	M6	8	8x45°	65	40
38		80	38	45	24	3.0	18	1.5	10	115	80	95	6	6.6	79	44	54	66	M8	8		79	44
42		95	46	50	26	3.0	20	2.0	12	140	95	115	6	9.0	88	50	65	80	M8	12	16x22.5°	88	50
48		105	51	56	28	3.5	21	2.0	12	150	105	125	8	9.0	96	52	75	90	M8	12		96	52
55		120	60	65	30	4.0	22	2.0	16	175	120	145	8	11.0	111	62	84	102	M10	8	8x45°	111	62
65		135	68	75	35	4.5	26	2.0	16	190	135	160	10	11.0	126	67	96	116	M10	12	16x22.5°	126	67
75		160	80	85	40	5.0	30	2.5	19	215	160	185	10	13.5	144	78	112	136	M12	15		144	78
90		200	100	100	45	5.5	34	3.0	20	260	200	225	12	13.5	165	85	145	172	M16	15		165	85
100		225	113	110	50	6.0	38	4.0	25	285	225	250	12	13.5	185	100	165	195	M16	15		185	100
110		255	127	120	55	6.5	42	4.0	26	330	255	290	12	18.0	201	107	180	218	M20	15	20x18°	201	107
125		290	147	140	60	7.0	46	5.0	30	370	290	325	16	18.0	230	120	215	252	M20	15		230	120
140		320	165	155	65	7.5	50	5.0	34	410	320	360	16	22.0	254	133	245	282	M20	15		254	133
160		370	190	175	75	9.0	57	5.0	38	460	370	410	16	22.0	288	151	280	325	M24	15		288	151
180		420	220	195	85	10.5	64	5.5	40	520	420	465	16	26.0	320	165	330	375	M24	18	24x15°	320	165

For other flange programmes see catalogue "Drive Technology" on page 45.

Other types: ROTEX® CF-H

Flange drop-out center design coupling

Please order our separate dimension sheet (M412069).



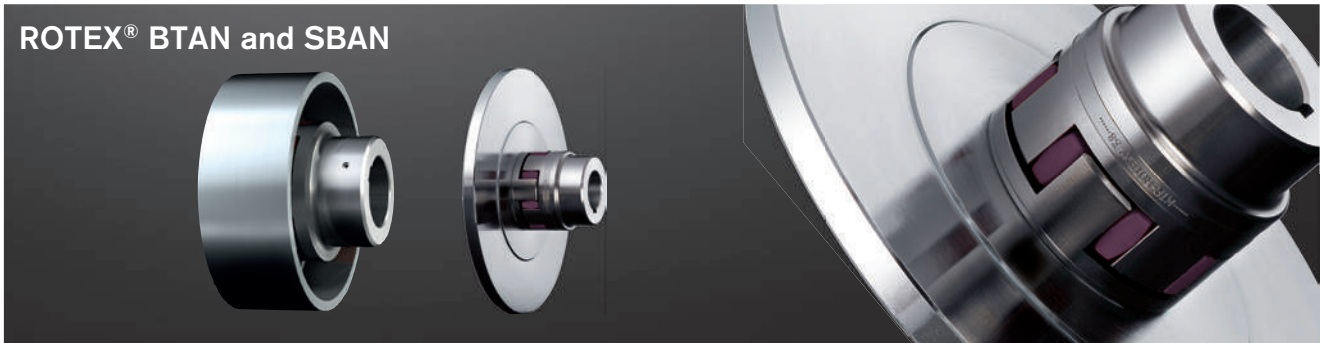
Ordering example:	ROTEX® 38	CF	92 ShA	1	GJL	Ø20
	Coupling size	Type	Spider hardness	Hub side, component	Material	Finish bore

# ROTEX®

## Flexible jaw couplings

### Other types

#### ROTEX® BTAN and SBAN



##### BTAN

- With brake drum for external drum brakes with double shoes
- Following DIN 15431/15435

##### SBAN

- With disk for braking caliper

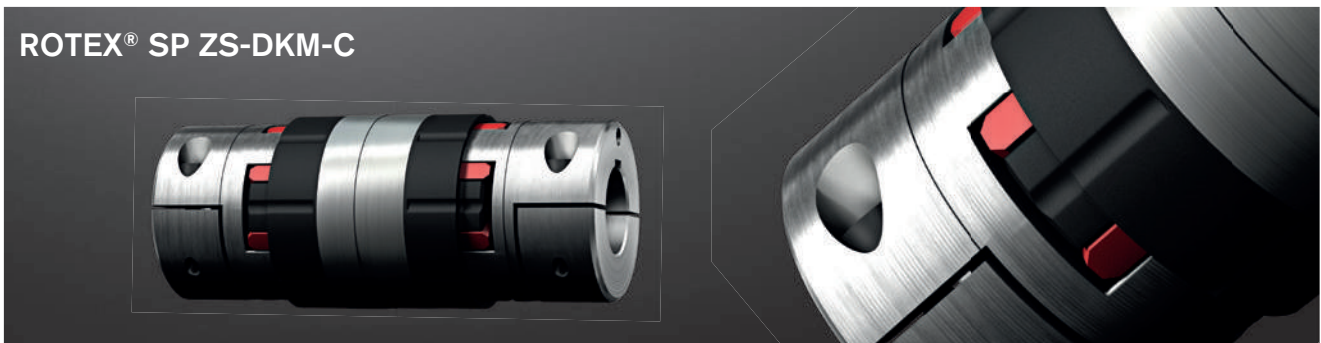
Every coupling type can be combined with various sizes of brake drums/brake disks.

#### ROTEX® ZS-DKM-H



- Double-cardanic jaw coupling for large shaft displacements
- Good damping properties due to double arrangement of spiders
- Spacer adapted to drop-out center length of standard pumps
- For bigger radial displacements generated by thermal expansion
- Assembly/disassembly via four screws
- For reduced loads on bearings / axial forces on shaft seals

#### ROTEX® SP ZS-DKM-C

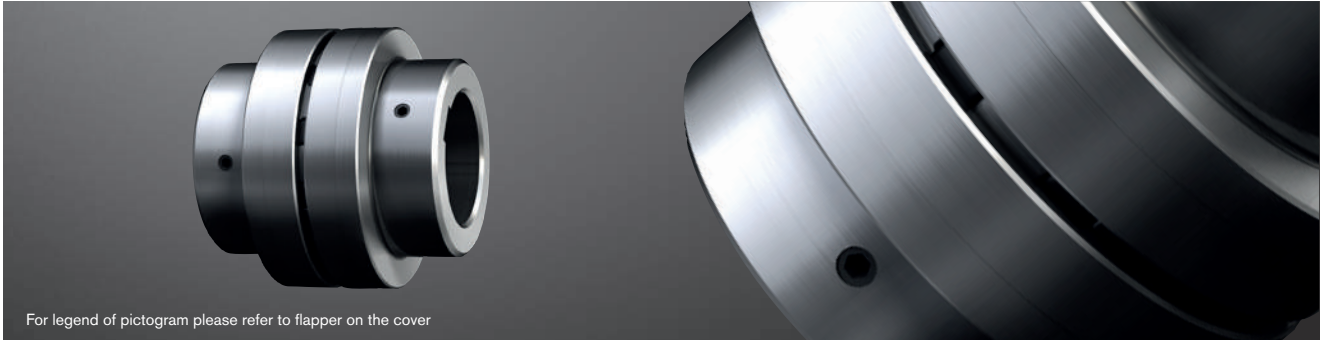


- Cam geometry consisting of conductive and high-strength nylon
- Maintenance-free in potentially explosive atmospheres
- Fail-safe, non-sparking
- Material of hub body: steel, aluminium or other metal materials
- Standard spacers up to a shaft distance of 250 mm
- Assembly/disassembly via 4 screws only
- Compensating for big shaft displacements due to double-cardanic structure
- Low restoring forces, thus increasing the overall service life of all adjacent components (bearings, gaskets, etc.)
- Assessed and approved according to EU directive 2014/34/EU (type 7.6 marked ex stock, type 7.5 half shell clamping hub without feather keyway as per cat. 3)

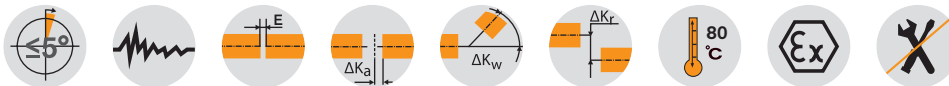
# POLY-NORM® AR

## Flexible couplings

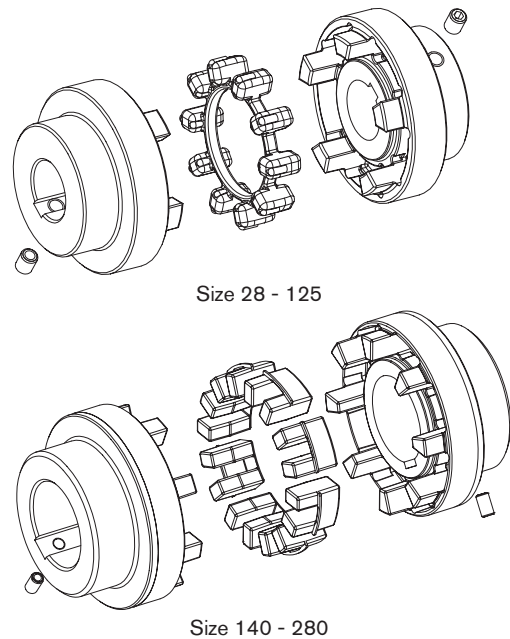
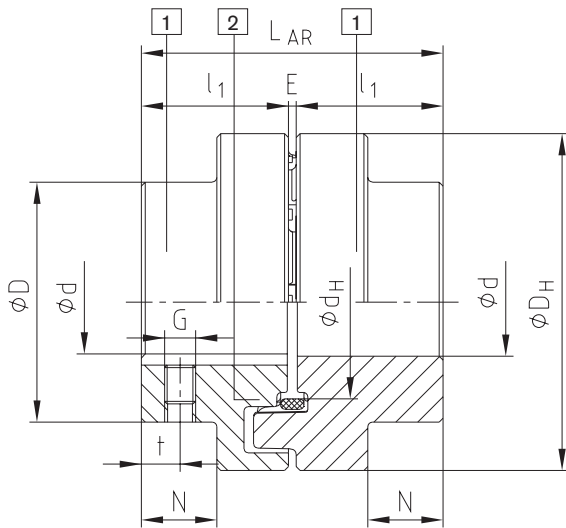
### Two-part



For legend of pictogram please refer to flapper on the cover



### Components



Components of type AR:  
1 = Standard hub (GJL)  
2 = Elastomer ring (up to size 180: NBR 78 ShA; from size 200: T-PUR® 84 ShA)

POLY-NORM® Type AR															
Size	Elastomer ring <sup>1)</sup> (part 2) Torque [Nm]		Max. finish bore d <sup>2)</sup>	Dimensions [mm]										Mass moment of inertia <sup>3)</sup> [kgm <sup>2</sup> ]	Weight <sup>3)</sup> [kg]
	TKN	TKmax.		General											
				LAR	l <sub>1</sub>	E	D <sub>H</sub>	D	d <sub>H</sub>	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	
200	19000	38000	85-200	408	200	8	450	335	-	126	M24	50	5.728	263.7	
220	30000	60000	95-220	448	220	8	500	370	-	140	M24	50	9.489	355.9	
240	43000	86000	105-240	488	240	8	550	405	-	154	M24	50	14.963	466.3	
260	55000	110000	115-260	530	260	10	650	440	-	158	M24	60	29.504	672.2	
280	67000	134000	125-280	570	280	10	700	475	-	172	M24	60	42.451	836.6	

<sup>1)</sup> Standard material Perbunan [NBR] 78 Shore A, size 140 - 280 double tooth elastomers, for selection see catalogue "Drive Technology" on page 14 et seqq.

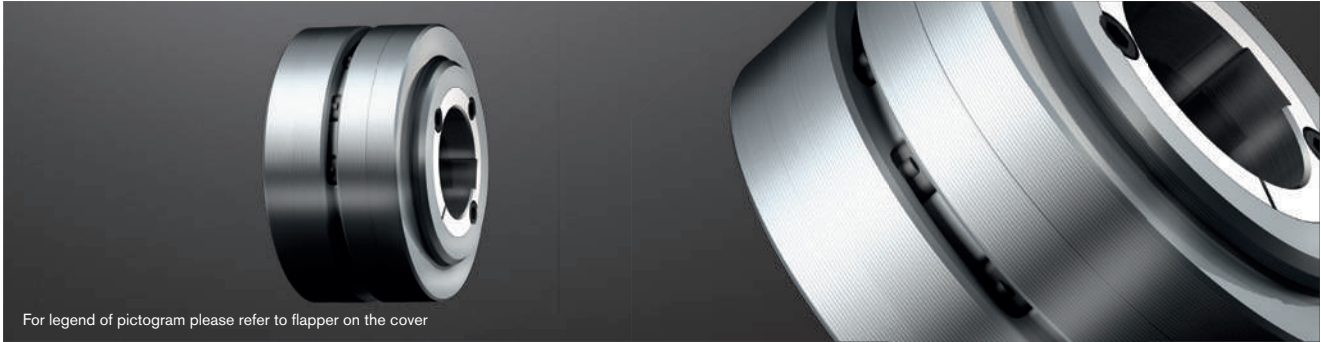
<sup>2)</sup> Bores H7 with keyway to DIN 6885 sheet 1 [JS9] and thread for setscrew on the keyway

<sup>3)</sup> Referring to average bore



# POLY-NORM® AR Flexible couplings

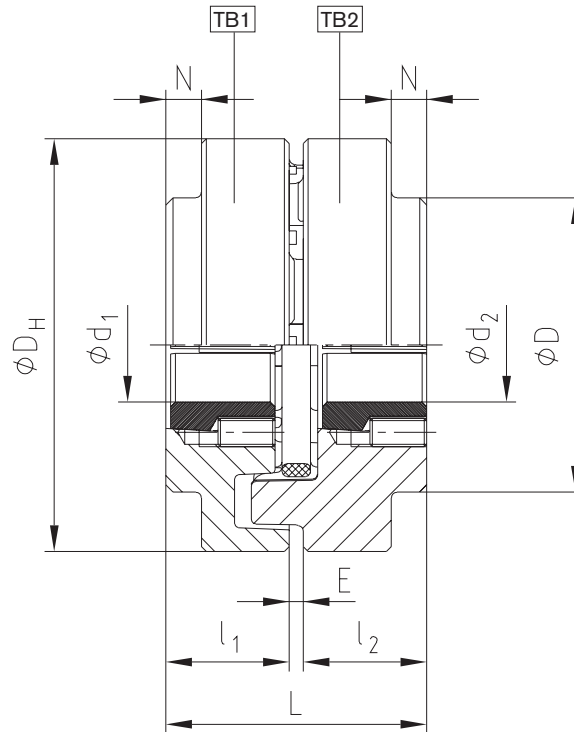
## For taper clamping sleeve



For legend of pictogram please refer to flapper on the cover



### Components



POLY-NORM® for taper clamping sleeve

Size	Taper clamping sleeve	Dimensions [mm]		Fastening screws <sup>1)</sup> for taper clamping sleeve				Size	Taper clamping sleeve	Dimensions [mm]		Fastening screws <sup>1)</sup> for taper clamping sleeve			
		Max. d1, d2	l <sub>1</sub> , l <sub>2</sub>	Size [Inch]	Length [mm]	SW [mm]	T <sub>A</sub> [Nm]			Max. d1, d2	l <sub>1</sub> , l <sub>2</sub>	Size [Inch]	Length [mm]	SW [mm]	T <sub>A</sub> [Nm]
32	1108	25	25.5	1/4"	13	3	5.7	75	2517	60	52.5	1/2"	25	6	49
42	1210	32	31.0	3/8"	16	5	20	85	2517	60	46.5	1/2"	25	6	49
48	1610	40	30.0	3/16"	16	5	20	90	3020	75	82	5/8"	32	8	90
	1615	40	42.5	3/8"	16	5	20	90	3020	75	52.0	5/8"	32	8	92
60	2012	50	38.5	7/16"	22	6	31	100	3535	90	98.0	1/2"	38	10	115
65	2517	60	62.5	1/2"	25	6	49	125	4040	100	111.5	5/8"	45	12	172

<sup>1)</sup> Each 2 fastening screws, with 3535/4040 3-off  
For coupling type TB1 screwing on cam side - TB2 screwing on collar side  
Combination possible! Please order our separate dimension sheet (M407045).

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

# POLY-NORM® ADR Flexible couplings

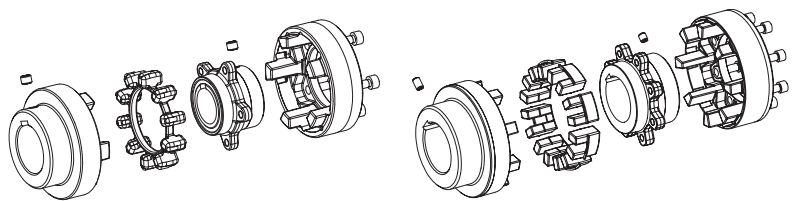
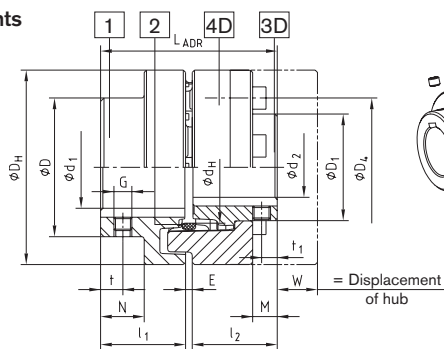
## Three-part



For legend of pictogram please refer to flapper on the cover



### Components



Size 38 - 125

Size 140 - 280

Components of type ADR (three-part):  
 1 = Standard hub\* (GJL)  
 2 = Elastomer ring (up to size 180: NBR 78 ShA; from size 200: T-PUR® 84 ShA)  
 3D = Flange hub (GJS); 4D = Cam ring (GJL)  
 \* To be used preferably on driving side

### POLY-NORM® Type ADR

Size	Elastomer ring <sup>1)</sup> (part 2) Torque [Nm]		Dimensions [mm]															
			Max. finish bore <sup>2)</sup>		General										Thread for setscrews			
	T <sub>KN</sub>	T <sub>K max</sub>	d <sub>1</sub>	d <sub>2</sub>	L <sub>ADR</sub>	l <sub>1</sub> , l <sub>2</sub>	E	D <sub>H</sub>	D	D <sub>1</sub>	d <sub>H</sub>	N	M	W	G	t	t <sub>1</sub>	T <sub>A</sub> [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
200	19000	38000	85-200	73-200	408	200	8	450	335	290	-	126	95	7	M24	50	50	240
220	30000	60000	95-220	83-220	448	220	8	500	370	320	-	140	103	8	M24	50	50	240
240	43000	86000	105-240	93-240	488	240	8	550	405	350	-	154	119	1	M24	50	50	240
260	55000	110000	115-260	103-260	530	260	10	650	440	380	-	158	109	34	M24	60	60	240
280	67000	134000	125-280	113-280	570	280	10	700	475	410	-	172	109	29	M24	60	60	240

### Selection of cap screws DIN EN ISO 4762 - 12.9

Size	M x l [mm]	z = number	Pitch z x angle	D <sub>4</sub> [mm]	T <sub>A</sub> [Nm] <sup>3)</sup>	Size	M x l [mm]	z = number	Pitch z x angle	D <sub>4</sub> [mm]	T <sub>A</sub> [Nm] <sup>3)</sup>
38	M6x16	5	5x72	62	10	110	M16x40	8	8x45	183	210
42	M8x16	5	5x72	69	25	125	M20x40	8	8x45	202	410
48	M8x20	6	6x60	78	25	140	M20x50	8	8x45	237	410
55	M8x20	6	6x60	88	25	160	M20x55	9	9x40	267	410
60	M8x20	6	6x60	98	25	180	M20x60	10	10x36	304	410
65	M10x20	6	6x60	104	49	200	M20x60	10	10x36	342	580
75	M10x25	6	6x60	120	49	220	M24x70	10	10x36	378	1000
85	M12x25	6	6x60	138	86	240	M27x70	10	10x36	416	1500
90	M16x30	6	6x60	149	210	260	M30x90	10	10x36	480	2000
100	M16x30	6	6x60	163	210	280	M30x90	10	10x36	520	2000

<sup>1)</sup> Standard material Perbunan [NBR] 78 Shore A, size 140 - 280 double tooth elastomers, for selection see catalogue "Drive Technology" on page 14 et seqq.

<sup>2)</sup> Bores H7 with keyway to DIN 6885 sheet 1 [JS9] and thread for setscrew <sup>3)</sup> Screw tightening torques acc. to 8.8

Ordering example:	POLY-NORM® 65	ADR	d <sub>1</sub> = Ø55	d <sub>2</sub> = Ø60
	Coupling size	Type	Finish bore	Finish bore

# POLY-NORM®

## Flexible couplings

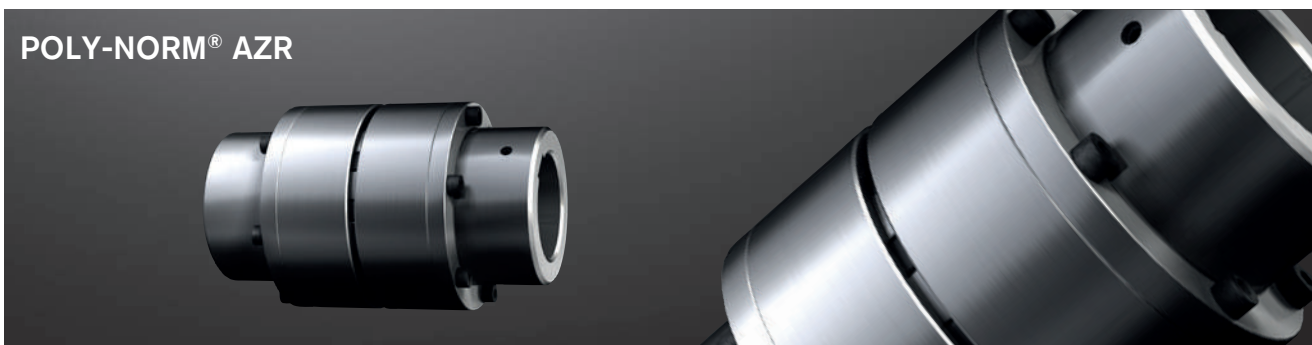
### Other types

#### POLY-NORM® BTA and SBA



- For drum brakes as a holding brake
- Elastomer spider can be replaced while being assembled
- Axial plug-in, easy assembly
- Maintenance-free
- Short dimensions, small shaft distance dimension
- Torques from 90 to 13,400 Nm

#### POLY-NORM® AZR



- Intermediate flange coupling for power transmission damping torsional vibrations
- Axial plug-in, easy assembly
- Maintenance-free
- Spacer with standard lengths for radial assembly operations
- Main applications: pump industry and compressor technology

#### POLY-NORM® ADR-SB

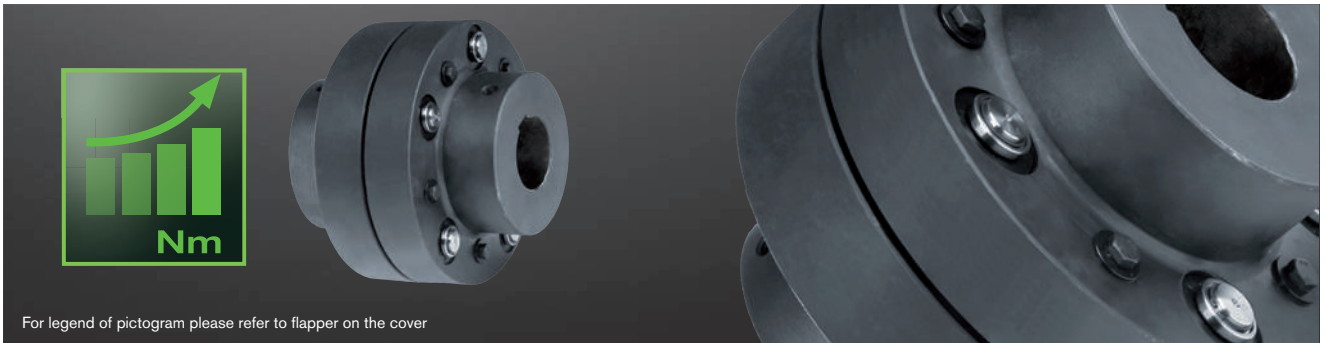


- Elastomer spider can be replaced while being assembled
- Axial plug-in, easy assembly
- Maintenance-free
- Short dimensions, small shaft distance dimension
- Torques from 300 to 10,000 Nm

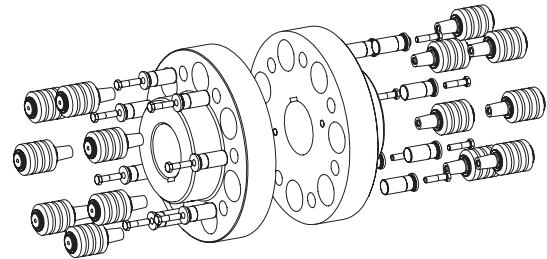
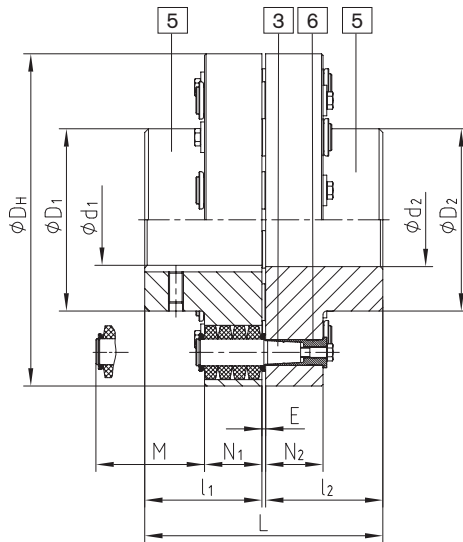
# REVOLEX® KX-D

## Flexible pin & bush coupling

### Material cast



### Components



Components of 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 moment of inertia <sup>3)</sup> [kgm <sup>2</sup> ]	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	9400	18800	2000	38-110	237	117	3	330	180	56	76	0.907	68
KX-D 120	15200	30400	1800	45-125	270	132	6	370	206	76	100	1.867	108
KX-D 135	20000	40000	1600	75-140	300	147	6	419	230	76	100	3.144	145
KX-D 150	25000	50000	1450	85-160	336	165	6	457	256	76	100	4.573	180
KX-D 170	41000	82000	1250	95-180	382	188	6	533	292	92	130	10.259	291
KX-D 190	54000	108000	1100	110-205	428	211	6	597	330	92	130	16.601	385
KX-D 215	67500	135000	1000	125-230	480	237	6	660	368	92	130	25.495	498
KX-D 240	98000	196000	900	140-250	534	264	6	737	407	122	170	50.147	760
KX-D 265	134000	268000	800	160-285	590	292	6	826	457	122	170	80.796	997
KX-D 280	170000	340000	720	180-315	628	311	6	927	508	122	170	129.979	1301
KX-D 305	205000	410000	675	180-330	654	324	6	991	533	122	170	170.016	1509
KX-D 330	265000	530000	625	200-355	666	330	6	1067	572	122	170	227.451	1755
KX-D 355	350000	700000	575	225-380	721	356	9	1156	610	164	220	415.259	2263
KX-D 370	430000	860000	535	225-450	773	382	9	1250	720	164	220	586.686	2701

■ = Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials allowing for an increase of the rated and maximum torques with some sizes of this series.

\* Drop-out center dimension required

<sup>1)</sup> Standard material Perbunan [NBR] 80 Shore A, for selection see catalogue "Drive Technology" on page 18 et seqq.

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

<sup>3)</sup> Referring 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-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding  $v = 30$  m/s dyn. balancing is recommended.

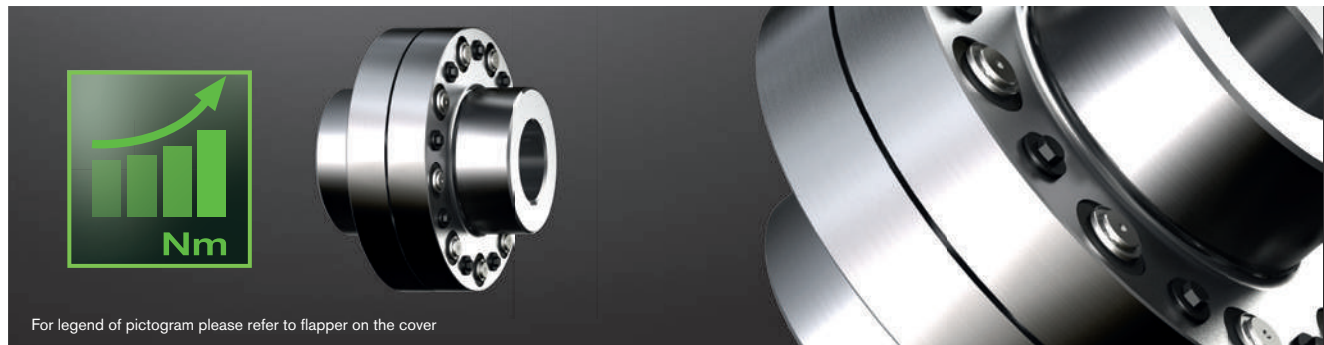
■ = Pilot bored available from stock

Ordering example:	REVOLEX® KX-D 170	GJL	Ø120	Ø150
	Type and size of coupling	Material	Finish bore	Finish bore

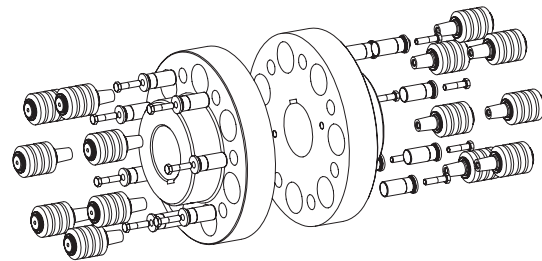
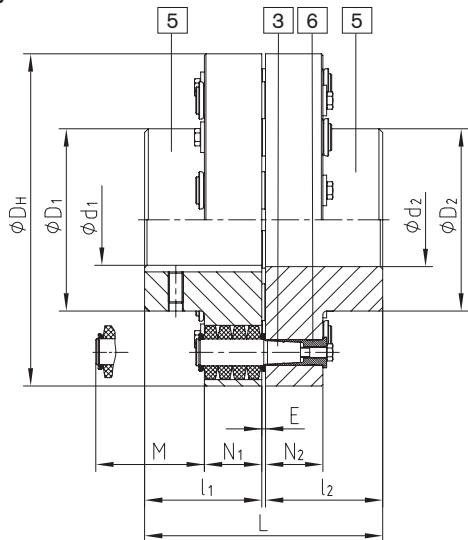
# REVOLEX® KX-D

## Flexible pin & bush coupling

Material steel



### Components



Components of 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 moment of inertia <sup>3)</sup> [kgm <sup>2</sup> ]	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 75	4300	8600	4500	0-100	193	95	3	255	136	56	76	0.325	39
KX-D 85	5500	11000	4175	0-110	213	105	3	274	152	56	76	0.440	46
KX-D 95	7200	14400	3825	0-125	227	112	3	298	168	56	76	0.624	56
KX-D 105	9400	18800	3475	0-130	237	117	3	330	180	56	76	0.907	80
KX-D 120	15200	30400	3100	0-150	270	132	6	370	206	76	100	1.867	124
KX-D 135	20000	40000	2725	75-170	300	147	6	419	230	76	100	3.144	165
KX-D 150	25000	50000	2500	85-190	336	165	6	457	256	76	100	4.573	205
KX-D 170	41000	82000	2150	95-220	382	188	6	533	292	92	130	10.259	322
KX-D 190	54000	108000	1900	110-245	428	211	6	597	330	92	130	16.601	431
KX-D 215	67500	135000	1725	125-275	480	237	6	660	368	92	130	25.495	559
KX-D 240	98000	196000	1550	140-310	534	264	6	737	407	122	170	50.147	833
KX-D 265	134000	268000	1375	160-350	590	292	6	826	457	122	170	80.796	1099
KX-D 280	170000	340000	1225	180-385	628	311	6	927	508	122	170	129.979	1436
KX-D 305	205000	410000	1150	180-405	654	324	6	991	533	122	170	170.016	1669
KX-D 330	265000	530000	1075	200-435	666	330	6	1067	572	122	170	227.451	1954
KX-D 355	350000	700000	975	225-450	721	356	9	1156	610	164	220	415.259	2451
KX-D 370	430000	860000	900	225-530	773	382	9	1250	720	164	220	584.686	2925
KX-D 470	520000	1040000	855	240-520 <sup>4)</sup>	969 <sup>4)</sup>	480 <sup>4)</sup>	9	1340	705 <sup>4)</sup>	164	220	785.489	3631
KX-D 520	810000	1620000	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	1000000	2000000	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	1350000	2700000	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

  = Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials allowing for an increase of the rated and maximum torques with some sizes of this series.

\* Drop-out center dimension required <sup>1)</sup> Standard material Perbunan [NBR] 80 Shore A, for selection see catalogue "Drive Technology" on page 18 et seqq.

<sup>2)</sup> Higher speeds on request. <sup>3)</sup> Referring to max. bore <sup>4)</sup> 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-key balancing G 6.3 with speed on request of customer). For circumferential speeds exceeding  $v = 30$  m/s dyn. balancing is recommended.

  = Pilot bored available from stock

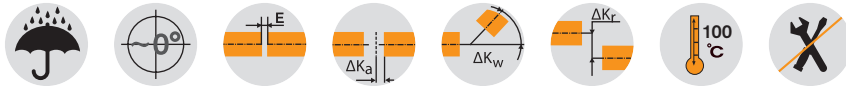
<b>Ordering example:</b>	REVOLEX® KX-D 170	Steel	Ø120	Ø150
	Type and size of coupling	Material	Finish bore	Finish bore

# BoWex® junior and junior M Curved-tooth gear coupling®

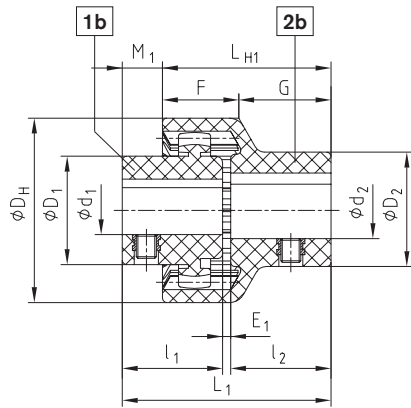
Plug-in coupling made of nylon (two-part and three-part)



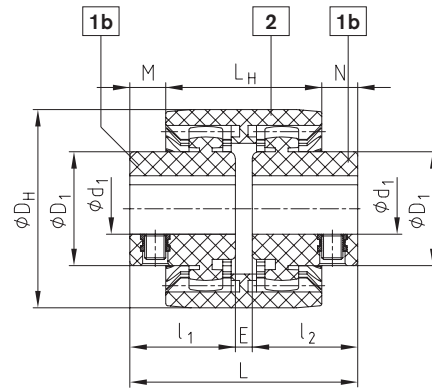
For legend of pictogram please refer to flapper on the cover



## Components



Type junior plug-in coupling (two-part)



Type junior M coupling (three-part)

BoWex® junior plug-in coupling (two-part) and BoWex® junior M (three-part)																			
Size	Torque [Nm]		Finish bore				Dimensions [mm]											Max. speed [rpm]	
			Hub Component 1b <sup>1)</sup>		Plug-in sleeve Component 2b <sup>1)</sup>		DH	l <sub>1</sub> , l <sub>2</sub>	E <sub>1</sub>	L <sub>1</sub>	L <sub>H1</sub>	M <sub>1</sub>	F	G	E	L	L <sub>H</sub>		M, N
	d <sub>1</sub> <sup>1)</sup>	D <sub>1</sub>	d <sub>2</sub> <sup>1)</sup>	D <sub>2</sub>															
14 M-14	5	10	Ø6, Ø7, Ø8, Ø9	22	Ø8	22	40	23	2	48	40	8	18.5	21.5	4	50	37	6.5	6000
			Ø10, Ø11	25	Ø10, Ø11	25													
			Ø12, Ø14	26	Ø12, Ø14	26													
			Ø12, Ø14	27	Ø14, Ø15	29													
19 M-19	8	16	Ø16	30	Ø19	35	47	25	2	52	42	10	19.0	23.0	4	54	37	8.5	6000
			Ø19	32	Ø19	35													
			Ø10, Ø11, Ø12	26	Ø14, Ø16	32													
24 M-24	12	24	Ø14, Ø15, Ø16	32			53	26	2	54	45	9	21.5	23.5	4	56	41	7.5	6000
			Ø18, Ø19, Ø20	36	Ø19, Ø20	36													
			Ø24	38	Ø24	40													

<sup>1)</sup> Finish bore with tolerance +0.05/-0.1; feather keyway ±0.08

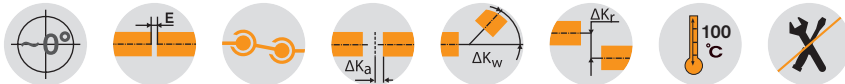
Ordering example:	BoWex® junior 19	d <sub>1</sub> Ø19	d <sub>2</sub> Ø14
	Coupling size two-part type or BoWex® junior M-19 three-part type	Finish bore	Finish bore

# BoWex® M, I Curved-tooth gear coupling®

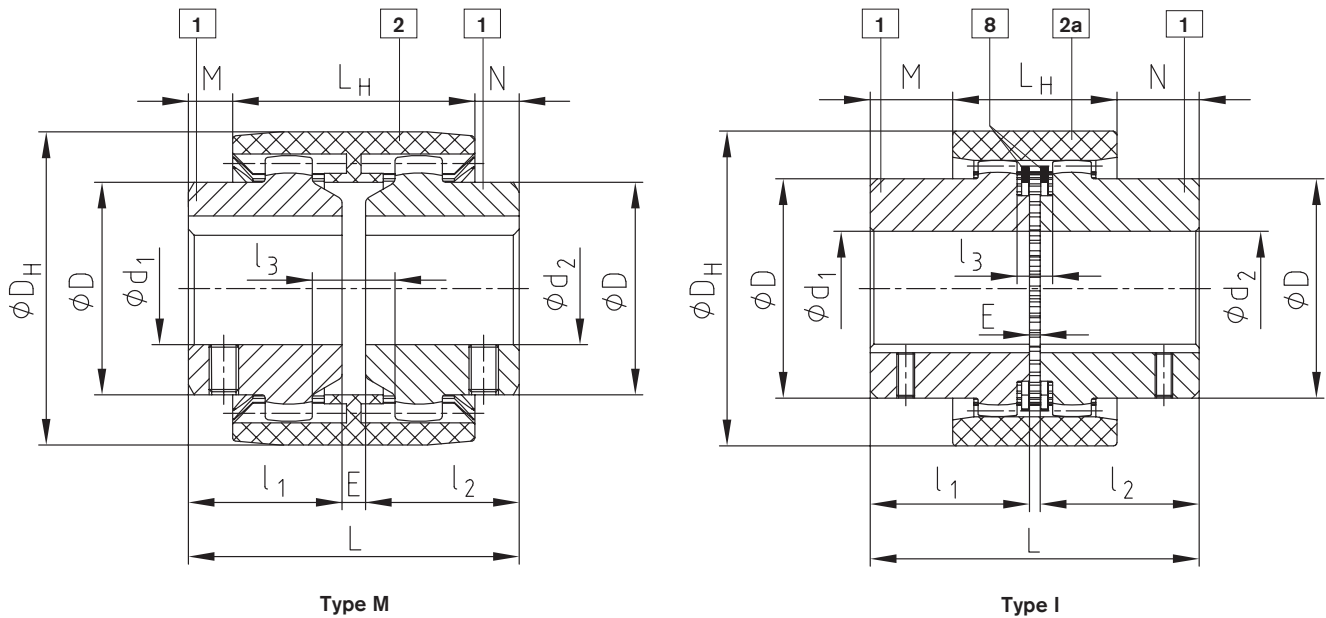
Compact and maintenance-free



For legend of pictogram please refer to flapper on the cover



## Components

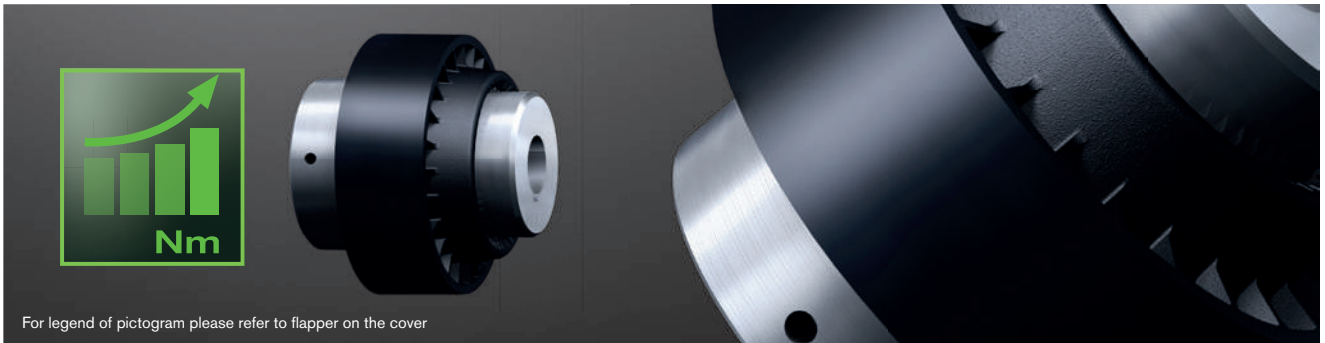


BoWex® type M, type I																						
Size	Torque [Nm]			Finish bore d1, d2		Dimensions [mm]											Weight with max. bore [kg]			Mass moment of inertia J with max. bore [kgcm <sup>2</sup> ]		
	T <sub>KN</sub>	T <sub>K</sub> max	T <sub>KW</sub>	Pilot bored	Max.	l <sub>1</sub> , l <sub>2</sub>	E	L	L <sub>H</sub>	M, N	l <sub>3</sub>	D	D <sub>H</sub>	Tip circle ØD <sub>Z</sub> hub	Number of teeth	Hub lengthened max. l <sub>1</sub> , l <sub>2</sub>	Sleeve	Hub	Total	Sleeve	Hub	Total
M-14	10	30	5	-	15	23	4	50	37	6.5	10	25	40	33	20	40	0.03	0.07	0.1	0.08	0.09	0.26
M-19	16	48	8	-	20	25	4	54	37	8.5	10	32	47	39	24	40	0.03	0.1	0.23	0.15	0.16	0.47
M-24	20	60	10	-	24	26	4	56	41	7.5	14	36	53	45	28	50	0.04	0.14	0.32	0.21	0.36	0.93
M-28	45	135	23	-	28	40	4	84	46	19	13	44	65	54	34	55	0.08	0.33	0.74	0.65	1.22	3.09
M-32	60	180	30	-	32	40	4	84	48	18	13	50	75	63	40	55	0.09	0.43	0.95	1.14	2.17	5.48
M-38	80	240	40	-	38	40	4	84	48	18	13	58	83	69	44	60	0.13	0.55	1.23	1.58	3.55	8.68
M-42	100	300	50	-	42	42	4	88	50	19	13	65	92	78	50	60	0.14	0.68	1.5	2.32	5.98	14.28
M-48	140	420	70	-	48	50	4	104	50	27	13	68	95	78	50	60	0.23	0.79	1.81	3.9	7.22	18.34
M-65	380	1140	190	21	65	55	4	114	68	23	16	96	132	110	42	70	0.55	1.9	4.35	21.2	31.8	84.8
I-80	700	2100	350	31	90	90	6	186	93	46.5	20	124	178	145	46	-	1.13	5.2	11.53	68.9	150.8	370.5
I-100	1200	3600	600	38	100	110	8	228	102	63	22	152	210	176	48	-	1.78	9.37	20.52	158.6	401.3	961.2
I-125	2500	7500	1250	45	125	140	10	290	134	78	30	192	270	225	54	-	3.88	19.44	42.76	562.9	1362.3	3287.5

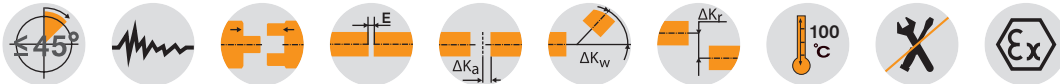
Ordering example:	BoWex® M-28	d <sub>1</sub> Ø20	d <sub>2</sub> Ø28
	Size and type of coupling	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)

# BoWex® HEW Compact Curved-tooth gear coupling®

Compensating for large displacements, very compact design



For legend of pictogram please refer to flapper on the cover



## BoWex® Type HEW Compact

Size	Max. finish bore d		Dimensions [mm]														Weight with pilot bored coupling [kg]	Mass moment of inertia with pilot bored coupling J <sub>1</sub> [kgm <sup>2</sup> ]	Mass moment of inertia with pilot bored coupling J <sub>2</sub> [kgm <sup>2</sup> ]
	d <sub>1</sub>	d <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	E	L	L <sub>1</sub>	D <sub>3</sub>	z	M				
42-130	42	42	90	65	131	42	42	45	37	34	118	98	78	6	M6	3.4	0.003	0.001	
65-180	65	65	130	96	180	60	55	55	47	30	145	122	110	8	M10	9	0.014	0.006	
80-225	75	90	145	124	225	70	90	77	51	50	210	158	120	10	M12	18.9	0.035	0.029	
100-305	100	100	200	152	305	90	110	90	73	58	258	187	175	16	M12	40.2	0.152	0.087	
125-365	125	125	235	192	365	120	140	150	90	68	328	240	205	12	M16	75	0.36	0.26	

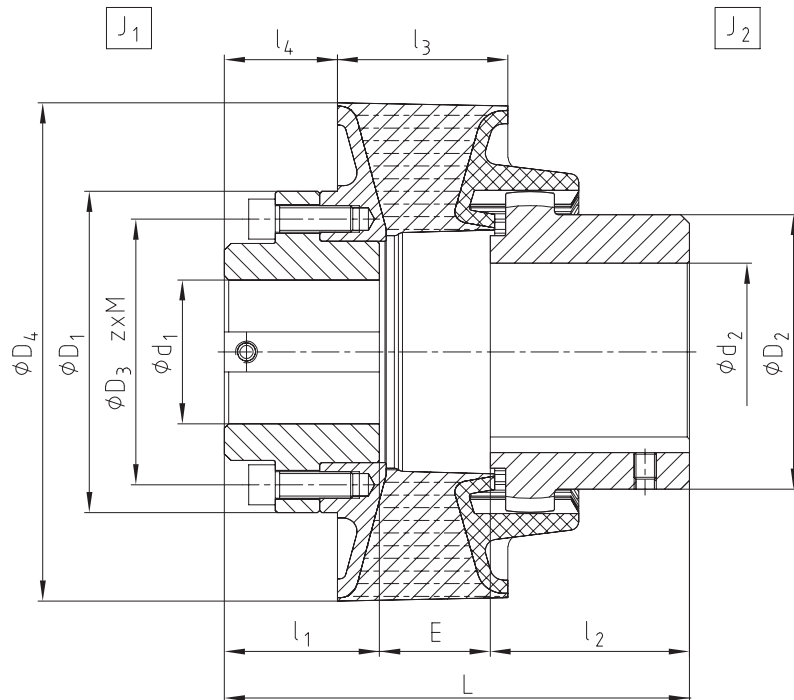
## Technical data

Coupling size	Elastomer hardness [Shore A]	Torque [Nm]			Perm. speed n <sub>max</sub> [rpm]	Perm. damping power			Dynamic torsion spring stiffness C <sub>t</sub> dyn [Nm/rad]	Relative damping ψ	Resonance factor V <sub>R</sub> ≈ 2·Π/ψ	Radial torsion spring stiffness C <sub>r</sub> [Nm/rad]
		T <sub>K</sub>	T <sub>K</sub> max	with 10 Hz T <sub>KW</sub>		PKW						
						60 °C	80 °C	90 °C				
BoWex® 42 HEW Compact	T50	200	400	50					780	0.8	7.9	178
	T65	270	540	68	7300	30	18	12	2400	1.2	5.2	600
	T70	320	640	80					2900	1.2	5.2	710
BoWex® 65 HEW Compact	T50	550	1100	138					2850	0.8	7.9	379
	T65	740	1500	185	5500	55	33	22	7800	1.2	5.2	955
	T70	860	1700	215					9500	1.2	5.2	1240
BoWex® 80 HEW Compact	T50	1250	2500	313					5000	0.8	7.9	420
	T65	1600	3200	400	4400	90	54	36	13000	1.2	5.2	1090
	T70	1900	3800	475					16500	1.2	5.2	1450
BoWex® 100 HEW Compact	T50	2750	5500	688					17000	0.8	7.9	760
	T65	3900	7800	975	3200	150	90	60	44000	1.2	5.2	1850
	T70	4500	9000	1125					50000	1.2	5.2	2250
BoWex® 125 HEW Compact	T50	5500	11000	1375					25000	0.8	7.9	750
	T65	7500	15000	1875	2900	220	132	88	62000	1.2	5.2	1930
	T70	8400	16800	2100					70000	1.2	5.2	2300

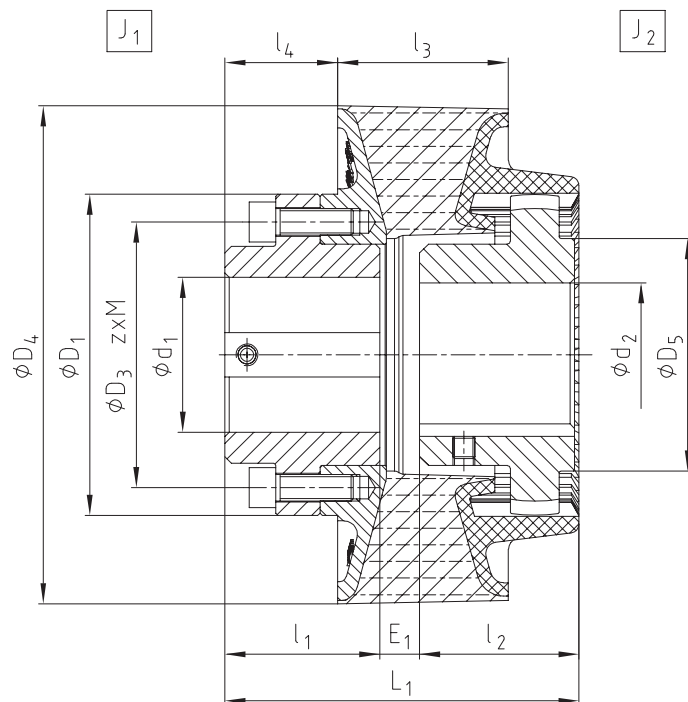
■ = Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials allowing for an increase of the rated torques with some sizes of this series.

Ordering example:	BoWex® 65 HEW Compact	T50	d <sub>1</sub> Ø40	d <sub>2</sub> Ø65
	Size and type of coupling	Elastomer hardness	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)





BoWex® HEW Compact with reduced hub

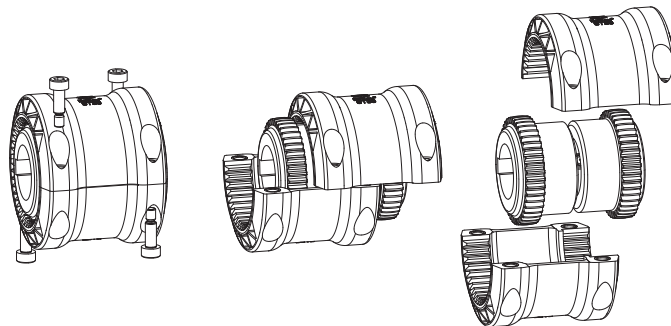
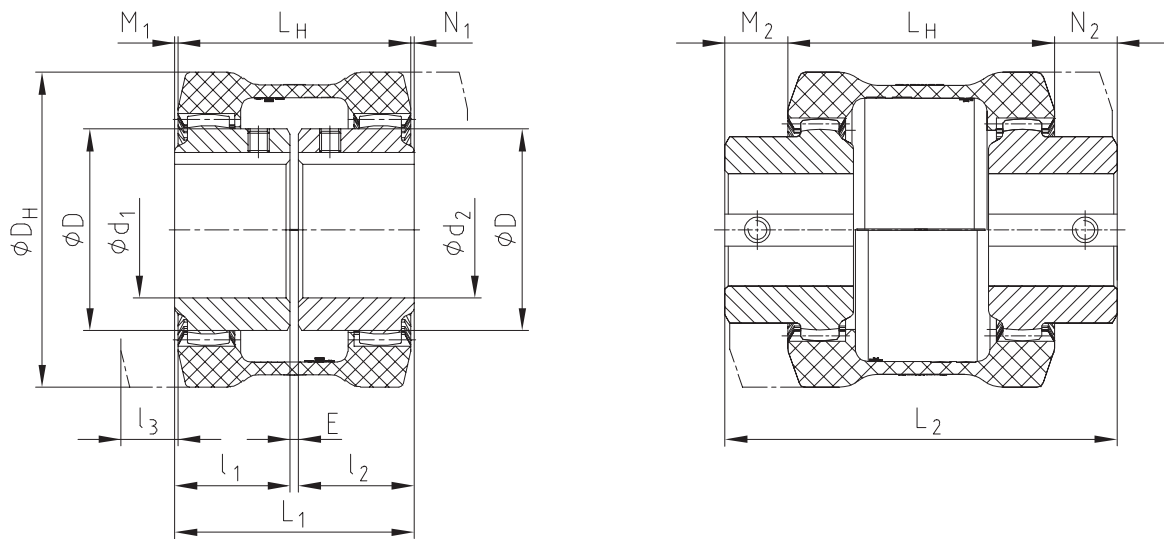
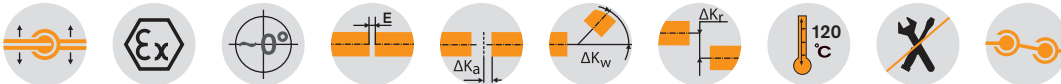


# BoWex® GT Curved-tooth gear coupling®

Split CFK sleeve for high power density



For legend of pictogram please refer to flapper on the cover



BoWex® Type GT with split sleeve

Size	Torque [Nm]			Finish bore d <sub>max.</sub>		Dimensions [mm]										Weight with max. bore [kg]			Mass moment of inertia J with max. bore [kgcm <sup>2</sup> ]			
	T <sub>KN</sub>	T <sub>K max</sub>	T <sub>KW</sub>	d <sub>1</sub>	d <sub>2</sub>	D	D <sub>H</sub>	L <sub>H</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	E	L <sub>1</sub>	L <sub>2</sub>	M <sub>1</sub> , N <sub>1</sub>	M <sub>2</sub> , N <sub>2</sub>	Sleeve	Hub	Total	Sleeve	Hub	Total
28	70	210	35	28	28	44	80	80	40	40	15	4	84	124	2	22	0.158	0.22	0.702	1.77	1.22	4.21
38	120	360	60	38	38	58	98	83	40	40	18	4	84	122	0.5	19.5	0.25	0.45	1.15	4.43	3.36	11.15
48	200	600	100	48	48	68	110	106	50	50	21	4	104	160	0	28	0.33	0.67	1.68	7.39	6.11	19.61
65	560	1680	280	65	65	96	150	111	55	55	27	4	114	160	1.5	24.5	0.69	1.54	3.77	28.9	31.80	92.5

l<sub>3</sub> = Drop-out center dimension required

Ordering example:	BoWex® GT-28	d <sub>1</sub> Ø20	d <sub>2</sub> Ø28
	Size and type of coupling	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)	Finish bore H7 keyway to DIN 6885 sheet 1 (JS9)

# BoWex® Curved-tooth gear coupling®

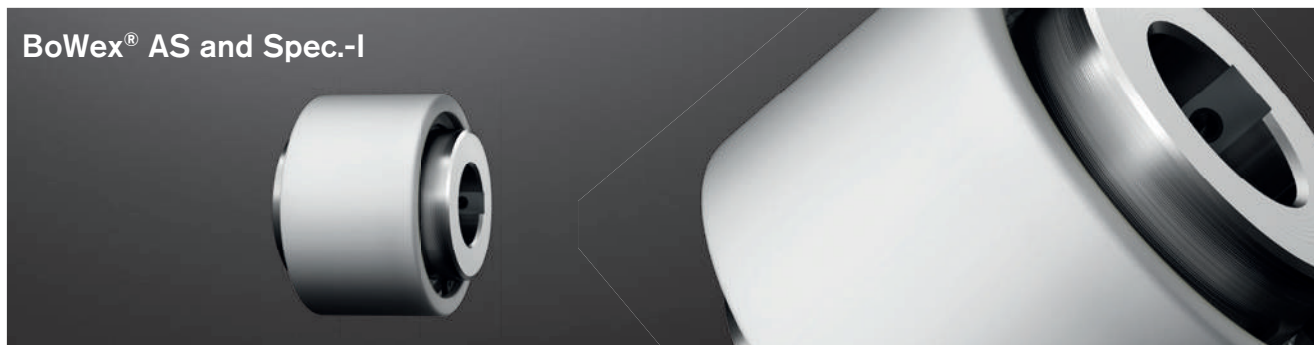
## Other types

### BoWex® SD / SD-D



- Curved-tooth gear coupling® shiftable at standstill
- Power packs can be quickly switched on and off at standstill
- For all applications in general engineering
- Maintenance-free due to material combination nylon/steel

### BoWex® AS and Spec.-I



- Double-cardanic curved-tooth gear coupling®
- Separable coupling type
- Sleeve can be axially shifted while being assembled
- Application range from -25° C to +100° C
- Maintenance-free due to material combination nylon/steel

### BoWex® SG, SSR and Spec.-I/CD



- Double-cardanic curved-tooth gear coupling®
- Type with dust protection circlips for drives subject to dirt
- Maintenance-free due to material combination nylon/steel
- Operating range -25 °C to +100 °C

# GEARex® FA, FB and FAB

## All-steel gear couplings

Coupling in accordance with AGMA 9008-B00, high power density



For legend of pictogram please refer to flapper on the cover



Dimensions																			
Size	Pilot bore	Max. finish bore		Dimensions [mm]															Grease capacity [dm <sup>3</sup> ] <sup>2)</sup>
		d <sub>1</sub> , d <sub>2</sub>	l <sub>1</sub> , l <sub>2</sub>	Hub lengthened max. l <sub>1</sub> , l <sub>2</sub>	EFA	EFB	EFAB	LFA	LFB	LFAB	L <sub>3</sub>	D	DA <sub>1</sub>	DA <sub>2</sub>	F <sup>1)</sup>	d <sub>3</sub> <sup>1)</sup>			
10	26	50	43	105	3	21	12	89	107	98	55	67	111	83	74	52	0.02		
15	26	64	50	115	3	15	9	103	115	109	59	87	152	106	84	68	0.04		
20	31	80	62	130	3	31	17	127	155	141	79	108	178	129	104	85	0.08		
25	38	98	76	150	5	29	17	157	181	169	93	130	213	157	123	110	0.12		
30	44.5	112	90	170	5	33	19	185	213	199	109	153	240	181	148	130	0.18		
35	46	133	105	185	6	40	23	216	250	233	128	180	280	213	172	150	0.22		
40	52	158	120	215	6	42	24	246	282	264	144	214	318	249	192	175	0.35		
45	80	172	135	245	8	50	29	278	320	299	164	233	347	273	216	190	0.45		
50	80	192	150	295	8	56	32	308	356	332	182	260	390	308	241	220	0.70		
55	90	210	175	300	8	70	39	358	420	389	214	283	425.5	333	275	250	0.90		
60	100	232	190	305	8	84	46	388	464	426	236	312	457	364.5	316	265	1.15		
70	100	276	220	310	10	76	43	450	516	483	263	371	527	424	360	300	1.50		

Technical data										
Size	Torque [Nm]		Max. speed [rpm]	Weight with max. bore [kg]			Mass moment of inertia with max. bore [kgm <sup>2</sup> ]	Dowel screw (10.9)		
	T <sub>KN</sub>	T <sub>KN</sub> (42CrMo4)		Sleeve	Hub	Total		z	M	T <sub>A</sub> [Nm]
10	930	1580	8500	0.75	0.55	2.73	0.00436	6	M6	15
15	2000	3300	6400	1.88	1.12	6.38	0.01894	8	M8	36
20	3500	6300	5400	2.60	2.09	9.94	0.04000	6	M10	72
25	6500	11000	4500	4.43	3.56	16.83	0.09749	6	M12	125
30	10000	17400	4000	5.83	6.18	25.21	0.18080	8	M12	125
35	17000	28800	3500	9.71	9.87	41.25	0.41419	8	M14	200
40	28500	48500	3100	11.88	16.07	58.14	0.75535	8	M14	200
45	37000	62000	3000	15.72	21.42	77.08	1.17590	10	M14	200
50	51000	86000	2500	25.66	29.59	114.40	2.24991	8	M18	430
55	65000	110000	2300	31.52	40.30	150.41	3.45102	14	M18	430
60	85000	145000	2100	32.82	52.96	177.44	4.16734	14	M18	430
70	135000	240000	1850	43.52	85.77	268.20	9.32429	16	M20	610

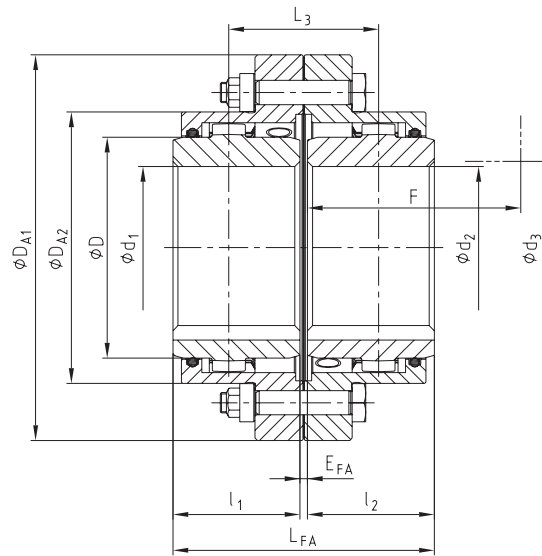
■ = Standard

<sup>1)</sup> Space required to align the coupling and replace the gasket

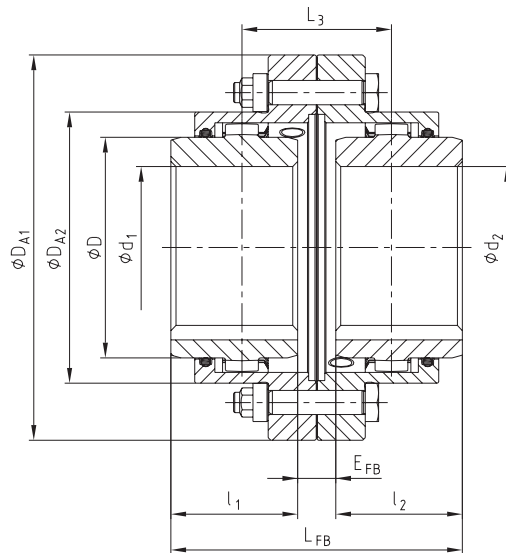
<sup>2)</sup> Grease capacity for each coupling half

Ordering example:	GEARex® FA 10	d <sub>1</sub> Ø50	d <sub>2</sub> Ø50
	Type and size of coupling	Finish bore with keyway to DIN 6885 sheet 1	Finish bore with keyway to DIN 6885 sheet 1

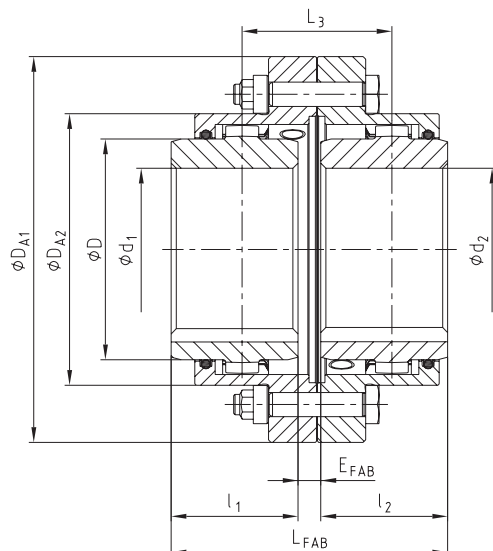
Type FA



Type FB

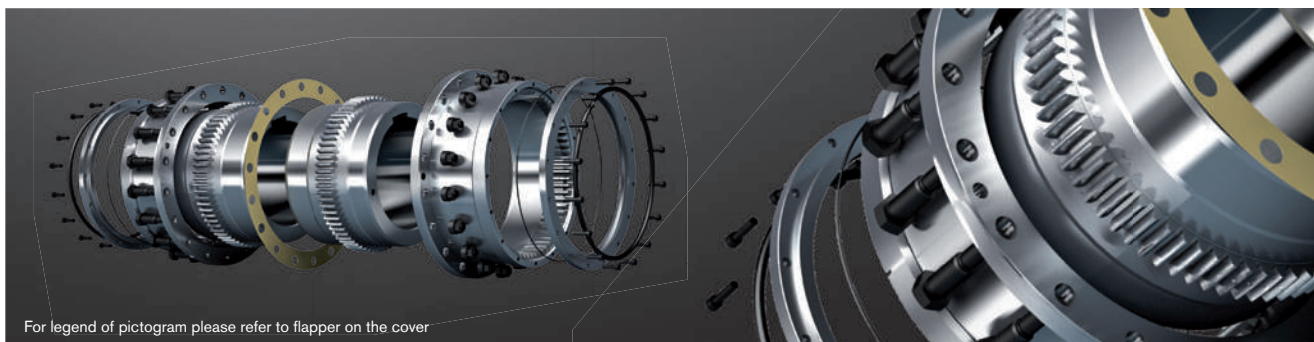


Type FAB

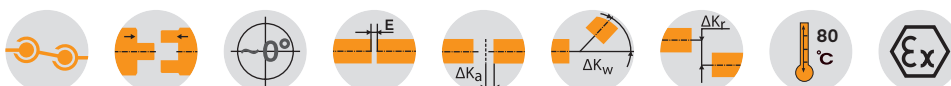


# GEARex® DA, DB and DAB All-steel gear couplings

Easy to assemble, high power density



For legend of pictogram please refer to flapper on the cover



Dimensions																
Size	Pilot bore	Max. finish bore d <sub>1</sub> , d <sub>2</sub>	Dimensions [mm]													Grease capacity [dm <sup>3</sup> ] <sup>2)</sup>
			l <sub>1</sub> , l <sub>2</sub>	FDA	EDB	EDAB	LDA	LDB	LDAB	L <sub>3</sub>	D	DA1	DA2	F <sup>1)</sup>	d <sub>3</sub> <sup>1)</sup>	
20	31	80	62	3	31	17	133	155	144	79	108	187	146	105	85	0.08
25	38	98	76	5	29	17	157	181	169	93	130	220	172	115	105	0.12
30	44.5	112	90	5	33	19	185	213	199	109	153	248	194	140	120	0.18
35	46	133	105	6	40	23	216	250	233	128	180	285	228	165	145	0.22
40	52	158	120	6	42	24	246	282	264	144	214	335	270	180	160	0.35
45	80	172	135	8	50	29	278	320	299	164	233	358	294	195	185	0.45
50	80	192	150	8	56	32	388	356	332	182	260	390	332	215	205	0.70
55	90	210	175	8	70	39	358	420	389	214	283	425.5	354	240	220	0.90
60	100	232	190	8	84	46	388	464	426	236	312	457	380	260	245	1.15
70	100	276	220	10	76	43	450	516	483	263	371	527	445	300	290	1.50
80	140	300	280	10	50	30	570	610	590	310	394	545	475	340	310	2.50
85	160	325	292	13	53	33	597	637	617	325	430	585	515	352	330	3.00
90	180	350	305	13	83	48	623	693	658	353	464	640	560	365	360	4.00
100	220	390	330	13	93	53	673	753	713	383	512	690	612	390	400	5.00
110	220	420	350	20	296	158	720	996	858	508	560	765	665	410	420	6.00
120	260	450	420	25	421	223	864	1261	1063	643	608	825	720	480	470	7.50
130	300	500	440	25	415	220	905	1295	1100	660	684	950	805	520	520	9
140	380	550	460	20	430	225	940	1350	1145	685	750	1010	875	570	590	12
150	460	630	520	30	460	245	1070	1500	1285	765	850	1140	975	630	670	15

Technical data										
Size	Torque [Nm]		Max. speed [rpm]	Weight with max. bore [kg]			Mass moment of inertia with max. bore [kgm <sup>2</sup> ]	Dowel screw (10.9)		
	T <sub>KN</sub>	T <sub>KN</sub> (42CrMo4)		Sleeve	Hub	Total		z	M	T <sub>A</sub> [Nm]
20	3500	6300	5400	3.6	2.1	12.8	0.056	6	M10	72
25	6500	11000	4500	5.5	3.6	20.3	0.125	6	M12	125
30	10000	17400	4000	6.9	6.2	28.9	0.219	8	M12	125
35	17000	28800	3500	11.2	9.8	46.6	0.488	8	M14	200
40	28500	48500	3100	16.3	15.9	70.9	1.011	8	M14	200
45	37000	62000	3000	20.2	21.4	90.7	1.482	10	M14	200
50	51000	86000	2500	27.0	29.5	123.5	2.474	8	M18	430
55	65000	110000	2300	32.6	40.2	159.1	3.714	14	M18	430
60	85000	145000	2100	32.0	52.8	184.4	4.810	14	M18	430
70	135000	240000	1850	43.8	85.5	280	9.907	16	M20	610
80	175000	300000	1750	64	117	362	14.214	18	M20	610
85	225000	380000	1650	75	148	446	20.320	20	M20	610
90	290000	500000	1550	101	183	568	31.036	20	M24	1000
100	380000	650000	1500	117	232	698	45.358	24	M24	1000
110	480000	820000	1250	140	295	940	73.880	20	M30	1700
120	620000	1050000	1150	188	430	1312	118.40	24	M30	1700
130	-	1450000	1000	319	603	1954	226.732	20	M36	2800
140	-	1950000	950	373	758	2391	328.567	24	M36	2800
150	-	2750000	850	475	983	3069	540.298	30	M36	2800

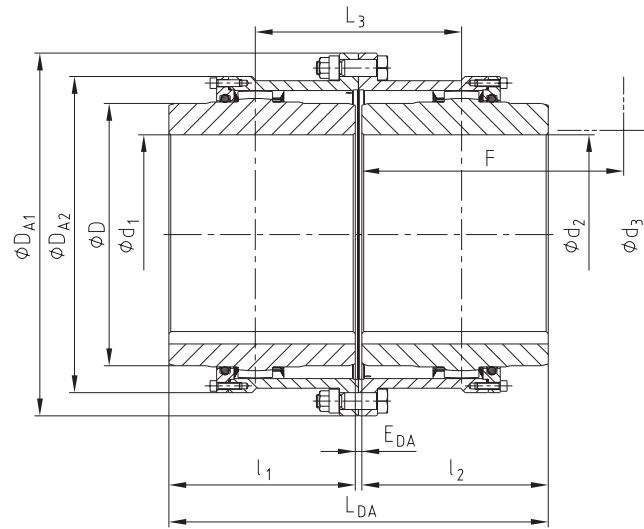
■ = Standard

<sup>1)</sup> Space required to align the coupling and replace the gasket

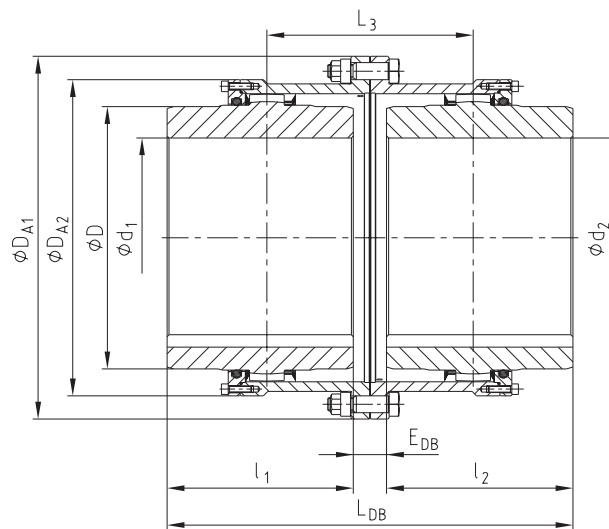
<sup>2)</sup> Grease capacity for each coupling half

Ordering example:	GEARex® DA 80	d <sub>1</sub> Ø300	d <sub>2</sub> Ø300
	Type and size of coupling	Finish bore with keyway to DIN 6885 sheet 1	Finish bore with keyway to DIN 6885 sheet 1

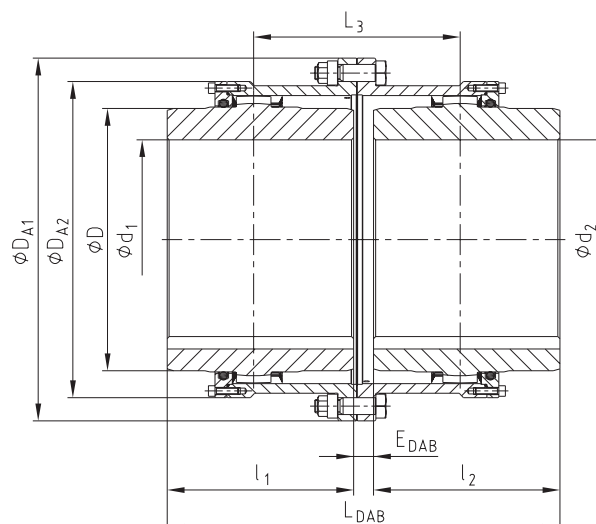
### Type DA



### Type DB



### Type DAB



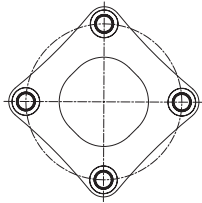
# RADEX®-N

## Steel lamina couplings

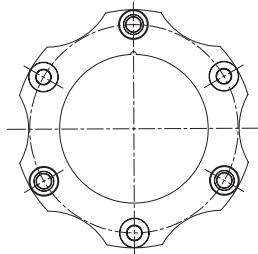
### Technical data

The following lamina types are to be distinguished with RADEX®-N:

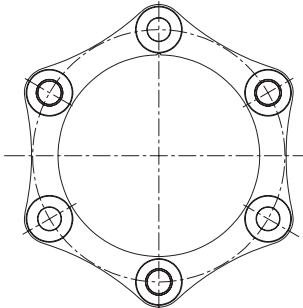
Size 20 – 50  
(lamina with 4 holes)



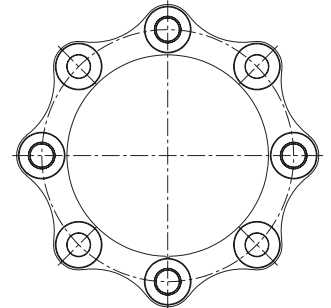
Size 60 – 135  
(lamina with 6 holes)



Size 136 – 336  
(lamina with 6 holes)



Size 138 – 338  
(lamina with 8 holes)



### Torques and displacements

Size	Lamina type	Torques [Nm] <sup>1)</sup>			Angular [°] each lamina	Perm. displacements <sup>2)</sup>			
		TKN	TK max	TKW		Axial [mm]		Radial [mm]	
						NN	NANA 1/ NANA2/ NNZ	NANA 1	NANA 2/NNZ
20		30	60	15	1.0	0.60	1.2	1.0	0.2
25		60	120	30	1.0	0.80	1.6	1.0	0.2
35	lamina with 4 holes	120	240	60	1.0	1.00	2.0	1.1	0.3
38		240	480	120	1.0	1.20	2.4	1.2	0.3
42		320	640	160	1.0	1.40	2.8	1.2	0.4
50		470	940	235	1.0	1.60	3.2	1.5	0.4
60		900	1800	450	1.0	1.00	2.0	1.5	0.8
70		1300	2600	650	1.0	1.10	2.2	1.8	1.0
80		1800	3600	900	1.0	1.30	2.6	2.1	1.2
85		2600	5200	1300	1.0	1.30	2.6	2.2	1.2
90		4600	9200	2300	1.0	1.00	2.0	2.2	1.1
105		5600	11200	2800	1.0	1.20	2.4	2.4	1.4
115		9900	19800	4950	1.0	1.40	2.8	2.5	1.5
135	lamina with 6 holes	13500	27000	6750	1.0	1.75	3.5	3.8	–
136		17500	35000	8750	0.7	1.85	3.7		
156		25000	50000	12500	0.7	2.10	4.2		
166		35000	70000	17500	0.7	2.25	4.5		
186		42000	84000	21000	0.7	2.40	4.8		
206		52500	105000	26250	0.7	2.60	5.2		
246		90000	180000	45000	0.7	3.00	6.0		
286		150000	300000	75000	0.7	3.35	6.7		
336		210000	420000	105000	0.7	3.75	7.5		
138		23000	46000	11500	0.5	1.30	2.6	Depending on shaft distance dimension E	
158	33000	66000	16500	0.5	1.40	2.8			
168	45000	90000	22500	0.5	1.50	3.0			
188	56000	112000	28000	0.5	1.60	3.2			
208	70000	140000	35000	0.5	1.75	3.5			
248	120000	240000	60000	0.5	2.00	4.0			
288	200000	400000	100000	0.5	2.40	4.5			
338	280000	560000	140000	0.5	2.50	5.0			

<sup>1)</sup> = Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials allowing for an increase of the rated and maximum torques with some sizes of this series.

### Permissible speeds and torsional stiffness figures

Size	Max. speed [rpm] (higher speeds on request)	Torsion spring stiffness x 10 <sup>6</sup> [Nm/rad] per lamina set	Size	Max. speed [rpm] (higher speeds on request)	Torsion spring stiffness x 10 <sup>6</sup> [Nm/rad] per lamina set
20	20400	0.02	156	3500	17.00
25	16800	0.03	166	3300	19.00
35	13900	0.11	186	3000	25.00
38	12000	0.20	206	2800	31.00
42	11000	0.28	246	2300	55.00
50	9000	0.50	286	2000	79.00
60	8200	0.56	336	1800	125.00
70	7300	0.90	138	3800	20.00
80	6300	1.10	158	3500	26.00
85	5900	1.50	168	3300	30.00
90	5400	2.00	188	3000	39.00
105	5000	2.50	208	2800	49.00
115	4300	3.50	248	2300	83.00
135	3700	6.90	288	2000	125.00
136	3800	13.00	338	1800	200.00

<sup>1)</sup> For selection of coupling see catalogue "Drive Technology" on page 18 et seqq.

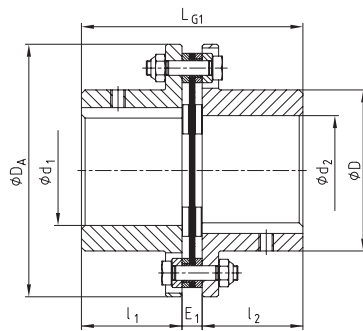
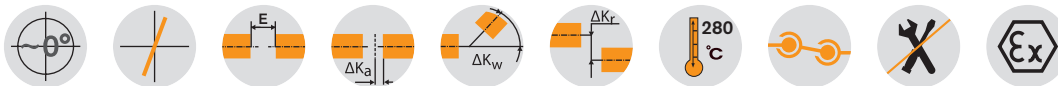
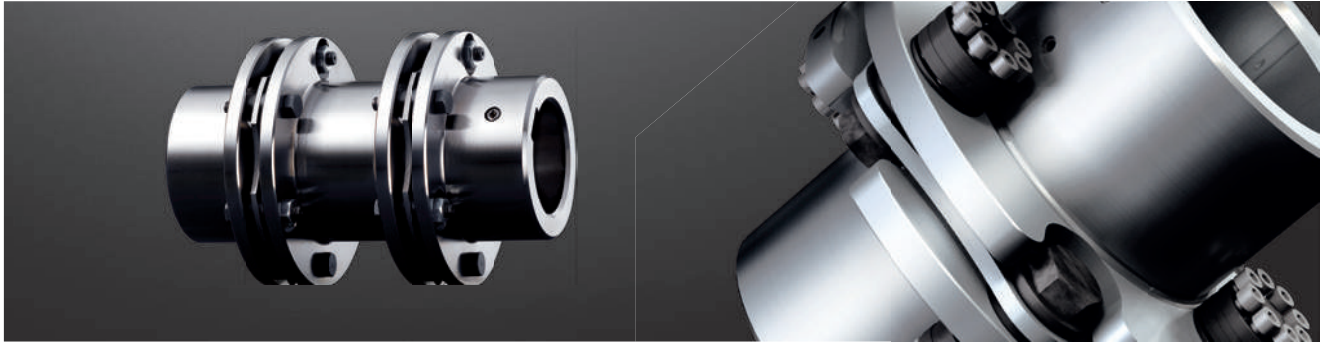
<sup>2)</sup> The permissible displacement figures specified are maximum figures which must not arise simultaneously. If radial, axial and angular displacements arise in parallel, the figures need to be reduced.



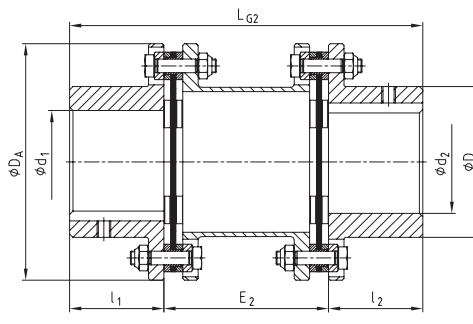
# RADEX®-N NN, NANA 1 and NANA 2

## Steel lamina couplings

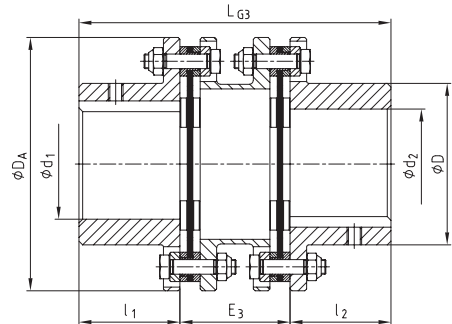
### Standard types



Type NN



Type NANA 1



Type NANA 2

### RADEX®-N Types NN, NANA 1, NANA 2

Size	Max. finish bore	Dimensions [mm]								
	d <sub>1</sub> , d <sub>2</sub>	D	DA	l <sub>1</sub> , l <sub>2</sub>	LG <sub>1</sub>	E <sub>1</sub>	LG <sub>2</sub>	E <sub>2</sub>	LG <sub>3</sub>	E <sub>3</sub>
20	20	32	56	20	45	5	100	60	-	-
25	25	40	68	25	56	6	110	60	-	-
35	38	54	82	40	86	6	150	70	-	-
38	42	58	94	45	98	8	170	80	-	-
42	50	68	104	45	100	10	170	80	-	-
50	55	78	126	55	121	11	206	96	-	-
60	65	88	138	55	121	11	206	96	170	60
70	75	102	156	65	141	11	246	116	200	70
80	85	117	179	75	164	14	286	136	233	83
85	90	123	191	80	175	15	300	140	246	86
90	100	132	210	80	175	15	300	140	251	91
105	110	147	225	90	200	20	340	160	281	101
115	120	163	265	100	223	23	370	170	309	109
135	135	184	305	135	297	27	520	250	-	-
136	135	180	300	135	293	23				
156	150	195	325	150	327	27				
166	170	225	350	165	361	31				
186	190	250	380	185	401	31				
206	210	275	420	200	437	37				
246	245	320	500	240	524	44				
286	290	383	567	280	612	52				
336	340	445	660	330	718	58				
138	135	180	300	135	293	23				
158	150	195	325	150	327	27				
168	170	225	350	165	361	31				
188	190	250	380	185	401	31				
208	210	275	420	200	437	37				
248	245	320	500	240	524	44				
288	290	383	567	280	612	52				
338	340	445	660	330	718	58				

According to customer specification

#### Ordering example:

RADEX®-N 60	NANA 1	Ø50	Ø60
Coupling size	Type	Finish bore d <sub>1</sub>	Finish bore d <sub>2</sub>

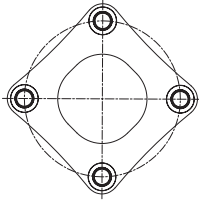
# RIGIFLEX®-N

## Steel lamina couplings

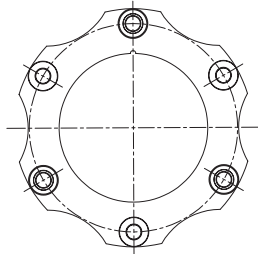
### Technical data

The following lamina types are to be distinguished with RIGIFLEX®-N:

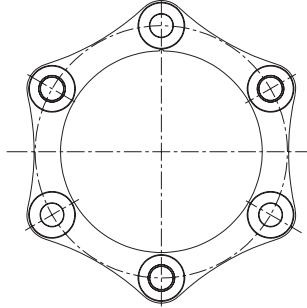
Size 35 – 65  
(lamina with 4 holes)



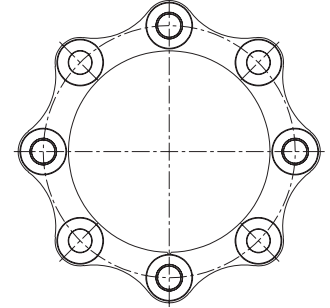
Size 75 – 160  
(lamina with 6 holes)



Size 166 – 406  
(lamina with 6 holes)



Size 168 – 408  
(lamina with 8 holes)



Torques and displacements											
Size	Lamina type	Torques [Nm]			Angular displacement $\pm K_w$ <sup>1)</sup> [°]	Axial displacement $\pm K_a$ [mm]	Perm. displacements				
		TKN	TK max	TKW			Radial $\pm K_r$ [mm]				
							E=100	E=140	E=180	E=200	E=250
35	lamina with 4 holes	130	260	65	0.7	1.2	0.90	1.40	–	–	–
50		270	540	135	0.7	1.4	0.77	1.26	–	–	–
65		550	1100	275	0.7	1.5	0.75	1.23	1.72	–	–
75		1100	2200	550	0.7	1.8	0.73	1.22	1.71	–	–
85	lamina with 6 holes	1900	3800	950	0.7	2.1	–	1.14	1.62	1.87	2.48
110		3500	7000	1750	0.7	2.4	–	1.05	1.54	1.78	2.39
120		5750	11500	2875	0.7	2.6	–	1.00	1.49	1.73	2.35
140		10500	21000	5250	0.7	3.3	–	–	–	1.55	2.16
160		16000	32000	8000	0.7	3.8	–	–	–	–	1.99
166		19000	38000	9500	0.7	3.7	Depending on shaft distance dimension E				
196		22500	45000	11250	0.7	4.2					
216		32000	64000	16000	0.7	4.5					
256	52500	105000	26250	0.7	5.2						
306	86000	172000	43000	0.7	6.0						
346	135000	270000	67500	0.7	6.7						
406	210000	420000	105000	0.7	7.5						
168	25000	50000	12500	0.5	2.6						
198	30000	60000	15000	0.5	2.8						
218	42500	85000	21500	0.5	3.0						
258	lamina with 8 holes	70000	140000	35000	0.5	3.5					
308		115000	230000	57500	0.5	4.0					
348		180000	360000	90000	0.5	4.5					
408		280000	560000	140000	0.5	5.0					

<sup>1)</sup> Angular displacement each lamina set

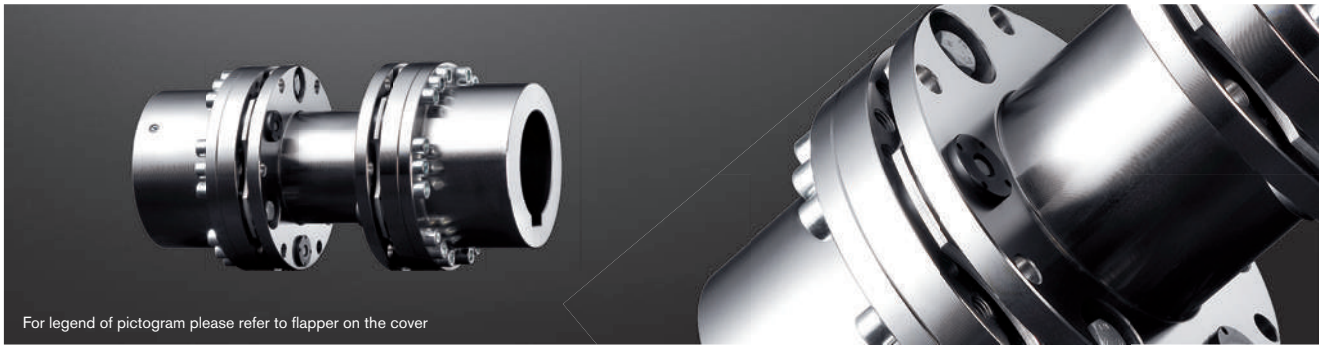
If axial, angular and radial shaft displacement arises in parallel please note the following table:

Size	Permissible angular displacement								
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	
35	1.20	1.00	0.85	0.74	0.60	0.40	0.20	0.00	
50	1.40	1.20	1.00	0.80	0.60	0.40	0.20	0.00	
65	1.50	1.29	1.07	0.86	0.64	0.43	0.22	0.00	
75	1.80	1.54	1.29	1.03	0.77	0.52	0.26	0.00	
85	2.10	1.80	1.50	1.20	0.90	0.60	0.30	0.00	
110	2.40	2.06	1.71	1.37	1.03	0.69	0.34	0.00	
120	2.60	2.23	1.86	1.48	1.11	0.74	0.37	0.00	
140	3.30	2.83	2.36	1.88	1.41	0.94	0.47	0.00	
160	3.80	3.26	2.71	2.17	1.63	1.09	0.54	0.00	
166	3.70	3.17	2.64	2.12	1.59	1.06	0.53	0.00	
196	4.20	3.60	3.00	2.40	1.80	1.20	0.60	0.00	
216	4.50	3.86	3.21	2.57	1.93	1.29	0.64	0.00	
256	5.20	4.46	3.71	2.97	2.23	1.49	0.74	0.00	
306	6.00	5.14	4.29	3.43	2.57	1.72	0.86	0.00	
346	6.75	5.79	4.82	3.86	2.89	1.93	0.96	0.00	
406	7.50	6.43	5.36	4.28	3.21	2.14	1.07	0.00	
168	2.60	2.08	1.56	1.04	0.52	0.00	–	–	
198	2.80	2.24	1.68	1.12	0.56	0.00	–	–	
218	3.00	2.40	1.80	1.20	0.60	0.00	–	–	
258	3.50	2.80	2.10	1.40	0.70	0.00	–	–	
308	4.00	3.20	2.40	1.60	0.80	0.00	–	–	
348	4.50	3.60	2.70	1.80	0.90	0.00	–	–	
408	5.00	4.00	3.00	2.00	1.00	0.00	–	–	

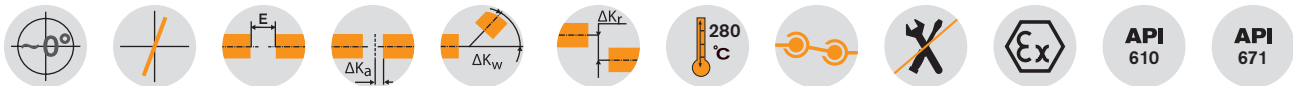
# RIGIFLEX®-N

## Steel lamina couplings

### Standard type A



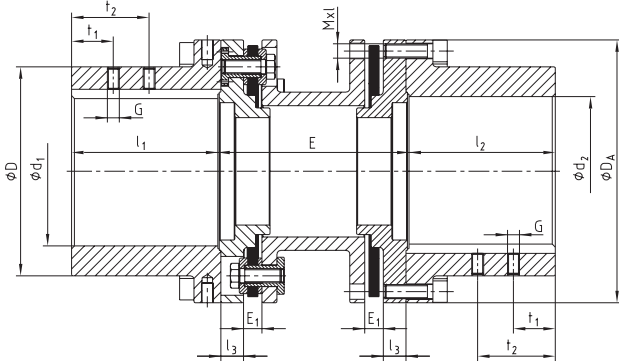
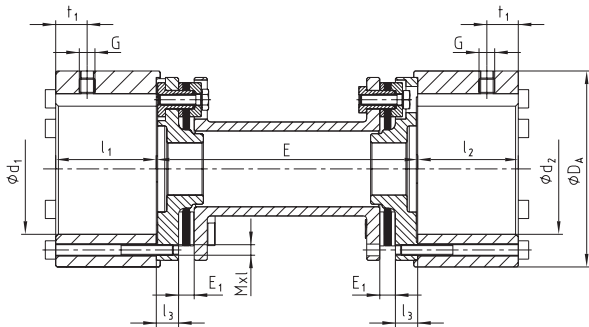
For legend of pictogram please refer to flapper on the cover



### Components

Size 35

Size 50 - 408



RIGIFLEX®-N type A																			
Size	Torques [Nm]			Max. finish bore	Dimensions [mm]													Screws DIN EN ISO 4762	
	T <sub>KN</sub>	T <sub>K max</sub>	T <sub>KW</sub>		d <sub>1</sub> , d <sub>2</sub>	D	D <sub>A</sub>	l <sub>1</sub> , l <sub>2</sub>	l <sub>3</sub>	G	t <sub>1</sub>	t <sub>2</sub>	E <sub>1</sub>	E <sup>1)</sup>				MxI	T <sub>A</sub> [Nm]
35	130	260	65	50	-	75	38.5	8.5	M6	15	-	6	100	140	-	-	-	M4x45	4.1
50	270	540	135	50	70	95	50	12	M6	10	-	9	100	140	-	-	-	M6x22	14
65	550	1100	275	70	100	126	63	12	M8	20	-	11	100	140	180	-	-	M6x25	14
75	1100	2200	550	75	105	138	62.5	12	M8	20	-	11	100	140	180	-	-	M8x30	35
85	1900	3800	950	90	120	156	72.5	15	M10	20	-	12	-	140	180	200	250	M8x30	35
110	3500	7000	1750	110	152	191	87	18	M10	25	-	12	-	140	180	200	250	M10x35	69
120	5750	11500	2875	120	165	213	102	20	M12	25	-	12	-	-	180	200	250	M12x40	120
140	10500	21000	5250	150	200	265	126	25	M12	30	-	15	-	-	-	200	250	M16x50	295
160	16000	32000	8000	165	230	305	145	31	M12	30	-	15	-	-	-	-	250	M16x55	295
166	19000	38000	9500	165	230	305	155	31	M16	30	70	17					M20x50	560	
196	22500	45000	11250	195	260	330	185	32	M16	40	90	24					M20x50	560	
216	32000	64000	16000	210	285	370	205	32	M20	50	110	26					M20x65	560	
256	52500	105000	26250	260	350	440	245	38	M20	70	130	31					M24x80	970	
306	86000	172000	43000	305	400	515	295	43	M24	70	130	36					M27x100	1450	
346	135000	270000	67500	350	460	590	335	55	M24	95	175	45					M30x110	1950	
406	210000	420000	105000	405	530	675	395	58.5	M24	95	175	50	According to customer specification				M36x130	3300	
168	25000	50000	12500	165	230	305	155	31	M16	30	70	17					M20x50	560	
198	30000	60000	15000	195	260	330	185	32	M16	40	90	24					M20x50	560	
218	42500	85000	21500	210	285	370	205	32	M20	50	110	26					M20x65	560	
258	70000	140000	35000	260	350	440	245	38	M20	70	130	31					M24x80	970	
308	115000	230000	57500	305	400	515	295	43	M24	70	130	36					M27x100	1450	
348	180000	360000	90000	350	460	590	335	55	M24	95	175	45					M30x110	1950	
408	280000	560000	140000	405	530	675	395	58.5	M24	95	175	50					M36x130	3300	

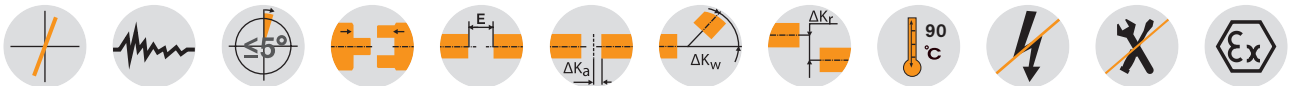
<sup>1)</sup> Other shaft distance dimensions available on request.  
For selection of coupling see catalogue "Drive Technology" on page 18 et seqq. Assembly instructions KTR standard 47410 available at [www.ktr.com](http://www.ktr.com).

Ordering example:	RIGIFLEX®-N 120	A	Ø 100	Ø 120	200
	Coupling size	Type	Bore d <sub>1</sub>	Bore d <sub>2</sub>	Shaft distance dimension E

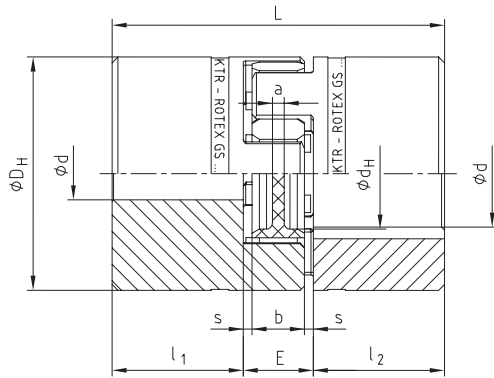
# ROTEX® GS

## Backlash-free jaw couplings

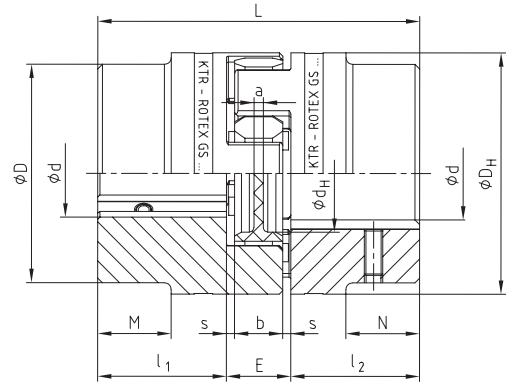
### Standard types



ROTEX® GS 5 - 38

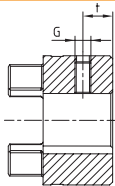


ROTEX® GS 42 - 90



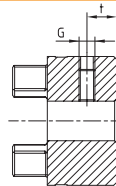
#### Types of hubs:

Type 1.0



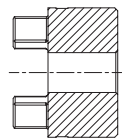
with feather keyway and setscrew

Type 1.1



without feather keyway, with setscrew

Type 1.2



without feather keyway and without setscrew

#### ROTEX® GS standard types - For size 5 to 38 hub material aluminium/for size 42 to 90 hub material steel

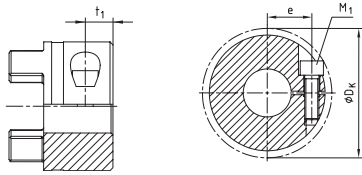
Size	Spider GS <sup>1)</sup> torque T <sub>KN</sub> [Nm] for 98 ShA	d <sub>max.</sub> for hub design			Dimensions [mm]										Setscrew DIN EN ISO 4029		
		1.0	1.1	1.2	D	D <sub>H</sub>	d <sub>H</sub>	L	l <sub>1</sub> , l <sub>2</sub>	M, N	E	b	s	a	G	t	T <sub>A</sub>
5	0.9	-	6	5	-	10	-	15	5	-	5	4	0.5	4.0	M2	2.5	0.35
7	2.0	7	7	7	-	14	-	22	7	-	8	6	1.0	6.0	M3	3.5	0.6
9	5.0	10	11	11	-	20	7.2	30	10	-	10	8	1.0	1.5	M4	5.0	1.5
12	9.0	12	12	12	-	25	8.5	34	11	-	12	10	1.0	3.5	M4	5.0	1.5
14	12.5	16	16	16	-	30	10.5	35	11	-	13	10	1.5	2.0	M4	5.0	1.5
19	21	24	-	-	-	40	18	66	25	-	16	12	2.0	3.0	M5	10	2.0
24	60	28	-	-	-	55	27	78	30	-	18	14	2.0	3.0	M5	10	2.0
28	160	38	-	-	-	65	30	90	35	-	20	15	2.5	4.0	M8	15	10
38	325	45	-	-	-	80	38	114	45	-	24	18	3.0	4.0	M8	15	10
42	450	55	-	-	85	95	46	126	50	28	26	20	3.0	4.0	M8	20	10
48	525	62	-	-	95	105	51	140	56	32	28	21	3.5	4.0	M8	20	10
55	685	74	-	-	110	120	60	160	65	37	30	22	4.0	4.5	M10	20	17
65	940	80	-	-	115	135	68	185	75	47	35	26	4.5	4.5	M10	20	17
75	1920	95	-	-	135	160	80	210	85	53	40	30	5.0	5.0	M10	25	17
90	3600	110	-	-	160	200	104	245	100	62	45	34	5.5	6.5	M12	30	40

<sup>1)</sup> For selections see catalogue "Drive Technology" on page 22 et seqq./other spiders see page 123 and following.

Ordering example:	ROTEX® GS 24	98 ShA-GS	d 20	2.5 - Ø24		1.0 - Ø20	
	Coupling size	Spider hardness	Optional: Bore in spider	Hub design	Finish bore	Hub design	Finish bore

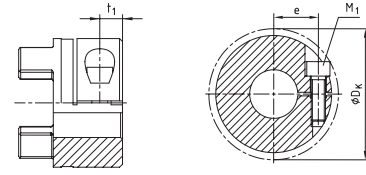
**Types of hubs:**

Type 2.0  
Type 2.1



Size 5 to 14  
Type 2.0: single slotted clamping hub **without** feather keyway (only for ATEX cat. 3), torque depending on bore Ø  
Type 2.1: single slotted clamping hub **with** feather keyway

Type 2.5  
Type 2.6



from size 19  
Type 2.5: double slotted clamping hub **without** feather keyway (only for ATEX cat. 3), torque depending on bore Ø  
Type 2.6: double slotted clamping hub **with** feather keyway

**ROTEX® GS standard types - For size 5 to 38 hub material aluminium/for size 42 to 90 hub material steel**

Size	Spider GS <sup>1)</sup> torque T <sub>KN</sub> [Nm] for 98 ShA	d <sub>max.</sub> for hub design				Dimensions [mm]											Clamping screw DIN EN ISO 4762 (ROTEX® 5 - DIN EN ISO 1207)				
		2.0	2.1	2.5	2.6	D	D <sub>H</sub>	d <sub>H</sub>	L	l <sub>1</sub> , l <sub>2</sub>	M, N	E	b	s	a	M <sub>1</sub>	t <sub>1</sub>	e	D <sub>K</sub>	T <sub>A</sub> [Nm]	
5	0.9	5	-	-	-	-	10	-	15	5	-	5	4	0.5	4.0	M1.2	2.5	3.5	11.4	- <sup>2)</sup>	
7	2.0	7	7	-	-	-	14	-	22	7	-	8	6	1.0	6.0	M2	3.5	5.0	16.5	0.37	
9	5.0	11	11	-	-	-	20	7.2	30	10	-	10	8	1.0	1.5	M2.5	5.0	7.5	23.4	0.76	
12	9.0	12	12	-	-	-	25	8.5	34	11	-	12	10	1.0	3.5	M3	5.0	9.0	27.5	1.34	
14	12.5	16	16	-	-	-	30	10.5	35	11	-	13	10	1.5	2.0	M3	5.0	11.5	32.2	1.34	
19	21	-	-	24	24	-	40	18	66	25	-	16	12	2.0	3.0	M6	11.0	14.5	46	10.5	
24	60	-	-	28	28	-	55	27	78	30	-	18	14	2.0	3.0	M6	10.5	20.0	57.5	10.5	
28	160	-	-	38	38	-	65	30	90	35	-	20	15	2.5	4.0	M8	11.5	25.0	73	25	
38	325	-	-	45	45	-	80	38	114	45	-	24	18	3.0	4.0	M8	15.5	30.0	83.5	25	
42	450	-	-	50	45	85	95	46	126	50	28	26	20	3.0	4.0	M10	18	32.0	93.5	69	
48	525	-	-	55	55	95	105	51	140	56	32	28	21	3.5	4.0	M12	21	36.0	105	120	
55	685	-	-	68	68 <sup>3)</sup>	110	120	60	160	65	37	30	22	4.0	4.5	M12	26	42.5	119.5	120	
65	940	-	-	70	70 <sup>3)</sup>	115	135	68	185	75	47	35	26	4.5	4.5	M12	33	45.0	124	120	
75	1920	-	-	80	80	135	160	80	210	85	53	40	30	5.0	5.0	M16	36	51.0	147.5	295	
90	3600	-	-	90	90	160	200	104	245	100	62	45	34	5.5	6.5	M20	40	60.0	176	580	

<sup>1)</sup> For selections see catalogue "Drive Technology" on page 22 et seqq./other spiders see page 123 and following.  
<sup>2)</sup> No T<sub>A</sub> defined (slotted screw)  
<sup>3)</sup> From Ø60 keyway opposite the clamping screw

**Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 2.0**

Size	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16
7		0.8	0.9	0.95	1.0	1.1								
9			2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8				
12			3.6	3.8	4.0	4.1	4.3	4.5	4.7	4.8	5.0			
14				4.7	4.8	5.0	5.1	5.3	5.5	5.6	5.8	6.1	6.3	6.5

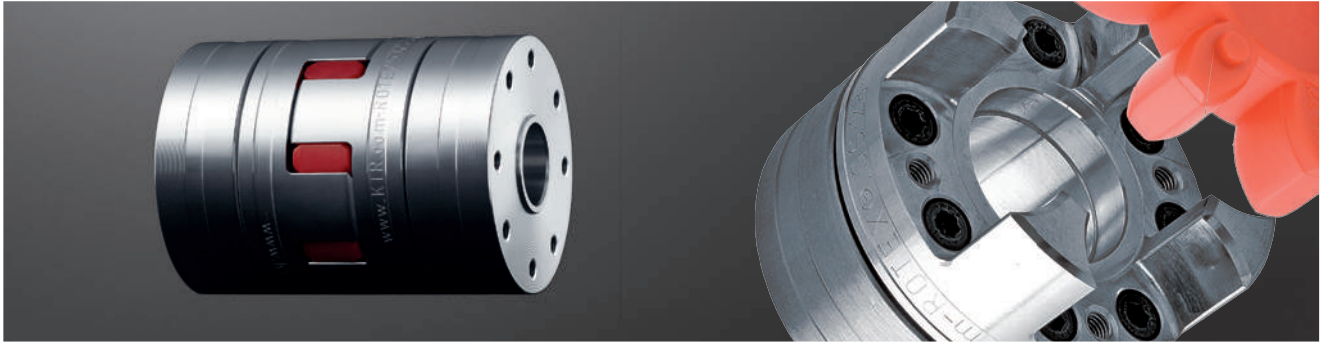
**Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 2.5**

Size	Ø8	Ø10	Ø11	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60	Ø65	Ø70	Ø75	Ø80	Ø90	
19	25	27	27	29	30	31	32	32	34	30 <sup>4)</sup>	32 <sup>4)</sup>																			
24		34	35	36	38	38	39	40	41	42	43	45	46																	
28				80	81	81	84	85	87	89	91	92	97	99	102	105	109													
38					92	94	97	98	99	102	104	105	109	112	113	118	122	123	126	130										
42									232	238	244	246	255	260	266	274	283	288	294	301	309	315								
48												393	405	413	421	434	445	454	462	473	486	494	514							
55															473	486	498	507	514	526	539	547	567	587	608					
65																507	518	526	535	547	559	567	587	608	627	648				
75																			1102	1124	1148	1163	1201	1239	1278	1316	1354	1393		
90																				1944	1980	2016	2040	2100	2160	2220	2280	2340	2400	2520

<sup>4)</sup> Clamping hub single slotted with 2-off clamping screws M4 and dimension e = 15

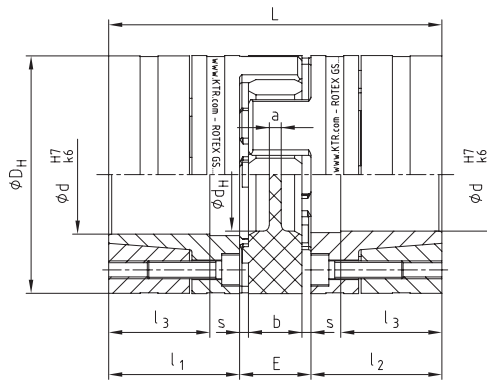
# ROTEX® GS Clamping ring hubs light Backlash-free jaw couplings

Integrated clamping system made of aluminium



Tack thread M<sub>1</sub> between clamping screws

Clamping ring hub light with block mounting (hub and clamping ring mounted as a block)



ROTEX® GS clamping ring hubs light																				
Size	Spider GS <sup>1)</sup> torque T <sub>KN</sub> [Nm]			Dimensions [mm]										Clamping screws DIN EN ISO 4762			Weight per hub with max. bore [kg]	Mass moment of inertia per hub with max. bore [kgm <sup>2</sup> ]		
	92 ShA	98 ShA	64 ShD	d <sub>max.</sub>	D <sub>H</sub> <sup>2)</sup>	d <sub>H</sub>	L	l <sub>1</sub> , l <sub>2</sub>	l <sub>3</sub>	E	b	s	a	M	z = number	T <sub>A</sub> [Nm]			M <sub>1</sub>	
14	7.5	12.5	16.0	14	30	10.5	50	18.5	13.5	13	10	1.5	2.0	M3	4	1.34	M3	0.032	0.04 x 10 <sup>-4</sup>	
19	12	21	26	20	40	18	66	25	18	16	12	2.0	3.0	M4	6	3	M4	0.077	0.19 x 10 <sup>-4</sup>	
24	35	60	75	32	55	27	78	30	22	18	14	2.0	3.0	M5	4	6	M5	0.162	0.78 x 10 <sup>-4</sup>	
28	95	160	200	38	65	30	90	35	27	20	15	2.5	4.0	M5	8	6	M5	0.240	1.70 x 10 <sup>-4</sup>	
38	190	325	405	48	80	38	114	45	35	24	18	3.0	4.0	M6	8	10	M6	0.490	5.17 x 10 <sup>-4</sup>	
42	265	450	560	51	95	46	126	50	35	26	20	3.0	4.0	M8	4	25	M8	0.772	11.17 x 10 <sup>-4</sup>	
48	310	525	655	55	105	51	140	56	41	28	21	3.5	4.0	M10	4	49	M10	1.066	18.81 x 10 <sup>-4</sup>	

<sup>1)</sup> For selections see catalogue "Drive Technology" on page 22 et seqq./other spiders see page 123 and following.

<sup>2)</sup> ØD<sub>H</sub> + 2 mm with high speeds for expansion of spider

Review of shaft-hub-connection: Friction torques T <sub>R</sub> [Nm] for hub design 6.0 light																										
Size		Ø6	Ø8	Ø9	Ø10	Ø11	Ø14	Ø15	Ø16	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55*		
14	H7/k6	8.2	13.1	18.7	20.5	25.9	36.2																			
	H7/h6	5.8	9.5	15.7	16.6	21.6	24.7																			
19	H7/k6				33	41	59	71	51	80	92															
	H7/h6				27	35	52	65	39	68	81															
24	H7/k6						84	99	93	139	157	160	177	232												
	H7/h6						75	92	79	125	145	119	136	190												
28	H7/k6							140	207	188	289	316	355	414	324	404	422									
	H7/h6							121	187	157	263	293	318	381	245	324	343									
38	H7/k6									290	439	480	567	656	617	759	733		825	922	808	937				
	H7/h6									247	403	447	530	626	499	636	606	696	792	678	809					
42	H7/k6													651	752	747	916	1001	1115	1044	1218	1404	1432			
	H7/h6													574	681	613	774	881	1001	888	1058	1241	1295			
48	H7/k6													765	822	927	1121	1220	1357	1318	1536	1768	1535	1834		
	H7/h6													678	760	837	1047	1085	1231	1128	1339	1566	1331	1591		

\* Standard bore tolerance H7, special tolerances on request \* From Ø55 tolerance G7/m6

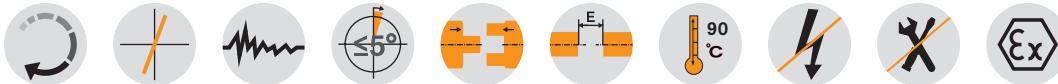
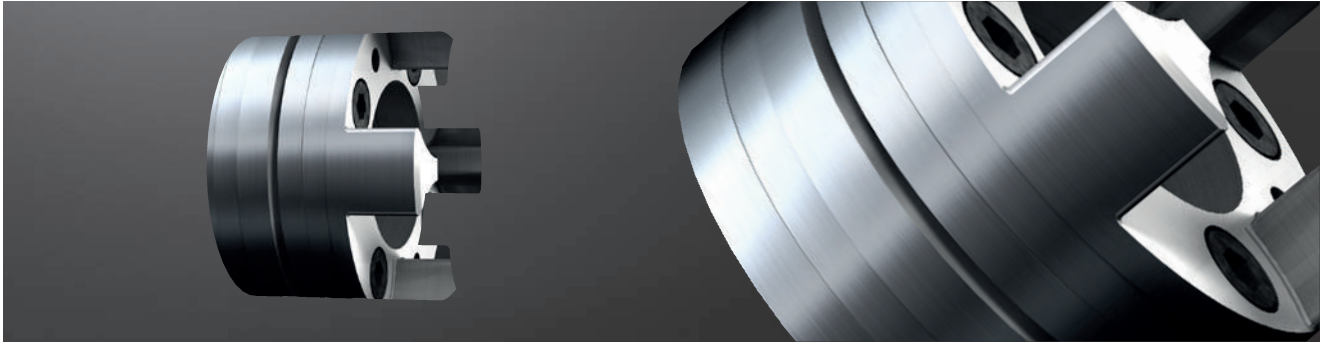
The torque is reduced with bigger fitting tolerances. Steel or nodular iron with a yield strength of approx. 250 N/mm<sup>2</sup> or more can be used as shaft material. For strength calculation of shaft/hollow shaft see KTR standard 45510 on our homepage www.ktr.com.

Ordering example:	ROTEX® GS 24	98 ShA-GS	d 20	6.0 light - Ø24		6.0 light - Ø20	
	Coupling size	Spider hardness	Optional: Bore in spider	Hub design	Finish bore	Hub design	Finish bore

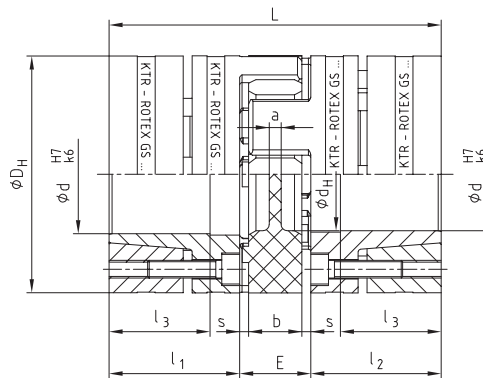
# ROTEX® GS Clamping ring hubs made of steel

## Backlash-free jaw couplings

### Integrated clamping system made of steel



Tack thread M<sub>1</sub> between clamping screws



ROTEX® GS clamping ring hubs steel

Size	Spider GS <sup>1)</sup> torque T <sub>KN</sub> [Nm]			Dimensions [mm]										Clamping screws DIN EN ISO 4762			Weight per hub with max. bore [kg]	Mass moment of inertia per hub with max. bore [kgm <sup>2</sup> ]
	98 ShA	64 ShD	72 ShD	d <sub>max</sub>	D <sub>H</sub> <sup>2)</sup>	d <sub>H</sub>	L	l <sub>1</sub> , l <sub>2</sub>	l <sub>3</sub>	E	b	s	a	M	z = number	T <sub>A</sub> [Nm]		
19	21	26	—	20	40	18	66	25 18	16	12	2.0	3.0	M4	6	4.1	M4	0.179	0.44 x 10 <sup>-4</sup>
24	60	75	97	28	55	27	78	30 22	18	14	2.0	3.0	M5	4	8.5	M5	0.399	1.91 x 10 <sup>-4</sup>
28	160	200	260	38	65	30	90	35 27	20	15	2.5	4.0	M5	8	8.5	M5	0.592	4.18 x 10 <sup>-4</sup>
38	325	405	525	48	80	38	114	45 35	24	18	3.0	4.0	M6	8	14	M6	1.225	12.9 x 10 <sup>-4</sup>
42	450	560	728	51	95	46	126	50 35	26	20	3.0	4.0	M8	4	41	M8	2.30	31.7 x 10 <sup>-4</sup>
48	525	655	852	55	105	51	140	56 41	28	21	3.5	4.0	M10	4	69	M10	3.08	52.0 x 10 <sup>-4</sup>
55	685	825	1072	70	120	60	160	65 45	30	22	4.0	4.5	M10	4	69	M10	4.67	103.0 x 10 <sup>-4</sup>
65	940	1175	1527	70	135	68	185	75 55	35	26	4.5	4.5	M12	4	120	M12	6.70	191.0 x 10 <sup>-4</sup>
75	1920	2400	—	80	160	80	210	85 63	40	30	5.0	5.0	M12	5	120	M12	9.90	396.8 x 10 <sup>-4</sup>
90	3600	4500	—	105	200	104	245	100 75	45	34	5.5	6.5	M16	5	295	M16	17.7	1136 x 10 <sup>-4</sup>

<sup>1)</sup> For selections see catalogue "Drive Technology" on page 22 et seqq./other spiders see page 123 and following.

<sup>2)</sup> ØD<sub>H</sub> + 2 mm with high speeds for expansion of spider

### Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 6.0 steel

Size		Ø10	Ø11	Ø14	Ø15	Ø16	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55*	Ø60*	Ø65*	Ø70*	Ø80*	Ø90*	Ø95*	Ø100*	Ø105*	
19	H7/k6	27	32	69	84	57	94	110																						
	H7/h6	15	18	57	74	38	76	94																						
24	H7/k6			70	87	56	97	114	116	133	192																			
	H7/h6			55	74	32	72	93	84	103	173																			
28	H7/k6				108	131	207	148	253	285	315	382	330	433	503															
	H7/h6				74	97	172	94	207	242	267	343	260	377	453															
38	H7/k6							208	353	395	439	531	463	603	593	689	793	776												
	H7/h6							136	290	337	373	476	367	525	491	601	721	677												
42	H7/k6								445	495	595	526	678	671	775	718	872	1043	1061											
	H7/h6								387	429	540	429	600	569	687	599	773	970	978											
48	H7/k6									616	704	899	896	1030	962	1160	1379	1222	1543											
	H7/h6									513	590	806	775	924	822	1042	1290	1073	—											
55	H7/k6													863	856	991	918	1119	1110	1247	1277	1665	1605	2008						
	H7/h6													750	710	863	750	976	934	1089	—	—	—	—						
65	H7/k6															1446	1355	1637	1635	1827	1887	2429	2368	2930						
	H7/h6															1275	1135	1447	1404	1619	—	—	—	—						
75	H7/k6																1710	2053	2059	2294	2384	3040	2983	3664	4293					
	H7/h6																1460	1836	1797	2056	—	—	—	—						
90	H7/k6																				3845	4249	4794	5858	5900	7036	8047	9247	9575	10845
	H7/h6																				3445	—	—	—	—	—	—	—	—	—

\* From Ø55 tolerance G7/m6

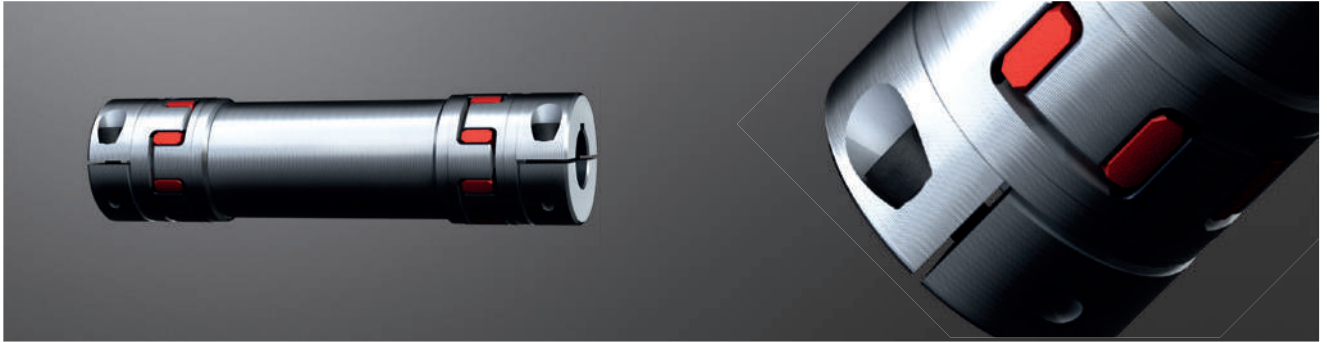
The torque is reduced with bigger fitting tolerances. For the strength calculation of shaft/hollow shaft see KTR standard 45510 at our homepage www.ktr.com.

Ordering example:	ROTEX® GS 24	98 ShA-GS	d 20	6.0 steel - Ø24		6.0 steel - Ø20	
	Coupling size	Spider hardness	Optional: Bore in spider	Hub design	Finish bore	Hub design	Finish bore

# ROTEX® GS ZR3

## Backlash-free intermediate shaft couplings

### Intermediate shaft coupling with aluminium pipe bonded



#### ROTEX® GS Type ZR3 - Hub material aluminium/intermediate pipe material aluminium

Size	Dimensions [mm]														Cap screw DIN EN ISO 4762	
	d <sub>max.</sub>	D <sub>H</sub>	l <sub>1</sub>	L	l <sub>3</sub>	E	L <sub>R</sub>		L <sub>ZR</sub> = L <sub>R</sub> + 2 · l <sub>3</sub>		d <sub>R</sub>	D <sub>K</sub>	t <sub>1</sub>	e	M	T <sub>A</sub> [Nm]
							Min.	Max.	Min.	Max.					M	T <sub>A</sub> [Nm]
14	15	30	18.5	36.0	14.5	13	72	2971	101	3000	28	33.3	7.5	10.5	M4	2.9
19	20	40	25	49.0	17.5	16	98	2965	133	3000	40	46	8.0	14.5	M6	10
24	28	55	30	59.0	22.0	18	121	3456	165	3500	50	57.5	10.5	20	M6	10
28	38	65	35	67.0	25.0	20	137	3950	187	4000	60	73	11.5	25	M8	25
38	45	80	45	83.5	33.0	24	169	3934	235	4000	70	83.5	15.5	30	M8	25
42	50	95	50	93.0	36.5	26	180	3927	253	4000	80	93.5	18.0	32	M10	49
48	55	105	56	100.0	39.5	28	202	3921	281	4000	100	105	18.5	36	M12	86

#### Technical data of type ZR3

Size	Spider GS <sup>1)</sup> torque T <sub>KN</sub> [Nm]		Moment of inertia [10 <sup>-3</sup> kgm <sup>2</sup> ]			Static torsion spring stiffness [Nm/rad]
	98 ShA	64 ShD	Hub <sup>2)</sup>		Pipe/meter	ZW C <sub>2</sub>
14	12.5	16.0	0.00362	0.00238	0.088	858
19	21.0	26.0	0.02002	0.01304	0.329	3243.6
24	60.0	75.0	0.07625	0.04481	0.673	6631.8
28	160	200	0.17629	0.10950	1.199	11814.1
38	325	405	0.50385	0.2572	2.972	29290.4
42	450	560	1.12166	0.5523	4.560	44929.7
48	525	655	1.87044	1.1834	9.251	91158.2

<sup>1)</sup> For selections see catalogue "Drive Technology" on page 22 et seqq./other spiders see page 123 and following.

<sup>2)</sup> With d<sub>max.</sub>

<sup>3)</sup> Torsion spring stiffness with a length of 1 m of intermediate pipe with L<sub>pipe</sub> = L<sub>ZR</sub> - 2 · L

For inquiries and orders please specify the shaft distance dimension L<sub>R</sub> along with the maximum speed to review the critical bending speed. See catalogue "Drive Technology" diagramme on page 127.

The intermediate pipe can be combined with other hub designs, but in that case it can no longer be radially disassembled. Please specify the shaft distance dimension required in your order.

With vertical application a support washer has to be used (please specify in your order).

Insertion dimension of shaft l<sub>3</sub>, to make sure that the coupling can be assembled/disassembled radially.

Straightness/concentricity of pipes according to DIN EN 755-1.

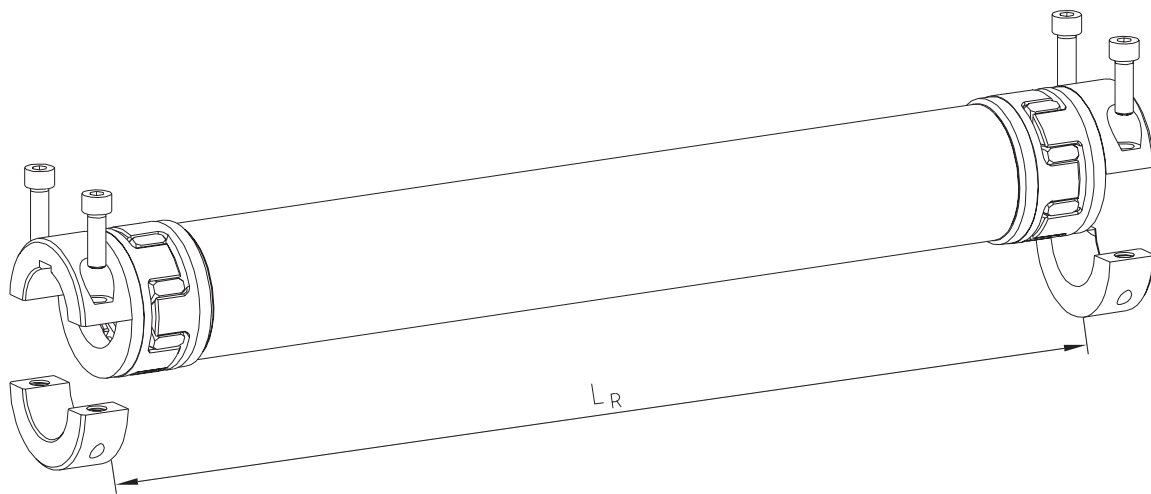
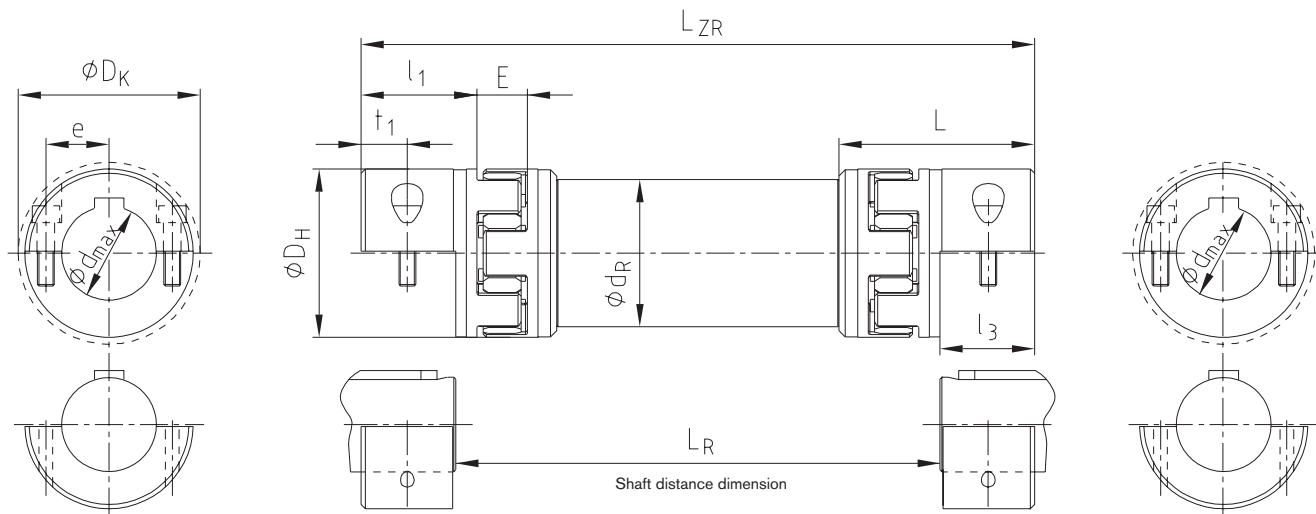
#### Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 7.5

Size	Ø5	Ø6	Ø8	Ø10	Ø11	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø46	Ø48	Ø50	Ø55
14	4.6	5.5	7.4	9.2	10.1	12.9	13.8																			
19			17	21	23	30	32	34	38	40	42															
24				21	23	30	32	34	38	40	42	47	51	53	59											
28					54	58	62	70	74	78	86	93	97	109	117	124	136	148								
38								70	74	78	86	93	97	109	117	124	136	148	156	163	175					
42											136	149	155	174	186	198	217	235	248	260	279	285	297	310		
48											199	217	226	253	271	290	317	344	362	380	407	416	434	452	498	

Ordering  
example:

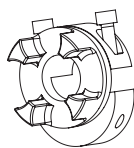
ROTEX® GS 24	ZR3	1200 mm	98 ShA-GS	7.5 - Ø24	7.5 - Ø24		
Coupling size	Type	Shaft distance dimension (L <sub>R</sub> )	Spider hardness	Hub design	Finish bore	Hub design	Finish bore





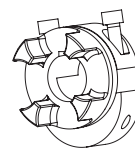
## Types of hubs

Type 7.5



Clamping hub type DH without feather keyway for double-cardanic connections

Type 7.6



Clamping hub type DH with feather keyway for double-cardanic connections

# ROTEX® GS

## Backlash-free jaw couplings

### Technical data

Size	Spider GS Shore hardness	Shore scale	Max. speed [rpm] for type					DKM	Torque [Nm]		Static torsion spring stiffness <sup>1)</sup> [Nm/rad]	Dynamic torsion spring stiffness <sup>1)</sup> [Nm/rad]	Radial torsion spring stiffness C <sub>r</sub> [N/mm]	Weight [kg]		Mass moment of inertia J [kgm <sup>2</sup> ]	
			2.0 / 2.1 2.5 / 2.6	2.8 2.9	1.0 1.1	6.0 light <sup>2)</sup>	6.0 P <sup>2)</sup>		T <sub>KN</sub>	T <sub>K max</sub>				Each Hub <sup>5)</sup>	Spider	Each Hub <sup>5)</sup>	Spider
5	70	A	38000	38000	47700			57300	0.2	0.3	1.78	5	43	0.001	0.2 x 10 <sup>-3</sup>	0.015 x 10 <sup>-6</sup>	0.002 x 10 <sup>-6</sup>
	80	A							0.3	0.6	3.15	10	82				
	92	A							0.5	1.0	5.16	16	154				
	98	A							0.9	1.7	8.3	25	296				
7	80	A	27000	27000	34100			40900	0.7	1.4	8.6	26	114	0.003	0.7 x 10 <sup>-3</sup>	0.085 x 10 <sup>-6</sup>	0.01 x 10 <sup>-6</sup>
	92	A							1.2	2.4	14.3	43	219				
	98	A							2.0	4.0	22.9	69	421				
	64	D							2.4	4.8	34.3	103	630				
8	80	A	23800						0.7	1.4	8.8	27	117	0.003	0.5 x 10 <sup>-3</sup>	0.117 x 10 <sup>-6</sup>	0.0124 x 10 <sup>-6</sup>
	98	A							2.0	4.0	23.5	71	433				
	64	D							2.4	4.8	35.3	106	648				
9	80	A	19000	19000	23800			28600	1.8	3.6	17.2	52	125	0.01	1.7 x 10 <sup>-3</sup>	0.48 x 10 <sup>-6</sup>	0.085 x 10 <sup>-6</sup>
	92	A							3.0	6.0	31.5	95	262				
	98	A							5.0	10.0	51.6	155	518				
	64	D							6.0	12.0	74.6	224	739				
12	80	A	15200	15200	19100			22900	3.0	6.0	84.3	252	274	0.02	2.3 x 10 <sup>-3</sup>	1.5 x 10 <sup>-6</sup>	0.139 x 10 <sup>-6</sup>
	92	A							5.0	10.0	160.4	482	470				
	98	A							9.0	18.0	240.7	718	846				
	64	D							12.0	24.0	327.9	982	1198				
13	80	A	12700						3.6	7.2	111	330	359	0.01	2.0 x 10 <sup>-3</sup>	1.1 x 10 <sup>-6</sup>	0.155 x 10 <sup>-6</sup>
	98	A							11.0	22.0	316	941	1109				
	64	D							14.5	29.0	430	1287	1570				
14	80	A	12700	12700	15900	32000	47700	19100	4.0	8.0	60.2	180	153	0.02	4.7 x 10 <sup>-3</sup>	2.8 x 10 <sup>-6</sup>	0.509 x 10 <sup>-6</sup>
	92	A							7.5	15.0	114.6	344	336				
	98	A							12.5	25.0	171.9	513	654				
	64	D							16.0	32.0	234.2	702	856				
16	80	A	12000						5.0	10.0	157	471	400	0.02	3.6 x 10 <sup>-3</sup>	2.8 x 10 <sup>-6</sup>	0.435 x 10 <sup>-6</sup>
	98	A							15.0	30.0	450	1341	1710				
	64	D							19.0	38.0	612	1835	2238				
19	80	A	9550	9550	11900	24000	35800	14300	6.0	12.0	618	1065	582	0.09	7.6 x 10 <sup>-3</sup>	19.5 x 10 <sup>-6</sup>	1.35 x 10 <sup>-6</sup>
	92	A							12.0	24.0	1090	1815	1120				
	98	A							21.0	42.0	1512	2540	2010				
	64	D							26.0	52.0	2560	3810	2930				
24	92	A	6950	10400	8650	17000	26000	10400	35	70	2280	4010	1480	0.2	0.02	81.9 x 10 <sup>-6</sup>	6.7 x 10 <sup>-6</sup>
	98	A							60	120	3640	5980	2560				
	64	D							75	150	5030	10896	3696				
	72 <sup>3)</sup>	D							97	194	9944	17095	5799				
28	92	A	5850	8800	7350	15000	22000	8800	95	190	4080	6745	1780	0.3	0.03	184.2 x 10 <sup>-6</sup>	14.85 x 10 <sup>-6</sup>
	98	A							160	320	6410	9920	3200				
	64	D							200	400	10260	20177	4348				
	72 <sup>3)</sup>	D							260	520	21526	36547	7876				
38	92	A	4750	7150	5950	12000	17900	7150	190	380	6525	11050	2350	0.6	0.05	542.7 x 10 <sup>-6</sup>	39.4 x 10 <sup>-6</sup>
	98	A							325	650	11800	17160	4400				
	64	D							405	810	26300	40335	6474				
	72 <sup>3)</sup>	D							525	1050	44584	71180	11425				
42	92	A	4000		5000	10000 8050 <sup>4)</sup>	15000	6000	265	530	10870	15680	2430	2.4	0.08	2802 x 10 <sup>-6</sup>	85 x 10 <sup>-6</sup>
	98	A							450	900	21594	37692	5570				
	64	D							560	1120	36860	69825	7270				
	72 <sup>3)</sup>	D							728	1456	58600	93800	9766				
48	92	A	3600		4550	9100 7200 <sup>4)</sup>	13600	5450	310	620	12968	18400	2580	3.3	0.09	4709 x 10 <sup>-6</sup>	135 x 10 <sup>-6</sup>
	98	A							525	1050	25759	45620	5930				
	64	D							655	1310	57630	99750	8274				
	72 <sup>3)</sup>	D							852	1704	80000	136948	11359				
55	92	A	3150		3950	6350 <sup>4)</sup>	11900	4750	410	820	15482	21375	2980	5.1	0.12	9460 x 10 <sup>-6</sup>	229 x 10 <sup>-6</sup>
	98	A							685	1370	42117	61550	6686				
	64	D							825	1650	105730	130200	9248				
	72 <sup>3)</sup>	D							1072	2144	150000	209530	12762				
65	98	A	2800		3500	5650 <sup>4)</sup>	11000		940	1880	48520	71660	6418	6.7	0.2	15143 x 10 <sup>-6</sup>	437 x 10 <sup>-6</sup>
	64	D							1175	2350	118510	189189	8870				
	72 <sup>3)</sup>	D							1527	3054	160000	310000	11826				
75	98	A	2350		2950	4750 <sup>4)</sup>	8950		1920	3840	79150	150450	8650	10.5	0.3	32750 x 10 <sup>-6</sup>	1179 x 10 <sup>-6</sup>
	64	D							2400	4800	182320	316377	11923				
	72 <sup>3)</sup>	D							3120	6240	360540	586429	16454				
90	98	A	1900		2380	3800 <sup>4)</sup>	7150		3600	7200	204500	302900	10700	18.2	0.6	87099 x 10 <sup>-6</sup>	3362 x 10 <sup>-6</sup>
	64	D							4500	9000	429450	908700	14700				
	72 <sup>3)</sup>	D							5850	11700	847440	1308852	20290				

<sup>1)</sup> Static and dynamic torsion spring stiffness with 0.5 x T<sub>KN</sub>

<sup>2)</sup> For higher speeds see ROTEX® GS HP

<sup>3)</sup> When using the spider 72 ShD, we recommend to use hubs made of steel

<sup>4)</sup> Clamping ring hubs 6.0 made of steel

<sup>5)</sup> Hubs with an average bore type 1.0

The coupling has to be dimensioned in a way that the permissible coupling load is not exceeded during any operating condition (see selection catalogue "Drive Technology" on page 22 seq.).

The torques specified T<sub>KN</sub>/T<sub>K max</sub> refer to the spider. The shaft-hub-connection needs to be reviewed by the customer.

For technical data of type HP see catalogue "Drive Technology" on page 138

# ROTEX® GS

## Backlash-free jaw couplings

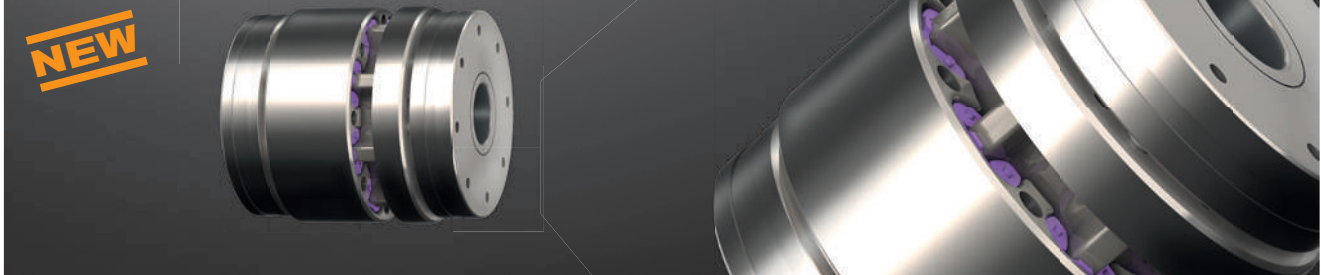
### Other types

#### ROTEX® GS Compact



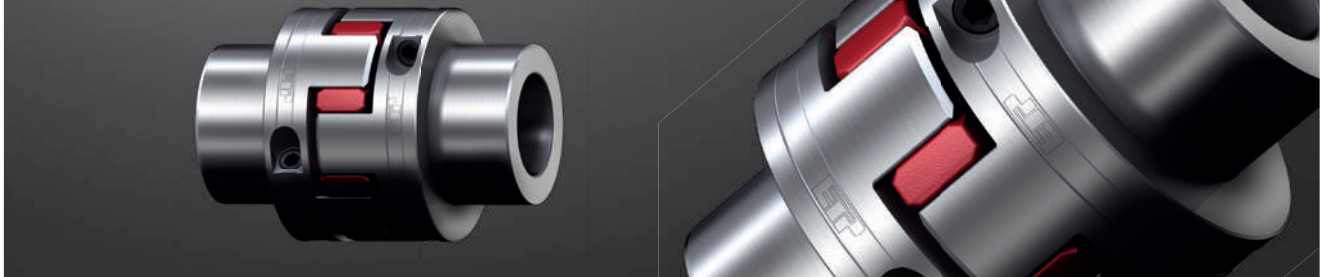
- It is up to 1/3 shorter than standard types
- Axial slot, DBGM (German utility model)
- Good concentric running
- Uniform power transmission by cams without slots

#### ROTEX® GS HP



- Highly accurate jaw coupling for severely high speeds (up to a circumferential speed of 175 m/s)
- Short dimensions
- Easy assembly due to internal clamping screws
- High friction torques

#### ROTEX® GS P ETP®

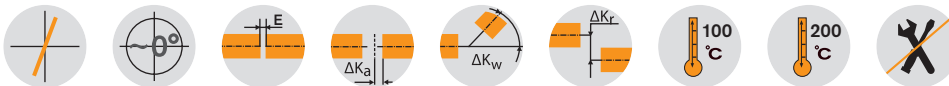


- Backlash-free shaft coupling damping vibrations with integrated ETP quick clamping system
- Quick assembly / disassembly since one screw only needs to be tightened
- Severely good concentric running properties even after repeated assembly operations
- Assembly / disassembly for thousands of times
- Assembly in spaces difficult to access possible, since the pressure screw is tightened in axial direction to the shaft
- Small mounting dimensions
- The hub can be set easily and accurately

# TOOLFLEX® S

## Metal bellow-type couplings

### Type S: with clamping hubs



#### TOOLFLEX® Type S with clamping hubs - Hub material aluminium (size 55/65 steel)/bellow material stainless steel

Size	Dimensions [mm]											
	Finish bore d		General					Clamping screws DIN EN ISO 4762				
	Min.	Max.	L	I <sub>1</sub> , I <sub>2</sub>	E	D <sub>H</sub>	d <sub>H</sub>	M <sub>1</sub>	D <sub>3</sub>	t <sub>1</sub>	e <sub>1</sub>	T <sub>A</sub> [Nm]
7	3	7	24	9	6	15	9	M2	16.5	3.2	5	0.37
9	3	9	29	11	7	20	12	M2.5	21.5	3.5	7.1	0.76
12	4	12	34.5	13	8.5	25	16	M3	26.5	4	8.5	1.34
16	5	16	45	17.0	11	32	20	M4	35.0	5	12.0	2.9
20	8	20	55	21.5	12	40	27	M5	43.5	6	14.5	6
30	10	30	63	23.0	17	55	33	M6	58.0	7	19	10
38	12	38	69	25.5	18	65	42	M8	72.6	9	25	25
42	14	42	84	30.0	24	70	46	M8	76.1	9	27	25
45	14	45	86.5	32.0	22.5	83	58	M10	89.0	11	30	49
55 Al	20	55	111	40.0	31	100	73	M12	106.0	14	37	86
55 <sup>3)</sup>	20	55	111	40.0	31	100	73	M12	106.0	14	37	120
65 <sup>3)</sup>	30	65	126	45.0	36	125	95	M14	127.2	15	45	185

#### Technical data

Size	Bellow-hub-connection	Torque of bellow T <sub>KN</sub> [Nm] <sup>1)</sup>	Max. speed [rpm]	Hub material	Moment of inertia <sup>2)</sup> [x10 <sup>-6</sup> kgm <sup>2</sup> ]	Torsion spring stiffness C <sub>T</sub> [Nm/rad]	Axial stiffness C <sub>A</sub> [N/mm]	Radial stiffness C <sub>R</sub> [N/mm]	Perm. displacements			Weight <sup>2)</sup> [kg]
									Axial [mm]	Radial [mm]	Angular [degree]	
7	Bonded	1	31800	Aluminium	0.26	390	—	—	±0.3	0.10	0.7	0.007
9		1.5	23800	Aluminium	0.97	750	—	—	±0.35	0.15	1.0	0.014
12		2	19100	Aluminium	2.6	1270	—	—	±0.4	0.15	1.0	0.025
16		5	14900	Aluminium	9	4500	43	138	±0.3	0.15	1.0	0.06
20		15	11950	Aluminium	30	9600	63	189	±0.4	0.15	1.0	0.12
30	Flanged	35	8700	Aluminium	114	17800	97	233	±0.5	0.20	1.5	0.24
38		65	7350	Aluminium	245	37400	108	318	±0.6	0.20	1.5	0.35
42		95	6820	Aluminium	396	54700	120	499	±0.6	0.20	1.5	0.49
45		170	5750	Aluminium	931	95800	132	738	±0.9	0.20	1.5	0.82
55 Al		340	4800	Aluminium	1665	144100	160	894	±1.1	0.25	1.5	1.50
55 <sup>3)</sup>	340	4800	Steel	4996	144100	160	894	±1.0	0.25	1.5	3.20	
65 <sup>3)</sup>	600	3850	Steel	13318	322740	212	1365	±1.0	0.30	1.5	5.50	

<sup>1)</sup> For selection see page 22 et seqq.

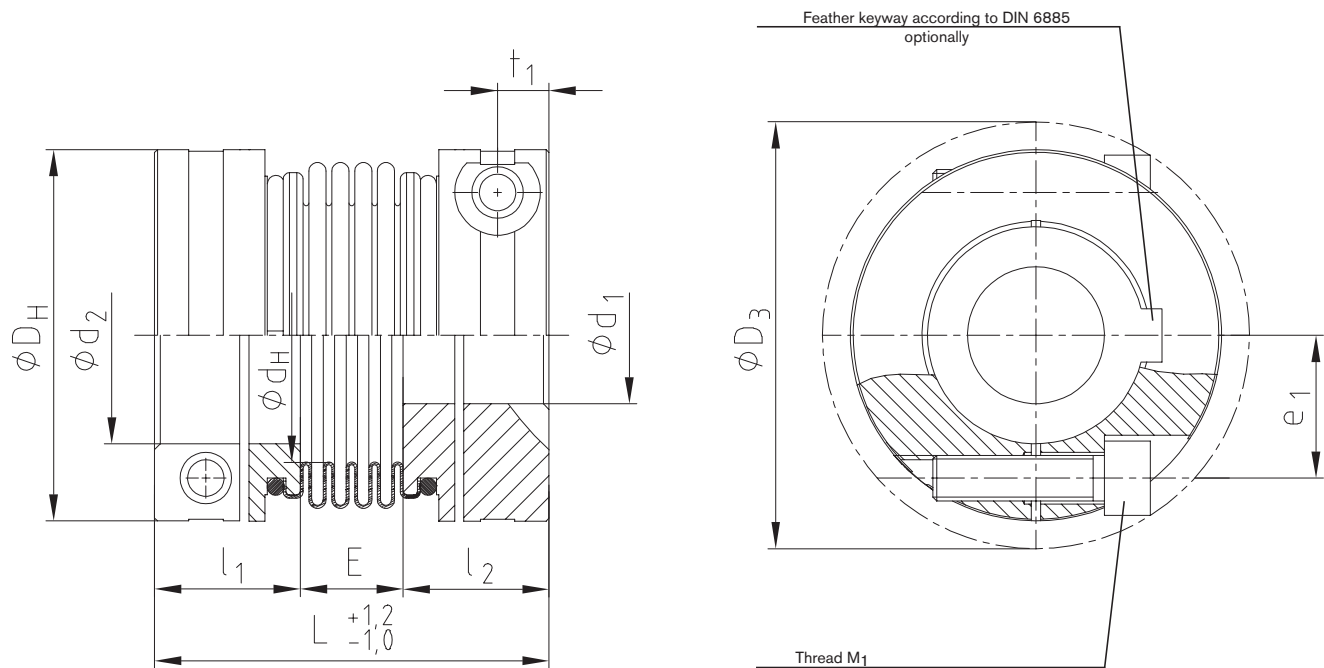
<sup>2)</sup> Figures refer to the complete coupling with max. bore.

<sup>3)</sup> Hub made of steel welded with bellow.

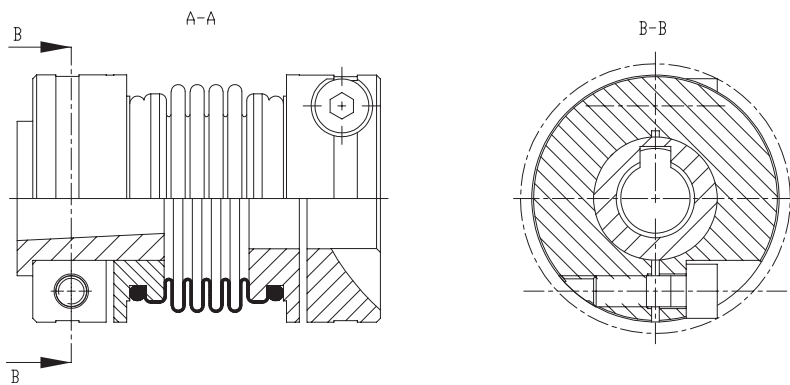
#### Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 2.5

Size	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø50	Ø55	Ø60	Ø65	
7	0.84	0.91	0.97	1.04	1.10																										
9	1.87	1.98	2.09	2.20	2.31	2.41	2.52																								
12		3.48	3.65	3.81	3.98	4.14	4.31	4.48	4.64	4.81																					
16			8.5	8.8	9.1	9.4	9.7	9.9	10.2	10.5	11.1	11.4	11.7																		
20						17.6	18.1	18.6	19.1	19.5	20.5	21.0	21.4	22.4	22.9	23.3															
30									33.1	33.8	35.1	35.8	36.5	37.8	38.5	39.2	41.9	42.5	44.6	45.9											
38											79.2	80.4	81.7	84.2	85.4	86.6	91.6	92.8	96.5	99.0	102	105	109								
42											84.2	85.4	86.6	89.1	90.3	91.6	96.5	97.8	102	104	106	110	114	116	119						
45												157	165	167	173	177	181	187	193	197	200	206									
55 Al																270	281	284	293	298	304	313	321	327	333	341	356	371			
55 <sup>3)</sup>																	397	401	413	421	429	442	454	462	470	482	502	523			
65 <sup>3)</sup>																					720	732	750	768	780	792	810	840	870	900	930

Ordering example:	TOOLFLEX® 30 S	2.5	Ø25	2.5	Ø30
	Size and type of coupling	Hub design	Finish bore	Hub design	Finish bore



**Other types:**  
Type for FANUC motors



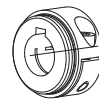
## Types of hubs

Type 2.5



Clamping hub double slot without feather keyway

Type 2.6

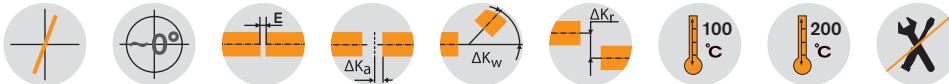
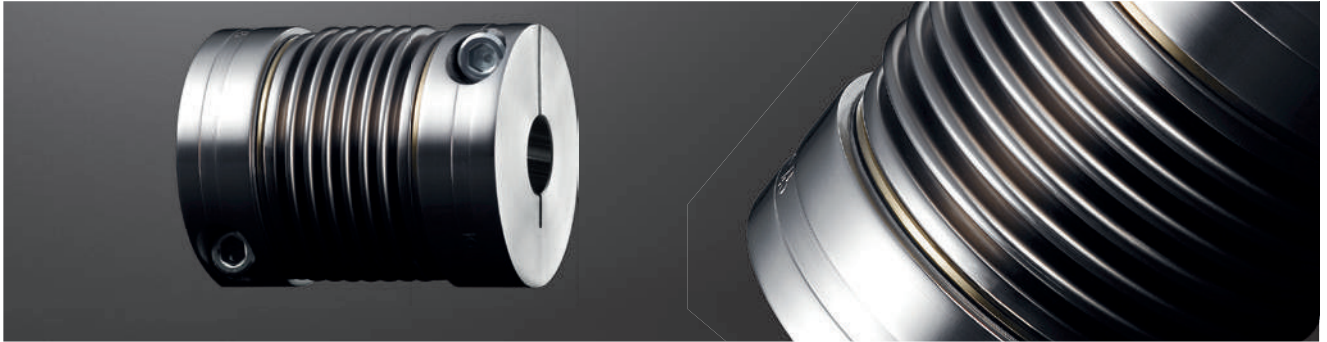


Clamping hub double slot with feather keyway

# TOOLFLEX® M

## Metal bellow-type couplings

### Type M: with clamping hubs



#### TOOLFLEX® Type M with clamping hubs - Hub material aluminium (size 55/65 steel)/bellow material stainless steel

Size	Dimensions [mm]											
	Finish bore d		General					Clamping screws DIN EN ISO 4762				
	Min.	Max.	L	l <sub>1</sub> , l <sub>2</sub>	E	D <sub>H</sub>	d <sub>H</sub>	M <sub>1</sub>	D <sub>3</sub>	t <sub>1</sub>	e <sub>1</sub>	T <sub>A</sub> [Nm]
7	3	7	26	9	8	15	9	M2	16.5	3.2	5	0.37
9	3	9	32	11	10	20	12	M2.5	21.5	3.5	7.1	0.76
12	4	12	38	13	12	25	16	M3	26.5	4	8.5	1.34
16	5	16	49	17.0	15	32	20	M4	35.0	5	12	2.9
20	8	20	62	21.5	19	40	27	M5	43.5	6	14.5	6
30	10	30	72	23.0	26	55	33	M6	58.0	7	19	10
38	12	38	81	25.5	30	65	42	M8	72.6	9	25	25
42	14	42	95	30.0	35	70	46	M8	76.1	9	27	25
45	14	45	103	32.0	39	83	58	M10	89.0	11	30	49
55 Al	20	55	125	40.0	45	100	73	M11	106.0	14	37	86
55 <sup>3)</sup>	20	55	125	40.0	45	100	73	M12	106.0	14	37	120
65 <sup>3)</sup>	30	65	142	45.0	52	125	95	M14	127.2	15	45	185

#### Technical data

Size	Bellow-hub-connection	Torque of bellow T <sub>KN</sub> [Nm] <sup>1)</sup>	Max. speed [rpm]	Hub material	Moment of inertia <sup>2)</sup> [x10 <sup>-6</sup> kgm <sup>2</sup> ]	Torsion spring stiffness C <sub>T</sub> [Nm/rad]	Axial stiffness C <sub>A</sub> [N/mm]	Radial stiffness C <sub>R</sub> [N/mm]	Perm. displacements			Weight <sup>2)</sup> [kg]
									Axial [mm]	Radial [mm]	Angular [degree]	
7	Bonded	1	31800	Aluminium	0.3	300	—	—	±0.4	0.15	1.0	0.008
9		1.5	23800	Aluminium	1.0	580	—	—	±0.5	0.20	1.5	0.015
12		2	19100	Aluminium	2.7	980	—	—	±0.6	0.20	1.5	0.03
16		5	14900	Aluminium	10	3050	29	92	±0.5	0.20	1.5	0.06
20	Flanged	15	11950	Aluminium	32	6600	42	126	±0.6	0.20	1.5	0.14
30		35	8700	Aluminium	123	14800	65	155	±0.8	0.25	2.0	0.31
38		65	7350	Aluminium	262	24900	72	212	±0.8	0.25	2.0	0.45
42		95	6820	Aluminium	427	36500	80	333	±0.8	0.25	2.0	0.52
45		170	5750	Aluminium	1020	64000	88	492	±1.0	0.25	2.0	1.13
55 Al		340	4800	Aluminium	1706	96100	107	598	±1.1	0.30	2.0	2.0
55 <sup>3)</sup>	340	4800	Steel	5118	96100	107	598	±1.0	0.30	2.0	3.3	
65 <sup>3)</sup>	600	3850	Steel	13727	226550	135	910	±2.0	0.35	2.0	5.6	

<sup>1)</sup> For selection see page 22 et seqq.

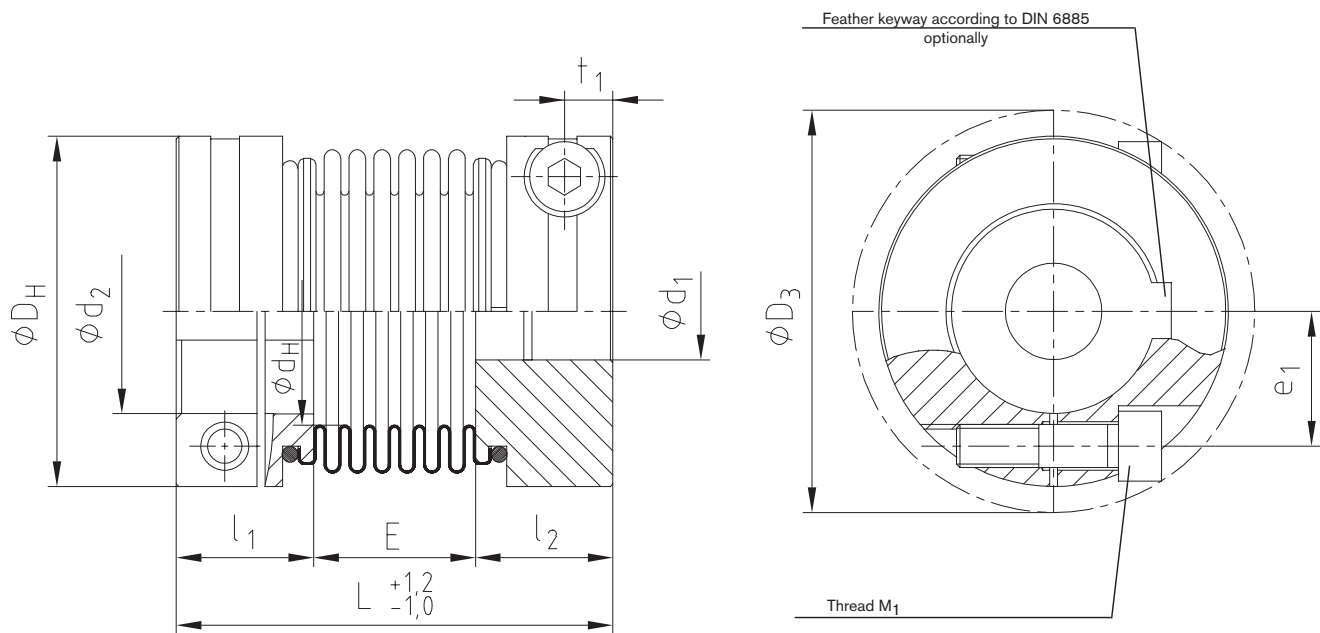
<sup>2)</sup> Figures refer to the complete coupling with max. bore.

<sup>3)</sup> Hub made of steel welded with bellow.

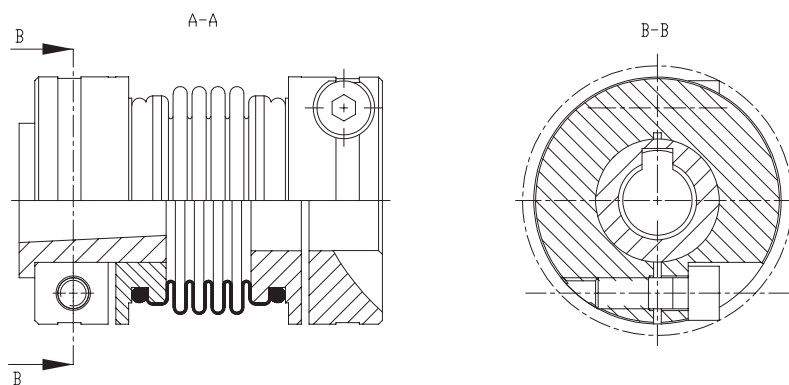
#### Review of shaft-hub-connection: Friction torques T<sub>F</sub> [Nm] for hub design 2.5

Size	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø50	Ø55	Ø60	Ø65	
7	0.84	0.91	0.97	1.04	1.10																										
9	1.87	1.98	2.09	2.20	2.31	2.41	2.52																								
12		3.48	3.65	3.81	3.98	4.14	4.31	4.48	4.64	4.81																					
16			8.5	8.8	9.1	9.4	9.7	9.9	10.2	10.5	11.1	11.4	11.7																		
20						17.6	18.1	18.6	19.1	19.5	20.5	21.0	21.4	22.4	22.9	23.3															
30									33.1	33.8	35.1	35.8	36.5	37.8	38.5	39.2	41.9	42.5	44.6	45.9											
38											79.2	80.4	81.7	84.2	85.4	86.6	91.6	92.8	96.5	99.0	102	105	109								
42											84.2	85.4	86.6	89.1	90.3	91.6	96.5	97.8	102	104	106	110	114	116	119						
45																157	165	167	173	177	181	187	193	197	200	206					
55 Al																270	281	284	293	298	304	313	321	327	333	341	356	371			
55 <sup>3)</sup>																	397	401	413	421	429	442	454	462	470	482	502	523			
65 <sup>3)</sup>																					720	732	750	768	780	792	810	840	870	900	930

Ordering example:	TOOLFLEX® 30 M	2.5 - Ø25		2.5 - Ø30	
	Size and type of coupling	Hub design	Finish bore	Hub design	Finish bore



**Other types:**  
Type for FANUC motors



## Types of hubs

Type 2.5



Clamping hub double slot without feather keyway

Type 2.6



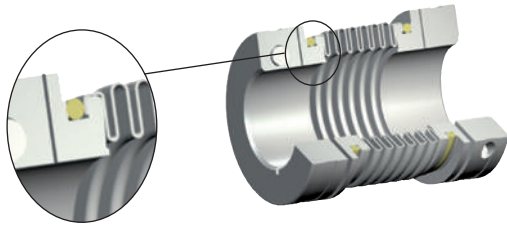
Clamping hub double slot with feather keyway

# TOOLFLEX®

## Metal bellow-type couplings

### Technical description

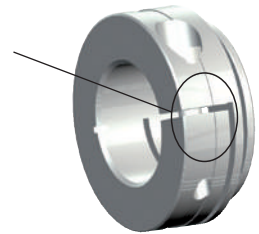
TOOLFLEX® is a metal bellow-type coupling, a coupling system which has proven in the field with numerous applications. The metal bellow compensates perfectly for axial, radial and angular displacements. At the same time its geometric shape allows for high torsional stiffness and a low mass moment of inertia. TOOLFLEX® is manufactured in twelve sizes for maximum torques up to 600 Nm. Its main application ranges are both positioning drives, e. g. ball spindles with a high incline, and indexing tables or planetary and worm gears with small gear ratios.



Subject to its proven bonding technique a non-positive, backlash-free connection of the aluminium hubs with the multilayer bellows made of stainless steel is generated. The flanged insert connection for sizes 16 to 55 ensures torque transmission of every single bellow layer. Since TOOLFLEX® is a metal coupling, it remains fatigue-endurable in the high-temperature range up to a maximum of 200 °C. Apart from that it is resistant to the effect of media or critical operating conditions, respectively.

The well-known shaft-hub-connection by means of clamping hubs ensures an easy assembly by a radial clamping screw. Subject to two slots in the hub there is no deformation of the bellow when tightening the clamping screw. For higher friction torques type KN with taper hubs can be used.

Double slotted clamping hub



### Types



Summary																				
Size	Type	Bellow-hub-connection	Thread for setscrews (hub design 1.0/1.1)			Clamping hubs (hub design 2.5/2.6)			KN			PI			CF					
			Torque of bellow T <sub>KN</sub> [Nm]	Torque of bellow T <sub>K</sub> max [Nm]	Max. speed [rpm]	Torque of bellow T <sub>KN</sub> [Nm]	Torque of bellow T <sub>K</sub> max [Nm]	Max. speed [rpm]	Torque of bellow T <sub>KN</sub> [Nm]	Torque of bellow T <sub>K</sub> max [Nm]	Max. speed [rpm]	Torque of bellow T <sub>KN</sub> [Nm]	Torque of bellow T <sub>K</sub> max [Nm]	Max. speed [rpm]	Torque of bellow T <sub>KN</sub> [Nm]	Torque of bellow T <sub>K</sub> max [Nm]	Max. speed [rpm]			
5	S	Bonded Maximum ambient temperature 100 °C	0.1	0.15	47700															
	M																			
7	S								1	1.5	31800									
	M																			
9	S								1.5	2.25	23800									
	M																			
12	S				2	3	19000													
	M																			
16	S				5	7.5	14900													
	M																			
20	S				15	22.5	11900				15	22.5	11950							
	M																			
30	S	Flanged Maximum ambient temperature 200 °C				35	52.5	8700	35	52.5	15280	35	52.5	8700	35	52.5	8700			
	M																			
38	S					65	97.5	7350	65	97.5	12600	65	97.5	7350	65	97.5	7350			
	M																			
42	S					95	142.5	6820	95	142.5	11580	95	142.5	6820	95	142.5	6820			
	M																			
45	S				170	255	5750	170	255	9300	170	255	5750	170	255	5750				
	M																			
55 Al	S				340	510	4800													
	M																			
55	S	Welded Maximum ambient temperature 200 °C				340	510	4800	340	510	7870	340	510	4800						
	M																			
65	S					600	900	3850												
	M																			

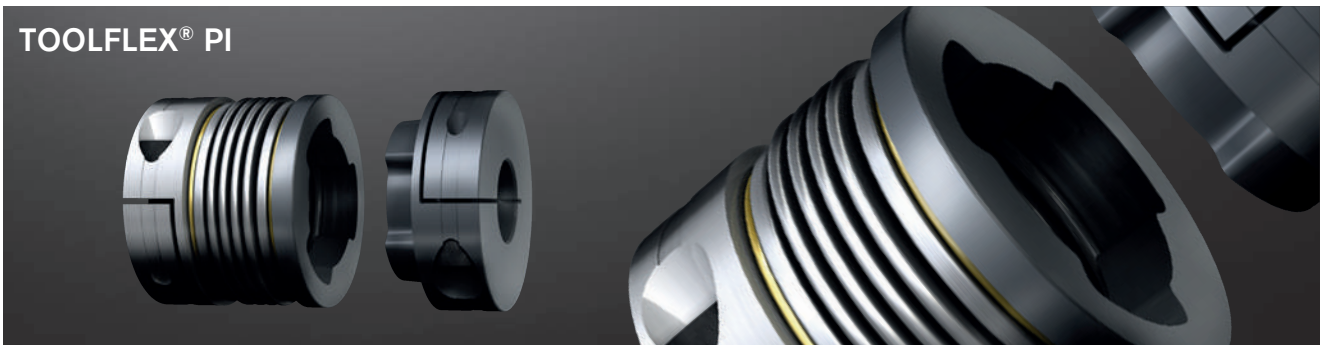


# TOOLFLEX®

## Metal bellow-type couplings

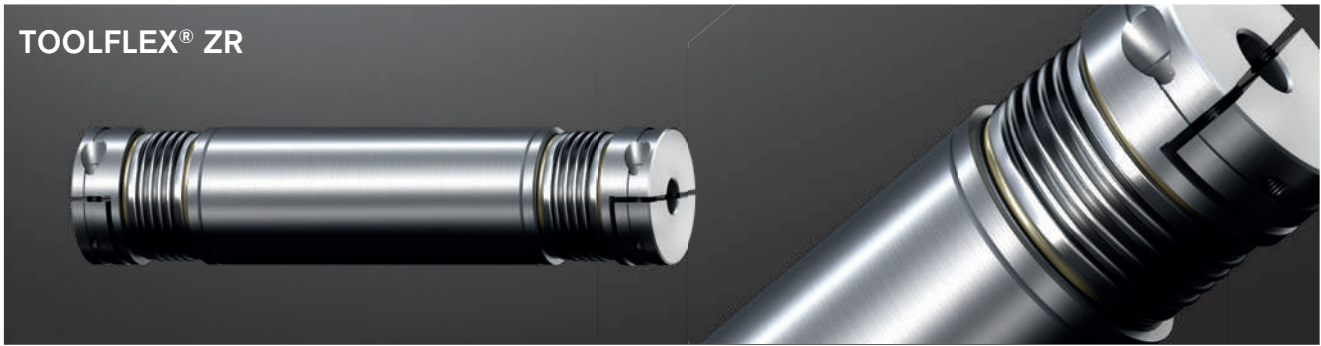
### Other types

#### TOOLFLEX® PI



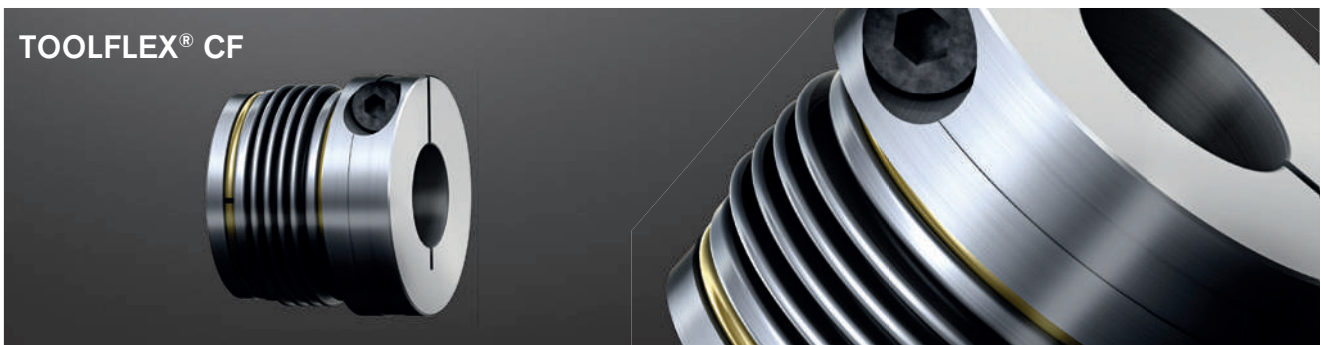
- Axial plug-in
- Optionally available with short bellow with 4 layers (type S) or bellow with 6 layers (type M)

#### TOOLFLEX® ZR



- Variable length up to 4 m
- High torsion stiffness
- High critical bending speed
- Low moments of inertia
- Easy radial assembly / disassembly
- Optionally available with feather keyways acc. to DIN 6885 sheet 2

#### TOOLFLEX® CF



- Extremely short design
- 25 % higher torques possible than with type M or type S
- Higher torsion stiffness
- Backlash-free and torsionally rigid
- Maintenance-free
- Due to welded connection suitable for high temperatures (max. 280 °C)
- Specifically suitable for use on gearboxes
- Flange-to-shaft connection
- Optionally available with short bellow with 4 layers (type S) or bellow with 6 layers (type M)
- Torques from 35 - 340 Nm
- Special type with bellow with either 1, 2 or 3 layers available

# RADEX®-NC

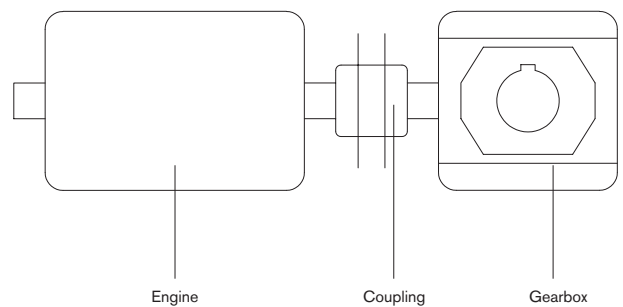
## Servo lamina couplings

### Technical description

RADEX®-NC is a line specifically developed for servo technology. With this coupling a set of torsionally rigid steel laminae that are soft in bending ensure a reliable compensation for axial, angular and radial shaft displacements. As an all-metal coupling - the laminae are made of stainless steel - RADEX®-NC can even be used with high temperatures (up to 200 °C) and under aggressive ambient conditions. RADEX®-NC is manufactured in 14 sizes from size 5 to 61 for max. torques up to 3000 Nm. In addition to the two different types (EK = single-cardanic and DK = double-cardanic) it is available in five different types of hubs.



A typical application of RADEX®-NC are backlash-free worm gear pairs with low gear ratios. For reason of the gear ratio of the gearbox the rigidity of the coupling must be converted from the drive side into the driven side. Here the gear ratio itself has a decisive influence because it is squarely included in the calculation. This converted rigidity is added in line with the gearbox stiffness in order to obtain the total rigidity. In case of gear ratios that are smaller than  $i = 8$  we recommend to use RADEX®-NC due to the loss of rigidity of the total system arising with the use of flexible couplings.



### Use in potentially explosive atmospheres

RADEX®-NC couplings are suitable for power transmission in drives in potentially explosive atmospheres. The couplings are assessed and approved according to EU directive 2014/34/EU as units of category 2G/2D and thus suitable for the use in potentially explosive atmospheres of zone 1, 2, 21 and 22. Please read through our information included in the respective Type Examination Certificate and the operating and assembly instructions at [www.ktr.com](http://www.ktr.com).

Selection:

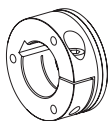
If used in potentially explosive atmospheres, the clamping hubs without feather keyway only for use in category 3 (with feather keyway for cat. 2) must be selected in that there is a minimum safety factor of  $s = 2$  between the peak torque (including all operating parameters) and the nominal torque and frictional torque of engagement of the coupling.



### Types of hubs



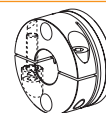
**Type 2.5 clamping hub**  
double slotted, without feather keyway  
Frictionally engaged, backlash-free shaft-hub-connection. Transmittable torques depending on bore diameter.



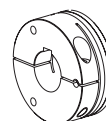
**Type 2.6 clamping hub**  
double slotted, with feather keyway  
Positive-locking power transmission with additional friction fit. The friction fit avoids or reduces reverse backlash. Surface pressure of the keyway connection is reduced.



**Type 6.5 clamping ring hub**  
Integrated frictionally engaged shaft-hub-connection for the transmission of higher torques. Suitable for high speeds.



**Type 3.5 clamping hub**  
triple slotted, without feather keyway  
Frictionally engaged, backlash-free shaft-hub-connection, good properties of concentric running and reduced imbalance. Transmittable torques depending on bore diameter. Type 3.5 standard from size 43



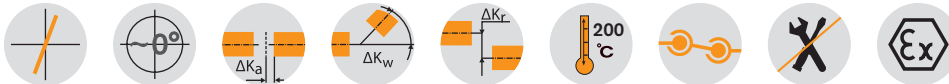
**Type 3.6 clamping hub**  
triple slotted, with feather keyway  
Positive-locking power transmission with additional friction fit. The friction fit avoids or reduces reverse backlash. Surface pressure of the keyway connection is reduced. Type 3.6 standard from size 43

# RADEX®-NC DK and EK Servo lamina couplings

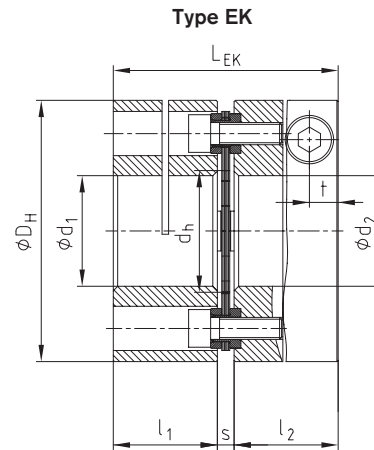
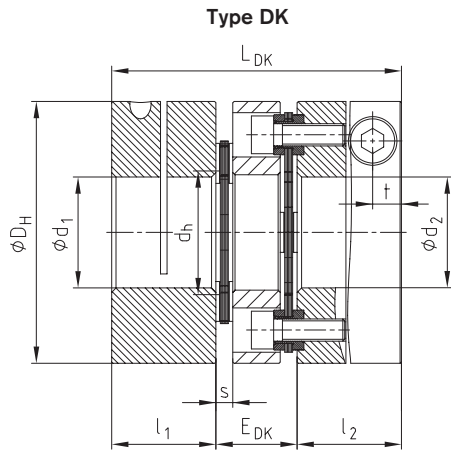
## Double- and single-cardanic types



For legend of pictogram please refer to flapper on the cover



### Hub design 2.5/2.6



### RADEX®-NC Types DK and EK - Hub and spacer material aluminium (size 42 steel)/laminas stainless steel

Size	Dimensions [mm]									Clamping screw		Mass moments of inertia	
	Max. d1, d2	DH	l1, l2	LDK	EDK	LEK	d <sub>h</sub>	s	t	M	T <sub>A</sub> [Nm]	DK [kgm <sup>2</sup> ]	EK [kgm <sup>2</sup> ]
5	12	26	12	34	10	26.5	12	2.5	3.5	M2.5	0.8	0.000004	0.000003
10	15	35	16	44	12	35	14.5	3	5.0	M4	3	0.000016	0.000012
15	20	47	21	55	13	45	19.5	3	6.8	M6	10	0.000065	0.000053
20	25	59	24	67	19	52	24	4	6.5	M6	10	0.000199	0.000154
25	35	70	32	88	24	69	30	5	9.0	M8	25	0.000508	0.000393
35	42	84	35	98	28	77	38	7	10.5	M10	49	0.001153	0.000911
42	55	104	40	116	36	91	48	11	10.5	M10	69	0.007458	0.006153

### Technical data

Size	TKN <sup>1)</sup> [Nm]	TK max <sup>1)</sup> [Nm]	Max. speed [rpm]	Torsion spring stiffness [Nm/rad]		Displacements of type DK			Displacements of type EK		
				Type EK	Type DK	Radial [mm]	Axial [mm]	Angular each lamina [°]	Radial [mm]	Axial [mm]	Angular each lamina [°]
5	2.5	5	18300	2400	1200	0.10	0.4	1	—	0.2	1
10	7.5	15	13600	5600	2800	0.14	0.8	1	—	0.4	1
15	20	40	10100	12000	6000	0.16	1.0	1	—	0.5	1
20	30	60	8050	30000	15000	0.25	1.2	1	—	0.6	1
25	60	120	6800	60000	30000	0.30	1.6	1	—	0.8	1
35	100	200	5650	72000	36000	0.40	2.0	1	—	1.0	1
42	300	600	4550	240000	120000	0.50	2.8	1	—	1.4	1

<sup>1)</sup> For selection see page 22 et seqq.

### Review of shaft-hub-connection: Friction torques T<sub>R</sub> [Nm] for hub design 2.5

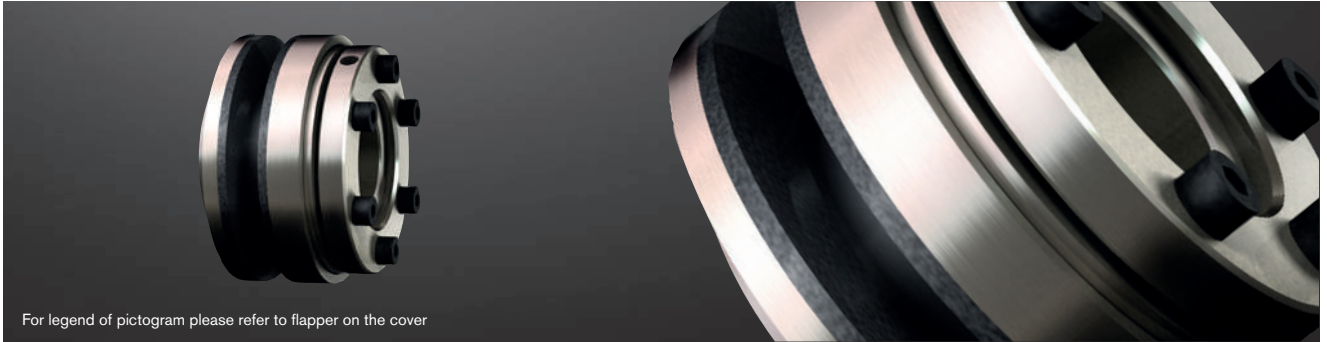
Size	Pilot bored	Ø3	Ø5	Ø8	Ø10	Ø12	Ø14	Ø15	Ø16	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø45	Ø50	Ø55
5	2.5	2.2	2.3	2.4	2.5																	
10	4.5		8	9	10	10	11	11														
15	5.5				28	30	31	32	32	34	35											
20	7.5					36	37	38	39	40	41	44	45									
25	9.5							82	83	87	88	93	94	98	100	103	106					
35	11.5									155	157	165	167	173	177	181	187	193	197			
42	15.0											285	287	296	301	307	315	323	329	343	357	370

Ordering example:

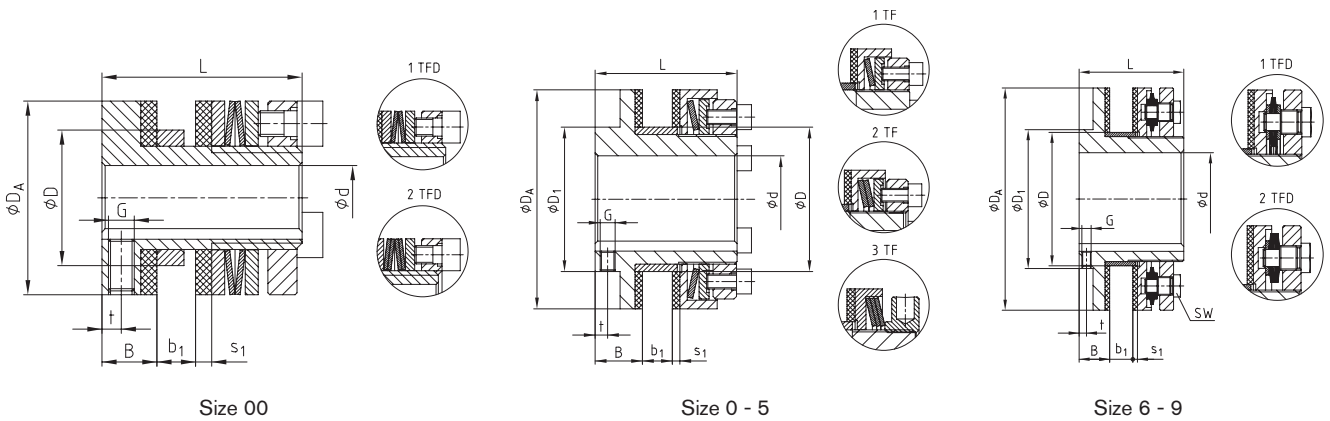
RADEX®-NC 20	DK	2.5 - Ø20		2.5 - Ø25	
Coupling size	Type	Hub design	Finish bore	Hub design	Finish bore

# RUFLEX® Torque limiters

## Standard width of drive component



For legend of pictogram please refer to flapper on the cover



### Technical data – dimensions

Size	Max. speed <sup>4)</sup> [rpm]	Torques [Nm]			Dimensions [mm]												
					Bore d		Drive component b <sub>1</sub>		Locking screw								
		1TF	2TF	3TF <sup>3)</sup>	Pilot bore	Max.	D <sup>2)</sup>	D <sub>1</sub>	D <sub>A</sub>	B	Min.	Max.	s <sub>1</sub>	L	t	G	
00	10000	(0.5) <sup>5)</sup> 1-3	2-5	–	–	10	21	–	30	8.5	2	6	2.5	31	3	M4	
0	8500	2-10	4-20	–	–	19 (20) <sup>1)</sup>	35	45	45	8.5	2	6	2.5	33	3	M4	
01	6600	5-35	10-70	–	–	22	40	40	58	16	3	8	3	45	4	M5	
1	5600	20-75	40-150	130-200	–	25	44	45	68	17	3	10	3	52	5	M5	
2	4300	25-140	50-280	250-400	–	35	58	58	88	19	4	12	3	57	5	M6	
3	3300	50-300	100-600	550-800	–	45	72	75	115	21	5	15	4	68	5	M6	
4	2700	90-600	180-1200	1100-1600	–	55	85	90	140	23	6	18	4	78	5	M8	
5	2200	400-800	800-1600	1400-2100	–	65	98	102	170	29	8	20	5	92	8	M8	
6	1900	300-1200	600-2400	–	38	80	116	120	200	31	8	23	5	102	8	M8	
7	1600	600-2200	1200-4400	–	45	100	144	150	240	33	8	25	5	113	8	M10	
8	1300	900-3400	1800-6800	–	58	120	170	180	285	35	8	25	5	115	8	M10	
9	1000	2500-6000	6000-12000	–	65	140	237	225	350	53	16	28	6	162	11	M12	

<sup>1)</sup> The figure in brackets specifies the max. bore with keyway to DIN 6885 sheet 3 (low-rise design)

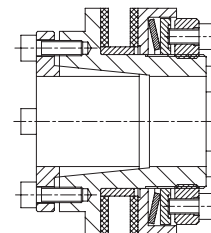
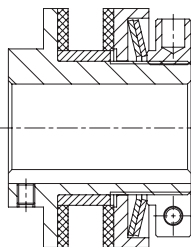
<sup>2)</sup> Bore tolerance (drive component): F8 with size 00 - 4, H8 with size 5 - 9

<sup>3)</sup> With clamping setting nut to be used on types limited in dimensions only

<sup>4)</sup> See comments on page 245

<sup>5)</sup> With special disk spring

On request:



- With clamping setting nut for size 0 - 5 (standard with 3TF)
- For radial torque setting
- With taper bush (hub design 4.5)
- Frictionally engaged shaft-hub-connection

Ordering example:	RUFLEX® 1	2TF	b <sub>1</sub> 10	d Ø20
	Type/size	Disk spring layering	Width of drive component b <sub>1</sub>	Finish bore

# RUFLEX®

## Torque limiters

### Other types

#### RUFLEX® with sprocket



- Torque limiter with integrated sprocket
- Overload protection up to 800 Nm
- Subassembly ready to fit
- Torque setting as requested by the customer available ex works
- Available from stock with standard sprockets
- Other sprockets on request of the customer available

#### RUFLEX® with torsionally flexible ROTEX®



- Torque limiter for shaft-to-shaft connections
- Torsionally flexible torque limiter able to compensate for displacements
- Axial plug-in
- Easy setting of slipping torque via standard tools
- Overload protection up to 12,000 Nm

#### RUFLEX® with torsionally rigid BoWex®



- Torque limiter as a torsionally rigid double-cardanic shaft-to-shaft connection
- Big displacements subject to double-cardanic design
- Low-cost torque protection for shaft-to-shaft connections
- Axial plug-in
- Easy setting of slipping torque via standard tools
- Overload protection up to 400 Nm

# KTR-SI Overload systems

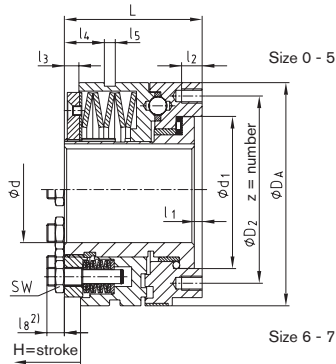
## Flange type



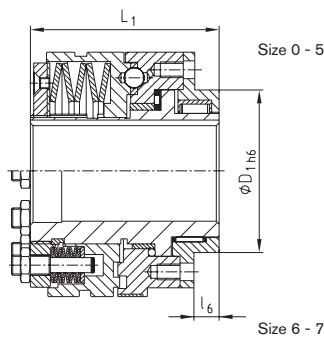
For legend of pictogram please refer to flapper on the cover



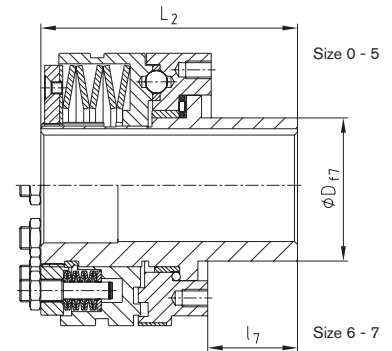
Type FT



Type KT



Type LT



### Technical data

Size	Torques [Nm]												Weight with max. bore [kg]
	Type DK				Type SR and SGR				Type FR				
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	$\eta_{max.}^{3)}$ [rpm]	
0	2.5-5	5-20	-	20-40	5-10	10-40	-	-	5-10	10-20	20-40	6000	0.41
1	6-12	12-25	25-55	55-100	12-25	25-50	50-100	-	12-25	25-50	50-100	5000	1.30
2	12-25	25-50	50-120	120-200	25-50	50-100	100-200	-	25-50	50-100	100-200	4000	2.27
3	25-50	50-100	100-250	200-450	50-100	100-200	200-450	-	50-100	100-200	200-450	3500	3.88
4	50-100	100-200	200-500	500-1000	100-200	200-400	400-800	800-2000	100-200	200-400	400-800	3000	8.34
5	85-250	230-600	300-1000	600-2000	170-450	350-900	600-1800	1200-3400	170-450	350-900	600-1800	2300	13.51
6	180-480	360-960	720-1950	1600-3300	300-750	600-1500	1200-3000	2900-5800	-	-	-	-	21
7	250-520	500-1050	1000-2100	2000-3600	550-1100	1100-2200	2200-4400	3000-8200	-	-	-	-	37

### Dimensions [mm]

Size	Bore d		$d_1$	D	$D_1$	$D_2$	$D_A$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$l_7$	L	$L_1$	$L_2$	z	H=stroke			
	Pilot bore	Max.																	DK	SR	SGR	FR
0	7	20	41.0	28	38	48	55	4.0	6.5	3.0	7.5	9	8	27.5	38.5	51.0	66.0	6xM5	1.4	1.2	0.6	1.6
1	10	25	60.0	38	50	70	82	4.0	8.0	6.0	11.5	9	10	33.0	52.0	70.0	85.0	6xM5	2.3	1.8	0.8	2.3
2	14	35	78.0	52	60	89	100	5.0	10.0	5.0	12.0	9	12	39.0	61.0	78.0	100.0	6xM6	2.4	2.0	1.1	3.0
3	18	45	90.5	65	80	105	120	5.0	12.0	8.5	21.0	10	12	47.0	78.0	96.0	125.0	6xM8	2.7	2.2	1.2	3.5
4	24	55	105.0	78	100	125	146	6.5	15.0	11.0	27.0	9	16	52.5	100.0	124.5	152.5	6xM10 <sup>1)</sup>	3.7	2.5	1.2	3.8
5	30	65 (70) <sup>4)</sup>	120.5	90	120	155	176	6.5	17.0	12.0	33.0	9	18	57.5	113.5	140.0	171.0	6xM12 <sup>1)</sup>	4.6	3.0	1.6	4.5
6 <sup>2)</sup>	40	80	136.0	108	130	160	200	7.0	20.0	14.0	39.0	9	20	64.0	119.0	150.0	183.0	6xM12 <sup>1)</sup>	5.0	3.5	2.5	-
7 <sup>2)</sup>	50	100 (110) <sup>4)</sup>	168.0	135	160	200	240	8.0	25.0	15.0	46.0	9	25	72.0	141.0	175.0	213.0	6xM16 <sup>1)</sup>	5.5	4.0	2.7	-

<sup>1)</sup> Type T4 SR and SGR: tightening torques according to 12.9

<sup>2)</sup> Size 6: dimension  $l_8 = 15$  mm, size 7: dimension  $l_8 = 21$  mm

<sup>3)</sup> See comments on page 245

<sup>4)</sup> The figure in brackets specifies the max. bore with keyway to DIN 6885 sheet 3 (low-rise design)

Ordering  
example:

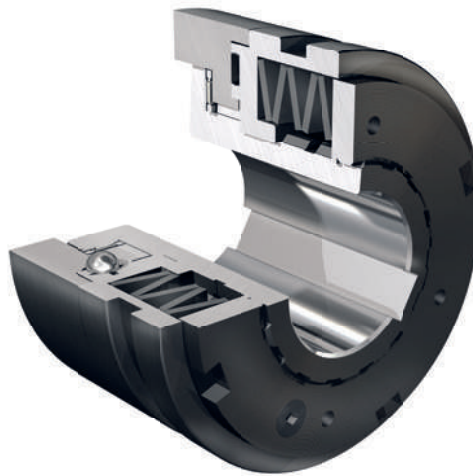
KTR-SI 2	FR	FT	T2	d Ø20	40 Nm
Type/size	Type (DK/SR/SGR/FR)	Type	Disk spring layering	Bore	Torque set

# KTR-SI

## Overload systems

### Structure and operation

- Overload protection up to 8,200 Nm
- Available as a ratchet, synchronous, idle rotating and fail-safe design with the same dimensions
- Reduction of torque peaks
- High response accuracy, even after a long operating period
- Disconnection of the drive with overload by retrieving limit switch
- Automatically operative (DK, SR, SGR)

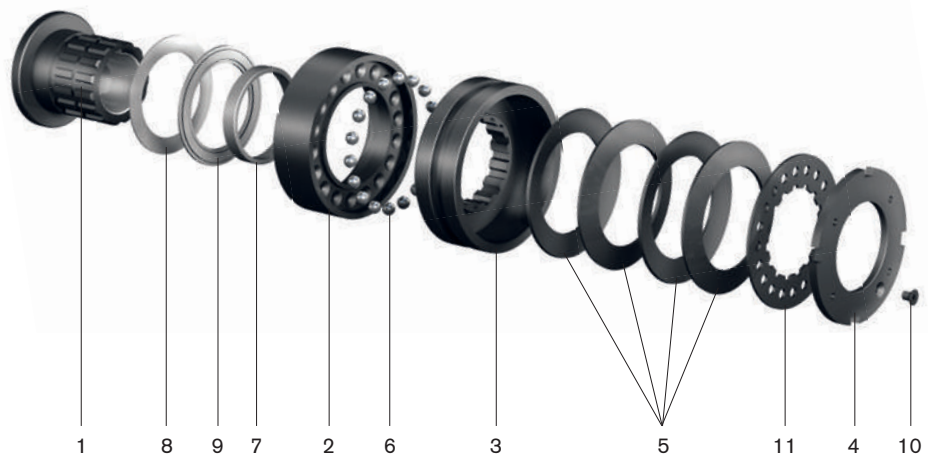


- Available in various designs (e. g. with needle bearing) and combinations (e. g. with torsionally flexible ROTEX®)
- Easy assembly and torque setting
- Maintenance-free
- Insensitive to oil and grease
- Long service life due to high-quality materials

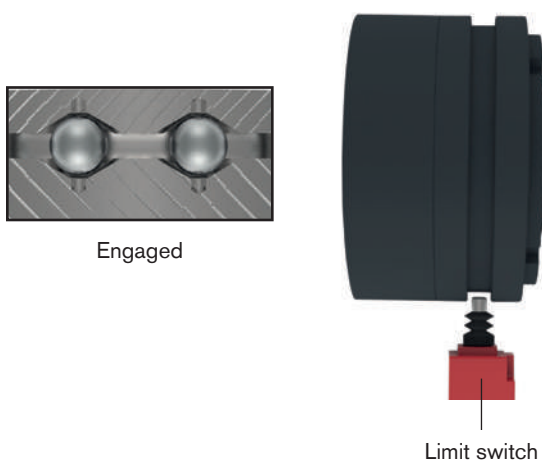
In case of overload the ratchet components (balls or rollers) leave their indentations, and a relative motion between the driving and driven side is generated. Damages caused by overload are reliably prevented in this way. The shift ring (3) makes an axial motion to the engagement travel „H“ activating the limit switch or proximity initiator. The signal can be used for controlling or disconnecting the drive. For restarting we would recommend to bypass the limit switch or proximity switch electrically for a short time.

#### Component - Description

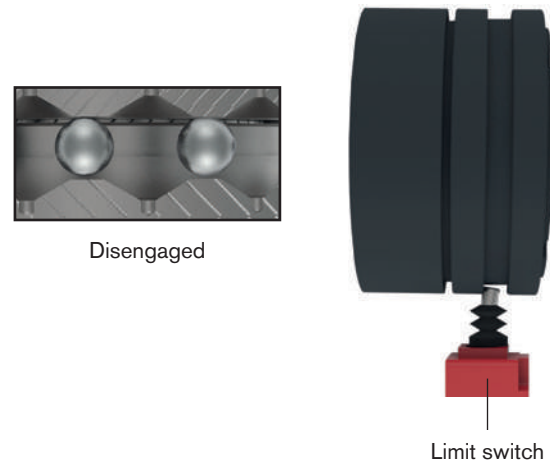
- |    |                      |
|----|----------------------|
| 1  | Hub                  |
| 2  | Flange ring          |
| 3  | Shifting ring        |
| 4  | Setting nut          |
| 5  | Disk spring          |
| 6  | Ball bearing cage    |
| 7  | Slide bush           |
| 8  | Axial disk           |
| 9  | Axial needle bearing |
| 10 | Setscrew             |
| 11 | Lock washer          |



#### No signal with normal operation



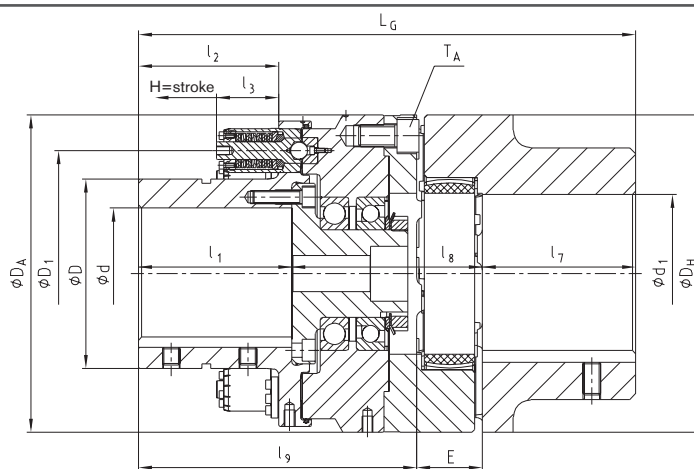
#### Signal with overload



# KTR-SI FRE

## Idle rotating overload system

With torsionally flexible ROTEX®



Torques [Nm]							
Size	Type of element	3 idle rotation elements		6 idle rotation elements		9 idle rotation elements	
		Min.	Max.	Min.	Max.	Min.	Max.
9	1T2	1000	4000	2000	8000	-	-
	1T3	2400	5500	4800	11000	-	-
12	1T2	1300	5000	2600	10000	3900	15000
	1T3	2900	6700	5800	13400	8700	20100
15	1T2	1700	6000	3400	12000	5100	18000
	1T3	3500	8200	7000	16400	10500	24600
20	2T2	5000	15000	10000	30000	15000	45000
	2T3	13100	20000	26300	40000	39400	60000

Technical data – dimensions																					
Size <sup>1)</sup>	ROTEX®			Max. bore		Dimensions [mm]													TA [Nm]	Speed <sup>2)</sup> [rpm]	Weight with max. bore [kg]
	Size	Torque <sup>3)</sup> [Nm]		d	d1	D	D1	DH	DA	l1	l2	l3	l7	l8	l9	E	LG	H=stroke			
		TKN	TK max																		
9	90	4500	9000	90	110	135	185	200	260	120	110	56.7	100	133	217	45	362	5.2	117	3300	59
12	125	12500	25000	120	145	173	225	290	290	146	130	56.7	140	165	254	60	454	5.2	560	2300	106
15	140	16000	32000	150	160	215	270	320	324	170	160	56.7	155	176	292	65	512	5.2	560	2050	147
20	180	35000	70000	200	200	285	370	420	460	220	200	88.4	195	227	381	85	661	8.9	970	1550	349

<sup>1)</sup> Other sizes on request

<sup>2)</sup> Higher speeds on request, see comments on page 245

<sup>3)</sup> See selection of ROTEX® couplings on page 14 et seqq.



### Special type:

- KTR-SI FRE with torsionally flexible pin & bush coupling REVOLEX® KX-D and limitation of axial backlash
- KTR-SI FRE with torsionally rigid all-steel gear coupling GEARex® and integrated brake disk
- KTR-SI FRE with torsionally rigid lamina coupling RADEX®-N and integrated brake disk

Ordering example:	KTR-SI FRE 12	1T3	9	d Ø85	ROTEX® 125	98 ShA	d1 Ø85	12000 Nm
	Type/size	Type of element	Number of idle rotation elements	KTR-SI FRE bore	Type/size	Spider	ROTEX® bore	Torque set



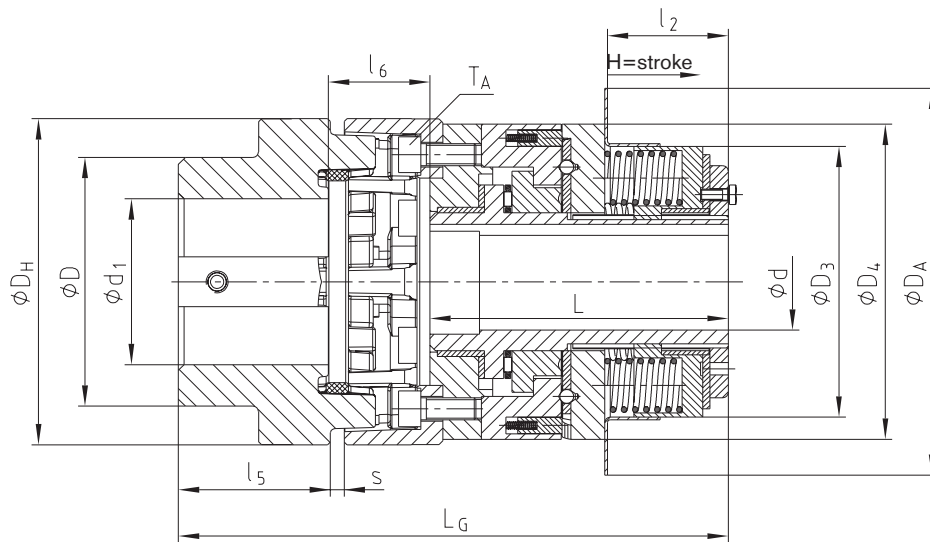
# KTR-SI FRA

## Idle rotating overload system with automatic re-engagement when reversing the direction of rotation

With torsionally flexible POLY-NORM®



For legend of pictogram please refer to flapper on the cover



### Torques [Nm]

KTR-SI FRA size	T1	T2	T3	T4
2	5-20	15-70	40-135	80-260
3	24-104	57-360	110-540	245-730
4	45-210	145-435	340-960	465-1320
5	90-415	240-640	490-1880	1060-3000

### Technical data – dimensions

KTR-SI FRA size	POLY-NORM®			Max. bore		Dimensions [mm]												TA [Nm]	Speed <sup>1)</sup> [rpm]	Weight with max. bore [kg]	
	Size	Torque [Nm]		d	d1	D	D3	D4	DH	DA	l1	l2	l5	l6	s	LG	L				H=stroke
2	55	300	600	35	60	90	98	114	118	140	108	45	55	27	5	189.3	108	2.8	23	3600	9
3	75	850	1700	45	70	123	131	149	158	184	111	42	75	33.8	5	218.8	111	3.5	46	3600	18
4	85	1350	2700	55	80	139	147	166	182	203	121	46	85	52.6	5	257.6	121	3.5	79	2000	25
5	100	3900	7800	80	90	165	196	223	224	279	164	70	100	63.2	6	326.2	164	4.4	195	2000	51

<sup>1)</sup> See comments on page 245

#### Ordering example:

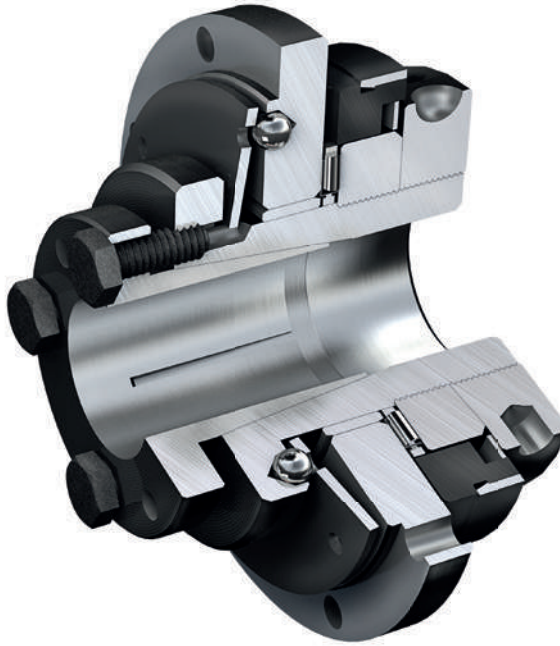
KTR-SI FRA 3	T3	d Ø35	POLY-NORM® 75	AR	d1 Ø45	300 Nm
Type/size	Torque setting range	KTR-SI FRA bore	Type/size	Type	POLY-NORM® bore	Torque set

# SYNTEX®

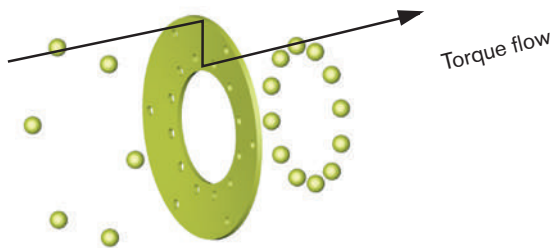
## Backlash-free overload systems

### Structure and operation

- Backlash-free, torsionally rigid overload protection up to 400 Nm, suitable for reversing operation
- Disconnection of the drive in case of overload
- Reduction of torque peaks
- High response accuracy, even after a long operating period
- Easy integration of customer components
- Compact design, low mass moment of inertia
- Variable due to modular system
- Special disk springs available for special applications



- Low-cost protection even for simple drives
- Easy assembly and torque setting
- Maintenance-free
- Insensitive to oil and grease
- Long service life due to small internal loads
- Backlash-free shaft-hub-connections
- Any or synchronous re-engagement
- Automatically operative



SYNTEX® is an overload system with positive locking operation. The punched disk spring is a component serving for transmitting the torque.

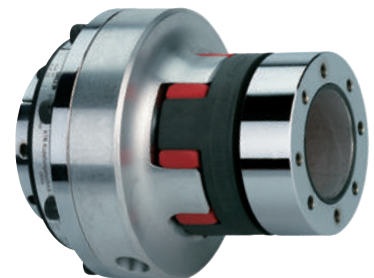
**SYNTEX®**  
Overload system with mounting flange



**SYNTEX®**  
Overload system with sprocket



**SYNTEX®**  
Overload system with ROTEX® GS



# SYNTEX®

## Backlash-free overload systems

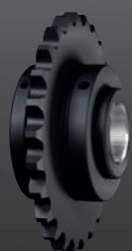
### Other types

#### SYNTEX® flange type



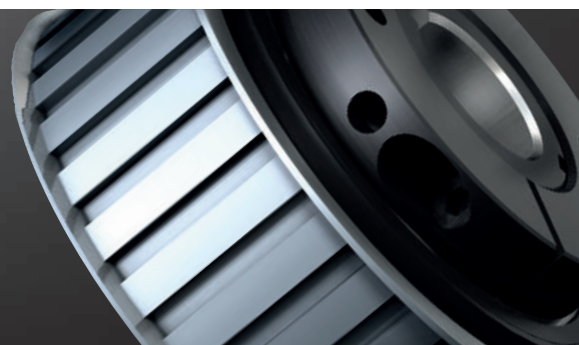
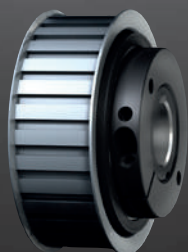
- Overload system with positive locking operation for torques up to 400 Nm
- Backlash-free and torsionally rigid
- High response accuracy
- Synchronous and ratchet design
- Protection of high-quality drive units

#### SYNTEX® with sprocket



- Backlash-free overload system with integrated sprocket
- Available ready for assembly with the torque set
- Standard sprockets available from stock
- Torque setting possible while in place
- Reduction of components and costs due to integrated sprocket

#### SYNTEX® with toothed belt pulley



- Backlash-free overload system with integrated toothed belt pulley
- Ready to fit with slipping torque set
- Available as a synchronous and ratchet design
- Torque setting possible while in place
- Reduction of components and costs due to integrated toothed belt pulley

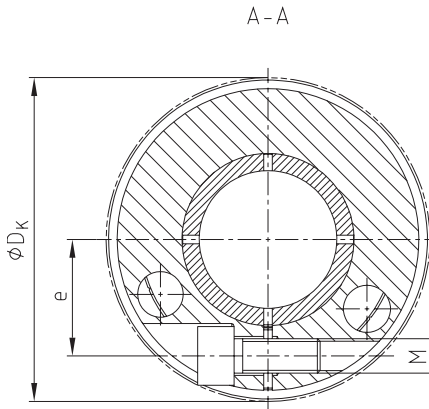
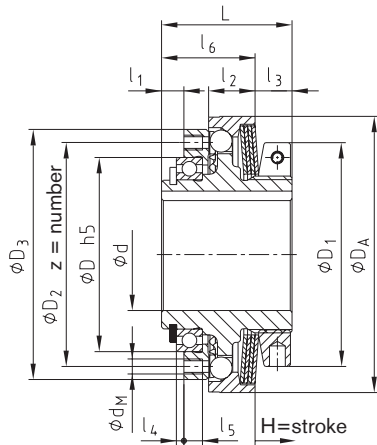
# SYNTEX®-NC

## Backlash-free overload systems

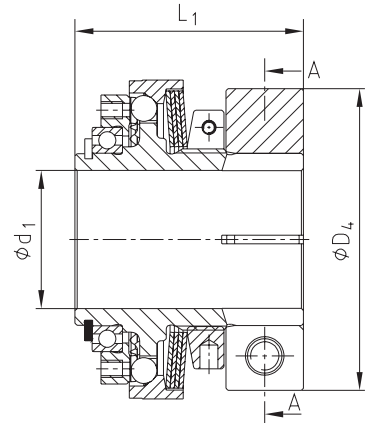
### Hub design



Hub design 1.0 (keyway acc. to DIN 6885)



Hub design 6.1 (clamping ring)



#### Technical data – dimensions

Size	Max. speed <sup>3)</sup> [rpm]	Torques [Nm]			Max. bore d	Dimensions [mm]											H=stroke		
		T1	T2	T3		D <sub>h5</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>A</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	l <sub>6</sub>		L	z x d <sub>M</sub>
15	3500	2-3.5	3.5-7	7-14	12	32	33	37	42	42	5.0	7.0	9.2	2	4	18.8	28	12xM3	0.8
25	3000	9-15	20-35	40-65	19 (22) <sup>1)</sup>	42	50	48	56	61	5.5	11.5	9.1	2	5	23.9	33	8xM4	1.2
32	3000	25-38	50-75	100-150	27 (30) <sup>1)</sup>	52	60	60	67	74	6	12.5	9.9	2	5	25.1	35	8xM4	1.5
42	2500	30-65	60-135	120-265	36 (38) <sup>1)</sup>	65	72	75	83	90	7	16	11.2	2	6	31.8	43	8xM5	1.5
60 <sup>4)</sup>	2000	70-140	120-180	220-550	50	90	96	100	113	116	8	21	11.8	2	7	38.2	52	12xM6	1.8

#### Dimensions – Hub design 6.1

Size	Bore d <sub>1</sub>		Dimensions [mm]						T <sub>A</sub> [Nm]	Weight with max. bore [kg]	Mass moment of inertia <sup>2)</sup> J <sub>total</sub> [kgm <sup>2</sup> ]
	Pilot bore	Max.	D <sub>4</sub>	D <sub>K</sub>	L <sub>1</sub>	e	M				
15	7.5	15	40	43	38	15	M4	1.7	0.124	0.029 x 10 <sup>-3</sup>	
25	9.5	25	55	-	45	21	M6	14	0.282	0.14 x 10 <sup>-3</sup>	
32	13.5	32	70	-	53	27	M8	34	0.471	0.35 x 10 <sup>-3</sup>	
42	18.5	42	86	91.2	63	33	M10	67	0.815	0.95 x 10 <sup>-3</sup>	
60 <sup>4)</sup>	24	60	112	119.4	75	45	M12	115	3.04	5.9 x 10 <sup>-3</sup>	

#### Transmittable friction torques T<sub>R</sub> [Nm] (fitting tolerance H7/h6) of hub design 6.1

Size	Ø8	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø36	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60
15	8	12	14	16	22	24																				
25		30	35	42	55	62	69	48	53	58	69	80	86													
32						74	83	104	114	125	148	116	125	153	172	192										
42										149	178	209	225	275	310	264	309	324	356	389	422					
60 <sup>4)</sup>													247	310	356	405	485	513	571	633	394	452	514	558	675	803

<sup>1)</sup> The figure in brackets specifies the max. bore with keyway to DIN 6885 sheet 3 (low-rise design)

<sup>2)</sup> With max. bore

<sup>3)</sup> See comments on page 245

<sup>4)</sup> Material steel

#### Ordering example:

SYNTEX®-NC 32	SK	6.1	T3	d <sub>1</sub> Ø25	120
Type/size	Type (DK/SK)	Hub design	Disk springs	Bore	Torque set

# SYNTEX®-NC

## Backlash-free overload systems

### Other types

#### SYNTEX®-NC with backlash-free ROTEX® GS



- Overload system in combination with a backlash-free flexible ROTEX® GS
- Short dimensions
- Torsionally flexible, able to compensate for displacements
- Axial plug-in
- Electrical insulation

#### SYNTEX®-NC with torsionally rigid TOOLFLEX® S



- Overload system in combination with a torsionally rigid, backlash-free TOOLFLEX®
- Able to compensate for displacements
- TOOLFLEX® with frictionally engaged clamping hub or taper hub

- Overload protection up to 550 Nm
- Backlash-free torque transmission
- Light-weight design
- Declining spring characteristic
- Low mass moment of inertia
- Large bore diameters
- Short reaction times
- High power density

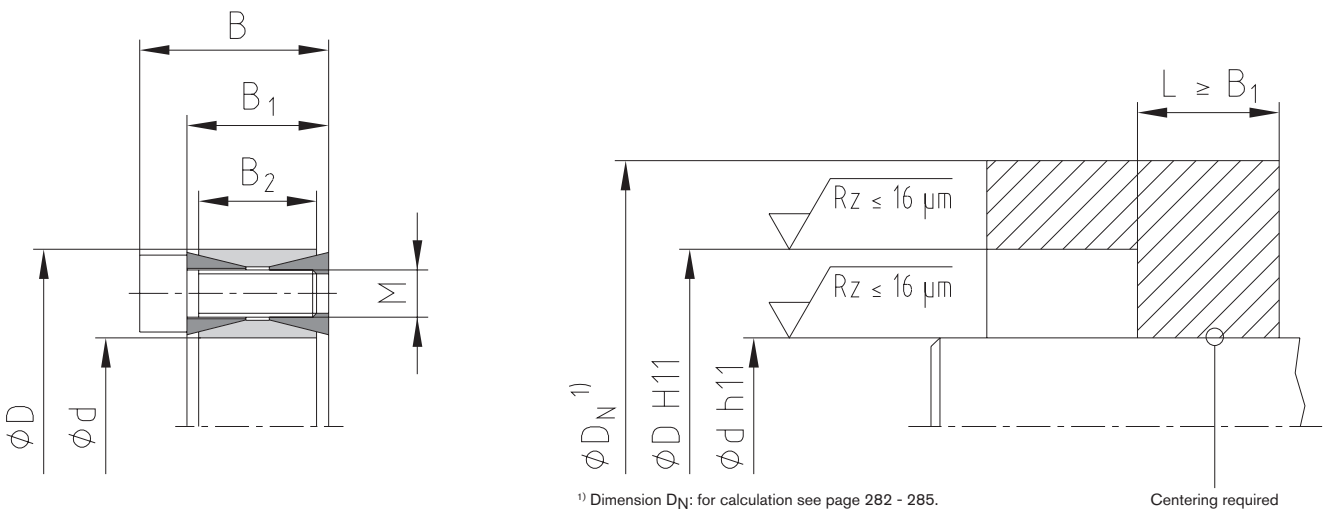


- Clamping ring design easy to assemble
- Available both as a ratchet (DK) and synchronous design (SK)
- Backlash-free shaft-hub-connection
- In combination with the backlash-free ROTEX® GS or backlash-free, torsionally rigid TOOLFLEX®
- Direct assembly of toothed belt pulley, as an example, possible (integrated groove ball bearing)

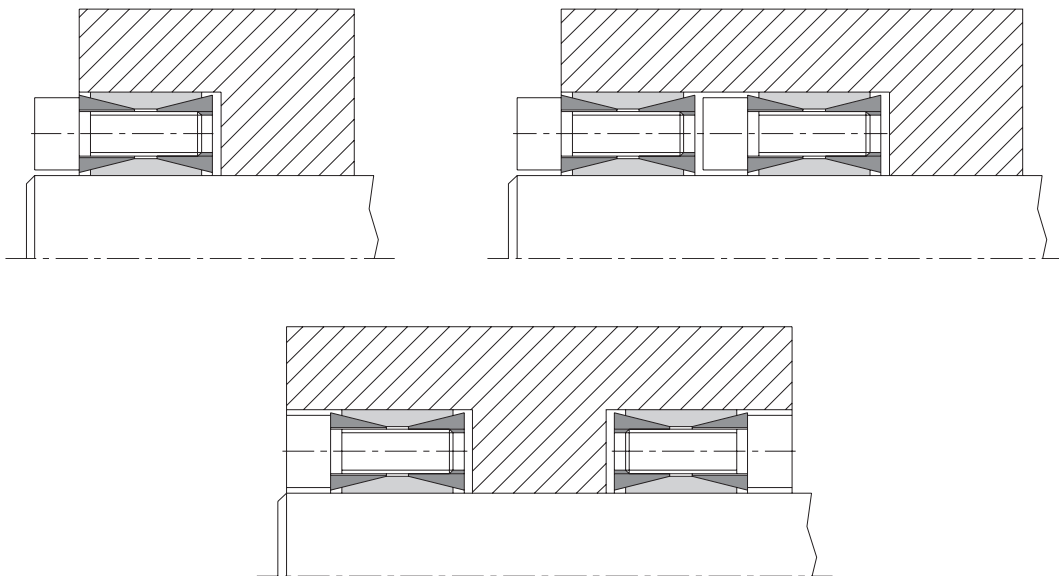
# CLAMPEX® KTR 100

## Clamping elements

Not self-centering, suitable for large shaft and hub tolerances



### Example of application of hub design



● Sizes of clamping elements available from stock.

<sup>1)</sup> These are the maximum screw tightening torques. They can be reduced by a maximum of 40 % of the above-mentioned figures with T,  $F_{ax}$ ,  $P_W$  and  $P_N$  decreasing proportionately.

Ordering example:	KTR 100	50	x	80
	Series	Size of internal diameter d		Size of external diameter D

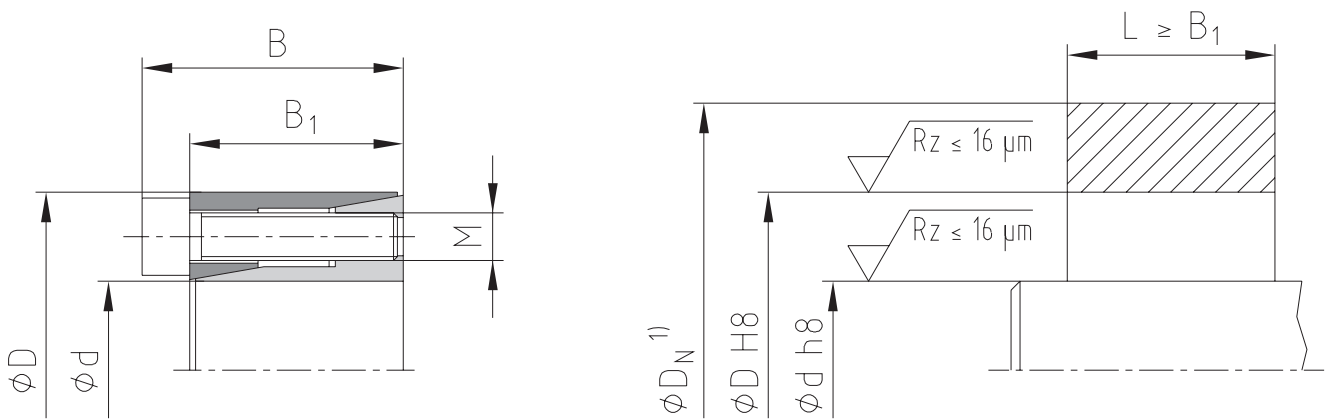
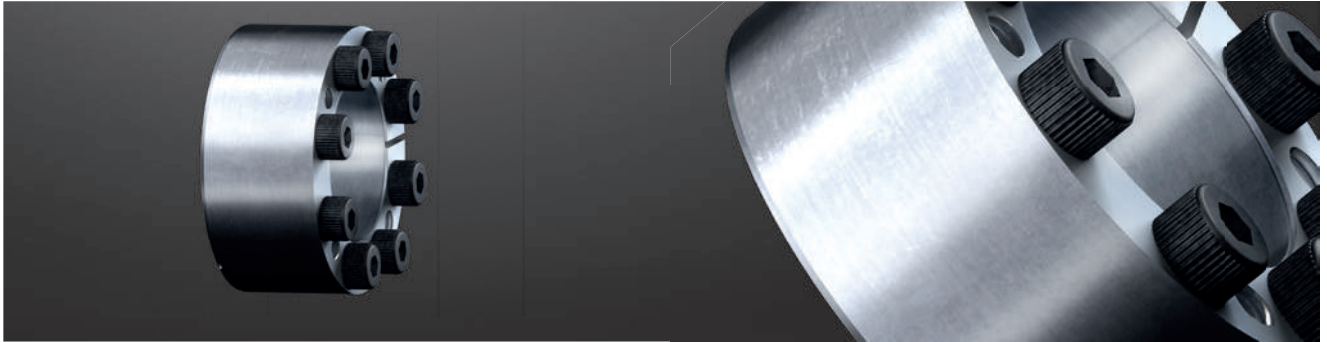
## CLAMPEX® – KTR 100

NEW	d x D [mm]	Dimensions [mm]			Clamping screws DIN EN ISO 4762 - 12.9 $\mu_{\text{total}}=0.14$				Transmittable torque or axial force		Surface pressure between clamping element		Weight [-kg]	Stock programme
		B	B <sub>1</sub>	B <sub>2</sub>	M	Length	z = number	T <sub>A</sub> [Nm] <sup>1)</sup>	T [Nm]	F <sub>ax</sub> [kN]	Shaft Pw [N/mm <sup>2</sup> ]	Hub P <sub>N</sub> [N/mm <sup>2</sup> ]		
	17 x 47	26	20	17	M6	18	8	16	260	31	281	102	0.2	
	18 x 47	26	20	17	M6	18	8	16	280	31	270	103	0.2	
	19 x 47	26	20	17	M6	18	8	16	290	31	251	101	0.2	●
	20 x 47	26	20	17	M6	18	8	16	310	31	242	103	0.2	●
	22 x 47	26	20	17	M6	18	8	16	340	31	219	103	0.2	●
	24 x 50	26	20	17	M6	18	8	16	370	31	200	96	0.3	●
	25 x 50	26	20	17	M6	18	8	16	390	31	195	97	0.3	●
	28 x 55	26	20	17	M6	18	12	16	650	46	259	132	0.3	●
	30 x 55	26	20	17	M6	18	12	16	700	47	243	132	0.3	●
	32 x 60	26	20	17	M6	18	12	16	750	47	229	122	0.3	●
	35 x 60	26	20	17	M6	18	12	16	820	47	209	122	0.3	●
	38 x 65	26	20	17	M6	18	15	16	1100	58	238	139	0.4	●
	40 x 65	26	20	17	M6	18	15	16	1170	59	228	140	0.3	●
	42 x 75	32	24	20	M8	22	12	40	1670	80	251	141	0.6	●
	45 x 75	32	24	20	M8	22	12	40	1790	80	234	141	0.5	●
	48 x 80	32	24	20	M8	22	12	40	1900	79	219	131	0.6	●
	50 x 80	32	24	20	M8	22	12	40	1990	80	211	132	0.6	●
	55 x 85	32	24	20	M8	22	15	40	2740	100	240	155	0.6	●
	60 x 90	32	24	20	M8	22	15	40	2990	100	220	147	0.7	●
	65 x 95	32	24	20	M8	22	15	40	3240	100	203	139	0.8	●
	70 x 110	38	28	24	M10	25	15	78	5550	159	250	159	1.3	●
	75 x 115	38	28	24	M10	25	15	78	5950	159	234	152	1.2	●
	80 x 120	38	28	24	M10	25	15	78	6350	159	219	146	1.4	●
	85 x 125	38	28	24	M10	25	15	78	6740	159	206	140	1.4	●
	90 x 130	38	28	24	M10	25	15	78	7140	159	195	135	1.5	●
	95 x 135	38	28	24	M10	25	18	78	9000	189	220	155	1.6	●
	100 x 145	44	32	26	M12	30	15	135	11600	232	237	163	2.2	●
	110 x 155	44	32	26	M12	30	15	135	12750	232	215	153	2.3	●
	120 x 165	44	32	26	M12	30	16	135	14800	247	210	153	2.4	●
	130 x 180	50	38	34	M12	30	20	135	20150	310	186	134	3.5	●
	140 x 190	50	38	34	M12	30	22	135	23850	341	190	140	3.8	●
	150 x 200	50	38	34	M12	30	24	135	27850	371	193	145	4.0	●
	160 x 210	50	38	34	M12	30	26	135	32200	403	196	150	4.4	●
	170 x 225	58	44	38	M14	45	22	215	40300	474	195	147	5.7	●
	180 x 235	58	44	38	M14	45	24	215	46600	518	201	154	6.0	●
	190 x 250	66	52	46	M14	45	28	215	57300	603	183	139	8.0	●
	200 x 260	66	52	46	M14	45	30	215	71000	710	205	157	8.2	●
	220 x 285	72	56	50	M16	50	26	335	93200	847	204	158	11.0	●
	240 x 305	72	56	50	M16	50	30	335	117300	978	216	170	12.2	●
	260 x 325	72	56	50	M16	50	34	335	144000	1108	226	181	13.2	●
	280 x 355	84	66	60	M18	60	32	465	177700	1269	200	158	19.2	●
	300 x 375	84	66	60	M18	60	36	465	214100	1427	210	168	20.5	●
	320 x 405	98	78	72	M20	70	36	660	295800	1849	213	168	29.6	●
	340 x 425	98	78	72	M20	70	36	660	314300	1849	200	160	31.1	●
	360 x 455	112	90	84	M22	80	36	900	413300	2296	201	159	42.2	●
	380 x 475	112	90	84	M22	80	36	900	436300	2296	191	153	44.0	●
	400 x 495	112	90	84	M22	80	36	900	459300	2297	181	147	46.0	●
	420 x 515	112	90	84	M22	80	40	900	535800	2551	192	156	50.0	●
	440 x 545	130	102	96	M24	90	40	1130	647600	2944	185	149	64.6	●
	460 x 565	130	102	96	M24	90	40	1130	677000	2943	177	144	67.4	●
	480 x 585	130	102	96	M24	90	42	1130	741800	3091	178	146	71.0	●
	500 x 605	130	102	96	M24	90	44	1130	809500	3238	179	148	72.6	●
	520 x 630	130	102	96	M24	90	45	1130	861000	3312	176	145	80	●
	540 x 650	130	102	96	M24	90	45	1130	894000	3311	169	141	82	●
	560 x 670	130	102	96	M24	90	48	1130	989000	3532	174	146	85	●
	580 x 690	130	102	96	M24	90	50	1130	1067000	3679	175	147	88	●
	600 x 710	130	102	96	M24	90	50	1130	1103800	3679	169	143	91	●
NEW	620 x 730	130	102	96	M24	90	52	1130	1186200	3826	171	145	93	●
NEW	640 x 750	130	102	96	M24	90	54	1130	1271600	3974	172	146	96	●
NEW	660 x 770	130	102	96	M24	90	56	1130	1359900	4121	173	148	99	●
NEW	680 x 790	130	102	96	M24	90	56	1130	1401100	4121	167	144	102	●
NEW	700 x 810	130	102	96	M24	90	60	1130	1545400	4415	174	151	104	●
NEW	720 x 830	130	102	96	M24	90	60	1130	1589500	4415	169	147	107	●
NEW	740 x 850	130	102	96	M24	90	62	1130	1688100	4562	170	148	110	●
NEW	760 x 870	130	102	96	M24	90	64	1130	1789700	4710	171	150	113	●
NEW	780 x 890	130	102	96	M24	90	65	1130	1865500	4783	169	149	116	●
NEW	800 x 910	130	102	96	M24	90	66	1130	1942700	4857	168	147	118	●
NEW	820 x 930	130	102	96	M24	90	68	1130	2051600	5004	169	149	121	●
NEW	840 x 950	130	102	96	M24	90	70	1130	2163500	5151	169	150	124	●
NEW	860 x 970	130	102	96	M24	90	72	1130	2278300	5298	170	151	127	●
NEW	880 x 990	130	102	96	M24	90	74	1130	2396000	5445	171	152	129	●
NEW	900 x 1010	130	102	96	M24	90	75	1130	2483600	5519	169	151	132	●
NEW	920 x 1030	130	102	96	M24	90	76	1130	2572600	5593	168	150	135	●
NEW	940 x 1050	130	102	96	M24	90	78	1130	2697700	5740	169	151	138	●
NEW	960 x 1070	130	102	96	M24	90	80	1130	2825800	5887	169	152	140	●
NEW	980 x 1090	130	102	96	M24	90	81	1130	2920700	5961	168	151	143	●
NEW	1000 x 1110	130	102	96	M24	90	82	1130	3017100	6034	167	150	146	●

# CLAMPEX® KTR 105

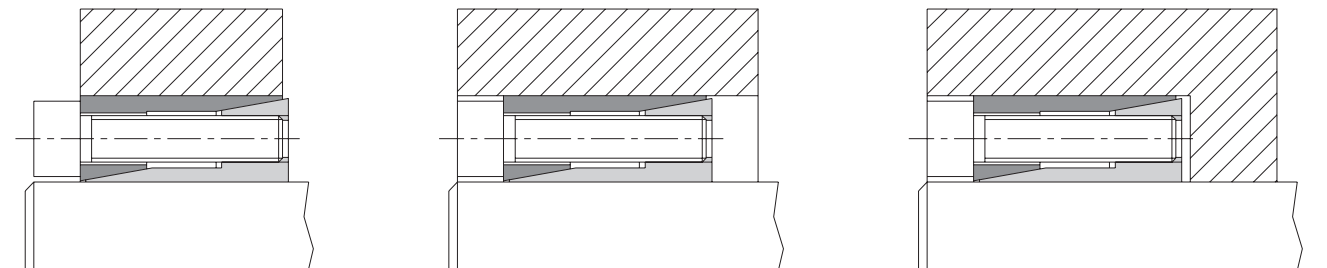
## Clamping elements

### Self-centering clamping element in a compact design



<sup>1)</sup> Dimension  $D_N$ : for calculation see page 282 - 285.

Example of application of hub design



Ordering  
example:

KTR 105	8	x	18
Series	Size of internal diameter d		Size of external diameter D



### CLAMPEX® – KTR 105

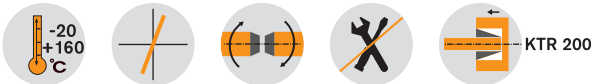
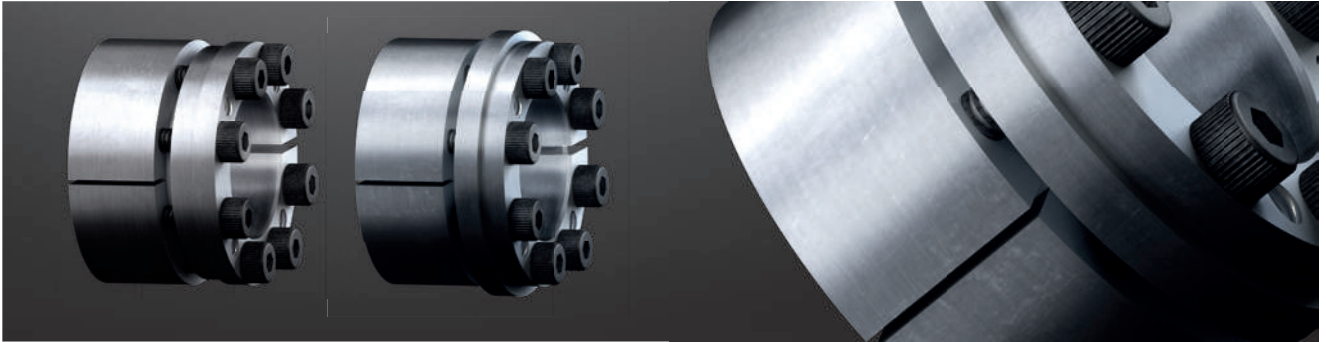
d x D [mm]	Dimensions [mm]		Clamping screws DIN EN ISO 4762 - 12.9 $\mu_{total}=0.14$				Transmittable torque or axial force			Surface pressure between clamping element		Weight [-kg]	Stock programme
	B	B1	M	Length	z = number	T <sub>A</sub> [Nm] <sup>1)</sup>	T [Nm]	F <sub>ax</sub> [kN]	Shaft P <sub>W</sub> [N/mm <sup>2</sup> ]	Hub P <sub>N</sub> [N/mm <sup>2</sup> ]			
5 x 16	13.5	11	M2.5	10	3	1.2	5	2	177	55	0.01	●	
6 x 16	13.5	11	M2.5	10	3	1.2	6	2	147	55	0.01	●	
6.35 x 16	13.5	11	M2.5	10	3	1.2	6	2	132	52	0.01	●	
7 x 17	13.5	11	M2.5	10	3	1.2	8	2	144	59	0.01	●	
8 x 18	13.5	11	M2.5	10	3	1.2	10	3	138	61	0.02	●	
9 x 20	15.5	13	M2.5	12	4	1.2	15	3	140	63	0.02	●	
9.53 x 20	15.5	13	M2.5	12	4	1.2	15	3	125	60	0.02	●	
10 x 20	15.5	13	M2.5	12	4	1.2	15	3	114	57	0.02	●	
11 x 22	15.5	13	M2.5	12	4	1.2	18	3	113	56	0.02	●	
12 x 22	15.5	13	M2.5	12	4	1.2	20	3	105	57	0.02	●	
14 x 26	20	17	M3	16	4	2.1	35	5	105	57	0.04	●	
15 x 28	20	17	M3	16	4	2.1	40	5	94	51	0.04	●	
16 x 32	21	17	M4	16	4	4.9	70	9	132	66	0.07	●	
17 x 35	25	21	M4	20	4	4.9	75	9	125	61	0.09	●	
18 x 35	25	21	M4	20	4	4.9	80	9	119	61	0.09	●	
19 x 35	25	21	M4	20	4	4.9	85	9	114	62	0.08	●	
20 x 38	26	21	M5	20	4	9.7	150	15	153	81	0.1	●	
22 x 40	26	21	M5	20	4	9.7	160	15	135	74	0.1	●	
24 x 47	32	26	M6	25	4	16.5	250	21	154	78	0.2	●	
25 x 47	32	26	M6	25	4	16.5	260	21	147	78	0.2	●	
28 x 50	32	26	M6	25	6	16.5	440	31	198	111	0.2	●	
30 x 55	32	26	M6	25	6	16.5	470	31	185	101	0.3	●	
32 x 55	32	26	M6	25	6	16.5	500	31	173	100	0.25	●	
35 x 60	37	31	M6	30	8	16.5	730	42	166	97	0.35	●	
38 x 65	37	31	M6	30	8	16.5	800	42	155	90	0.4	●	
40 x 65	37	31	M6	30	8	16.5	840	42	147	90	0.4	●	
42 x 75	44	36	M8	35	6	40	911	43	125	70	0.7	●	
45 x 75	44	36	M8	35	8	40	1300	58	155	93	0.6	●	
48 x 80	44	36	M8	35	8	40	1824	76	191	115	0.7	●	
50 x 80	44	36	M8	35	8	40	1900	76	183	115	0.7	●	

● Sizes of clamping elements available from stock.

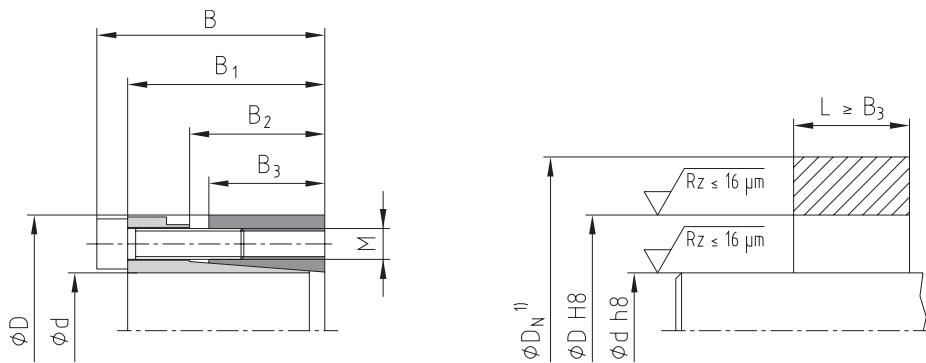
<sup>1)</sup> These are the maximum screw tightening torques. They can be reduced by a maximum of 40 % of the above-mentioned figures with T, F<sub>ax</sub>, P<sub>W</sub> and P<sub>N</sub> decreasing proportionately.

# CLAMPEX® KTR 200 and KTR 201 Clamping elements

Self-centering clamping elements with a wide range of applications

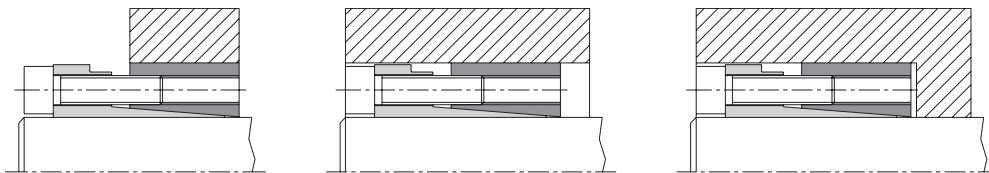


KTR 200

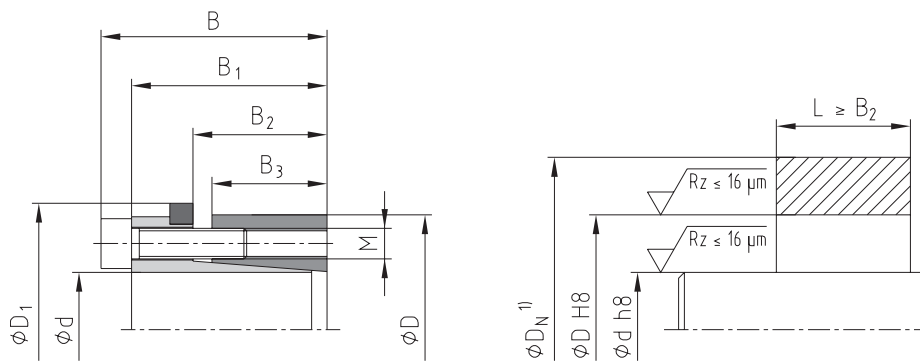


<sup>1)</sup> Dimension  $D_N$ : for calculation see page 282 - 285.

Example of application of hub design

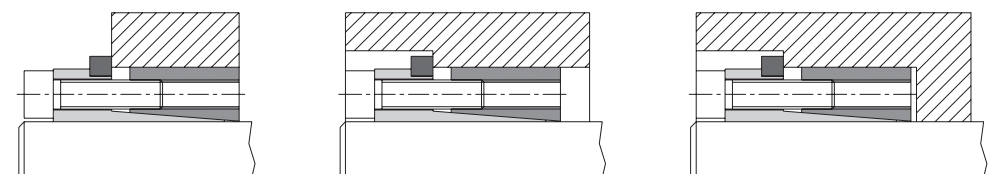


KTR 201



<sup>1)</sup> Dimension  $D_N$ : for calculation see page 282 - 285.

Example of application of hub design



Ordering  
example:

KTR 200	40	x	65
Series	Size of internal diameter d		Size of external diameter D

**CLAMPEX® – KTR 200 and KTR 201**

d x D [mm]	Dimensions [mm]					Clamping screws DIN EN ISO 4762 - 12.9 $\mu_{total}=0.14$					KTR 200				KTR 201							
						M	Length	z = number	T <sub>A</sub> [Nm] <sup>1)</sup>		T [Nm]	F <sub>ax</sub> [kN]	Surface pressure between clamping element		T [Nm]	F <sub>ax</sub> [kN]	Surface pressure between clamping element		Weight [-kg]	Stock programme		
	KTR 200	KTR 201	Shaft P <sub>W</sub> [N/mm <sup>2</sup> ]	Hub P <sub>N</sub> [N/mm <sup>2</sup> ]	Shaft P <sub>W</sub> [N/mm <sup>2</sup> ]				Hub P <sub>N</sub> [N/mm <sup>2</sup> ]													
20 x 47	48	42	31	26	53	M6	25	6	17	17	530	53	270	115	0.4	●	320	32	163	69	0.4	●
22 x 47	48	42	31	26	53	M6	25	6	17	17	580	53	245	114	0.4	●	360	33	152	71	0.4	●
24 x 50	48	42	31	26	56	M6	25	6	17	17	630	53	223	107	0.4	●	390	33	138	66	0.4	●
25 x 50	48	42	31	26	56	M6	25	6	17	17	660	53	215	108	0.4	●	400	32	131	65	0.4	●
28 x 55	48	42	31	26	61	M6	25	6	17	17	740	53	193	98	0.5	●	450	32	117	60	0.5	●
30 x 55	48	42	31	26	61	M6	25	6	17	17	790	53	179	98	0.5	●	490	33	111	61	0.5	●
32 x 60	48	42	31	26	66	M6	25	8	17	17	1150	72	229	122	0.6	●	690	43	137	73	0.6	●
35 x 60	48	42	31	26	66	M6	25	8	17	17	1300	74	217	126	0.5	●	750	43	125	73	0.5	●
38 x 65	48	42	31	26	71	M6	25	8	17	17	1300	68	184	107	0.6	●	820	43	116	68	0.6	●
40 x 65	48	42	31	26	71	M6	25	8	17	17	1400	70	179	110	0.6	●	860	43	110	67	0.6	●
42 x 75	59	51	35	30	81	M8	30	6	41	41	2000	95	200	112	1.0	●	1300	62	130	73	1.0	●
45 x 75	59	51	35	30	81	M8	30	6	41	41	2200	98	192	115	1.0	●	1400	62	122	73	1.0	●
48 x 80	59	51	35	30	86	M8	30	8	41	41	3200	133	246	147	1.1	●	1900	79	146	87	1.1	●
50 x 80	59	51	35	30	86	M8	30	8	41	41	3300	132	233	146	1.1	●	2000	80	141	88	1.1	●
55 x 85	59	51	35	30	91	M8	30	8	41	41	3600	131	210	136	1.2	●	2200	80	129	83	1.2	●
60 x 90	59	51	35	30	96	M8	30	8	41	41	3900	130	192	128	1.2	●	2400	80	118	79	1.2	●
65 x 95	59	51	35	30	101	M8	30	8	41	41	4300	132	180	123	1.3	●	2600	80	109	74	1.3	●
70 x 110	71	61	46	40	119	M10	30	8	83	83	7500	214	203	129	2.2	●	4600	131	125	79	2.3	●
75 x 115	71	61	46	40	124	M10	30	8	83	83	8000	213	189	123	2.3	●	5000	133	118	77	2.4	●
80 x 120	71	61	46	40	129	M10	30	8	83	83	8500	213	176	117	2.4	●	5200	130	108	72	2.6	●
85 x 125	71	61	46	40	134	M10	30	10	83	83	11400	268	209	142	2.6	●	7000	165	128	87	2.7	●
90 x 130	71	61	46	40	139	M10	30	10	83	83	12000	267	196	136	2.7	●	7400	164	121	84	2.8	●
95 x 135	71	61	46	40	144	M10	30	10	83	83	12600	265	185	130	2.8	●	7800	164	115	81	2.9	●
100 x 145	80	68	52	45	155	M12	35	8	145	145	15000	300	177	122	3.9	●	9800	196	116	80	4.1	●
110 x 155	80	68	52	45	165	M12	35	8	145	145	16500	300	161	114	4.2	●	10700	195	104	74	4.4	●
120 x 165	80	68	52	45	175	M12	35	10	145	145	22500	375	184	134	4.5	●	14600	243	120	87	4.7	●
130 x 180	80	68	52	45	188	M12	35	12	145	145	29000	446	202	146	5.5	●	19000	292	133	96	5.7	●
140 x 190	90	76	58	50	199	M14	40	10	210	230	32000	457	173	128	6.6	●	23000	329	125	92	6.9	●
150 x 200	90	76	58	50	209	M14	40	12	210	230	41000	547	193	145	6.9	●	30000	400	141	106	7.2	●
160 x 210	90	76	58	50	219	M14	40	12	210	230	44000	550	182	139	7.4	●	32000	400	133	101	7.8	●
170 x 225	90	76	58	50	234	M14	40	14	210	230	54500	641	200	151	8.6	●	39000	459	143	108	9.0	●
180 x 235	90	76	58	50	244	M14	40	14	210	230	57500	639	188	144	9.1	●	41000	456	134	103	9.5	●
190 x 250	90	76	58	50	259	M14	40	15	210	230	65000	684	191	145	10.6	●	46400	488	136	104	11.1	●
200 x 260	90	76	58	50	269	M14	40	15	210	230	68000	680	180	139	11.2	●	48800	488	129	100	11.7	●

● Sizes of clamping elements available from stock.

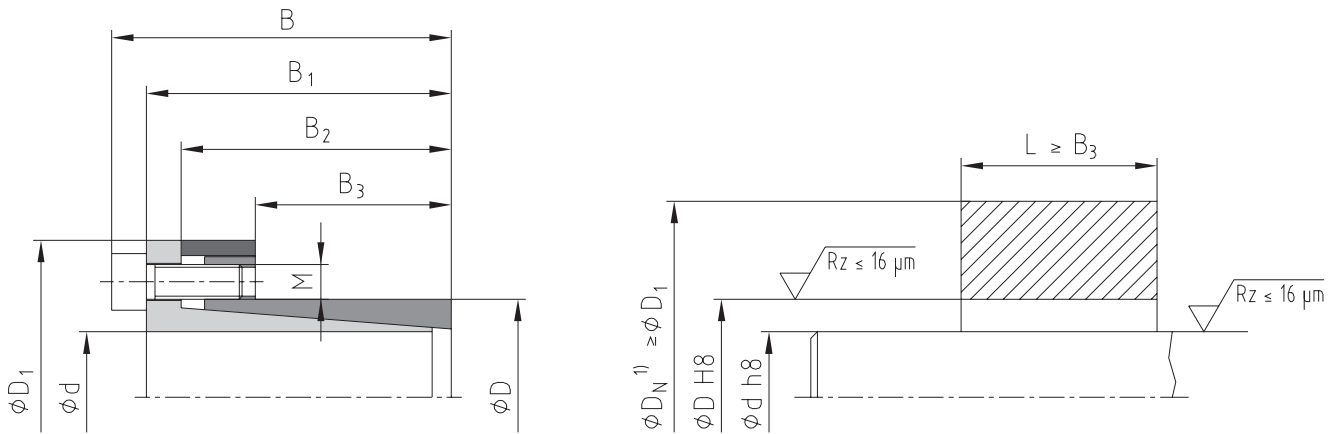
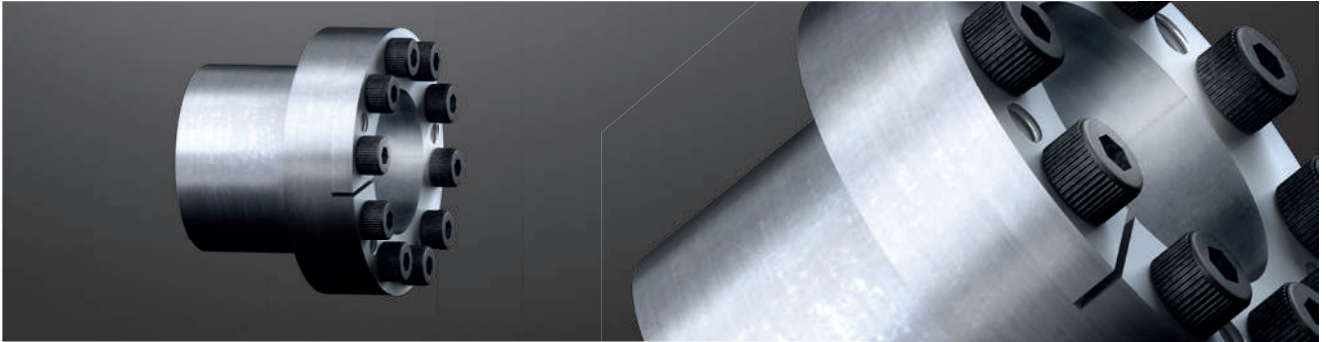
<sup>1)</sup> These are the maximum screw tightening torques. They can be reduced by a maximum of 40 % of the above-mentioned figures with T, F<sub>ax</sub>, P<sub>W</sub> and P<sub>N</sub> decreasing proportionately.

**NEW**  
**NEW**

# CLAMPEX® KTR 250

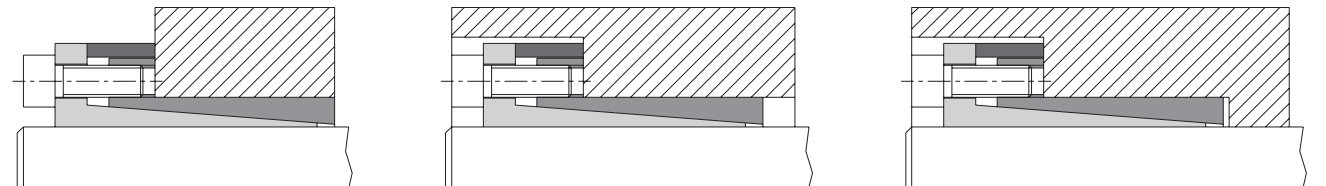
## Clamping elements

Self-centering clamping element, particularly suitable for thin-walled hubs



<sup>1)</sup> Dimension  $D_N$ : for calculation see page 282 - 285.

### Example of application of hub design



Ordering example:	KTR 250	28	x	39
	Series	Size of internal diameter d		Size of external diameter D

### CLAMPEX® – KTR 250

d x D [mm]	Dimensions [mm]					Clamping screws DIN EN ISO 4762 - 12.9 $\mu_{total}=0.14$				Transmittable torque or axial force		Surface pressure between clamping element		Weight [-kg]	Stock pro- gramme
	B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	D <sub>1</sub>	M	Length	z = number	T <sub>A</sub> [Nm] <sup>1)</sup>	T [Nm]	F <sub>ax</sub> [kN]	Shaft P <sub>W</sub> [N/mm <sup>2</sup> ]	Hub P <sub>N</sub> [N/ mm <sup>2</sup> ]		
6 x 14	24.5	21.5	18.5	10	25	M3	10	4	2.6	11	4	162	69	0.05	●
8 x 15	29	25	21.5	11.5	27	M4	10	3	5.6	26	7	187	100	0.05	●
9 x 16	30	26	22.5	14	28	M4	10	4	5.6	37	8	173	97	0.06	●
10 x 16	30	26	22.5	14	29	M4	10	4	5.6	42	8	159	99	0.16	●
11 x 18	30	26	22.5	13.5	32	M4	10	4	5.6	50	9	162	99	0.18	●
12 x 18	30	26	22.5	13.5	32	M4	10	4	5.6	55	9	150	100	0.18	●
14 x 23	30	26	22.5	14	38	M4	10	6	5.6	100	14	193	118	0.20	●
15 x 24	42	36	28.5	16	44	M6	18	4	15	145	19	214	134	0.2	●
16 x 24	42	36	28.5	16	44	M6	18	4	15	155	19	201	134	0.3	●
17 x 25	42	36	28.5	16	45	M6	18	4	15	162	19	186	126	0.2	●
NEW 17 x 26	44	38	31	18	47	M6	18	4	17	180	21	184	120	0.2	●
NEW 18 x 26	44	38	31	18	47	M6	18	4	17	200	22	182	126	0.2	●
19 x 27	44	38	31	18	48	M6	18	4	17	210	22	171	121	0.3	●
20 x 28	44	38	31	18	49	M6	18	4	17	220	22	162	116	0.2	●
22 x 32	51	45	38	25	54	M6	18	4	17	250	23	110	75	0.3	●
24 x 34	51	45	38	25	56	M6	18	4	17	270	23	99	70	0.3	●
25 x 34	51	45	38	25	56	M6	18	4	17	280	22	95	70	0.3	●
28 x 39	51	45	38	25	61	M6	18	6	17	480	34	130	93	0.4	●
30 x 41	51	45	38	25	62	M6	18	6	17	510	34	120	88	0.4	●
32 x 43	51	45	38	25	65	M6	18	8	17	730	46	151	113	0.5	●
35 x 47	56	50	43	30	69	M6	18	8	17	800	46	115	86	0.5	●
38 x 50	56	50	43	30	72	M6	18	8	17	860	45	105	80	0.6	●
40 x 53	56	50	43	30	75	M6	18	8	17	900	45	99	75	0.6	●
42 x 55	65	57	49	32	78	M8	22	8	41	1800	86	169	129	0.9	●
45 x 59	73	65	57	40	85	M8	22	8	41	1900	84	124	95	1.0	●
48 x 62	78	70	62	45	87	M8	22	8	41	2000	83	102	79	1.0	●
50 x 65	78	70	62	45	92	M8	22	10	41	2600	104	123	94	1.3	●
55 x 71	83	75	67	50	98	M8	22	10	41	2900	105	102	79	1.5	●
60 x 77	83	75	67	50	104	M8	22	10	41	3100	103	91	71	1.7	●
65 x 84	83	75	67	50	111	M8	22	10	41	3400	105	85	66	1.9	●
70 x 90	101	91	80	60	119	M10	25	10	83	5800	166	105	81	2.9	●
75 x 95	101	91	80	60	126	M10	25	10	83	6200	165	97	77	2.3	●
80 x 100	106	96	85	65	131	M10	25	12	83	8000	200	102	82	3.3	●
85 x 106	106	96	85	65	137	M10	25	12	83	8500	200	96	77	3.6	●
90 x 112	106	96	85	65	143	M10	25	15	83	11200	249	113	91	3.9	●
95 x 120	106	96	85	65	153	M10	25	15	83	11800	248	107	84	4.5	●
100 x 125	114	102	89	65	162	M12	30	12	145	14600	292	119	95	5.5	●
110 x 140	140	128	114	90	180	M12	30	12	145	16000	291	78	61	8.0	●
120 x 155	140	128	114	90	198	M12	30	12	145	17400	290	71	55	10.5	●
130 x 165	140	128	114	90	208	M12	30	16	145	25000	385	87	69	11.9	●

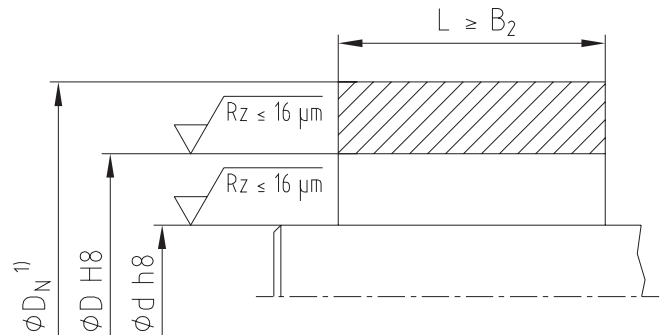
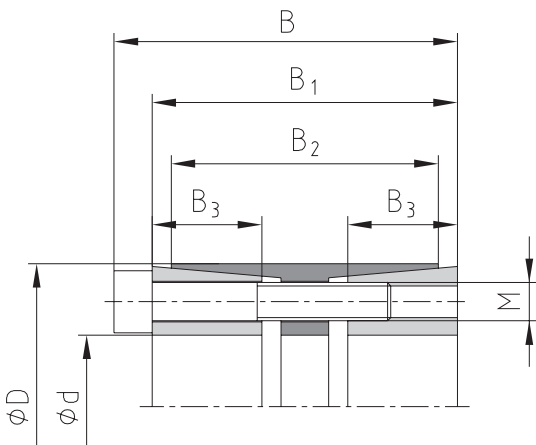
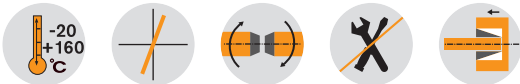
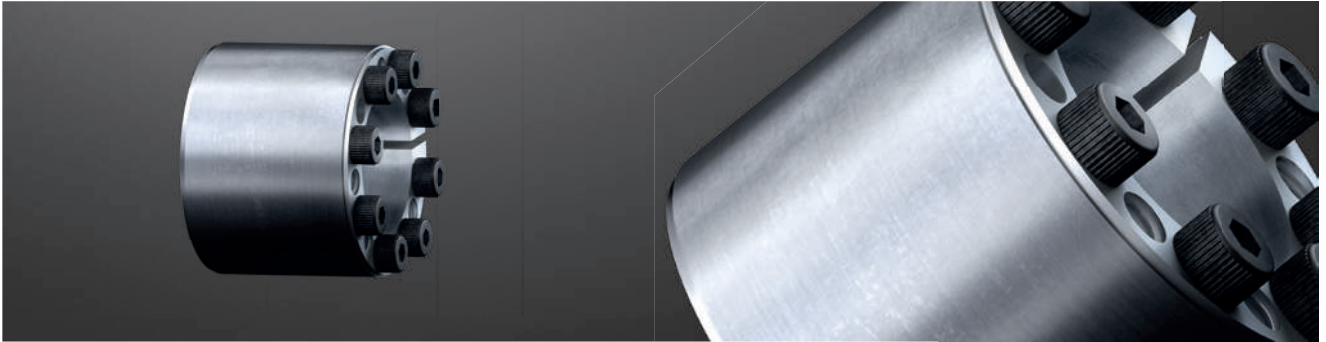
● Sizes of clamping elements available from stock.

<sup>1)</sup> These are the maximum screw tightening torques. They can be reduced by a maximum of 40 % of the above-mentioned figures with T, F<sub>ax</sub>, P<sub>W</sub> and P<sub>N</sub> decreasing proportionately.

# CLAMPEX® KTR 400

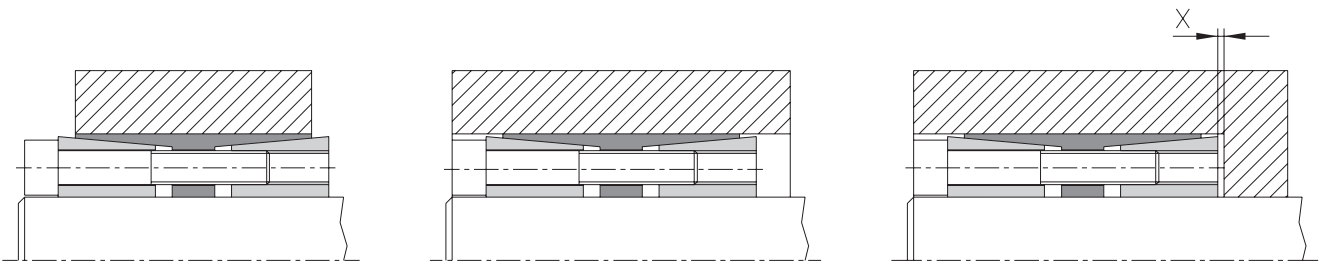
## Clamping elements

Self-centering clamping element with highest transmission performance



<sup>1)</sup> Dimension  $D_N$ : for calculation see page 282 - 285.

### Example of application of hub design



Formula to calculate space  $x$  for disassembly:

$$x = \frac{B_1 - B_2}{2}$$

Ordering example:	KTR 400	100	x	145
	Series	Size of internal diameter $d$		Size of external diameter $D$

**CLAMPEX® – KTR 400**

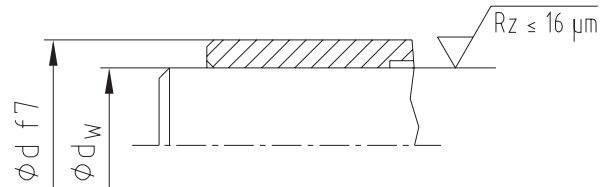
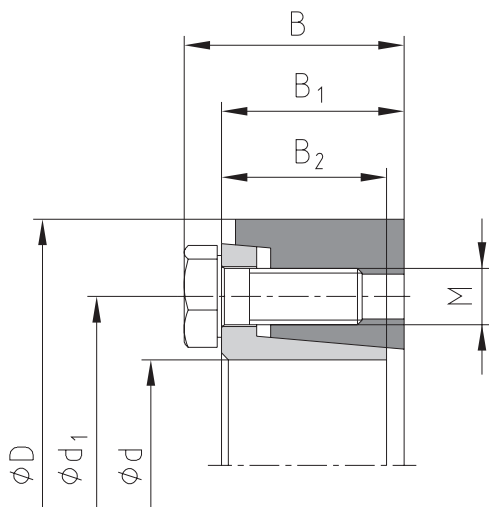
d x D <sup>1)</sup> [mm]		Standard applications in industry																			Applications with components subject to bending and torsion stress			Weight [–kg]	Stock programme				
		Dimensions [mm]				Clamping screws DIN EN ISO 4762 - 12.9					Transmittable torque or axial force			Surface pressure between clamping element			Clamping screws DIN EN ISO 4762 - 12.9					Transmittable torque or axial force				Transmittable bending moment Mb perm. [Nm]	Surface pressure between clamping element		
						$\mu_{\text{total}}=0.14$								T [Nm]	F <sub>ax</sub> [kN]	Shaft PW [N/mm <sup>2</sup> ]	Hub PN [N/mm <sup>2</sup> ]	M	z = number	Length	T <sub>A</sub> [Nm]	T [Nm]	F <sub>ax</sub> [kN]				M <sub>b</sub> perm. [Nm]	Shaft PW [N/mm <sup>2</sup> ]	Hub PN [N/mm <sup>2</sup> ]
		B	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	M	z = number	Length	T <sub>A</sub> <sup>2)</sup> [Nm]	T [Nm]	F <sub>ax</sub> [kN]	Shaft PW [N/mm <sup>2</sup> ]	Hub PN [N/mm <sup>2</sup> ]	M	z = number	Length	T <sub>A</sub> [Nm]	T [Nm]	F <sub>ax</sub> [kN]	M <sub>b</sub> perm. [Nm]	Shaft PW [N/mm <sup>2</sup> ]	Hub PN [N/mm <sup>2</sup> ]							
24 x 50	51	45	41	16	M6	6	35	17	700	58	202	92	M6	6	35	14	460	38	420	230	93	0.5	●						
25 x 50	51	45	41	16	M6	6	35	17	730	58	194	92	M6	6	35	14	470	38	430	227	94	0.5	●						
28 x 55	51	45	41	16	M6	8	35	17	1100	79	233	112	M6	8	35	14	740	53	490	257	110	0.5	●						
30 x 55	51	45	41	16	M6	8	35	17	1180	79	217	112	M6	8	35	14	790	53	520	243	112	0.5	●						
32 x 60	51	45	41	16	M6	8	35	17	1270	79	206	103	M6	8	35	14	830	52	560	230	104	0.8	●						
35 x 60	51	45	41	16	M6	8	35	17	1390	79	188	104	M6	8	35	14	890	51	610	214	106	0.7	●						
38 x 65	51	45	41	16	M6	10	35	17	1880	99	216	119	M6	10	35	14	1250	66	660	240	119	1.1	●						
40 x 65	51	45	41	16	M6	10	35	17	1980	99	205	119	M6	10	35	14	1300	65	700	230	120	1.1	●						
40 x 75	51	45	41	16	M8	8	35	41	2850	143	296	149	M8	8	35	35	2030	102	700	320	142	1.1	●						
42 x 75	51	45	41	16	M8	8	35	41	3000	143	282	149	M8	8	35	35	2120	101	730	307	142	1.2	●						
45 x 75	51	45	41	16	M8	8	35	41	3250	144	266	151	M8	8	35	35	2260	100	780	289	145	1.1	●						
48 x 80	70	62	58	23	M8	8	55	41	3450	144	173	98	M8	8	55	35	2160	90	1700	202	101	1.5	●						
50 x 80	70	62	58	23	M8	8	55	41	3600	144	166	98	M8	8	55	35	2220	89	1770	196	102	1.4	●						
55 x 85	70	62	58	23	M8	8	55	41	3950	144	151	92	M8	8	55	35	2350	85	1950	182	98	1.5	●						
60 x 90	70	62	58	23	M8	10	55	41	5400	180	173	109	M8	10	55	35	3380	113	2130	202	113	1.6	●						
65 x 95	70	62	58	23	M8	10	55	41	5850	180	160	103	M8	10	55	35	3560	110	2310	190	109	1.7	●						
70 x 110	86	76	70	28	M10	10	60	83	10200	291	197	118	M10	10	60	69	6620	189	3650	222	120	3.1	●						
75 x 115	86	76	70	28	M10	10	60	83	10950	292	184	113	M10	10	60	69	6970	186	3920	210	117	3.3	●						
80 x 120	86	76	70	28	M10	12	60	83	14000	350	207	130	M10	12	60	69	9210	230	4180	231	131	3.5	●						
85 x 125	86	76	70	28	M10	12	60	83	15000	353	197	126	M10	12	60	69	9710	228	4440	220	129	3.6	●						
90 x 130	86	76	70	28	M10	12	60	83	15800	351	185	121	M10	12	60	69	10000	222	4700	210	124	3.8	●						
95 x 135	86	76	70	28	M10	12	60	83	16800	354	176	117	M10	12	60	69	10500	221	4960	201	122	4.0	●						
100 x 145	110	98	92	35	M12	12	80	145	26000	520	197	121	M12	12	80	120	16850	337	8580	219	124	6.1	●						
110 x 155	110	98	92	35	M12	12	80	145	28600	520	179	114	M12	12	80	120	18000	327	9440	203	118	6.6	●						
120 x 165	110	98	92	35	M12	14	80	145	36300	605	191	124	M12	14	80	120	23350	389	10300	214	128	7.1	●						
130 x 180	128	114	108	41	M14	12	90	230	46000	708	176	114	M14	12	90	190	29950	461	15300	201	119	10.0	●						
140 x 190	128	114	108	41	M14	14	90	230	57800	826	191	126	M14	14	90	190	37200	531	16500	214	129	10.6	●						
150 x 200	128	114	108	41	M14	16	90	230	70800	944	204	136	M14	16	90	190	46400	619	17700	226	139	11.2	●						
160 x 210	128	114	108	41	M14	16	90	230	75500	944	191	130	M14	16	90	190	48600	608	18800	214	133	11.9	●						
170 x 225	162	146	136	52	M16	14	110	355	95900	1128	169	114	M16	14	110	295	59100	695	32000	196	119	17.6	●						
180 x 235	162	146	136	52	M16	15	110	355	108800	1209	171	117	M16	15	110	295	67500	750	33900	198	122	18.5	●						
190 x 250	162	146	136	52	M16	16	110	355	122500	1289	173	117	M16	16	110	295	76100	801	35800	199	122	21.4	●						
200 x 260	162	146	136	52	M16	16	110	355	128900	1289	164	113	M16	16	110	295	78600	786	37700	192	118	22.4	●						
220 x 285	162	146	136	52	M16	18	110	355	171800	1562	181	120	M16	18	110	295	105000	955	41400	195	126	26.6	●						
240 x 305	162	146	136	52	M16	20	110	355	208000	1733	184	125	M16	20	110	295	128000	1067	45200	198	130	28.7	●						
260 x 325	166	150	134	55	M16	21	110	355	237000	1823	169	117	M16	21	110	295	142000	1092	51000	187	123	31.2	●						
280 x 355	197	177	165	66	M20	18	130	690	340000	2429	174	119	M20	18	130	580	208000	1486	81300	192	125	46.8	●						
300 x 375	197	177	165	66	M20	20	130	690	405000	2700	181	125	M20	20	130	580	252000	1680	87100	198	130	69.7	●						
320 x 405	197	177	165	66	M20	21	130	690	453000	2831	178	121	M20	21	130	580	280000	1750	92900	196	127	60.5	●						
340 x 425	197	177	165	66	M20	22	130	690	504900	2970	176	121	M20	22	130	580	311000	1829	98700	193	127	63.9	●						
360 x 455	224	203	190	76	M22	21	150	930	626000	3478	169	115	M22	21	150	780	381000	2117	138500	189	121	86.8	●						
380 x 475	224	203	190	76	M22	22	150	930	692000	3642	167	115	M22	22	150	780	420000	2211	146000	188	122	91.0	●						
400 x 495	224	203	190	76	M22	24	150	930	795000	3975	173	121	M22	24	150	780	489000	2445	154000	194	127	95.3	●						
420 x 515	224	203	190	76	M22	24	150	930	835000	3976	165	116	M22	24	150	780	505000	2405	161500	186	123	100	●						
440 x 535	224	203	190	76	M22	24	150	930	875000	3977	158	112	M22	24	150	780	517000	2350	169000	178	120	105	●						
460 x 555	224	203	190	76	M22	24	150	930	914000	3974	151	108	M22	24	150	780	530000	2304	177000	172	117	109	●						
480 x 575	224	203	190	76	M22	28	150	930	1113000	4638	169	121	M22	28	150	780	678000	2825	184500	189	128	114	●						
500 x 595	224	203	190	76	M22	28	150	930	1160000	4640	162	117	M22	28	150	780	692000	2768	192000	182	125	119	●						
520 x 615	224	203	190	76	M22	30	150	930	1292000	4969	167	122	M22	30	150	780	780000	3000	200000	186	129	122.5	●						
540 x 635	224	203	190	76	M22	30	150	930	1342000	4970	161	118	M22	30	150	780	799000	2959	207500	180	126	128	●						
560 x 655	224	203	190	76	M22	32	150	930	1484000	5300	165	122	M22	32	150	780	893000	3189	215500	184	129	131	●						
580 x 675	224	203	190	76	M22	32	150	930	1537000	5300	159	118	M22	32	150	780	912000	3145	223000	179	127	136	●						
600 x 695	224	203	190	76	M22	33	150	930	1640000	5467	159	118	M22	33	150	780	972000	3240	231000	179	127	139	●						

● Sizes of clamping elements available from stock.  
<sup>1)</sup> External ring from size 400 x 495 without slot.  
<sup>2)</sup> These are the maximum screw tightening torques. They can be reduced by a maximum of 40 % of the above-mentioned figures with T, F<sub>ax</sub>, P<sub>W</sub> and P<sub>N</sub> decreasing proportionately.

# CLAMPEX® KTR 620

## Clamping elements

Two-part external clamping set for applications on hollow shafts



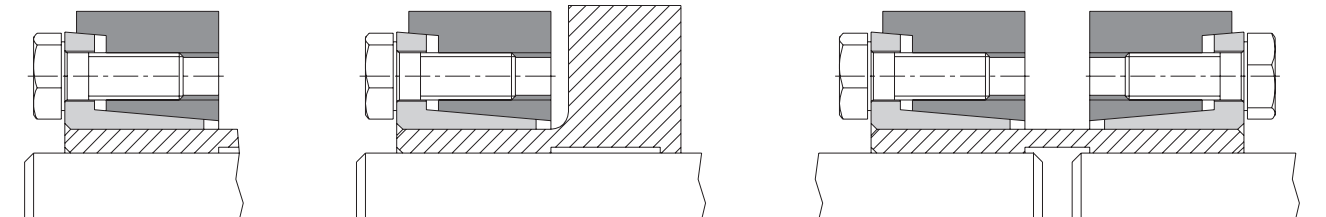
### Tolerances for $d_w$

$$d_w \leq \varnothing 160 = h6/H7$$

$$d_w > \varnothing 160 = g6/H7$$

Bigger tolerances are generally possible! Please contact us!

### Example of application of hub design



Ordering  
example:

KTR 620	55	x	100
Series	Size of internal diameter d		Size of external diameter D



**CLAMPEX® – KTR 620**

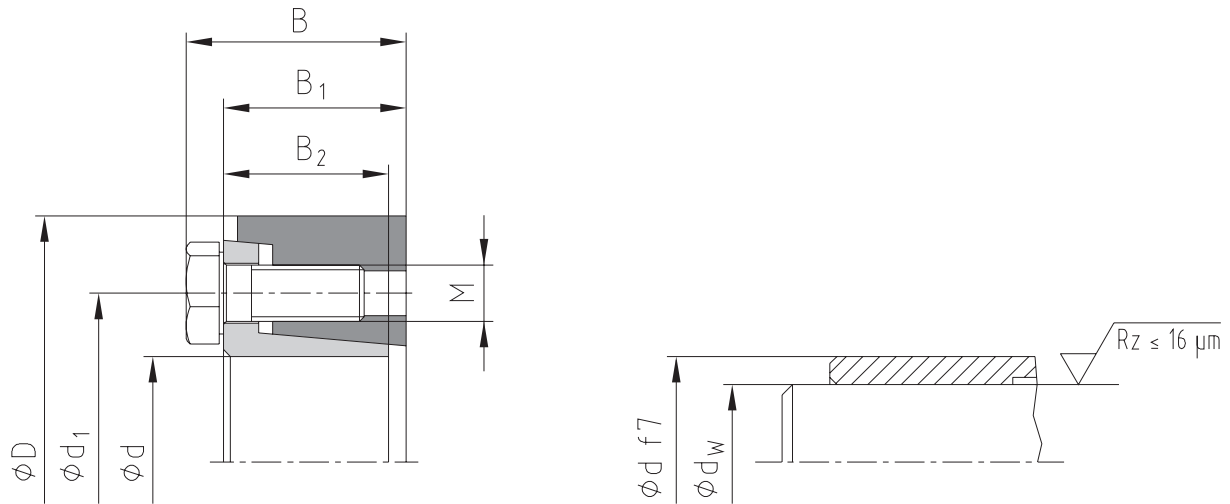
d x D [mm]	Shaft diameter d <sub>w</sub> [mm]	Transmittable torque or axial force		Dimensions [mm]				Clamping screws DIN EN ISO 4017 - 12.9 <sup>1)</sup> μ <sub>total</sub> =0.10				Surface pressure of clamping element/hollow shaft	Weight [-kg]	Stock programme
		T [Nm]	F <sub>ax</sub> [kN]	B	B <sub>1</sub>	B <sub>2</sub>	d <sub>1</sub>	M	Length	z = number	T <sub>A</sub> [Nm]	P <sub>H</sub> [N/mm <sup>2</sup> ]		
16 x 41	13	70	11	19.5	15.3	13.5	28	M6	12	3	13	254	0.1	
	14	90	13											
NEW 18 x 44	15	80	11	19.5	15.3	13.5	30	M6	12	4	13	222	0.1	
	16	110	14											
20 x 47	17	150	18	19.5	15.3	13.5	32	M6	12	4	13	274	0.1	●
	18	175	19											
24 x 50	19	165	17	22	18.22	16	36	M6	16	5	13	243	0.2	●
	20	215	22											
NEW 26 x 51.5	22	280	25	22	18.05	16	38	M6	16	5	13	238	0.2	
	20	200	20											
30 x 60	22	260	24	24	20.26	18	44	M6	16	6	13	255	0.3	●
	24	330	28											
36 x 72	24	370	31	27.5	22.1	20	52	M8	20	5	30	250	0.5	●
	25	420	34											
38 x 72	26	465	36	27.5	22.1	20	54	M8	20	5	30	240	0.5	●
	27	480	36											
40 x 80	30	650	43	29.5	24.22	22	61	M8	20	6	30	209	0.6	●
	33	835	51											
44 x 80	27	480	36	29.5	24.22	22	61	M8	20	6	30	192	0.6	●
	34	830	49											
50 x 90	35	770	44	31.5	26.1	23.5	68	M8	20	8	30	212	0.8	●
	37	880	48											
55 x 100	38	1130	59	34.5	29	26	72	M8	20	8	30	195	1.1	●
	40	1260	63											
60 x 110	42	1400	67	34.5	29.25	26	80	M8	20	9	30	191	1.3	●
	42	1300	62											
62 x 110	45	1600	71	34.5	29.25	26	80	M8	20	9	30	189	1.3	●
	48	1900	79											
68 x 115	48	1700	71	35	29.4	26	86	M8	20	9	30	206	1.3	●
	50	1950	78											
75 x 138	52	2160	83	37.5	30.7	27	100	M10	25	10	60	211	2.3	●
	48	1700	71											
80 x 141	50	1950	78	37.5	31.1	27	104	M10	25	10	60	215	2.3	●
	52	2160	83											
NEW 85 x 155	55	2500	91	44.5	38.2	34	114	M10	25	11	60	216	3.2	
	60	3150	105											
90 x 155	55	2700	98	44.5	38.2	34	114	M10	25	11	60	223	3.2	●
	65	4100	126											
NEW 95 x 170	60	3400	113	50	43.45	39	124	M10	30	14	60	182	4.3	
	65	4100	126											
100 x 170	65	5500	169	50	43.45	39	124	M10	30	14	60	176	4.3	●
	70	7400	197											
NEW 105 x 185	70	7900	211	56.5	49.1	43.5	136	M12	35	12	100	208	5.8	
	75	7900	211											
110 x 185	70	6200	177	56.5	49.1	43.5	136	M12	35	12	100	202	5.8	●
	75	7400	197											
NEW 115 x 197	80	8600	215	60.5	53	48	147	M12	35	14	100	193	6.9	
	70	6200	177											
120 x 197	75	7400	197	60.5	53	48	147	M12	35	14	100	189	6.9	
	80	8600	215											
NEW 120 x 197	80	10500	263	60.5	53	48	147	M12	35	14	100	189	6.9	
	85	11800	278											
NEW 120 x 197	85	12500	294	60.5	53	48	147	M12	35	14	100	189	6.9	
	90	13700	304											
NEW 120 x 197	85	12500	294	60.5	53	48	147	M12	35	14	100	189	6.9	
	90	14100	313											
NEW 120 x 197	95	16000	337	60.5	53	48	147	M12	35	14	100	189	6.9	
	85	12500	294											
NEW 120 x 197	90	14100	313	60.5	53	48	147	M12	35	14	100	189	6.9	
	95	16000	337											

● Sizes of clamping elements available from stock.  
<sup>1)</sup> DIN EN ISO 4017-10.9 for size 16 x 41 to 20 x 47

# CLAMPEX® KTR 620

## Clamping elements

Two-part external clamping set for applications on hollow shafts



CLAMPEX® – KTR 620

d x D [mm]	Shaft diameter d <sub>w</sub> [mm]	Transmittable torque or axial force		Dimensions [mm]				Clamping screws DIN EN ISO 4017 - 12.9 μ <sub>total</sub> =0.10				Surface pressure of clamping element/hollow shaft		Weight [-kg]	Stock programme
		T [Nm]	F <sub>ax</sub> [kN]	B	B <sub>1</sub>	B <sub>2</sub>	d <sub>1</sub>	M	Length	z = number	T <sub>A</sub> [Nm]	P <sub>H</sub> [N/mm <sup>2</sup> ]			
125 x 215	90	14500	322	61	53.4	48	158	M12	35	14	100	196	8.7	●	
	95	16600	349												
	100	18800	376												
NEW 130 x 215	95	17000	358	61	53.4	48	158	M12	35	14	100	187	9.4		
	100	18400	368												
	110	22000	400												
130 x 230	95	18400	387	66.5	57.5	51	165	M14	40	12	160	213	10.8	●	
	100	20800	416												
	110	26200	476												
NEW 135x 230	95	18400	387	66.5	57.5	51	165	M14	40	12	160	209	10.8		
	100	20800	416												
	110	26200	476												
140 x 230	100	19900	398	67	57.8	51	172	M14	40	12	160	207	10.3		
	105	22200	423												
	115	27800	483												
NEW 150 x 263	110	27000	491	71	62.2	55	186	M14	40	14	160	202	15.2		
	120	32000	533												
	125	36200	579												
155 x 263	110	27000	491	71	62.2	55	186	M14	40	14	160	199	15.2		
	120	32000	533												
	125	36200	579												
NEW 160 x 290	120	39000	650	78.5	68.5	61	198	M16	45	12	250	215	21.5		
	130	48000	738												
	135	51000	756												
165 x 290	120	39000	650	78.5	68.5	61	198	M16	45	12	250	212	21.5		
	130	48000	738												
	135	51000	756												
NEW 170 x 300	130	46500	715	79	68.9	61	208	M16	50	14	250	212	22.5		
	140	53000	757												
	145	59000	814												
175 x 300	130	46500	715	79	68.9	61	208	M16	50	14	250	209	22.5	●	
	140	53000	757												
	145	59000	814												
NEW 180 x 320	140	66000	943	95	85	77.5	222	M16	50	16	250	210	32.7		
	150	76000	1013												
	155	83000	1071												
185 x 320	140	66000	943	95	85	77.5	222	M16	50	16	250	207	32.7		
	150	76000	1013												
	155	83000	1071												
NEW 190 x 340	150	82000	1093	98	87.7	77.5	238	M16	50	16	250	225	36.3		
	160	91000	1138												
	165	102000	1236												
NEW 195 x 340	150	82000	1093	98	87.7	77.5	238	M16	50	16	250	222	36.3		
	160	91000	1138												
	165	102000	1236												
200 x 340	150	82000	1093	98	87.7	77.5	238	M16	50	16	250	219	36.3		
	160	91000	1138												
	165	102000	1236												

● Sizes of clamping elements available from stock.

**CLAMPEX® – KTR 620**

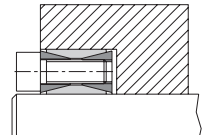
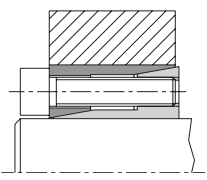
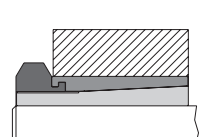
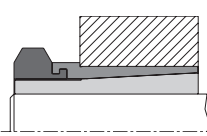
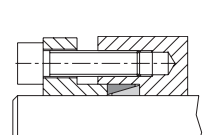
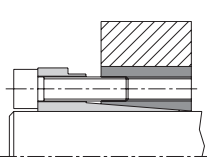
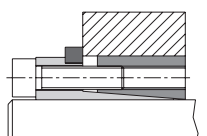
d x D [mm]	Shaft diameter d <sub>w</sub> [mm]	Transmittable torque or axial force		Dimensions [mm]				Clamping screws DIN EN ISO 4017 - 12.9 <sup>2)</sup> μ <sub>total</sub> =0.10				Surface pressure of clamping element/hollow shaft		Weight [-kg]	Stock programme
		T [Nm]	F <sub>ax</sub> [kN]	B	B <sub>1</sub>	B <sub>2</sub>	d <sub>1</sub>	M	Length	z = number	T <sub>A</sub> [Nm]	P <sub>H</sub> [N/mm <sup>2</sup> ]			
220 x 370	160	105000	1313	120	107.55	96.5	268	M20	60	15	480	205	53		
	170	122000	1435												
	180	138000	1533												
240 x 405	170	125000	1471	123.5	111.1	98	288	M20	60	16	480	214	66		
	180	145000	1611												
	200	182000	1820												
260 x 430	190	165000	1737	138	125.3	110.5	312	M20	60	16	480	202	82		
	200	190000	1900												
	220	238000	2164												
280 x 460	210	220000	2095	152.5	140	121	334	M20	60	18	480	193	103		
	220	245000	2227												
	240	300000	2500												
300 x 485	220	297000	2700	159	139.8	124	360	M24	70	16	840	205	120		
	230	330000	2870												
	250	399000	3192												
320 x 520	240	331000	2758	160.5	141.6	124	380	M24	70	18	840	190	138		
	250	365000	2920												
	270	437000	3237												
340 x 570	250	429000	3432	177.5	158.4	139	402	M24	70	18	840	195	189		
	260	469000	3608												
	280	556000	3971												
360 x 590	270	545000	4037	182	163	143	424	M24	70	20	840	216	207		
	280	592000	4229												
	290	694000	4786												
<b>NEW</b> 390 x 650	290	704000	4855	191	169.2	148	454	M27	70	18	1250	216	249		
	300	760000	5067												
	320	879000	5494												
<b>NEW</b> 420 x 670	320	827000	5169	208.4	186.4	166	486	M27	70	20	1250	184	285		
	330	876000	5309												
	350	1000000	5714												
<b>NEW</b> 440 x 710	340	1117000	6571	220	198	179	506	M27	70	21	1250	222	343		
	350	1190000	6800												
	370	1345000	7270												
<b>NEW</b> 460 x 750	360	1306000	7256	223	201	179	534	M27	70	21	1250	230	387		
	370	1386000	7492												
	390	1554000	7969												
<b>NEW</b> 470 x 705	370	950000	5135	241.6	219.6	200	538	M27	70	21	1250	151	340		
	380	1000000	5263												
	400	1150000	5750												
<b>NEW</b> 480 x 770	380	1557000	8195	247	223	201	552	M30	100	21	1650	223	449		
	390	1648000	8451												
	410	1818000	8868												
<b>NEW</b> 500 x 820	400	1653000	8265	241	217	198	572	M30	100	24	1650	214	515		
	410	1725000	8415												
	430	1915000	8907												
<b>NEW</b> 530 x 850	430	2048000	9526	262.3	238.3	216	606.5	M30	100	24	1650	208	585		
	440	2154000	9791												
	460	2374000	10322												
<b>NEW</b> 560 x 885	450	2306000	10249	266	242	220	632	M30	100	24	1650	212	636		
	460	2419000	10517												
	480	2654000	11058												
<b>NEW</b> 590 x 950	470	2735000	11638	281.5	257.5	236	664	M30	100	28	1650	211	805		
	480	2863000	11929												
	500	3128000	12512												
<b>NEW</b> 620 x 960	500	3150000	12600	307	283	258	706	M30	100	28	1650	201	853		
	520	3396000	13062												
	540	3689000	13663												
<b>NEW</b> 660 x 1020	530	3636000	13721	319	293	267	748	M33	130	28	2250	199	993		
	550	3942000	14335												
	570	4261000	14951												
<b>NEW</b> 700 x 1085	560	4189000	14961	318.5	292.5	263	788	M33	130	28	2250	187	1112		
	580	4520000	15586												
	600	4863000	16210												
<b>NEW</b> 750 x 1100	600	5281000	17603	346	320	280	850	M33	130	32	2250	202	1111		
	620	5672000	18297												
	650	6287000	19345												
<b>NEW</b> 800 x 1230	640	6091000	19034	359	333	296	900	M33	130	32	2250	202	1589		
	660	6511000	19730												
	700	7394000	21126												

● Sizes of clamping elements available from stock.

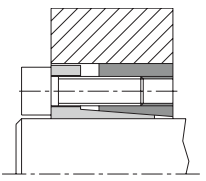
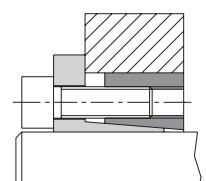
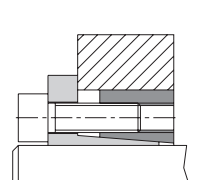
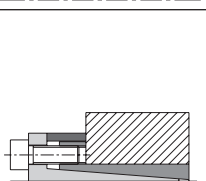
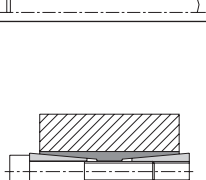
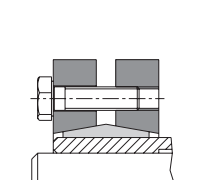
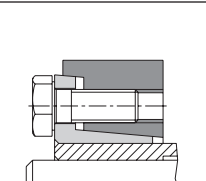
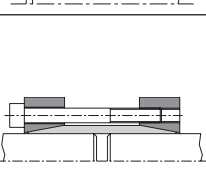
<sup>2)</sup> DIN EN ISO 4014-12.9 for size 660 x 1020 to 800 x 1230

# CLAMPEX® CLAMPING ELEMENTS TYPES AND OPERATING DESCRIPTION

## Properties of clamping elements

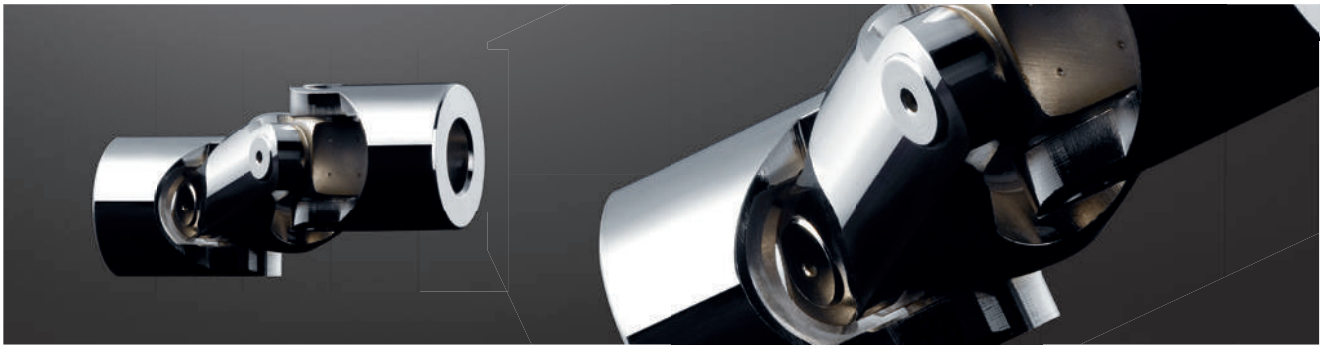
Type	Series	Shaft diameter [mm]	Transmittable	Centering of hub versus shaft via the clamping element	Centering between hub and shaft required	Axial displacement of hub during assembly of clamping element	Details on page
Internal clamping elements	 KTR 100	17 – 1,000	260 – 3,017,100		●		286 287
	 KTR 105	5 – 50	5 – 1,900	●		●	288 289
	 KTR 130	5 – 50	10 – 2,320	●		●	290 291
	 KTR 131	5 – 35	10 – 836	●		●	290 291
	 KTR 150	6 – 440	2 – 215,000		●	●*	292 293
	 KTR 200	20 – 200	530 – 68,000	●		●	294 295
	 KTR 201	20 – 200	320 – 48,800	●			294 295

\* Depending on mounting position

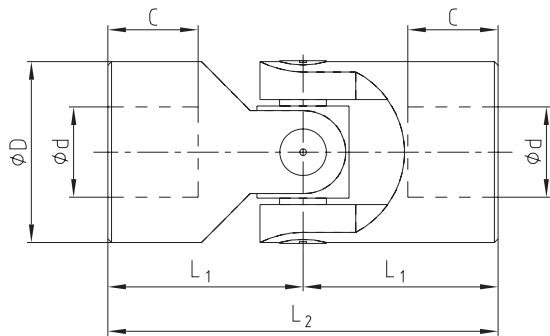
Type	Series	Shaft diameter [mm]	Transmittable	Centering of hub versus shaft via the clamping element	Centering between hub and shaft required	Axial displacement of hub during assembly of clamping element	Details on page
Internal clamping elements	 KTR 203	18 – 400	370 – 487,000	●		●	296 297
	 KTR 206	18 – 400	290 – 342,000	●			296 297
	 KTR 225	14 – 50	287 – 1,796	●			298 299
	 KTR 250	6 – 130	11 – 25,000	●			300 301
	 KTR 400	24 – 600	700 – 1,640,000	●		●	302 303
External clamping elements	 KTR 603	10 – 420	28 – 1,460,000	●			304 - 307
	 KTR 620	13 – 700	70 – 7,394,000	●			308 - 311
Shaft couplings	 KTR 700	10 – 100	62 – 8,350	●			312 313

# KTR Precision joints type G and GD

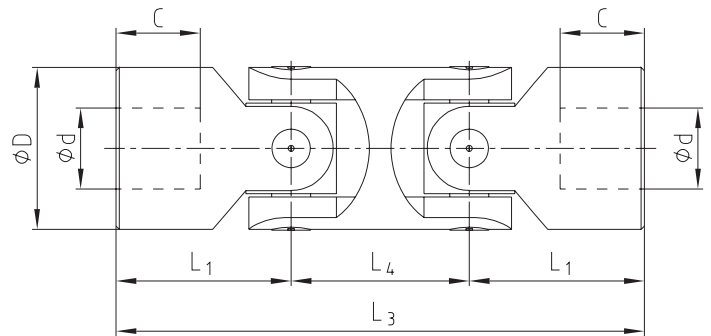
According to DIN 808 with plain bearing



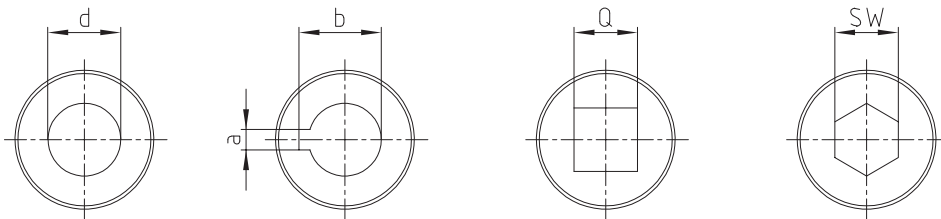
Precision single joint G



Precision double joint GD



Finish bores:



Type G and GD																
Types and size															Weight [kg]	
Size G	DIN designation G	Size GD	DIN designation GD	d (H7)	D	L <sub>2</sub>	L <sub>1</sub>	C	L <sub>4</sub>	L <sub>3</sub>	a (JS9)	b	Q (H10)	SW (H10)	G	GD
01 G	E6 x 16-G	01 GD	D6 x 16-G	6	16	34	17	8	22	56	2	7.0	6	6	0.05	0.08
02 G	E8 x 16-G	02 GD	D8 x 16-G	8	16	40	20	11	22	62	2	9.0	8	8	0.05	0.08
03 G	E10 x 22-G	03 GD	D10 x 22-G	10	22	48	24	12	26	74	3	11.4	10	10	0.10	0.15
04 G	E12 x 25-G	04 GD	D12 x 25-G	12	25	56	28	13	30	86	4	13.8	12	12	0.16	0.25
05 G	E14 x 28-G	05 GD	D14 x 28-G	14	28	60	30	14	36	96	5	16.3	14	14	0.20	0.40
1 G	E16 x 32-G	1 GD	D16 x 32-G	16	32	68	34	16	37	105	5	18.3	16	16	0.30	0.45
2 G	E18 x 36-G	2 GD	D18 x 36-G	18	36	74	37	17	40	114	6	20.8	18	18	0.45	0.70
3 G	E20 x 42-G	3 GD	D20 x 42-G	20	42	82	41	18	47	129	6	22.8	20	20	0.60	1.00
4 G	E22 x 45-G	4 GD	D22 x 45-G	22	45	95	47.5	22	50	145	6	24.8	22	22	0.95	1.55
5 G	E25 x 50-G	5 GD	D25 x 50-G	25	50	108	54	26	55	163	8	28.3	25	25	1.20	2.00
6 G	E30 x 58-G	6 GD	D30 x 58-G	30	58	122	61	29	68	190	8	33.3	30	30	1.85	2.90
6 G1	E32 x 58-G	6 GD1	D32 x 58-G	32	58	130	65	33	68	198	10	35.3	30	30	2.00	3.00
7 G	E35 x 70-G	7 GD	D35 x 70-G	35	70	140	70	33	72	212	10	38.3	-	-	3.15	4.75
8 G	E40 x 80-G	8 GD	D40 x 80-G	40	80	160	80	38	85	245	12	43.3	-	-	4.60	7.20
9 G	E50 x 95-G	9 GD	D50 x 95-G	50	95	190	95	46	100	290	14	53.8	-	-	7.60	12.0

Ordering example:	04 G	Ø12	Ø12 keyway to DIN
	Size and type of joint	Finish bore (H7)	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)

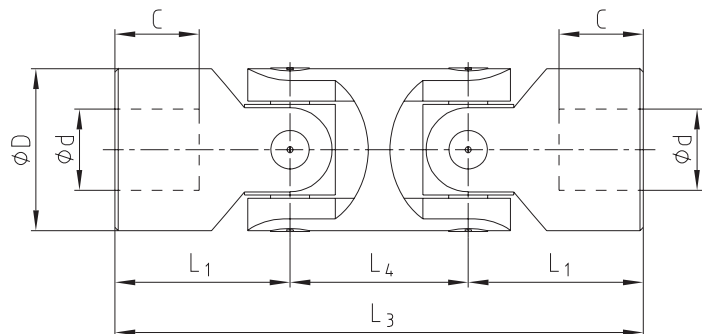
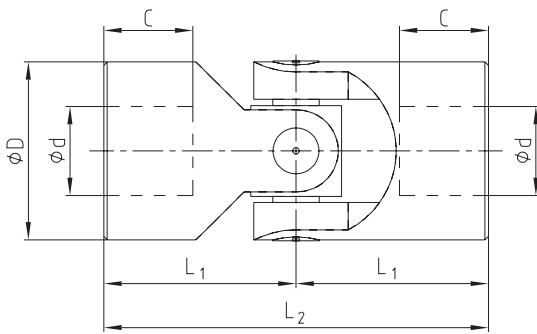
# KTR Precision joints type H and HD

According to DIN 808 with needle bearing

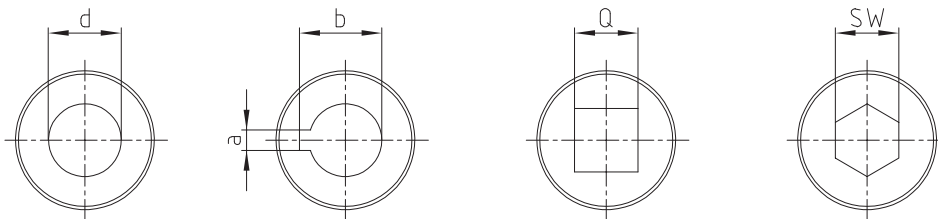


Precision single joint H

Precision double joint HD



Finish bores:



Type H and HD																
Types and size				Dimensions [mm]										Weight [kg]		
Size H	DIN designation H	Size HD	DIN designation HD	d (H7)	D	L <sub>2</sub>	L <sub>1</sub>	C	L <sub>4</sub>	L <sub>3</sub>	a (JS9)	b	Q (H10)	SW (H10)	H	HD
03 H	E10 x 22-W	03 HD	D10 x 22-W	10	22	48	24	12	26	74	3	11.4	10	10	0.10	0.15
04 H	E12 x 25-W	04 HD	D12 x 25-W	12	25	56	28	13	30	86	4	13.8	12	12	0.16	0.25
05 H	E14 x 28-W	05 HD	D14 x 28-W	14	28	60	30	14	36	96	5	16.3	14	14	0.20	0.40
1 H	E16 x 32-W	1 HD	D16 x 32-W	16	32	68	34	16	37	105	5	18.3	16	16	0.30	0.45
2 H	E18 x 36-W	2 HD	D18 x 36-W	18	36	74	37	17	40	114	6	20.8	18	18	0.45	0.70
3 H	E20 x 42-W	3 HD	D20 x 42-W	20	42	82	41	18	47	129	6	22.8	20	20	0.60	1.00
4 H	E22 x 45-W	4 HD	D22 x 45-W	22	45	95	47.5	22	50	145	6	24.8	22	22	0.95	1.55
5 H	E25 x 50-W	5 HD	D25 x 50-W	25	50	108	54	26	55	163	8	28.3	25	25	1.20	2.00
6 H	E30 x 58-W	6 HD	D30 x 58-W	30	58	122	61	29	68	190	8	33.3	30	30	1.85	2.90
6 H1	E32 x 58-W	6 HD1	D32 x 58-W	32	58	130	65	33	68	198	10	35.3	30	30	2.00	3.00
7 H	E35 x 70-W	7 HD	D35 x 70-W	35	70	140	70	33	72	212	10	38.3	-	-	3.15	4.75
8 H	E40 x 80-W	8 HD	D40 x 80-W	40	80	160	80	38	85	245	12	43.3	-	-	4.60	7.20
9 H	E50 x 95-W	9 HD	D50 x 95-W	50	95	190	95	46	100	290	14	53.8	-	-	7.60	12.0

Ordering example:	1 H	Ø16	Ø16 keyway to DIN
	Size and type of joint	Finish bore (H7)	Finish bore (H7), feather keyway acc. to DIN 6885 sheet 1 (JS9)

# Torque measuring technology

## Types and operating description

### Properties of torque measuring shafts

#### DATAFLEX® 16, 32, 42, 70, 110 - High precision with each revolution



With the new size of DATAFLEX® 110 KTR extend their range of precision measuring shafts for bigger torques. Along with the established sizes of DATAFLEX® 16 to DATAFLEX® 110 measuring ranges from 10 Nm to 20,000 Nm are covered.

With the new series the torque is measured using the approved technology of wire strain gauges DMS while processing contactlessly with a resolution of 24 bit. Thus, the inaccuracy of torque measuring is reduced to less than 0.1 % of the measuring range. By integrating a high-resolution speed sensor the new series combines four measurements in one: Measuring the torque, speed, rotation angle and rotation direction is part of the standard equipment.

#### DATAFLEX® 140 - Technology at top prices



The DATAFLEX® torque measuring shafts size 140 measure the torque contactlessly and free from wear. Their secret is a measuring method sensing twisting of the torsion shaft by light quantity measurement. Here the light is directed through two disks the transparency of which changes proportionately to the torque. The overall electronics are installed in a stationary housing to make sure that no signals have to be transmitted by the rotating shaft and the torque is available completely with a high band width of 16 kHz. This allows to measure and analyze highly dynamic processes accurately.

The analog output values are available both as a voltage signal from 0 - 10 V and as a current signal from 4 - 20 mA. In addition a speed encoder is fitted as a standard providing a signal at a resolution of 60 pulses per revolution.

#### Couplings adjusted to every application



Matching with all series of DATAFLEX® we recommend to use the servo lamina coupling RADEX®-NC and the steel lamina coupling RADEX®-N. Together they form a compact solution which is easy to integrate while having a high stiffness. Basically it is also possible to use backlash-free, plug-in types of couplings such as ROTEX® GS or to fit an overload coupling.



# TORQUE MEASURING TECHNOLOGY TYPES AND OPERATING DESCRIPTION

## Product finder of torque measuring shafts

Product	DATAFLEX® 16	DATAFLEX® 32	DATAFLEX® 42	DATAFLEX® 70	DATAFLEX® 110	DATAFLEX® 140
Maintenance-free	●	●	●	●	●	●
For rotating applications	●	●	●	●	●	●
Torque range $T_{KN}$ [Nm]	10, 30, 50	100, 300, 500	1000	3000, 5000	10000, 20000	50000
Measuring inaccuracy [% of final value]	0.1	0.1	0.1	0.1	0.1	1
Torque output	-10 ... 10 V	-10 ... 10 V	-10 ... 10 V	-10 ... 10 V	-10 ... 10 V	0 ... 10 V, 4 ... 20 mA
Speed output						
Square-wave signal [pulses/rev.]	2 x 360	2 x 720	2 x 720	2 x 450	2 x 720	1 x 60
DC - direct voltage signal [0 ... 10V]	●	●	●	●	●	●
Direction signal	●	●	●	●	●	–
Maximum speed [rpm]	10,000	7,500	6,500	4,000	3,000	2,000
Coupling recommended	RADEX®-NC 20, 25	RADEX®-N 42, 60	RADEX®-N 80	RADEX®-N 90, 115	as specified	as specified
Connection housing DF2	●	●	●	●	●	●

### Connection housing DF2 - All Inclusive



The connection housing DF2 can easily be combined with all DATAFLEX® torque measuring shafts disposing of a retainer for top hat rail assembly as well as terminal screws for an easy connection of external devices.

The following features save the purchase of expensive measuring amplifiers and converters:

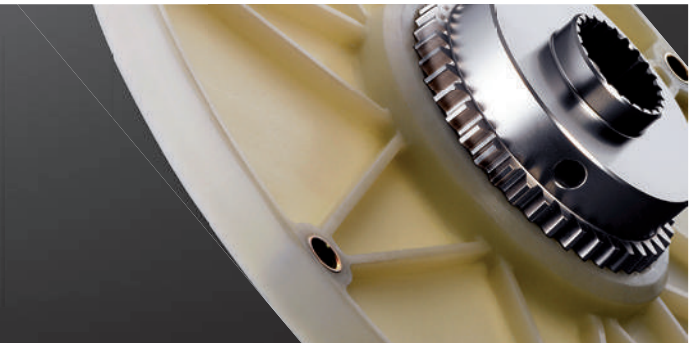
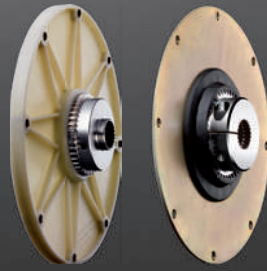
- The torque output can be filtered over 5 steps so that short torque peaks in the display can be reduced.
- The pulsed outputs of the speed signals can be configured both for 5V (TTL) and 24V (HTL) controls. This makes the outputs compatible with data logging boards and SPS controls.
- In parallel with the pulse signal an integrated frequency voltage converter supplies a DC voltage from 0 – 10 V proportionally to the speed, the scaling of which can be individually adapted. This makes an expensive counter superfluous so that the signal can either be processed as a voltage or displayed.
- A direction signal indicates the rotational direction of the drive (with DATAFLEX® 16, 32, 42, 70 and 110).

# BoWex®

## Flange couplings

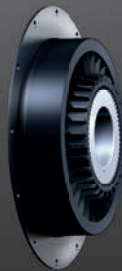
### Other types

BoWex® FLE-PA  
BoWex® FLE-PAC



- For I. C.-engines
- Engine power up to 2500 kW
- Axial plug-in, easy assembly
- Compact dimension
- Torsionally rigid

BoWex-ELASTIC®



- Highly flexible flange coupling with SAE and special dimensions
- For the drive with diesel engines up to 2500 kW
- Available as a Shore hardness (T) 40, (T) 50 and (T) 65 Shore
- Damping torsional vibrations
- Compensating for displacements on the driving and driven side
- Axial fitting without subsequent screwing
- Available as a Shore hardness 40, 50 and 65 Shore A
- Specifically short dimensions
- Special dimensions without adapter possible

MONOLASTIC®



- One-piece, flexible flange coupling
- For the drive in diesel engine/hydraulic pump up to 250 kW
- Available in various kinds of Shore hardness
- Axial plug-in in combination with pump spline shaft
- Available for SAE and DIN pump spline shaft
- Available with connection with 3 holes and acc. to SAE

# MINEX<sup>®</sup>-S

## Magnetic couplings

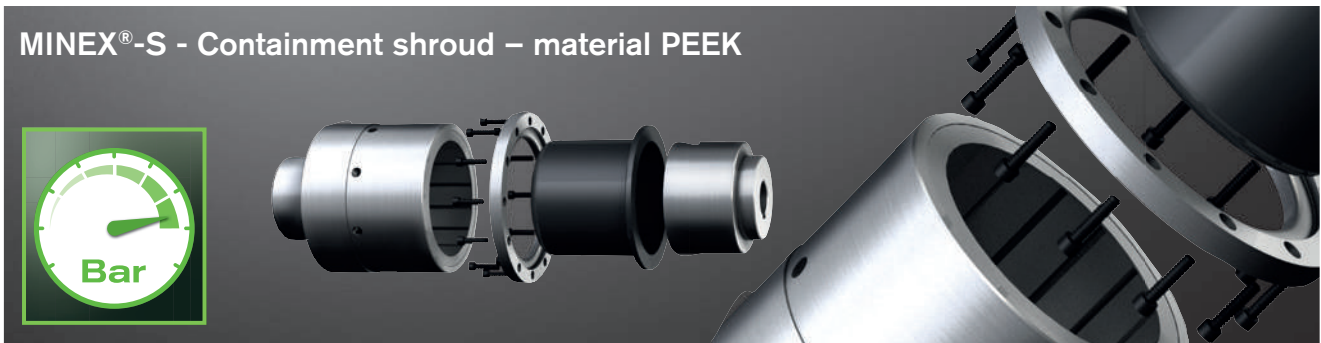
### Other types

#### MINEX<sup>®</sup>-S - Containment shroud – material Hastelloy



- Contactless torque transmission with permanent magnets
- Hermetical separation of driving and driven side
- Torque range from 10 to 1,000 Nm
- Containment shroud made of Hastelloy

#### MINEX<sup>®</sup>-S - Containment shroud – material PEEK



- No eddy current losses
- No generation of heat in the coupling caused by the containment shroud
- Low sensitivity to fracture, low weight, easy handling
- Ideally suitable with low demands on temperature and pressure resistance (up to 16 bar and + +130 °C)
- Torque range from 10 to 390 Nm
- Internal cooling measures not required
- Specifically suitable for dry-running drives

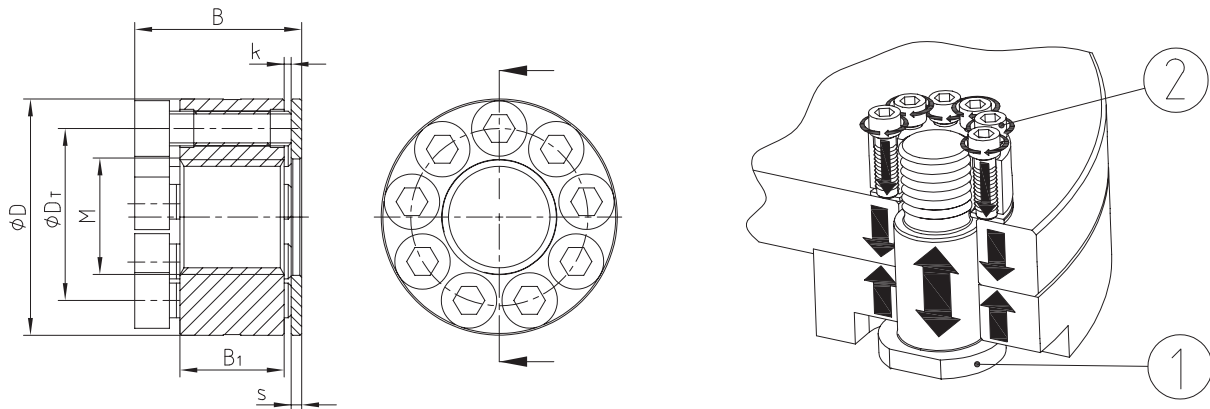
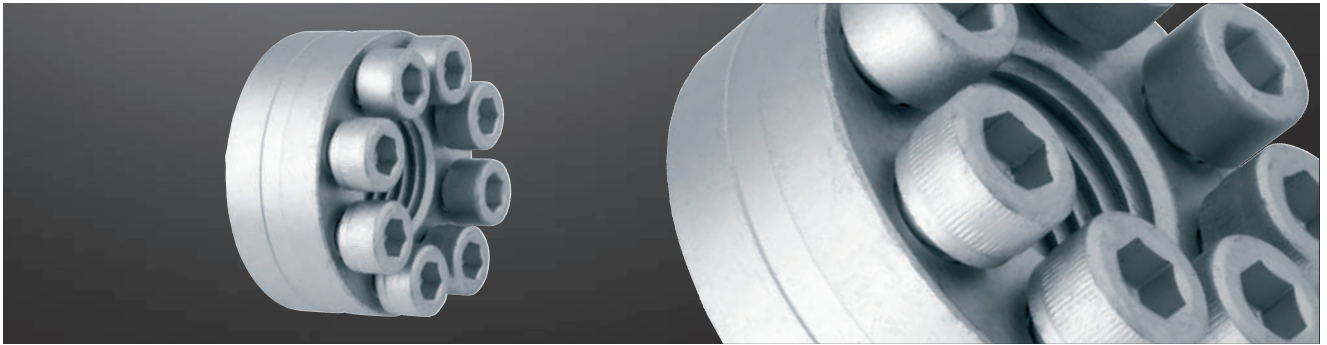
#### MINEX<sup>®</sup>-S - containment shroud made of ceramics



- No eddy current losses
- No generation of heat in the coupling caused by the containment shroud
- Ideally suitable with low demands on temperature and pressure resistance (up to 25 bar and + +300 °C)
- Torque range from 25 to 550 Nm
- Internal cooling measures not required
- Specifically suitable for dry-running drives

# KTR Clamping nuts

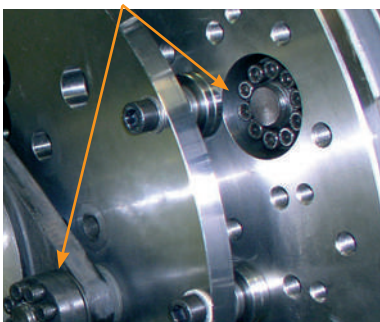
Large screw connections for easy and quick assembly



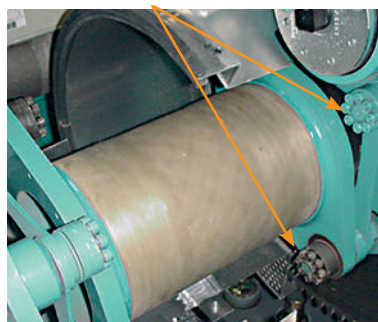
Size	Dimensions [mm]						Pressure screw pos. 2		Property class 8.8, screw pos. 1		Property class 10.9, screw pos. 1	
	D	D <sub>T</sub>	B	B <sub>1</sub>	s	k	DIN EN ISO 4762	Quantity	Tightening torque * [Nm]	Preload force [N]	Tightening torque * [Nm]	Preload force [N]
M24 x 3.0	52	39	36.0	20	3.0	1 - 2	M8	8	21	174000	30	249000
M27 x 3.0	57	42	41.0	25	3.0	1 - 2	M8	9	24	224000	30	280000
M30 x 3.5	65	48	43.0	25	3.0	1 - 2	M10	8	41	274000	60	401000
M33 x 3.5	68	51	48.0	30	3.0	1 - 2	M10	9	45	338000	60	451000
M36 x 4.0	80	58	50.0	30	3.0	1 - 2	M12	8	71	396000	105	586000
M42 x 4.5	86	64	55.0	35	3.0	1 - 2	M12	10	78	544000	105	732000
M48 x 5.0	90	72	60.0	40	3.0	1 - 2	M12	11	94	721000	105	806000
M52 x 5.0	100	79	66.5	42	4.5	1 - 2	M12	13	95	862000	105	952000
M56 x 5.5	108	83	75.5	45	4.5	1 - 2	M16	9	210	1001000	250	1192000
M60 x 5.5	112	86	80.5	48	4.5	1 - 2	M16	10	215	1139000	250	1325000
M64 x 6.0	120	92	84.0	52	8.0	1 - 2	M16	11	225	1311000	250	1457000
M72 x 6.0	142	107	98.0	58	8.0	1 - 2	M20	10	400	1696000	490	2077000
M80 x 6.0	164	122	103.0	64	8.0	1 - 2	M20	12	420	2137000	490	2493000

\* each screw pos. 2

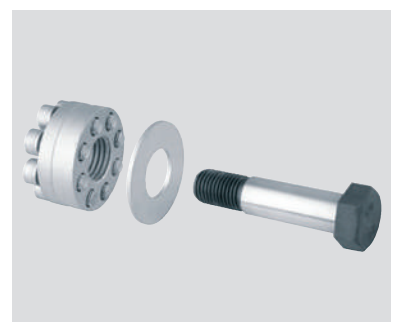
Used on 100 kNm test bench flanges



Used on couplings for wind power stations



Available as a complete unit including dowel screw



Ordering example:	KTR clamping nut	M33 x 3.5
	Designation	Size

# Summary of literature

No matter if a perfect drive, a brake that takes effect, space-saving cooling or accurate hydraulics is required, if on land, by sea or at an airy height - KTR's product portfolio is just as manifold as its applications. The following catalogues and leaflets provide an overview. Available at [www.ktr.com](http://www.ktr.com)

## Product catalogues



Made for Motion **KTR**

### Drive Technology

- Couplings
- Torque Limiters
- Clamping Sets
- Torque Measuring Shafts

[www.ktr.com](http://www.ktr.com)



Made for Motion **KTR**

### Brake Systems

- KTR-STOP®
- EMB-STOP

[www.ktr.com](http://www.ktr.com)



Made for Motion **KTR**

### Hydraulic Components

- Bellhousings
- Damping Elements
- Tanks

[www.ktr.com](http://www.ktr.com)



Made for Motion **KTR**

### Cooling systems

- For mobile machines and stationary hydraulics
- Customised solutions or standard design

[www.ktr.com](http://www.ktr.com)

# Certificates and Approvals

Being one of the first companies in the field of drive technology, KTR was certified in accordance with DIN EN ISO 9001 already in 1993, including the plants in Poland, China, India and USA.

Currently KTR products have been approved by numerous societies for standardization and classification being of international significance. Individual approvals by other societies can be implemented on request without fail.



# Legend of pictograms



Torsionally rigid



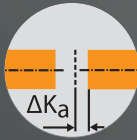
Light-weight



Protected against corrosion



Torsionally flexible



Axial compensation



Electrically insulating



Highly flexible



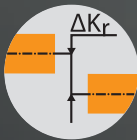
Angular compensation



Maximum speed



Damping vibrations



Radial compensation



No eddy current losses



Axial plug-in



Shiftable at standstill



Torque limiter slipping



Consider shaft distance



Double-cardanic



Torque limiter with synchronous ratcheting



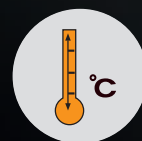
Relatively short shaft distance



Radial disassembly  
Ease of service



Torque limiter with idle rotation type



Maximum operating temperature



Standard drop-out center lengths available



Hardened surface



High speeds



Available in accordance with API



Accuracy X %



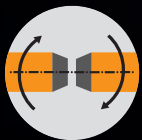
Backlash-free



Complying with ATEX  
For details refer to our ATEX leaflet



Consider axial displacement



Shear type, separating, slipping



Maintenance-free



Additional features compared to standard version