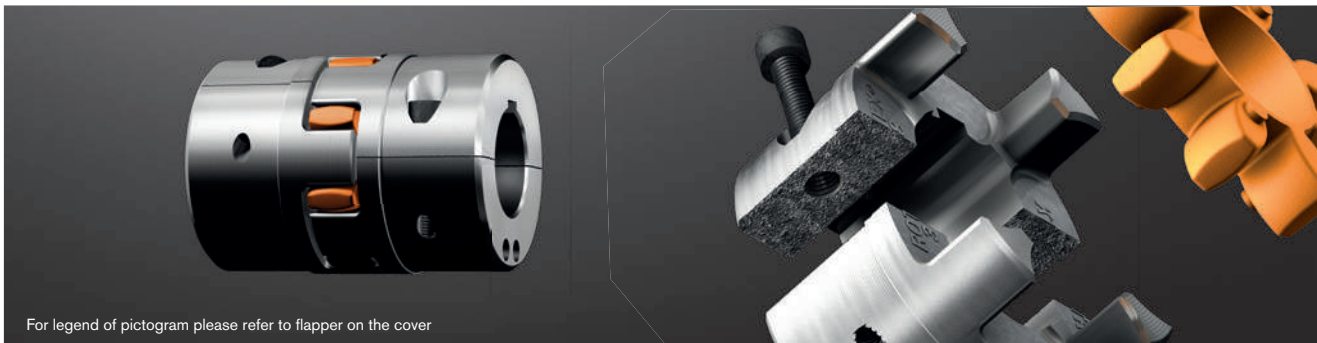


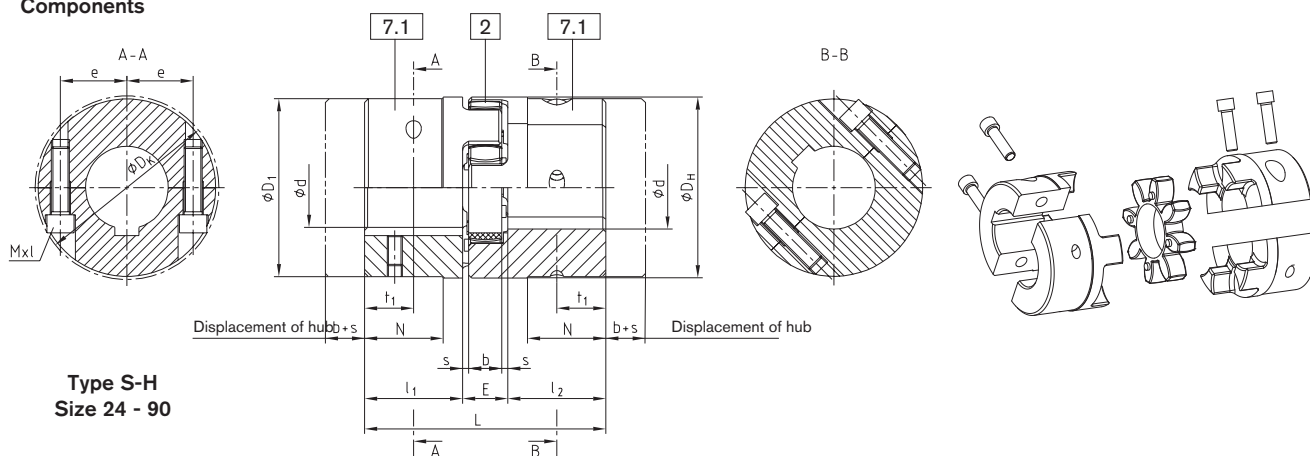
### Drop-out center design coupling with SPLIT hubs



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

# Legend of pictograms



Torsionally rigid



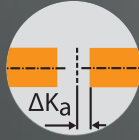
Light-weight



Protected against corrosion



Torsionally flexible



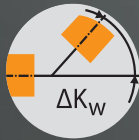
Axial compensation



Electrically insulating



Highly flexible



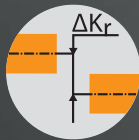
Angular compensation



Maximum speed



Damping vibrations



Radial compensation



No eddy current losses



Axial plug-in



Shiftable at standstill



Torque limiter slipping



Consider shaft distance



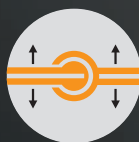
Double-cardanic



Torque limiter with synchronous ratcheting



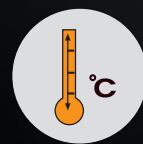
Relatively short shaft distance



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



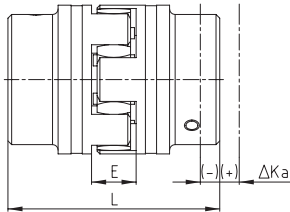
Maintenance-free



Additional features compared to standard version

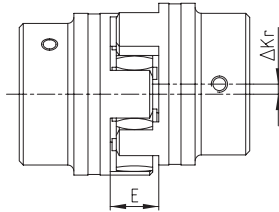
Displacements

Axial displacement  $\Delta K_a$

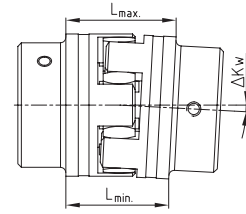


$L_{max} = L + \Delta K_a$

Radial displacement  $\Delta K_r$



Angular displacement  $\Delta K_w$  [degree]



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

Displacements for spider 92 and 98 Shore A

ROTEX® size	14	19	24	28	38	42	48	55	65	90	100	110	125	140	160	180	
Max. axial displacement $\Delta K_a$ [mm]	-0.5 +1.0	-0.5 +1.2	-0.5 +1.4	-0.7 +1.5	-0.7 +1.8	-1.0 +2.0	-1.0 +2.1	-1.0 +2.2	-1.0 +2.6	-1.5 +3.0	-1.5 +3.4	-1.5 +3.8	-2.0 +4.2	-2.0 +4.6	-2.0 +5.0	-2.5 +5.7	-3.0 +6.4
Max. radial displacement with $n=1500 \text{ rpm } \Delta K_r$ [mm]	0.17	0.20	0.22	0.25	0.28	0.32	0.36	0.38	0.42	0.48	0.50	0.52	0.55	0.60	0.62	0.64	0.68
Max. angular displacement with $n=1500 \text{ rpm } \Delta K_w$ [degree]	1.2	1.2	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2
$\Delta K_w$ [mm]	0.67	0.82	0.85	1.05	1.35	1.70	2.00	2.30	2.70	3.30	4.30	4.80	5.60	6.50	6.60	7.60	9.00

Displacements of spider 64 Shore D

ROTEX® size	14	19	24	28	38	42	48	55	65	75	90	100	110	125	140	160	180
Max. axial displacement $\Delta K_a$ [mm]	-0.5 +1.0	-0.5 +1.2	-0.5 +1.4	-0.7 +1.5	-0.7 +1.8	-1.0 +2.0	-1.0 +2.1	-1.0 +2.2	-1.0 +2.6	-1.5 +3.0	-1.5 +3.4	-1.5 +3.8	-2.0 +4.2	-2.0 +4.6	-2.0 +5.0	-2.5 +5.7	-3.0 +6.4
Max. radial displacement with $n=1500 \text{ rpm } \Delta K_r$ [mm]	0.11	0.13	0.15	0.18	0.21	0.23	0.25	0.27	0.30	0.34	0.36	0.37	0.40	0.43	0.45	0.46	0.49
Max. angular displacement with $n=1500 \text{ rpm } \Delta K_w$ [degree]	1.1	1.1	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1
$\Delta K_w$ [mm]	0.57	0.76	0.76	0.90	1.25	1.40	1.80	2.00	2.50	3.00	3.80	4.30	5.30	6.00	6.10	7.10	8.00

Displacements for spider PA, PEEK

ROTEX® size	14	19	24	28	38	42	48	55	65	75	90	100	110	125	140
Max. axial displacement $\Delta K_a$ [mm]	-0.5 +1.0	-0.5 +1.2	-0.5 +1.4	-0.7 +1.5	-0.7 +1.8	-1.0 +2.0	-1.0 +2.1	-1.0 +2.2	-1.0 +2.6	-1.5 +3.0	-1.5 +3.4	-1.5 +3.8	-2.0 +4.2	-2.0 +4.6	-2.0 +5.0
Max. radial displacement with $n=1500 \text{ rpm } \Delta K_r$ [mm]	0.08	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.21	0.24	0.25	0.26	0.27	0.30	0.31
Max. angular displacement with $n=1500 \text{ rpm } \Delta K_w$ [degree]	0.60	0.45	0.45	0.50	0.50	0.55	0.55	0.55	0.60	0.60	0.60	0.60	0.65	0.65	0.60
$\Delta K_w$ [mm]	0.33	0.41	0.42	0.52	0.67	0.85	1.00	1.15	1.35	1.65	2.15	2.40	2.80	3.25	3.30

The above-mentioned displacement figures of the flexible ROTEX® couplings are standard values taking into account the load of the coupling up to the rated torque  $T_{KN}$  and an operating speed  $n = 1500 \text{ rpm}$  along with an ambient temperature of  $+30^\circ \text{C}$ . The displacement figures may only be used one by one - if they appear simultaneously, they must be limited in proportion. Care should be taken to maintain the distance dimension  $E$  accurately in order to allow for axial clearance of the coupling while in operation. Detailed mounting instructions are shown on our homepage [www.ktr.com](http://www.ktr.com).

# ROTEX®

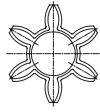
## Flexible jaw couplings

### Properties of standard spiders

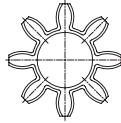
ROTEX® 14



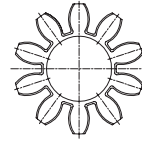
ROTEX® 19



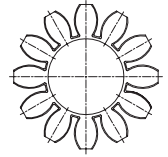
ROTEX® 24 - 65



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®

## Flexible jaw couplings

### Technical data and properties of special spiders

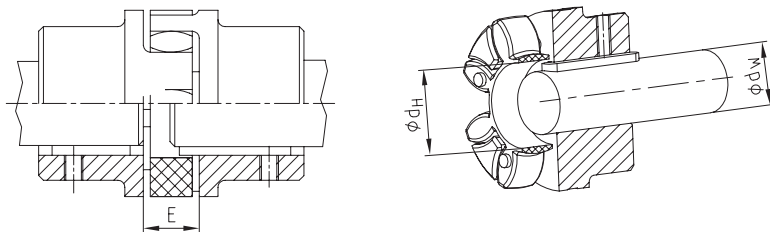
		
Designation	PA	PEEK
Material	Polyamide	Polyetheretherketone
Permissible temperature range		
Permanent temperature	-20 °C to +130 °C <sup>1)</sup>	up to +180 °C (ATEX up to +160 °C)
Short-term temperature	-30 °C to +150 °C <sup>1)</sup>	up to +250 °C
Features	<ul style="list-style-type: none"> <li>- small twisting angle and high torsion spring stiffness</li> <li>- transmission of very high torques with very low damping</li> <li>- good resistance to chemicals <sup>1)</sup></li> <li>- recommended hub material: steel</li> <li>- high restoring forces with displacements</li> </ul>	<ul style="list-style-type: none"> <li>- small twisting angle and high torsion spring stiffness</li> <li>- transmission of very high torques with very low damping</li> <li>- highly temperature-resistant, resistant to hydrolysis</li> <li>- good resistance to chemicals</li> <li>- recommended hub material: steel</li> <li>- high restoring forces with displacements</li> </ul>

<sup>1)</sup> different properties depending on compound

Torques			
ROTEX® size	PA, PEEK		
	T <sub>KN</sub> [Nm]	T <sub>K max</sub> [Nm]	T <sub>KW</sub> [Nm]
14	22	44	5.5
19	30	60	8.0
24	105	210	27.5
28	280	560	73
38	565	1130	147
42	785	1570	204
48	915	1830	238
55	1200	2400	312
65	1645	3290	427
75	2560	5130	667
90	6300	12600	1640
100	8650	17300	2250
110	10500	21000	2730
125	13000	26000	3380

Temperature factor S <sub>t</sub>												
	-50 °C	-30 °C +30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+180 °C
PA	-	1.0	1.15	1.25	1.4	1.6	1.9	2.3	3.0	-	-	-
PEEK	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

### Installation of spider

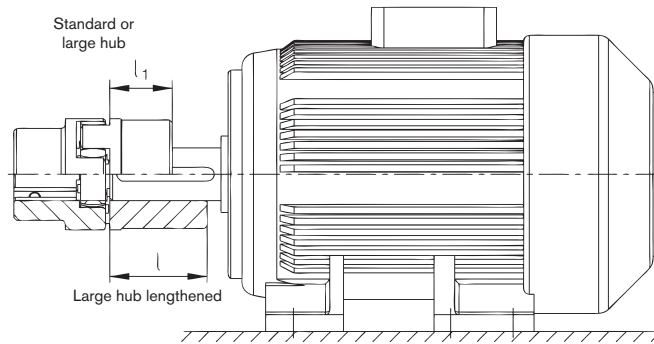


Shaft Ød<sub>W</sub> with feather key (acc. to DIN 6885 sheet 1) protruding into the spider Ød<sub>H</sub>

Assembly dimensions																	
ROTEX® size	14	19	24	28	38	42	48	55	65	75	90	100	110	125	140	160	180
Distance dimension E	13	16	18	20	24	26	28	30	35	40	45	50	55	60	65	75	85
Dimension d <sub>H</sub>	10	18	27	30	38	46	51	60	68	80	100	113	127	147	165	190	220
Dimension d <sub>W</sub> <sup>2)</sup>	7	12	20	22	28	36	40	48	55	65	80	95	100	120	135	160	185

<sup>2)</sup> If the shaft diameter is smaller than or equal to dimension d<sub>H</sub>, one shaft end or both shaft ends may protrude with the feather keyway into the spider.

## Selection of standard IEC motors



**ROTEX® couplings for standard IEC motors, protection class IP 54/IP 55 (spider 92 Shore A)**

Size	A. C. motor 50 Hz		Motor power n= 3000 rpm 2 poles		ROTEX® coupling size	Motor power n= 1500 rpm 4 poles		ROTEX® coupling size	Motor power n= 1000 rpm 6 poles		ROTEX® coupling size	Motor power n= 750 rpm 8 poles		ROTEX® coupling size
	Shaft end d x l [mm]		Power P [kW]	Torque T [Nm]		Power P [kW]	Torque T [Nm]		Power P [kW]	Torque T [Nm]		Power P [kW]	Torque T [Nm]	
	2 poles	4, 6, 8 poles												
56	9 x 20		0.09	0.32	9 <sup>1)</sup>	0.06	0.43	9 <sup>1)</sup>	0.037	0.43	9 <sup>1)</sup>			
			0.12	0.41			0.09		0.64			0.045	0.52	
63	11 x 23		0.18	0.62	14	0.12	0.88	14	0.06	0.7	14			
			0.25	0.86			0.18		1.3			0.09	1.1	
71	14 x 30		0.37	1.3	14	0.25	1.8	14	0.18	2	14	0.09	1.4	14
			0.55	1.9			0.37		2.5			0.25	2.8	
80	19 x 40		0.75	2.5	19	0.55	3.7	19	0.37	3.9	19	0.18	2.5	19
			1.1	3.7			0.75		5.1			0.55	5.8	
90S	24 x 50		1.5	5	19	1.1	7.5	19	0.75	8	19	0.37	5.3	19
90L			2.2	7.4			1.5		10			1.1	12	
100L	28 x 60		3	9.8	24	2.2	15	24	1.5	15	24	0.75	11	24
112M			4	13		3	20		2.2	22		1.1	16	
132S			5.5	18		4	27		2.2	22		1.5	21	
132M	38 x 80		7.5	25	28	5.5	36	28	3	30	28	2.2	30	28
						7.5	49		4	40		3	40	
									5.5	55				
160M	42 x 110		11	36	38	11	72	38	7.5	75	38	4	54	38
160L			15	49		15	98		11	109		5.5	74	
180M	48 x 110		18.5	60		18.5	121		11	109		7.5	100	
180L			22	71		22	144		15	148		11	145	
200L	55 x 110		30	97	42	30	196	42	18.5	181	42	15	198	42
			37	120					22	215				
225S	55 x 110					37	240	48				18.5	244	48
225M	60 x 140	60 x 140	45	145		45	292	55	30	293	55	22	290	55
250M	60 x 140	65 x 140	55	177	48	55	356	55	37	361	65 <sup>2)</sup>	30	392	65
280S			75	241		75	484	65 <sup>2)</sup>	45	438	65 <sup>2)</sup>	37	483	65 <sup>2)</sup>
280M	75 x 140		90	289	55	90	581	55	55	535		45	587	75
315S			110	353		110	707	75	75	727	75	55	712	75
315M	80 x 170		132	423	65	132	849		90	873		75	971	
	65 x 140	80 x 170	160	513		160	1030		110	1070		90	1170	
315L					200	641		200	1290	90	132	1280	90	110
					75				160	1550		132	1710	
315	85 x 170		250	802		250	1600		200	1930		160	2070	
			315	1010		315	2020		250	2410	100	200	2580	100
			355	1140		355	2280	100						
355	75 x 140	95 x 170	400	1280	90	400	2570		315	3040	110	250	3220	110
			500	1600		500	3210	110	400	3850		315	4060	125
			560	1790		560	3580		450	4330	125	355	4570	
400	80 x 170	110 x 210	630	2020		630	4030	125	500	4810		400	5150	140
			710	2270	100	710	4540		560	5390	140	450	5790	
			800	2560		800	5120	140	630	6060		500	6420	
450	90 x 170	120 x 210	900	2880		900	5760		710	6830		560	7190	160
			1000	3200	110	1000	6400	160	800	7690	160	630	8090	

The coupling selection is based on an ambient temperature up to +30 °C. The selection is based on a minimum safety factor of 2 versus the max. coupling torque ( $T_{K \max}$ ). A detailed selection is possible according to catalogue, page 14 et seqq. Drives with periodical torque curves must be selected according to DIN 740 part 2. If requested, KTR will perform the selection. Torque T = rated torque according to Siemens catalogue M 11 · 1994/95.

<sup>1)</sup> For dimensions see ROTEX® GS series

<sup>2)</sup> For motor hub made of steel see page 40







**Morskate®**



Any questions? Please contact us.

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