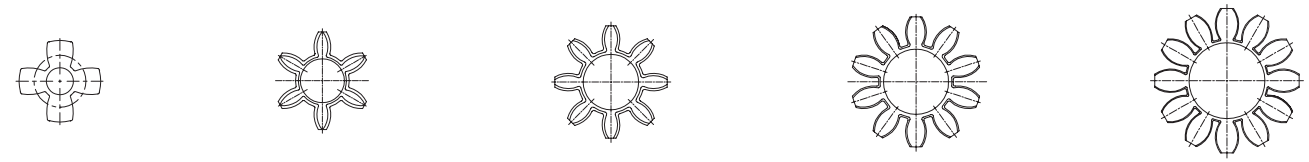
Properties of standard spiders

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 Short-term temperature	 -50 °C to +120 °C -50 °C to +150 °C	 -40 °C to +90 °C -50 °C to +120 °C
Features	– significantly higher service life expectancy – very good temperature resistance – improved damping of vibrations – good damping, average flexibility – suitable for all hub materials	– good damping, average flexibility – suitable for all hub materials

Spider type (Shore hardness)	98 Shore A (T-PUR®) [1]	98 Shore A [1]
	 T-PUR®	
Size	14 to 180	14 to 90
Material	T-PUR®	Polyurethane (PUR)
Permissible temperature range Permanent temperature Short-term temperature	 -50 °C to +120 °C -50 °C to +150 °C	 -30 °C to +90 °C -40 °C to +120 °C
Features	– significantly higher service life expectancy – very good temperature resistance – improved damping of vibrations – transmission of high torques with average damping – recommended hub material: steel, GJL and GJS	– transmission of high torques with average damping – recommended hub material: steel, GJL and GJS

Spider type (Shore hardness)	64 Shore D (T-PUR®)
	 T-PUR®
Size	14 to 180
Material	T-PUR®
Permissible temperature range Permanent temperature Short-term temperature	 -50 °C to +120 °C -50 °C to +150 °C
Features	– significantly higher service life expectancy – very good temperature resistance – improved damping of vibrations – transmission of very high torques with low damping – recommended hub material: steel and GJS

Technical data of standard spiders

92 Shore A spider made of T-PUR® and PUR

ROTEX® size	Max. speed v=35 m/s cast material	Max. speed v=40 m/s steel	Torsion angle ϕ with T_{KN}	Torsion angle ϕ with $T_{K\,max}$	Torque [Nm] DIN 740 [1] Rated T_{KN}	Torque [Nm] DIN 740 [1] Max. $T_{K\,max}$	Torque [Nm] DIN 740 [1] Vibratory T_{KW}	Torque [Nm] $T_{K\,max}$ [2]	Damping power P_{KW} [W] [3]	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad] 1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
14	22200	25400	6.4°	10°	7.5	15	2.0	22.5	–			0.38x10³	0.31x10³	0.24x10³	0.14x10³
19	16700	19000			10	20	2.6	30	4.8			1.28x10³	1.05x10³	0.8x10³	0.47x10³
24	12100	13800			35	70	9.1	105	6.6			4.86x10³	3.98x10³	3.01x10³	1.79x10³
28	10100	11500			95	190	25	285	8.4			10.9x10³	8.94x10³	6.76x10³	4.01x10³
38	8300	9500			190	380	49	570	10.2			21.05x10³	17.26x10³	13.05x10³	7.74x10³
42	7000	8000			265	530	69	795	12.0			23.74x10³	19.47x10³	14.72x10³	8.73x10³
48	6350	7250			310	620	81	930	13.8			36.7x10³	30.09x10³	22.75x10³	13.49x10³
55	5550	6350			410	820	107	1230	15.6			50.7x10³	41.59x10³	31.45x10³	18.64x10³
65	4950	5650	3.2°	5°	625	1250	163	1875	18.0	0.80	7.90	97.1x10³	79.65x10³	60.2x10³	35.7x10³
75	4150	4750			1280	2560	333	3840	21.6			113.3x10³	92.9x10³	70.3x10³	41.65x10³
90	3300	3800			2400	4800	624	7200	30.0			190.1x10³	155.9x10³	117.9x10³	69.9x10³
100	2950	3350			3300	6600	858	9900	36.0			253.1x10³	207.5x10³	156.9x10³	93x10³
110	2600	2950			4800	9600	1248	14400	42.0			415.5x10³	336.9x10³	257.6x10³	177.4x10³
125	2300	2600			6650	13300	1729	19950	48.0			647.7x10³	537.3x10³	412.2x10³	277.5x10³
140	2050	2350			8550	17100	2223	25650	54.6			813.4x10³	670.2x10³	519.7x10³	351.7x10³
160	1800	2050			12800	25600	3328	38400	75.0			1298x10³	1104x10³	901.9x10³	655.7x10³
180	1550	1800			18650	37300	4849	55950	78.0			2327x10³	1981x10³	1618x10³	1176x10³

98 Shore A spider made of T-PUR® and PUR

ROTEX® size	Max. speed v=35 m/s cast material	Max. speed v=40 m/s steel	Torsion angle ϕ with T_{KN}	Torsion angle ϕ with $T_{K\,max}$	Torque [Nm] DIN 740 [1] Rated T_{KN}	Torque [Nm] DIN 740 [1] Max. $T_{K\,max}$	Torque [Nm] DIN 740 [1] Vibratory T_{KW}	Torque [Nm] $T_{K\,max}$ [2]	Damping power P_{KW} [W] [3]	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad] 1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
14	22200	25400	6.4°	10°	12.5	25	3.3	37.5	–			0.56x10³	0.46x10³	0.35x10³	0.21x10³
19	16700	19000			17	34	4.4	51	4.8			2.92x10³	2.39x10³	1.81x10³	1.07x10³
24	12100	13800			60	120	16	180	6.6			9.93x10³	8.14x10³	6.16x10³	3.65x10³
28	10100	11500			160	320	42	480	8.4			26.77x10³	21.95x10³	16.6x10³	9.84x10³
38	8300	9500			325	650	85	975	10.2			48.57x10³	39.83x10³	30.11x10³	17.85x10³
42	7000	8000			450	900	117	1350	12.0			54.5x10³	44.69x10³	33.79x10³	20.03x10³
48	6350	7250			525	1050	137	1575	13.8			65.3x10³	53.54x10³	40.48x10³	24x10³
55	5550	6350			685	1370	178	2055	15.6			95x10³	77.9x10³	58.88x10³	34.9x10³
65	4950	5650	3.2°	5°	940	1880	244	2820	18.0	0.80	7.90	129.5x10³	106.2x10³	80.3x10³	47.6x10³
75	4150	4750			1920	3840	499	5760	21.6			197.5x10³	162x10³	122.5x10³	72.6x10³
90	3300	3800			3600	7200	936	10800	30.0			312.2x10³	256x10³	193.6x10³	114.7x10³
100	2950	3350			4950	9900	1287	14850	36.0			383.3x10³	314.3x10³	237.6x10³	140.9x10³
110	2600	2950			7200	14400	1872	21600	42.0			805.9x10³	663.1x10³	515.3x10³	360.5x10³
125	2300	2600			10000	20000	2600	30000	48.0			1207x10³	1003x10³	787.6x10³	552.5x10³
140	2050	2350			12800	25600	3328	38400	54.6			1549x10³	1283x10³	979.8x10³	674.1x10³
160	1800	2050			19200	38400	4992	57600	75.0			2481x10³	2137x10³	1781x10³	1275x10³
180	1550	1800			28000	56000	7280	84000	78.0			4220x10³	3635x10³	3031x10³	2170x10³

64 Shore D spider made of T-PUR® and PUR

ROTEX® size	Max. speed v=35 m/s cast material	Max. speed v=40 m/s steel	Torsion angle ϕ with T_{KN}	Torsion angle ϕ with $T_{K\,max}$	Torque [Nm] DIN 740 [1] Rated T_{KN}	Torque [Nm] DIN 740 [1] Max. $T_{K\,max}$	Torque [Nm] DIN 740 [1] Vibratory T_{KW}	Torque [Nm] $T_{K\,max}$ [2]	Damping power P_{KW} [W] [3]	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad] 1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
14	22200	25400	4.5°	7.0°	16	32	4.2	48	9.0			0.76x10³	0.62x10³	0.47x10³	0.28x10³
19	16700	19000			21	42	5.5	63	7.2			5.35x10³	4.39x10³	3.32x10³	1.97x10³
24	12100	13800			75	150	19.5	225	9.9			15.11x10³	12.39x10³	9.37x10³	5.55x10³
28	10100	11500			200	400	52	600	12.6			27.52x10³	22.57x10³	17.06x10³	10.12x10³
38	8300	9500			405	810	105	1215	15.3			70.15x10³	57.52x10³	43.49x10³	25.78x10³
42	7000	8000			560	1120	146	1680	18.0			79.9x10³	65.5x10³	49.52x10³	29.35x10³
48	6350	7250			655	1310	170	1965	20.7			95.5x10³	78.3x10³	59.22x10³	35.1x10³
55	5550	6350			825	1650	215	2475	23.4			107.9x10³	88.5x10³	66.9x10³	39.66x10³
65	4950	5650	2.5°	3.6°	1175	2350	306	3525	27.0	0.75	8.50	151.1x10³	123.9x10³	93.7x10³	55.53x10³
75	4150	4750			2400	4800	624	7200	32.4			248.2x10³	203.5x10³	153.9x10³	91.2x10³
90	3300	3800			4500	9000	1170	13500	45.0			674.5x10³	553.1x10³	418.2x10³	247.9x10³
100	2950	3350			6185	12370	1608	18555	54.0			861.2x10³	706.2x10³	533.9x10³	316.5x10³
110	2600	2950			9000	18000	2340	27000	63.0			1230x10³	1001x10³	773.1x10³	531.4x10³
125	2300	2600			12500	25000	3250	37500	72.0			1749x10³	1436x10³	1149x10³	832.1x10³
140	2050	2350			16000	32000	4160	48000	81.9			2312x10³	1929x10³	1521x10³	1082x10³
160	1800	2050			24000	48000	6240	72000	112.5			3415x10³	2961x10³	2471x10³	1830x10³
180	1550	1800			35000	70000	9100	105000	117.0			5670x10³	4917x10³	4103x10³	3038x10³

[1] see catalogue page 15
[2] ≤ 1000 load cycles
[3] with +30 °C

Temperature factor S_t

	-50 °C	-30 °C +30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C
T-PUR®	1.0	1.0	1.1	1.2	1.3	1.45	1.6	1.8	2.1	2.5	3.0
PUR	–	1.0	1.2	1.3	1.4	1.55	1.8	2.2	–	–	–

Unless the Shore hardness of spider is not explicitly specified in your order, we will supply spiders with Shore hardness 92 Shore A T-PUR®.
For circumferential speeds exceeding v = 30 m/s dynamic balancing is required. For circumferential speeds exceeding v = 35 m/s only steel or nodular iron.

Technical data and properties of special spiders

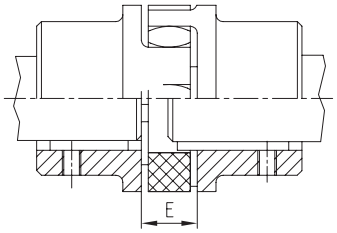
		
Description	PA	PEEK
Material	Polyamide	Polyetheretherketone
Permissible temperature range Permanent temperature Short-term temperature	-20 °C to +130 °C [1] -30 °C to +150 °C [1]	up to +180 °C (ATEX up to +160 °C) up to +250 °C
Features	– small twisting angle and high torsion spring stiffness – transmission of very high torques with very low damping – good resistance to chemicals [1] – recommended hub material: steel – high restoring forces with displacements	– small twisting angle and high torsion spring stiffness – transmission of very high torques with very low damping – highly temperature-resistant, resistant to hydrolysis – good resistance to chemicals – recommended hub material: steel – high restoring forces with displacements

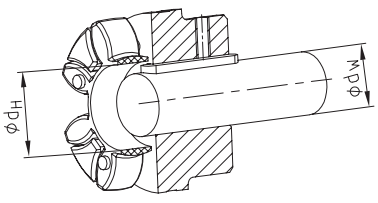
[1] different properties depending on compound

Torques			
ROTEX® size	PA, PEEK		
	T_{KN} [Nm]	$T_{K\,max}$ [Nm]	T_{KW} [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_t												
	-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



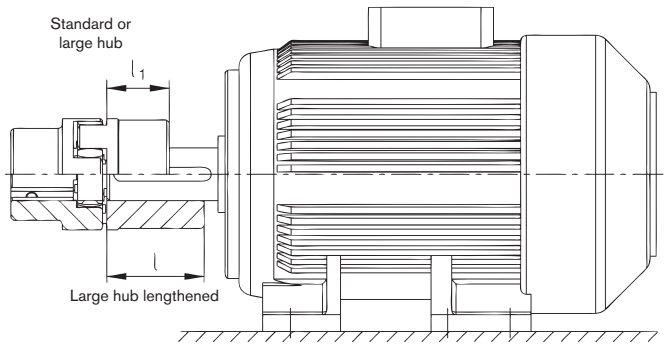


Shaft $Ød_W$ with feather key (acc. to DIN 6885 sheet 1) protruding into the spider $Ød_H$

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_H	10	18	27	30	38	46	51	60	68	80	100	113	127	147	165	190	220
Dimension d_W [2]	7	12	20	22	28	36	40	48	55	65	80	95	100	120	135	160	185

[2] If the shaft diameter is smaller than or equal to dimension d_H, 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)

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
Size	Shaft end dxl [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 [1]	0.06	0.43	9 [1]	0.037	0.43	9 [1]			
			0.12	0.41		0.09	0.64		0.045	0.52				
63	11 x 23		0.18	0.62		0.12	0.88		0.06	0.7				
			0.25	0.86	14	0.18	1.3	14	0.09	1.1	14			
71	14 x 30		0.37	1.3		0.25	1.8		0.18	2		0.09	1.4	14
			0.55	1.9		0.37	2.5		0.25	2.8		0.12	1.8	
80	19 x 40		0.75	2.5		0.55	3.7		0.37	3.9		0.18	2.5	
			1.1	3.7	19	0.75	5.1	19	0.55	5.8	19	0.25	3.5	19
90S	24 x 50		1.5	5		1.1	7.5		0.75	8		0.37	5.3	
90L			2.2	7.4		1.5	10		1.1	12		0.55	7.9	
100L	28 x 60		3	9.8	24	2.2	15	24	1.5	15	24	0.75	11	24
						3	20					1.1	16	
112M			4	13		4	27		2.2	22		1.5	21	
132S	38 x 80		5.5	18		5.5	36		3	30		2.2	30	
			7.5	25	28			28			28			28
132M						7.5	49		4	40		3	40	
									5.5	55				
160M	42 x 110		11	36		11	72		7.5	75		4	54	
			15	49	38			38			38	5.5	74	38
160L			18.5	60		15	98		11	109		7.5	100	
180M	48 x 110		22	71		18.5	121							
180L						22	144	42	15	148	42	11	145	42
200L	55 x 110		30	97	42	30	196		18.5	181		15	198	
			37	120					22	215				
225S	55 x 110	60 x 140				37	240	48				18.5	244	48
225M			45	145		45	292	55	30	293	55	22	290	55
250M	60 x 140	65 x 140	55	177	48	55	356		37	361	65 [2]	30	392	65
280S		75 x 140	75	241	55	75	484	65 [2]	45	438		37	483	65 [2]
280M			90	289		90	581		55	535		45	587	75
315S		80 x 170	110	353		110	707	75	75	727	75	55	712	
315M	65 x 140		132	423	65	132	849		90	873		75	971	
			160	513		160	1030		110	1070		90	1170	90
315L			200	641		200	1290	90	132	1280	90	110	1420	
		85 x 170			75				160	1550		132	1710	
315			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	125	315	4060	125
			560	1790		560	3580	125	450	4330		355	4570	
400	80 x 170	110 x 210	630	2020		630	4030		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	110	900	5760		710	6830	160	560	7190	160
			1000	3200		1000	6400	160	800	7690		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.

[1] For dimensions see ROTEX® GS series

[2] For motor hub made of steel see page 40

Cylindrical bores and spline bores

Stock programme of cylindrical finish bores [mm] H7 feather keyway acc. to DIN 6885 sheet 1 [JS9] and setscrew

ROTEX® size	Material	Unbored	Ø6	Ø8	Ø9	Ø10	Ø11	Ø12	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55	Ø60	Ø65	Ø70	Ø75	Ø80	Ø85	Ø90	Ø100
14	Sint	●		●		●	●	●	●	●	●																									
	Al-H	●	●	●	●	●	●	●	●	●	●																									
19	Sint	●							●		●			●	●	●	●																			
	Al-D	●		●		●	●	●	●	●	●	●	●	●	●		●																			
	St	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																		
24	Sint	●											●		●		●	●	●																	
	Al-D	●				●		●	●	●	●	●	●	●	●	●	●	●	●		●															
	St	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●															
28	Al-D	●							●		●		●	●	●	●	●	●	●	●	●	●	●													
	St	●							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●												
38	GJL	●											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	St	●													●		●	●	●	●	●	●	●	●	●	●	●									
42	GJL	●													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
	St	●																●	●	●	●	●	●	●	●	●	●	●	●							
48	GJL	●																●	●	●	●	●	●	●	●	●	●	●	●	●						
	St	●																		●	●	●	●	●	●	●	●	●	●	●						
55	GJL	●																●		●	●	●	●	●	●	●	●	●	●	●	●	●				
	St	●																			●	●	●	●		●	●	●	●	●	●	●	●				
65	GJL	●																			●	●	●	●	●	●	●	●	●	●	●	●	●				
	St	●																						●	●	●	●	●	●	●	●	●	●	●			
75	GJL	●																					●	●	●	●	●	●	●	●	●	●	●	●			
	St	●																						●		●	●	●	●	●	●	●	●	●	●		
90	GJL	●																										●	●	●	●	●	●	●	●	●	
	St	●																											●		●	●	●		●	●

Basic programme of SAE involute splines

Spline code	Size	Pitch circle	Pitch	No. of teeth	Angle	Spline code	Size	Pitch circle	Pitch	No. of teeth	Angle
PH-S	5/8"	14.28	16/32	9	30°	**PS-S**	1 1/2"	35.98	12/24	17	30°
PI-S	3/4"	17.46	16/32	11	30°	**PD-S**	1 1/2"	36.51	16/32	23	30°
PB-S	7/8"	20.63	16/32	13	30°	**PE-S**	1 3/4"	42.86	16/32	27	30°
PB-BS	1"	23.81	16/32	15	30°	**PK-S**	1 3/4"	41.275	8/16	13	30°
PJ	1 1/8"	26.98	16/32	17	30°	**PT-C** [1]	2"	47.625	8/16	15	30°
PC-S	1 1/4"	29.63	12/24	14	30°	**PQ-C** [1]	2 1/4"	53.975	8/16	17	30°
PA-S	1 3/8"	33.33	16/32	21	30°						

Basic programme of spline bores acc. to DIN 5482

Size	Pitch circle	Module	No. of teeth	Profile correction	Size	Pitch circle	Module	No. of teeth	Profile correction
A 17 x 14	14.40	1.6	9	+0.600 [2]	**A 35 x 31**	31.50	1.75	18	+0.676
A 20 x 17	19.20	1.6	12	-0.2	**A 40 x 36**	38.00	1.9	20	+0.049
A 25 x 22	22.40	1.6	14	+0.550	**A 45 x 41**	44.00	2	22	+0.181
A 28 x 25	26.25	1.75	15	+0.302	**A 50 x 45**	48.00	2	24	+0.181
A 30 x 27	28.00	1.75	16	+0.327					

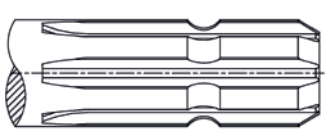
Basic programme of spline bores acc. to DIN 5480

Spline code	Pitch circle	Module	No. of teeth	Spline code	Pitch circle	Module	No. of teeth
20 x 1 x 18 x 7H	18.0	1	18	**40 x 2 x 18 x 8H**	36.0	2	18
20 x 1.25 x 14 x 7H	17.5	1.25	14	**45 x 2 x 21 x 7H**	41.0	2	21
25 x 1.25 x 18 x 7H	22.5	1.25	18	**48 x 2 x 22 x 9H**	44.0	2	22
28 x 1.25 x 21 x 7H	26.25	1.25	21	**50 x 2 x 24 x 8H**	48.0	2	24
30 x 2 x 14 x 7H	26.0	2	14	**60 x 2 x 28 x 8H**	56.0	2	28
32 x 2 x 14 x 8H	28.0	2	14	**75 x 3 x 24 x 7H**	72.0	3	24
35 x 2 x 16 x 8H	32.0	2	16	**80 x 3 x 25 x 8H**	75.0	3	25

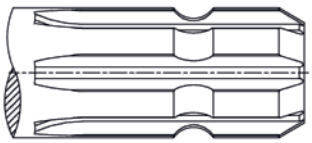
Basic programme of spline bores acc. to DIN 9611 - ISO 500 (p.t.o. shaft connection)

Size	Width of keyway	No. of teeth	Tip circle	Root circle
1 3/8"	8.69	6	34.93	29.65
1 3/8"	–	21	34.95	34.80 [3]
1 3/4"	11.07	6	44.45	37.74
1 3/4"	–	20	45.20	40.20

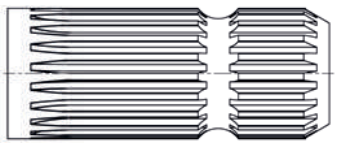
1 3/8", 6 teeth



1 3/4", 6 teeth



1 3/4 ", 20 teeth



Spline clamping hubs are often adapted to the shafts of hydraulic pumps/hydraulic motor shafts. Please contact us for the respective hub length of the spline code!

[1] For clamping hubs only, with plug-in hubs use code PT or PQ.

[2] Profile correction different from DIN

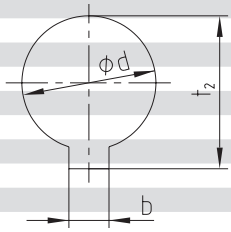
[3] Similar to code PA-S

Inch bores and taper bores

Stock programme of inch bores

Bore and keyway acc. to ANSI/AGMA 9002-C14
Bore (clearance fit) Keyway (commercial class fit)

KTR code	Ø bore ["]	Width of keyway ["]	Ø bore [mm]	Width of keyway [mm]	Keyway depth/ Tolerance +0.381 [mm]	Size 19	24	28	38	42	48	55	65	75	90
						Steel			Cast iron (GJL)						
Tb	3/8	1/8	9.525 $^{+0.0254}$	3.175 $^{+0.051}$	10.972										
DNB	7/16	3/32	11.112 $^{+0.0254}$	2.382 $^{+0.051}$	12.293										
T	1/2	3/16	12.7 $^{+0.0254}$	4.762 $^{+0.051}$	14.757										
Ta	1/2	1/8	12.7 $^{+0.0254}$	3.175 $^{+0.051}$	14.224	●	●								
DNC	17/32	1/8	13.495 $^{+0.0254}$	3.175 $^{+0.051}$	15.011										
Do	9/16	1/8	14.287 $^{+0.0254}$	3.175 $^{+0.051}$	15.824										
E	5/8	1/8	15.875 $^{+0.0254}$	3.175 $^{+0.051}$	17.424										
Es	5/8	5/32	15.875 $^{+0.0254}$	3.968 $^{+0.051}$	17.729	●	●	●							
Ed	5/8	3/16	15.875 $^{+0.0254}$	4.762 $^{+0.051}$	18.008	●	●								
DNH	11/16	3/16	17.462 $^{+0.0254}$	4.762 $^{+0.051}$	19.634										
Ad	3/4	1/8	19.05 $^{+0.0254}$	3.175 $^{+0.051}$	20.624										
A	3/4	3/16	19.05 $^{+0.0254}$	4.762 $^{+0.051}$	21.259	●	●	●	●						
G	7/8	3/16	22.225 $^{+0.0254}$	4.762 $^{+0.051}$	24.485	●	●	●	●	●					
F	7/8	1/4	22.225 $^{+0.0254}$	6.35 $^{+0.051}$	25.069		●	●	●	●					
Gf	15/16	1/4	23.812 $^{+0.0254}$	6.35 $^{+0.051}$	26.695										
H	1	3/16	25.4 $^{+0.0254}$	4.762 $^{+0.051}$	27.686										
Hs	1	1/4	25.4 $^{+0.0254}$	6.35 $^{+0.051}$	28.295		●	●	●	●					
R	1 1/16	3/16	26.987 $^{+0.0254}$	4.762 $^{+0.051}$	29.286										
Sb	1 1/8	1/4	28.575 $^{+0.0254}$	6.35 $^{+0.051}$	31.521		●	●	●	●					
Sd	1 1/8	5/16	28.575 $^{+0.0254}$	7.937 $^{+0.051}$	32.105										
Js	1 1/4	1/4	31.75 $^{+0.0254}$	6.35 $^{+0.051}$	34.721				●						
K	1 1/4	5/16	31.75 $^{+0.0254}$	7.937 $^{+0.051}$	35.331			●	●	●	●	●	●		
Ma	1 3/8	5/16	34.925 $^{+0.0254}$	7.937 $^{+0.051}$	38.557			●	●						
RH1	1 3/8	3/8	34.925 $^{+0.0254}$	9.525 $^{+0.063}$	39.141										
Cb	1 7/16	3/8	36.512 $^{+0.0254}$	9.525 $^{+0.063}$	40.767										
Ca	1 1/2	5/16	38.1 $^{+0.0254}$	7.937 $^{+0.051}$	41.783										
C	1 1/2	3/8	38.1 $^{+0.0254}$	9.525 $^{+0.0635}$	42.392				●	●	●	●	●	●	
Nb	1 5/8	3/8	41.275 $^{+0.0254}$	9.525 $^{+0.0635}$	45.618				●	●					
Ls	1 3/4	3/8	44.45 $^{+0.0254}$	9.525 $^{+0.0635}$	48.818										
L	1 3/4	7/16	44.45 $^{+0.0254}$	11.112 $^{+0.0635}$	49.428										
Lu	1 7/8	1/2	47.625 $^{+0.0254}$	12.7 $^{+0.0635}$	53.238					●					
Da	1 15/16	1/2	49.212 $^{+0.0254}$	12.7 $^{+0.0635}$	54.864										
Ds	2	1/2	50.8 $^{+0.0254}$	12.7 $^{+0.0635}$	56.464										
Pa	2 1/8	1/2	53.975 $^{+0.0381}$	12.7 $^{+0.063}$	59.69					●					
U	2 1/4	1/2	57.15 $^{+0.0381}$	12.7 $^{+0.063}$	62.915										
Ub	2 3/8	5/8	60.325 $^{+0.0381}$	15.875 $^{+0.076}$	67.335										
Wd	3 3/8	7/8	85.725 $^{+0.0381}$	22.225 $^{+0.076}$	95.504										
Wf	3 5/8	7/8	92.075 $^{+0.0381}$	22.225 $^{+0.076}$	101.955										



Basic programme taper 1:8

Code	$d^{+0.05}$	(d_2)	b^{JS9}	$t_2{}^{+0.1}$	l_K
N/1	9.7	7.575	$2.4^{+0.05}$	10.85	17.0
N/1c	11.6	9.5375	3^{JS9}	12.90	16.5
N/1e	13.0	10.375	$2.4^{+0.05}$	13.80	21.0
N/1d	14.0	11.813	3^{JS9}	15.50	17.5
N/1b	14.3	11.8625	$3.2^{+0.05}$	15.65	19.5
N/2	17.287	14.287	$3.2^{+0.05}$	18.24	24.0
N/2a	17.287	14.287	4^{JS9}	18.94	24.0
N/2b	17.287	14.287	3^{JS9}	18.34	24.0
N/3	22.002	18.502	4^{JS9}	23.40	28.0
N/4	25.463	20.963	$4.78^{+0.05}$	27.83	36.0
N/4b	25.463	20.963	5^{JS9}	28.23	36.0
N/4a	27.0	22.9375	$4.78^{+0.05}$	28.80	32.5
N/4g	28.45	23.6375	6^{JS9}	29.32	38.5
N/5	33.176	27.676	$6.38^{+0.05}$	35.39	44.0
N/5a	33.176	27.676	7^{JS9}	35.39	44.0

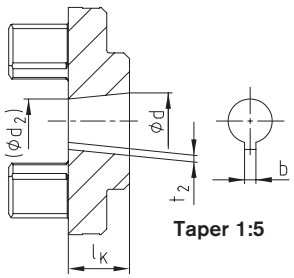
With code N/6 and N/6a keyway in parallel with taper.

Basic programme of taper 1:10

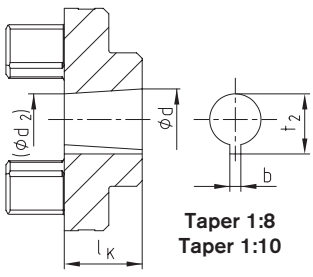
Code	$d^{+0.05}$	(d_2)	b^{JS9}	$t_2{}^{+0.1}$	l_K
CX	19.95	16.75	5^{JS9}	22.08	32
DX	24.95	20.45	6^{JS9}	26.68	45
EX	29.75	24.75	8^{JS9}	31.88	50

Basic programme taper 1:5

Code	$d^{+0.05}$	(d_2)	b_{JS9}	$t_2{}^{+0.1}$	l_K
A-10	9.85	7.55	2^{JS9}	1.0	11.5
B-17	16.85	13.15	3^{JS9}	1.8	18.5
C-20	19.85	15.55	4^{JS9}	2.2	21.5
Cs-22	21.95	17.65	3^{JS9}	1.8	21.5
D-25	24.85	19.55	5^{JS9}	2.9	26.5
E-30	29.85	23.55	6^{JS9}	2.6	31.5
F-35	34.85	27.55	6^{JS9}	2.6	36.5
G-40	39.85	32.85	6^{JS9}	2.6	35.0



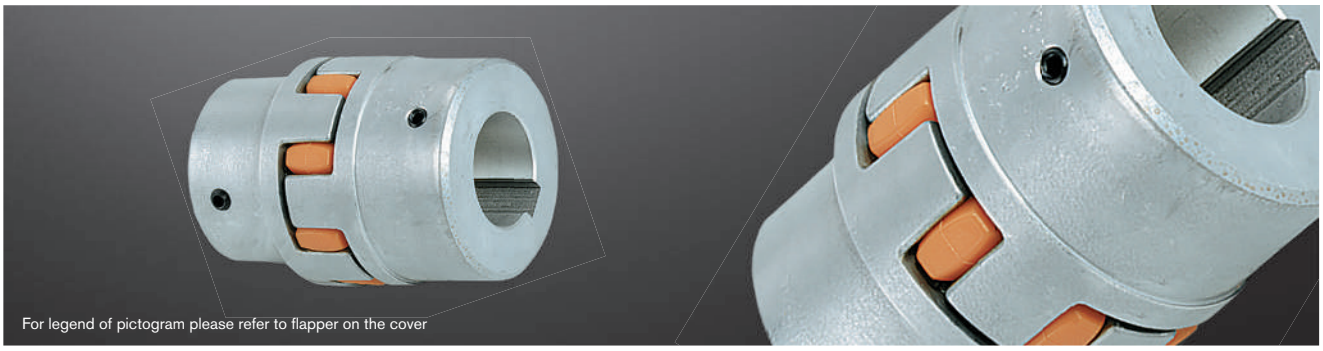
Taper 1:5

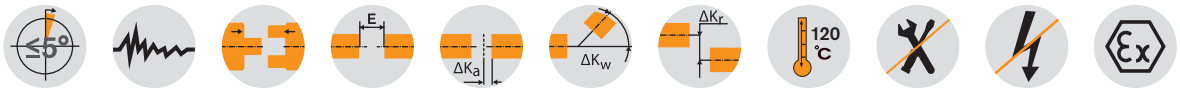


Taper 1:8
Taper 1:10

ROTEX® Standard
Flexible jaw couplings

Material aluminium + cast + powder metal





ROTEX® Powder metal steel (Sint)																				
Size	Compo-nent	Spider [1] (component 2) Rated torque [Nm]			Finish bore d	Dimensions [mm]														
						General											Setscrew			
		92 ShA	98 ShA	64 ShD		L	l_1, l_2	E	b	s	D_H	d_H	D	N	G	t	T_A [Nm]		
14	1a	7.5	12.5	—	0-16	35	11	13	10	1.5	30	10	30	–	M4	5	1.5			
19	1a	10	17	—	0-24	66	25	16	12	2.0	40	18	40	–	M5	10	2			
24	1a	35	60	—	0-28	78	30	18	14	2.0	56	27	56	–	M5	10	2			
ROTEX® Aluminium diecast (Al-D)																				
19	1	10	17	—	6-19	66	25	16	12	2	41	18	32	20	M5	10	2			
	1a				19-24								41							
24	1	35	60	—	9-24	78	30	18	14	2	56	27	40	24	M5	10	2			
	1a				22-28								56							
28	1	95	160	—	10-28	90	35	20	15	2.5	66	30	48	28	M8	15	10			
	1a				28-38								66							
ROTEX® Aluminium (Al-H)																				
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).

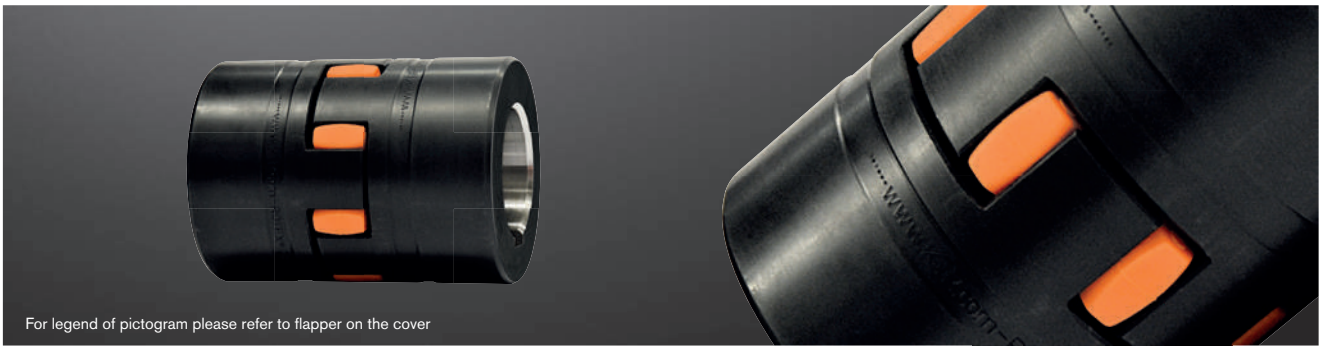
ROTEX® Cast iron (GJL)																				
38	1	190	325	405	12-40	114	45	24	18	3	80	38	66	37	M8	15	10			
	1a				38-48								78							
	1b				12-48	164	70							62						
42	1	265	450	560	14-45	126	50	26	20	3	95	46	75	40	M8	20	10			
	1a				42-55								94							
	1b				14-55	176	75							65						
48	1	310	525	655	15-52	140	56	28	21	3.5	105	51	85	45	M8	20	10			
	1a				48-62								104							
	1b				15-62	188	80							69						
55	1	410	685	825	20-60	160	65	30	22	4	120	60	98	52	M10	20	17			
	1a				55-74								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)																				
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.

[1] Maximum torque of the coupling $T_{K\ max}$ = rated torque of the coupling $T_{K\ rated}$ x 2. For selection see 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

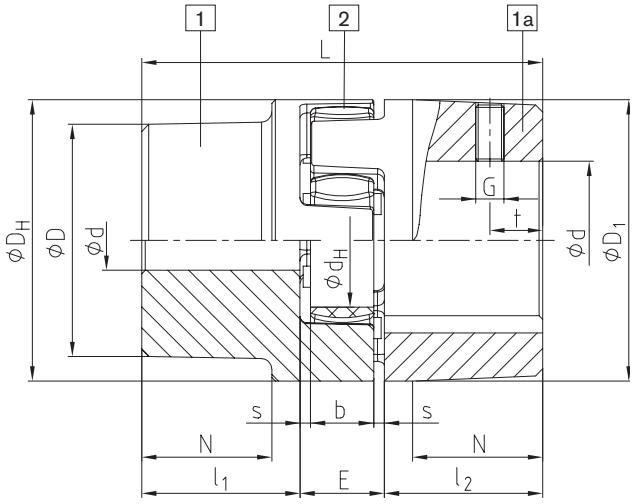


ROTEX® with CDP coating [1)]

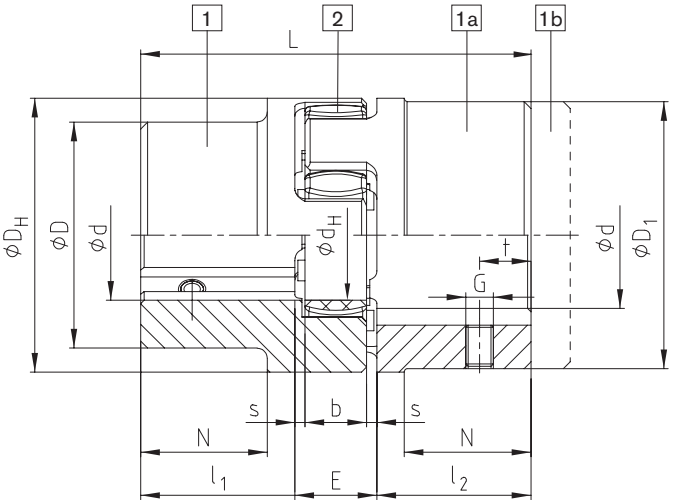
Size	Compo-nent	Spider (component 2) Rated torque [Nm]			Finish bore	Dimensions [mm]											
						General									Setscrew		
		92 ShA	98 ShA	64 ShD	d (min. - max.)	L	l_1, l_2	E	b	s	D_H	d_H	D	N	G	t	T_A [Nm]
19	1a	10	17	21	0-25	66	25	16	12	2	40	18	40	–	M5	10	2
24	1a	35	60	75	0-35	78	30	18	14	2	55	27	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

[1)] Corrosion protection class acc. to DIN EN ISO 12944: Min. C4, heavy-long

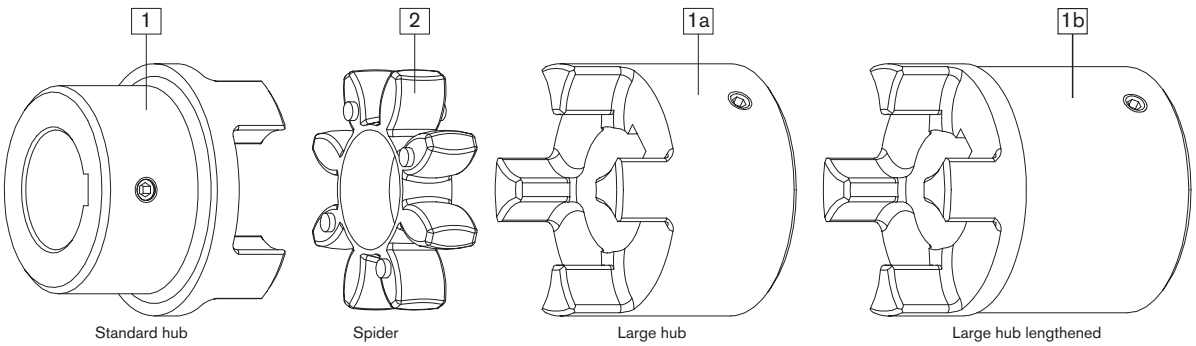
Components



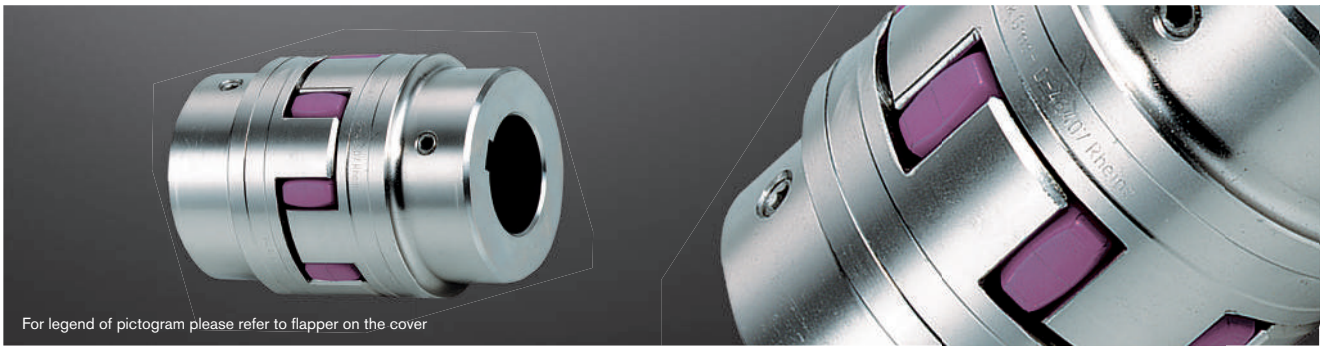
AI-D (thread opposite the keyway)

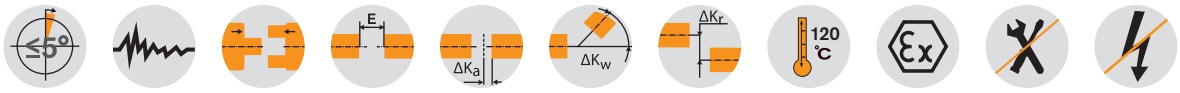


GJL / GJS (thread on the keyway)



Material steel/stainless steel





ROTEX® Steel (St)

Size	Compo-nent	Spider [1] (component 2) Rated torque [Nm]			Finish bore	Dimensions [mm]											
						General									Setscrew		
		92 ShA	98 ShA	64 ShD	d (min. - max.)	L	l_1, l_2	E	b	s	D_H	d_H	D	N	G	t	T_A [Nm]
14	1a	7.5	12.5	16	0-16	35	11	13	10	1.5	30	10	30	—	M4	5	1.5
	1b					50	18.5										
19	1a	10	17	21	0-25	66	25	16	12	2	40	18	40	—	M5	10	2
	1b					90	37										
24	1a	35	60	75	0-35	78	30	18	14	2	55	27	55	—	M5	10	2
	1b					118	50										
28	1a	95	160	200	0-40	90	35	20	15	2.5	65	30	65	—	M8	15	10
	1b					140	60										
38	1	190	325	405	0-48	114	45	24	18	3	80	38	70	27	M8	15	10
	1b					164	70						80	—			
42	1	265	450	560	0-55	126	50	26	20	3	95	46	85	28	M8	20	10
	1b					176	75						95	—			
48	1	310	525	655	0-62	140	56	28	21	3.5	105	51	95	32	M8	20	10
	1b					188	80						105	—			
55	1	410	685	825	0-75	160	65	30	22	4	120	60	110	37	M10	20	17
	1b					210	90						120	—			
65	1	625	940	1175	0-80	185	75	35	26	4.5	135	68	115	47	M10	20	17
	1b					235	100						135	—			
75	1	1280	1920	2400	0-95	210	85	40	30	5	160	80	135	53	M10	25	17
	1b					260	110						160	—			
90	1	2400	3600	4500	0-110	245	100	45	34	5.5	200	100	160	62	M12	30	40
	1b					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.
[1] Maximum torque of the coupling $T_{K\,max}$ = rated torque of the coupling $T_{K\,rated}$ x 2. For selection see page 14 et seqq.

ROTEX® Stainless steel

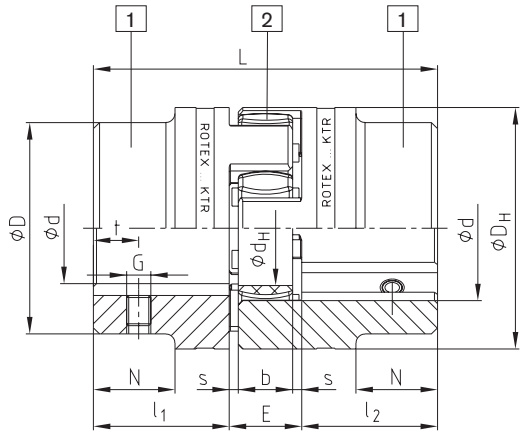
Size	Material	Spider (component 2) Rated torque [Nm]			Finish bore d (min. - max.)	Dimensions [mm]											
						General									Setscrew		
		92 ShA	98 ShA	64 ShD		L	l_1, l_2	E	b	s	D_H	d_H	D	N	G	t	T_A [Nm]
19	1.4305	10	17	21	0-25	66	25	16	12	2	40	18	40	-	M5	10	2
24	1.4571	35	60	75	0-35	78	30	18	14	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

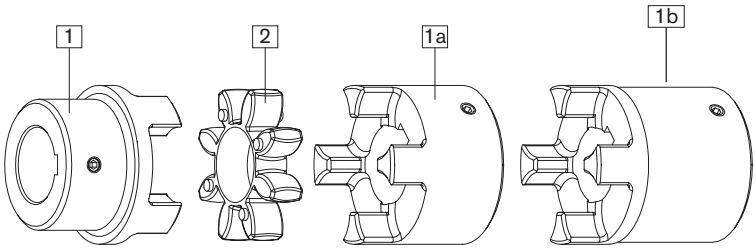
Ordering example:

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

DIN EN 10204 - 3.1 and 3.2 material test certificate

Components





Standard hub | Spider | Large hub | Large hub lengthened

Steel (thread on the keyway)

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

[1] S355 suitable for feather key connections, 42CrMoS4+QT for oil press-fits
[2] Notch impact strength with -40 °C
[3] 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	Compo-nent	Material	Spider (component 2) Rated torque [Nm] 92 ShA	Dimensions [mm] Finish bore d (min. - max.)	L	l_1, l_2	E	D_H
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 40