

ROTEX®

Flexible jaw couplings

Technical data of standard spiders

92 Shore-A spider made of T-PUR® and PUR														
ROTEX® size	Max. speed		Twist angle ϕ with		Torque [Nm]			Damping power PKW [W] 1)	Relative damping ψ	Resonance factor VR	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s casted material	V=40 m/s steel	TKN	TK max	Rated (TKN)	Max (TK max)	Vibratory (TKW)				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	—			0,38x10³	0,31x10³	0,24x10³	0,14x10³
19	16700	19000			10	20	2,6	4,8			1,28x10³	1,05x10³	0,80x10³	0,47x10³
24	12100	13800			35	70	9,1	6,6			4,86x10³	3,98x10³	3,01x10³	1,79x10³
28	10100	11500			95	190	25	8,4			10,90x10³	8,94x10³	6,76x10³	4,01x10³
38	8300	9500			190	380	49	10,2			21,05x10³	17,26x10³	13,05x10³	7,74x10³
42	7000	8000			265	530	69	12,0			23,74x10³	19,47x10³	14,72x10³	8,73x10³
48	6350	7250			310	620	81	13,8			36,70x10³	30,09x10³	22,75x10³	13,49x10³
55	5550	6350			410	820	107	15,6			50,72x10³	41,59x10³	31,45x10³	18,64x10³
65	4950	5650	3,2°	5°	625	1250	163	18,0	0,80	7,90	97,13x10³	79,65x10³	60,22x10³	35,70x10³
75	4150	4750			1280	2560	333	21,6			113,32x10³	92,92x10³	70,26x10³	41,65x10³
90	3300	3800			2400	4800	624	30,0			190,09x10³	155,87x10³	117,86x10³	69,86x10³
100	2950	3350			3300	6600	858	36,0			253,08x10³	207,53x10³	156,91x10³	93,01x10³
110	2600	2950			4800	9600	1248	42,0			311,61x10³	255,52x10³	193,20x10³	114,52x10³
125	2300	2600			6650	13300	1729	48,0			474,86x10³	389,39x10³	294,41x10³	174,51x10³
140	2050	2350			8550	17100	2223	54,6			660,49x10³	541,60x10³	409,50x10³	242,73x10³
160	1800	2050			12800	25600	3328	75,0			890,36x10³	730,10x10³	552,03x10³	327,21x10³
180	1550	1800			18650	37300	4849	78,0			2568,56x10³	2106,22x10³	1592,51x10³	943,95x10³
98 Shore-A spider made of T-PUR® and PUR														
ROTEX® size	Max. speed		Twist angle ϕ with		Torque [Nm]			Damping power PKW [W] 1)	Relative damping ψ	Resonance factor VR	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s casted material	V=40 m/s steel	TKN	TK max	Rated (TKN)	Max (TK max)	Vibratory (TKW)				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	—			0,56x10³	0,46x10³	0,35x10³	0,21x10³
19	16700	19000			17	34	4,4	4,8			2,92x10³	2,39x10³	1,81x10³	1,07x10³
24	12100	13800			60	120	16	6,6			9,93x10³	8,14x10³	6,16x10³	3,65x10³
28	10100	11500			160	320	42	8,4			26,77x10³	21,95x10³	16,60x10³	9,84x10³
38	8300	9500			325	650	85	10,2			48,57x10³	39,83x10³	30,11x10³	17,85x10³
42	7000	8000			450	900	117	12,0			54,50x10³	44,69x10³	33,79x10³	20,03x10³
48	6350	7250			525	1050	137	13,8			65,29x10³	53,54x10³	40,48x10³	24,00x10³
55	5550	6350			685	1370	178	15,6			94,97x10³	77,88x10³	58,88x10³	34,90x10³
65	4950	5650	3,2°	5°	940	1880	244	18,0	0,80	7,90	129,51x10³	106,20x10³	80,30x10³	47,60x10³
75	4150	4750			1920	3840	499	21,6			197,50x10³	161,95x10³	122,45x10³	72,58x10³
90	3300	3800			3600	7200	936	30,0			312,20x10³	256,00x10³	193,56x10³	114,73x10³
100	2950	3350			4950	9900	1287	36,0			383,26x10³	314,27x10³	237,62x10³	140,85x10³
110	2600	2950			7200	14400	1872	42,0			690,06x10³	565,85x10³	427,84x10³	253,60x10³
125	2300	2600			10000	20000	2600	48,0			1343,64x10³	1101,79x10³	833,06x10³	493,79x10³
140	2050	2350			12800	25600	3328	54,6			1424,58x10³	1168,16x10³	883,24x10³	523,54x10³
160	1800	2050			19200	38400	4992	75,0			2482,23x10³	2035,43x10³	1538,98x10³	912,22x10³
180	1550	1800			28000	56000	7280	78,0			3561,45x10³	2920,40x10³	2208,10x10³	1308,84x10³
64 Spider 64 Shore-D made of T-PUR® and PUR														
ROTEX® size	Max. speed		Twist angle ϕ with		Torque [Nm]			Damping power PKW [W] 1)	Relative damping ψ	Resonance factor VR	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s casted material	V=40 m/s steel	TKN	TK max	Rated (TKN)	Max (TK max)	Vibratory (TKW)				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	9,0			0,76x10³	0,62x10³	0,47x10³	0,28x10³
19	16700	19000			21	42	5,5	7,2			5,35x10³	4,39x10³	3,32x10³	1,97x10³
24	12100	13800			75	150	19,5	9,9			15,11x10³	12,39x10³	9,37x10³	5,55x10³
28	10100	11500			200	400	52	12,6			27,52x10³	22,57x10³	17,06x10³	10,12x10³
38	8300	9500			405	810	105	15,3			70,15x10³	57,52x10³	43,49x10³	25,78x10³
42	7000	8000			560	1120	146	18,0			79,86x10³	65,49x10³	49,52x10³	29,35x10³
48	6350	7250			655	1310	170	20,7			95,51x10³	78,32x10³	59,22x10³	35,10x10³
55	5550	6350			825	1650	215	23,4			107,92x10³	88,50x10³	66,91x10³	39,66x10³
65	4950	5650	2,5°	3,6°	1175	2350	306	27,0	0,75	8,50	151,09x10³	123,90x10³	93,68x10³	55,53x10³
75	4150	4750			2400	4800	624	32,4			248,22x10³	203,54x10³	153,90x10³	91,22x10³
90	3300	3800			4500	9000	1170	45,0			674,52x10³	553,11x10³	418,20x10³	247,89x10³
100	2950	3350			6185	12370	1608	54,0			861,17x10³	706,16x10³	533,93x10³	316,48x10³
110	2600	2950			9000	18000	2340	63,0			1138,59x10³	933,64x10³	705,92x10³	418,43x10³
125	2300	2600			12500	25000	3250	72,0			1435,39x10³	1177,01x10³	899,93x10³	527,50x10³
140	2050	2350			16000	32000	4160	81,9			1780,73x10³	1460,20x10³	1104,05x10³	654,42x10³
160	1800	2050			24000	48000	6240	112,5			3075,80x10³	2522,16x10³	1907,00x10³	1130,36x10³
180	1550	1800			35000	70000	9100	117,0			6011,30x10³	4929,27x10³	3727,01x10³	2209,15x10³
Temperature factor St														
	-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 explicitly specified in your order, we will supply spiders with Shore hardness 92 Sh-A T-PUR®.
 For circumferential speeds exceeding V = 30 m/s, dyn. balancing is necessary For circumferential speeds exceeding V = 35 m/s only steel or nodular iron.
 1) With +30 °C

ROTEX®

Flexible jaw couplings

Technical data and properties of special spiders

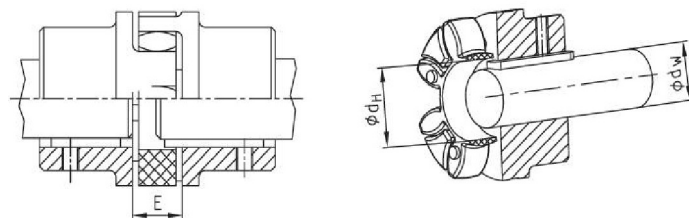
		
Spider type	PA	PEEK
Material	Polyamide	Polyetheretherketone
Permissible temperature range Permanent temperature Short-term temperature	-20 °C to +130 °C 1) -30 °C to +150 °C 1)	up to +180 °C (ATEX to +160 °C) up to +250 °C
Properties	– small twisting angle and high torsion spring stiffness – transmission 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			
	PA, PEEK		
	TKN [Nm]	TK max [Nm]	TKW [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 St												
	-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 $\varnothing d_W$ with feather key (acc. to DIN 6885 sheet 1) protruding into the spider $\varnothing d_H$

Mounting dimension																
ROTEX® Size	14	19	24	28	38	42	48	55	65	75	90	100	110	125	140	180
Distance dimension E	13	16	18	20	24	26	28	30	35	40	45	50	55	60	65	85
Dimension dH	10	18	27	30	38	46	51	60	68	80	100	113	127	147	165	220
Dimension dW 2)	7	12	20	22	28	36	40	48	55	65	80	95	100	120	135	185

²⁾ 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 in the spider.