

ROTEX®

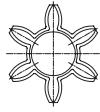
Flexible jaw couplings

Properties of standard spiders

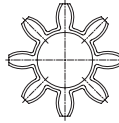
ROTEX® 14



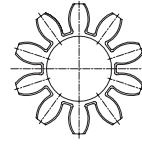
ROTEX® 19



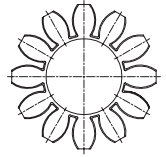
ROTEX® 24 - 65



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	-40 °C to +120 °C	-40 °C to +90 °C
Short-term temperature	-40 °C to +150 °C	-40 °C to +120 °C
Properties	<ul style="list-style-type: none"> - significantly higher service life expectancy - very good temperature resistance - improved damping of vibrations - good damping, medium flexibility - suitable for all hub materials 	<ul style="list-style-type: none"> - good damping, medium flexibility - suitable for all hub materials

Spider type (Shore hardness)	98 Shore A (T-PUR®)	98 Shore A
	 T-PUR®	
Size	14 to 180	14 to 90
Material	T-PUR®	Polyurethane (PUR)
Permissible temperature range		
Permanent temperature	-40 °C to +120 °C	-30 °C to +90 °C
Short-term temperature	-40 °C to +150 °C	-40 °C to +120 °C
Properties	<ul style="list-style-type: none"> - significantly higher service life expectancy - very good temperature resistance - improved damping of vibrations - transmission of high torques with medium damping - recommended hub material: steel, GJL and GJS 	<ul style="list-style-type: none"> - transmission of high torques with medium 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	-40 °C to +120 °C
Short-term temperature	-40 °C to +150 °C
Properties	<ul style="list-style-type: none"> - 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	Torsion angle ϕ with		Torque [Nm]				Damping power P_{KW} [W] ³⁾	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	T_{KN}	$T_{K max}$	DIN 740 ¹⁾			$T_{K max}^{2)}$				1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
			Rated T_{KN}	Max. $T_{K max}$	Vibratory T_{KW}								
14	6.4°	10°	7.5	15	2.0	22.5	—			0.38x10 ³	0.31x10 ³	0.24x10 ³	0.14x10 ³
19			10	20	2.6	30	4.8			1.28x10 ³	1.05x10 ³	0.8x10 ³	0.47x10 ³
24			35	70	9.1	105	6.6			4.86x10 ³	3.98x10 ³	3.01x10 ³	1.79x10 ³
28			95	190	25	285	8.4			10.9x10 ³	8.94x10 ³	6.76x10 ³	4.01x10 ³
38			190	380	49	570	10.2			21.05x10 ³	17.26x10 ³	13.05x10 ³	7.74x10 ³
42			265	530	69	795	12.0			23.74x10 ³	19.47x10 ³	14.72x10 ³	8.73x10 ³
48			310	620	81	930	13.8			36.7x10 ³	30.09x10 ³	22.75x10 ³	13.49x10 ³
55			410	820	107	1230	15.6			50.7x10 ³	41.59x10 ³	31.45x10 ³	18.64x10 ³
65	3.2°	5°	625	1250	163	1875	18.0	0.80	7.90	97.1x10 ³	79.65x10 ³	60.2x10 ³	35.7x10 ³
75			1280	2560	333	3840	21.6			113.3x10 ³	92.9x10 ³	70.3x10 ³	41.65x10 ³
90			2400	4800	624	7200	30.0			190.1x10 ³	155.9x10 ³	117.9x10 ³	69.9x10 ³
100			3300	6600	858	9900	36.0			253.1x10 ³	207.5x10 ³	156.9x10 ³	93x10 ³
110			4800	9600	1248	14400	42.0			415.5x10 ³	336.9x10 ³	257.6x10 ³	177.4x10 ³
125			6650	13300	1729	19950	48.0			647.7x10 ³	537.3x10 ³	412.2x10 ³	277.5x10 ³
140			8550	17100	2223	25650	54.6			813.4x10 ³	670.2x10 ³	519.7x10 ³	351.7x10 ³
160			12800	25600	3328	38400	75.0			1298x10 ³	1104x10 ³	901.9x10 ³	655.7x10 ³
180			18650	37300	4849	55950	78.0			2327x10 ³	1981x10 ³	1618x10 ³	1176x10 ³

98 Shore A spider made of T-PUR® and PUR													
ROTEX® size	Torsion angle ϕ with		Torque [Nm]				Damping power P_{KW} [W] ³⁾	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	T_{KN}	$T_{K max}$	DIN 740 ¹⁾			$T_{K max}^{2)}$				1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
			Rated T_{KN}	Max. $T_{K max}$	Vibratory T_{KW}								
14	6.4°	10°	12.5	25	3.3	37.5	—			0.56x10 ³	0.46x10 ³	0.35x10 ³	0.21x10 ³
19			17	34	4.4	51	4.8			2.92x10 ³	2.39x10 ³	1.81x10 ³	1.07x10 ³
24			60	120	16	180	6.6			9.93x10 ³	8.14x10 ³	6.16x10 ³	3.65x10 ³
28			160	320	42	480	8.4			26.77x10 ³	21.95x10 ³	16.6x10 ³	9.84x10 ³
38			325	650	85	975	10.2			48.57x10 ³	39.83x10 ³	30.11x10 ³	17.85x10 ³
42			450	900	117	1350	12.0			54.5x10 ³	44.69x10 ³	33.79x10 ³	20.03x10 ³
48			525	1050	137	1575	13.8			65.3x10 ³	53.54x10 ³	40.48x10 ³	24x10 ³
55			685	1370	178	2055	15.6			95x10 ³	77.9x10 ³	58.88x10 ³	34.9x10 ³
65	3.2°	5°	940	1880	244	2820	18.0	0.80	7.90	129.5x10 ³	106.2x10 ³	80.3x10 ³	47.6x10 ³
75			1920	3840	499	5760	21.6			197.5x10 ³	162x10 ³	122.5x10 ³	72.6x10 ³
90			3600	7200	936	10800	30.0			312.2x10 ³	256x10 ³	193.6x10 ³	114.7x10 ³
100			4950	9900	1287	14850	36.0			383.3x10 ³	314.3x10 ³	237.6x10 ³	140.9x10 ³
110			7200	14400	1872	21600	42.0			805.9x10 ³	663.1x10 ³	515.3x10 ³	360.5x10 ³
125			10000	20000	2600	30000	48.0			1207x10 ³	1003x10 ³	787.6x10 ³	552.5x10 ³
140			12800	25600	3328	38400	54.6			1549x10 ³	1283x10 ³	979.8x10 ³	674.1x10 ³
160			19200	38400	4992	57600	75.0			2481x10 ³	2137x10 ³	1781x10 ³	1275x10 ³
180			28000	56000	7280	84000	78.0			4220x10 ³	3635x10 ³	3031x10 ³	2170x10 ³

64 Shore D spider made of T-PUR®													
ROTEX® size	Torsion angle ϕ with		Torque [Nm]				Damping power P_{KW} [W] ³⁾	Relative damping ψ	Resonance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	T_{KN}	$T_{K max}$	DIN 740 ¹⁾			$T_{K max}^{2)}$				1.0 T_{KN}	0.75 T_{KN}	0.5 T_{KN}	0.25 T_{KN}
			Rated T_{KN}	Max. $T_{K max}$	Vibratory T_{KW}								
14	4.5°	7.0°	16	32	4.2	48	9.0			0.76x10 ³	0.62x10 ³	0.47x10 ³	0.28x10 ³
19			21	42	5.5	63	7.2			5.35x10 ³	4.39x10 ³	3.32x10 ³	1.97x10 ³
24			75	150	19.5	225	9.9			15.11x10 ³	12.39x10 ³	9.37x10 ³	5.55x10 ³
28			200	400	52	600	12.6			27.52x10 ³	22.57x10 ³	17.06x10 ³	10.12x10 ³
38			405	810	105	1215	15.3			70.15x10 ³	57.52x10 ³	43.49x10 ³	25.78x10 ³
42			560	1120	146	1680	18.0			79.9x10 ³	65.5x10 ³	49.52x10 ³	29.35x10 ³
48			655	1310	170	1965	20.7			95.5x10 ³	78.3x10 ³	59.22x10 ³	35.1x10 ³
55			825	1650	215	2475	23.4			107.9x10 ³	88.5x10 ³	66.9x10 ³	39.66x10 ³
65	2.5°	3.6°	1175	2350	306	3525	27.0	0.75	8.50	151.1x10 ³	123.9x10 ³	93.7x10 ³	55.53x10 ³
75			2400	4800	624	7200	32.4			248.2x10 ³	203.5x10 ³	153.9x10 ³	91.2x10 ³
90			4500	9000	1170	13500	45.0			674.5x10 ³	553.1x10 ³	418.2x10 ³	247.9x10 ³
100			6185	12370	1608	18555	54.0			861.2x10 ³	706.2x10 ³	533.9x10 ³	316.5x10 ³
110			9000	18000	2340	27000	63.0			1230x10 ³	1001x10 ³	773.1x10 ³	531.4x10 ³
125			12500	25000	3250	37500	72.0			1749x10 ³	1436x10 ³	1149x10 ³	832.1x10 ³
140			16000	32000	4160	48000	81.9			2312x10 ³	1929x10 ³	1521x10 ³	1082x10 ³
160			24000	48000	6240	72000	112.5			3415x10 ³	2961x10 ³	2471x10 ³	1830x10 ³
180			35000	70000	9100	105000	117.0			5670x10 ³	4917x10 ³	4103x10 ³	3038x10 ³

¹⁾ see catalogue page 15

²⁾ ≤ 1000 load cycles

³⁾ with +30 °C

Temperature factor S_t										
	-40 °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	1.2	1.3	1.45	1.6	1.8	2.1	2.5	3.0
PUR	1.0	1.0	1.3	1.4	1.55	1.8	2.2	—	—	—

With temperatures below -40 °C consult with KTR.

Unless the Shore hardness of spider is 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.