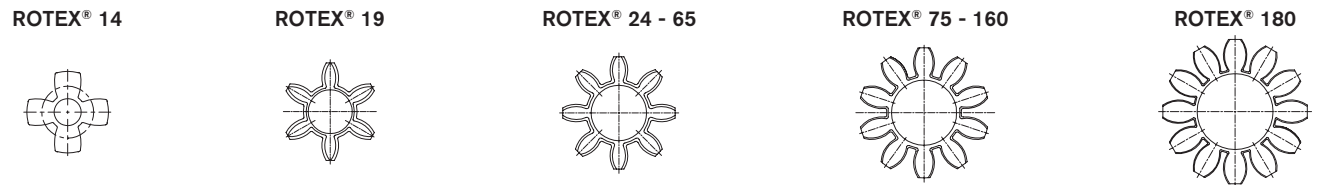






ROTEX®



Flexible jaw couplings

Properties of standard spiders



Spider type (hardness Shore)	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
Properties	<ul style="list-style-type: none"> - significantly higher service life expectancy - very good temperature resistance - improved damping of vibrations - good damping, average flexibility - suitable for all hub materials 	<ul style="list-style-type: none"> - 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	-50 °C to +120 °C	-30 °C to +90 °C
Short-term temperature	-50 °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 average damping - recommended hub material: steel, GJL and GJS 	<ul style="list-style-type: none"> - transmission of high torques with average damping - recommended hub material: steel, GJL and GJS

Spider type (Shore hardness)	64 Shore-D (T-PUR®)	64 Shore-D
	 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 +110 °C
Short-term temperature	-50 °C to +150 °C	-30 °C to +130 °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 	<ul style="list-style-type: none"> - transmission of very high torques with low damping - suitable for displacing critical speeds - suitable with high humidity, resistant to hydrolysis - recommended hub material: steel and GJS

Härtegrad



Increasing hardness

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 damp- ing ψ	Reso- nance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s GJL	V=40 m/s steel	TKN	TK max	DIN 740 ¹⁾			TKmax. ²⁾				1.0 TKN	0.75 TKN	0.5 TKN	0.25 TKN
					Rated (TKN)	Max (TK max)	Vibratory (TKW)								
14	22200	25400	6,4°	10°	7,5	15	2,0	22,5	–			0,38x10 ³	0,31x10 ³	0,24x10 ³	0,14x10 ³
19	16700	19000			10	20	2,6	30	4,8			1,28x10 ³	1,05x10 ³	0,8x10 ³	0,47x10 ³
24	12100	13800			35	70	9,1	105	6,6			4,86x10 ³	3,98x10 ³	3,01x10 ³	1,79x10 ³
28	10100	11500			95	190	25	285	8,4			10,9x10 ³	8,94x10 ³	6,76x10 ³	4,01x10 ³
38	8300	9500			190	380	49	570	10,2			21,05x10 ³	17,26x10 ³	13,05x10 ³	7,74x10 ³
42	7000	8000			265	530	69	795	12,0			23,74x10 ³	19,47x10 ³	14,72x10 ³	8,73x10 ³
48	6350	7250			310	620	81	930	13,8			36,7x10 ³	30,09x10 ³	22,75x10 ³	13,49x10 ³
55	5550	6350			410	820	107	1230	15,6			50,7x10 ³	41,59x10 ³	31,45x10 ³	18,64x10 ³
65	4950	5650	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	4150	4750			1280	2560	333	3840	21,6			113,3x10 ³	92,9x10 ³	70,3x10 ³	41,65x10 ³
90	3300	3800			2400	4800	624	7200	30,0			190,1x10 ³	155,9x10 ³	117,9x10 ³	69,9x10 ³
100	2950	3350			3300	6600	858	9900	36,0			253,1x10 ³	207,5x10 ³	156,9x10 ³	93x10 ³
110	2600	2950			4800	9600	1248	14400	42,0			415,5x10 ³	336,9x10 ³	257,6x10 ³	177,4x10 ³
125	2300	2600			6650	13300	1729	19950	48,0			647,7x10 ³	537,3x10 ³	412,2x10 ³	277,5x10 ³
140	2050	2350			8550	17100	2223	25650	54,6			813,4x10 ³	670,2x10 ³	519,7x10 ³	351,7x10 ³
160	1800	2050			12800	25600	3328	38400	75,0			1298x10 ³	1104x10 ³	901,9x10 ³	655,7x10 ³
180	1550	1800			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	Max. speed		Twist angle ϕ with		Torque [Nm]				Damping power PKW [W] ¹⁾	Relative damp- ing ψ	Reso- nance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s GJL	V=40 m/s steel	TKN	TK max	DIN 740 ¹⁾			TKmax. ²⁾				1.0 TKN	0.75 TKN	0.5 TKN	0.25 TKN
					Rated (TKN)	Max (TK max)	Vibratory (TKW)								
14	22200	25400	6,4°	10°	12,5	25	3,3	37,5	–			0,56x10 ³	0,46x10 ³	0,35x10 ³	0,21x10 ³
19	16700	19000			17	34	4,4	51	4,8			2,92x10 ³	2,39x10 ³	1,81x10 ³	1,07x10 ³
24	12100	13800			60	120	16	180	6,6			9,93x10 ³	8,14x10 ³	6,16x10 ³	3,65x10 ³
28	10100	11500			160	320	42	480	8,4			26,77x10 ³	21,95x10 ³	16,6x10 ³	9,84x10 ³
38	8300	9500			325	650	85	975	10,2			48,57x10 ³	39,83x10 ³	30,11x10 ³	17,85x10 ³
42	7000	8000			450	900	117	1350	12,0			54,5x10 ³	44,69x10 ³	33,79x10 ³	20,03x10 ³
48	6350	7250			525	1050	137	1575	13,8			65,3x10 ³	53,54x10 ³	40,48x10 ³	24x10 ³
55	5550	6350			685	1370	178	2055	15,6			95x10 ³	77,9x10 ³	58,8x10 ³	34,9x10 ³
65	4950	5650	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	4150	4750			1920	3840	499	5760	21,6			197,5x10 ³	162x10 ³	122,5x10 ³	72,6x10 ³
90	3300	3800			3600	7200	936	10800	30,0			312,2x10 ³	256x10 ³	193,6x10 ³	114,7x10 ³
100	2950	3350			4950	9900	1287	14850	36,0			383,3x10 ³	314,3x10 ³	237,6x10 ³	140,9x10 ³
110	2600	2950			7200	14400	1872	21600	42,0			805,9x10 ³	663,1x10 ³	515,3x10 ³	360,5x10 ³
125	2300	2600			10000	20000	2600	30000	48,0			1207x10 ³	1003x10 ³	787,6x10 ³	552,5x10 ³
140	2050	2350			12800	25600	3328	38400	54,6			1549x10 ³	1283x10 ³	979,8x10 ³	674,1x10 ³
160	1800	2050			19200	38400	4992	57600	75,0			2481x10 ³	2137x10 ³	1781x10 ³	1275x10 ³
180	1550	1800			28000	56000	7280	84000	78,0			4220x10 ³	3635x10 ³	3031x10 ³	2170x10 ³

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 damp- ing ψ	Reso- nance factor V_R	Torsion spring stiffness C dyn. [Nm/rad]			
	V=35 m/s GJL	V=40 m/s steel	TKN	TK max	DIN 740 ¹⁾			TKmax. ²⁾				1.0 TKN	0.75 TKN	0.5 TKN	0.25 TKN
					Rated (TKN)	Max (TK max)	Vibratory (TKW)								
14	22200	25400	4,5°	7,0°	16	32	4,2	48	9,0			0,76x10 ³	0,62x10 ³	0,47x10 ³	0,28x10 ³
19	16700	19000			21	42	5,5	63	7,2			5,35x10 ³	4,39x10 ³	3,32x10 ³	1,97x10 ³
24	12100	13800			75	150	19,5	225	9,9			15,11x10 ³	12,39x10 ³	9,37x10 ³	5,55x10 ³
28	10100	11500			200	400	52	600	12,6			27,52x10 ³	22,57x10 ³	17,06x10 ³	10,12x10 ³
38	8300	9500			405	810	105	1215	15,3			70,15x10 ³	57,52x10 ³	43,49x10 ³	25,78x10 ³
42	7000	8000			560	1120	146	1680	18,0			79,9x10 ³	65,5x10 ³	49,52x10 ³	29,35x10 ³
48	6350	7250			655	1310	170	1965	20,7			95,5x10 ³	78,3x10 ³	59,22x10 ³	35,1x10 ³
55	5550	6350			825	1650	215	2475	23,4			107,9x10 ³	88,5x10 ³	66,9x10 ³	39,66x10 ³
65	4950	5650	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	4150	4750			2400	4800	624	7200	32,4			248,2x10 ³	203,5x10 ³	153,9x10 ³	91,2x10 ³
90	3300	3800			4500	9000	1170	13500	45,0			674,5x10 ³	553,1x10 ³	418,2x10 ³	247,9x10 ³
100	2950	3350			6185	12370	1608	18555	54,0			861,2x10 ³	706,2x10 ³	533,9x10 ³	316,5x10 ³
110	2600	2950			9000	18000	2340	27000	63,0			1230x10 ³	1001x10 ³	773,1x10 ³	531,4x10 ³
125	2300	2600			12500	25000	3250	37500	72,0			1749x10 ³	1436x10 ³	1149x10 ³	832,1x10 ³
140	2050	2350			16000	32000	4160	48000	81,9			2312x10 ³	1929x10 ³	1521x10 ³	1082x10 ³
160	1800	2050			24000	48000	6240	72000	112,5			3415x10 ³	2961x10 ³	2471x10 ³	1830x10 ³
180	1550	1800			35000	70000	9100	105000	117,0			5670x10 ³	4917x10 ³	4103x10 ³	3038x10 ³

¹⁾ see catalogue page 11

²⁾ ≤ 1000 Load change

³⁾ at +30°C

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.

Technical data and properties of special spiders



Spider type	PA	PEEK
Material	Polyamide	Polyetheretherketone
Permissible temperature range		
Permanent temperature	-20 °C to +130 °C 1)	up to +180 °C (ATEX to +160 °C)
Short-term temperature	-30 °C to +150 °C 1)	up to +250 °C
Properties	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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

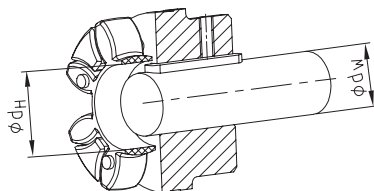
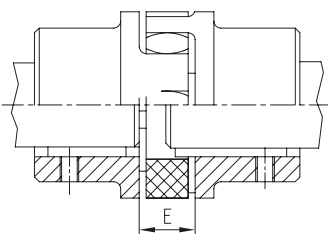
Torques

	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 ϕd_w with feather key (acc. to DIN 6885 sheet) ¹⁾ protruding into the spider ϕd_H

Mounting 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 dH	10	18	27	30	38	46	51	60	68	80	100	113	127	147	165	190	220
Dimension dW 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 in the spider.

Der neue Werkstoff / The new material / La nouvelle matière: T-PUR®

92 Shore A

ALT **PREVIOUS** **ANCIEN**

Material:
Polyurethan (PUR)

Farbe: gelb

Material:

Polyurethane (PUR)

Colour: yellow

Matière :

Polyuréthane (PUR)

Couleur : jaune



NEU **NEW** **NOUVEAU**



Material:

T-PUR®

Farbe: orange

Material:

T-PUR®

Colour: orange

Matière :

T-PUR®

Couleur : orange

98 Shore A

Material:
Polyurethan (PUR)

Farbe: rot

Material:

Polyurethane (PUR)

Colour: red

Matière :

Polyuréthane (PUR)

Couleur : rouge



Material:

T-PUR®

Farbe: lila

Material:

T-PUR®

Colour: purple

Matière :

T-PUR®

Couleur : violet

64 Shore D

Material:
Polyurethan (PUR)

Farbe: weiß mit Markierung

Material:

Polyurethane (PUR)

Colour: white with marking

Matière :

Polyuréthane (PUR)

Couleur : blanc avec marquage



Material:

T-PUR®

Farbe: blassgrün

Material:

T-PUR®

Colour: pale green

Matière :

T-PUR®

Couleur : vert pâle

Der neue Werkstoff / The new material / La nouvelle matière: T-PUR®

IHRE VORTEILE

- Längere Einsatzdauer
- Ein erweiterter Temperaturbereich von über 40 %
- In den Temperaturbereichen von +40° C bis +90° C eine Verbesserung des Temperaturfaktors von bis zu 23 %
- Beibehaltung aller technischen Eigenschaften
- Gleicher Preis wie klassisches Programm

YOUR BENEFITS

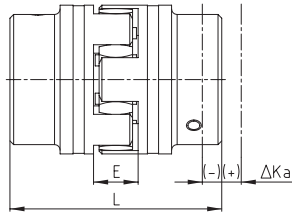
- Longer service life
- Extended temperature range of more than 40 %
- In the temperature ranges from +40° C to +90° C the temperature factor has been improved by up to 23 %
- Maintaining all technical properties
- Same price as the traditional spiders

VOS AVANTAGES

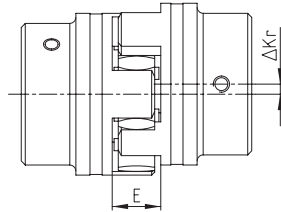
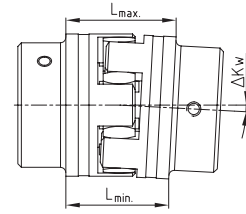
- Allongement de la durée de vie
- Extension de la plage de température de plus de 40 %
- Amélioration du facteur de température jusqu'à 23% dans la plage de température comprise entre +40°C et +90°C
- Propriétés techniques inchangées
- Mêmes prix que la gamme traditionnelle

Temperaturfaktor S_t Temperature factor S_t Facteur de température 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
NEU / NEW / NOUVEAU	1,0	1,0	1,1	1,2	1,3	1,45	1,6	1,8	2,1	2,5	3,0
ALT / PREVIOUS / ANCIEN	-	1,0	1,2	1,3	1,4	1,55	1,8	2,2	-	-	-

Displacements

Axial displacement ΔK_a


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

Radial displacement ΔK_r

Angular displacement ΔK_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	75	90	100	110	125	140	160	180
Max. axial displacement ΔK_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 $n=1500$ rpm ΔK_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 $n=1500$ rpm ΔK_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
ΔK_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 ΔK_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 $n=1500$ rpm ΔK_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 $n=1500$ rpm ΔK_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
ΔK_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 ΔK_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 $n=1500$ rpm ΔK_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 $n=1500$ rpm ΔK_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
ΔK_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 $n = 1500$ 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 with the assembly of the coupling to accurately adhere to the distance dimension E in order to allow for axial clearance of the coupling while in operation. For detailed mounting instructions please refer to our homepage (www.ktr.com).