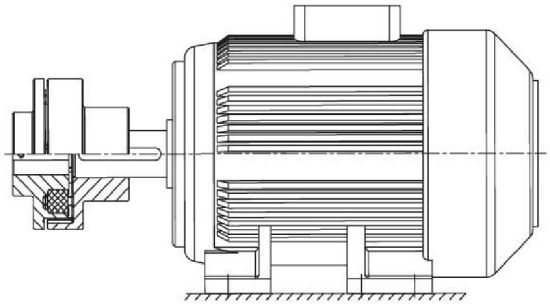
Selection of standard IEC motors



POLY-POLY couplings for standard IEC motors, protection IP 54/IP 55

A. C. motor 50 Hz			Motor output n= 3000 rpm 2 poles		POLY coupling size	Motor output n= 1500 rpm 4 poles		POLY coupling size	Motor output n= 1000 rpm 6 poles		POLY coupling size	Motor output n= 750 rpm 8 poles		POLY coupling size
Size	Shaft end dxl [mm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]		Output P [kW]	Torque T [Nm]	
	2 poles	4, 6, 8 poles												
56	9 x 20		0,09	0,32		0,06	0,43		0,037	0,43				
			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	8	0,18	1,3	8	0,09	1,1	8			8
71	14 x 30		0,37	1,3		0,25	1,8		0,18	2		0,09	1,4	
			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		0,75	5,1		0,55	5,8		0,25	3,5	
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	9	2,2	15	9	1,5	15	9	0,75	11	9
						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	10			10			10			10
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	12			12				5,5	74	
160L			18,5	60		15	98		11	109	14	7,5	100	14
180M	48 x 110		22	71		18,5	121	14						
180L						22	144		15	148		11	145	
200L	55 x 110		30	97		30	196	15	18,5	181	15	15	198	15
			37	120	15				22	215				
225S	55 x 110	60 x 140				37	240	17				18,5	244	17
225M			45	145		45	292	19	30	293	19	22	290	19
250M	60 x 140	65 x 140	55	177	17	55	356		37	361		30	392	
280S	65 x 140	75 x 140	75	241		75	484	20	45	438	20	37	483	20
280M			90	289	19*	90	581		55	535		45	587	
315S		80 x 170	110	353		110	707	22	75	727	22	55	712	22
315M			132	423	20*	132	849	25	90	873	25	75	971	25
			160	513		160	1030		110	1070		90	1170	
315L			200	641		200	1290	28	132	1280	28	110	1420	28
		85 x 170			22*				160	1550		132	1710	
315			250	802		250	1600		200	1930		160	2070	30
			315	1010		315	2020		250	2410	30	200	2580	
355	75 x 140	95 x 170	355	1140		355	2280	30						35
			400	1280		400	2570		315	3040		250	3220	
			500	1600		500	3210		400	3850	35	315	4060	
400	80 x 170	110 x 210	560	1790		560	3580	35	450	4330		355	4570	
			630	2020		630	4030		500	4810		400	5150	40
			710	2270		710	4540		560	5390	40	450	5790	
450	90 x 170	120 x 210	800	2560		800	5120	40	630	6060		500	6420	
			900	2880		900	5760							
			1000	3200		1000	6400							

The coupling selection is based on an ambient temperature up to + 30 °C. The coupling was selected for normal operation. The respective couplings have a minimum operating factor of f min. = 1,35. Drives with periodical torque courses must be selected according to DIN 740 part 2. If requested, KTR will perform the selection.

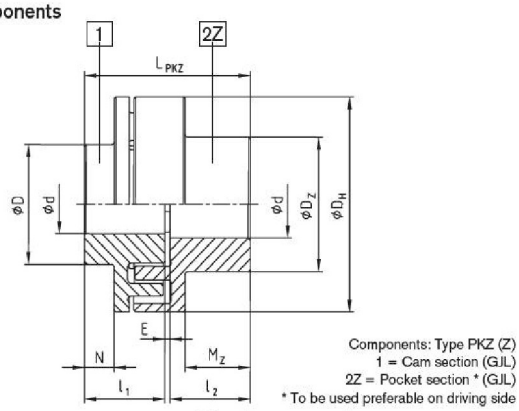
Torque T = rated torque according to Siemens catalogue M 11 · 1994/95..

* Dynamic balancing is necessary.

POLY PKZ and PKD
Flexible couplings

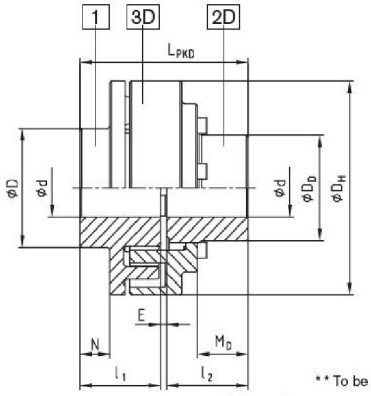
PKZ (two-part) and PKD (three-part)

Components



Components: Type PKZ (Z)
1 = Cam section (GJL)
2Z = Pocket section * (GJL)
* To be used preferable on driving side

Type PKZ (Z) – (Size 8 to 30)

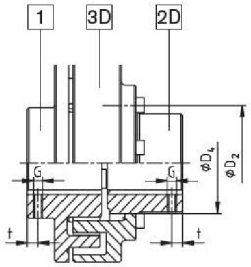


Components type PKD (D)
1 = Cam section * (GJL)
2D = Flange hub (steel)
3D = Cam ring (GJL)
** To be used preferably on driving side

Type PKD (D) – (Size 15 to 35)

POLY Type PKZ and PKD

Size	Rated torque-1) T_{KN} [Nm]	Max. speed 2) n [rpm]	Max. finish bore Ød [mm]			Dimensions [mm]												Thread for setscrew			Weight 3) [kg]
			Part 1	Part 2Z	Teil 2D	D_H	D	D_Z	D_D	$l_1; l_2$	M_Z	M_D	N	E	D_2	D_4(H7/h7)	L_{PKZ}/L_{PKD}	G	t	T_A [Nm]	
8 (Z)	42	5000	20	28	–	86	43	50	–	35	25	–	3	3	–	–	73	M5	18	2	1,7
9 (Z)	72	5000	28	38	–	97	55	65	–	41	30	–	7	3	–	–	85	M8	23	10	2,7
10 (Z)	100	5000	32	42	–	107	60	70	–	45	35	–	10	4	–	–	94	M8	27	10	3,5
12 (Z)	170	5000	38	48	–	131	70	80	–	55	43	–	12	4	–	–	114	M8	30	10	5,4
14 (Z)	210	4800	45	55	–	142	80	93	–	60	46	–	17	4	–	–	124	M8	10	10	7,6
15 (Z;D)	320	4300	50	60	50	157	90	100	74,5	65	52	33	21	4	90	75	134	M8	15	10	8,6
17 (Z;D)	400	3800	60	65	60	176	100	110	87	70	56	43,5	26	4	106	90	144	M8	15	10	12
19 (Z;D)	660	3500	75	75	70	195	125	125	106	75	64	48	27	4	126	107	154	M8	15	10	18
20 (Z;D)	820	3300	65	75	70	205	115	127	104	80	65	45	23	4	123	105	164	M8	15	10	20
22 (Z)	1100	3000	85	85	–	224	140	140	–	90	75	–	38	4	–	–	184	M10	20	17	25
25 (Z;D)	1600	2700	90	90	95	257	150	150	138	100	84	67	43	5	162	140	205	M12	20	40	35
28 (Z;D)	2500	2350	100	100	110	288	165	165	158	110	90	65	44	5	178	160	225	M12	20	40	53
30 (Z;D)	3950	2200	110	110	110	308	180	180	165	130	108	89	58	5	202	170	265	M16	20	80	66
35 (D)	6100	1850	130	–	145	373	210	–	209	160	–	102	70	5	240	210	325	M16	25	80	125

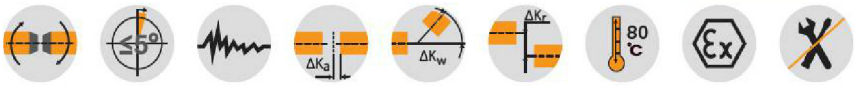


[1] Maximum torque $T_{Kmax} = T_{KN} \times 2$; standard material of elastomer: Perbunan (NBR) 92 Shore-A; standard material of hub: GJL
[2] Speeds for v = 30 m/sec. For circumferential speeds exceeding V = 30 m/s, dyn. we recommend dynamic balancing
[3] Referring to average bore

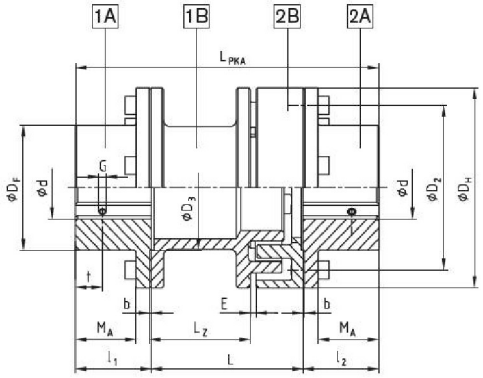
Ordering example:	POLY	PKD	28	d_1Ø90	d_2Ø80
	Coupling type	Type	Size	Finish bore part 1	Finish bore part 2

POLY PKA
Flexible couplings

Drop-out center design coupling



Components



Components: Type PKA
1.A/2A = Coupling flange (steel)
1.B = Spacer (GJL)
2B = Driving flange (GJL)
1.A and 1B to be preferably used drive-sided

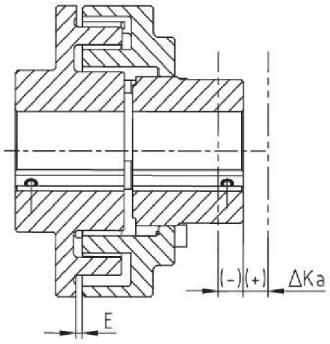
POLY Type PKA

Size	Rated torque T_{KN} [Nm]	Max. speed n [rpm]	Max. finish bore d [mm] part 1A/2A	Dimensions [mm]											Thread for setscrew			Weight [kg]
				D_H	D_F	D_2	D_3	l_1, l_2	b	M_A	E	L	L_{PKA}	L_Z	G	t	TA [Nm]	
8	42	5000	38	86	55	70	60	35	1,5	25,5	3	100	170	66	M5	15	2	3,04
9	72	5000	45	97	70	85	70	41	1,5	30,5	3	100	182	63	M8	15	10	4,26
												140	222	103				4,66
10	100	5000	50	107	78	93	80	46	1,5	35,5	4	100	192	61	M8	20	10	5,42
												140	232	101				5,88
12	170	5000	60	131	95	113	90	55	1,5	43,0	4	100	210	55	M8	20	10	9,49
												140	250	95				10,15
14	210	4800	70	142	105	125	100	60	1,5	48,0	4	100	220	54	M8	25	10	11,46
												140	260	94				12,23
15	320	4300	70	157	110	135	110	65	1,5	49,5	4	140	270	93	M8	25	10	15,63
												180	310	133				16,50
17	400	3800	80	176	125	150	110	70	1,5	54,5	4	100	240	53	M8	25	10	18,79
												140	280	93				19,60
												180	320	133				20,41
20	820	3300	100	205	150	175	130	80	2,0	61,0	4	140	300	81	M8	30	10	30,96
												180	340	121				32,18
												140	340	81				54,73
25	1600	2700	125	257	195	225	150	100	2,0	81,0	5	180	380	121	M12	40	40	56,50
												250	450	191				59,60

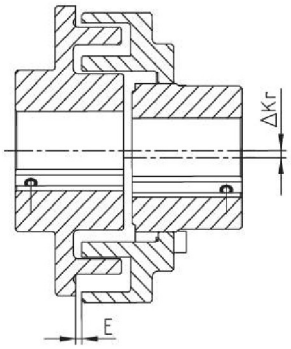
Ordering example:

POLY	PKA	15	140	Ø38	Ø40
Coupling type	Type	Size	Drop-out center length	Finish bore part 1A	Finish bore part 2A

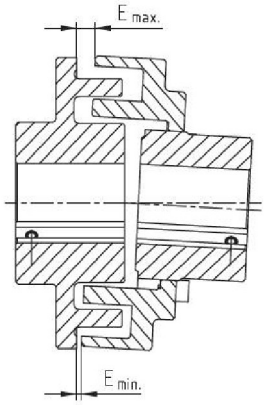
Displacements / elastomer sets / screws



Axial displacement



Radial displacement

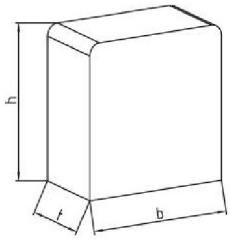


Angular displacement

$\Delta K_W = E_{max.} - E_{Min.}$ [mm]

Radial and angular displacements may occur simultaneously.
The combined sum V = ΔKr + (Emax. – Emin.) must not exceed the values listed in the table .

Displacements [mm]															
Coupling size		8	9	10	12	14	15	17	19	20	22	25	28	30	35
Max. axial displacement ΔKa [mm]		±1	±1	±1	±2	±2	±2	±2	±2	±2	±2	±2	±2	±2	±3
Max. radial displacement ΔKr	n=750 1/min	0,8	0,8	0,8	0,8	0,8	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,2	1,2
or max. angular displacement	n=1000 1/min	0,7	0,7	0,7	0,7	0,7	0,9	0,9	0,9	0,9	0,9	0,9	0,9	1,1	1,1
ΔKw or sum V	n=1500 1/min	0,5	0,5	0,5	0,5	0,5	0,7	0,7	0,7	0,7	0,7	0,7	0,7	0,7	0,9



Elastomer sets NBR (building block)															
Coupling size		8	9	10	12	14	15	17	19	20	22	25	28	30	35
Set size		1			2		3		3a	4	3b	4Ü	5	6Ü	7Ü
Number of sets		8	10	10	10	10	12	12	12	12	16	16	16	16	20
Dimensions of	b	18,4			24,9		27,2		27,7	34,9	29,6	35,1	40	43,3	45,7
elastomer sets	t	10			15,3		16,1		18,4	19,6	18,4	22,9	22,2	28,6	25,0
b x t x h [mm]	h	18,9			23,9		24,6		26,8	34,6	29,6	35	40,6	41,1	60,0

Type PKD — Dimensions of cyl. screws DIN EN ISO 4762															
Coupling size		8	9	10	12	14	15	17	19	20	22	25	28	30	35
Screw size	M	—	—	—	—	—	M8	M8	M8	M10	M8	M10	M10	M12	M12
	l	—	—	—	—	—	30	25	25	30	30	30	40	40	55
No. z		—	—	—	—	—	6	6	6	6	8	8	8	8	10
Tightening torque TA [Nm]		—	—	—	—	—	25	25	25	25	25	49	49	86	86
Type PKA — Dimensions of cyl. screws DIN EN ISO 4762															
Screw size	M	M6	M6	M6	M8	M8	M10	M10	—	M10	—	M10	—	—	—
	l	16	18	18	20	20	25	25	—	30	—	30	—	—	—
No. z		4	5	5	5	5	6	6	—	6	—	8	—	—	—
Tightening torque T_A [Nm]		10	10	10	25	25	49	49	—	49	—	49	—	—	—

Standard bores H7 with feather keyway to DIN 6885 sheet 1 [JS9] and threads for setscrews.
Please see our detailed mounting instructions at our website www.ktr.com.