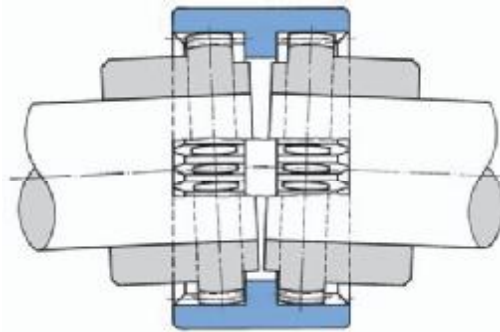


# BoWex® Curved-tooth gear couplings®



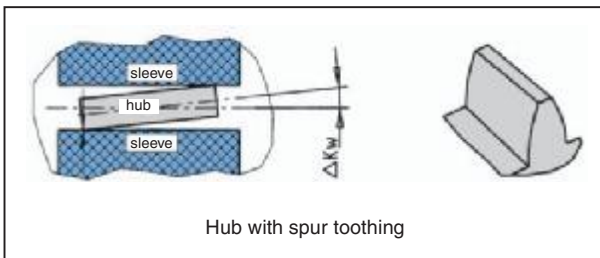
## Operating description



BoWex  
BoWex-FLE-PA  
BoWex ELASTIC

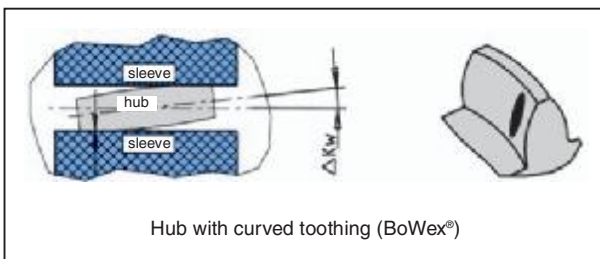
BoWex curved-tooth gear couplings are flexible shaft connections for a positive torque transmission and specifically suitable to compensate for axial, radial and angular shaft misalignment.

According to the well-known effect of curved-tooth gear couplings any edge pressure in the spline in case of angular and radial displacements is avoided so that BoWex couplings are almost free from wear.



Hub with spur tothing

On couplings with spur tothing high edge pressure along with considerable wear arises at the contact surfaces in case of misalignment.



Hub with curved tothing (BoWex®)

The curved teeth avoid any edge pressure on the coupling in case of angular and radial misalignment.

The material combination of steel hubs and polyamide sleeves allows for maintenance-free continuous operation with very low friction on the teeth.

Due to the double cardanic operation of BoWex couplings restoring forces may be neglected in case of angular and radial displacements and periodic fluctuations in angular velocity do not arise.

BoWex couplings can be assembled both vertically or horizontally with no need for any special assembly tools.

The standard polyamide material is characterized by the following positive features:

- high mechanical consistency
- high stiffness
- high thermal stability (+ 100° C)
- good viscosity even in case of low temperatures
- favourable slide-friction behaviour
- very good electrical insulating property
- good resistance to chemicals
- good dimensional accuracy

### Behaviour of friction and wear of the BoWex sleeve

The smooth and hard surface (crystalline structure) and the high thermal stability and resistance to lubricants, fuels, hydraulic fluids, dissolvents, etc. make polyamide an ideal material for components stressed by sliding, particularly for the coupling production. While any metallic materials tend to "corrode" in case of dry running, slide combinations with polyamide and steel are operative without any lubrication and maintenance.

### Explosion protection use

BoWex® couplings type M until size 65 incl. with an electrically conductive nylon sleeve (PA-CF) are suitable for power transmission in hazardous areas. The couplings are approved according to EC Standard 94/9/EC (ATEX 95) as units of category 2G/2D and are thus suitable for the use in hazardous areas in zones G1, G2, D21 and D22. Please see our Certificate and our operating and mounting instructions on our web site [www.ktr.com](http://www.ktr.com).



## Technical data

### Determination of coupling size

#### Selection according to torque

The coupling has to be selected in a way that the maximum starting torque of driving or driven machine does not exceed the maximum torque of the coupling.

With a smooth load curve and well-aligned shafts the coupling can be loaded up to the maximum torque.

In case of uneven torque course with short-term peaks the BoWex coupling may be overloaded three times the rated torque mentioned.

For small shaft dimensions please take into account the permissible surface pressure on the keyway connection.

Design and size	Power Rated	$\frac{P}{n}$ kW 1/min Maximum	Torque $T_K$ [Nm]			Max. speed [1/min]	
			$T_{KN}$	$T_{K \max}$	$T_{KW}$		
Type plug-in coupling / junior-M	junior 14 / M-14	0,0005	0,0010	5	10	2,5	6000
	junior 19 / M-19	0,0008	0,0017	8	16	4	6000
	junior 24 / M-24	0,0013	0,0025	12	24	6	6000
Type M/I AS Spec.-I SG SSR	14	0,0010	0,0021	10	20	5	14000
	19	0,0017	0,0033	16	32	8	11800
	24	0,0021	0,0042	20	40	10	10600
	28	0,0047	0,0094	45	90	23	8500
	32	0,0063	0,013	60	120	30	7500
	38	0,0084	0,017	80	160	40	6700
	42	0,010	0,021	100	200	50	6000
	45 u. 48	0,015	0,029	140	280	70	5600
	65	0,040	0,080	380	760	190	4000
	80	0,073	0,15	700	1400	350	3150
	100	0,13	0,25	1200	2400	600	3000
	125	0,26	0,52	2500	5000	1250	2120
Type M...C	14	0,0015	0,0047	15	45	7,5	14000
	19	0,0025	0,0075	24	72	12	11800
	24	0,003	0,009	30	90	15	10600
	28	0,007	0,022	70	210	35	8500
	32	0,009	0,028	90	270	45	7500
	38	0,013	0,038	120	360	60	6700
	48	0,021	0,063	200	600	100	5600
Type FLE-PA	28	0,0078	0,014	75	185	37,5	6000
	32	0,014	0,028	135	335	67,5	6000
	48	0,025	0,050	240	600	120	5000
	T 48	0,03	0,078	300	750	150	5000
	T 55	0,047	0,112	450	1125	225	4500
	65	0,068	0,14	650	1600	325	3600
	T 65	0,084	0,21	800	2000	400	3600
	T 70	0,105	0,262	1000	2500	500	3400
	80	0,13	0,25	1200	3000	600	3000
	T 80	0,16	0,039	1500	3750	750	3000
	100	0,21	0,43	2050	5150	1025	2500
	125	0,44	0,89	4250	10700	2125	2500
Type ELASTIC HE HEW	W42HE 40Sh	0,0009	0,028	90	270	25	6200
	40Sh	0,014	0,041	130	390	39	
	42HE 50Sh	0,016	0,047	150	450	45	6200
	65Sh	0,019	0,057	180	540	54	
	40Sh	0,021	0,063	200	600	60	
	48HE 50Sh	0,024	0,072	230	690	69	5600
	65Sh	0,029	0,088	280	840	84	
	40Sh	0,037	0,110	350	1050	105	
	65HE 50Sh	0,042	0,126	400	1200	120	4500
	65Sh	0,052	0,157	500	1500	150	
	40Sh	0,089	0,267	750	2250	225	
	80HE 50Sh	0,096	0,298	950	2850	285	3600
	65Sh	0,126	0,372	1200	3600	360	
	40Sh	0,130	0,39	1250	3750	375	
	G80HE 50Sh	0,16	0,50	1600	4800	480	3000
	65Sh	0,21	0,62	2000	6000	600	
	40Sh	0,21	0,62	2000	6000	600	
	100HE 50Sh	0,26	0,78	2500	7500	750	2500
	65Sh	0,36	1	3200	9600	960	
	40Sh	0,31	0,942	3000	9000	900	
	125HE 50Sh	0,41	1,256	4000	12000	1200	2300
	70Sh	0,52	1,570	5000	15000	1500	

# BoWex® Curved-tooth gear couplings®

Cylinder, taper, inch bores

## Basic programme



BoWex  
BoWex-FLE-PA  
BoWex-ELASTIC

BoWex® size	Finish bores (mm) H7 keyway DIN 6885 sheet 1 (JS9) and setscrew																															
	un-pilot bored	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75
14	●	●	●	●	●	●	●	●	●																							
19	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
24	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
28	●							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
32	●											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
38	●											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
42	●												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
48	●													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
65	●																															
80	●																															

● standard length    ■ standard lengthened

Code d <sup>+0,05</sup> b <sup>JS9</sup> t <sup>+0,2</sup>	Taper 1 : 5					Taper 1 : 8					Inch bores																					
	A-10 9,85 2	B-17 16,85 3	C-20 19,85 4	D-25 24,85 5	E-30 29,85 6	N/1 9,7 2,4	N1d 14 3	N/2 17,28 3,2	N/2a 17,28 4	N/3 22 3,99	Ta 12,7 3,17 14,3	DNC 13,45 3,17 14,9	Ed 15,87 4,75 18,1	A 19,05 4,78 21,3	G 22,22 4,75 24,7	F 22,22 6,38 25,2	Bs 25,38 6,37 28,3	Hs 25,4 6,35 28,3	K 31,75 7,93 35,4													
14	●					●							●																			
19		●				●							●																			
24	●	●				●	●	●	●			●	●																			
28	●	●	●			●	●	●	●				●																			
32		●	●	●																												
38		●	●	●																												
42		●	●	●	●																											
48			●	●	●																											
65																																

Further dimensions on request

### BoWex® couplings for IEC-motors (protection type IP 54 / IP 55)

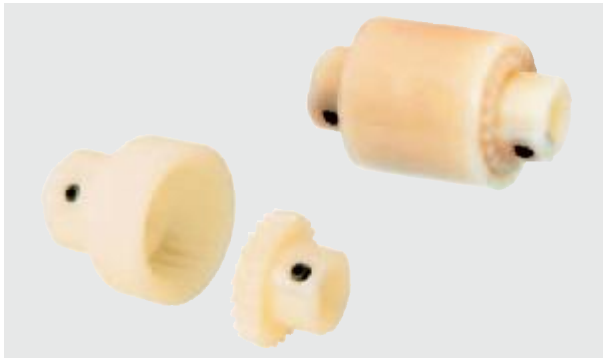
A. C. motor Size	Motor output with 50 Hz n = 3000 [1/min]		BoWex®-coupling	Motor output with 50 Hz n = 1500 [1/min]		BoWex®-coupling	Motor output with 50 Hz n = 1000 [1/min]		BoWex®-coupling	Cylindric shaft end d x l [mm] 3000 ≤ 1500	
	kW	T [Nm]		kW	T [Nm]		kW	T [Nm]			
56	0,09	0,32		0,06	0,43		0,037	0,43		9 x 20	
	0,12	0,41		0,09	0,64		0,045	0,52			
63	0,18	0,62	14	0,12	0,88	14	0,06	0,72	14	11 x 23	
	0,25	0,86		0,18	1,3		0,09	1,1			
71	0,37	1,3		0,25	1,8		0,18	2,0		14 x 30	
	0,55	1,9		0,37	2,5		0,25	2,7			
80	0,75	2,5	19	0,55	3,7	19	0,37	3,9	19	19 x 40	
	1,1	3,7		0,75	5,1		0,55	5,8			
90 S	1,5	5,0	24	1,1	7,5	24	0,75	8,0	24	24 x 50	
90 L	2,2	7,4		1,5	10		1,1	12			
100 L	3	9,8	28	2,2	15	28	1,5	15	28	28 x 60	
				3	20						
112 M	4	13		4	27		2,2	22			
132 S	5,5	18	38	5,5	36	38	3	30	38	38 x 80	
	7,5	25					4	40			
132 M				7,5	49		5,5	55			
160 M	11	36	42	11	72	42	7,5	75	42	42 x 110	
	15	49									
160 L	18,5	60		15	98		11	108			
180 M	22	71	48	18,5	121	48			48	48 x 110	
180 L				22	144		15	148			
200 L	30	97		30	196		18,5	181		55 x 110	
	37	120					22	215			
225 S			65	37	240	65			65	55 x 110	
				45	292		30	293		60 x 140	
225 M	45	145									
250 M	55	177		55	356		37	361		60 x 140	
280 S	75	241		75	484		45	438		65 x 140	
280 M	90	289		90	581	80	55	535	80	75 x 140	
315 S	110	353		110	707		75	727			
315 M	132	423	80	132	849	100	90	873	100	65 x 140	
	160	513		160	1030		110	1070		80 x 170	
315 L	200	641		200	1290		132	1280			
							160	1550			
315	250	801	100	250	1610	125	200	1930	125	85 x 170	
	315	1010		315	2020		250	2420			
355	355	1140		355	2280		315	3040		75 x 140	
	400	1280	125	400	2560					95 x 170	

Torque T<sub>Δ</sub> rated torque according to Siemens catalogue.

# BoWex® Curved-tooth gear couplings®

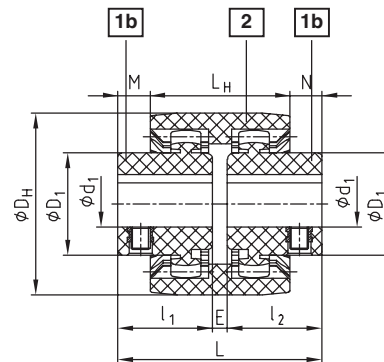
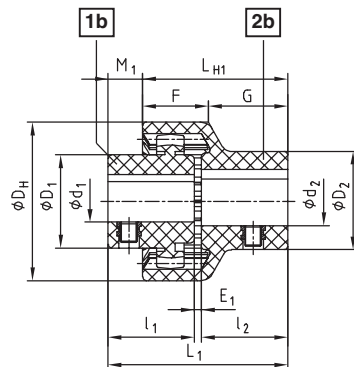
Junior basic programme from nylon

## Type plug-in coupling No. 001 a. type M No. 002



- Curved-tooth gear coupling plug-in design (2 parts) from nylon
- Double cardanic curved-tooth gear coupling type M (3 parts) from nylon
- Maintenance-free due to material combination nylon
- Compensating for axial, radial and angular shaft misalignment
- Low weight and small flywheel effect
- Axial plug-in – easy assembly
- Operating range - 25 °C to + 100 °C
- Available from stock with finish bore for standard shafts including keyway to DIN 6885 sheet 1 and thread for set screws, bore tolerance + 0,05 - 0,1 keyway tolerance ± 0,08, H7 fit for steel hubs only

Components



Type junior plug-in coupling (2 parts)

Type junior M coupling (3 parts)

Size	Torque $T_K$ [Nm] $T_{KN}$ $T_{Kmax}$		Finish bores				Dimensions [mm]												Max. speed [1/min]						
			Hub, part 1b		Plug-in-sleeve part 2b		$D_H$	$l_1; l_2$	$E_1$	$L_1$	$L_{H1}$	$M_1$	$F$	$G$	$E$	$L$	$L_H$	$M; N$							
BoWex® junior 14	5	10	Ø6, Ø7, Ø8, Ø9	22	Ø8	22																			
BoWex® junior M-14			Ø10, Ø11	25	Ø10, Ø11	25	40	23	2	48	40	8	23	17	4	50	37	6,5	6000						
BoWex® junior 19	8	16	Ø12, Ø14	27	Ø14, Ø15	29																			
BoWex® junior M-19			Ø16	30	Ø19	35	48	25	2	52	42	10	23	19	4	54	37	8,5	6000						
BoWex® junior 24	12	24	Ø10, Ø11, Ø12	26	Ø14, Ø16	32																			
BoWex® junior M-24			Ø14, Ø15, Ø16	32	Ø18, Ø19, Ø20	36	Ø19, Ø20	36	53	26	2	54	45	9	25	20	4	56	41	7,5	6000				
			Ø24	38	Ø24	40																			

Order form:

BoWex® junior 19	$d_1$ Ø 19	$d_2$ Ø 14
Coupling size 2-parted design or BoWex® junior M-19 3-parted design	Finish bore	Finish bore