

BoWex-ELASTIC® HE1 - HE4

Highly flexible flange couplings

Axial plug-in, available in different kinds of hardness



For legend of pictogram please refer to flapper on the cover



BoWex-ELASTIC® Type HE1 - HE4

Size	Bore d [mm]		Flange connection acc. to SAE - J620							Dimensions [mm]										Type HE1 / HE2			Type HE3 / HE4		
	Pilot bored	Max.	6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	l ₃ HE1/HE2	l ₃ HE3/HE4	D ₅	l ₂	D ₄	D	l ₁	L _{HE1}	L _{HE2}	L _{HE3}	L _{HE4}	Weight with max. bore [kg]	Mass moment of inertia with max. bore [kgm ²]		Weight with max. bore [kg]	Mass moment of inertia with max. bore [kgm ²]	
																					J _A	J _L		J _A	J _L
42 HE	-	42	●	●	●				4	2	180	33	145	65	42	70	50	55	40	1.8	0.0074	0.0016	1.8	0.0071	0.0021
																					2.8	0.0172	0.0016	-	-
48 HE	-	48	●	●	●				4	2	198	37	163	68	50	78	50	68	42	2.3	0.0119	0.0021	1.9	0.0070	0.0022
																					2.6	0.0170	0.0021	2.1	0.0103
65 HE	21	65			●				5	-	244	55	205	96	55	85	62	-	-	3.4	0.0342	0.0021	2.5	0.0201	0.0022
																					4.9	0.0424	0.0069	-	-
G 65 HE	21	65			●				-	3	-	45	205	96	55	-	-	73	50	-	-	-	3.9	0.0147	0.0075
																					-	-	-	4.1	0.0281
GG 65 HE	21	65			●				-	3	-	48	220	96	55	-	-	73	50	-	-	-	4.6	0.0423	0.0075
																					-	-	-	3.8	0.0163
80 HE	31	90			●				-	4	316	56	265	124	90	126	74	-	-	8.1	0.0239	0.0307	9.1	0.0414	0.0305
																	132	80	112	60	10.2	0.0765	0.0307	-	-
G 80 HE	31	90			●				-	4	356	66	300	124	90	136	80	-	-	9.7	0.0426	0.0471	11.1	0.0713	0.0472
																	142	84	122	70	14.7	0.2851	0.0471	-	-
GG 80 HE	31	90			●				-	4	-	71	302	124	90	-	-	130	80	-	-	-	11.9	0.0768	0.0498
																					-	-	-	18.3	0.2028
100 HE	38	100			●				-	4	-	80	350	152	110	142	90	150	82	-	-	-	16	0.2172	0.1013
																					-	-	-	-	-
G 100 HE	38	100			●				-	4	-	76	350	152	65	-	-	102	85	-	-	-	-	-	-
																					-	-	-	-	-

Other flange connections on request

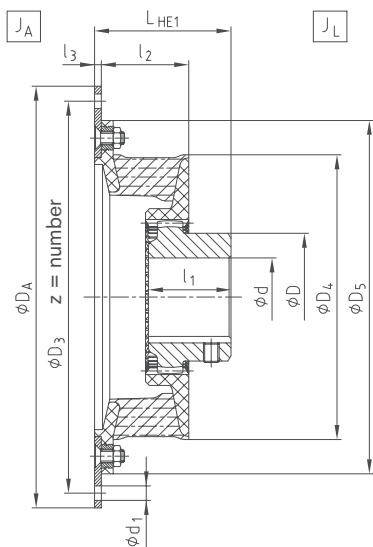
Technical data

Size	Elastomer hardness [Shore A]	Torque [Nm]			Perm. damping power P _{KW} [W]			Perm. operating speed n _{max} [rpm]	Dynamic torsion spring stiffness C _{dyn} [Nm/rad]	Relative damping ψ	Resonance factor V _R ≈ 2 • π / ψ	Radial spring stiffness C _r [N/mm]
		TKN	TK max.	with 10 Hz TKW	60 °C	80 °C	90 °C					
42 HE	T40	130	390	39	550	13	6.5	6200	550	0.6	10.5	142
	T50	150	450	45	26	13	6.5	6200	850	0.8	7.9	219
	T65	180	540	54	2700	1.2	5.2	697				
48 HE	T40	200	600	60	850	0.6	10.5	176				
	T50	230	690	69	36	18	9	5600	1300	0.8	7.9	269
	T65	280	840	84	3500	1.2	5.2	724				
65 HE	T40	350	1050	105	1600	0.6	10.5	209				
	T50	400	1200	120	2200	0.8	7.9	288				
	T65	500	1500	150	6000	1.2	5.2	784				
G65 HE	T40	430	1290	129	2350	0.6	10.5	294				
	T50	500	1500	150	3000	0.8	7.9	375				
	T65	620	1860	186	8500	1.2	5.2	1063				
GG 65 HE	T40	600	1800	180	3650	0.6	10.5	420				
	T50	700	2100	210	4800	0.8	7.9	550				
	T65	850	2550	255	13500	1.2	5.2	1550				
80 HE	T40	750	2250	225	4500	0.6	10.5	351				
	T50	950	2850	285	6500	0.8	7.9	507				
	T65	1200	3600	360	18000	1.2	5.2	1404				
G 80 HE	T40	1250	3750	375	7500	0.6	10.5	476				
	T50	1600	4800	480	12000	0.8	7.9	762				
	T65	2000	6000	600	32000	1.2	5.2	2031				
GG 80 HE	T40	1550	4650	465	9200	0.6	10.5	660				
	T50	2000	6000	600	14200	0.8	7.9	1020				
	T65	2500	7500	750	39600	1.2	5.2	2800				
100 HE	T40	2000	6000	600	12000	0.6	10.5	460				
	T50	2500	7500	750	19000	0.8	7.9	730				
	T65	3200	9600	960	48000	1.2	5.2	1840				
G 100 HE	T40	2350	7050	705	14200	0.6	10.5	584				
	T50	2975	8925	893	22600	0.8	7.9	935				
	T65	3800	11400	1140	57000	1.2	5.2	2350				

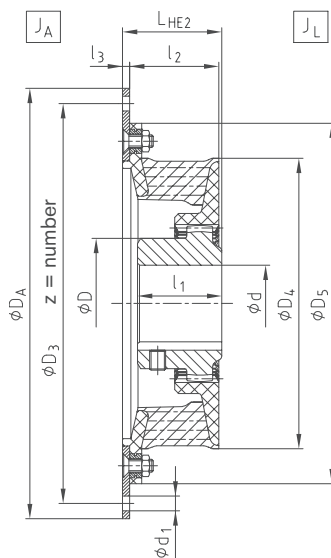
T = Temperature-stable rubber compound. The technical data specified apply for an ambient temperature of T = 60 °C.

* Expiring as a standard

Ordering example:	BoWex-ELASTIC® 42	HE1	40	8	70	U
	Coupling size	Type	Elastomer hardness	Flange Ø D _A according to SAE or special	Mounting length L _{HE}	Unbored or with finish bore

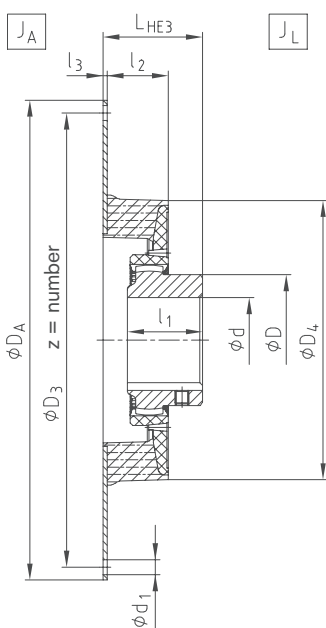


Type HE1

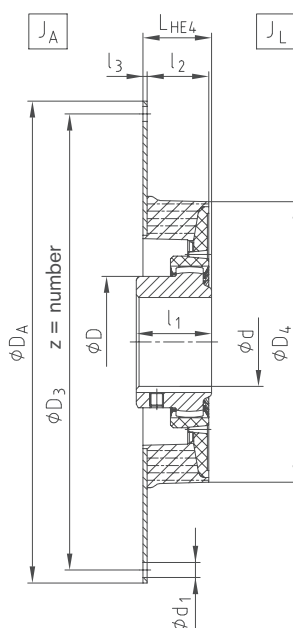


Type HE2

Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D3	z	d1
6 1/2"	215.90	200.02	6	9
7 1/2"	241.30	222.25	8	9
8"	263.52	244.47	6	11
10"	314.32	295.27	8	11
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13



Type HE3



Type HE4

Displacements																
Size	42 HE			48 HE			65 HE G65 HE GG65 HE			80 HE G80 HE GG80 HE			100 HE			
	T40	T50	T65	T40	T50	T65	T40	T50	T65	T40	T50	T65	T40	T50	T65	
Elastomer hardness [Shore A]	T40	T50	T65	T40	T50	T65	T40	T50	T65	T40	T50	T65	T40	T50	T65	
Perm. radial displacement ΔK_r [mm]	n=1500 rpm	1.1	1.0	0.5	1.2	1.1	0.5	1.6	1.5	0.7	1.8	1.7	0.8	2.2	2.0	1.0
	max. 1)	3.6	3.3	1.5	3.8	3.5	1.7	5.1	4.7	2.2	5.7	5.3	2.4	6.5	6.0	3.0
Perm. angular displacement ΔK_w [°]	n=1500 rpm	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5
	n=3000 rpm	0.5	0.4	0.25	0.5	0.4	0.25	0.5	0.4	0.25	0.5	0.4	0.25	0.5	0.4	0.25
Perm. angular displacement ΔK_w [°]	max. 1)	1.5			1.5			1.5			1.5			1.5		
Perm. axial displacement ΔK_a [mm]	± 2			± 2			± 2			± 2			± 3			

1) For short-term start-up operation

Mounting procedure, screw type with property class, tightening torques as per KTR assembly instructions (see www.ktr.com).

BoWex-ELASTIC® HE3 / HE4 / HE-D

Highly flexible flange couplings

Axial plug-in, available in different kinds of hardness



BoWex-ELASTIC® Type HE3, HE4 and HE-D

Size	Bore d [mm]		Flange connection acc. to SAE - J620						Dimensions [mm]						Weight with max. bore [kg]	Mass moment of inertia with max. bore [kgm²]			
	Pilot bored	Max.	14"	16"	18"	21"	24"	Ø800	Ø885	l ₃	l ₂	D ₄	D	l ₁		LHE3	LHE4	J _A	J _L
125 HE	45	125	•							6	92	416	192	140	186	103	33.1	0.3142	0.2750
G125 HE	45	125		•						6	89	440	192	140	192	109	34.8	0.4231	0.2750
150 HE	44	160			•					6	140	470	225	150	179	91	36.6	0.4634	0.3264
150 HE-D	44	160			•					-	286	470	225	275	205	160	39.5	0.6812	0.3264
G150 HE	44	160			•					6	140	504	225	150	179	91	46.8	0.7277	0.5414
G150 HE-D	44	160			•					-	286	504	225	275	205	160	51.5	1.2120	0.5414
200 HE	46	180				•				6	149	568	250	175	205	160	113	3.0045	1.0738
200 HE-D	46	180				•				-	325	568	250	298	310	-	155	6.4399	1.0738
G200 HE	46	180				•				6	149	600	250	175	205	160	51.9	0.8164	0.6500
G200 HE-D	46	180				•				-	325	600	250	298	310	-	56.6	1.3007	0.6500
240 HE	80	240					•			8	172	772	326	200	270	205	123	3.1820	1.291
275 HE	80	275						•		10	185	810	372	240	312	215	165	6.6173	1.291

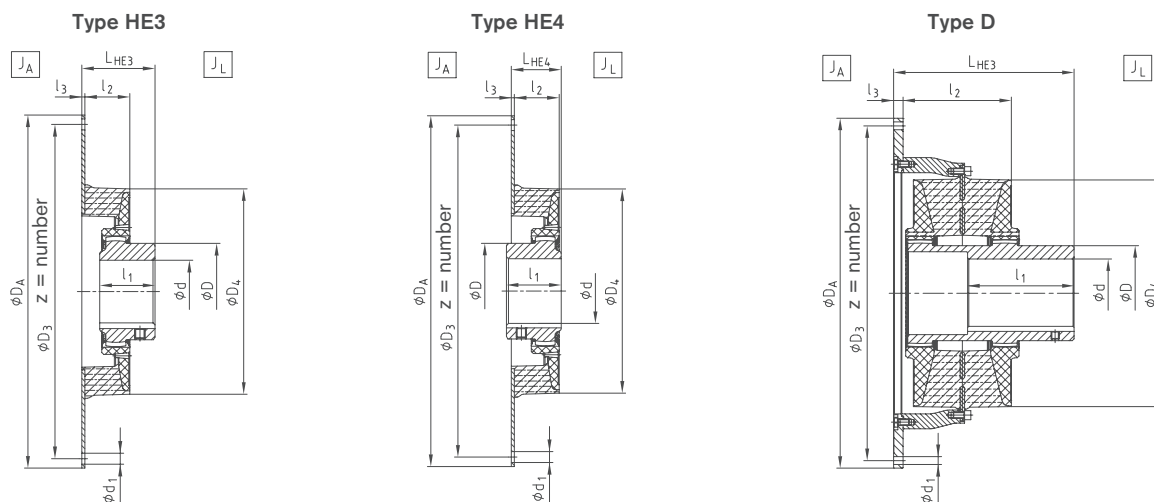
Technical data

Size	Elastomer hardness [Shore A]	Torque [Nm]				Perm. damping power P _{KW} [W]			Perm. operating speed n _{max.} [rpm]	Dynamic torsion spring stiffness C _{dyn.} [Nm/rad] 60 °C	Relative damping ψ	Resonance factor V _R ≈ 2 • π / ψ	Radial spring stiffness C _r [N/mm]
		T _{KN} [Nm]	T _K max. 10.000 LW [Nm]	T _K max. 50.000 LW [Nm]	T _{KW} [Nm]	60 °C	80 °C	90 °C					
125 HE	T50	4300	12900	6450	1075	221	133	88	2300	30000	0.8	7.9	617
	T70	7500	22500	11250	1875								
G125 HE	T50	6100	18300	9150	1525	240	144	96	2250	51000	0.8	7.9	560
	T70	9750	29250	14625	2438								
150 HE	T50	8000	24000	12000	2000	262	157	105	2200	67500	0.8	7.9	714
	T70	14000	42000	21000	3500								
150 HE-D	T50	16000	48000	24000	4000	524	314	210	2200	134000	0.8	7.9	1428
	T70	28000	84000	42000	7000								
G150 HE	T50	10000	30000	15000	2500	278	167	111	2100	85000	0.8	7.9	1485
	T70	18000	54000	27000	4500								
G150 HE-D	T50	20000	60000	30000	5000	556	334	222	2100	170000	0.8	7.9	2970
	T70	36000	108000	54000	9000								
200 HE	T50	14500	43500	21750	3625	308	185	123	1900	119000	0.8	7.9	1720
	T70	25000	75000	37500	6250								
200 HE-D	T50	29000	87000	43500	7250	616	370	246	1900	238000	0.8	7.9	3440
	T70	50000	150000	75000	12500								
G200 HE	T50	17500	52500	26250	4375	324	194	130	1800	139000	0.8	7.9	1952
	T70	30000	90000	45000	7500								
G200 HE-D	T50	35000	105000	52500	8750	648	388	260	1800	278000	0.8	7.9	3904
	T70	60000	180000	90000	15000								
240 HE	T50	29000	87000	43500	7250	372	223	149	1500	259000	0.8	7.9	2326
	T70	49000	147000	73500	12250								
275 HE	T50	42000	126000	63000	10500	410	246	164	1500	375000	0.8	7.9	2950
	T70	70000	210000	105000	17500								

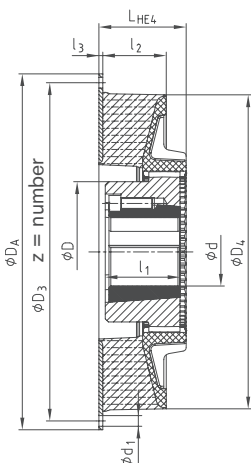
■ = Years of experience with applications at customer sites and additional test series in the KTR test field in Rheine enabled us to determine potentials allowing for an increase of the rated torques with some sizes of this series.

Other elastomer hardness on request.

Ordering example:	BoWex-ELASTIC® 80	HE3	40	10	112	U
	Coupling size	Type	Elastomer hardness	Flange Ø D _A according to SAE or special	Mounting length L _{HE}	Unbored or with finish bore



Type HE4 with taper clamping sleeve



Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D3	z	d1
14"	466.72	438.15	8	13
16"	517.50	489.00	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø800 ¹⁾	800	770	32	17
Ø885 ¹⁾	885	855	36	17

¹⁾ Flange connection differing from SAE standard, dimensions in mm.

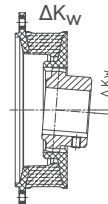
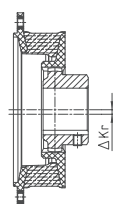
Displacements

For different operating speeds or higher operating temperatures the permissible radial displacement is calculated as follows:

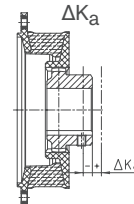
$$\Delta K_r \text{ perm.} = \Delta K_r \cdot St \cdot \sqrt{1500 / nx}$$

nx = speed / St = temperature factor

Radial displacement ΔK_r Angular displacement



Axial displacement ΔK_a



Displacements																
Size	125 HE G125 HE			150 HE G150 HE			200 HE G200 HE			240 HE			275 HE			
	T40	T50	T70	T40	T50	T70	T40	T50	T70	T40 Sh	T50	T70	T40	T50	T70	
Perm. radial displacement ΔK_r [mm]	n=1500 rpm	2.5	2.3	1.1	2.8	2.5	1.3	3.0	2.7	1.5	3.2	2.9	1.6	3.4	3.1	1.8
	max. ²⁾	7.5	6.9	3.3	8.0	7.5	4.0	8.5	8.0	4.5	9.0	8.5	5.0	9.5	9.0	5.5
Perm. angular displacement ΔK_w [°]	n=1500 rpm	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5	1.0	0.75	0.5
	n=3000 rpm	0.5	0.4	0.25	-	-	-	-	-	-	-	-	-	-	-	-
Perm. angular displacement ΔK_w [°]	max. ²⁾	1.5			1.5			1.5			1.5			1.5		
Perm. axial displacement ΔK_a [mm]	± 3			± 4			± 4			± 4			± 4			

²⁾ For short-term start-up operation

Mounting procedure, screw type with property class, tightening torques as per KTR assembly instructions (see www.ktr.com).

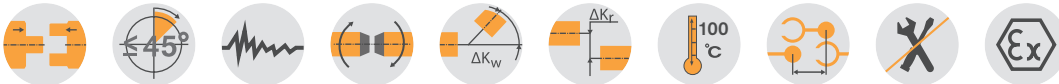
BoWex-ELASTIC® HE-ZS and HEW

Highly flexible flange couplings

With drop-out center part for pump drives, highly flexible shaft-to-shaft coupling



For legend of pictogram please refer to flapper on the cover



BoWex-ELASTIC® Type HE-ZS

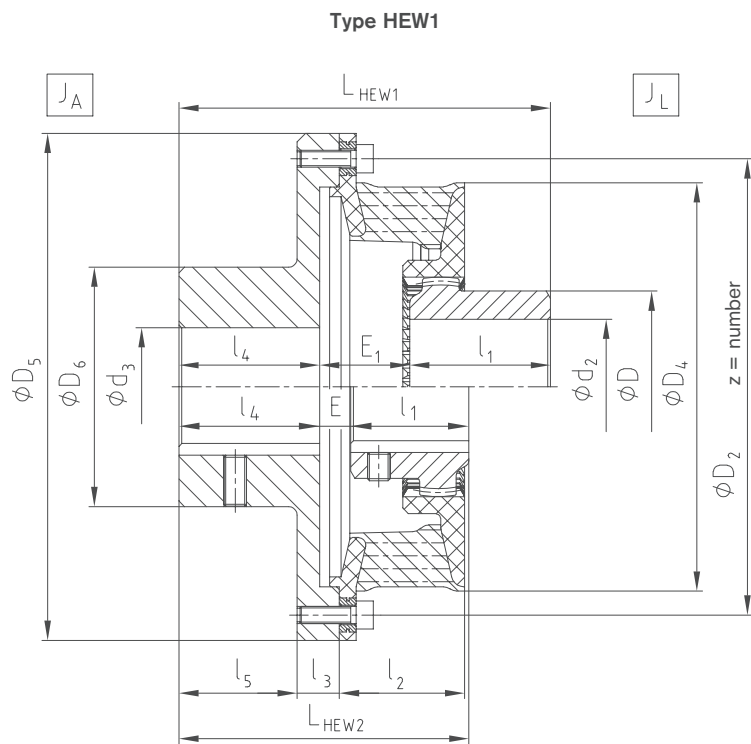
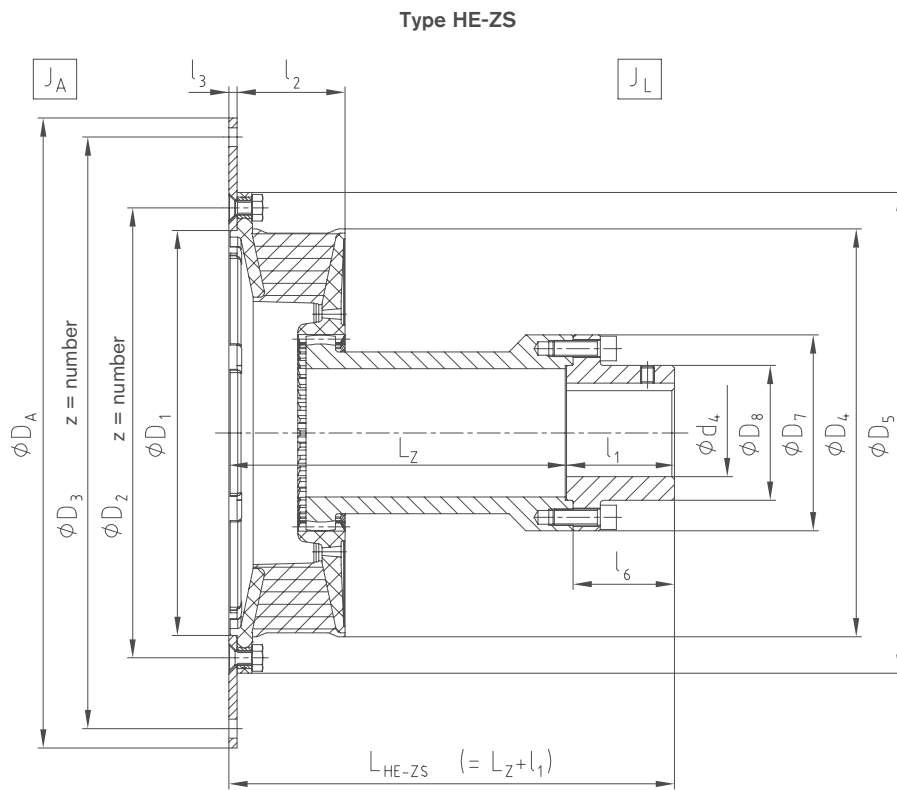
Size	Max. finish bore d4	Flange connection acc. to SAE - J620 DA for HE-ZS											Dimensions [mm]								Drop-out center part HE-ZS Lz [mm]					Weight with max. bore [kg]	Mass moment of inertia [kgm²]	
		6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	16"	18"	21"	24"	D1	D4	D5	D7	D8	l1	l2	l3	l6	100	120	140	180	250		JA	JL
48 ³⁾	28	●															48	10			●	●				2.9 ¹⁾	0.0026	0.0033
			●																		●	●				3.6 ¹⁾	0.0106	0.0033
				●																	●	●				3.9 ¹⁾	0.0148	0.0033
					●																●	●				4.6 ¹⁾	0.0298	0.0033
G65 ³⁾	45				●																	●	●			7.3 ¹⁾	0.0242	0.0129
						●																	●	●		8.9 ²⁾	0.0372	0.0150
80 ³⁾	65					●																	●	●		13.7 ²⁾	0.0211	0.0497
							●																●	●		15.9 ²⁾	0.0726	0.0497
G80 ³⁾	65						●																●	●		14.6 ²⁾	0.0402	0.0634
								●															●	●		19.5 ²⁾	0.2251	0.0634
100 ³⁾	95							●																●	●	29.8 ²⁾	0.1951	0.1779
									●															●	●	41.7 ²⁾	0.3013	0.3363
125 ⁴⁾	100									●														●	●	43.6 ²⁾	0.4123	0.3363
											●													●	●	45.6 ²⁾	0.4781	0.3700
G125 ⁴⁾	120											●												●	●	47.7 ²⁾	0.6380	0.3700
													●											●	●	63.2	0.6918	0.6647
150 ⁴⁾	135													●										●	●	67.9	1.1410	0.6647
															●									●	●	68.3	0.7540	0.7677
G150 ⁴⁾	135															●								●	●	73.0	1.2460	0.7677
																	●							●	●	98.7	1.5348	1.4109
200 ⁴⁾	150																							●	●	101.7	1.9138	1.4109
																								●	●	103.5	1.7270	1.6401
G200 ⁴⁾	150																							●	●	106.6	2.1060	1.6401

¹⁾ with Lz 120
²⁾ with Lz 100
³⁾ For technical data see page 220
⁴⁾ For technical data see page 222

BoWex-ELASTIC® Type HEW

Size	Max. finish bore		Dimensions [mm]														Weight with max. bore [kg]	Mass moment of inertia [kgm²]		
	d2	d3	D	D2	z x M	D4	D5	D6	l1	l2	l3	l4	l5	E	E1	LHEW1		LHEW2	JA	JL
42	48	50	68	162	6 M6	146	180	85	50	45	15	50	42	4	32	132	104	4.3	0.0121	0.0015
48 ³⁾	48	55	68	180	8 M6	164	200	92	50	45	17	55	45	4	32	137	109	5.5	0.0204	0.0019
65 ³⁾	65	75	96	224	8 M8	205	245	125	70	55	28	75	63	5	42	187	150	13.2	0.0752	0.0071
80 ³⁾	90	80	124	295.27	8 M10	266	318	130	90	70	17	80	70	5	45	215	160	19.7	0.1449	0.0285
G80 ³⁾	90	95	124	333.4	8 M10	302	358	145	90	80	22	90	78	5	55	235	185	25.9	0.2748	0.0422
100 ³⁾	100	110	152	438.15	8 M12	350	478	158	110	80	14	111.5	113	26	57	278	207	48.5	0.8356	0.1050
125 ⁴⁾	125	125	192	438.15	8 M12	416	478	175	140	99	14	170	158	-	45	335	-	67.2	0.9498	0.2617
G125 ⁴⁾	125	125	192	489	8 M12	440	530	175	140	95	14	170	158	-	45	335	-	76.6	1.4492	0.3034
150 ⁴⁾	160	160	225	542.9	6 M16	470	585	225	150	100	18	160	145	-	70	380	-	110	2.7206	0.5303
G150 ⁴⁾	160	160	225	542.9	6 M16	504	585	225	150	108	18	160	145	-	70	380	-	113.4	2.7809	0.5861
200 ⁴⁾	180	200	250	641.35	12 M16	568	683	280	175	149	26	220	214	-	85	480	-	195	6.6418	1.1406
G200 ⁴⁾	180	200	250	641.35	12 M16	600	683	280	175	149	26	220	214	-	85	480	-	200	6.6099	1.3419

³⁾ For technical data see page 220
⁴⁾ For technical data see page 222
 Other sizes available. Please consult with us.



Type HEW2

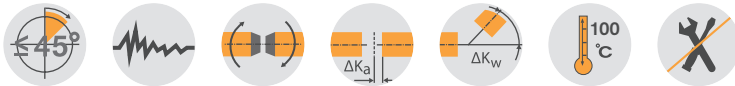
BoWex-ELASTIC® HEG

Highly flexible flange couplings

Cardan shaft connecting coupling



For legend of pictogram please refer to flapper on the cover



BoWex-ELASTIC® Type HEG1 and type HEG2																															
Size	Flywheel connection acc. to SAE-J620					Metric flange connection HEG1 dimensions [mm]								MECHANICS cardan shaft connection HEG2 dimensions [mm]								Dimensions [mm]			Weight [kg]	Mass moment of inertia					
	8"	10"	11 1/2"	14"	16"	58	65	75	90	100	120	150	180	l ₄	L	2 C	4 C	5 C	6 C	7 C	8,5 C	8 C	L ₁	D ₄		l ₂	l ₃	J _A [kgm ²]	J _L [kgm ²]		
48 ¹⁾	●					●	●	●						8	58.5										163	43.5	8	7	0.03	0.006	
		●				●	●	●									●	●	●								8	12	0.07	0.02	
G65 ¹⁾		●						●	●	●				8	66		●	●	●						71	205	48.0	10	14	0.10	0.02
			●					●	●	●	●						●	●	●								23	21	0.11	0.06	
80 ¹⁾		●						●	●	●	●			10	88.5		●	●	●	●					104	265	68.5	12	23	0.17	0.06
			●					●	●	●	●	●					●	●	●	●							23	26	0.18	0.09	
G80 ¹⁾			●					●	●	●	●	●		10	96			●	●	●	●				110	302	74.0	12	33	0.48	0.09
				●				●	●	●	●	●	●					●	●	●	●						12	33	0.48	0.09	
100 ¹⁾				●				●	●	●	●	●	●	12	98					●	●				128	350	78.0	16	41	0.63	0.19
125 ²⁾				●				●	●	●	●	●	●	12	111						●	●					18	56	0.74	0.42	
					●			●	●	●	●	●	●								●	●					12	59	0.97	0.42	

¹⁾ For technical data see page 220

²⁾ For technical data see page 222

Flywheel connection to SAE-J620				
Size	D _A	D ₁	z ₁	d ₁
8"	263.52	244.47	6	11
10"	314.32	295.27	8	11
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	14
16"	517.50	489.00	8	14

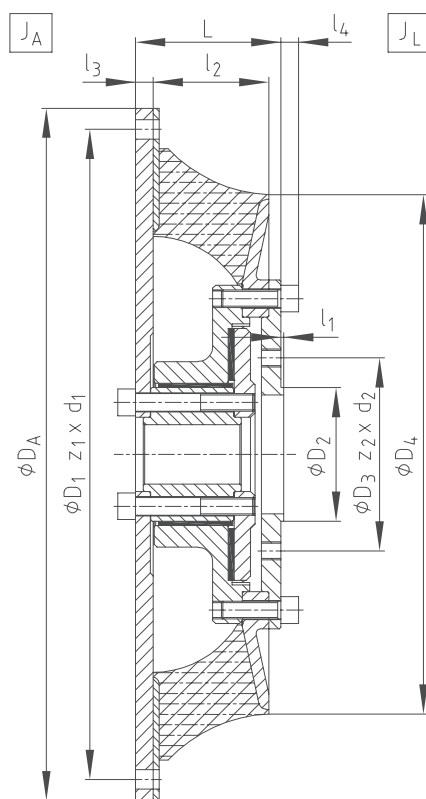
Metric flange connection HEG1 [mm]					
Size	D ₂	l ₁	D ₃	z ₂	d ₂
58	30	1.0	47.0	4	M5
65	35	1.0	52.0	4	M6
75	42	1.5	62.0	6	M6
90	47	2.0	74.5	4	M8
100	57	2.0	84.0	6	M8
120	75	2.0	101.5	8	M10
150	90	2.5	130.0	8	M12
180	110	3.0	155.5	8	M14

MECHANICS cardan shaft connection HEG2 [mm]						
Size	D ₅	l ₅	l ₆	l ₇	l ₈	z ₃
2 C	79.35	33.3	59.5	9.50	3.8	M8
4 C	107.92	36.5	87.3	9.50	3.8	M8
5 C	115.06	42.9	88.9	14.26	5.1	M10
6 C	140.46	42.9	114.3	14.26	5.1	M10
7 C	148.39	49.2	117.5	15.85	6.0	M12
8,5 C	165.08	71.4	123.8	15.85	6.0	M12
8 C	206.32	49.2	174.6	15.85	6.0	M12

BoWex-ELASTIC® type HEG has a maintenance-free plain bearing compensating for the radial loads generated by the cardan shaft. Moreover, the coupling has a friction disk which is axially prestressed by the elastomer part. The elastomer part is made of natural rubber via vulcanizing.

The permanent friction provides the coupling with excellent damping properties reducing the high vibratory torques arising in the coupling during the starting process and running through resonance considerably.

Type HEG1



Type HEG2

