



Flange couplings

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BoWex®

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MONOLASTIC®

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SINULASTIC® **NEW**

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BoWex® FLE-PA



BoWex® FLE-PAC



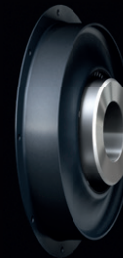
MONOLASTIC®



BoWex-ELASTIC®



SINULASTIC® **NEW**



FLANGE COUPLINGS

TYPES AND OPERATING DESCRIPTION

Properties of flange couplings

				
Product	BoWex® FLE-PA/-PAC	MONOLASTIC®	BoWex-ELASTIC®	SINULASTIC®
Type	Torsionally stiff flange coupling	Flexible flange coupling	Highly flexible flange coupling	Highly flexible flange coupling
Properties				
Torsionally stiff	●			
Torsionally flexible		●		
Highly flexible			●	●
Damping vibrations		●	●	●
Maintenance-free	●	●	●	●
Axial plug-in	●	●	●	●
Special features/applications				
Variant diversity	very high	high	very high	very high (type A, B, T, V)
Flange dimension	SAE standard and special dimensions	type 3/4 hole, SAE standard and special dimensions	SAE standard and special dimensions	SAE standard and special dimensions
internal spline	see standard programme of BoWex® hubs	for SAE or DIN pump shafts	see standard programme of BoWex® hubs	Type B
Applications	hydrostatic drives of construction machines, agricultural machines, ...	hydrostatic drives of construction machines, agricultural machines, ...	generators, splitterboxes, water pumps, piston compressors, agricultural machines, gensets, mill drives, separator drives, ...	generators, gensets, splitterboxes, traction drives, hydraulic pumps, piston compressors, ...
Performance data				
Max. rated torque T_{KN} [Nm]	6,600	1,850	70,000	25,000
Max. speed n [rpm]	6,000	6,000	6,200	3,800
Flange (standard and special)				
Material	fibre-glass reinforced polyamide (PA)	natural rubber	natural rubber	natural rubber, EPDM, silicone
	combination of polyamide with carbon fibre share and steel flange (PAC)			
Elastomer hardness	torsionally stiff	65, 70 Shore A	various kinds of hardness for vibration adaptation of drives	miscellaneous: S, M, H, U
Flange (standard)				
Temperature range [°C] min./max.	-25 / +130 (PA)	-40 / +100	-40 / +100	-40 / +120
	-25 / +130 (PAC)			
Engine power [kW]				
Max.	800	250	5,000	3,500

- ≈ Standard
- ≈ On request
- * ≈ Depending on size

FLANGE COUPLINGS TYPES AND OPERATING DESCRIPTION

Product finder of flange couplings

Product	BoWex® FLE-PA/-PAC	MONOLASTIC®	BoWex-ELASTIC®	SINULASTIC®
Type	Torsionally stiff flange coupling	Flexible flange coupling	Highly flexible flange coupling	Highly flexible flange coupling
Geometries				
Design	extremely short	short	short	short
max. radial displacement	0.5 mm	1 mm	9.5 mm	3 mm
shaft diameter min./max. [mm]	20 / 125	20 / 60	21 / 275	20 / 240
Types (extract)				
Intermediate shaft types » bridging larger shaft distances	-	-	HE-ZS	Type B and V
shaft-to-shaft connection	-	-	HEW1 and HEW2, HEW-ZS	○
flange-to-shaft connection	Standard	Standard	HE1, HE2, HE3 and HE4, HE-ZS	●
For cardan shafts » connecting couplings for I. C.-engines	-	-	HEG1 and HEG2	○
Combination with pump mounting flange	●	●	●	●
Certifications / type examinations				
ATEX			●	○
Bureau Veritas		●	●	○
DNV/GL			●	○
GOST R / GOST TR		●	●	○

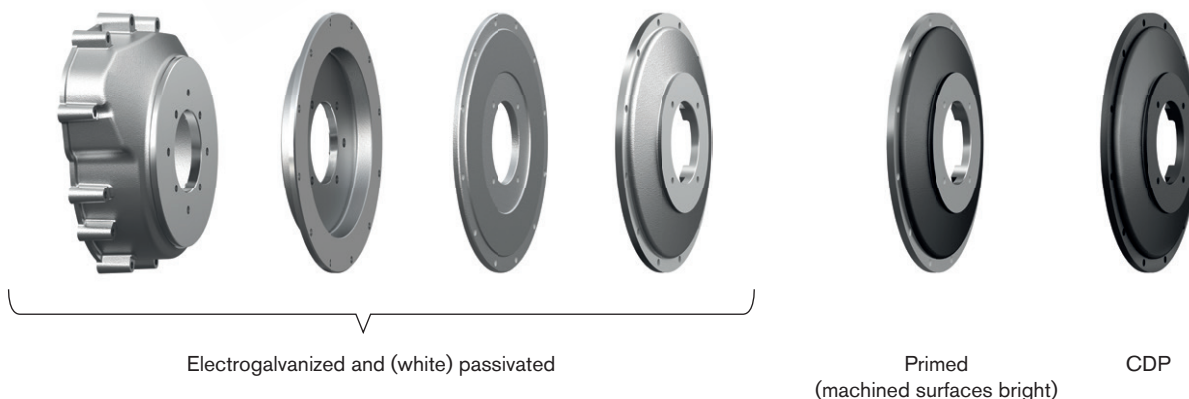
● ≈ Standard

Please note: Pump mounting flanges



For connecting hydraulic pumps to the diesel engine KTR supplies mounting flanges according to SAE connection dimensions sizes SAE 6 to SAE 1. These flanges are made of steel and EN-GJL-250 for hydraulic pumps with flange connections according to SAE-A, -B, -C, -D and -E as types with 2 and 4 holes.
Pump connection housings made of EN-GJL-250 to be mounted directly to the back plate of the engine.

Miscellaneous pump mounting flange designs



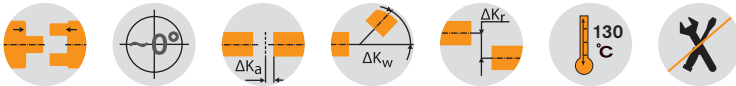
BoWex® FLE-PA

Torsionally stiff flange couplings

Axial plug-in, maintenance-free, torsionally stiff



For legend of pictogram refer to flapper on the cover



BoWex® FLE-PA – Dimensions/nominal dimension acc. to SAE

Size	Pilot bore	Finish bore d		Dimensions [mm]								Special length l1 max.	Nominal size acc. to SAE (Dg)						Max. axial displacement [mm]
		min.	Max.	D	D1	l1	l3	l7	l8	l10	l11		6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	
48	-	20	48	68	100	50	41	50	20	13	48	up to 60	●	●	●	●			± 2
T 48	13	15	48	68	100	50	38	45	20	13	46	-	●	●	●	●			± 1
T 55	17	20	55	85	115	50	37	48	24	13	48	-	●	●	●	●			± 2
65 / T 65	21	30	65	96	132	55	45	54	27	21	51	up to 70			●	●	●		± 2
T 70	26	30	70	100	153	60	48	56	30	21	57	-				●		± 2	
80 / T 80	31	35	90	124	170	90	78	87	30	21	87	-				●	●	± 2	
100 / T 100	38	40	100	152	265	110	78	108	35	21	110	-				●	●	± 2	
125 / T 125	45	50	125	192	250	140	113	140	50	28	97	-				●	●	± 2	

Special flange dimensions see page 230 et seqq. and on request

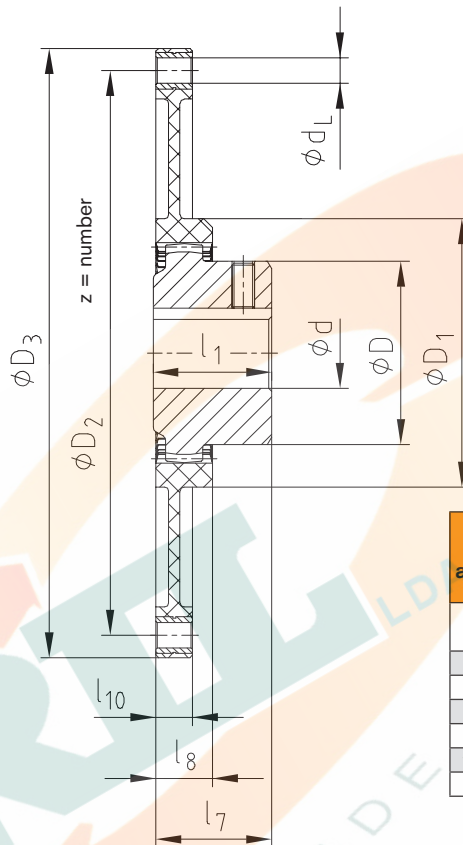
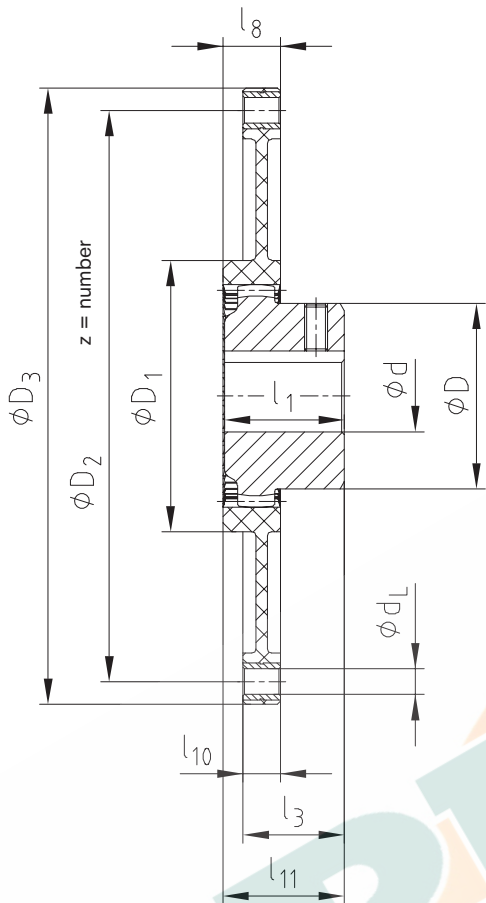
Technical data of BoWex® FLE-PA – Torques/weights/mass moments of inertia/torsion spring stiffness

Size	Torque TK [Nm]			Weight/mass moment of inertia J	Hub with max. bore	FLE-PA flanges according to SAE						Dynamic torsion spring stiffness with +60 °C/ψ = 0.4 [Nm/rad]			
	TKN	TK max.	TKW			6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	0.30 TKN	0.50 TKN	0.75 TKN	1.00 TKN
48	240	600	120	[kg] [kgm²]	0.79 0.0007	0.32	0.43	0.51	0.64			35 x 10³	75 x 10³	105 x 10³	125 x 10³
T 48	300	750	150	[kg] [kgm²]	0.79 0.0007	0.32	0.43	0.51	0.64			40 x 10³	86 x 10³	120 x 10³	143 x 10³
T 55	450	1125	225	[kg] [kgm²]	1.20 0.0016	0.34	0.62	0.45	0.646			90 x 10³	140 x 10³	170 x 10³	195 x 10³
65	650	1600	325	[kg] [kgm²]	1.50 0.0027			0.63	0.64	0.89		110 x 10³	160 x 10³	200 x 10³	230 x 10³
T 65	800	2000	400	[kg] [kgm²]	1.60 0.0035			0.63	0.64	0.89		130 x 10³	190 x 10³	240 x 10³	280 x 10³
T 70	1000	2500	500	[kg] [kgm²]	2.60 0.0059				0.941			165 x 10³	315 x 10³	345 x 10³	368 x 10³
80	1200	3000	600	[kg] [kgm²]	5.20 0.0151				1.05	1.12		200 x 10³	410 x 10³	580 x 10³	700 x 10³
T 80	1500	3750	750	[kg] [kgm²]	5.20 0.0151				1.05	1.12		240 x 10³	450 x 10³	638 x 10³	770 x 10³
100	2050	5150	1025	[kg] [kgm²]	9.37 0.0401					1.16	8.45	500 x 10³	700 x 10³	856 x 10³	950 x 10³
T 100	2500	6250	1250	[kg] [kgm²]	9.37 0.0401					1.16	8.45	600 x 10³	830 x 10³	960 x 10³	1070 x 10³
125	4250	10700	2125	[kg] [kgm²]	19.73 0.1359					2.09	9.85	1280 x 10³	1885 x 10³	2280 x 10³	2665 x 10³
T 125	5300	13250	2650	[kg] [kgm²]	19.73 0.1359					2.09	9.85	1600 x 10³	2250 x 10³	2700 x 10³	3200 x 10³

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

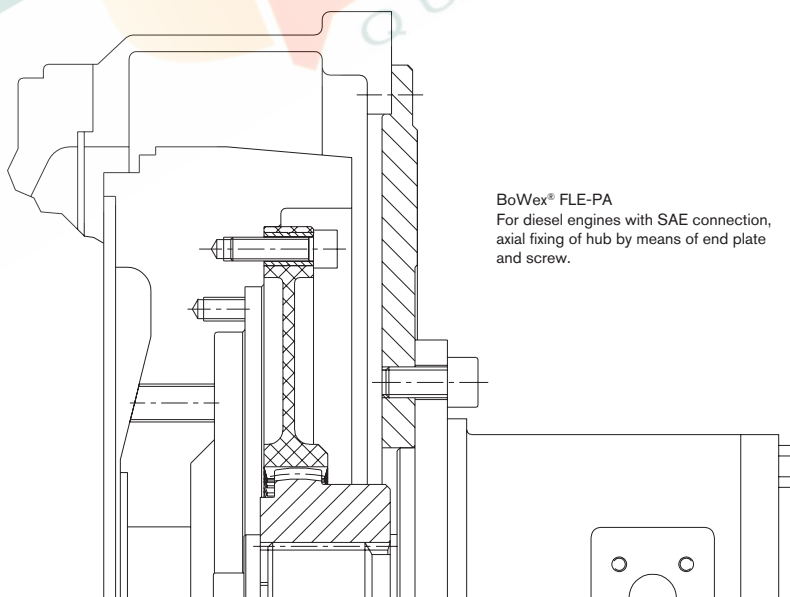
Short mounting version

Long mounting version



Flange dimensions according to SAE J620 [mm]				
Size	D ₃	D ₂	z	d _L
6 1/2"	215.9	200.02	6	9
7 1/2"	241.3	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

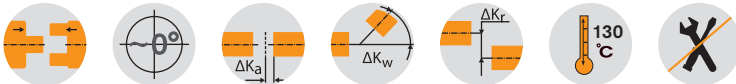
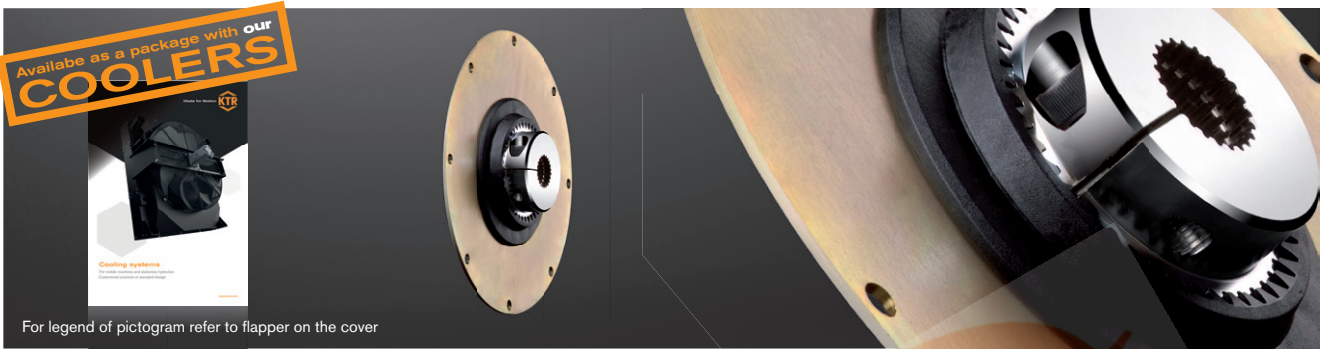
Example of installation



BoWex® FLE-PAC

Torsionally stiff flange couplings

Axial plug-in, extremely short design, carbon-fibre reinforced material



BoWex® FLE-PAC – Dimensions/nominal dimension to SAE																		
Size	Pilot bore	Finish bore d		Dimensions [mm]							Special length l ₁ max.	Nominal size acc. to SAE (D ₃)						Max. axial displacement [mm]
		min.	Max.	D	D ₁	l ₁	l ₃	l ₇	l ₈	l ₁₀		6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	
48 / T 48	13	15	48	68	110	50	35	46	25	3	up to 60	●	●	●	●		± 3	
T 55	17	20	55	85	148	50	32	42	28	3	-	●	●	●	●		± 3	
65 / T 65	21	30	65	96	165	55	36	46	32	4	up to 70	●	●	●	●	●	± 3	
80 / T 80	31	35	90	124	220	90	72	76	35	4	-				●	●	± 3	
100 / T 100	38	40	100	152	280	110	85	102	47	5	-				●	●	± 3	
125 / T 125	45	50	125	192	250	140	113	140	50	28	-				●	●	± 3	

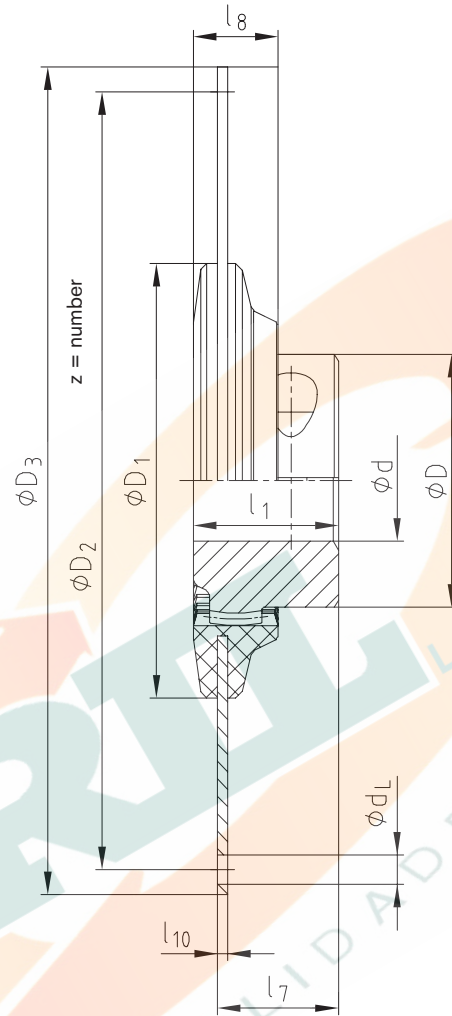
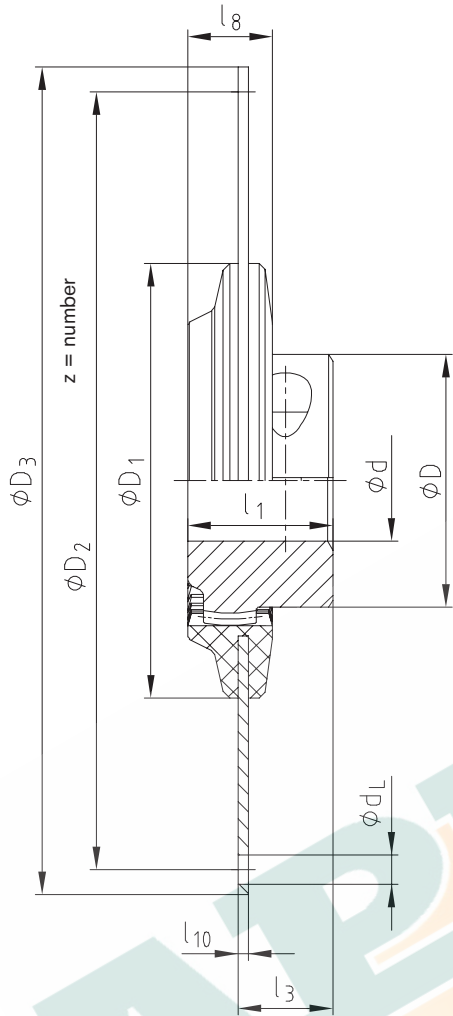
Special flange dimensions deviating from SAE standard are also available.

Technical data of BoWex® FLE-PAC – Torques/weights/mass moments of inertia/torsion spring stiffness																
Size	Torque T _K [Nm]			Weight/mass moment of inertia J	Hub with max. bore	FLE-PAC flanges according to SAE						Dynamic torsion spring stiffness with +60 °C/ψ = 0.45 [Nm/rad]				
	T _{KN}	T _{K max.}	T _{KW}			6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	0.30 T _{KN}	0.50 T _{KN}	0.75 T _{KN}	1.00 T _{KN}	
48	300	600	150	[kg]	0.79	0.77	0.98	1.19	1.73			64 x 10 ³	95 x 10 ³	114 x 10 ³	132 x 10 ³	
				[kgm ²]	0.0007	0.0049	0.0077	0.0109	0.0221							
T 48	370	740	185	[kg]	0.79	0.77	0.98	1.19	1.73			91 x 10 ³	129 x 10 ³	155 x 10 ³	182 x 10 ³	
				[kgm ²]	0.0007	0.0049	0.0077	0.0109	0.0221							
T 55	550	1100	275	[kg]	1.20	0.74	0.95	1.16	1.7			181 x 10 ³	258 x 10 ³	312 x 10 ³	358 x 10 ³	
				[kgm ²]	0.0016	0.0049	0.0077	0.0109	0.0222							
65	800	1600	400	[kg]	1.50	0.93	1.2	1.48	2.20	2.83		214 x 10 ³	329 x 10 ³	397 x 10 ³	451 x 10 ³	
				[kgm ²]	0.0027	0.0065	0.0101	0.0145	0.0294	0.0467						
T 65	1000	2000	500	[kg]	1.60	0.93	1.2	1.48	2.20	2.83		256 x 10 ³	381 x 10 ³	461 x 10 ³	516 x 10 ³	
				[kgm ²]	0.0035	0.0065	0.0101	0.0145	0.0294	0.0467						
80	1500	3000	750	[kg]	5.20				2.27	2.90	5.20	486 x 10 ³	713 x 10 ³	923 x 10 ³	1156 x 10 ³	
				[kgm ²]	0.0151				0.0312	0.0485	0.1462					
T 80	1850	3700	925	[kg]	5.20				2.27	2.90	5.20	556 x 10 ³	815 x 10 ³	1065 x 10 ³	1329 x 10 ³	
				[kgm ²]	0.0151				0.0312	0.0485	0.1462					
100	2550	5100	1275	[kg]	9.37						3.35	6.22	679 x 10 ³	929 x 10 ³	1218 x 10 ³	1457 x 10 ³
				[kgm ²]	0.0401						0.0606	0.1828				
T 100	3100	6200	1550	[kg]	9.37						3.35	6.22	767 x 10 ³	1030 x 10 ³	1343 x 10 ³	1594 x 10 ³
				[kgm ²]	0.0401						0.0606	0.1828				
125	5350	10700	2675	[kg]	19.73						2.09	9.85	1538 x 10 ³	2098 x 10 ³	2528 x 10 ³	2980 x 10 ³
				[kgm ²]	0.1359						0.0606	0.1828				
T 125	6600	13200	3300	[kg]	19.73						2.09	9.85	1887 x 10 ³	2495 x 10 ³	3035 x 10 ³	3629 x 10 ³
				[kgm ²]	0.1359						0.043	0.306				

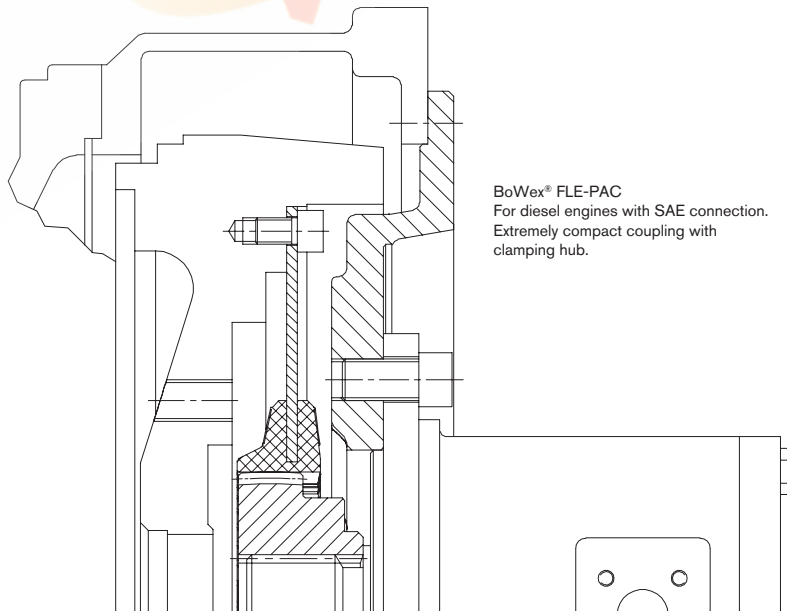
Mounting procedure, screw type with property class, tightening torques as per KTR assembly instructions (see www.ktr.com).

Short mounting version

Long mounting version



Flange dimensions according to SAE J620 [mm]				
Size	D ₃	D ₂	z	d _L
6 1/2"	215.9	200.02	6	9
7 1/2"	241.3	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	14

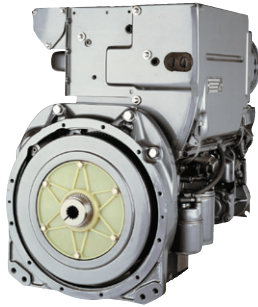


BoWex® FLE-PAC
For diesel engines with SAE connection.
Extremely compact coupling with clamping hub.

BoWex® FLE-PA / FLE-PAC

Torsionally stiff flange couplings

Selection according to SAE standard



Determination of coupling

- Determination of coupling size
- Connection dimension of coupling
- Hub type/mounting length

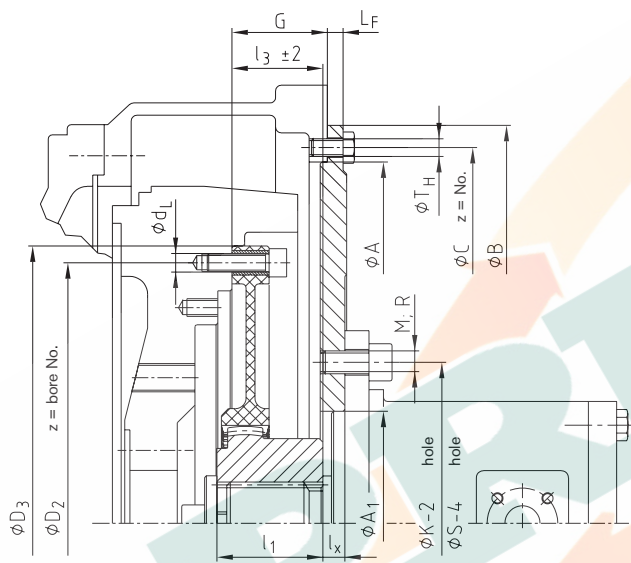
- Table 1
- Table 2
- Table 3

SAE pump mounting flange

- Flange size according to SAE 617
- Connection flange of hydraulic pump

- Table 4
- Table 5

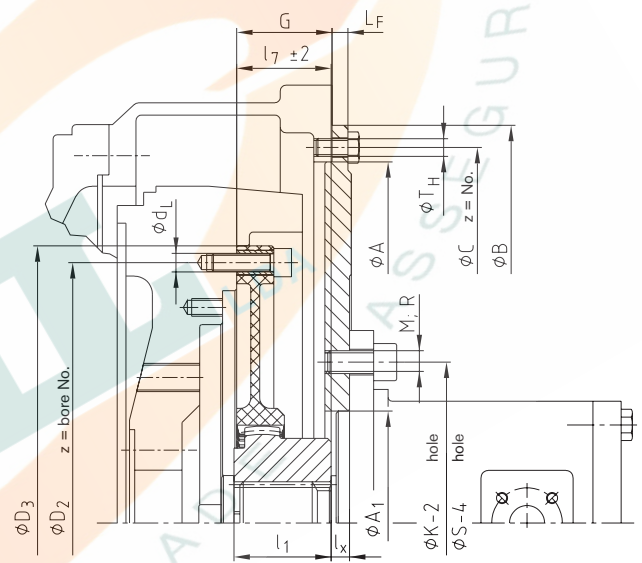
Short mounting version of coupling (l_3)



Marking on PA flange



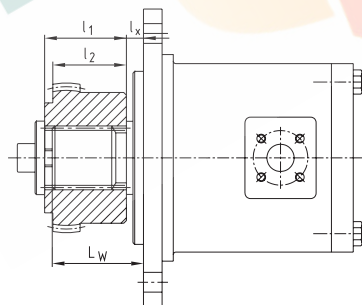
Long mounting version of coupling (l_7)



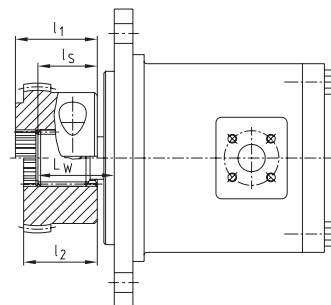
Marking on PA flange



Spline hub



Clamping hub



Determination of mounting length l_3 or l_7

SAE shaft	$l_3 / l_7 = G + LF - LW + l_5$
DIN shaft	$l_3 / l_7 = G + LF - l_5$

If axial fixing of the hub by means of an end plate and a screw is not possible for a pump shaft with involute spline, we recommend to use a clamping hub.

Mounting instructions:

The flange can be fastened to the engine flywheel by means of socket head cap screws according to DIN EN ISO 4762 quality 8.8 or by hexagon head screws quality 8.8. We recommend screws are loctited in position.

Screw tightening torque of FLE-PA flange on the flywheel

M8	25 Nm
M10	49 Nm
M12	86 Nm

Screw tightening torque of spline clamping hubs DIN EN ISO 4762

42/48	M10	49 Nm
T55/65/T70	M12	86 Nm
80/100/125	M16	210 Nm

BoWex® FLE-PA / FLE-PAC

Torsionally stiff flange couplings

Mounting dimensions according to SAE standard

1. Selection of coupling for diesel engine											
Diesel engine power		Coupling size	Flywheel acc. to SAE			Pump mounting flange		Driving shaft of pump			
kW	PS		G			LF					
up to 40	up to 55	48 FLE-PA	6 1/2"	30.15	1.19"	9.5	0.375"	See Table 3 hub type SAE J 498/DIN 5480			
			7 1/2"	30.15	1.19"						
			8	62	2.44"						
			10	54	2.12"						
up to 75	up to 100	T55 FLE-PA	6 1/2"	30.15	1.19"	9.5	0.375"		See Table 3 hub type SAE J 498/DIN 5480		
			7 1/2"	30.15	1.19"						
			8	62	2.44"						
			10	54	2.12"						
up to 90	up to 120	65 FLE-PA	8	62	2.44"	9.5	0.375"			See Table 3 hub type SAE J 498/DIN 5480	
			10	54	2.12"						
			11 1/2"	39.6	1.56"						
up to 150	up to 200	T70 FLE-PA	10	54	2.12"	9.5	0.375"				See Table 3 hub type SAE J 498/DIN 5480
up to 180	up to 240	80 FLE-PA	10	54	2.12"	9.5	0.375"				
			11 1/2"	39.6	1.56"						
up to 285	380	100 FLE-PA	11 1/2"	39.6	1.56"	12.7	0.5"	See Table 3 hub type SAE J 498/DIN 5480			
			14	25.4	1"						
up to 540	720	125 FLE-PA	11 1/2"	39.6	1.56"	12.7	0.5"		See Table 3 hub type SAE J 498/DIN 5480		
			14	25.4	1"						

2. Dimensions of coupling flange according to SAE J620 [mm]				
Nominal size	D ₃	D ₂	z = number	d _L
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	14

3. Selection of coupling hubs - Determination of mounting length l ₃ or l ₇															
BoWex® coupling size	Pump shaft to SAE J 498 and DIN 5480	Spline hub	Spline clamping hub	Dimensions of coupling hub [mm]			Mounting length of coupling l ₃ or l ₇								Code to order coupling hub Specify coupling size
				l ₁	l ₂	l _S	Flange size 6 1/2" and 7 1/2"		Flange size 8"		Flange size 10"		Flange size 11 1/2"		
							K	L	K	L	K	L	K	L	
42	SAE-16/32 DP PI-S 3/4" z = 11	x	x	42	-	33	33	42							P559101
42	SAE-16/32 DP PB-S 1/8" z = 13	x	x	42	-	-	33	42							P567101
42	SAE-16/32 DP PB-BS 1" z = 15	x	x	42	-	27	33	42							P660201
48	SAE-16/32 DP	x	x	50	-	45	41	50	50	41	50				P663301
65	PA-S 1 3/8" z = 21	x	x	50	-	48			54	45	54	41			P663301
65	SAE-12/24 DP PC-S 1 1/4" z = 14	x	x	55	-	44			54	45	54	41			P656201
65	SAE-16/32 DP PD-S 1 1/2" z = 23	x	x	-	49	45					53	41			P664301
80	SAE-16/32 DP PE-S 1 3/4" z = 27	x	x	55	-	-						33	44		P665402
42	25 x 1.25 x 18	x	x	42	-	-	33	42							P000205
42	DIN 5480	x	x	42	-	-	33	42							P500202
42	30 x 2 x 14	x	x	42	-	-	33	42							P500203
48	DIN 5480	x	x	50	-	-	41	50							P000206
48	30 x 2 x 14	x	x	50	-	-	41	50	50		50				P500203
48	DIN 5480	x	x	46	-	-	37	46							P000303
65	35 x 2 x 16	x	x	55	-	-					54	39			P000303
65	DIN 5480	x	x	60	-	-			50	59	50	59	39		P500301
65	40 x 2 x 18	x	x	55	-	-					54	39			P000304
65	DIN 5480	x	x	55	-	-			54	45	54	39			P500302
65	45 x 2 x 21	x	x	-	64	-			60	69	60	69	39		P000403
65	DIN 5480	x	x	55	-	-			54	45	54	39			P500401
80	50 x 2 x 24 DIN 5480	x	x	55	-	-						37	42		P500405

Shown above is a small overview of splines available, other SAE or DIN splines are also available.

4. Housing dimensions according to SAE 617 [mm]						
SAE size	A	B	C	Z	TH	
SAE-1	511.18	552	530.2	12	M10	3/8"
SAE-2	447.68	489	466.7	12	M10	3/8"
SAE-3	409.58	451	428.6	12	M10	3/8"
SAE-4	361.95	403	381.0	12	M10	3/8"
SAE-5	314.33	356	333.4	8	M10	3/8"
SAE-6	266.7	308	285.7	8	M10	3/8"

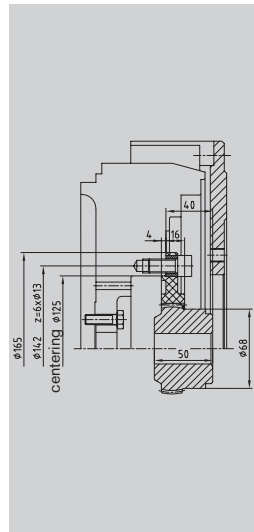
5. Mounting flange for hydraulic pump acc. to SAE [mm]										
SAE size	SAE flange with 2 holes					SAE flange with 4 holes				
	A ₁	K-2	M	Z		A ₁	S-4	R	Z	
A	82.55	106.4	M10	3/8"	2	82.55	104.6	M10	3/8"	4
B	101.6	146.0	M12	1/2"	2	101.6	127.0	M12	1/2"	4
C	127.0	181.0	M16	5/8"	2	127.0	162.0	M12	1/2"	4
D	152.4	228.6	M16	5/8"	2	152.4	228.6	M16	5/8"	4
E	-	-	-	-	-	165.1	317.5	M20	3/4"	4

Ordering example: Coupling FLE-PA/FLE-PAC			SAE pump mounting flange	
BoWex® 48 FLE-PA	7 1/2"	P663301	SAE-4	B-2L
Coupling size	SAE connection of coupling	Code of coupling hub	Pump mounting flange for engine housing	Pump flange acc. to SAE 2 holes/4 holes standard metric fastening thread
Table 1	Table 2	Table 3	Table 4	Table 5

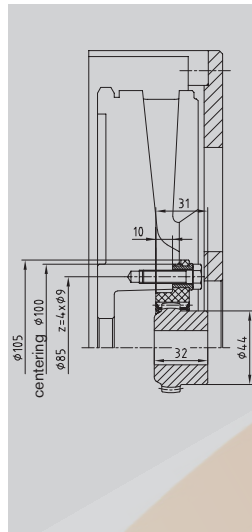
BoWex® FLE-PA Torsionally stiff flange couplings

Special flange programme, deviations from SAE standard

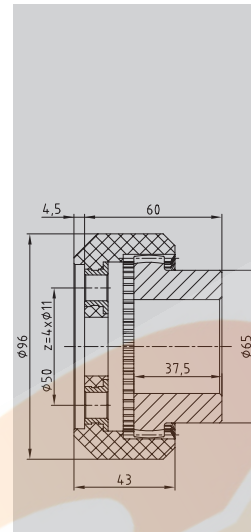
Fitting to
diesel engines:
Hatz



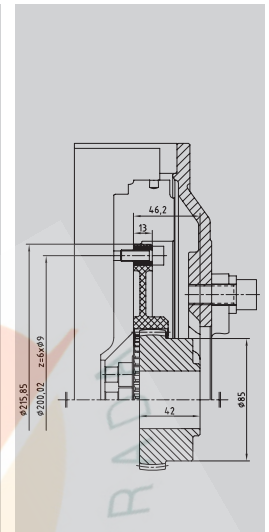
BoWex® 48 FLE-PA, Ø165
Hatz
2L/3L/4L41C 2M/3M/4M41
4M42,4L42C



BoWex® 28 FLE-PA, Ø105
Hatz
1D81/1D90



BoWex® 48 FLE-PA, Ø96
Hatz
Z788/Z789/Z790

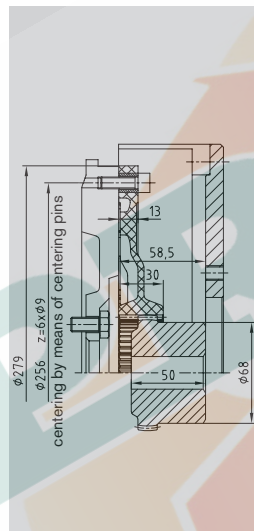


BoWex® T55 FLE-PA
Hatz
2-4 H50

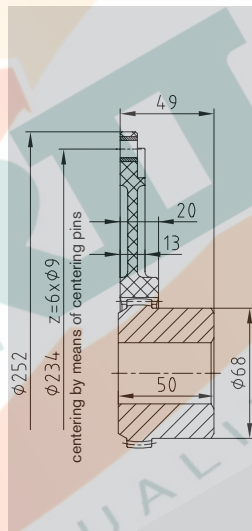
Coupling size

Engine type

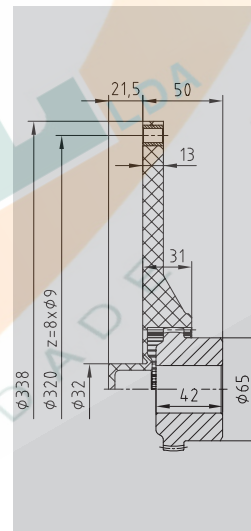
Fitting to
diesel engines:
VW
Mitsubishi



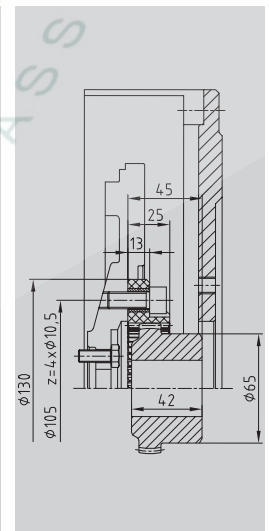
BoWex® 48 FLE-PA, Ø279
VW
028.B / M344



BoWex® 48 FLE-PA, Ø252
VW
062.2 / 068.5 / 6 / A / D



BoWex® 48 FLE-PA
Mitsubishi
Ø338-32

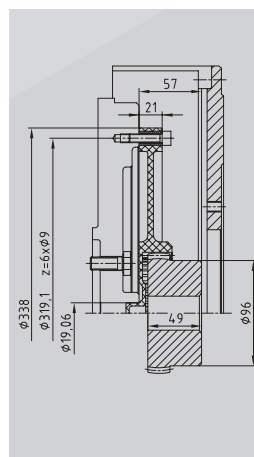


BoWex® 48 FLE-PA, Ø130
Mitsubishi
Series L / Series K

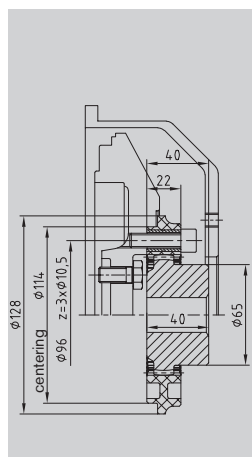
Coupling size

Engine type

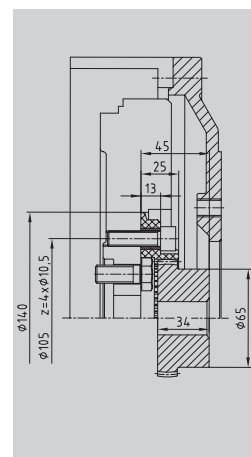
Fitting to
diesel engines:
Perkins
Lombardini



BoWex® 65 FLE-PA, Ø338
Perkins 1104C-44T
Flywheel No. D0014



BoWex® 48 FLE-PA, Ø128
Lombardini
FOCS series



BoWex® 48 FLE-PA, Ø140
Lombardini
LDW

Coupling size

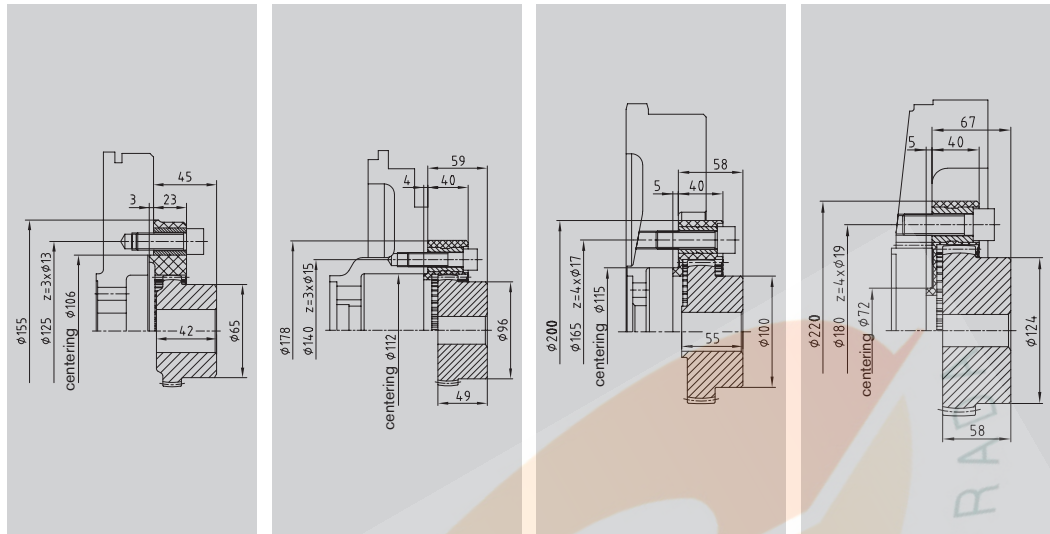
Engine type

BoWex® FLE-PA

Torsionally stiff flange couplings

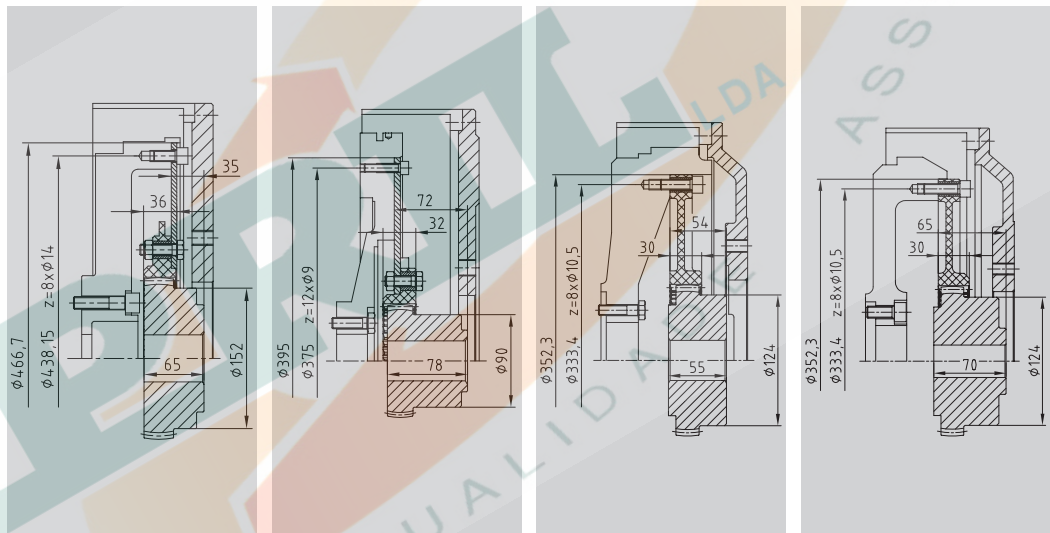
Special flange programme, deviations from SAE standard

Fitting to diesel engines:
Perkins
Isuzu
Cummins



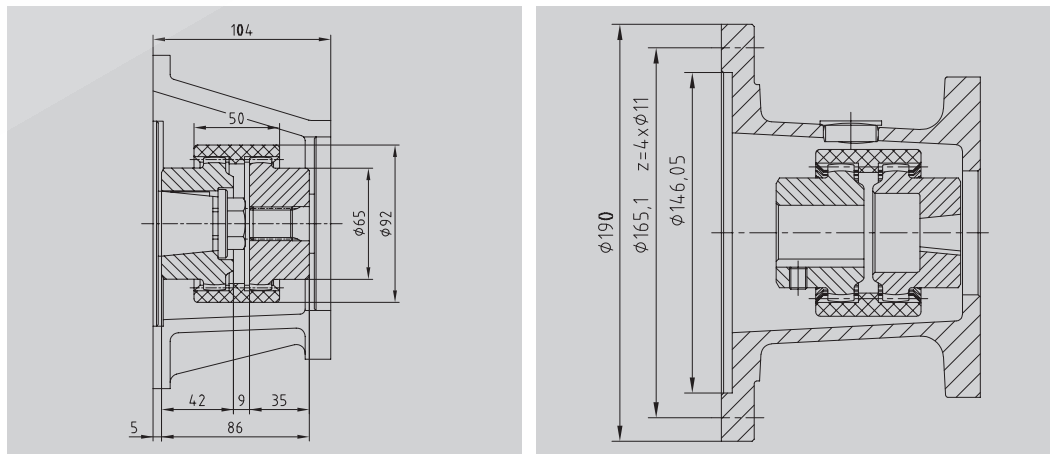
Coupling size	BoWex® 48 FLE-PA, Ø155	BoWex® 65 FLE-PA, Ø178	BoWex® 70 FLE-PA, Ø200	BoWex® 80 FLE-PA, Ø220
Engine type	3 holes, Ø125	3 holes, Ø140	4 holes, Ø165	4 holes, Ø180

Fitting to diesel engines:
Caterpillar
Daimler
Cummins
John Deere



Coupling size	BoWex® T100 FLE-PA, 14"	BoWex® T65 FLE-PA, Ø395	BoWex® 80 FLE-PA, 11 1/2"	BoWex® 80 FLE-PA 11 1/2"
Engine type	Caterpillar C 10 / C 12	Daimler OM904	Cummins QSX/QSB	John Deere

Fitting to shaft engines:
Hatz
Honda
Briggs & Stratton
Yanmar
Kohler
Robin



Coupling size	BoWex® M42	BoWex® shaft coupling type M28 and M32
Engine type	Hatz 2G30	Housing connection according to SAE J609A

BoWex® FLE-PA

MONOLASTIC®

BoWex-ELASTIC®

SINULASTIC®

Flange couplings

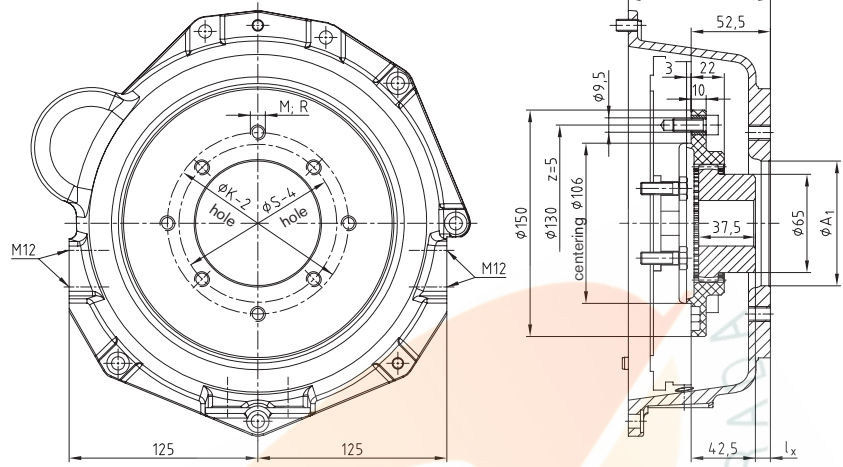
BoWex® FLE-PA

Torsionally stiff flange couplings

Flange couplings and pump connection housings for KUBOTA engines

KUBOTA
Super MINI series

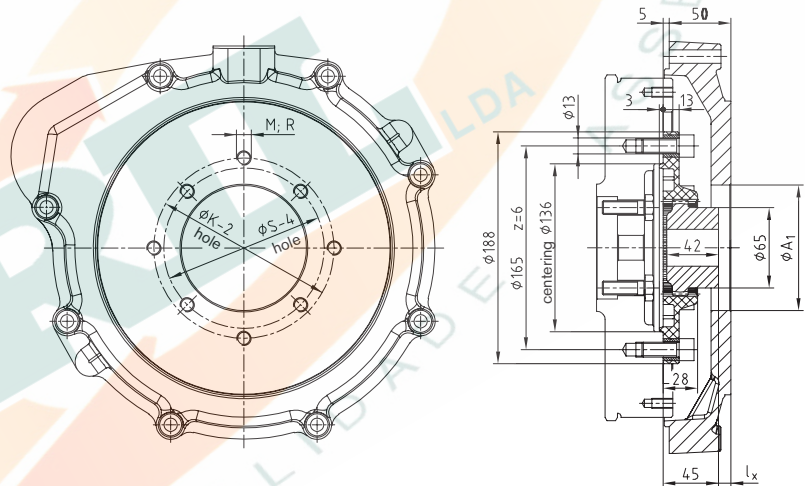
- Z-400
- Z-442-B
- Z-482-B
- D-600
- D-662-B
- D-902-B
- V-800



BoWex® 48 FLE-PA Ø 150 / pump connection housings

KUBOTA
Super 3 series

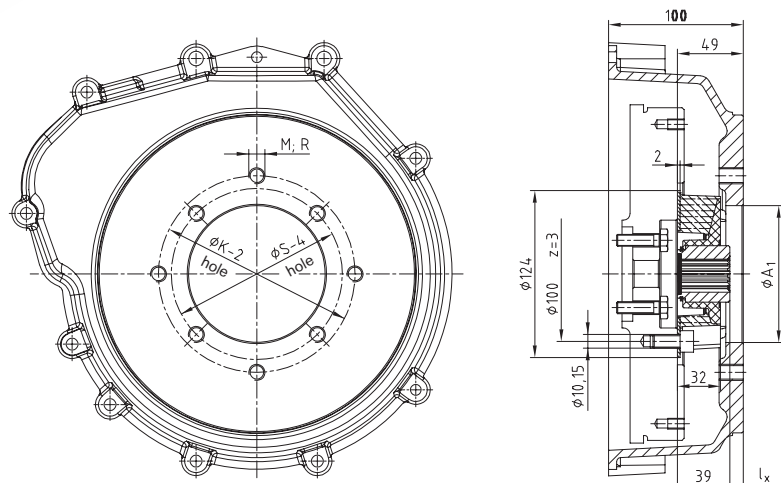
- D 1403/1703
Flywheel
No. 190027991
- V 1903/2203
Flywheel
No. 190002369
- V 2003-T



BoWex® 48 FLE-PA Ø 188 / pump connection housings

KUBOTA
Super 5 series

- D 905
- D 1005
- D 1105
- D 1105-T
- V 1205
- V 1305
- V 1505



MONOLASTIC® 28 Ø 124 / pump connection housings

BoWex® FLE-PA

Torsionally stiff flange couplings

Flange couplings and pump connection housings for Perkins engines

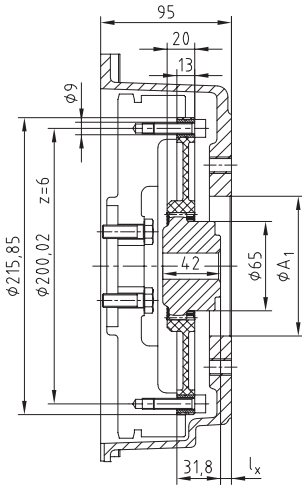
BoWex® FLE-PA

MONOLASTIC®

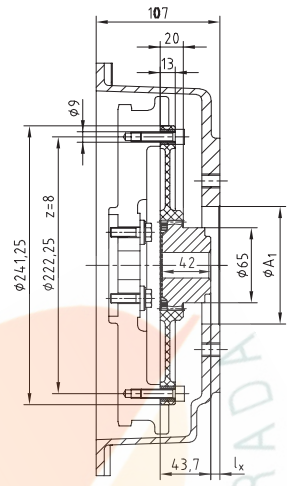
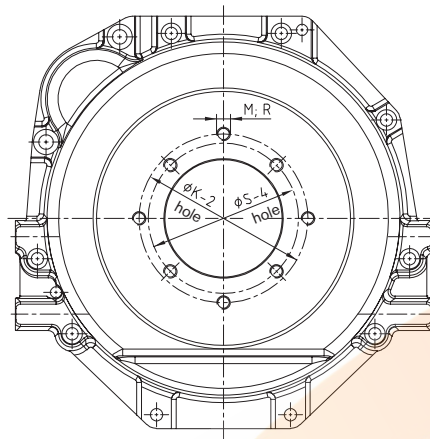
BoWex-ELASTIC®

SINULASTIC®

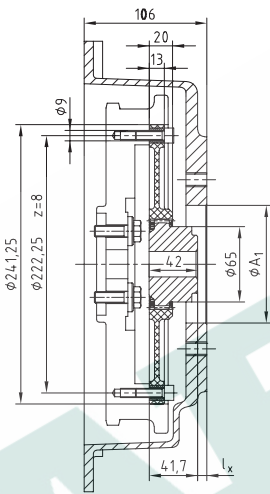
Flange couplings



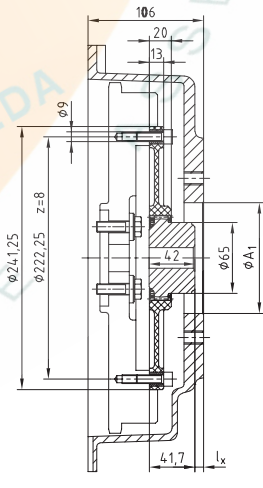
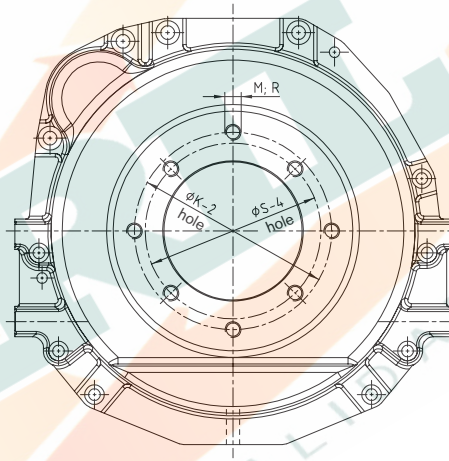
Perkins 403D - 10/11



Perkins 403D - 13/15

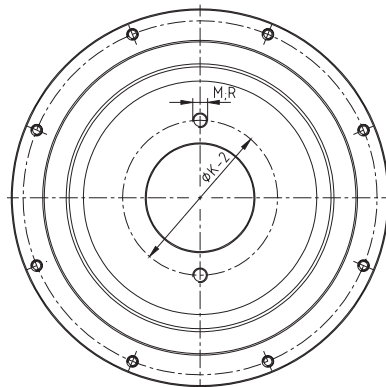


Perkins 404D - 20

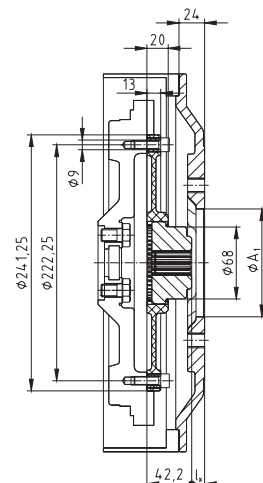


Perkins 404D - 22

Other selections on request for Yanmar Mitsubishi etc.



Mitsubishi SL series



Yanmar TNV series

BoWex® FLE-PA Torsionally stiff flange couplings

Selection of DEUTZ engines FL/M 1011 and FL/M 2011, TCD/TD/D 2.9 L4, TDC/T 3.6 L

Anbaukombination A

Antrieb: Hydraulikpumpen
BoWex® 48 FLE-PA 6 1/2"
SAE-4.0/33 Pumpenanbauflansch

Bezugsfläche
80 33
5,2 11
SAE 4
Sechskantschraube M8 - DIN ISO 4017
Anziehdrehmoment $T_A=25Nm$
Festigkeitsklasse > 8.8
Klebesicherung im Gewinde
 $\phi 215,9$
 $\phi 200,02$ z=6x $\phi 9$
13
36 max. $\phi 4,8$ $\phi 68$
SAE A, B, C $\phi 164$
Zylinderschraube M8 - DIN 912
Anziehdrehmoment $T_A=25Nm$
Festigkeitsklasse > 8.8
Klebesicherung im Gewinde
50

Anbaukombination B

Antrieb: Kompressoren,
Wasserpumpen usw.
BoWex-Elastic® HE 6 1/2"

Anbaukombination C

Antrieb: Hydraulikpumpen
BoWex® 48 FLE-PA 8"
SAE-4.3/24 Pumpenanbauflansch

Bezugsfläche
80 24
8,9 10
SAE 4
Sechskantschraube
M10 - DIN ISO 4017
Anziehdrehmoment $T_A=49Nm$
Festigkeitsklasse > 8.8
Klebesicherung im Gewinde
 $\phi 263,45$
 $\phi 244,47$ z=6x $\phi 10,5$
13
max. $\phi 4,2$
SAE A, B, C

Anbaukombination D

Antrieb: Hydraulikpumpen
BoWex® T55 FLE-PA 8"
SAE-4.0/38 Pumpenanbauflansch

Bezugsfläche
80 38
8,9 11
SAE 4
Zylinderschraube M8 - DIN 912
Anziehdrehmoment $T_A=49Nm$
Festigkeitsklasse > 8.8
Klebesicherung im Gewinde
 $\phi 263,45$
 $\phi 244,47$ z=6x $\phi 10,5$
13
max. $\phi 1,4$ $\phi 85$
SAE A, B, C
50

ACHTUNG: Entsprechend der Motorleistung ist die Kupplungsanordnung durch den Anwender zu prüfen. Nach erfolgtem Kupplungsanbau Kurbelwellenlangspiel prüfen! Spillmaß für Lagerluft 0,1... 0,3 mm. DEUTZ übernimmt keine Haftung für außerhalb des DEUTZ Lieferumfanges liegende Maßgaben und/oder Teile.

Bei techn. Rückfragen hinsichtlich der Kupplungsausführung wenden Sie sich bitte an:							
KTR-Kupplungstechnik GmbH							
Postfach 1763 D-48407 Rheine							
Telefon +49 - 05971 / 798-0							
1	1	1	3	Zwischengehäuse (SAE-4)	0427 0980 KZ 0138-52 0417 1040 UA 0138-52	15	0553
-	-	1	2	Schwungrad (SAE 6 1/2") J= 0,499 kgm'	0428 0586 KZ 0138-05 0417 1301 UA 0138-05	30,3	3174
1	1	-	1	Schwungrad (SAE 8 u 10") J= 0,485 kgm'	0427 2426 KZ 0138-05 0417 1301 UA 0138-05	25,3	2461
D	C	B	A	Pos.	Benennung	Nummer	G ^{kg/l} Baus.-Nr.

DIMENSIONS ARE IN MILLIMETERS		UNLESS OTHERWISE SPECIFIED		GEOMETRIC TOLERANCES PER ISO 1101		SURFACE TEXTURE PER ISO 1312		MATERIAL		PROJECTION METHOD	
CORNERS PER DIN 6764		GENERAL TOLERANCES		PER ISO 1101		IN MICROMETERS				ISO 1312	
FL/M1011	FL/M2011	Werkstücktoleranzen nach DIN 6764	Form- und Lager-Hafttoleranzen nach DIN 7176	Form- und Lager-Hafttoleranzen nach DIN 7176	Oberflächentexturen nach ISO 1312	Skizze	Skizze	Skizze	Skizze	Skizze	Skizze
		±0,1	±0,05	±0,1	±0,05	11	11	11	11	11	11
Kupplungsanbau BoWex® FLE-PA / ELASTIC HE DEUTZ AG 0428 0967 UB 0138-97											

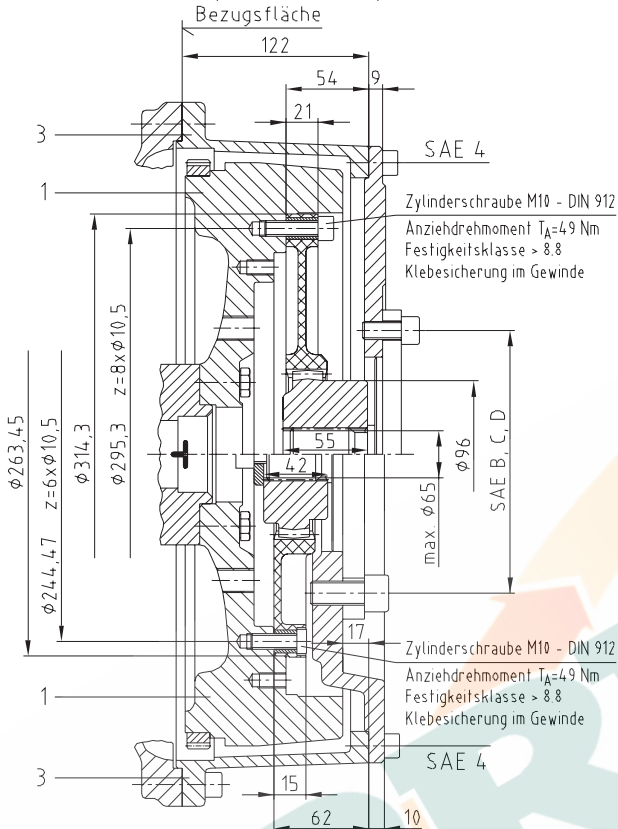
BoWex® FLE-PA Torsionally stiff flange couplings

Selection of DEUTZ engines BFM 1012/1013/2012/2013/1015

Anbaukombination A

Deutz-Motor
BF4/6M 1012/2012, BF4/6 1013/2013,
TCD/TD 2012 L04/06 2V/4V, TCD/TD 2013 L04 2V, TCD 4.1 L4

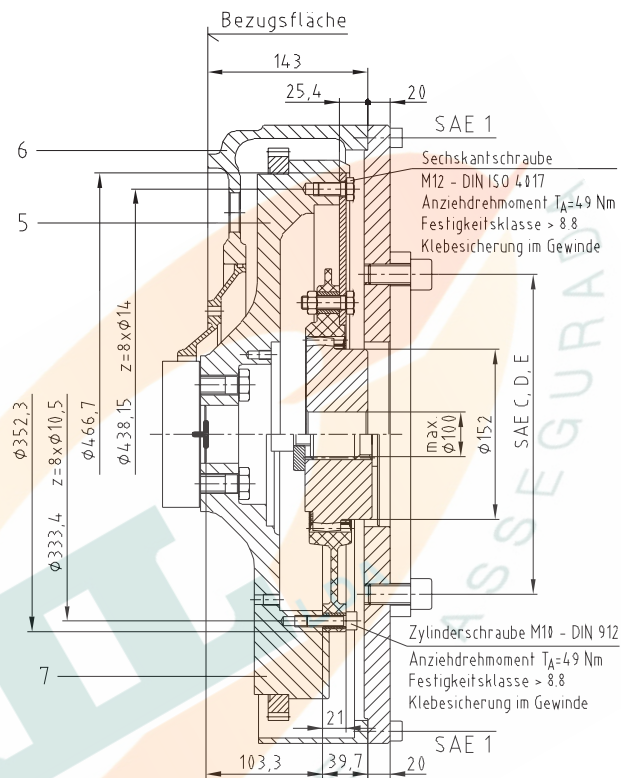
BoWex® 65 FLE-PA 10"
SAE-4/9 Pumpenanbauflansch



Anbaukombination D

Deutz-Motor
BF6/8M 1015/2015,
TCD 2015 V06, TCD 12.0 V6

BoWex® 100 FLE-PA 14"
SAE-1/20 Pumpenanbauflansch



Anbaukombination B

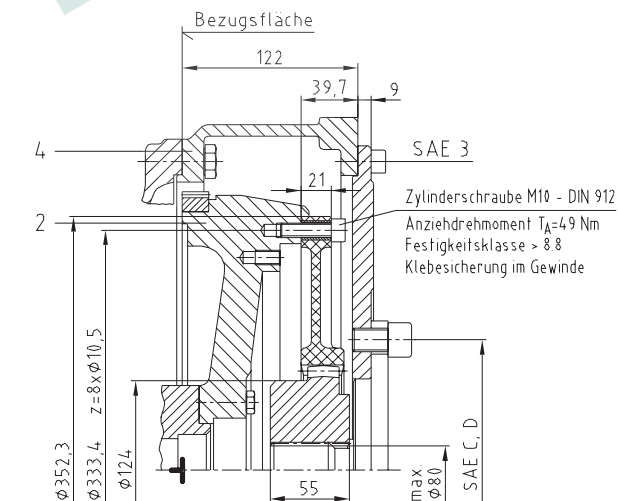
Deutz-Motor
BF4/6M 1012/2012, BF4/6 1013/2013,
TCD/TD 2012 L04/06 2V/4V, TCD/TD 2013 L04 2V, TCD 4.1 L4

BoWex® 65 FLE-PA 8"
SAE-4.2/-17 Pumpenanbauflansch

Anbaukombination C

Deutz-Motor
BF4/6M 1012/2012, BF4/6 1013/2013,
TCD/TD 2012 L04/06 2V/4V, TCD/TD 2013 L04/06 2V, TCD 4.1 L4, TCD 6.1 L6

BoWex® 80 FLE-PA 11 1/2"
SAE-3/9 Pumpenanbauflansch



Anbaukombination E

Deutz-Motor
BF6/8M 1015/2015,
TCD 2015 V06, TCD 12.0 V6

BoWex® 100 FLE-PA 11 1/2"
SAE-1/20 Pumpenanbauflansch

ACHTUNG: Entsprechend der Motorleistung ist die Kupplungsanordnung durch den Anwender zu prüfen. Nach erfolgtem Kupplungsanbau Kurbelwellenlängsspiel prüfen. Sollmaß für Lagerluft: Motor 1012/1013/2012/2013 = 0,1 - 0,28 mm; Motor 1015 = 0,2 - 0,4 mm
DEUTZ übernimmt keine Haftung für außerhalb des DEUTZ Lieferumfanges liegende Maßgaben und/oder Teile.

Bei techn. Rückfragen hinsichtlich der Kupplungsausführung wenden Sie sich bitte an:
KTR-Kupplungstechnik GmbH, Postfach 1763, D-48407 Rheine, Tel.: 05971/798-0

E	D	C	B	A	Pos.	Benennung	Nummer	G ^{kg}	Baus.-Nr.
1	-	-	-	-	7	Schwungrad (SAE-11 1/2") J = 2,255 kgm ²		66,7	
1	1	-	-	-	6	Anschlußgehäuse (SAE-11)		45,6	
-	1	-	-	-	5	Schwungrad (SAE-14") J = 2,264 kgm ²		61,6	
-	-	1	-	-	4	Anschlußgehäuse (SAE-3)			
-	-	-	1	1	3	Anschlußgehäuse (SAE-4)			
-	-	1	-	-	2	Schwungrad (SAE-10 u. 11 1/2") J = 0,872 kgm ²			
-	-	-	1	1	1	Schwungrad (SAE-8 u. 10") J = 1,03 kgm ²			
E D C B A					Pos.	Benennung	Nummer	G ^{kg}	Baus.-Nr.
Anbau-									
kombination									

DEUTZ 1012 / 1013
siehe 0420 8900 UB 0130-97

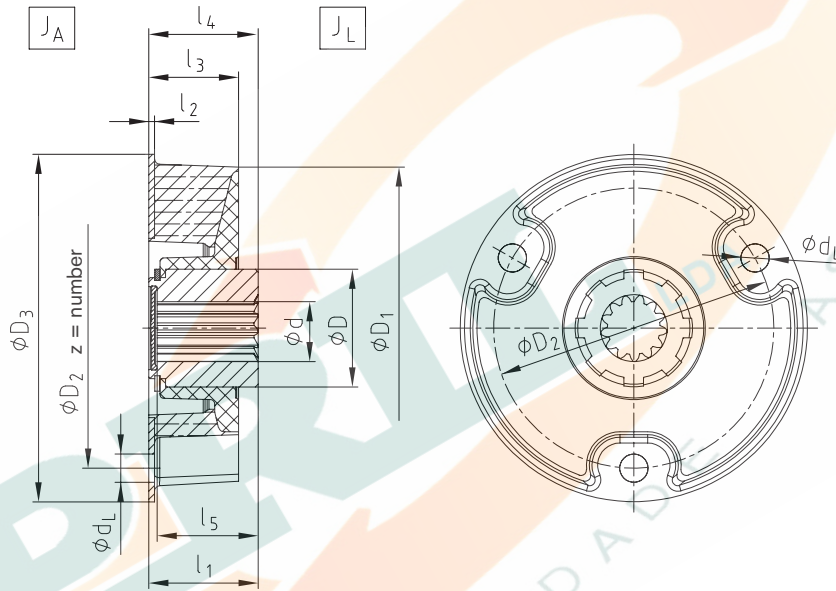
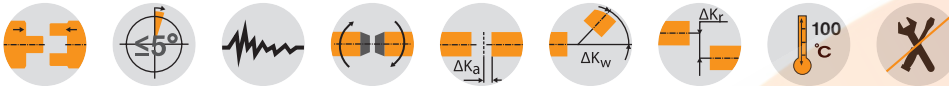
MONOLASTIC®

One-piece, flexible flange couplings

Type with 3 holes (EP 0853203/U.S. Patent 6,117,017)



For legend of pictogram refer to flapper on the cover



MONOLASTIC®																
Size	Elastomer hardness [Shore A]	Torque [Nm]			Dimensions [mm]											
		T _{KN}	T _{K max.}	T _{KW}	d	D	D ₁	D ₂	z	d _L	D ₃	l ₁	l ₂	l ₃	l ₄	l ₅
22	T65	40	100	20	20	34	93	80	3	8.10	100	33	1.5	32	34	30
	T70	70	175	35	25	42	115	100	3	10.10	124	40	2	32	40	38
28	T65	160	400	80	32	50	140	125	3	12.10	150	42	2	42	43	38
	T70	225	562	112	32	50	167	140	3	14.10	175	46	3	35	46	43
50-140	T70	260	650	130	32	50	175	165	3	16.15	200	46	3	35	46	43
50-165	T70	300	750	150	32	50	175	170	3	16.15	200	46	3	35	46	43
50-170	T70	300	750	150	32	50	175	170	3	16.15	200	46	3	35	46	43
60-165	T70	400	1000	200	48	68	191	165	3	16.15	205	50	3	40	55	46

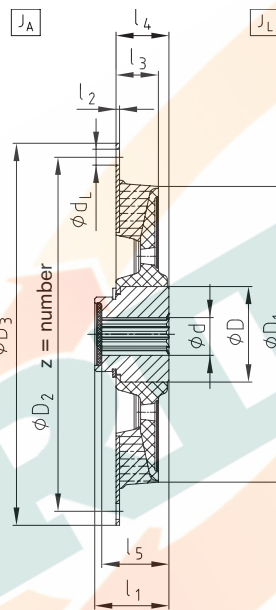
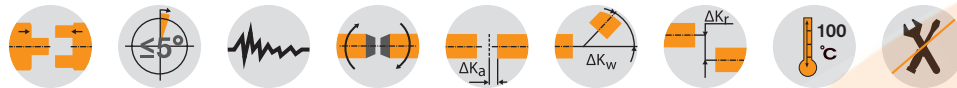
Technical data									
Size	Elastomer hardness [Shore A]	C _{dyn.} with 60 °C [Nm/rad]	Perm. damping power with 60 °C P _{KW} [W]	Max. displacement with 2200 rpm ΔK _r [mm]	Perm. angular displacement with 2200 rpm ΔK _w [°]	Radial spring stiffness C _r [N/mm]	Mass moment of inertia [kgm ²]		Perm. operating speed n _{max.} [rpm]
							J _A	J _L	
22	T65	600	10	0.6		200	0.00017	0.00010	6000
28	T65	900	15	0.5		400	0.00054	0.00033	6000
32	T65	1800	25	0.5		400	0.00120	0.00081	6000
50-140	T70	4200	35	0.5	1	1365	0.00210	0.00130	6000
50-165		5600	40	0.5	1550	0.00250	0.00130	6000	
50-170	T70	7800	40	0.5		1500	0.00599	0.00358	6000
60-165									

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

MONOLASTIC®

One-piece, flexible flange couplings

Type SAE (EP 0853203/U.S. Patent 6,117,017)



Flange dimensions according to SAE J620 [mm]				
Size	D ₃	D ₂	z	d _L
6 1/2"	215.9	200.02	6	9
7 1/2"	241.3	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

MONOLASTIC®																		
Size	Elastomer hardness [Shore A]	Torque [Nm]			Dimensions [mm]									MONOLASTIC® flanges according to SAE				
		T _{KN}	T _{K max.}	T _{KW}	d _{max.}	D	D ₁	l ₁	l ₂	l ₃	l ₄	l ₅	6 1/2"	7 1/2"	8"	10"	11 1/2"	
30	T65	200	400	100	25	42	120	39	2	21	30	36	X	X				
	T70	250	500	125														
50	T65	350	700	175	32	50	167	42	2	24	30	38	X	X	X	X		
	T70	450	900	225														
G50	T70	600	1200	300	32	50	178	42	2	24	36	38		X	X	X		
	T65	750	1500	375														
65	T70	1000	2000	500	48	68	200	45	3	32	45	42				X	X	
	T65	1500	3000	750														
75	T65	1500	3000	750	60	90	265	58	3	35	50	54				X	X	
	T70	1850	3700	925														

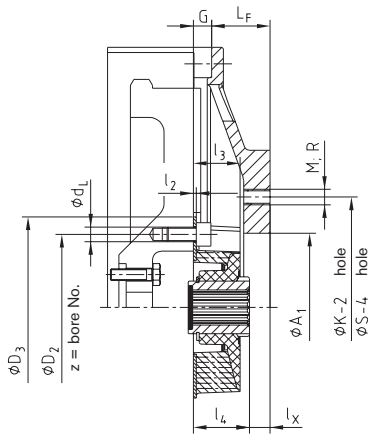
Technical data										
Size	Elastomer hardness [Shore A]	C _{dyn.} with 60 °C [Nm/rad]	Perm. damping power with 60 °C PKW [W]	Max. displacement with 2200 rpm ΔK _r [mm]	Perm. angular displacement with 2200 rpm ΔK _w [°]	Radial spring stiffness C _r [N/mm]	Mass moment of inertia [kgm ²]		Perm. operating speed n _{max.} [rpm]	
							JA	JL		
30	T65	3750	25	0.5	1	1150	6 1/2"	0.0038	6000	
	T70	4875					7 1/2"	0.0057		
50	T65	9000	35	0.5	1	1300	8"	0.0078	6000	
	T70	12000					10"	0.0153		
G50	T70	17500	40	0.5	1	1910	7 1/2"	0.0060	6000	
							8"	0.0080		
65	T70	18000	45	0.5	1	2450	10"	0.0162	6000	
							11 1/2"	0.0238		
75	T70	42000	80	0.5	1	2400	10"	0.0368	6000	
							11 1/2"	0.0272		
							11 1/2"	0.0402		

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

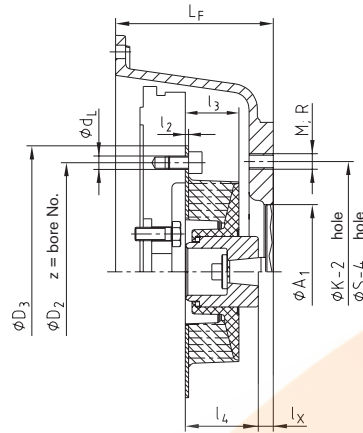
MONOLASTIC®

One-piece, flexible flange couplings

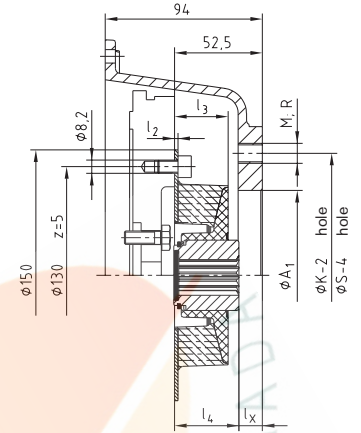
Examples of installation for type with 3 holes (EP 0853203/U.S. Patent 6,117,017)



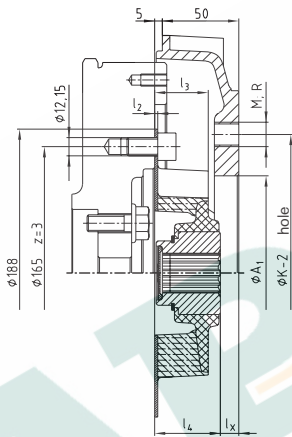
MONOLASTIC® 28
with spline shaft



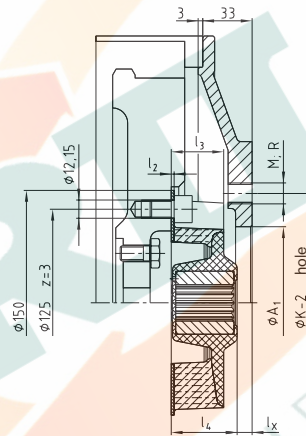
MONOLASTIC® 28
with taper shaft



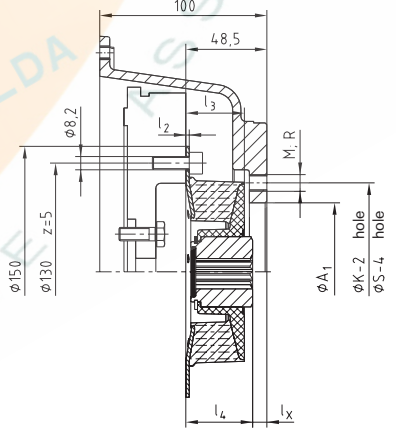
MONOLASTIC® 28
KUBOTA-Mini



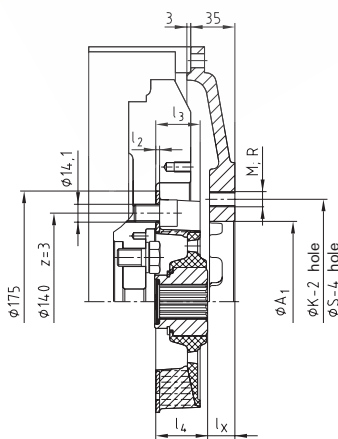
MONOLASTIC® 32 - 188
KUBOTA Super Three Series



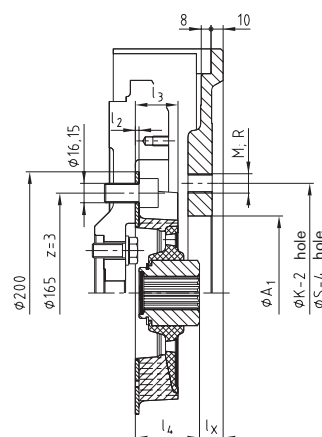
MONOLASTIC® 32 S



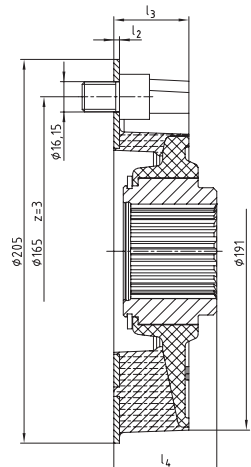
MONOLASTIC® 28
KUBOTA Super Mini



MONOLASTIC® 50 - 140



MONOLASTIC® 50 - 165



MONOLASTIC® 60 - 165

MONOLASTIC®

One-piece, flexible flange couplings

Examples of installation for SAE type (EP 0853203/U.S. Patent 6,117,017)

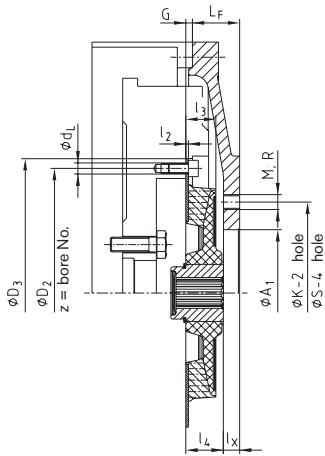
BoWex® FLE-PA/-PAC

MONOLASTIC®

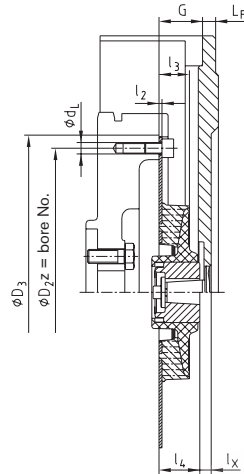
BoWex-ELASTIC®

SINULASTIC®

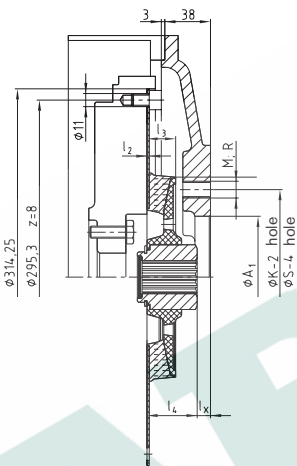
Flange couplings



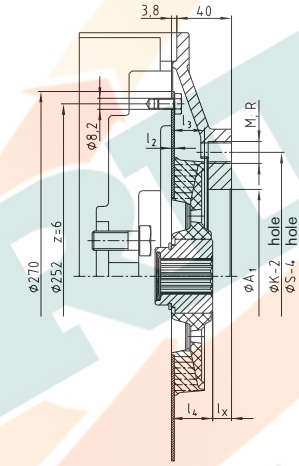
MONOLASTIC® 30
with spline shaft



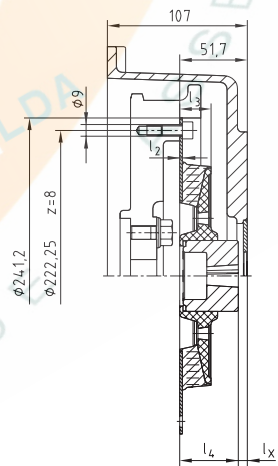
MONOLASTIC® 30
with taper shaft



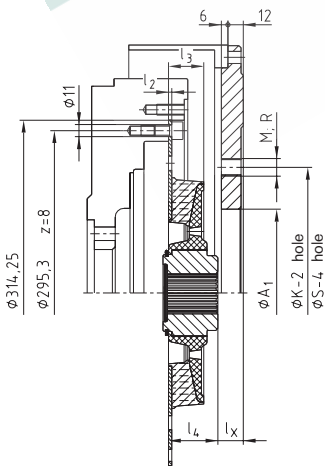
MONOLASTIC® 50 - 10⁴



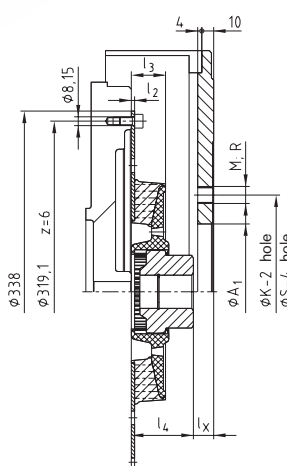
MONOLASTIC® 50 - 270
KUBOTA engine
D1803, V2403, V2403T



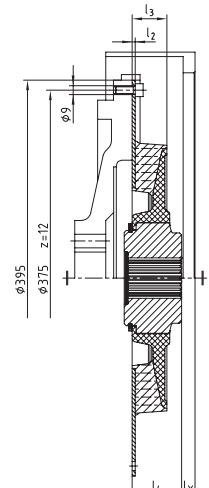
MONOLASTIC® 50
Perkins engine
403-13/403-15



MONOLASTIC® 65 - 10⁴



MONOLASTIC® 65 / T48



MONOLASTIC® 75 - 395

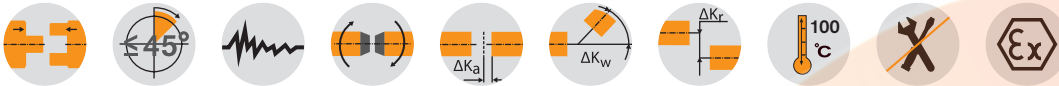
BoWex-ELASTIC® HE1 - HE4

Highly flexible flange couplings

Axial plug-in, available in different kinds of hardness



For legend of pictogram 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 HE1/HE2	l ₂ HE3/HE4	D ₄	D	l ₁	LHE1	LHE2	LHE3	LHE4	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]	
																						JA	JL		JA	JL
42 HE	-	42	•	•					4	2	180	44.5	37	145	65	42	70	50	55	40	1.8	0.0074	0.0016	1.8	0.0071	0.0021
48 HE	-	48	•	•	•				4	2	198	45	37	163	68	50	78	50	68	42	2.3	0.0119	0.0021	1.9	0.0070	0.0022
65 HE	21	65			•				5	-	244	55.5	-	205	96	55	85	62	-	-	2.6	0.0170	0.0021	2.1	0.0103	0.0022
G 65 HE	21	65			•	•			-	3	-	-	45	205	96	55	-	-	73	50	3.4	0.0342	0.0021	2.5	0.0201	0.0022
GG 65 HE	21	65			•	•	•		-	3	-	-	45	220	96	55	-	-	73	50	4.9	0.0424	0.0069	-	-	-
80 HE	31	90			•	•	•		-	4	316	70	56	265	124	90	126	74	-	-	5.7	0.0647	0.0069	3.9	0.0147	0.0075
G 80 HE	31	90			•	•	•	•	-	4	356	80	66	300	124	90	132	80	-	-	-	-	-	4.1	0.0281	0.0075
GG 80 HE	31	90			•	•	•	•	-	4	-	-	71	302	124	90	136	80	-	-	9.7	0.0426	0.0471	11.1	0.0713	0.0472
100 HE	38	100			•	•	•	•	-	4	-	-	76	350	152	110	142	84	-	-	14.7	0.2851	0.0471	-	-	-
G 100 HE	38	100			•	•	•	•	-	4	-	-	76	350	152	65	-	-	102	85	-	-	-	4.4	0.0294	0.0093
																								4.9	0.0439	0.0093
																								9.1	0.0414	0.0305
																								11.9	0.0768	0.0498
																								18.3	0.2028	0.1104
																								16	0.2172	0.1013

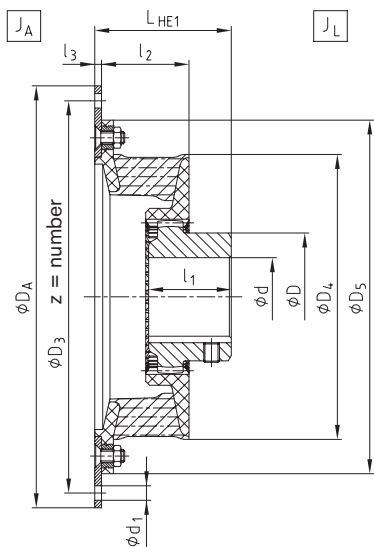
Other flange connections on request

Technical data

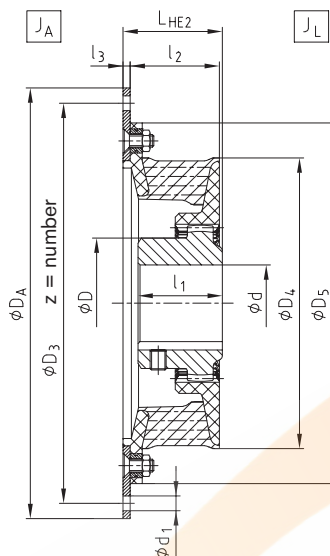
Size	Elastomer hardness [Shore A]	Torque [Nm]				Perm. damping power P _{KW} [W]			Perm. operating speed n _{max} [rpm]	Dynamic torsion spring stiffness C _{dyn} [Nm/rad]	Relative damping ψ	Resonance factor V _R ≈ 2 • π / ψ	Radial spring stiffness C _r [N/mm]				
		TKN	TK max. 10,000 LA [Nm]	TK max. 50,000 LA [Nm]	with 10 Hz TKW	60 °C	80 °C	90 °C									
														60 °C	80 °C	90 °C	
42 HE	T40	165	395	330	41	26.0	15.6	10.4	6200	550	0.6	10.5	142				
	T50	205	490	410	51									850	0.8	7.9	219
	T65	260	625	520	65												
48 HE	T40	250	600	500	63	36.0	21.6	14.4	5600	850	0.6	10.5	176				
	T50	315	755	630	79									1300	0.8	7.9	269
	T65	400	960	800	100												
65 HE	T40	440	1050	880	110	60.0	36.0	24.0	4500	1600	0.6	10.5	209				
	T50	550	1320	1100	138									2200	0.8	7.9	288
	T65	720	1730	1440	180												
G 65 HE	T40	540	1300	1080	135	68.0	40.8	27.2	4300	2350	0.6	10.5	294				
	T50	700	1700	1400	175									3000	0.8	7.9	375
	T65	890	2140	1780	223												
GG 65 HE	T40	750	1800	1500	188	76.0	45.6	30.4	4000	3650	0.6	10.5	420				
	T50	960	2300	1920	240									4800	0.8	7.9	550
	T65	1250	3000	2500	313												
80 HE	T40	950	2280	1900	238	120.0	72.0	48.0	3600	4500	0.6	10.5	351				
	T50	1300	3120	2600	325									6500	0.8	7.9	507
	T65	1750	4200	3500	438												
G 80 HE	T40	1600	3850	3200	400	180.0	108.0	72.0	3000	7500	0.6	10.5	476				
	T50	2200	5280	4400	550									12000	0.8	7.9	762
	T65	2900	6960	5800	725												
GG 80 HE	T40	2000	4800	4000	500	196.0	117.6	78.4	3000	9200	0.6	10.5	660				
	T50	2750	6600	5500	688									14200	0.8	7.9	1020
	T65	3600	8650	7200	900												
100 HE	T40	2500	6000	5000	625	210.0	126.0	84.0	2700	12000	0.6	10.5	460				
	T50	3250	7800	6500	813									19000	0.8	7.9	730
	T65	4250	10200	8500	1063												
G 100 HE	T40	3000	7200	6000	750	215.0	129.0	86.0	2700	14200	0.6	10.5	584				
	T50	3800	9120	7600	950									22600	0.8	7.9	935
	T65	5000	12000	10000	1250												

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

Ordering example:	BoWex-ELASTIC® 42		HE1	T40	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

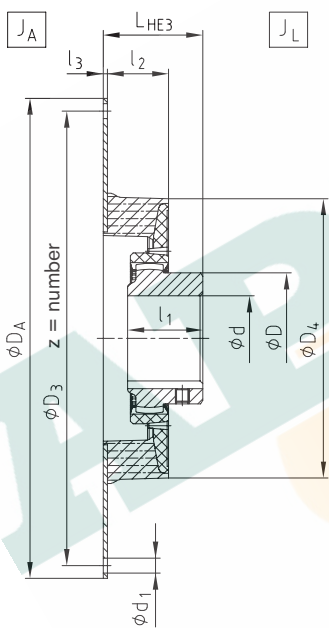


Type HE1

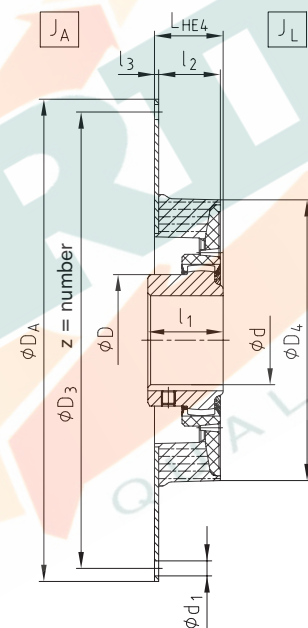


Type HE2

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 G100 HE			
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			

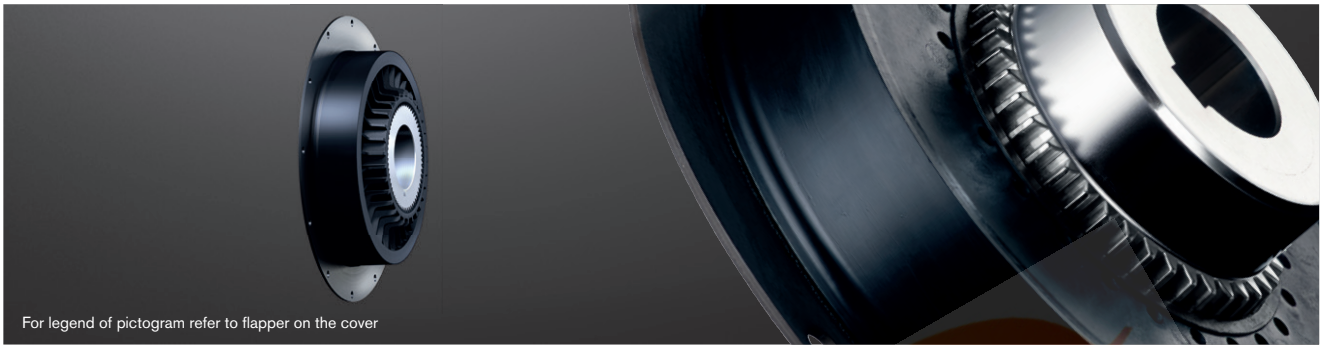
¹⁾ For short-term start-up operation

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

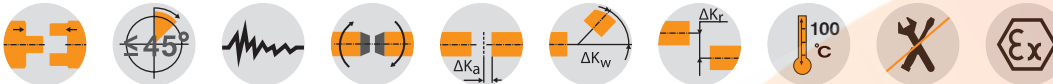
BoWex-ELASTIC® HE3 / HE4 / HE-D

Highly flexible flange couplings

Axial plug-in, available in different kinds of hardness



For legend of pictogram refer to flapper on the cover



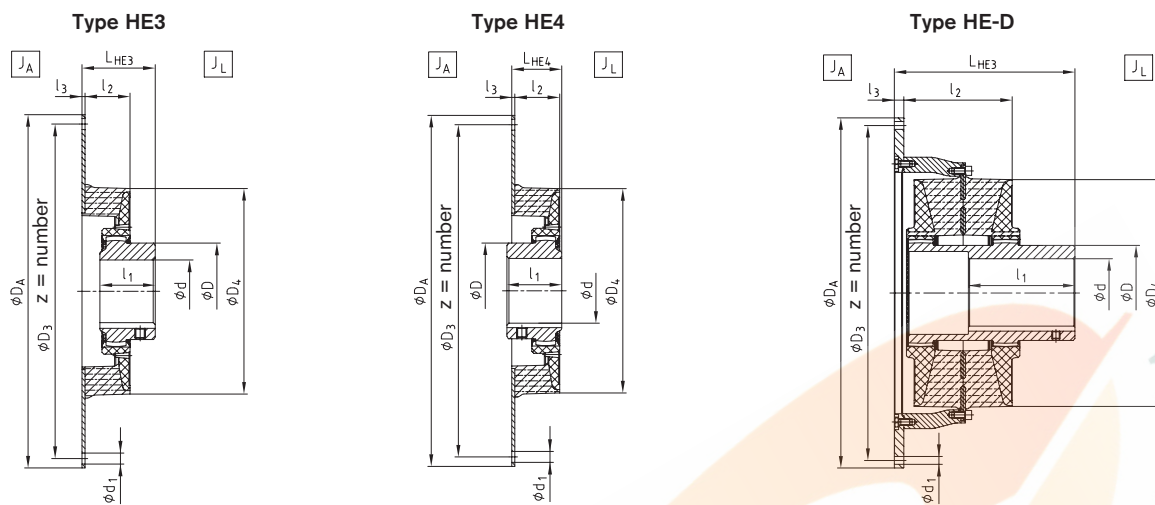
BoWex-ELASTIC® Type HE3, HE4 and HE-D

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	179	91	34.8	0.4231	0.2750
150 HE	44	160			•					6	140	470	225	150	205	160	36.6	0.4634	0.3264
150 HE-D	44	160			•					-	286	470	225	275	291	-	39.5	0.6812	0.3264
G150 HE	44	160			•					6	140	504	225	150	205	160	46.8	0.7277	0.5414
G150 HE-D	44	160			•					-	286	504	225	275	291	-	51.5	1.2120	0.5414
200 HE	46	180			•					6	149	568	250	175	240	160	56.6	1.3007	0.6500
200 HE-D	46	180			•					-	325	568	250	298	310	-	66.8	1.4880	1.2952
G200 HE	46	180			•					6	149	600	250	175	240	160	81.2	2.0390	1.2952
G200 HE-D	46	180			•					-	325	600	250	298	310	-	86.0	2.1782	1.5409
240 HE	80	240				•				8	172	772	326	200	270	205	238	12.00	3.0387
275 HE	80	275								10	185	810	372	240	312	215	230	10.92	3.0387

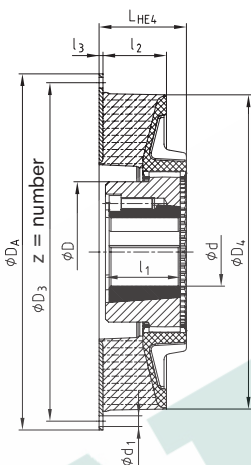
Technical data

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 LA [Nm]	T _K max. 50,000 LA [Nm]	T _{KW} [Nm]	60 °C	80 °C	90 °C					
	T50	4800	11400	9600	1200					30000	0.8	7.9	988
	T70	6800	20400	13600	1700					54000	1.2	5.2	2434
	T40	4800	14400	7200	1200					34000	0.6	10.5	890
G125 HE	T50	6600	19800	9900	1650	240	144	96	2250	51000	0.8	7.9	1305
	T70	10000	30000	15000	2500					98000	1.2	5.2	1915
150 HE	T50	8000	24000	12000	2000	262	157	105	2200	67500	0.8	7.9	714
	T70	14000	42000	21000	3500					140000	1.2	5.2	2500
150 HE-D	T50	16000	48000	24000	4000	524	314	210	2200	134000	0.8	7.9	1428
	T70	28000	84000	42000	7000					279000	1.2	5.2	5000
G150 HE	T50	10000	30000	15000	2500	278	167	111	2100	85000	0.8	7.9	1485
	T70	18000	54000	27000	4500					160000	1.2	5.2	5874
G150 HE-D	T50	20000	60000	30000	5000	556	334	222	2100	170000	0.8	7.9	2970
	T70	36000	108000	54000	9000					320000	1.2	5.2	11748
200 HE	T50	14500	43500	21750	3625	308	185	123	1900	119000	0.8	7.9	1720
	T70	25000	75000	37500	6250					241000	1.2	5.2	6769
200 HE-D	T50	29000	87000	43500	7250	616	370	246	1900	238000	0.8	7.9	3440
	T70	50000	150000	75000	12500					482000	1.2	5.2	13538
G200 HE	T50	17500	52500	26250	4375	324	194	130	1800	139000	0.8	7.9	1952
	T70	30000	90000	45000	7500					281500	1.2	5.2	7708
G200 HE-D	T50	35000	105000	52500	8750	648	388	260	1800	278000	0.8	7.9	3904
	T70	60000	180000	90000	15000					563000	1.2	5.2	15416
240 HE	T50	29000	87000	43500	7250	372	223	149	1500	259000	0.8	7.9	2326
	T70	49000	147000	73500	12250					521000	1.2	5.2	9160
275 HE	T50	42000	126000	63000	10500	410	246	164	1500	375000	0.8	7.9	2950
	T70	70000	210000	105000	17500					758000	1.2	5.2	11785

Ordering example:	BoWex-ELASTIC® 125	HE3	T40	14"	186	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.

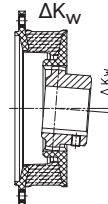
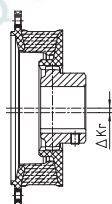
Displacements

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

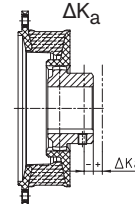
$$\Delta K_r \text{ perm.} = \Delta K_r \cdot St \cdot \sqrt{1500 / nx}$$

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			
Elastomer hardness [Shore A]	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

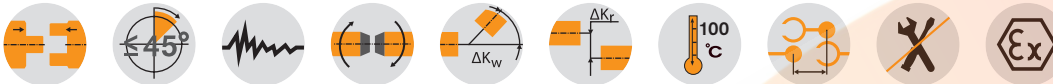
Mounting procedure, screw type with property class, tightening torques as per KTR assembly instructions (see www.ktr.com).

BoWex-ELASTIC® HE-ZS and HEW Highly flexible flange couplings

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



For legend of pictogram refer to flapper on the cover

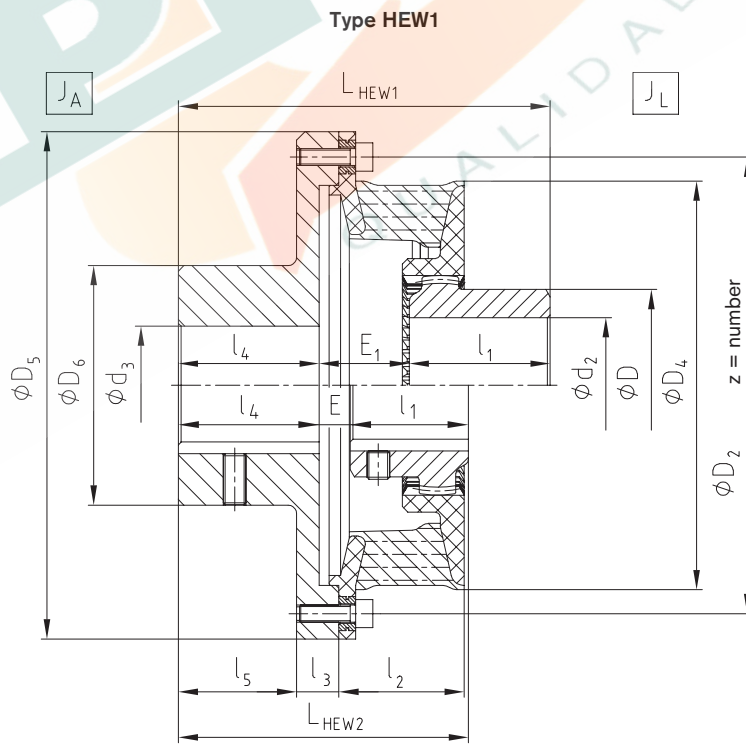
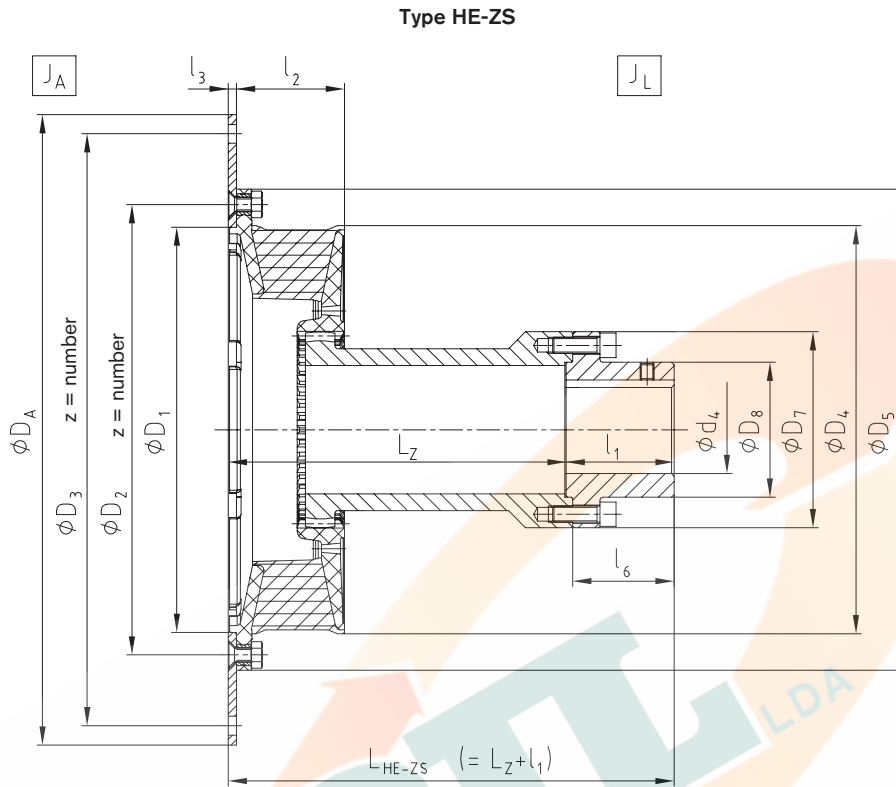


BoWex-ELASTIC® Type HE-ZS																																				
Size	Max. finish bore d4	Flange connection acc. to SAE - J620 D _A for HE-ZS										Dimensions [mm]								Drop-out center design piece HE-ZS L _Z [mm]					Weight with max. bore [kg]	Mass moment of inertia [kgm ²]										
		6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	16"	18"	21"	24"	D ₁	D ₄	D ₅	D ₇	D ₈	l ₁	l ₂	l ₃	l ₆	100	120	140	180		250	J _A	J _L								
48 ³⁾	28	●																48	10			●	●				2.9 ¹⁾	0.0026	0.0033							
			●																			37	4	●	●				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 L_Z 120
²⁾ with L_Z 100
³⁾ For technical data see page 240
⁴⁾ For technical data see page 241

BoWex-ELASTIC® Type HEW																					
Size	Max. finish bore		Dimensions [mm]														Weight with max. bore [kg]	Mass moment of inertia [kgm ²]			
	d ₂	d ₃	D	D ₂	z x M	D ₄	D ₅	D ₆	l ₁	l ₂	l ₃	l ₄	l ₅	E	E ₁	LHEW1		LHEW2	J _A	J _L	
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	355	-	67.2	0.9498	0.2617
G125 ⁴⁾	125	125	192	489	8	M12	440	530	175	140	95	14	170	158	-	45	355	-	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 240
⁴⁾ For technical data see page 241
 Other sizes available. Please consult with us.



Type HEW2

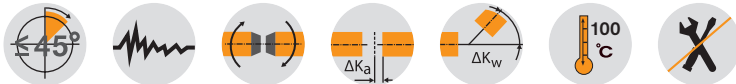
BoWex-ELASTIC® HEG

Highly flexible flange couplings

Cardan shaft connecting coupling



For legend of pictogram 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	66		●	●	●						71	205	48.0	10	8	0.06	0.006
G65 ¹⁾			●				●	●	●	●	●						●	●	●								12	12	0.07	0.02	
				●			●	●	●	●	●						●	●	●								14	14	0.10	0.02	
80 ¹⁾		●					●	●	●	●	●			10	88.5		●	●	●	●							23	21	0.11	0.06	
			●				●	●	●	●	●						●	●	●	●							12	23	0.17	0.06	
G80 ¹⁾				●			●	●	●	●	●			10	96		●	●	●	●	●						23	26	0.18	0.09	
					●		●	●	●	●	●						●	●	●	●	●						12	33	0.48	0.09	
100 ¹⁾				●			●	●	●	●	●			12	98		●	●	●	●	●						18	41	0.63	0.19	
					●		●	●	●	●	●						●	●	●	●	●						12	33	0.48	0.09	
125 ²⁾				●			●	●	●	●	●			12	111		●	●	●	●	●						18	56	0.74	0.42	
					●		●	●	●	●	●						●	●	●	●	●						12	59	0.97	0.42	

¹⁾ For technical data see page 240
²⁾ For technical data see page 241

Flywheel connection acc. 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

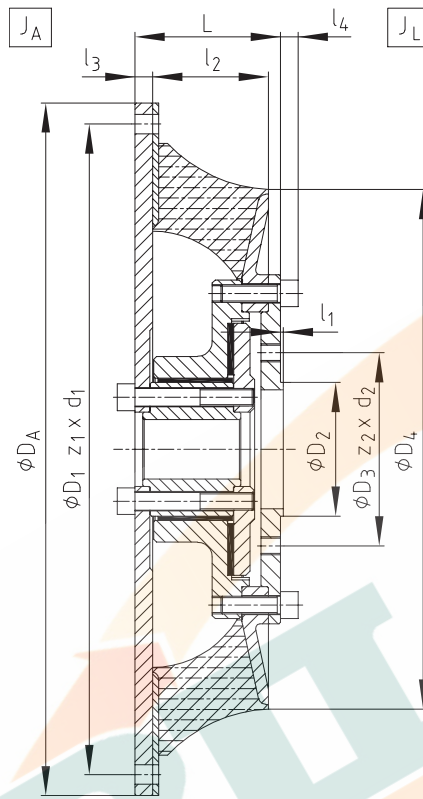
Metric flange connection HEG1 [mm]					
Size	D ₂	l ₁	D ₃	z ₂	d ₂
58	30	1.0	47.0	4	M5
65	35	1.0	52.0	4	M6
75	42	1.5	62.0	6	M6
90	47	2.0	74.5	4	M8
100	57	2.0	84.0	6	M8
120	75	2.0	101.5	8	M10
150	90	2.5	130.0	8	M12
180	110	3.0	155.5	8	M14

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

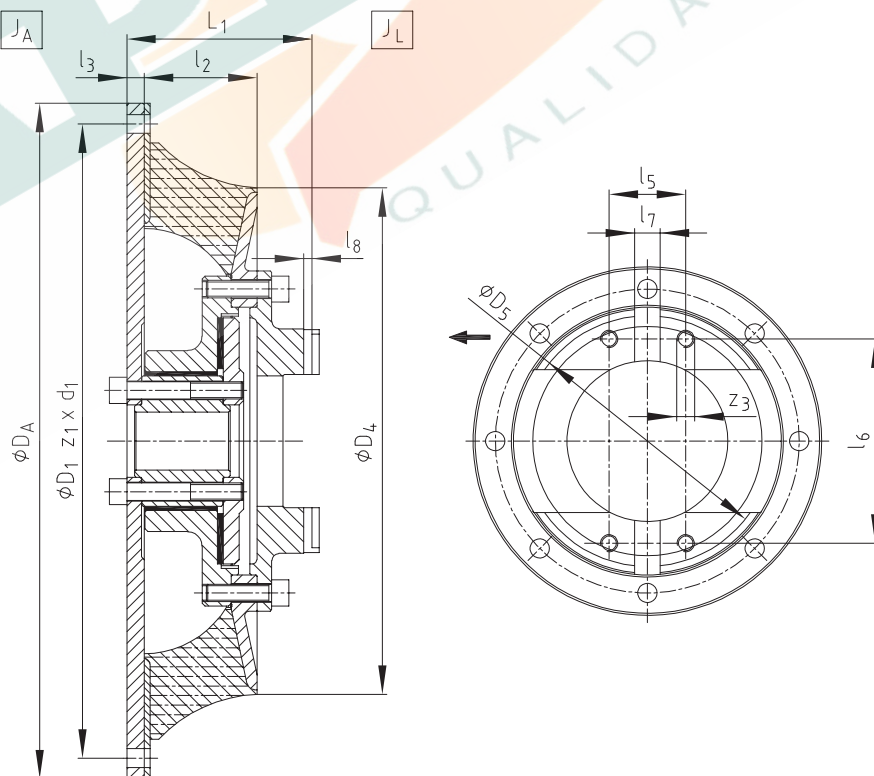
BoWex-ELASTIC® type HEG has a maintenance-free plain bearing compensating for the radial loads generated by the cardan shaft. Moreover, the coupling has a friction disk which is axially prestressed by the elastomer part. The elastomer part is made of natural rubber via vulcanizing.

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

Type HEG1



Type HEG2



SINULASTIC®

Highly flexible flange coupling

Description of product and application

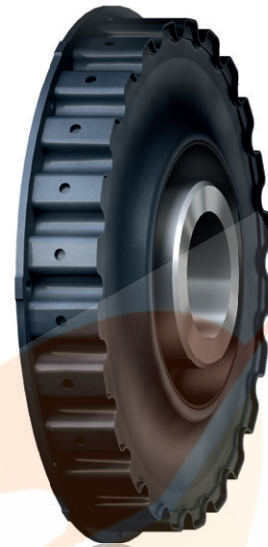
SINULASTIC® is a modularly structured series of highly flexible flange couplings based on a disk-shaped coupling body. Four practical basic versions with individual properties cover a wide range of applications primarily for diesel engine drives, but also general drive tasks.

The main task of the coupling is reducing torsional vibrations resulting from excitations of the I. C.-engine during standard operation and misfire operation as well as protecting the drive from overload. It is a good option both for variable speed and constant speed drives, while a supercritical selection of the drive train above resonance level is always made. Particularly for the series the coupling disk requires the smallest possible axial mounting space.

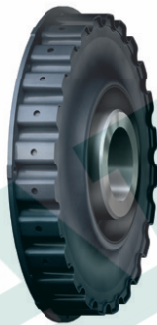
Depending on the type the coupling is pluggable and compensates for displacements resp. tolerances moderately to very well. It is a non-slip or shear type and radially mountable.

The elastomer element is available in various qualities for all types. It is composed of natural rubber compounds optimised over many years (SN, MN, HN, UN up to 80 °C) or upon request of synthetical EPDM material for higher temperatures (SE, ME, HE, UE up to 100 °C) as well as silicone rubber (SC, MC up to 120 °C). The various kinds of rubber hardness cover one application and torque range per size. The vibratory properties of the four types are compatible within one size.

A wide standard portfolio of hub connections covers a large variety of shaft configurations on the driven side while special connections can be realised.



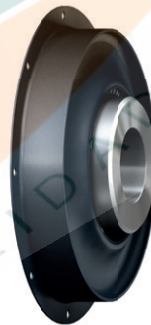
SINULASTIC® - The types



A



T



B



V

SINULASTIC® A is the evolution design of the renowned disk coupling with plug-in spline between elastomer and flange ring as well as hub vulcanized on. The tooth shape that is subject to high loads particularly with alternating loads in the contact area between engine flange and rubber was extensively optimized, the new sinusoidal tooth shape being eponymous for the series. For the first time the engine flange was executed by a deep-drawn sheet metal section creating a beneficial and smooth surface to the elastomer. Another benefit is the tight contact gap for easy mountability with simultaneously highly sound and defined form fit.

In contrast to type A a Taperlock shaft connection as a standard version with feather key is used with SINULASTIC® T. The modular concept makes use of the plug-in ability of type A on the flange side.

Type B and V make use of a deep-drawn and inherently stable flange ring that the elastomer part is externally vulcanized on. This results in a low-cost solution for high speeds and overloads.

In combination with the renowned BoWex® inner hub the SINULASTIC® B as an all-rounder of the overall series is formed. The so-called BoWex® hub defines a pluggable connection resistant to high loads as well as beneficial adaptations on the driven side up to long driving shaft systems owing to the potentials for particularly high displacements. The hub and connection variants of BoWex®-ELASTIC are fully compatible with the elastomer elements of this series.

SINULASTIC® V is beneficially used where the ability for axial plug-in is not required. A resulting radial assembly is realised by a split ring on the hub side.

The slim wasteline shape of the elastomer elements of this type allows for significant displacements in axial, radial and angular direction without any wear, while the coupling element is suitable both for not flange-mounted assembly, i. e. for system configurations set up freely and as a shaft coupling with cardanic misalignment.

SINULASTIC®

Highly flexible couplings

Properties of types compared

Properties of types compared			
Properties	SINULASTIC® A SINULASTIC® T	SINULASTIC® V	SINULASTIC® B
Rated torque T_{KN}	Compatible within the series		
Maximum torque T_{Kmax}	$\geq 2x T_{KN}$	$3x T_{KN}$	$3x T_{KN}$
Vibratory properties, e. g. torsional stiffness	Compatible within the series		
Materials ¹⁾	Natural rubber compounds up to 80 °C for hardness ranges WN, SN, MN and HN, synthetical EPDM up to 100 °C for hardness ranges WE, SE, ME and HE, silicone rubber up to 120°C in the hardness ranges SC and MC.		
Plug-in	Yes	No	Yes
Radial assembly	Partially possible	Yes	No
Mounting length	++	Ø	++
Axial displacement	++	+	++
Radial displacement	Ø	+	+
Angular displacement	Ø	++	++
Standard	For flywheel flange and shaft connection (SAE J620, DIN 5480 et seqq., DIN 6281, etc.)		
Special solutions	Bearing-mounted intermediate coupling, with failure protection, combination with shifting unit	Cardanic offset joint, failure protection, shaft systems	
	Application-specific shaft connections of elastomer elements		

¹⁾The standard materials and availabilities depend on the size and type, special compounds available on request



BoWex® FLE-PA/-PAC

MONOLASTIC®

BoWex-ELASTIC®

SINULASTIC®

Flange
couplings

SINULASTIC®

Highly flexible flange coupling

Technical data of natural rubber (NR)

Technical data														
Size	Elastomer type	Torque [Nm] ¹⁾				Dynamic torsion spring stiffness C _{dyn.} [Nm/rad] ²⁾		Relative damping ψ [-]		Perm. damping power [W] ³⁾			Operating speed [rpm]	
		T _{KN}	T _{Kmax}	T _{Kmax1}	T _{KW}	30 °C	60 °C	30 °C	60 °C to 80 °C	30 °C	60 °C	80 °C	n	n _{max.}
20	SN	1800	2700	3600	720	7500	6150	1.00	0.70	210	130	80	2700	3000
	MN	2000	3000	4000	800	11500	9430	1.10	0.77	240	149	91	2700	3000
	HN	2500	3750	7500	1000	18500	15170	1.30	0.91	270	167	103	3240	3600
	UN	2850	4275	8550	1140	22000	18040	1.40	0.98	290	180	110	3240	3600
28	WN	2000	3000	4000	800	9800	8036	0.90	0.63	240	149	91	2340	2600
	SN	2200	3300	4400	880	12500	10250	1.00	0.70	260	161	99	2340	2600
	MN	2800	4200	5600	1120	17000	13940	1.10	0.77	270	167	103	2340	2600
	HN	3400	5100	10200	1360	24000	19680	1.30	0.91	290	180	110	2520	2800
38	UN	3750	5625	11250	1500	30000	24600	1.40	0.98	310	192	118	2520	2800
	SN	3100	4650	6200	1240	15000	12300	1.00	0.70	275	171	105	2520	2800
	MN	3800	5700	7600	1520	22000	18040	1.10	0.77	300	186	114	2520	2800
	HN	4600	6900	13800	1840	35000	28700	1.30	0.91	330	205	125	2880	3200
53	UN	5100	7650	15300	2040	41000	33620	1.40	0.98	350	217	133	2880	3200
	SN	4200	6300	8400	1680	17000	13940	1.00	0.70	285	177	108	2340	2600
	MN	5300	7950	10600	2120	28000	22960	1.10	0.77	325	202	124	2340	2600
	HN	6200	9300	18600	2480	45500	37310	1.30	0.91	370	229	141	2700	3000
96	UN	7000	10500	21000	2800	52000	42640	1.40	0.98	400	248	152	2700	3000
	SN	8100	12150	16200	3240	75000	61500	1.00	0.70	480	298	182	2070	2300
	MN	10000	15000	20000	4000	100000	82000	1.10	0.77	500	310	190	2070	2300
	HN	11200	16800	33600	4480	135000	110700	1.30	0.91	510	316	194	2250	2500
114	UN	13200	19800	39600	5280	175000	143500	1.40	0.98	520	322	198	2250	2500
	SN	10000	15000	20000	4000	90000	73800	1.00	0.70	500	310	190	2070	2300
	MN	11400	17100	22800	4560	125000	102500	1.10	0.77	530	329	201	2070	2300
	HN	13400	20100	40200	5360	160000	131200	1.30	0.91	550	341	209	2250	2500
140	UN	15600	23400	46800	6240	190000	155800	1.40	0.98	560	347	213	2250	2500
	SN	13000	19500	26000	5200	106000	86920	1.00	0.70	540	335	205	1890	2100
	MN	14000	21000	28000	5600	149000	122180	1.10	0.77	550	341	209	1890	2100
	HN	16200	24300	48600	6480	235000	192700	1.30	0.91	570	353	217	2070	2300
180	UN	19000	28500	57000	7600	330000	270600	1.40	0.98	590	366	224	2070	2300
	SN	16000	24000	32000	6400	132000	108240	1.00	0.70	620	384	236	1890	2100
	MN	18000	27000	36000	7200	185000	151700	1.10	0.77	630	391	239	1890	2100
	HN	22000	33000	66000	8800	295000	241900	1.30	0.91	650	403	247	2070	2300
UN	25000	37500	75000	10000	380000	311600	1.40	0.98	670	415	255	2070	2300	

¹⁾ T_{KN} Torque that can be continuously transmitted over the full speed range
T_{Kmax} Transient torque peaks (e. g. resonance passage), max. 100,000 load alternations pulsating / 50,000 load alternations vibratory
T_{Kmax1} Impact loads rarely, max. 1,000 load alternations
For selection consider DIN 740 part II (operating factor, temperature factor), parameters for an ambient temperature of 20 °C.
²⁾ Referring to 0.5 T_{KW}
³⁾ Here permanent damping power. Twice the damping power figure is permissible for one hour.

Technical data of synthetical rubber (EPDM)

Technical data														
Size	Elastomer type	Torque [Nm] ¹⁾				Dynamic torsion spring stiffness C _{dyn.} [Nm/rad] ²⁾	Relative damping ψ [-]			Perm. damping power [W] ³⁾			Operating speed [rpm]	
		T _{KN}	T _{Kmax}	T _{Kmax1}	T _{KW}		60 °C - 100 °C	30 °C	80 °C	100 °C	30 °C	80 °C	100 °C	n
20	SE	1800	2700	3600	720								2700	3000
	ME	2000	3000	4000	800								2700	3000
	HE	2500	3750	7500	1000								3240	3600
	UE	2850	4275	8550	1140								3240	3600
28	SE	2200	3300	4400	880								2340	2600
	ME	2800	4200	5600	1120								2340	2600
	HE	3400	5100	10200	1360								2520	2800
	UE	3750	5625	11250	1500								2520	2800
38	SE	3100	4650	6200	1240								2520	2800
	ME	3800	5700	7600	1520								2520	2800
	HE	4600	6900	13800	1840								2880	3200
	UE	5100	7650	15300	2040								2880	3200
53	SE	4200	6300	8400	1680								2340	2600
	ME	5300	7950	10600	2120								2340	2600
	HE	6200	9300	18600	2480								2700	3000
	UE	7000	10500	21000	2800								2700	3000
96	SE	8100	12150	16200	3240								2070	2300
	ME	10000	15000	20000	4000								2070	2300
	HE	11200	16800	33600	4480								2250	2500
	UE	13200	19800	39600	5280								2250	2500
114	SE	10000	15000	20000	4000								2070	2300
	ME	11400	17100	22800	4560								2070	2300
	HE	13400	20100	40200	5360								2250	2500
	UE	15600	23400	46800	6240								2250	2500
140	SE	13000	19500	26000	5200								1890	2100
	ME	14000	21000	28000	5600								1890	2100
	HE	16200	24300	48600	6480								2070	2300
	UE	19000	28500	57000	7600								2070	2300
180	SE	16000	24000	32000	6400								1890	2100
	ME	18000	27000	36000	7200								1890	2100
	HE	22000	33000	66000	8800								2070	2300
	UE	25000	37500	75000	10000								2070	2300

¹⁾ T_{KN} Torque that can be continuously transmitted over the full speed range
T_{Kmax} Transient torque peaks (e. g. resonance passage), max. 100,000 load alternations pulsating / 50,000 load alternations vibratory
T_{Kmax1} Impact loads rarely, max. 1,000 load alternations
For selection consider DIN 740 part II (operating factor, temperature factor), parameters for an ambient temperature of 20 °C.
²⁾ Referring to 0.5 T_{KW}
³⁾ Here permanent damping power. Twice the damping power figure is permissible for one hour.

SINULASTIC®

Highly flexible couplings

Technical data of silicone rubber (SI)

Technical data																				
Size	Elastomer type	TKN RT ³⁾	Torque [Nm] with an ambient temperature of +80 °C ¹⁾				Dynamic torsion spring stiffness C _{dyn.} [Nm/rad] ²⁾					Relative damping ψ [-]			Perm. damping power [W] ³⁾				Operating speed [rpm]	
			TKN	TK _{max}	TK _{max1}	TK _W	10%	25%	50%	75%	100%	30 °C	100 °C	120 °C	30 °C	80 °C	100 °C	120 °C	n	η _{max.}
20	SC	1800	1385	2077	2769	554												2700	3000	
	MC	2000	1538	2308	3077	615												2700	3000	
28	SC	2200	1692	2538	3385	677												2340	2600	
	MC	2800	2154	3231	4308	862												2340	2600	
38	SC	3100	2385	3577	4769	954												2520	2800	
	MC	3800	2923	4385	5846	1169												2520	2800	
53	SC	4200	3231	4846	6462	1292												2340	2600	
	MC	5300	4077	6115	8154	1631												2250	2500	
96	SC	8100	6231	9346	12462	2492												2070	2300	
	MC	9600	7385	11077	14769	2954												2070	2300	
114	SC	9200	7077	10615	14154	2831												2070	2300	
	MC	11400	8769	13154	17538	3508												2070	2300	
140	SC	12500	9615	14423	19231	3846												1890	2100	
	MC	14000	10769	16154	21538	4308												1890	2100	
180	SC	16000	12308	18462	24615	4923												1890	2100	
	MC	18000	13846	20769	27692	4800												1890	2100	

¹⁾ TKN Torque that can be continuously transmitted over the full speed range
 TK_{max} Transient torque peaks (e. g. resonance passage), max. 100,000 load alternations pulsating / 50,000 load alternations vibratory
 TK_{max1} Impact loads rarely, max. 1,000 load alternations
 For selection consider DIN 740 part II (operating factor, temperature factor)
²⁾ Referring to 0.5 TK_W
³⁾ Reference value with an ambient temperature of +20 °C



Natural rubber (NR)

Synthetic rubber (EPDM)

Silicone rubber (SI)

New materials	
Synthetic rubber (EPDM)	Silicone rubber (SI)
• Max. ambient temperature: +100 °C	• Max. ambient temperature: +120 °C
• Long service life	• Very good resistance to media with oils and greases
• Low decline of torsion spring stiffness	• Lightly progressive torsion spring stiffness
• High weather and aging resistance	• High weather and aging resistance
• Resuming high damping work	• Resuming very high damping work

BoWex® FLE-PA/-PAC

MONOLASTIC®

BoWex-ELASTIC®

Flange couplings

SINULASTIC®

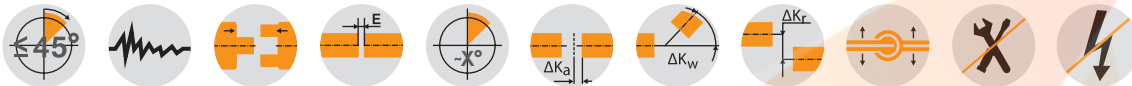
SINULASTIC® A

Highly flexible flange coupling

Pluggable disk coupling with optimal tooth contact



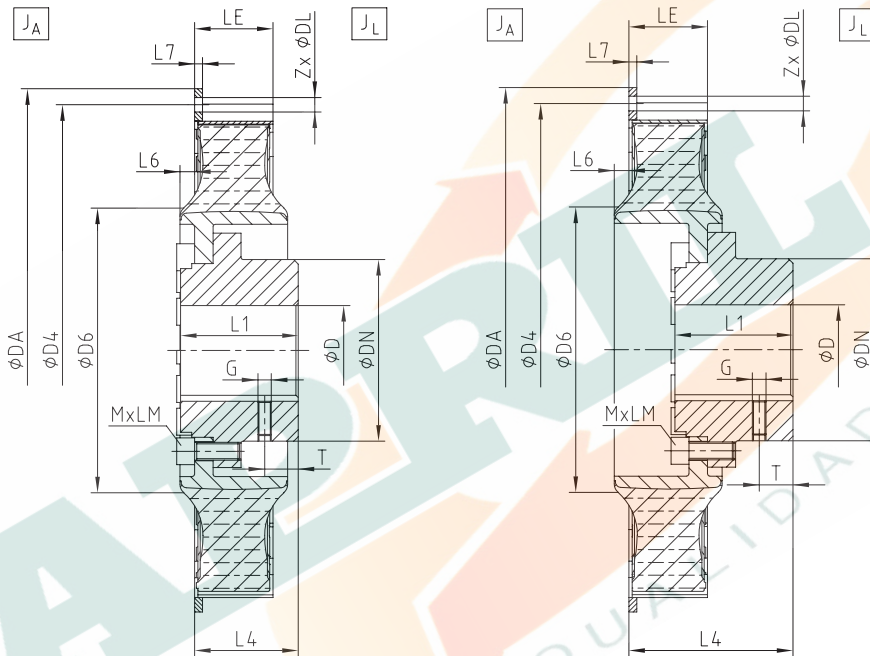
For legend of pictogram refer to flapper on the cover



Type AK

Type AL

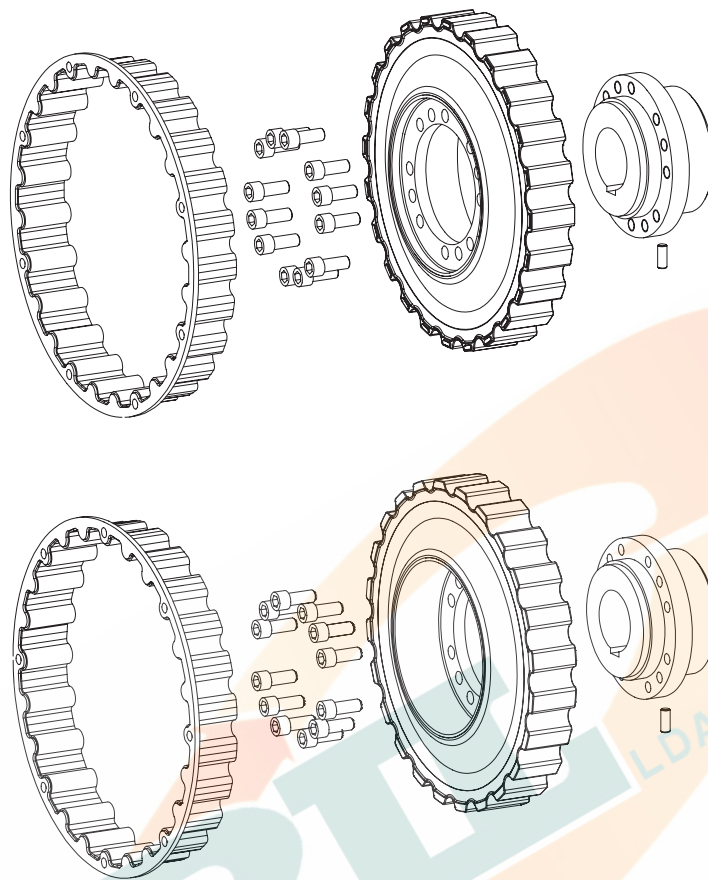
Types AK and AL specify the standard with variable hub connections as a short or long version



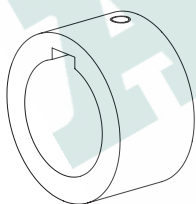
Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D4	Z	DL
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø475	475	450	12	11

SINULASTIC® type AK / AL																																	
Size	Flange connection acc. to SAE - J620						Dimensions [mm]												Mass moment of inertia [kgm ²] ¹⁾		Weight [kg] ¹⁾												
	11 1/2"	14"	18"	21"	24"	Ø475	Max. finish bore D	DN	D6	LE	L1	L4		L6	L7	MxLM	G	T	JA	JL													
	AK	AL																															
20	●						80	112	164	65	75	90.5 +3.5/-4.5	127.5 +3.5/-4.5	5.5	41.0 13.6	M12x30	M10	30	0.0947	0.0533	13.70												
28		●					115	162	244	44	90	93.5 ±3	109 ±3	7.0	7.0	M16x40	M12	35	0.1353	0.0533	14.79												
			●																														
				●																													
38			●				115	162	244	58	100	93.5 ±3	123 ±3	7.0	7.0	M16x40	M12	35	0.1873	0.1667	21.89												
				●																													
					●																												
53				●			115	162	247	70	105	92.5 ±3	146 ±3	13.0	7.0	M16x40	M12	40	0.2539	0.1994	30.18												
					●																												
						●																											
96					●		175	248	352	84	150	129 ±4	192 ±4	1.0	11.0	M20x50	-	-	0.2584	0.1994	25.79												
						●																											
																			●														
114						●	175	248	352	98	150	129 ±4	206 ±4	1.0	11.0	M20x50	-	-	0.2906	0.2378	29.44												
																			●														
																				●													
140							175	248	431	94	200	200 ±3.5	280 ±3.5	3.0	14.0	M20x60	-	-	0.3046	0.2378	29.70												
																				●													
																					●												
180							175	248	431	114	200	200 ±3.5	300 ±3.5	3.0	14.0	M20x60	-	-	0.7310	1.0321	63.86												
																					●												
																						●											

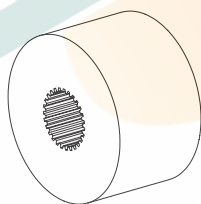
¹⁾ With max. bore



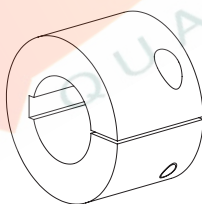
Types of hubs type AK / AL ¹⁾



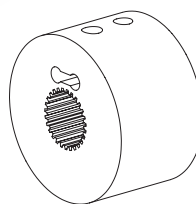
Type 1.0
with feather keyway
and setscrew
(acc. to standard AK, AL)



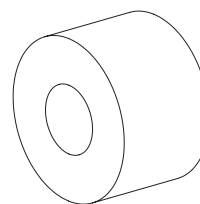
Type 1.3
spline toothing



Type 2.1
clamping hub
single slot with
feather keyway



Type 3.1
spline/clamping hub N



Type 8.0
taper interference fit

Type 8.1
cylindrical
interference fit

¹⁾Dimensions and type may differ depending on size, other types of hubs on request

SINULASTIC® A

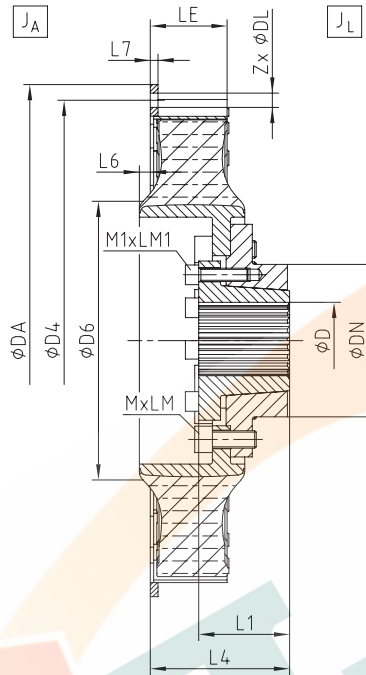
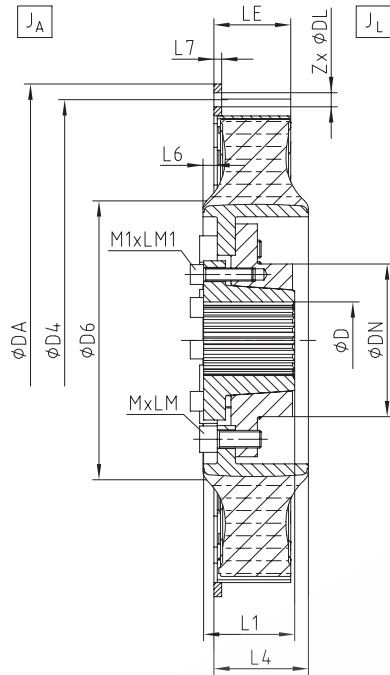
Highly flexible flange coupling

Type ALC / AKC

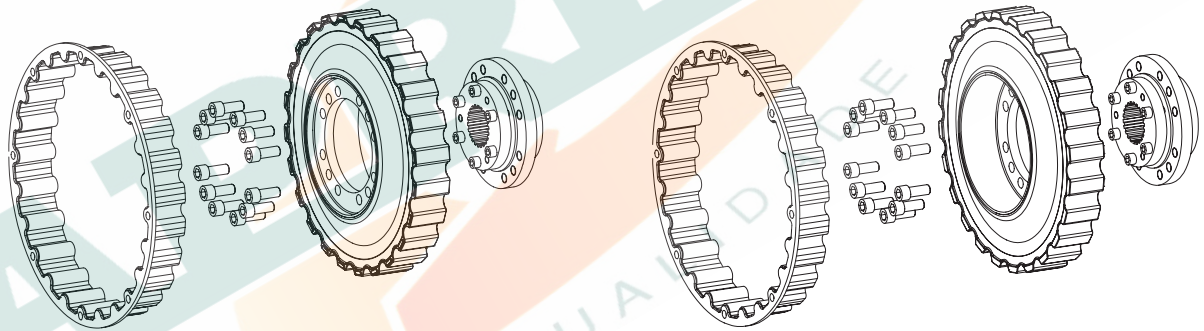
Type AKC

Type ALC

Types AKC and ALC specify the hub type as a spline clamping ring hub



Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D4	Z	DL
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø475	475	450	12	11



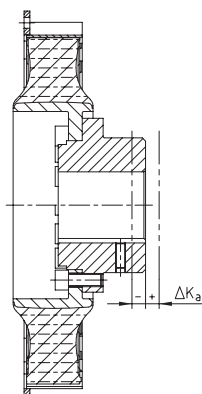
SINULASTIC® type AKC / ALC																						
Size	Flange connection acc. to SAE - J620						Finish bore D		Dimensions [mm]										Mass moment of inertia [kgm ²] ¹⁾		Weight [kg] ¹⁾	
	11 1/2"	14"	18"	21"	24"	Ø475	Pilot bored	Max.	DN	D6	LE	L1	L4		L6	L7	MxLM	M1xLM1	JA	JL		
	AK		AL																			
20	●						30	50	109	164	65	57	70.5 +3.5/-4.5	95.5 +3.5/-4.5	5.5	41.0	13.6	M12x30	M10x30	0.0947	0.0520	13.93
		●																		0.1353	0.0520	15.02
			●																		0.1873	0.1525
28			●				46	65	139	244	44	63	56.5 ±3	72 ±3	7.0	7.0	M16x40	M10x40	0.4968	0.1525	25.79	
		●																		0.2013	0.1525	21.40
				●																0.2444	0.1837	24.05
38				●			46	80	139	244	58	69	65 ±3	92 ±3	7.0	7.0	M16x40	M10x40	0.5539	0.1837	28.70	
		●																		0.2584	0.1837	24.31
			●																	0.2906	0.2240	28.72
53					●		46	80	139	247	70	83	83 ±3	124 ±3	13.0	7.0	M16x40	M12x45	0.6000	0.2240	33.37	
		●																		0.3046	0.2240	28.98
						●																
96	On request																					
114	On request																					
140	On request																					
180	On request																					

¹⁾ With max. bore

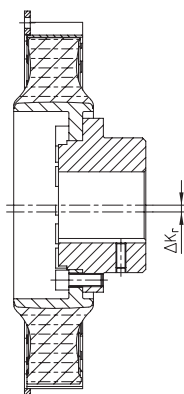
SINULASTIC® A

Highly flexible flange coupling

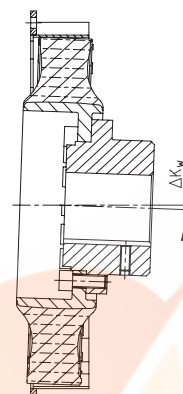
Displacements



Axial displacement



Radial displacement



Angular displacement

SINULASTIC® A size		20	28	38	53	96	114	140	180
Perm. axial displacement ΔK_a [mm] ²⁾		±2.0	±3.0	±3.0	±3.0	±3.0	±3.0	±3.0	±3.0
Perm. radial displacement ΔK_r [mm]	1500 rpm	0.8	1.1	1.1	1.1	1.25	1.25	1.5	1.5
	n _{max.}	0.6	0.8	0.8	0.8	0.9	0.9	1.1	1.1
	max. ¹⁾	1.6	2.2	2.2	2.2	2.5	2.5	3.0	3.0
Perm. angular displacement ΔK_w [degree]	1500 rpm	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4
	n _{max.}	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3
	max. ¹⁾	1.1	0.9	0.9	0.9	0.8	0.8	0.6	0.6

¹⁾With assembly, for a short time resp. rarely with downtime or start-up operation as well as exceptional load conditions.

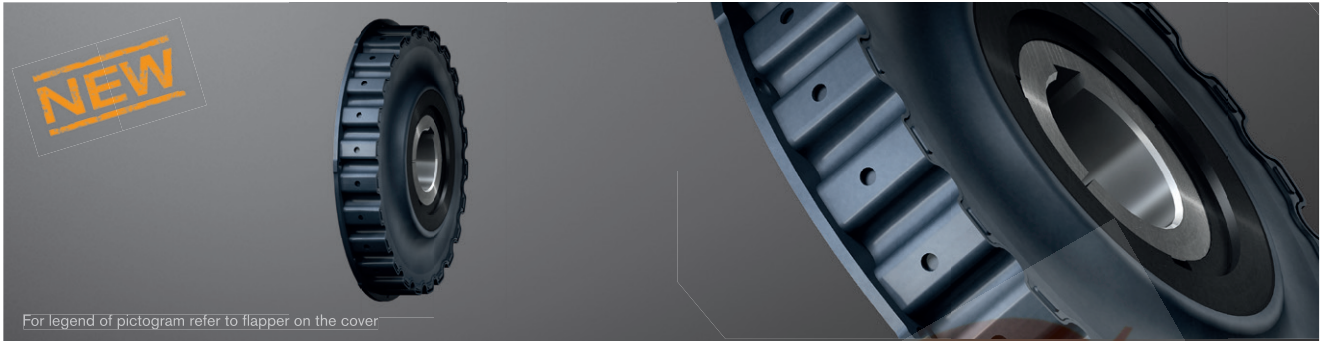
²⁾Plug-in fit in the tooth contact allows for alternative mounting lengths

Ordering example:	SINULASTIC® 53	ALC	M	14	1.3	DIN 5480 - 60x2x28
	Coupling size	Type	Elastomer hardness	Flange ØDA acc. to SAE or special	Hub type	Finish bore

SINULASTIC® T

Highly flexible flange coupling

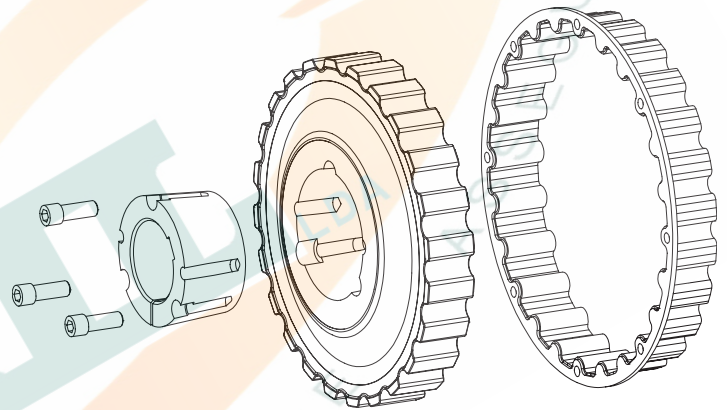
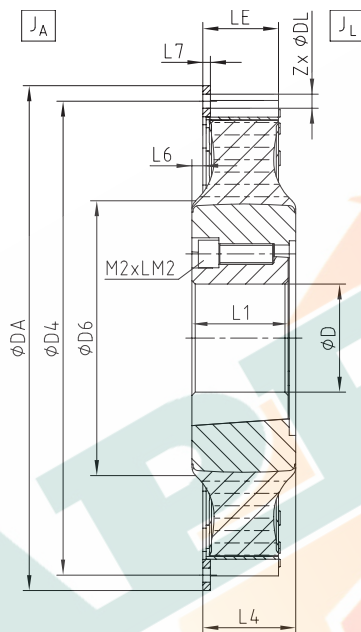
Pluggable disk coupling with optimal tooth contact



For legend of pictogram refer to flapper on the cover



Type T specifies the hub type as Taperlock shaft connection

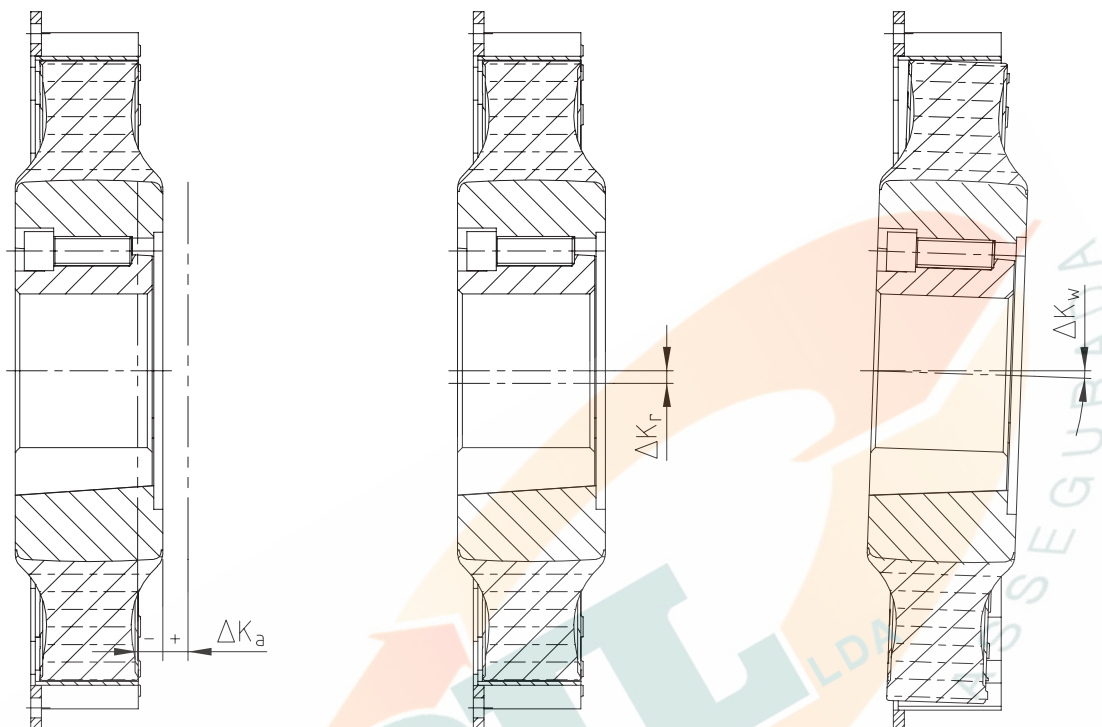


Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D4	Z	DL
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø475	475	450	12	11

SINULASTIC® type T																					
Size	Flange connection acc. to SAE - J620						Finish bore D		Dimensions [mm]							Taper clamping sleeve		Mass moment of inertia [kgm ²] ¹⁾		Weight [kg] ¹⁾	
	11 1/2"	14"	18"	21"	24"	Ø475	Pilot bored	Max.	D6	LE	L1	L4	L6	L7	M2xLM2	Type	JA	JL			
																			41.0		13.6
20	●						35	90	164	60	63.5	70.5 +3.5/-4.5	5.5					0.0947	0.0568	13.75	
		●																0.1353	0.0568	14.83	
28		●					35	90	244	44	63.5	57.0 ± 3	7.0	7.0				0.1873	0.1919	24.37	
			●															0.4968	0.1919	29.02	
						●												0.2013	0.1919	24.63	
38		●					40	110	244	58	76.2	70.0 ± 3	7.0	7.0				0.2444	0.2404	28.68	
			●															0.5539	0.2404	33.33	
						●												0.2584	0.2404	28.93	
53		●					55	125	247	70	89.0	83.0 ± 3	13.0	7.0				0.2906	0.2993	33.72	
			●															0.6000	0.2993	38.36	
						●												0.3046	0.2993	33.97	

¹⁾ With max. bore

Displacements



Axial displacement

Radial displacement

Angular displacement

SINULASTIC® T size		20	28	38	53
Perm. axial displacement ΔK_a [mm] ²⁾		±2.0	±3.0	±3.0	±3.0
Perm. radial displacement ΔK_r [mm]	1500 rpm	0.8	1.1	1.1	1.1
	n_{max} max. ¹⁾	0.6 1.6	0.8 2.2	0.8 2.2	0.8 2.2
Perm. angular displacement ΔK_w [degree]	1500 rpm	0.7	0.6	0.6	0.6
	n_{max} max. ¹⁾	0.5 1.1	0.4 0.9	0.4 0.9	0.4 0.9

¹⁾With assembly, for a short time resp. rarely with downtime or start-up operation as well as exceptional load conditions.

²⁾Plug-in fit in the tooth contact allows for alternative mounting lengths

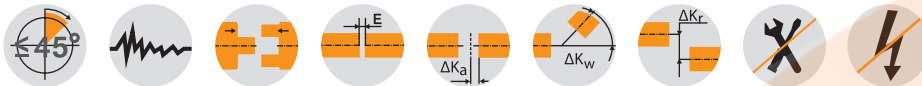
Ordering example:

SINULASTIC® 53	T	M	14	1.0	Ø75
Coupling size	Type	Elastomer hardness	Flange ØDA acc. to SAE or special	Hub type	Finish bore

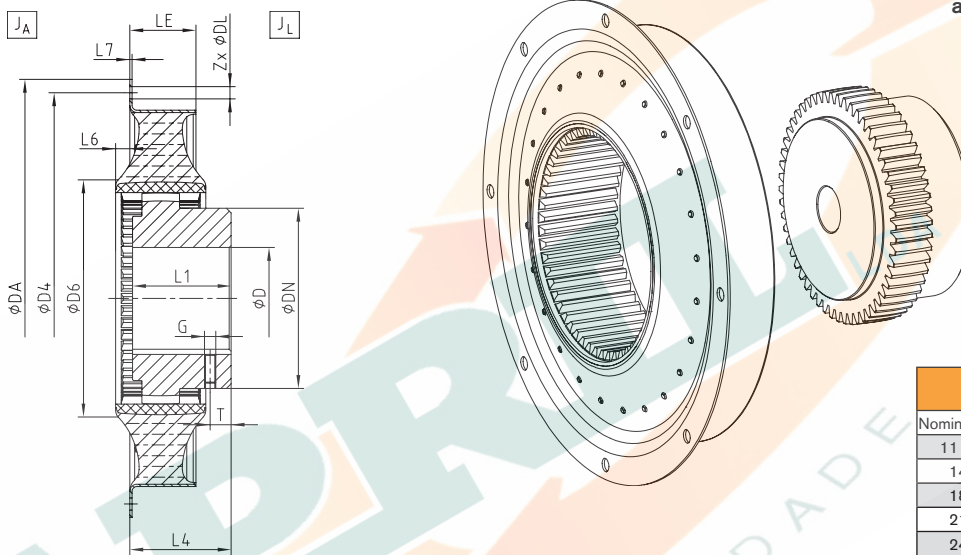
SINULASTIC® B

Highly flexible flange coupling

Disk coupling pluggable inside



Type B specifies a type pluggable in the hub for variable use and high potential for offset

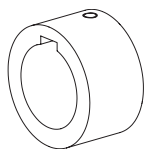


Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D4	Z	DL
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø475	475	450	12	11

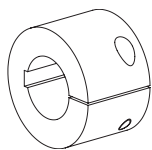
SINULASTIC® type B																			
Size	Flange connection acc. to SAE - J620						Dimensions [mm]										Mass moment of inertia [kgm ²] ¹⁾		Weight [kg] ¹⁾
	11 1/2"	14"	18"	21"	24"	Ø475	Max. finish bore D	DN	D6	LE	L1	L4	L6	L7	G	T	JA	JL	
20	●						80	124	169	60.0	75	80.5 ±21	8.5	2.0	M10	20	0.0625	0.0336	9.67
		●															0.1114	0.0336	10.82
28		●					125	200	244	38.0	140	129 ±7	10.0	2.5	M10	20	0.1159	0.1978	27.15
			●			●											0.2291	0.1978	28.82
38																	0.1213	0.1978	27.24
		●					125	200	245	52.0	140	136 ±14	10.0	2.5	M16	40	0.1524	0.2121	28.95
			●														0.2655	0.2121	30.62
				●		●											0.1578	0.2121	29.05
53		●					125	200	247	70.5	140	143 ±20	15.0	2.5	M16	40	0.1944	0.2298	31.10
			●														0.3075	0.2298	32.77
				●		●											0.1998	0.2298	31.20
96				●			160	225	352	69.0	150	131.5 ±12	7.0	2.5	-	-	0.3857	0.5413	41.23
					●												0.5741	0.5413	43.18
						●											0.7318	0.5413	44.46
114					●												0.4591	0.5979	44.33
						●	160	225	352	83.0	150	138.5 ±19	7.0	2.5	-	-	0.6475	0.5979	46.28
																	0.8052	0.5979	47.56
140					●		240	326	431	81.0	200	175 ±11	10.0	3.0	-	-	0.8816	1.8772	83.39
						●											1.0708	1.8772	84.93
180						●	240	326	431	101.0	200	185 ±21	10.0	3.0	-	-	1.0905	2.0154	88.66
																	1.2796	2.0154	90.19

¹⁾ With max. bore

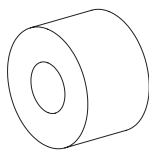
Types of hubs type B ¹⁾



Type 1.0
with feather keyway
and setscrew



Type 2.1
clamping hub
single slot with
feather keyway

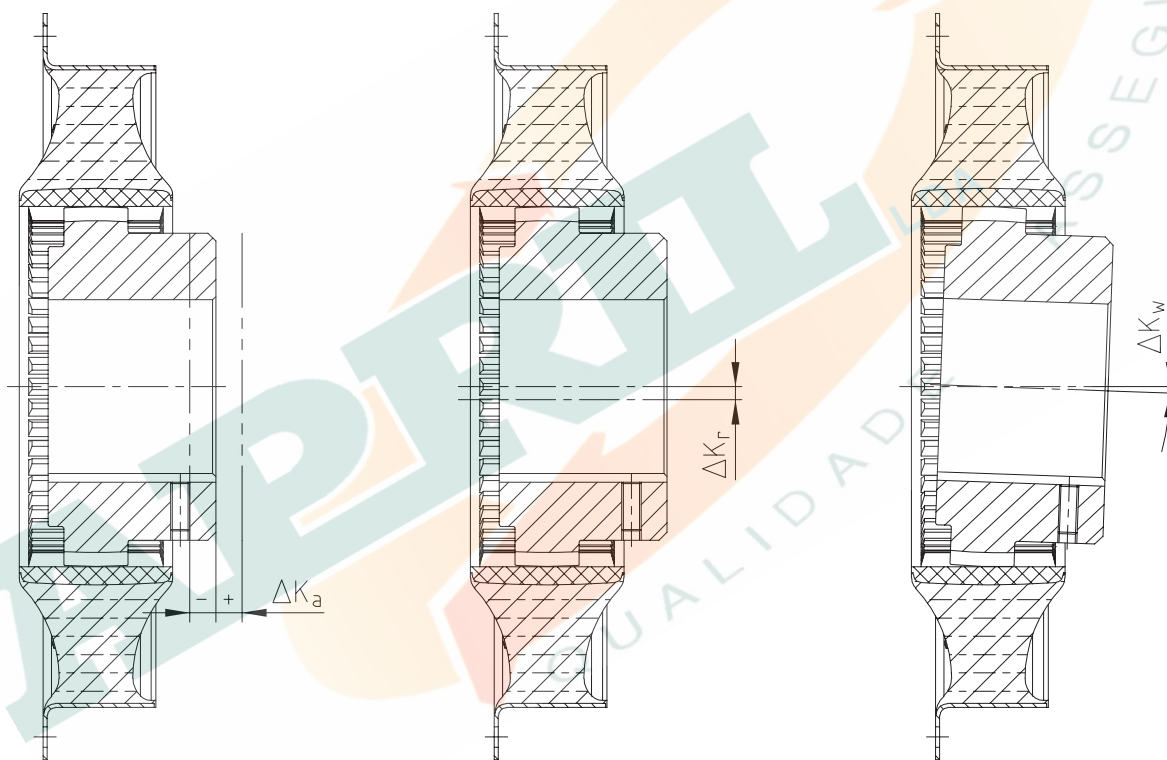


Type 8.0
taper interference fit

Type 8.1
cylindrical
interference fit

¹⁾Dimensions and type may differ depending on size, other types of hubs on request

Displacements



Axial displacement

Radial displacement

Angular displacement

SINULASTIC® B size		20	28	38	53	96	114	140	180
Perm. axial displacement ΔK_a [mm]		±2	±3	±3.0	±3.0	±4.0	±4.0	±4.0	±4.0
Perm. radial displacement ΔK_r [mm]	1500 rpm	0.8	1.1	1.1	1.1	1.25	1.25	1.5	1.5
	n_{max}	0.6	0.8	0.8	0.8	0.9	0.9	1.1	1.1
	max. ¹⁾	1.6	2.2	2.2	2.2	2.5	2.5	3.0	3.0
Perm. angular displacement ΔK_w [degree]	1500 rpm	1.0	0.8	0.8	0.8	0.7	0.7	0.6	0.6
	n_{max}	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4
	max. ¹⁾	2.0	1.6	1.6	1.6	1.4	1.4	1.2	1.2

¹⁾With assembly, for a short time resp. rarely with downtime or start-up operation as well as exceptional load conditions.

Ordering example:	SINULASTIC® 53	B	M	14	1.3	DIN 5480 - 60x2x28
	Coupling size	Type	Elastomer hardness	Flange ØDA acc. to SAE or special	Hub type	Finish bore

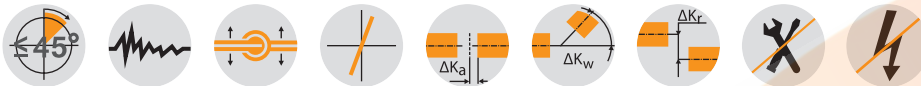
SINULASTIC® V

Highly flexible flange coupling

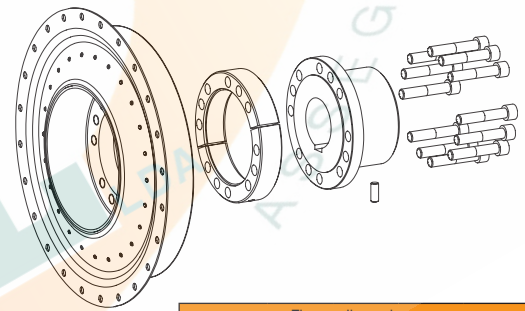
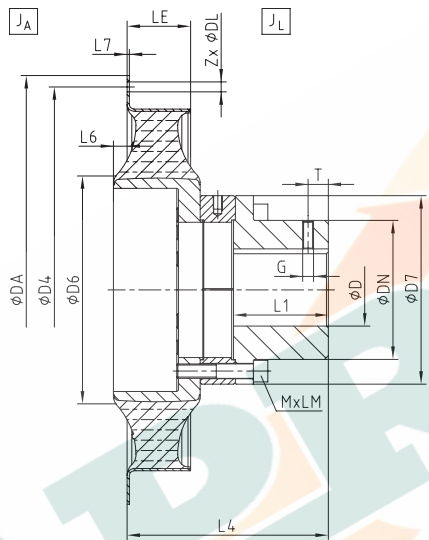
Radially mountable disk coupling



For legend of pictogram refer to flapper on the cover



Type V specifies a radially replaceable type for not flange-mounted drives set up freely



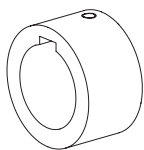
Flange dimensions according to SAE J620 [mm]				
Nominal size	DA	D4	Z	DL
11 1/2"	352.42	333.37	8	11
14"	466.72	438.15	8	13
18"	571.50	542.90	6	17
21"	673.10	641.35	12	17
24"	733.42	692.15	12	21
Ø475	475	450	12	11

SINULASTIC® type V

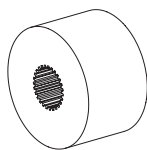
Size	Flange connection acc. to SAE - J620						Dimensions [mm]											Mass moment of inertia [kgm ²] ¹⁾		Weight [kg] ¹⁾	
	11 1/2"	14"	18"	21"	24"	Ø475	Max. finish bore D	DN	D6	D7	LE	L1	L4	L6	L7	MxLM	G	T	JA		JL
20	●						70	100	145	145	60.0	75	196	8.5	2.0	M12x90	M10	20	0.0625	0.0650	16.22
		●				181							0.1114						0.0612	16.40	
			●			191							0.1159						0.2148	27.33	
28			●				110	154	244	209	38.0	100	181	10.0	2.5	M16x90	M10	20	0.2291	0.2053	27.85
				●		181							0.1213						0.2053	26.28	
					●	205							0.1524						0.2379	29.77	
38				●			110	154	245	209	52.0	100	195	10.0	2.5	M16x90	M16	40	0.2655	0.2274	30.16
					●	195							0.1578						0.2274	28.59	
						229							0.1944						0.2751	33.62	
53					●		110	154	247	209	70.5	105	223	15.0	2.5	M16x90	M16	40	0.3075	0.2690	34.55
						223							0.1998						0.2690	32.97	
													0.3857						1.1404	68.98	
96				●			160	235	352	300	69.0	150	249	7.0	2.5	M20x80	-	-	0.5741	0.1404	70.93
					●								0.7318				1.1404	72.21			
													0.4591				1.2304	72.97			
114					●		160	235	352	300	83.0	150	263	7.0	2.5	M20x80	-	-	0.6475	1.2304	74.92
													0.8052				1.2304	76.20			
													0.8816				2.1530	97.56			
140					●		165	235	431	300	81.0	200	314	10.0	3.0	M20x80	-	-	1.0708	2.1530	99.10
													1.0905				2.3954	104.94			
													1.2796				2.3954	106.47			
180					●		165	235	431	300	101.0	200	334	10.0	3.0	M20x80	-	-			

¹⁾ With max. bore

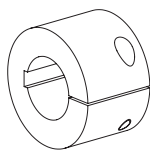
Types of hubs type V ¹⁾



Type 1.0
with feather keyway
and setscrew



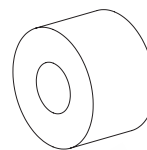
Type 1.3
spline toothing



Type 2.1
clamping hub
single slot with
feather keyway



Type 3.1
spline/clamping hub N

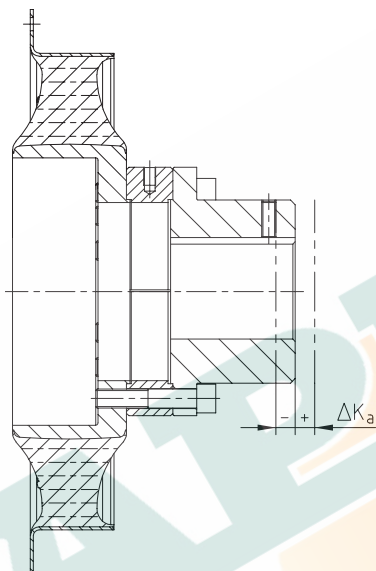


Type 8.0
taper interference fit

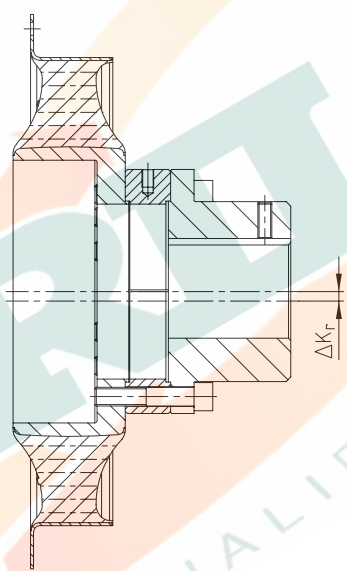
Type 8.1
cylindrical
interference fit

¹⁾Dimensions and type may differ depending on size, other types of hubs on request

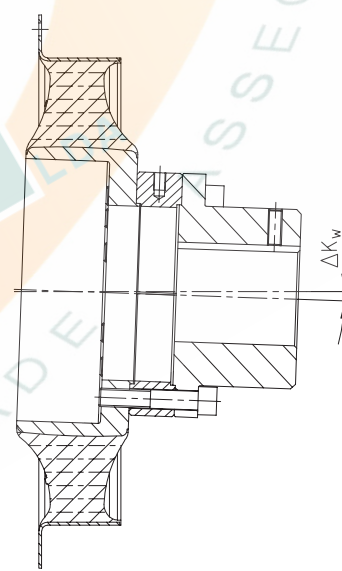
Displacements



Axial displacement



Radial displacement



Angular displacement

SINULASTIC® V size		20	28	38	53	96	114	140	180
Perm. axial displacement ΔK_a [mm]		±2	±3	±3.0	±3.0	±4.0	±4.0	±4.0	±4.0
Perm. radial displacement ΔK_r [mm]	1500 rpm	0.8	1.1	1.1	1.1	1.25	1.25	1.5	1.5
	n_{max} max. ¹⁾	0.6	0.8	0.8	0.8	0.9	0.9	1.1	1.1
Perm. angular displacement ΔK_w [degree]	1500 rpm	1.0	0.8	0.8	0.8	0.7	0.7	0.6	0.6
	n_{max} max. ¹⁾	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4
		2.0	1.6	1.6	1.6	1.4	1.4	1.2	1.2

¹⁾With assembly, for a short time resp. rarely with downtime or start-up operation as well as exceptional load conditions.

Ordering example:	SINULASTIC® 53	V	M	14	1.0	Ø60
	Coupling size	Type	Elastomer hardness	Flange ØDA acc. to SAE or special	Hub type	Finish bore