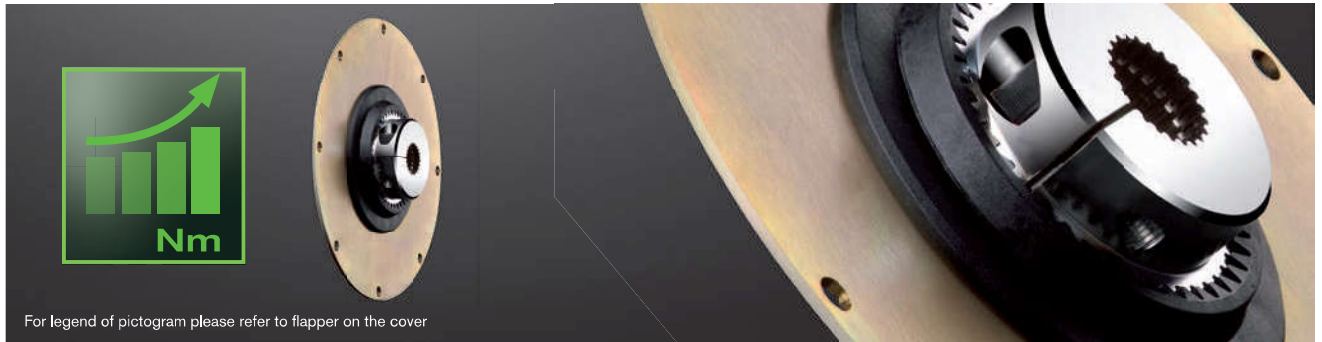


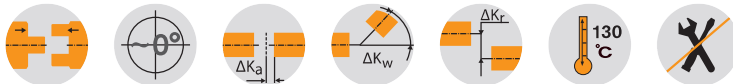
# BoWex® FLE-PAC

## Torsionally rigid flange couplings

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



For legend of pictogram please refer to flapper on the cover



BoWex® FLE-PAC – Dimensions/nominal dimension to SAE

Size	Pilot bore	Finish bore d		Dimensions [mm]							Special length l <sub>1</sub> max.	Nominal size acc. to SAE (D <sub>3</sub> )					Max. axial displacement [mm]
		Min.	Max.	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>3</sub>	l <sub>7</sub>	l <sub>8</sub>	l <sub>10</sub>		6 1/2"	7 1/2"	8"	10"	11 1/2"	
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

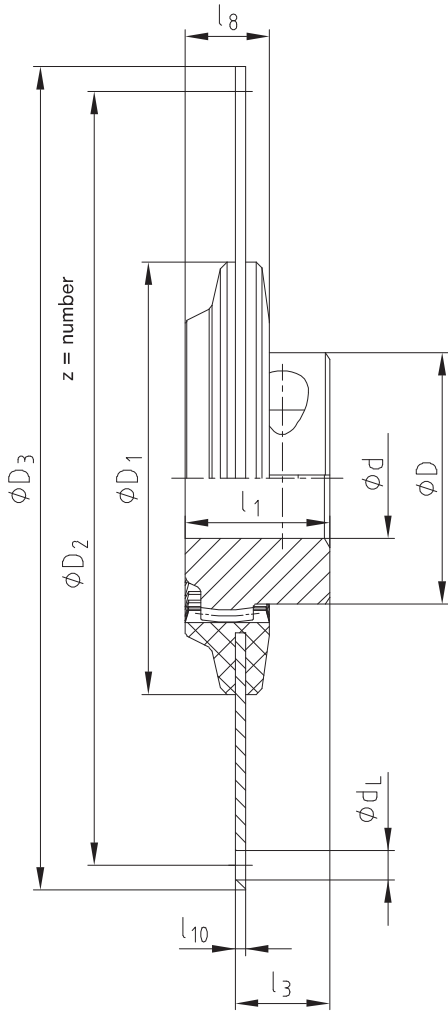
Special flange dimensions deviating from SAE standard are also available.

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

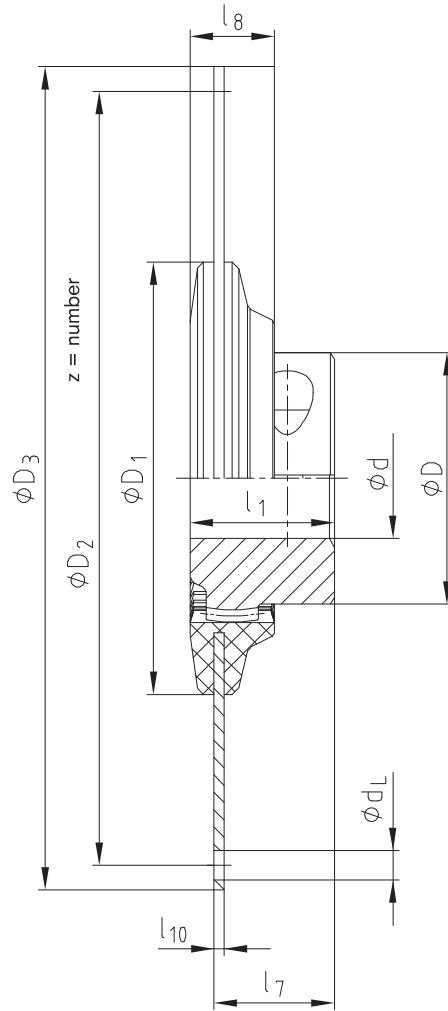
Size	Torque T <sub>K</sub> [Nm]			Weight/mass moment of inertia J	Hub with max. bore	FLE-PAC flanges according to SAE					Dynamic torsion spring stiffness with +60 °C/ψ = 0.45 [Nm/rad]							
	T <sub>KN</sub>	T <sub>K max</sub>	T <sub>KW</sub>			6 1/2"	7 1/2"	8"	10"	11 1/2"	14"	0.30 T <sub>KN</sub>	0.50 T <sub>KN</sub>	0.75 T <sub>KN</sub>	1.00 T <sub>KN</sub>			
48	300	600	150	[kg]	0.79	0.77	0.98	1.19	1.73									
				[kgm <sup>2</sup> ]	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									
				[kgm <sup>2</sup> ]	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									
				[kgm <sup>2</sup> ]	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								
				[kgm <sup>2</sup> ]	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								
				[kgm <sup>2</sup> ]	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							
				[kgm <sup>2</sup> ]	0.0151				0.0312	0.0485	0.1462							
T 80	1850	3700	925	[kg]	5.20				2.27	2.90	5.20							
				[kgm <sup>2</sup> ]	0.0151				0.0312	0.0485	0.1462							
100	2550	5100	1275	[kg]	9.37							3.35	6.22					
				[kgm <sup>2</sup> ]	0.0401													
T 100	3100	6200	1550	[kg]	9.37							3.35	6.22					
				[kgm <sup>2</sup> ]	0.0401													
125	5350	10700	2675	[kg]	19.73							2.09	9.85					
				[kgm <sup>2</sup> ]	0.1359													
T 125	6600	13200	3300	[kg]	19.73							2.09	9.85					
				[kgm <sup>2</sup> ]	0.1359													

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

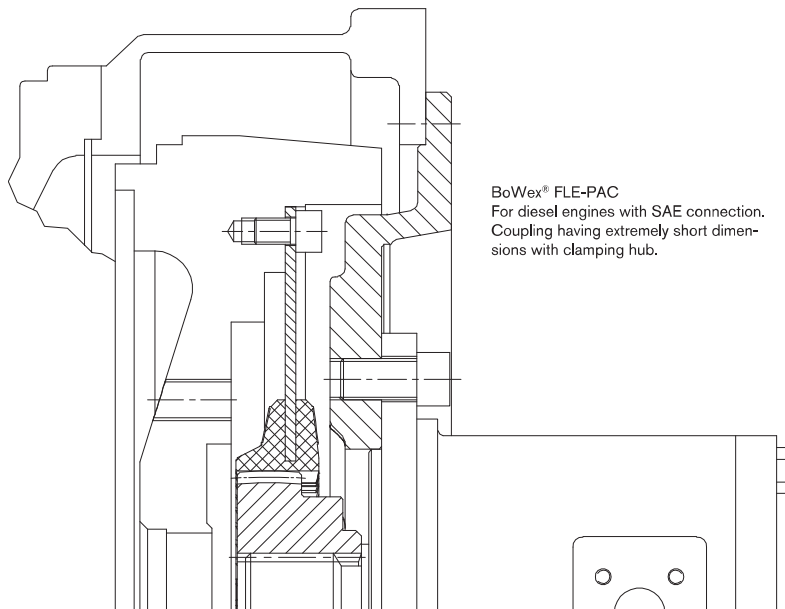
Mounting short version



Mounting long version



Flange dimensions according to SAE J620 [mm]				
Size	D <sub>3</sub>	D <sub>2</sub>	z	d <sub>L</sub>
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-PA / FLE-PAC

## Torsionally rigid flange couplings

### Selection according to SAE standard



#### Determination of coupling

Determination of coupling size

Table 1

Connection dimension of coupling

Table 2

Hub design/mounting length

Table 3

#### SAE pump mounting flange

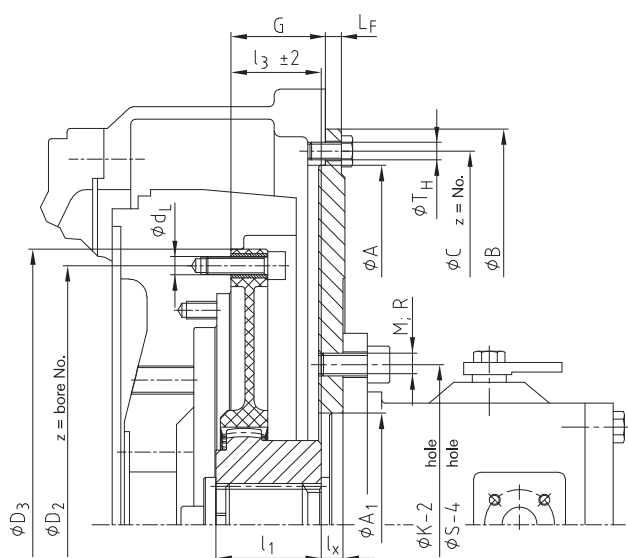
Flange size according to SAE 617

Table 4

Connection flange of hydraulic pump

Table 5

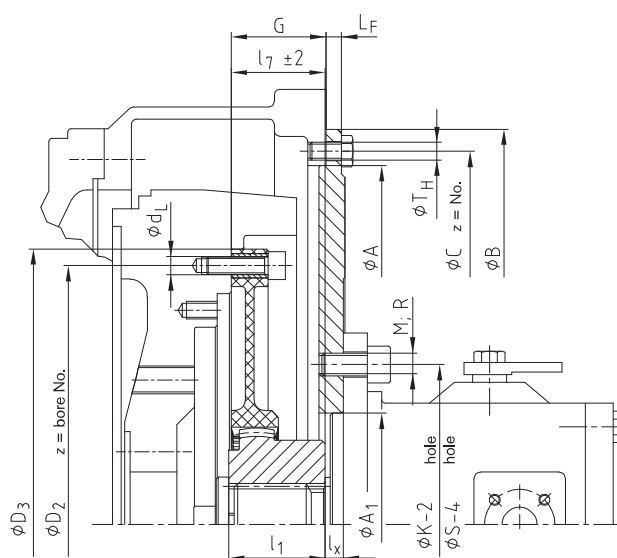
Short mounting version of coupling (l<sub>3</sub>)



Marking on PA flange



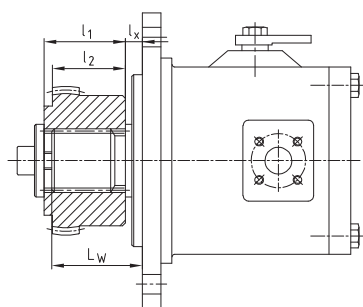
Long mounting version of coupling (l<sub>7</sub>)



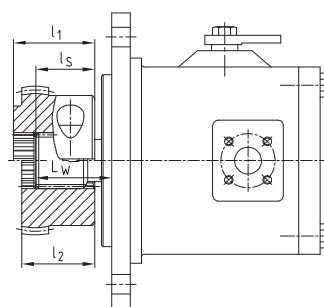
Marking on PA flange



Spline hub



Clamping hub



#### Determination of mounting length l<sub>3</sub> or l<sub>7</sub>

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

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 would 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 rigid flange couplings

### Mounting dimensions according to SAE standard

1. Selection of coupling for diesel engine									
X	Diesel engine power		Coupling size	Flywheel to SAE			Pump mounting flange		Driving shaft of pump
	kW	HP		G			LF		
up to 30 kW	up to 40 PS	48 FLE-PA	6 1/2"	30.15	1.19"	For dimensions to SAE see tables 3 and 4	9.5	0.375"	See Table 3 hub design SAE J 498 / DIN 5480
			7 1/2"	30.15	1.19"				
			8"	62	2.44"				
up to 90 kW	up to 120 PS	65 FLE-PA	8"	54	2.12"	For dimensions to SAE see tables 3 and 4	9.5	0.375"	See Table 3 hub design SAE J 498 / DIN 5480
			10"	54	2.12"				
			11 1/2"	39.6	1.56"				
up to 180 kW	up to 240 PS	80 FLE-PA	11 1/2"	39.6	1.56"	For dimensions to SAE see tables 3 and 4	12.7	0.5"	See Table 3 hub design SAE J 498 / DIN 5480

2. Dimensions of coupling flange according to SAE J620 [mm]					
X	Nominal size	D <sub>3</sub>	D <sub>2</sub>	z = number	d <sub>L</sub>
	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

4. Housing dimensions according to SAE 617 [mm]							
X	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"

5. Mounting flange for hydraulic pump acc. to SAE [mm]											
X	SAE size	SAE flange with 2 holes				SAE flange with 4 holes					
		A <sub>1</sub>	K-2	M	Z	A <sub>1</sub>	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

3. Selection of coupling hubs - Determination of mounting length l <sub>3</sub> or l <sub>7</sub>															
BoWex® coupling size	Pump shaft to SAE J 498 and DIN 5480	Splines hub	Splines clamping hub	Mounting length of coupling l <sub>3</sub> or l <sub>7</sub>										Code to order coupling hub Specify coupling size	
				Dimensions of coupling hub [mm]			Flange size 6 1/2" and 7 1/2"		Flange size 8"		Flange size 10"		Flange size 11 1/2"		
				l <sub>1</sub>	l <sub>2</sub>	l <sub>S</sub>	K	L	K	L	K	L	K		L
42	SAE-16/32 DP	x		42	-	33	33	42							P559101
	PI-S 3/4"														
	z = 11														
42	SAE-16/32 DP	x		42	-	-	33	42							P567101
	PB-S 7/8"														
	z = 13														
42	SAE-16/32 DP	x		42	-	27	33	42							P660201
	PB-BS 1"														
	z = 15														
48	SAE-16/32 DP	x		50	-	45	41	50	50	41	50				P663301
65	PA-S 1 3/8"	x		50	-	48			54	45	54	41			P663301
	z = 21														
65	SAE-12/24 DP	x		55	-	44			54	45	54	41			P656201
	PC-S 1 1/4"														
	z = 14														
65	SAE-16/32 DP	x		-	49	45					53	41			P664301
	PD-S 1 1/2"														
	z = 23														
80	SAE-16/32 DP	x		55	-	-						33	44		P565402
	PE-S 1 3/4"														
	z = 27														
42	25 x 1.25 x 18 DIN 5480	x		42	-	-	33	42							P000205
42		x		42	-	-	33	42							P500202
42	30 x 2 x 14 DIN 5480	x		42	-	-	33	42							P500203
48		x		50	-	-	41	50							P000206
48	35 x 2 x 16 DIN 5480	x		50	-	-	41	50	50		50				P500203
48		x		46	-	-	37	46							P000303
65	40 x 2 x 18 DIN 5480	x		55	-	-					54	39			P000303
65		x		60	-	-			50	59	50	59	39		P500301
65	45 x 2 x 21 DIN 5480	x		55	-	-					54	39			P000304
65		x		55	-	-			54	45	54	39			P500302
65	50 x 2 x 24 DIN 5480	x		-	64	-			60	69	60	69	39		P000403
65		x		55	-	-			54	45	54	39			P500401
80	50 x 2 x 24 DIN 5480	x		55	-	-						37	42		P500405

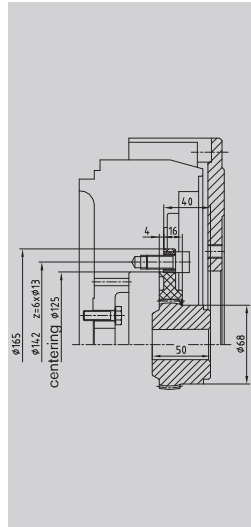
Ordering example: Coupling FLE-PA/FLE-PAC			SAE pump mounting flange	
BoWex® 48 FLE-PA	7 1/2"	P663301	SAE-4	B-2L
Coupling size	SAE connection of coupling	Code of coupling hub	Pump mounting flange for engine housing	Pump flange to SAE 2 holes/4 holes standard metric fastening thread
Table 1	Table 2	Table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

# BoWex® FLE-PA

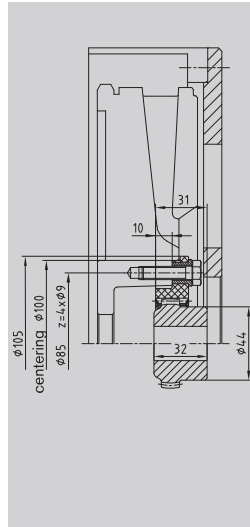
## Torsionally rigid flange couplings

### Special flange programme, deviations from the SAE standard

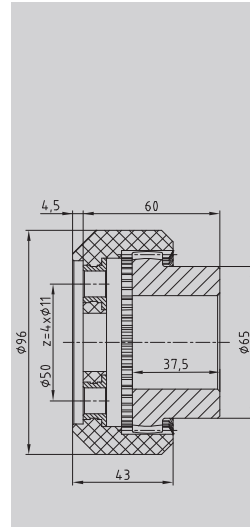
Fitting to  
diesel engines:  
Hatz



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



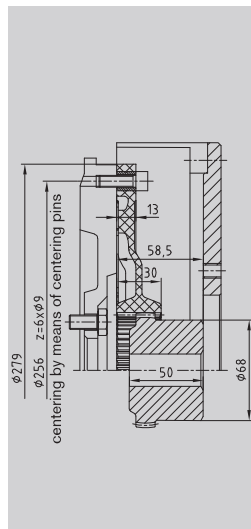
BoWex® 28 FLE-PA, Ø105  
Hatz  
1D81 / 1D90



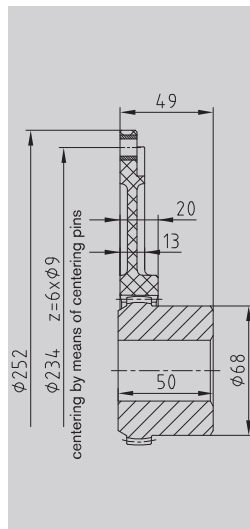
BoWex® 48 FLE-PA, Ø96  
Hatz  
Z788 / Z789 / Z790

Coupling size  
Engine type

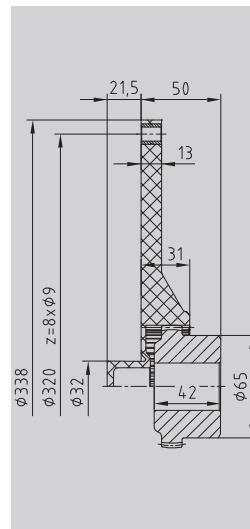
Fitting to  
diesel engines:  
VW  
Mitsubishi



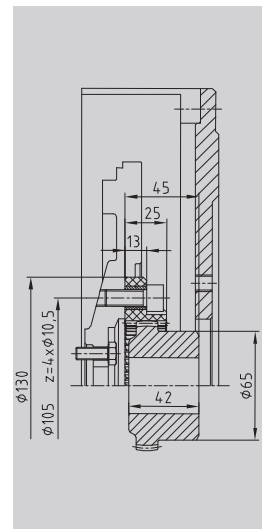
BoWex® 48 FLE-PA, Ø279  
VW  
028.B / M344



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



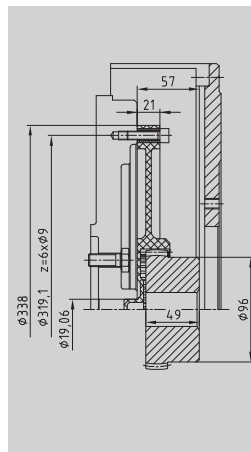
BoWex® 48 FLE-PA  
Mitsubishi  
Ø338-32



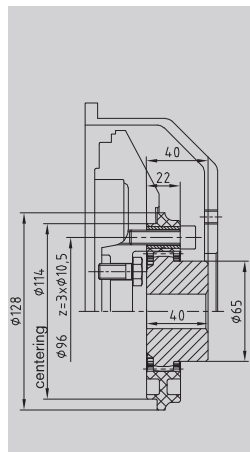
BoWex® 48 FLE-PA, Ø130  
Mitsubishi  
Series L / Series K

Coupling size  
Engine type

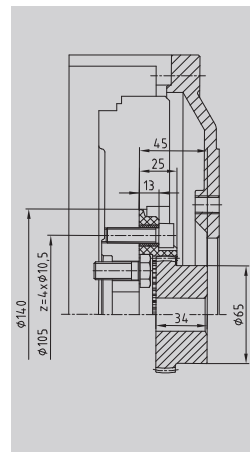
Fitting to  
diesel engines:  
Perkins  
Lombardini



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

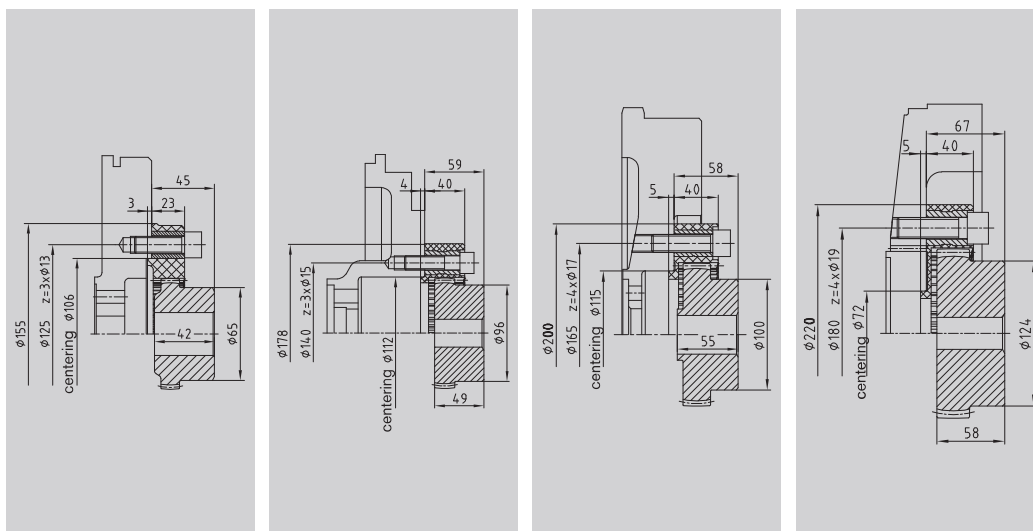
Coupling size  
Engine type

# BoWex® FLE-PA

## Torsionally rigid flange couplings

### Special flange programme, deviations from the SAE standard

Fitting to diesel engines:  
Perkins  
Isuzu  
Cummins



Coupling size  
Engine type

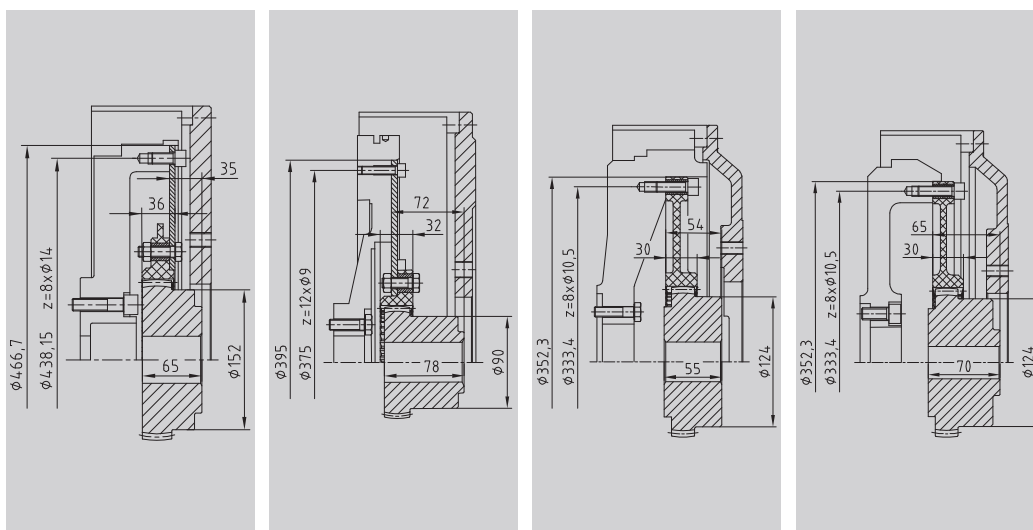
BoWex® 48 FLE-PA,  
Ø155  
3 holes, Ø125

BoWex® 65 FLE-PA,  
Ø178  
3 holes, Ø140

BoWex® 70 FLE-PA,  
Ø200  
4 holes, Ø165

BoWex® 80 FLE-PA,  
Ø220  
4 holes, Ø180

Fitting to diesel engines:  
Caterpillar  
Daimler  
Cummins  
John-Deere



Coupling size  
Engine type

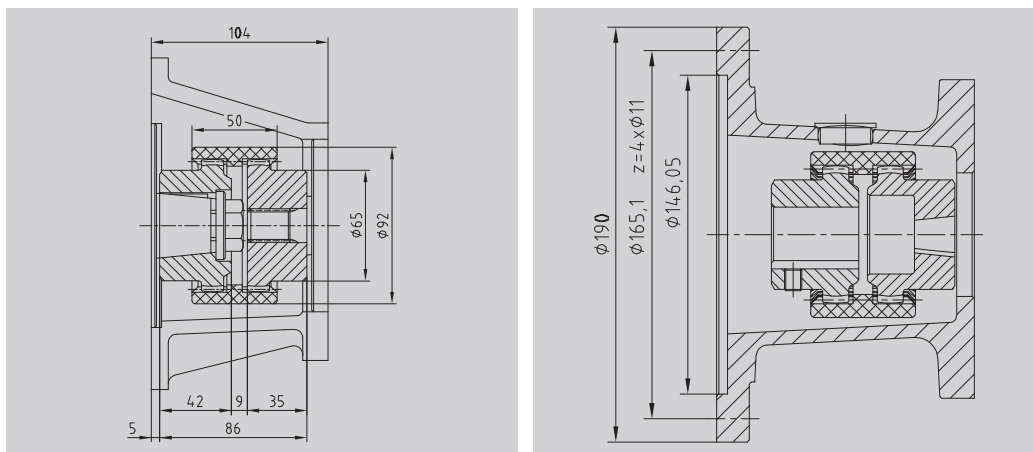
BoWex® T100 FLE-PA, 14"  
Caterpillar  
C 10 / C 12

BoWex® T65 FLE-PA, Ø395  
Daimler  
OM904

BoWex® 80 FLE-PA, 11 1/2"  
Cummins  
QSX/QSB

BoWex® 80 FLE-PA 11 1/2"  
John Deere

Fitting to shaft motors:  
Hatz  
Honda  
Briggs-Stratton  
Yanmar  
Kohler  
Robin



Coupling size  
Engine type

BoWex® M42  
Hatz 2G30

BoWex® shaft coupling type M28 and M32  
Housing connection according to SAE J609A

BoWex® FLE-PA/-PAC

MONOLASTIC®  
Flange couplings

BoWex-ELASTIC®

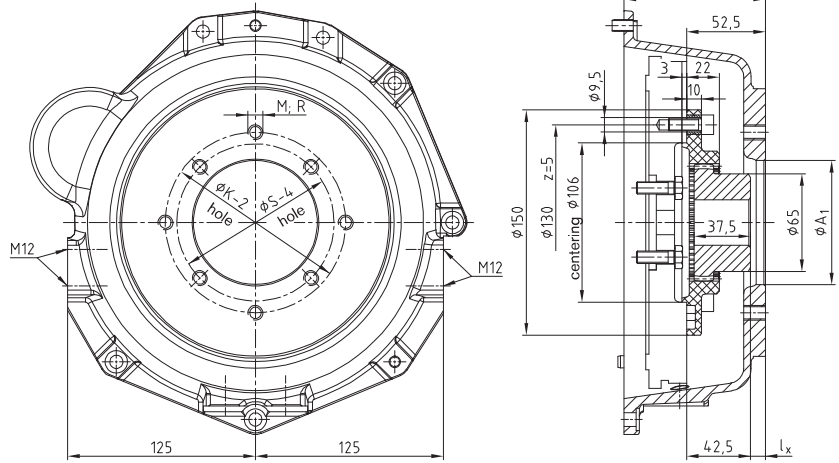
# BoWex® FLE-PA

## Torsionally rigid 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

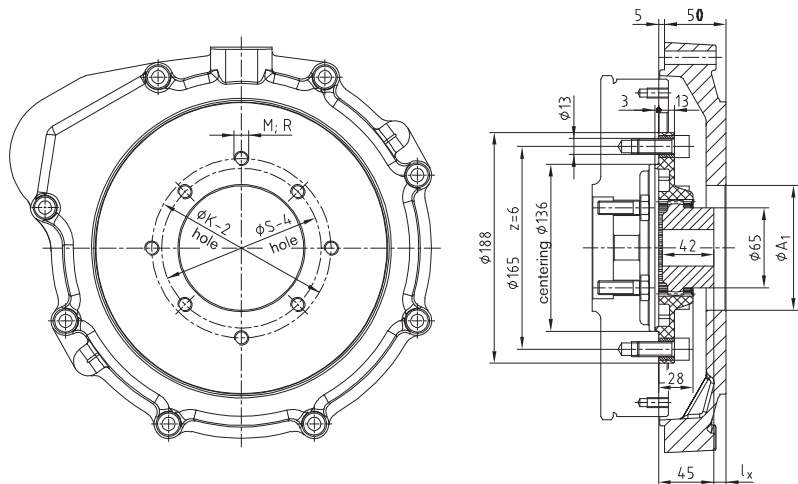


BoWex® 48 FLE-PA Ø 150 / pump connection housings

KUBOTA  
Super 3 series

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

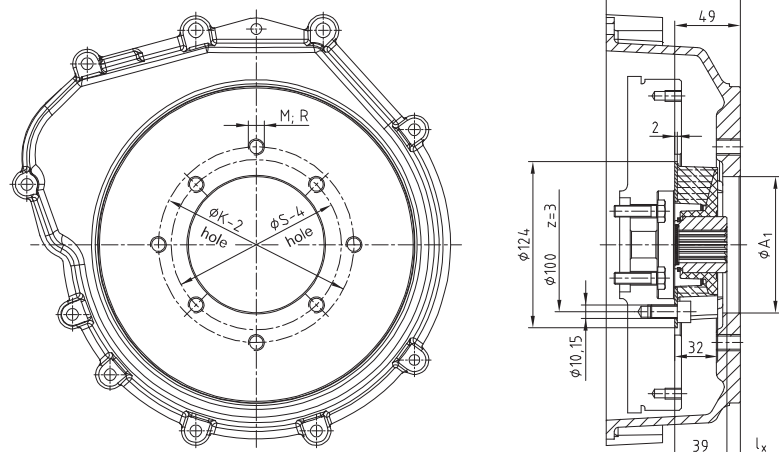
V 2003-T



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

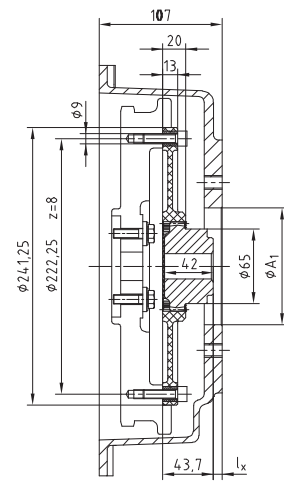
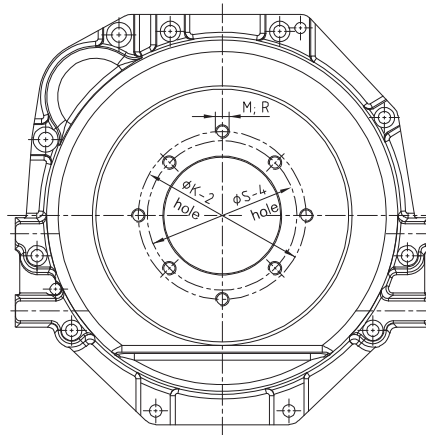
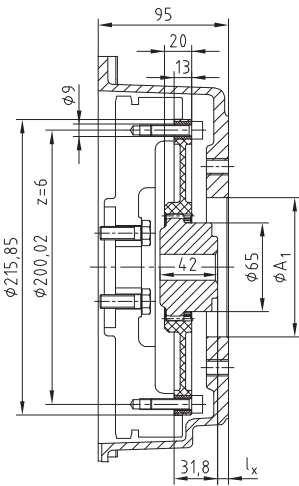


MONOLASTIC® 28 Ø 124 / pump connection housings

# BoWex® FLE-PA Torsionally rigid flange couplings

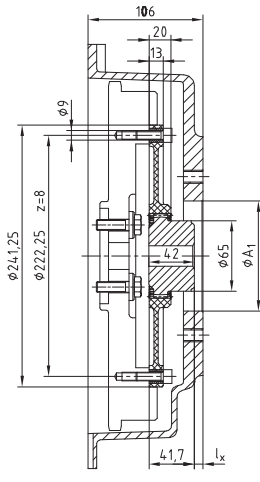
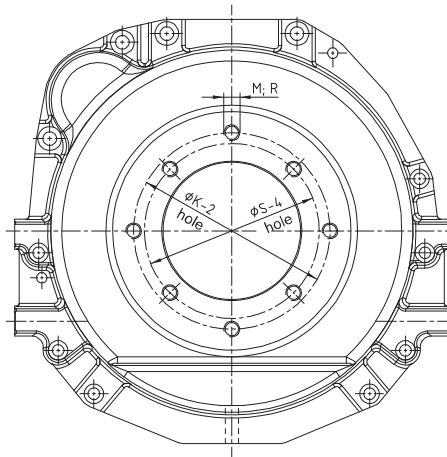
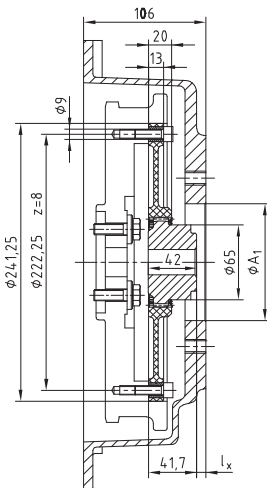
## Flange couplings and pump connection housings for Perkins engines

BoWex® FLE-PA/-PAC



Perkins 403D - 10/11

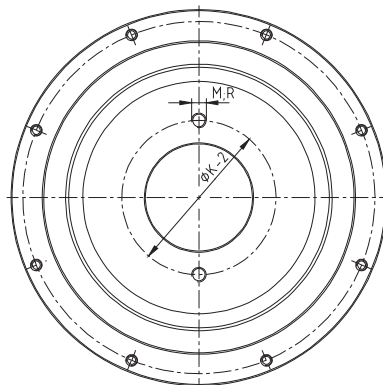
Perkins 403D - 13/15



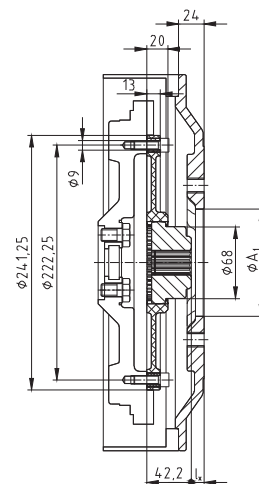
Perkins 404D - 20

Perkins 404D - 22

Other selections on request for Yanmar Mitsubishi etc.



Mitsubishi SL series



Yanmar TNV series

MONOLASTIC®

Flange couplings

BoWex-ELASTIC®

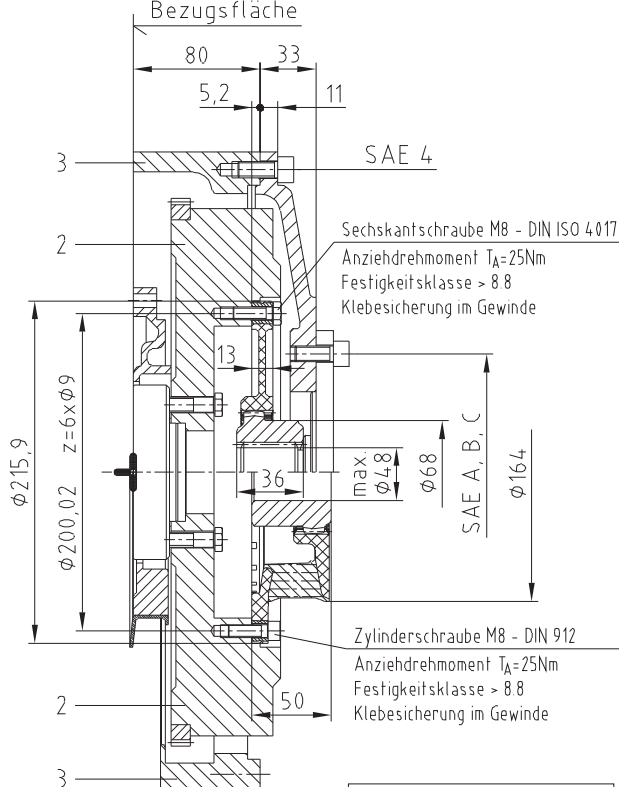


# BoWex® FLE-PA Torsionally rigid flange couplings

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

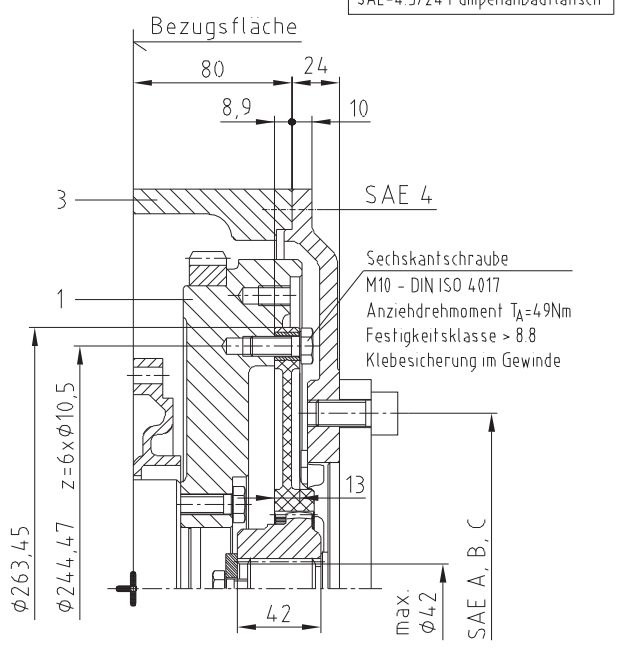


Antrieb: Kompressoren,  
Wasserpumpen usw.  
BoWex-Elastic® HE 6 1/2"

Anbaukombination B

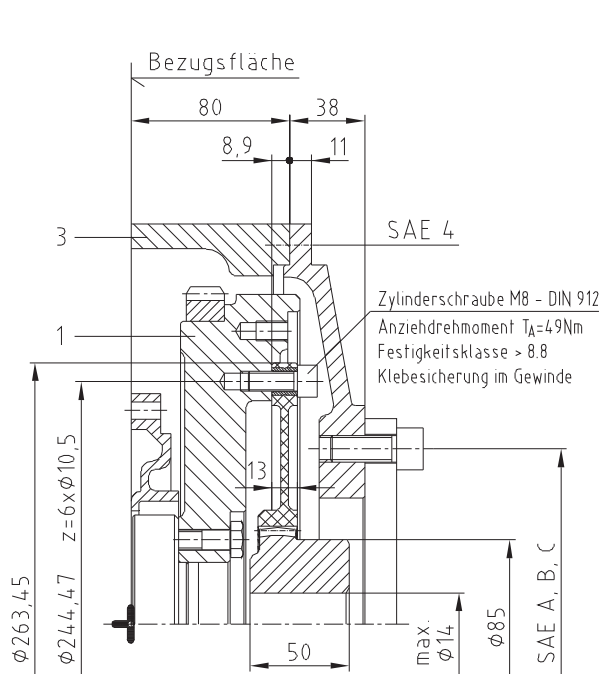
Anbaukombination C

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



Anbaukombination D

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



ACHTUNG: Entsprechend der Motorleistung ist die Kupplungsanordnung durch den Anwender zu prüfen. Nach erfolgtem Kupplungsanbau Kurbelwellenlängsspiel prüfen. Sollmaß für Lagerluft  $\phi,1 \dots \phi,3 mm$ . 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)	04.27 0980 KZ 0138-52 04.17 104.0 UA 0138-52	15	0553
-	-	1	2	Schwungrad (SAE 6 1/2") J= 0,499 kgm <sup>2</sup>	04.28 0586 KZ 0138-05 04.17 1301 UA 0138-05	30,3	3174
1	1	-	1	Schwungrad (SAE 8 u 10") J= 0,405 kgm <sup>2</sup>	04.27 2426 KZ 0138-05 04.17 1301 UA 0138-05	25,3	2461
D	C	B	A	Pos.	Benennung	Nummer	G[kg] Baus.-Nr.

Anbaukombination

DIMENSIONS ARE IN MILLIMETERS		UNLESS OTHERWISE SPECIFIED		SURFACE FINISH		MATERIAL		PROTECTION	
CORNERS PER DIN 474		GEOMETRIC TOLERANCES PER ISO 1101		TEXTURE PER ISO 1312		PER ISO 1312		METHOD	
GENERAL TOLERANCES		FORM- AND LOCATION TOLERANCES PER DIN 3114		MICROMETERS		FINISH		METHOD	
Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114	Form- und Lagehinweise nach DIN 3114
17.12.83	17.12.83	17.12.83	17.12.83	17.12.83	17.12.83	17.12.83	17.12.83	17.12.83	17.12.83
Kupplungsanbau				BoWex® FLE-PA / ELASTIC HE				0428 0967 UB 0138-97	
DEUTZ AG				0428 0967 UB 0138-97				0428 0967 UB 0138-97	

