SITEX FL

1. Description

The SITEX FL couplings are designed for optimising the connections between Diesel engines and hydraulic pumps (hydrostatic transmissions). They consists of a Polyamide flange reinforced by fibreglass with high mechanical strength and dimensional stability with temperature, complete with a toothed steel hub.
The special teeth allows SITEX FL couplings to compensate for small misalignments thus avoiding wear. The steel-polyamide coupling allows maintenance free continuous operation.

2. Main characteristics and advantages

Minimum dimensions: the whole coupling length is usually installed inside the engine housing, reducing the axial dimension to a minimum. In such a way: less tools are required for fitting.

Axial misaligments: the hub teething can move freely axially inside the polyamide flange avoiding axial forces which may arise on the pump shaft.

Heat stability: the special fibreglass polyamide flange is designed to operate in internal combustion engine environments without air cooling and up to 140° C.

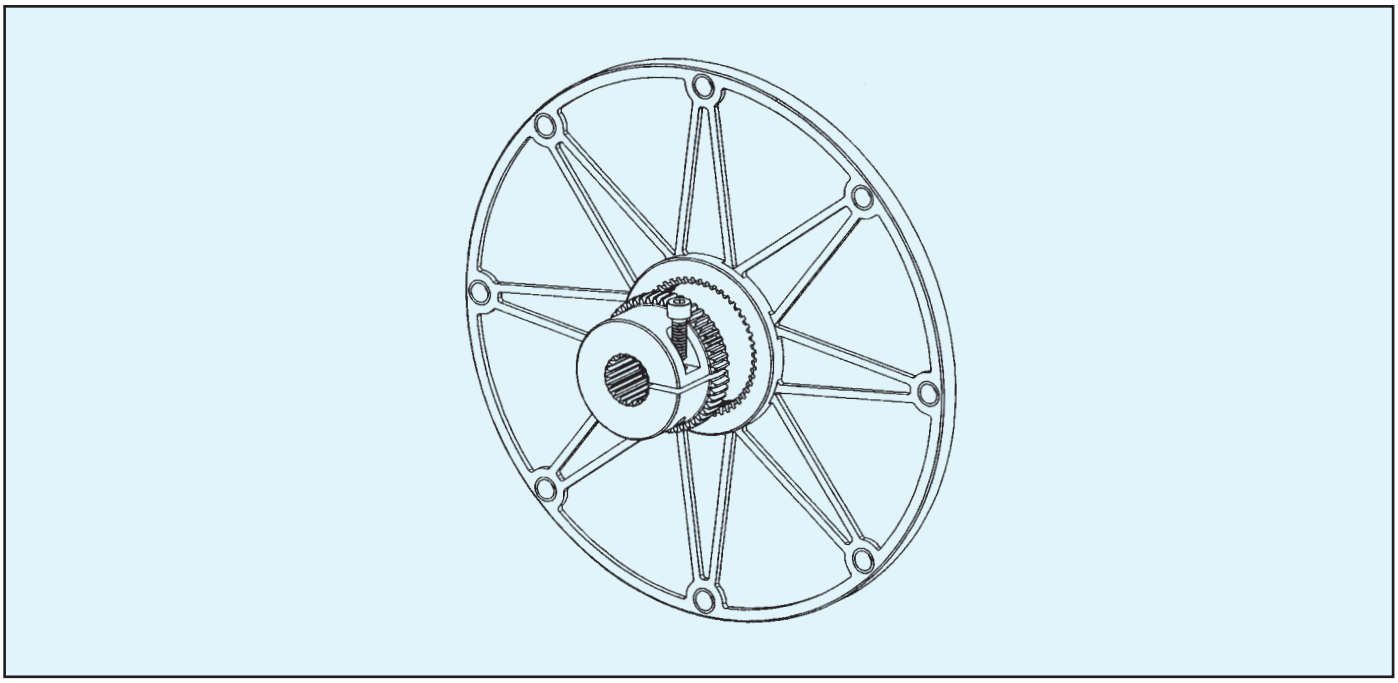
Maintenance free: the SITEX FL joints are maintenance and lubrication free.

Quick assembling: the blind assembly makes the SITEX FL assembly and inspection very fast.

Angular misalignments: the special teeth allow angular misalignment correction, protecting the bearings against angular forces.

Stiffness: the SITEX FL couplings are stiff couplings: operations will be torsionally vibration free.

The SITEX FL couplings are used in connections between the flywheels of the internal combustion engines and: hyd-pumps, rotating pistons and compressor blades.



Dimensions

Flange dimensions in accordance with SAE J620

Nominal size	D 3 [mm]	D 2 [mm]	z	d1 [mm]
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

Non standard flange are available upon request

Fig. 1

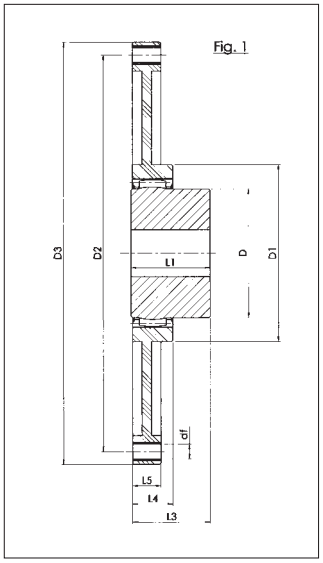
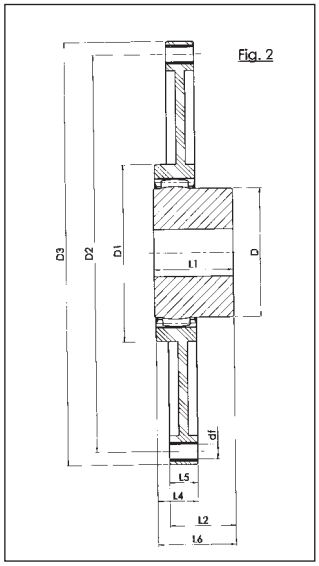


Fig. 2



Size	Dimensions [mm]									SAE Flange				
	Max bore dia.	D	D1	L1	L2	L3	L4	L5	L6	6-1/2”	7-1/2”	8”	10”	11-1/2”
8/42	42	65	100	42	33	42	20	13	40	x	x	x	x	
12/48	48	68	100	50	41	50	20	13	48	x	x	x	x	
12/48P	48	68	100	50	38	45	20	13	46	x	x	x	x	
30/60	65	96	132	70	60	69	27	21	66			x	x	x
30/60P	65	96	132	70	60	69	27	21	66			x	x	x
40/80	80	124	170	90	78	87	30	21	87					x

Technical characteristics

Size	Misalignment			Torques			Weight / Moment of inertia							Dynamic torsional rigidity +60°C (Nm/rad 10^3) = 0,4
									Flange SITEX FL SAE					
	Axial (mm)	Angular (°)	Radial (mm)	Nominal T_{KN}	Max T_K max. (Nm)	Reversible T_{KW}		Hub	6 - 1/2”	7 - 1/2”	8”	10”	11 - 1/2”	
8/42	+/- 2	1°	0,2	240	600	75	[Kg]	0,68	0,39	0,455	0,565	0,8		0,25T_{KN} = 33 0,50T_{KN} = 78 0,75T_{KN} = 110 1,00T_{KN} = 130
							[Kgm²]	0,0006	0,003	0,004	0,006	0,011		
12/48	+/- 2	1°	0,2	250	620	75	[Kg]	0,75	0,4	0,52	0,5	0,75		0,25T_{KN} = 33 0,50T_{KN} = 78 0,75T_{KN} = 110 1,00T_{KN} = 130
							[Kgm²]	0,0007	0,003	0,004	0,006	0,011		
12/48 P	+/- 1	1°	0,2	310	780	88	[Kg]	0,85	0,4	0,52	0,5	0,75		0,25T_{KN} = 38 0,50T_{KN} = 88 0,75T_{KN} = 125 1,00T_{KN} = 148
							[Kgm²]	0,0007	0,003	0,004	0,006	0,011		
30/60	+/- 2	1°	0,3	660	1650	200	[Kg]	2,4			0,8	0,93		0,25T_{KN} = 58 0,50T_{KN} = 142 0,75T_{KN} = 205 1,00T_{KN} = 250
							[Kgm²]	0,005			0,009	0,015	0,23	
30/60P	+/- 1	1°	0,2	800	1950	240	[Kg]	2,45			0,8	0,93		0,25T_{KN} = 76 0,50T_{KN} = 185 0,75T_{KN} = 270 1,00T_{KN} = 330
							[Kgm²]	0,005			0,009	0,015	0,23	
40/80	+/- 2	1°	0,3	1300	3100	380	[Kg]	5,1					1,13	0,25T_{KN} = 190 0,50T_{KN} = 420 0,75T_{KN} = 590 1,00T_{KN} = 710
							[Kgm²]	0,015					0,228	

Flywheel Bellhousing

The dimensions of the flywheel Bellhousing plates are in accordance to SAE 617.
Crowned Bellhousing available upon request.

SAE - Gr.	A [mm]	B [mm]	C [mm]	Wf [mm]	Wr [mm]	Z	SCREWS	
SAE - 5	314,33	356	333,4	9,5	13,5	8	M10	3/8”
SAE - 4	361,95	403	381,0	9,5	13,5	12	M10	3/8”
SAE - 3	409,58	451	428,6	9,5	13,5	12	M10	3/8”
SAE - 2	447,68	489	466,7	12,7	18,0	12	M10	3/8”

SAE Size	SAE Flange with two holes				
	A1 [mm]	K2 [mm]	M		Z
AA	50,8	82,6	M 8	5/16”	2
A	82,6	106,4	M10	3/8”	2
B	101,6	146,0	M 12	1/2”	2
C	127,0	181,0	M 16	5/8”	2
D	152,4	228,6	M 16	3/4”	2

SAE Size	SAE Flange with four holes				
	A1 [mm]	S-4 [mm]	R		Z
A	82,5	104,6	M10	3/8”	4
B	101,6	127,0	M 12	1/2”	4
C	127,0	162,0	M 12	1/2”	4
D	152,4	228,6	M 16	5/8”	4

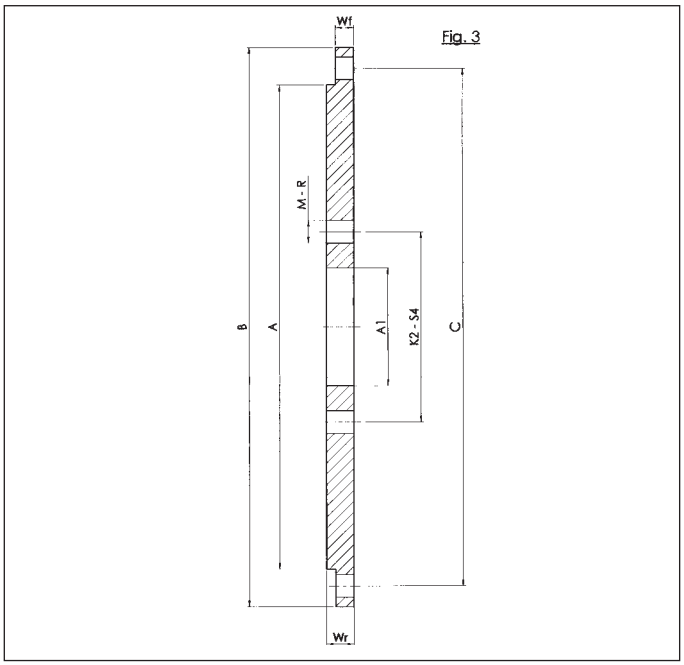


Fig. 3

Selection

For a proper sizing a safety factor k = 1,3 – 1,6 must be considered in accordance to the application. Or the coupling nominal torque must be higher or equal to the engine torque multiplied for k:

$$Tkn \geq Tm * K$$

Tkn = Coupling nominal torque
Tm = engine side torque
K= safety factor selected in accordance with the use

Applications	K factor
Tandem rollers	1,6
Asphalt processing machines	1,4
Agricultural machines	1,4
Fork lifts trucks	1,6
Concrete Mixer	1,3
Self-propelled cranes	1,4
Excavators	1,4
Farm tractors	1,4
Road working machines	1,4

Assembling

The particular versatility of the SITEX FL couplings allows, for several assembling positions and different hub lengths, the ability to obtain the suitable dimension for every application.

1- Centre the flange on the fly-wheel in correspondence to the seat and tighten the fixing screws DIN 912 – 8.8 class in accordance with the torque values shown in the table:

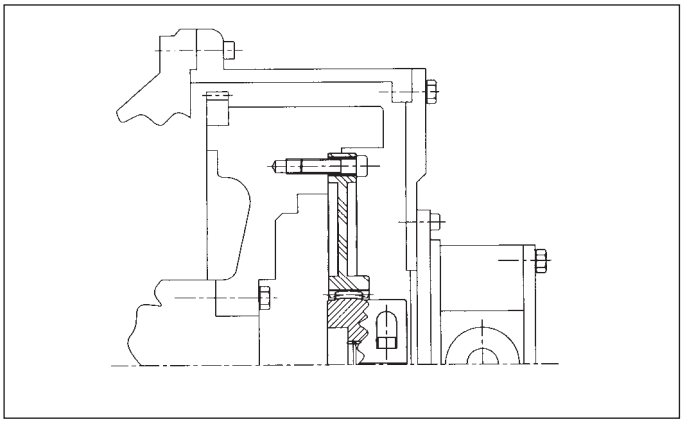
Screw	Ms
M 8 M 10 M 12	25 Nm 49 Nm 86 Nm

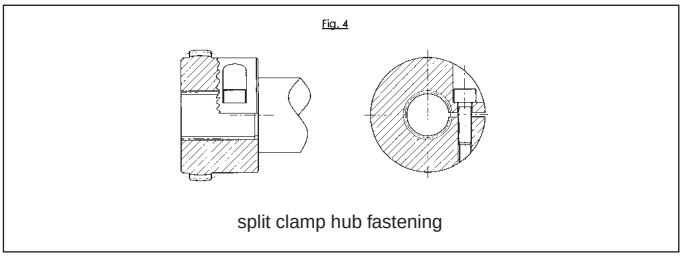
2 - Centre the fly-wheel cover plate in relation to the seat on the engine bellhousing. Tighten the screws.

3 - Install the toothed hub onto the pump shaft. For split clamp hub tighten, in accordance with the torques shown in the table.

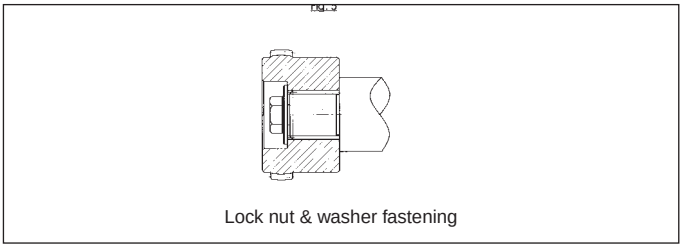
Coupling	Screw	Ms
8/42 - 12/48 30/60 40/80	M 10 M 12 M 16	49 Nm 86 Nm 355 Nm

4 - Move the pump-hub assy through the fly-wheel cover plate and up to the stop. Tighten the screws.





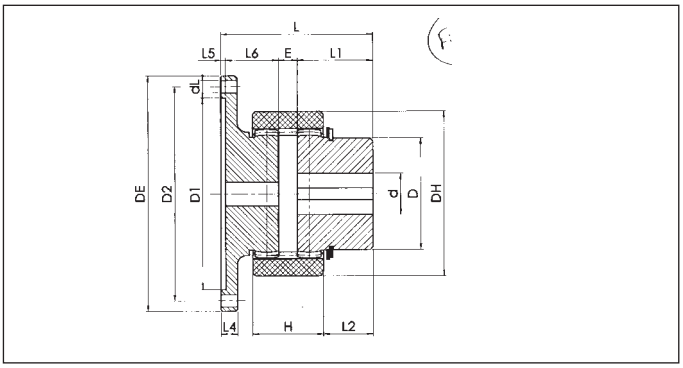
split clamp hub fastening



Lock nut & washer fastening

FLD Execution

The SITEX FLD couplings are designed for applications which combine with diesel engines pulley. These couplings allow for belt replacement without pump disassembly. The operating temperature range is from –25°C to 100°C.



Size	TKN Nm	Tk max Nm	Tk w Nm	d max mm	L5 mm	L1 mm	L4 mm	L6 mm	E mm	L mm	H mm	L2 mm	D mm	DH mm
35 / 28 FLD	45	90	23	26	4	35,5	10	28,5	13	81	39	22,5	42	70
5 / 32 FLD	60	120	30	30	4	35,5	12	28,5	13	81	40	21,5	48	84
8 / 42 FLD	140	280	70	42	5	37,5	13	30,5	13	86	43	22,5	63	100
30 / 60 FLD	380	780	190	65	5	64	16	44	16	129	60	42	95	140
40 /80 FLD	700	1400	350	80	6	83	20	53	20	162	69	58,5	120	175

Tkn = Nominal Coupling torque Tkm = Max Coupling torque Tkw = Max reversal torque
Other dimensions according to customer request.