



Lakshmi Tyre Couplings



Lakshmi Tyre couplings designed as per IS 14285:1995. The flanges are available in either F/H version of Easyfit bush fitting or bored to size B. With the addition of a spacer flange, the coupling can be used to accommodate standard distance between shaft ends and facilitate pump maintenance

Lakshmi Tyre couplings can accommodate simultaneous maximum misalignment in all planes without imposing undue loads on adjacent bearings and the excellent shock-absorbing properties of the flexible tyre reduce vibrations and torsional oscillations. Handles parallel, angular and axial displacements, either singly or in any combination. They can accommodate parallel misalignment upto 6mm, angular misalignment upto 4°, and end float upto 8mm

Lakshmi Tyres are available in natural rubber compounds, for use in ambient temperatures between - 50°C to +50°C Neoprene rubber compounds are available for use in adverse operating conditions e.g. Oil or grease contaminations and can be used in temperatures of 15°C to + 70°C

Installation:- Requires neither special tools nor skilled labour to assemble. Alignment is quickly checked by placing a straight edge into across outside diameter of flanges. The split flexible tyre is then positioned in the flanges and the screws tightened place. Reduces vibration and torsional oscillation developed in internal combustion engines, the amplitude of which increases greatly at critical points in the speed range, Lakshmi Tyre Coupling dampens these destructive vibrations.

Element replacment :- To replace flexible element simply loosen the clamping screws, remove the tyre and replace with a new one. It is not necessary to move either driver or driven machine or coupling flanges.

DETAILS REQUIRED FOR COUPLING SELECTION

1. Type of driven machine and operating hours per day.
2. Speed and power absorbed by driven machine (if absorbed power is not known, calculate on power rating of prime mover).
3. Diameters of shafts to be connected.

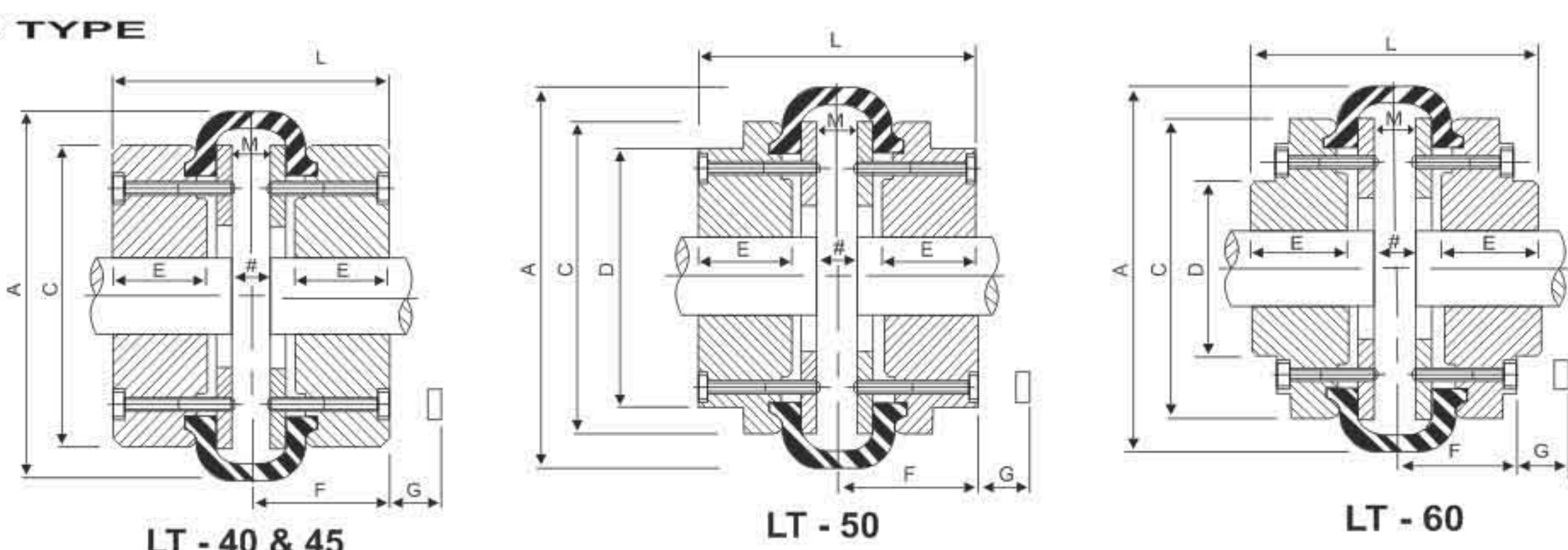
Example:- A Lakshmi Tyre Coupling is required to transmit 30 kW from an A.C. Electric Motor which runs at 1440 rev/min to a rotary screen for 12 hours a day. The motor shaft is 50 mm diameter and the screen shaft is 60 mm diameter.

Service Factor : From table 1, the service factor is 1.4. Design Power = 30x1.4 = 42 kW.

Coupling Size : By reading across from 1440 rev/min in table 2 The size of coupling is Lt90.

Bore Size : By referring to table 3 it can be seen that both shaft diameters fall within the bore range available.

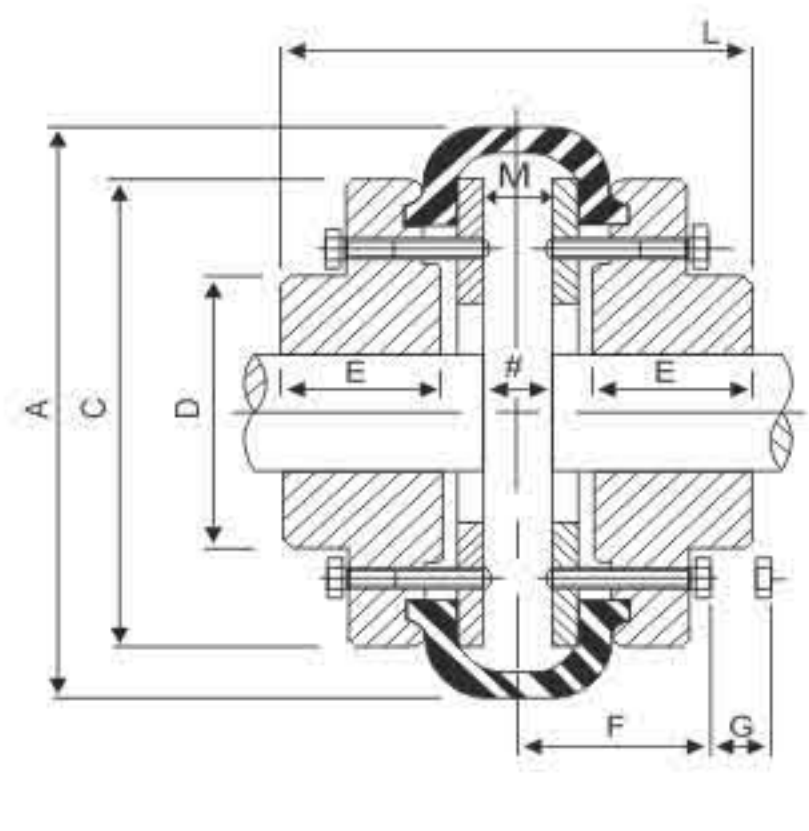
B TYPE



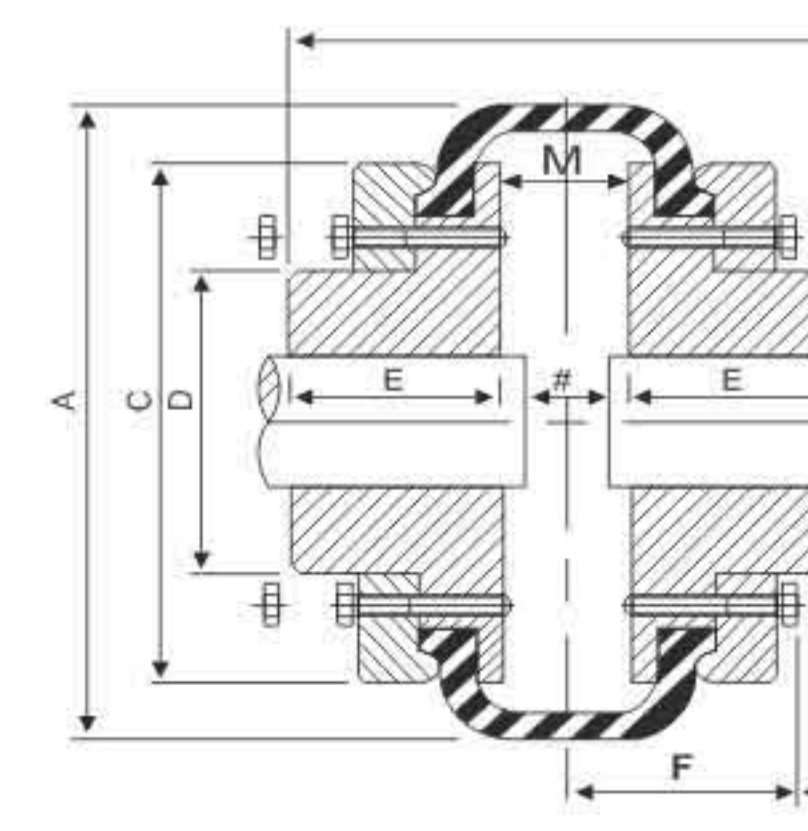
Lt - 40 & 45

Lt - 50

Lt - 60

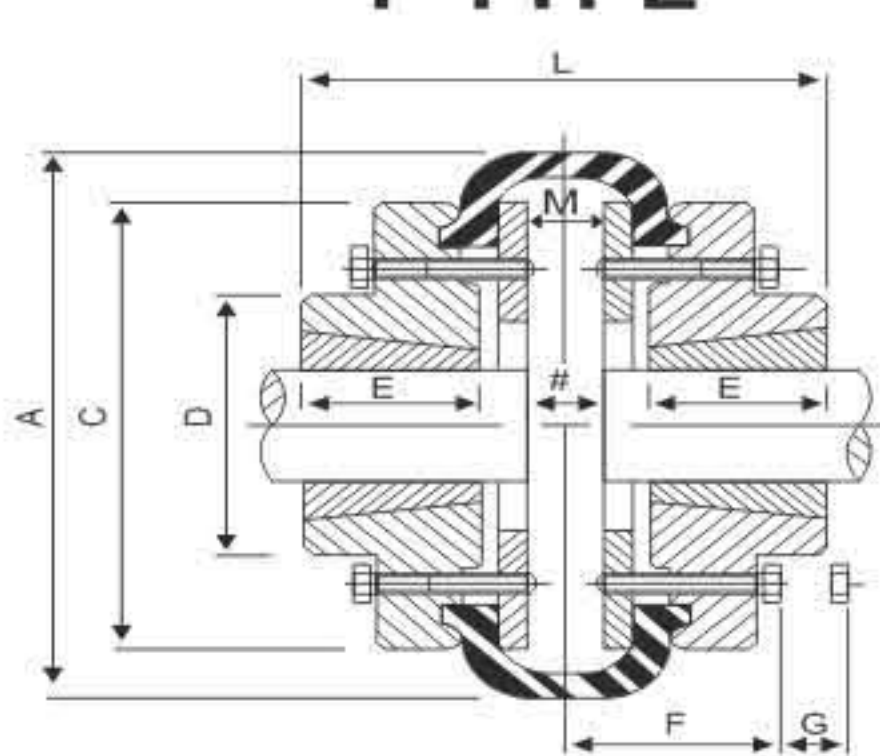


Lt - 70 TO 120

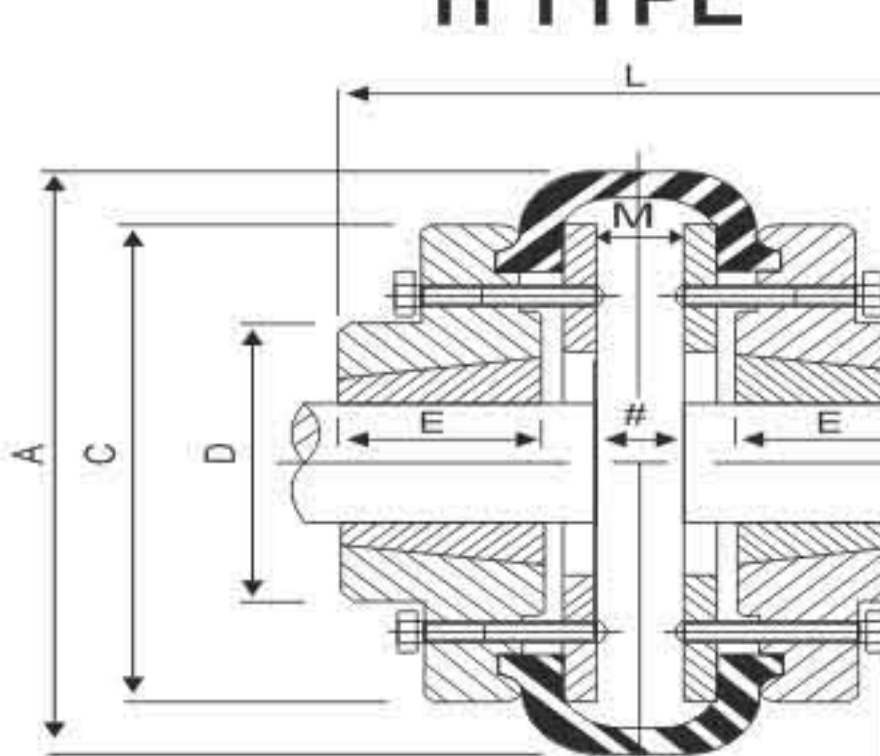


Lt - 140 TO 180

F TYPE



H TYPE



M is the distance between flanges. Shaft ends, although normally located 'M' apart - can project beyond the flanges as shown. In this event, allow sufficient space between shaft ends for the float and misalignment. G is the amount by which clamping screws need to be withdrawn to release tyre. J is the wrench clearance to allow for tightening and loosening the bush on the shaft. The use of shortened wrench will allow this dimension to be reduced.



TABLE 1: SERVICE FACTORS

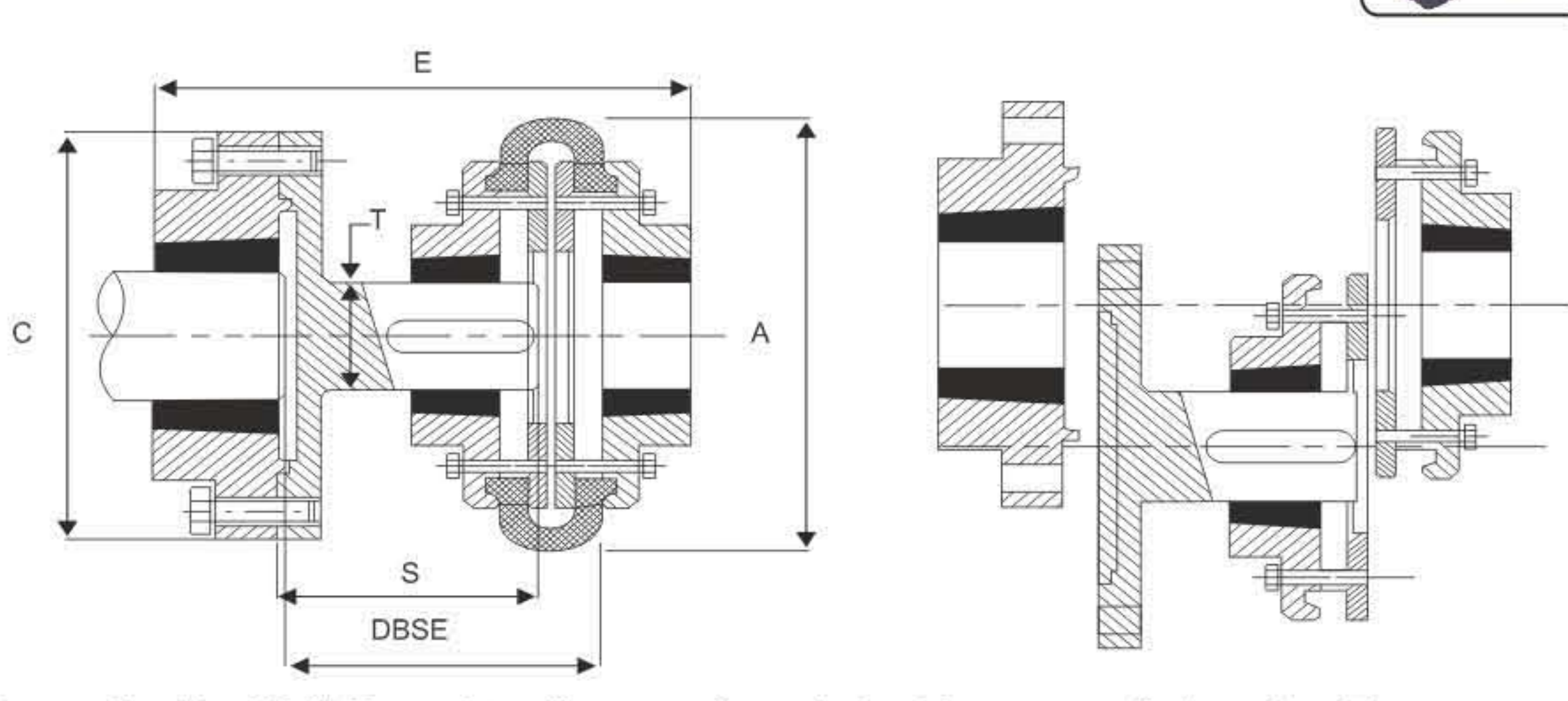
Special Cases	Type of Driving Unit					
	Electric Motors Steam Turbines			Internal Combustion Engines Steam Engines Water Turbines		
	Operational hours per day					
Type of Driven Machine	10 and under	Over 10 to 16 inclusive	over 16	10 and under	Over 10 to 16 inclusive	over 16
CLASS 1 Agitators, Brewing machinery, Centrifugal compressors and pumps, Belt conveyors, Dynamometers, Line shafts, Fans upto 7.5 kW, Blowers and Exhausters (except positive displacement) Generators.	0.8	0.9	1.0	1.3	1.4	1.5
CLASS 2 Clay working machinery, General Machine tools, Paper mill beaters and winders, Rotary pumps, Rubber extruders, Rotary screens, Textile machinery, Marine propellers and fans over 7.5 kW.	1.3	1.4	1.5	1.8	1.9	2.0
CLASS 3 Bucket elevators, Cooling tower fans, Piston compressors and pumps, Foundry machinery, Metal presses, Paper mill calendars, Pulverisers and Positive displacement blowers.	1.8	1.9	2.0	2.3	2.4	2.5
CLASS 4 Reciprocating conveyors, Gyrotory crushers, Mills (ball, pebble and rod), Rubber machinery (Banbury mixers and mills) and Vibratory screens	2.3	2.4	2.5	2.8	2.9	3.0

TABLE 2

Speed (rev./min)	Lt 40	Lt 45	Lt 50	Lt 60	Lt 70	Lt 80	Lt 85	Lt 90	Lt 100	Lt 110	Lt 120	Lt 140	Lt 160	Lt 180
100	0.20	0.4	0.55	1.10	1.70	2.66	3.20	3.80	5.30	7.45	12.5	19.5	32.5	57.5
720	1.60	2.80	4.0	8.0	12.0	19.0	23.0	27.0	38.0	53.82	89.0	142	235	415
960	2.10	3.75	5.35	10.72	16.32	25.3	30.6	36.8	50.85	71.55	119	189	312	550
1440	3.15	5.60	8.02	18.04	24.0	38.0	46.0	55.0	76.0	107	178	284	468	825
2880	6.30	11.2	18.0	32.0	49.0	76.2	92.0	110						

TABLE 3: DIMENSIONS "F&H" AND "B" TYPE COUPLINGS

Size	TYPE F & H								TYPE B												
	Bush No.	Torque	L	D	E	F	X	J	Approx Weight Kg	Max Bore	Min Bore	L	D	E	F	MIS ALIGNMENT	* Approx Weight Kg	A	C	G	M
Lt40	1008	65	67	-	22	33.5	29	1.4	30	11.00	67	-	22	33.5	1.1/1.3	2.0	104.0	82	43	23	4500
Lt45	1108	110	67	-	22	33.5	29	3.1	32	11.00	73	-	25	36.5	1.2/1.5	2.2	120.0	94	43	23	4500
Lt50	1210	160	78	79.0	25	39.0	38	3.1	38	16.00	92	79	32	46.0	1.3/1.7	4.0	133.5	100	43	28	4500
Lt60	1610	320	86	103.0	25	43.0	38	5.2	48	16.00	112	73	38	43.0	1.6/2	5.0	165.0	125	43	36	4000
Lt70	1610	485	92	76.0	25	50.5	38	7.4	55	19.05	132	82	45	50.5	1.9/2.3	8.0	197.0	144	10	42	3600
Lt80	2012	760	111	95.0	32	53.0	47	9.2	65	25.40	149	95	51	53.0	2.1/2.6	12.0	211.0	167	10	47	3100
Lt85	2012	914	112	103.0	32	53.5	47	12.5	70	31.75	154	103	53	59.5	2.2/2.8	14.0	222.0	179	13	48	3000
Lt90	2517	1095	140	110.0	45	59.5	50	15.0	76	31.75	164	110	57	59.5	2.4/3	15.0	235.0	188	13	50	2800
Lt100	2517	1515	148	124.0	45	61.5	50	20.0	85	31.75	178	124	60	61.5	2.6/3.3	21.0	254.0	216	13	58	2600
Lt110	2517	2140	140	134.0	45	63.5	50	26.5	90	31.75	180	134	65	63.5	2.9/3.7	28.0	279.0	233	14	50	2300
Lt120	3020	3550	157	152.0	51	70.0	68	35.5	102	38.10	207	152	76	70.0	3.2/4	41.0	314.0	264	14	55	2050
Lt140	3535	5640	204	194.5	89	76.0	89	67.2	120	75.00	204	195	89	76.0	3.7/4.6	61.0	359.0	313	14	26	1800
Lt160	4040	9340	220	216.0	102	78.0	110	91.0	140	75.00	220	216	102	78.0	4.2/5.3	86.0	402.0	345	19	16	1600
Lt180	4545	16450	258	266.0	114	94.0	126	146.0	150	75.00	258	266	114	94.0	4.8/6	141.0	470.0	398	19	30	1500



Lakshmi Tyre coupling (size lt40-lt140) complete with a spacer flange designed for use on applications where it is an advantage to be able to move either shaft axially without disturbing the driving or driven machine; e.g. centrifugal pump rotors. Lakshmi Tyre spacer couplings are primarily designed for the standard distance between shaft end dimensions 100, 140 and 180 mm.

TABLE 4

SPACER SIZE	DBSE	Lakshmi TYRE COUPLING SIZE	SPACER BUSH SIZE	MAX. BORE	Lakshmi TYRE COUPLING BUSH SIZE	MAX. BORE	A	C	E	S	T
SM12	80	Lt40	1210	32	1008	25	104	118	134	77	25
SM12	100	Lt40	1210	32	1008	25	104	118	140	97	25
SM16	100	Lt40 *	1615	42	1008	25	104	127	170	94	32
SM16	140	Lt40 *	1615	42	1008	25	104	127	210	134	32
SM16	100	Lt50	1615	42	1210	32	133.5	127	173	94	32
SM16	140	Lt50	1615	42	1210	32	133.5	127	213	134	32
SM16	100	Lt60	1615	42	1610	42	165	127	177	94	32
SM16	140	Lt60	1615	42	1610	42	165	127	214	134	32
SM25	100	Lt70	2517	60	1610	42	197	178	180	94	42
SM25	140	Lt70	2517	60	1610	42	197	178	220	134	42
SM25	180	Lt70	2517	60	1610	42	197	178	260	174	42
SM25	100	Lt80	2517	60	2012	50	211	178	193	94	48
SM25	140	Lt80	2517	60	2012	50	211	178	233	134	48
SM25	180	Lt80	2517	60	2012	50	211	178	273	174	48
SM25	140	Lt90	2517	60	2517	60	235	178	235	134	48
SM25	180	Lt90	2517	60	2517	60	235	178	275	174	48
SM30	140	Lt100	3030	75	2517	60	254	216	269.5	134	60
SM30	180	Lt100	3030	75	2517	60	254	216	309.5	174	60
SM30	140	Lt110	3030	75	2517	60	279	216	369.5	134	60
SM30	180	Lt110	3030	75	2517	60	279	216	309.5	174	60
SM35	140	Lt120	3535	90	3020	75	314	248	297.5	134	75
SM35	180	Lt120	3535	90	3020	75	314	248	327.5	174	75
SM35	140	Lt140	3535	90	3535	90	359	248	296	134	80
SM35	180	Lt140	3535	90	3535	90	359	248	336	174	80

* Lt40 'B' Flange must be used to fit spacer shaft.