

Tyre Coupling



Features

Techno series Tyre couplings provide all the desirable features of an ideal flexible coupling, including Taper-Lode fixing. The Tyre coupling is a “torsionally elastic” coupling offering versatility to designers and engineers with a choice of flange combinations to suit most applications.

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.

Benefits

TORQUE-BORE RANGE

The range includes couplings with torque capacity upto 12606 Nm. and bore diameters upto 190 mm.

MISALIGNMENT

Handles parallel, angular and axial displacements, either singly or in any combination. They can accommodate parallel misalignment upto 6 mm, angular misalignment upto 4° and end float upto 8 mm.

TORSIONALLY SOFT

Cushions against destructive shock loads protecting the complete system, preventing expensive breakdowns and lengthens machine life.

FREE OF BACKLASH

Does not create ‘snatch’ on take up of the drive.

INSTALLATION

Requires neither special tools nor skilled labour to assemble. Alignment is quickly checked by placing a straight edge across outside diameter of flanges. The split flexible tyre is then positioned in the flanges and the screws tightened into place.

MAINTENANCE

Because there are no moving parts, no lubrication is required. Periodic visual inspection of the tyre is all that is necessary.

EASY ELEMENT REPLACEMENT

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.

Performance Range

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.

PROCEDURE

1. Service Factor: Determine the required service factor from table 1.
2. Design Power : Multiply the normal running power by the service factor. This gives the design power which is used as a basis for selecting the coupling.
3. Coupling Size : Refer to table 3 (page 5) and from the appropriate speed, read across until a power greater than that required in step (2) is found.
4. The size of Tyre Coupling required is given at the head of that column.
5. Bore Size : Check from dimension tables that chosen flanges can accommodate required bores.

EXAMPLE

A Tyre Coupling is required to transmit 45 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 60 mm diameter and the screen shaft is 55 mm diameter.

1. Service Factor: From table 1, the service factor is 1.4.
2. Design Power: Design Power = $45 \times 1.4 = 63$ kW.
3. Coupling Size : By reading across from 1440 rev/min in table 3 (page 6) the first power figure to exceed the required 63 kW in step (2) is 76.1 kW. The size of coupling is F100.
4. Bore Size : By referring to table 2 (page 5) it can be seen that both shaft diameters fall within the bore range available.

Service Factors

Special Cases	Type of Driving Unit					
	Electric Motors Steam Turbines			Internal Combustion Engines Steam Engines Water Turbines		
Type of Driven Machine	Operational hours per day					
	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