KFBD - SKF
FLUID COUPLING FOR INTERNAL COMBUSTION ENGINES
Applying TRANSFLUID
Fluid Couplings in your Drive Line

Transfluid Fluid Couplings are used on all types of industrial equipment driven by internal combustion engines up to 2300 kW. By transmitting power through a fluid, they improve overall performance and protect both driving and driven machine.

Figure 1 shows the typical performance available from a Fluid Coupling when used with an internal combustion engine. The curved sloping lines represent the torque capacity of Fluid Coupling for various values of slip and input speeds. The relatively flat curve is the engine torque.

The points at which the curves intersect, indicate per cent of slip in the coupling output. Since slip represents loss of speed between input and output member and since Fluid Coupling transmits torque at a 1:1 ratio, output speed and output power can be readily calculated. Performance characteristics are easily determined by superimposing the engine torque curve on the torque capacity curve of the selected Coupling.

From the performance curve it can be noted that at 100% of governed speed, slip is 1.5%. As the load on the Coupling output member increases, it demands more torque, forcing the engine to decelerate so that it can supply this extra torque. A slower input speed to the Coupling will result in a higher slip. If still greater loads are applied, the Coupling output member will eventually stall with the engine being pull down in speed until its torque curve intersects the 100% slip curve of the Coupling.

Note that 100% slip should not occur until the engine has developed peak torque. This is a highly desirable characteristic, since it permits the engine to deliver maximum torque without stalling and also permits rapid acceleration to normal load speeds. In addition to transmitting power smoothly and without shocks the Coupling has other advantages related to engine operation. Especially important is the fact that the engine can always be started under low load conditions.

Figure 2 shows the fluid couplings power capacity against input engine speed. It is a quick selection chart where slip values are not mentioned. For an application specific calculation ask Transfluid or local distributor.

Torque (Nm)

Engine Torque

Figure 1

Input Speed (% Engine Speed)

General Reference Power Chart

Horsepower

Horsepower kW

Engine Torque

Fig. 1

Input Speed RPM

The curves show limit capacity of Coupling

Fig. 2

Fluid couplings – 1601
When you drive through a Transfluid Coupling you profit by these Basic Benefits

1. Frees engine during heavy starts
During heavy starts and sudden running load increases, engine stalling is prevented. The Fluid Coupling simply “slips” while the engine smoothly picks up the load.

2. Provides cushioned drive
Mechanical connection is eliminated; power and torque are transmitted entirely by the mass and velocity of the fluid. The result is a smooth, sustained flow of power without the shocks and strains which, with mechanical drives, reduce equipment life.

3. Prevents transmission of shock loads
Fluid Couplings protect both driving and driven equipment by smoothing out shock loads and preventing them from impacting the drive line.

4. Assures damping effect
Torsional vibrations from engine are drastically dampened by Fluid Couplings allowing longer life of entire transmission line.

5. Transmits full input torque
The patented Transfluid Circuit design always delivers output torque equal to input torque. The engine can operate at the maximum torque-rpm, even when the driven equipment is stalled.

6. Improves load distribution on compounded drives
With Fluid Couplings, engines no longer “fight” each other when a common drive is driven in parallel. Each engine is free to seek its own operating speed, while the Fluid Couplings balance the load requirements at each point of operation.
SKF SERIES
OIL TIGHT FLYWHEEL MOUNTED

SKF type installation requires specific design. Please contact our technical department for certified prints and instructions.

Fluid couplings - 1601
Fluid couplings - 1601

For 15 KFBD: Key according to USAS Square B17.1.67; shaft threaded hole 3/4" - 10-UNC.
For 17-19-21-24 KFBD: Key according to DIN 6885; shaft threaded hole DIN 332

(1) Weight refers to KFBD larger flywheel size and without oil.

Temperature switch is available as optional. It detects the surrounding air temperature related to the fluid coupling oil temperature. It is adjustable according to ambient temperature (Refer to TF5941-O).

Dimensions can be changed without notice.
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<th>Size</th>
<th>Dim. (mm)</th>
<th>D max</th>
<th>J max</th>
<th>A</th>
<th>C</th>
<th>L</th>
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<th>SAE J617 housing size</th>
<th>weight (kg) (1)</th>
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STANDARD KEYWAY AS PER DIN 6885/1
REDUCED DEPTH KEYWAY AS PER DIN 6885/2
(1) WEIGHT REFERS TO KRDA LARGER FLYWHEEL SIZE AND WITHOUT OIL

DIMENSIONS CAN BE CHANGED WITHOUT NOTICE
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<th>PRODUCT</th>
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<th>IN LINE</th>
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<th>TYPICAL APPLICATIONS</th>
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<td>C dis</td>
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<td>C dis</td>
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<td>Powershift transmission</td>
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<td>dis</td>
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</table>
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