TYPE CF-CFD-CFDD

Standard circuit (CF)

CONSTANT FILL FLUID COUPLINGS
HYDRAULIC COUPLING - TURBO COUPLING

The LOVEJOY fluid coupling (CF series) is a constant filling type comprising of three main elements:

- Driving impeller (pump) mounted on the input shaft.
- Driven impeller (turbine) mounted on the output shaft.
- Cover, flanged to the output impeller, with an oil-tight seal.

The first two elements can work both as pump and/or turbine.

OPERATING CONDITIONS

The LOVEJOY fluid coupling is a hydrokinetic transmission.
The impellers perform like a centrifugal pump and a hydraulic turbine. With an input drive to the pump (e.g. electric motor or Diesel engine) kinetic energy is imparted to the oil in the coupling. The oil moves by centrifugal force across the blades of the turbine towards the outside of the coupling. This absorbs the kinetic energy and develops a torque which is always equal to input torque thus causing rotation of the output shaft. The wear is practically zero since there are no mechanical connections. The efficiency is influenced only by the speed difference (slip) between pump and turbine.
The slip is essential to the functioning of the coupling: there could not be torque transmission without slip! The formula for slip, from which the power loss can be deduced is as follows:

$$\text{Slip } \% = \frac{\text{input speed} - \text{output speed}}{\text{input speed}} \times 100$$

In normal conditions (standard duty) the slip can vary from 1,5% (large power) to 6% (small power).

The LOVEJOY fluid couplings follow the laws of all centrifugal machines:

- Transmitted torque is proportional to the square of input speed;
- Transmitted power is proportional to the cube of input speed;
- Transmitted power is proportional to the fifth power of circuit outside diameter.

The CF Series couplings work using oil but they are also available for water operation upon request.

Lovejoy® INDIA

Standard circuit with Double Delayed chamber (CFDD)

Standard circuit with Delayed chamber (CFD)

CONSTANT FILL FLUID COUPLINGS

Application of constant fill fluid coupling in different industries

CHEMICAL
- Ball mills
- Mixers
- Rotary Grates
- Driers Agitators
- Fans
- Blowers

GAS INDUSTRY
- Conveyors
- Wagon Haulers
- Coke Cutters
- Gas Exhausters
- Cooling tower Fans

MARINE PROPULSION
- Tugs
- Trawlers
- Ore Carriers
- Frigates
- Mikne Sweepers

CEMENT INDUSTRY
- Fans
- Ariel Ropeways
- Coveyors
- Crushers
- Rotary Kiln
- Coal Pulverisers

POWER INDUSTRY
- Gas Circulating Fans
- Centrifugal Pumps
- Elevtors

PAPER AND PULP INDUSTRY
- Fans
- Pumps
- Conveyors
- Centrifuges
- Wood Chippers

AUTOMOBILE INDUSTRY
- Tanks
- Cars
- Tractors
- Fork Lifttruck

DOCKS AND HARBOURS
- Conveyors
- Diesel Locomotives
- Lock Gates
- Tugs and Dredgers
- Ship Loaders
- Reclaimers
- Stackers

MINING
- Conveyors
- Haulages
- Mines locos
- Crushers
- Ball mills
- Bucket Wheel
- Shredders

RAILWAYS
- Locomotives
- Railcars
- Wagon Haulers

IRON AND STEEL
- Ore Handling Plant
- Crushers
- Coke Oven Plant
- By Product Centrifuges

STREAM POWER PLANTS
- Conveyors
- Crushers
- ID and FD Fans
- Wagon Tiplers
- Exhaust Fans

TEXTILE INDUSTRIES
- Speed Frames
- Twister Machines
- Cablers

ISO 9001 BUREAU VERITAS Certification

UKAS QUALITY MANAGEMENT 008

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