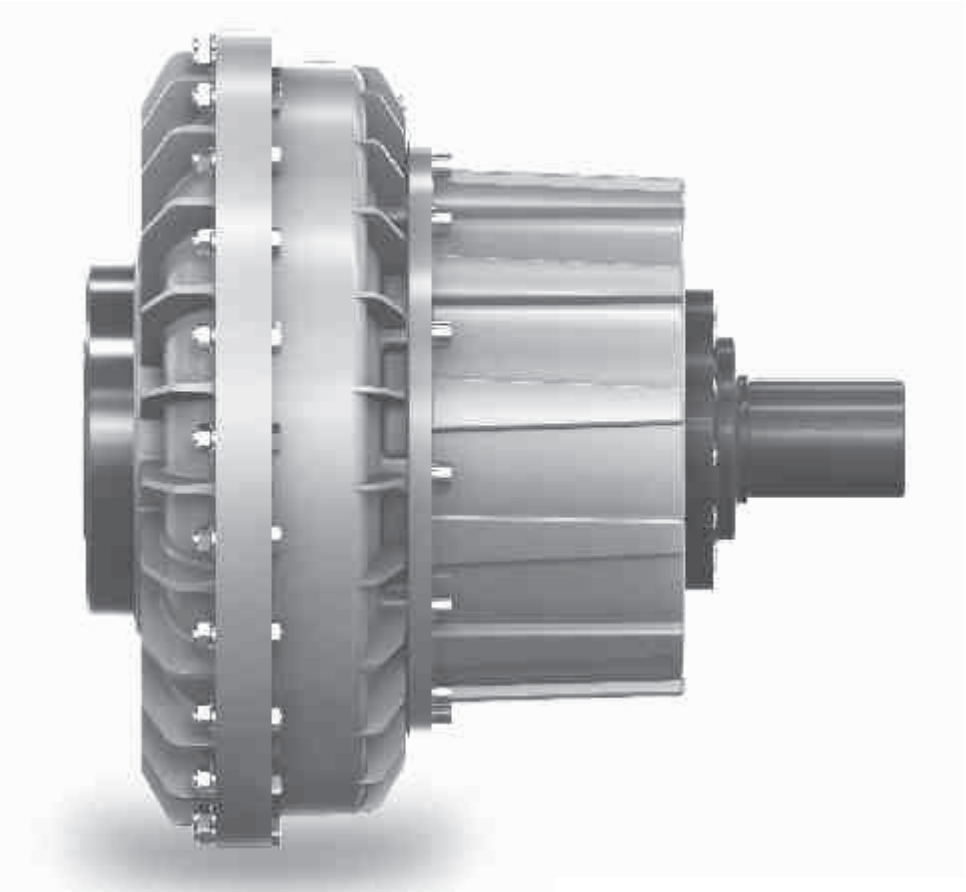
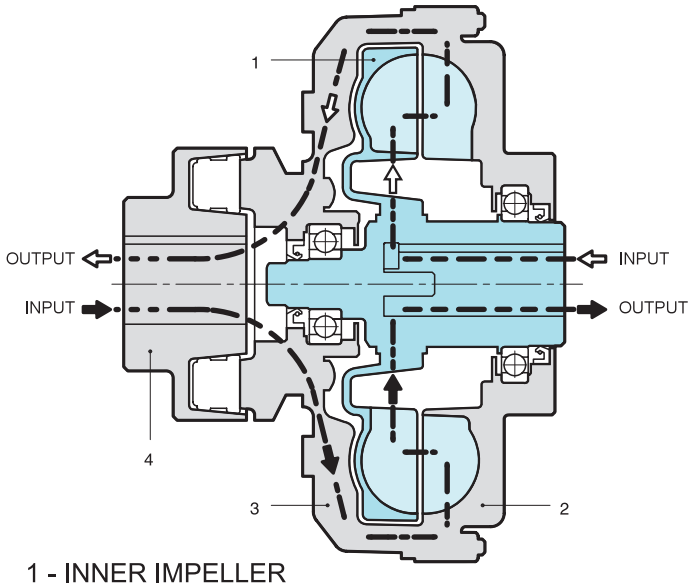


CONSTANT FILL FLUID COUPLING

The Lovejoy CF series fluid coupling is a constant fill type comprising of three major elements,

- Driving impeller (pump) mounted on the input shaft
- Driven impeller (turbine) mounted on the output shaft
- Cover flanged to the output impeller

The Lovejoy fluid coupling works on a principle of hydrokinetic transmission, the both impellers perform like a centrifugal pump and/or hydraulic turbine. With an input drive to the pump such as electric motor or diesel engine, kinetic energy is imparted to the oil in the coupling. The oil moves by centrifugal force across coupling. This absorbs the kinetic energy and develops a torque which is always equal to input torque thus causing rotation of the output shaft.



1 - INNER IMPELLER
2 - OUTER IMPELLER
3 - COVER
4 - FLEX COUPLING

Lovejoy fluid coupling with a delayed fill chamber

In a stand still position, the delayed fill chamber contains part of the filling oil, thus reducing the effective quantity in the working circuit (fig.A) and a torque reduction is obtained, allowing the motor to quickly reach the steady running speed as if started without load. During startup, oil flows from the delayed fill chamber to the main circuit (fig.B) in a quantity proportional to the rotating speed. As soon as the fluid reaches the nominal speed, all oil flows into the main circuit (fig.C) and torque si transmitted with a minimum slip

With a simple delayed fill chamber, the ratio between starting and nominal torque may reach 150%. This ratio may be further reduced down to 120% with a double delayed fill chamber, which contains a higher oil quantity, to be progressively transferred into the main circuit during the starting phase.

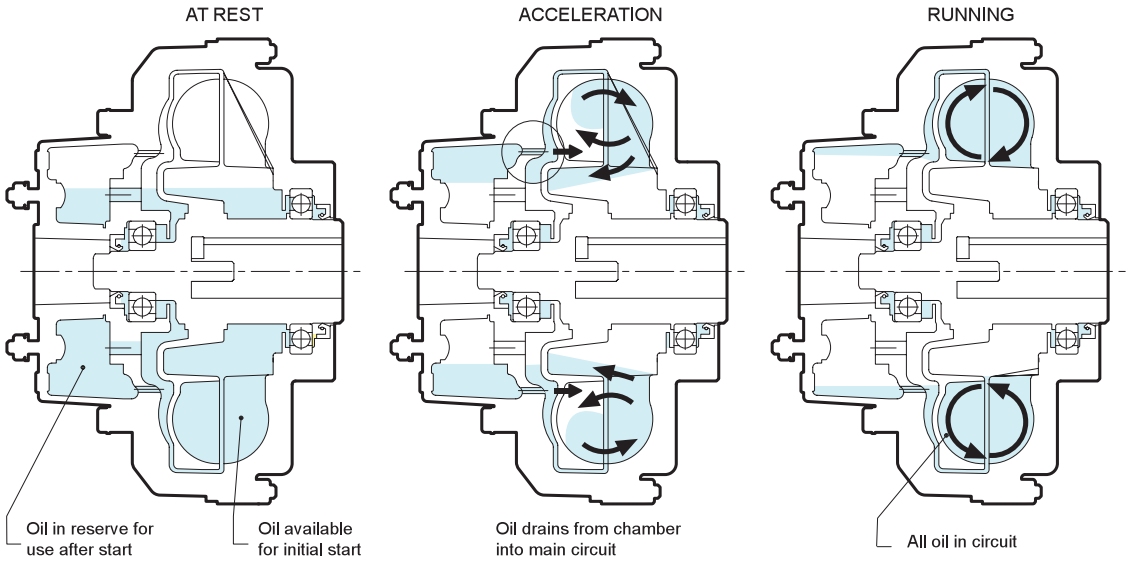


Fig A Fig B Fig C

Special features of Lovejoy fluid coupling

- ✓ Lovejoy fluid coupling is manufactured with Pressurised Aluminium die casting – it ensures no porosity, best aesthetics & superior quality as compared to gravity die casting & sandcasting fluid couplings.
- ✓ High grade Viton Oil seals are used
- ✓ Fluid couplings are fitted with our 'Lovejoy' connecting couplings and cast iron & steel material with anticorrosion treatment.

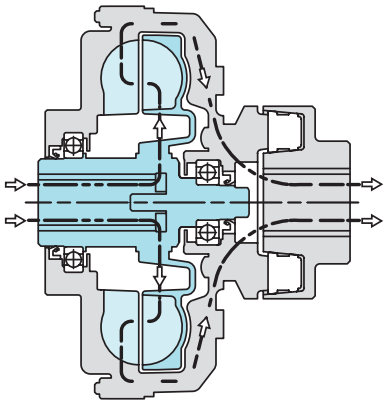
Industry	Application
Cement	Conveyors, Crusher, Klin, Coal Pulverizers, Fans, Bucket elevator
Chemical	Mixer, Centrifuges, Agitator, Blower, Fans, Ball mill
Material Handling	Belt conveyors, Stacker & Reclaimers, Chain conveyors
Mining	Conveyor, Crusher, Ball mill, Bucket wheel escavator, Screeners, Stage loaders
Metal & minerals	Crushers, Mills, Shredders
Paper & Pulp	Mixers, Dryers, Filters, Barking pumps, Conveyors & feeders
Port & Harbour	Ship loaders & unloaders, Conveyors, Wagon tipplers, Dock gates
Power	Clinker, Ball mill, Conveyors, Coal crusher, Fans, Belt feeder, Stacker & Reclaimer
Steel	Conveyor, Stacker, Mills, Crusher, Wagon tippler, Furnace chargers
Other	Amusement park riders, Presses, Shears, Screw conveyors, Soap machines etc

Advantages of Fluid coupling

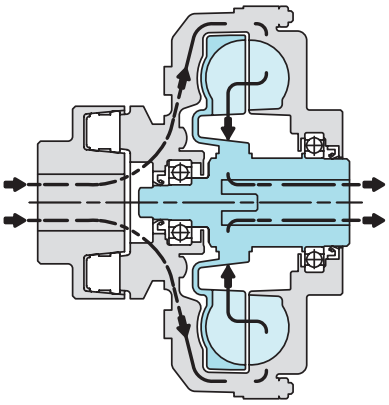
- ✓ Very smooth start up
- ✓ Reduction of current absorptions during the starting phase, the motor starts with very low load
- ✓ Protection of the motor and driven machine from jams and overloads
- ✓ Utilization of a synchronous squirrel cage motors instead of special motors with soft starter devices.
- ✓ Higher starting duration and operating convenience of the whole drive train by protection of fluid coupling.
- ✓ Higher energy saving through peak current reduction
- ✓ High efficiency
- ✓ Limits starting torque down to 120% in the versions with a double delayed fill chamber
- ✓ Same torque at input and output, the motor can supply the maximum torque even when load is jammed.
- ✓ Torsional vibration absorption for internal combustion engines.
- ✓ Possibility to achieve a high number of start-ups, also with an inversion of the rotation direction
- ✓ Load balancing in case of multiple motor drive, fluid couplings automatically adjust load speed to the motors speed
- ✓ Minimum maintenance

Benefits of Inner impeller drive:

- ✓ Minimum Possible inertia is added to motor, therefore free to accelerate more quickly
- ✓ During starting phase, the outer impeller gradually reaches the steady running condition
- ✓ It is convenient and easy to install brake drum or disc on the flexible coupling
- ✓ They delay fill chamber is fitted on the driven side, thus rotating speed of the chamber gradually increases during start-up leading to longer startging time
- ✓ Flexible coupling is protected by placement of the fluid coupling before it, and therefore fit for applications with frequent start-up or inversions of the rotating sense.



Standard Mounting
(Inner impeller drive)



Reverse Mounting
(Outer impeller drive)

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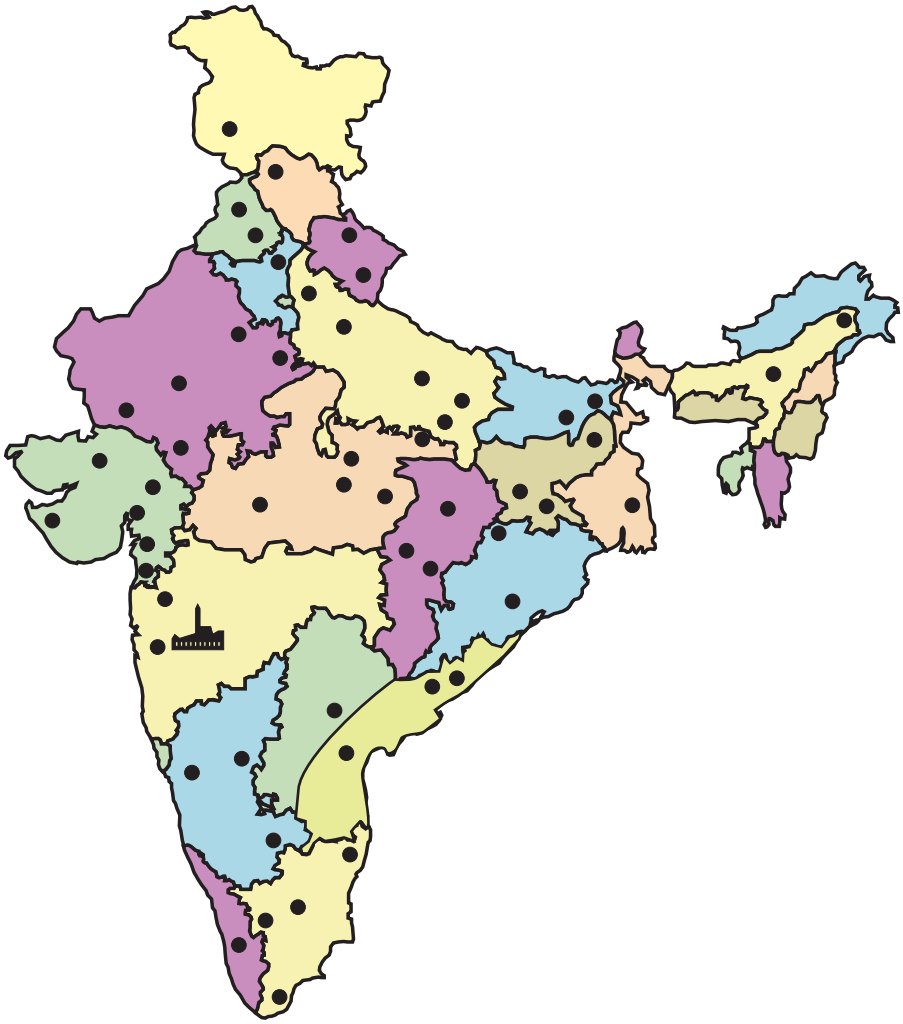

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Guwahati (Assam)
Sibsagar (Assam)
Jamshedpur (Jhd)
Rourkela (Orissa)
Patna (Bihar)
Ranchi (Jharkhand)
Dibrugarh (Assam)
Bhubaneshwar (Orissa)
Begusarai (Bihar)
Bokaro (Jharkhand)

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Kanpur (U.P)
Lucknow (U.P)
Varanasi (U.P)
Allahbad (U.P)
Meerut (U.P)
Haridwar (Uttarakhand)
Rudrapur (Uttarakhand)
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Gurgaon (Haryana)
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Ludhiyana (Punjab)

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Bhilai (CH)
Korba (CH)
Indore (M.P)
Jabalpur (M.P)
Waidhan (M.P)
Singrauli (M.P)

ZONE MAHARASHTRA
Pune (Maharashtra)
Goa

***In technical collaboration with* TRANSFLUID S.p.A, Italy**

ISO 9001 BUREAU VERITAS Certification
UKAS QUALITY MANAGEMENT 008

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