Introduction

As natural development to Transfluid’s power transmission product range, the TowerClutch fulfills a growing market demand for a disconnectable, compact dry clutch with high capacity hydraulic pump pads. With the ability to easily drive multiple implements, leading manufacturers of mobile machinery have been finding applications for its use in rock crushers, wood chippers, drill rigs, waste grinders, road mills and reclaimers.

Additionally, reliability and the flexible modular design of the TowerClutch make it useful in marine applications such as work boats, tugs and dredges.

Main features

Assembled with time tested and proven heavy-duty production products and components the TowerClutch provides unsurpassed performances and reliability. The oil/air actuated dry clutch (HF series) is flanged to the engine through an innovative splitter box (Stelladrive series) which mounts to standard SAE engine flywheel and housing connections.

The splitter box pump pads accommodate SAE B, C, D, or E hydraulic pumps with the possibility to disconnect each of them by installing the C0650 pump clutch (see Stelladrive catalogue).

Torsional vibrations dampening and compensation of radial and angular misalignment is assured by a flexible coupling mounted on TowerClutch’s input.

The TowerClutch is a self-standing transmission. The hydraulic block, feed pump, filter and the MPCB-RS electronic controller with wire harnesses are completely preassembled in a compact user-friendly design that eliminates additional plumbing and wiring associated with similar products. The MPCB-RS controller can be wired for single system control or interfaced with the machines main control system in order to integrate remote e-stop buttons and other features.

Advantages

The self-adjusting integrated HF clutch drastically reduces downtime and maintenance costs. It contains a multi disc dry clutch that is rigidly connected to the splitter box and has an output shaft capable of transmitting torque either radially by a pulley or in line with a cardan shaft or flexible coupling.

The TowerClutch is remotely operated and uses oil or air pressure for engagement. The robust splitter box eliminates flywheel side loads and torsional vibrations associated with modern high torque industrial engines. In extremely heavy-duty applications, the optional Kevlar friction disc assures machine uptime and extended operating life.

In addition to hydraulic pumps, the TowerClutch heads accept a variety of unique accessories such as pulleys, stub shaft PTOs, cardan shafts, pump clutches and electric motor/generators.

Electronic control, relevant benefits

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Hydraulics & Electronics

Proportional solenoid valve to modulate pressure during start up and normal operation.

Pressure relief valve set at 12 or 25 bar depending on clutch model.

1/2 BSP tank/drain port/heat exchanger.

Pressure transducer to continuously control clutch operating pressure.

1/4 BSP clutch pressure gauge.

16 micron mesh filter with integrated by-pass (only for TC14 - 18 - 22).

Oil pump to supply main clutch and CC650 pressure (only for TC14 - 18 - 22).

(Optional) Face to face CC650 clutch (for details see catalogue #645).

Hydraulic block to operate main clutch. No oil lubrication or cooling circuit required (only for TC14).

(Optional) Stub shaft PTO (for details see catalogue #645) for in-line and pulley.

Face to face CC650 clutch (for details see catalogue #645).

15 different status of clutch and equipment are displayed by LCD graphic interface (see manual #513).

Can bus SAE J1939 or Open.

MPCB to softly engage the main clutch, to enhance equipment efficiency and to avoid undesired down time.

Warning and alarm messages are sent via CAN BUS to the operating machines PLC or Transfluid Display. The operating machines system can apply any intervention necessary to prevent failures. It followed, warning messages can eliminate machine down time and improve productivity.

In the event that warning messages are ignored or not received by the machines operating system the MPCB-R5 automatically shuts down the TowerClutch by disengaging the main clutch preventing undesired and costly failures.