

GTD MUD PUMPS

Mud pumps are essential components of drilling rigs. GTD offer a range of both 'Centrifugal' and 'Piston' pumps. Choosing the right pump/s to match the needs of your operation is crucial, as there are benefits and considerations for each pump type.

Often a combination of two pumps is preferential when outfitting a rig to enhance the efficiency and flexibility of your drilling operations. The GTD team is here to advise and help you make the right decision for your operation.

WHY WE NEED MUD PUMPS...

Mud pumps are indispensable in drilling shallow geothermal and water well boreholes. They circulate drilling mud that serves multiple critical functions: cooling and lubricating the drill bit, maintaining borehole stability, and carrying drill cuttings back to the surface. Mud pumps must deliver the necessary pressure and flow rate to push the drilling mud from the mud tank or recycling system, through the drill string, and then back to the surface. As the drilling depth increases, a more powerful pump is required - this is also true when dealing with drilling mud of higher viscosity.



MUD PUMP OPTIONS:

Reciprocating 'Piston Pumps': These pumps use pistons to create pressure and circulate the drilling mud. With the pistons reciprocating within a cylinder, they draw in and expel mud with each stroke. Due to their positive displacement nature, piston pumps possess high-pressure capabilities. They generate significant hydraulic pressures to overcome resistance during drilling and ensure efficient mud circulation. Piston pumps are typically reconditioned, rather than replaced, so over time their higher purchase price is offset. It is advisable to take this reconditioning time into account to mitigate any servicing downtime.

Centrifugal Pumps: For geothermal drilling operations requiring a balance of high flow rates and pressure, centrifugal pumps can be an excellent choice. These pumps work on the principles of centrifugal force. A rotating impeller with curved vanes, spins within the casing. The impeller's rotation creates centrifugal force, pushing the drilling mud radially outward. While these pumps produce high flow rates, they typically operate at lower pressure ranges than piston pumps.

Making the right choice

We have a wealth of real-world local knowledge of 'what works where' - so do reach out to determine what would be the most appropriate Mud Pump setup to outfit your rig with. There are different setups and common configurations depending on your region.

Outside of Europe, we advise our customers to outfit their rigs with both a reciprocating 'Piston Pump' and a Centrifugal Pump. The Piston Pump, provides high pressure, excelling in overcoming drilling resistance and ensuring thorough mud circulation. Alternatively, the Centrifugal Pump can be utilised to deliver high flow rates at a lower pressure when necessary. This dual pump setup can handle a broad range of drilling conditions, enhancing the adaptability and productivity of the operations.

In Europe, it is more typical to have a dual pump setup comprising of a Single Stage Centrifugal pump and a Multi Stage Centrifugal pump. The Single Stage pump delivers a high-high flow rate at lower pressure, or if the necessary the Multi Stage pump is invaluable in scenarios which require higher pressures.

We recommend the compatibility, efficiency and reliability of the mud pumps listed in the spec sheet, when installed on our rigs. They have been exhaustively tested and proven in both R&D and commercial drilling scenarios. **If you have a specific or different mud pump preference, please reach out to us for advice on its integration and compatibility with a GTD rig.**



SINGLE ACTION 4x5 TRIPLEX PISTON MUD PUMP

Model: MP800PP

- ▶ Flow: 211gpm (800lpm)
- ▶ Head: 1,150ft (350m)
- ▶ Pressure: 500psi (35 Bar)
- ▶ Feature: Ceramic Liners
- ▶ Core Benefits: High Pressure & High Flow
- ▶ Considerations: Purchase Price, Down time when rebuilding



SINGLE STAGE 4x3x13 CENTRIFUGAL MUD PUMP

Model: MP-4x3x13CP-CrMo

- ▶ Impeller: 13"
- ▶ Flow: 238gpm (900lpm)
- ▶ Head: 370ft (112m)
- ▶ Pressure: 162psi (11 Bar)
- ▶ RPM: 2400
- ▶ High Chrome Alloy SA05 Impeller & Body
- ▶ Core Benefits: High Flow, Long Lasting
- ▶ Considerations: Lower Pressure



SINGLE STAGE 4x3x11 CENTRIFUGAL MUD PUMP

Model: MP-4x3x11CP-CrMo

- ▶ Impeller: 11"
- ▶ Flow: 264gpm (1,000lpm)
- ▶ Head: 426ft (130m)
- ▶ Pressure: 188psi (13 Bar)
- ▶ RPM: 2900
- ▶ High Chrome Alloy SA05 Impeller & Body
- ▶ Core Benefits: High Flow, Long Lasting
- ▶ Considerations: Lower Pressure, Higher RPM (increased wear vs 13")



SINGLE STAGE 4x3x11 CENTRIFUGAL MUD PUMP

Model: MP-4x3x11CP

- ▶ Impeller: 11"
- ▶ Flow: 238gpm (900lpm)
- ▶ Head: 492ft (150m)
- ▶ Pressure: 218psi (15 Bar)
- ▶ RPM: 2900
- ▶ Core Benefits: Good Value, No Maintenance
- ▶ Considerations: Shorter Lifespan, Lower Pressure



MULTI STAGE 3x2.5x11 CENTRIFUGAL MUD PUMP

Model: MP-3x2.5x11CP-M

- ▶ Impeller: 11"
- ▶ Flow: 158gpm (600lpm)
- ▶ Head: 690ft (210m)
- ▶ Pressure: 305psi (21 Bar)
- ▶ RPM: 2400
- ▶ Core Benefits: Medium Pressure, No Maintenance
- ▶ Considerations: Shorter Lifespan

The performance figures quoted are intended for guidance purposes only and should be interpreted as indicative, not definitive. These figures were produced during real-world testing on drill rigs, instead of being derived from theoretical calculations. Therefore, they are subject to potential margins of error due to variable test conditions, environmental factors.