

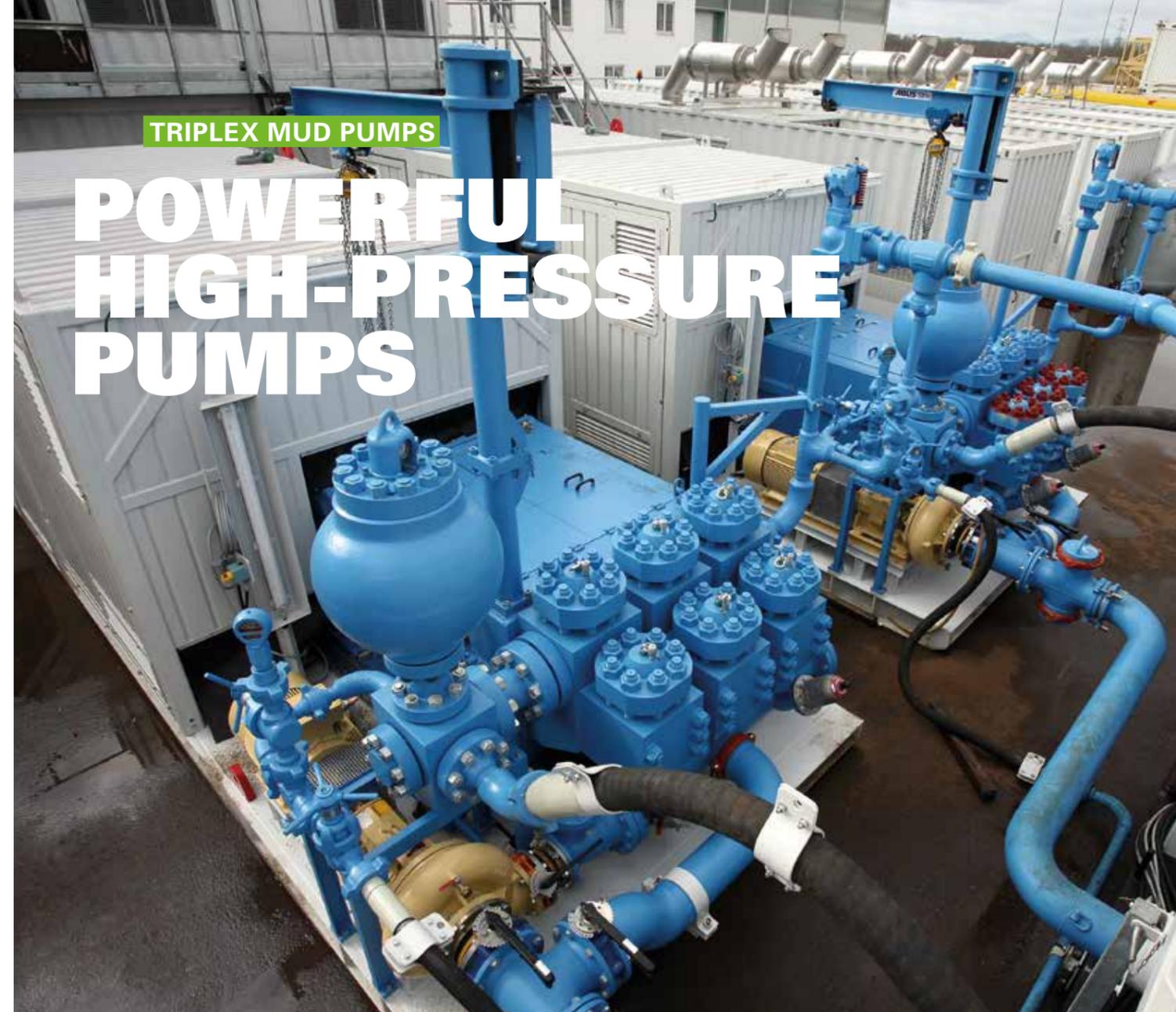
Herrenknecht Vertical

Automated Rig Technology

The exploration of new energy deposits is one of the global challenges for future energy supply. Whether the development of onshore and offshore oil and gas or deep geothermal energy is economically reasonable also depends on the drilling equipment used. Herrenknecht Vertical, a subsidiary of Herrenknecht AG, the market leader in mechanized tunnelling systems, designs and manufactures customized high-quality rigs for drilling, workover and decommissioning, meeting the needs of our customers and their projects. The hydraulic rig concepts for drilling to 8,000 meters incorporate comprehensive, safety-based automation, setting new standards of safety, efficiency and environmental protection. **Automated Rig Technology. Engineered and built for your performance.**



Headquarters in Germany, active worldwide. With more than 40 years of engineering and manufacturing experience, around 5,000 employees and 76 locations within the Herrenknecht Group, we support our customers globally.



TRIPLEX MUD PUMPS

POWERFUL HIGH-PRESSURE PUMPS

Mud pumps tailored to customer requirements

- › High reliability
- › Low noise level
- › Low maintenance
- › Short setup time
- › Small footprint
- › Made in Germany



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In cooperation
with



SCHÄFER & URBACH
System and High Pressure Technology



**HERRENKNECHT
VERTICAL**

**AUTOMATED
RIG TECHNOLOGY**

High pressure triplex mud pumps

Technical specifications

The Herrenknecht Vertical TSP mud pump series,

rated for a maximum operating pressure of 517 bar (7,500psi), is completely 'Made in Germany'. The mud pumps from the renowned German pump manufacturer Schäfer & Urbach are electrically driven by water- or air-cooled motors. The mud pumps have no internal pinion with inside gearing. The power from the electric motor is transmitted to the mud pump via a spur gearbox. The complete mud pump unit is mounted on an oilfield skid and therefore easy to handle.

Basic features

- › Mud pump
- › Gearbox
- › Electric motor, water- or air-cooled
- › Lube circuit
- › Cooling circuit
- › Liner flush system
- › Oilfield skid

Drive concepts

- › AC or DC electric motor
- › Diesel motor
- › Diesel-hydraulic drive

Key benefits

- › Ball joint heads are used in the power unit instead of crossheads. Accordingly, no shear forces develop. Both maintenance and servicing costs are reduced.
- › The use of a four-fold mounted crankshaft and the elimination of an internal pinion shaft allows us to grant an extended guarantee period for the power unit.
- › A dumping chamber prevents the water/mud and gear oil from intermixing, which means less servicing and greater environmental protection.

Optional features

- › Hydraulic quick release for valve covers and liners
- › Pulsation dampener
- › Relief line with safety valve
- › High pressure manifolds
- › Suction manifold
- › Charge pump
- › Noise protection
- › Jib crane
- › Trailer-base
- › Variable frequency drive

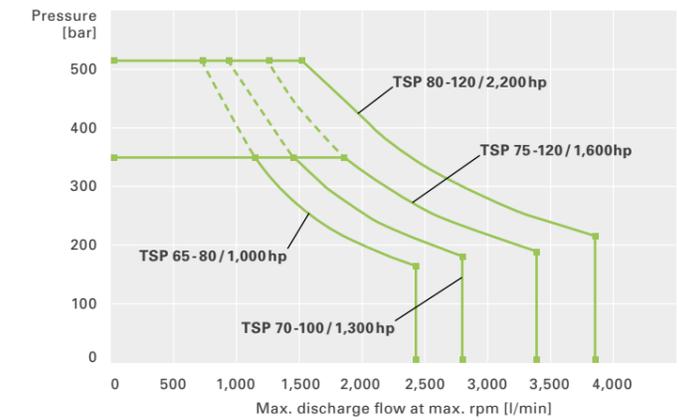


MUD PUMP SERIES

	TSP 65-80	TSP 70-100	TSP 75-120	TSP 80-120
› Max. input power ¹ :	800 kW (1,000 hp)	1,000 kW (1,300 hp)	1,200 kW (1,600 hp)	1,600 kW (2,200 hp)
› Max. operating pressure:	5,000 psi (optional: 7,500 psi)			7,500 psi
› Max. discharge flow ² :	2,428 l/min (640 gpm)	2,793 l/min (740 gpm)	3,390 l/min (895 gpm)	3,857 l/min (1,019 gpm)
› Max. speed:	180 rpm	150 rpm	130 rpm	130 rpm
› Max. liner × max. stroke:	6.5" × 8"	7" × 10"	7.5" × 12"	8" × 12"
› Approx. weight ³ :	27,000 kg (59,500 lbs)	32,000 kg (70,550 lbs)	38,000 kg (83,800 lbs)	45,000 kg (99,200 lbs)

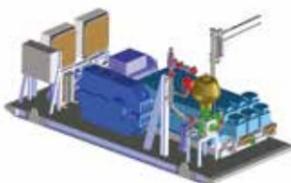
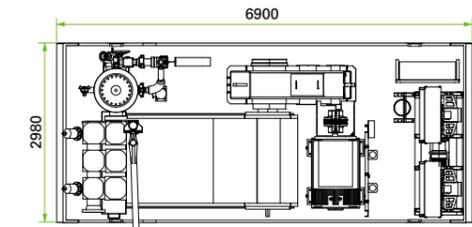
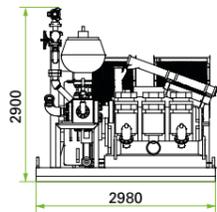
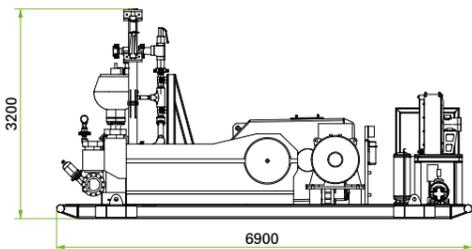
¹ based on 90% mechanical efficiency
² based on 100% volumetric efficiency
³ basic configuration

PERFORMANCE CURVE



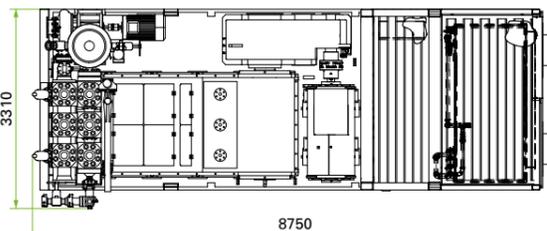
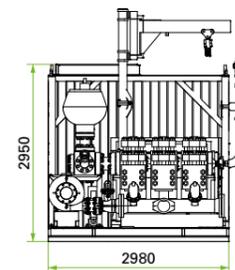
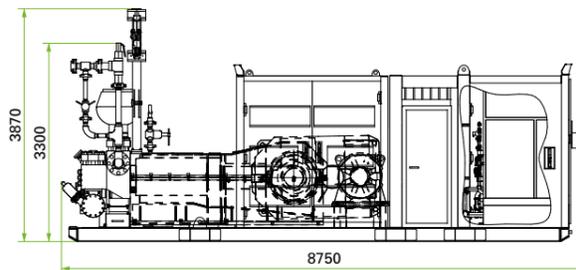
'Basic' configuration

- › On oilfield skid
- › Single spur gear



'Standard' configuration

- › On oilfield skid with noise protection
- › Single spur gear



'Offshore' configuration

- › On oilfield skid with noise protection
- › With double spur gear

