

Land Rig Hydraulic Power Unit

Steady hydraulic pressure and flow for easy operation and maintenance

APPLICATIONS

Land rig drilling

BENEFITS

- Improved safety
- Low maintenance costs
- Increased operational efficiency
- Remote operation and monitoring
- Flexibility and robustness

FEATURES

- Design based on extensive use of hard piping
- Considerably reduced number of connection points
- Interlocks and warning systems with user-intuitive operator interface
- Maintenance access at defined points
- Oil level switch for protecting hydraulic power unit (HPU) pumps
- Pressure-relief valve on each pump
- Emergency stop button
- Hydraulic soft-start design
- Main electric motors connected to soft starters located on the HPU skid
- High number of filters and circulation pump unit for maintaining good oil quality
- Hydraulic filters equipped with both visual and electric clogging indicators
- Diesel engine and main pumps mounted on vibration dampeners
- Hydraulic circuit for heating the oil in the reservoir
- Remote or local operation
- Built-in self-diagnostic functions



The efficient design of the land rig HPU enables easy operation, simplified maintenance, and reliable performance, even in challenging onshore drilling applications.

The land rig hydraulic power unit (HPU) delivers steady hydraulic pressure and flow with a design that facilitates streamlined operation and simplified maintenance.

Robust engineering for reliable service

For a long service life in challenging conditions, the HPU is fabricated with field-proven components and materials. It also includes an onboard oil cooling system, which consists of an air oil cooler, local pressure gauges, and a bypass valve to protect the oil cooler from pressure peaks. The HPU can be operated even if the rig power generator, main electric motor, or pump unit should fail.

Simplified display and control

The HPU is engineered with a remote supply pressure readout, integrated inspection hatch, and local reservoir level and temperature readout, making it easy for rig personnel to determine and evaluate critical drilling parameters.

Ruggedized design for rough handling

The HPU is mounted on a skid to accommodate turbulent rig moves. It can be handled by overhead crane, forklift, or oilfield skidding or pulling. The HPU can be transported with hydraulic oil and diesel fuel in the reservoirs.

Land Rig Hydraulic Power Unit

Technical Specifications

Area classification	Nonhazardous
Operating temperature, degF [degC]	-4 to 113 [-20 to 45]
Main pumps (two)	
Working pressure, psi [MPa]	3,000 [20.7]
Maximum total flow rate, galUS/min [L/min]	126.8 [480]
Total AC motor power, hp [kW]	252 [188]
Rig-up pump (one)	
Working pressure, psi [MPa]	3,000 [20.7]
Maximum total flow rate, galUS/min [L/min]	39.6 [150]
Diesel engine power, hp [kW]	100 [74.5]
Diesel engine emission standard	Environmental Protection Agency (EPA) Tier 3
Circulation AC motor power, hp [kW]	10 [7.5]
Dimensions (L x W x H), in [mm]	252 x 96 x 110 [6,400 x 2,438 x 3,028]
Oil tank capacity, galUS [L]	1,500 [5,700]
Diesel tank capacity, galUS [L]	132 [500]

Scope of Supply

Base frame made with corrosion-protected carbon steel and equipped with mounting brackets (for diesel engine pump unit, electric motor and pump units, air oil cooler, reservoirs, manifolds, and starter cabinet); platforms; two forklift pockets; antispill arrangement with two drain nozzles; two electric earthing bosses; and brackets for external hydraulic and electric connections

Two hydraulic main pumps and circulation motor mounted via flexible coupling on vertically positioned electric motor

Diesel engine pump unit for use during rig-up (when the HPU is not connected to a rig power generator)

Framework-mounted roof with two light fixtures located above important access points and four lifting lugs to enable lifting the entire HPU, even with fluid in both reservoirs

Stainless steel starter cabinet containing all necessary components for local or remote operation

Local operator panel that enables start and stop of electrical motor pump units, emergency stop, and indication of various parameter values

Final documentation

Recommended spare parts list

Options

Hazardous area suitability

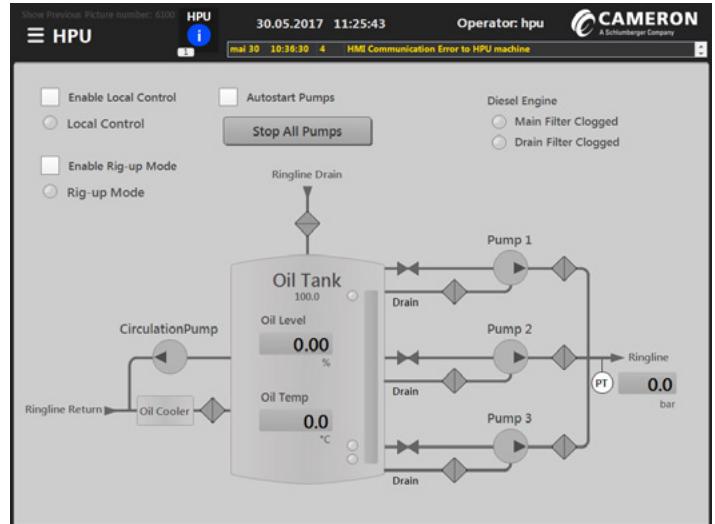
First-time oil fill

Fire and gas system

Upgrade with a third main pump unit for increased total flow rate or for increased redundancy

Automatic control system for sequential-pump start and stop

Automatic control system for distribution of running hours between the pumps



The HPU's control system simplifies determining and evaluating critical drilling parameters.

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