

14-P-220 Triplex Pumps

Description

National Oilwell Varco provides smooth Triplex performance and high efficiency from the 14-P-220 Mud Pump. Its compact engineering provides higher efficiency in less space. The pump's light weight and flexible design make it easily adaptable to a variety of rig configurations. This provides flexibility as drilling requirements and conditions change.

Key Features

Power End

- Fabricated steel frame construction
- One-piece forged steel construction crankshaft, connecting rod and pinion shaft
- Adaptability to a variety of drive arrangements on either sides or on both sides
- Premium roller bearings to enhance smooth performance and efficiency

Fluid End

- Two-piece modular cylinder design is completely interchangeable between modules
- Fast Change™ screw-type valve covers, which facilitate quick removal and installation are currently standard
- Suction manifold can be equipped with front or side inlet connections
- Discharge piping connects from either side
- Piston and liner chambers are easily accessible and fully open
- Two-piece piston rod construction allows removal of piston without disturbing liner
- Easy-to-operate clamps give positive locking for liners and piston rod assemblies
- Spray system cools and lubricates piston and liner surfaces

Fluid End Modules

NOV offers a choice of fluid end modules and valve covers for every P Series pump model to select the fluid end module that exactly matches the drilling requirements. All pump models can be equipped with either the standard or premium forged, two-piece interchangeable fluid modules.

Hybrid — Standard

- 7,500 psi operating pressure
- Modules are hydrostatically tested
- Available with ABS, DNV, and CCS certifications
- Utilize a tapered seal for valve covers
- Uses connectors between discharge modules to direct discharge flow

Mission L — Premium

- 7,500 psi operating pressure
- Modules undergo an autofrettage process
- Modules are hydrostatically tested
- Available with ABS, DNV, and CCS certifications
- Utilize a tapered seal for the valve covers
- Uses a discharge manifold to direct discharge flow

AC drive motors

- Standard DM27 Drill Force™ AC Cage Induction Motor
- Electrical rating: Continuous duty
- Temperature ambient
 - 40°C to 45°, 600V – 1,150HP (7,700 ft.-lbs.); 690V- 1,229HP (7,550 ft.-lbs.)
 - 40°C to 55°, 600V – 1,075HP (7,057 ft.-lbs.); 690V- 1,150HP (7,064 ft.-lbs.)
- Insulation: Class H, VPI form wound
- External cooling requirements; 2,800 SCFM at motor inlet
- Standard stator and bearing RTD's
- Standard ATEX; increased safety, IECEx
- Optional ABS, DNV, CSA certification
- Optional GEB-22 AC Cage Induction Motor

Belt Drive

- Belt life in excess of 10 years delivers an effective drive solution with the lowest cost of ownership in the industry
- No requirement for lube oil filter, cables, cable trays, MCC cubicles, starters

Forged steel crankshaft

- One piece forged steel crankshaft with pressed fit bearing journals
- Naturally balanced for smooth running
- No casting
- No welding

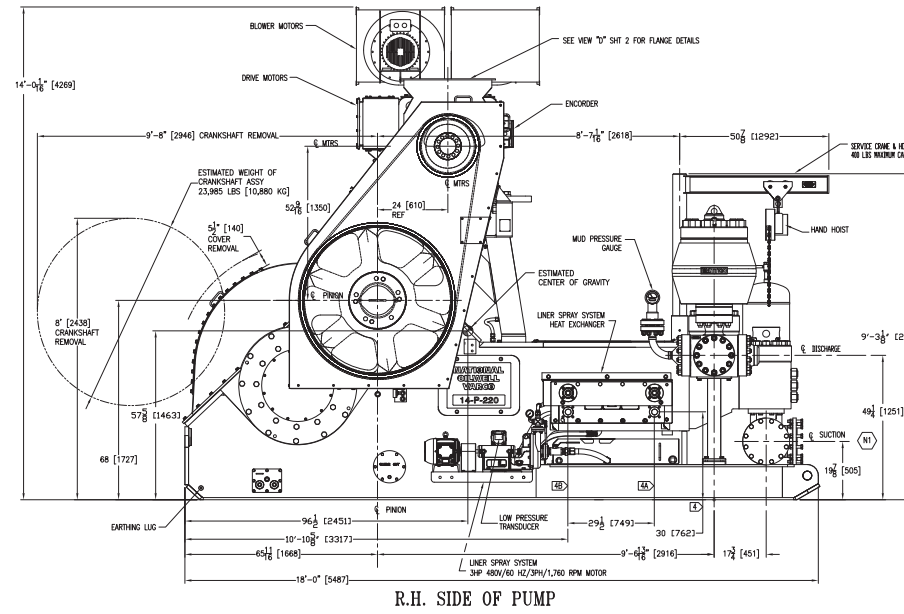
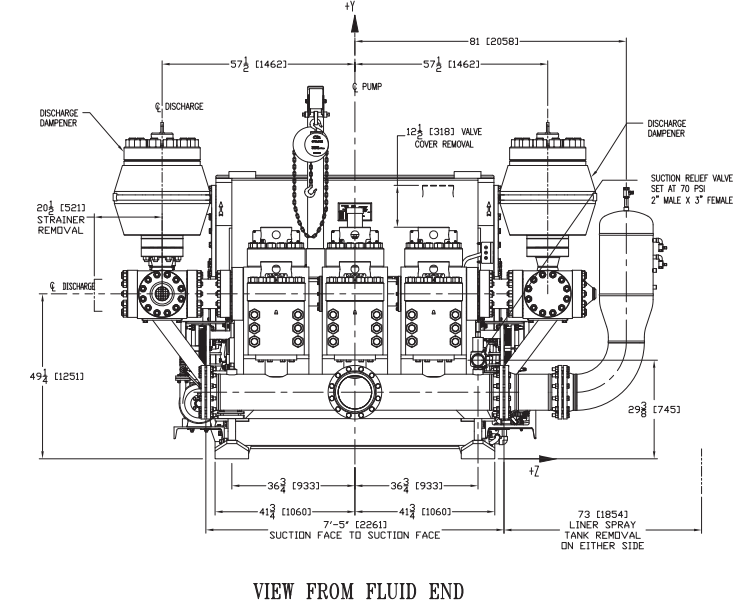
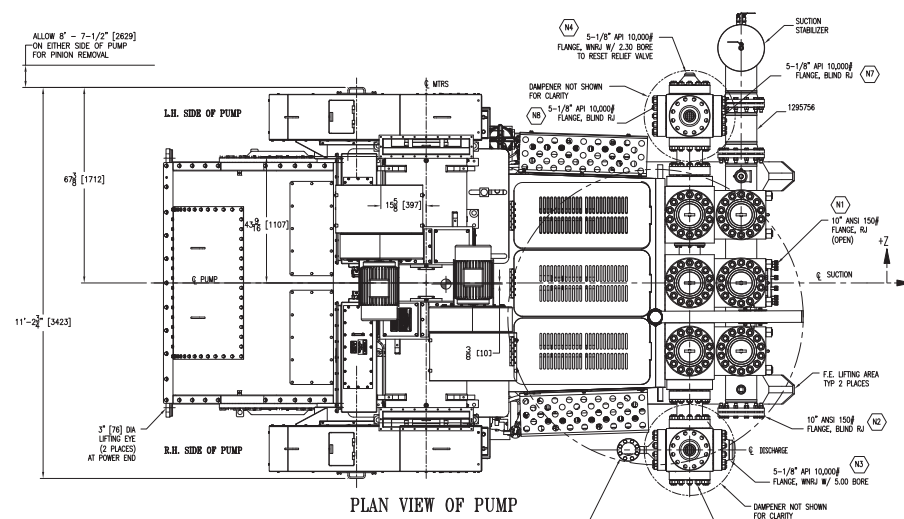
Optional Accessories

- HydrA-LIGN™ piston rod
- Blak-JAK™ liner retention system
- Blak-JAK™ Torque master quick change valve cover retention system
- Pneumatic pump rotation tool

Warranties

- The standard module carries a three-year, 100% warranty against cracking
- The premium module has a four-year, 100% warranty against cracking
- Crankshaft carries a seven year limited warranty

General Dimensions and Specifications	
Height, floor to center of front inlet suction, inches (mm)	19 7/8 (505)
Height, floor to center of discharge, inches (mm)	49 1/4 (1251)
Overall length over skids, inches (mm)	218 1/4 (5544)
Width over frame, inches (mm)	91 (2311)
Width over pinion shaft, inches (mm)	125 3/4 (3194)
Height, floor to top of gear case, inches (mm)	84 1/4 (2139)
Height over fluid cylinders, inches (mm)	69 1/8 (1756)
Maximum input horsepower (kW)	2200 (1640)
Rated pump speed, spm	105
Maximum fluid cylinder liner bore, inches (mm)	9 (228.6)
Stroke, inches (mm)	14 (355.6)
Hydrostatic test pressure of fluid cylinders, psi (kg/cm2)	11,250 (776)
Gear ratio	3.969
Suction connection ASA-150 lb. R.J. flange, inches	10"
Discharge connection, cross w/ API-10,000 psi. R.J. flange, inches	5"
Valve pot, API number	MOD. 8
Weight-complete, less sheave, lbs. (kg)	86,000 (39,009)
Weight-complete, Mission L, lbs. (kg)	96,000 (45,546)
Pinion Speed	417 rpm



Liner size, inches		9"	8"	7 1/2"	7"	6 1/2"	6"	5 1/2"
Max. Discharge Pressure, PSI of 14-P-220 with high pressure Fluid End		2795	3535	4025	4615	5360	6285	7475
Speed spm	Input HP	Gallons per minute						
105*	2200*	1215	960	843	735	633	540	454
80	1676	925	731	643	560	483	411	346
60	1257	694	548	482	420	362	308	259
40	838	462	366	321	280	241	206	173
Volume/Stroke, (gallons)		11.57	9.14	8.03	7.00	6.03	5.14	4.32

*Rated maximum input horsepower and speed
**Based on 90% mechanical efficiency and 100% volumetric efficiency
† 9 inch liner requires special liner bushing and liner cap

Performance 14-P-220

