

P Triplex Mud Pumps

National Oilwell provides smooth triplex performance from six durable, space-saving mud pump models.

From the shallowest to the deepest drilling, there is a National Oilwell mud pump to meet specific requirements. There are six P series models ranging from 500 (373 kw) to 2200 (1640 kw) input horsepower.

An advanced fluid end design gives exceptionally smooth triplex performance. In addition, this unique design facilitates fast inspection and easy servicing.

Compact engineering provides higher efficiency in less space. The pump's light weight and flexible design make it easily adaptable to varied rig configurations. This provides flexibility as drilling requirements and conditions change.



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FEATURES:

Power End

- Fabricated steel frame construction
- One-piece construction of crankshaft, connecting rods and pinion shaft
- Adaptability to a variety of drive arrangements on either side or both sides
- Roller bearings to enhance smooth performance and efficiency
- Splash- and gravity-flow lubrication system

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
- TAPR-LOK® Valve Covers are offered as an option which permits fast inspection and easy servicing, as well as provide excellent protection against "breathing" motion at higher pressures
- 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

TECHNICAL SUPPORT:

National Oilwell provides continuing technical support after the sale. National Oilwell has published a handbook titled "How To Treat Your Type P Triplex Mud Pump" (document # 0001-0487-44). This maintenance manual provides detailed information to help keep pumps running smoothly. Please contact your National Oilwell representative for a copy of this publication.

FLUID END:

National Oilwell 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.

Standard and Extended Warranties

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

Cold-Worked for Longer Life

The internal bores of the standard modules are shot peened. The premium modules have auto-frettagged bores.

Both shot peening and auto-frettaging are cold working processes which increase the mechanical properties of the bore surfaces by imparting residual compressive stresses into the surface material.

The benefits of these processes are increased module fatigue life and greater resistance to stress corrosion cracking.

The auto-frettaging process works to a greater depth in the bore surface, extending service life.

High Pressure Modules to 7500 PSI

Also available for the 12-P-160 and 14-P-220 mud pumps are high pressure modules. These are designed for working pressures up to 7500 psi (527.4 kg/cm²). The 12-P-160 modules have smaller internal bores than the standard or premium modules in order to withstand the higher pressures. The bores for both the 12-P-160 and 14-P-220 high pressure modules are auto-frettaged to provide improved fatigue life at the higher pressures. These high pressure modules have a 60-month prorated warranty.

FLUID END VALVE COVERS FOR EVERY DRILLING CONDITION:

The TAPR-LOK® Valve Cover is well suited for drilling applications where continuous operation at higher pressures is expected. The Fast Change™ Valve Cover is designed for quicker removal and installation.

COMPLETE SUPPLIER AND CUSTOMER SERVICE:

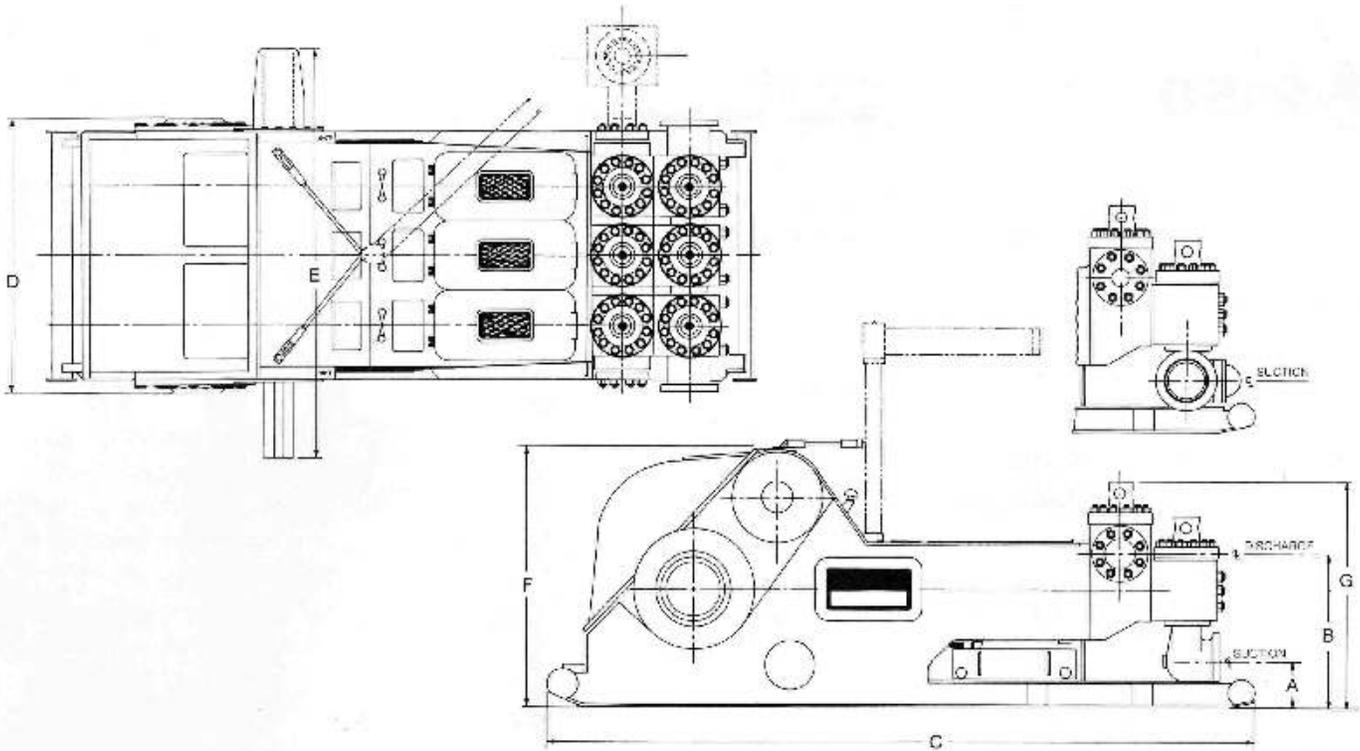
National Oilwell manufactures virtually every major component of a modern drilling rig. The company offers the broadest selection of rotary drilling machinery in the world. No matter the location in the oil patch, a National Oilwell facility is nearby, staffed by knowledgeable people who are ready to help.

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Dimensions and Specifications

Model	7-P-50	8-P-80	9-P-100	10-P-130	12-P-160	14-P-220
A Height, floor to center of front inlet suction, inches (mm)	10 $\frac{5}{8}$ (270)	10 $\frac{3}{4}$ (273)	13 $\frac{1}{4}$ (337)	13 $\frac{1}{4}$ (337)	16 $\frac{1}{2}$ (419)	19 $\frac{3}{4}$ (505)
B Height, floor to center of discharge, inches (mm)	33 $\frac{1}{2}$ (851)	35 $\frac{1}{4}$ (895)	38 $\frac{3}{4}$ (972)	39 $\frac{1}{4}$ (997)	45 $\frac{1}{4}$ (1149)	49 $\frac{1}{4}$ (1251)
C Overall length over skids, inches (mm)	142 $\frac{1}{4}$ (3613)	161 $\frac{5}{8}$ (4105)	176 $\frac{3}{4}$ (4477)	186 $\frac{5}{8}$ (4740)	209 (5309)	218 $\frac{1}{4}$ (5544)
D Width over frame, inches (mm)	54 $\frac{1}{2}$ (1384)	62 $\frac{9}{16}$ (1589)	67 $\frac{7}{8}$ (1705)	71 $\frac{3}{8}$ (1813)	78 $\frac{5}{8}$ (1997)	91 (2311)
E Width over pinion shaft, inches (mm)	81 $\frac{7}{16}$ (2069)	93 $\frac{7}{8}$ (2384)	101 $\frac{1}{4}$ (2572)	107 $\frac{1}{4}$ (2724)	113 $\frac{3}{4}$ (2889)	125 $\frac{3}{4}$ (3194)
F Height, floor to top of gear case, inches (mm)	54 $\frac{1}{2}$ (1384)	60 (1524)	64 (1626)	67 (1702)	75 (1905)	84 $\frac{3}{4}$ (2139)
G Height over fluid cylinders, inches (mm)	48 $\frac{7}{8}$ (1241)	51 $\frac{7}{8}$ (1318)	54 $\frac{7}{8}$ (1394)	55 $\frac{7}{8}$ (1419)	62 $\frac{1}{16}$ (1599)	69 $\frac{3}{8}$ (1756)
Max. input, horsepower (kW)	500 (373)	800 (597)	1000 (746)	1300 (969)	1600 (1193)	2200 (1640)
Rated pump speed, spm	165	160	150	140	120	105
Maximum fluid cylinder line bore*, inches (mm)	6 $\frac{1}{4}$ (158.8)	6 $\frac{1}{4}$ (158.8)	6 $\frac{3}{4}$ (171.5)	6 $\frac{3}{4}$ (171.5)	7 $\frac{1}{4}$ (184.2)	9 (228.6)
Stroke, inches (mm)	7 $\frac{3}{4}$ (196.9)	8 $\frac{1}{2}$ (215.9)	9 $\frac{1}{4}$ (235)	10 (254)	12 (304.8)	14 (355.6)
Hydrostatic test pressure of standard fluid cylinders, psi (kg/cm ²)	10,000 (703)	10,000 (703)	10,000 (703)	10,000 (703)	10,000 (703)	10,000 (703)
Ratio of gears	2.742	2.463	2.658	2.853	3.439	3.969
Suction connection, ASA-150 lb. R.J. flange, inches	8	8	8	8	10	10
Discharge connection, cross w/API-5000 lb. R.J. flange, inches	4	4	5	5	6	6
Valve pot, API number	MOD. 5.5	MOD. 6	MOD. 6	MOD. 6	MOD. 7	MOD. 8
Weight-complete, less sheave, lbs. (kg)	16,750 (7600)	26,970 (12,235)	33,200 (15,060)	42,550 (19,300)	54,700 (24,810)	86,000 (39,007)

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