

“At PREMIUM , we care about the products we supply.”

PREMIUM RIG PARTS PRODUCTS

MUD PUMP EXPENDABLE PARTS LIST

EXPENDABLES

ACCESSORIES

FLUID END MODULES



NATIONAL PREMIUM OILWELL

E-mail: sales@premiumrigparts.com
www.premiumrigparts.com



Premium Mud Pump Parts List

We Provide Superior Value

- Forging Material
- Engineering Support
- Module Alliance
- Our Distribution Network
- Ultra Modern State of the Art Machining Centers
- Warranty - Only 4 year warranty in the industry.

Operation concepts

- ◇ **Core Value**
Assist the customers in achieving goals and creating values
- ◇ **Enterprise Spirit**
Learning Innovation Surpassing
- ◇ **Enterprise Mission**
To be a first-class international drilling equipment supplier

Nine Elements of Customer Satisfaction

- ◇ **Delivery on time**
- ◇ **Supply products that work**
- ◇ **Provide quality service**
- ◇ **Price consistent with quality**
- ◇ **Honor commitments**
- ◇ **Respond with appropriate urgency**
- ◇ **Work with you to resolve problems**
- ◇ **Prevent surprises**
- ◇ **Make it easy to do business with us**



Premium Mud Pump Parts List

Triplex Mud Pumps Manufacturers and Brands			
<u>NATIONAL</u>	<u>GD</u>	<u>EMSCO</u>	<u>OILWELL</u>
<u>7P50</u>	<u>PAH-275</u>	<u>F350/500/650</u>	<u>A350PT</u>
<u>8P80</u>	<u>PZ-7</u>	<u>F800</u>	<u>A560/600PT</u>
<u>9P100</u>	<u>PZ-8</u>	<u>F1000</u>	<u>A850PT</u>
<u>10P130</u>	<u>PZ-9</u>	<u>FB1300</u>	<u>A100PT</u>
<u>12P160</u>	<u>PZ-10</u>	<u>FB1600</u>	<u>A1400PT</u>
<u>14P220</u>	<u>PZ-11</u>	<u>FC2200</u>	<u>A1700PT</u>
IDECO	DRILLMEC	WEATHERFORD	BOMCO
T500	7TS500	MP-5	F500
T800	9T800	MP-8	F800/F1000
T1000	9T1000	MP-10	F1300
T1300	12T1600	MP-13/16	F1600
T1600	14T2200	E-447	F1600HL
		E-2200	F2200HL
TSC	EWCO	AMERICAN BLOCK	EWECO
WF-400	W-440	K-800	E-447
WF-700	W-446	K-1000	E-600
WF-1300	WH-1312	K-1300	E-800
WF-1600	WH-1612	K-1600	E-1100
WF-2000	W-1712		E-1300
WF-2200	W-2214/W-2215		E-1600
HONGHUA	LS NOV	WIRTH	Rongsheng
F500	3NB500C	TPK-1000	W440/446
F800	3NB800C	TPK-1600	F500
F1000	3NB1000C	TPK-2000	F800
F1300	3NB1300C	TPK-2200	F1000
F1600	3NB1600		F1600L
F1600HL/F2200HL	F-1600/F-1600L		
Other Mud pumps and Parts brands: Southwest, Mud King, Baker, Texma, Skytop, RG, Ellis Williams, Brewster			
Disclaimer:National Premium Oilwell Machinery Co.,Ltd is in no way affiliated with any of the reference manufacturers and company names and Brands and /or part numbers are for reference purposes only.			



Premium Mud Pump Parts List

Duplex/Well Services Mud Pumps Manufacturers and Brands			
<u>Emsco</u>	<u>National</u>	<u>Oilwell</u>	<u>Ideco</u>
<u>D300</u>	<u>N1000-1600</u>	<u>6P-HD</u>	<u>MM300</u>
<u>D500</u>	<u>K380</u>	<u>8P-HD</u>	<u>MM500/500F</u>
<u>D550</u>	<u>K500</u>	<u>610P</u>	<u>MM700/700F</u>
<u>D700</u>	<u>K500A</u>	<u>212P</u>	<u>MM600/600F</u>
<u>D375</u>	<u>K700A</u>	<u>214P/14P</u>	<u>MM200</u>
	<u>C150/C150B</u>	<u>218P</u>	<u>MM300</u>
	<u>C250</u>	<u>18P</u>	
<u>Gasco</u>	<u>Gardner Denver</u>	<u>Gardner Denver</u>	<u>Ellis Williams</u>
<u>1563</u>	<u>5" x 6" FG FXG</u>	<u>7.5" x 8" FY FXX</u>	<u>15W600</u>
<u>1740-55</u>	<u>5" x 8" FD FXX</u>	<u>7.25" x 12" FZ FXZ</u>	<u>19W1000</u>
<u>2651</u>	<u>5.5" x 8" FD FXX</u>	<u>7.25" x 14" FXN</u>	
<u>2652</u>	<u>FC-FXX/FC-FXD</u>	<u>7.25" x 14" FK FXK</u>	
	<u>5" x 10" FD FXD</u>	<u>FQ-FXQ</u>	
	<u>5.5" x 10" FD FXD</u>	<u>7.25" x 10" FO FXO</u>	
	<u>7.5" x 10" FY FXD</u>	<u>4.5" x 6" FG FXG</u>	
<u>Drillmec</u>	<u>Russian</u>	<u>Gardner Denver</u>	
<u>10D2C</u>	<u>NB125</u>	<u>4x5 TEE Triplex</u>	
<u>8D1S</u>	<u>NB80</u>	<u>5-1/2x5 THE Triplex</u>	
	<u>NB50</u>	<u>5x8 PAH Triplex</u>	
	<u>NB32</u>	<u>PJ-8</u>	
<u>The Spares for Above pumps:</u>			
* Liners			
*Pistons			
*Piston Rubber kits			
*Piston rods			
*Valves & Seats			
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Mud Pump Liners

Premium manufactures chrome alloy sleeved liners, hardened liners, hardened / chrome plated liners and Zirconia liners. Premium also supplies genuine U.S. made rubber and urethane liner seals. All our liner products are exchangeable with OEM products and meet or exceed API-7K standards.

All our liners are made with a high strength forged steel shell machined to fit triplex pumps and fitted with high pressure lip sleeve. The liner is precision machined to exact tolerances to keep the liner concentric. The sleeve is manufactured to the bore tolerances specified by API to provide longer life by reducing gaps between the liner bore and piston.

Zirconia Liner

Premium's zirconia liner offers life time cost savings, significantly longer service, better performance and safer operation than those made of more commonly used alumina ceramic. Premium's zirconia liner is a proprietary Zirconium-based matrix that has significantly improved mechanical characteristics.

- ◎ Zirconia has three important property advantages compared to alumina.
- ◎ Zirconia exhibits better impact strength.
- ◎ Zirconia is harder than alumina.
- ◎ Zirconia can be honed to finer surface finishes than alumina.

Finished to 4 RMS,

- ◎ Zirconia liners - provide a surface finish that's three to four times finer than alumina.

All three of these property advantages translate to lower ownership costs. The improved wear directly extends the service life of the sleeve, while the improved impact strength cuts down on the significant costs of replacing broken liners in the field. The surface finish improvements, meanwhile, have an indirect effect.

- ◎ HP design with shoulder-on-hull design to prevent sleeve slippage
- ◎ Reduced liner and piston wear
- ◎ Rated for all drilling operations up to 7500 PSI
- ◎ Bore hardness of 92-94 Rockwell
- ◎ ID tolerances of $+.010'' / -.000''$
- ◎ Surface finish of 4 - 8 RMS
- ◎ Hardness is HV 0.3 kg/mm – 1100/1200 (92 - 94 Rc)
- ◎ High pressure design to prevent slippage
- ◎ Liner sizes are available from 4½'' to 7'' for all popular mud pump



Premium Mud Pump Parts List

What is Zirconia?

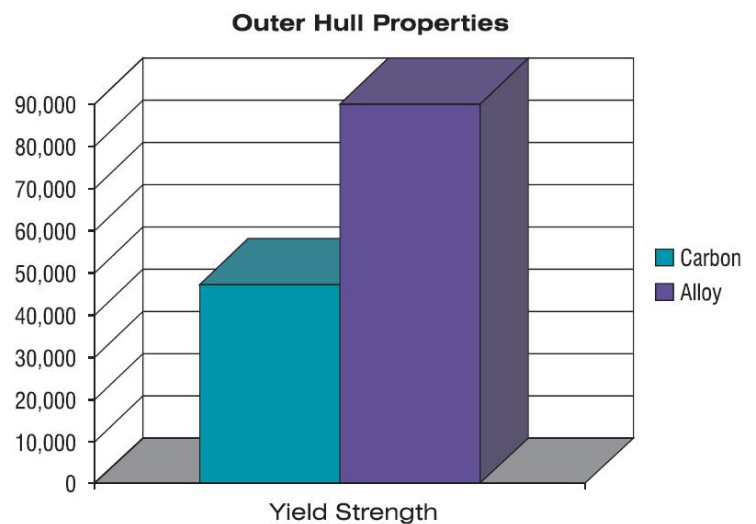
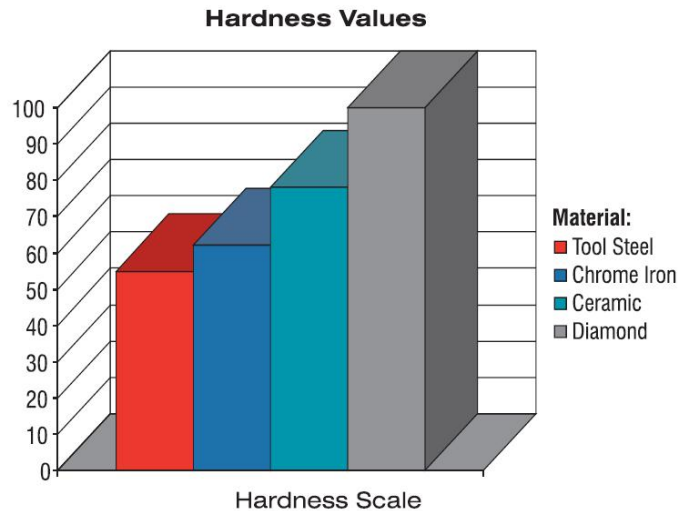
- Its great hardness, low reactivity, and high melting point have made it the oldest mineral that can be found on earth.
- Zirconium Dioxide (ZrO_2), also known as zirconia is a white crystalline oxide of the element zirconium (Zr).
- Exists naturally as the mineral Baddeleyite.
- One of the most studied ceramic materials.

Zirconia Case Study

- Conducted four year case study and collected over 12,000 pumping hours
- Pumps using Chromium Liners had expendable cost of \$47,000 vs. \$11,000 for Zirconia Liners
- Pump shutdowns were 4x higher (8 vs. 32) in chromium pumps compared to Zirconia
- Zirconia lined pumps used approximately 1/5 of the pistons compared to chromium lined pumps

Zirconia Benefits

- Ceramic Liners out perform steel Liners
- Zirconia is significantly stronger and tougher than Alumina in bending or tension, often by a factor of 4 or more
- Does not require self aligning piston rods
- Extended Life and less wear reduces overall expendable cost
- Traditional liner hourly cost is approximately \$1.05 per hour, while Zirconia Liners are approximately \$.23 per Hour



High Chrome Sleeve Liner

The outer hull, or body, of the liner is a high strength forging. **Premium** uses forgings exclusively to ensure the consistent quality. The sleeve is centrifugally cast in the **Premium** facilities by skilled craftsmen. It has the maximum amount of chrome for the base metal and **Premium** adds molybdenum to increase the hardness depth. The sleeve is then inserted into the hull at a tightness that exceeds its counterparts. The liner is rated to match the pressure rating of the pump per liner size.

- Rated for all drilling operations up to 5,000 PSI and 7500 PSI
- Bore hardness is 62 - 69 Rockwell
- Flip design to prevent inner sleeve slippage
- Extremely long service life



Chrome Plated Liner

Premium chrome plates the same outer hull in lieu of sleeve to a maximum thickness. It is then machined and polished to a mirror finish.

Features:

- Single high strength forged steel hull construction.
 - Optional chrome plating to reach hardness of 62 RC.
- Corrosion resistance, free deformation.



Premium Mud Pump Parts List

Hardened Liner

Premium Hardened Liner the same outer hull in lieu of sleeve to a maximum thickness. It is then machined and polished to a mirror finish.

Features:

- Single high strength forged steel hull construction.
- Inner bore is nitro carburized and quenched to reach hardness of 60 RC.
- Corrosion resistance, free deformation.

Premium can make the following brand pump Chrome-Plated and Hardenedliners and more:

<u>Emsco</u>	<u>National</u>	<u>Oilwell</u>	<u>Ideco</u>
<u>D300</u>	<u>N1000-1600</u>	<u>6P-HD</u>	<u>MM300</u>
<u>D500</u>	<u>K380</u>	<u>8P-HD</u>	<u>MM500/500F</u>
<u>D550</u>	<u>K500</u>	<u>610P</u>	<u>MM700/700F</u>
<u>D700</u>	<u>K500A</u>	<u>212P</u>	<u>MM600/600F</u>
<u>D375</u>	<u>K700A</u>	<u>214P/14P</u>	<u>MM200</u>
	<u>C150/C150B</u>	<u>218P</u>	<u>MM300</u>
	<u>C250</u>	<u>18P</u>	
<u>Gasco</u>	<u>Gardner Denver</u>	<u>Gardner Denver</u>	<u>Ellis Williams</u>
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	<u>5.5" x 10" FD FXD</u>	<u>7.25" x 10" FO FXO</u>	
	<u>7.5" x 10" FY FXD</u>	<u>4.5" x 6" FG FXG</u>	
<u>Drillmec</u>	<u>Russian</u>	<u>Gardner Denver</u>	
<u>10D2C</u>	<u>NB125</u>	<u>4x5 TEE Triplex</u>	
<u>8D1S</u>	<u>NB80</u>	<u>5-1/2x5 THE Triplex</u>	
	<u>NB50</u>	<u>5x8 PAH Triplex</u>	
	<u>NB32</u>	<u>PJ-8</u>	



Mud Pump Pistons

Premium Pistons are made to precise tolerances and include a variety of materials yielding extended service life. Piston materials include the following from 3" to 7-1/2" sizes to accommodate for all types of drilling conditions, mud properties and temperatures reaching up to 350°F. Premium provides a full range of mud pump pistons for both triplex and duplex pumps. They are:

Replaceable Rubber Piston
Long Life Urethane Bonded Piston
High Temperature Bonded Piston
BullNose Piston
FlexLip Piston
Features:



Rated for all drilling operations
High tensile strength
Maximum operating temperature is 350°F
High pressure mud pump service
Extended service life

Urethane Bonded Piston

These pistons are constructed of urethane, bonded to a solid metal hub. Double durometer urethane is designed to provide optimum performance in oil base or water base mud and high drilling pressures.

Features:

- Rated for all drilling operations
- Maximum operating temperature is 180°F
- High pressure mud pump service
- Extended service



Premium Mud Pump Parts List

Replaceable Rubber Piston

Premium's replaceable rubber pistons are made with nitrile rubber to resist extrusion and abrasion. These pistons are fully interchangeable with most other manufactures products. Available sizes are from 3" through 7½" and series are A, B, K and L. If flange is not worn past these marks, rubber kit can be installed

Fabric anti-extrusion device reduces extrusion of the rubber even at maximum pressure rating

Features:

- High tensile strength
- Rated for all drilling operations
- Maximum operating temperature is 250°F
- Extended service life



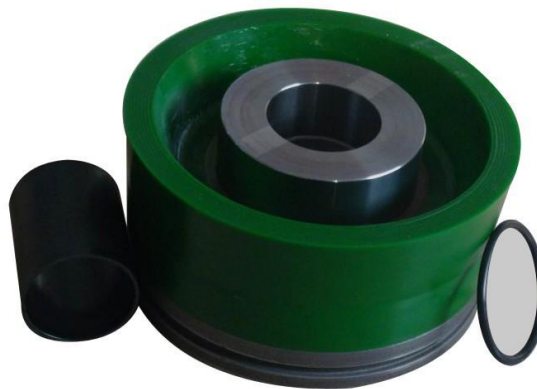
Green Duo piston

The Green Duo piston is a bonded dual durometer piston that is highly resistant to abrasion and tear. The bonded construction resists extrusion under pressure and restricts movement to reduce the build-up of heat.

The Green Duo piston is recommended for systems with oil or synthetic based mud. It is also recommended for water based muds when weights are 11 lb/gal or over. The Green Duo piston is not recommended for clear water or seawater pumping due to the lack of lubricity of these fluids. As in all urethane pistons, the backflush requirement is recommended at 14 gal/min or greater for each piston.

Features:

- Temperature resistance up to 180°F (82°C)
- Can be operated in pressures up to 6300 psi
- Backflush requirement is 14 gal/min or greater for each piston
- Not recommended for clear water or seawater pumping due to lack of lubricity of these fluids



Premium Mud Pump Parts List

Blue Lightning Piston

Super premium bonded polyurethane piston designed for operation in extreme drilling environments.

The Blue Lightning piston is manufactured from an engineered elastomeric compound that delivers excellent resistance to tear, abrasion and extrusion while maintaining high mechanical properties. A unique anti-extrusion feature, coupled with a premium elastomer, improves service life while reducing downtime and allowing for reduced pump maintenance.

Anti-Extrusion Feature

The anti-extrusion feature is a significant feature of the Blue Lightning. Manufactured from a proprietary bearing material that expands upon installation, this feature reduces friction by reducing or eliminating contact between the steel piston body and the liner wall. Additional benefits include reduced extrusion of the urethane and dramatically increased run times, even in pressures above 5000 psi. The bearing even reduces liner wear and liner damage over other piston designs. The Blue Lightning can be operated in pressures of up to 7500 psi.



White Lightning bonded piston

Super premium bonded polyurethane piston designed for operation in extreme drilling environments.

The White Lightning bonded piston is manufactured from an engineered elastomeric compound that delivers excellent resistance to tear, abrasion, chemical attack and extrusion while maintaining high mechanical properties.

Features/Benefits

- Increased run times up to 7500 PSI
- Consistent run times
- Reduced cost per operating hour
- Reduced maintenance and downtime
- Flex Lip design for decreased liner wear

Elastomer compound which provides:

Increased resistance to water, oil, and aggressive synthetic drilling fluids

Temperature resistance up to 230o F (110 o C)

Increased abrasion and particle embedment resistance



Premium Mud Pump Parts List

Bull nose Piston

Manufactured from highly engineered premium urethane homogenous compound, Bull nose Piston outperforms all other polyurethane pistons on the today's market. The compound provides superior resistance to tear, abrasion, and extrusion, and is capable of operating in fluid temperature from -20°F up to 225°F . It is compatible with water, oil and synthetic designed piston head is composed of two different urethane compounds bonded together for superior performance.

Features:

- The piston body, while made of high strength alloy steel, is compatible with existing piston rods
- Resistant to high pressure, abrasion, heat and extrusion
- Averages 30%+ longer life than offer mud pump pistons
- Dual-durometer bonded urethane allows for longer piston life
- "Bull nose" lip design provides better sealing to reduce flush system contamination



Bull nose Extreme Piston

Designed to preform in the harshest of drilling conditions, its oil-resistant high-temperature premium urethane homogenous compound has excellent abrasion resistance, low friction surface, and high tensile strengths. It is compatible with all applications and mud types and will withstand operating temperatures from -20°F up to 350°F with pressures up to 7500psi. Superior design and ultra-durable quality adds value through increased run times in extreme conditions, reduced maintenance, and reduced cost per pumping hour.

Features:

- Wide Temperature Range, -20°F to 350°F , 7500 psi.
- "Bull nose" lip design provides better sealing to reduce flush system contamination
- Fully compatible with all types of drilling and mud during any point of the drilling process



Mud Pump Valves & Seats

Premium manufactures a wide variety of valves and seats, for the following applications, among others: workover pumps; high pressure well service fracturing pumps; cementing pumps; and mud pumps.

Cross Arms/4-Web Valve & Seat

The Cross Arms Valve is a 4-Web Center Guided Valve System. This Valve has a replaceable Insert that is retained by a screw on plate with hammer lugs. Available in heavy duty standard temperature and high temperature versions. Oxide coated to fight corrosion while in storage. Available with standard API seats and “modified” API seats.

Design Benefits:

- Large metal-to-metal seat bearing area, longer wear life for metal wear areas
- 4-Web Seat Design Maximizes Bearing Area and makes Seat Pulling easier
- This stem guided valve and seat assembly weightless and provides a reasonable value at an economical price.

Operating Temperature:

- Standard Insert – Temperature Up to 160°F (71°C)
- High temperature (HC) Insert - 200°F (93°C)



Bonded Valve

Premium introduces a new and improved full open valve with bonded insert. The bonded valve has replaced the slip-on insert to provide a tighter fit. This design is permanently bonded to the valve body. This reduces the tendency for fluids to penetrate between the polyurethane insert and the valve body; preventing failure. This bonded polyurethane insert is also used to minimize shock when the valve closes. The full open design of this bonded valve provides maximum fluid flow, and has a longer operation life due



Premium Mud Pump Parts List

to its increased structural strength. This is the result of using a forged solid body instead of a two piece design. This is done to provide durability at high pressures. The large metal- bearing area on the valve seat surface promotes a longer service life.

Design benefits include:

- Very high tensile strength
Enhanced Sealing Capabilities
- Improved Shock Absorption
Premature sealing failure prevention



Double Angle Valve

The Double Angle Valve is a 3-Web Center Guided Valve System. This Valve has a replaceable “Snap-In” Insert, available in standard temperature and high temperature versions. Oxide coated to fight corrosion while in storage.

Available with standard API seat and “modified” API seats.

Design Benefits Include:

- Large metal-to-metal seat bearing area, longer wear life for metal wear areas.
- 3-web seat design maximizes bearing area and makes seat pulling easier.
- Lightweight design for stable operation at high pump speeds.

Operating Temperatures:

- Standard Insert – Temperature Up to 160°F (71°C)
- High temperature (HC) Insert - 200°F (93°C)



Premium Mud Pump Parts List

Full Open Mud Pump Valves & Seats

Premium is the leader in full open valve and seat supply; the first valves and seats in the industry rated for continuous service at 7500 psi. The Premium design incorporates many of the features proven in the Premium Well Service Valves & Seats



Made Strong To Last Long

The **Heavy Duty Valve** is a bonded urethane valve that will hold up to the most hostile drilling environment. The HD Valve will withstand High Pressure, High Temperature and High Solids.

Superior Performance, Long Run Life, Excellent Abrasion Resistance and Sealing Surface coupled with the highest rated chemically resistant urethane make the HD Valve an excellent choice for any drilling application.

Features :

- Unique urethane bonding anchor
- Reliable with the highest quality control
- High Temperature Urethane
- Excellent extrusion and abrasion resistance
- The strongest urethane bond of any valve for increased service life and a stronger seal
- Excellent chemical resistance
- 7500+ psi rated
- 300°F rated urethane
- Carburized and heat treated



Premium Mud Pump Parts List

Southwest ND Style Valve

The ND (Roughneck Style) Valve is a full open type valve that is fully interchangeable with Roughneck valves and seats. The full open design of the seat promotes even loading of the seat deck in the fluid end module. This valve is available with a standard polyurethane insert or a high temperature insert (add “HC” to the end of the valve part number. Ex: ND-7V2HC)

Design benefits include:

- Two piece welded design is better for high pumping speeds.
- Balanced insert and seat area for better sealing & loading characteristics
- Standard Insert – Temperature Up to 160°F (71°C) with Max Pressure of 7500 PSI
- High Temp. (HC) Insert - Temperature 300°F (149°C) with Max Pressure of 7500 PSI



Well Service Pump Valve

SPM Well Service Pump Valve is designed for maximum flow characteristics. SPM Well Service Pump Valve combines the strength of a forged alloy steel upper body with precision casting to minimize flow restriction and fluid turbulence.

- Low cost and superior performance
- Increased resistance to abrasion and extrusion



Fluid End Modules

Premium's high-strength, triple reduction, forged steel triplex fluid end modules are made from 4135 alloy steel, heat treated for a long working life, machined to perfection and packaged for delivery with anti-corrosion protection. The precision-made jewelry, like the exterior finish, reflects the superior quality inside.

Features:

- Completely interchangeable with OEM
- Premium forged alloy steel
- Made on CNC boring mills
- Strict computer controlled heat treat procedures
- Rigid inspection
- Rated for all drilling operations up to 7,500 psi

Premium offers a complete line of interchangeable fluid end modules and accessories for triplex mud pumps. Fluid ends and components are interchangeable to OEM's such as **National, Emsco, Gardner Denver, Bomco, Ideco, Weatherford, Drillmec, Ewco, Eweco, Baker, Texma, Mud King, Honghua, RG, RS, GPM, LS-NOW, Wirth** and **Oilwell**. We offer both standard OEM style replacement parts and Two piece "L" Shaped fluid ends. Manufactured to the highest quality, our products offer the best performance and durability. 5000psi & 7500psi available.



Premium Mud Pump Parts List

Part Number List for Popular Model Pumps

Mud Pump Models	Module with Stud	Module No Studs
Continental Emsco F-800 / 1000	6999-0086-02	6999-0087-02
Continental Emsco FB-1300 / 1600	6316-0357-00	6316-0356-00
Gardner Denver TEE	200PJH029B	200PJH029B-NS
Gardner Denver PAH	200PJH029B	200PJH029B-NS
Gardner Denver PZ-7/8/9	205PZL029D	205PZL029D-NS
Gardner Denver PZ-10/11	202PZL029B	202PZL029B-NS
Ideco T-800 / 1000	551-458	551-458-NS
Ideco T-1000 / 1300	551-122-01	551-122-01-NS
Oilwell A-850-PT / A-1100-PT	10300181	10300181 NS
Oilwell A-1400-PT / A-1700-PT	10300181	10300181 NS
Mud Pump Models	Module with Stud	Module No Studs
National 8-P-80 Discharge	1291280	1291281
National 8-P-80 Suction	1290338	1290339
National 9-P-100 Discharge	1293240	1293241
National 9-P-100 Suction	1290338	1290339
National 10-P-130 Discharge	1290335	1290336
National 10-P-130 Suction	1290338	1290339
National 12-P-160 Discharge	1292240	1292241
National 12-P-160 Suction	1292243	1292244
National 14-P-220 Discharge	1295601	1295602
National 14-P-220 Suction	1295604	1295603



Premium Mud Pump Parts List

The Material Properties of the Module

AISI 4130 LOW ALLOY STEEL FORGING API 6A 90K

- I. Forgings shall comply with ASTM A 322, Grade 4130 and ASTM A 788 general requirements for steel forgings
- II. Chemical composition

<u>Element</u>	<u>Weight Percent</u>
Carbon (C)	0.28 – 0.33
Manganese (Mn)	0.40 – 0.80
Phosphorus (P)	0.025 Maximum
Sulfur (S)	0.025 Maximum
Silicon (Si)	0.15 – 0.35
Copper (Cu)	0.35 Maximum
Nickel (Ni)	0.50 Maximum
Chromium (Cr)	0.80 to 1.10
Molybdenum (Mo)	0.15 – 0.25
Vanadium (V)	0.03 Maximum
Aluminum (Al)	0.05 Maximum
Iron (Fe)	Base

- III. Heat Treatment
 - A. Heat treatment shall conform to specifications required by latest revision of API 6A.
 - B. Required Mechanical Properties

Tensile Strength	110,000 psi (758 MPa) Minimum
Yield Strength, 0.2% Offset	90,000 psi (621 MPa) Minimum
Elongation, 2 inches	18 % Minimum
Reduction of Area	35 % Minimum
Hardness Range	229 – 255 HBN
Charpy Impact Test Temperature	- 20°F (- 29°C)
Charpy Absorbed Energy	20 Ft. - Lbs (27 J) Minimum Average
Longitudinal Direction 10 mm x 10 mm x 55 mm	14 Ft. - Lbs (19 J) Single Minimum

- IV. Material Testing and Traceability
 - a. Material Test Report required
 - b. Tests to be performed in accordance with ASTM A 370
 - c. Ultrasonic examination to be performed per ASTM A 388 on each forging
 - d. Forging to be free of cracks, voids, laminations, or other defects
 - e. Heat identification number to be steel impression stamped on each forging, see forge drawing for location



Premium Mud Pump Parts List

Warranty of Premium Modules

Premium warrants only to original purchaser from Premium or an Authorized Distributor, that if any Premium Triplex Mud Pump Fluid Module is found to have a crack or defect due to faulty material or workmanship, it will be replaced at no charge, FOB point of manufacture per the following : Warranty period begins at date of purchase.

STANDARD MODULES ARE WARRANTED 100% AGAINST CRACKS FOR 2 YEARS.

PREMIUM MODULES ARE WARRANTED 100 % AGAINST CRACKS FOR 3 YEARS

THIS WARRANTY SPECIFICALLY EXCLUDES:

- 1.) Normal wear and wash-outs in gasket areas and valve seat areas.
- 2.) Cracks or defects in any area which develop because of improper repairs by customer or customer representative(s).

Module Serial numberxxxxxxxxxx

Premium Part Number:xxxxxxxxxxxxxxxxxxxxxx

Customer:xxxxxxxxxx

Effective Date: December 10, 2008

By: _xxxx_____

Premium Provides Superior Value

Forging Material

Engineering Support

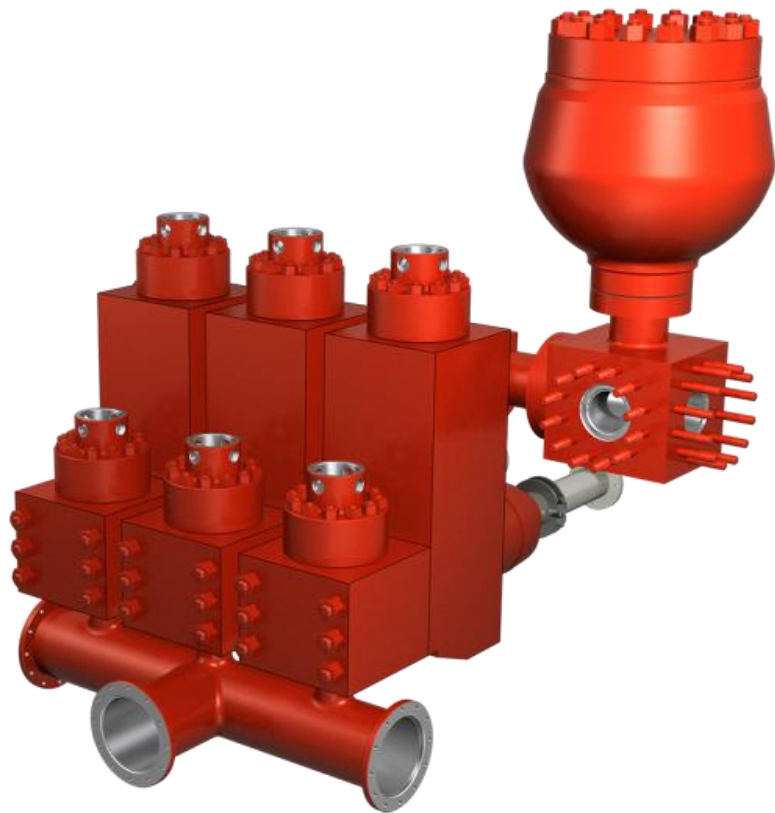
Module Alliance

Premium Computer Network/Instant messaging

Premium Distribution Network

Ultra Modern State of the Art Machining Centers

Warranty - Only 4 year warranty in the industry.



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Premium Mud Pump Parts List

“L” Shape Module for 7500 PSI Purpose

The market demand for 7500 psi land drilling has continued to increase and forecasted to remain strong as drillers and operators seek to complete wells more faster and more efficiently. **Premium** has the expertise and ability to convert existing 5000 psi pump systems with our 7500 psi fluid end upgrade. In addition to replacing the existing valve-over-valve module with our proven L-Shaped design, a typical conversion also includes an upgraded liner retainer system, discharge cross/strainer, high-pressure discharge manifold and 7500 psi pulsation dampener.

These modules create added value for contractors and operators by increasing the operating range of existing mud pump

Features/Benefits:

- Maximum rated working pressure: 7500 psi
- Individually forged, heat-treated alloy steel
- Greater resistance to cracking, longer life
- Hydro-statically tested and autofrettaged for material integrity
- Direct replacement for the current 7500 psi wide body module (same outside dimensions and same external and internal components except valve cover, bore seal and Falcon spring retainer)



Available 7500 P.S.I. Models include:

- **BOMCO F1600**
- **EMSCO FB1600**
- **GARDNER DENVER PZ11**
- **HH F1600**
- **NATIONAL 12P160**
- **OILWELL A1700PT**
- **IDECO T1600**



Premium Mud Pump Parts List

Fluid End Components

All modules and fluid end components offered by Premium are of high-strength, premium alloy steel, heat treated for a long working life and machined to precise tolerances. Each product is rated for all drilling operations up to 7500 PSI.

Premium's module accessories offer full lines of cylinder heads, valve lock covers, cylinder head threaded rings, cylinder head plugs, valve cover plugs, upper valve guides, lower valve guides, liner threaded rings, liner locks, wear plates and much more. The parts are precisely made to meet or exceed API-7K standards, and they are 100% exchangeable with OEM parts of all major pump models. Associated items include:

- Suction and Discharge modules
- Valve and Cylinder head plugs
- Valve and Cylinder head thread rings
- Valve and Cylinder head locks
- Valve guides
- Studs and nuts
- Strainers
- Rods: Piston, Extension, Sub
- Wear Plates
- Rod Clamps
- Gaskets
- Discharge Manifold
- Pulsation Dampener
- Safety/ Relief Valve
- Suction Manifold



Premium Mud Pump Parts List

Pulsation Dampeners & Stabilizers

Premium is proud to offer a full-line of Pulsation Dampener Solutions. Our PD series dampeners are available in 5 ,10 & 20 gallon models and are rated for 5000 or 7500psi.

They are available in 1500 psi, 3000 psi, and 5000 psi ratings. Replacement diaphragms and parts are offered for 10 and 20 gallon, Mattco and Hydril pulsation dampeners. Also available are stabilizers, bottom plate gaskets, charging valves, pressure gauges (0-6000 psi), plates, screws, and lock washers.

Features:

Single piece forged body (no circumferential welds), results in a stronger body and smoother inside surface

Inside surface machined to facilitate diaphragm movement

Field-replaceable top and bottom plates

Bottom plate connection to suit customer application

Diaphragms equipped with stabilizer plate to eliminate folding, trapping of fluids, resulting in enhanced life

Nitrile (NBR) and Hydrogenated Nitrile (HNBR) diaphragms standard

Diaphragms can be replaced without removing the unit from the Line

Performance:

Flaw detection: conform to API Spec 16A standard requirements

Pressure index: nominal working pressure of hydraulic pressure is 34.5 MPa(5000 PSI), highest

Test pressure: 51.7 MPa (7500 PSI); Nitrogen test pressure is 10.3 Mpa (1500 PSI)



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FLUID END MODULE

AND ACCESSORIES

NATIONAL

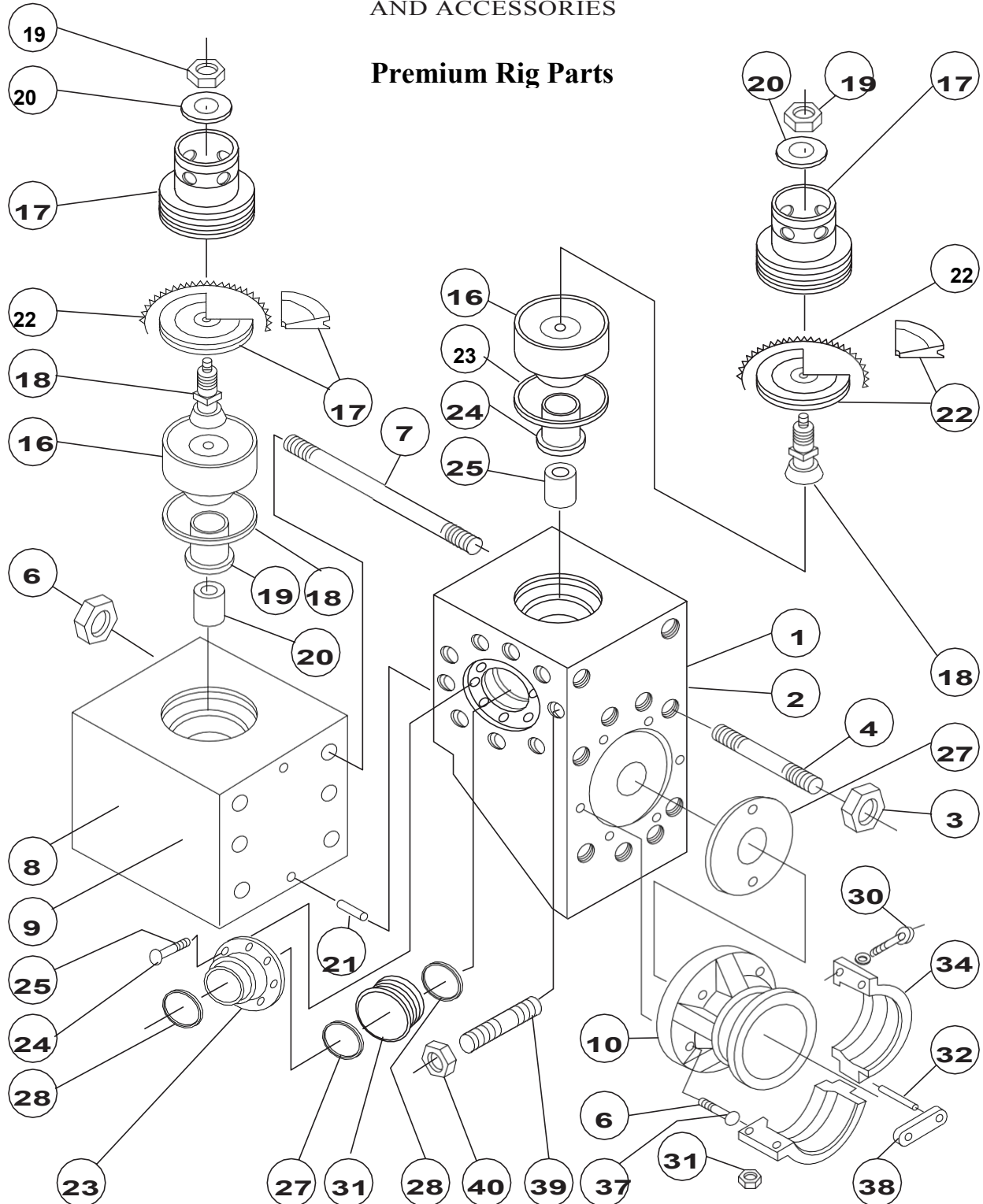
8 - P - 80

Item	Premium Part Number	Description	Qty per Pump
1	P-1291280	Discharge Module Studded, (incl. Items 2-10)	3
2	P-1291281	Discharge Module, Only	3
3	P-6300180	Nut, 1 1/8" Hvy. Hex	24
4	P-2408026	Stud, 1 1/8" X 5 3/4", Discharge to Frame	24
5	P-6300120	Nut, 3/4" Hvy. Hex	18
6	P-2408025	Stud, 3/4" X 5", Discharge to Liner Bushing	18
7	P-6300241	Nut, 1 1/2 8UN-3A" Hvy. Hex	18
8	P-2408034	Stud, 1 1/2" X 19 1/8", Discharge to Suction	18
9	P-6300220	Nut, 1 3/8 Hvy. Hex	36
10	P-2408019	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
11	P-1290338	Suction Module Studded, (incl. Items 12-14)	3
12	P-6300220	Nut, 1 3/8 Hvy. Hex	36
13	P-2408019	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
14	P-1290339	Suction Module, Only	3
10	P-1291165	Bushing, Liner	3
16	P-1290174	Seal Retainer	6
17	P-1290307	Valve Cover	6
18	P-1290178	Screw, Wedge Adjusting	6
19	P-6300160	Nut, 1" Hvy. Hex	6
20	P-1290315	Washer, Wedge Adjusting Screw	6
	P-1290308	Ring, Threaded	6
22	P-G-1290376	Wedge Assembly	6
23	P-1540126	Gasket, Valve Cover	6
24	P-1292140	Holder, Valve Guide Insert	6
25	P-1292141	Insert, Valve Guide	6
21	P-6511416	Pin 7/8 X 2 Dowell	6
27	P-1290357	Plate, Wear	3
28	P-1290324	Connector, Discharge	2
29	P-7000305-11	Screw 1/2 X 1 1/2 Hex Head	16
30	P-7619050	Washer, Lock 1/2"	16
31	P-1290343	Adapter, Discharge Connector	2
32	P-2410031-348	Packing, Rectangular	2
33	P-2410031-427	Packing, Rectangular	4
34	P-1291166	Clamp, Liner	3
35	P-7000403-11	Screw 5/8 X 3 1/2 Hex Hd. w/ Lock Washer	6
36	P-6309100	Nut, 5/8" Lock Type	6
37	P-12911-69	Pin, Liner Clamp	3
38	P-12911-68	Connector, Liner Clamp	3
39	P-2402560	Stud 1 1/4" x 6 1/4"	16
40	P-6300200	Nut, 1 1/4" Hvy. Hex	16

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FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

NATIONAL

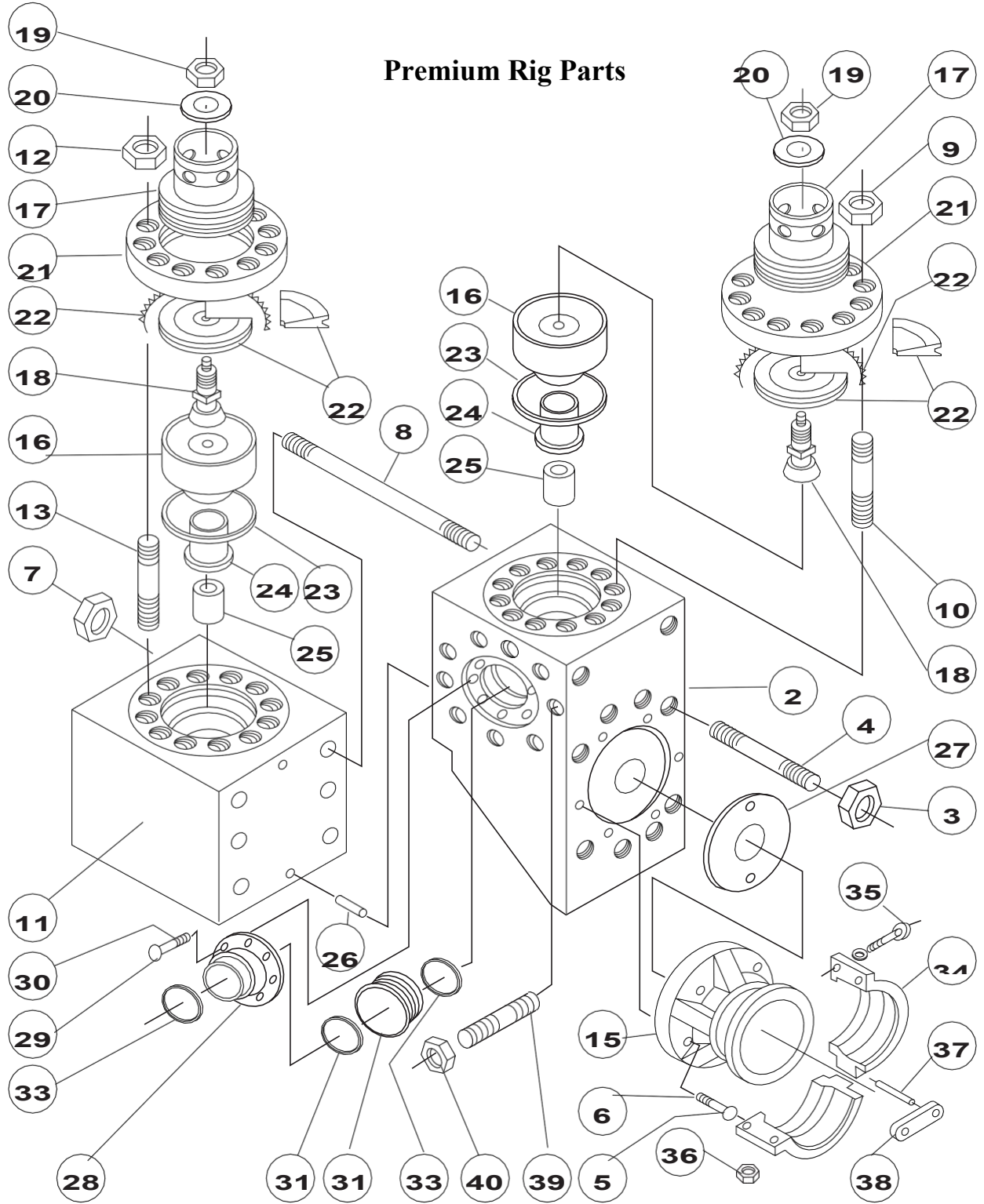
9 - P - 100

Item	Premium Part Number	Description	Qty per Pump
1	P-1293240	Discharge Module Studded, (incl. Items 2-10)	3
2	P-1293241	Discharge Module, Only	3
3	P-6300200	Nut, 1 1/2" Hvy. Hex	24
4	P-2408030	Stud, 1 1/4" X 6 ", Discharge to Frame	24
5	P-6300160	Nut, 1" Hvy. Hex	18
6	P-2408018	Stud, 1 " X 5 7/8", Discharge to Liner Bushing	18
7	P-6300241	Nut, 1 1/2"-8UN-3A Hvy. Hex	18
8	P-2408034	Stud, 1 1/2" X 19 1/8", Discharge to Suction	18
9	P-6300220	Nut, 1 3/8 Hvy. Hex	36
10	P-2408019	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
11	P-1290338	Suction Module Studded, (incl. Items 12-14)	3
	P-1290339	Suction Module, Only	3
12	P-6300220	Nut, 1 3/8" Hvy. Hex	36
13	P-2408027	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
15	P-1293165	Bushing, Liner	3
16	P-1290174	Seal Retainer	6
17	P-1290307	Valve Cover	6
18	P-1290178	Screw, Wedge Adjusting	6
19	P-6300160	Nut, Wedge Adjusting	6
20	P-1290315	Washer, Wedge Adjusting Screw	6
21	P-1290308	Ring, Threaded	6
22	P-G-1290376	Wedge Assembly	6
23	P-1540126	Gasket, Valve Cover	6
24	P-1292140	Holder, Valve Guide Insert	6
25	P-1292141	Insert, Valve Guide	6
26	P-6511416	Pin Dowell	6
27	P-1290357	Plate, Wear	3
28	P-1290342	Connector, Discharge	2
29	P-7000-305-11	Screw Hex Head	16
30	P-7619050	Washer, Lock	16
31	P-1292253	Adapter, Discharge Connector	2
32	P-2410031-433	Packing, Rectangular	2
33	P-2410031-437	Packing, Rectangular	4
34	P-1293167	Clamp, Liner	3

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FLUID END MODULE AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

NATIONAL

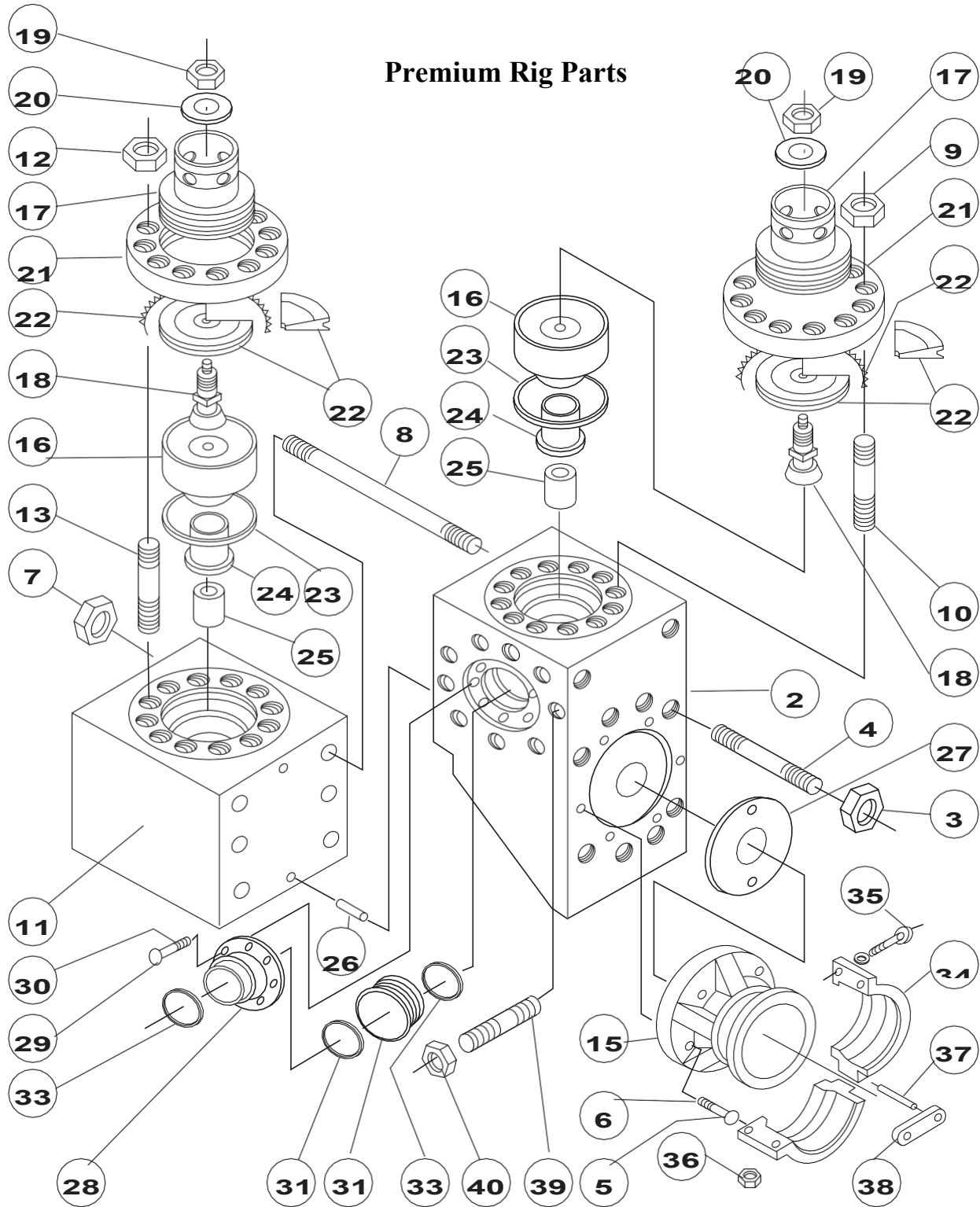
10 - P - 130

Item	Premium Part Number	Description	Qty per Pump
1	P-1290335	Discharge Module Studded, (incl. Items 2-10)	3
2	P-1290336	Discharge Module, Only	3
3	P-6300240	Nut, 1 1/2" Hvy. Hex	24
4	P-2408020	Stud, 1 1/2" X 6 7/8", Discharge to Frame	24
5	P-6300160	Nut, 1" Hvy. Hex	18
6	P-2408018	Stud, 1 " X 5 7/8", Discharge to Liner Bushing	18
7	P-6300241	Nut, 1 1/2"-8UN-3A Hvy. Hex	18
8	P-2408034	Stud, 1 1/2" X 19 1/8", Discharge to Suction	18
9	P-6300220	Nut, 1 3/8 Hvy. Hex	36
10	P-2408019	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
11	P-1290338	Suction Module Studded, (incl. Items 12-14)	3
12	P-1290339	Suction Module, Only	3
13	P-6300220	Nut, 1 3/8" Hvy. Hex	36
14	P-2408027	Stud, 1 3/8" X 7 1/4" Top, Thread Ring	36
15	P-1293165	Bushing, Liner	3
16	P-1290174	Seal Retainer	6
17	P-1290307	Valve Cover	6
18	P-1290178	Screw, Wedge Adjusting	6
19	P-6300160	Nut, Wedge Adjusting	6
20	P-1290315	Washer, Wedge Adjusting Screw	6
21	P-1290308	Ring, Threaded	6
22	P-G-1290376	Wedge Assembly	6
23	P-1540126	Gasket, Valve Cover	6
24	P-1292140	Holder, Valve Guide Insert	6
25	P-1292141	Insert, Valve Guide	6
26	P-6511416	Pin Dowell	6
27	P-1290357	Plate, Wear	3
28	P-1292252	Connector, Discharge	2
29	P-7000-305-11	Screw Hex Head	16
30	P-7619050	Washer, Lock	16
31	P-1292253	Adapter, Discharge Connector	2
32	P-2410031-433	Packing, Rectangular	2
33	P-2410031-437	Packing, Rectangular	4
34	P-1292167	Clamp, Liner	3

10 - P - 130

FLUID END MODULE AND ACCESSORIES

Premium Rig Parts



NATIONAL

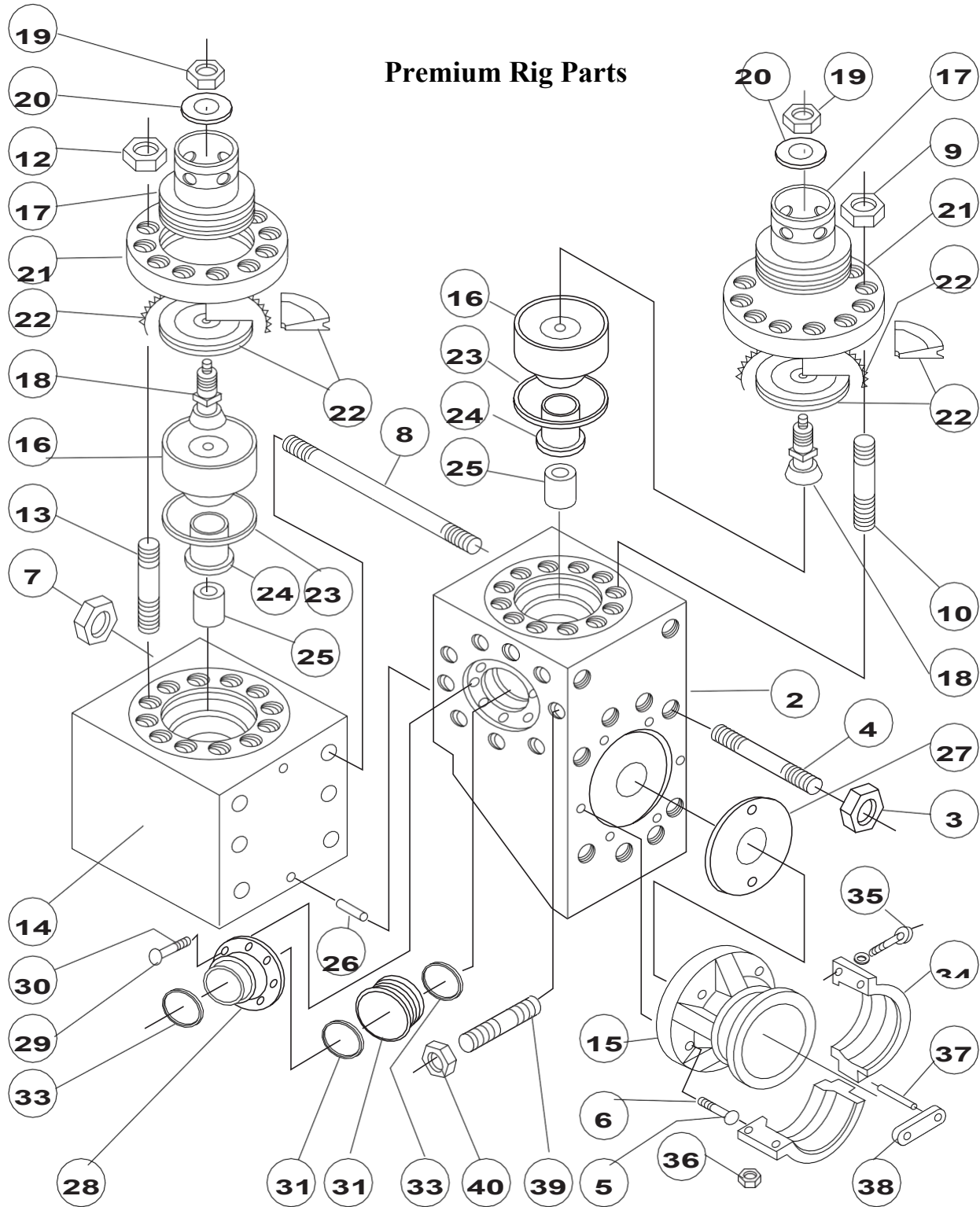
1 2 - P - 160

Item	Premium Part Number	Description	Qty per Pump
1	P-1292240	Discharge Module Studded, (incl. Items 2-10)	3
2	P-1292241	Discharge Module, Only	3
3	P-6300220	Nut, 1 3/8" Hvy. Hex	24
4	P-2408029	Stud, 1 3/8" X 6 3/4", Discharge to Frame	24
5	P-6300180	Nut, 1 1/8" Hvy. Hex	18
6	P-2408028	Stud, 1 1/8" X 6 3/8", Discharge to Liner Bushing	18
7	P-6300281	Nut, 1 3/4" Hvy. Hex	18
8	P-2408033	Stud, 1 3/4" X 21 1/8", Discharge to Suction	18
9	P-6300240	Nut, 1 1/2 Hvy. Hex	36
10	P-2408027	Stud, 1 1/2" X 7 7/8" Top, Thread Ring	36
11	P-1292243	Suction Module Studded, (incl. Items 12-14)	3
12	P-1292244	Suction Module, Only	3
13	P-6300240	Nut, 1 1/2 Hvy. Hex	36
14	P-2408027	Stud, 1 1/2" X 7 7/8" Top, Thread Ring	36
15	P-1293165	Bushing, Liner	3
16	P-1292174	Seal Retainer	6
17	P-1292172	Valve Cover	6
18	P-1292178	Screw, Wedge Adjusting	6
19	P-6300182	Nut, Wedge Adjusting	6
20	P-1292171	Washer, Wedge Adjusting Screw	6
21	P-1292176	Ring, Threaded	6
22	P-G-1292268	Wedge Assembly	6
23	P-1540127	Gasket, Valve Cover	6
24	P-1292140	Holder, Valve Guide Insert	6
25	P-1292141	Insert, Valve Guide	6
26	P-6511416	Pin Dowell	6
27	P-1292266	Plate, Wear	3
28	P-1292252	Connector, Discharge	2
29	P-7000-305-11	Screw Hex Head	16
30	P-7619050	Washer, Lock	16
31	P-1292253	Adapter, Discharge Connector	2
32	P-2410031-433	Packing, Rectangular	2
33	P-2410031-437	Packing, Rectangular	4
34	P-1292167	Clamp, Liner	3
35	P-7000491-10	Screw 7/8 X 4 1/2" Hex Hd. w/ Lock Washer	6
36	P-6309140	Nut, 7/8" Lock Type	6
37	P-1292169	Pin, Liner Clamp	3
38	P-1292168	Connector, Liner Clamp	3
39	P-2408015	Stud 1 1/2" x 7 1/2"	16
40	P-6300240	Nut, 1 1/2" Hvy. Hex	16

12 - P - 160

FLUID END MODULE AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

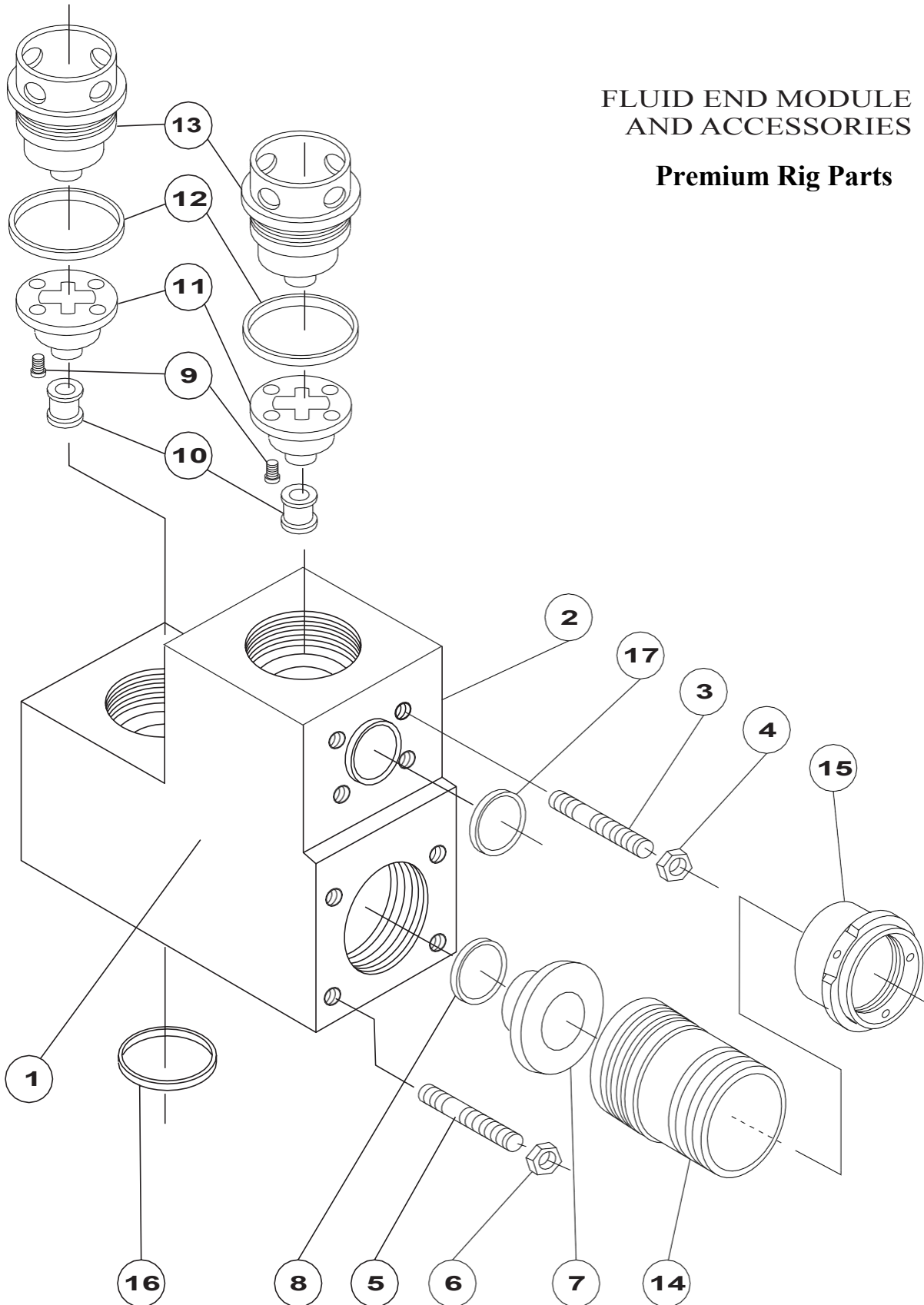
OILWELL A-600-PT

Item	Premium Part Number	Description	Qty per Pump
1	P-10-304-052	Discharge Module Studded, (incl. Items 2-6)	3
2		Discharge Module , Only	3
3	P-45-810-063	Stud, 1 1/4 - 8 X 4 1/2"	12
4	P-16-700-025	Nut, Hvy. Hex 1 1/4 - 8	12
5	P-45-810-020	Stud, 1 1/8 - 8 X 5 1/4"	12
6	P-10-200-004	Nut, 1 1/8 Hvy. Hex	12
7	P-10-305-110	Wear Plate, Liner	6
8	P-20-100-014	Gasket, Liner Wear Plate	6
9	P-75-632-135	Cap Screw, Self Locking 1/2" - 13 X 1"	24
10	P-20-200-004	Bushing, Valve Guide	6
11	P-10-304-054	Valve Guide	6
12	P-10-268-004	Gasket, Valve Cover	6
13	P-10-305-097	Valve Cover	6
14	P-10-305-037	Liner Adapter	3
15	P-10-305-037	Nut, Liner Adapter	3
16	P-10-305-103	Seal, Suction Manifold	3
17	P-08-568-023	Seal, Discharge Manifold	3

A-600-PT

FLUID END MODULE AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

OILWELL

A-850-PT, A-1100-PT, A-1400-PT & A-1700-PT

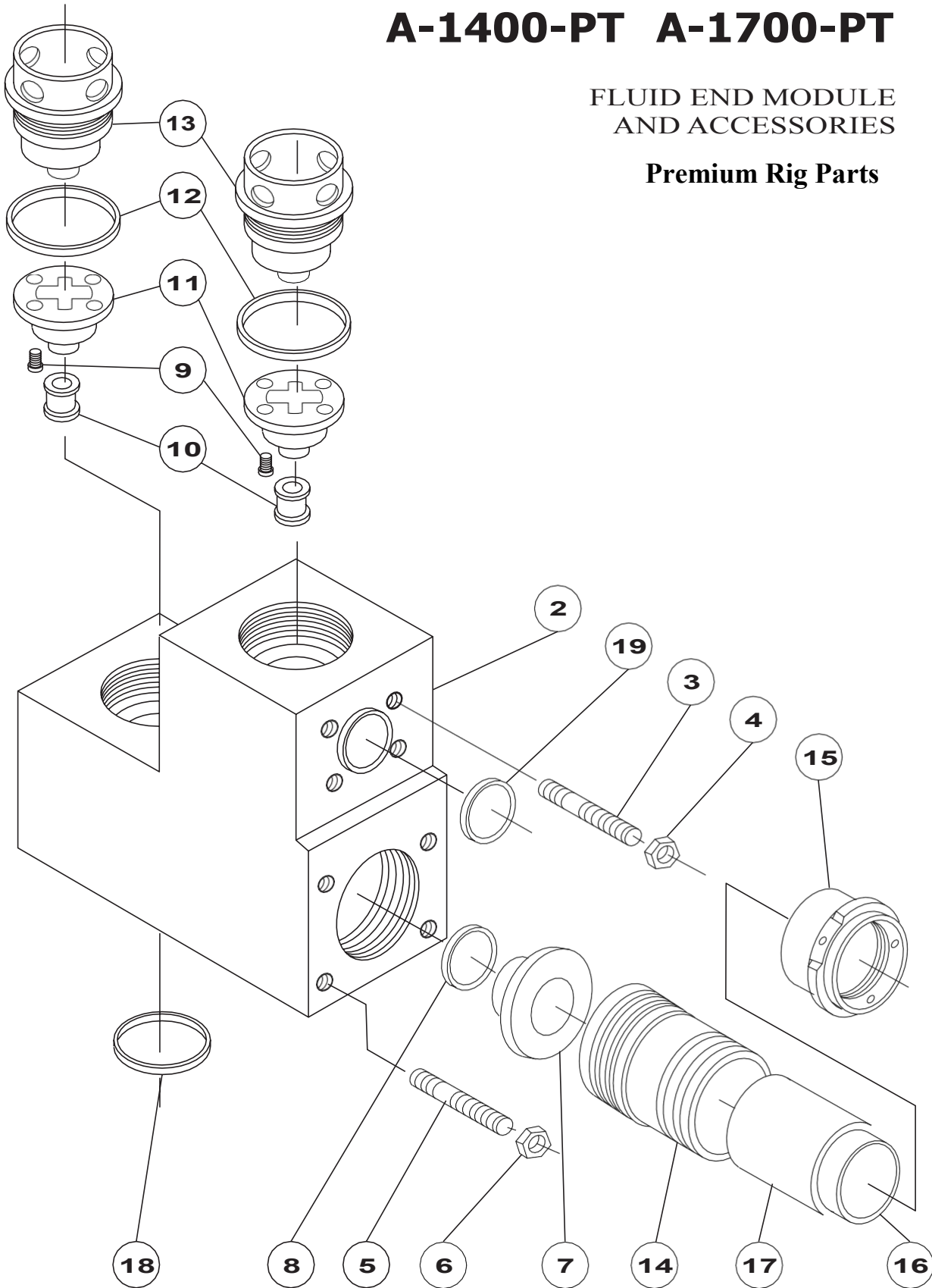
Item	Premium Part Number	Description	Qty per Pump
1	P-10-300-181	Discharge Module Studded, (incl. Items 2-6)	3
2		Discharge Module , Only	3
3	P-49-001-292	Stud, 1 3/8 - 8 X 4 1/2	12
4	P-75-511-754	Nut, Hvy. Hex 1 3/8 - 8	12
5	P-49-002-837	Stud, 1 3/4 - 8 X 7 1/2	12
6	P-75-510-126	Nut, 1 3/4 - 8 Hvy. Hex	12
7	P-10-300-184	Wear Plate, Liner	6
8	P-20-100-008	Gasket, Liner Wear Plate	6
9	P-75-632-234	Cap Screw, Self Locking	24
10	P-20-200-004	Bushing, Valve Guide	6
11	P-10-300-004	Valve Guide	6
12	P-10-300-011	Gasket, Valve Cover	6
13	P-10-300-005	Valve Cover	6
14	P-10-300-183	Liner Adapter	3
15	P-10-303-092	Nut, Liner Adapter (A850-PT, A1100-PT only)	3
	P-10-300-182	Nut, Liner Adapter (A1400-PT, A1700-PT only)	3
16	P-10-300-185	Spacer Ring, Liner	3
17	P-10-303-091 *	Centering Sleeve, Liner (A850-PT, A1100-PT only)	3
	P-10-300-186 **	Centering Sleeve, Liner (A1400-PT, A1700-PT only)	3
18	P-10-300-201	Seal, Suction Manifold	3
19	P-99-609-345	Seal, Discharge Manifold	3



A-850-PT A-1100-PT A-1400-PT A-1700-PT

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

EMSCO

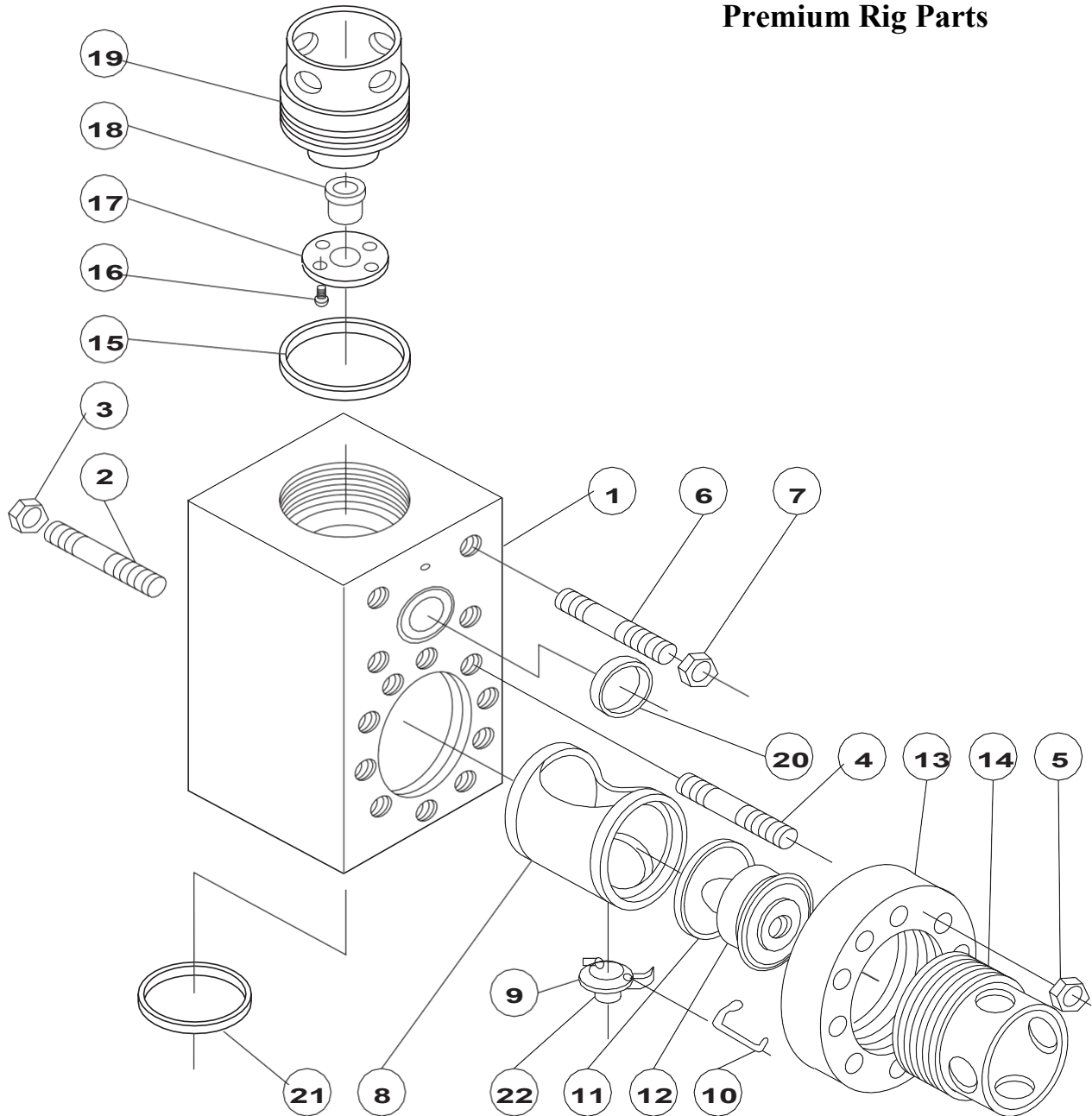
F-350, F- 500 & F- 650

Item	Premium Part Number	Description	Qty per Pump
1	P-6318-0151-00	Fluid Module Studded	3
2	P-7507-2205-00	Stud, Frame	18
3	P-7601-0630-17	Nut Stud Frame	18
4	P-7507-3402-00	Stud, Threaded Ring	30
5	P-7601-0630-26	Nut Threaded Ring	30
6	P-7507-3407-00	Stud, Discharge Manifold	12
7	P-7601-0630-26	Nut Discharge Manifold	12
8	P-6318-0148-00	Liner Cage	3
9	P-6318-0177-00	Guide, Lower Valve (with Bushing)	3
10	P-6318-0153-00	Clip, Locking (for Lower valve Guide)	3
11	P-7602-2200-34	Gasket, Liner	6
12	P-6318-0158-00	Cylinder Head Plug	3
13	P-6318-0130-00	Ring, Threaded Cylinder Head	3
14	P-6318-0157-00	Cap, Threaded Cylinder Head	3
15	P-6310-0084-00	Gasket, Valve Cover	3
16	P-7501-0057-00	Screw, Retainer (Upper)	12
17	P-6310-0133-00	retainer Plate (Upper)	3
18	P-6397-0602-00	Guide, Upper Valve	3
19	P-6310-0016-01	Cover, Valve Pot	3
20	P-7602-1600-23	Gasket, Discharge Manifold	3
21	P-7602-1600-33	Gasket, Suction Manifold	3
22	P-6318-0155-00	Bushing, Lower Valve Guide	3

F-350 F-500 F-650

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

EMSCO

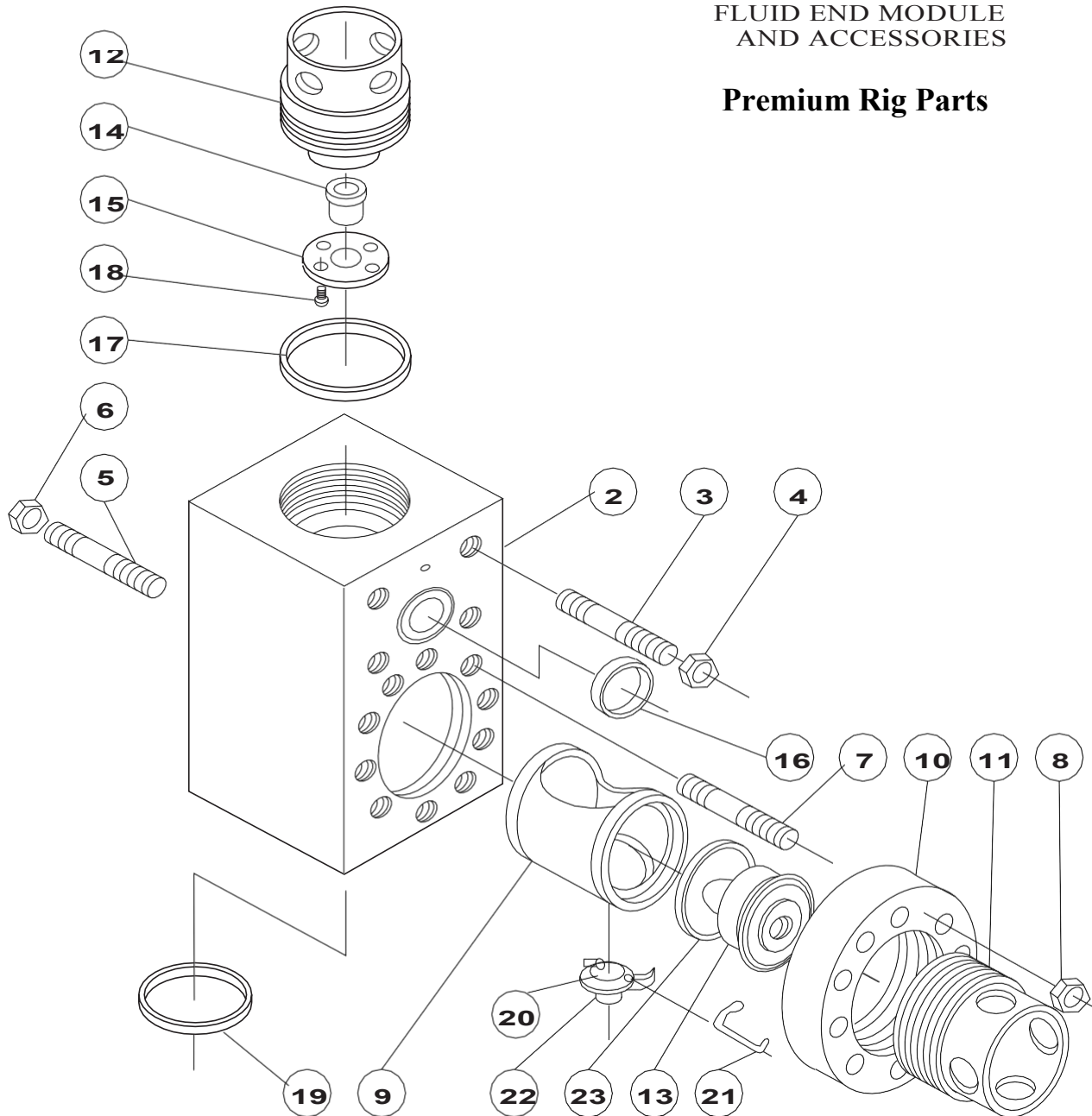
F- 800 & F- 1000

Item	Premium Part Number	Description	Qty per Pump
1	P-6999-0086-02	Fluid Module Studded, (incl. Items 2-8)	3
2	P-6999-0087-02	Fluid Module , Only	3
3	P-7507-2108-00	Stud, 1 1/4	12
4	P-7601-0630-24	Nut, 1 1/4 - 8 Hvy. Hex	12
5	P-7507-2205-00	Stud, 1 1/2	18
6	P-7601-0630-17	Nut, 1 1/2 - 8 Hvy. Hex	18
7	P-7507-2150-00	Stud, 1 3/8	30
8	P-7601-0630-26	Nut, 1 3/8 - 8 Hvy. Hex	30
9	P-6319-0026-00	Liner Cage	3
10	P-6999-0089-00	Thread Ring	3
11	P-6319-0031-00	Cylinder Head	3
12	P-6319-0027-00	Valve Cover	3
13	P-6319-0090-00	Cylinder Head Plug	3
14	P-6397-0575-00	Valve Guide, Upper	3
15	P-6397-0603-00	Retainer, Valve Guide	3
16	P-7602-1610-46	O-Ring, AN 6230-19	3
17	P-6319-0076-00	Seal, Valve Cover	3
18	P-7501-0051-00	Screw, Valve Guide Retainer	3
19	P-7602-1600-61	O-Ring, Suction Manifold	3
20	P-6319-0096-00	Bushing, Lower Valve Guide	3
21	P-6319-0089-00	Locking Clip, Lower Valve	3
22	P-6319-0087-00	Lower Valve Guide	3
23	P-7602-2200-32	Liner Seal	3

F-800 F-1000

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

EMSCO

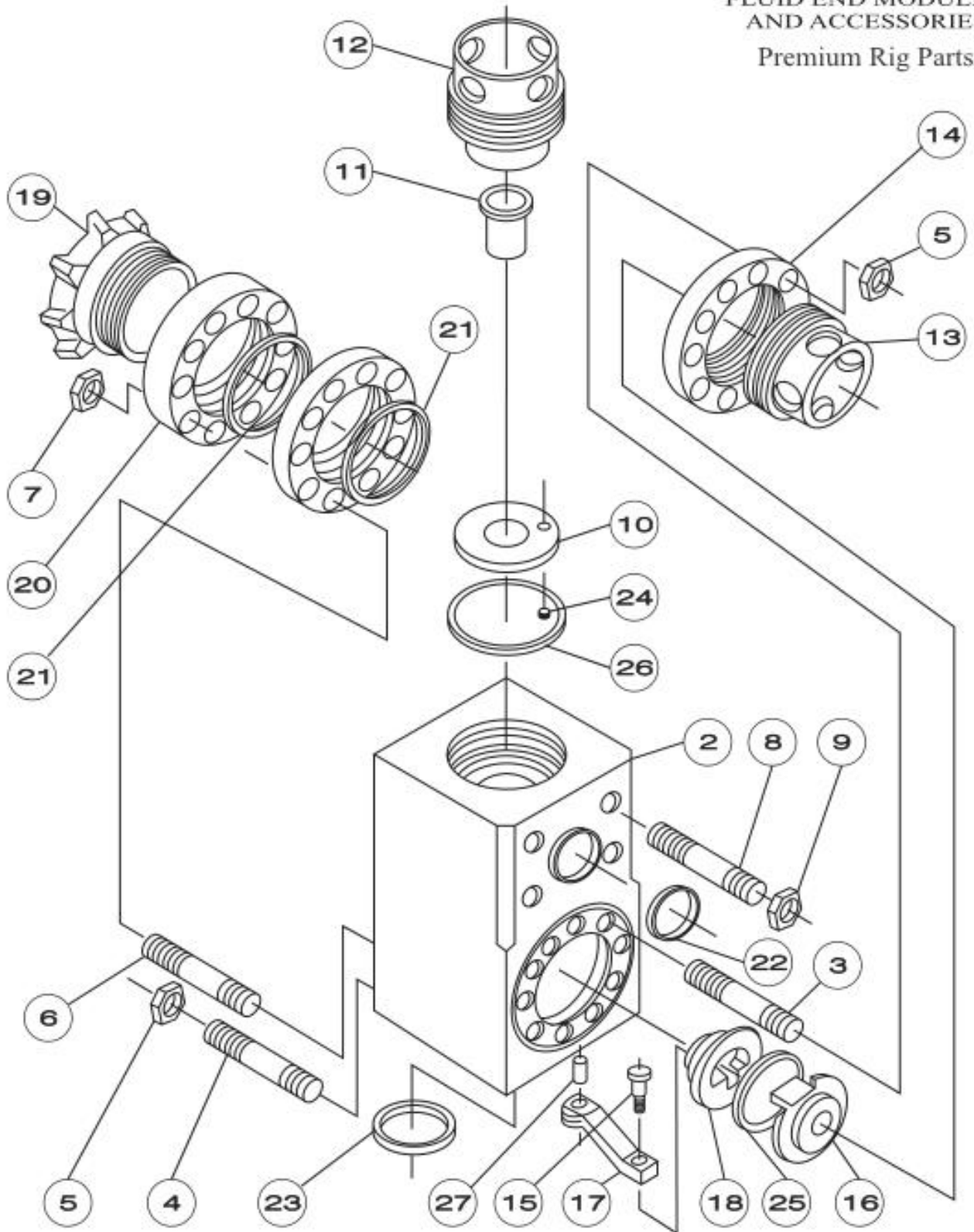
FB - 1300 & FB - 1600

Item	Premium Part Number	Description	Qty per Pump
1	P-6316-0357-00	Fluid Module Studded, (incl. Items 2-9)	3
2	P-6316-0356-00	Fluid Module, Only	3
3	P-7507-2210-00	Stud, 1 1/2 - 8 X 8 5/8	30
4	P-7507-2201-00	Stud, 1 1/2 - 8 X 6 7/8	18
5	P-7601-0630-17	Nut, 1 1/2 - 8 Hvy. Hex	48
6	P-7507-2013-00	Stud, 1 - 8 X 9	36
7	P-7601-0610-18	Nut 1 - 8 Stud. Hex	36
8	P-7507-2108-00	Stud, 1 1/4 - 8 x 9 1/2	12
9	P-7601-0630-24	Nut, 1 1/4 - 8 Hvy. Hex	12
10	P-6397-0603-00	Retainer, Valve Guide	3
11	P-6397-0575-00	Upper Valve Guide	3
12	P-6316-0039-00	Valve Cover	3
13	P-6316-0362-00	Cylinder Head	3
14	P-6316-0361-00	Cylinder Thread Ring	3
15	P-6316-0360-00	Lock Bolt, Valve Guide	3
16	P-6316-0364-00	Cylinder Head Plug	3
17	P-6316-0354-00	Low Valve Guide & Bushing	3
18	P-6316-0363-00	Alignment Ring	3
19	P-6316-0367-00	Liner Lock	3
20	P-6316-0366-00	Liner Thread Ring	3
21	P-6316-0373-00	Seal	3
22	P-7602-1600-25	Seal, Discharge Manifold	3
23	P-7602-1600-61	Seal, Suction Manifold	3
24	P-7501-0051-00	Retainer Screw	12
25	P-6316-0369-00	Head Seal	3
26	P-6316-0092-00	Seal, Valve Pot Cover	3
27	P-6316-0096-00	Valve Guide Bushing	3
28	P-6316-0365-00	Wear Plate	3

FB-1300 FB-1600

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

GARDNER DENVER

PZ- 7, PZ-8 & PZ-9

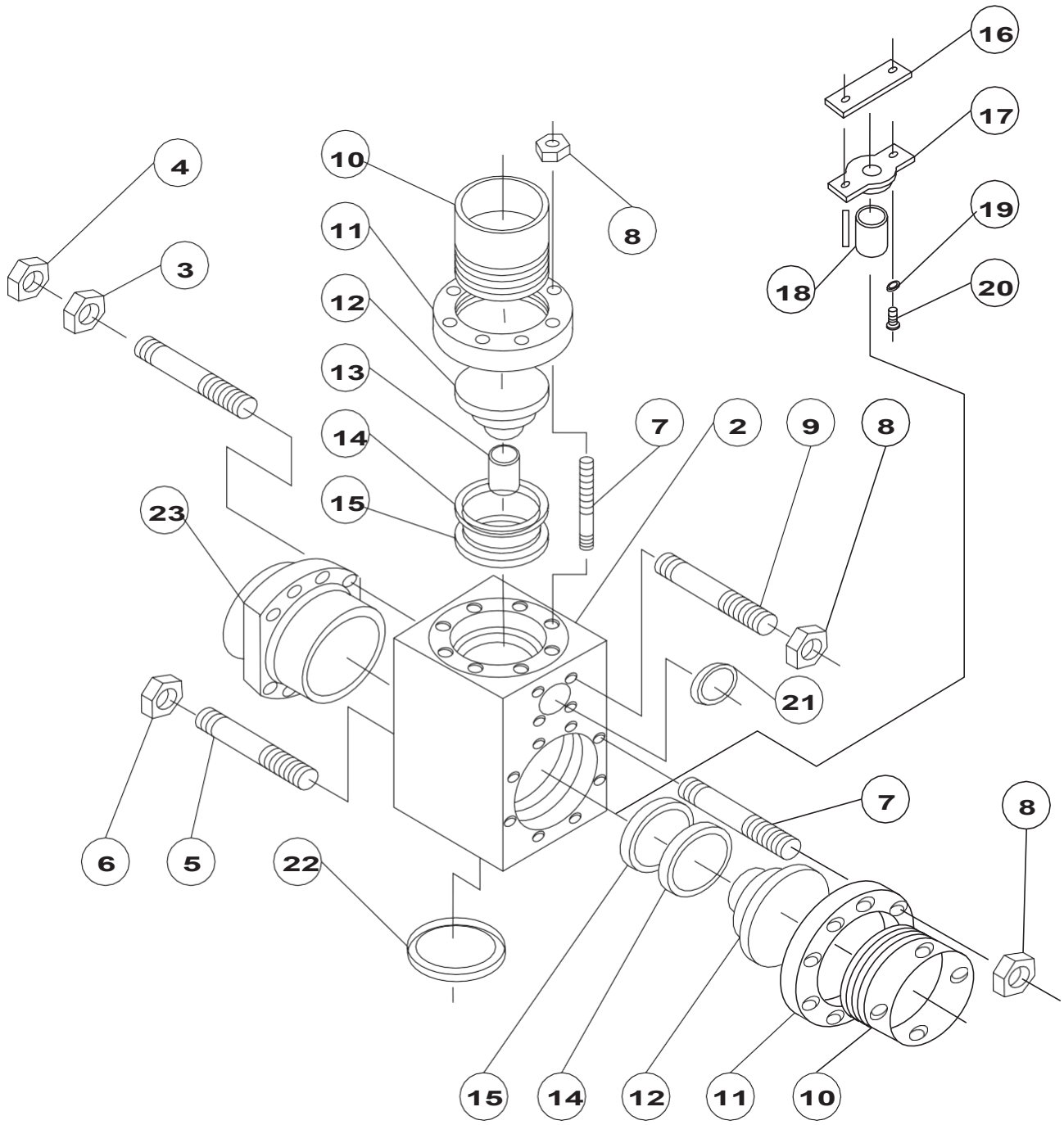
Item	Premium Part Number	Description	Qty per Pump
1	P-205PZL029D	Fluid Module Studded, (incl. Items 2-9)	3
2		Fluid Module , Only	3
3	P-79L188	Stud, Module to Frame & Liner Clamp	24
4	P-750B38	Nut, Module to Frame & Liner Clamp	48
5	P-79L73	Stud, Module to Frame	12
6	P-750AQ30	Nut, Module to Frame	12
7	P-79AL6	Stud, Valve Cover to Module	48
8	P-50B34	Nut, Valve Cover to Module & Module to Discharge	60
9	P-202PZL110	Stud, Module to Discharge Manifold	12
10	P-2011857	Cap. Valve Lock	6
11	P-2011699	Thread Ring	6
12	P-2011860	Cover, Valve	6
13	P-2007674	Bushing, Valve Guide, Discharge	3
14	P-2011862	Gasket, Valve Cover	6
15	P-2011861	Ring, Retaining	6
	P-2011706	Valve Guide Assembly (incl. Items 16-20)	3
16	P-2011701	Plate, Retainer	1
17	P-2011700	Valve Guide, Suction	1
18	P-2007674	Bushing, Valve Guide, Suction	1
19	P-95W2	Lock Washer, Valve Guide	2
20	P-655EE06S	Screw, Valve Guide	2
21	P-25A135	Gasket, Discharge Manifold to Module	3
22	P-25G41	Gasket, Suction Manifold to Module	3
23	P-IPV14	Liner Clamp	3



PZ-7 PZ-8 PZ-9

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE AND ACCESSORIES

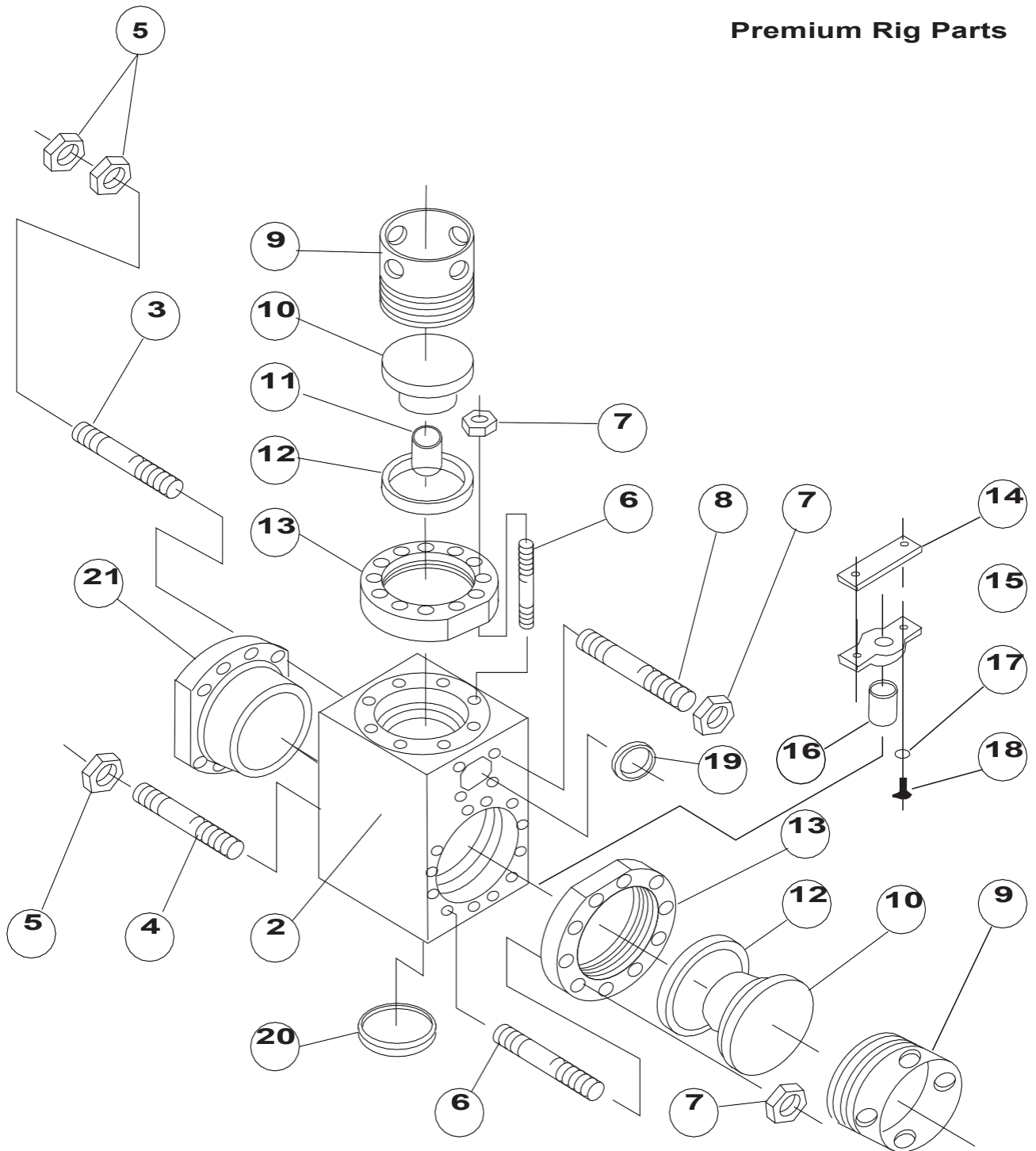
GARDNER DENVER PZ- 10 & PZ-11

Item	Premium Part Number	Description	Qty per Pump
1	P-202PZL029B	Fluid Module Studded, (incl. Items 2-9)	3
2		Fluid Module , Only	3
3	P-201PZL110	Stud, Long, Module to Frame	24
4	P-205PZL110	Stud, Short, Module to Frame	24
5	P-50B36	Nut, Module to Frame & Liner Clamp	60
6	P-204PZL110	Stud, Valve Cover to Module	72
7	P-50B34	Nut, Valve Cover to Module & Module to Discharge	84
8	P-202PZL110	Stud, Module to Discharge Manifold	12
9	P-200PZL587	Cap. Valve Lock	6
10	P-200PZL147	Cover, Valve	6
11	P-2007674	Bushing, Valve Guide, Discharge	3
12	P-204PZL715	Gasket, Valve Cover	6
13	P-200PZL387	Thread Ring	6
	P-200PZL483A	Valve Guide Assembly (incl. Items 14-18)	3
14	P-2011701	Plate, Retainer	1
15	P-2011700	Valve Guide, Suction	1
16	P-2007674	Bushing, Valve Guide, Suction	1
17	P-95W2	Lock Washer, Valve Guide	2
18	P-655EE06S	Screw, Valve Guide	2
19	P-25A135	Gasket, Discharge Manifold to Module	3
20	P-25G41	Gasket, Suction Manifold to Module	3
21	P-200PZL455	Liner Clamp	3

PZ-10 PZ-11

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE

AND ACCESSORIES

IDECO

T- 500,T- 800&T- 1000

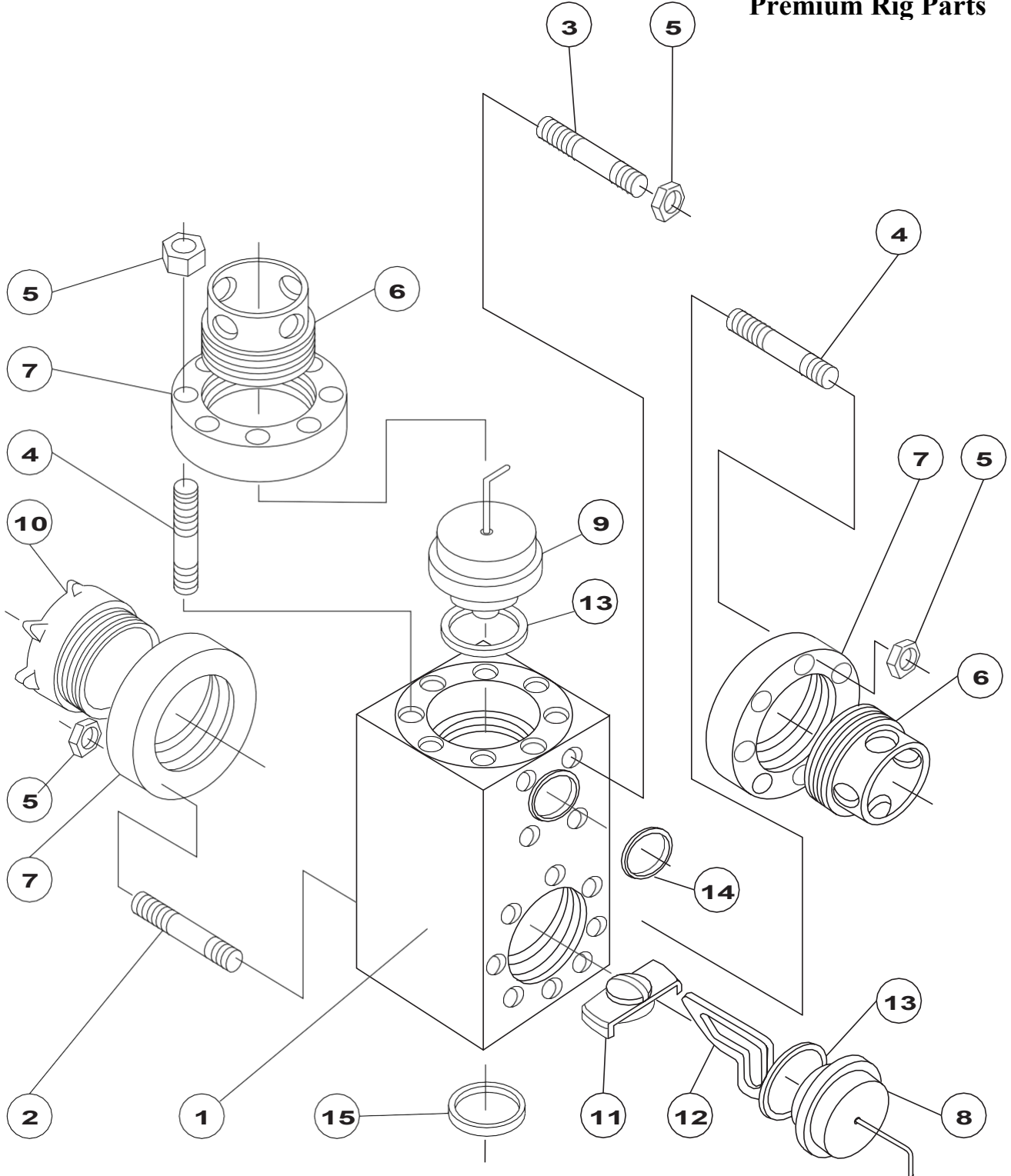
Item	PREMIUM Part Number	Description	Qty per Pump
1	P-551-458	Fluid Module Only	3
2	P-551-410-01	Stud	24
3	P-551-410-02	Stud	12
4	P-551-410-03	Stud	48
5	P-IN-416	Nut	84
6	P-551-405-04	Threaded Plug Retainer	6
7	P-551-405-03	Thread Ring	9
8	P-551-422-02	Cylinder Head Plug	3
9	P-551-422-03	Cylinder Head Plug (Top)	3
10	P-551-405-05	Threaded Liner Retainer	3
11	P-551-405-07	Lower Valve Guide	3
12	P-551-422-04	Lower Valve Guide Reatiner	3
13	P-BMT-1669-63-09	Plug & Liner Seal	9
14	P-IO-548	Seal, Discharge	3
15	P-IO-521	Seal, Suction	3



T-500 T-800 T-1000

FLUID END MODULE
AND ACCESSORIES

Premium Rig Parts





FLUID END MODULE AND ACCESSORIES

IDECO T- 1300 & T- 1600

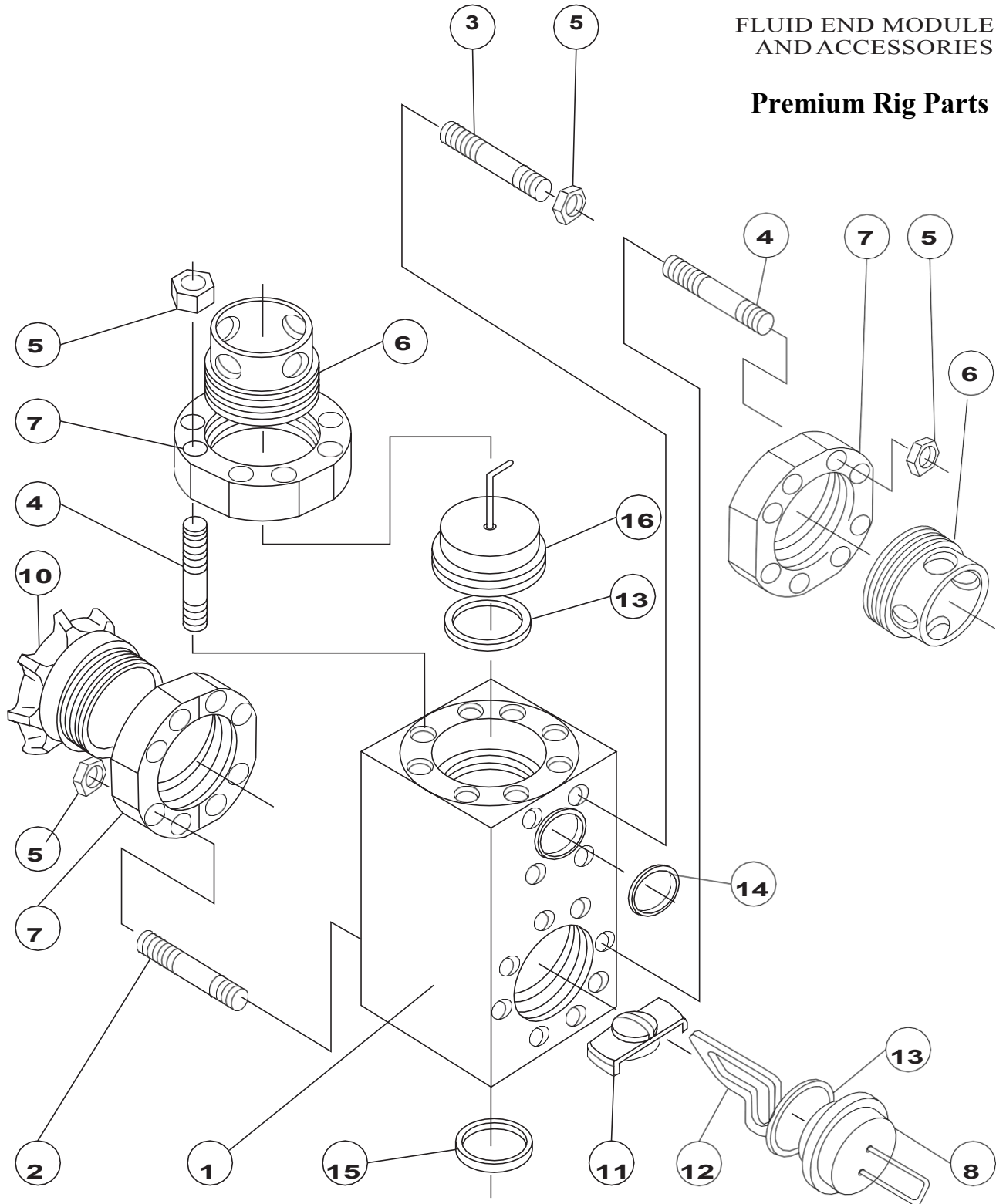
Item	Premium Part Number	Description	Qty per Pump
1	P-551-122-01	Fluid Module Only	3
2	P-551-110-01	Stud	24
3	P-551-110-02	Stud	12
4	P-551-110-03	Stud	48
5	P-IN-415	Nut	84
6	P-551-105-04	Threaded Plug Retainer	3
7	P-551-105-03	Thread Ring	3
8	P-551-122-02	Cylinder Head Plug	9
9	P-551-122-03	Cylinder Head Plug (Top)	6
10	P-551-105-05	Threaded Liner Retainer	3
11	P-551-105-07	Lower Valve Guide	3
12	P-551-105-08	Lower Valve Guide Reatiner	3
13	P-BMT-1669-63-08	Plug & Liner Seal	9
14	P-IO-548	Seal, Discharge	3
15	P-IO-507	Seal, Suction	3
16	P-551-105-06	Upper Valve Guide	3



T-1300 T-1600

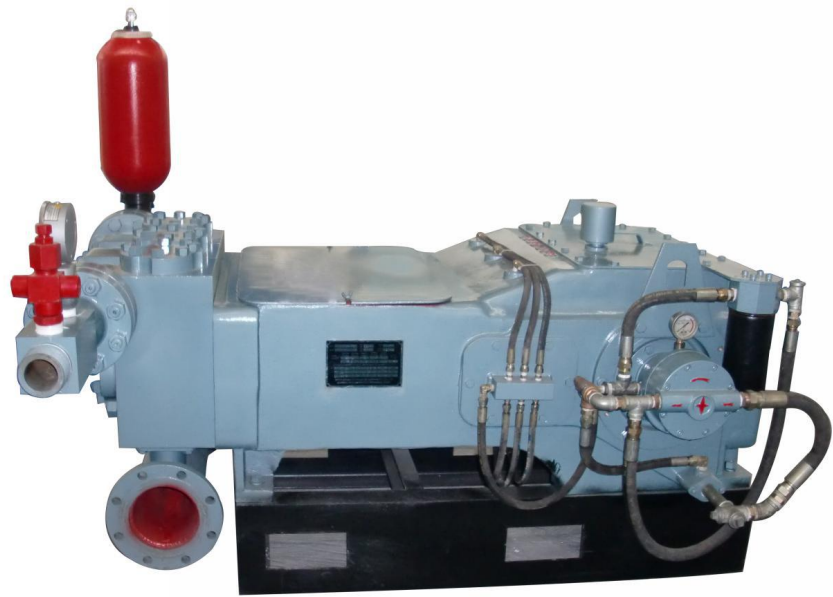
FLUID END MODULE
AND ACCESSORIES

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**OILFIELD HIGH PRESSURE EQUIPMENT
MUD PUMP
FOR TEED-165**



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Premium Mud Pump TEED-165

TEED-165 Pump Technical specifications

I. TEED-165 PUMP Technical Specification

Parameter	TEED-165 PUMP	Parameter	TEED-165 PUMP
Max. Input Power	165HP	Design according to consumer's demand.	(6" Slop/ Flange)
Max Stroke number	300 s/min	Discharge Thread	2-9/16" 10000PSI Flange
Stroke	5" (127mm)	Outside Dimension (skid included)	1815*1200*955 mm
Max Plunger Dia.	4" (101.6mm)	Weight	1451KG
Max Pump Pressure	70MPa		

II. TEED-165 PUMP Structure Character

Power Frame :

Eccentric Direct Drive

External Lubricating Oil Pump and Filter

Fluid End :

Forged steel modular blocks

Cast Steel monoblock

Removable Stuffing Box with Thread Gland Nuts

Adjustable or Non-Adjustable type packing

Hardened Abrasive- Resistant Valves

6" Suction Manifold

Colmonoy Plungers or Pistons/Liners Configuration

Piston/Liner Construction

III. TEED-165 PUMP Performance Parameter Table

		Plunger/ Piston* Diameter 柱塞直径		Displacement Per Revolution 流量		50RPM 公升/分				100RPM 公升/分				200RPM 公升/分				250RPM 公升/分				300RPM 公升/分			
		(in.)	(mm.)	Gal/ Rev	Liter/ Rev.	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm
LEE D-165	LEE F-165	4.00	102	0.817	3.091	155	41	3500	246	309	82	2950	206	618	163	1475	104	773	204	1175	83	927	245	975	69
		3.50	89	0.623	2.359	118	31	4600	321	236	62	3800	268	472	125	1925	135	590	156	1550	108	708	187	1300	90
		3.00	76	0.460	1.741	87	23	6200	438	174	46	5250	368	348	92	2625	184	435	115	2100	147	522	138	1750	123
		2.75	70	0.387	1.463	73	19	7400	521	146	39	6150	433	293	77	3125	220	366	97	2500	176	439	116	2075	146
		2.50	63	0.319	1.206	60	16	9000	630	121	32	7550	532	241	64	3775	265	302	80	3025	212	362	96	2525	177
		2.25	57	0.258	0.977	49	13	10000	703	98	26	9300	655	195	52	4650	328	244	65	3725	262	293	77	3100	218
		2.00	51	0.204	0.722	39	10	10000	703	77	20	10000	703	154	41	5900	414	193	51	4725	332	232	61	3925	276
		1.75	44	0.156	0.591	30	8	10000	719	59	16	10000	703	118	31	7700	542	148	39	6175	433	177	47	5125	360

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MUD PUMP
FOR TEEF-165**



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Premium Mud Pump TEEF-165

TEEF-165 Pump Technical specifications

I. TEEF-165 PUMP SPECIFICATIONS:

Parameter	TEEF-165 PUMP	Parameter	TEEF-165 PUMP
Max. Input Power	165HP	Design according to consumer's demand.	4"- 6"Slop
Max Stroke number	300 s/min.	Discharge Thread	NPT 2"Thread Connection
stroke	5"(127mm)	Outside Dimension	1765*1200*955 mm
Max Plunger Dia.	3"(76.2mm)	Weight	1360KG
Max Pump Pressure	70MPa		

II. TEEF-165 PUMP Performance parameter table

		Plunger/ Piston* Diameter 柱塞直径		Displacement Per Revolution 流量		50RPM 公升/分				100RPM 公升/分				200RPM 公升/分				250RPM 公升/分				300RPM 公升/分			
		(in.)	(mm.)	Gal/ Rev	Liter/ Rev.	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm	LPM	GPM	PSI	Kg/ sq. cm
LEE D-165	LEE F-165	4.00	102	0.817	3.091	155	41	3500	246	309	82	2950	206	618	163	1475	104	773	204	1175	83	927	245	975	69
		3.50	89	0.623	2.359	118	31	4600	321	236	62	3800	268	472	125	1925	135	590	156	1550	108	708	187	1300	90
		3.00	76	0.460	1.741	87	23	6200	438	174	46	5250	368	348	92	2625	184	435	115	2100	147	522	138	1750	123
		2.75	70	0.387	1.463	73	19	7400	521	146	39	6150	433	293	77	3125	220	366	97	2500	176	439	116	2075	146
		2.50	63	0.319	1.206	60	16	9000	630	121	32	7550	532	241	64	3775	265	302	80	3025	212	362	96	2525	177
		2.25	57	0.258	0.977	49	13	10000	703	98	26	9300	655	195	52	4650	328	244	65	3725	262	293	77	3100	218
		2.00	51	0.204	0.722	39	10	10000	703	77	20	10000	703	154	41	5900	414	193	51	4725	332	232	61	3925	276
		1.75	44	0.156	0.591	30	8	10000	719	59	16	10000	703	118	31	7700	542	148	39	6175	433	177	47	5125	360

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**OILFIELD HIGH PRESSURE EQUIPMENT
MUD PUMP
FOR THE-215**



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Premium Mud Pump THE-215

THE-215 Pump Technical specifications

I. THE-215 PLUNGER PUMP SPECIFICATIONS

Maximum BHP: 215 HP (160 KW)	Dis Oil Capacity: 12 gal. (45 liters)
Maximum RPM: 300 rpm	Plunger Load: 37,000 lbs. (16,965 kg)
No. of Plungers: 3	Test Pressure 3,600 psi (1,633 kg/cm ²)
Stroke Length: 5 in. (127 mm)	Pump Weight: 3,990 lbs. (1,810 kg) charge Hydrostatic

II. THE-215 PLUNGER PUMP STANDARD EQUIPMENT

Eccentric construction	Stainless steel, abrasion resistant, wing-guided valves
Left or right side suction and discharge connections	Piston and liner construction
Left or right hand keyed shaft extension	Clamp style connections between piston rod and crosshead extensions
Pressure lubricated power end	Chrome liners in 4, 4.5, 5 and 5.5 inch sizes
Fluid end, forging steel	Rod wash spray bar and baffles

III. THE-215 PLUNGER PUMP Performance

Piston/Liner Size 活塞/缸套尺寸		Displacement per Revolution 流量		Displacement at Pump RPM 流量											
		50				100				150					
in.	mm	GPR	LPR	GPM	LPM	PSI	kg/cm ²	GPM	LPM	PSI	kg/cm ²	GPM	LPM	PSI	kg/cm ²
5" Cast Fluid End															
4	102	0.816	3.089	41	154	2944	206	82	309	2944	206	122	463	2718	191
4.5	114	1.032	3.907	52	195	2326	163	103	391	2326	163	155	588	2100	148
5	127	1.274	4.824	64	241	1884	132	127	482	1884	132	191	724	1700	120
5.5	140	1.542	5.837	77	292	1557	109	154	584	1557	109	231	876	1435	100
Input Power: 输入功率		BHP		79				156				215			
		KW		59				116				160			

Piston/Liner Size 活塞/缸套尺寸		Displacement per Revolution 流量		Displacement at Pump RPM 流量											
		200				250				300					
in.	mm	GPR	LPR	GPM	LPM	PSI	kg/cm ²	GPM	LPM	PSI	kg/cm ²	GPM	LPM	PSI	kg/cm ²
5" Cast Fluid End															
4	102	0.816	3.089	163	618	2034	143	204	772	1625	114	245	927	1354	95
4.5	114	1.032	3.907	206	781	1600	112	258	977	1280	90	310	1173	1070	75
5	127	1.274	4.824	255	965	1300	91	319	1206	1040	73	383	1448	870	61
5.5	140	1.542	5.837	308	1167	1076	76	386	1460	860	60	462	1752	720	51
Input Power: 输入功率		BHP		215				215				215			
		KW		160				160				160			

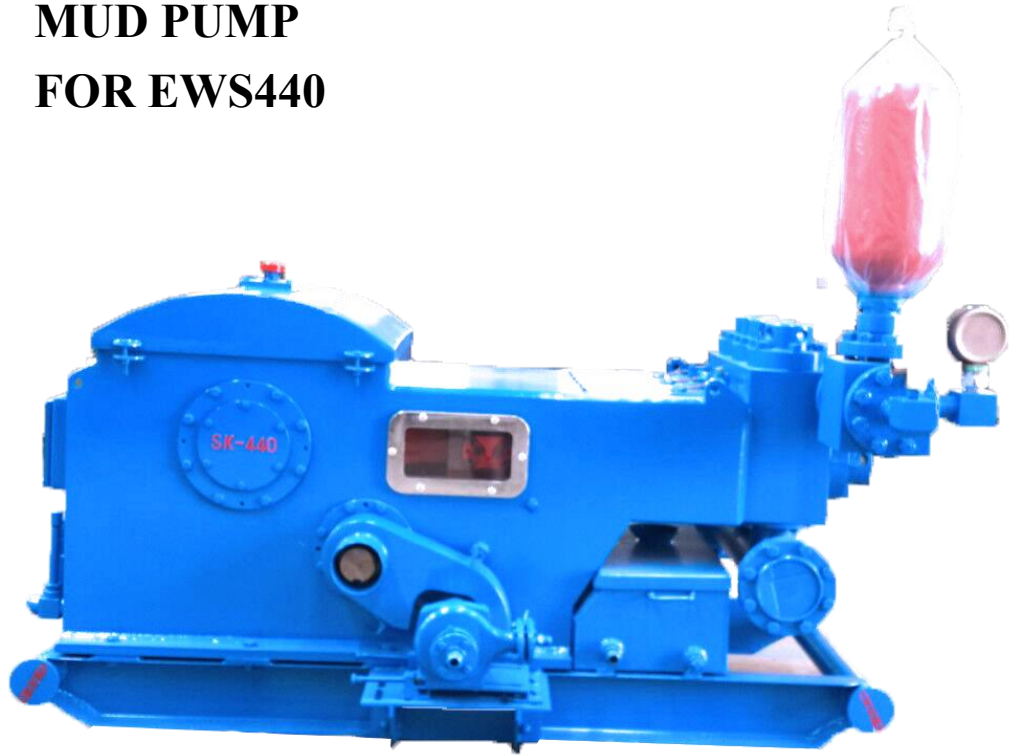
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**OILFIELD WORK OVER EQUIPMENT
MUD PUMP
FOR EWS440**



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Premium Mud Pump EWS440

Specifications

Rated Horsepower:	440 HP
Rated Pump Speed:	320 SPM
Stroke Length:	6"
Suction Inlet:	150 flange 6"
Discharge Outlet:	900 flange 3"
Gear Ratio:	4.578:1
Valve Pot:	API #4
Dimensions	98" x 48" x 44"
Approximate Weight:	9,840 lbs

HW-440 Performance

Liner Size, inches		4-1/2	4-1/4	4	3-3/4	3-1/2	3
Rated Pressure, psi		1,710	1,917	2,169	2,468	2,816	3,327
Pump Speed SPM	Input Power HP	Displacement, GPM					
320	440	397	354	313	275	240	204
270	380	335	299	264	232	202	149
220	320	273	243	215	189	165	121
170	260	211	188	167	146	127	94
120	200	149	133	118	103	90	66
70	200	87	77	69	60	52	39
Volume/Stroke, gallons		1.239	1.011	0.979	0.861	0.750	0.551

Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

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MUD PUMP
FOR EWS446**



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Premium Mud Pump EWS446

EWS446 Mud Pump TECHNICAL SPECIFICATION

Rated input power 328KW (440HP)
Rated Stroke 320 Stroke/Minute(320SPM)
Stroke 152.4mm (6")
Gear Ratio 4.578 : 1
Max. operation pressure 35Mpa
Valve chamber Valve-Over API 4#
Max. liner dia. 6"
Max. liner mud pressure (160 stroke/minute) 16.9Mpa
Dia. of suction manifold, 6" (150#) Flange
Dia. of discharge manifold 3"(900#) Flange
Dia. pinion shaft 95.25 mm(3.75")
Key 22.174x15.9mm
Dimension: (No included base) , 2479X1219X1103 mm

EWS-446 Performance

Liner Size, inches		6	5-1/2	5	4-1/2	4	3-1/2
Rated Pressure, psi		1,027	1,222	1,479	1,710	2,169	2,816
Pump Speed SPM	Input Power HP	Displacement, GPM					
320	440	661	555	459	397	313	240
270	380	551	463	382	335	264	202
220	320	441	370	306	273	215	165
170	260	330	278	229	211	167	127
120	200	220	185	153	149	118	90
70	200	110	93	76	87	69	52
Volume/Stroke, gallons		2.203	1.851	1.530	1.239	0.979	0.750

Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

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MUD PUMP
FOR F Series**



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Premium Mud Pump F Series

- Integrated production line: Premium delivers F series triplex single acting piston mud pump from 500HP up to 2200 HP with time-tested high performance.
- Reliable, compact, well-balanced design: designed for the most severe conditions.
- Power end with fine craftsmanship: High-strength, precisely machined frame; forged, heat-treated crankshaft; hardened surface on drive gears and longer lifetime.
- Fluid end & consumables: interchangeable with multiple OEM.
- Diversified drive options: Through belt, chain or gearbox, pumps could be operated by multiple brand AC/DC motor, diesel engine, or simply couple the pinion shaft with one of our premium Direct Drive motors.
- Upgrade a 1300HP or 1600HP mud pump to achieve higher discharge pressure (7500 psi) simply by changing to an "L" type fluid end, site service optional (extra charge).
- Western brand bearing set, relief valve, pulsation dampener, liner spray pump, pre-charge pump optional.
- Suitable for multiple brand piston & valve quick change tools, liner retention systems.
- Standard qualification and certification satisfies customer demand.

TECHNICAL PARAMETERS

Model	F-500	F-800	F-1000	F-1300
Max. Liner Size × Stroke	170×191 (6-3/4×7.5)	170×229 (6-3/4×9)	170×254 (6-3/4×10)	180×305 (7×12)
Strokes Rating, r/min	165	150	140	120
Power Rating, kW (HP)	373 (500)	597 (800)	746 (1000)	969 (1300)
Gear Type	4.286:1	4.185:1	4.207:1	4.206:1
Suction Inlet Flange , in	8	10	12	12
Discharge Outlet Flange , in	4	5	5	5
Pinion Shaft Dia., mm (in)	139.7 (5-1/2)	177.8 (7)	196.9 (7-3/4)	215.9 (8-1/2)
Key, mm (in)	31.75×31.75 (1-1/4×1-1/4)	44.45×44.45 (1-3/4×1-3/4)	50.8×50.8 (2×2)	50.8×50.8 (2×2)
Valve Cavity	Valve-Over-Valve, API #5	Valve-Over-Valve, API #6	Valve-Over-Valve, API #6	Valve-Over-Valve, API #7
Approx. Weight, kg (lb)	9770 (21540)	14500 (31970)	18790 (41420)	26700 (54170)



Premium Mud Pump F Series

TECHNICAL PARAMETERS

Model	F-1600/1600L	F-1600HL	F-2200	F-2200HL
Type	Triplex single acting piston	Triplex single acting piston	Triplex single acting piston	Triplex single acting piston
Max. Liner size×stroke length	180×305 (7×12)	190×305 (7-1/2×12)	230×356 (9×14)	230×356 (9×14)
Strokes Rating , r/min	120	120	105	105
Power Rating , kW (HP)	1193 (1600)	1193 (1600)	1640 (2200)	1640 (2200)
Gear Ratio	4.206:1	4.206:1	3.512:1	3.512:1
Discharge Outlet Flange, in	5" Flange, 5000 psi	5" Flange, 10000psi (110 mm)	5" Flange, 5000 psi (130 mm)	5" Flange, 10000 psi (130 mm)
Pinion Shaft Dia. , mm (in)	215.9 (8-1/2)	215.9 (8-1/2)	254 (10)	254 (10)
Key, mm (in)	50.8×50.8 (2×2)	50.8×50.8 (2×2)	63.5×44.45 (2-1/2×1-3/4)	63.5×44.45 (2-1/2×1-3/4)
Valve Pots	Valve-Over-Valve, API #7/ L type, API #7	L type, API #7	Valve-Over-Valve, API #8	L type, API #8
Approx. Weight , kg (lb)	24791 (54660) /27020kg (57100lb)	29400 (64820)	38460 (84790)	44000 (94980)

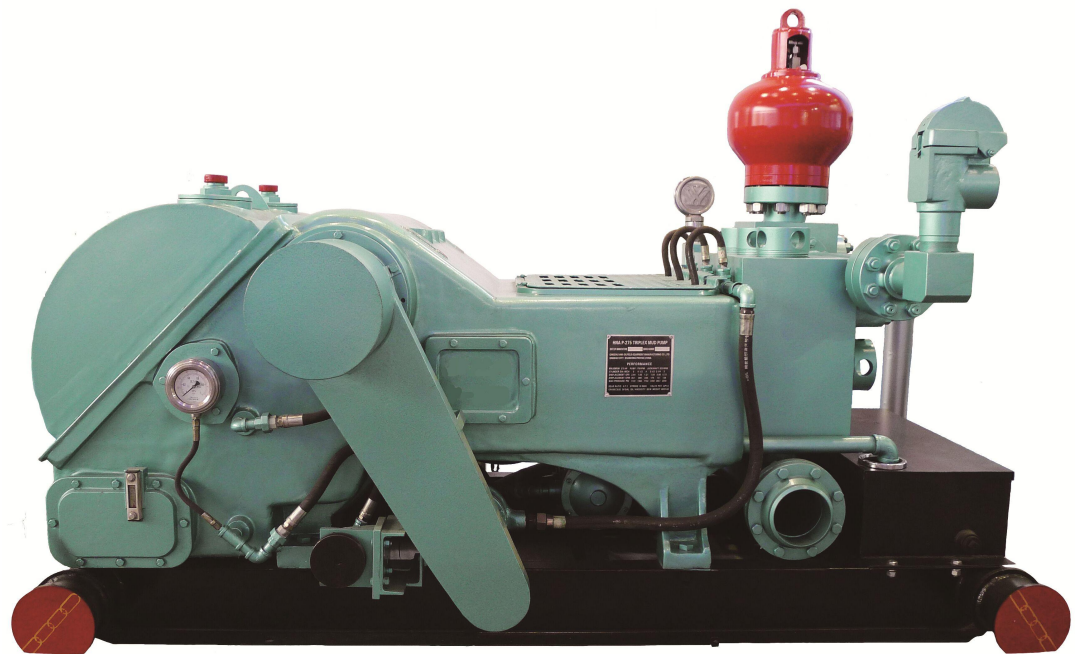
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**OILFIELD WORK OVER EQUIPMENT
MUD PUMP
FOR PAH-275**



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Premium Mud Pump PAH-275

P-275 Pump Technical specifications

1. Input power rating (KW) 205 (275HP)
2. Rated pump speed (RPM) 175
3. Stroke Length (mm) 203(8")
3. Gear ratio 4.625
4. Rated speed of transmission shaft (RPM) 823
5. Max. working pressure (Kg/sq.cm) 219(3118PSI)
6. Valve size (API) 4#
7. Max. liner diameter (in) $\Phi 5''$
8. Max. displacement (GPM) 357
9. Max. liner pressure (Kg/sq.cm) 79 (1122PSI)
10. Diameter of suction pipe (mm) 158 (6 1/4")
11. Diameter of discharge pipe (mm) 58 (2 9/32")
12. Overall dimensions (with steel skid, LXWXH)
13. 2900*1700*2000mm(114.2"x69"x79)
14. Weight (Kg) (with skid) 5600(12400LBS)

Specifications

Rated Horsepower:	275 HP
Rated Pump Speed:	175 SPM
Stroke Length:	8"
Maximum Liner Size:	5"
Rod Load :	22,030 lbs
Gear Ratio:	4.7:1
Approximate Weight:	9,800 lbs

Performance

Liner Size, inches	Displacement		Maximum Pressure, psi	Pump RPM	JackShaft RPM
	Gallon Per Revolution	Gallon Per Minute			
5	2.04	357	1,122	175	823
4-1/2	1.65	289	1,386		
4	1.31	228	1,753		
3-1/2	1.00	175	2,290		
3-1/4	0.862	151	2,657		
3	0.734	128	3,118		

Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

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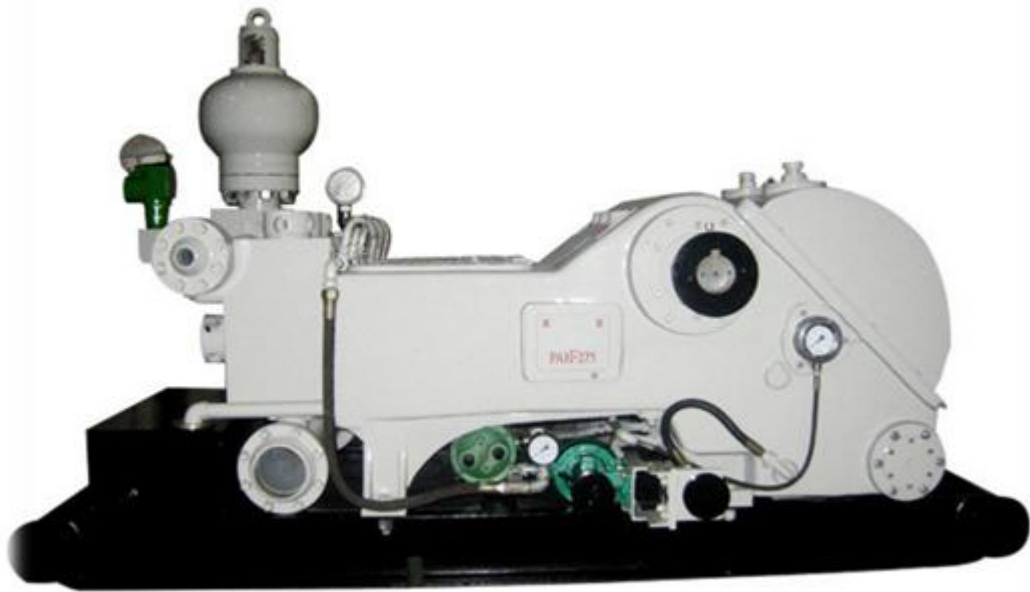


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**OILFIELD DRILLING EQUIPMENT
MUD PUMP
FOR PZ-7**



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Premium Mud Pump PZ-7

PZ-7 Pump Technical specifications

1. Input power rating (KW) 410 (550HP)
2. Rated pump speed (RPM) 145
3. Stroke Length (mm) 177.8(7")
4. Gear ratio 4.625
5. Rated speed of transmission shaft (RPM) 670
6. Max. working pressure (Kg/sq.cm) 352 (5000PSI)
7. Valve size (API) 7#
8. Max. liner diameter (mm) $\Phi 7''$
9. Max. displacement (GPM) 507
10. Max. liner pressure (Kg/sq.cm) 118 (1673PSI)
11. Diameter of suction pipe (mm) 203.2 (8")
12. Diameter of discharge pipe (mm) 100 (4")
13. Overall dimensions 3205*2250*2000mm
14. Weight (lbs) (exclude five way joint and pulsation damper) 8300kg 18300lbs
15. Weight (with skid) 10800kg

Liner Size, inches	Displacement		Maximum Pressure, psi	Pump RPM	JackShaft RPM
	Gallon Per Revolution	Gallon Per Minute			
7	3.5	507	1,673	145	670
6-1/2	3.02	437	1,940		
6-1/4	2.78	404	2,100		
6	2.57	373	2,277		
5-1/2	2.16	313	2,710		
5	1.78	259	3,279		
4-1/2	1.45	210	4,048		
4	1.14	166	5,000		

Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

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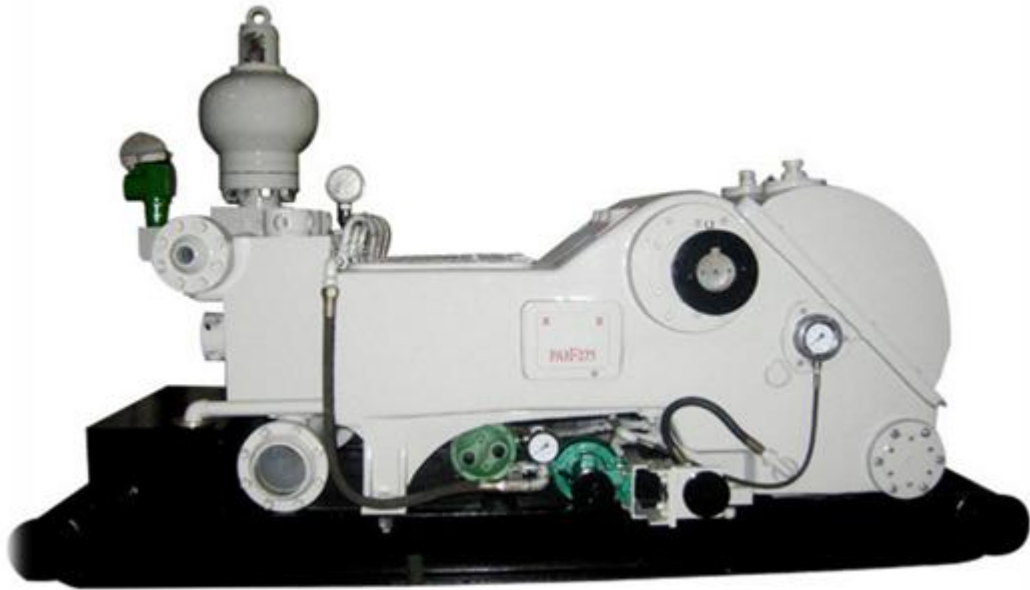


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**OILFIELD DRILLING EQUIPMENT
MUD PUMP
FOR PZ-8**



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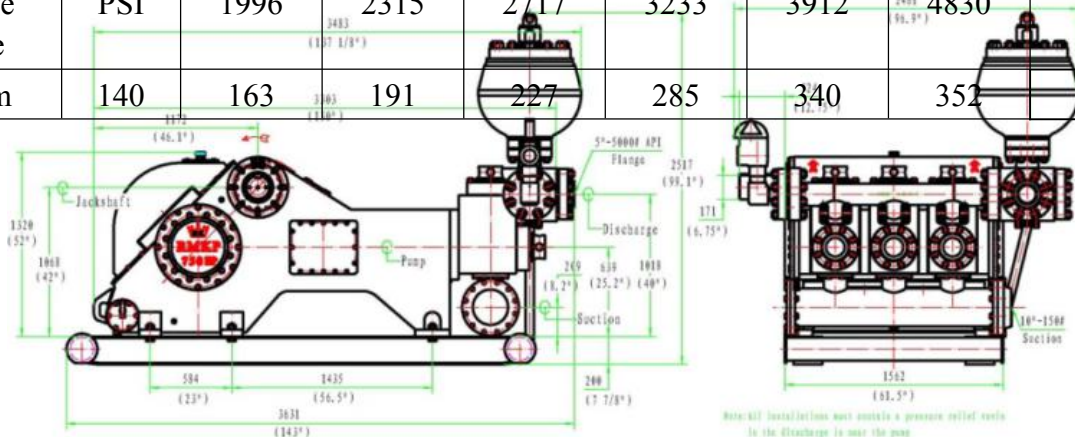
Premium Mud Pump PZ-8

PZ-8 Pump Technical specifications

1. Input power rating (KW) 559 (750HP)
2. Rated pump speed (RPM) 145
3. Stroke Length (mm) 203 (8")
4. Gear ratio 4.5
5. Rated speed of transmission shaft (RPM) 652
6. Max. working pressure (Kg/sq.cm) 352 (5000PSI)
7. Valve size (API) 7#
8. Max. liner diameter (mm) Φ 7"
9. Max. displacement (GPM) 580
10. Max. liner pressure (Kg/sq.cm) 140 (1996PSI)
11. Diameter of suction pipe (mm) 254 (10")
12. Diameter of discharge pipe (mm) 100 (4")
13. Overall dimensions 3650×2460×2520 mm
14. Weight (without dampener and joint atc) 10000kg
15. Weight (with dampener and joint atc) 12200kg

Pump Performance Data

Dia. of Liner	IN	7"	6 1/2"	6"	5 1/2"	5"	4 1/2"	4"
Gallon/Minute	580	500	426	358	296	240	189	Displacement
Liter/Minute	2196	1893	1613	1355	1120	908	715	
Discharge Pressure	PSI	1996	2315	2717	3233	3912	4830	5000
Kg/sq.cm	140	163	191	227	285	340	352	



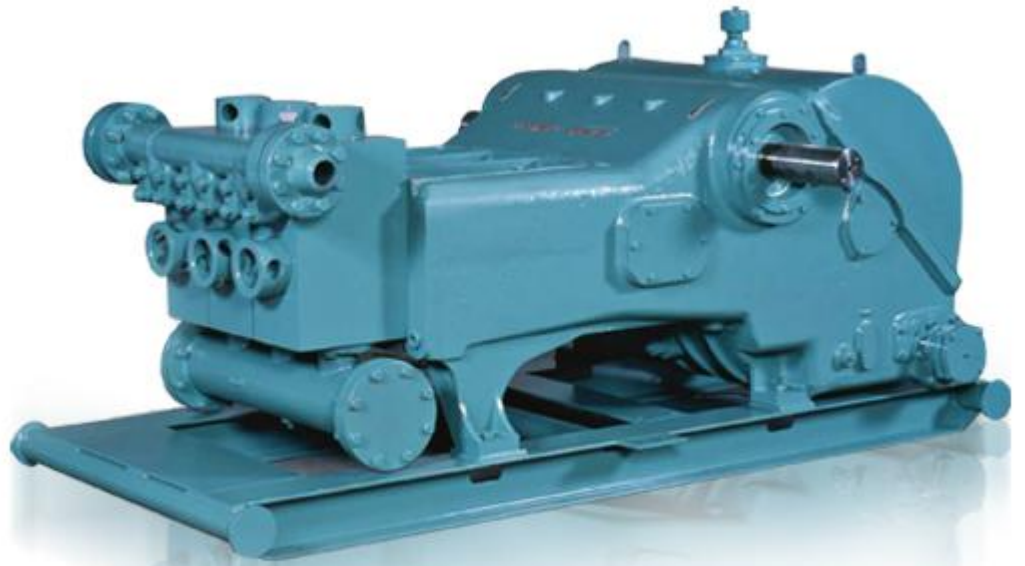
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**OILFIELD DRILLING EQUIPMENT
MUD PUMP
FOR PZ-9**



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Premium Mud Pump PZ-9

PZ-9 Pump Technical specifications

1. Input power rating (KW) 746 (550HP)
2. Rated pump speed (RPM) 130
3. Stroke Length (mm) 229 (9")
4. Gear ratio 4.483
5. Rated speed of transmission shaft (RPM) 582
6. Max. working pressure (Kg/sq.cm) 352 (5000PSI)
7. Valve size (API) 7#
8. Max. liner diameter (mm) Φ 7"
9. Max. displacement (GPM) 585
10. Max. liner pressure (Kg/sq.cm) 186 (2639PSI)
11. Diameter of suction pipe (mm) 254 (10")
12. Diameter of discharge pipe (mm)100 (4")
13. Overall dimensions 4320*2500*2600mm
14. Weight (without dampener and joint atc)12480kg
15. Weight (with skid) 15500kg

Liner Size, inches	Displacement		Maximum Pressure, psi	Pump RPM	JackShaft RPM
	Gallon Per Revolution	Gallon Per Minute			
7	4.5	585	2,639	130	582
6-1/2	3.88	504	3,060		
6-1/4	3.59	466	3,310		
6	3.30	430	3,592		
5-1/2	2.78	361	4,274		
5	2.29	298	5,000		
4-1/2	1.86	242	5,000		
4	1.47	191	5,000		

Ratings are based on 90% mechanical efficiency and 100% volumetric efficiency.

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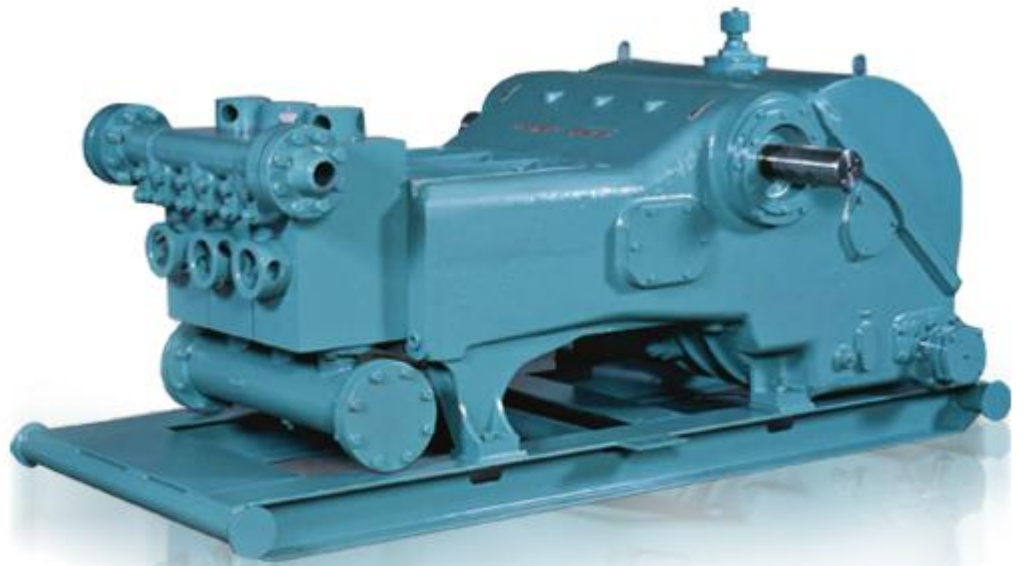


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**OILFIELD DRILLING EQUIPMENT
MUD PUMP
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Premium Mud Pump PZ-10/11

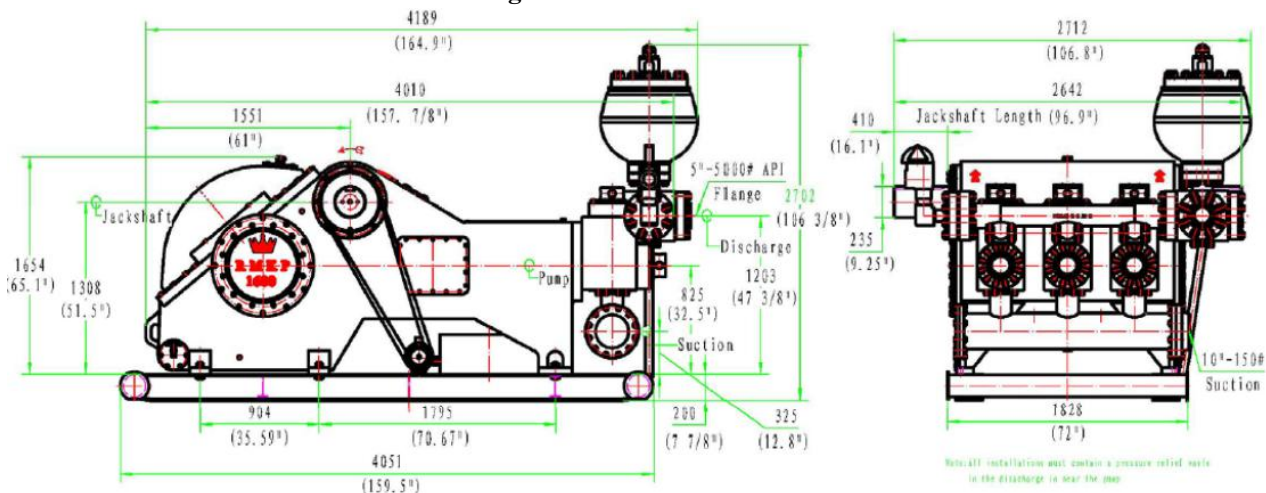
PZ-10/11 Pump Technical specifications

1. Input power rating (KW) 1193 (16000HP)
2. Rated pump speed (RPM) 115
3. Stroke Length (mm) 1279(11")
4. Gear ratio 4.38
5. Rated speed of transmission shaft (RPM) 504
6. Max. working pressure (Kg/sq.cm) 352 (5000PSI)
7. Valve size (API) 7#
8. Max. liner diameter (mm) Φ 7"
9. Max. displacement (GPM) 632
10. Max. liner pressure (Kg/sq.cm) 275 (3905PSI)
11. Diameter of suction pipe (mm) 254 (10")
12. Diameter of discharge pipe (mm) 100 (4")
13. Overall dimensions 4380*2700*2700 mm
14. Weight (exclude five way joint and pulsation damper) 17600kg
15. Weight (lbs) (21000kg) 46000lbs

Pump Performance Data

Dia. of Liner	IN	7	6 1/2	6	5 1/2
Displacement	Gal	632	545	465	390
	lon/Minut	2392	2063	1760	1476
Discharge Pressure	PSI	3905	4529	5000	5000
	Kg/sq.cm	275	318	352	352

The Over Installation Dimensions Drawing For PZ10/11



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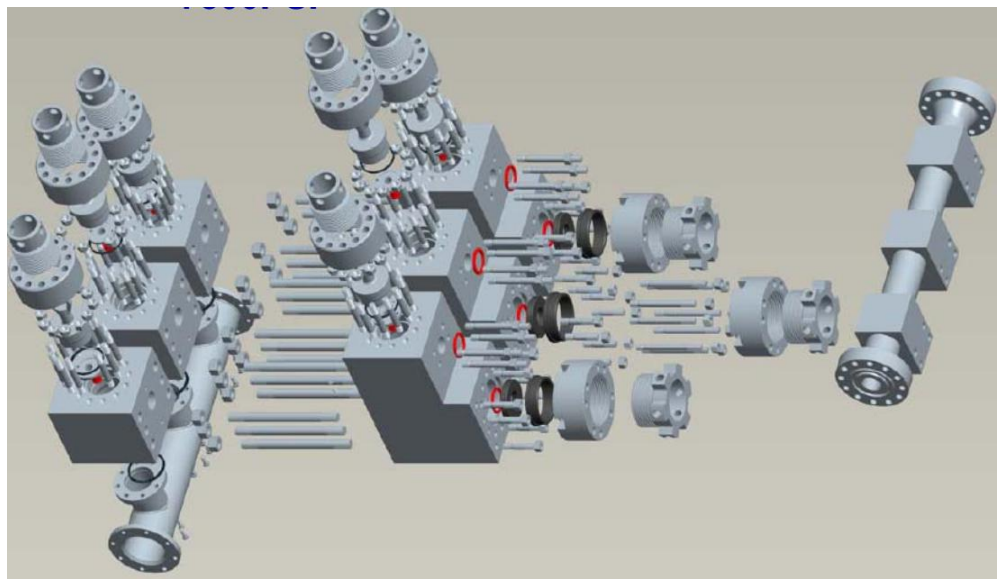
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**OILFIELD DRILLING EQUIPMENT
MUD PUMP
FOR PZ-11 HL 7500 PSI**



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Premium Mud Pump PZ-11HL 7500 PSI

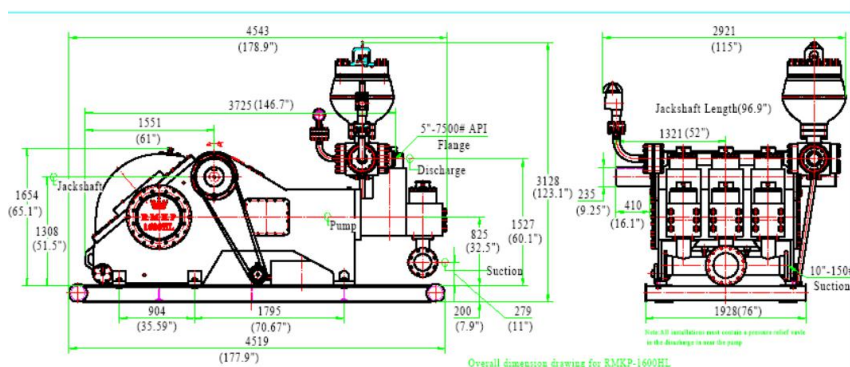
PZ-11 7500 PSI Pump Technical specifications

1. Input power rating (KW) 1193 (16000HP)
2. Rated pump speed (RPM) 115
3. Stroke Length (mm) 1279(11")
4. Gear ratio 4.38
5. Rated speed of transmission shaft (RPM) 504
6. Max. working pressure (Kg/sq.cm) 527
7. (7500PSI)
8. Valve size (API) 6 #
9. Max. liner diameter (mm) $\Phi 7''$
10. Max. displacement (GPM) 632
11. Max. liner pressure (Kg/sq.cm) 275 (3905PSI)
12. Diameter of suction pipe (mm) 254 (10")
13. Diameter of discharge pipe (mm) 100 (4")
14. Overall dimensions 4520*2790*3040 mm
15. Weight (exclude five way joint and pulsation damper) 47000 (21500kg)
16. Weight (lbs) 55000 (25000kg)

Pump Performance Data

Dia. of Liner	IN	7"	6-1/2"	6"	5-1/2"	5"
Displacement	Gallon/Minute	632	545	465	390	323
	Liter/Minute	2392	2063	1760	1476	1223
Discharge Pressure	PSI	3905	4529	5314	6324	7500
	Kg/sq.cm	275	318	374	445	527

■ The Over Installation Dimensions Drawing For RMKP-1600HL



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