

PUMP EXPANDABLES



NS-SE ISO 9001 : 2008 / ISO 9001: 2008 COMPANY

License 7k-0092



KHALSA OIL FIELD EQUIPMENTS (P) LTD.

46, BALLUPUR ROAD

DEHRADUN – 248 001 (UK), INDIA

Phone : 0135 – 2753986, Fax : 0135 – 2759363

E-mail : sukhibabbar@gmail.com

EQUIPPED WITH MACHINERY & EQUIPMENTS

Turning	-	14 Nos.
Milling & Shaping	-	06 Nos.
Grinding Machines	-	08 Nos.
Fabrication Facilities	-	14 Nos.
Heat Treatment Facilities	-	05 Nos.
Quality Control instruments & Equipments	-	19 Nos.



PRODUCTS

Slush Pump Expendables for Triplex Pumps

OILWELL	:	A-600PT, A-850A/A-1100PT, A-1400 PT/A-1700PT
NATIONAL	:	10P130, 12P160
GARDNER DENVER	:	PZ-8, PZ-9, PZ-10/PZ-11.
WIRTH	:	TPK-1600
IDECO	:	T1300 / T-1600
RUMANIAN	:	3PN 1300/ 3PN 1600
EMSCO	:	FB1600

1. Hy-chrome sleeved liners all standard sizes.
2. Valve Assy. (Nitrile/Polyurethane) & their components.
3. Piston Rod, Piston Rod Nut.
4. Piston Assy complete, all standard sizes.

Hy-chrome Sleeved Liner

Hy-Chrome Sleeved Liner has been engineered to overcome the specific stresses that this part encounters in drilling operations.

Conventional liners have a decreasing hardness gradient from the bore. On the other hand, offers a bimetallic supreme sleeved liner. It is an assembly of liner shell with liner sleeve. The liner shell is centrifugally cast and heat treated to withstand hoop stresses generated in shrink fitting and stress reversals during operation.



Construction : The liner sleeve is of high chromium alloyed martensitic white iron and thin walled seamless tube. Special heat treatment ensures proper carbide grain formation, refined microstructure and controlled grain size. Liner sleeves, therefore, offer the maximum possible wear and corrosion resistance. Liner sleeves are through hardened to provide a uniform hardened wear surface throughout the useful life of the liner. The sleeve bore hardness is 60 to 67 Rockwell C scales while the hull has high tensile strength of more than 90000 psi. Uniform wear resistance increases service life – and reduces frequency of liner changes.

The liner is manufactured to tolerances tighter than API specifications. The result is a perfect fit between :-

- Pump bore and liner outside diameter.
- Liner bore and piston outside diameter.

LINERS SIZES : Hy-chrome liners are available from 5” – 6” in increments of ½” and from 6” – 7” in increments of ¼”.

TRIPLEX PUMP

Hy-Chrome Liners available for following make :-

Oil Well, NATIONAL, GARDNER DENVER, CONTINENTAL EMSCO, INDECO, ROMANIAN.

MODEL OF PUMPS :

A1700 PT / A-1400 PT, A-1100 PT/A-850 PT, 12P-160, 10P-130, PZ-8, PZ-9, PZ-10, PZ-11, F-1600, F-1000, F-1800, F-650, T-1600, 3PN-1000.

LINERS SIZES / MODELS

S. No.	OEM Part Number	Description	Wt
1.	24-0284	OILWELL Piston Rod Clamp PT Series	
2.	2011860	GARDNER DENVER PZ 7/8/9 Valve Cover	18
3.	7403364	Piston Rod Nut 1-1/2"	1.5
4.	0255-54HP	NATIONAL 9P100/10P130 Liner 5-1/2"	130
5.	0255-60HP	NATIONAL 9P100/10P130 Liner 6"	105
6.	0255-64HP	NATIONAL 9P100/10P130 Liner 6-1/2"	95
7.	0255-62HP	NATIONAL 9P100/10P130 Liner 6-1/4"	99
8.	0255-66HP	NATIONAL 9P100/10P130 Liner 6-3/4"	89
9.	0148-64HP	EMSCO F-800/1000 Liner 6-1/2"	67
10.	0148-66CR	EMSCO F-800/1000 Liner 6-3/4"	62
11.	0148-60HP	EMSCO F-800/1000 Liner 6"	90
12.	2145-64HP	EMSCO FB1300/1600 Liner 6-1/2"	140
13.	2145-70HP	EMSCO FB1300/1600 Liner 7"	115
14.	0284-70HP	OILWELL A-1400/1700PT Liner 7"	
15.	0284-64HP	OILWELL A-1400/1700PT Liner 6-1/2"	
16.	0287-64HP	OILWELL A-350/600PT Liner Bi Metal 6-1/2"	
17.	0285-64HP	OILWELL A-850/1100PT Liner 6-1/2"	
18.	0285-70HP	OILWELL A-850/1100PT LINER 7"	
19.	1191-64HP	GARDNER DENVER PZ8/9 Liner 6-1/2"	53
20.	1191-70HP	GARDNER DENVER PZ8/9 Liner 7"	50
21.	10-300-184	OILWELL A850-A1700-PT Wear Plate Liner 7	
22.	0259-70HP	NATIONAL 12P160 Liner 7" Bi Metal	135
23.	0200	GARDNER DENVER PZ 10/11 Piston Rod (Clamp)	31
24.	0191	GARDNER DENVER PZ 8/9 Piston Rod (Clamp Type)	17
25.	2011699	GARDNER DENVER PZ 7/9 Threaded Ring	58
26.	16-0191	GARDNER DENVER PZ 9 Pony Extention Rod (Clamp Type)	
27.	16-0192	GARDNER DENVER PZ7/8 Pony Extention Rod (Clamp Type)	50
28.	U5C-EEF	API 7 Valve Assy	9
29.	U5B-EH	API 6 Valve Assy	8
30.	6ADD-B6	API 6 Valve Seat	14
31.	7DD-B1	API 7 Valve Seat	11

VALVE ASSEMBLY AND COMPONENTS FOR SLUSH PUMPS

Stem guided 3 web and 4 web design

Valve Assembly Complete

Suitable for all drilling pressures. Valve assembly consists of valve body, valve insert and knock – on plate. Valve insert is secured to the valve body by a strong knock – on plate nut which minimizes the entry of solids such as lost circulation material under the insert and between the valve striking surface and insert.

The heavy and extra strong integral driving lugs on knock – on plate nut ensure easy assembly and disassembly when changing the valve insert.



The lower valve stem with flat end facilitates holding in the vice for insert replacement without damaging the guide area. The face as well as diameter of the valve body is threaded. Both threads on valve body are coated with anti-seize compound to prevent corrosion. This facilitates replacement of insert.

Selectively hardened lower flange face of valve body transmits severity of impact, if any, to flat cross arms of seat instead of tapered sealing surface. The valve body is placed square and flat on the valve seat. There is no shifting due to heavy load from fluid pressure.

Valve Inserts

Valve inserts are available in Buna nitrile and Polyurethane material. For low pressure and normal operating conditions, use Buna nitrile inserts. For high pressure and severe operating conditions, use Polyurethane inserts. During closing, the resilient valve insert makes first contact with the bevel on the seat and absorbs shock.

Valve Seats

Valve seat has precisely ground tapered outside diameter, which is perfectly matched with pump deck taper to provide metal-to-metal seal between high pressure and low pressure. Rigid design of three cross arms acts as a guide to valve stem. It increases metal-to-metal contact between valve body and seat for distributing the impact forces over a large area. It also provides enough flow-through area essential for smooth and knock-free operation of the pump. Wear groove at the junction of bevel sealing surface and flat cross arms indicates limit of permissible wear.

PISTON RODS WITH NUT & LOCK NUT; DUPLEX & TRIPLEX PUMPS

Piston Rods

Piston rods are available in single-piece design or two-piece design depending upon the type of mud pump. For 'L' head pumps such as National and Oil Well brands, two-piece rods are offered to facilitate removal of piston.

An elastic stop nut is available for tightening the piston on to the piston rod. A specially designed piston rod nut wrench is available to prevent crimping the wall of the splinted elastic stop nut. Other useful piston and rod removal tools are also offered.



PISTON ASSEMBLY

For Triplex and Duplex mud Pumps Piston cores are made of normalized carbon steel forgings. Clearances of Piston core and liner bore are kept below 010". Piston rubber cup is of fluid king design. It features a stronger lip as compared to the cantilevered sharp lip. It also extends piston and liner life.

PISTON ASSEMBLY

For Triplex and Duplex mud Pumps Piston cores are made of normalized carbon steel forgings. Clearances of Piston core and liner bore are kept below 010". Piston rubber cup is of fluid king design. It features a stronger lip as compared to the cantilevered sharp lip. It also extends piston and liner life.



FACTORS EFFECTING PERFORMANCE OF CYLINDER LINERS
(HIGH CARBON HIGH CHROME)

1. **DESIGN** : The sleeved/bimetallic liner consists of a liner sleeve of high chromium white iron which is very hard and equally brittle. It cannot stand internal pressure alone unless it is shrouded by a outer casing of ductile material. To achieve this the sleeve is shrink fitted in a low/medium carbon steel forged shell. The interference required for effecting shrink fit should be such that the compressive stresses induced in the inner sleeve are within its compressive yield strength. If they exceed the material shall yield in compression and thus making micro cracks in the inner surface of sleeve. These cracks under internal pressure cause havoc in the wear of the liner.
2. **METALLURGICAL REQUIREMENTS** : The hardness, Microstructure surface finish should be maintained to achieve maximum wear and corrosion resistance of the Liner.
3. **PROPER INSTALLATION CARE** : To ensure that the Liner Gasket is seated squarely in the linder groove after applying a thin layer of grease, there are not dents in the liner groove and the liner wear plate surface should be cleaned without any indication of any unevenness/wear. Otherwise it shall result in Mud-cut of liner at the groove rendering it useless for further operation the matching piston should be proper with no excessive interference as this shall result in overheating of Piston followed by its premature failure and eventually the liner will get mud-cut. The life of liner and piston are interdependent on each other.
4. **ALIGNMENT OF THE CORSS HEAD W.R.T. LINER AXIS** : Excessive deviation in the alignment of the cross head shall result in uneven wear of liner and eventually premature failure.
5. **MUD PUMP COOLING SYSTEM** : Flushing/cooling of liner and piston is an important factor responsible for life of liner as well as for piston. It should be done as per the Pump's manufacturers recommendation and entry of Mud/abrasive material to be avoided in the flushing liquid. Improper flushing results in less overheating of liner and piston. Eventually resulting in enhanced service life for vital components of the mud pump.
6. Timely change of piston cups shall enhance the life of Piston/liner. The cost of piston is much smaller as compared to Liner and it should be changed before it starts leaking.
7. Mud parameters mainly solid contents should be kept below the maximum permissible limit. High solid contents drastically reduce the life of mud pump expendables.
8. The life in hours of mud pump expendables is inversely proportional to the strokes per minute of the mud pump.

FACTORS EFFECTING PERFORMANCE OF VALVE ASSEMBLY

1. Valve assembly is a component of mud pump fluid end to prevent back flow of fluid (Non return valve). The valve body hammers on the valve seat with loads as high as working pressure multiplied by valve face area. The area of the right cross arms in the valve seat and its tapered surface distributes the heavy load. Insufficient load bearing area will drastically reduce the life of valve body as well as seat. Since valve disc/insert takes the sudden shock load caused by the impact of valve on seat, its quality should be excellent for abrasion, and suitable for working in the required fluid.
2. **METALLURGICAL REQUIREMENTS** : The functional requirements of the valve disc/valve seat are good abrasion resistance and high impact strength. Both these requirements are contrary to each other and can be achieved only in case hardened material.
3. **INSTALLATION CARE** : Worn out valve seat should be removed by proper seat puller and gas cutting should be avoided as far as possible. After removing seat the deck should be washed and wiped clean, free from any solid particles. New valve seat outer surface should be cleaned of any rust preventive with a rag diesel/kerosene soaked in and installed in the valve deck by hammering with a few blows of used piston rod.
4. **MUD PARAMETERS** : The sand/solid contents in Mud have drastic effect on the life of Mud pump expendables. These should be controlled to minimum possible.
5. **TIMELY REPLACEMENTS OF PARTS** : A worn out disc should be replaced immediately. This can be known by hearing the peculiar knocking sound outside the valve pot. If timely replacement is avoided it may result in mud cut of valve, valve seat and eventually the Fluid End.
6. **ENSURING PROPER ALIGNMENT OF MOVING PARTS** : The upper valve guide should be replaced, once it has worn out, otherwise it will not align centrally the valve body resulting in uneven wear of sealing surface and eventually premature failure. If the valve pot has been repaired by rebuilding and subsequent machining after mud cut, concentricity of the valve pot machined surface w.r.t. its axis be ensured.
7. **HYDRAULIC REQUIREMENTS** : To meet the requirement of higher discharge, the Pump SPM is increased. The service hours of the components will be decreased due to severity.
8. To get a prolonged trouble free life of valve Assembly, change both valve and valve seat together after first sign of wear. A worn out valve should never be put on a new seat and vice versa. Valve and seats are only compatible among similar make. Interchanging of components of different make result in decreased service life due to un-matching of load bearing surfaces.

LIST OF PLANT & MACHINERY

A. TURNING.

1. Lathe machine lb. 25 Centre distance 3000mm, with hydraulic copy turning attachment.
2. Lathe machine Enterprise 1330 centre distance, 1000mm with all attachments.
3. Lathe machine Shimoga 2 (Mysore Kirlosker), Centre distance 2500mm.
4. Lathe Centre distance 2500mm.
5. Mysore Kirlosker Shimoga 3.
6. Lathe machine Enterprise 1550, admit between centre 1500mm.
7. Lathe machine J.C. Weisser West Germany.
8. Boring Machine.
9. Lathe cum Drill cum Boring Russian.
10. Russian lathe with variable height headstock.
11. Diachi Japan four in one tool room lathe.
12. Tool Room lathe PTC OKHLA.
13. Lathe South Bend USA 2 meter ABC.
14. Lathe HMT H-22 make 1.00M ABC
15. Lathe HMT H-22 make 1.50 ABC.

B. MILLING & SHAPING.

1. Vertical Milling Machine.
2. Universal Milling machine.
3. Shaping machine with Stroke 18".
4. Radial Drilling machine 1" Capacity.
5. Pillar Type drill machine 2" capacity Praga.
6. Universal Milling machine Brown & Sharpe USA.
7. Universal Milling machine no-2 Cincinnati.

C. GRINDING MACHINE.

1. Cylindrical Universal Grinding machine Centre distance 1300mm.
2. Lathe Grinding Attachment.
3. Two bench Grinders.
4. Taper Grinding Machine.
5. Hydraulic Cylinder Honing machine, Bore 8", Stroke 24" (2 Nos).
6. Bore Grinding Machine.
7. Hydraulic honing Machine Bames drill USA Bore 8" stroke 48".
8. Cylindrical grinder CHURCHILL USA.

D. **FABRICATION FACILITIES.**

1. Profile Flame cutting machine.
2. 15 KVA Welding A.C. Transformer.
3. Oxy Acetylene Brazing set with pre-heating Torch.
4. Sheet Bending Press.
5. Hand Shearing machine.
6. Spot Welding machine (ENGLISH- Phillips make).
7. Pre-tensioning Jig for wire cloth of Shale Shaker Screen.
8. Pretension layered screen fabricating machine for LMSS.
9. DC Welding Rectifier 400 amps make Sweden.
10. Hydraulic Press 100 Tons.
11. E.O.T. Crane SEKIGHARA Japan 5 Tonne.
12. Demag Germany 5 Tonne Electric Hoist.
13. Hydraulic Press Brake.
14. Flame Power Spray Gun for special coatings.

E. **HEAT TREATMENT FACILITIES.**

1. Oil Field Muffle Furnace for case carburising.
2. Oil Field Muffle Furnace for salt bath.
3. Electric Muffle Furnace 0-1300 C.
4. Quenching Oil Tank Capacity 15000 ltrs.
5. Air Blast Tunnel for Air Quenching.

QUALITY CONTROL INSTRUMENTS & EQUIPMENTS

1. Working and inspection Gauges for items on Rate Contract viz. Plug & Ring Gauge.
2. Vernier Calipers of various sizes from 200mm to 1000mm.
3. Micrometers from 0 to 300mm (Inside & outside).
4. Cylinder Bore gauge 50 to 400mm.
5. Surface Plate 24" x 24".
6. Sine Bar.
7. Two set of slip gauge of A+ Accuracy.
8. Height Vernier.
9. Depth Micrometer.
10. Rockwell hardness Tester with various fixtures for our products (Bench Model).
11. Portable Poldi Hardness Tester.
12. Digital & Analogue Temperature indicator.
13. Temperature Recorder for Monitoring soak period of case carburising operation.
14. Metallurgical Microscope.
15. Hydraulic test pump 7000 PSI.
16. Two axis measuring traveling microscope.
17. Surface finish comparison blocks.
18. Universal vibration measuring instrument.
19. Tachometers 3 Nos. for RPM measurement.
20. Thermocouple Calibration set.

COMPOSITE PRODUCT LIST

Assy Description.	Part Description	OEM Part No
A-1700/850/1400 PT / 1100 PT Oil Well	Clamp Complete	16-484-114
PZ-8 / 9 Pump Gardner Denver	Cover Valve	2011660
Drag Bit	Drag Bits 3 Blade 4-1/2"	F3WY
Drag Bit	Drag Bits 3 Blade 4-1/8"	F3WZ
Drag Bit	Drag Bits 3 Blade 4-3/4"	F3WX
Drag Bit	Drag Bits 4 Blade 4-1/2"	F4WY
Drag Bit	Drag Bits 4 Blade 4-1/8"	F4WZ
Drag Bit	Drag Bits 4 Blade 4-3/4"	F4WX
Mud Cleaner screens 41"x27" Original Derrick DX 24 thru DX 110H	DX 24 thru DX 110H	
P-Rod & Nut A-700	Elastic Stop Nut	20-150-001
Caterpillar Engine D-398 / 397 / 399	Exhaust Muffler	2W4076
Caterpillar Engine D-398 / 397 / 399	Flexible exhaust adopter	5L6297
Fluid end Boring Bar Portable	For Repairing fluid end of mud pump	
10P-130 National	Liner 10P-130 5-1/2"	L4227
10P-130 National	Liner 10P-130 6"	L4247
10P-130 National	Liner 10P-130 6-1/2"	LU/95/37/7
10P-130 National	Liner 10P-130 6-1/4"	L4257
10P-130 National	Liner 10P-130 6-3/4"	LU/95-37/8
F-1000/800 C EMSCO	Liner 6- 1/2"	S16717-62
F-1000/800 C EMSCO	Liner 6- 3/4"	S16717-66
F-1000/800 C EMSCO	Liner 6"	S16717-60
F-1600 C EMSCO	Liner 6 1/2"	
F-1600 C EMSCO	Liner 7"	
A1400/A1700PT Oil Well	Liner A1400/A1700PT 6-1/2"	07-326-651
A1400/A1700 PT Oil Well	Liner A1400/A1700 PT 7"	07-326-700
A-600PT Oil Well	Liner A-600PT 6-1/2"	07-329-650
A-850/1100PT Oil Well	Liner A-850/1100PT 6- 1/2"	05-330-651
A-850/1100PT Oil Well	Liner A-850/1100PT 7"	05-330-700
PZ-9 Gardner Denver	Liner PZ-9 6-1/2"	200-PZJ-456
PZ-9 Gardner Denver	Liner PZ-9 7"	207-PZJ-456
A-1700/850/1400 PT / 1100 PT Oil Well	Liner Wear Plate	10-300-184
12P-160 National	Liners 12P-160 6-1/2", 7"	L-4467
3PN-1300/1000	Liners 3PN-1300/1000 6-3/4"	617-17-01-102
3PN-1300/1000	Liners 3PN-1300/1000 6-2"	617-17-01-102E
3PN-1300-1000 Romanian	Liners 3PN-1300-1000 6-1/2", 7"	617-17-01-107E
P-Rod & Nut A-700	Lock Nut	49-003-372
A-700 duplex, oil well	P-Rod & Nut A-700	
PZ-10 / 11 Pump Gardner Denver	P-Rod & Nut for PZ - 10 / 11 Pump	200PZL060A
PZ-9 Pump Gardner Denver	P-Rod & Nut for PZ-9 Pump	IPZ 183
PZ-8 / PZ-9 Gardner Denver	Rod Extension	IP0183
PZ-8 / PZ-9 Gardner Denver	Ring Valve Cover	2011699
Mud Cleaner screen Brandt Mesh 100 thru 200	Screen 4' x 4' Mesh 100 thru 200	
Screen Swaco Shale Shaker	Screen 4' x 4' Mesh 20,40,60	
Screen Brandt Shale Shaker	Screen 4' x 5' Mesh 20 thru80	212334108 (MC)
Screen Brandt Shale Shaker With backup of 08 mesh	Screen 4' x 5' Mesh 60 thru100	212334108 (MC)
Dual/Triple Tandem Shale shaker	Shale shaker Assembly	
Dual/Triple Tandem Shale shaker	Shale shaker Basket	
API-6 Valve pots	Valve 4 Jaw (mission type)	U5B-EH
API-7 Valve Pots	Valve 4 Jaw (mission type)	U5B-EE
A-600 PT Oil Well	Valve Assy, API-6	20-160-171
33-5-RSL Oil Well	Valve Body 2-1/2"	08-018-382
A-1400PT / 1100 PT Oil Well	Valve Body A-1400 - API 7	20-160-162
A-600 PT Oil Well	Valve Disc, API-6	20-160-171
33-5-RSL Oil Well	Valve Insert 2-1/2"	991322005
A-1400PT / 1100 PT Oil Well	Valve Insert (Buna-Nitrile) A-1400 - API 7	20-180-018
33-5-RSL Oil Well	Valve Nut 2-1/2"	08-018-378
A-1400PT / 1100 PT Oil Well	Valve Nut A-1400 - API 7	20-860-015
A-600 PT Oil Well	Valve Nut, API-6	20-160-171
33-5-RSL Oil Well	Valve Seat 2-1/2"	08-216-025
API-6 Valve Pots	Valve seat 4 Jaw (mission type)	6ADD-B6
API-7 Valve Pots	Valve seat 4 Jaw (mission type)	7DD-B1
A-1400PT / 1100 PT Oil Well	Valve Seat A-1400 - API 7	20-160-105
A-600 PT Oil Well	Valve Seat, API-6	20-160-171
33-5-RSL Oil Well	Valve Spring 2-1/2"	08-516-070
A-1400PT / 1100 PT Oil Well	Valve W with Nut & Buna-N insert	20-160-164
A-1400PT / 1100 PT Oil Well	Valve W with Nut & Polyurethane insert	20-160-163

API CERTIFICATE FOR SLUSH PUMP COMPONENTS

**American
Petroleum
Institute**



2011-111

Certificate of Authority to use the Official API Monogram

License Number: 7K-0092

ORIGINAL

The American Petroleum Institute hereby grants to

KHALSA OIL FIELD EQUIPMENTS PVT. LTD.
46, Ballapur Road
Dehra Dun, Uttaranchal
India

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API Spec 7K** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: **7K-0092**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following product: Slush Pump Components

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: JANUARY 10, 2011
Expiration Date: JANUARY 10, 2014

To verify the authenticity of this license, go to www.api.org/compositelist.

American Petroleum Institute

Director of Global Industry Services

EXPENDABLE PUMP PARTS

MUD PUMP API VALVES AND SEATS

Manufacturer	API-4		API-5		API-6		API-7		API-8		API-9	
NATIONAL					KSH-180	(6x 10)	K-180	(7¼ x 10)	C-250-F	(7¼ x 15)	C-350	(7¼ x 18)
					KSH-280	(6x 12)	K-280	(7¼ x 12)	K-500	(7½ x 15)	C-350-F	(7¼ x 18)
							K-380	(7¼ x 14)	K-500-A	(7¼ x 15)	G-1000-C	(7¼ x 16)
									K-700-A	(7¼ x 16)	H-850-A	(6 x 15)
											H-1250	(7¼ x 16)
											K-700	(8 x 16)
OILWELL					350-PT	(7 x 8)	B850-PT	(6½ x 9)	1400-P	(7 x 18)	A700-P	(7¼ x 16)
					A580-PT	(7 x 8)	B1100-PT	(6½ x 10)	1700-P	(7 x 18)	A850-P	(7¼ x 16)
					A600-PT	(7 x 8)	1400-PT	(6½ x 10)			A1000-P	(7¼ x 18)
							1700-PT	(6½ x 12)				
							A1400-PT	(6½ x 10)				
							A1700-PT	(6½ x 12)				
WILSON									600	(6½ x 14)	1250	(7 x 18)
									900	(6½ x 16)	Titan	(7 x 18)
									Giant	(7½ x 14)		
MATTCO							D-500	(7½ x 16)	D-550	(7½ x 16)	D-700	(8 x 16)
CONTINENTAL -									D-850	(8½ x 16)	D-1000	(8¼ x 18)
EMSCO									DA500	(7½ x 16)	D-1350	(7½ x 18)
									DB-700	(7½ x 16)	D-1650	(7½ x 18)
									DC-850	(7½ x 16)	DA-700	(8 x 16)
									DC-1000	(7½ x 16)	DA-850	(8¼ x 18)
											DB-1000	(7½ x 18)
MATTCO							G-300	(7¼ x 16)	B-1640	(8x16)		
EMESCO "B" LINE									G-45	(8x16)		
									G-65	(8x16)		
									GC1-325-	(8x16)		
									OB			
									GC1-325-	(8x16)		
									OB			
MATTCO	PJ-8H	(5x8)	PO-7	(6x7)					GQ-GXN	(7¼ x 14)	GR-GXP	(7¼ x 16)
GARDNER-DENVER			PV-9	(6x9)					GQ-GXQ	(7¼ x 16)	GR-GXR	(7¼ x 18)
			PY-7	(6x7)							KG-KXF	(7¼ x 16)
			PZ-8	(6x8)							KG-KXG	(7¼ x 18)
			PZ-9	(6x9)								
MATTCO INDECO									MM-600-F	(7¼ x 14)	MM-1250-F	(7½ x 18)
									MM-700-F	(7¼ x 16)	MM-1250-GB	(7½ x 18)
									MM-1000	(7 x 16)		
									MM-1250	(7 x 18)		
MATTCO NATIONAL							C-250*	(7¼ x 15)	C-250!	(7¼ x 15)	C-350**	(7¼ x 18)
									C-350**	(7 x 18)	G-700	(8 x 14)
									K-500	(7½ x 15)	E-500	(8 x 14)
									K-700-A	(7½ x 16)	H-850-A	(8 x 15)
											H-1250	(7¼ x 16)
MATTCO OILWELL							214-P	(7¼ x 14)	218-P	(7¼ x 18)	A700-P	(7¼ x 16)
									700-P	(7 x 16)	A850-P	(7¼ x 16)
									1000-P	(7 x 18)	A1000-P	(7¼ x 18)
MATTCO WHELAND									HP-16000	(7 x 16)		
									HP-18000	(7 x 18)		
SOUTHWEST							D-700	(6½ x 16)				
EMSCO							DB-700	(6½ x 16)				

Manufacturer	API-4		API-5		API-6		API-7		API-8		API-9	
SOUTHWEST NATIONAL							C-250	(6½ x 15)				
							C-350	(6 x 18)				
							N-900	(6½ x 16)				
ELLIS WILLIAMS					9W-1000		14W-400		15W-600			
									15W-800			
REWESTER									B-500	(7¼ x 14)	B-750-C	(7¾ x 16)
									B-750-F	(7 x 16)		
									B-1000-F	(7 x 18)		
CONTINENTAL EMSCO	F-350-P	(4½ x 7)	F-350	(6 x 7)	D-125	(7¼ x 10)	BA-14	(7½ x 14)	D-550	(7½ x 16)	D-700	(8 x 16)
			F-500	(6 x 7½)	D-225	(7¼ x 12)	CA-16	(7½ x 16)	D-850	(8¼ x 16)	D-1000	(8¼ x 18)
			F-650	(6 x 8)	F-800	(6¼ x 9)	D-14	(7½ x 14)	DA-500	(7½ x 18)	D-1250	(7½ x 18)
			F-750	(7 x 8)	F-1000	(6¼ x 10)	D-16	(7½ x 16)	DB-550	(7½ x 16)	D-1350	(7½ x 18)
							D-300	(7½ x 14)	DB-700	(7½ x 16)	D-1500	(7½ x 18)
							D-375	(7½ x 14)	DC-850	(7½ x 18)	D-1650	(7½ x 18)
							D-500	(7½ x 16)	DC-1000	(7½ x 18)	D-1000-A	(8¼ x 18)
							F-1300	(7 x 12)	DC-1350	(7½ x 18)	DA-700	(8¼ x 16)
							F-1600	(7 x 12)	DC-1650	(7½ x 18)	DA-850	(8¼ x 18)
							FA-1300	(7 x 12)			DB-1000	(7½ x 18)
							FA-1600	(7 x 12)				
							FB-1600	(7 x 12)				
GARDNER-DENVER	AAPA-8HA	(5 x 8)	PO-7C	(6 x 7)			PY-7B	(7 x 7)	FK-FXK	(7¼ x 14)	FQ-FR	(7¾ x 18)
	PJ-8A	(5 x 8)	PV-9A	(6 x 9)			PY-7D	(7 x 7)	GN-GXN	(7¼ x 14)	GH-GXH	(7¾ x 18)
	PJ-8HB	(5 x 8)	PY-7A	(6 x 7)			PY-7F	(57 x 7)	GN-GXN-A	(7¼ x 14)	FQ-FXQ	(7¾ x 16)
			PY-7C	(6 x 7)			PZ-7GA	(6 x 7)	GQ-GXN	(7¼ x 14)	GP-GXR	(7¾ x 18)
			PY-7E	(6 x 7)			PZ-9JC	(7 x 9)	GQ-GXN-A	(7¼ x 14)	GR-GXR	(7¾ x 18)
			PY-7G	(6 x 7)			PZ-11LC	(7 x 11)	GZ-GXN-B	(7¼ x 14)	GP-GXP-A	(7½ x 16)
			PZ-8A	(6 x 8)			PZ-11A	(7 x 11)	GX-GXN-C	(7¼ x 14)	GR-KXP-A	(7½ x 16)
			PZ-8HB	(6 x 8)					GX-GXN-D	(7¼ x 14)	KG-KXG-A	(7¾ x 18)
			PZ-9A	(6 x 9)					GQ-GXQ	(7¼ x 16)	KG-KXG-B	(7¾ x 18)
									KJ-KXJ-B	(7¼ x 18)	KG-KXG-C	(7¾ x 18)
											KG-KXF-A	(7¾ x 16)
											KJ-KXJ-A	(7¾ x 18)
EMSCO			T-500	(7 x 8)	MM-200	(6¾ x 10)	MM-300-A	(7¼ x 12)	MM-550-F	(7¼ x 15)	MM-1000	(8 x 16)
					T-800	(7 x 9)	MM-300-B	(7¼ x 12)	MM-600-D	(7¾ x 16)	MM-1000-F	(7½ x 16)
					T-1000	(7 x 10)	MM-450	(7¼ x 12)	MM-600-F	(7¼ x 16)	MM-1000-FA	(7½ x 16)
							T-1300	(7½ x 12)	MM-700	(7¾ x 16)	MM-1000-GB	(7½ x 16)
							T-1600	(7½ x 12)	MM-700-F	(7¼ x 16)	MM-1250	(8 x 18)
											MM-1250-F	(7½ x 18)
											MM-1250-FA	(7½ x 18)
											MM-1250-FC	(7½ x 18)
											MM-1250-GB	(7½ x 18)
											MM-1450-F	(7½ x 18)
											MM-1650-F	(7½ x 18)
											MM-1750-F	(7½ x 18)
EMSCO CLARK							T-380-A	(7¼ x 12)				
							T-380-B	(7¼ x 12)				
							T-380-S	(6¾ x 12)				
							T-440-A	(7¼ x 12)				
							T-440-B	(7¼ x 12)				
							T-440-C	(7¼ x 12)				
							T-440-D	(7¼ x 12)				
PI					500-DC		1000-HDL					
					700-DL							
					700-HDL							

TRIPLEX MUD PUMP PARTS

Mfr & Model of Pump Part	Oilwell			National		Gardenver Denver			Wirth	IDECO	Rumanian	EMSCO
	A600PT	A850PT/ A100PT	A1400PT/ A1700PT	10P130	12P160	PZ8	PZ9	PZ10/PZ11	TPK1600	T1300/T1 600	3PN1300/ 3PN1600	FB1600
Liner Basic part No. Min. Size (inch) Max Size (inch)	S18575-XX 4 6 ½	S208931-XX 5 7	S18317-XX 5 7	S15728-SS 4 6 ¾	S17244-XX 4 7 ½	S18260-XX 3 ½ 6	S18260-XX 4 ¼ 6 ½	S17575-XX 5 7	S19801-XX 5 6 ½	S20252-XX 5 7	S22392-XX 5 7	S21682-XX 5 7
Liner Packing	16948-YY	16948-YY	16948-YY	17290-YY	17325-YY	20371	20371	20371	16948-14	20353	16948-YY	21683
Valve Assy (Nitrile)	5BEH	5CEEF	5CEEF	5BEH	5CEEF	5B-5	5CEEF	5CEEF	5CEEF	5CEEF	5CEEF	5CEEF
Valve Assy (Polyuthane)	U5BEH	U5CEEF	U5CEEF	U5BEH	U5CEEF	U5B-5	U5CEEF	U5CEEF	U5CEEF	U5CEEF	U5CEEF	U5CEEF
Valve Seat	6ADDB6	7DDB1	7DDB1	6ADDB4	7DDB12	5DDB1	7DDB1	7DDB1	*	7DDB1	7DDB1	7DDB1
Valve Insert (Nitrile)	DD-6AB	DD-7B	DD-7B	DD-6AB	DD-7B	DD-5B	DD-7B	DD-7B	DD-7B	DD-7B	DD-7B	DD-7B
Valve Insert (Polurethane)	UDD-6AB	UDD-7B	UDD-7B	UDD-7B	UDD-6AB	UDD-78	UDD-5B	UDD-7B	UDD-7B	UDD-7B	UDD-7B	UDD-7B
Valve Cap Gasket	155001662	155001688	155001688	155001548	155001563	155001381	155001407	155001423	-	155001449	-	155001142
Valve Seat Puller Assy	JDD-6A-B	JDD-7	JDD-7	JDD-7	JDD-6A	JDD-7	JDD-5A	JDD-7G	*	JDD-7G	*	*
Valve Spring	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110	5710-110
Piston Assy B Series (upto 6") L series (Beyond 6")	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14	S®HB14 S®HL14
Piston Rubber Assy B Series (upto 6") L series (Beyond 6")	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL	S®HB S®HL
Piston Rod Piston Rod Nut	21041-B 7301-14	21041-A 7301-14	21041-A 7301-14	23112@ 7301-14	23114@ 7301-14	16550 7301-14	19910 7301-14	17576 7301-14	19798 7301-14	20254 7301-14	*	22366 7301-14
Piston Rod Nut Wrench	17114	17114	17114	17114	17114	17114	17114	17114	17114	17114	17114	17114
Piston Snap Ring B Series L Series	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934	03350 05934
Piston End Plate												
Cylinder Head Gasket	-	-	-	-	-	155001381	155001407	155001423	-	155001449	-	155002140
Liner Wear Plate Gasket	16948-13	16948-7	16948-7	-	-	-	-	-	-	-	-	-

Asterix (*) indicates – Refer factory for part number.

@ Refer factory for part number for Sub Rod.

Linze Size Code (XX) Bore Size (Inch) " 7 ½, 7 ¼, 7, 5 ¾, 6 ½, 6 ¼, 5 ¾, 5 ½, 5 ¼, 5, 4 ¾, 4 ½, 4 ¼, 4 3 ¾, 3 ½, 3 ¼

Code XX : 74 72 70 66 64 62 60 56 54 52 40 36 34 32 30

Piston Assy and Piston Rubber Assy Size Code ® : Indicate nominal dia. in inches for ®. Available in steps of ¼ inch. From 3 or 7 ½" as per liner bore size.