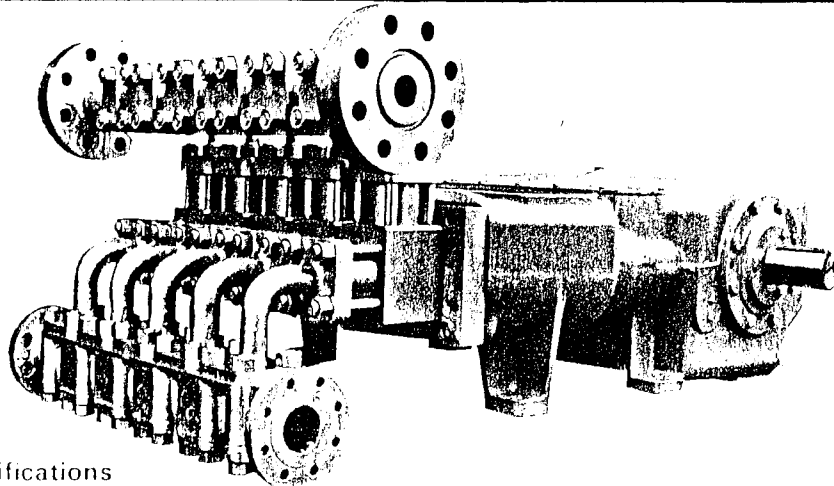


A-516 Quintuplex Plunger Pump



This six-inch stroke pump with its patented, sectional fluid end provides excellent, economic service in handling corrosive fluids.

Working Pressure

Up to 5,650 psi

Displacement

4,428 bpd (129.09 gpm)
at 3,190 psi
2,519 bpd (73.44 gpm)
at 5,650 psi

Specifications

Pump Size (Max. Plunger Dia. X Stroke)	inches	1 7/8 x 6
Standard Plunger Sizes	inches	1 1/2, 1 5/8, 1 3/4 1 11/16, 1 3/4, 1 13/16 and 1 7/8
Rated bhp at 360 rpm		267
Hydrostatic Test Pressure: Discharge	psi	9,000
Suction	psi	1,100
Maximum Working Pressure: Discharge	psi	5,650
Suction	psi	720
Two Flanged Suction Connections: Pipe Size	inches	4
ANSI Rating	pounds	300
ANSI Facing		Raised Face
Two Flanged Discharge Connections: Pipe Size	inches	4
ANSI Rating	pounds	2500
ANSI Facing		R.T.J.
Crankshaft Extension: Diameter	inches	4.495
Length	inches	7 3/4
Keyway (Width X Depth)	inches	1 x 3/8
Pinion Shaft Extension (If Gear Unit Supplied)		
(For Belt Or Chain Drive) Diameter	inches	4.495
Length	inches	8 1/4
Keyway (Width x Depth)	inches	1 x 1/2
(For Direct Drive) Diameter	inches	3.375
Length	inches	4 1/2
Keyway (Width x Depth)	inches	7/8 x 1/16
Accessory Gear Units (Reduction Ratios)		2.698:1 3.680:1 5.500:1 7.316:1 9.500:1
Oil Capacity: Crankcase	gallons	32
Gear Unit	gallons	—
Weight: Pump Only (On Wood Shipping Skids)	pounds	8,219
Gear Unit	pounds	2,219

Quick Maintenance Features

- Horizontal design
- Large power end access covers and doors
- Easy access for bearing adjustment
- Separate crosshead plunger-shank construction
- Open frame cradles
- Removable stuffing boxes
- Interchangeable valves

Plunger Diameter (Inches)	Stuffing Box Bore (Inches)
1 1/2 - 1 3/4	2 1/2

Each Pump Is Standard Equipped with:	Optional Equipment	Accessory Equipment
Aluminum Bronze Fluid End (Five Individual Blocks) Aluminum Bronze Suction Elbows Aluminum Bronze Discharge Elbows Aluminum Bronze Suction Manifold Aluminum Bronze Discharge Manifold Aluminum Bronze Stuffing Boxes CO-HARD Plungers Style 610-405-59 VD Plunger Packing S. S. Wing Guided Valves S. S. Valve Seats S. S. Valve Springs Bronze Stuffing Box Bushings Bronze Packing Followers Oil Level Switch-Gauge Double Extended Crankshaft Crankshaft Extension Cover Crankcase Breather Wooden Shipping Skids	Ceramic Plungers Titanium Valve Springs	5-Feed Stuffing Box Lubricator Assembly Cradle Covers Valve Seat Puller Assembly Suction Stabilizers Discharge Pulsation Dampeners 2.698:1 Ratio Gear Reduction Unit 3.680:1 Ratio Gear Reduction Unit 5.500:1 Ratio Gear Reduction Unit 7.316:1 Ratio Gear Reduction Unit 9.500:1 Ratio Gear Reduction Unit Steel Base For Pump Only Steel Base For Pump and Electric Motor Steel Base For Pump and Engine Gear Reduction Units (Separate Mount) V Belt Drives Belt Guards Flexible Couplings Coupling Guards

We reserve the right to change specifications without incurring any obligation for equipment previously or subsequently sold.

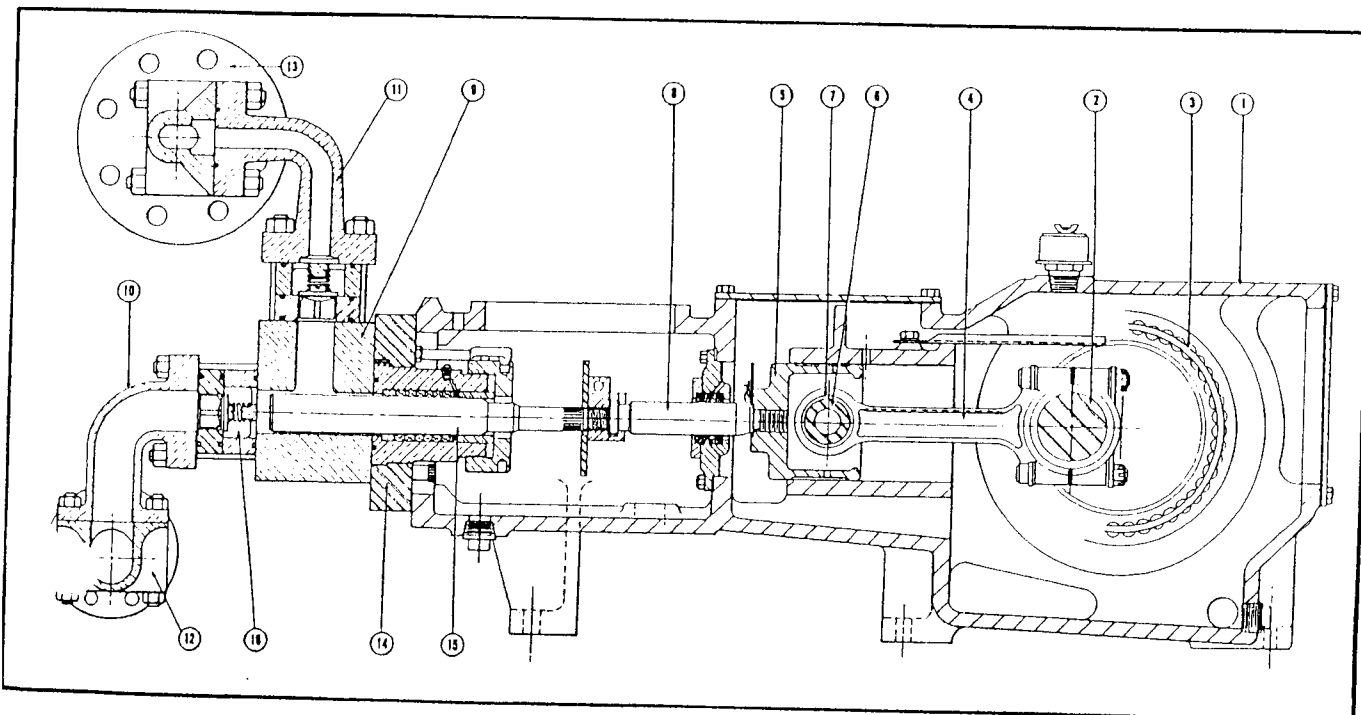
Features of OILWELL Standard Units

POWER END

- (1) **POWER FRAME** — One-piece . . . fully enclosed . . . rib reinforced . . . close grained iron casting.
- (2) **CRANKSHAFT** — Ground journals . . . polished throws . . . fully heat-treated . . . forged steel (extended on both sides of power frame to provide for either right-hand or left-hand drive).
- (3) **BEARINGS** — (crankshaft) — shim adjusted . . . heavy-duty . . . tapered roller bearings.
(crankpin) — individually fitted . . . shim adjusted . . . bearing bronze.
(back-up) — straight roller . . . mounted between No. 2 and 3 crank throws.
- (4) **CONNECTING RODS** — Marine type (enclosed eye at crosshead end and with separate cap at crank end) . . . ductile iron.
- (5) **CROSSHEADS** — Cylindrical . . . upper and lower oil grooves . . . cast iron.
- (6) **CROSSHEAD PINS** — Case hardened . . . finished ground . . . alloy steel.
- (7) **CROSSHEAD PIN BUSHINGS** — Press fitted into connecting rods . . . bearing bronze.
- (8) **EXTENSION RODS** — Removable from crossheads . . . chrome plated . . . alloy steel.
- (*) **LUBRICATION** — Flooded sump . . . splash distribution.
- (*) **OIL LEVEL SWITCH-GAUGE** — Visual oil level gauge . . . built-in high and low level contacts.

FLUID END

- (9) **FLUID CHAMBER** — Five individual cylinders . . . single intersecting bore . . . low stress intensification . . . heat treated . . . aluminum bronze.
- (10) **SUCTION ELBOWS** — Five individual elbows . . . singly removable . . . aluminum bronze.
- DISCHARGE ELBOWS** — Five individual elbows . . . singly removable . . . aluminum bronze.
- (12) **SUCTION MANIFOLD** — ANSI Flange facings on both ends . . . aluminum bronze.
- (13) **DISCHARGE MANIFOLD** — ANSI Flange facings on both ends . . . aluminum bronze.
- (14) **STUFFING BOXES** — Bolted type . . . individually removable . . . screw-type glands . . . aluminum bronze.
- (15) **PLUNGERS** — Stub type — knurled wrench surface . . . end clamped and bolt locked to extension rod.
- (*) **PACKING** — Moulded . . . high pressure type . . . minimum cross section.
- (16) **VALVES AND SEATS** — Metal-to-metal . . . wing-guided type . . . stainless steel.
- (*) Not Detailed In This Drawing.



Plunger Pump

Performance Data

ENGLISH UNITS

Stroke Lgh. 6" . . . Max. Pressure 5,650 psi (2,519 bpd, 73.44 gpm) . . . Max. Vol. 4,428 bpd, 129.09 gpm (3,190 psi) . . . Rated Speed 360 rpm . . . Rated Plunger Load 10,000 lbs.
(Volumes Indicated are Displacement of Noncompressible Fluid)

Plgr. Dia.	Plgr. Area (Sq. In.)	Displacement Gal. Per Rev.	Max. Pres. psi	100 rpm		150 rpm		200 rpm		250 rpm		300 rpm		320 rpm		360 rpm	
				bpd	gpm	bpd	gpm	bpd	gpm	bpd	gpm	bpd	gpm	bpd	gpm	psi	gpm
1 1/4"	1.7671	2.295	5,650	787	22.95	1181	34.42	1574	45.90	1968	57.37	2362	68.85	2519	73.44	5000	2834
1 1/2"	1.9175	2.490	5,220	854	24.90	1281	37.35	1708	49.80	2135	62.26	2562	74.71	2733	79.69	4600	89.65
1 3/4"	2.0739	2.693	4,820	924	26.93	1386	40.40	1848	53.87	2310	67.34	2772	80.80	2956	86.19	4250	96.96
1 1/2"	2.2365	2.905	4,470	996	29.05	1494	43.57	1993	58.09	2491	72.62	2989	87.14	3188	92.95	3950	104.57
1 1/4"	2.4053	3.124	4,160	1071	31.24	1607	46.86	2143	62.47	2679	78.09	3214	93.71	3429	99.96	3670	112.45
1 3/4"	2.5802	3.351	3,875	1149	33.51	1724	50.26	2299	67.02	2873	83.77	3448	100.53	3678	107.23	3420	120.63
1 1/2"	2.7612	3.586	3,620	1230	35.86	1845	53.79	2460	71.72	3075	89.65	3690	107.58	3936	114.75	3190	129.09
Gear Unit Pinion				270	405	540	675	809	863	971	1178	1325	1580	1760	1980	2634	3420
Shaft rpm				368	552	736	920	1100	1375	1589	1829	2195	2500	2875	3340	3670	4250
At Gear Ratios Of:				732	1097	1463	1829	2195	2500	2875	3340	3670	4250	4900	5550	6340	7250
Brake Horsepower Required				84	126	168	210	250	267	307	375	448	500	571	634	725	825

Brake Horsepower = $\frac{\text{gpm} \times \text{psi}}{1714 \times 90\% \text{ Mech. Eff.}}$

Barrels Per Day = $\text{gpm} \times 24 \times 3.43$

Barrels Per Day = $\text{Gal. Per Rev.} \times \text{rpm} \times 34.3$

Gal. Per Rev. = $\frac{\text{Area of Plunger} \times (\text{Length of Strokes} \times \text{Number of Plungers})}{231}$

Gal. Per Min. = $\frac{\text{bpd}}{34.3}$

Gal. Per Min. = $\text{Gal. Per Rev.} \times \text{rpm}$

m³/d = Cubic Meters Per 24 Hrs

METRIC UNITS

Stroke Lgh. 152mm . . . Max. Pressure 397 kg/cm² (400.49 m³/d, 277.99 litres per min.) . . . Max. Vol. 703.99 m³/d, 488.65 litres per min. (224 kg/cm²) Rated Speed 360 rpm . . . Rated Plunger Load 4536 kg.

Plgr. Dia. mm	Plgr. Area cm ²	litres Per Rev.	Max. Pressure kg/cm ²	100 rpm		150 rpm		200 rpm		250 rpm		300 rpm		320 rpm		360 rpm	
				m ³ /d	litres per min.	m ³ /d	litres per min.	m ³ /d	litres per min.	m ³ /d	litres per min.	m ³ /d	litres per min.	m ³ /d	litres per min.	kg/cm ²	litres per min.
38	11.4006	.8687	397	125.12	86.87	187.76	130.29	250.25	173.75	312.89	217.16	375.53	260.62	400.49	278.00	352	312.74
40	12.3709	.9425	367	135.77	94.25	203.66	141.38	271.55	188.51	339.44	235.67	407.33	282.80	434.51	301.65	323	339.35
41	13.3800	1.0194	339	146.90	101.94	220.36	152.93	293.81	203.92	367.26	254.90	440.71	305.85	469.97	326.26	299	367.03
43	14.4290	1.0996	314	158.35	109.96	237.53	164.93	316.86	219.89	396.04	274.89	475.21	329.85	506.85	351.85	278	395.83
44	15.5180	1.1825	292	170.28	118.25	255.49	177.38	340.71	236.47	425.93	295.60	510.98	354.72	545.17	378.38	258	425.66
46	16.6464	1.2685	272	182.68	126.85	274.09	190.25	365.51	253.69	456.77	317.10	548.19	380.54	584.75	405.90	240	456.62
48	17.8142	1.3574	255	195.55	135.74	293.33	203.61	391.11	271.48	488.89	339.35	586.66	407.23	625.77	434.37	224	488.65
Gear Unit Pinion				270	405	540	675	809	863	971	1178	1325	1580	1760	1980	2634	3420
Shaft rpm				368	552	736	920	1100	1375	1589	1829	2195	2500	2875	3340	3670	4250
At Gear Ratios of:				732	1097	1463	1829	2195	2500	2875	3340	3670	4250	4900	5550	6340	7250
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