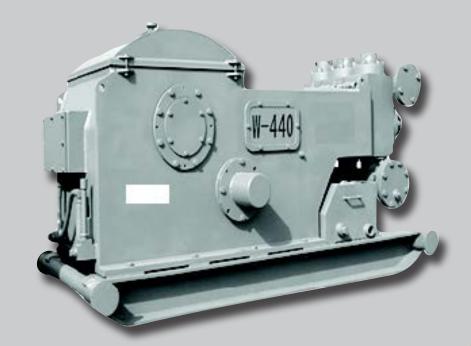
Energy Services, Inc.





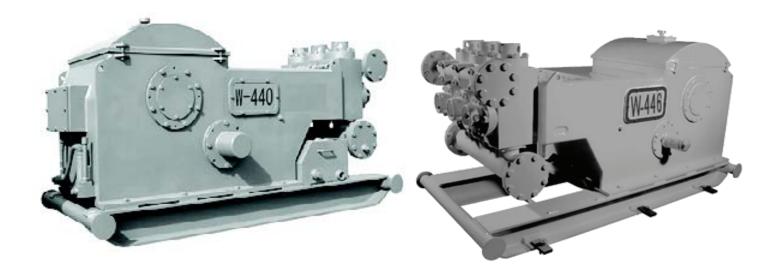


W-440/446 SINGLE-ACTING TRIPLEX PUMP

Energy Services, Inc.

10550 Bissonnet Street, Suite 150 Houston, Texas 77099 USA Tel: 281.530.6688 / Fax: 281.530.6694 www.kanaenergyservices.com

KANA Energy Services, Inc., Sales and Services, Houston, Texas



W-440/446 SINGLE-ACTING TRIPLEX PUMP

The W-440/446 mud pump is used in a broad range of oilfield applications and fluids. The structure is durable, yet light and compact for easy use and transport. The wheel set of the transmission is an integrated herringbone gear with a high driving torque.

Features of the Pump:

The **frame** is made of a welded steel plate structure that has been stress relived to release inner stress after welding and is reinforced by the bearing block of the crank and main bearing base.

The **Crank shaft** is made of forged steel and machined and balanced so that they run smoothly with no vibration.

The **pinion** is made of forged alloy steel with herringbone teeth machined on the shaft and utilizes the medium hard toothed flank.

The **Crosshead** is coated with ductile iron which allows for non-friction during operations. The guide plate utilizes the structure of upper and lower guide plates which allows you to adjust concentricity by adding spacers at the lower guide plate.

The **Hydraulic Cylinder** is made of forged alloy steel and is straight-way type. It is compact with a high volumetric efficiency. The surface of the hydraulic cylinder is available in several anti-corrosive materials including nickel and phosphorous plating.

The outer diameter of the W440/446 Mud Pump **Liners** are the same. They are attached to the hydraulic cylinder end with a square liner cap and bolts. There is an elastomeric seal between the liner and hydraulic cylinder.

The mud pumps use a forced **Lubrication System** to deliver oil to the guide plate of the crosshead and all of the bearings.

TECHNICAL SPECIFICATIONS

Model	W-440	W-446			
Rated Input Power	440 HP	446 HP			
Max Stroke	320 min ⁻¹ (320SPM)	300 min ⁻¹ (300SPM)			
Stroke Length	6"	6" 4,578 : 1 3000 psi			
Gear Ratio	4,578 : 1				
Max Working Pressure	5000 psi				
Valve	API #4	API #SA-4			
Max Liner Diameter	4 ½"	6"			
Max Liner Pressure	1710 psi	1050 psi 6" (150#) Flange			
Suction Pipe Diameter	6" (150#) Flange				
Discharge Pipe Diameter	3" (900#) Flange	3" (900#) Flange			
Pinion Diameter	3.75"	3.75"			
Key	0.87" X 0.63"	0.87" X 0.63"			
Dimensions (in)	97.60" x 47.99" x 43.43"	97.60" x 47.99" x 43.43"			
Weight	9,839 lbs	9,855 lbs			

PERFORMANCE SPECIFICATIONS

W-440 PUMP		Stroke, min ⁻¹		270	220	170	120	70
PARAMETERS		Input Power (Horsepower)		380	320	260	200	200
Liner Diameter	Pressure	Gallon, run ⁻¹	Gallon, run ⁻¹					
4 ½	1710	1.239	397	335	273	211	149	87
4 1/4	1917	1.105	354	299	243	188	133	77
4	2169	0.979	313	264	215	167	118	69
3 ¾	2468	0.861	275	232	189	146	103	60
3 ½	2816	0.750	240	202	165	127	90	52
3	3327	0.551	204	149	121	94	66	39
Mechanical efficiency : 90%, coefficient of fullness α = 100%, and volumetric efficiency : 100%								

W-446 PUMP PARAMETERS		Stroke, min ⁻¹	300	250	200	1750	50	100	50
		Input Power (Horsepower)	446	355	285	250	213	142	71
Liner Diameter	Pressure	Gallon, run ⁻¹	Gallon, run ⁻¹						
6	1050	2.203	661	550	440	386	330	220	110
5 ½	1248	1.851	555	463	370	324	278	185	63
5	1508	1.530	459	383	306	286	230	153	76
4 ½	1863	1.239	372	310	248	217	186	124	62
4	2357	0.979	294	245	196	171	147	98	491
3 ½	3000	0.750	225	188	150	131	113	75	38
Mechanical efficiency: 90%, coefficient of fullness α = 100%, and volumetric efficiency: 100%									