

535/545 Duplex Double-Acting Piston Pump

Specifications

Pump Size:

maximum piston size x stroke length, in.(mm):
4.500 x 5.125 (88.9 x 130.2)

Rated BHP (kW) at 85 RPM (Crankshaft speed):
12.4 (9.3)

Rated piston load, pounds (kg): 2500 (1134)

Maximum discharge pressure, psi (kPa):
796 (5487)

Pinion Gear Ratio: 4.933:1

Pinion shaft extension:

Diameter, in. (mm): 1.500 (38.10)

Length, in. (mm): 4.188 (4.76)

Keyway width x depth, in.(mm):

3/8 x 3/16 (9.52 x 4.76)

Maximum recommended sheave diameter,
in.(mm): 25.0 (635.0)

For larger sheave diameters:

Contact Factory

Oil Capacity, gallons (L): 1.25 (4.7)

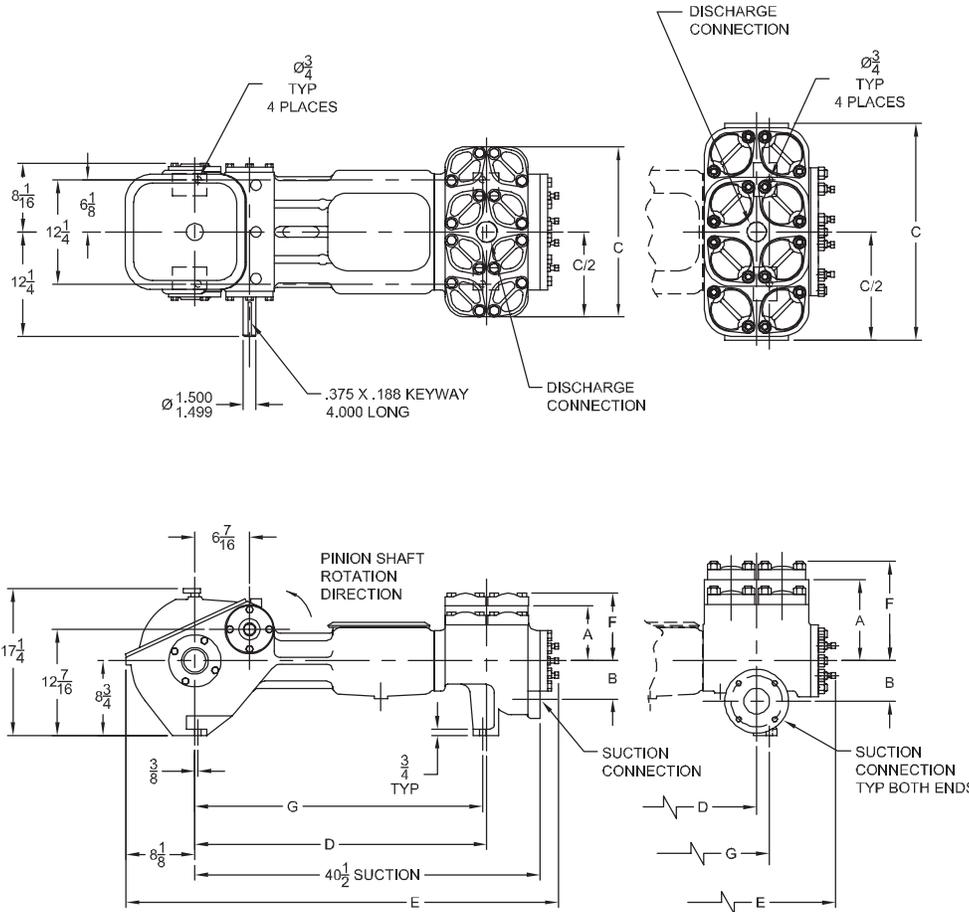
Weight, pump only on

wood shipping skids, pounds (kg): 800 (363)

Standard Materials for Fluid End Bodies:

Cast Gray Iron

Cast Ductile Iron



Pump Model	Flange Connections		Dimensions (Inches)										
	Discharge Connection Sizes	Suction Connection Sizes	A	B	C	D	E	F	G	H	J	K	L
535	2 (50.8)-11 1/2 NPT	2 1/2 (63.5)-8 NPT	6 7/16	4 1/2	20	34 1/4	50 7/8	8	33 3/8	2 5/8	3	31 1/4	13 3/4
545	2 (50.8)-11 1/2 NPT	3 (76.2)-8 NPT	8 13/16	4 3/4	25 1/2	34 3/8	50 3/4	11 3/4	35 7/8	4	2 3/4	32 5/8	16 1/4

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535/545 Duplex Double-Acting Piston Pump

Performance Data

PUMP	English Units					25 RPM		40 RPM		55 RPM		70 RPM		85 RPM	
	Piston Dia. In.	Piston Area Sq. In.	BPD per RPM	GPM per RPM	Max. Press. PSI	BPD	GPM								
535	2.000	3.1416	8.3623	0.2439	796	210	6.1	335	9.8	460	13.4	586	17.1	711	20.7
	2.500	4.9087	13.7383	0.4007	509	344	10.0	550	16.0	756	22.0	962	28.0	1168	34.1
	3.000	7.0686	20.3074	0.5923	354	508	14.8	813	23.7	1117	32.6	1422	41.5	1727	50.3
	3.500	9.6211	28.0766	0.8189	260	702	20.5	1124	32.8	1545	45.0	1966	57.3	2387	69.6
545	2.500	4.9087	13.7383	0.4007	509	344	10.0	550	16.0	756	22.0	962	28.0	1168	34.1
	3.000	7.0686	20.3074	0.5923	354	508	14.8	813	23.7	1117	32.6	1422	41.5	1727	50.3
	3.500	9.6211	28.0766	0.8189	260	702	20.5	1124	32.8	1545	45.0	1966	57.3	2387	69.6
	4.000	12.5664	37.0354	1.0802	199	926	27.0	1482	43.2	2037	59.4	2593	75.6	3149	91.8
	4.500	15.9043	47.1943	1.3765	157	1180	34.4	1888	55.1	2596	75.7	3304	96.4	4012	117.0
Brake Horsepower Required						3.7		5.9		8.0		10.2		12.4	

PUMP	Metric Units					25 RPM		40 RPM		55 RPM		70 RPM		85 RPM	
	Plunger Dia. mm	Plunger Area cm ²	M ³ /Hr per RPM	L/Sec. per RPM	Max. Press. kPa	M ³ /Hr	L/Sec.								
535	51	20.268	0.0554	0.0154	5487	1.4	0.4	2.2	0.6	3.0	0.8	3.9	1.1	4.7	1.3
	64	31.669	0.0910	0.0253	3511	2.3	0.6	3.6	1.0	5.0	1.4	6.4	1.8	7.7	2.1
	76	45.604	0.1345	0.0374	2439	3.4	0.9	5.4	1.5	7.4	2.1	9.4	2.6	11.4	3.2
	89	62.072	0.1860	0.0517	1792	4.6	1.3	7.4	2.1	10.2	2.8	13.0	3.6	15.8	4.4
545	64	31.669	0.0910	0.0253	3511	2.3	0.6	3.6	1.0	5.0	1.4	6.4	1.8	7.7	2.1
	76	45.604	0.1345	0.0374	2439	3.4	0.9	5.4	1.5	7.4	2.1	9.4	2.6	11.4	3.2
	89	62.072	0.1860	0.0517	1792	4.6	1.3	7.4	2.1	10.2	2.8	13.0	3.6	15.8	4.4
	102	81.073	0.2453	0.0681	1372	6.1	1.7	9.8	2.7	13.5	3.7	17.2	4.8	20.9	5.8
	114	102.608	0.3126	0.0868	1084	7.8	2.2	12.5	3.5	17.2	4.8	21.9	6.1	26.6	7.4
Kilowatts Required						2.7		4.4		6.0		7.6		9.3	

For operation below 54 RPM, an auxiliary lubrication system is required.

RPM shown is Crankshaft speed. For Pinion Shaft speed, multiply RPM by Gear Ratio. Volumetric Rate is based on 100% Volumetric Efficiency. Brake Horsepower/Kilowatts Required is based on 85% Mechanical Efficiency.

The information and data on this sheet is accurate to the best of our knowledge and belief, but are intended for general information only. Applications suggested for the materials are described only to help readers make their own evaluations and decisions, and are neither guarantees nor to be construed as express or implied warranties of suitability for these or other applications. National Oilwell makes no warranty either express or implied beyond that stipulated in National Oilwell Standard Terms and Conditions of Sale.

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