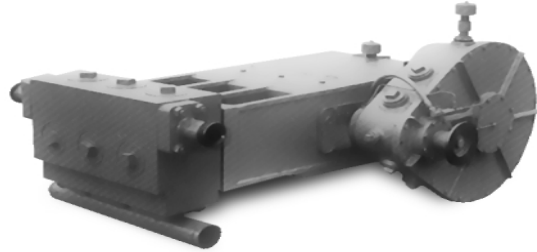


ROTATING RIGHT

# NATIONAL OILWELL SA-600-5 TECHNICAL DATA SHEET



Series  
**Triplex Intermittent Duty SA-600-5**



"SA" series intermittent duty pump  
Rated input horsepower  
Stroke length (in.)

The SA-pump series incorporates the desirable combination of light weight and high strength, ideal for mounting onto truck/trailer, barge and platform while providing dependable intermittent duty service.

**Field Connections** in. (mm)

Pump Model	Discharge Connection Size	Suction Connection Size
SA-626-5	2" Fig 1502 Female Union Half	4" Grooved Std Pipe
SA-630-5	2" Fig 1502 Female Union Half	4" Grooved Std Pipe
SA-634-5	2" Fig 1502 Female Union Half	4" Grooved Std Pipe
SA-640-5	2" Fig 1502 Female Union Half	4" Grooved Std Pipe
SA-644-5	3" Fig 1002 Female Union Half	5" Grooved Std Pipe
SA-650-5	3" Fig 1002 Female Union Half	5" Grooved Std Pipe

**Dimensions**

Pump Type	Length	Width	Height
SA-626-5	87-9/16"	43-9/16"	42-3/4"
SA-630-5	87-9/16"	43-9/16"	42-3/4"
SA-634-5	74-3/8"	44-9/16"	42-3/4"
SA-640-5	74-3/8"	44-9/16"	42-3/4"
SA-644-5	77-1/8"	42-1/8"	42-3/4"
SA-650-5	77-1/8"	42-1/8"	42-3/4"

**Pump Specifications**

Pump Size (Max. Plunger Diameter x Stroke) in. (mm)  
 SA-626-5 .....2-3/4 x 6 (70x152)      SA-640-5 .....4 x 6 (102x152)  
 SA-630-5 .....3 x 6 (76x152)          SA-644-5 .....4-1/2 x 6 (114x152)  
 SA-634-5 .....3-1/2 x 6 (89x152)      SA-650-5 .....5 x 6 (127x152)

Rated BHP At 450 RPM (Kw).....500 (373)

Maximum Working Pressure: PSI (kPa).....see table on back

**Discharge:**  
 SA-626-5 .....15,000 (103,421)      SA-640-5 .....8,000 (55,158)  
 SA-630-5 .....13,000 (89,632)      SA-644-5 .....6,000 (41,369)  
 SA-634-5 .....1,000 (68,948)        SA-650-5 .....5,000 (34,474)

**Suction:**  
 SA-626-5 .....500 (3,447)            SA-640-5 .....500 (3,447)  
 SA-630-5 .....500 (3,447)            SA-644-5 .....150 (1,034)  
 SA-634-5 .....500 (3,447)            SA-650-5 .....500 (3,447)

Stroke Length, in. (mm) .....6 (152)  
 Maximum Speed, rpm.....450  
 Maximum Plunger size, in. (mm)  
 SA-626-5 .....2-3/4 (70)            SA-640-5 .....4 (102)  
 SA-630-5 .....3 (76)                SA-644-5 .....4-1/2 (114)  
 SA-634-5 .....3-1/2 (89)            SA-650-5 .....5 (127)

**Oil Capacity:** Gallons (L)  
 Crankcase.....Dry Sump

**Weight:** Pump Only On Wood Shipping Skids - Lbs. (Kg)  
 SA-626-5 .....5,300 (2,404)          SA-640-5 .....5,463 (2,477)  
 SA-630-5 .....5,750 (2,608)          SA-644-5 .....6,160 (2,794)  
 SA-634-5 .....5,400 (2,449)          SA-650-5 .....6,236 (2,829)

**Standard Equipment**

Forged Steel Fluid End  
 Fabricated Steel Suction Manifold  
 Forged Steel Discharge Connection  
 Threaded Packing Glands  
 Tungsten Carbide Coated Plungers  
 Pressure Actuated Header Ring Packing  
 "Mission" Service Master Valves  
 Urethane Valve Discs  
 Alloy Steel Valve Seats

**Accessories**

Bolt On Style Gear Reducers  
 4.77:1 Standard Ratio  
 5.45:1 Optional Ratio

Oil Pressure Gauge  
 Bronze Latern Rings  
 Bronze Packing Followers  
 Crankcase Breather  
 Rockide Plungers  
 Tach Drive Connection  
 Thermometer  
 Plunger Lubricator  
 Relief Valves  
 Valve Service Kit  
 Center Gauge Connection  
 Complete Unitization Services

**Quick Maintenance Features**

- Horizontal Design
- Built-in Bearing Clearance
- Large Power End Access Covers
- Replaceable Gear Unit
- Tapered Roller Bearings

## SA-600 Series Performance Data (Volumes Indicated Are Displacement Of Incompressible Fluid)

### English Units

Plunger Dia. Inches	Area Inches Squared	Gallon Per RPM	100 RPM		150 RPM		200 RPM		250 RPM		300 RPM		350 RPM		400 RPM		450 RPM	
			PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
<b>SA-626-5</b>																		
2 3/4	5.94	0.463	15,000	46.28	12,345	69.42	9,260	92.57	7,406	115.71	6,173	138.85	5,290	161.99	4,630	185.13	4,116	208.27
Brake Horsepower Required:			405		500		500		500		500		500		500		500	
<b>SA-630-5</b>																		
3	7.0686	0.5508	13,000	55.08	10,373	82.62	7,780	110.16	6,224	137.70	5,186	165.24	4,446	192.78	3,890	220.32	3,458	247.86
Brake Horsepower Required:			437		500		500		500		500		500		500		500	
<b>SA-634-5</b>																		
3 1/2	9.62	0.75	10,000	74.97	7,621	112.46	5,716	149.94	4,573	187.43	3,810	224.91	3,266	262.40	2,858	299.88	2,540	337.37
Brake Horsepower Required:			437		500		500		500		500		500		500		500	
<b>SA-640-5</b>																		
4	12.5664	0.9792	8,000	97.92	5,834	146.88	4,377	195.84	3,500	244.80	2,918	293.76	2,500	342.72	2,188	391.68	1,945	440.64
Brake Horsepower Required:			457		500		500		500		500		500		500		500	
<b>SA-644-5</b>																		
4 1/2	15.9044	1.2393	6,000	123.93	4,610	185.90	3,458	247.86	2,766	309.83	2,305	371.79	1,976	433.76	1,729	495.72	1,537	557.69
Brake Horsepower Required:			434		500		500		500		500		500		500		500	
<b>SA-650-5</b>																		
5	19.6350	1.5300	5,000	153.00	3,734	229.50	2,800	306.00	2,241	382.50	1,867	459.00	1,600	535.50	1,400	612.00	1,245	688.50
Brake Horsepower Required:			446		500		500		500		500		500		500		500	

### Metric Units

Plunger Diameter mm.	Area Centi. Squared	Liter Per RPM	100 RPM		150 RPM		200 RPM		250 RPM		300 RPM		350 RPM		400 RPM		450 RPM	
			kPa	L/Min.	kPa	L/Min.	kPa	L/Min.	kPa	L/Min.	kPa	L/Min.	kPa	L/Min.	kPa	L/Min.	kPa	L/Min.
<b>SA-626-5</b>																		
70	38.32	1.752	103,425	175.18	85,119	262.77	63,848	350.36	51,064	437.95	42,563	525.54	36,475	613.13	31,924	700.72	28,380	788.31
Kilowatts Required:			302		373		373		373		373		373		373		373	
<b>SA-630-5</b>																		
76	45.60	2.085	89,635	208.48	71,522	312.72	53,643	416.96	42,914	521.19	35,757	625.43	30,655	729.67	26,822	833.91	23,843	938.15
Kilowatts Required:			326		373		373		373		373		373		373		373	
<b>SA-634-5</b>																		
89	62.07	2.84	68,950	283.76	52,547	425.64	39,412	567.52	31,531	709.40	26,270	851.28	22,519	993.17	19,706	1,135.05	17,513	1,276.93
Kilowatts Required:			326		373		373		373		373		373		373		373	
<b>SA-640-5</b>																		
102	81.07	3.706	55,160	370.63	40,225	555.94	30,179	741.25	24,133	926.57	20,120	1,111.88	17,238	1,297.20	15,086	1,482.51	13,411	1,667.82
Kilowatts Required:			341		373		373		373		373		373		373		373	
<b>SA-644-5</b>																		
114	102.61	4.691	41,370	469.08	31,786	703.61	23,843	938.15	19,072	1,172.69	15,893	1,407.23	13,625	1,641.76	11,921	1,876.30	10,598	2,110.84
Kilowatts Required:			324		373		373		373		373		373		373		373	
<b>SA-650-5</b>																		
127	126.68	5.791	34,475	579.11	25,746	868.66	19,306	1,158.21	15,452	1,447.76	12,873	1,737.32	11,032	2,026.87	9,653	2,316.42	8,584	2,605.97
Kilowatts Required:			333		373		373		373		373		373		373		373	

\*\* Horsepower and Kilowatts required are based on 90% mechanical efficiency and 100% volumetric efficiency.

**Intermittent Duty Ratings:** These ratings are for intermittent service. Pressures as shown may be utilized for a period not to exceed 30 minutes followed by an equal period at no load, but not to exceed 3 hours in a 24 hour period.

**Pressure Limitations, Caution:** When pump is equipped with pistons and liners, pressures in excess of 5,000 psi (34,475 kPa) should not be exceeded except for emergencies or intermittent duty of short duration.

**Charge Pump:** A suction system charge pump is recommended for best operation. The charge pump should be capable of delivering 1-1/2 time the maximum discharge flow rate of the reciprocating pump.



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