

ROTATING RIGHT

## MODEL 2S-1 SINGLE ACTING SIMPLEX PUMP



### 2S-1

A 2 ½ horsepower 1” stroke horizontal simplex single acting plunger pump. Available in four different fluid end materials at pump speeds up to 350 RPM.

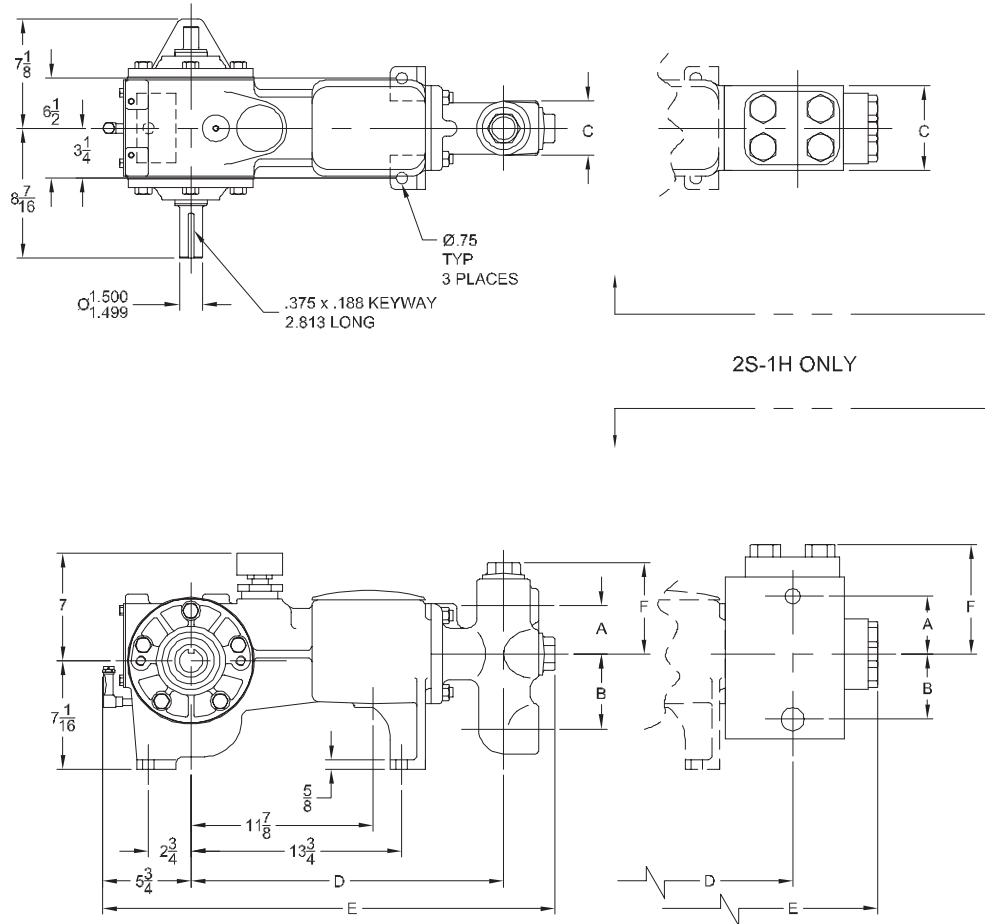
#### Power End Features

- Cast iron power frame
- Heavy-duty roller crankshaft bearings
- Precision type, aluminum alloy crankpin bearings
- Cast iron connecting rods
- Alloy steel crosshead pins
- Ductile iron crankshaft with ground journals & polished throws
- Bronze bearing crosshead pin bushings
- Cast iron crossheads with upper/lower oil grooves
- Flooded sump, splash distribution lubrication
- Rated rod load is 2030 lbs.

#### Fluid End Features

- Threaded valve covers
- Bolted valve covers on PSTL and forged fluid ends
- Threaded type glands & integral stuffing boxes
- Bronze stuffing box bushings and packing followers
- Plungers - solid ceramic, or tungsten coated
- General service plunger packing
- Spherical suction and discharge valves
- Valve seat & valve body: Nitronic 50
- Spring: inconel
- Cage: 316L Stainless Steel
- Cage: 316L Stainless Steel
- Threaded suction and discharge connections

# 2S-1 Simplex Plunger Pump



## Specifications

### Pump Size:

maximum plunger size x stroke length, in.(mm)  
2.000 x 1.000 (50.8 x 25.4)

### Rated BPH (kW) at 350 RPM

2.5 (1.9)

### Rated plunger load, pounds (kg)

2030 (921)

### Maximum discharge pressure: psi (kPa)

"L" model: 1149 (7920)

"M" model: 2042 (14081)

"H" model: 4595 (31681)

### Crankshaft extension:

Diameter, in.(mm): 1.500 (38.1)

Length, in.(mm): 3.375 (85.73)

Keyway width x depth, in.(mm):

3/8 x 3/16 (9.53 x 4.76)

Maximum recommended sheave diameter,

in.(mm): 25 (635)

For larger sizes: **Contact Factory**

### Oil Capacity, gallons (L)

Crankcase: 1/2 (1.89)

### Weight, pump only on

wood shipping skids, pounds (kg): 219 (99)

Weight varies with pump model

### Standard Materials for Fluid Ends:

"L" & "M" models

Cast Ductile Iron, Cast 316 Stainless Steel

Cast Nickel-Aluminum-Bronze

Plate Carbon Steel

"H" model

Forged/Plate Carbon Steel

Forged 15-5 Stainless Steel

Pump Model	Flange Connections		Dimensions (Inches)					
	Discharge Connection Sizes	Suction Connection Sizes	A	B	C	D	E	F
2S-1L	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT	3 1/8	4 7/8	3 1/2	20 3/8	29 9/16	5 15/16
2S-1M	1 (25.4)-11 1/2 FNPT	2 (50.8)-11 1/2 FNPT	3 1/8	4 7/8	3 1/2	20 3/8	29 9/16	5 15/16
2S-1H	3/4 (19.05)-14 FNPT	1 1/4 (31.75)-11 1/2 FNPT	3 3/4	4 1/4	5 1/2	20	31 5/16	7 1/8

# 2S-1 Simplex Plunger Pump

## Performance Data

PUMP	English Units					50 RPM		150 RPM		200 RPM		250 RPM		300 RPM		350 RPM	
	Plunger Dia. In.	Plunger Area Sq. In.	BPD per RPM	GPM per RPM	Max. Press. PSI	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM
2S-1L (P50BLS)	2.000	3.1416	0.4663	0.0136	646	24	0.7	70	2.0	94	2.7	117	3.4	140	4.1	164	4.8
	1.875	2.7612	0.4098	0.0120	735	21	0.6	62	1.8	82	2.4	103	3.0	123	3.6	144	4.2
	1.750	2.4053	0.3570	0.0104	844	18	0.5	54	1.6	72	2.1	90	2.6	108	3.1	125	3.6
	1.625	2.0739	0.3078	0.0090	979	16	0.4	47	1.3	62	1.8	77	2.2	93	2.7	108	3.1
	1.500	1.7671	0.2623	0.0076	1149	14	0.4	40	1.1	53	1.5	66	1.9	79	2.3	92	2.7
2S-1M (P50B)	1.750	2.4053	0.3570	0.0104	844	18	0.5	54	1.6	72	2.1	90	2.6	108	3.1	125	3.6
	1.625	2.0739	0.3078	0.0090	979	16	0.4	47	1.3	62	1.8	77	2.2	93	2.7	108	3.1
	1.500	1.7671	0.2623	0.0076	1149	14	0.4	40	1.1	53	1.5	66	1.9	79	2.3	92	2.7
	1.375	1.4849	0.2204	0.0064	1367	12	0.3	34	1.0	45	1.3	56	1.6	67	1.9	78	2.2
	1.250	1.2272	0.1821	0.0053	1654	10	0.3	28	0.8	37	1.1	46	1.3	55	1.6	64	1.9
2S-1H (P50BH)	1.000	0.7854	0.1166	0.0034	2585	6	0.2	18	0.5	24	0.7	30	0.8	35	1.0	41	1.2
	0.875	0.6013	0.0892	0.0026	3376	5	0.1	14	0.4	18	0.5	23	0.7	27	0.8	32	0.9
	0.750	0.4418	0.0656	0.0019	4595	4	0.1	10	0.3	14	0.4	17	0.5	20	0.6	23	0.7
Brake Horsepower Required						0.4		1.1		2.0		1.8		2.1		2.5	

PUMP	Metric Units					50 RPM		150 RPM		200 RPM		250 RPM		300 RPM		350 RPM	
	Plunger Dia. mm	Plunger Area cm <sup>2</sup>	M <sup>3</sup> /Hr per RPM	L/Sec. per RPM	Max. Press. kPa	M <sup>3</sup> /Hr	L/Sec.	M <sup>3</sup> /Hr	L/Sec.	M <sup>3</sup> /Hr	L/Sec.	M <sup>3</sup> /Hr	L/Sec.	M <sup>3</sup> /Hr	L/Sec.	M <sup>3</sup> /Hr	L/Sec.
2S-1L (P50BLS)	51	20.268	0.0031	0.0009	4455	0.15	0.04	0.46	0.13	0.62	0.17	0.77	0.21	0.93	0.26	1.08	0.30
	48	17.814	0.0027	0.0008	5069	0.14	0.04	0.41	0.11	0.54	0.15	0.68	0.19	0.81	0.23	0.95	0.26
	44	15.518	0.0024	0.0007	5819	0.12	0.03	0.35	0.10	0.47	0.13	0.59	0.16	0.71	0.20	0.83	0.23
	41	13.380	0.0020	0.0006	6749	0.10	0.03	0.31	0.08	0.41	0.11	0.51	0.14	0.61	0.17	0.71	0.20
	38	11.401	0.0017	0.0005	7920	0.09	0.02	0.26	0.07	0.35	0.10	0.43	0.12	0.52	0.14	0.61	0.17
2S-1M (P50B)	44	15.518	0.0024	0.0007	5819	0.12	0.03	0.35	0.10	0.47	0.13	0.59	0.16	0.71	0.20	0.83	0.23
	41	13.380	0.0020	0.0006	6749	0.10	0.03	0.31	0.08	0.41	0.11	0.51	0.14	0.61	0.17	0.71	0.20
	38	11.401	0.0017	0.0005	7920	0.09	0.02	0.26	0.07	0.35	0.10	0.43	0.12	0.52	0.14	0.61	0.17
	35	9.580	0.0015	0.0004	9426	0.07	0.02	0.22	0.06	0.29	0.08	0.36	0.10	0.44	0.12	0.51	0.14
	32	7.917	0.0012	0.0003	11405	0.06	0.02	0.18	0.05	0.24	0.07	0.30	0.08	0.36	0.10	0.42	0.12
2S-1H (P50BH)	25	6.413	0.0010	0.0003	14081	0.05	0.01	0.15	0.04	0.20	0.05	0.24	0.07	0.29	0.08	0.34	0.10
	22	5.067	0.0008	0.0002	17821	0.04	0.01	0.12	0.03	0.15	0.04	0.19	0.05	0.23	0.06	0.27	0.08
	19	3.879	0.0006	0.0002	23276	0.03	0.01	0.09	0.02	0.12	0.03	0.15	0.04	0.18	0.05	0.21	0.06
Kilowatts Required						0.3		0.8		1.5		1.3		1.6		1.9	

For operation below 50 RPM, an auxiliary lubrication system is required.

Volumetric Rate is based on 100% Volumetric Efficiency. Brake Horsepower/Kilowatts Required is based on 72% Mechanical Efficiency.

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## Accessories

Rotating Right offers a full line of accessories to ensure long trouble free and safe operation of your multiplex pumps.

### Accessories Include:

- Pulsation Dampeners - Suction & Discharge
- Vibration Shock Switches
- Liquid Level Gauges & Switches
- Pressure Safety Valves
- Plunger Lubricators
- Fire Safety Valves
- High Discharge Pressure Switch
- Condensate Drain
- N.A.C.E. Valving
- Lubricator Level Controller
- API Valves
- Drive Options



## Expendables



With our worldwide buying power Rotating Right is well equipped to provide a wide range of replacement parts & expendables for virtually all multiplex plunger pumps regardless of make or model.

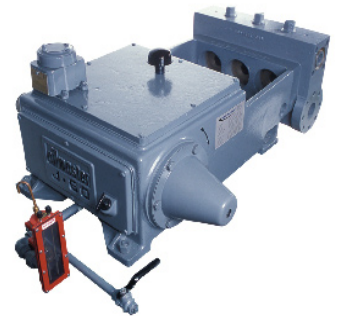


Our expendables inventory includes plungers, packing, brass, valves, bearings, crankshafts, connecting rods and seals.



## Repair & Overhauls

Rotating Right service technicians follow strict quality control procedures for every pump repair and overhaul. The use of consistent and reliable re-manufacturing techniques ensure your equipment is returned to you in "Like New" condition.



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