

ROTATING RIGHT

## MODEL 103Q-3 SINGLE ACTING QUINTUPLEX PUMP



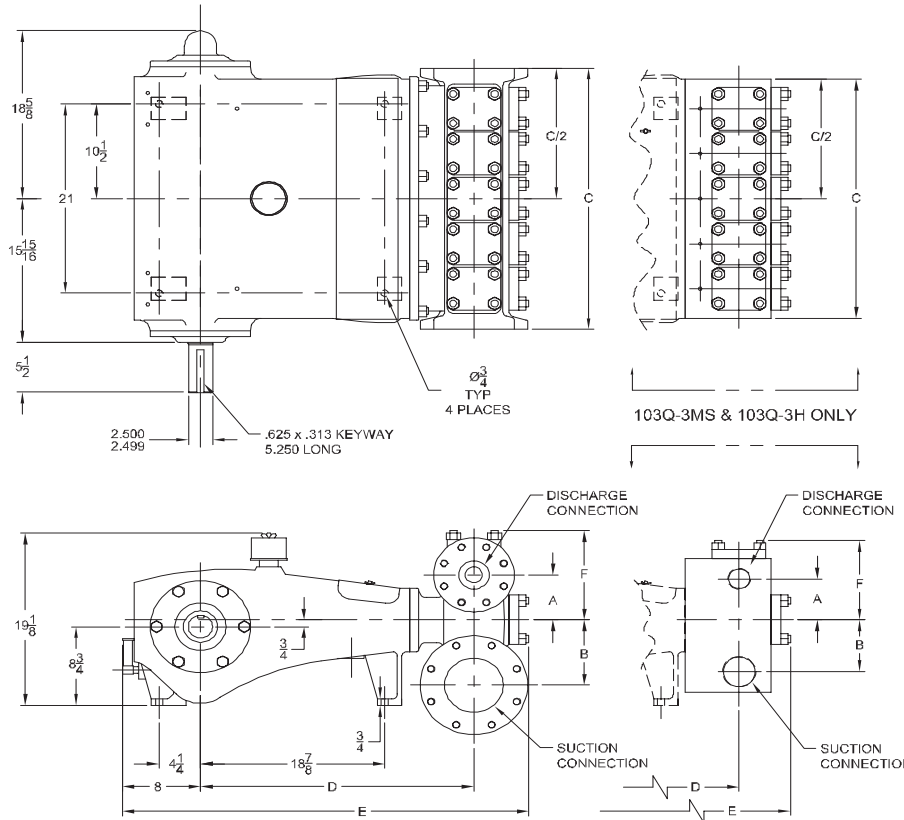
### 103Q-3

A 103 horsepower 3 1/2" stroke horizontal quintuplex single acting plunger pump. Available in four fluid end materials at pump speeds up to 435 RPM and four accessory gear reduction unit ratios.

#### Features:

- Cast iron power frame
- Ductile Iron Crankshaft
- Cast iron crossheads with upper/lower oil grooves
- Flooded sump, splash distribution lubrication
- Ductile iron connecting rods
- Alloy steel crosshead pins
- Bronze bearing crosshead pin bushings
- Cast iron crossheads with upper/lower oil grooves
- Rated rod load is 4760 lbs.

# 103Q-3 Quintuplex Plunger Pump



## Specifications

### Pump Size:

maximum plunger size x stroke length, in.(mm):  
3.000 x 3.500 (76.2 x 88.9)

**Rated BHP (kW) at 435 RPM:** 102 (76)

**Rated plunger load, pounds (kg):** 4760 (2159)

**Maximum discharge pressure:** psi (kPa)

"L" model: 970 (6686)

"M" model: 2295 (15825)

"MS" model: 4789 (33017)

"H" model: 10000 (68948)

### Crankshaft extension:

Diameter, in.(mm): 2.500 (63.5)

Length : 5.250 (133.35)

Keyway (width x depth):

5/8 x 5/16 (15.875 x 7.938)

Maximum recommended sheave

in.(mm): 38 (965.2)

For larger sizes: **Contact Factory**

### Pinion shaft extension,

if gear reducer is supplied, in.(mm)

For belt or chain drive: **Contact Factory**

For direct drive: Diameter: 2.000 (50.8)

Length: 4.250 (108.0)

Keyway width x depth:

1/2 x 1/4 (12.70 x 6.35)

### Accessory gear reduction unit:

3.00:1, 3.12:1, 3.23:1, 3.36:1, 3.49:1,

3.62:1, 3.78:1, 3.94:1, 4.11:1, 4.29:1,

4.48:1, 4.69:1, 4.93:1, 5.17:1

### Oil Capacity, gallons (L)

Crankcase: 5 (18.93)

Gear Reducer - varies with ratio:

1.25 to 1.50 (4.73 to 5.68)

### Weight, pump only on

wood shipping skids, pounds (kg)

"L" model: 1620 (735)

"M" model: 1450 (658)

"MS" model: 1600 (726)

"H" model: 1700 (771)

### Standard Materials for Fluid Ends:

"L" model

Cast Ductile Iron

Cast Nickel-Aluminum-Bronze

Cast Duplex Stainless Steel

Forged/Plate Carbon Steel

"M" model

Cast Ductile Iron,

Cast Nickel-Aluminum-Bronze

Cast Duplex Stainless Steel

Forged/Plate Carbon Steel

"MS" model

Forged Nickel-Aluminum-Bronze

Forged/Plate Carbon Steel

Forged 316 Stainless Steel

"H" model

Forged 15-5 Stainless Steel

Pump Model	Flange Connections		Dimensions (Inches)					
	Discharge Connection Sizes	Suction Connection Sizes	A	B	C	D	E	F
103Q-3L	3 (76.2)-ANSI 600 FF	6 (152.4)-ANSI 150 FF	5	7 1/4	29	28	41 5/8	9 7/8
103Q-3M	2 (50.8)-ANSI 1500 FF	3 (76.2)-ANSI 300 FF	3 7/16	5 3/4	30	27 3/16	40 7/8	8 1/8
103Q-3MS	2 (50.8)-11 1/2 NPT	3 (76.2)-8 NPT	4 9/16	5 3/4	26 1/2	26 7/8	40 1/8	8 7/8
103Q-3H	1 (25.4)-11 1/2 NPT	1 1/2 (38.1)-11 1/2 NPT	3 7/8	4 3/8	28	25 3/4	39 7/8	7 3/4

# 103Q-3 Quintuplex Plunger Pump

## Performance Data

PUMP	English Units					50 RPM		150 RPM		250 RPM		300 RPM		350 RPM		435 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
103Q-3L (Q3115AL)	3.000	7.0686	18.3599	0.5355	673	918	26.8	2754	80.3	4590	133.9	5508	160.6	6426	187.4	7987	232.9
	2.875	6.4918	16.8618	0.4918	733	844	24.6	2530	73.8	4216	123.0	5059	147.5	5902	172.1	7335	213.9
	2.750	5.9396	15.4274	0.4500	801	772	22.5	2315	67.5	3857	112.5	4629	135.0	5400	157.5	6711	195.7
	2.625	5.4119	14.0568	0.4100	880	703	20.5	2109	61.5	3515	102.5	4218	123.0	4920	143.5	6115	178.3
	2.500	4.9087	12.7500	0.3719	970	638	18.6	1913	55.8	3188	93.0	3825	111.6	4463	130.2	5547	161.8
103Q-3M (Q3115AM)	2.500	4.9087	12.7500	0.3719	970	638	18.6	1913	55.8	3188	93.0	3825	111.6	4463	130.2	5547	161.8
	2.375	4.4301	11.5068	0.3356	1074	576	16.8	1727	50.3	2877	83.9	3453	100.7	4028	117.5	5006	146.0
	2.250	3.9761	10.3275	0.3012	1197	517	15.1	1550	45.2	2582	75.3	3099	90.4	3615	105.4	4493	131.0
	2.125	3.5466	9.2118	0.2687	1342	461	13.4	1382	40.3	2303	67.2	2764	80.6	3225	94.0	4008	116.9
	2.000	3.1416	8.1600	0.2380	1515	408	11.9	1224	35.7	2040	59.5	2448	71.4	2856	83.3	3550	103.5
	1.875	2.7612	7.1718	0.2092	1724	359	10.5	1076	31.4	1793	52.3	2152	62.8	2511	73.2	3120	91.0
	1.750	2.4053	6.2475	0.1822	1979	313	9.1	938	27.3	1562	45.6	1875	54.7	2187	63.8	2718	79.3
1.625	2.0739	5.3869	0.1571	2295	270	7.9	809	23.6	1347	39.3	1617	47.1	1886	55.0	2344	68.3	
103Q-3MS (Q3115MS)	1.500	1.7671	4.5900	0.1339	2694	230	6.7	689	20.1	1148	33.5	1377	40.2	1607	46.9	1997	58.2
	1.375	1.4849	3.8569	0.1125	3206	193	5.6	579	16.9	965	28.1	1158	33.7	1350	39.4	1678	48.9
	1.250	1.2272	3.1875	0.0930	3879	160	4.6	479	13.9	797	23.2	957	27.9	1116	32.5	1387	40.4
	1.125	0.9940	2.5819	0.0753	4789	130	3.8	388	11.3	646	18.8	775	22.6	904	26.4	1124	32.8
103Q-3H (Q3115H)	1.000	0.7854	2.0400	0.0595	6061	102	3.0	306	8.9	510	14.9	612	17.8	714	20.8	888	25.9
	0.875	0.6013	1.5619	0.0456	7916	79	2.3	235	6.8	391	11.4	469	13.7	547	15.9	680	19.8
	0.750	0.4418	1.1475	0.0335	10000	58	1.7	173	5.0	287	8.4	345	10.0	402	11.7	500	14.6
Brake Horsepower Required						12		35		59		70		82		102	

PUMP	Metric Units					50 RPM		150 RPM		250 RPM		300 RPM		350 RPM		435 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.
103Q-3L (Q3115AL)	76	45.604	0.1216	0.0338	4643	6.1	1.69	18.2	5.07	30.4	8.45	36.5	10.14	42.6	11.82	52.9	14.70
	73	41.883	0.1117	0.0310	5055	5.6	1.55	16.8	4.65	27.9	7.76	33.5	9.31	39.1	10.86	48.6	13.50
	70	38.320	0.1022	0.0284	5526	5.1	1.42	15.3	4.26	25.5	7.10	30.7	8.52	35.8	9.94	44.5	12.35
	67	34.915	0.0931	0.0259	6064	4.7	1.29	14.0	3.88	23.3	6.47	27.9	7.76	32.6	9.05	40.5	11.25
	64	31.669	0.0845	0.0235	6686	4.2	1.17	12.7	3.52	21.1	5.87	25.3	7.04	29.6	8.21	36.7	10.21
103Q-3M (Q3115AM)	64	31.669	0.0845	0.0235	6686	4.2	1.17	12.7	3.52	21.1	5.87	25.3	7.04	29.6	8.21	36.7	10.21
	60	28.581	0.0762	0.0212	7408	3.8	1.06	11.4	3.18	19.1	5.29	22.9	6.35	26.7	7.41	33.2	9.21
	57	25.652	0.0684	0.0190	8254	3.4	0.95	10.3	2.85	17.1	4.75	20.5	5.70	23.9	6.65	29.8	8.27
	54	22.881	0.0610	0.0170	9254	3.1	0.85	9.2	2.54	15.3	4.24	18.3	5.09	21.4	5.93	26.5	7.37
	51	20.268	0.0540	0.0150	10447	2.7	0.75	8.1	2.25	13.5	3.75	16.2	4.50	18.9	5.26	23.5	6.53
	48	17.814	0.0475	0.0132	11886	2.4	0.66	7.1	1.98	11.9	3.30	14.3	3.96	16.6	4.62	20.7	5.74
	44	15.518	0.0414	0.0115	13645	2.1	0.57	6.2	1.72	10.3	2.87	12.4	3.45	14.5	4.02	18.0	5.00
41	13.380	0.0357	0.0099	15825	1.8	0.50	5.4	1.49	8.9	2.48	10.7	2.97	12.5	3.47	15.5	4.31	
103Q-3MS (Q3115MS)	38	11.401	0.0304	0.0084	18572	1.5	0.42	4.6	1.27	7.6	2.11	9.1	2.53	10.6	2.96	13.2	3.67
	35	9.580	0.0255	0.0071	22102	1.3	0.35	3.8	1.06	6.4	1.77	7.7	2.13	8.9	2.48	11.1	3.09
	32	7.917	0.0211	0.0059	26744	1.1	0.29	3.2	0.88	5.3	1.47	6.3	1.76	7.4	2.05	9.2	2.55
	29	6.413	0.0171	0.0048	33017	0.9	0.24	2.6	0.71	4.3	1.19	5.1	1.43	6.0	1.66	7.4	2.07
103Q-H (Q3115H)	25	5.067	0.0135	0.0038	41787	0.7	0.19	2.0	0.56	3.4	0.94	4.1	1.13	4.7	1.31	5.9	1.63
	22	3.879	0.0103	0.0029	54579	0.5	0.14	1.6	0.43	2.6	0.72	3.1	0.86	3.6	1.01	4.5	1.25
	19	2.850	0.0076	0.0021	68948	0.4	0.11	1.1	0.32	1.9	0.53	2.3	0.63	2.7	0.74	3.3	0.92
Kilowatts Required						9		26		44		52		61		76	

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 90% 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.

## 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.

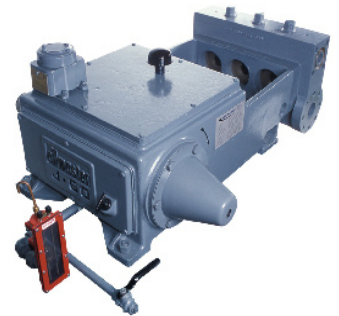


Our expendables inventory includes plungers, packing, brass, valves, bearings, crankshafts, connecting rods and seals.



## 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.



**Head Office:**  
6120 Davies Road  
Edmonton, AB  
T6E 4M9

Phone: (780) 485-2010 • Toll Free: (866) 707-7867  
Fax: (780) 485-1938  
• Calgary • Drayton Valley • Lloydminster  
[www.rotatingright.com](http://www.rotatingright.com)