

ROTATING RIGHT

## MODEL 163Q-4 SINGLE ACTING QUINTUPLEX PUMP

**NOV NATIONAL OILWELL VARCO**

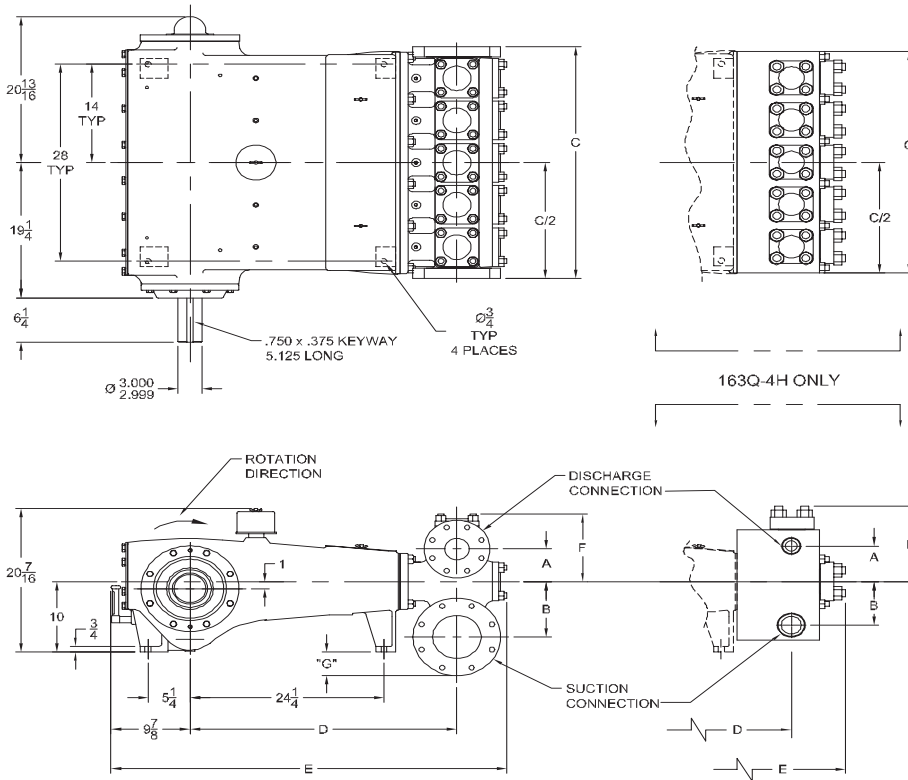
### 163Q-4

A 163 horsepower 4 1/2" stroke horizontal quintuplex single acting plunger pump. Available in four end material at pump speeds up to 390 RPM and multiple accessory gear reduction unit ratios.

#### Features:

- Cast iron power frame
- Ductile Iron Crankshaft
- Cast iron crossheads with upper/lower oil grooves
- Heavy-duty, tapered roller crankshaft bearings
- Precision type, aluminum alloy crankpin bearings
- Bronze bearing crosshead pin bushings
- Flooded sump, splash distribution lubrication
- Rated rod load is 6600 lbs.
- Plungers - Solid Ceramic, or Tungsten coated
- Spherical suction and discharge valves
- Valve Seat & Valve Body: Nitronic 50
- Spring: Inconel
- Cage: 316L Stainless Steel
- Severe duty valves with inserts available

# 163Q-4 Quintuplex Plunger Pump



## Specifications

### Pump Size:

maximum plunger size x stroke length, in.(mm):  
3.375 x 4.500 (85.725 x 114.3)

Rated BHP (kW) at 390 RPM: 163 (121)

Rated plunger load, pounds (kg): 6600 (2994)

Maximum discharge pressure: psi (kPa)

"L" model: 1220 (8408)

"M" model: 2744 (18919)

"H" model: 5378 (37081)

### Crankshaft extension:

Diameter, in.(mm): 3.000 (76.2)

Length, in.(mm): 6.25 (158.7)

Keyway width x depth, in.(mm):

3/4 x 3/8 (19.05 x 9.52)

Maximum recommended sheave diameter,  
in.(mm): 53 (1346.2)

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: 2.500 (63.5)

Length: 5.000 (127.0)

Keyway width x depth:

5/8 x 5/16 (15.88 x 7.94)

### Accessory gear reduction unit:

2.06:1, 2.26:1, 3.60:1, 4.25:1, 4.65:1,

4.88:1, 5.13:1, 5.40:1, 5.69:1

### Oil Capacity, gallons (L)

Crankcase: 7 (26.5)

Gear Reducer-varies with ratio:

2.00 to 2.25 (7.57 to 8.52)

### Weight, pump only on

wood shipping skids, pounds (kg): 2913 (1322)

Weight varies with pump model

### Standard Materials for Fluid Ends:

"L" model

Cast Nickel-Aluminum-Bronze

Cast Duplex Stainless Steel

Plate Carbon Steel

Cast Ductile Iron

"M" model

Cast Nickel-Aluminum-Bronze

Cast Duplex Stainless Steel

Plate Carbon Steel

Forged Nickel-Aluminum-Bronze

"H" model

Forged 15-5 Stainless Steel

Forged/Plate Carbon Steel

Pump Model	Flange Connections		Dimensions (Inches)						
	Discharge Connection Sizes	Suction Connection Sizes	A	B	C	D	E	F	G
163Q-4L	3 (76.2)-ANSI 600 FF	6 (152.4)-ANSI 150 FF	4 5/8	7 7/8	33	33 3/8	49 7/16	9 5/8	3 3/8
163Q-4M	2 (50.8)-ANSI 1500 FF	4 (101.6)-ANSI 300 FF	5 1/16	5 7/8	33	33	48 11/16	9 1/2	7/8
163Q-4H	2 (50.8)-11 1/2 NPT	3 (76.2)-8 NPT	5 1/16	6 3/16	31 1/2	33	49 1/4	10 3/4	-1 5/8

# 163Q-4 Quintuplex Plunger Pump

## Performance Data

PUMP	English Units					50 RPM		150 RPM		200 RPM		250 RPM		300 RPM		390 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
163Q-4L (HP165AL)	3.375	8.9462	29.8759	0.8714	738	1494	43.6	4482	130.7	5976	174.3	7469	217.8	8963	261.4	11652	339.8
	3.250	8.2958	27.7038	0.8080	796	1386	40.4	4156	121.2	5541	161.6	6926	202.0	8312	242.4	10805	315.1
	3.125	7.6699	25.6137	0.7471	861	1281	37.4	3843	112.1	5123	149.4	6404	186.8	7685	224.1	9990	291.4
	3.000	7.0686	23.6056	0.6885	934	1181	34.4	3541	103.3	4722	137.7	5902	172.1	7082	206.5	9207	268.5
	2.875	6.4918	21.6795	0.6323	1017	1084	31.6	3252	94.8	4336	126.5	5420	158.1	6504	189.7	8455	246.6
	2.750	5.9396	19.8353	0.5785	1111	992	28.9	2976	86.8	3968	115.7	4959	144.6	5951	173.6	7736	225.6
163Q-4M (HP165AM)	2.625	5.4119	18.0731	0.5271	1220	904	26.4	2711	79.1	3615	105.4	4519	131.8	5422	158.1	7049	205.6
	2.500	4.9087	16.3928	0.4781	1345	820	23.9	2459	71.7	3279	95.6	4099	119.5	4918	143.4	6394	186.5
	2.375	4.4301	14.7945	0.4315	1490	740	21.6	2220	64.7	2959	86.3	3699	107.9	4439	129.5	5770	168.3
	2.250	3.9761	13.2782	0.3873	1660	664	19.4	1992	58.1	2656	77.5	3320	96.8	3984	116.2	5179	151.0
	2.125	3.5466	11.8438	0.3454	1861	593	17.3	1777	51.8	2369	69.1	2961	86.4	3554	103.6	4620	134.7
	2.000	3.1416	10.4914	0.3060	2101	525	15.3	1574	45.9	2099	61.2	2623	76.5	3148	91.8	4092	119.3
163Q-4H (HP165MS)	1.875	2.7612	9.2209	0.2689	2390	462	13.4	1384	40.3	1845	53.8	2306	67.2	2767	80.7	3597	104.9
	1.750	2.4053	8.0325	0.2343	2744	402	11.7	1205	35.1	1607	46.9	2009	58.6	2410	70.3	3133	91.4
	1.625	2.0739	6.9260	0.2020	3182	347	10.1	1039	30.3	1386	40.4	1732	50.5	2078	60.6	2702	78.8
	1.500	1.7671	5.9014	0.1721	3735	296	8.6	886	25.8	1181	34.4	1476	43.0	1771	51.6	2302	67.1
	1.375	1.4849	4.9588	0.1446	4445	248	7.2	744	21.7	992	28.9	1240	36.2	1488	43.4	1934	56.4
	1.250	1.2272	4.0982	0.1195	5378	205	6.0	615	17.9	820	23.9	1025	29.9	1230	35.9	1599	46.6
Brake Horsepower Required						21		63		84		104		125		163	

PUMP	Metric Units					50 RPM		150 RPM		200 RPM		250 RPM		300 RPM		390 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.
163Q-4L (HP165AL)	86	57.717	0.1979	0.0550	5087	9.9	2.7	29.7	8.2	39.6	11.0	49.5	13.7	59.4	16.5	77.2	21.4
	83	53.521	0.1835	0.0510	5485	9.2	2.5	27.5	7.6	36.7	10.2	45.9	12.7	55.1	15.3	71.6	19.9
	79	49.483	0.1697	0.0471	5933	8.5	2.4	25.4	7.1	33.9	9.4	42.4	11.8	50.9	14.1	66.2	18.4
	76	45.604	0.1564	0.0434	6438	7.8	2.2	23.5	6.5	31.3	8.7	39.1	10.9	46.9	13.0	61.0	16.9
	73	41.883	0.1436	0.0399	7010	7.2	2.0	21.5	6.0	28.7	8.0	35.9	10.0	43.1	12.0	56.0	15.6
	70	38.320	0.1314	0.0365	7661	6.6	1.8	19.7	5.5	26.3	7.3	32.8	9.1	39.4	10.9	51.2	14.2
163Q-4M (HP165AM)	67	34.915	0.1197	0.0333	8408	6.0	1.7	18.0	5.0	23.9	6.7	29.9	8.3	35.9	10.0	46.7	13.0
	64	31.669	0.1086	0.0302	9270	5.4	1.5	16.3	4.5	21.7	6.0	27.1	7.5	32.6	9.0	42.3	11.8
	60	28.581	0.0980	0.0272	10272	4.9	1.4	14.7	4.1	19.6	5.4	24.5	6.8	29.4	8.2	38.2	10.6
	57	25.652	0.0880	0.0244	11445	4.4	1.2	13.2	3.7	17.6	4.9	22.0	6.1	26.4	7.3	34.3	9.5
	54	22.881	0.0785	0.0218	12831	3.9	1.1	11.8	3.3	15.7	4.4	19.6	5.4	23.5	6.5	30.6	8.5
	51	20.268	0.0695	0.0193	14485	3.5	1.0	10.4	2.9	13.9	3.9	17.4	4.8	20.8	5.8	27.1	7.5
163Q-4H (HP165MS)	48	17.814	0.0611	0.0170	16481	3.1	0.8	9.2	2.5	12.2	3.4	15.3	4.2	18.3	5.1	23.8	6.6
	44	15.518	0.0532	0.0148	18919	2.7	0.7	8.0	2.2	10.6	3.0	13.3	3.7	16.0	4.4	20.7	5.8
	41	13.380	0.0459	0.0127	21942	2.3	0.6	6.9	1.9	9.2	2.5	11.5	3.2	13.8	3.8	17.9	5.0
	38	11.401	0.0391	0.0109	25751	2.0	0.5	5.9	1.6	7.8	2.2	9.8	2.7	11.7	3.3	15.2	4.2
Kilowatts Required						16		47		63		78		93		121	

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. \*Operation below 150 RPM requires an "optional" externally-mounted electric motor-driven auxiliary lubrication system.

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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.

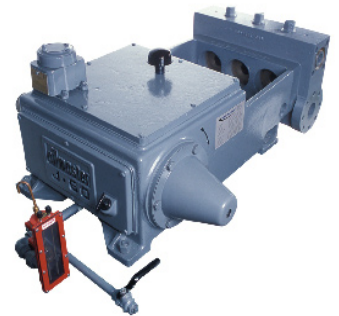


Our expendables inventory includes plungers, packing, brass, valves, bearings, crankshafts, connecting rods and seals.



## 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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