ROSKA
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OPERATIONS SOLUTIONS
EQUIPMENT SPECIFICATION SHEET

INJECTION PUMP

UNIT: PUM016

PERFORMANCE

Maximum Operating Pressure	4,730 psi (32.6 MPa)
Maximum Flow Rate	294 m^3/day

INJECTION DRIVE

Model	6068HF285 John Deere
Horse Power	165 HP
Maximum RPM	1800 RPM
Fuel Type	Diesel

PUMP

Make	Weatherford
Model	W165-H
Type	Triplex
Plungers	3
Installed Plunger Diameter	1.625” (41.275 mm)
Maximum Input	165 HP (123 kW)
Maximum RPM	400 RPM
Stroke Length	5” (127 mm)

POWER REQUIREMENTS

Building Total	7.6 kW / 1.5 kW
Main Disconnect	None on Skid
Voltage Input	480 V / 120 V
Phase	3Ø / 1Ø

Approximate Power Requirements

SHUTDOWNS

High/Low Discharge Pressure
High/Low Suction Pressure
Manual ESD
Vibration Switch
Positive Air Shutdown
Low Power End Oil

CERTIFICATION

Area Classification	General Purpose
Piping	ASME B31.3

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SOUND RATING

Distance	@50%	@100%
In Building	96.1 dB(A)	105.3 dB(A)
1.2 m (4 ft)	76.1 dB(A)	81.5 dB(A)
7.5 m (25 ft)	66.3 dB(A)	72.3 dB(A)
15.2 m (50 ft)	61.2 dB(A)	69.8 dB(A)

Sound ratings will be field verified

SUCTION PIPING

Maximum Allowable Working Pressure	675 psi (4,654 kPa)
Size	3” (88.9 mm)
Connection	CL300 RF

DISCHARGE PIPING

Maximum Allowable Working Pressure	5,000 psi (34.5 MPa)
Size	2” (60.3 mm)
Connection	CL2500 RTJ

FEATURES

Building Equipped With Heater and Lights
Suitable For Sour Service
Pulsation Dampener
24V System (2 x 12V Batteries)
Suction Strainer On Inlet Piping
Built In Tool Box
Removable Catch Tank
Steel Building Construction
Discharge Piping Complete With MC-III Flow Meter
Baird Adjustable Pressure Relief Valve

FUEL CONSUMPTION

50% Load	15.9 L/h
75% Load	22.9 L/h
100% Load	28.9 L/h

Approximate: Will vary based on site conditions

EMISSIONS

NOx	6.9 g/hp-hr
CO	2.6 g/hp-hr

Meets EPA Tier 3 Emission Requirements

SHIPPING DIMENSIONS

Width	9’ (2.74 m)
Length	20’ (6.1 m)
Height	9’ (2.74 m)
Weight Estimate	16,000 lb (7,258 kg)

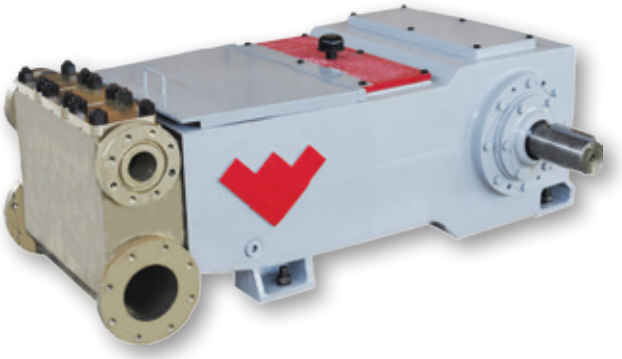
W165 Triplex Pump

Pump Specifications

Rated (HP, *kW*)	165	*123*
Stroke length (in., *mm*)	5	*127*
Maximum discharge pressure (PSI, *Bar*)		
W165H	5,000	*345*
W165M	3,120	*215*
W165L	1,650	*114*
Rated rod load (lb, *kg*)	9,800	*4,445*
API-674 speed, RPM	310	
Maximum speed, RPM	400	
Minimum speed, RPM	100	
Crankshaft dimensions (in., *mm*)		
Diameter	4.125	*105*
Length (long)	7.92	*201*
Length (short)	5.62	*149*
Keyway, width × depth (in., *mm*)	1.00 × .50	*25 × 13*
Oil capacity (gal, *l*)		
Pump	8.0	*30.3*
Reducer (varies with ratio)	2.25 to 3.5	*8.52 to 13.25*
Weight (lb, *kg*); estimates only		
Pump		
W165H	4,213	*1,911*
W165M	4,132	*1,874*
W165L	4,037	*1,831*
Reducer	800	*363*
Mechanical efficiency	90%	

Flange Connections

Pump Model	Discharge Connection Sizes (in., *mm*)	Suction Connection Sizes (in., *mm*)
W165H	2 *(50.8)* ANSI 2500 RJ	3 *(76.2)* API 2000 RJ
W165M	2 *(50.8)* API 5000 RJ	4 *(101.6)* ANSI 150 FF
W165L	3 *(76.2)* API 2000 RJ	6 *(152.4)* ANSI 150 FF



Standard Equipment

- Cast aluminum-bronze, forged duplex stainless steel, or forged carbon steel fluid ends
- Aluminum-bronze or duplex stainless steel stuffing boxes
- Various valve designs offered per fluid end style
- Tungsten carbide coated plungers over stainless steel base or solid ceramic plungers
- Double extended crankshaft
- Multiple plunger packing arrangements offered

Optional Accessories

- Weatherford bolt on gear reducers (ratios)
  - 2.80:1
  - 3.22:1
  - 3.46:1
  - 4.00:1
  - 4.38:1
  - 4.78:1
  - 4.96:1
  - 5.74:1
- Packing lubricators
- Customized plunger packing arrangements
- Complete pump packages

Technical Support

pumps@weatherford.com
1-281-252-7867

W165 Triplex Pump
Performance Ratings

Model (standard)	Plunger Diameter (in.)	Gallons Per Revolution	Maximum Pressure PSI	100 RPM		150 RPM		200 RPM		310 RPM*		350 RPM		400 RPM	
				GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD	GPM	BPD
W165H	1.500	0.1147	5000	11.5	393	17.2	590	22.9	787	35.6	1220	40.2	1377	45.9	1574
	1.625	0.1347	4730	13.5	462	20.2	693	26.9	923	41.7	1431	47.1	1616	53.9	1847
	1.750	0.1562	4070	15.6	535	23.4	803	31.2	1071	48.4	1660	54.7	1674	62.5	2142
	1.875	0.1793	3550	17.9	615	26.9	922	35.9	1229	55.6	1906	62.8	2152	71.7	2459
	2.000	0.2040	3120	20.4	600	30.6	1049	40.8	1399	63.2	2168	71.4	2448	81.6	2798
W165M	2.000	0.2040	3120	20.4	699	30.6	1049	40.8	1399	63.2	2168	71.4	2448	81.6	2798
	2.125	0.2303	2760	23.0	790	34.5	1184	46.1	1579	71.4	2448	80.6	2764	92.1	3158
	2.250	0.2582	2460	25.8	885	38.7	1328	51.6	1770	80.0	2744	90.4	3098	103.3	3541
	2.375	0.2877	2210	28.8	986	43.2	1479	57.5	1973	89.2	3058	100.7	3452	115.1	3945
	2.500	0.3187	2000	31.9	1093	47.8	1639	63.7	2186	98.8	3388	111.6	3825	127.5	4371
	2.625	0.3514	1810	35.1	1205	52.7	1807	70.3	2410	108.9	3735	123.0	4217	140.6	4819
	2.750	0.3857	1650	38.6	1322	57.9	1984	77.1	2645	119.6	4099	135.0	4628	154.3	5289
W165L	2.750	0.3857	1650	38.6	1322	57.9	1984	77.1	2645	119.6	4099	135.0	4628	154.3	5289
	3.000	0.4590	1390	45.9	1574	68.8	2361	91.8	3147	142.3	4879	160.6	5508	183.6	6295
	3.250	0.5387	1180	53.9	1847	80.8	2770	107.7	3694	167.0	5725	188.5	6464	215.5	7388
	3.500	0.6247	1020	62.5	2142	93.7	3213	124.9	4284	193.7	6640	218.7	7497	249.9	8568
	3.750	0.7172	890	71.7	2459	107.6	3688	143.4	4918	222.3	7623	251.0	8606	286.9	9836
	4.000	0.8160	780	81.6	2798	122.4	4197	163.2	5595	253.0	8673	285.6	9792	326.4	11191

Model (metric)	Plunger Diameter (in.)	Liters Per Revolution	Maximum Pressure BAR	100 RPM		150 RPM		200 RPM		310 RPM*		350 RPM		400 RPM	
				LPM	M^3/hr	LPM	M^3/hr	LPM	M^3/hr	LPM	M^3/hr	LPM	M^3/hr	LPM	M^3/hr
W165H	1.500	0.4343	345	43.4	2.6	65.1	3.9	86.9	5.2	134.6	8.1	152.0	9.1	173.7	10.4
	1.625	0.5097	326	51.0	3.1	76.5	4.6	101.9	6.1	158.0	9.5	178.4	10.7	203.9	12.2
	1.750	0.5912	281	59.1	3.5	88.7	5.3	118.2	7.1	183.3	11.0	206.9	12.4	236.5	14.2
	1.875	0.6786	245	67.9	4.1	101.8	6.1	135.7	8.1	210.4	12.6	237.5	14.3	271.5	16.3
	2.000	0.7721	215	77.2	4.6	115.8	6.9	154.4	9.3	239.4	14.4	270.2	16.2	308.9	18.5
W165M	2.000	0.7721	215	77.2	4.6	115.8	6.9	154.4	9.3	239.4	14.4	270.2	16.2	308.9	18.5
	2.125	0.8717	190	87.2	5.2	130.8	7.8	174.3	10.5	270.2	16.2	305.1	18.3	348.7	20.9
	2.250	0.9772	170	97.7	5.9	146.6	8.8	195.4	11.7	302.9	18.2	342.0	20.5	390.9	23.5
	2.375	1.0888	152	108.9	6.5	163.3	9.8	217.8	13.1	337.5	20.3	381.1	22.9	435.5	26.1
	2.500	1.2065	138	120.6	7.2	181.0	10.9	241.3	14.5	374.0	22.4	422.3	25.3	482.6	29.0
	2.625	1.3301	125	133.0	8.0	199.5	12.0	266.0	16.0	412.3	24.7	465.5	27.9	532.1	31.9
	2.750	1.4598	114	146.0	8.8	219.0	13.1	292.0	17.5	452.5	27.2	510.9	30.7	583.9	35.0
W165L	2.750	1.4598	114	146.0	8.8	219.0	13.1	292.0	17.5	452.5	27.2	510.9	30.7	583.9	35.0
	3.000	1.7373	96	173.7	10.4	260.6	15.6	347.5	20.8	538.6	32.3	608.1	36.5	694.9	41.7
	3.250	2.0389	81	203.9	12.2	305.8	18.4	407.8	24.5	632.1	37.9	713.6	42.8	815.6	48.9
	3.500	2.3647	70	236.5	14.2	354.7	21.3	472.9	28.4	733.0	44.0	827.6	49.7	945.9	56.8
	3.750	2.7145	61	271.5	16.3	407.2	24.4	542.9	32.6	841.5	50.5	950.1	57.0	1085.8	65.1
	4.000	3.0886	54	308.9	18.5	463.3	27.8	617.7	37.1	957.5	57.4	1081.0	64.9	1235.4	74.1

*API Speed

General Notes

1. Capacities shown are based on 100 percent volumetric efficiency. Actual capacities are lower, based on discharge pressure and fluid compressibility.
2. API-674 and NACE-compliant designs are available; consult Weatherford for details and exceptions to these standards.
3. For operation below 200 RPM, an auxiliary lubrication system is required.
4. Standard plunger sizes are shown, however other sizes are available upon request.
5. Spherical valves must be installed when using 4.00 in. plungers.