

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-16958

Exam Date: 12/16/2015

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ☒ Yes ☐ No
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - Other < >

2. Current Owner: Name: Raymond R Bradley
 Owner-of-Record Correct? ☒ Yes ☐ No
 Address-of-Record Correct? ☒ Yes ☐ No
 If No: <Address>

The available Kootenai County taxlot information shows that the property is owned by Raymond R Bradley

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: C101272

4. SOURCE

Spokane River
 Method of Determination: aerial photography.
 Change in Source:

TRIBUTARY

Columbia River
☐ Yes ☒ No

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Overlap? ☒ Yes ☐ No

Water Right No.	Source	Purpose of Use	Basis
95-12025	Ground water	Domestic & irrigation	License

Comments: Riverview Island Estates Homeowners Assn holds water right WR 95-12025. The well for that system is located within the Bradley property.

2. Other water rights with the same point of diversion: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments:

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	%	%	%	Sec.	TWP	RGE		County
Spokane River	05		SE	NE	8	50N	04W	B.M.	KOOTENAI

Method of Determination: The legal description in the permit is validated by PLS data and aerial photography.

Change in POD? ☐ Yes ☒ No

Amendment Required? ☐ Yes ☒ No

2. **LOCATION OF PLACE(S) OF USE:** Use: Domestic

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
50N	04W	08			D	D													
					L6	L5													

Method of Determination: The legal description in the permit is validated by PLS data and aerial photography.

Change in POU? ☐ Yes ☒ No Amendment Required? ☐ Yes ☒ No

3.

☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable. The pipe size is unknown.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☐ Photo of Diversion and System Attached

4. Well or Diversion Identification No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
		3/4		Goulds	12.5 gpm (0.03 cfs)

According to the application for permit, the pump is a Gould's jet pump, model J7(S).

*Code to correspond with No. on map and aerial photo

D. **FLOW MEASUREMENTS**

1. Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: In-office field exam. No measurements taken

E. **FLOW CALCULATIONS**

☒ Additional Computation Sheets Attached

Domestic use standard = 0.04 cfs

Permit allowed = 0.04 cfs

License recommended for 0.04 cfs.

F. **VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\text{N/A}}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\text{N/A}}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\text{N/A}}$

Volume Calculations for Other Uses: N/A

Domestic use standard = 0.6 af

License recommended for 0.6 af

G. **PURPOSE OF USE**

Irrigation ☐ Yes ☒ No # Stock _____

Domestic # of Homes external use 1 home

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Information in the water right file is consistent with aerial photography of the property.

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA

H. NARRATIVE/REMARKS/COMMENTS

Permit 96-16958 authorizes a 0.04 cfs diversion from the Spokane River for domestic purposes. Based on the small permitted diversion rates, this permit qualifies for an in-office field exam.

Legal description of the POU was used to locate the property. Available Kootenai County taxlot information indicates that Raymond R Bradley owns the property.

I created the POU shape based on taxlot information and a review of aerial photography. The irrigation POU seen in 2015 aerial photography and Google Earth imagery is less than the default 2013 imagery which displays in the attachment to the license.

The permit holder stated that internal domestic water is provided by a system which is owned and operated by the HOA. Riverview Island Estates Homeowners Assn holds license WR# 95-12025 for irrigation and domestic use on 8 lots. One of those 8 lots is the Bradley property. A combined use condition has been added to this license.

I created the POD by reselecting the POD in the permit layer. The POD appears to be located just outside of the line defining the Bradley property but within government lot 5.

The permit holder, Raymond Bradley, has also constructed a standing column well on this property. That well serves as both the production and injection well for a geothermal heat pump system. WR permit 95-16651 authorizes the heat pump system to provide heating and cooling uses only. Spent heating/cooling water is not discharged to the land surface.

The permit authorized the standard rate for a domestic use. I am recommending the standard rate and volume for the license.

In a 12/11/2015 phone conversation, the permit holder stated that the portable pump provides water from Spokane River for a pressurized irrigation system consisting of 7 stations. The river water is used for lawn irrigation only. Internal domestic use is provided by the HOA system.

The permit was conditioned with a requirement for fish screening on the pump. In the proof of beneficial use statement, the permit holder states that fish screening is installed on the pump. Because that can't be confirmed in a desk-top review, the fish screen condition will be maintained on the water right license.

Have conditions of permit approval been met? ☒ Yes ☐ No

I. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Domestic	01/01-12/31	0.04 cfs	0.6 AF
	<u>Totals</u>	0.04 cfs	0.6 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

Other: < >

I. AUTHENTICATION

Field Examiner's Name Michele Edl Date December 16, 2015

Reviewer Camille Skuggs Date 12-16-2015

Beneficial Use Report 95-16958

POU 95-16958

POD 95-16958





Google earth



Imagery Date: 4/20/2015

Beneficial Use Report 95-16958

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-16958
 Reviewer: Michele Edl
 Date of Review: 12/11/2015

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	0.75	0.75	0.75
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	6.0	6.0	6.0
DISCHARGE PRESSURE	35	45	55
RATE OF FLOW (cfs)	0.05	0.04	0.03 0.04

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: % 70 efficiency
 No Friction

Examiners Notes:

Horsepower was given by the applicant. Lift was estimated by the applicant and is from the pump location in the river to the irrigation level of the property. Discharge pressure ranges from 35-55 psi to account for expected sprinkler system in use.

FEATURES

Convertible: May be used on shallow or deep well applications using appropriate Goulds Water Technology fittings.

Serviceable:

- Back pullout design for service without disturbing piping.
- Two compartment motor for access to wiring and replaceable components.
- Nozzle clean out plug in shallow well adapter.
- Corrosion resistant, plastic tubing and fittings are easily removed for cleaning. Premium O-ring design fittings need only be hand tight to seal.

Impeller: F.D.A. compliant, glass filled Noryl®. Corrosion and abrasion resistant.

Diffuser (Guidevane): Bolt down Lexan® diffuser has stainless wear ring for extended performance in abrasive conditions.

Powered for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits. Can be operated continuously without damage.

Corrosion Resistant: Electro-coat paint is baked on.

Protected Mechanical Seal: Diaphragm retains water in the casing to ensure the mechanical seal can never run dry.

Excellent Air Handling Ability: After initial priming the pump has the ability to re-prime itself.

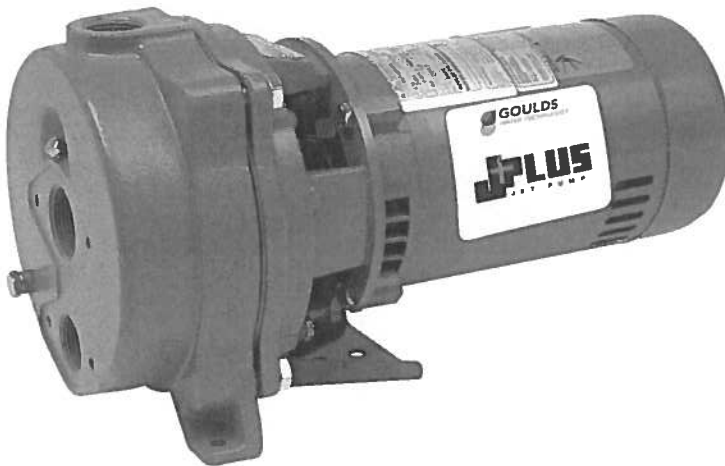
AGENCY LISTINGS



Canadian Standards
Association



Underwriters
Laboratories®



J+

J5, J7, J10 AND J15

CONVERTIBLE JET PUMPS ½, ¾, 1 AND 1½ HP - 60 HZ



GOULDS
WATER TECHNOLOGY

a xylem brand

APPLICATIONS

Specifically designed for:

- Homes
- Farms
- Cottages
- Booster service

SPECIFICATIONS

Pump:

- Pipe connections: 1¼" NPT suction, 1" NPT discharge, 1" NPT drive (pressure)
- Pressure switch: AS4 preset at 30-50 PSI

Motor:

- NEMA standard
- 60 Hz
- ½ - 1½ HP, 115/230 V capacitor start
- Single phase
- 3500 RPM
- Built-in overload with automatic reset
- Stainless steel shaft
- Rotation: clockwise when viewed from motor end
- UL778 listed

Maximum temperature: 140°F

SYSTEM COMPONENTS

- Basic Pump Unit: Includes pump and motor, pressure gauge and bushing, pressure switch with tubing and fittings.

NOTE: THE TUBING COMES CONNECTED FOR SHALLOW WELL USE. A DEEP WELL SET UP REQUIRES A JDW FITTINGS PACKAGE OR AN AV22 KIT.

Both include additional fittings and a 24" tubing to connect to a pressure control valve.

ADDITIONAL COMPONENTS REQUIRED

- Shallow Well Package: Includes shallow well adapter, nozzle, venturi (diffuser), gasket, bolts and pipe plugs OR
- Deep Well Package: Choose either a twin pipe or packer style.
 - Twin pipe includes jet body, nozzle, venturi (diffuser) and foot valve.
 - Packer includes packer body, nozzle, venturi (diffuser), and built-in check valve.

NOTE: Packer systems also require a packer adapter on the wellhead.

Deep well systems require a pressure control valve.

NOTE: YOU MUST HAVE A JDW OR AV22 KIT TO MAKE THE PRESSURE SWITCH CONNECTION.

Pressure tank required on all systems.

MODEL INFORMATION

CSA Listed Order No.	U.L. Listed (Indoor use)① Order No.	HP
J5	J5UL	½
J7	J7UL	¾
J10	J10NUL	1
J15	J15UL	1½

SHALLOW WELL PERFORMANCE RATINGS

HP/Model	½ HP - J5					½ HP - J5					¾ HP - J7					1 HP - J10					1½ HP - J15									
Shallow Well Package	FH5					FH5H (High Pressure Model)										FH7					FH10					FH15				
Adapter	4K62																													
Nozzle	AN017					AN019					AN018					AN018					AN022									
Venturi	AD3731					AD3528					AD3536					AD3538					AD3542									
Total Suction Lift (feet)	Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI					Discharge Pressure - PSI									
	20	30	40	50	Max. Shut off (PSI)	20	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)	30	40	50	60	Max. Shut off (PSI)				
	Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute					Gallons per minute									
5	17.5	16.5	10.2	5.0	63	11.5	11.3	11.0	7.7	4.8	83	21.3	18.3	12.5	6.6	70	24.8	24.4	16.6	9.9	74	26.6	26.3	25.0	15.6	80				
10	15.7	14.4	9.2	4.3	61	10.3	10.0	9.6	7.0	4.2	81	18.8	17.3	11.3	5.0	68	22.9	22.2	15.8	8.6	72	24.7	24.3	22.6	13.9	77				
15	13.7	12.5	8.0	3.6	59	8.8	8.6	8.3	6.3	3.7	79	16.4	15.5	9.6	3.7	66	19.8	19.5	13.8	6.9	70	21.6	21.5	20.4	12.9	75				
20	11.5	10.4	7.1	2.3	57	7.0	7.0	6.8	5.8	3.2	76	13.6	13.2	8.3	2.0	63	16.6	16.6	12.2	5.6	67	18.1	18.0	17.6	12.0	73				
25	8.7	8.6	6.2	1.3	54	5.3	5.2	5.2	5.0	2.8	73	10.0	9.9	6.4	1.0	59	12.5	12.4	10.4	3.6	65	14.0	14.0	14.0	10.1	71				

TWIN PIPE PERFORMANCE RATINGS

HP/Model		½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15			
Well Casing min. I.D.		4		4½		4		4½		4		4½		4½			
Pressure	Pipe	1		1½		1		1½		1		1½		1½			
	Size (in.)	1¼		1½		1¼		1½		1¼		1½		1½			
① Jet Assembly Package		FT4-13	FT4-31	FT4-08	FT5-14	FT4-14	FT4-34	FT4-18	FT5-47	FT5-48	FT4-44	FT4-43	FT4-18	FT5-49	FT5-11	FT5-12	FT5-11
Jet Body (only)		AT4		AT5		AT4		AT5		AT4		AT5		AT5			
Nozzle		AN017	AN016	AN015	AN018	AN017	AN016	AN016	AN018	AN017	AN017	AN017	AN016	AN019	AN018	AN019	AN018
Venturi		AD726	AD723	AD720	AD724	AD729	AD725	AD722	AD730	AD725	AD730	AD727	AD722	AD732	AD727	AD734	AD727
② Control Valve Setting (PSI)		30	30	30	30	28	29	30	28	30	31	33	35	30	32	35	40
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting															
Depth to Jet Assembly (based on submergence of 5 feet)	30	13.0	11.0			15.8			16.6		17.0			19.3		21.2	
	40	11.8	9.0			15.7			16.0		16.6			18.0		20.0	
	50		7.6		6.9	13.2			15.0		14.4			16.0		16.1	
	60		7.0	5.2	6.4	10.2			13.0		11.5	11.2		14.3		15.0	
	70			4.7	5.6		8.2		11.0	10.0		9.3		12.6		14.0	11.2
	80			3.8	4.8		6.5		8.6		7.3	6.2	10.0	10.0		10.6	
	90			3.1	4.1		5.0	5.0	7.3			6.1		8.7		9.0	
	100							4.4	6.0			5.4		7.0		7.6	
	110							3.5	5.0			4.5		5.7		6.2	
	120													4.5		5.2	
	130															4.0	
	140															2.8	
	150															1.5	
	160																
	170																

NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown.

① Jet assembly package includes jet body (AT4), venturi, nozzle and foot valve.

② Deep well jet pumps require a pressure control device on the discharge to provide back pressure to the jet assembly. Failure to control the amount of discharge by adjusting the back pressure (pressure control valve setting) will cause the pump to lose prime. On pumps with low control valve settings, up to 40 psi, a simple ball valve or AV15 will work. On systems with control valve settings of 40 - 80 psi an AV22, AV22KIT or AV21 is required. They measure the pressure on the outbound side so that the high pressure does not open the 30-50 psi switch and turn the pump off.

PACKER SYSTEM PERFORMANCE RATINGS

HP/Model		½ HP - J5				¾ HP - J7				1 HP - J10				1½ HP - J15			
Well Casing		2		3		2		3		2		3		3			
Suction Pipe Size (in.)		1¼		1½		1¼		1½		1¼		1½		1½			
Jet Assembly Package ①		FP2-13	FP2-31	FP2-08	FP3-36	FP3-24	FP2-40	FP2-47	FP3-53	FP3-54	FP2-48	FP2-43	FP3-55	FP3-14	FP3-16	FP3-18	FP3-21
Jet Body (only)		AP2		AP3		AP2		AP3		AP2		AP3		AP3			
Nozzle		AN017	AN016	AN015	AN021	AN018	AN015	AN015	AN018	AN017	AN016	AN016	AN019	AN018	AN019	AN021	AN023
Venturi		AD726	AD723	AD720	AD730	AD724	AD727	AD723	AD730	AD725	AD729	AD725	AD732	AD727	AD735	AD723	AD731
Control Valve Setting (PSI) ②		30	30	30	30	30	30	32	27	30	35	36	28	32	34	34	39
Feet		Gallons Per Minute (GPM) 30-50 PSI Pressure Switch Setting															
Depth to Jet Assembly (based on submergence of 5 feet)	30	11.9	9.5		13.1		13.8		16.8		16.7		19.3		24.4		
	40	10.6	7.9		12.6		13.5		16.8		14.6		19.3		23.1		
	50		7.6		10.7	6.9	11.5		15.3		13.5		18.0		20.2		
	60		6.7	4.8	8.8	6.5	9.0	7.8	13.5		11.0	9.2	15.3		16.9	15.0	
	70			4.3	7.3	5.6		7.1	11.5	9.8		9.0	12.7		14.4		
	80			3.5		4.8		5.1		8.6		7.3	10.2	10.3		12.9	
	90							4.3		7.3		5.6		8.8		10.9	10.3
	100									6.2		4.2		7.2			9.6
	110									5.0				5.8			8.2
	120													4.5			6.9
	130																5.8
	140																4.7
	150																3.4
	160																4.0
	170																3.3

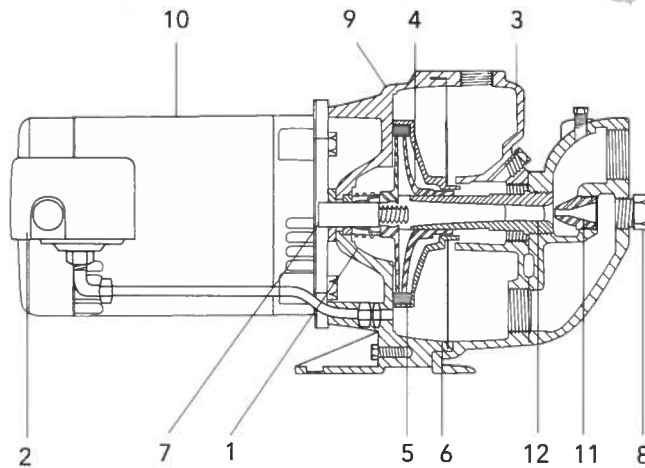
NOTE: An offset of 50 feet will result in a decrease of about 25% from ratings as shown. Special turned (diameter) couplings are required on 2" packer systems, order no. 64655 in Jet and Sub price book.

① Jet Assembly Package includes jet body, AP2 or AP3; built-in check valve, nozzle and venturi.

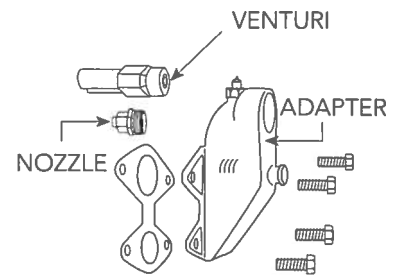
② Same as above

COMPONENTS

Item No.	Description
1	Mechanical seal
2	Pressure switch
3	Casing
4	Impeller
5	Diffuser (Guidevane)
6	Diaphragm
7	Stainless steel shaft
8	Nozzle clean-out plug
9	Motor adapter
10	Motor
11	Nozzle
12	Venturi

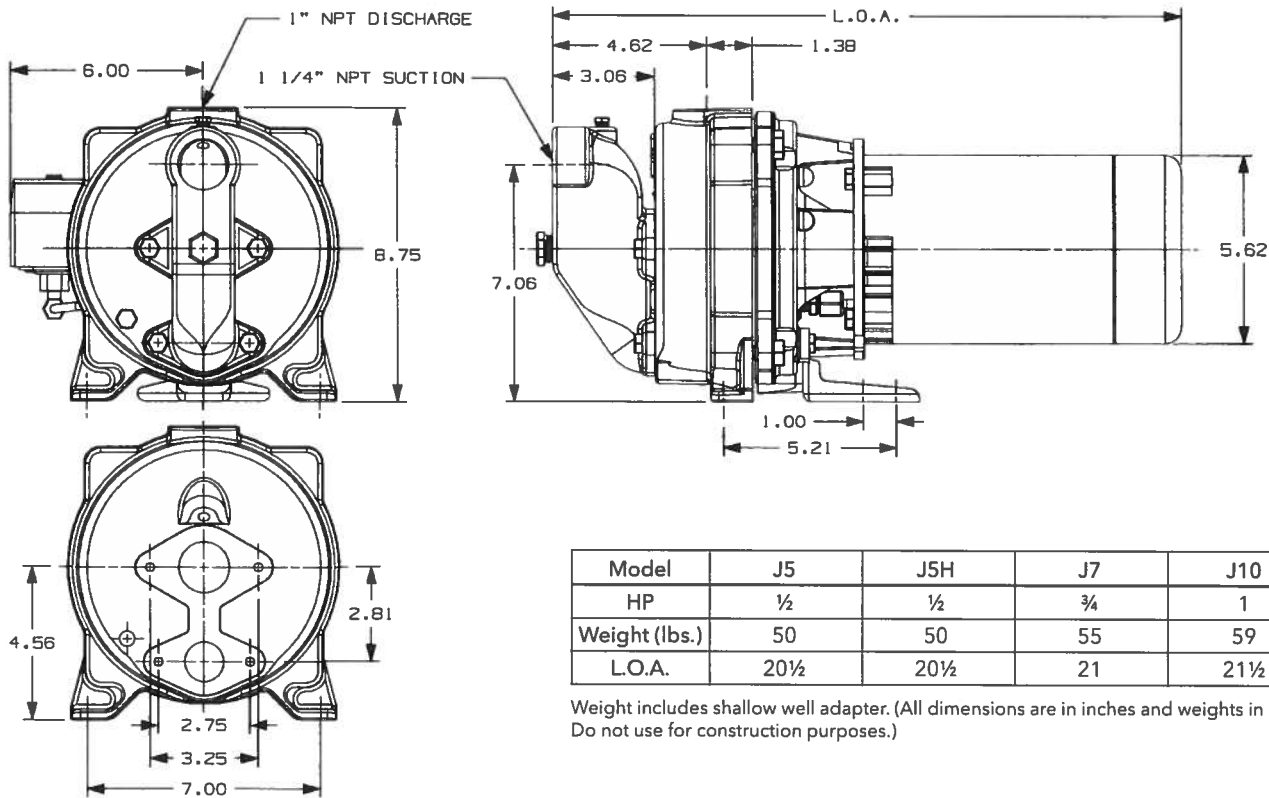


Shallow Well Model



Shallow Well Package

DIMENSIONS AND WEIGHTS



Model	J5	J5H	J7	J10	J15
HP	1/2	1/2	3/4	1	1 1/2
Weight (lbs.)	50	50	55	59	68
L.O.A.	20 1/2	20 1/2	21	21 1/2	24

Weight includes shallow well adapter. (All dimensions are in inches and weights in lbs.
Do not use for construction purposes.)

xylem
Let's Solve Water

Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.gouldswatertechnology.com

Goulds is a registered trademark of Goulds Pumps, Inc. and is used under license.
Noryl and Lexan are trademarks of GE Plastic.
© 2012 Xylem Inc. BJ+ R1 June 2013