

# RHEEM WATER HEATERS

## GAS<sup>①</sup>



**Classic** ♦29 gal (29-32N)  
 ♦PROG-  
 ♦6-Year Warranty ♦40 gal (40-38N)

**Classic** ♦40 gal (40-40N)  
 ♦PROG-  
 ♦6-Year Warranty ♦50 gal (50-40N)  
 ♦75 gal (75-76N)

**LOWBOY** ♦30 gal (30S-30N)  
 ♦PROG-  
 ♦6-Year Warranty ♦40 gal (40S-34N)

**MOBILE HOME** ②  
 ♦6-Year Warranty 30 gal (30-32N)  
 40 gal (40-34N)

### 6 Year\*

	Width x Height to vent top	Recovery/(NAT) Flue Size / Energy Factor
\$ 1,172.00	16½ x 59¾	32 / 3 / .63
1,085.00	19 x 61½	38 / 3 / .62
\$ 1,130.00	19½ x 63¼	40 / 3 / .62
1,270.00	21½ x 62½	40 / 3 / .62
2,329.00	26¼ x 64	75 / 4 / .53
\$ 1,273.00	19¾ x 49⅞	30 / 3 / .63
1,185.00	21 x 52⅞	34 / 3 / .62
\$ 1,718.00	16½ x 59⅞	32 / 3 / .63
1,822.00	18½ x 61½	34 / 3 / .62

## ELECTRIC

**Classic**  
 ♦PROE-  
 ♦6-Year Warranty

30 gal (E30-M2)	\$ 830.00	20¼ x 37½	.95
40 gal (E40-M2)	930.00	20¼ x 48¼	.95
50 gal (E50-T2)	955.00	20¾ x 58⅞	.95

**Classic**  
 ♦PROE-Short  
 ♦6-Year Warranty

28 gal (E28-S2)	\$ 930.00	23 x 30	.95
36 gal (E36-S2)	990.00	24¼ x 31½	.95

**Classic**  
 ♦PROE-POU  
 POINT OF USE  
 ♦6-Year Warranty

2.5 gal (E2-1)	\$ 554.00	+ 9¾ x 14
6 gal (E6-1)*	655.00	* 15¾ x 15¼
10 gal (E10-1)*	890.00	* 15¾ x 23
15 gal (E15-1)*	991.00	* 17¾ x 24¼
20 gal (E20-1)*	1,010.00	* 19¾ x 25¼

\*(120v & 240v Models)  
 \*2,000 Watts  
 » Side connections «

**Protection-Plus #SP20865 \$125.00**  
**Tank Warranty 4-year extension.**  
**6 year warranty ⇒ 10 year warranty**

♦ Gas Water Heaters ♦  
 Meets the new ANSI Z21.10.1 code for  
 Flammable Vapor Ignition Resistance protocols.  
 With Piezo push-button gas igniter.

**\* Tank Warranty is 6-years**  
**Parts have a 6-year warranty.**

- ① All Prices are for NATURAL GAS  
 For LPG add \$ 66.00 to the Retail Price.  
 ② Mobile Home is set for Natural Gas,  
 can be field converted to LPG.  
 Recovery = GPH Recovery at 90° rise.

**All non-compact electric heaters have 2 interlocked  
 4500W / 240V elements w/ 21 GPH recovery @ 90° rise.**  
 + = ½"ips water connections (¾"ips for relief valve).  
 \* = Tanks have ¾" side inlets for water / relief valve  
 \* = Water / relief valve does not come with these units.

## FACTS ABOUT WATER

1 Gal of fresh water = **8.333** lb.  
 1 cubic foot of water = **7.48** Gal

Water expands 4.34% when heated from 40°F to 212°F.  
 A 40 gal water heater will gain an extra .5 gal of water volume when heating water from 50°F to 120°F.  
 If a house has a check valve on the incoming cold water line, a small expansion tank might be needed to prevent the P&T valve from continuously opening.

1 Foot of Head = **.433** #/sq.ft  
 2.31 Feet of Head = **1** #/sq.ft  
 115.5 Feet of Head = **50** #/sq.ft

The **Static-Head** of a water system equals the height difference between the water surface in a water tank and the faucet in the house.

The **Dynamic-Head** of a water system equals the **Static-Head** minus the **Friction-Loss** in the piping, fittings, and valves.

A 1000' run of 1" PVC pipe from a water tank 100' higher than a house will have a **Static-Head** of 43psi. The **Dynamic-Head** will be less than 29psi @ 10gpm. For 1 1/4" Pipe the **Dynamic-Head** will be 39psi @ 10gpm.

## GAS & ELECTRICITY

1 kWh = **3,412** BTU  
 4,500 Watts = **15,354** BTU

1 HP = **745.7** Watts  
 1 kW = **1.341** HP

1 Gal of Propane = **91,000** BTU  
 1 Cu. Ft of Natural gas = **1,075** BTU

1 psi of Gas = **27.68"** Water Column  
 1 psi of Gas = **2.036"** Mercury Column

7" Water Column (Nat) = **4.04** Ounces/Sq. In.  
 11" Water Column (LPG) = **6.34** Ounces/Sq. In.

1 Therm = **100,000** BTU  
 1.05 Therm = **100** cubic feet (Nat)

### For Electric Water Heaters

$$GPH = .4096x \frac{Watts}{Temp.Rise}$$

GPH is gal / hour of hot water at a given temperature:  
 e.g. a 4500watt electric element produces 20.5 GPH @ a 90° Temperature Rise (ground water Temp ~50°F to normal water heater Temp ~ 140°F)

$$Amps = \frac{Watts}{Volts}$$

e.g., a 4500watt 240volt electric element draws **18.75 amps**,  
 a 2000watt 120volt electric element draws **16.67 amps**.

Friction Loss per 100' of PVC Pipe #/Sq. Inch

GPM	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
1	.49	.12				
2	1.76	.45	.14	.04	.02	
5	9.60	2.44	.76	.20	.09	.03
7	↘	4.56	1.41	.37	.18	.05
10		8.82	2.73	.72	.34	.10
15		↘	6.00	1.42	.70	.20
20			9.84	2.59	1.22	.36
25			↘	4.05	1.80	.55
30				5.49	2.59	.77
35				7.30	3.45	1.02
40				9.35	4.42	1.31
45	<i>Use Next Pipe Size</i>			11.63	5.49	1.63
50				14.14	6.68	1.98
60				↘	9.36	2.77
80					↘	4.73
100						7.15

Friction Loss per 100' of Poly Pipe #/Sq. Inch

GPM	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
1	.50	.12				
2	1.82	.44	.13	.03		
5	↘	2.42	.73	.19	.09	
7		4.52	1.36	.35	.16	.05
10		↘	2.63	.68	.32	.09
15			5.50	1.42	.80	.21
20			9.61	2.45	1.14	.33
25			↘	3.55	1.70	.51
30				5.19	2.42	.71
35				6.90	3.23	.94
40				8.84	4.13	1.21
45	<i>Use Next Pipe Size</i>			10.99	5.14	1.50
50				↘	6.25	1.83
60					8.75	2.56
80					↘	4.36
100						6.59

## VALVES - BIBBS - CHECKS (AB1953 COMPLIANT)



### Gate Valves

200# WOG 125# Steam  
 200# WOG 200# WOG

C x C, IPS

	Brass	Bronze
1/2"	\$ 16.82	31.83
3/4"	22.67	39.12
1"	33.98	54.43
1 1/4"	47.86	79.11
1 1/2"	60.88	103.36
2"	87.26	154.20
2 1/2"	167.57	
3"	230.52	
4"	395.56	

### Check Valves

200# WOG 125# Steam  
 200# WOG 200# WOG

	Brass	Bronze
1/2"	\$ 12.68	48.59
3/4"	15.97	64.74
1"	22.40	82.96
1 1/4"	38.20	124.38
1 1/2"	45.94	149.25
2"	76.69	200.97

### Ball Valves

600# WOG 600# WOG  
 150# WSP 150# WSP

	Brass	Brass <sup>®</sup>
1/2"	\$ 18.31	26.60
3/4"	25.82	39.32
1"	39.57	59.50
1 1/4"	77.68	86.03
1 1/2"	109.90	139.70
2"	165.48	210.11



Red-White

### PVC

Import  
 Ball Valve  
 150#

### PVC

Utility  
 Ball Valve  
 150# (USA)

### PVC

Spring Check  
 200# (USA)  
 S or T

### PVC

Swing Check  
 Slip x Slip



25AUB



Water  
 Pressure  
 Reducer

1/2"	\$ 280.00
3/4"	375.00
1"	668.00
1 1/2"	830.00
2"	995.00



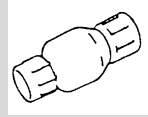
Reduced  
 Pressure Type  
 Double  
 Check Valve  
 Assembly

1/2"	\$ 1,075.00
1"	1,145.00

Standard  
 Double  
 Check Valve  
 Assembly

3/4"	\$ 510.00
1"	545.00

1/2"	\$ 3.48	\$ 16.22	\$ 22.65	
3/4"	4.47	19.23	24.95	
1"	6.14	26.14	25.00	
1 1/4"	8.97	34.59	33.35	\$ 26.65
1 1/2"	12.61	52.82	35.55	27.45
2"	15.45	66.76	51.10	41.95
3"	53.75	209.13	124.80	102.00



### NO-KINK HOSE BIBB

(USA) (Import 1/4 Turn)

1/2" Mip	\$ 22.15	~	\$ 10.20
1/2" Fip	22.15	~	9.90
3/4" Mip	22.95	~	10.50
3/4" Fip	22.95	~	10.30
1/2" CxC	22.95		
1/2" Com	24.95		

\* Add \$ 5.00 for loose key



**Garden Valve\*** (USA)

1/2"	
3/4"	\$ 33.85
1"	35.60



**SOT\*** (USA)

1/2"	\$ 29.75
3/4"	31.50



**SSS\*** (USA)

1/2"	\$ 25.75
3/4"	26.00



**Sill Cock\*** (USA)

1/2"	\$ 27.50
3/4"	33.15

\* 1/2-3/4", ♦ Add \$ 5.00 For Loose key

## RELIEF & TEMPERING VALVES

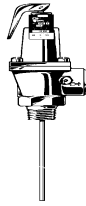


1170UT

### 1170 Tempering Valves

ASSE-1070 (90°-160°) ips / cop

3/4", 1"-UT / US \$ 438.00



### Relief Valves

	List	Inlet/ Outlet	Pressure Temperature	AGA BTU/ Hr
100XL-4	\$ 31.00	3/4 / 3/4	150# / 210°	100,000
100XLL-2.5	45.00	3/4 / 3/4	150# / 210°	100,000
3L	28.00	3/4 / 3/4	150# / -	
10L-2	85.00	3/4 / 3/4	150# / 210°	80,000
530C	135.00	1/2, 3/4 / 1/2, 3/4	50-175# / -	



### MMV Thermostatic Valve

ASSE-1017 (80°-120°) ips / cop

3/4"-UT / US \$ 195.00

### USG-B Thermostatic Valve

ASSE-1016 (80°-120°)

3/8"OD \$ 165.00



USG-B



174-A

### Water Pressure Relief

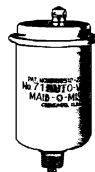
174-A Series 3/4" \$ 250.00

A.S.M.E. (30#)

## VENTS & STRAINERS



PLT



#75 Maid-O-Mist



FV-4



N36



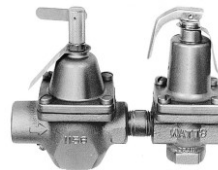
HAV

### Air Vents

HAV - Watts	\$ 22.50	1/8" mip - 1/4" mip	125 #
FV-4 - Watts	39.00	1/8" mip - 1/4" mip	150 #
FV-4 - Watts	52.00	1/2" mip	150 #
FV-4 - Watts	60.40	3/4" mip	150 #
75 - Maid-O-Mist	74.00	3/4" mip - 1/2" fip	150 #

### Miscellaneous

N-36-1/2"	\$ 98.00	Vacuum Relief
N-36-3/4"	124.00	Vacuum Relief
PLT-5	62.00	Domestic Expansion Tank
PLT-12	84.00	Domestic Expansion Tank
1156F -1/2"	205.00	Feed Water Regulator
T1450F -1/2"	405.00	#1156F w/relief (30#)
15 -3/4"	81.00	Water Hammer Arrestor
695-01	96.50	1/2" Trap Primer



T1450F



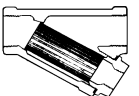
1156F

### Wye Strainers

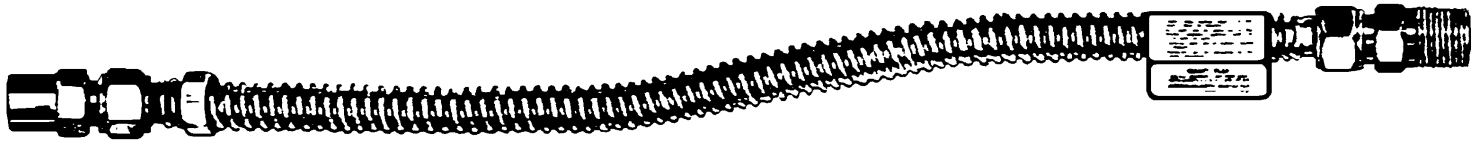
(LF380 - RED-WHITE)

\*BRONZE

1/2"	\$ 27.40
3/4"	38.55
1"	55.42
1 1/4"	81.88
1 1/2"	128.03
2"	161.87



## Gas Appliance Fittings



	12"	18"	24"	30"	36"	48"	60"	72"	With Valve ADD
1/2" IPS [1/2" OD (3/8" ID)]	15.59	18.95	21.59	23.10	25.50	31.70	38.95	44.40	~ 16.00
3/4" IPS [5/8" OD (1/2" ID)]		19.70	22.56	23.65	25.80	33.85	40.45	49.64	~ 25.00

### Stainless Steel GAS FLEX

	24"	36"	48"	60"
*High BTU Gas Flex 3/4" IPS [1" OD (3/4" ID)] x	\$ 73.50	79.15	112.25	128.80

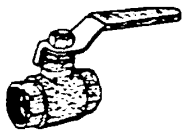
\*PVC Coated Yellow

#### BTU Flow Capacity (BTU/Hr) @ 1/2" water column

	2 Foot	4 Foot	6 Foot
3/8" OD (1/4" ID)	40,000	28,300	23,100
1/2" OD (3/8" ID)	85,000	60,500	49,100
5/8" OD (1/2" ID)	150,000	106,000	86,000
* 1" OD (3/4" ID)	290,000	215,000	173,900



**GAS TEST GAUGE** \$ 16.55

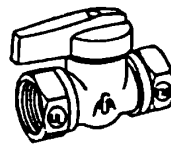


**Brass Ball Valve**  
 150# Steam 600# WOG  
**UL CSA FM**



**Jomar #175LWN**  
**"Safe Ball"®**  
 CSA 175#  
 Lock-Wing

1/2"	\$ 26.60	~	\$ 35.51
3/4"	39.32	~	39.59
1"	59.50	~	55.45
1 1/4"	86.03	~	100.37
1 1/2"	139.70	~	146.21
2"	210.11	~	194.95



**Gas Ball Valve**  AGA

1/2"	3/4"
\$ 10.40	15.50



**Flare Gas Ball Valves 1-Piece**

3/8" Flare x 1/2" Fip	\$ 16.00
1/2" Flare x 1/2" Fip	16.00
15/16" Flare x 3/4" Fip	25.00

## Natural Gas Pipe Sizing Chart

Length of Pipe in Feet	Size of Pipe in Inches								
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
10	108	230	387	793	1237	2259	3640	6434	
20	75	160	280	569	877	1610	2613	5236	9521
30	61	129	224	471	719	1335	2165	4107	7859
40	52	110	196	401	635	1143	1867	3258	6795
50	46	98	177	364	560	1041	1680	2936	6142
60	42	89	159	336	513	957	1559	2684	5647
70	38	82	149	317	476	896	1447	2492	5250
80	36	76	140	239	443	840	1353	2315	4900
90	33	71	133	275	420	793	1288	2203	4667
100	32	68	126	266	411	775	1246	2128	4518
125	28	60	117	243	369	700	1143	1904	4065
150	25	54	105	215	327	625	1008	1689	3645
175	23	50	93	196	303	583	993	1554	3370
200	22	47	84	182	280	541	877	1437	3160
300	17	37	70	145	224	439	686	1139	2539

Natural Gas flow is given in thousands of BTU/hr. - One cubic foot of LP gas = 1000 BTU.

Nominal pressure at the burner for Natural Gas is 3.5" of water column. (Typical machine supply 5"-7") Pipe length must include additional length for all fittings. Add approximately 5 feet of pipe per fitting.

Natural Gas Example: A machine with a burner that requires 440,000 BTU would need a 1 -1/4" pipe for a 20' long run.

## Liquid Propane Gas Pipe Sizing Chart

Length of Pipe in Feet	Size of Pipe in Inches								
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
10	275	567	1071	2205	3307	6221	10140	17990	35710
20	189	393	732	1496	2299	4331	7046	12510	25520
30	152	315	590	1212	1858	3465	5695	10110	20620
40	129	267	504	1039	1559	2992	4778	8481	17300
50	114	237	448	913	1417	2646	4343	7708	15730
60	103	217	409	834	1275	2394	3908	6936	14150
80	89	185	346	724	1086	2047	3329	5908	12050
100	78	162	307	630	976	1811	2991	5309	10830
125	69	146	275	567	866	1606	2654	4711	9613
150	63	132	252	511	787	1496	2412	4281	8736
200	54	112	209	439	665	1282	2083	3618	7382
250	48	100	185	390	590	1138	1808	3210	6549
300	43	90	168	353	534	1030	1637	2905	5927
350	40	83	155	325	491	947	1505	2671	5450
400	37	77	144	303	458	887	1404	2492	5084

LP Gas flow is given in thousands of BTU/hr. - One cubic foot of LP gas - 2516 BTU.

This chart refers to low pressure LP, after regulation Standard nominal pressure at the burner for Liquid Propane Gas is 11" of water column.

Pipe length must include additional length for all fittings. Add approximately 5 feet of pipe per fitting.

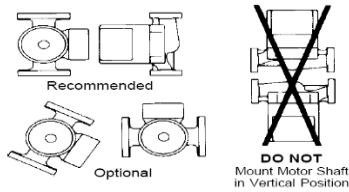
LP Example: A machine with a burner that requires 440,000 BTU would need a 1" pipe for a 20' long run.

# GRUNDFOS Circulating Pumps

**STAINLESS STEEL-CAST \*IRON BODY**

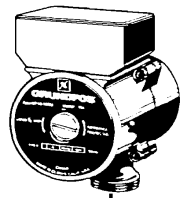
<i>UPS = 3-Speed Pumps</i>	Max Temp - Max Head - Watts - Amps - Width - HP	
*UPS15 - 58FC Cast Iron	230°F -- 19.5' -- 87W -- .75A -- 6.50" -- 1/25 <sup>th</sup> Hp	\$ 295.00
UP15 - 29SU Stainless Steel	230°F -- 9.7' -- 87W -- .75A -- 6.50" -- 1/25 <sup>th</sup> Hp	610.00
UPS15 - 55SFC Stainless Steel	230°F -- 18' -- 87W -- .75A -- 6.50" -- 1/12 <sup>th</sup> Hp	890.00

**Mounting Positions**



**FOR INDOOR USE ONLY**

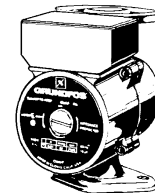
Timer Control **\$ 150.00**  
 Thermostatic Control **98.00**  
 { On @ 105°F - Off @ 115°F }



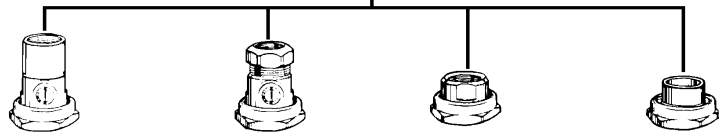
STAINLESS STEEL  
 UP 15-18SU  
 UP 15-42SU  
 UP 25-64SU



CAST IRON  
 UP 15-42F  
 UP 26-64F  
 UP 26-96F  
 UP 43-75F



STAINLESS STEEL OR BRONZE  
 UP 15-42SF  
 UP 25-64SF  
 UP 26-96BF  
 UP 43-75BF

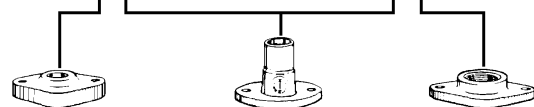


**Union Ips Valve**  
 1/2 & 3/4" Sets  
**\$ 89.00**

**Union Comp. Valve**  
 3/4" Sets  
**\$ 89.00**

**ips Half Union**  
 3/4" Sets  
**\$ 79.00**

**Cop Half Union**  
 1/2 & 3/4" Sets  
**\$ 79.00**

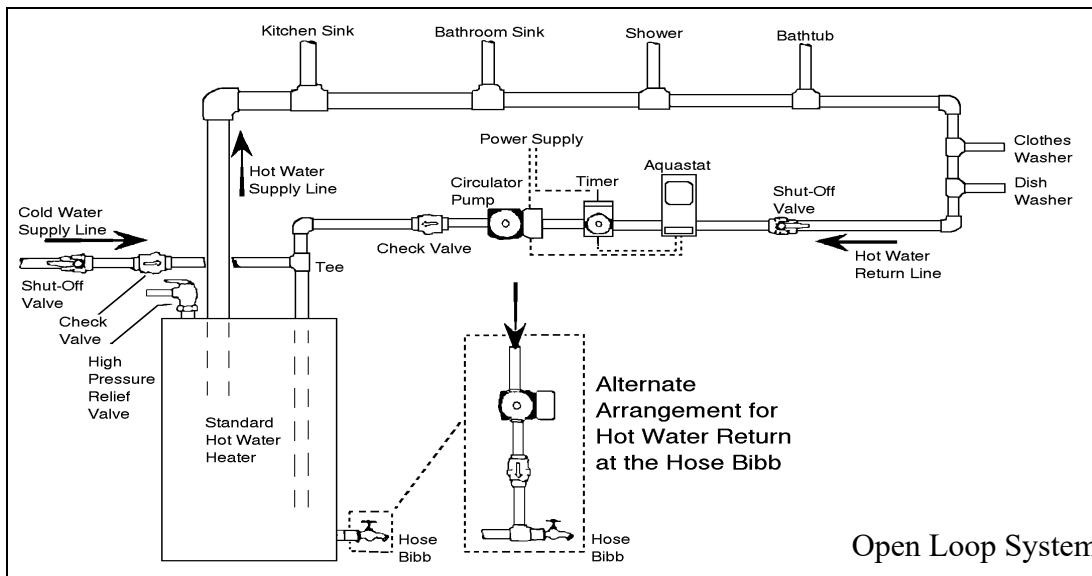


**Cast Iron Flange**  
 3/4, 1", Set  
**\$ 35.00**

**Bronze Flg. Valve**  
 3/4, 1", Flange Set  
**\$ 115.00**

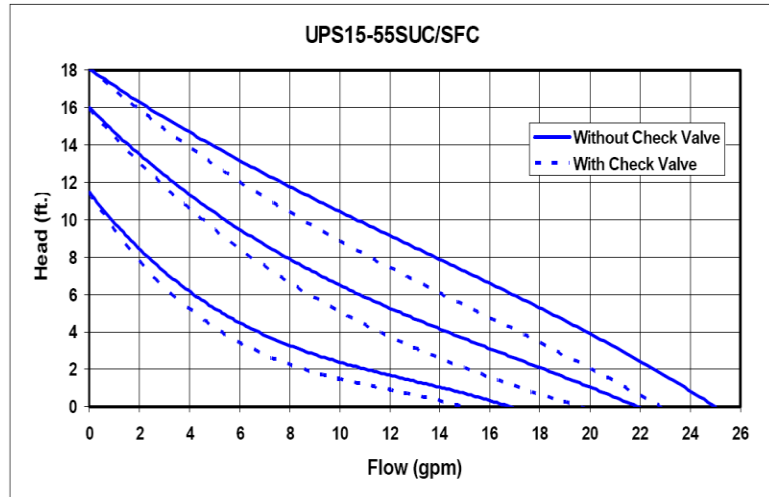
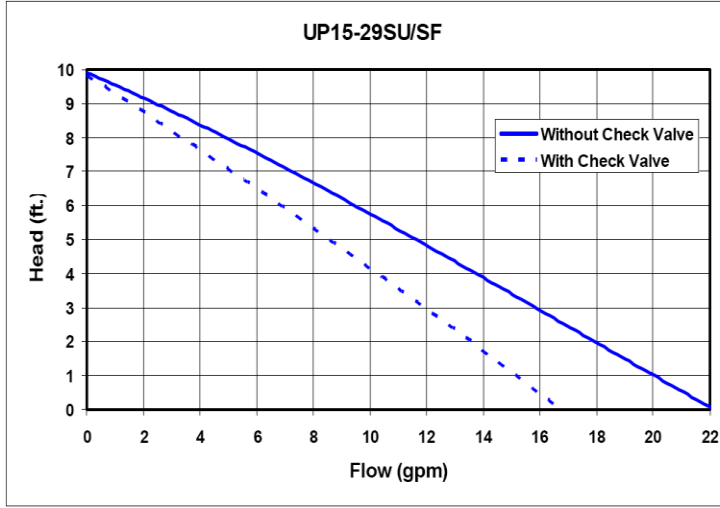
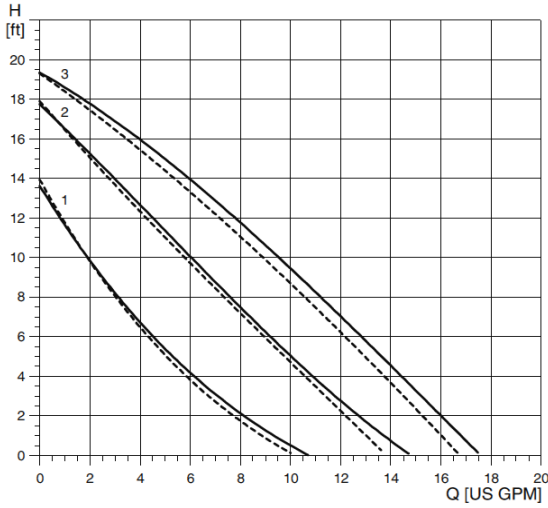
**Bronze Flanges**  
 3/4" Flange Set  
**\$ 100.00**

Put the pump on the back leg of the hot water circuit. Use 3/4" pipe size or larger for the back leg.



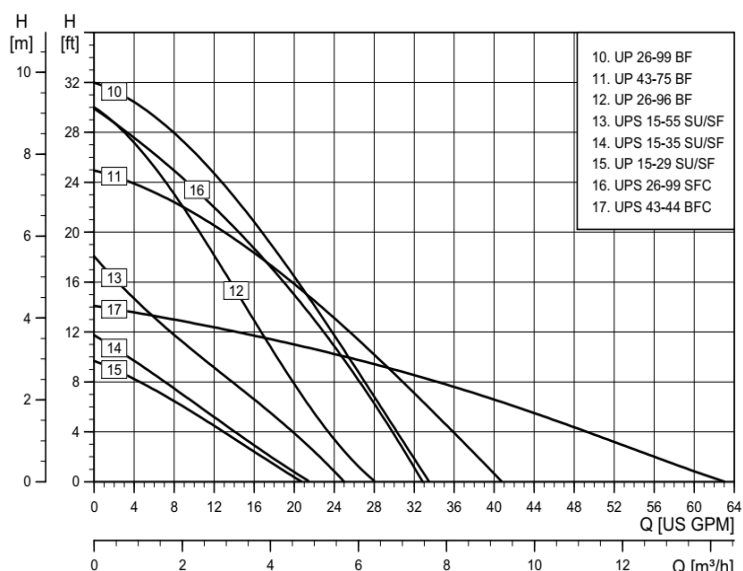


# Pump Curves



## Older Pump Specifications ↓

### UP/UPS Open Loop Systems



### UP Closed Loop Systems

