



Rain Bird Golf Pump Station Products



Rain Bird applies its world-leading irrigation expertise to the design and manufacture of pump stations. By doing so, Rain Bird is the only irrigation manufacturer able to provide totally integrated irrigation solutions, Reservoir to Rotor.™ Rain Bird's solutions reliably and dependably deliver a more playable course, while lowering operational costs with Smart Pump.™

Rain Bird offers a variety of pump station options to meet your specific needs. These options include pre-fabricated skids with vertical turbine lift pumps, horizontal centrifugal flooded suction or suction lift pumps, self contained booster pumps, split-case water feature pumps, submersible or floating skid pumps and more. Featuring Variable Frequency Drive technology, every station is engineered and custom-built for the specific user requirements.

Additional customization includes:

- Pressure maintenance and/or jockey pumps for smaller daily watering needs
- Pumps from 3 H.P. to 200 H.P.
- Up to six main pumps
- Custom skid designs to fit existing pump houses
- Integrated filtration systems
- Additional optional features



FEATURES AND BENEFITS

Electrical Design — Rain Bird® Pump Stations use a sophisticated suppression system to reduce the risk of electronic component damage that could lead to inconvenient and costly downtime. This includes full heavy duty circuit breaker integration that provides protection for the motor and is easier and less expensive to service.

Engineered Pump Station Skid Design — Using 3D modeling, the channel steel skid frame is engineered for strength and rigidity. This engineering reduces the vibration and eliminates the requirement for oversized pump mounting plates. The deck is the industry's strongest and longest-lasting by providing heavy duty pump mounting plates continuously welded on top of the engineered frame.

Durable Polyester Powder-Coating — Rain Bird's in-house sandblasting system assures all surfaces of the pump station are prepared properly to allow for the best coating adhesion. The polyester powder-coat Rain Bird applies is far more durable than liquid coatings, and will not deteriorate over time like other coatings that often develop a chalky appearance. In fact, Rain Bird's powder-coating process scored a 10 out of 10 on an ASTM corrosion test provided by Sherwin Williams. Other industry pump stations scored 4 out of 10 on the very same test. In addition, the powder-coating process is environmentally friendly.

VFD Per Motor (VPM) Option — Rain Bird offers the industry's most comprehensive package by designing custom stations upon request to include a VFD for each motor on a multi-pump station. This option offers superior motor protection along with no mechanical switching.

Advanced Controls — Using a simple-to-operate touch screen interface, Rain Bird offers the most advanced control package in the industry.

Automatic Adjusting Pressure Set Point — Save money and wear by maintaining a lower pressure set point until higher flows are demanded.

Real-Time Irrigation System Integration — With Rain Bird's Smart Pump™ central control software, Rain Bird pump stations lead the industry in energy efficiency. No other manufacturer provides this total integration and truly manages the operation of the pump throughout the irrigation cycle.

Note: Compatible with all Cirrus™, Nimbus™ II, Stratus™ II and StratusLT™ central control software systems.

MAIN IRRIGATION PUMP STATIONS

Flows Up To 10,000 GPM (2,300 m³/h)

Benefits:

- **Enhanced Serviceability:** Modern electrical design utilizing industrial breaker motor protection instead of time-wasting fuses. Industrial circuit breakers are quickly reset and designed for an extended service life.
- **Reduced Downtime:** Industrial circuit breakers are good for thousands of trips.
- **Easy Operator Training:** Six languages on the color touchscreen provide an easy-to-use interface.
- **Reduced Cost:** Our powder coat paint earned a perfect rating on ASTM corrosion tests. Less corrosion equals longer pipe, skid, and manifold life, reducing cost.
- **No-Hassles Buying:** Get everything you need for your irrigation system construction or renovation from the only manufacturer dedicated to irrigation for over seven decades.
- **Real-Time Communication:** The pump station communicates in real-time with the central, allowing the central to make immediate decisions to maximize the efficiency of the entire irrigation system.

Application

Reliable Variable Frequency Drive Pump Stations designed to serve as the main irrigation pump station for large commercial sites and projects. Rain Bird's Pump Systems are designed for both new construction projects and can be custom built for tough-to-fit renovation projects.

Available in the following configurations:

- Vertical and submersible turbine pump stations for wet well applications
- Horizontal end suction for flooded suction, suction lift and pressure boosting applications
- Multistage pumps for flooded suction and pressure boosting applications where differential pressures greater than 130 psi (9 bar) are required

Available Options:

- Air Conditioned Electrical Panel Cooling
- Custom Controls
- Custom Piping and Manifolds
- Enclosures: Aluminum, Painted Steel (Government Specified Colors), or Stainless Steel
- Fabricated Discharge Heads
- Fertigation Systems
- Filtration: Backwashing Screen, Suction Scanning, and Disc Filtration
- HDPE Piping and Manifolding
- Heater, Skid Mounted 5KW
- Stainless Steel Intake Box Screen
- Lake Level Control: Float Switch and Ultrasonic
- Magnetic Flow Meter
- Modem, Radio or Hard-wired
- Power Zones: 5, 7.5 or 10KVA
- Premium Efficient Motors
- Totally Enclosed, Fan-cooled (TEFC) Motors
- Wye Strainer with Auto Back-flush
- Discharge Zee Pipes

Electrical Power Specifications:

- **60 Hz, 3-Phase Power:** 230V (up to 60hp per pump), 460V, 575V
- **50 Hz, 3-Phase Power:** 190V (up to 60hp per pump), 380V, 415V
- **60 Hz, 1-Phase Power:** 230V (up to 30HP per pump)



INTERMEDIATE FLOW PUMP STATIONS

Flows Up To 750 GPM (170 m³/h) At 120 psi (8.3 bar)

Higher flows available at pressure less than 120 psi (8.3 bar)

Reliable variable frequency drive, single horizontal end suction pump stations designed for boosting pressure on golf courses with elevation changes, lake transfer or serving as the main irrigation pump station on smaller golf courses configured for flooded-suction or suction lift.

Benefits

- **Enhanced Serviceability:** Modern electrical design utilizing industrial breaker motor protection instead of time-wasting fuses. Industrial circuit breakers are quickly reset and designed for an extended service life.
- **Easy Operator Training:** Easy-to-navigate monochrome touch screen.
- **Reduced Cost:** Our powder coat paint earned a perfect rating on ASTM corrosion tests. Less corrosion equals longer pipe, skid, and manifold life, reducing cost.

Features

- Everything you need for your irrigation system construction or renovation from the only manufacturer dedicated to irrigation for over seven decades
- Easy installation and startup

Available Options

- Air Conditioned Electrical Panel Cooling
- Enclosures: Aluminum, Painted Steel (Government Specified Colors) or Stainless Steel
- Full-color Touch Screen with the option of six languages
- Magnetic Flow Meter
- Modem, Radio or Hard-wired
- Totally Enclosed, Fan-cooled (TEFC) Motors
- Wye Strainer with Auto Flush
- Discharge Zee Pipes

Electrical Power Specifications

- **60 Hz, 3-Phase Power:** 230V (up to 60hp per pump), 460V, 575V
- **50 Hz, 3-Phase Power:** 190V (up to 60hp per pump), 380V, 415V
- **60 Hz, 1-Phase Power:** 230V (up to 30hp per pump)

EV TWIN VERTICAL PUMP STATIONS

Providing Up to 1,500 GPM (340 m³/h) at 20 psi (8.3 bar)

For 60Hz/460V–575V applications

Providing Up to 273 m³/h at 8.3 bar

For 50Hz/380V–415V applications

The EV Twin Vertical Turbine Pump Stations are intended for standard wet-well applications with a 48" (1.2 m) to 60" (1.5 m) diameter and a depth of either 12' (3.7 m) or 15' (4.6 m).

For use on golf courses, commercial and municipal sites utilizing a wet-well and requiring the redundancy of a twin vertical turbine system to deliver up to 1,500 GPM at 120 psi for 60Hz applications and up to 273 m³ at 8.3 bar for 50 Hz applications.

Benefits

- **Easy Operator Training:** Monochrome touch screen operator interface.
- **Easy Installation and Start-Up:** All stations are wet-tested prior to shipment.
- **No-Hassles:** Purchase all irrigation system components from one supplier.

Features

- Air to Liquid Control Panel Heat Exchanger for maximum VFD life
- NEMA 4 Electrical Panel for maximum protection of electrical components
- RU Vertical Turbine Pump Motors
- Electrical Power Surge Protection
- Power-loss auto-restart ensures seamless operation on loss/regain of electrical power
- Modern electrical design employs industrial grade circuit breaker motor protection instead of outdated and expensive-to-replace fuses
- Complete skid and piping garnet-blasted and powder-coated for maximum corrosion resistance

- Pressure relief valve with butterfly isolation valve protects the station from over-pressurization while ensuring serviceability
- Stainless steel pressure transducer for maximum durability
- Mechanical actuated air relief system to ensure smooth system operation
- Individual pump silent check valves and isolation valves
- Integral wet-well service hatch
- Lake level floats prevent inadvertent dry-running of vertical turbine pumps
- 3HP (2.2kW) Stainless Steel Pressure Maintenance Pump and Motor

Available Options

- Non-Reverse Ratchets for Vertical Turbine Pump Motors
- Magnetic Flow Meter
- Wye Strainer
- Premium Efficient Motors

Electrical Power Specifications

- **60 Hz, 3-Phase Power:** 230V (up to 60hp per pump), 460V, 575V
- **50 Hz, 3-Phase Power:** 190V (up to 60hp per pump), 380V, 415V
- **60 Hz, 1-Phase Power:** 230V (up to 30hp per pump)



Intermediate Flow Pump Station

WATER FEATURE PUMP STATIONS

Flows up to 10,000 GPM (2.3 m³/h) and greater

Reliable Variable Frequency Drive (VFD) water feature pump stations allow adjustable water feature appearance and provide a "Night-Run" mode that prevents stagnant water when the full look of the water feature is not desired. Constant speed systems require that the system be on or off, allowing water to stagnate during non-running periods.

Available in flows up to 10,000 GPM (2.3 m³/h) and greater in the following configurations:

- Vertical turbine pump stations for wet-well applications
- Split-case and horizontal end suction for flooded suction applications

Benefits

- **Adjustable Look:** The VFD allows for altering the look of a water feature by adjusting the pump run speed.



- **Save Energy:** "Night-Run" mode runs VFD driven pump at minimum speed, minimizing energy cost while preventing stagnant water.

- **Enhanced Serviceability:** Modern electrical design utilizing industrial breaker motor protection instead of time-wasting fuses. Industrial circuit breakers are quickly reset and designed for an extended service life.

Available Options

- Air Conditioned Electrical Panel Cooling
- Custom Controls
- Custom Piping and Manifolds
- Enclosures: Aluminum, Painted Steel (Government Specified Colors) or Stainless Steel
- Fabricated Discharge Heads
- Filtration: Backwashing Screen Filters and Suction Scan Filters (Hydraulic or Electric)
- Heater, Skid Mounted 5kW
- Intake Box Screen with 3 Stainless Steel Screens
- Premium Efficiency Motors
- Lake Level Control: Float Switch and Ultrasonic
- Totally Enclosed, Fan-Cooled (TEFC) Motors
- Wye Strainer with Auto Flush
- Discharge Zee Pipe
- HDPE Piping and Manifolding

Electrical Power Specifications

- **60 Hz, 3-Phase Power:** 230V (up to 60hp per pump), 460V, 575V
- **50 Hz, 3-Phase Power:** 190V (up to 60hp per pump), 380V, 415V

FILTRATION

Stand-Alone Back Washing Screen or Suction Scanning Filtration Packages can be ordered for new or existing systems.

Benefits

- **Easy Installation:** Rain Bird's customer design capabilities allow us to fabricate filter manifolds to fit pre-existing connections. We can also provide manifolds with intake to discharge centerline matched to allow installation on a pre-existing irrigation pipeline.
- **Easy to Operate:** Easy to navigate monochrome touch-screen allows user to quickly set time-based and differential pressure settings.
- **Reduced Irrigation System Concerns:** Filtration minimizes the amount of waterborne debris introduced to your irrigation system and is the best answer for reclaim water-use challenges.



RETROFIT PANELS

- **Increased Reliability:** Replace aging and obsolete panels and components with the latest VFD and PLC technology and touchscreen.
- **Better Irrigation Efficiency:** Installing a Rain Bird pump station retrofit panel allows Rain Bird Central Control customers to optimize their irrigation system using Rain Bird's Smart Pump™ software. SmartPump is the only software that integrates operation of your central control and pump station in real time.
- **Reduced Maintenance:** Modern panels equipped with circuit breakers allow you to leave behind the hassles of out-dated fuses, reducing down-time and maintenance cost.



PUMP MANAGER WITH SMART PUMP™

Combine Rain Bird's pump station and central control software to fully integrate pump station operation with your central control. This combination allows the pump station and central control to respond to changes in the system and irrigation immediately, providing the highest level of efficiency.

Smart Pump™ matches the irrigation system operation with the real capacity of the pump station, shortening the water window by an average of 20 percent and decreasing energy consumption. In addition, Smart Pump alerts the superintendent in real time of irrigation and pump station problems via cell phone text messaging. When an issue occurs such as an irrigation pipe break, the system verifies the break, shuts down the system and notifies the superintendent. Other systems cannot respond in a timely manner and can lose an hour of irrigation time trying to recover from a system fault.



ASP NETWORK

Rain Bird pump stations are professionally installed and serviced by Rain Bird Services Corporation (RBSC) and our factory trained, professional Authorized Service Provider (ASP) network. A comprehensive offering of technical support, preventative maintenance, extended customer satisfaction policy plans and other service solutions are available from RBSC by calling (888) 444-5756 or visit the web at www.RainBirdServicesCorporation.com.



PRESSURE CONVERSION

PSI	FEET	METER	BAR	kPa
1	2.3090	0.7038	0.0689	6.8948
80	185	56	5.5	552
85	196	60	5.9	586
90	208	63	6.2	621
95	219	67	6.6	655
100	231	70	6.9	689
105	242	74	7.2	724
110	254	77	7.6	758
115	266	81	7.9	793
120	277	84	8.3	827
125	289	88	8.6	862
130	300	91	9.0	896
135	312	95	9.3	931
140	323	99	9.7	965
150	346	106	10.3	1034
160	369	113	11.0	1103
170	393	120	11.7	1172
180	416	127	12.4	1241
190	439	134	13.1	1310
200	462	141	13.8	1379

FLOW RATE CONVERSION

GPM	ft ³ /s	m ³ /h	l/s	acre-ft/day
1	0.0022	0.2271	0.0002	0.004419
100	0.22	22.7	6.3	0.442
250	0.56	56.8	15.8	1.105
500	1.11	113.6	31.5	2.210
750	1.67	170.3	47.3	3.314
1000	2.23	227.1	63.1	4.419
1500	3.34	340.7	94.6	6.629
2000	4.46	454.2	126.2	8.838
2500	5.57	567.8	157.7	11.048
3000	6.68	681.4	189.3	13.258
3500	7.80	794.9	220.8	15.467
4000	8.91	908.5	252.4	17.677
4500	10.03	1022.1	283.9	19.886
5000	11.14	1135.6	315.5	22.096
6000	13.37	1362.7	378.5	26.515
7000	15.60	1589.9	441.6	30.934
8000	17.82	1817.0	504.7	35.353
9000	20.05	2044.1	567.8	39.773
10000	22.28	2271.2	630.9	44.192

HORSEPOWER TO KILOWATTS

HORSEPOWER	KILOWATT	HORSEPOWER	KILOWATT
1	0.746	25	18.7
3	2.2	30	22.4
5	3.7	40	29.8
10	7.5	50	37.3
15	11.2	60	44.8
20	14.9	75	56.0

LAKE INTAKE BOX SCREEN SIZING

FLOW RATE IN GPM	BOX SCREEN SIZE
0 - 500	18" square
501 - 1000	24" square
1001 - 1800	30" square
1801 - 2800	36" square
2801 - 4000	42" square
4001 - 5000	48" square
5001 - 7000	54" square
7001 - 8500	60" square
8501 - 10000	66" square

Based on screen velocities of less than 0.5 feet per second

WET WELL INTAKE PIPE SIZING

FLOW RATE IN GPM	LENGTH OF PIPE IN FEET				NOMINAL IPS PIPE DIAMETER
	50'	100'	200'	300'	
0 - 500	12"	12"	12"	14"	
501 - 1000	18"	18"	18"	18"	
1001 - 1500	24"	24"	24"	24"	
1501 - 2000	26"	26"	26"	26"	
2001 - 2500	28"	28"	28"	28"	
2501 - 3000	30"	30"	30"	30"	
3001 - 3500	32"	32"	32"	32"	
3501 - 4000	34"	34"	34"	34"	
4001 - 5000	36"	36"	36"	36"	

The nominal IPS pipe diameters listed in this chart assume a total equivalent pipe length as listed for friction loss calculations. A recommended internal pipe water velocity of up to 1.5 feet per second and/or a draw down of 1 inch or less is used to develop this conservative intake sizing table. Consult a Rain Bird engineer for values ranging outside of this chart.

WET WELL OPEN AREA SIZING

SIZE	SHAPE	NUMBER OF PUMPS
36" DIA	ROUND	1 - Vertical Turbine
48" DIA	ROUND	1 or 2 - Vertical Turbines
60" DIA	ROUND	1 or 2 - Vertical Turbines
72" DIA	ROUND	1 to 3 - Vertical Turbines
84" DIA	ROUND	1 to 5 - Vertical Turbines
96" DIA	ROUND	1 to 6 - Vertical Turbines
6' X 8'	RECTANGULAR	1 to 7 - Vertical Turbines

FULL LOAD AMPERAGE (FLA)

MOTOR HP	SINGLE PHASE A-C		THREE PHASE A-C INDUCTION TYPE SQUIRREL CAGE & WOUND ROTOR		
	115 VOLTS	230 VOLTS**	230 VOLTS**	460 VOLTS	575 VOLTS
1/2	9.8	4.9	2.2	1.1	0.9
3/4	13.8	6.9	3.2	1.6	1.3
1	16	8	4.2	2.1	1.7
1 1/2	20	10	6.0	3.0	2.4
2	24	12	6.8	3.4	2.7
3	34	17	9.6	4.8	3.9
5	56	28	15.2	7.6	6.1
7 1/2	80	40	22	11	9
10	100	50	28	14	11
15			42	21	17
20			54	27	22
25			68	34	27
30			80	40	32
40			104	52	41
50			130	65	52
60			154	77	62
75			192	96	77
100			240	120	96
125			296	148	118
150			350	175	140
200			456	228	182
250			558	279	223

**For 208V applications, increase the FLA by 10%

To calculate the FLA of a pump motor operating on a VFD, multiply the nominal FLA by 1.24

To estimate FLA, multiple the largest load by 1.25 and then add this to remaining component FLAs.

Example: a 460V 2 x 50HP pump station with a SHP PM pump would have an FLA of 173.4 Amps.

$$173.4 \text{ Amps} = 1.24 \times 1.25 \times 65A + 65A + 7.6A$$

The Intelligent Use of Water.™

LEADERSHIP • EDUCATION • PARTNERSHIPS • PRODUCTS

At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit www.rainbird.com for more information about The Intelligent Use of Water.™



Rain Bird Corporation

6991 E. Southpoint Road
Tucson, AZ 85756
Phone: (520) 741-6100
Fax: (520) 741-6522

Rain Bird Technical Services

(800) RAINBIRD (1-800-724-6247)
(U.S. and Canada)

Rain Bird Corporation

970 West Sierra Madre Avenue
Azusa, CA 91702
Phone: (626) 812-3400
Fax: (626) 812-3411

Specification Hotline

800-458-3005 (U.S. and Canada)

Rain Bird International, Inc.

1000 West Sierra Madre
Azusa, CA 91702
Phone: (626) 963-9311
Fax: (626) 852-7343

www.rainbird.com