



CLEAN & CLEAR® PLUS

CLEAN & CLEAR® PLUS CARTRIDGE FILTER



CRYSTAL CLEAR WATER THE EASY WAY

The Clean & Clear Plus filter combines top-end filter performance with low maintenance. This dependable design uses special filter elements to strip tiny particles from your pool water...particles as small as 20 microns (an average grain of beach sand is 1,000 microns). Our four-cartridge design provides maximum filter surface area to capture more dirt and extend time between cleanings. And cleaning is a snap—open the top, remove the cartridges, hose them off and the Clean & Clear Plus filter is ready to go again.



We've maximized cartridge surface consistency to block and trap the maximum amount of solids, plus we use the most durable materials to extend cartridge life. The Clean & Clear Plus filter delivers commercial-grade performance that keeps pools clean and sparkling, day in and day out.

- Four-cartridge design traps more dirt and extends time between cleanings.
- Cartridges are easy to remove and rinse.
- Clamp ring allows easier access to cartridges and internal parts to speed service routines.
- 1½" drain is easy to access and located to ensure complete draining during winterization.
- Fiberglass-reinforced polypropylene tank is strong and corrosion resistant for extra long life.

AN ECO SELECT® BRAND PRODUCT

The Eco Select brand identifies our "greenest" and most efficient equipment choices. Water flows very efficiently through the Clean & Clear Plus filter, often allowing the use of smaller pumps or lower pump speeds to minimize energy use. And when you rinse cartridges rather than backwash, you can significantly reduce water use, too.



CLEAN & CLEAR[®] PLUS CARTRIDGE FILTER

Clamp ring for easy and quick access to cartridges

Single-piece fiberglass-reinforced polypropylene tank for strength and corrosion resistance

2" plumbing for maximum flow and faster water cleaning

Easy access 1/2" drain makes proper winterization fast and simple



FOUR CARTRIDGES IN A COMPACT DESIGN

Clean & Clear Plus filters contain four polyester cartridges that hold enormous amounts of dirt, yet are easier to clean. The fiberglass-reinforced tank halves are secured with an innovative clamp ring—just loosen the ring and remove the top half for easy cartridge access and rinsing. Filter maintenance doesn't get any easier.

- Continuous internal air bleed helps prevent air build-up to keep the filter operating at peak performance.
- Single-piece base and body for strength, stability and years of dependable service.

Model Number	Filter Area Sq. Ft.	Vertical Clearance*	Filter Diameter	Flow Rate GPM ²	Turnover Capacity-Res. (Gallons)		
				Residential	8 hrs.	10 hrs.	12 hrs.
CCP240	240	56"	21.5"	90	43,200	54,000	64,800
CCP320 ¹	320	62"	21.5"	120	57,600	72,000	86,400
CCP420 ¹	420	68"	21.5"	150	72,000	90,000	108,000
CCP520 ¹	520	74"	21.5"	150	72,000	90,000	108,000

¹NSF Certified

²Residential rate .375 GPM per sq. ft. of filter area

AVAILABLE FROM:



1620 HAWKINS AVE, SANFORD, NC 27330 800.831.7133 WWW.PENTAIRPOOL.COM

All Pentair trademarks and logos are owned by Pentair or one of its global affiliates. Clean & Clear[®] and Eco Select[®] are registered trademarks of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice. Pentair is an equal opportunity employer.

pumps • filters • heaters • heat pumps • automation • lighting • cleaners • sanitizers • water features • maintenance products



FloPro Pump



Jandy®
Pro Series
by ZODIAC®

FLOPRO™
PUMP

Compact, Versatile,
Powerful



ZODIAC®



Compact, Versatile, Powerful

FloPro is designed with an innovative adjustable base, allowing for simple installation on new construction, or quick and easy replacement of existing pumps. With the FloPro, minimal plumbing adjustments are required, thereby enabling cost effective pump replacement.

- Medium-head, high-flow pump in an ultra compact body. Excellent choice for tight equipment areas.
- Adjustable base options allow for easy replacement of select Hayward®, Pentair®, Sta-Rite®, and Jandy pumps.
- Ergonomic cam-lock lid with easy alignment indicators.
- Equipped with 2" unions & 2" internal threads.
- Quiet operation.

» Easy to Use

Innovative pump equipped with ergonomic cam-lock lid for easy alignment and strainer basket cleaning, handle brackets, and 2" pump unions.

» Energy And Cost Efficient

Energy-efficient 2-speed models provide uncompromising power to filter and recirculate pool and spa water while keeping costs down.

» Easy To Install

FloPro enables easy drop-in replacement of most leading pumps. With its innovative inline connectivity, you can get rid of unsightly pipes and plumbing. FloPro Pumps make it easy to replace many existing pumps including Hayward Super Pump® or Pentair WhisperFlo® and SuperFlo® pump.

BASE OPTIONS

Type of Base	Components	Fits
Option 1	No base required	Hayward® Super Pump®, Pentair® SuperFlo® Sta-Rite® SuperMax®
Option 2	Small base	Hayward Super II™, Jandy Pro Series PlusHP and Max HP
Option 3	Small base with spacers	Pentair WhisperFlo®, Sta-Rite Dyna-Glas™
Option 4**	Small base + large base	Sta-Rite Max-E-Pro®, Sta-Rite Dura-Glas®, Sta-Rite Dura-Glas II, Sta-Rite Max-E-Glas®

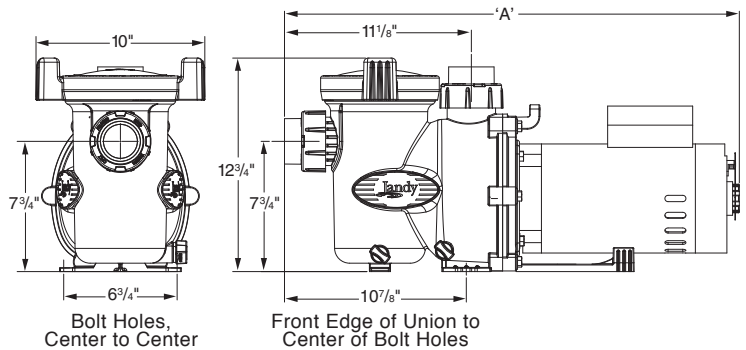
**Optional: Part # R0546400



Zodiac Pool Systems, Inc.
 2620 Commerce Way, Vista, CA 92081
 1.800.822.7933 | www.ZodiacPoolSystems.com

Zodiac Pool Systems Canada, Inc.
 2115 South Service Road West, Unit #3, Oakville, ON L6L 5W2
 1.888.647.4004 | www.ZodiacPoolSystems.ca

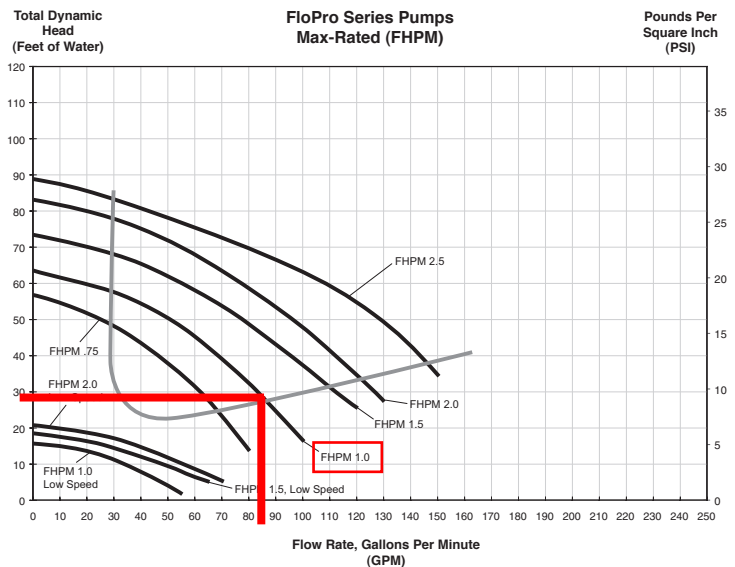
DIMENSIONS



SPECIFICATIONS

Model No.	Horse Power	Voltage	Amps	Recommended Pipe Size	Carton weight	Overall Length 'A'
FHPM .75	.75	230/115	5.4/10.8	1 1/2"-2"	40.6 lbs.	25 3/16"
FHPM 1.0	1.00	230/115	7.1/14.2	2-2 1/2"	41.2 lbs.	25 3/16"
FHPM 1.5	1.50	230/115	8.0/16	2-2 1/2"	42.6 lbs.	25 1/2"
FHPM 2.0	2.00	230/115	11.2/22.4	2-2 1/2"	54.6 lbs.	27 3/16"
FHPM 2.5	2.50	230	11.5	2 1/2"-3"	48.6 lbs.	26 3/16"
FHPM 1.0-2-SPD	1.00	230	7.1/2.3	2-2 1/2"	46.5 lbs.	26 5/16"
FHPM 1.5-2SPD	1.50	230	8.0/3.0	2-2 1/2"	48.0 lbs.	26 5/16"
FHPM 2.0-SPD	2.00	230	11.2/3.5	2-2 1/2"	52.9 lbs.	27 11/16"

PERFORMANCE

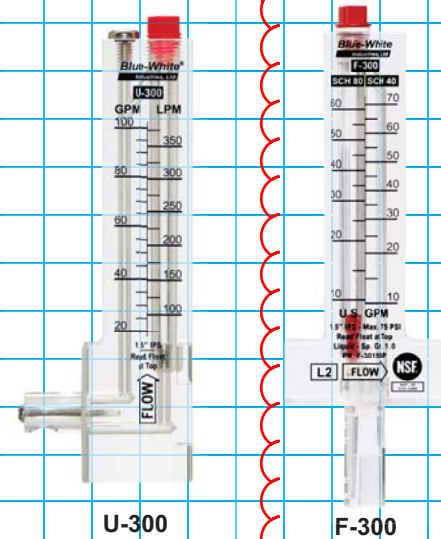


F-300

U-300

D-300

Clamp-on Insertion Mount



U-300

F-300

Features:

- 1" through 8" pipe sizes.
- Flow rates from 4 to 1900 GPM (15 to 7200 LPM).
- Corrosion resistant 316SS, PTFE, or PVDF internal float materials.
- One piece machined acrylic body.
- Mounts to existing pipe. No unions or adapters required.
- Models for mounting on horizontal or vertical pipe.
- Mounting clamps and gasket included.
- NSF Listed (1, 1 1/4", 1 1/2", and 2" horizontal only)

Specifications:

Pipe Requirements: IPS inch pipe size (ASTM-D-1785)
Max. Psi (bar): 75 PSI (5.2 bar) @ 70° F (21° C)
Fluid temp. range: 0° to 190° F / -18° to 88° C @ 0 PSI
Ambient temp. range:.....0° to 110° F / -18° to 43° C
Note: Temperature & Pressure ratings of meter only. Actual pipe rating may vary.

Full scale accuracy:1", 1 1/2", 2", and 3" 5%, all other 10%
Power requirement:No power required
Enclosure: NEMA 4X (IP56)
Approximate shipping wt: 1"-4" units: 1 lb. (.45 kg)
 6"-8" units: 2 lb. (.91 kg)

Materials of Construction:

Meter Body:Cast Acrylic
Float:Standard range models = 316SS or PVDF
 Low range models = PTFE

Gasket:..... Neoprene
Pipe Clamp:316 series Stainless Steel
Pitot screw:.....300 series stainless Steel (1", 1 1/2", 2", and 3" do not use screw)

Installation Requirements:

Minimum Straight Pipe Length Requirements

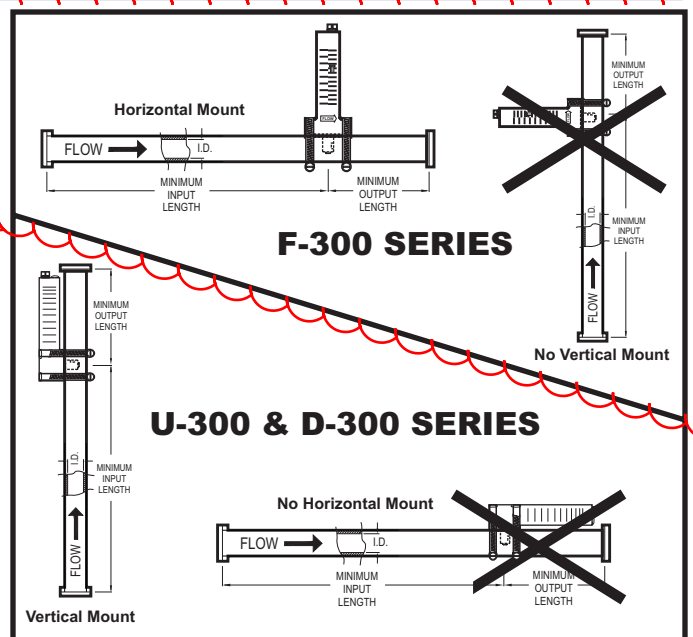
The meter's accuracy is affected by disturbances such as pumps, elbows, tees, valves, etc., in the flow stream. Install the meter in a straight run of pipe **as far as possible** from any disturbances.

Example of Minimum Straight Pipe Length Requirements

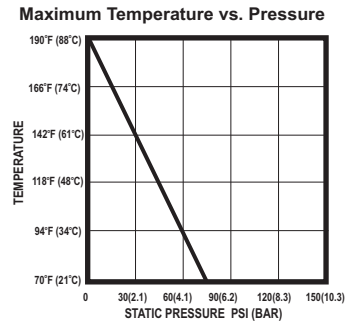
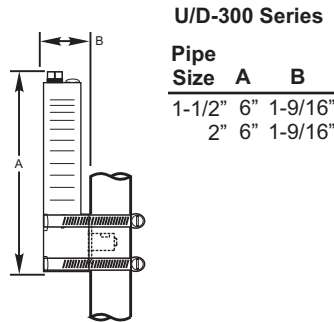
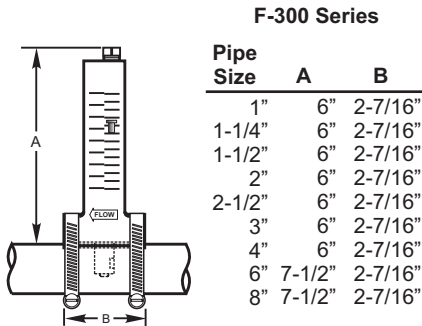
Nominal Pipe Diameter	Minimum Inlet Pipe Length	Minimum Outlet Pipe Length
4 inch	40 inch (10 X 4")	16 inch (4 X 4")
6 inch	60 inch (10 x 6")	24 inch (4 x 6")

Mounting location

- The meter is designed to withstand outdoor conditions.
- F series meters must be mounted at the vertical (twelve o'clock) position on horizontal pipe only.
- U & D series meters must be mounted on vertical pipe only.
- The pipe must be completely full of water at all times.
- See the minimum straight length of pipe requirement chart above.
- The meter can accurately measure flow from one direction only.
- U-series meters measure upward flows only.
- D-series meters measure downward flows only.



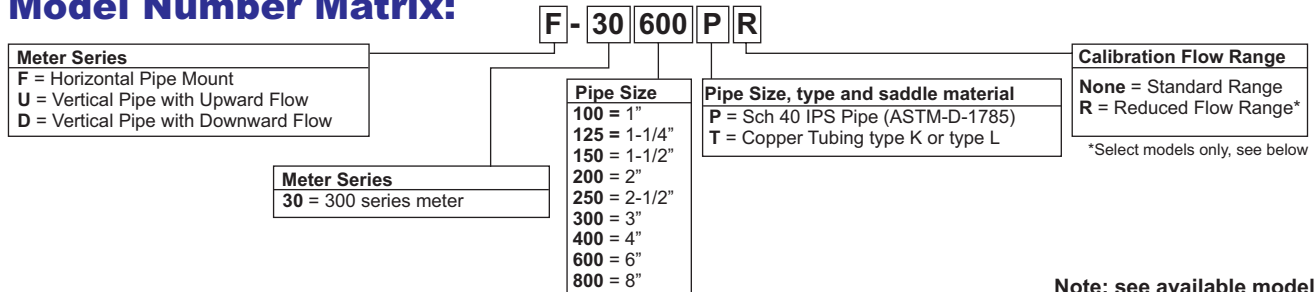
Dimensions:



Flow Stream Requirements:

Low viscosity fluids with a specific gravity of 1.0.

Model Number Matrix:



Note: see available models below.

Pipe Size, Flow Range and Display Model Options:

Models for Mounting on Horizontal Pipe

Models for U.S. IPS Sch40 Pipe (ASTM 1785) Display in U.S. Gallons and Liters per Minute

Pipe Size	GPM Flow Range	LPM Flow Range	Model Number
4"	125 to 500	550 to 2000	F-30400P
6"	250 to 1050	900 to 3900	F-30600P
8"	500 to 1900	2000 to 7200	F-30800P

Models for Copper Tubing types K & L Display in U.S. Gallons and Liters per Minute

Pipe Size	GPM Flow Range	LPM Flow Range	Model Number
4"	125 to 500	550 to 2000	F-30400T
6"	250 to 1050	900 to 3900	F-30600T
8"	500 to 1900	2000 to 7200	F-30800T

Models for U.S. IPS Sch40 & 80 Pipe (ASTM 1785) Display in U.S. Gallons per Minute

Pipe Size	Sch40	Sch80	Model Number
1"	5 to 35	4 to 26	F-30100P
1-1/4"	9 to 50	8 to 40	F-30125P
1-1/2"	10 to 70	10 to 60	F-30150P
2"	20 to 120	18 to 100	F-30200P
2-1/2"	29 to 150	25 to 130	F-30250P
3"	45 to 240	40 to 215	F-30300P

Models for Copper Tubing types K & L Display in U.S. Gallons and Liters per Minute

Pipe Size	GPM Flow Range	LPM Flow Range	Model Number
1"	4 to 26	15 to 100	F-30100T
1-1/2"	10 to 65	50 to 250	F-30150T
2"	20 to 105	75 to 400	F-30200T

Models for Mounting on Vertical Pipe

Models for U.S. IPS Sch40 Pipe (ASTM 1785) Display in U.S. Gallons and Liters per Minute

Pipe Size	GPM Flow Range	LPM Flow Range	Flow Direction	Model Number
1-1/2"	20 to 100	75 to 375	UP	U-30150P
1-1/2"	20 to 100	75 to 375	DOWN	D-30150P
1-1/2"	9 to 30	30 to 120	UP	U-30150PR
1-1/2"	9 to 30	30 to 120	DOWN	D-30150PR
2"	40 to 150	150 to 550	UP	U-30200P
2"	40 to 150	150 to 550	DOWN	D-30200P
2"	18 to 70	70 to 280	UP	U-30200PR
2"	18 to 70	70 to 280	DOWN	D-30200PR

Models for Copper Tubing types K & L Display in U.S. Gallons and Liters per Minute

Pipe Size	GPM Flow Range	LPM Flow Range	Flow Direction	Model Number
1-1/2"	20 to 100	75 to 375	UP	U-30150T
1-1/2"	20 to 100	75 to 375	DOWN	D-30150T
1-1/2"	9 to 30	30 to 120	UP	U-30150TR
1-1/2"	9 to 30	30 to 120	DOWN	D-30150TR
2"	40 to 150	150 to 550	UP	U-30200T
2"	40 to 150	150 to 550	DOWN	D-30200T
2"	18 to 70	70 to 280	UP	U-30200TR
2"	18 to 70	70 to 280	DOWN	D-30200TR

Rainbow Automatic Chlorine/Bromine Feeders

Years of customer use and satisfaction have proven the Rainbow feeders to be the performance leader in pool & spa chemical dispensers.

FEATURES

- No special venting required
- Completely enclosed system
- No escaping gases
- All Rainbow Feeders are NSF Listed



In-Line Feeders

320 Series. For permanent installation in return line of new or existing pools or spas. Installs in return line on pressure side of pump downstream of all equipment. Standard with 2 in. slip PVC fittings and adapters for 1½ in.

Off-Line Feeders

300 Series. Retrofits into existing pools or spas. Operates on pressure side of pump. Uses ¼ in. feeder hoses, control valve and fittings.



Part No.	Model No.	Description	Pack Qty.	Wt.	UPC 788379+
IN-LINE FEEDERS					
R171096	320	Holds 11 large or 98 small Bromine or Trichlor slow dissolving tablets. Treats from 6,500 up to 27,000 gallons bottom feed and from 18,000 up to 70,000 gallons top feed.	6	30 lbs.	004385
R171218	320C	As above with see-through amber body.	6	30 lbs.	004446
R171100	322	Low profile spa feeder. Holds ½ lb. 1 in. tablets.	6	28 lbs. os	004415
OFF-LINE FEEDERS					
R171016	300	Holds 11 large or 98 small tablets. Treats from 12,000 up to 48,000 gallons.	6	26 lbs. os	004217
R171022	300C	As above with see-through amber body.	6	26 lbs. os	004224
R171026	302	Spa feeder. Includes spa chamber. Treats from 500 up to 2,000 gallons. Holds 15 small tablets.	6	28 lbs. os	004231
R171056	300-19	As above with double-capacity 19 in. chamber. Treats from 13,000 up to 52,000 gallons.	1	5 lbs.	004248
R171066	300-29	As above with triple-capacity 29 in. chamber. Treats from 14,000 up to 57,000 gallons.	1	6 lbs.	004262
COMMERCIAL AND HIGH CAPACITY FEEDERS					
R171070	300-29X	Heavy duty ½ in. control valve and tubing optimizes flow and erosion to provide larger amounts of sanitizer. Dispenses 8.5 lbs. of 1 in. Trichlor in 24 hours. Holds 29 large or 237 small tablets. Treats from 80,000 up to 322,000 gallons.	1	8 lbs.	004279
R171215	HC-3315	High capacity for 1 in. hard plumbing installations. Holds 15 lbs. of tablets. Treats up to 20,200 gallons with Bromine and up to 97,600 gallons with Trichlor.	1	9 lbs.	014988
R171230	HC-3330	High capacity for 1 in. hard plumbing installations. Holds 30 lbs. of tablets. Treats up to 40,000 gallons with Bromine and up to 160,000 gallons with Trichlor.	1	12 lbs.	014995
R171240	HC-3340	High capacity for 1 in. hard plumbing installations. Holds 40 lbs. of tablets. Treats up to 61,000 gallons with Bromine and up to 332,000 gallons with Trichlor.	1	14 lbs.	015008



Feeders-Chlorine/Bromine

Fig.1

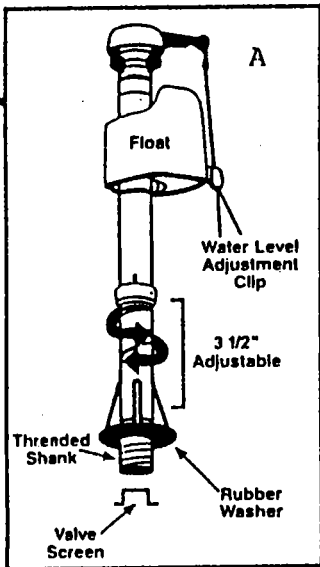
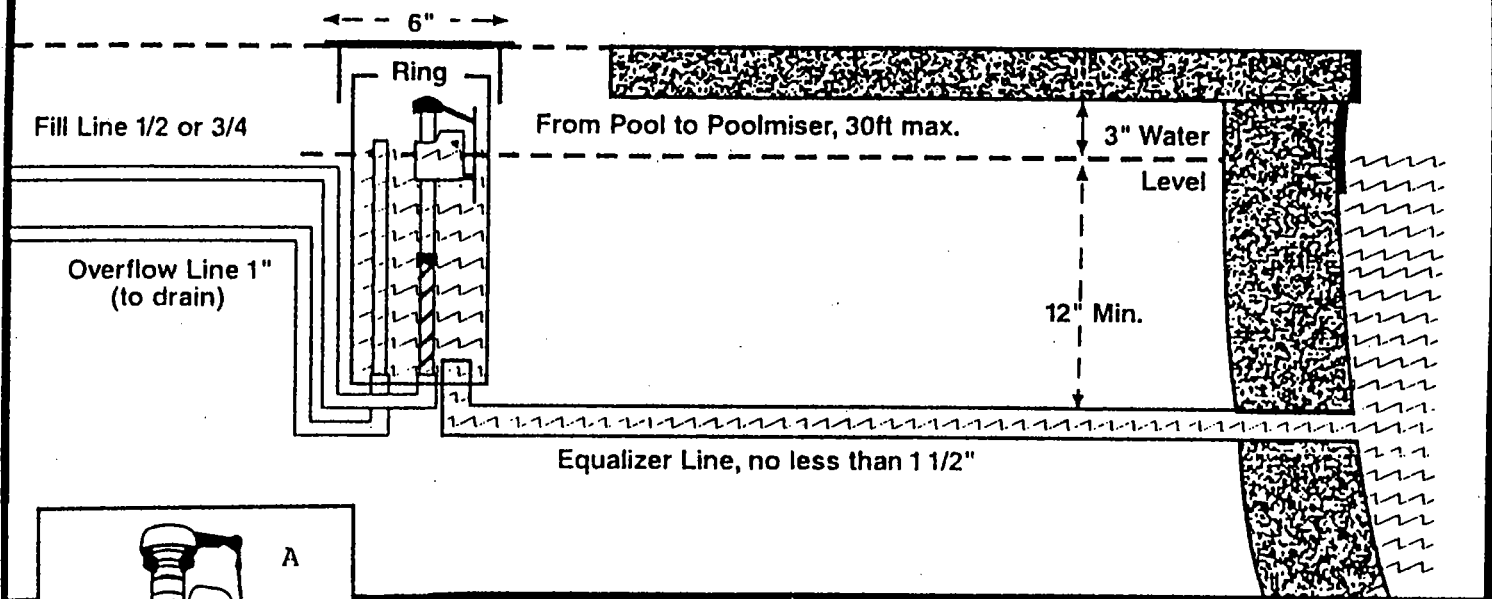
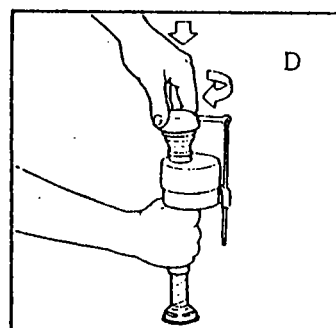
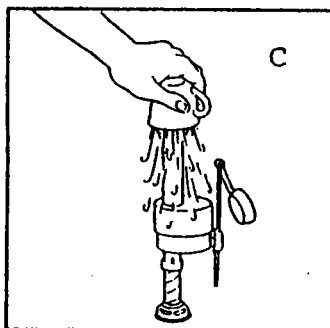
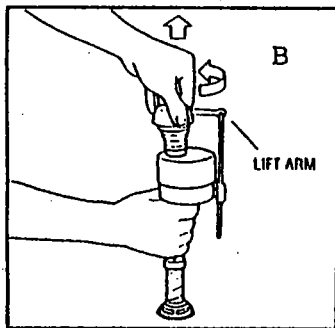


Fig.2

(CLEARING SAND AND RUST FROM VALVE)



Clear sand and rust from system: Remove valve TOP by lifting arm and rotating top 1/8 turn counterclockwise. While holding a container over the uncapped VALVE to prevent splashing, turn water supply on and off a few times. Replace TOP by engaging lugs and rotating 1/8 turn clockwise. MAKE CERTAIN TOP IS TURNED TO THE LOCKED POSITION. VALVE MAY NOT TURN ON IF TOP IS NOT FULLY TO THE LOCKED POSITION.

PACKING LIST:

- 1 = Tank
- 1 = Ring Lid
- 1 = Valve
- 1 = 1" x 10" Overflow PVC Pipe
- 1 = Instruction Sheet w/pkg. of 3 screws, 1 filter, 1 washer

WARRANTY

POOLMISER WILL WARRANTY THAT THE TANK, RING AND LID WILL BE FREE FROM DEFECTS AT THE TIME OF SHIPMENT. INSPECT CAREFULLY BEFORE YOU INSTALL THEM. THE FLUIDMASTER VALVE HAS A MANUFACTURER'S WARRANTY TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF THREE YEARS.

FILL IN INFORMATION BELOW; AFFIX POSTAGE AND MAIL TODAY

CUT HERE

Date purchased _____

Installed by Pool contractor

Date installed _____

Plumber

Your name and address _____

Yourself

Purchased from _____

Name and address _____

Signature _____

★ ★ INSTRUCTIONS ★ ★

LOCATION VERY IMPORTANT

To eliminate possible earth movement problems, we suggest installing the POOLMISER outside of the decking area. We recommend that the POOLMISER and all pipes within 3 feet be backfilled with sand.

STEP 1

BUILT-IN POOLS (GUNITED OR CONCRETE): Before you gunite, place the POOLMISER (with the tank top) 3 inches higher than desired water level (see Fig.1). Extend the 1 1/2" equalizer line through the gunite, allowing enough to extend through finished plaster, (can be cut later). **VERY IMPORTANT:** The equalizer line must be a minimum of 12 inches below desired water level. Hook up the threaded fill inlet to the water line and connect the overflow line to a convenient drain. (It is recommended to add a shut-off valve between the POOLMISER and the main water line). When guniting, fill tank with newspaper to make clean-up easier.

***VINYL LINER IN-GROUND POOLS, ABOVE GROUND POOLS, STEEL WALL POOLS, TUBS OR SPAS:** Use the same process as above. The only difference is the equalizer line must go through the wall, using an inlet fitting.

STEP 2

Before installing the valve into the tank, remove newspaper, insert the black washer seal and the filter screen, (see Fig. 2A); flush the lines two or three times. Remove the cap from the valve (see Fig.2B) to permit it to screw freely into the tank. Hand tighten the valve into the tank.

Before replacing the cap, flush the whole system one more time, (see Fig. 2C). Put the cap back on (see Fig. 2D); turn on your water supply, and your POOLMISER is now ready to operate.

NOTE 1

To adjust water level, turn off water supply, remove the cap (see Fig. 2B); adjust the shank (turn to the left for lower and to the right for higher) to the proper desired level, and replace the cap (see Fig. 2D). Water level is usually set between 3 and 4 inches below the top of the cap. Turn on the water supply. A final tune-up can be made by adjusting the clip on the side of the float (see Fig. 2A).

VERY IMPORTANT (Please Read)

- A) *Do not reduce the equalizer line; 1 1/2" is the minimum (line can be bigger). Equalizer line can be installed at any depth below 12" from top of water (up to 10 feet).
- B) *For better results, keep the fill line between 30 psi to 60 psi.
- C) *It is a good idea to take the valve apart before you install your first unit to know how the valve functions, for adjustments and for maintenance.
- D) *Overflow line should always be hooked up to prevent overflowing from heavy rain or malfunction of the system.
*The provided overflow stand pipe is tight-fitting; Do Not Glue.

.....

GENERAL INFORMATION

- *The POOLMISER will operate the same if it is placed one foot from the pool or up to 15 feet away.
- *The POOLMISER is capable of adding up to 4000 gallons of water in a 24 hour period.
- *The POOLMISER should be turned off completely for 15 days after installation, to make sure your pool is not leaking.
- *If the valve does not close completely, or if it drips, there is some dirt or debris in the valve cap. Clean cap under running water, and flush the line (see Fig. 2B, 2C. & 2D).
- *Water hammer can be caused by a variety of factors.....if you experience water hammer in the operation of your POOLMISER, consult with a plumber.
- *The POOLMISER is made of ABS plastic; most of the piping is made of PVC plastic. Be sure to use a pipe cement compatible with both materials.

.....

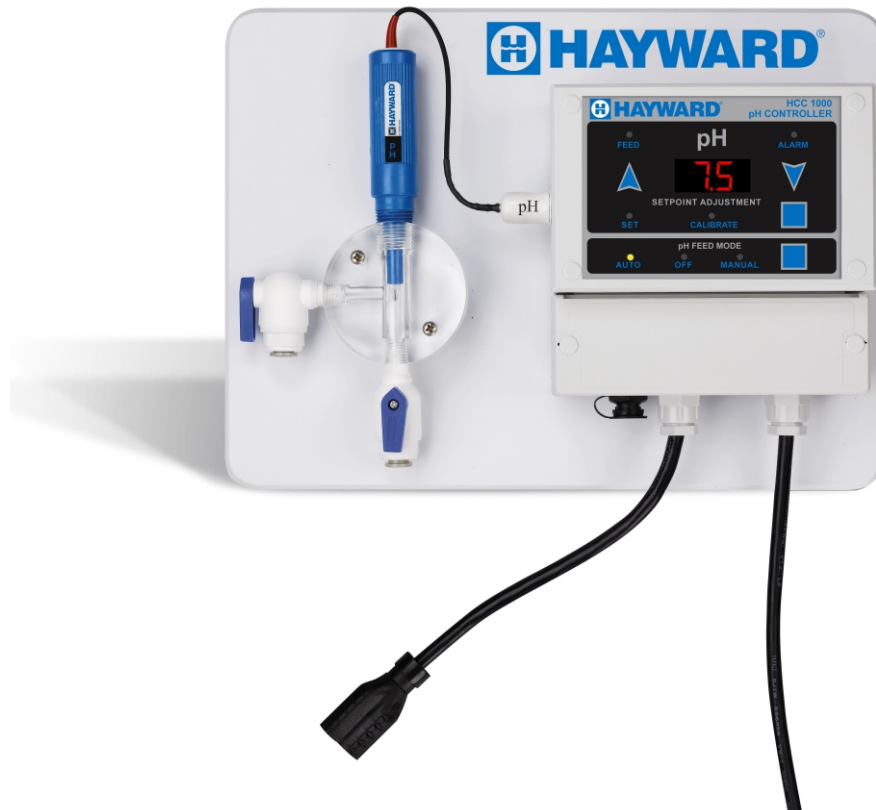
**PLACE
STAMP
HERE**

POOLMISER, INC.
307 Sixth Street
Petaluma, CA 94952



HCC 1000

AUTOMATED CONTROLLER



OWNER'S MANUAL

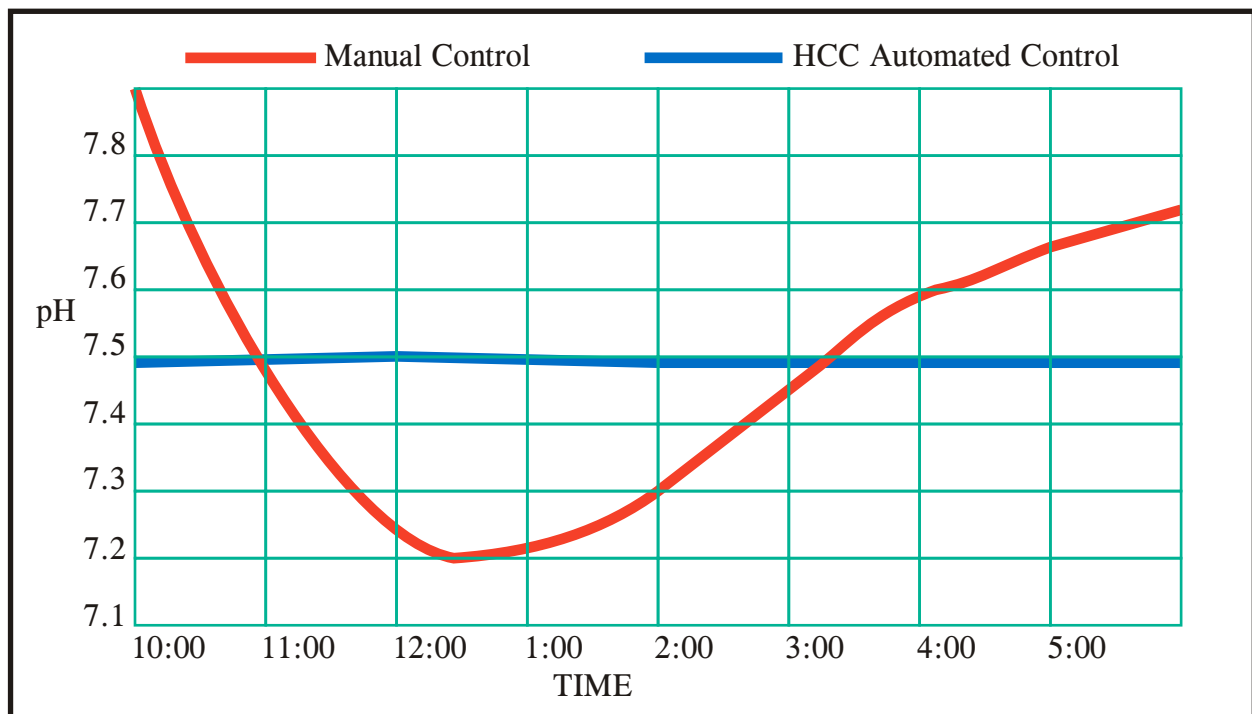
- INSTALLATION
- OPERATION
- MAINTENANCE
- SPECIFICATIONS

SECTION 1. CHEMICAL AUTOMATION WITH THE HCC 1000

A pool operator typically checks and adjusts pool or spa water chemistry hourly at best. The HCC 1000 continuously monitors pH, constantly adjusting the feeding of chemicals on a basis proportional to the demand. The results include elimination of "human error", accurate and reliable maintenance of chemical levels twenty-four hours a day, compliance with safe water chemistry standards, reduced burden on operating staff, and a reduction of chemical usage and costs.

The following graph (Illustration 1.) compares typical pH levels when chemistry is adjusted manually versus automatically with the HCC 1000 controller.

ILLUSTRATION 1.
MANUAL -VS- AUTOMATED CONTROL



SECTION 2.

COMPONENTS OF A HCC 1000 AUTOMATED SYSTEM

The following is a description of the components incorporated in a typical HCC 1000 controller system:

The Professional-Series pH Sensor samples water from the filtration system and sends signals to the controller indicating the acidity of the water. The ideal pH range for pools and spas is 7.4 - 7.6. The HCC 1000 controller is preset from the factory to maintain pH 7.5. If pH is maintained below 7.4 (too acidic), eye irritation, corrosion of equipment, and damage to the pool or spa surface can occur. If pH is maintained above 7.6 (too alkaline), sanitizer activity is reduced, water may become cloudy, and eye irritation may result.

The Flow Sensor (required) monitors the rate of flow across the pH sensor and signals the controller to disable automated chemical feeding during periods when the filtration system is off or low recirculation flow is detected.

The Flow Cell provides a convenient location for mounting the pH sensor while ensuring ideal hydraulic conditions to maximize sensor performance and life.

The HCC 1000 controller unit scans and interprets the signals from the pH sensor, displays water quality readings in digital format, and activates chemical feeder in proportion to the demand required to maintain the pH setpoint level. The unit incorporates audible and visual safeguard alarms for out of range conditions, calibration adjustment for pH, and mode selections to manually feed or disable feeding. The HCC 1000 controller unit also features an internal micro-computer for unsurpassed accuracy, adaptability, and ease of use. All user-entries and adjustments are made through the touch-screen interface front panel.

SECTION 4.

PACKAGE CONTENTS

Please unpack your new controller system carefully. Do not use a razor or sharp instrument to remove contents. Report any shipping or handling damage immediately to your shipping company. Enclosed in the packaging you should find all of the following:

- (1) HCC 1000 Water Chemistry Controller
- (1) Professional Series pH Sensor with 24" Cable and BNC Connector
- (1) BNC Connector Protective Covers (Remove to Connect Sensor)
- (1) Sensor Storage Container
- (1) HCC 1000 Owner's Manual
- (1) PVC Backboard with Mounting Holes and Stainless Hardware
- (1) Round Machined Acrylic Flow Cell assembled with:
 - (2) 1/4" NPT x 3/8" Tubing Parker Ball Valves
- (1) Pressure Flow Switch with Cable
- (1) 30' Roll, Black Poly Installation Tubing (3/8" OD)
- (2) 1/4" NPT x 3/8" Tubing True-Seal Connectors

Before commencing installation, please confirm that items listed above have been included. Please report any shortages immediately to the factory.

SECTION 5.

INSTALLATION INSTRUCTIONS

The following tools are recommended for installation:

- Drill (Cordless preferred)
- 7/16" Drill Bit
- 1/4" NPT (National Pipe Tapered) Tap
- Masonry Drill Bit & Anchors (if required)
- 13/16" Wrench or Channel-Lock Pliers.

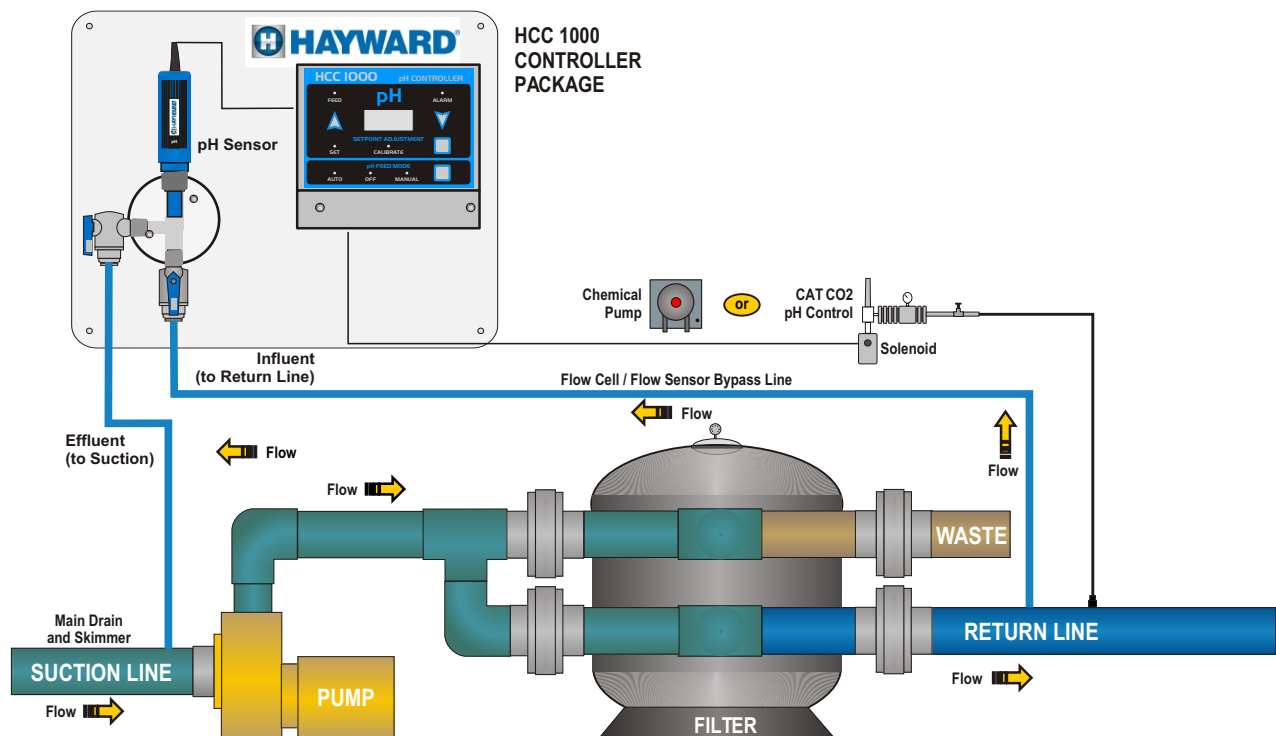
INSTALLATION PROCEDURES

The key to a successful flow cell installation is in the plumbing. A pressure differential is required to allow clean, untreated water to pass through the cell and across the sensor. We recommend using a pressure-suction "loop" line.

1. Turn off heater, chemical feeders, pump, and any other related equipment. Relieve pressure from filtration system.
2. Select a convenient mounting location for the controller unit which will meet the following criteria:
 - A. Facilitates a combined (influent and effluent) maximum tubing run of 30'.
 - B. Located a minimum of ten feet from pool or spa.
 - C. GFI protected power source available.
 - D. Easily accessible to pool or spa operator.
 - E. Away from corrosive materials and physical hazards.
3. Securely mount Controller or PVC Backboard on vertical wall.
4. Drill and tap a 1/4" NPT port at a location just down-stream of the filter, but up-stream from any chemical injection point. Install a tubing connector, and run flex tubing to the influent flow cell port.
5. Drill and tap a 1/4" NPT port at a location subject to vacuum or reduced pressure. Install the remaining tubing connector and run flex tubing to the effluent flow cell port.
6. Cut a 3" to 6" length of flex tubing and insert into the sample stream port.
7. Remove pH sensor from the plastic storage bottle and save bottle and storage fluid for future use. Apply teflon tape and thread sensor into flow cell.

8. Remove BNC protective cover from left side of controller unit and store for future use. This cover protects the controller unit from electro-static discharge (ESD) and should be used whenever handling or transporting the controller unit.
9. Connect the pH and Flow sensor cables to the controller unit as labeled. Sensor cables are constructed from a specialized material - never cut or splice.
10. If new or additional chemical feeders are to be used with the controller, install according to manufacturers instructions at this time.
11. Connect chemical feeder to the controller as labeled.
12. Check all electrical and mechanical connections. Resume filtration system operation and check for any leaks.

ILLUSTRATION 2. HCC 1000 INSTALLATION DIAGRAM



ALL CHEMICALS MUST BE INJECTED DOWN STREAM FROM HEATER & FLOW CELL

SECTION 6.

PREPARING WATER CHEMISTRY

Now that your new controller has been physically installed, water chemistry should be tested and adjusted prior to initiating automated control of the pool or spa. Confirm that your pool or spa water conforms to the following ranges before powering on and setting up the HCC 1000.

TEST	MINIMUM	IDEAL	MAXIMUM
pH	7.2	7.5	7.8
Free Chlorine (PPM)	1	2	3
Bromine (PPM)	2	3	4
Cyanuric Acid (PPM)	0	-	100
ORP (mV)	650	-	-
Total Alkalinity	80	-	120
Calcium Hardness	200	-	400

The above table indicates generally accepted guidelines. Always maintain water chemistry according to standards set by your local or State Health Department.

Hayward® strongly recommends establishing desired pH, sanitizer residual, calcium hardness, total alkalinity, temperature and cyanuric acid levels prior to initiating automated control of the pool or spa.

SECTION 7. SETTING AND OPERATING THE HCC 1000

Once desired start up chemistry parameters have been established, you are ready to set the HCC 1000 to automatically maintain pH. Please refer to Illustration 3 for controller unit button designations. Button designations appear in bold type.

Selecting Acid or Base Feed

The HCC 1000 is preset from the factory to operate in the acid feed mode (when pH exceeds the setpoint, the pH chemical feeder is activated). If the sanitizer used at your pool or spa causes the pH to decrease you must select base feed mode. To switch the controller between acid feed and base feed modes, perform the following steps.

1. Press and hold the **Hidden Button (#1)** for five seconds to enter advanced setup mode.
2. Scroll to pFD and press the enter key. Scroll to select A for acid feed or B for base feed. Press the Enter key to set your selection, then press the **Hidden Button (#1)** again to return to normal operating mode.

As the unit powers on, the digital pH readout will display an "A" or "B" indicating whether acid feed or base feed mode has been activated.

Calibrating pH

Readings from the HCC 1000 are far more accurate than those obtained from most liquid test standards. To match manual water testing results or compensate for a depleted or unclean pH sensor, the pH channel of the controller may be calibrated as follows:

1. Press the **pH Setpoint Adjustment Button (#4)** twice, illuminating the green "CALIBRATE" LED.
2. Press the arrow-shaped **pH Channel Increase Button (#2)** or **pH Channel Decrease Button (#3)** until the digital display matches your manual pH test reading.
3. The controller will automatically return to the normal operating mode after twenty seconds, storing any changes.

Changing the pH Setpoint

The HCC 1000 is preset from the factory to maintain pH at 7.5. To set pH control at a different level, perform the following:

1. Press the **pH Setpoint Adjustment Button (#4)** until the green "SET" LED is illuminated.
2. Press the arrow-shaped **pH Channel Increase Button (#2)** or **pH Channel Decrease Button (#3)** until the digital display matches your desired pH control level.
3. The controller will automatically return to the normal operating mode after twenty seconds, storing any changes.

Manually Activating pH Feed

To manually enable the pH chemical feeder press the **pH Channel Mode Selection Button (#5)** until the green "MANUAL" LED is illuminated. The chemical feeder will operate continuously for 30 minutes, and then automatically revert to "Auto" to prevent accidental over-feeding.

Manually Disabling pH Feed

To manually prevent operation of the pH chemical feeder press the **pH Channel Mode Selection Button (#5)** until the red "OFF" LED is illuminated. Automatic pH feeding will be disabled. So that the user may have time to enter selections, the chemical feeding cycle will not be interrupted for approximately ten seconds.

Automatically Controlling pH Feed

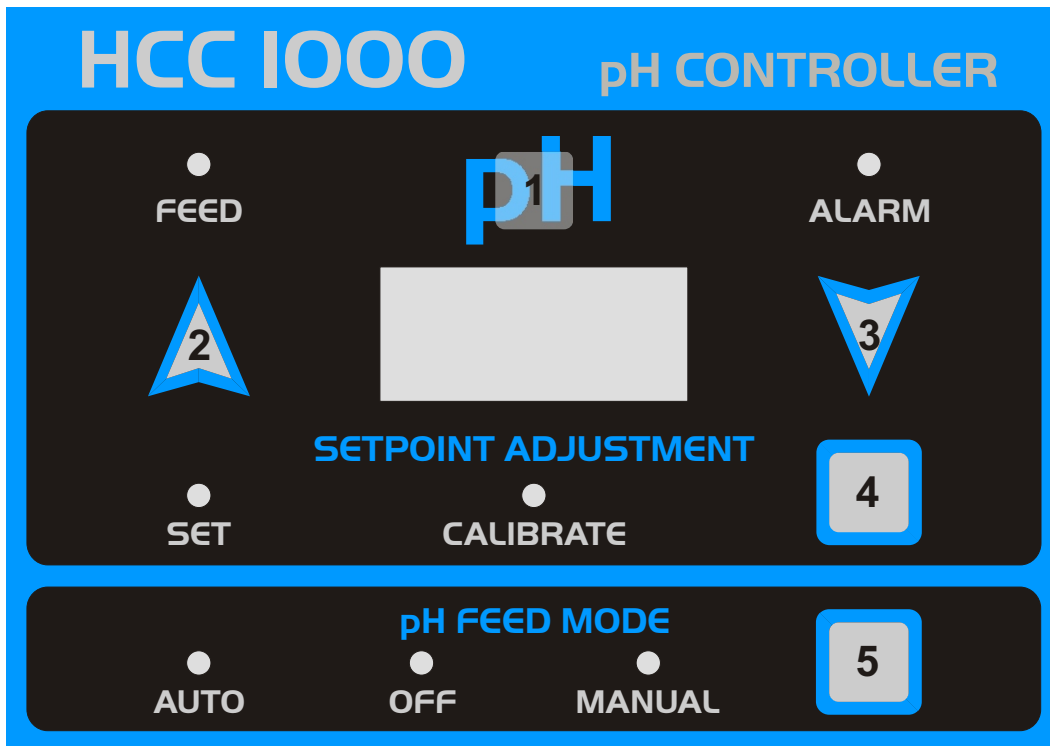
For automated control of the pH chemical feeder press the **pH Channel Mode Selection Button (#5)** until the green "AUTO" LED is illuminated. The chemical feeder will operate automatically in proportion to chemical demand. So that the user may have time to enter selections, the chemical feeding cycle will not be interrupted for approximately ten seconds.

About Proportional Feed

The HCC 1000 features an advanced proportional feed algorithm which constantly analyzes demand for chemicals and initiates feeding in intervals based on the relationship between setpoint and actual water sample values. This feature is highly valuable in maintaining precise control of water chemistry in most applications.

**ILLUSTRATION 3.
HCC 1000 SWITCH AND KEYPAD FUNCTIONS**

BUTTON DESIGNATION	DESCRIPTION
1	Hidden Button (Located Behind "pH" Text)
2	pH Channel Increase Button
3	pH Channel Decrease Button
4	pH Channel Setpoint Adjustment Button
5	pH Channel Mode Selection Button



SECTION 8.

Advanced (Dealer) Setup Options

The HCC 1000 offers a host of advanced options to ensure compatibility with a wide variety of applications. The advanced programming menu contains features which are usually implemented during initial dealer setup and do not need to be routinely changed by the operator.

Enhanced No-Flow Alarm

The no-flow alarm displays the prompt on the LED display, in addition to activating the pH Alarm indicator and sounding the audible alarm:

no Flow

Power On Display

At power on, the controller displays the pH feed mode and firmware version number. The pH feed mode is displayed on the LED display:



A Acid feed selected.

b Base feed selected.

The firmware version number is displayed on the ORP channel LED display:



Firmware version number (or later).

Entering Advanced Setup Mode

Find the **Hidden Button** (#1) located behind the large pH text over the pH digital display.

1. Press and hold the **Hidden Button** (#1) for five seconds to enter advanced setup mode.
2. Press the **Up** (#2) and **Down** (#3) arrow buttons to scroll through programming options.
3. Press the **Enter Button** (#4) to make a selection.

pH Feed Mode (Acid or Base Feed)

P.F d pH Feed. Selects the condition under which the pH feed output is activated.

A Acid (default). pH feed output is activated when the measured pH is greater than the pH setpoint, indicating the need to feed acid to decrease the pH of the water.

b Base. pH feed output is activated when the measured pH is less than the pH setpoint, indicating the need to feed base to increase the pH of the water.

pH Proportional Feed

P.P.F pH Proportional Feed. Selects either fixed setpoint or proportional control.

OFF Off. The pH feed output is activated based on a simple above or below setpoint decision. When the measured pH value is less than or equal to the pH setpoint (pH Feed: Acid selected) or greater than or equal to the pH setpoint (pH Feed: Base selected) the pH output feed is turned off. Otherwise, the pH feed output is turned on.

On On (Default). The pH feed output is activated based on the difference between the pH setpoint and the measured pH value. As the difference increases, the duration the pH feed output is turned on increases to 20, 30, 40, and 50 seconds of the 60 second cycle, and then the pH feed output is turned on continuously.

pH Overfeed Timer

Over Feed Timers prevent potentially dangerous, unintentional, dispensing of chemicals. Hayward recommends always having the "Over Feed Time Out" functions enabled as a precautionary measure. By disabling the "Over Feed Time Out" the over feeding of chemicals could occur and create unsafe water chemistry conditions. Over feeding chemicals is dangerous and could potentially harm patrons.

P.O.F pH Overfeed Timer. When Off is selected, the pH feed output will remain activated as long as a pH feed condition is indicated. When any other selection is made, an overfeed limit timer is enabled on the pH feed output. After the pH feed output has been turned on for a period of time greater than this limit, the pH channel is turned off and placed into an overfeed alarm condition which must be manually reset.

If pH Proportional Feed: On has been selected, the pH feed output must be on continuously for the overfeed time limit, rather than in the part of the proportional feed cycle in which the pH feed output is on for only a portion of the 60 second proportional feed cycle.

After the pH feed channel is placed into the overfeed alarm condition, the pH channel is turned off and the pH Feed Mode indicator flashes rapidly to indicate the alarm. Press the pH Feed Mode button to return the pH channel to the off, manual or automatic feed mode. This will reset the pH overfeed alarm and restart the overfeed timer. The pH overfeed alarm will also be reset if the controller is powered off and then back on.

The pH overfeed timer is disabled when the pH Feed Mode button is used to place the pH channel in the manual feed state.

OFF Off - The pH feed output will remain on for an unlimited amount of time.
15 15 Minutes.
30 30 Minutes.
60 60 Minutes (1 Hour).
120 120 Minutes (2 Hours).
180 180 Minutes (3 Hours).
240 240 Minutes (4 Hours)- default.

pH Low Alarm Limit

P.A.L pH Alarm Limit Low. Sets the low alarm point for the pH channel. When the measured pH value is less than this limit, the audible alarm will be activated and the pH feed output will be disabled. The alarm will be cleared and feed will resume automatically when the measured pH value returns to within the non-alarm range.

6.8 Use the UP and DOWN buttons to select a value between 6.0 and 9.0 pH. The value must be less than the pH alarm high value. The default value is 6.8 pH.

pH Alarm High Limit

P.A.H pH Alarm Limit High. Sets the high alarm point for the pH channel. When the measured pH value is greater than this limit, the audible alarm will be activated and the pH feed output will be disabled. The alarm will be cleared and feed will resume automatically when the measured pH value returns to within the non-alarm range.

8.2 Use the UP and DOWN buttons to select a value between 6.0 and 9.0 pH. The value must be greater than the pH alarm low value. The default value is 8.2 pH.

Clear All Programming and Restore Factory Defaults

[F r] Factory Clear. Returns all controller operating parameters to their default values.

Demonstration Mode

d E o Places the controller in Demo Mode for showroom display, presentations, etc.

Audible Alarm (Beeper)

b P r The Beeper setting allows the audible alarm to be enabled (default) or disabled.

Serial Interface

S r l The HCC 1000 includes a standard RS232 serial interface. A header assembly and cable are required to connect.

O n l Online Communications. Use this selection when the controller is attached to a PC or building automation system.

P r n Printer (default). Use this selection when the controller is attached to an optional Serial Printer to make a hard-copy record of controller operating parameters. The printer is supplied with a cable to connect it to the controller. The Serial Printer prints one data record at 15 minute intervals. Data recorded includes pH measured values, and the feed output and alarm status.

When all desired settings have been entered, press the Hidden Button or wait 30 seconds and the controller will return to default operating mode

SECTION 9.

DISPLAY FUNCTIONS

Please refer to Illustration 4 with reference to designations of the various LED indicator lights on the front panel. Please note that for enhanced viewing the HCC 1000 features a "dead-front" display panel, so only illuminated indicators will be visible to the user. All lights and indicators are activated during power-on.

pH Feed Indicator (#1)

This green LED is illuminated whenever the pH chemical feeder is automatically or manually activated.

pH Alarm Indicator (#2)

Illumination of this red indicator is accompanied by an audible alarm and indicates that pH is outside of the safe operating range. Check that the pH chemical feeder is functioning properly and that an adequate chemical supply is available.

pH Digital Display (#3)

The red digital numeric display of the pH channel normally indicates the current pH of the pool or spa water (as calibrated) passing through the filtration system. Pressing the **pH Setpoint Adjustment Button** until the red "SET" LED is illuminated causes the pH setpoint to be displayed.

pH Setpoint Adjustment Mode Indicator (#4)

This green LED is illuminated whenever the controller is in the pH setpoint adjustment mode. Setpoint adjustment is allowed only when this LED is illuminated.

pH Calibrate Mode Indicator (#5)

This green LED is illuminated whenever the controller is in the pH calibration mode. Calibration of the pH display is allowed only when this LED is illuminated.

pH Automatic Control Indicator (#6)

This green LED is illuminated when pH is under automated control.

pH Manual Off Indicator (#7)

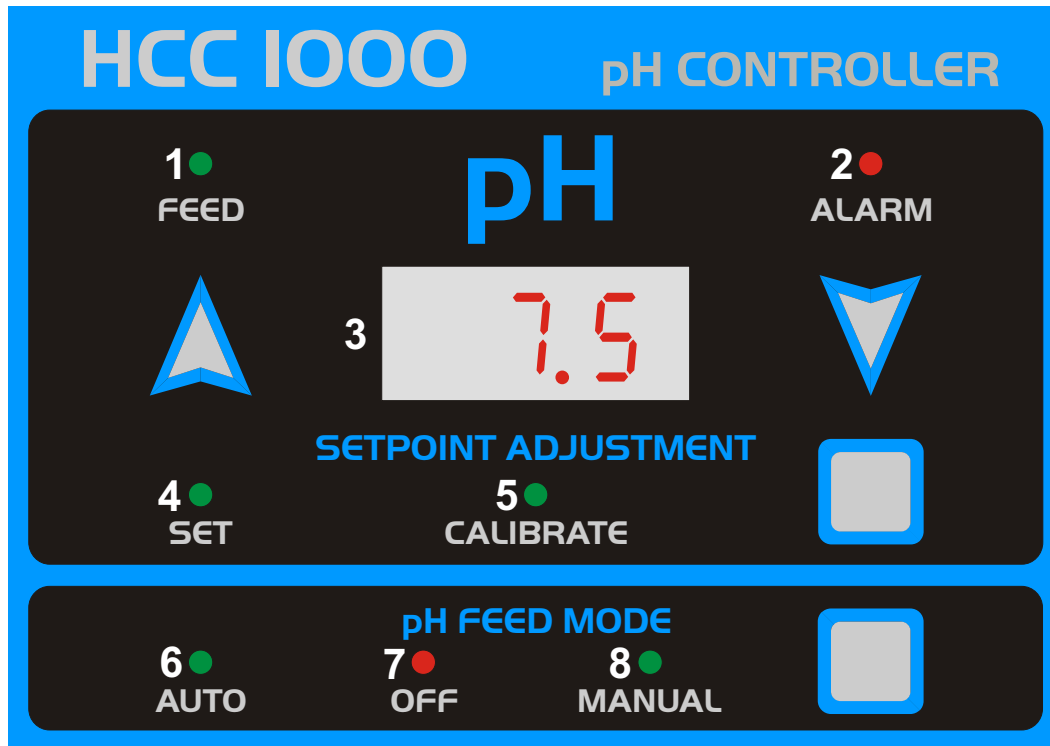
This red LED is illuminated when pH feeding is manually disabled.

pH Manual On Indicator (#8)

This green LED is illuminated when pH feeding is manually activated.

**ILLUSTRATION 4.
HCC 1000 INDICATOR DESIGNATIONS & FUNCTIONS**

DESIGNATION	COLOR / TYPE	DESCRIPTION
1	GREEN LED	pH FEED INDICATOR
2	RED LED	pH OUT OF RANGE ALARM
3	DIGITAL DISPLAY	pH INDICATOR/SETPOINT/CALIBRATION
4	GREEN LED	pH SETPOINT ADJUSTMENT MODE INDICATOR
5	GREEN LED	pH CALIBRATION MODE INDICATOR
6	GREEN LED	AUTOMATIC pH CONTROL INDICATOR
7	RED LED	pH FEED MANUALLY DISABLED
8	GREEN LED	pH FEED MANUALLY ACTIVATED



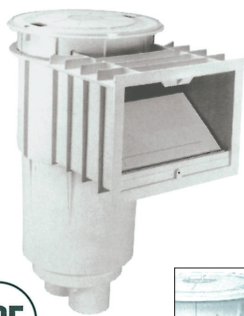


In-Ground Skimmers

FOR CONCRETE POOLS

Hayward in-ground pool skimmers are the preferred choice of professional pool builders. Engineered for residential and commercial applications, these large capacity skimmers are manufactured to Hayward's rigorous quality standards. Their durable, unibody construction is molded of rugged ABS, and they've been designed without submerged joints. Hayward skimmers come with multiple plumbing connections for easier installations.

All Hayward skimmers are non-corrosive, non-conductive and virtually indestructible, no matter what Mother Nature dishes out.



SP10712



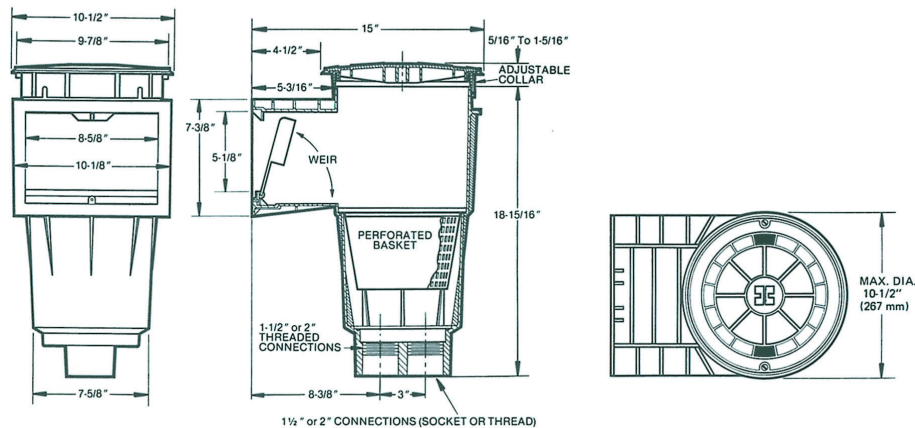
Overflow Port

Skim-Master™ Series

Skim Master is a non-corrosive, large capacity automatic surface skimmer featuring a round, tamper-proof access cover, self-adjusting 8" weir with stainless steel spring for added strength, dual outlets, and threaded internal connections for pressure testing. The optional float/bypass valve provides a main drain-thru-skimmer system and an automatic safety bypass for low water conditions. No glue is used in manufacturing, promoting maximum strength and longevity. SP1070 Series provide a knockout overflow port that guards against overflow or pool water refill. All Skim-Master Series Skimmers are available with Float Valve and Equalizer Kit to meet specific NSF commercial requirements.

Model Number	Pipe Size	Cover Style	Throat Length	Ctn. Qty.	Ctn. Weight	Product Descriptions
SP1070	1 1/2" FIP	Round	4 1/2"	1	8 lbs.	ABS Body adjustable cover (deck) collar. Round tamper-proof cover, basket, weir, overflow port, Flo-Control plate. Dual outlets, have threaded internal cZons for pressure testing.
SP1070S	1 1/2" SKT	Round	4 1/2"	1	8 lbs.	
SP10712	2" FIP	Round	4 1/2"	1	8 lbs.	Same as SP1070 plus weir incorporated with Stainless Steel Spring.
SP10712S**	2" SKT	Round	4 1/2"	1	8 lbs.	

*Available in Gray, Dark Gray and Black. Add suffix GR for Gray, DGR for Dark Gray and BLK for Black.
 **Available with tan collar and cover. Add suffix 10 to model number.
 For skimmer packaged with float valve, add suffix FVA to model number.



Measurements are for reference only.

In-Ground Concrete/Gunite

SP1071/1070 Skim-Master™ Series



SP10712



Overflow Port

Skim Master is a non-corrosive, large capacity automatic surface skimmer featuring a round, tamper-proof access cover, self-adjusting 8" weir with stainless steel spring for added strength, dual outlets, and threaded internal connections for pressure testing. The optional float/bypass valve provides a main drain-thru-skimmer system and an automatic safety bypass for low water conditions. No glue is used in manufacturing, promoting maximum strength and longevity. Both the SP1071 and SP1070 Series provide a knockout overflow port that guards against overflow or pool water refill. All Skim-Master Series Skimmers are available with Float Valve and Equalizer Kit to meet specific NSF commercial requirements.

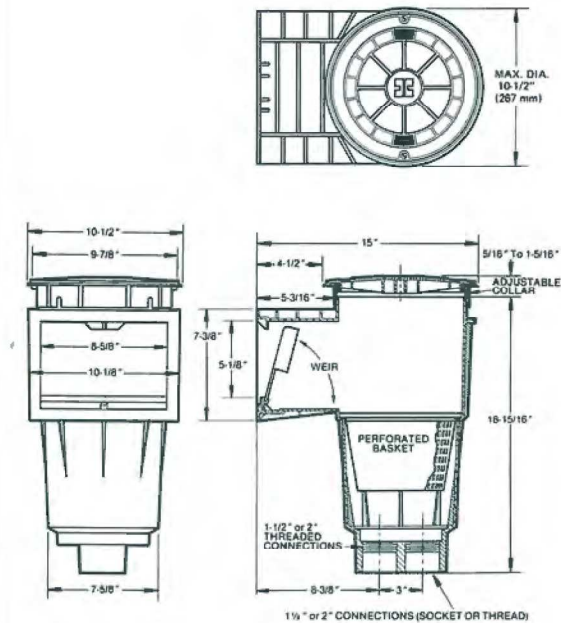
Model Number	Pipe Size	Cover Style	Throat Length	Ctn. Qty.	Ctn. Weight	Product Descriptions
SP1070	1 1/2" FIP	Round	4 1/2"	1	8 lbs.	ABS Body adjustable cover (deck) collar. Round tamper-proof cover, basket, weir, overflow port, Flo-Control plate. Dual outlets, have threaded internal cZons for pressure testing.
SP1070S	1 1/2" SKT	Round	4 1/2"	1	8 lbs.	
SP10712'	2" FIP	Round	4 1/2"	1	8 lbs.	Same as SP1070 plus weir incorporated with Stainless Steel Spring
SP10712S"	2" SKT	Round	4 1/2"	1	8 lbs.	

Available with tan cover and collars - add -10 to model number. Available packaged with float valve - add FVA to model number.

NOTE: All SP1071/1070 Series Skimmers have a minimum flow rate of 10 GPM and maximum flow rate of 55 GPM.

*Replaces SP10702. **Replaces SP10702S

Maximum Flow Rate of 55 gpm each Skimmer.



Measurements are for reference only.

CERTIFICATION OF COMPLIANCE

8" TRU FLO DRAIN COVER



Contents: **1**

Part Number: **640-18XX V**

Description: **Round Tru Flo Drain & Frame**

Size: **8"**

Open Area: **14.8 in²**

GPM @ 1.5 fps: **68**

Floor Flow Rate: **153 GPM**

Wall Flow Rate: **96 GPM**



Date of Manufacture:

Date of Installation: _____

Name of Installer: _____

Signature of Installer: _____

This product has been tested, certified and listed to the requirements of **ASME/ANSI A112.19.8-2007, ASME/ANSI A112.19.8a-2008, ASME/ANSI A112.19.8b-2009 and APSP-16-2011** per §1404 of the Virginia Graham Baker (VGB 2008) Pool and Spa Safety Act. Certified by: Underwriters Laboratories, Inc., 2929 E. Imperial Highway, Suite 100, Brea, CA 92821-6729

This product is certified to comply with §1404 of the Virginia Graham Baker (VGB 2008) Pool and Spa Safety Act. A copy of the test results for the above may be found at www.waterwayplastics.com or go to: www.ul.com. This product is manufactured by Waterway Plastics, Oxnard CA 93030

This certificate not valid without signature.



Waterway™

2200 East Sturgis Road Oxnard CA 93030 • Phone 805.981.0262 • Fax 805.981.9403
waterway@waterwayplastics.com • www.waterwayplastics.com

Fittings

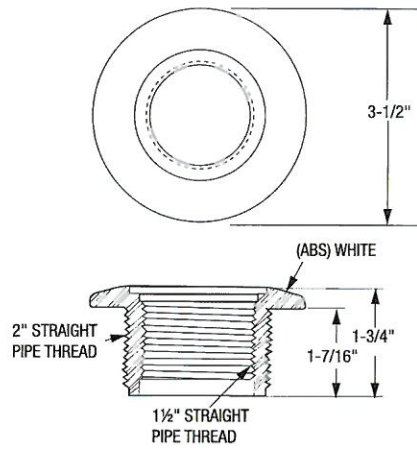


Hayward fittings are manufactured to the highest standards of design and material to provide extra durability and long lasting performance. All are manufactured by Hayward of high quality, UV resistant, ABS and have been installed by pool professionals throughout the world setting the standard for excellence and value.

Vacuum Fitting/ Receptacle For Concrete Pools



SP-1022* 1 1/2" FIP, White
SP-1022S 1 1/2" Socket, White.



Directional Flow Inlet Fittings



SP-1419B Hydrostream 3/8" opening
SP-1419C Hydrostream 1/2" opening
SP-1419D Hydrostream 3/4" opening
SP-1419E Hydrostream 1" opening

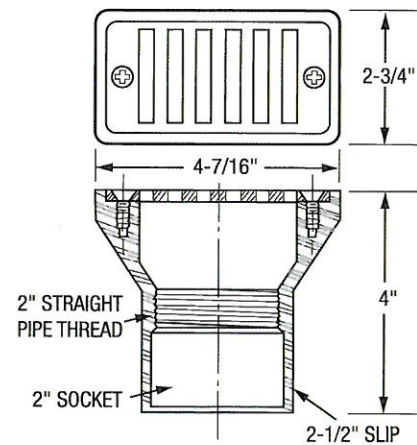
Extended Flange Directional Flow Eyeball Fitting



SP1418D 1 1/2" MIP Hydrostream 3/4" opening
SP1422D 1 1/2" slip Hydrostream Insider 3/4" opening
SP1422E 1 1/2" slip Hydrostream Insider 1" opening

Type 1422D-2" Hydrostream Insider Fitting
for 2" Schedule 40 PVC pipe

Gutter Drain Attractive and Streamlined



Model No.

SP-1019

Description

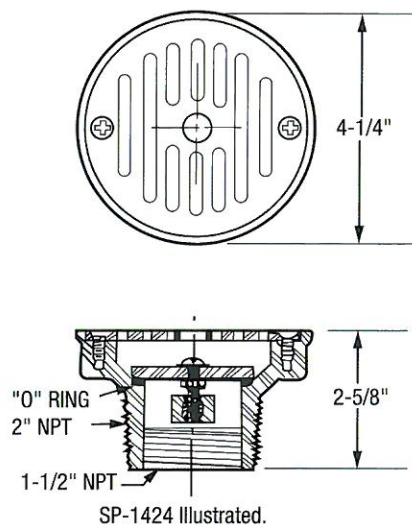
2" FIP plus 2" Socket Connection.
White Body and Grate.

Wall Inlets

Adjustable and Non-Adjustable



White Body and Grate.



Model No.	Description	
SP-1424	Adj.	1 1/2" FIP x 2" MIP
SP-1424S	Adj.	1 1/2" SKT x 2" MIP

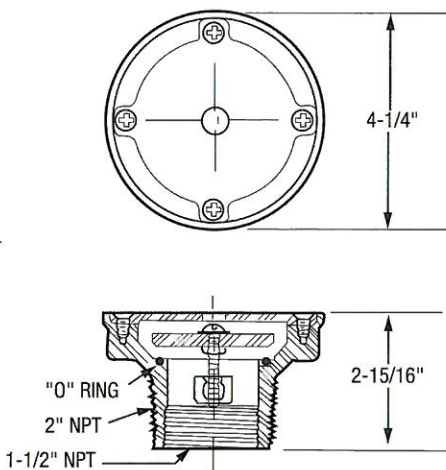
SP-1424 provides full range of flow adjustments, line testing and winterizing. Internal spinner valve disc and O-Ring is adjustable thru center hole in grate.

Floor Inlet

Fully Adjustable



White Body and Flusher Diffuser Plate.



Model No.	Description	
SP-1425		1 1/2" FIP x 2" MIP
SP-1425S		1 1/2" SKT x 2" MIP

Installs in pool floor to provide uniform, efficient, high velocity 360° distribution of water. Top diffuser plate is stationary and automatically provides proper flow angle away from floor to prevent staining or erosion. A full range of tamperproof flow settings, plus line testing and winterizing, is achieved by means of an internal spinner valve disc and O-Ring seal.

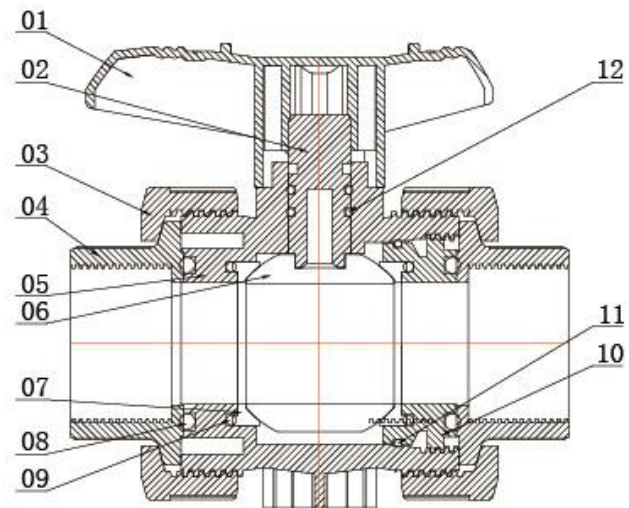
SERIES 2 – True Union Ball Valve

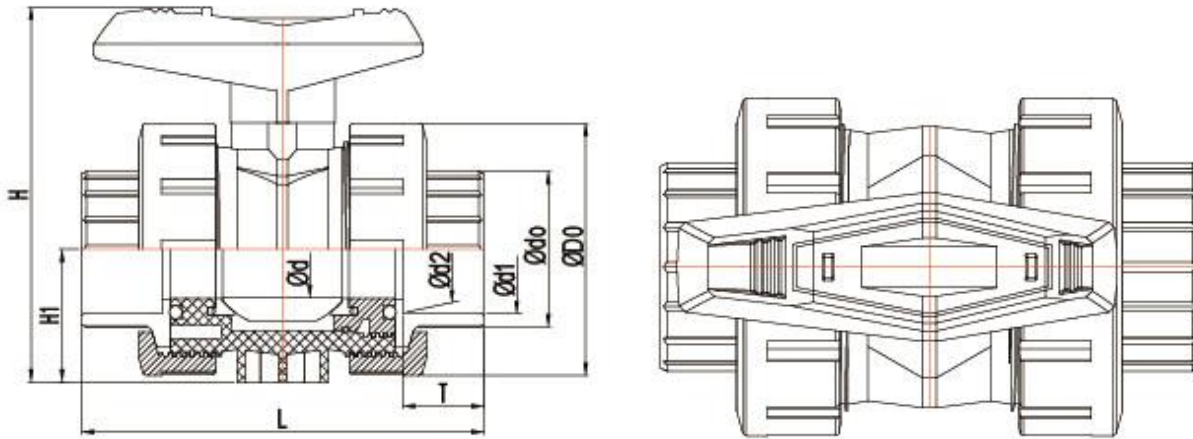


- ✓ Top Quality Industrial Style Valve
- ✓ Removable Double Union Design
- ✓ Durable PVC Construction
- ✓ TPE Seats, EPDM Seals
- ✓ Socket & Threaded Ends Included up to 2" Size
- ✓ Available in ½" – 4" Sizes

Materials:

1. Lever – PVC
2. Shaft – PVC
3. Nut (2) – PVC
4. Threaded Faucet (2) – PVC
5. Body – PVC
6. Ball – PVC
7. Ball Seat (2) – TPE
8. O-Ring1 (2) – EPDM
9. O-Ring2 (2) – EPDM
10. Seal-Carrier – PVC
11. O-Ring3 – EPDM
12. O-Ring4 (2) – EPDM





Dimensions in Inches

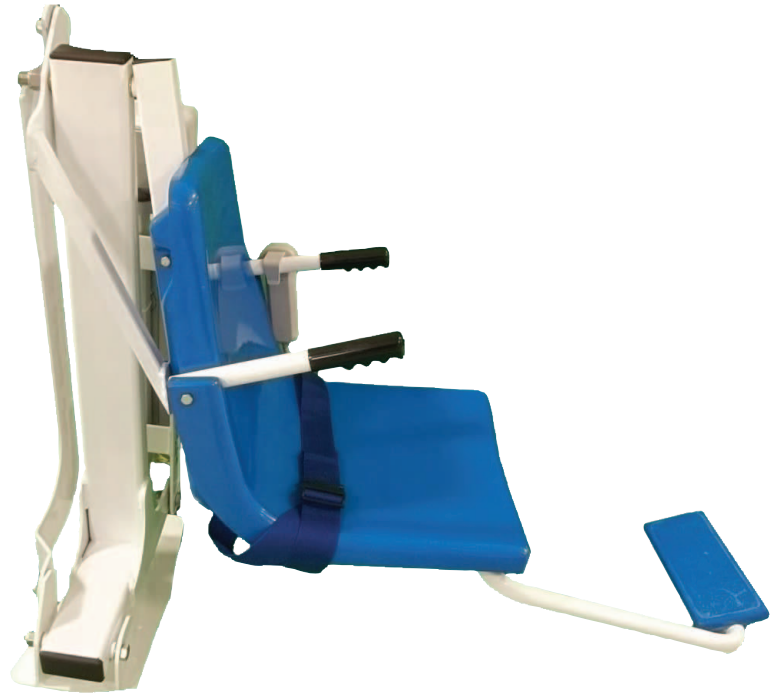
Size	D0	d0	d1	d2	d	H1	H	T	L
1/2"	2.03	1.08	0.85	0.84	0.61	1.04	3.26	0.91	4.25
3/4"	2.32	1.29	1.06	1.05	0.81	1.20	3.65	1.04	4.84
1"	2.76	1.63	1.33	1.31	1.02	1.54	4.30	1.16	5.34
1-1/4"	3.36	1.95	1.67	1.66	1.30	1.74	5.19	1.29	6.25
1-1/2"	3.89	2.37	1.91	1.89	1.54	2.06	5.64	1.26	6.57
2"	4.81	2.99	2.39	2.37	2.01	2.81	6.92	1.54	7.20
2-1/2"	6.24	3.53	2.89	2.87	2.52	3.26	9.11	1.75	9.29
3"	7.56	4.15	3.52	3.49	3.19	3.91	10.26	1.91	9.80
4"	8.80	5.06	4.52	4.49	3.90	4.54	11.50	2.29	11.38

Please Note: The 2-1/2", 3", and 4" size handle is different than pictured in drawing above. If the handle dimensions are critical to your application, please contact us for detailed information.

Superior Series S-350 Lift

Standard Features

- ADA Compliant Pool Lift
- Stainless Steel Construction
- Powder Coat Finish
- Lift Capacity 350 lbs
- Battery Powered 24 volt system
- User Friendly controls
- 5-year Structural Warranty
- Arm Rests
- Foot Rest
- Safety Seat Belt
- UPS Packaging for easy shipping
- Used for spas and pools
- Fits Most Standard Pool Applications
- UV Resistant
- Right Seat Application
- Includes Battery Charging Station
- Sleeve Anchor System (Optional)



Global Lift Corp. Products are Laboratory tested to meet ADA Standards

The new Anti-Pinch Linkage System (Patent Pending) holds the seat in a level position with an external linkage system that virtually eliminates pinch points.

Options



Protective Cover



Extra Battery



2012

New ADA Laws

- All of our lifts are compliant with the New ADA Laws
- All swimming pools in the USA that fall under Title II or Title III need to comply with the new laws.

Title II (Public Industry) municipal pools, school pools, government owned pools, etc.

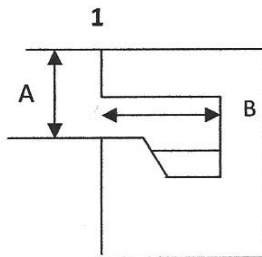
Title III (Private Industry) place of recreation, place of lodging, which addresses public accommodations

- Existing pools shall become compliant with accessibility by March 15, 2012
- There are tax incentives available
See details at www.GlobalLiftCorp.com

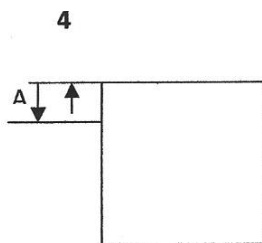
S-350

DECK CONFIGURATOR FORM

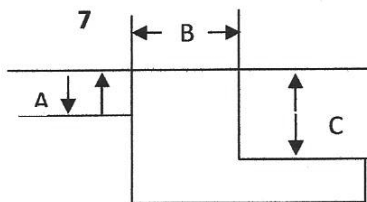
PLEASE CHOOSE WHICH APPLICATION YOUR POOL GUTTER BEST REPRESENTS



Fully Recessed Gutter



Gutter less Deck



Above Ground Pool

LEGEND MIN/MAX

A= (Draft) pool deck to water line 0 – 7"

B= Width of Gutter 1 – 12"

C= Height of Curb 1 – 2"

**NOTE: If your pool doesn't fall within these measurements,
Please contact your dealer for assistance**

Dealer:

Taylor's 2000 Series Test Kits

INTRODUCTION

The 2000 Series™ was designed to permit users to **build up their test kits in a stepwise fashion** as their testing needs grow without having to purchase duplicate components. The family of products includes the **Starter™**, **Test 4™**, **Complete™**, **Service Complete™**, and **Pool Inspector™** models. Thanks to this upgrade system, a buyer can begin with the fundamentals in the Starter kit and build his way to a comprehensive testing tool called, appropriately enough, the Complete kit.

Options in the 2000 Series include high- or low-range sanitizer values, .75 oz. or 2 oz. reagent bottles, and kits in Spanish. All cases feature a piano-style interlocking hinge and a handle for easy transport.

Over the years, salt systems have become a popular way to sanitize pools and spas. To be successful, these systems require a minimum salt concentration. Too low, and not enough chlorine will be produced to inhibit algae and bacterial growth. To monitor the salt concentration, Taylor has added a new kit to its lineup—**K-2005-SALT**. This kit contains the same tests as the K-2005, plus a test for sodium chloride.

The heart of any test kit is the comparator block, used for obtaining the water sample, mixing the reagents, and matching colors. Ours are the finest available. Advantages include **raised fill marks** to help ensure proper test volumes; **frosted backing** for uniform color perception; and **dilution guides** that make dealing with high concentrations a breeze. In 2012 we improved the visibility of the CYA test scale by adding a flange, and we resized the large comparator tube to work with our optional sample-sizing tools #6190 and #6191.

Several of the kits in this series feature **FAS-DPD drop tests**, which can measure free and combined chlorine directly as low as 0.2 ppm. The reading is made by noting a distinct change from vibrant pink to colorless in the reacted water sample. This method is also beneficial when testing samples with a high level of sanitizer (>3–20 ppm chlorine) because there is no need to interpret close shades of pink. The method is a boon for colorblind users too.

All kits include a copy of *Pool & Spa Water Chemistry: A Testing & Treatment Guide*. Written by experts in water chemistry, this waterproof booklet contains information about sanitation and water balance, as well as **tables for water treatment**. (Spanish kits have translated instructions and a Spanish guide.)



Testing with a Complete kit will answer how much sanitizer to add, when and how much to shock treat, and what adjustments are needed to prevent corrosion and scaling conditions.

Complete and Service Complete kits also contain Taylor's unique **Watergram®** for quick water balance calculations.

Topnotch chemistry and easy-to-follow instructions make the 2000 Series the perfect choice for service technicians, public pool operators, environmental health pool inspection programs, and do-it-yourself consumers.

To save money, inquire about the availability of multipacks.

2000 SERIES

K-2000 (available in English or Spanish)

Starter-high (uses DPD): chlorine 1–10 ppm; bromine 2–20 ppm; pH 7.0–8.0; acid & base demand; .75 oz. bottles

K-2100

Starter-low (uses DPD): chlorine .25–2.5 ppm; bromine .5–5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; .75 oz. bottles

K-2015

Test 4-high (uses DPD): chlorine 1–10 ppm; bromine 2–20 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; .75 oz. bottles

K-2115

Test 4-low (uses DPD): chlorine .25–2.5 ppm; bromine .5–5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; .75 oz. bottles

K-2005 (available in English or Spanish)

Complete-high (uses DPD): chlorine 1–10 ppm; bromine 2–20 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness; cyanuric acid; .75 oz. bottles

K-2005-SALT

Same tests as K-2005, plus a test for sodium chloride.



the most trusted name in water testing

Taylor Technologies, Inc.
410-472-4340
800-TEST KIT (837-8548)
www.taylortechnologies.com

ISO 9001:2008 Certified

2000 SERIES (cont'd)

K-2006 (available in English or Spanish)

Complete-high (uses FAS-DPD): chlorine 1 drop = 0.2 or 0.5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness; cyanuric acid; .75 oz. bottles

K-2006-SALT

Same tests as K-2006, plus a test for sodium chloride.

K-2105

Complete-low (uses DPD): chlorine .25–2.5 ppm; bromine .5–5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness; cyanuric acid; .75 oz. bottles

K-2106 (available in English or Spanish)

Complete-high (uses FAS-DPD): bromine 1 drop = 0.5 or 1.25 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness; .75 oz. bottles

K-2005C (available in English or Spanish)

Service Complete-high (uses DPD): chlorine 1–10 ppm; bromine 2–20 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness (w/ pipet option); cyanuric acid; 2 oz. bottles

K-2006C (available in English or Spanish)

Service Complete-high (uses FAS-DPD): chlorine 1 drop = 0.2 or 0.5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness (w/ pipet option); cyanuric acid; 2 oz. bottles

K-2105C

Service Complete-low (uses DPD): chlorine .25–2.5 ppm; bromine .5–5 ppm; pH 7.0–8.0; acid & base demand; total alkalinity; calcium hardness (w/ pipet option); cyanuric acid; 2 oz. bottles

K-2007

Pool Inspector-high (uses DPD): chlorine 1–10 ppm; bromine 2–20 ppm; pH 7.0–8.0; extra cyanuric acid; .75 oz. bottles

K-2007C

Same tests as K-2007, except bottles are 2 oz.

K-2009

Pool Inspector-low (uses FAS-DPD): chlorine 1 drop = 0.2 or 0.5 ppm; pH 7.0–8.0; extra cyanuric acid; .75 oz. bottles

USER BENEFITS

- Reagents dispense completely—**no waiting for tablets to dissolve.**
- Printed-color standards, sealed in plastic for protection against water, chemicals, and scratches, provide **reliable color matches.**
- **Waterproof instructions** are printed on plastic-impregnated paper that resists fading and tearing.
- Custom-molded, durable plastic cases provide **safe storage** for all tests. Complete and Service Complete cases will now hold up to seven additional bottles.
- **Proven chemistries** are based on *Standard Methods for the Examination of Water and Wastewater*, APHA, Washington, DC, and/or *American Society for Testing and Materials*, ASTM, Philadelphia, PA. Some methods use proprietary chemistry developed by Taylor Technologies.

ALSO AVAILABLE

- **Deox Reagent** add-on to eliminate interference in DPD and FAS-DPD chlorine tests from monopersulfate oxidizing shock treatments in the water; K-2041 (.75 oz.) or K-2042 (2 oz.).
- **FAS-DPD** drop test add-on: the K-1515 measures both free and combined chlorine at increments as low as 0.2 ppm; the K-1517 measures total bromine as low as 0.5 ppm.
- **SampleSizer**® measurement tools to speed up testing (#6190 for alkalinity and hardness; #6191 for pH).
- **SpeedStir**® magnetic stirrer for any drop test performed in the #9198 sample tube instead of the comparator block. Both fit in a Service Complete case.
- A wide array of single- and multiparameter kits featuring color-matching and/or drop-count tests.
- Taylor's **TTI**® **Colorimeter** (M-2000); test more than a dozen parameters commonly encountered in pool/spa settings and transfer results to a PC database.
- Testing supplies and kit replacement parts (e.g., burets, flasks, test tubes, and test cells).
- **Video demonstrations** for new users posted on our website.
- Toll-free technical assistance at **800-TEST KIT.**

REPRESENTATIVE TEST PROCEDURE

Reproduced from
K-2006C instruction:

Guidebook (#2004B) amplifies these instructions and should be read to use this product properly.		POOL & SPA WATER TESTS		6. Rinse tubes before and after each test. Instr. #5140	
1. Read precautions on all labels. 2. Keep test kit out of reach of children.		3. Store test kit in cool, dark place. 4. Replace reagents once each year. 5. Do not dispose of solutions in pool or spa.		7. Obtain samples 18" (45 cm) below water surface. 8. Hold bottle vertically when dispensing.	
Free & Combined Chlorine Test 1. Rinse and fill large comparator tube to desired mark with water to be tested. NOTE: For 1 drop = 0.2 ppm, use 25 mL sample. For 1 drop = 0.5 ppm, use 10 mL sample. 2. Add 2 dippers R-0870. Swirl until dissolved. If free chlorine is present, sample will turn pink. NOTE: If pink color disappears, add R-0870 until color turns pink. 3. Add R-0871 dropwise, swirling and counting after each drop, until color changes from pink to colorless. 4. Multiply drops in Step 3 by drop equivalence (Step 1). Record as parts per million (ppm) free chlorine (FC). 5. Add 5 drops R-0003. Swirl to mix. If combined chlorine is present, sample will turn pink. 6. Add R-0871 dropwise, swirling and counting after each drop, until color changes from pink to colorless. 7. Multiply drops in Step 6 by drop equivalence (Step 1). Record as ppm combined chlorine (CC).	Total Alkalinity Test 1. Rinse and fill large comparator tube to 25 mL mark with water to be tested.* 2. Add 2 drops R-0007. Swirl to mix. 3. Add 5 drops R-0008. Swirl to mix. Sample should turn green. 4. Add R-0009 dropwise. After each drop, count and swirl to mix until color changes from green to red. 5. Multiply drops in Step 4 by 10. Record as parts per million (ppm) total alkalinity as calcium carbonate. *When high TA is anticipated, this procedure may be used: Use 10 mL sample, 1 drop R-0007, 3 drops R-0008, and multiply drops in Step 4 by 25.	Cyanuric Acid Test 1. Rinse and fill CYA dispensing bottle (#9191) to 7 mL mark with water to be tested. 2. Add R-0013 to 14 mL mark. Cap and mix for 30 seconds. 3. Slowly transfer clearly yellow to small comparator tube until black dot on bottom just disappears when viewed from top. 4. Read tube at liquid level on back of comparator block. Record reading as parts per million (ppm) cyanuric acid.			
pH Test 1. Rinse and fill large comparator tube to 44 mL mark with water to be tested. 2. Add 5 drops R-0004. Cap and invert to mix. 3. Match color with color standard. Record as pH units and save sample if pH needs adjustment. If sample color is between two values, pH is average of the two. To LOWER pH: See acid demand test. To RAISE pH: See base demand test. Acid Demand Test 1. Use treated sample from pH test. 2. Add R-0005 dropwise. After each drop, count, mix, and compare with color standards until desired pH is matched. See treatment tables to continue. Base Demand Test 1. Use treated sample from pH test. 2. Add R-0006 dropwise. After each drop, count, mix, and compare with color standards until desired pH is matched. See treatment tables to continue.	Calcium Hardness Test 1. Rinse and fill large comparator tube to 25 mL mark with water to be tested.* 2. Add 20 drops R-0010 (or use pipet provided and fill to 1 mL mark). Swirl to mix. 3. Add 5 drops R-0011L. Swirl to mix. If calcium hardness is present, sample will turn red. 4. Add R-0012 dropwise. After each drop, count and swirl to mix until color changes from red to blue. 5. Multiply drops in Step 4 by 10. Record as parts per million (ppm) calcium hardness as calcium carbonate. *When high CH is anticipated, this procedure may be used: Use 10 mL sample, 10 drops R-0010 (or use pipet provided and fill to 0.5 mL mark), 3 drops R-0011L, and multiply drops in Step 4 by 25.	Sodium Chloride (Salt) Test For 1 drop = 200 ppm 1. Rinse and fill sample tube (#9198) to 10 mL mark with water to be tested. 2. Add 1 drop R-0830. Swirl to mix. Sample should turn yellow. 3. Add R-0718 dropwise, swirling and counting after each drop, until color changes from yellow to a milky salmon (brick) red. Always hold bottle in vertical position. NOTE: Do not add enough R-0718 to give a brown color. First change from yellow to a milky salmon (brick) red is the endpoint. 4. Multiply drops of R-0718 by 200. Record as parts per million (ppm) salt as sodium chloride.			

Only Service Complete kits have pipet option.



rev. 050415