



# QUICK START FILTER ASSEMBLY

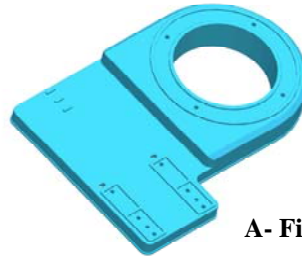
## 1. Carefully open carton #1 and unpack the filter tank.

- A. Remove all packing material from filter connection openings.
- B. Open tank, remove any packing materials and inspect cartridge.

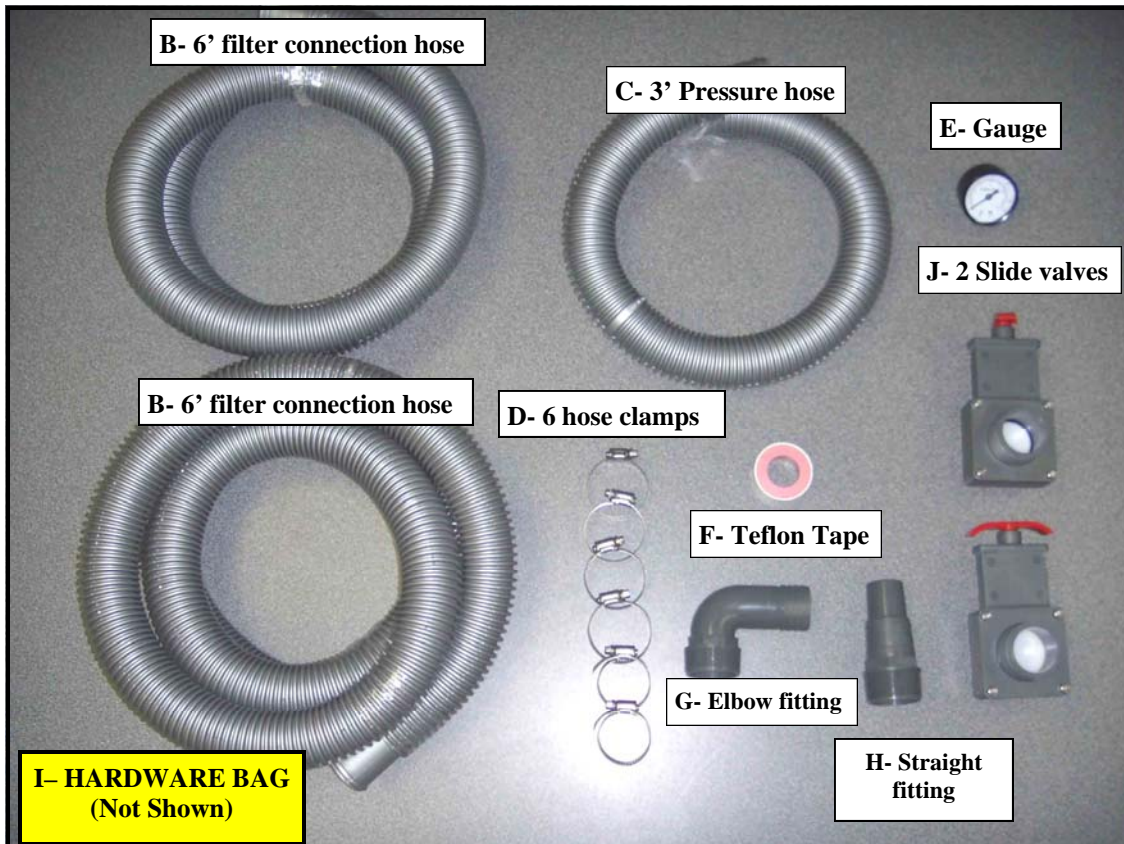
## 2. Carefully open carton #2 and unpack all components.

### Key Description

- A. Filter Base
- B. (2) 6' long filter connection hoses
- C. (1) 3' long pressure hose
- D. (6) Stainless Steel hose clamps
- E. Pressure gauge
- F. Teflon tape
- G. Elbow fitting
- H. Straight fitting
- I. Hardware bag
- J. (2) Slide Valves



A- Filter base



# SPECK PUMP

## INSTRUCTION ADDENDUM

When using this pump in conjunction with the Hydro Filter System, you will need to install these pieces in addition to what is shown in your Hydro Filter Instruction Manual:



**2-piece adaptor (1 set)**

Will be installed on pump inlet before slide valve is in place; allows for secure placement of straight fitting.



**Straight Fitting (1)**

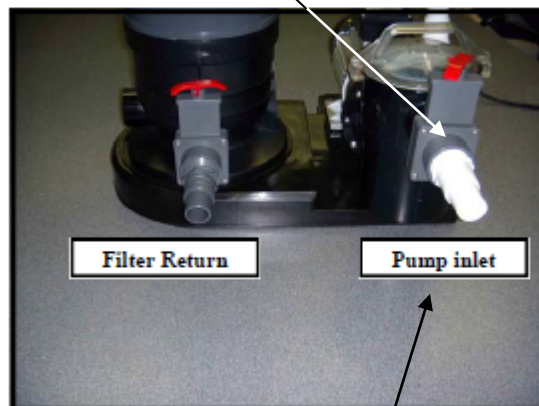
Will be installed on the pump inlet.

On Step 6, install the 2-piece adaptor on the pump inlet before installing the slide valve shown here:

### 6. Installing Valves

Your hardware packages includes 2 slide valves. (key J)  
Slide valves are used to stop the flow of water to and from the filter. The recommended location for installation of your slide valves is as follows:

- A. Filter Return to pool
- B. Pump Inlet



Install the enclosed straight fitting on the pump inlet.

# WATERWAY HI-FLO PUMP

## INSTRUCTION ADDENDUM

When using this pump in conjunction with the Hydro Filter System, you will need to install these pieces in addition to what is shown in your Hydro Filter Instruction Manual:



**2-piece adaptor (1 set)**

Will be installed on pump inlet before slide valve is in place; allows for secure placement of straight fitting.



**Straight Fittings (2)**

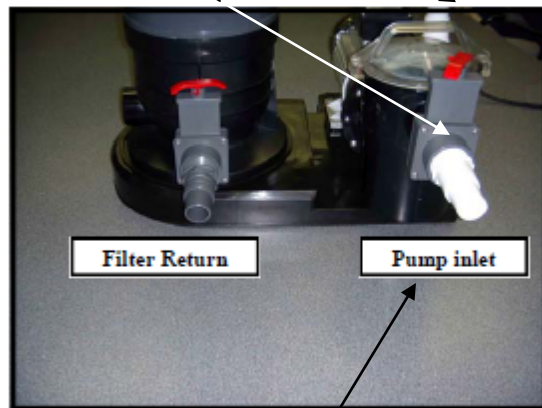
Will be installed on the pump inlet and pump outlet.

On Step 6, install the 2-piece adaptor on the pump inlet before installing the slide valve shown here:

### 6. Installing Valves

Your hardware packages includes 2 slide valves. (key J)  
Slide valves are used to stop the flow of water to and from the filter.  
The recommended location for installation of your slide valves is as follows:

- A. Filter Return to pool
- B. Pump Inlet

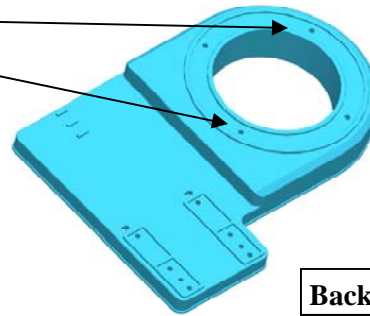


Install the straight fittings enclosed on the pump inlet and pump outlet.

### 3. Attaching Tank to Base (key A)

Place tank on base and rotate until the holes in the tank bottom line up with the holes indicated on the base.

The port marked "To Pump" on the filter should be facing the back of the base. Attach filter to base using the hardware supplied.



Back of Base



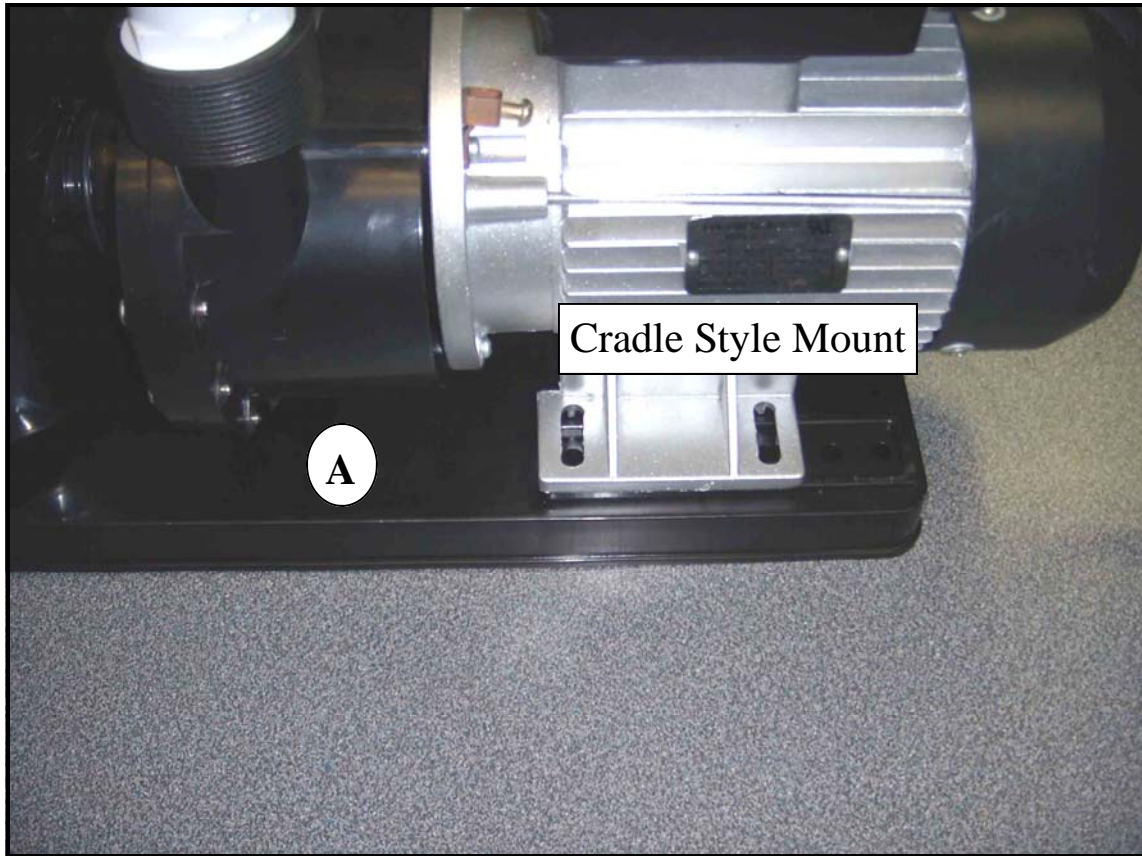
Port marked "to pump"

### 4. Installing Elbow Fitting (key G)

1. Wrap the threads of the elbow fitting with Teflon tape (key F) to ensure a tight fit and protect against leaks.
2. Insert elbow fitting into port marked "**from pump**"
3. Turn until fitting is tight and faces up as shown.

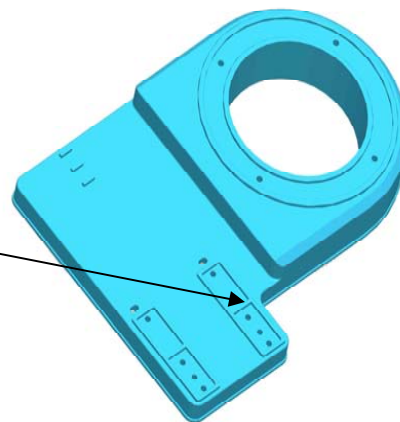


**5 A. Attaching a Pump with Cradle Style Mount to the Filter Base**  
Pump motors come with a variety of mounts depending on the supplier.  
This filter base is designed to accept the two most common pump mounts.

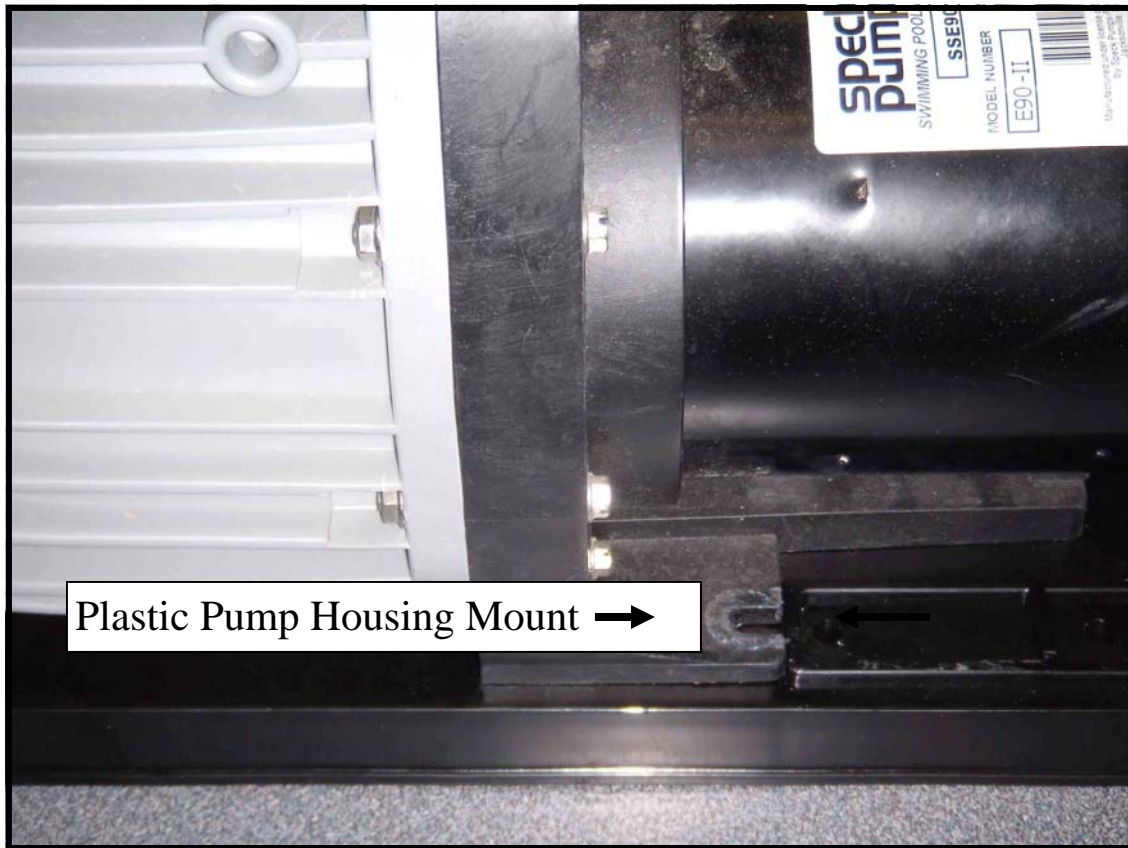


A. Pumps with cradles located directly under the motor should be aligned with the holes in the raised area of the base.

This type of motor mount will require the use of 4 mounting bolts supplied in your hardware package.

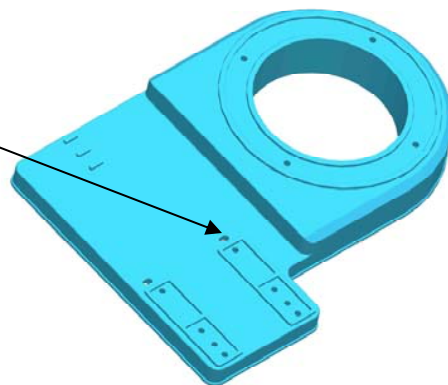


**5 B Mounting a Pump with Plastic Pump Housing Mounts to Filter Base**  
Pump motors come with a variety of mounts depending on the supplier.  
This filter base is designed to accept the two most common pump mounts.



B. Pumps with mounts located on the bottom of the plastic portion of the pump housing., should be aligned with the 2 holes outside the raised area

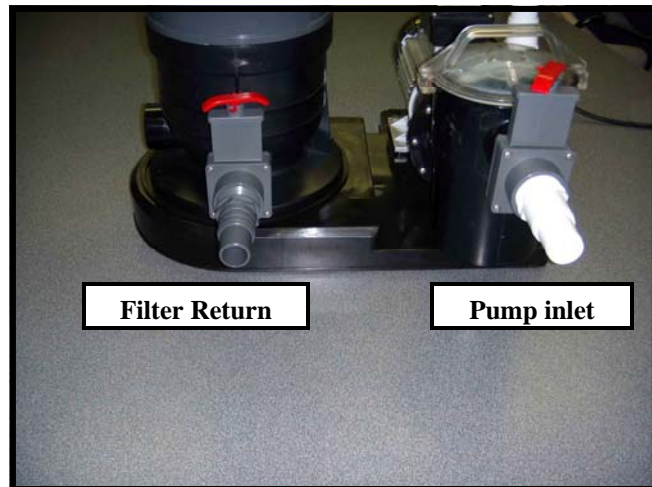
This type of motor mount will only require the use of 2 mounting bolts supplied in your hardware package.



## 6. Installing Valves

Your hardware packages includes 2 slide valves. (key J)  
Slide valves are used to stop the flow of water to and from the filter.  
The recommended location for installation of your slide valves is as follows:

- A. Filter Return to pool
- B. Pump Inlet



## 7. Attaching Hoses



Your hardware packages includes 1 straight hose fitting that should be installed on the filters return port (key H)

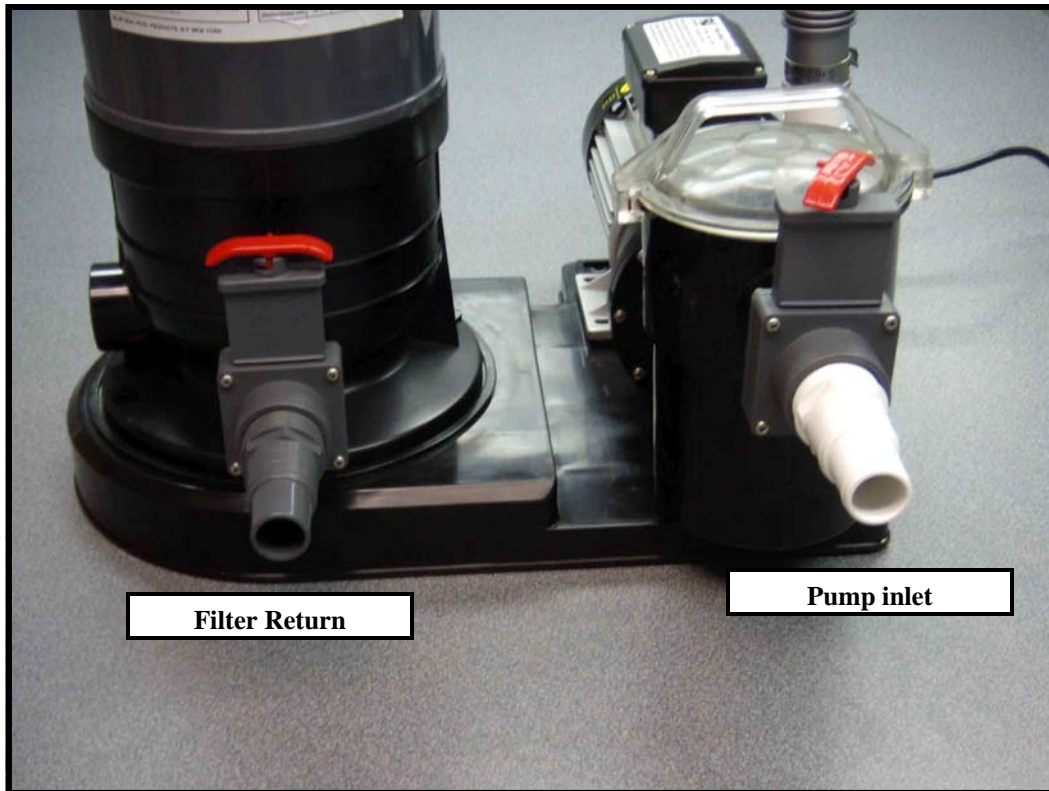


Your pump should include 2 hose fittings that should be installed on the pump inlet and outlet.



Attach one side of the 3' pressure hose (key C) to the pump outlet and the other to the tank inlet as shown .  
Secure each connection with a hose clamp. (key D)

## 8. Attaching Hoses –Continued



- A. Attach filter return to thru wall return fitting using a 6' filter connection hose. (key B) Secure each connection with a hose clamp.



- B. Attach pump inlet to thru wall skimmer using a 6' filter connection hose.(key B) Secure each connection with a hose clamp. (key D)

# READ AND FOLLOW SAFETY INSTRUCTIONS!



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

**! DANGER**

Warns about hazards that will cause death, serious personal injury, or major property damage if ignored.

**! WARNING**

Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

**! CAUTION**

Warns about hazards that will or can cause minor personal injury or property damage if ignored.

**NOTICE**

Indicates special instructions not related to hazards.

**CAREFULLY READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND ON EQUIPMENT**  
Keep safety labels in good condition; replace if missing or damaged.

**! WARNING**

Incorrectly installed or tested equipment may fail, causing severe injury or property damage.

**Hazardous Pressure**

Read and follow instructions in owner's manual when installing and operating equipment.

1. Do not connect system to a high pressure or city water system..
2. Use equipment only for a pool installation
3. Trapped air in system can cause explosion. BE SURE all air is out of system before operating or testing equipment.

## BEFORE OPERATING, MAKE THE FOLLOWING SAFETY CHECKS

1. Check all clamps, bolts, lids and system accessories before testing.
2. Release all air in system before testing.
3. Tighten trap lids.
4. Water pressure must be less than 25 PSI (172 kPa).
5. Water temperature must be less than 100° F. (38° C).

**! DANGER**

If filter clamp is adjusted under pressure, tank will blow off base, causing severe injury or major property damage.

**BEFORE WORKING ON FILTER:**

1. Stop pump.
2. Open air release valve.
3. Release all pressure from system.

# GENERAL INFORMATION

**⚠ DANGER** Hazardous pressure. If filter is improperly disassembled or assembled, it will explode under pressure.

To avoid danger of severe injury or major property damage, always follow service instructions in this manual (Pages 8 to 10) when working on filter.

**⚠ WARNING** Risk of explosion. Never operate this filter system at more than 50 pounds per square inch (50 PSI/345kPa) pressure!

- Clean a new pool as well as possible before filling pool and operating filter.
- Excess dirt and large particles of foreign matter in the system can cause serious damage to the filter and pump.
- With a cartridge filter system in place and operating correctly, clean water is returned to the pool faster than the pool water is being contaminated. A typical pool installation will require approximately one week to obtain and maintain the sparkle that your filter is capable of giving you.
- Keep pool water pH at recommended level (7.2 to 7.6).
- Be sure both clamps are in place and knobs are securely tightened before starting filter.
- Maintain pressure gauge in good working order. Replace gauge if it fails or is damaged.
- Cleaning interval is based on pressure differential, not on length of time filter is operated.

**NOTICE** Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

# POOL CHEMISTRY GUIDELINES

SUGGESTED POOL CHEMISTRY LEVELS	ACTION REQUIRED TO CORRECT POOL CHEMISTRY	
	TO RAISE	TO LOWER
pH <span style="float: right;">7.2 to 7.6</span>	Add pHix It UP	Add pHix It DOWN
TOTAL ALKALINITY <span style="float: right;">100 to 130 ppm</span>	Add ALKA pHix	Add pHix It DOWN
CHLORINE (Unstabilized) <span style="float: right;">0.3 to 1.0 ppm</span>	Add Chlorine Chemical	No action - Chlorine will naturally dissipate
CHLORINE (Stabilized) <span style="float: right;">1.0 to 3.0 ppm</span>	Add Chlorine Chemical	No action - Chlorine will naturally dissipate
CHLORINE STABILIZER (Cyanuric Acid) <span style="float: right;">40 to 70 ppm</span>	Add Chlor-Guard	Dilution — partially drain & refill pool with water that has not been treated with Cyanuric Acid

# INSTALLATION — GENERAL

## **FILTER LOCATION SHOULD:**

- Provide space and lighting for easy access for routine maintenance.
- Provide adequate ventilation and drainage for pump.
- Be reasonably level.
- Be as close to pool as possible to reduce line loss from pipe friction.

## **PIPING**

- Never use pipe joint sealing compound on pipe and fittings that are plastic or may come into contact with plastic. To seal threaded connections on PVC pipe and fittings, use only teflon tape. Pipe joint compound may cause stress cracking of plastic components.

### **NOTICE**

Filter locations remote from pool are possible but may require larger pipe to produce adequate flow through filter.

- Check local codes if considering a remote installation.
- Fittings restrict flow; for best efficiency use fewest possible fittings.
- Keep piping tight and free of leaks. Pump suction line leaks may cause trapped air in filter tank or loss of prime at pump. Pump discharge line leaks may show up as dampness or jets of water.

## **VALVES**

- A check valve installed between pool and filter outlet will prevent contaminants from draining back into pool.

### **NOTICE**

A check valve between filter and pool will also prevent possible backflow which could dislocate element from its seat.

- A check valve installed between filter and heater will prevent hot water from heater from backing up into the filter and deforming filter elements.

### **NOTICE**

Damaging filter elements through excessive heat voids the warranty.

## **ELECTRICAL**

- **BE SURE** filter grounding and bonding meets local and National Electrical Code standards. All wiring, grounding and bonding of associated equipment must also meet local and National Electrical Code standards.

# ASSEMBLING FILTER

Filter Cartridge may shift position during shipping. To make sure cartridge is in place, follow procedure below before using filter.

When disassembling filter, place all parts in a clean area.

1. Place filter in a clean area near its permanent location.
2. Remove filter head by turning Locking Ring counter clockwise Figure 1. Remove clamp by lifting straight up over tank.
3. As clamp is turned the Filter Head will rise from the tank body. Please note the Filter Head and Locking Ring are one piece.
4. Set tank head in a clean place; check for missing or damaged parts.
5. Filter element should be installed firmly by pressing into base.
6. Replace tank head evenly on filter tank shell for a tight seal. (Use pool lube)

**NOTICE** Be sure O-Ring and O-Ring seating area are clean.

7. Replace Filter Head and Locking Ring assembly on tank.

**NOTICE** To properly engage threads make sure Filter Head is on straight and push downward.

8. Tighten Locking Ring by turning clockwise until it stops **Hand Tighten Only**.
9. Attach pressure gauge and air release valve as shown in Figure 1. Apply Teflon tape to threads of pressure gauge.

**NOTICE** Tighten gauge hand tight only. Tighten air release valve finger tight only.

## CONNECTING FILTER PIPING

**NOTICE** For ease of installation, plastic pipe and fittings are recommended for all piping to and from pool. DO NOT use pipe joint compound on base of filter. To do so will cause stress cracking of base, which will void warranty and may cause property damage.

**CAUTION** Risk of damage to filter. Do not tighten fittings into base ports past thread stops. To do so will ruin filter base and void warranty, and may cause property damage.

**NOTICE** If pool water level is higher than filter base, shut-off valves must be installed in suction and return lines.

1. Wrap 1-1/2 to 2 layers of teflon tape to male threads only on all piping and fittings.
2. Hand tighten fitting in each port. Be careful not to cross thread.
3. Tighten fittings to a snug fit with wrench. Be careful not to thread fittings past thread stop.
4. If pipe connections leak, remove, clean off sealant, re-apply sealant and re-tighten in ports. Do not overtighten.

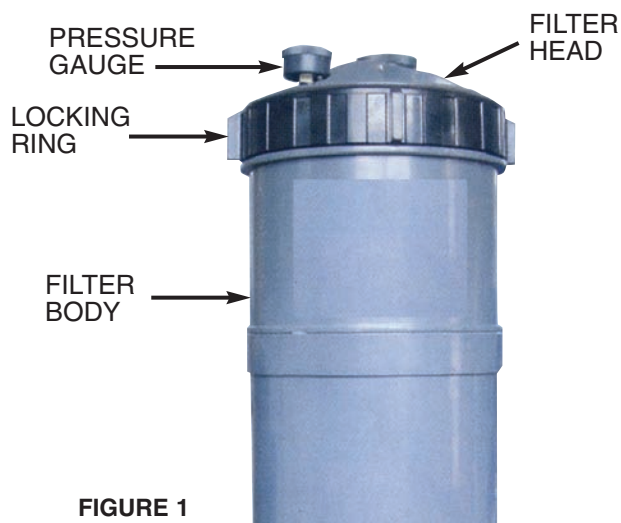


FIGURE 1

## START UP

**WARNING** HAZARDOUS PRESSURE. Risk of severe injury or major property damage if tank explodes. READ the entire procedure before starting system or disassembling filter.

1. Turn pump OFF before starting procedure.
2. Properly seat filter clamps and securely tighten clamp knobs before proceeding.

**NOTICE** 1. Tightly close plugs on Tank Drain Port (Figure 2).

2. Open air release valve located on top of filter tank head.

**NOTICE** Air trapped inside the filter greatly increases the explosion hazard. The air release valve allows you to get accumulated air out of the filter tank. At startup, open the air release valve and make sure that it is running a solid stream of water before putting the filter in service.

1. Start pump.
2. When a steady stream of water comes from air release valve, close valve.
3. After filter is operating, record filter pressure gauge reading in owner's manual for future use.

**NOTICE** When installed on a new pool, filter element may need cleaning after approximately 48 hours of operation.

**NOTICE** A new or recently cleaned filter element may pass some foreign material until it builds up a sufficient coating to stop all "fines". This is normal. A short operational period will correct the condition.

Check pressure gauge. If pressure has risen more than 10 PSI (70kPa) above startup pressure, remove and clean element.

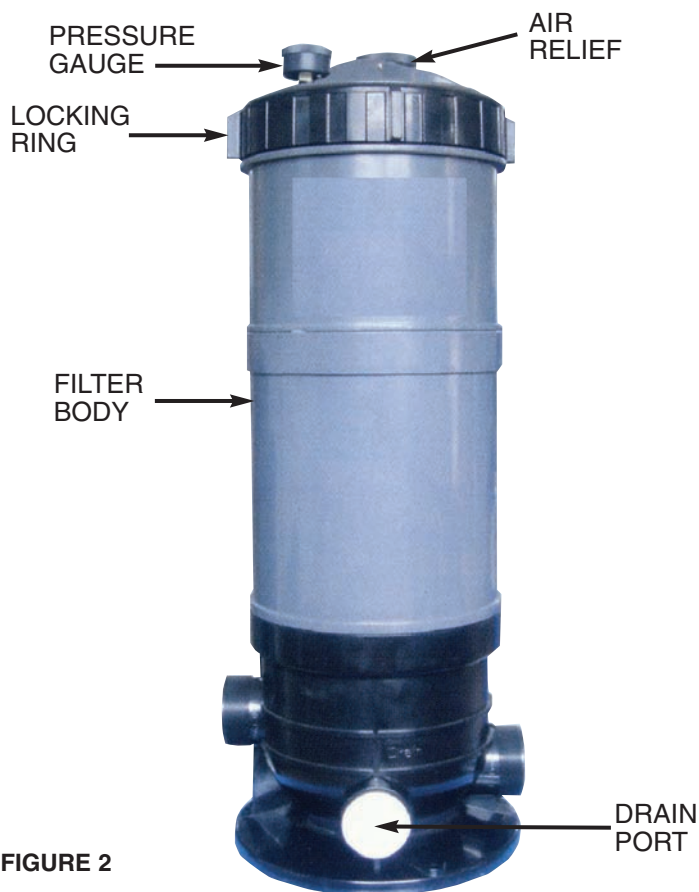


FIGURE 2

# FILTER DISASSEMBLY

**⚠ DANGER**

Hazardous Pressure

Releasing either ring with pressure on system will cause tank or tank head to blow off base, causing severe injury or major property damage. NEVER adjust, tighten or loosen ring when tank is under pressure. If filter leaks at the ring, do not adjust the ring. Instead, follow instructions under "Filter Disassembly", below and "Filter Assembly", Page 8.



Regularly inspect clamp assemblies for cracked, corroded or broken welds and worn or stripped threads. If any wear or damage shows, replace the complete ring.



Tension stresses and aggressive pool chemicals can aggravate mechanical wear. Tank clamp assemblies and nuts or plastic knobs should be replaced every five years.



Do not use a filter that shows cracks, corrosion or distortion.

## FILTER DISASSEMBLY

### 1. STOP PUMP.

2. **CLOSE** suction and return line valves (if used).

3. **OPEN** air release valve on top of filter.

4. **WAIT** until all pressure is released from filter tank and system before loosening either clamp.



**WARNING** To prevent severe or fatal injury, make sure that all pressure has been released from filter tank BEFORE proceeding.

5. Remove drain plug or open drain valve at "Tank Drain Port" and drain filter.

6. Loosen clamp ring; remove clamp by lifting it straight up over tank.

7. Remove tank head from tank body. Be careful not to damage O-Ring. Place tank head in clean area.

**NOTICE**

If heavy dirt deposits have collected around bottom of filter element and base, wash out base before removing element.

8. Remove the O-Ring from the filter. Clean the O-Ring and inspect it. If you see cuts, cracking, deformation or wear, replace it.

9. Rock filter element to one side to free seal.

10. Lift element out of tank body. Do not drop filter element. Place element in clean area where it can be cleaned with hose and Spray-a-Way attachment.

## FILTER REASSEMBLY

1. Replace plugs or close valves in Tank Drain and Auxiliary Drain ports.
2. Set filter element on base.
3. Make sure filter element is flush with base of filter to avoid damaging element when you replace the filter head (Figure 3).
4. Inspect and clean the tank flanges and O-Ring seats. If flanges are deformed, cracked or corroded, replace entire filter.
5. Replace Filter Head and Locking Ring assembly on tank.
6. Tighten Locking Ring by turning clockwise until it stops. **Hand Tighten Only.**
7. Clean pump strainer basket.
8. Open system valves as needed.
9. Proceed to "Startup".

LIFT FILTER ELEMENT  
STRAIGHT UPWARD  
TO REMOVE

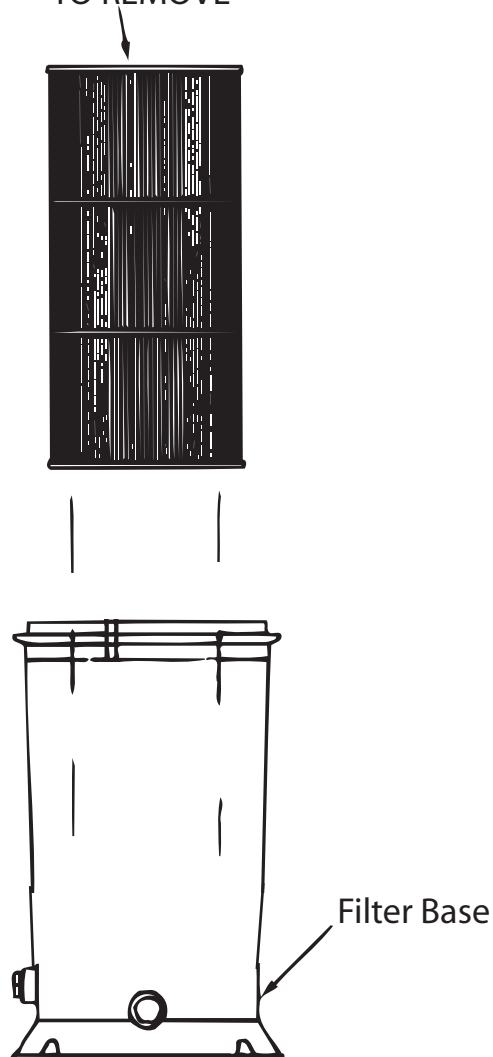


FIGURE 3

# FILTER CLEANING PROCEDURE

**NOTICE** Keep track of filter operating pressure. When pressure reaches 10 pounds per square inch (PSI) (70kPa) above initial operating pressure, clean filter element.

**NOTICE** If filter is used with a spa, soak element (see Step 2, "Special Cleaning Instructions") at each regular cleaning. With hose, wash foreign material from inside of base. Try to avoid washing debris into outlet port (See figure 4)

**NOTICE** Be sure inside surface of base is clean.

## WASHING FILTER ELEMENT (See Figures 4, 5 and 6)

1. Use a garden hose with straight flow nozzle to wash down filter element (Figure 4). For best results use a Spray-A-Way cleaning system.
2. Work from the top down; wash down all pleats. Wash between all pleats.
3. Turn element while spraying to wash down entire outside of element.
4. Repeat wash down process for inside of filter element. Hold nozzle as close to inside of pleats as possible (Figure 6).

- NOTICE**
- BE SURE all dirt and foreign materials are washed away from INSIDE pleats of element.
  - Allow cartridge to dry thoroughly before replacing it in filter
  - TIP — Have a second cartridge on hand and ready to use; this will avoid filter down time.

# SPECIAL CLEANING INSTRUCTIONS

**⚠ DANGER** Risk of fire or explosion. Isolate filter from system before chemical cleaning; rinse filter and elements completely before returning to service.

If filter cannot be isolated, remove media and clean at another location. Follow chemical manufacturer's instructions for use. Do not mix chemicals except as directed by manufacturer. Do not allow cleaning chemicals to mix with or to come in contact with chlorine, bromine, other chemicals, or chemical feed devices.

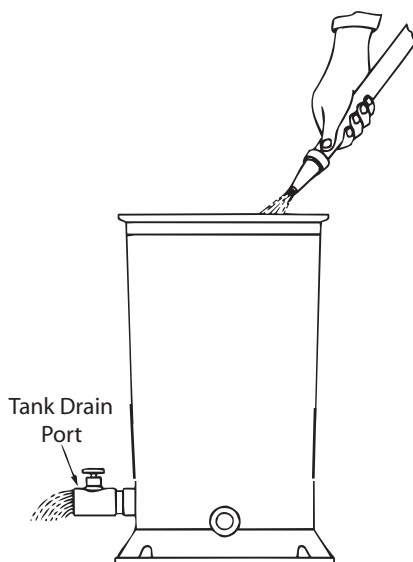


FIGURE 4



FIGURE 5

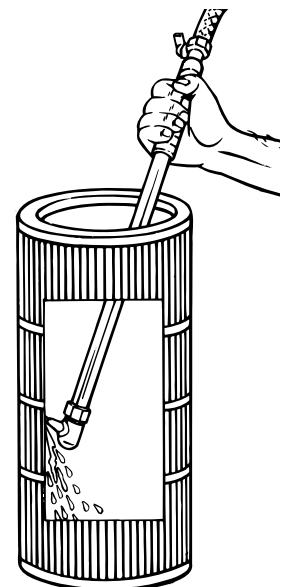


FIGURE 6

**NOTICE**

Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

For stubborn deposits, proceed as follows:

1. Follow Filter Cleaning Procedure (Page 9).
2. If deposits remain, soak element at least one hour with a solution of Filter Flush and water.
3. Wash off with water to remove oils, dirt and remaining cleaner solution.
4. If filter element does not come clean with this procedure, consult your pool professional. Acid washing should be done only by trained professionals who have proper safety equipment and acid disposal facilities.

## POOL MAINTENANCE

### VACUUM CYCLE

1. Attach vacuum hose to skimmer connection.
2. Adjust suction line valves to provide sufficient flow through vacuum tube.
3. Proceed to vacuum. Filtered water will be recirculated back to pool.

## WINTERIZING

**⚠ DANGER**

Hazardous pressure. To avoid severe injury or major property damage, follow instructions below exactly.

**⚠ WARNING**

Explosion hazard. Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter or piping.

**NOTICE**

Filter must be protected from the weather and drained if freezing is anticipated. Allowing filter to freeze can cause damage to filter and **WILL VOID THE WARRANTY!**

1. Stop pump.
2. Open air release valve.
3. Remove drain plugs from ports or open valves at "Tank Drain Ports".
4. Drain ALL piping to and from filter.
  - a) Gravity drain system as far as possible.
  - b) Protect areas which retain water with non-toxic propylene glycol antifreeze (RV antifreeze) or pipeline Anti-Freeze.
5. Turn to Page 7 for filter disassembly instructions.
6. Remove filter element and store in a warm, dry area.

**⚠ CAUTION**

Do not remove or damage safety and instruction labels during cleaning. Replace any decals which may have been damaged.

# TROUBLESHOOTING GUIDE

## SHORT CYCLE:

### NOTICE

Time between cleanings will vary with each installation. The following causes and remedies are for cycle times shorter than normal.

### NOTICE

Some pool disinfectants may clog filter media. To maximize media life and filter cycle time, closely follow disinfectant manufacturer's instructions when cleaning pool or filter.

1. **Chlorine residual too low** — maintain proper residual (consult pool professional for recommendation).
2. **Flow rate too high** — restrict flow to rated capacity of filter (see instruction decal on filter).
3. **Filter too small** — install larger filter or additional filter.
4. **Unstable water** — consult pool professional.
5. **Filter element not cleaned properly or plugged with algae, iron, calcium, etc** — see "Special Cleaning Instructions".
6. **Heavy or improper application of powdered chlorine or chlorine pills that contain a binder** — see "Special Cleaning Instructions".
7. **Algae in pool** — apply heavy dose of chlorine or algicide as recommended by pool manufacturer. Continue until algae is controlled.

## LOW FLOW:

1. **Element is plugged** — see "Special Cleaning Instructions".
2. **Pipe blocked downstream from filter** — remove obstruction.
3. **Piping too small** — replace with larger pipe (consult dealer for recommendation).
4. **Pump hair and lint trap is plugged** — empty and clean.
5. **Pump impeller and diffuser worn** — replace with new parts. Consult pump owner's manual for information.
6. **Pump too small for system** — replace with larger pump.

## POOL WATER NOT CLEAR:

1. **Chlorine dosage too low** — maintain adequate chlorine residual (consult pool professional for recommendation).
2. **Element cloth torn or punctured** — replace element.
3. **Filter too small, flow too low, or daily operating time too short, giving inadequate turnover rate** — consult dealer to verify that equipment is properly sized for your pool.
4. **Pump too large** — overpumping — reduce flow rate.
5. **Filter installed backward** — replumb.

## LONG RECOVERY TIME AFTER HEAVY USAGE:

1. **Residual Chlorine level is too low** — add chlorine.
2. **Filter too small** — replace with larger unit.
3. **Pump too large** — reduce flow rate.

## **FILTER BY-PASSES DIRT:**



To avoid severe injury or major property damage, follow instructions under “Disassembly” and “Assembly” (Pages 7 and 8) EXACTLY.

1. **Element cloth torn or punctured** — replace element.
2. **Filter element is not seated properly in filter base** — follow instructions under “Filter Disassembly - Reassembly” and reposition properly.
3. **Filter is plumbed backwards and element cloth is ruptured** — replumb properly and replace element.
4. **Colloidal fines (very small suspended dirt particles) are present and passing through element covering** — use Crystal Clear or if fines have already settled, vacuum to waste.

# FILTER PARTS LIST

PART #	DESCRIPTION	BS PRC30	BS PRC60	NE635	NE636	BS PRC150	BS PRC180	BS PRC30BD	BS PRC60BD	BS PRC90BD	BS PRC120BD	BS PRC150BD	BS PRC180BD
BS 40061BLK	Hose Adapter	1	1	1	1	1	1	1	1	1	1	1	1
BS PRCBASE	Filter Base	1	1	1	1	1	1	1	1	1	1	1	1
AC 26875	Complete LID	1	1	1	1	1	1	1	1	1	1	1	1
AC 26859	Slide Valve	2	2	2	2	2	2	2	2	2	2	2	2
BS 10022	6' 1/2 Hose	2	2	2	2	2	2	2	2	2	2	2	2
BS 17396GRY	Threaded Plug	1	1	1	1	1	1	1	1	1	1	1	1
BS 35815	Clamps	4	4	4	4	4	4	4	4	4	4	4	4
BS 35858	Teflon Tape	1	1	1	1	1	1	1	1	1	1	1	1
AC 04723	Molded Hoses	1	1	1	1	1	1	1	1	1	1	1	1
BS 39349	Rearmount Gauge	1	1	1	1	1	1	1	1	1	1	1	1
BS 11762	1/4 Air Relief Plug	1	1	1	1	1	1	1	1	1	1	1	1
AC 11991	Horizontal Union	1	1	1	1	1	1	1	1	1	1	1	1
AC 08524	Union Adapter	1	1	1	1	1	1	1	1	1	1	1	1
AC 09474	Body Only	1	—	—	—	—	—	1	—	—	—	—	—
AC 09644	Body Only	—	1	—	—	—	—	—	1	—	—	—	—
AC 09687	Body Only	—	—	1	—	—	—	—	—	1	—	—	—
AC 15873	Body Only	—	—	—	1	—	—	—	—	—	1	—	—
AC 15903	Body Only	—	—	—	—	1	—	—	—	—	—	1	—
AC 16314	Body Only	—	—	—	—	—	1	—	—	—	—	—	1
BS 00477	30 Cartridge	1	—	—	—	—	—	—	—	—	—	—	—
BS 55387	60 Cartridge	—	1	—	—	—	—	—	—	—	—	—	—
NCC100	90 Cartridge	—	—	1	—	—	—	—	—	—	—	—	—
NCC105	120 Cartridge	—	—	—	1	—	—	—	—	—	—	—	—
BS 08753	150 Cartridge	—	—	—	—	1	—	—	—	—	—	—	—
BS 08788	180 Cartridge	—	—	—	—	—	1	—	—	—	—	—	—
AC 16411	Black Diamond Cartridge—30	—	—	—	—	—	—	1	—	—	—	—	—
AC 16497	Black Diamond Cartridge—60	—	—	—	—	—	—	—	1	—	—	—	—
AC 16543	Black Diamond Cartridge—90	—	—	—	—	—	—	—	—	1	—	—	—
AC 16888	Black Diamond Cartridge—120	—	—	—	—	—	—	—	—	—	1	—	—
AC 16985	Black Diamond Cartridge—150	—	—	—	—	—	—	—	—	—	—	1	—
AC 17108	Black Diamond Cartridge—180	—	—	—	—	—	—	—	—	—	—	—	1