

# PENTAIR RAINBOW™ CHLORINE/BROMINE\* FEEDER MODEL #320 - (\* Using Bromine tablets with this device is not NSF certified)

## Features:

- No special venting required.
- Completely enclosed-no escaping gases.
- Positive external no-clog control valve.
- When used with timer, feeder is designed to automatically lower the water level so tablets are not soaking during off period of pump. This allows more efficient use of tablets.
- No equipment damage.
- Feeds sanitizer directly to pool or spa.
- All parts replaceable.
- To prevent over chlorination during use, completely close the control valve and the built in check valve will prevent chemical from being fed into pool or spa.

**YOUR LIFEGARD® FEEDER IS THE MOST EFFICIENT AND TROUBLE-FREE AUTOMATIC FEEDER YOU CAN BUY, BUT IT CAN ALSO BE DANGEROUS TO YOU AND YOUR EQUIPMENT. PLEASE FOLLOW INSTRUCTIONS EXACTLY AND HEED ALL CAUTIONS. YOUR SAFETY AND THE PROTECTION OF YOUR EQUIPMENT IS OUR FIRST CONCERN.**

It is important to read all information **BEFORE** proceeding with the installation. The information will guide you in installing your feeder properly and to avoid problems due to improper installation.

## IF YOUR POOL OR SPA HAS COPPER PLUMBING . . . STOP!!

Never install the feeder into copper plumbing as pipe damage will occur. (See Equipment Safety CAUTION sheet enclosed). **NOTE:** If heaters are used, a Fireman's Switch or equivalent must be installed to prevent possible damage and improper operation of Check Valve and other equipment subject to heat damage.

## INSTALLATION INSTRUCTIONS MODEL #320

Note: Make sure all pumps and timer switches are in the OFF position.

## WHERE TO INSTALL YOUR FEEDER

The #320 feeder is designed for permanent installation in the return line of your new pool or spa and must always be installed after the heater, pool cleaner, valves, etc. If your pool does not have a heater, then it must be installed after the filter or any other piece of equipment.

## DAMAGE TO THE HEATER AND OTHER EQUIPMENT COULD RESULT IF HIGHLY CHLORINATED WATER FLOWS THROUGH IT.

If your pool is equipped with a solar system it may be necessary to install a **HI FLOW KIT**. This kit can be installed if your feeder is not getting adequate flow and/or pressure through the system. Refer to information on sheet enclosed. Your feeder may be installed in existing PVC plumbing but will require a union and/or other fittings. The feeder comes complete for installation with 2" or 1½" PVC plumbing. Choose a site in the return line where feeder can be installed in a vertical position. Always install as far from any metal equipment as practical since fumes, etc. can corrode them. If optional corrosion resistant check valve is required refer to installation instructions before next step.

## BASIC PLUMBING INSTALLATION INSTRUCTIONS

**2" OR 1½" PVC PIPE:** If feeder is being installed on a pool, spa or pool/spa combination, correct plumbing procedures must be followed to insure proper flow through feeder. If pool or spa is plumbed with 2" PVC pipe, be certain the pump, filter and heater all have 2" inlet and outlet fittings. If any part of the equipment has less than 2" fittings or pipe, then a minimum of 6" x 1½" reducer bushings must be installed directly into the inlet side of the feeder using the 2" x 1½" reducer bushings supplied. This will build pressure directly into the feeder insuring proper operation. Continue with 2" PVC pipe on the outlet side of the feeder.

**POOL/SPA COMBINATION:** If plumbing and equipment is a full 2" and the feeder is being installed on the pool return line after the diverter valve, with a portion of the water diverted to the spa, install a minimum section of 6" x 1½" PVC pipe directly into the inlet side of the feeder using the 2" x 1½" reducer bushing supplied. Continue with 2" PVC pipe on the outlet side of the feeder. This will compensate for that portion of water being diverted to the spa.

**90° ELBOWS:** Plumbing a 90° elbow directly into the inlet side of the feeder may cause turbulence inside the elbow. This will prevent water from being scooped into the feeder. A minimum of a 6" length of PVC pipe should be installed between the 90° elbow and the inlet side of the feeder.

**2" PVC:** Simply glue feeder to the return line using **PVC SOLVENT CEMENT**. Be sure arrows on feeder point in the direction of water flow returning to the pool or spa.

**1½" PVC:** Remove (2) 2" x 1½" slip reducer bushings packed inside the feeder and glue into 2" slip tee on bottom of feeder. Complete installation by gluing into 1½" return line making sure the arrows on feeder point in the direction of water flow returning to the pool or spa. Use only **PVC SOLVENT CEMENT**. Follow directions on solvent cement label. Allow to dry. Installation is now complete.

## OPERATING INSTRUCTIONS

Before start up of feeder, your pool should be properly conditioned and the residual should be 1.0 to 1.5 ppm. The water in a newly-filled pool should be properly conditioned to insure maximum effectiveness of the feeder. Consult your local dealer for water conditioning information for your area.

1. Remove cap of feeder and fill with proper size tablets.
- For Pools: 1" or 3" dia. tablets For Spas: 1" dia. tablets in optional Spa Chamber.
2. Making sure O-ring is clean, lubricated with Lifeguard Silicone and is in place, replace cap. Hand tighten only.
3. Turn on pump and timer switches for a minimum of 6 to 8 hours.
4. Adjust control valve according to your pool/spa size. Use a test kit to determine the

chemical residual. It is recommended that the chemical residual be checked daily for the first 5 days. Remember . . . hot days, higher water temperature or increased pool/spa activity will cause your pool/spa to use more sanitizer. When possible, increase the feed rate a day or two in advance. Because the chlorine demand in your pool/spa varies and is dependent on many factors (sunlight, bather load, water temperature, etc) your valve setting may have to be changed from time to time to adjust to these conditions. For example, the winter setting may be #2 while the summer setting is #3. Check the chlorine residual daily to find the ideal setting. Note: Higher numbers dispense more chemical. Small gradual changes are imperative for control.

## HOW TO RECHARGE FEEDER

1. Turn control valve to the closed position. **SHUT OFF PUMP.**
2. Wait one minute. This will allow water and fumes to drain from feeder.
3. Leave control valve closed and turn on pump. The check valve will prevent water from entering the feeder.
4. Remove cap and fill with proper size tablets or sticks. (See Operating Instructions #1)
5. Making sure O-ring is clean, lubricated with Lifeguard silicone and is in place, replace cap. Hand tighten only.
6. Open control valve to original setting. Inspect inlet line below control valve each time feeder is recharged. Replace lines yearly if necessary.

## SPECIAL FEATURES AND INSTRUCTIONS

If while using 3" diameter tablets the #320 feeder does not provide enough chlorine residual, switch to 1" tablets. The smaller tablet will erode faster producing more chlorine residual. If this does not correct the situation, the #320 has been fitted with an optional opening at the top of the feeder (which is plugged). To accommodate attachment of the valve and tubing assembly for top entry of water into the feeder, an additional length of tubing has been included. The following procedure should only be used if the suggested change has not solved the situation. Top entry in normal situations can cause over chlorination.

1. Turn off pump and timer switches.
2. Remove tubing by unscrewing compression nut at each end of tubing.
3. Remove plug at top of feeder directly above control valve.
4. Remove control valve. If nipple stays in valve, carefully remove by using pliers at the center of nipple. There is no need to remove the 90° tube fittings.
5. Wrap plug with 2 or 3 wraps of threaded tape in opposite direction of tightening. Screw into opening where control valve was attached. Hand tighten plus 2 or 3 turns. Do not overtighten.
6. Wrap threads of nipple with threaded tape. Thread nipple into top opening. Finger tighten only. Thread valve onto nipple. After nipple starts to turn from tightening valve, 2 to 3 more turns is enough. The nipple or valve can be broken by overtightening.
7. Slide compression nut over long section of tube. Slide tube over tapered part of 90° tube fitting and tighten. Hand tighten only. Repeat for other end of tubing.
8. Set control valve to #1. Turn on pump and timers. Check residual daily to determine proper setting. Small gradual changes are imperative for control.

## BELOW WATER LEVEL INSTALLATION

Feeder should be installed above water level whenever practical. If installed below water level, a drain valve must be installed to prevent spillage and dangerous splash back of high chlorinated water during recharging. Drill and tap a ¼" MPT hole at the same level the control valve is located. Make sure there is no water or tablets inside the feeder before drilling. Install optional drain valve, Part R172060, or suitable chemical resistant drain valve.

## BELOW WATER LEVEL RECHARGING INSTRUCTIONS

1. Shut off pump and timer switches.
2. Shut off control valve.
3. Place a clean container under drain and open drain valve.
4. Exercise extreme caution when opening or servicing feeder. Do not inhale fumes. Wear protective gear. Remove cap. Water will now drain from feeder. Empty container back into pool or spa.
5. Close drain valve. fill with proper size tablets or sticks.
6. Making sure O-ring is clean, lubricated with Lifeguard Silicone and is in place, replace cap.
7. Turn on pump and timer switches.
8. Reset control valve to original setting. Inspect inlet and outlet line each time feeder is recharged. Replace lines yearly if necessary.



# DANGER

## READ CAREFULLY

This feeder is designed to use only CLEAN Trichlor-s-trizinetriene OR CLEAN Bromine tablets - slow dissolving type. Never use dirty tablets. **UNDER NO CIRCUMSTANCES MIX Trichlor or Bromine with Calcium Hypochlorite, with other forms of concentrated chlorine or with other chemicals. Keep inside of feeder clean of dirt and debris at all times. FIRE AND/OR EXPLOSION MAY RESULT.**

**NEVER** use oils or grease to lubricate o-ring. Oil in contact with Trichlor OR Bromine may result in **FIRE**. Lubricate o-ring with Lifeguard Silicone o-ring Lubricant ONLY, available at your dealers. If shock treatments or Algaecides containing chemicals other than sanitizers tablets in feeder must be used, turn off Feeder OR remove tablets until the shock or Algae treatment is complete and all granules have dissolved. Failure to do so may result in granules mixing in feeder causing **FIRE AND/OR EXPLOSION**. The shock or algae treatment dissolved in water is safe with tablets. If you are not the original owner of this feeder, not sure which chemicals was used, or if dirt and/or debris inside feeder, be **SAFE** and flush thoroughly with fresh water. **CAUTION SHOULD BE USED WHEN REMOVING CAP. DO NOT INHALE FUMES.**

**CALCIUM HYPOCHLORITE IS NOT TO BE USED IN ANY FORM. Use of chemicals other than listed by manufacturer may be hazardous.**

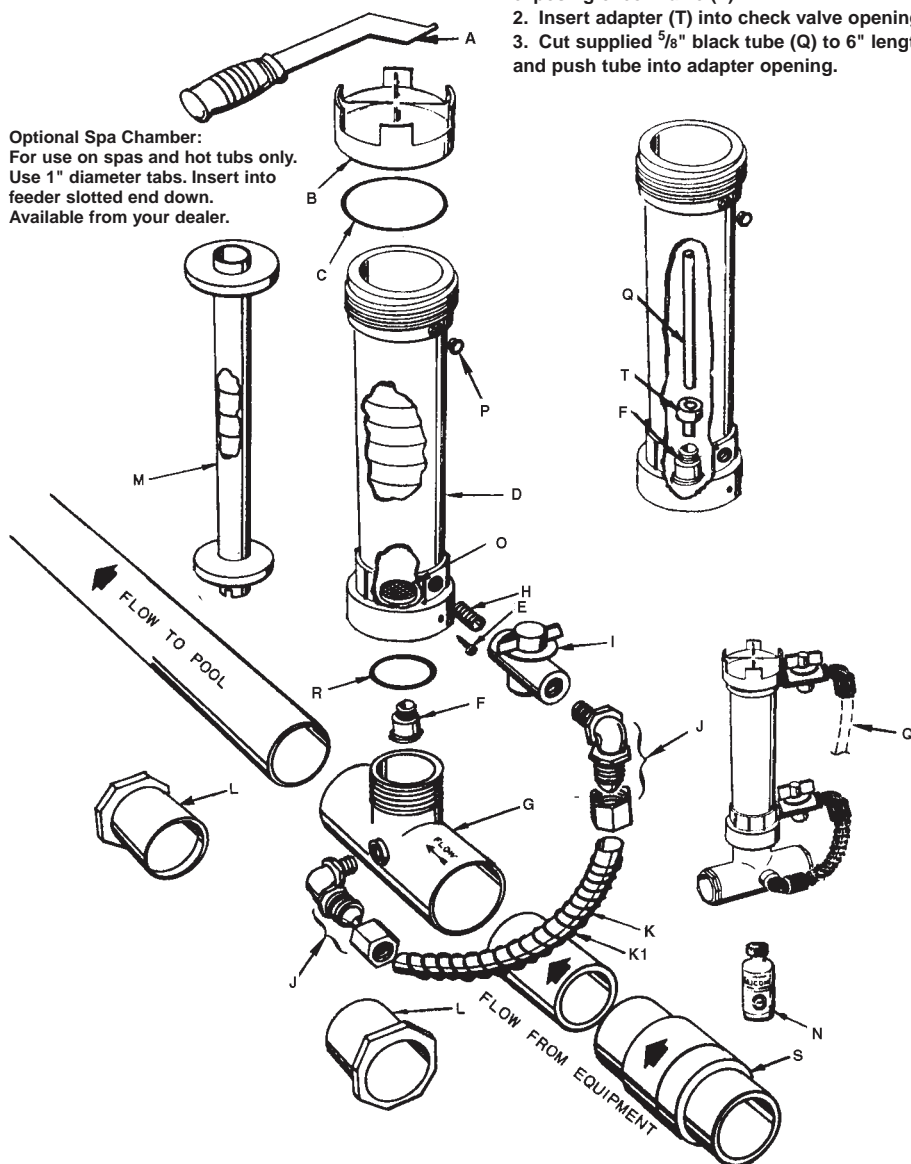


## #320 CHLORINE / BROMINE FEEDER PARTS BREAK DOWN DRAWING

### Bromine Standpipe Installation

To increase erosion of small bromine tablets, install Bromine Standpipe as follows:

1. Remove screen from bottom of chamber exposing check valve (F)
2. Insert adapter (T) into check valve opening.
3. Cut supplied  $\frac{5}{8}$ " black tube (Q) to 6" length and push tube into adapter opening.



YOU MAY SUBSTITUTE BROMINE TABLETS OR STICKS FOR TRICHLOR IN THIS FEEDER. DO NOT MIX.

**CALCIUM HYPOCHLORITE IS NOT TO BE USED IN ANY FORM.**

**IMPORTANT OPTION.**  
SEE CORROSION CAUTION SHEET.

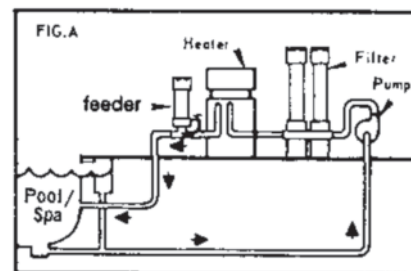
**CAUTION**  
Do not install feeder into copper plumbing. Pipe damage could occur. Never install feeder before heater. Heater damage could occur.

Item	Qty.	Part No.	Description
A	Optional	R172052	Cap wrench
B	1	R172008W	3" Threaded cap
C	1	R172009	3" O-Ring
D	1	R172331	#320 Body only (new)
E	1	R01052	Lock screw
F	1	R172248	Check valve
G	1	R172317	Diverter tee
H	1	R172256	$\frac{1}{2}$ " x Short MPT nipple
I	1	R172086	$\frac{1}{2}$ " Chlorine control valve
J	2	R172272	$\frac{1}{2}$ " NPT x tube fitting w/nut
K	1	R172091	$\frac{5}{8}$ " OD Chlorinator tube
K1	1	R171097	Tube support spring
*L	2	R172210	2" x $\frac{1}{2}$ " s x s bushing
M	Optional	R172037	Spa chamber
N	1	R172036	Silicone lubricant
**O	1	210396	Screen
P	1	R172134	$\frac{1}{2}$ " MPT PVC plug
Q	1	R172253	$\frac{5}{8}$ " OD 18" tube (optional top feed)
R	1	R172319	Bottom O-ring
S	Optional	R172288	$\frac{1}{2}$ " Corrosion resistant check valve
T	1	R172048B	Standpipe adapter

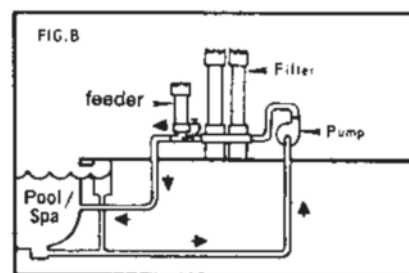
\*Not used with 2" PVC, for  $\frac{1}{2}$ " PVC only.

\*\*Be sure screen has not come loose in shipment—if loose: Simply snap over 4 posts in bottom of chlorinator to replace.

NOTE: To service check valve F, Remove lockscrew E, and unscrew (counter-clockwise) D chlorinator body from G diverter tee.



Typical Installation #320 with heater.



Typical Installation #320 without heater



NSF listed for public or residential use in Swimming Pools, Spas or HotTubs using 1" Trichlor tablets and when used with a flow indicating device such as Rainbow Model #R172276". Output rating for Bromine is not NSF certified.

[\*] Using Bromine tablets with this device is not NSF certified

Technical Support: (800) 831-7133



# HI FLO FEEDER KIT #R171099

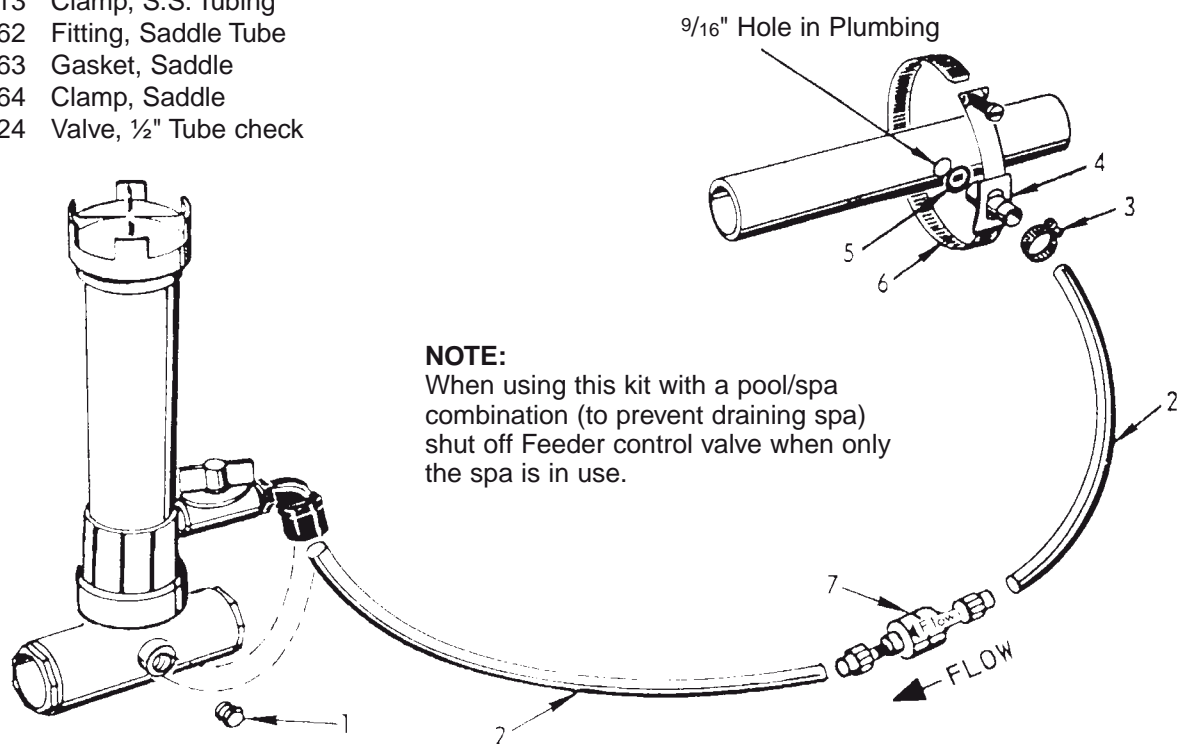
## FOR MODELS #320 & #322

### DIRECTIONS

1. Turn off pump and timer switches.
2. Loosen compression nut and remove Feeder tube and 90° elbow from the diverter tee at base of Feeder.
3. Using thread seal tape as thread sealant, wrap  $\frac{1}{2}$ " MPT plug threads (1) with several turns of the tape only. Install in place of 90° elbow on diverter tee.
4. Disconnect other end of Feeder tube from control valve 90° elbow, by loosening compression nut. Use the compression nuts from old tube to attach new 6' section (2).
5. Push compression nut over tubing end, then push tubing onto tapered end of elbow. Tighten nut firmly by hand.
6. Connect other end of plumbing. **IF POOL/SPA HAS A HEATER, INSTALL BETWEEN FILTER AND HEATER. IF YOUR POOL/SPA HAS A SOLAR SYSTEM, INSTALL BEFORE SOLAR SYSTEM INLET LINE. IF NO HEATER, INSTALL BETWEEN PUMP AND FILTER.** Drill  $\frac{9}{16}$ " hole in plumbing, remove burrs, and install saddle clamp assembly. (See illustration) Tighten clamp with screwdriver. Slide small stainless steel clamp #3 over tubing #2 and slide tubing over saddle tube fitting #4. Secure tubing to fitting by tightening camp with screwdriver. Make sure clamp is below rib at end of saddle tube fitting.
7. To install  $\frac{1}{2}$ " **CHECK VALVE**, cut tube approximately 6" away from plumbing connection. Remove compression nuts from check valve. Slide nuts over both ends of tube. Insert check valve ends into both pieces of tubing and tighten compression nuts firmly by hand. Be sure arrow "**FLOW**" is pointing toward the Feeder.

### HI FLO FEEDER KIT #R171099 PARTS BREAKDOWN DRAWING

Item	Quantity	Part No.	Description
1	1	R172134	Plug, $\frac{1}{2}$ " MPT
2	6' <sup>ft</sup>	R172093	Tube, $\frac{1}{2}$ " ID Chlorinator
3	1	R175013	Clamp, S.S. Tubing
4	1	R171162	Fitting, Saddle Tube
5	1	R172263	Gasket, Saddle
6	1	R172264	Clamp, Saddle
7	1	R172324	Valve, $\frac{1}{2}$ " Tube check



Technical Support: (800) 831-7133

# EXTENSIONS

- Going on vacation?
- Need more chlorine?
- Filling Chlorinator/Brominator too frequently?

## LIFEGARD CHLORINATOR EXTENSIONS SOLVE THE ABOVE PROBLEMS BY:

1. Increasing tablet capacity.
2. Larger chamber size allows more erosion of tablets. (See special instructions below)

The 10" extension doubles and the 20" extension triples (approximately) the capacity and time between refills. **\*AVAILABLE THROUGH LIFEGARD DEALERS ONLY.**

**NOTE:** On free standing #300 series chlorinators, the base of the chlorinator should be secured to prevent the possibility of the chlorinator tipping over due to increased height.

## INSTALLATION INSTRUCTIONS

1. Follow recharging instructions to the point of filling with tablets
2. Making sure O-Ring is clean, lubricated with Lifeguard Silicone and in place, screw on extension tightly and secure with lock screw. (You may wish to wait until back in operation before tightening screw to insure against leaks).
3. Fill with tablets and continue with normal recharging procedure.

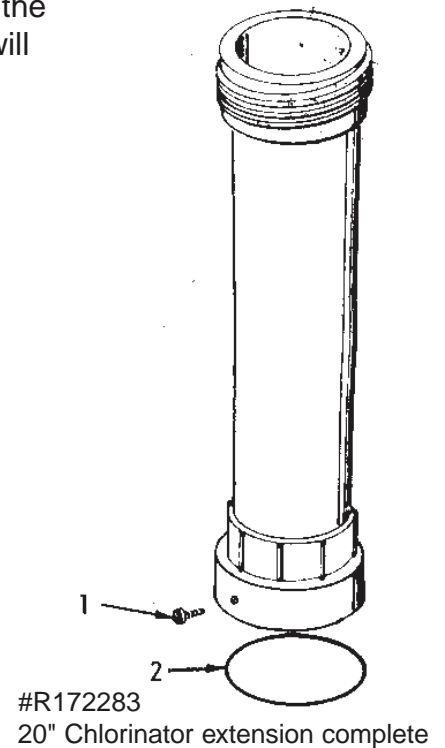
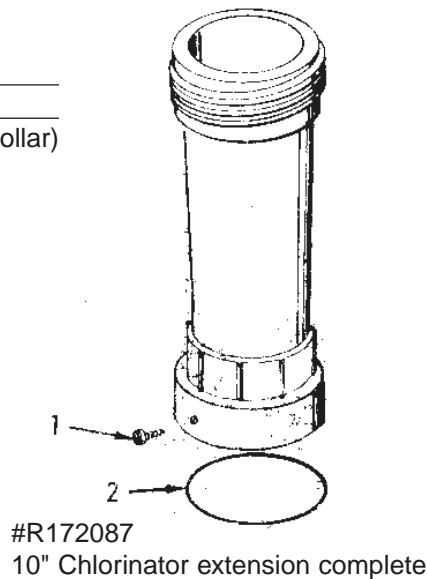
## SPECIAL INSTRUCTIONS:

The large chamber size will result in more chlorine being dispensed at the same valve setting, therefore, once installed, several days monitoring will be necessary to readjust chlorinator output.

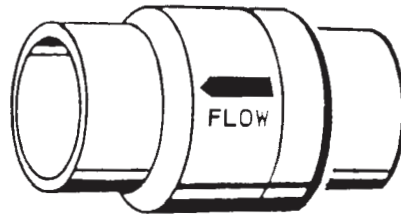
\*Does not apply to large capacity #300-19 or #300-29.

## Parts Breakdown Drawing

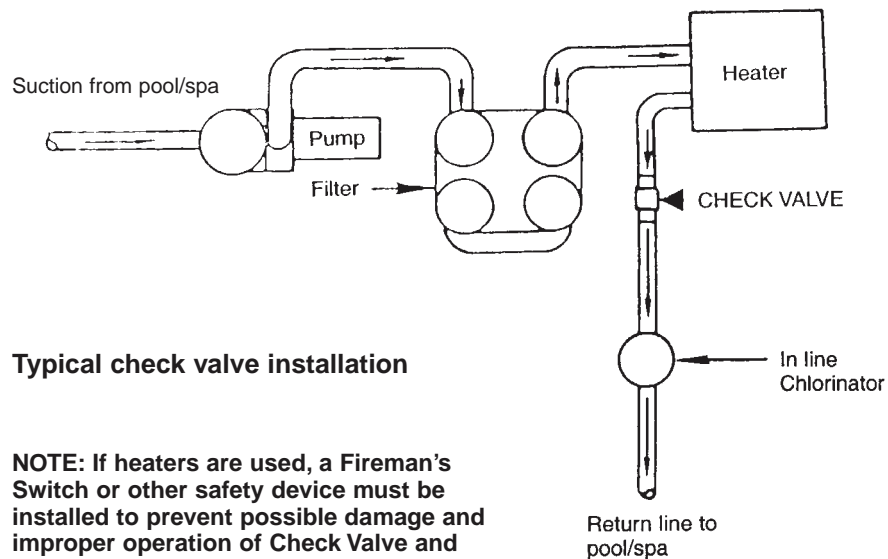
Item	Quantity	Part No.	Description
1	1	R172078	Lockscrew (bottom collar)
2	1	R172009	O-Ring



# #R172288 1½" & 2" SLIP SPRING CHECK VALVE



- Special corrosion resistant 1½" & 2" slip spring check valve can be used to check back flow of fluids, air, etc.
- Full free flow design
- Special Spring and Seal for corrosive applications.
- Enclosed spring insuring free operation.
- Very effective when used in conjunction with chlorinator to check back flow of chemicals to pool/spa equipment, preventing corrosion problems and damage.
- Can be mounted in any position.



**Typical check valve installation**

**NOTE: If heaters are used, a Fireman's Switch or other safety device must be installed to prevent possible damage and improper operation of Check Valve and other equipment subject to heat damage.**

Technical Support: (800) 831-7133

# EQUIPMENT SAFETY

## CAUTION!

### PLEASE READ CAREFULLY

Since most pool's plumbing is not airtight, and a mixture of air and chlorine is highly corrosive to metals, it is important to protect these items from corrosion in the OFF period when no circulation is taking place. (There is no chance for chlorine corrosion when the circulating system is in operation.)

Of course, corrosion or erosion of metal components can still occur independently of any chlorinator installation for the following reasons:

1. Water velocity too high.
2. Water pH less than 7.2.
3. Total alkalinity less than 100 PPM.

If your pool or spa has any of the following equipment, special plumbing procedures must be followed for safe operation:

1. Brass or bronze gate, rotary or backwash valves.
2. The preceding valves constructed of PVC or other plastic material with metallic shafts.
3. Filters, heaters, heat exchanges or other items with metallic tanks, shafts, coils or tubes.
4. **NOT FOR USE IN COPPER PLUMBING.**

Installation of the **OPTIONAL** Rainbow #R172288 positive seal, corrosion resistant check valve **SHOWN ON REVERSE SIDE** will prevent the backflow of corrosive liquids and gases that can damage equipment containing metallic components. Examples listed above.

**WARNING: If your pool is equipped with a permanent built in pool-cleaning system, damage could occur to that system if materials are not compatible with low pH Tri-Chloro feeders. Check with manufacturer for compatibility.**



TECHNICAL SUPPORT (800) 831.7133

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P/N R24290 REV E 3/15



# Clean & Clear® Cartridge Filter Owners Manual

## IMPORTANT SAFETY INSTRUCTIONS *READ AND FOLLOW ALL INSTRUCTIONS* SAVE THESE INSTRUCTIONS

### Table of Contents

SECTION I.	FILTER INSTALLATION .....	1
SECTION II.	FILTER OPERATION .....	2
SECTION III.	TROUBLESHOOTING .....	6
SECTION IV.	TECHNICAL DATA .....	7
	A. Filter Pressure Loss Chart .....	7
	C. Replacement Parts .....	7
	B. Flow Rate Table .....	7

### **⚠ WARNING**

Before installing this product, read and follow all warning notices and instructions accompanying this filter. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions.

### Important Notice



Attention Installer.

This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

## SECTION I. FILTER INSTALLATION

### A. GENERAL INFORMATION

1. The filter should be mounted on a level concrete slab. Position the filter so that the instructions, warnings and pressure gauge are visible to the operator. Also, position the filter so that the piping connections, control valve and drain port are convenient and accessible for servicing and winterizing.
2. Install electrical controls (e.g., on/off switches, timers control systems, etc.) at least five (5) feet from the filter. This will allow you enough room to stand clear of the filter during system start up.
3. Provide sufficient clearance around the filter to permit visual verification that the clamp is properly installed, see Figure 1.
4. Provide sufficient space above the filter to remove the filter lid for cleaning and servicing. This distance will vary with the model of filter you are using. See Table 1, for the required vertical clearance.

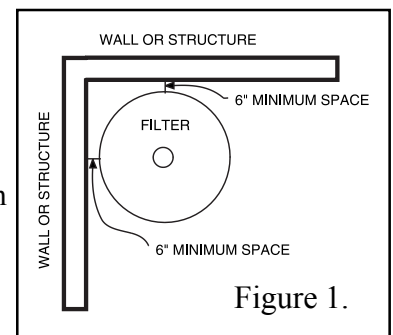


Figure 1.

**Pentair Water Pool and Spa, Inc.**

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 **Pentair** *Pool Products®*  
Because *reliability* matters most®

## ⚠ WARNING



Risk of electrical shock or electrocution. Position the filter and High Flow™ manual air relief valve to safely direct water drainage and purged air or water. Water discharged from an improperly positioned filter or valve can create an electrical hazard that can cause severe personal injury as well as damage property.

5. When installing the High Flow™ manual air relief valve use the O-ring only, there is no need for thread sealing compounds. Position the filter to safely direct water drainage. Rotate the valve to safely direct purged air or water. Water discharged from an improperly positioned filter or valve can create an electrical hazard as well as damage property.
6. Make all plumbing connections in accordance with local plumbing and building codes. Filter plumbing connections are provided with an O-ring seal. Use only a silicone base lubricant on the O-rings. Do not use pipe joint compound, glue or solvent on the bulkhead connections.
7. The base of this filter is provided with two (2) mounting bosses for the purpose of anchoring the filter to the concrete.
8. The maximum working pressure of this filter is 50 psi. Never subject this filter to pressure in excess of this amount, even when conducting hydrostatic pressure tests. Pressures above 50 psi can cause the lid to be blown off, which can result in severe injury, death or property damage.

TABLE 1.

Model	P/N	Size	Vertical Clearance Req.
CC50	160314	50 sq. ft.	30 in.
CC75	160315	75 sq. ft.	39 in.
CC100	160316	100 sq. ft.	61 in.
CC150	160317	150 sq. ft.	76 in.
CC200	160318	200 sq. ft.	76 in.

When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, ensure that the Maximum Pressure that the filtration system will be subjected to DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE OF ANY OF THE COMPONENTS CONTAINED WITHIN THE SYSTEM. In most cases, the maximum pressure will be stated on each component of the system.

If doubt exists as to the pressure to which the system will be subjected, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system for the lowest working pressure of any of the components in the system.

## SECTION II. FILTER OPERATION

## ⚠ WARNING



THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BLOW OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. BEFORE REPOSITIONING VALVES AND BEFORE BEGINNING THE ASSEMBLY, DISASSEMBLY, OR ADJUSTMENT OF THE LOCK RING OR ANY OTHER SERVICE OF THE CIRCULATING SYSTEM: (A) TURN THE PUMP OFF AND SHUT OFF ANY AUTOMATIC CONTROLS TO ASSURE THE SYSTEM IS NOT INADVERTENTLY STARTED DURING THE SERVICING; (B) OPEN AIR RELIEF VALVE; AND (C) WAIT UNTIL ALL PRESSURE IS RELIEVED -PRESSURE GAUGE MUST READ ZERO (0).
2. WHENEVER INSTALLING THE FILTER LOCK RING, FOLLOW THE **FILTER LOCK RING INSTALLATION INSTRUCTIONS EXACTLY.**
3. ONCE SERVICE ON THE CIRCULATING SYSTEM IS COMPLETE, FOLLOW **SYSTEM RESTART INSTRUCTIONS EXACTLY.**
4. MAINTAIN CIRCULATION SYSTEM PROPERLY. REPLACE WORN OR DAMAGED PARTS IMMEDIATELY (e.g., lock ring, pressure gauge, relief valve, O-rings, etc.)
5. BE SURE THAT THE FILTER IS PROPERLY MOUNTED AND POSITIONED ACCORDING TO THE INSTRUCTIONS PROVIDED.



## A. GENERAL INFORMATION

1. This filter operates under pressure. When the lock ring is installed properly and operated without air in the water system, this filter will operate in a safe manner.
2. The maximum working pressure of this filter is 50 psi. Never subject this filter to pressure in excess of this amount - even when conducting hydrostatic pressure tests. Pressures above 50 psi can cause the lid to be blown off, which can result in severe injury, death or property damage.

When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, ensure that the Maximum Pressure that the filtration system will be subjected to DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE OF ANY OF THE COMPONENTS CONTAINED WITHIN THE SYSTEM. In most cases, the maximum pressure will be stated on each component of the system.

If doubt exists as to the pressure to which the system will be subjected, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system for the lowest working pressure of any of the components in the system.

3. The pressure gauge is the primary indicator of how the filter is operating. Maintain your pressure gauge in good working order.

### WARNING



Your filter is a piece of machinery, do not tamper with it, attempt to disassemble it or otherwise adjust it unless you fully understand it's operation. Serious injury or death can occur if the equipment is improperly handled. Consult a pool service professional for maintenance and service assistance.

4. Clean your filter when pressure reads between 8-10 psi higher than the original starting pressure. Your filter pressure reading will increase as it removes dirt from your pool. However, this buildup of pressure will vary due to different bathing loads, temperature, weather conditions, etc.
  - a. MY ORIGINAL STARTING PRESSURE IS \_\_\_\_\_ psi (pounds per square inch).  
I SHOULD CLEAN THE FILTER CARTRIDGES AT \_\_\_\_\_ psi.

### NOTE

When the cartridge element filter is used on new pools and after cleaning the elements, introduce into the system .5 pounds of diatomaceous earth per every 100 square feet of filter area, (a one-pound coffee can equals .5 pounds of diatomaceous earth). Mix the diatomite with water and pour it into the skimmer after the pump is primed and the system is operating. This will enhance the filtration of your water.

## B. LOCK RING INSTALLATION INSTRUCTIONS

These instructions **MUST BE FOLLOWED EXACTLY** to prevent the lid from blowing off during system restart or later operation.

1. Perform the following steps before working on any part of the circulating system (e.g., lock ring, pump, filter, valves, etc.).
  - a. Turn the pump off and shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
  - b. Open the High Flow™ manual air relief valve.
  - c. Wait until all pressure is relieved. **Never attempt to assemble, disassemble or adjust the filter lock ring while there is any pressure in the filter.**

## ⚠ WARNING



THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BE BLOWN OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

2. Be certain the O-ring is in position in the lower tank half. Place the filter lid over the lower tank half, making sure it is fully and firmly seated on the tank half, see Figure 2.
3. Place lock ring over the tank lid, and centering the lock ring on the threads of the tank body. Turn the lock ring clockwise until the safety latches click and the lock ring hits the stops on the body. **DO NOT ATTEMPT TO OVER-TIGHTEN THE LOCK RING AFTER LOCK RING HAS HIT THE STOPS ON THE BODY.**
4. Follow the System Restart Instructions in Section C.

### C. SYSTEM RESTART INSTRUCTIONS

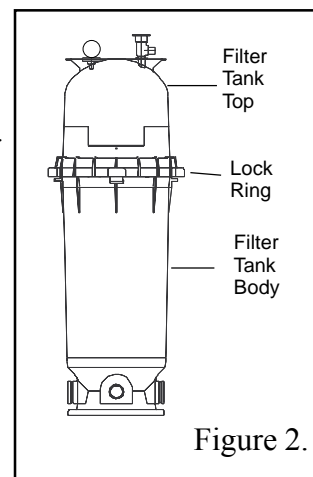
## ⚠ WARNING



THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BE BLOWN OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. **Open the High Flow™ manual air relief valve until it snaps into the full open position (this only requires a quarter turn counterclockwise).** Opening this valve rapidly releases air trapped in the filter.
2. Stand clear of the filter tank, then start the pump.
3. Close the High Flow™ manual air relief valve after a steady stream of water appears.
4. The system is not working properly if either of the following conditions occur.
  - a. A solid stream of water does not appear within 30 seconds, after the pump's inlet basket fills with water.
  - b. The pressure gauge indicates pressure before water outflow appears.

If either condition exists, **shut off the pump immediately**, open valves in the water return line to relieve pressure, and clean the air relief valve, see Section F. Cleaning the High Flow™ manual air relief valve. If the problem persists, call (800) 831-7133 for assistance.



### D. CLEANING THE FILTER

## ⚠ WARNING

The following information should be read carefully since it outlines the proper manner of care and operation for your filter system. As a result of following these instructions and taking the necessary preventative care, you can expect maximum efficiency and life from your filter system.

## ⚠ CAUTION



Please heed all manufacturers' posted instructions, warnings and cautions when using Baquacil® or Baqua® Clean.

1. Turn the pump off, shut off any automatic controls to ensure that the system is not inadvertently started during servicing.

2. Open the filter High Flow™ manual air relief valve, (and the waste drain valve, or cap, if your system has one).

---

#### NOTE

Special care must be taken when cleaning cartridge element used in a swimming pool or spa using Baquacil® as a sanitizer. Because of the way Baquacil® works, the cartridge element must be cleaned more thoroughly and more frequently than in a chlorine system. If extreme care is not taken to completely remove all residue from the cartridge element, a buildup will occur. This buildup will significantly shorten the life of the cartridge element.

Baquacil® is a mild coagulant which combines bacterial cells as well as other small particles contributed by the environment, bathers, etc. into particles large enough to be trapped by the filter. In comparison with all other trapped contaminants in a typical pool or spa the amount of bacterial cells that are deposited on the filter is minimal. The resulting deposit is a gray sticky film which can only be removed with Baqua® Clean. If TSP or any TSP type cleaner is used prior to stripping the film, the cleaner and the gray film will combine to form a gum-like substance. Once this occurs, the substance cannot be removed from the media and the cartridge element must be replaced.

---

3. Remove hair and lint strainer pot lid and clean basket. Replace basket and secure lid.
4. Disconnect air relief drain hose if installed.
5. Remove locking ring by depressing safety latches on both sides of ring and rotate counterclockwise, then remove tank lid.
6. Remove the element assembly by placing hands in lifting handles and pulling straight up on the element assembly.
7. Remove the cartridge element from the center support tube.
8. Using a garden hose with a nozzle, direct water spray at the cartridge element to dislodge and wash away accumulated foreign matter. Water may be sprayed at the outside as well as the inside of the cartridge element for thorough cleaning.
9. Turn the cartridge element over several times during the washing operation to clean the media thoroughly.
10. Clean and remove debris from inside the filter tank and from the O-ring and O-ring groove on the tank body.
11. Replace clean cartridge element on support tube and install assembly into the filter tank body, aligning the arrow on the support tube with the inlet port of the filter, making sure it is fully seated. Make sure the internal air relief screen is attached to the top of the element support tube.
12. Replace the tank lid onto the tank body making sure it is fully and firmly seated on the tank body.
13. Place lock ring over tank lid, and centering the lock ring on the threads of the tank body, turn the lock ring clockwise until the safety latches click and the lock ring hits the stops on the body. **DO NOT ATTEMPT TO OVER-TIGHTEN THE LOCK RING AFTER LOCK RING HAS HIT THE STOPS ON THE BODY.**

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#### NOTE

Any time the filter tank is opened, and/or element assembly is removed, be sure to generously coat the O-ring with silicone lubricant before reassembling the unit. **DO NOT USE PETROLEUM BASED LUBRICANTS BECAUSE THEY HAVE A DETERIORATING EFFECT ON RUBBER.**

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14. Replace drain cap and reinstall High Flow™ manual air relief valve drain hose if used.

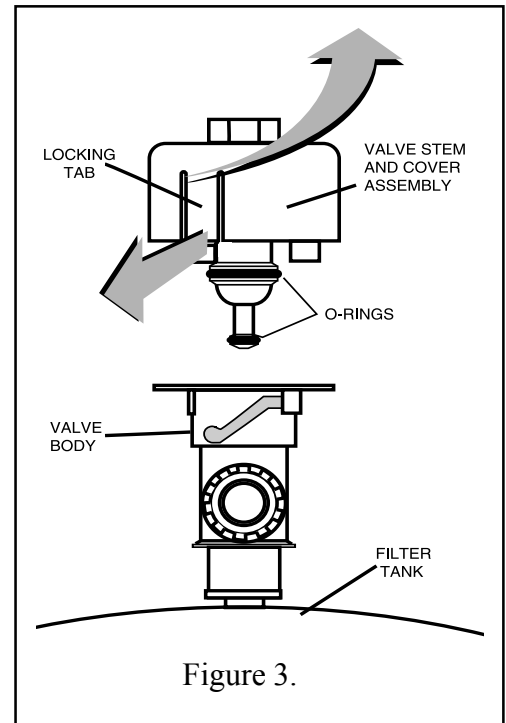
#### E. REPLACING CARTRIDGE ELEMENT

Cartridge element life will vary with pool conditions such as bather load, wind, dust, etc. You can expect an average media life of three (3) years under normal conditions.

1. To replace cartridge element follow steps in section D, Cleaning the Filter.

## F. CLEANING THE HIGH FLOW™ MANUAL AIR RELIEF VALVE

1. Turn the pump off and shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
2. **OPEN THE HIGH FLOW™ MANUAL AIR RELIEF VALVE UNTIL IT SNAPS INTO THE FULL OPEN POSITION, THEN WAIT UNTIL ALL PRESSURE IS RELIEVED.**
3. With the relief valve attached to the filter tank, pull out the locking tabs and remove the valve stem and cover assembly with a counterclockwise and lifting motion, see Figure 3.
4. Clean debris from the valve stem and body. Verify that the filter tank's air passage is open by inserting a 5/16 in. drill bit through the valve body. Verify that the O-ring are in good condition, properly positioned, and lubricated with a silicone base lubricant.
5. Reinstall the valve stem and cover assembly with a downward and clockwise motion until it snaps into position.

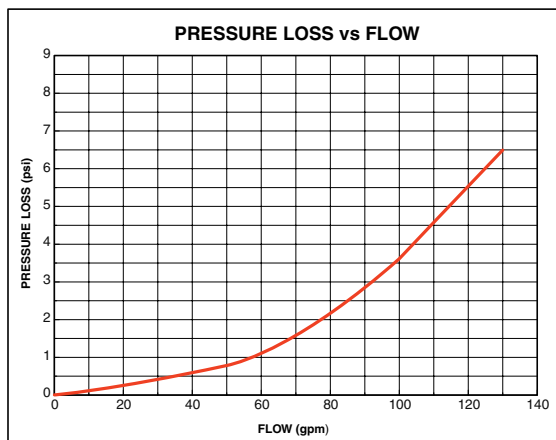


## SECTION III. TROUBLESHOOTING

- A. Air entering your filter is dangerous and can cause the lid to blow off. Correct any conditions in your filtration system that allow air to enter the system.
1. Some common ways to identify air entering the system:
    - a. Low water level in pool or spa - skimmer is starving for water with pump running. Add water to pool or spa.
    - b. Air bubbles or low water level in pump hair and lint pot are caused by; low water level, clogged skimmer basket, split suction cleaner hose, leak in pump hair and lint pot lid, or leak in pump suction line.
    - c. Air bubbles coming out of water return lines into pool or spa with pump running, see items 1.a and 1.b of this section.
    - d. Air is discharged from the air relief valve on top of the filter when the valve is opened with the pump running, see items 1.a and 1.b of this section, above.
- B. Until the water initially put into the pool has been completely filtered, short filter cycles in between cleanings are normal. In most cases pool owners are dismayed by the undesirable color and appearance of water in a newly filled pool. Plaster dust can be responsible for short filter cycles, requiring frequent cleaning.
- C. If pressure drops on gauge, check skimmer basket and pump basket first for debris. If the baskets are clean, shut off power to pump and turn off any automatic controls. Then turn motor shaft with your fingers. If it turns freely then the pump must be disassembled and the impeller checked to see if it is clogged. If it is not frozen or clogged then there is an obstruction in the line between the pool and the pump.
- D. The pressure gauge is an important part of the filter system. It is your primary indicator of how the system is operating. Maintain your pressure gauge in good working order. Check the operation of your pressure gauge in the following manner:
1. The pressure gauge should go to zero (0) when the system is turned off and pressure is relieved.
  2. The pressure gauge should indicate pressure when the system is operating.
  3. The pressure gauge should be readable and not damaged in any way.
  4. Replace the pressure gauge if it is not meeting the requirements of items D.1 through D.2 of this section, above.

## SECTION IV. TECHNICAL DATA

### A. Filter Pressure Loss Chart



### B. Flow Rate Table

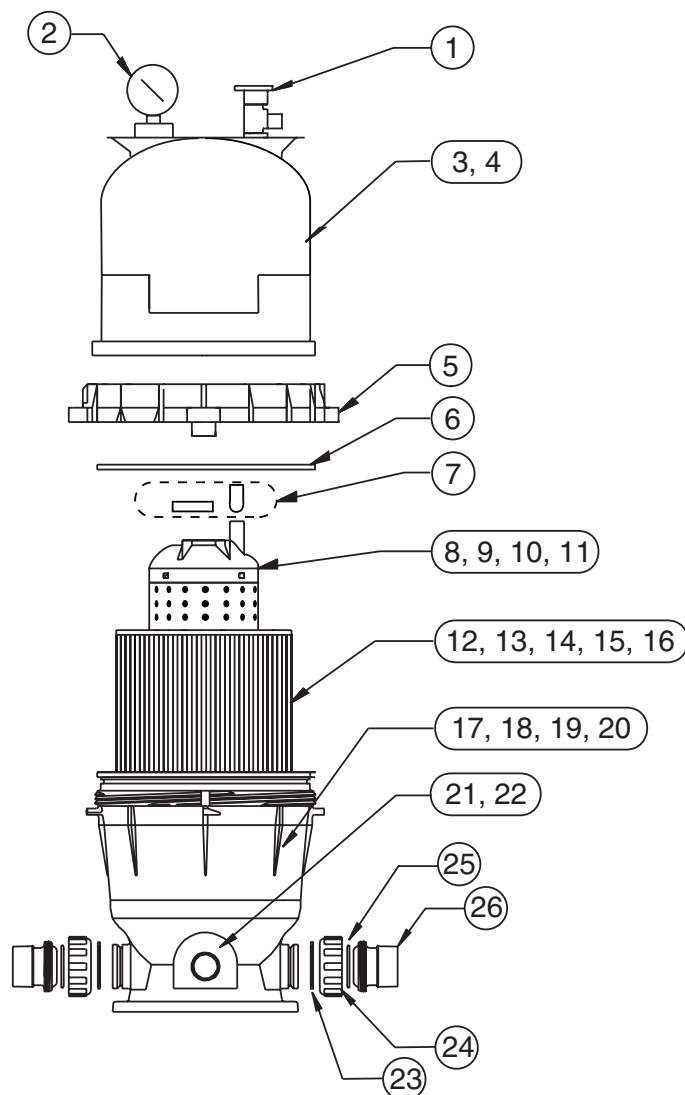
Product #	sq. ft.	Residential Maximum Cartridge Flow Rates				Commercial Maximum Cartridge Flow Rates			
		GPM	GPH	6 hour	8 hour	GPM	GPH	6 hour	8 hour
160314	50	50	3,000	18,000	24,000	19	1,140	6,840	9,120
160315	75	75	4,500	27,000	36,000	28	1,680	10,080	13,440
160316	100	100	6,000	36,000	48,000	38	2,280	13,680	18,240
160317	150	150	9,000	54,000	72,000	56	3,360	20,160	26,880
160318	200	150	9,000	54,000	72,000	75	4,500	27,000	36,000

- (1) One GPM per sq. ft. shown, recommended flow rate for residential is .5 GPM per sq. ft.  
 (2) Commercial flow rate is a maximum of .375 GPM per sq. ft. of filter area.

NOTE: Actual system flow will depend on plumbing size and other system components.

### C. Replacement Parts

Item	Part Number	Description
1	98209800	High Flow™ manual air relief valve
2	190058	Pressure Gauge
3	178553	Lid, 50, 100 sq. ft. filter
4	178561	Lid, 75, 150, 200 sq. ft. filter
5	59052900	Locking Ring assy.
6	87300400	Body O-ring
7	59016200	Air Bleed Sock Kit
8	59053500	Center Core, 50 sq. ft. filter
9	59053600	Center Core, 75 sq. ft. filter
10	59053700	Center Core, 100 sq. ft. filter
11	59053800	Center Core, 150, 200 sq. ft. filter
12	R173213	Cartridge Element, 50 sq. ft. filter
13	R173214	Cartridge Element, 75 sq. ft. filter
14	R173215	Cartridge Element, 100 sq. ft. filter
15	R173216	Cartridge Element, 150 sq. ft. filter
16	R173217	Cartridge Element, 200 sq. ft. filter
17	178562	Bottom, 50 sq. ft. filter
18	178554	Bottom, 75 sq. ft. filter
19	178563	Bottom, 100 sq. ft. filter
20	178560	Bottom, 150, 200 sq. ft. filter
21	86202000	Drain Cap Assy.
22	51005000	Drain Cap Gasket
23	39104500	Union Nut "C" Clip
24	98212200	Union Nut
25	071426	Union O-ring
26	79304600	Body, Swivel



## SAVE THESE INSTRUCTIONS

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# SCREENLOGIC® INTERFACE WIRELESS CONNECTION KIT FOR INTELLITOUCH® AND EASYTOUCH® CONTROL SYSTEMS



## INSTALLATION GUIDE

IMPORTANT SAFETY INSTRUCTIONS  
READ AND FOLLOW ALL INSTRUCTIONS  
SAVE THESE INSTRUCTIONS

# Technical Support

**Sanford, North Carolina** (8 A.M. to 4:30 P.M.)  
Phone: (800) 831-7133  
Fax: (919) 566-8920  
**Moorpark, California** (8 A.M. to 4:30 P.M.)  
Phone: (800) 831-7133 (Ext. 6502)  
Fax: (805) 530-0194  
Web sites: **visit [www.pentairpool.com](http://www.pentairpool.com) and [www.staritepool.com](http://www.staritepool.com)**

Related manual: ScreenLogic® Interface User's Guide (P/N 520493)

## Contents

Overview ..... 1

Summary installation steps ..... 1

In this Installation Guide ..... 1

ScreenLogic Interface Wireless Connection Kit Contents ..... 2

Step 1: Mount the Outdoor Wireless Transceiver and Connect to the IntelliTouch or EasyTouch Load Center ..... 3

Step 2: Connect the Indoor Wireless Transceiver to the ScreenLogic Interface Protocol Adapter ..... 8



**FCC Regulatory Safety Notice** - This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Modifications not expressly approved by the party responsible for FCC compliance could void the user's authority to operate the equipment.

## In this Installation Guide

Use the information in this manual for installing the ScreenLogic® Interface Wireless Connection kit contents.

- For ScreenLogic Interface system operating instructions, refer to the ScreenLogic Interface User's Guide (P/N 520493)

## ScreenLogic® Interface Wireless Connection Kit

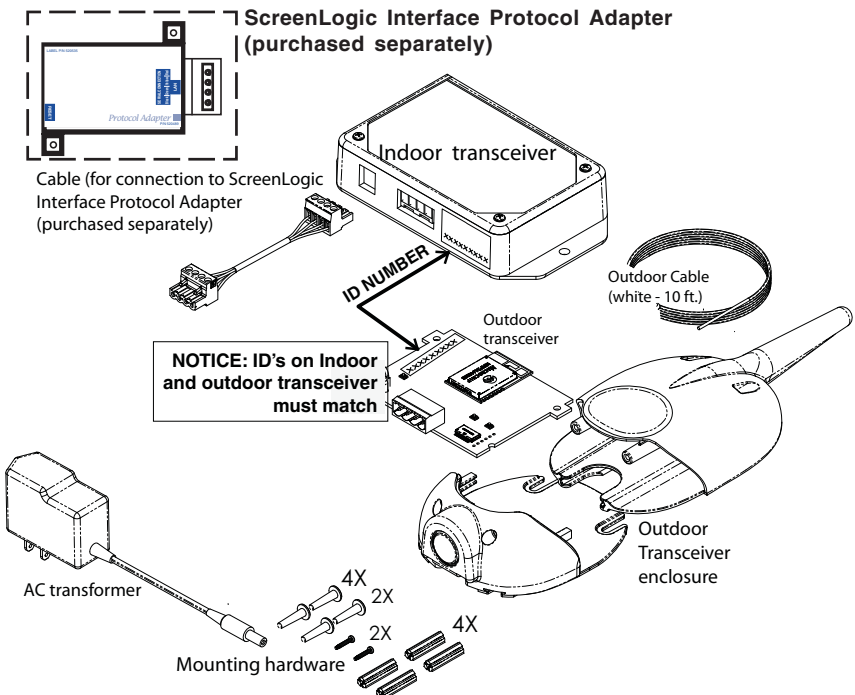
The ScreenLogic® Interface Wireless Connection interface consists of an indoor and outdoor wireless 2.4 GHz transceiver. *Note: The transceivers ship from the factory as a matched pair. The ID numbers on each transceiver must be the same number to function correctly. Transceivers are replaced as a matched pair. For more information, call Customer Support (880) 831.7133.*

The transceivers provides a wireless connection between the ScreenLogic Interface Protocol adapter and the IntelliTouch® or EasyTouch® Control System Load Center located at the equipment pad. This wireless connection eliminates the existing hard wire connection from inside your home to the equipment pad.

### Wireless Connection Kit Contents

The following items are included in the Wireless Connection kit.

- One ScreenLogic Interface indoor wireless transceiver with AC power adapter and one foot connection cable with attached plugs.
- One ScreenLogic Interface outdoor wireless transceiver with 10 ft. cable, provided in kit with enclosure and mounting hardware.
- ScreenLogic Interface Wireless Connection Installation Guide (this manual)

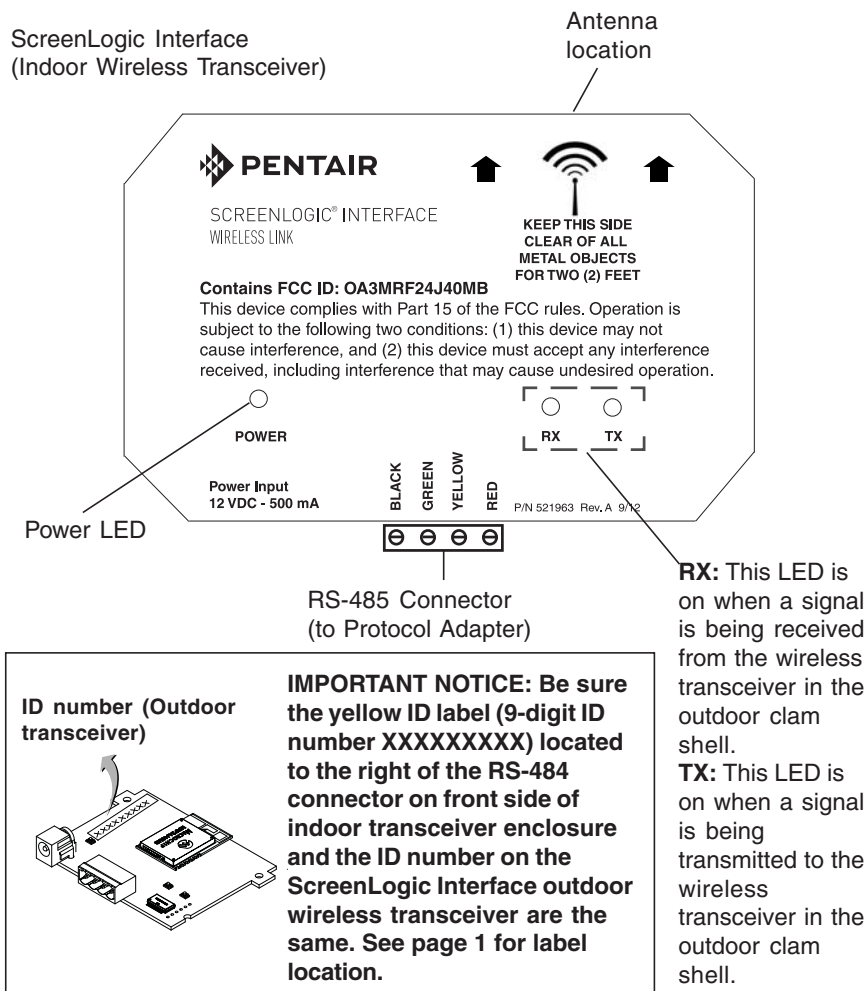


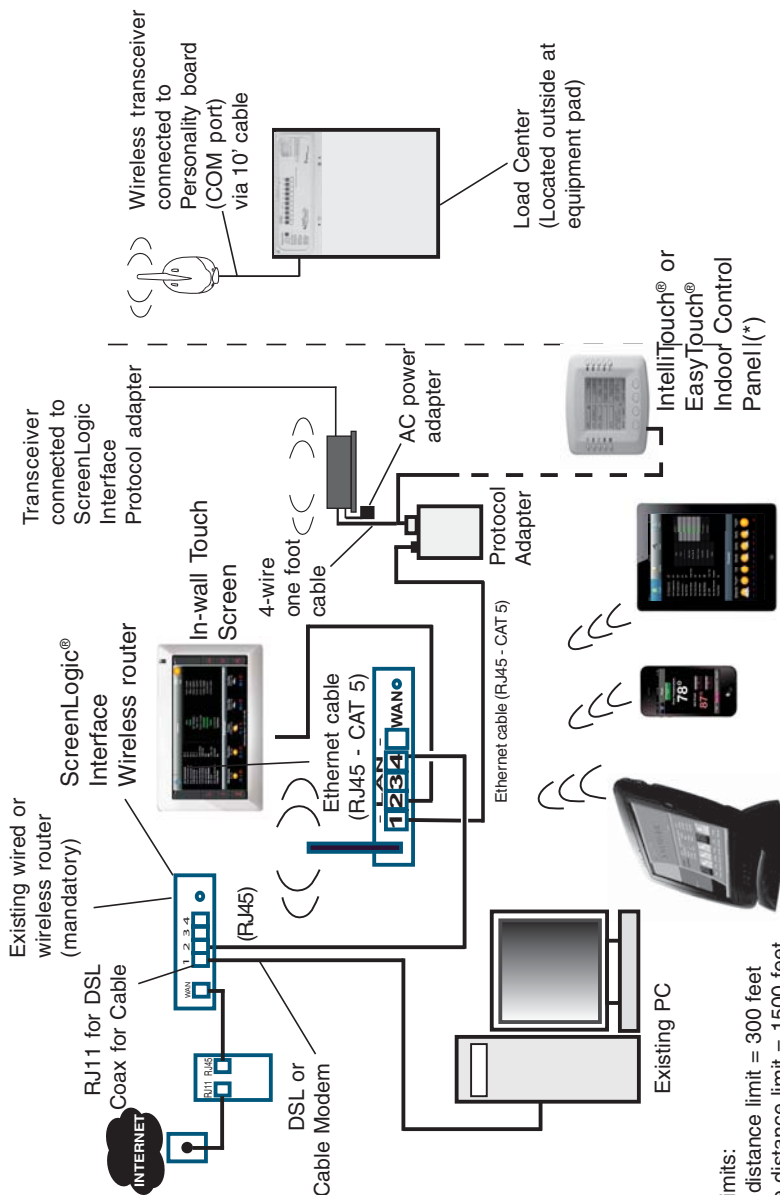
### ScreenLogic Interface Wireless Connection Kit Contents

## Summary installation steps

The ScreenLogic® Interface connection diagram on page 2 shows the transceiver locations and connections. To install the ScreenLogic Interface Wireless Connection kit:

- Mount the outdoor transceiver antenna near the IntelliTouch® or EasyTouch® Control System Load Center and connect the transceiver to the COM port connector located in the IntelliTouch® or EasyTouch® Control System Load Center.
- Use the supplied 12 inch cable to connect the ScreenLogic Interface indoor wireless transceiver to the ScreenLogic Interface Protocol adapter. Plug the transceiver AC power adapter into an AC wall-outlet and into the transceiver unit to power up the unit.





- Cable distance limits:
- Ethernet cable distance limit = 300 feet
  - Four-wire cable distance limit = 1500 feet
- Note: (\*) Optional wiring for existing Indoor Control Panel. Tap into the Indoor Control Panel connector or pig tail off the four-wire cable connected to the Personality board.

ScreenLogic® Interface Connection Diagram

## Step 1:

### Mount the Outdoor Wireless Transceiver and Connect to the IntelliTouch® or EasyTouch® Control System Load Center

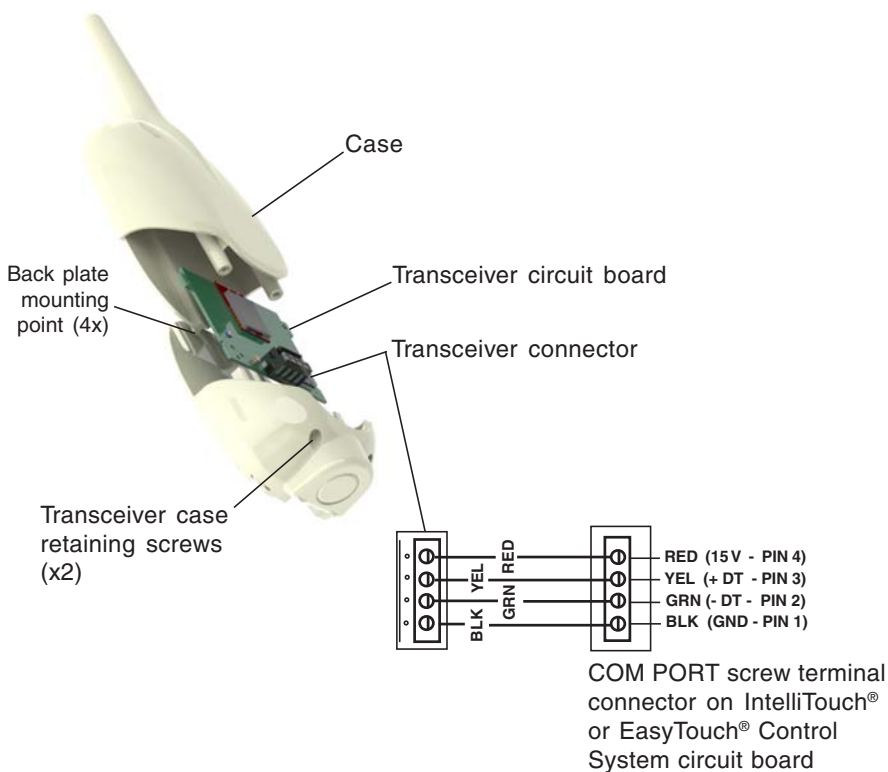
The following describes how to mount the transceiver to the IntelliTouch® or EasyTouch® Control System Load Center and connect the four-wire cable to the COM port connector located in the IntelliTouch or EasyTouch Control System Load Center:

#### Mount the Transceiver Module

The Transceiver is a two-way radio device with an attached antenna that communicates to and from the IntelliTouch or EasyTouch Control System. Mount the transceiver at a convenient location (on a flat vertical surface) near the load center at a minimum of 5 feet above ground level to optimize the transmit and receive operating range.

1. Remove the two retaining screws located on the underside of the transceiver case. Slide the case off the back plate.
2. Position the back plate against the mounting surface so that the transceiver is oriented in an upright position with the antenna pointing upwards. Use a pencil to mark the four mounting points. Drill four 3/16 in. diameter holes into the mounting surface and insert the four plastic anchors provided in the kit.  
***Note: To avoid signal interference, mount the transceiver a minimum of 10 feet away from the load center, any metal surface/structure, or air blower located in the immediate area of the equipment pad.***
3. Position the back plate over the mounting points and secure it with the four mounting screws provided in the kit.
4. Carefully position the transceiver circuit board into the mounted back plate. Route the connection wire down through the lower exit hole (left side) at the bottom of the back plate. Carefully pull the wire out the lower hole and position the circuit board in the back plate.
5. Position the transceiver circuit board to the left side of the back plate, and slide the case over the circuit board and antenna into the back plate. Secure the circuit board in the case using the two retaining screws.
6. Proceed to “**Connect the Transceiver connection cable to the COM Port on Control Systems Circuit Board**” on the next page.



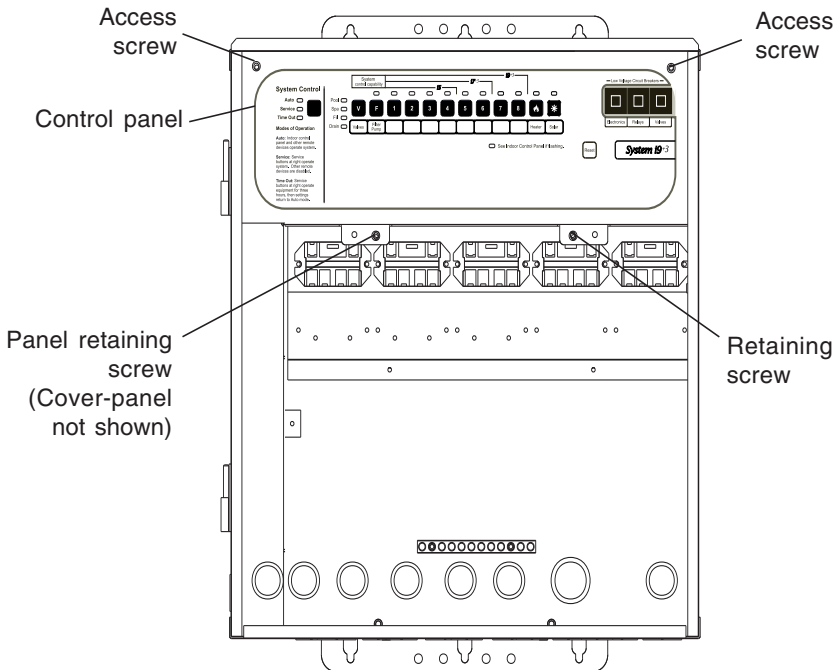


### Transceiver Module Wiring

## Connect the Transceiver connection cable to the COM Port on Control System Circuit Board

**⚠ WARNING** Switch OFF the main system power to the Load Center before making any connections.

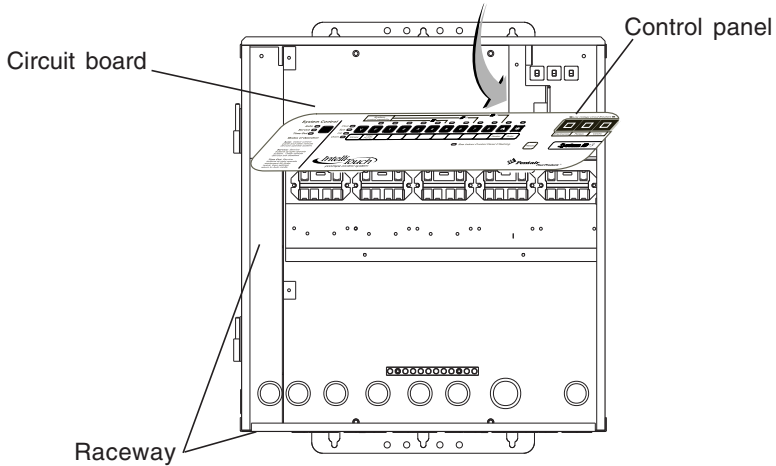
1. Unlatch the enclosure door spring latch(es), and open the door.
2. Remove the two retaining screws securing the high voltage cover-panel, and remove it from the enclosure.
3. Loosen the two access screws securing the control panel.



IntelliTouch® or EasyTouch® Load Center

4. Lower down the hinged control panel to access the circuit board.

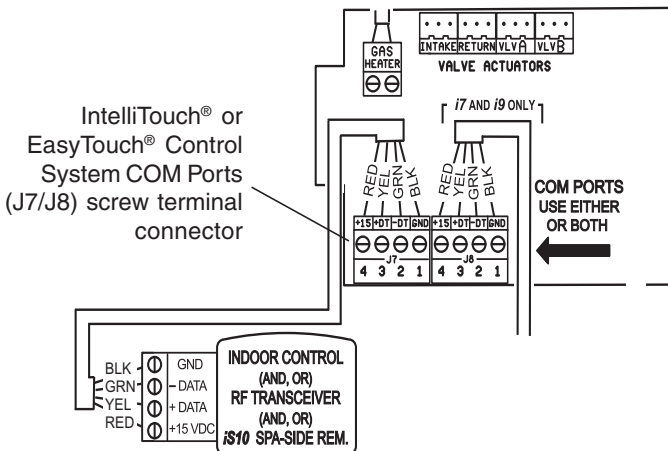
- Route the four conductor transceiver connection cable into the lower plastic grommet, up through the low voltage raceway to the circuit board.



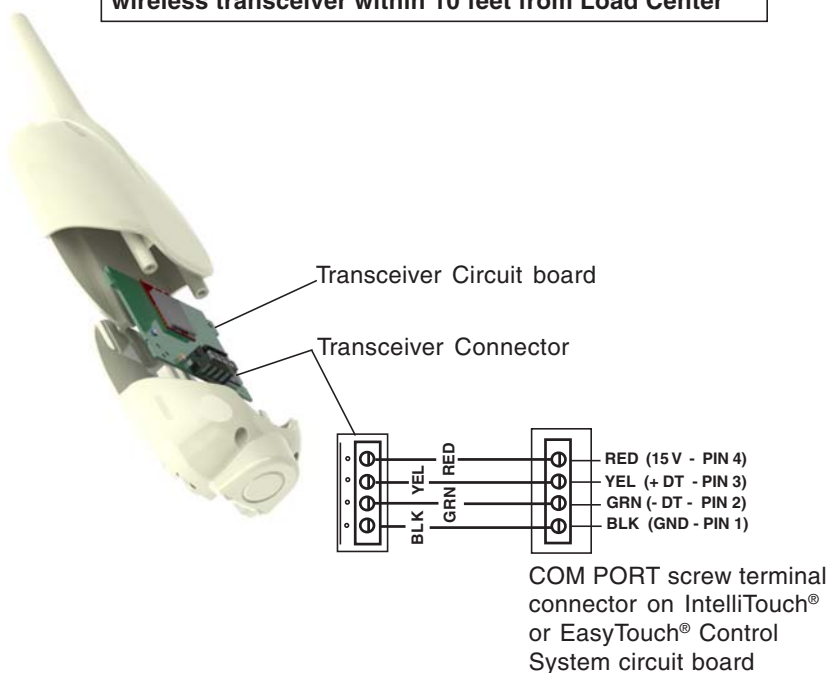
- Insert the four wires into the screw terminals of the COM PORT plug located on the circuit board as shown on page 6. Using a small flat-blade screwdriver, secure the wires with the screws. Make sure to match the color coding of the four wires:

Pin 4 - Red = +15
Pin 3 - Yellow = +DT
Pin 2 - Green = -DT
Pin 1 - Black = GND

***Note:** Multiple wires may be inserted into a single screw terminal but increases the chances of a poor or intermittent connection.*



**Note: Install the ScreenLogic® Interface outdoor wireless transceiver within 10 feet from Load Center**

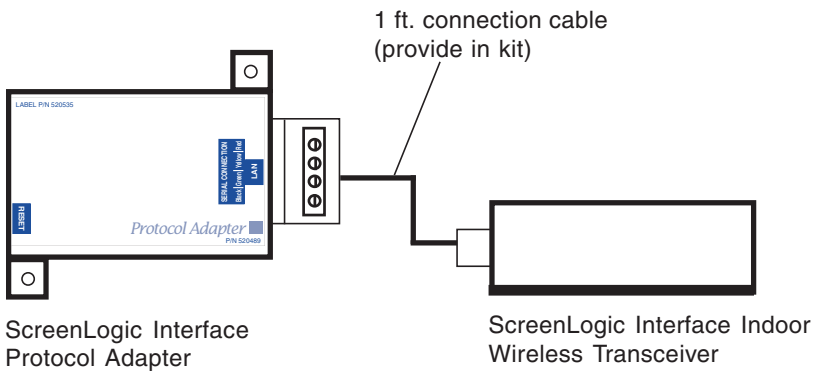


7. After the connection has been completed, close the control panel into its original position and secure it with the two access screws.
8. Install the front panel and secure it with the two retaining screws.
9. Close the Load Center front door. Fasten the spring latch(es).
10. Switch the power on to the IntelliTouch® or EasyTouch® Control System Load Center.
11. Proceed to the **“Connect the ScreenLogic Interface Indoor Wireless Transceiver to the ScreenLogic Interface Protocol Adapter”** on page 8.

**Step 2:****Connect the ScreenLogic® Interface Indoor Wireless Transceiver to the ScreenLogic Interface Protocol Adapter**

To connect the ScreenLogic Interface indoor wireless transceiver to the ScreenLogic Interface Protocol adapter:

1. Using the provided connection cable, connect one end of the cable to the ScreenLogic Interface Protocol adapter and the other end to the ScreenLogic Interface indoor wireless transceiver. The cable plugs are keyed for easy connection.
2. Plug the ScreenLogic Interface Wireless Connection transceiver AC adapter wall-plug into an AC grounded electrical outlet.



<b>Transceiver</b>	<b>&lt;-----&gt;</b>	<b>Indoor Wireless Transceiver</b>
RED	<b>&lt;-----&gt;</b>	RED
YELLOW	<b>&lt;-----&gt;</b>	YELLOW
GREEN	<b>&lt;-----&gt;</b>	GREEN
BLACK	<b>&lt;-----&gt;</b>	BLACK

**Wiring Configuration**



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P/N 521965 REV. C 1/14