Pentair Pool Products®

Because **reliability** matters most

Separation Tank

Installation Guide

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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Contents

IMPORTANT SAFETY PRECAUTIONS

Important Notice:

THIS SEPARATION TANK IS DESIGNED AND INTENDED FOR USE IN FILTRATION SYSTEMS DESIGNED FOR SWIMMING POOLS AND SPAS.

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 and/or operator of this equipment.

⚠ **WARNING** - Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in serious injury, death, and/or property damage. Call (800) 831-7133 for additional free copies of these instructions.

⚠ **WARNING** - This separation tank operates under pressure and if assembled improperly or operated with air in the water circulation system it can separate and result in an accident causing serious bodily injury and/or property damage. A warning label has been affixed to the top of the tank which should **NOT** be removed. Keep safety labels in good condition and replace if missing or illegible. (For free labels call 1-800-831-7133.)

⚠ **WARNING** - FILTERS SHOULD **NEVER** BE TESTED OR SUBJECTED TO AIR OR GAS UNDER PRESSURE. All gases are compressible and when under pressure create a danger. Severe bodily injury or property damage could occur if the filter is subjected to air or gas pressure.

⚠ **WARNING** - Releasing the tank clamp with pressure in the system will cause the lid to blow off, which could result in sever injury and/or property damage. **NEVER** adjust, tighten or loosen the “V” band clamp when the tank is under pressure.

⚠ **WARNING** - Do not overtighten the closure band. **HAND TIGHTEN ONLY** to produce an effective leak tight seal. Tightening the closure band beyond hand limits may damage the closure band and cause unexpected failure, sudden release or pressure and injury or damage.

⚠ **WARNING** - The tank clamp used on your separation tank is manufactured with high quality corrosion resistant materials. The manufacturing process could allow sharp edges to be present on the parts. When working around the clamp, use caution to prevent potential injury to fingers or hands from contact with sharp edges.

⚠ **WARNING** - Chemical fumes and/or spills can cause severe corrosive attack to the separation tank metallic components. Structurally weakened components can cause severe bodily injury and/or property damage.

Separation Tank Usage

1. Your separation tank is designed to operate for years with proper use and maintenance. The tank housing is made of corrosion resistant materials and when installed, operated and maintained in accordance to these instructions, your separation tank will provide years of service.

2. Separation tanks are designed to work primarily with diatomaceous earth (D.E.) swimming pool or spa filters. Their purpose is to separate the D.E. and dirt from filter effluent during the backwash cycle. The separation process should produce water out of the separation tank suitable for return back to the pool or disposal into city storm drain systems. The separation process uses a large cloth “filter” bag to literally filter out the D.E. and its entrapped dirt particles. During backwashing of a D.E. filter, a valve is used to reverse the normal flow through the filter. The reverse flow dislodges the D.E. cake from the filter and flushes it into the top of the filter bag. The D. E. and dirt are captured in the bag and clean water passes through and exits from the tank bottom (outlet). After backwashing the filter, the separation tank needs to be opened and the bag cleaned before another backwashing cycle.

3. The proper size of separation tanks is determined by the backwash rate of your filter.

   The following table should be used to determine the recommended tank size for your system.

SEPARATION TANK OPERATIONAL DATA			
TANK SIZE	**PRODUCT NO.**	**BAG HOLDING CAPACITY**	**BACKWASH - GAL. PER MIN. FLOW**
40	301045	576 Cu. In.	40
60	301046	860 Cu. In.	60
60	301050	860 Cu. In.	60
80	301051	1258 Cu. In.	80

Table 1.

Installation

1. Check carton for any evidence of damage due to rough handling in shipment. If carton or any separation tank components are damaged, notify the freight carrier immediately.

2. After inspection, carefully remove the separation tank and air bleeder valve from the carton.

3. Assemble air bleeder valve on top of separation tank.

4. Mount separation tanks on a permanent slab, preferably concrete poured in a form or on a platform constructed of concrete blocks or bricks. **DO NOT** use sand to level the tank as it will wash away.

5. Provide space and lighting for routine maintenance access. Do not mount electrical controls over the tank. In respect for the potential for injury from any pressurized system, it is good common sense precaution to always stand clear of the tank whenever starting the pump.

6. Assemble piping and pipe fittings in accordance with local and state plumbing and sanitary codes. On plastic fittings, use Teflon® tape or Plastojoint stick on all male connections or pipe compounds suited for plastic pipe. Support pipe if necessary to prevent strains on connections. The separation tank can be plumbed to return all water to the pool (Figure 1) or to waste (Figure 2).

7. Long piping runs and elbows restrict flow. For best efficiency, use the fewest possible fittings, large diameter pipe, (at least 1½ in. for tank P/N's 301045 and 301046 — 2 in. for tank P/N's 301050 and 301051), and locate equipment as close to the pool as possible.

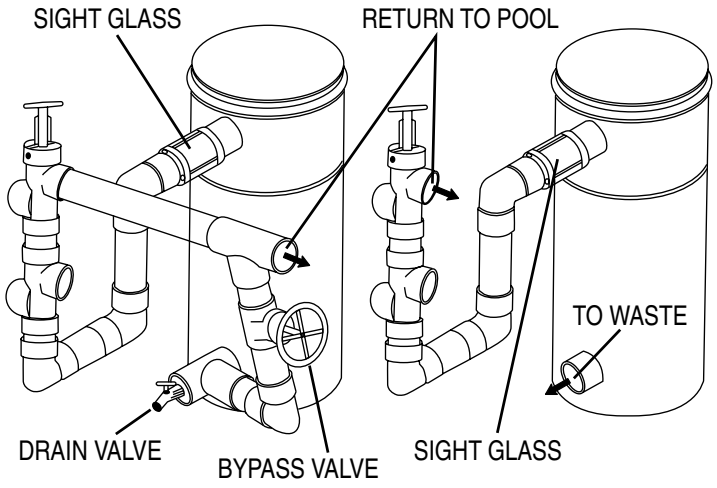


Figure 1. **Figure 2.**

8. If the separation tank is plumbed to return water back to the pool, a by-pass valve must be used, as shown in Figure 1. This valve must be closed when not backwashing through the separation tank so that the separation tank is not under pressure when in the normal filter mode.

9. If the separation tank is plumbed to return water to waste, a positive shut off valve is NOT recommended in the line from the separation tank. If the system is operated with such a valve closed, the pressure in the entire system would go abnormally high and could present an explosive situation. Additionally, running the system with no flow will seriously damage the equipment through heat build-up.

10. Never store pool chemicals within 10 feet of your separation tank, filter or pump. Pool chemicals are corrosive and should be stored in a cool, dry and well ventilated area.

11. The maximum operating pressure of the unit is 50 psi (pounds per square inch). **Never** operate this separation tank above this pressure or attach a pump to this unit that has more than 50 psi shut off pressure.

Operating Procedures

1. On a new pool, clean the pool before filling with water. Excess dirt and large particles can cause damage to your filtration equipment.

2. Check clamp assembly for tightness. See separation tank assembly procedures.

3. ⚠ **WARNING** - Improper tank assembly could cause the tank top to blow off and cause severe bodily injury and/or property damage.

4. When your filter system indicates that it requires backwashing, (see your filter operating instructional manual), *the first thing to do is shut the filter pump off.*

5. Change valve positions:
   - if using a multi-port valve, set to backwash position.
   - if using a two position slide valve, raise the handle to the fully extended position.
   - if separation tank is plumbed to return water to pool, open by-pass valve, see Figure 1.
   - open manual air bleed on top of separation tank.
6. Stand clear of filter and separation tank. Start pump, this will circulate water backwards through the filter and flush D.E. cake and contaminants into the separation tank. Close the manual air bleed on the top of the separation tank when a steady stream of water emerges.
7. When the backwashing action is complete, (see your filter operating instructions), stop the pump.
8. Change valve positions:
   - set filter valve to filter position.
   - close separation tank by-pass valve, see Figure 1.
   - open manual air bleed on top of separation tank.
   - if provided, open separation tank drain valve, see Figure 1.
9. Disassemble and clean your separation tank following the instructions given herein.

Disassembly/Assembly and Cleaning Procedures

1. Be sure the pump is turned off and all pressure has been released from the system.
2. Loosen the clamp knob and remove the knob, washer and bolt for the “V” band clamp, see Figure 3.
3. Open “V” band clamp so that it can be removed completely from the separation tank.
4. Remove the lid from the separation tank.
5. Open the drain valve if piped per Figure 1, and wait for the water to drain from the separation tank before removing the bag containing D.E. and contaminants.
6. Dispose of waste in trash and rinse bag clean. Inspect bag for holes — replace if necessary.
7. Clean o-ring and mating surfaces on the lid and tank assembly. Inspect o-ring for cuts, nicks, etc. If damaged, replace with a new one.
8. Lubricate the o-ring with petroleum jelly, silicone grease, Mytilube or a similar product.
9. Install o-ring on tank assembly
10. Install a clean bag into the tank assembly.
11. Replace the lid.
12. Clean the “V” band clamp inside and out and install onto the tank being sure that it engages both flanges (one on the tank and one on the lid), all around.

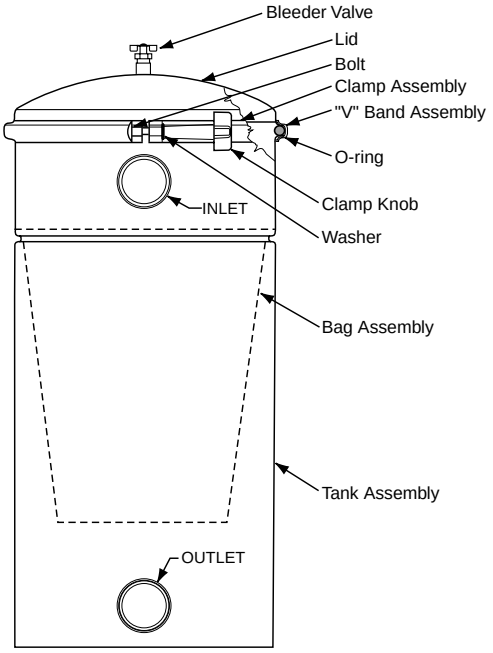


Figure 3.

13. Install the bolt, washer and knob and tighten knob securely. Lightly tap the clamp around entire diameter to help seat and be certain the hand knob is firmly tightened as much as possible using hand power to tighten. When the band has been properly assembled and tightened, the clamp ends should be between ¼ in. and ½ in. apart as shown in Figure 4.

14. Close the drain valve and leave the manual air bleed open, see Figure 1.

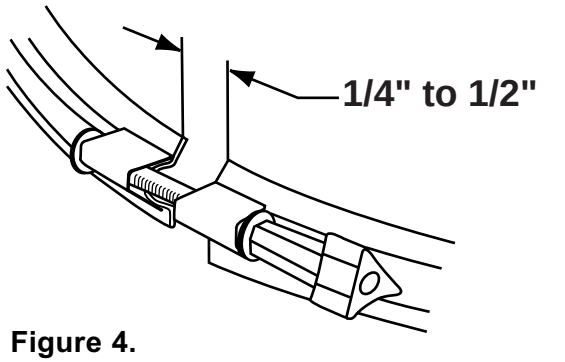


Figure 4.

Separation Tank Care

1. Your separation tank is a pressure vessel and should never be serviced while under pressure. Always shut off the pump to relieve the tank pressure and open the air bleeder before attempting to service your tank.

2. Always visually inspect the separation tank components during normal servicing to insure structural safety. Replace any item which is corroded, bent, cracked or otherwise visually defective. Corroded components cannot be repaired and must be replaced. If you are experiencing corrosion, consult your pool service company or dealer.

3. Do not overtighten the closure band. It is not necessary to use a tool such as pliers or a wrench to obtain an effective seal. If hand tightening alone does not produce a leak tight assembly, then something is wrong which must be corrected. Tightening the closure band beyond hand tightening can cause unexpected failure, sudden release of pressure and injury or damage.

4. This separation tank is made of stainless steel which is corrosion resistant but not corrosion proof. If the pool water is allowed to act aggressively, or if the pool chemicals are stored too close or if the separation tank is not cleaned after backwashing and allowed to stand for long periods before cleaning, corrosion can occur. Under such conditions, the steel can experience surface corrosion and pitting which will be most apparent in the flange area where the o-ring seals the two parts of the tank. To minimize this tendency, it is recommended to keep the flange clean of surface corrosion with a fine emery cloth or stainless steel wool, (do NOT use steel wool), and to coat the o-ring with a substance such as petroleum jelly, silicone grease, Mytilube, or a similar product. If corrosion is allowed to progress, the tank will eventually leak at the o-ring seal. The process cannot be arrested or corrected by overtightening the closure band, though this may temporarily stop the leak.

5. When cleaning the bag from the separation tank, avoid exposing the bag to direct sunlight for extended time periods as this will deteriorate the bag cloth.

6. To clean the exterior of the separation tank of dust or dirt, use a mild detergent and water and then hose off. Do not use solvents.

7. When restarting your system to backwash, open the manual air bleeder on the filter and separation tank. Close these valves only after a steady stream of water emerges.

Winterizing Procedure

If your local climate conditions include freezing temperatures and long periods of idle equipment, the following is recommended:

1. Clean the separation tank as described in “Disassembly/ Assembly/Cleaning Procedures” on page 7.
2. Drain all water from the tank, leave drain valve open, open the manual air bleeder.
3. Drain system plumbing.
4. We recommend covering the equipment with a tarpaulin or plastic sheet to prevent deterioration from the weather.

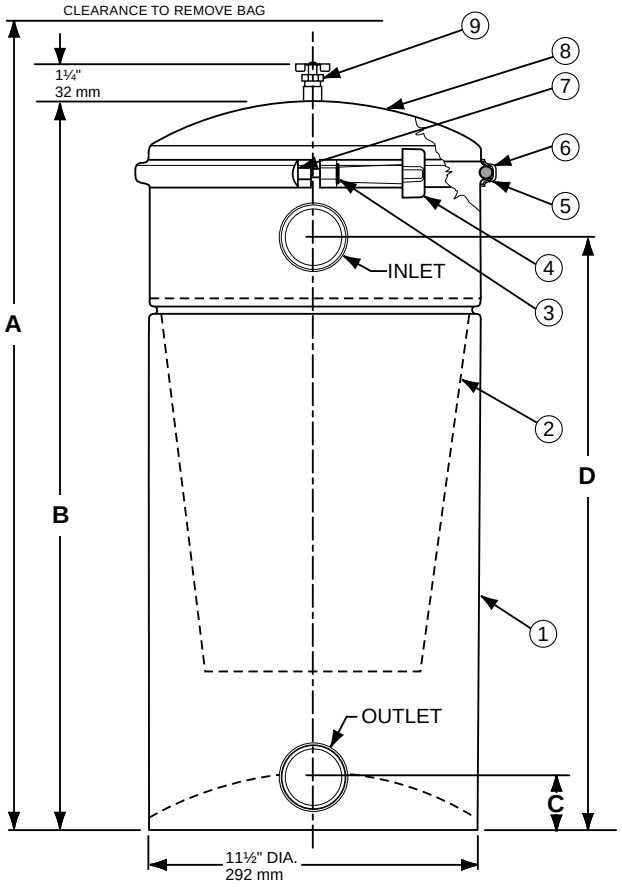
Troubleshooting Guide

The following are some common causes of problems that may arise.

Symptom	Possible Cause	Solution
D.E. returning back to pool on backwash.	Torn or damaged bag. Bag missing.	Replace bag.
Leakage at joint between lid and tank.	Band tension too low.	Shut off pump. Tighten to recommended gap dimension between band ends.
	Cut or damaged o-ring.	Replace o-ring.
	Debris on flanges or on o-ring.	Clean flanges and o-ring and re-lubricate o-ring.
	Pitting corrosion on flanges.	Replace tank and consult pool service technician for cause of corrosion.

Sepatation Tank Replacement Parts

THIS FORM COVERS
ASSEMBLIES:
301045 #40 W / 1/2”
301046 #60 W / 1/2”
301050 #60 W / 2”
301051 #80 W / 2”



ITEM	PART NO.	DESCRIPTION
1	312994	TANK ASSY. #40 w/1½ in.
1	312995	TANK ASSY. #60 w/1½ in.
1	312996	TANK ASSY. #60 w/2 in.
1	312997	TANK ASSY. #80 w/2 in.
2	313200	BAG ASSY. #40
2	313201	BAG ASSY. #60
2	313202	BAG ASSY. #80
3	639822	WASHER, 5/16 in. SS
4	174882	KNOB — CLAMP
5	313225	O-RING — TANK
6	313196	BAND CLAMP ASSY.
7	152060	CARRIAGE BOLT
8	313203	TOP LID ASSY.
9	154662	BLEEDER VALVE

TANK SIZE	FITTING SIZE	A	B	C	D	BAG HOLDING CAPACITY	GAL. PER MIN.
		INCHES	INCHES	INCHES	INCHES		
#40	1½" NPT	28	$19^{5/8}$	2	$14^{7/8}$	576 CU. IN.	40
#60	1½" NPT	40	$25^{5/8}$	2	$20^{7/8}$	860 CU. IN.	60
#60	2" NPT	40	$25^{5/8}$	2¼	$20^{1/2}$	860 CU. IN.	60
#80	2" NPT	50	$31^{5/8}$	2¼	$26^{1/2}$	1258 CU. IN.	80

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