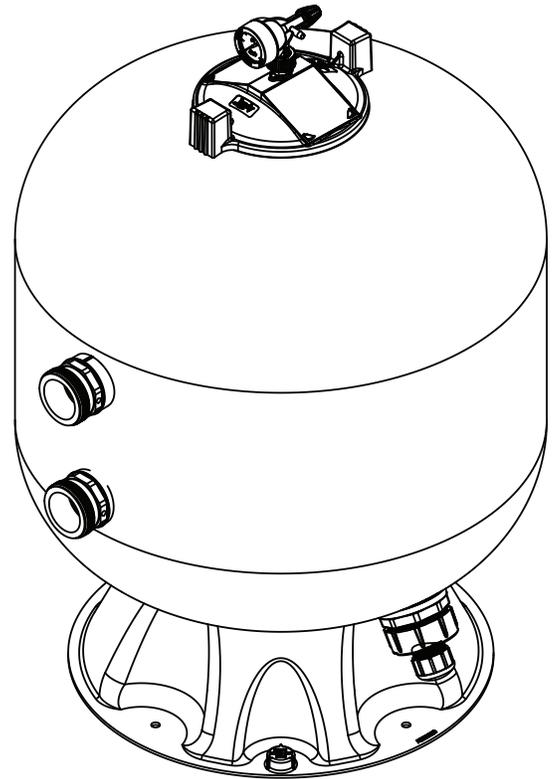


Installation and Operation Manual

Jandy® Fiberglass Sand Filters

JS Series Sidemount Sand Filters



WARNING

FOR YOUR SAFETY - This product must be installed and serviced by a professional pool/spa service technician. The procedures in this manual must be followed exactly. Improper installation and/or operation can create dangerous high pressure which can cause product failure or also cause the filter lid to be blown off, possibly causing death, serious injury or property damage. Improper installation and/or operation will void the warranty.

Before installing this product, read and follow all warning notices and instructions that accompany this filter. Failure to follow warning notices and instructions may result in property damage, serious injury, or death.

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EQUIPMENT INFORMATION RECORD

DATE OF INSTALLATION _____

INITIAL PRESSURE GAUGE READING (WITH CLEAN FILTER) _____

PUMP MODEL _____

HORSEPOWER _____

FILTER MODEL _____

SERIAL NUMBER _____

NOTES:

Section 1. Safety Information

1.1 Important Safety Warning



WARNING

- Do not connect system to an unregulated city water system or other external source of pressurized water producing pressures greater than 35 PSI.
- Pressurized air in system can cause product failure or also cause the filter lid to be blown off which can result in death, serious personal injury, or property damage. Be sure all air is out of system before operating or testing the equipment.



WARNING

MAXIMUM OPERATING PRESSURE OF THE FILTER IS 50 PSI. NEVER SUBJECT THE FILTER TO ANY OPERATING PRESSURE EXCEEDING 50 PSI.

This filter operates under high pressure. When any part of the circulating system, i.e., filter, pump, valve(s), etc. is serviced, air can enter the system and become pressurized when the system is restarted. Pressurized air can cause product failure or also cause the filter lid to be blown off which can result in death, serious personal injury or property damage. To avoid this potential hazard, follow all of the instructions in this manual.



WARNING

To minimize risk of severe injury or death the filter and/or pump should not be subjected to the piping system pressurization test.

Local codes may require the pool piping system to be subjected to a pressure test. These requirements are generally not intended to apply to the pool equipment such as filters or pumps.

Jandy pool equipment is pressure tested at the factory.

If however this WARNING cannot be followed and pressure testing of the piping system must include the filter and/or pump **BE SURE TO COMPLY WITH THE FOLLOWING SAFETY INSTRUCTIONS:**

- Check all clamps, bolts, lids, lock rings and system accessories to ensure they are properly installed and secured before testing.
- **RELEASE ALL AIR** in the system before testing.
- Water pressure for test must **NOT EXCEED 35 PSI**.
- Water temperature for test must **NOT EXCEED 100°F (38°C)**.
- Limit test to 24 hours. After test, visually check system to be sure it is ready for operation.

Notice: These parameters apply to Jandy equipment only. For non-Jandy equipment, consult equipment manufacturer.

1.2 General Safety Instructions



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.

1. Use equipment only in a pool or spa installation.
2. Before repositioning valve(s) and before beginning the assembly, disassembly, or removal or adjustment of the lid, or any other service of the circulating system; (A) **turn the pump off** and shut off any automatic controls to ensure the system is not inadvertently started during servicing; (B) open the air release valve; (C) wait until all pressure is relieved (air will have stopped flowing from the air release valve).
3. Whenever installing the threaded lid **follow Section 3.6** of this manual, "**Lid Installation**".
4. Once service on the circulation system is complete, **follow Section 4** of this manual, "**Start-up and Operation**".
5. Maintain circulation system properly. Replace worn or damaged parts immediately.
6. Be sure that the filter is properly mounted and positioned according to these installation instructions.
7. Do not pressure test above 35 PSI. Pressure testing must be done by a trained pool professional.

SAVE THESE INSTRUCTIONS.

Section 2. General Information

2.1 Introduction

This manual contains information for the proper installation and operation of the Jandy JS Series Sand Filters. Procedures in this manual must be followed exactly. To obtain additional copies of this manual contact us at 800.822.7933. For address information see back cover.

2.2 Description

Jandy high rate sand filters most commonly use sand as a filter medium, or sand over a shallow layer of pea gravel. A filter medium other than sand is sometimes used as described in Section 3.6.

Dirty water flows into the filter tank through the water line connected to the lower bulkhead fitting (inlet) on the side of the filter. The water is directed through a diffuser(s) in the water space above the sand bed surface. As the water flows through the filter, debris and large particles are deposited on the surface of the sand bed, and finer particles are collected throughout the body of sand. Clean water flows through the laterals (spokes) at the bottom of the sand bed and out of the filter through the upper bulkhead fitting (outlet) on the side of the filter.

As debris and dirt particles collect in the filter, the pressure will rise (indicated by the pressure gauge on the top of the filter) and water flow to the pool will diminish. The filter will eventually become so clogged with debris that it will be necessary to perform a backwash procedure to cleanse the filter. Backwashing instructions are provided in Section 5.1 "Filter Cleaning Instructions".

NOTE A filter removes dirt and other suspended particles but does not sanitize the pool. Pool water must be sanitized and chemically balanced for clear water. The filtration system should be designed to meet local health codes. At a minimum, the system should turnover the total volume of water in your pool two (2) to four (4) times in a 24 hour period.

2.3 General Requirements

1. For best overall performance place the system as close to the pool as possible.
2. The filter should be located on a level concrete slab so that the orientation of the valve outlets and the pressure gauge are convenient and accessible for the installation and operation of the unit.
3. Protect the filter from the weather.
4. If fitting a chlorinator and/or any other device into the filtration plumbing circuit, great care must be exercised to ensure that the appliance is installed in accordance with the Manufacturer's Instructions and any standards that may exist.

5. We recommend the use of barrel unions to connect each component of the water conditioning system to ease in future servicing. Barrel unions are provided with all Jandy filters.

⚠ WARNING

The maximum working pressure for this filter is 50 psi. Never subject the filter to working pressure exceeding 50 psi. Working pressures above 50 psi can cause product failure or also cause the filter lid to be blown off, which can result in death, serious personal injury, or property damage

6. When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, ensure that the maximum pressure the filtration system is subjected to ***does not exceed the maximum working pressure of any of the components within the system.***

2.4 Specifications and Dimensions

See Table 1 and Figure 1.

Table 1. Sand Filter Specifications

Specification	JS100-SM
Filtration Area sq ft ² (sqM)	4.9 (0,45)
Filtration gpm/ft ²	20
Filter Flow Rate gpm (lpm)	98 (371)
Backwash Minimum Flow Rate gpm (lpm)	74 (280)
Maximum Working Pressure psi (bar)	50 (3,4)
Six Hour Capacity (gal.)	35,280
Normal Start Up Pressure (psi)	6-15 (41-103kPa)
Dimension "A"	44.5" (1130,3mm)
Dimension "B"	30" (762mm)
Dimension "C"	18.5" (469,9mm)
Dimension "D"	26.5" (673.1mm)

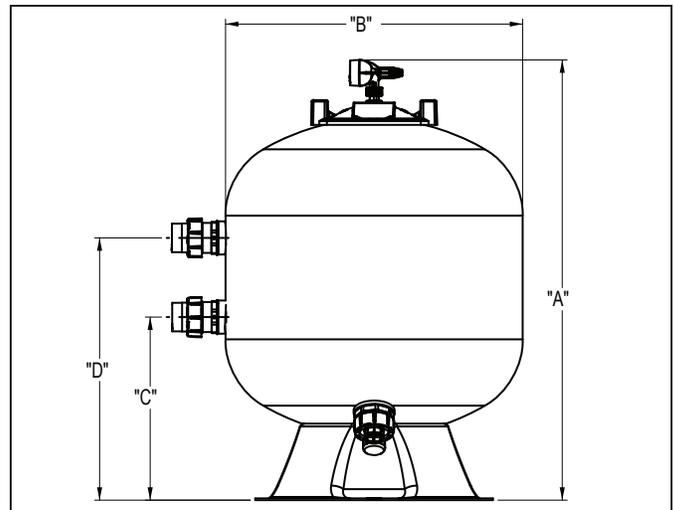


Figure 1. Jandy JS Series Sand Filters Dimensions

Section 3. Installation Instructions

⚠ WARNING

Use equipment only in a pool or spa installation. Do not connect system to an unregulated city water system or other external source of pressurized water producing pressures greater than 35 psi.

3.1 Filter Location

1. Select a well-drained area, one that does not flood when it rains. Damp, non-ventilated areas should be avoided.
2. Provide solid mounting for the filter and pump system. Install system on a concrete slab or solid concrete blocks to avoid risk of settlement. Do not use sand to level the filter as the sand will wash away. Filter systems can weigh up to 1100 lbs.
3. Install electrical controls at least 5 ft. from the filter. This will allow enough room to stand away from the filter during start-up.
4. Allow sufficient clearance around the filter. See Figure 2.
5. Allow sufficient space above the filter to remove the filter lid and filter internal parts for cleaning and servicing.
6. Position the filter to safely direct water drainage and to provide for clear access to drain for sand removal. Align the air release valve to safely direct purged air or water.

⚠ WARNING

Water discharged from an improperly positioned filter or valve can create an electrical hazard which can cause death, serious injury or property damage.

⚠ CAUTION

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

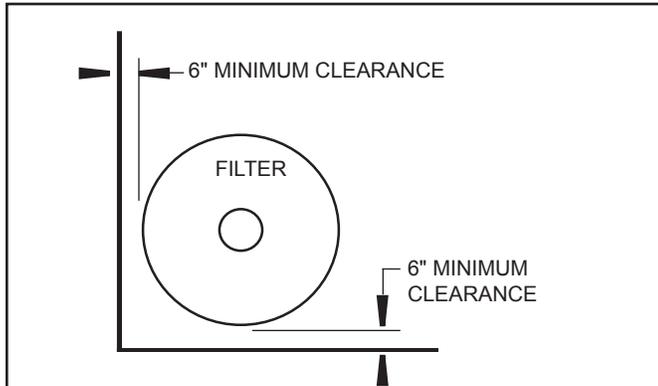


Figure 2. Filter Location

7. If the filter needs to be located above the water level of the pool, it can be raised 2.5 ft. without affecting the pump efficiency. A check valve is recommended on the suction line to the pump.
8. If the filter is to be installed below the water level of the pool, isolation valves should be installed on both the suction and return lines to prevent back flow of pool water during any routine servicing that may be required.

3.2 Anchoring the Filter to the Equipment Pad

In some areas, for example Florida, building codes require that all appliances be securely fastened to the equipment pad in order to withstand high wind pressures created by hurricanes. Please follow all local codes and standards.

NOTE Anchor screws and washers for securing the filter to the equipment pad are not included with the filter. Zodiac Pool Systems, Inc. ("Zodiac") recommends that a 2¼" X ¼" long stainless steel Tapcon®* concrete screw and stainless steel flat washer are used to mount each of the four (4) anchor holes in the base to the equipment pad. The Tapcon concrete screw meets Florida building code requirements.

After placing the filter on the equipment pad, as outlined in Section 3.1, drill a 5/32" hole in the concrete at each of the four holes in the base of the filter. (The correct size concrete drill bit should be obtained when the concrete screws are purchased.)

Install the Tapcon screws and washers through each of the four (4) holes to secure the filter to the equipment pad. See Figure 3. **Do not over-torque the screws.**

* Tapcon is a registered trademark of Illinois Tool Works, Inc.

3.3 Filter Preparation

1. Check carton for damage due to rough handling in shipment. If carton or any filter components are damaged, notify carrier immediately.
2. Carefully remove the accessory package.

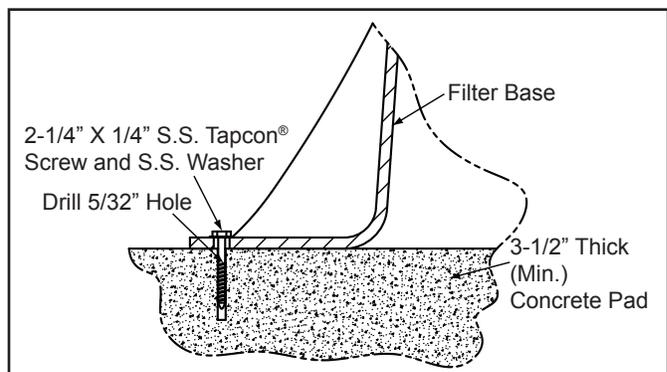


Figure 3. Filter to Platform Installation

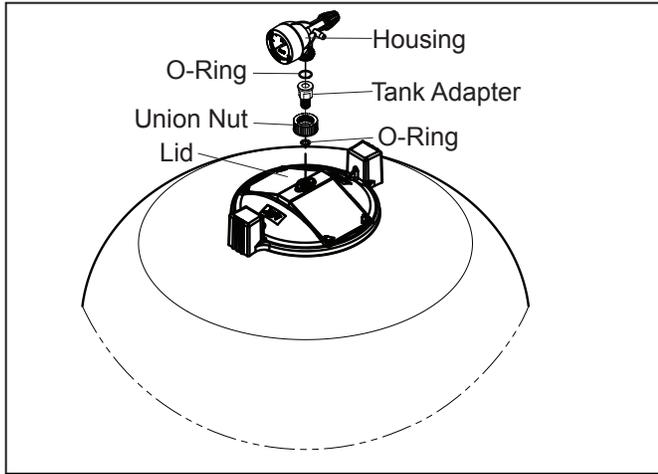


Figure 4. Pressure Gauge/Air Release Assembly

3. A visual inspection of all parts should be made now. See parts list in Section 9.
4. With the carton in an upright position, remove the filter tank from the carton.
5. To mount the pressure gauge/air release assembly, located in the accessory bag, to the lid of the filter tank:
 - a. Place the smaller, thicker o-ring onto the threads of the tank adapter. See Figure 4. Slide the tank adapter through the coupling nut and into the filter tank lid. Use the flats on the tank adapter to tighten. Do not overtighten.
 - b. Place the larger, thinner o-ring onto the gauge housing. Thread the housing into the coupler on the tank adapter.
 - c. Orient the gauge/air release assembly in the desired position. Raise and thread the locknut onto the bottom of the gauge/air release assembly. Hand tighten the nut only. Using a wrench to tighten the nut may damage the nut, gauge or air release assembly.

3.4 Filter Plumbing

⚠ WARNING

To avoid an electrical shock hazard, which can result in serious injury or death, ensure that all electrical power to the system is turned off before approaching, inspecting or troubleshooting any leaking valves or plumbing that may have caused other electrical devices in the surrounding area to get wet.

1. This filter operates under pressure. When lid is installed properly and operated without air in the water system, this filter will operate in a safe manner.
2. If the system can be subjected to higher pressure than the maximum rating of any component,

install an ASME® approved automatic pressure relief valve or pressure regulator in the circulation system. Set the relief valve or pressure regulator to lowest working pressure of any of the components in the system.

3. A positive shutoff valve at the outlet piping of the filter is not recommended. If the pump is operated with a shutoff at the filter outlet closed, an explosive condition could result from back pressure and the possibility of entrapped air in the filter. Sometimes equipment isolation shutoff valves are required in installation with the filter and other equipment below the pool water level to allow for equipment maintenance without draining down the pool. In this event, any shutoff valves are to be prominently labeled "Warning: Explosive Hazard. Do Not Run System With Valve Closed". Running pumps with no flow will also seriously damage the equipment.
4. Never install a chemical feeder or chlorine generator upstream of the filter or heater. Install downstream of the filter and heater and install a check valve to prevent water from back flowing from the chlorinator or feeder.

⚠ CAUTION

Creating high vacuum levels can cause the tank vessel to crack and leak with the potential for property damage.

5. This is a pressure filter. Install only on the discharge side of a pump system.
6. Backwash (waste) piping that discharges water at an elevation of 10 ft. or lower than the water surface of the pool should be equipped with a vacuum-breaker in the waste piping within 10 ft. in vertical drop from the elevation of the pool surface.
7. Place the filter on the concrete pad, lined up with the inlet/outlet pipes. See Figure 5.
8. To reduce pressure losses, 2" (minimum) piping is recommended for plumbing the system.
9. For best efficiency use the fewest possible number of fittings. This will prevent a restriction in the water flow.
 - a. The larger JS series sand filters come with a Jandy Sweep Elbow for this purpose. The sweep elbow also includes a threaded port and plug so that a ½" hose bib can be connected for pressure testing. See Figure 6.
 - b. To install the sweep elbow follow the instructions in Steps 9.c and 9.d.

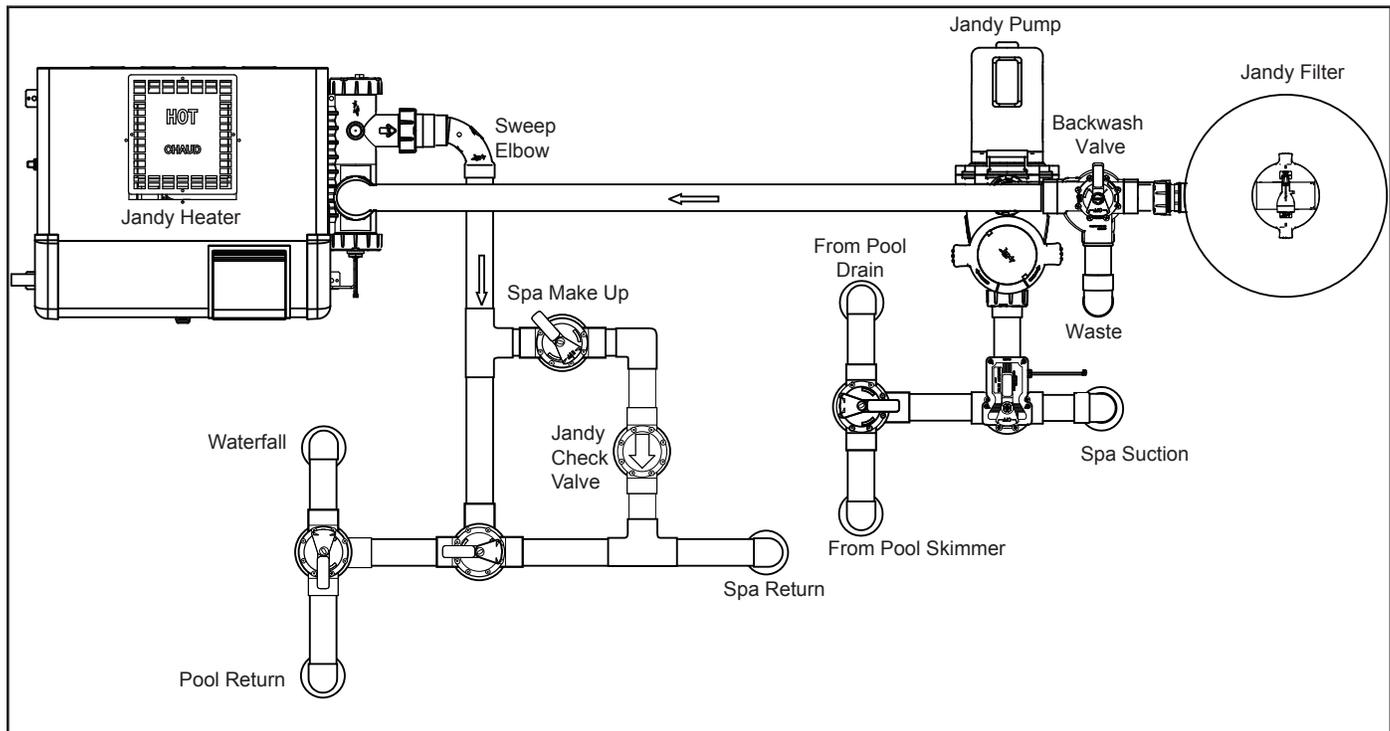


Figure 5. Sand Filter Plumbing for Pool/Spa Combination

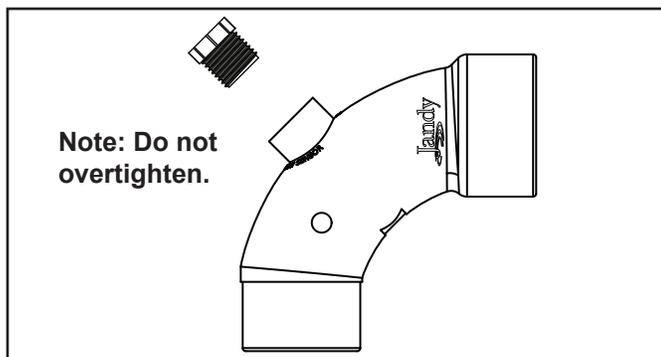


Figure 6. Sweep Elbow

- c. Be sure there is sufficient distance between the center of the pump outlet port and the backwash valve inlet port to accommodate the sweep elbow(s). See Figure 5 for recommended installation configuration.

NOTE Be sure to use 2" or 2½" schedule 40 PVC pipe.

- d. Clean the cut ends of the pipe and both ends of the sweep elbow(s) with an appropriate NSF®* approved All Purpose cleaner/primer. Glue the sweep elbow(s) onto the cut pipe ends using an appropriate All Purpose NSF approved adhesive/glue.

NOTE: Zodiac recommends Weld-On® 724 PVC to CPVC Cement to glue Schedule 40 CPVC to PVC.

10. Make all plumbing connections in accordance with local plumbing and building codes. Filter connections are provided with an o-ring seal. To

avoid damage to the o-rings, use only a silicone base lubricant on the o-rings. **Do not use pipe joint compound, glue or solvent on inlet/outlet union coupling nuts.**

11. Keep piping tight and free of leaks. Pump suction line leaks may cause air to be entrapped in filter tank or loss of prime at the pump. Pump discharge line leaks may show up as dampness or jets of water.
12. Support the inlet/outlet pipes independently to prevent any undue strains on the filter valve.
13. Connect the pipes using the unions supplied with the filter. **Do not use Teflon® tape or pipe dope on any unions.** Assemble the unions dry and hand tighten. See Figure 7.
14. Any piping with a ball valve that may be connected to the water drain at the bottom of the filter tank must be removable to facilitate the further removal of drain components to allow space for the flushing of sand from the filter. See Figure 7 for water drain cap location.
15. A large fitting is provided at the tank drain to allow the flushing of sand from the filter tank. See Figure 8. Sand removal is easiest without further restriction at this fitting. If a short piece of piping is desired to direct the sand being flushed away from the filter base, a universal tailpiece can be used for this purpose. Use this tailpiece to connect piping with the universal union nut as shown in Figure 9.

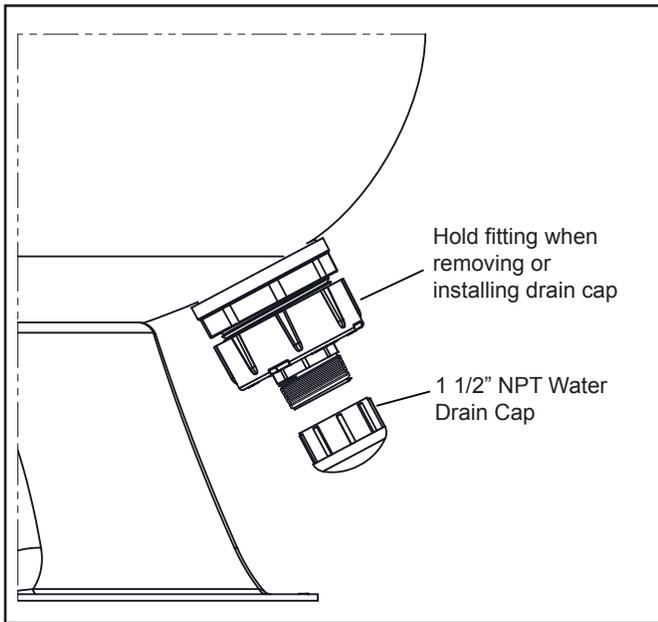


Figure 7. Water Drain Cap

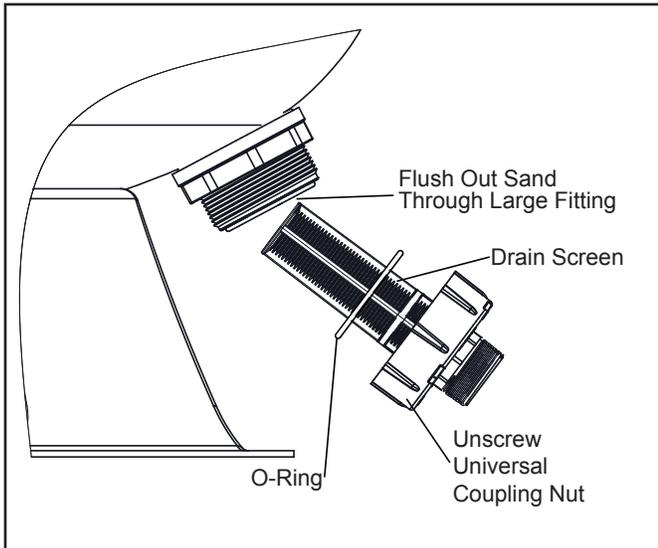


Figure 8. Sand Flushing Fitting

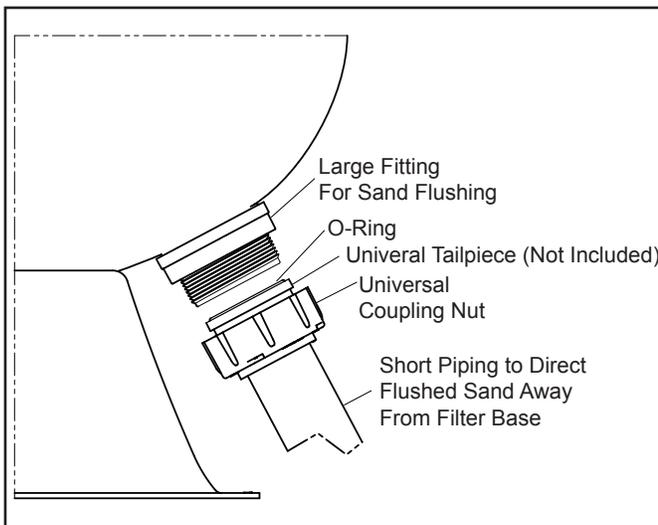


Figure 9. Universal Tailpiece Connections

CAUTION

Be sure that all provisions for wastewater disposal meet local, state or national codes. During any backwashing or draining process, 100 gallons or more of pool water will be discharged. Do not discharge water where it will cause flooding or damage.

3.5 Filling Filter with Sand

Jandy high rate sand filters most commonly use sand as a filter medium, or sand over a shallow layer of pea gravel. If pea gravel is used, it will cover the laterals to approximately 1" above the laterals. The use of filter media other than sand is also described in Section 3.6.

1. Sand density can vary depending on the sand and how much moisture it is carrying. For this reason, consider the sand weights given as approximation only. Determine the actual amount of sand to add based on Table 2.

Table 2. Required Sand Level

Model	Freeboard "F" inches (cm)	Sand Only lbs (kg)	Layered Media*	
			Pea Gravel lbs (kg)	Sand lbs. (kg)
JS100-SM	11 1/4" (31)	600 (273)	175 (80)	425 (193)

Notes: All media to be marked as meeting NSF® requirements for Sand Filters.
Sand is to be #20 Silica Sand (.016"-.021").
Pea Gravel, if used, is to be 1/8" to 1/4" diameter range.

2. Before adding any filter media, ensure the laterals (spokes) are screwed firmly into the hub and that the hub is centered in the tank with the laterals (spokes) horizontal.

CAUTION

To avoid damaging the laterals (spokes), slowly add the filter media until the laterals are fully covered. Cracked or broken laterals (spokes) will cause sand to be discharged to the pool.

3. Add water to approximately 4 inches above the level of the laterals.
4. A corrugated cardboard sand deflector is provided to keep sand or gravel out of the diffusers when adding the filter media. The sand deflector is provided in a flat form. To use it, roll the cardboard up tightly to make a circular tube and insert the tabs into the slots. Place it inside the threaded top hole of the filter such that the pop out tabs keep it in place until the addition of filter media is completed.
5. If used, pour pea gravel SLOWLY into the filter first. Level the surface of the gravel, and then pour in the appropriate amount of sand to the level indicated in Table 2. If using sand only, pour it into

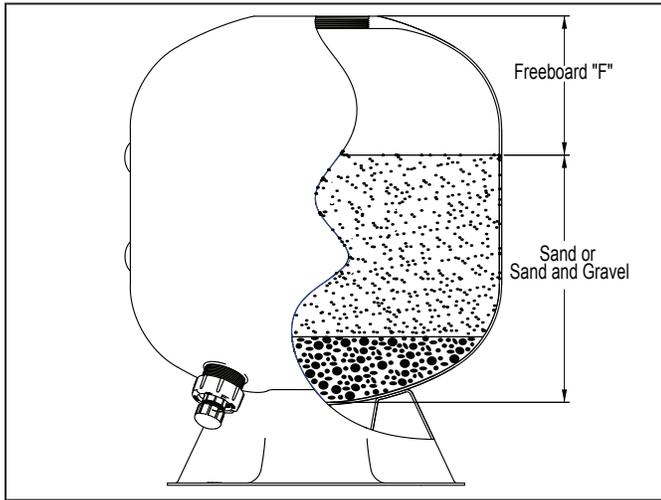


Figure 10. Sand Level

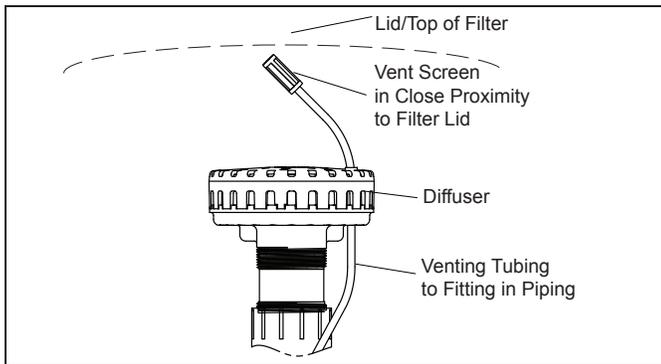


Figure 11. Automatic Vent Positioning

the filter SLOWLY to the level indicated in Table 2. Be careful not to dislodge the vent tubing from its fitting in the piping while adding filter media. Refer to Figure 10.

6. Remove the cardboard sand deflector. Wash away any sand or dirt particles in the threads in the top of the tank.
7. Ensure diffuser(s) are upright and centered properly.



WARNING

The automatic vent screen and tubing must be positioned properly to avoid trapping air inside the filter. Trapped air can cause product failure or also cause the filter lid to be blown off, which can result in death, serious personal injury, or property damage.

8. Make sure that the automatic vent tubing is in place (threaded through the diffuser) and the vent screen is installed at the top of the vent tubing. See Figure 11.

3.6 Use of Zeobrite® as an Alternative to Sand

As an alternative filter media for use instead of sand, Zeobrite has been qualified for use in Jandy JS series filters.

1. For filter sizes of 30 inches in diameter and greater, it is recommended that a pea gravel bed be used before adding the filter media. See Table 3 for the type and amount of pea gravel to use. Ensure the top surface of the pea gravel is flat before adding filter media.

Using the correct pea gravel will ensure that the filter media is evenly lifted during backwashing cycles and settles evenly after backwashing to optimize filter performance. The pea gravel will cover the laterals to approximately 1" above the laterals.

2. Fill the filter with Zeobrite to the level shown in Table 3. The weight of the material shown is approximate. See Figure 10 for the illustration of "Freeboard".

Table 3. Required Zeobrite Level

Model	Freeboard "F" inches (cm)	Layered Media	
		Pea Gravel* lbs (kg)	Zeobrite lbs. (kg)
JS100-SM	11 1/4" (31)	175 (80)	270 (122)

* Pea Gravel is to be 1/8" to 1/4" in diameter.

3.7 Lid Installation



WARNING

Follow these instructions carefully. Improper lid installation can cause product failure or also cause the filter lid to be blown off, which can result in death, serious injury, or property damage.



WARNING

Never attempt to adjust or remove the lid when the pump is running or there is pressure in the system. This can cause product failure or also cause the filter lid to be blown off which can result in death, serious personal injury, or property damage.

1. Ensure that the lid seal is fully seated within the groove in the flange of the lid.
2. Before installing the lid, ensure that the air vent screen at the top of the air vent tubing is properly located above the diffuser such that it will be close to the underside of the lid when the lid is installed. See Figure 11.

⚠ WARNING

Inspect the lid and tank for any damage before installing the lid. A damaged lid or tank could cause the lid to be blown off which can result in death, serious personal injury, or property damage.

- Inspect the threads to make certain that they are free of sand particles and wipe the threads on the tank and lid clean of any sand or debris. Apply a light coating of liquid dish washing detergent or bar hand soap with some water to the lid sealing surface on the top of the tank before installing the lid. Do not use any type of oil or grease that can cause sand to get caught in the threads. Thread the lid into the tank, making certain that the lid threads in smoothly. If resistance is felt while turning, remove the lid and ensure that it is not being cross-threaded into the tank and the threads are free of sand. Use the handles to tighten the lid hand-tight only. Do not use impact or hammers when installing the lid.

⚠ WARNING

Fiberglass and threads have sharp edges. To avoid cuts, use a brush to clean threads free of sand or dirt.

- When the lid is fully installed, the seal flange must contact the surface of the tank.
- If not already in place, the filter gauge/air relief valve assembly should be installed per Figure 4 in Section 3.3.

Section 4. Start-Up and Operation

This section applies to both new pool and seasonal start-up. For a new pool, make sure pool is cleaned before filling with water to avoid component damage from excessive debris and dirt particles.

NOTE If the pool is a new concrete or gunite pool or has a lot of debris or plaster dust that was not removed before the pool was filled and difficult to removed, start the filter with the backwash valve selector set on "FILTER" mode and run for 48 hours. (After step 3, go directly to steps 12 through 16.) After the initial 48 hours in "FILTER" mode, stop the pump and backwash the filter following steps 8 through 17.

⚠ WARNING



NEVER start pump while standing within 5 feet of the filter. Starting the pump while there is pressurized air in the system can cause product failure or also cause the filter lid to be blown off, which can cause death, serious personal injury or property damage.

⚠ WARNING



NEVER operate the filter system at more than 50 psi of pressure. Operating filter system in excess of 50 psi can cause product failure or also cause the filter lid to be blown off, which can cause death, serious personal injury or property damage.

⚠ CAUTION

DO NOT operate filter at water temperatures above 104° F (40° C). Water temperatures above the manufacturer's recommendations will shorten the life span of the filter and void the warranty.

- Turn off the pump. Switch off the circuit breaker to the pump motor.
- Check that the drain plug is in place and tight.
- Check that the tank lid is correctly seated and tight, see Figure 12, and ensure the pressure gauge/relief valve assembly is fully installed in the lid.
- Ensure the backwash piping is open.
- Open the pump hair/lint pot lid and fill the pump basket with water to prime the system. Replace the lid. (You may have to do this several times on new and seasonal start-ups.)
- Completely open the air release valve on the gauge/air release assembly by turning the knob on the back of the assembly fully counterclockwise (do not remove the knob).

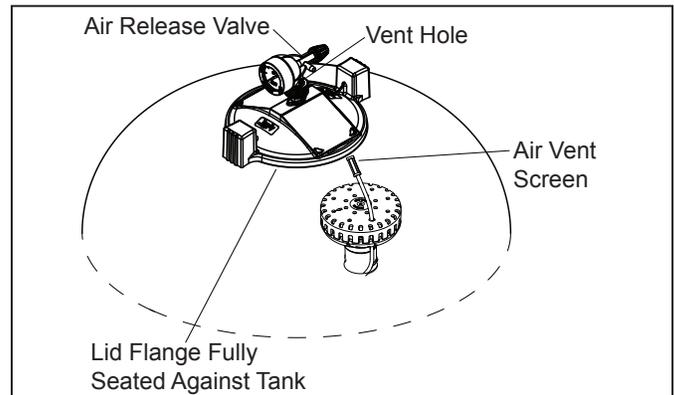


Figure 12. Filter Lid Installation

7. Be sure to open any filter isolation valves that were installed in the system.
8. Ensure the backwash piping is open. Set the backwash valve handle to the "Backwash" position, if a multiport backwash valve is installed, and if a slide valve is used, turn the handle to unlock and pull fully upwards to the backwash position.
9. **Stand clear of the filter** and start the pump. When a steady stream of water starts to come out of the air release valve, close the valve. There will be a steady stream of water flowing out of the backwash valve piping. Continue to backwash until the backwash water is clear (3 to 5 minutes).
10. Turn the pump off.
11. If the multiport backwash valve has a "Rinse" position do the following:
 - a. Set the selector handle in "Rinse" position.
 - b. Start the pump and run for 30 to 40 seconds. This helps settle the sand bed and removes fine particles in the bottom of the sand bed.
 - c. Stop the pump.
12. Set the backwash valve handle to normal operation position, or to "Filter" position if a multiport backwash valve is installed. If using a slide valve, push the handle down to the normal filter position and turn the handle to lock in place.
13. Make certain all inlet and return lines to the pool are open to allow free movement of water from the pool and returning to the pool.
14. Completely open the air release valve on the gauge/air release assembly by turning the knob on the back of the assembly fully counterclockwise. Do not remove the knob.
15. Stand clear of the filter and start the pump. When a steady stream of water starts to come out of the air release valve, close the valve.
16. Ensure that the water is returning to the pool. The system is now in normal filtration mode.
17. After the pressure gauge has stabilized, turn the bezel ring so that the arrow next to the word "CLEAN" aligns with the needle of the gauge. As the filter cleans the water and the sand begins to clog, the pressure will increase. When the needle of the pressure gauge aligns with the arrow next to the word "DIRTY" on the bezel, it is time to clean the filter (see Cleaning Instructions). This indicates an increased pressure of between 10 and 12 psi above original starting pressure.

NOTE Record this initial "CLEAN" pressure. This reference will be necessary in the future, when after backwashing, the "CLEAN" pressure does not return within 5 psi of the "CLEAN" pressure. This will indicate the need to chemically clean the sand bed. See Chemical Cleaning Procedure, Section 5.3.

Section 5. Filter Cleaning

5.1 Filter Cleaning Instructions

For New Pool Startup - after 48 hours of operation on a new pool, the filter should be backwashed to clear out plaster dust and debris from the pool construction.

Backwashing your filter is required when the pressure gauge reading shows an increase of 10 to 12 psi above the "CLEAN" filter pressure. Another indicator of the need to backwash is when the flow back to the pool is reduced by 30% compared to the clean filter flow amount.

WARNING



NEVER attempt to assemble, disassemble or adjust the filter when there is pressurized air in the system. Starting the pump while there is any pressurized air in the system can cause product failure or also cause the filter lid to be blown off, which can cause death, serious personal injury or property damage.

CAUTION

To prevent the possibility of personal injury and equipment damage, always turn the pump off before changing the position of a backwash valve.

1. Turn the pump off.
2. Ensure suction piping and backwash piping is open to ensure unobstructed flow through the filter and through the backwash line.
3. Set the backwash valve handle to the "Backwash" position if a multiport backwash valve is installed, and if a slide valve is used, push handle down to the backwash position and turn handle to lock in place.
4. Stand clear of the filter and start the pump.
5. Backwash the filter for 3 to 5 minutes, or until water appears clear.
6. Turn the pump off.

7. If the multiport backwash valve has a “Rinse” position do the following:
 - a. Set the selector handle in “Rinse” position.
 - b. Start the pump and run for one minute. This helps settle the sand bed.
 - c. Stop the pump
8. Set backwash valve handle to normal operation position or to the “Filter” position if a multiport backwash valve is installed. If there is a slide valve, turn handle to unlock and pull fully upwards to normal filter position.
9. Make certain all inlet and return lines to the pool are open to allow free movement of water from the pool and returning to the pool.
10. Completely open the air release valve on the gauge/air release assembly by turning the knob on the back of the assembly fully counterclockwise. Do not remove the knob.
11. Stand clear of the filter and start the pump. When a steady stream of water starts to come out of the air release valve, close the valve.
12. Ensure that water is returning to the pool. The system is now in normal filtration mode.
13. After the pressure gauge has stabilized, compare the pressure reading to the original startup “Clean” pressure noted from the initial installation of the product. If the pressure gauge after the backwash procedure indicates more than 5 psi difference above that reading, it will be necessary to chemically clean the sand bed. See Chemical Cleaning Procedure, Section 5.3.

5.2 Optimal Filter Performance

Determine the need to backwash your filter by waiting for a 10-12 psi increase above the “Clean” filter pressure, or by determining that there is a 30% reduction in flow compared to a “Clean” filter condition. It is not recommended to backwash the filter on a timed basis, e.g. once a month. Pool, weather, dust conditions and pool occupancy all affect the frequency of the need to backwash.

NOTE: Backwashing a filter too often will actually diminish the filter performance by limiting its ability to catch finer particles.

For the best filtration, do not run your system continually for 24 hours, day after day. Allowing the filter to stop periodically will allow slight disturbance of the “mud-deck” at the surface of the sand bed, which will lower the running pressure slightly after rest, and lengthen the time between backwashing without any decrease in filtration performance.

5.3 Chemical Cleaning Procedure

Sand filter chemical cleaners remove oils, deposits and rust from the sand bed with a 12 hour overnight soaking when used according to the following instruction. Follow these instructions carefully. **Do not allow the cleaning solution to be pumped back into the pool.**

1. Use an approved cleaner for sand filters. Approved cleaners should be readily available through your pool chemical retail store, or pool maintenance service or supplier.
2. Mix the proper solution per the manufacturer's label instructions.
3. Backwash the filter per Section 5.1, "Filter Cleaning Instructions".
4. Shut the pump off.
5. If the filter is installed below the pool water level, close the appropriate isolation valve(s) to prevent the pool from draining.
6. With the pump off and automatic controls disabled, remove filter water drain cap (center threaded cap on drain fitting) and drain water from filter.
7. After filter has drained, replace cap on drain fitting.
8. Place the backwash valve in “Backwash” position. Make certain backwash lines are open.
9. Remove the strainer pot lid from the filter pump.
10. Turn the pump on and pour the cleaning solution slowly into the pump strainer until the recommended amount of cleaner is introduced to thoroughly saturate the sand bed.
11. Replace the lid on the pump.
12. Turn off the pump and leave the filter valve in the “Backwash” position.
13. Disconnect the power at the breaker to disable automatic controls. Allow the filter to stand for 12 hours.
14. After 12 hour soak, turn on the power breaker and follow backwashing instructions in Section 5.1, “Filter Cleaning Instructions”.

15. After chemical cleaning, your filter should return very close to the original "Clean" pressure reading on the filter pressure gauge that was noted at the time of the original installation with fresh sand. If that value is not available, note this new "Clean" pressure reading for future reference.
16. Turn the bezel ring on the filter gauge assembly so that the arrow next to the word "Clean" is aligned with the needle.

Section 6. Maintenance

6.1 General Maintenance

1. Wash the outside of the filter with a mild detergent and water. Rinse off with a hose. **Do not use solvents to clean the filter, solvents will damage the plastic components of the filter.**
2. Check pressure during operation at least once a week.
3. Remove any debris from the skimmer basket and hair/lint pot on pump. (Only do this with the pump not running.)
4. Check pump and filter for any leaks. If any leaks develop, **turn off the pump and call a qualified pool service technician.**
5. Product safety signs or labels should be periodically inspected and cleaned by the product user as necessary to maintain good legibility from a safe viewing distance.
6. Product safety signs or labels should be replaced by the product user when a person with normal vision, including corrected vision, is no longer able to read the safety signs or label message panel text at a safe viewing distance from the hazard. In cases where the product has an extensive expected life or is exposed to extreme conditions, the product user should contact either the product manufacturer or some other source to determine means for obtaining replacement signs or labels.
7. Installation of new replacement safety signs or labels should be in accordance with the sign or label manufacturer's recommended procedure.

6.2 Pressure Gauge

1. During operation of the filtration system, check the pressure gauge/air release assembly for air or water leaks at least once a week.
2. Keep the pressure gauge in good working order. If you suspect a problem with the gauge, Zodiac recommends you call a qualified service technician to do any work on the filter/pump system.

Section 7. Winterizing

1. Backwash the filter. See Section 5, "Filter Cleaning".
2. Turn OFF the pump and circuit breakers.
3. Open the air release valve on top of the filter.
4. Remove the drain cap at the base of the filter to ensure that the tank is empty. Store the drain cap and seal in a safe place. Do not reinstall until next season at start-up.
5. Drain system piping of all water.
6. If the multiport backwash valve has a "Winterize" position, move selector lever to that position which leaves all ports partially open for the winter non-operation, and on some backwash valves also moves the seal to a relaxed position.
7. Cover the system with a tarpaulin or plastic sheet to protect it from the weather. Do not wrap electrical motors in plastic.

Section 8. Removing the Lid

When it becomes necessary to remove the lid for cleaning or sand replacement, follow these instructions:

 **WARNING**



Never attempt to adjust or remove the lid when the pump is running or there is pressure in the system. This can cause product failure or also cause the filter lid to be blown off which can result in death, serious personal injury, or property damage.

1. Before attempting to loosen or remove the lid, turn OFF the pump and OPEN the air release valve on top of the filter. DO NOT attempt to loosen or remove the lid while the pump is running or if the filter pressure gauge indicates there is pressure in the filter.
2. First, try to remove the lid by hand using the handles.
3. If removal by hand is not successful, use a mallet or soft-faced hammer to alternately strike the handles to loosen the lid.
4. Before reinstalling the lid, read Section 3.7 Lid Installation.

 **WARNING**

Inspect the lid and tank for any damage before installing the lid. A damaged lid or tank could cause the lid to be blown off which can result in death, serious personal injury, or property damage.

Section 9. Troubleshooting

1. For a list of common problems and solutions see the Troubleshooting Guide.
2. Zodiac recommends that you call a qualified service technician to do any work on the filter/pump system. For technical support call 800.822.7933.

Troubleshooting Guide

Fault Symptom	Possible Problems	Solutions
Water is not clear.	Insufficient disinfectant level. Incorrect pool chemistry. Heavy bathing and/or dirt loads. Insufficient running times. Incorrect size or amount of sand. Backwashing too frequently.	Check and adjust disinfectant level. Test and adjust water chemistry. Adjust filter time and/or water chemistry. Increase pump run time. Check sand freeboard and sand size or consult with pool service professional. Before backwashing, allow filter pressure to increase 10-12 psi above "Clean" pressure.
Low water flow and low filter pressure.	Filter system strainer baskets dirty. Air leaks on suction side of pump. Restrictions or blockage in either suction or return lines. Filter is Dirty. Pool water level too low. Pump not primed. Pump impeller vanes blocked. Strainer baskets not being used and/or broken. (Allow debris into pump.) Pump operating under speed (low voltage).	Check and clean strainer baskets. Check all connections between pool intake and pump. Check all lines for debris or partially closed valves. Backwash or clean sand filter per instructions. Fill pool so level is above pump inlet line. Fill pump with water at basket and replace lid. Technician required. Replace baskets. Technician or electrician required.
Short filter period between backwash events.	Presence of algae clogging filter. Incorrect water chemistry. Pump output exceeds design flow rate of filter. Ineffective cleaning.	Check disinfectant content. Check pH, total alkalinity and TDS. Check pump performance. Clean or replace sand or filter media per instructions.
High pressure on start-up.	Small eyeball fitting in Pool/Spa. Partially closed valve on return line. Too large of pump. Sand bed clogged. Incorrect size of sand.	Replace with larger diameter fitting. Check and fully open all valves on return line. Check pump and filter selection. Dig out top 1" to 8" layer of sand bed and discard. Replace with new sand and chemically clean the filter. See Section 3.5 for proper sand size, and Section 5.3 for the Chemical Cleaning Procedure. See Section 3.5 for the proper sand size. NOTE: If the sand is too fine, the laterals may become clogged. Clean all slots in the laterals before replacing the sand.
Dirt returns to pool.	Channeling or void tunnels occurring through the sand bed.	Insufficient backwash flow. Check pump performance. Backwash the filter to resettle the sand bed surface.
Sand appearing in pool.	Broken lateral(s). Too much filter media in the filter. Air vent tubing is dislodged (breather tube). Backwash valve installed incorrectly. Air vent screen is missing.	Replace damaged lateral(s). Carefully follow instructions in Section 3.5, Filling the Filter with Sand. Check the media level per Section 3.5 and 3.6. Reattach tubing to fitting at internal outlet piping. Refer to backwash valve instructions. Replace air vent screen.
Sand loss to waste during backwash.	Backwash flow rate too high. Incorrect sand size or quantity.	Reduce backwash flow rate to flow indicated in Section 2.4, "Specifications and Dimensions". Change to proper sand size and verify freeboard distance is correct.

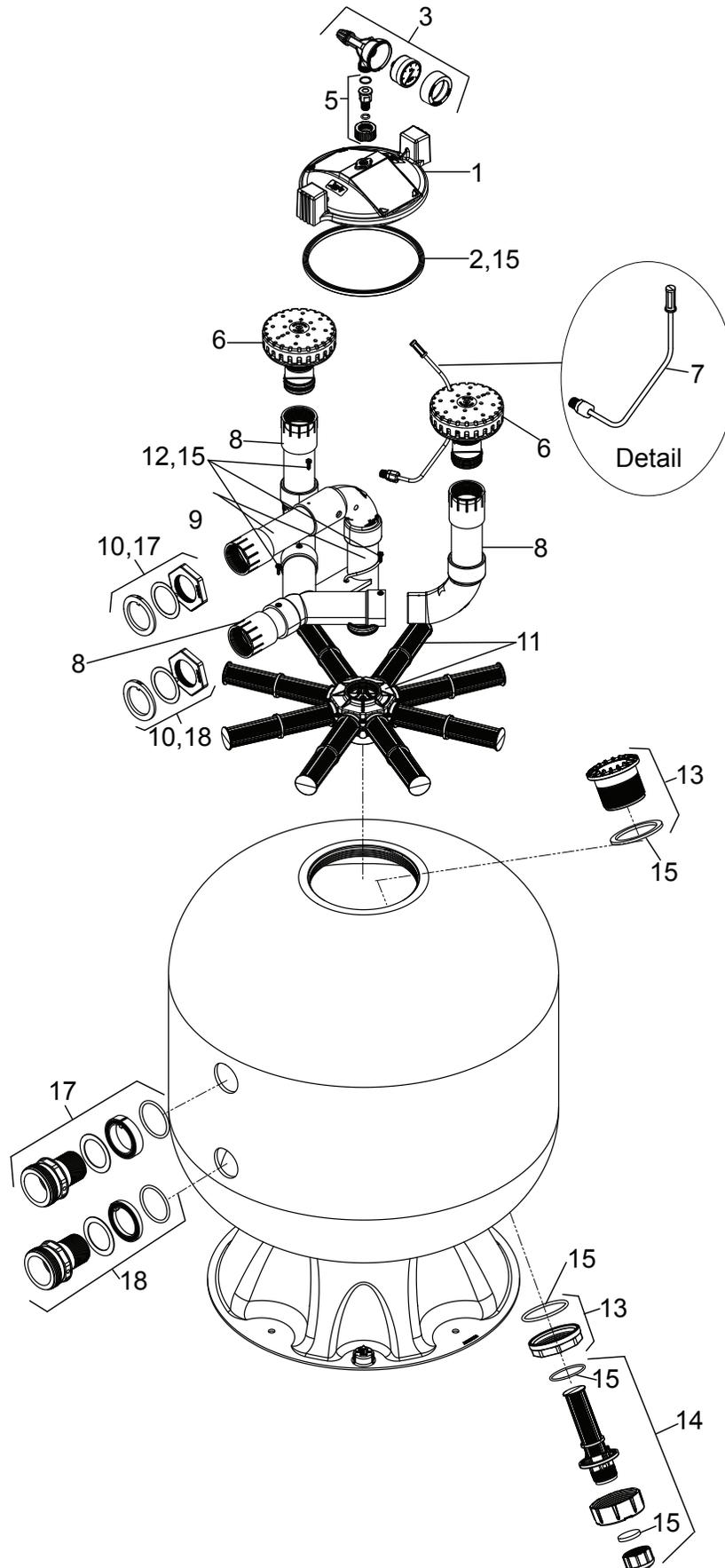
Section 10. Parts List and Exploded View

10.1 Jandy JS Sand Filter Parts List

Key No.	Description	Model No.	Part No.
1	Lid, Sand Filter	All	R0487300
2	Lid Seal, Sand Filter	All	R0487400
3	Gauge/Air Release Assembly	All	R0357200
4	Pressure Gauge	All	R0359600
5	Tank Adapter with O-Ring and Union	All	R0552000
6	Diffuser	All	R0487500
7	Air Relief Assembly	All	R0487600
8	30" Inlet Piping Kit	All	R0487700
9	Outlet Piping Kit	All	R0487800
10	Nut, Slip Ring and Inner Spacer	All	R0487900
11	Hub Assembly with 30" Laterals	All	R0488000
12	Screw, #10 x 3/4" SS (Qty 6)	All	R0488100
13	Sand Filter Drain Fitting Assembly	All	R0488200
14	Drain Screen Assembly	All	R0488300
15	Drain Fitting Seals Kit	All	R0488400
16*	O-Ring and Hardware Kit	All	R0488500
17	Outlet Fitting 30", Complete	All	R0488600
18	Inlet Fitting 30", Complete	All	R0488700
19*	Sweep Elbow	All	SEFL 1002

* Not Shown

10.2 Jandy JS Series Sand Filters Exploded View



Section 11. Head Loss Curves

11.1 Jandy JS Series Sand Filters Design Head Loss Curves

**Head Loss - JS100-SM Sand Filter
#20 Silica Sand**

