

# Sand Filter Installation and Operation Manual

### **A WARNING**

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, severe injury, or death.

FOR YOUR SAFETY - This product must be installed and serviced by authorized personnel, qualified in pool/spa installation. Improper installation and/or operation can create unwanted high pressure which can cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.



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Equipment Information Record				
Initial Pressure Gauge Reading (with clean filter)				
Pump Model	Horsepower			
Filter Model	Serial Number			
Notes:				



### SECTION 1. Safety Information

### 1A. Important Safety Warning

**A WARNING-** NEVER OPERATE THIS FILTER SYSTEM AT MORE THAN 50 PSI.



THIS FILTER OPERATES UNDER HIGH PRESSURE, WHEN ANY PART OF THE CIRCULATING SYSTEM, i.e., FILTER, PUMP, VALVE(S), CLAMPS, ETC. IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED WHEN THE SYSTEM IS STARTED. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THE INSTRUCTIONS IN THIS MANUAL.

### 1B. 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. Before repositioning valve(s) and before beginning the assembly, disassembly, 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 pressure release valve; (C) wait until all pressure is relieved.
- 2. Once service on the circulating system is complete **follow the steps in the "Start-Up and Operation" section of this manual.**
- 3. Maintain circulation system properly. Replace worn or damaged parts immediately.
- 4. Be sure that the filter is properly mounted and positioned according to these instructions.
- 5. SAVE THESE INSTRUCTIONS.



### SECTION 2. General Information

### 2A. Introduction

This manual contains information for the proper installation and operation of Jandy<sup>TM</sup> Sand Filters. Procedures in this manual must be followed exactly. To obtain additional copies of this manual contact us at 415-382-8220, ext. 237. For address information see back cover.

### 2B. Description

Debris is collected in the filter as the water flows through the multiport valve (MPV), plumbed to the filter, and directed into the top bulkhead. Dirty water flows into the diffuser at the top of the tank and is directed downward onto the top of the filter sand bed. The debris is collected in the sand bed and the clean water flows through the laterals and lower piping at the bottom of the filter up into the lower bulkhead. Clean water then goes into the MPV and is returned through the piping system to the pool.

As debris collects in the filter, the pressure will rise and water flow to the pool will diminish. The filter will eventually become so plugged with debris that it will be necessary to perform the backwash procedure. It is important to know when to backwash the filter. See Section 4 for further discussion of backwashing the filter.

Note: A filter removes dirt and other suspended particles, and 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. As a minimum, the system should turnover the total volume of water in your pool at least two to four times in a 24 hour period.

#### 2C. General Requirements

- 1. For best overall performance locate the system as close as possible to the pool.
- 2. The filter should be located on a level concrete slab so that the orientation of the valve outlets are convenient and accessible for the installation and operation of the unit.
- 3. Provide for protection 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. Incorrect application may void product warranty.

- 5. Provide barrel unions to each item of equipment for future servicing of equipment. All Teledyne Laars/Jandy Products filters come with these type of fittings.
- 6. The maximum working pressure for SF-T & SF-S filters is 50 psi (for ST-T filters the maximum working pressure is 35 psi). Never subject the filter to pressure exceeding recommended psi, even when conducting hydrostatic pressure tests.

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.

### 2D. Sand Requirements

- 1. Use a #20 Silica Sand (for pool filter use only), with a size range of .40-.55mm.
- 2. See Table 1 for recommended quantity of sand required.
- 3. Recommended sands:
  - a. Wedron Silica/Best Sand Co. Sand Grade- .45-.55mm Effective Size- .46mm
  - U.S. Silica/Silurian Filter Sand Sand Grade- .45-.55mm
     Effective Size- .48mm

Table 1. Quantity of sand required

Model#	lbs.
SF28-T	450
SF30-T	500
SF32-T	600
SF36-T	800
ST20-T	200
ST24-T	300
SF24-S	300
SF30-S	450
SF36-S	800



#### 2E. Dimensions

Table 2. Dimensions for Jandy™ ST-T Filters

Model#	$\mathbf{A}$	В	C
ST20-T	331/2"	231/2"	21¾"
ST24-T	331/2"	231/2"	25¾"

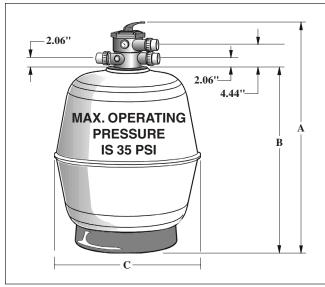


Figure 1. Dimensions, ST-T Series

Table 3. Dimensions for Jandy™ SF-T Filters

Model #	A	В	C	D	E	F
SF28-T	391/2"	301/4"	29"	2"	2"	41/2"
SF30-T	47"	371/4"	31"	21/2"	21/2"	51/2"
SF32-T	45¾"	341/2"	33"	21/2"	21/2"	51/2"
SF36-T	471/4"	381/2"	37"	21/2"	21/2"	51/2"

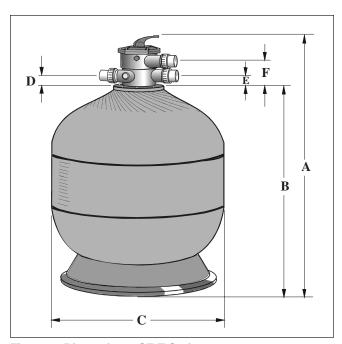


Figure 2. Dimensions, SF-T Series

Table 4. Dimensions for Jandy™ SF-S Filters

Model #	A	В	C	D	E
SF24-S	321/2"	34"	24¾"	231/2"	211/4"
SF30-S	371/4"	431/4"	301/2"	26¾"	231/2"
SF36-S	43"	491/2"	36¾"	291/4"	26"

**Note**: The waste outlet is the same height as the return outlet.

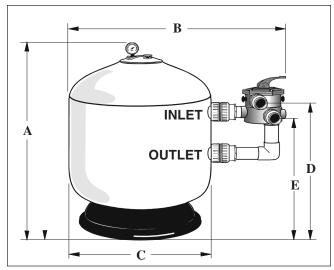


Figure 3. Dimensions, SF-S Series

### **SECTION 3.** Installation Instructions

### 3A. Filter Preparation

- 1. Check carton for any damage due to rough handling in shipment. If carton or any filter components are damaged, notify carrier immediately.
- 2. Carefully remove the accessory package and the filter tank from the carton.
- 3. A visual inspection of all parts should be made now.
- 4. Mount the pressure gauge to the top of the filter. **Note:** On top mount filters, the pressure gauge mounts into the MPV.
- 5. Install the pressure release valve to the top of the filter. **Note:** On top mount filters, the pressure relief knob mounts into the MPV.



#### 3B. 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, once loaded with media, can weigh up to 800 lbs.
- 3. Install electrical controls at least five (5) feet from the filter. This will allow enough room to stand away from the filter during start-up.
- 4. Allow sufficient clearance around the filter to permit a visual inspection of the entire system (see Fig. 4).

### **WARNING**

Water discharged from an improperly positioned filter or valve can create an electrical hazard and can damage property.

- 5. Position the filter to safely direct water drainage. Align the pressure release valve to safely direct purged air or water.
- 6. If the system is to be located above water level it can be raised 2.5 ft., without affecting the pump efficiency. A check valve is recommended on the suction line to the pump.

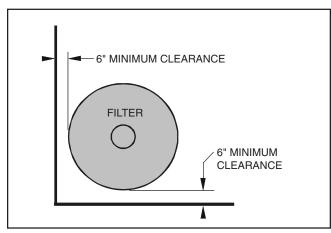


Figure 4. Filter Location

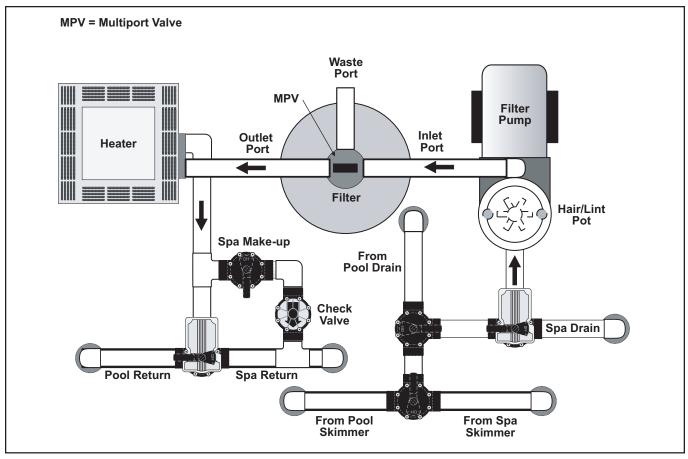


Figure 5. Basic Pool/Spa Combination Plumbing

Jandy

7. If the system is to be installed below water level, valves should be on both the suction and return lines to prevent back flow of pool water during any routine servicing that may be required.

#### 3C. Filter Installation

- 1. This filter operates under pressure. When clamped properly and operated without air in the water system, this filter will operate in a safe manner.
- 2. If doubt exists as to the pressure which the system will be subjected to, install an ASME approved automatic Pressure Relief Valve or Pressure Regulator in the circulation system for the lowest working pressure of any of the components in the system.

### **A** Caution

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

- 3. Place on the concrete pad, lined up with the inlet/outlet pipes (see Fig. 5).
- 4. To reduce pressure losses, 2" (minimum) piping is recommended.
- 5. For best efficiency use the fewest possible fittings. This will prevent a restriction in the water flow.
- Make all plumbing connections in accordance with local plumbing and building codes. Filter connections are provided with an o-ring seal. Do not use pipe joint compound, glue or solvent on bulkhead connections.
- 7. 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.
- 8. Support the inlet/outlet pipes independently to prevent any undue strains on the filter valve.
- 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.
- 10. Be sure that all provisions for waste water disposal meet local, state or national codes. One hundred gallons or more of pool water will be discharged during filter backwashing. Do not discharge water where it will cause flooding or damage.

### **WARNING**

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

# SECTION 4. Start-Up and Operation

### **WARNING**

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

### **WARNING**

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

### **A** Caution

Do not operate filter at water temperatures above 120° F (65.5° C).

### 4A. New Pool and Seasonal Start-Up

- 1. With the pump **off**, set MPV to "Backwash" position. Remove the hair/lint pot lid and fill with water. Replace the hair/lint pot lid
- 2. Open pressure release valve on filter or MPV.
- 3. Stand clear of the filter, start the pump and circulate the water backwards through the filter to waste.
- 4. Close pressure release valve when a steady stream of water is moving through the filter.
- 5. Run the pump for approximately five minutes or until waste water is clear (this purges excess fine particles from the system).
- 6. Turn the pump **off**, and move valve handle to the "Rinse" position. Stand clear of the filter, turn pump **on** and circulate the water for 10 seconds.
- 7. Turn pump **off**, move the valve handle to "Filter". Stand clear of the filter, and start the pump.



### 4B. Normal Operation

- 1. With the pump **off**, set MPV handle to "Filter" position.
- 2. Fill the hair/lint pot, on the pump, with water.
- 3. Open filter pressure release valve, stand clear of the filter, and turn the pump **on.**
- 4. When a steady stream of water comes from the pressure release valve, close the valve.
- 5. With the filter/pump operating, record the initial pressure gauge reading in this manual. When reading is 10 to 12 psi above the initial reading it is time to backwash the filter.

### 4C. Valve Operation

- The flow of water through a sand filter is controlled by the multiport valve (MPV) which comes completely assembled and ready for operation.
- 2. The handle on top of the MPV can be moved to any of six different positions. The function of each position is described below.

#### Valve Position **Function FILTER** Normal filtration and vacuuming. **BACKWASH** Cleaning filter by reversing the flow. Used after backwash to flush **RINSE** dirt from the valve. **WASTE** Bypasses filter; used for vacuuming to waste, or lowering water level. Bypasses filter for circulating RECIRCULATE water to the pool. **CLOSED** Shuts off all flow to the filter and pool.

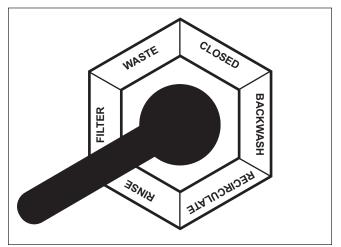


Figure 2. Multi Port Valve Handle Positions (shown in Rinse position).

## **SECTION 5. Backwashing the Filter**

### Caution

Be sure all provisions for waste water disposal meet applicable local, state or national code. 100 gals. or more of pool water will be discharged during filter backwashing. Do not discharge where water will cause flooding or damage.

### WARNING

To avoid equipment damage and personal injury, never change control valve handle while pump is running.

### 5A. Backwashing

- 1. Turn the pump off.
- 2. With filter pump **off**, set the MPV handle to "Backwash" position.
- 3. Open pressure release valve.
- 4. Stand clear of the filter, and start the pump to circulate the water backwards through the filter to the waste line.
- 5. Close pressure release valve until a steady stream of water is moving through the filter.
- 6. Backwash until water is clear.
- 7. Turn **off** the pump and set the MPV handle to the "Rinse" position.
- 8. Stand clear of the filter, turn **on** the pump then run the pump for one minute.
- 9. Turn **off** the pump and set the MPV handle to the "Filter" position.
- 10. Follow the steps under 4B "Normal Operation" to restart the system.



### 5B. Filter Disassembly/Assembly

- 1. Backwash filter according to the instructions under "Backwashing the Filter" (omit this step when first filling a new filter).
- 2. Stop the pump, disconnect the power if necessary.
- 3. Open pressure release valve on top of the filter tank to release all air pressure from inside the tank and system. On models with a top mounted valve, the pressure release valve is on the multiport valve.
- 4. Remove the filter drain plug from the bottom of the tank and drain any water remaining in the system.
- 5. Unscrew the multiport valve (on top mounted models) and remove. On side mounted models unscrew the cap on top of the filter tank.
- 6. Before filling the filter tank with sand, make sure that the correct grade and quantity is used (see Section 2D).
- 7. Before pouring the sand into the filter tank, do a visual check of the laterals. Look for broken or loose laterals. Replace if necessary.
- 8. After removing the top cap, on Side Mount Filter models, there will be one or two funnels visible. Cover these funnels to prevent sand from entering the laterals. Also, cover the breather tube assembly. Be sure to uncover them after step 10.
- 9. To eliminate stress on the laterals, fill tank with enough water to cover the laterals. Pour sand in slowly.
- 10. Wash all sand and debris away from the threads of the filter tank. Remove covers over the funnels.
- 11. When assembling the top cap or MPV, check the o-ring for cracks or tears. Replace if necessary.
- 12. Thread the top cap or MPV into the filter tank. Hand tighten only.

### SECTION 6. Maintenance

#### 6A. General Maintenance

- 1. Wash outside of 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. Inspect the sand bed at least once a year.
  Remove any foreign material which has not been backwashed out of the system.
- 3. Check pressure during operation at least once a week.
- 4. Remove any debris from the skimmer basket.
- 5. Check pump and filter for any leaks. If any leaks develop, turn **off** the pump and call a qualified pool service technician.

### 6B. Pressure Gauge

### $\overline{\Lambda}$

#### Caution

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

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

# **SECTION 7.** Winterizing

### 7A. Winterizing

- 1. Turn **off** the pump.
- 2. Open pressure release valve and move the MPV handle to a position between two ports. This will allow air to flow to all ports.
- 3. Remove any drain plugs from the filter.
- 4. Drain system piping of all water.
- 5. Cover the system with a tarpaulin or plastic sheet to protect from the weather.



# SECTION 8. Troubleshooting

### 8A. Troubleshooting

1. Teledyne Laars/Jandy Products recommends that you call a qualified service technician to do any work on the filter/pump system. For technical service call 415-382-8220, ext. 260.

Troubleshooting (	Guide
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Water is not clear. Insufficient disinfectant level.

Incorrect pool chemistry.

Heavy bathing and/or dirt loads.

Incorrect flow.

Insufficient running times. (Increase pump run time.)

Filter is dirty. (Backwash per instructions.)

Low water flow. Check strainer baskets for debris.

Check for air leaks on suction side.

Check for restrictions or blockage in either suction or return lines.

Filter needs to be backwashed. Pool water level too low. Pump not primed.

Pump impeller vanes blocked.

Strainer baskets not being used and/or not being cleaned regularly.

Pump operating under speed (low voltage).

Short filter cycles. Presence of algae, check disinfectant content.

Check pH and total alkalinity.

Pump output exceeds design flow rate of filter, check pump

performance.

Ineffective backwash, check conditions.

High pressure on start-up. Small eyeball fitting in Pool/Spa.

Partially closed valve on return line. Too large of pump, check selection.

Sand returns to pool line. Check that connections into multiport valve are correct.

Check for damaged or leaky drain plug.

Verify that it is filter sand that is returning to the pool. It may be

an external source.

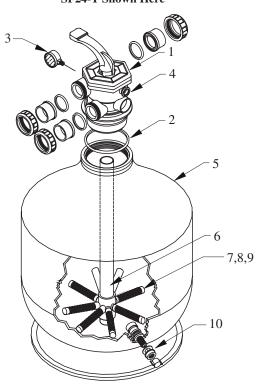
Broken Laterals. (Call for service.)

For Technical Service call 415-382-8220, ext. 260

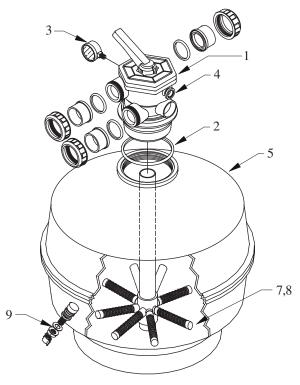


# **SECTION 9. Sectional Views and Parts List**

SF24-T Shown Here



### ST24-T Shown Here



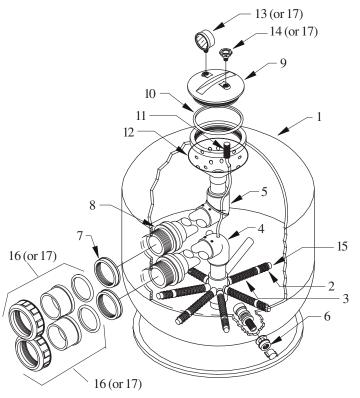
### 9A. Jandy™ SF-T (Fiberglass, Top Mount)

Ke <sub>y</sub> No	•	Size	ORDER PART NO:
1	Multiport Valve, 11/2", Threaded	SF24-T	A0102200
1	Multiport Valve, 1½", Threaded	SF28-T	A0102200
1	Multiport Valve, 2", Bolt down flange	SF30-T	A0102300
1	Multiport Valve, 2", Bolt down flange	SF32-T	A0102300
1	Multiport Valve, 2", Bolt down flange	SF36-T	A0102300
2	Multiport Valve O-ring	All	R0354800
3	Pressure Gauge w/ o-ring	All	R0349300
4	Pressure Relief Valve w/ o-ring	All	R0349200
5	Tank Body		
6	Collector Tube/Lateral		
_	Manifold Assembly,1½"	SF24-T	R0354901
6	Collector Tube/Lateral		_
_	Manifold Assembly,1½"	SF28-T	R0354902
6	Collector Tube/Lateral		
_	Manifold Assembly, 2"	SF30-T	R0355001
6	Collector Tube/Lateral		
_	Manifold Assembly, 2"	SF32-T	R0355002
6	Collector Tube/Lateral		
_	Manifold Assembly, 2"	SF36-T	R0355003
7	75mm Lateral (8)	SF24-T	R0349400
8	110mm Lateral (8)	SF24-T	R0349500
	200mm Lateral (16)(not shown)	SF28-T	R0350800
	200mm Lateral (16)(not shown)	SF30-T	R0350800
	75mm Lateral (8)(not shown)	SF32-T	R0349400
	145mm Lateral (8)(not shown)	SF32-T	R0349600
	145mm Lateral (16)(not shown)	SF36-T	R0349600
9	Lateral End Cap (8)	All	R0349700
10	Drain Plug Assembly	All	

### 9B. Jandy™ ST-T (Thermoplastic, Top Mount)

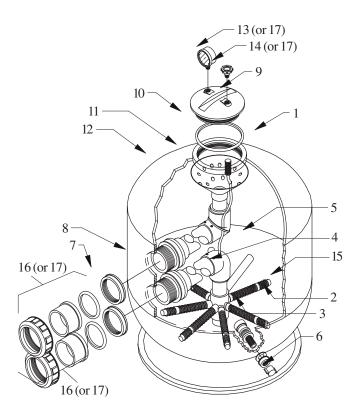
Key No. Description	Size	ORDER PART NO:
1 Multiport Valve, 11/2", Threaded	All	A0102200
2 Multiport Valve O-ring	All	R0354800
3 Pressure Gauge w/ o-ring	All	R0349300
4 Pressure Relief Valve w/ o-ring	All	R0349200
5 Tank Body		
6 Collector Tube/Lateral		
Manifold Assembly,11/2"	All	R0354903
110mm Lateral (8)(not shown)	SF20-T	R0349500
7 75mm Lateral (16)	SF24-T	R0349400
8 Lateral End Cap (8)	All	R0349700
9 Drain Plug Assembly	All	R0355100





### 9C. Jandy™ SF24-S

	ORDER
Size	PART NO:
SF24-S	
SF24-S	R0349400
SF24-S	R0349500
SF24-S	R0354100
All	R0354200
All	R0355100
All	R0354300
All	R0354400
All	R0354500
All	R0354600
All	R0352500
All	R0354700
All	R0349200
All	R0349301
All	R0349700
All	R0339500
All	R0355600
	SF24-S SF24-S SF24-S SF24-S All All All All All All All All All Al



### 9D. Jandy™ SF30-S & SF36-S

Key No. Description	Size	ORDER PART NO:
1 Filter Tank, SF30-S	SF30-S	
1 Filter Tank, SF36-S	SF36-S	
2 Lateral, 75mm	SF30,36	R0349400
3 Lateral, 145mm	SF30-S	R0349600
3a Lateral, 200mm (not shown)	SF36-S	R0350800
4 Lateral Manifold Assembly	SF30-S	R0354102
4 Lateral Manifold Assembly	SF36-S	R0354103
5 Inlet Tube Assembly	SF30-S	R0354202
5 Inlet Tube Assembly	SF36-S	R0354203
6 Drain Plug Assembly	All	R0355100
7 Half Unions, Bulkhead (2)	All	R0354300
8 Gasket, Half Union	All	R0354400
9 Top Cap	All	R0354500
10 O-ring, Top Cap	All	R0354600
11 Breather Tube Assembly	All	R0352500
12 Funnel (1)	All	R0354700
13 Pressure Gauge w/o-ring	All	R0349300
14 Air Relief Valve w/o-ring	All	R0349200
15 Lateral End Cap (8)	All	R0349700
16 Half Unions (2)	All	R0339500
17 Accessory Bag w/Half		
Unions (2), Pressure Gauge,		
Air Relief Valve, Instructions	All	R0355600

### NOTES

### LIMITED WARRANTY

Thank you for purchasing Jandy® pool and spa products. Water Pik Technologies (manufacturer of Jandy products, including Laars® pool and spa heaters, Air Energy Heat Pumps, and Clormatic Electronic Chlorine Generators) warrants all parts to be free from manufacturing defects in materials and workmanship for a period of one year from the date of retail purchase, with the following exceptions:

- AquaLink® RS units installed with Jandy Surge Protection Kits will be covered for two years.
- NeverLube® valves are warranted for the life of pool and/or spa on which they were originally installed.
- AquaPure™ Electronic Chlorine Generator Electrolytic Cells carry a 5 year limited warranty on a prorated basis.

This warranty is limited to the first retail purchaser, is not transferable, and does not apply to products that have been moved from their original installation sites. The liability of Water Pik Technologies shall not exceed the repair or replacement of defective parts and does not include any costs for labor to remove and reinstall the defective part, transportation to or from the factory, and any other materials required to make the repair. This warranty does not cover failures or malfunctions resulting from the following:

- 1. Failure to properly install, operate or maintain the product(s) in accordance with our published Installation, Operation and Maintenance Manuals provided with the product(s).
- 2. The workmanship of any installer of the product(s).
- 3. Not maintaining a proper chemical balance in your pool and/or spa [pH level between 7.2 and 7.8, Total Alkalinity (TA) between 80 to 120 ppm, Total Dissolved Solids (TDS) less than 2000].
- 4. Abuse, alteration, accident, fire, flood, lightning, rodents, insects, negligence or acts of God.
- 5. Scaling, freezing, or other conditions causing inadequate water circulation.
- 6. Operating the product(s) at water flow rates outside the published minimum and maximum specifications.
- 7. Use of non-factory authorized parts or accessories in conjunction with the product(s).
- 8. Chemical contamination of combustion air or improper use of sanitizing chemicals, such as introducing sanitizing chemicals upstream of the heater and cleaner hose or through the skimmer.
- 9. Overheating, incorrect wire runs; improper electrical supply; collateral damage caused by failure of O-Rings, DE grids, or cartridge elements; or damage caused by running the pump with insufficient quantities of water.

#### **LIMITATION OF LIABILITY:**

This is the only warranty given by Water Pik Technologies. No one is authorized to make any other warranties on Water Pik Technologies' behalf. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. WATER PIK TECHNOLOGIES EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT OR PUNITIVE DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY. This warranty gives you specific legal rights. You may also have other rights which vary by state or province.

#### **WARRANTY CLAIMS:**

For prompt warranty consideration, contact your dealer and provide the following information: proof of purchase, model number, serial number and date of installation. The installer will contact the factory for instructions regarding the claim and to determine the location of the nearest designated service center. If the dealer is not available, you can locate a service center in your area by visiting www.jandy.com or by calling our technical support department at (707) 776-8200 extension 260. All returned parts must have a Returned Material Authorization number to be evaluated under the terms of this warranty.

