

# **R<sub>x</sub> Clear™**

## **LIBERTY and PATRIOT SAND FILTER SERIES**

### **INSTALLATION & OPERATION MANUAL**

#### **RX Clear™ Patriot Sand Filters**



**8" Tank**

**MLA-F91-PS08**



**12" Tank**

**MLA-F91-PS12**



**16" Tank**

**MLA- F91-PS16**



**22" Tank**

**MLA-F91-PS22**



**24" Tank**

**MLA-F91-P24**

#### **RX Clear™ Liberty Sand Filters**



**14" Tank**

**MLR- F91-LS14**



**15" Tank**

**MLR-F91-LS15**

Notice: This manual contains important information and must be kept for reference.  
Installers: after installation is complete this manual must be given to owner / operator of equipment.





**Millstream  
Distribution LLC**


Millstream Distribution LLC  
1-800-253-4775  
[www.millstreamdstr.com](http://www.millstreamdstr.com)


## SAFETY INFORMATION


**READ THESE INSTRUCTIONS THOROUGHLY BEFORE OPERATING YOUR FILTER. REFER TO PRODUCT DATA FOR ADDITIONAL OPERATION INSTRUCTIONS AND SPECIFICATIONS.**


 **WARNING** This equipment must be installed and serviced by a qualified technician in accordance with all applicable codes and ordinances. Improper installation can create hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.


 **WARNING** To reduce risks of injury do not permit children to use this product unless they are closely supervised at all times.


 **WARNING** Risk of suction entrapment hazard which, if not avoided will result in injury or death.

 **WARNING** Never place filter where it can be pushed or in some way fall into the pool (e.g: setting atop pool deck).

 **WARNING** Do not allow anyone under the influence of drugs or alcohol to operate, use pool filters, or any pool equipment.

 **WARNING** Never run filter with more than 20 PSI pressure. Tank could rupture and serious personal injury could occur.

 **WARNING** Sand filters are designed to work with water at a temperature from 32° Fahrenheit - 110° Fahrenheit.

 **WARNING** Do not store pool chemicals near equipment. Spills and fumes can result in damage and weakening of equipment to fail.

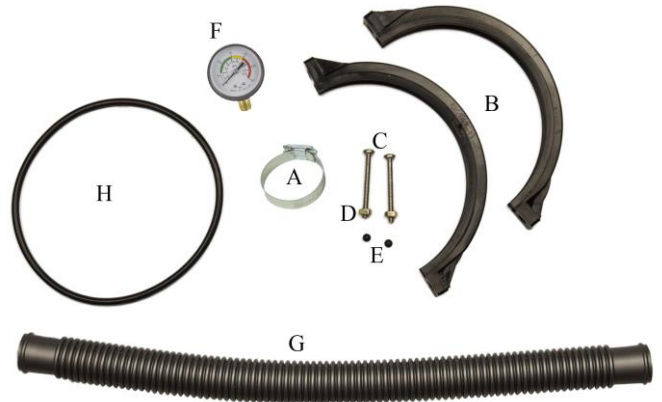
## LIST OF COMPONENTS

***Thank You For Your Purchase!!!***

Below is a list of components that should be included with your filter in order to complete the assembly process.

### **For use with 4-way push/pull valve**

Ref	Description	QTY
A	#16 Hose Clamp – Zinc	2
A	#16 Hose Clamp – S/S	1
B	Flange Clamps – halves	2
C	¼ - 20 x 2 ½ Phillips head bolt	2
D	¼ - 20 Hex Nut	2
E	Thread Protectors	2
F	Pressure Gauge	1
G	Filter Hose – size varies by model	1
H	O-Ring	1



**NOTE:** *Filter hose is used to connect filter to pump*

### **For use with 6-way multi-port valve**

Ref	Description	QTY
A	#24 Hose Clamp – Zinc	2
B	Flange Clamps – halves	2
C	¼ - 20 x 2 ½ Phillips head bolt	2
D	¼ - 20 Hex Nut	2
E	Thread Protectors	2
F	Saturn Gasket	1
G	Pressure Gauge	1
H	High Pressure Hose	1
I	Hose Connector	3



**NOTE:** High pressure hose is used to connect filter to pump. Hose connectors are used to make all connections from 6-way multi-port valve to pump and pool.

### **LIST OF TOOLS REQUIRED THAT ARE NOT INCLUDED**

- Phillips head screwdriver
- Flat head screwdriver
- Lubricant (non-petroleum based)
- Teflon tape

## INSTALLATION OF FILTER

1. Position tank on level, solid ground approximately 3 feet away from pool skimmer and pool return.
2. Ensure the black pipe adapter found on the PVC or Polyethylene standpipe completely engages over 1.25" diameter opening of the underdrain (lateral assembly found at the bottom of the tank.) Center the standpipe to the tank opening.
3. Filter should be positioned so that piping connections, multi-port valve and winter drain are easily accessible.

### Filter Media

4. Do not remove cardboard insert on top of standpipe. This ensures no media is spilled into the pipe opening and helps to center the standpipe.
5. When using sand and / or alternative media fill tank ¼ full of water before adding.

**NOTE: This allows for more even settling of filter media.**

6. Pour media in each side of the tank making sure to distribute evenly throughout.
7. Do not fill tank more than 2/3<sup>rd</sup> full with media.

**NOTE: If using sand, only use pool filter sand grade 20**

8. See chart below for required amount:

<b>Model</b>	<b><u>Amount Required Per Filter</u></b>	
	<b>Sand</b>	<b>Rx Clear™ Luster</b>
Rx Clear™ 8" Patriot	50 lbs	1 Box
Rx Clear™ 12" Patriot	75 lbs	1 ½ Boxes
Rx Clear™ 16" Patriot	125 lbs	2 ½ Boxes
Rx Clear™ 22" Patriot	150 – 200 lbs	3 - 4 Boxes
Rx Clear™ 24" Patriot	250 lbs	5 Boxes
Rx Clear™ 14" Liberty	Up to 50 lbs	1 Box
Rx Clear™ 15" Liberty	Up to 100 lbs	2 Boxes

9. With media in filter tank, add water until full
10. Once completed remove the standpipe insert and store for later use.

## **MULTI-PORT VALVE INSTALLATION**

**NOTE:** *Prior to installation ensure the exposed standpipe end is free of debris and has a small amount of lubricant applied.*

### **FOR 4 WAY PUSH/PULL VALVE**

1. Apply lubricant to o-ring then place in track on the bottom of the valve.
2. Align the valve with the standpipe; connect the two using the s/s hose clamp provided by tightening it.

**NOTE:** *Once the connection is made the valve will not sit directly on the tank top. The standpipe is flexible, designed to be maneuvered and pushed down into the tank.*

3. Seal the valve to the tank, fasten the two clamp halves together using screws provided. Place thread protectors over exposed threads. Refer to **Figure 1** for detailed instructions.

### **FOR 6 WAY MULTI-PORT VALVE**

1. Apply lubricant to saturn gasket then place in track on the bottom of the valve.
2. Apply lubricant to top of standpipe, place valve over top of standpipe push down on valve firmly over pipe until it is seated on top of tank.
3. Seal the valve to the tank by fastening the two clamp halves together using the screws provided. Place thread protectors over exposed threads. Refer to **Figure 1** for detailed instructions.

## FIGURE 1

### CLAMPING RING INSTRUCTION

- Top view of tank and clamping rings (valve omitted for the sake for visual clarity).



***CAUTION: Over tightening of screws can cause and worsen leaks. Over tightening will ultimately break the clamp. DO NOT USE POWER SCREWDRIVERS TO TIGHTEN CLAMP SCREWS.***

- When properly tightened, the gap between the clamp halves should be  $\frac{1}{4}$ " to  $\frac{3}{8}$ ".
- Make sure to tighten clamp halves evenly. The gaps on both sides should match.
- Make sure to line up clamp halves so the gaps are aligned over the tank seam.

## VALVE POSITIONS

**NOTE:** *Before operating or switching valve positions, the pool pump must be turned off.*

### 4 WAY PUSH/PULL VALVE

See label attached to valve and explanations below

### FOR 6 WAY MULTI-PORT VALVE POSITIONS

1. **Filter – Position for filtering the body of water.** Incoming water from the piping system is automatically directed by the Multiport Valve to the top of the filter bed. As the water is pumped through the filter sand, dirt, and debris are trapped by the filter bed, and filtered out. The filtered water is returned from the bottom of the filter tank, through the Multiport Valve and back through the piping system.
2. **Backwash – Position for cleaning the filter media.** Water flow is reversed by the Multiport Valve through the filter bed so that water flow is directed to the bottom of the tank and up through the filter bed, flushing the previously trapped dirt and debris out the backwash / waste port.
3. **Rinse – Position for flushing the filter system.** The water flow is directed to the Multiport Valve through the filter bed and out the water line. This process settles the filter media bed into place and ensures any dirt and debris is rinsed out of the filter, preventing possible return to the Swimming Pool / Spa (**6-way valve only**).  
**NOTE:** *“Waste” position on push / pull valve is interchangeable as “rinse” position.*
4. **Waste – Position for bypassing the filter bed to Waste.** The water flow is directed by the Multiport Valve straight to the backwash outlet, bypassing the entire filter bed. This Multiport Valve position is used to lower the water level or for vacuuming water with high dirt loads.
5. **Re-circulate – Position for bypassing the filter bed to the Swimming Pool / Spa.** The Multiport Valve re-circulates water flow directly back to the Swimming Pool / Spa, bypassing the filter (**6-way valve only**).
6. **Closed - Position for closing all flow to the filter.** This position is not to be used with the pump operating.  
**CAUTION:** *Operation of the Multiport Valve or mode selection is always done with the pump turned off.*

## **Initial Startup Operation of Filter**

### **4 WAY PUSH/PULL VALVE**

1. Rotate knob to align arrow on knob with up arrow. Pull knob out to expose stem. Valve is now positioned in BACKWASH.

**NOTE:** *Length that stem is exposed controls amount of flow.*

2. Switch on the Pump.

**CAUTION:** *All suction and discharge valves must be open when starting the pump. Failure to do so could cause severe personal injury and/or property damage.*

3. Once water flow is steady out of the waste line, run the pump for at least one minute. The initial backwashing of the filter is recommended to remove any impurities or fine sand particles in the filter media.
4. Turn the pump off, set valve to DIRECT WASTE. To do this rotate knob 90° to align knob arrow with side arrow. Switch on the pump.

**NOTE:** *Entire stem should be exposed in this position.*

5. Switch off the Pump. Set the Push / Pull Valve to the FILTER position and Switch on the Pump. Your filter is now operating in the normal filter mode.
6. Adjust pool suction and return valves to achieve desired flow. Check the plumbing and filter for water leaks and tighten connections, bolts, and nuts, as required.  
**NOTE:** *During initial clean-up of the pool water, it may be necessary to backwash frequently due to the unusually heavy initial dirt load in the water.*
7. Record the pressure gauge reading (start up pressure) during initial operation. After a period of time, the accumulated dirt and debris in the filter causes a resistance to flow, and the flow to diminish. The pressure will start to rise and the flow of water will start diminishing. When the pressure gauge reading is 8-10 PSI higher than the initial “Start up” pressure, it is time to backwash (clean) the filter (see Backwashing).



## Initial Startup Operation of Filter

### 6 WAY MULTI-PORT VALVE

Be sure correct amount of filter media is in tank and that all connections have been made and are secure.

1. Depress Multiport Valve handle and rotate to the BACKWASH position.  
***NOTE: To prevent damage to control valve seal, always depress handle before turning.***
2. Switch on the Pump.  
***CAUTION: All suction and discharge valves must be open when starting the pump. Failure to do so could cause severe personal injury and/ or property damage.***
3. Once water flow is steady out of the waste line, run the pump for at least one minute. The initial backwashing of the filter is recommended to remove any impurities or fine sand particles in the filter media.
4. Turn the pump off. Set the Multiport Valve to the RINSE position. Switch on the Pump.
5. Switch off the Pump. Set the Multiport Valve to the FILTER position and Switch on the Pump. Open the Inlet. Your filter is now operating in the normal filter mode.
6. Adjust pool suction and return valves to achieve desired flow. Check the plumbing and filter for water leaks and tighten connections, bolts, and nuts, as required.  
***NOTE: During initial clean-up of the pool water, it may be necessary to backwash frequently due to the unusually heavy initial dirt load in the water.***
7. Record the pressure gauge reading (start up pressure) during initial operation. After a period of time, the accumulated dirt and debris in the filter causes a resistance to flow, and the flow diminishes. The pressure will start to rise and the flow of water will start to diminish. When the pressure gauge reading is 8-10 PSI higher than the initial “Start up” pressure, it is time to backwash (clean) the filter (see Backwashing).

## **BACK WASHING**

The function of backwashing is to separate the deposited particles from the filter media grains and flush them from the filter bed. Backwashing is achieved by reversing the flow of water through the filter based at a fairly high flow rate. This high flow rate expands the filter bed and the water collects the debris taking it to waste.

### **Conditions for Backwashing**

Time for backwashing is determined by the following conditions:

1. The flow rate through the filter bed decreases until it is insufficient to meet the demand.
2. The removal efficiency of the filter bed decreases to the point where the water quality deteriorates and is no longer acceptable.
3. When the pressure gauge reading is 9 PSI higher than the start up pressure.
4. If the filter is connected to main water, pressure rise is not an accurate indicator as main pressure tends to fluctuate. It is best to rely on the actual flow rate.

***NOTE: We recommend that you backwash a swimming pool sand filter in a residential installation at least once a month.***

### **Importance of Backwashing**

The importance of backwashing cannot be overstated. Dense filter media can become “packed” without proper and frequent backwashing. Debris will remain trapped and create channeling within the filter bed. This will result in the filter bed exhausting early. Moreover, if debris is not flushed from the media grains, the filter bed will become dirtier and dirtier as time goes on until the filter operation fails.

### **Backwashing Instructions**

1. Switch off the Pump.  
***NOTE: If a pump is installed, switch the pump on and off, instead of closing and opening the Inlet Valve.***
2. Turn off the pump. Depress and turn handle 180° to the BACKWASH position. In the BACKWASH position, the water flow is automatically reversed through the filter so that it is directed to the bottom of the filter tank, up through the sand, flushing the previously trapped dirt and debris out the waste / back wash line.
3. Switch on the Pump. Backwash water will flow out through backwash /waste drain line.
4. When the backwash water in the sight glass appears clear, Switch off the Pump.
5. Depress and turn the handle to the RINSE position. In the RINSE position water flow is directed through the filter bed and out of the filter through the backwash outlet. This process settles the filter media bed into place and ensures any dirt or debris is rinsed out of the filter, preventing possible return to the pool.

6. Switch on the Pump. Rinse water will flow out through the backwash / waste drain line.
7. When the rinse water in the sight glass appears clear, switch off the pump.
8. Depress and turn the handle to the Filter position and switch on the pump.

## **MAINTENANCE**

The filter media will only require replacement once it has reached the limits of its designated life. Refer to the product information of the particular filter media used. To ensure the maximum life of the selected filter media, please follow the procedures below.

1. Backwash the filter regularly according to the instructions set under BACKWASHING.
2. Refer to the specifications of the filter media used and implement regeneration procedures accordingly.
3. Maintain a correct chemical balance for your pool or spa's water. The chemical balance of the water is a relationship between its pH, Total Alkalinity, Calcium Hardness and water temperature. The water must be maintained to the following:  
pH Level: 7.2-7.8.  
Total Alkalinity: 80-175ppm  
Calcium Hardness: 175-300ppm  
And within these tolerances be balanced to the Langelier Saturation Index within a range of -0.2 to +0.2.  
***NOTE: Testing kits/strips are available to test the water yourself or alternately bring a sample of the water to a professional pool and spa store.***
4. To prevent damage to the pump and filter and for proper operation of the system, clean pump strainer and skimmer basket regularly.
5. Replace the pressure gauge if faulty readings are observed.
6. At the end of every pool season filter should be stored away in "winter" position on valve (6-way Multi-Port Valve only).

## TROUBLESHOOTING

<u>Issue</u>	<u>Suggestion</u>
Need of excessive force to operate valve	<ul style="list-style-type: none"> <li>- Stuck or jammed with debris</li> <li>- Disassemble valve</li> </ul>
Pool water is cloudy / dirty	<ul style="list-style-type: none"> <li>- Check and adjust pool water chemistry accordingly</li> <li>- Confirm flow through filter is sufficient</li> <li>- Insufficient filtration time clogged or channeled filter media</li> <li>- Perform backwash</li> <li>- Check surface of sand for crusting and cracking. Remove 1” inch of sand if necessary</li> <li>- Verify valve is set on “filter” position</li> <li>- Requires “backwash”</li> </ul>
Filter media returning to swimming pool	<ul style="list-style-type: none"> <li>- Valve position is set to “recirculate”</li> <li>- Check inside of standpipe to see if filter media is present</li> <li>- Damage to underdrain laterals</li> <li>- Valve is damaged, not sealed properly or incorrect fit</li> <li>- Incorrect or mixed grades of filter media</li> </ul>
Filter media in the “backwash” position	<ul style="list-style-type: none"> <li>- Excessive amount of filter media</li> <li>- Excessive water flow</li> <li>- Incorrect size or grade of filter media used</li> </ul>



## SAND FILTER (TANK ONLY) BREAKDOWN

Liberty 14" and Patriot 8" and 12"



Ref #	Part #	Description	# Req
1	MLC-F91-FBBK	Universal Sand Filter Base	1
2	MLC-SX1-PG00	Drain Plug 15" Liberty Filter Only	1
3	MLA-F91-ULBK	Complete Lateral	4
4a	M9H-A12-I018	Standpipe for 14" Liberty Filter	1
4b	M9H-A12-I018	Standpipe for 8" Patriot Filter	1
4c	M9H-A12-I024	Standpipe for 12" Patriot Filter	1
5	MLC-F92-HC16	#16 s/s hose clamp	2
6	MLC-V91-LR70	O-Ring	1
7	MLA-V91-CSBK	Flange Clamp w/hardware	1
8	MLA-VPI-4W12	4-way Push/Pull Valve	1
9	MLG-T20-I025	Pressure Gauge	1



## SAND FILTER (TANK ONLY) BREAKDOWN

Liberty 15” and Patriot 16”, 22” and 24”  
(with 6-way Valve shown)



Ref #	Part #	Description	# Req
1	MLC-F91-FBBK	Universal Sand Filter Base	1
2	MLA-FR1-PTDA	Drain Cap with Gasket	1
3	MLA-F91-ULBK	Complete Lateral	4
4a	-----	Standpipe for 15” Liberty Filter	1
4b	-----	Standpipe for 16” Patriot Filter	1
4c	-----	Standpipe for 22” Patriot Filter	1
4d	-----	Standpipe for 24” Patriot Filter	1
5	MLC-FR1-SG30	Saturn Gasket	1
6	MLA-V91-CSBK	Flange Clamp w/hardware	1
7	MLA-VR2-6WI5	6-way Multi-Port Valve	1
8	MLG-T20-I025	Pressure Gauge	1



**Millstream**  
Distribution LLC

**3 YEAR**  
**MANUFACTURER'S**  
**LIMITED WARRANTY**

Rx Clear™ PATRIOT AND LIBERTY SAND FILTER TANKS

Thank you for your purchase from Millstream Distribution LLC.

The **Rx Clear™ Sand Filter Tank** comes with a 3 year manufacturer's limited Warranty to the original purchaser. This limited Warranty covers manufacturer's defects during the first three years from date of sale.

The Warranty for the first year from date of sale covers the full cost of replacement of the **Rx Clear™ Sand Filter Tank** or the cost of replacement parts.

The Warranty for the second and third years from date of sale is pro-rated as follows:

YEAR	% OF REPLACEMENT COST OR REPLACEMENT PARTS COVERED BY MILLSTREAM DISTRIBUTION, LLC. (Based on list price at time of warranty claim)
SECOND	35%
THIRD	10%

**Rx Clear™** Sand filter tanks that fail due to abuse, improper use or handling, alteration, wear and tear, an accident or freezing are not covered under this Warranty. Millstream Distribution LLC is not responsible for any labor charges, loss of water or any damages that may occur. The purchaser is responsible for all shipping and handling fees for the replacement of the sand filter tank and/or replacement parts covered by this Warranty.

This Warranty gives you specific legal rights. This Warranty provides the exclusive remedy for any damages, including direct, consequential, special or incidental loss or damage when a claim is made under this Warranty. You may have other rights, which may vary from state to state. For example, some states do not permit a limitation on direct, consequential, special or incidental loss or damage.

Warranty claims for this **Rx Clear™ Sand Filter Tank** are handled directly with Millstream Distribution LLC. To make a Warranty claim, contact Customer Service at 1-800-253-4775.