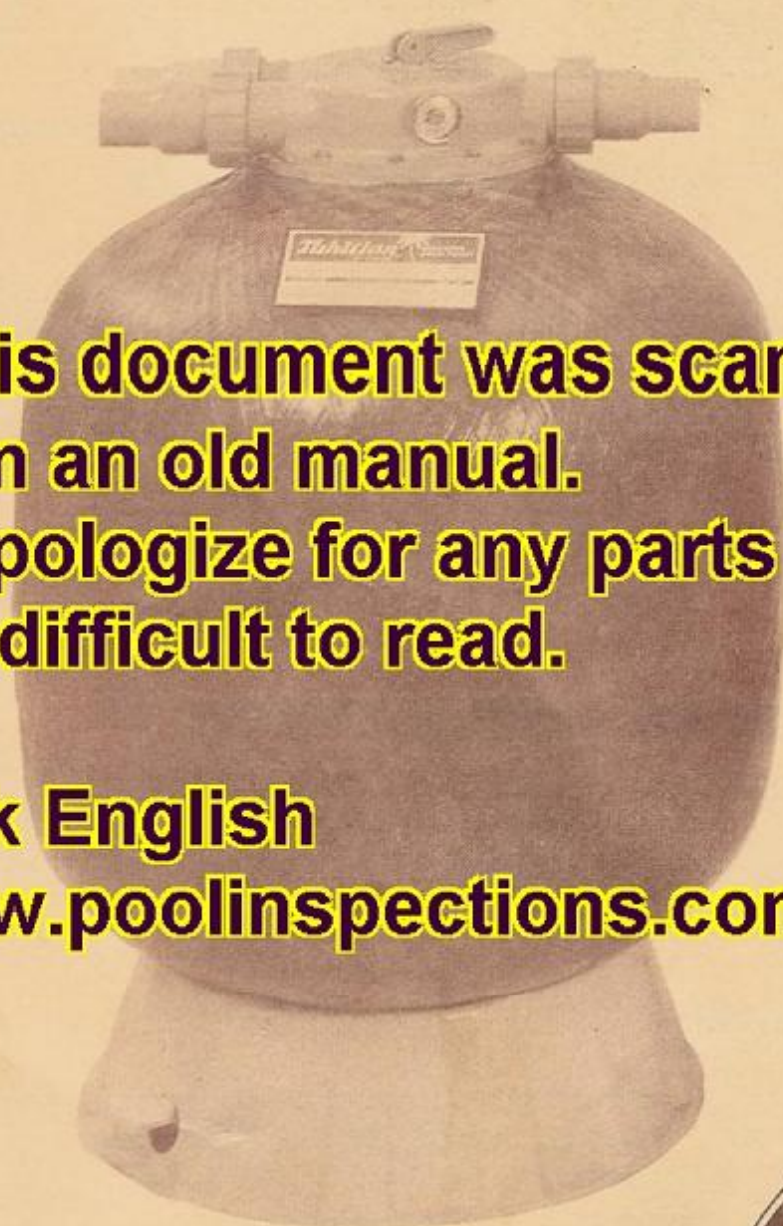


**Tahitian**<sup>®</sup>  
BY PUREX



HIGH-RATE  
SAND FILTER

**INSTALLATION & OPERATING MANUAL**



**This document was scanned  
from an old manual.**

**I apologize for any parts that  
are difficult to read.**

**Rick English**

**[www.poolinspections.com](http://www.poolinspections.com)**



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P19120

# *Tahitian*®



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## **HIGH RATE SAND FILTER**

The Purex "Tahitian" High Rate Sand Filter has been tested and approved by the National Sanitation Foundation. This booklet will enable you to install and operate your pool filter in the correct manner. Correct installation and operation will enable you to realize the trouble-free operation of a quality product, as well as prevent unnecessary repairs.

### **NOTICE OF IMPORTANCE:**

For installer and operator of the "Tahitian" High Rate Filter — The manufacturer's warranty will not be accepted as valid if, for any reason, the filter is improperly installed and/or operated. Be sure to follow the instructions set forth in this manual.

### **CAUTION:**

When a heater is installed in the circulating system, it is recommended that a check valve be installed between the filter and the heater. The filter valve assembly is made of a plastic material which may be damaged by momentary "back-syphoning" of hot water from the heater when the pump stops running. To prevent such back flow, install a positive gate check valve and "heat sink" (3 ft.) pipe in the piping between the filter and heater.

Consult Local Building Codes for possible variation in installation and operation requirements.

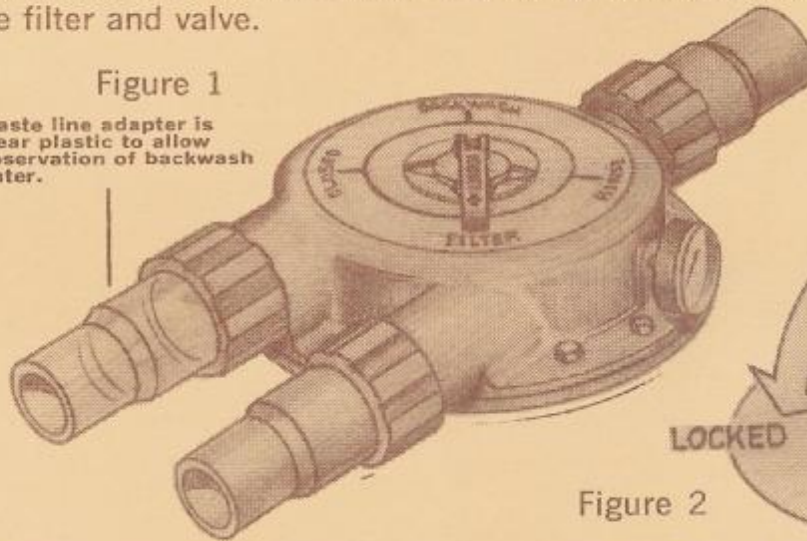
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# PUREX TAHITIAN HIGH RATE SAND FILTER

The Purex "Tahitian" Sand Filter is supplied complete with selector valve and plumbing adapters as an integral part of the filter unit. The Purex selector valve is a new innovation in valve design with a minimum of pressure drop across the valve and five positions for a more efficient filtering system. The plumbing adapters are provided for easy and quick connections to the valve, allowing ready access to the internal parts of the filter and valve.

Figure 1  
Waste line adapter is clear plastic to allow observation of backwash water.



Pump must be OFF before turning valve.

Lift and flip handle to select position. Rotate to desired position. Lift in opposite direction to lock in position selected.

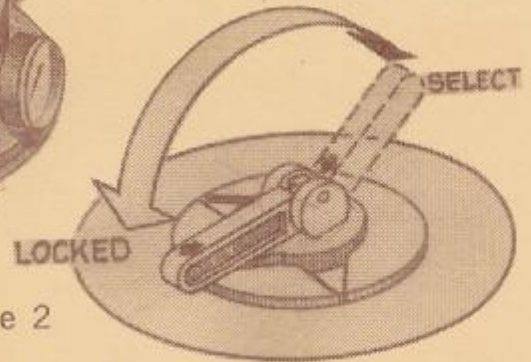


Figure 2

## VALVE

The valve provided with the filter has five positions — Filter, Backwash, Rinse, Close and Winterize. The functions of the valve settings are:



### Valve Setting

### Function

FILTER

Normal filtering cycle.



BACKWASH

Cleaning the filter.



RINSE  
(Filter to waste)

For rinsing of the filter media after backwashing — also used for draining the pool.



CLOSED  
(No flow thru filter)

For installations below pool water level to allow cleaning of pump strainer, also serves as filter shut off for vacuum to waste bypass installation.



WINTERIZE

For winterizing, maintains clearance between Rotor Seal and Seal Plate.

## PLUMBING ADAPTERS

The plumbing adapters are designed for a permanent plumbing installation, yet provide the convenience of a quick coupling connection should service be required on the internal parts of the valve or filter. The adapters are designed for coupling to 1½" pipe or they may be adapted to couple to 2" pipe. Should 2" connections to the valve be desired, it will be necessary to cut the adapter as shown in Figure 4.

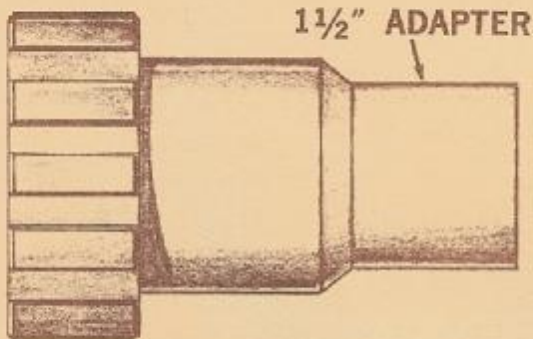


Figure 3

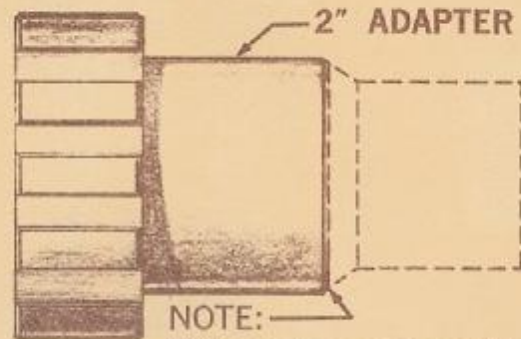
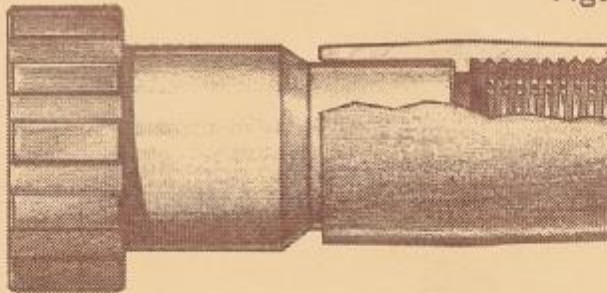


Figure 4  
NOTE: Cut as close as possible to the bevel.

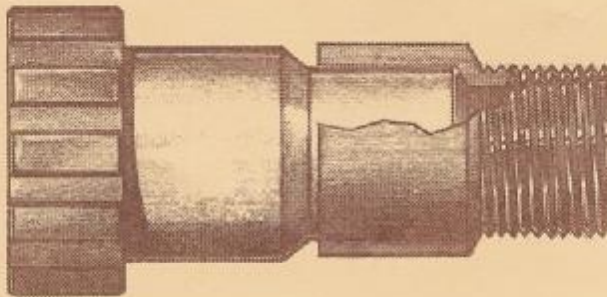
## PLUMBING

The filter is designed to be plumbed with plastic or copper. The plumbing adapters are designed to accept standard plastic couplings which can be connected to thread adapters for copper installations or slip fittings for plastic installations.

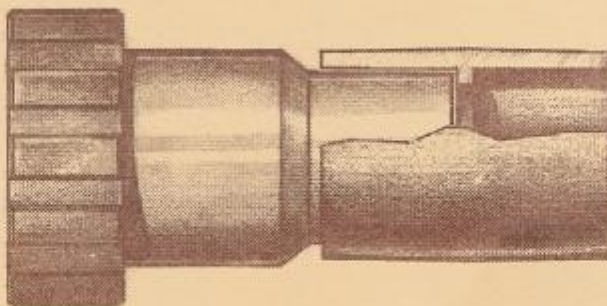
Figure 5



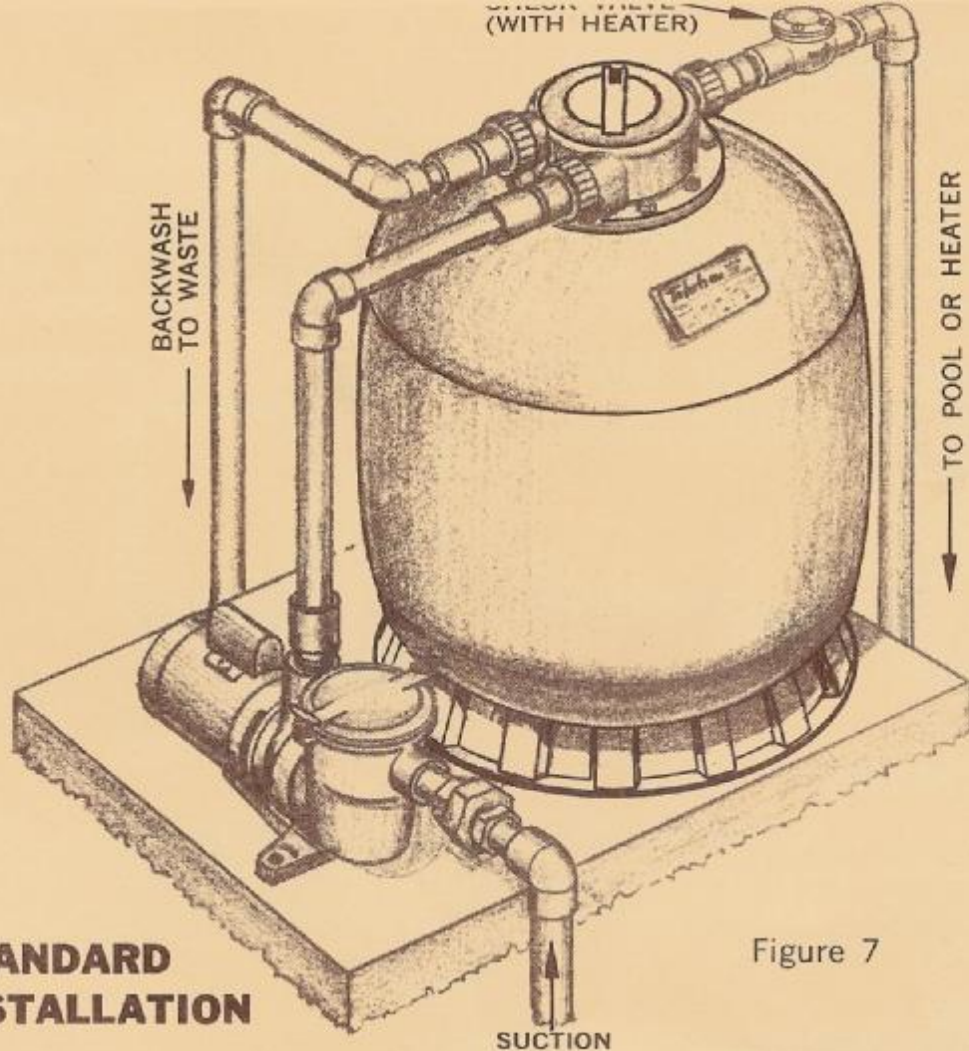
SOCKET TO FEMALE  
THREAD FOR  
POLYETHYLENE PIPING



SOCKET TO MALE THREAD  
FOR COPPER PIPING



SOCKET TO SOCKET  
FOR PVC PIPING



## STANDARD INSTALLATION

Figure 7

The filter must be installed on a hard level surface. In locating the filter, consideration must be given to proximity to pool, drainage of filter area, access to selector valve and required plumbing to the filter. The "waste" port must be connected to an area which can accept the backwash water and is acceptable to local building codes.

1. **DO NOT** place sand in filter until plumbing is complete. This will allow for moving of the tank as needed to line up fittings. Check lateral underdrains for tightness before placing sand in the tank.
2. Place tank in location.
3. **Very Important** — When connecting plumbing lines, be sure to tighten plumbing adapters on filter valve and plumb from the filter out. This will insure correct and positive alignment. Plumbing adapters are ABS material. Use ABS-PVC solvent or PVC solvent when bonding couplings to adapters.  
NOTE: If it is desirable to have a filter bypass installed in the line, install gate valves and plumbing as shown in Figure 8. This will allow you to vacuum the pool directly to waste or drain the pool without going through the filter.
4. **DO NOT** overtighten nuts on plumbing adapters. It is only necessary to hand tighten these nuts.
5. When plumbing connections are complete, unscrew nuts on plumbing adapters and remove valve assembly.
6. Follow sand placement instructions.

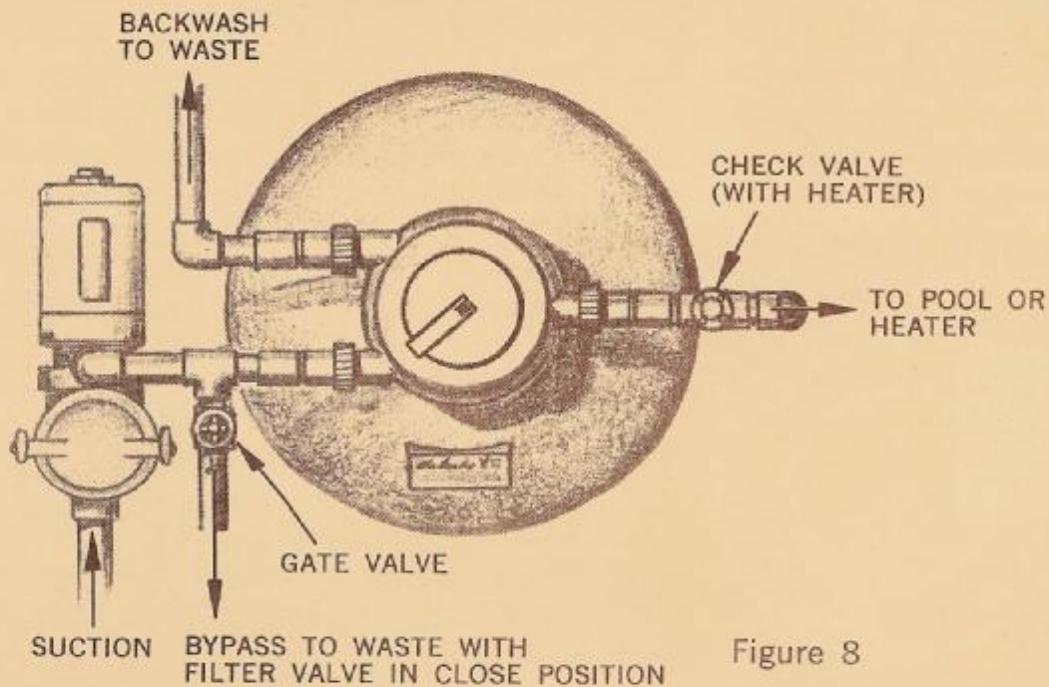


Figure 8

## OPTIONAL BYPASS PLUMBING INSTALLATION

This optional bypass plumbing may be used for:

1. Vacuuming the pool directly to waste when the pool is exceptionally dirty.
2. Draining pool directly to waste, bypassing the filter.

## TYPE AND AMOUNT OF SAND REQUIRED

It is important that you use the proper grade of filtering sand in the filter. The filter is designed to use #20 silica sand which has an effective particle size of .45 mm and a uniformity coefficient of 1.5. The Model HR21 requires 2.4 cu. ft. of sand (240 lbs.), HR25 requires 3 cu. ft. of sand (300 lbs.), and the Model HR31 requires 5½ cu. ft. of sand (550 lbs.)

## PLACEMENT OF SAND IN THE FILTER

**Note:** Certain precautions must be taken to insure that sand does not enter the underdrain manifold or fill up the valve bolt holes. A protective cap has been supplied to fit over the center manifold pipe in the tank. This will insure that sand will not enter the underdrain manifold.

Do not place the sand until the filter is in position.

1. Remove valve from filter.
2. Place protective cap over the center tube.
3. Tape or cover all bolt holes.
4. Place sand in filter through the tank opening.
5. Clean off all loose sand from the filter and remove protective cap and tape. Save cap for future use.
6. Be sure the o-ring in the valve is replaced and adequately lubricated.
7. Install valve on tank and hand tighten adapter nuts. **DO NOT** use tools to tighten adapter nuts.





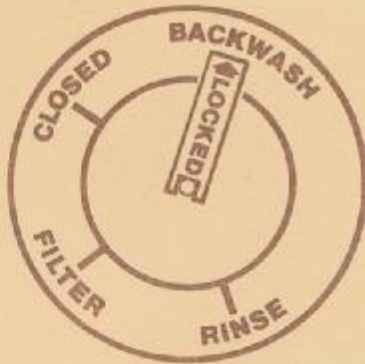
## BACKWASHING (CLEANING) THE FILTER

When the pressure reading on the gauge increases 8-10 P.S.I. over the initial (clean) filter reading, filter requires backwashing.

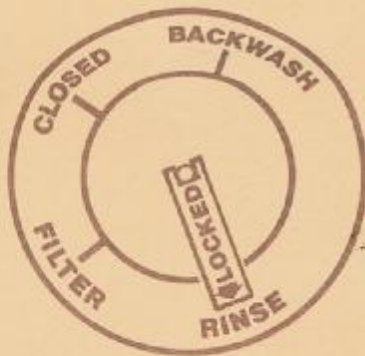
**Example:** If gauge reading on initial startup with a clean filter was 12 P.S.I., then when pressure increases to 20 P.S.I., filter should be backwashed. It is recommended that the gauge pressure not be allowed to exceed 25 P.S.I. This will result in low flow rates which will contribute to poor filtering cycles.

Backwash Required At

P.S.I.

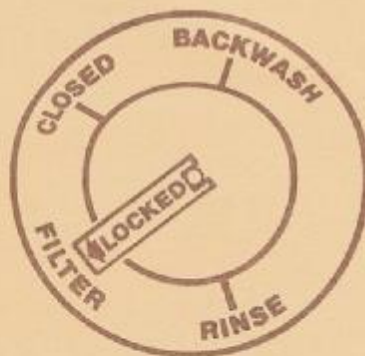


1. Shut off pump motor. Clean pump strainer basket and replace basket and pump cover.
2. Turn selector valve to BACKWASH.
3. Start pump motor and backwash for 2 minutes, or until waste water appears clean, as observed at the waste line adapter. Shut off pump motor.

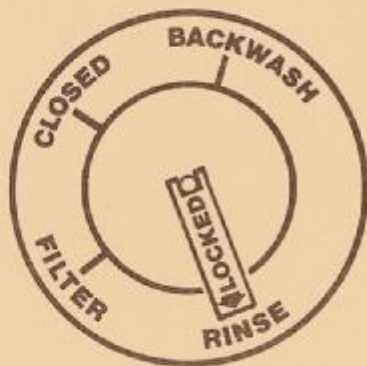


4. Turn selector valve to RINSE.
5. Start pump motor and rinse for 30 seconds. Shut off pump motor.

**Note:** It is important to rinse the filter after backwashing to remove impurities left in the bed which were not removed in the backwash cycle.



6. Turn selector valve to FILTER and start pump to resume filtering cycle.

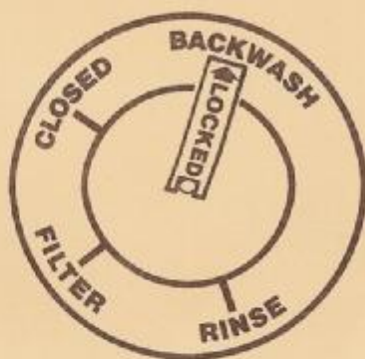


## TO DRAIN POOL

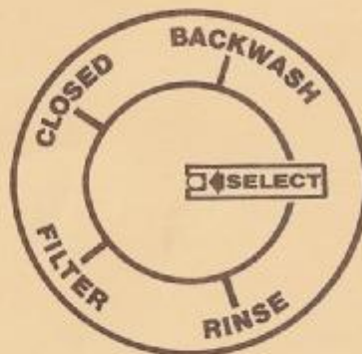
Pool may be drained through the filter by turning the valve to RINSE position. Optional method would be to use bypass plumbing installation shown in Figure 8, page 7, which will bypass the filter when draining pool.

## WINTERIZING (FREEZING CLIMATES ONLY)

1. Backwash the filter according to the backwash instructions.
2. Remove the 1/2" pipe plug on the bottom of the filter.
3. Turn the valve handle to the backwash position. This will allow air to enter the tank and aid the draining process.
4. Remove the drain plugs from the pump case and strainer.
5. Rotate valve to WINTERIZE position, when all water is drained from the system.



BACKWASH



WINTERIZE

## MAINTENANCE

Under normal use, no routine maintenance of the filter other than backwashing is required. Should it be necessary to service the selector valve or the tank underdrain, proceed as follows:

1. Shut off pump motor and close any valves in the piping to the filter.
2. Turn selector valve to backwash.
3. Remove drain plug from bottom of filter tank to drain water in filter.
4. Loosen the three retainer nuts on the selector valve. This allows the piping to separate from the selector valve.
5. Remove the bolts securing the selector valve to the tank.
6. Lift the selector valve vertically out of the tank. Selector valve and water distributor assembly can now be removed to a convenient area for servicing.

## **TANK SERVICE**

If it is necessary to replace the sand or service the underdrain system, follow the procedure listed below:

1. Remove valve assembly as shown. See page 12, Figure 10.
2. Remove all sand manually.
3. Remove the 2" center tube from the tank. This pipe is threaded into the lower lateral manifold and can be removed by turning counter-clockwise.
4. When all sand is removed, rinse out the tank, insuring that all sand left is washed out the drain hole at the bottom of the tank.
5. The laterals may be removed by unscrewing.
6. Before replacing sand, be sure that the center tube is threaded firmly back into the lateral manifold, the laterals are screwed or snapped into the proper position with the openings facing downward and the drain plug is replaced securely.
7. Follow sand placement instructions on page 7.

## **VALVE SERVICE**

To service valve when it has been removed from the filter, remove the roll pin from the handle and the rotor plate will separate from the valve body. (See exploded view of filter and valve on page 12.)

The roll pin in the rotor plate can be removed with a  $\frac{1}{8}$ " flat punch.

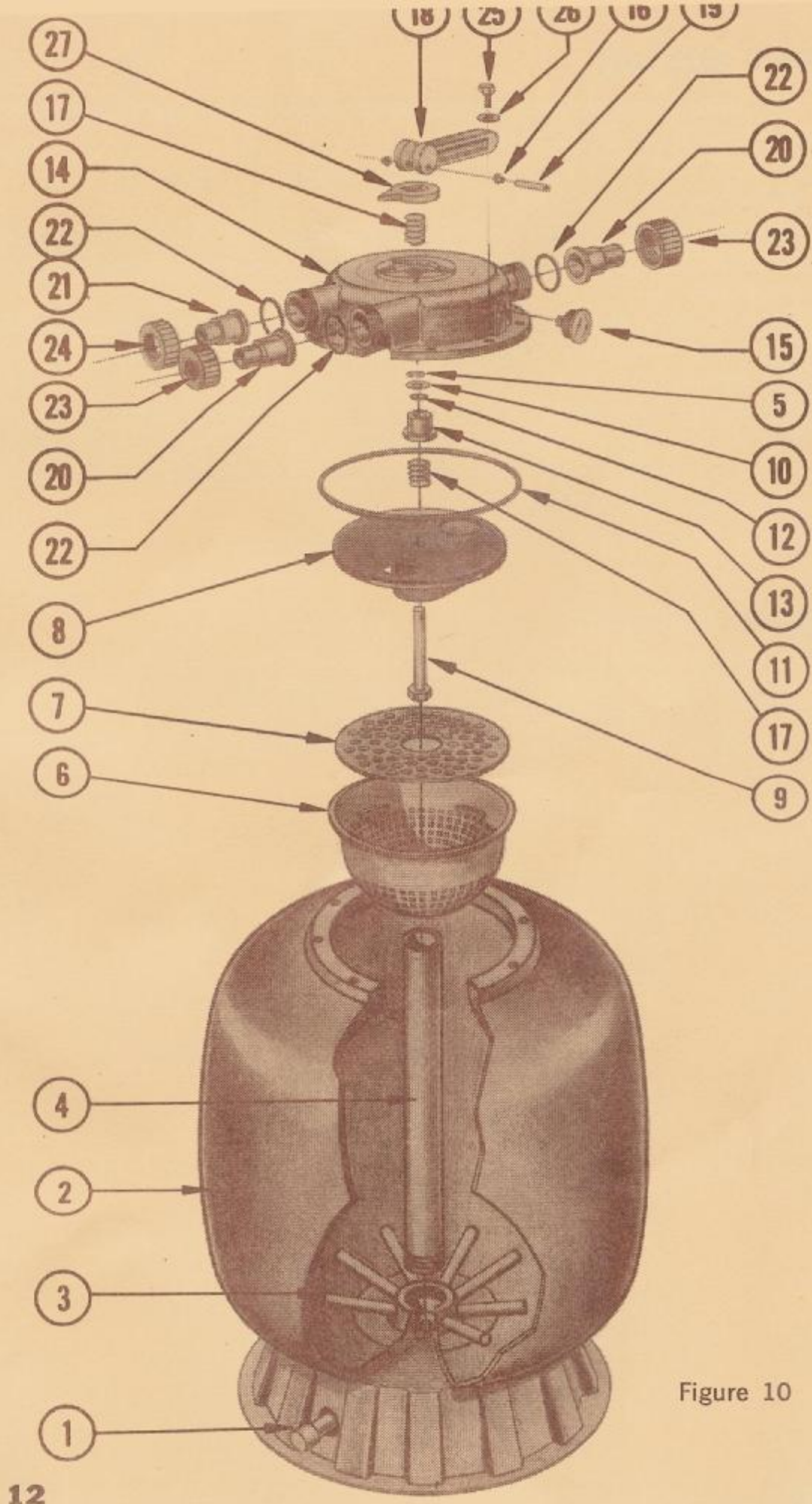


Figure 10



### PARTS LIST

DESCRIPTION	PART NO.
1. Drain Cap, 1/2" NPT .....	P08634
2. Tank (HR 21) .....	P30560
2. Tank (HR 25) .....	P30564
2. Tank (HR 31) .....	P30565
3. Lateral (8 Required) HR 21 .....	P20164
3. Lateral (8 Required) HR 25 .....	P20164
3. Lateral (8 Required) HR 31 .....	P20170
4. Center Tube HR 21, — 18-5/16" Long .....	P05925
4. Center Tube HR 25, — 21 5/8" Long .....	P05928
4. Center Tube HR 31, — 24 5/8" Long .....	P05929
5. Split Spring .....	P29979
6. Distributor .....	P08415
7. Diffuser .....	P08416
8. Rotor Assembly .....	P26827
9. Stainless Steel Shaft With Hex Head .....	P28709
10. Flat Washer .....	P34846
11. O-Ring, Body .....	P24306
12. O-Ring, Shaft .....	P24308
13. Bushing, Nylon .....	P24311
14. Valve Body .....	P02350
15. Pressure Gauge .....	P25824
16. Brass Eyelet (2) .....	P34847
17. Spring (2) .....	P29980
18. Actuating Lever (Handle) .....	P00008
19. Lever Roll Pin, 3/16" Dia. ....	P28709
20. Adapter, colored (2) .....	P00991
21. Adapter, clear .....	P00992
22. Adapter O-Ring (3) .....	P00996
23. Adapter Nut, colored (2) .....	P00993
24. Adapter Nut, clear .....	P00994
25. 1/4-20x1" Hex Head Screw (9) .....	P26948
26. Washer (9) .....	P34848
27. Index Pointer .....	P19050

## **POOL WATER CHEMISTRY**

### **Its importance to your swimming pool equipment**

Your Purex pool filter was designed specifically for your swimming pool and will give you many years of trouble-free service provided you keep your water chemistry in proper condition.

### **WHAT CHLORINE DOES**

Two pool guests you do not want are algae and bacteria. To get rid of them and make pool water sanitary for swimming — as well as to improve the water's taste, odor and clarity — some sort of disinfectant must be used.

Chlorine, universally approved by health authorities, is the accepted disinfecting agent for bacteria. And, by maintaining a free chlorine residual of no less than 1.0 ppm (parts-per-million), algae also can be prevented.

### **WHAT IS CHLORINE RESIDUAL?**

When you add chlorine to pool water, a portion of the chlorine will be consumed in the process of destroying bacteria, algae and other oxidizable materials. The chlorine remaining is called chlorine residual. You can determine the chlorine residual of your pool water with a reliable test kit, available from your Guardex dealer.

You must maintain a free chlorine residual level adequate enough to assure a continuous kill of bacteria or virus introduced into pool water by swimmers, through the air, from dust, rain or other sources.

Since chlorine residual is lowered by sunlight (its ultra-violet rays decompose chlorine) it is impossible to maintain a constant residual level with most forms of chlorine unless a mechanical device — a chemical feeder — is used to feed the chlorine compound continuously.

Whether or not you have such a device, it is wise to test pool water regularly, never allowing chlorine residual to drop below 1.0 ppm (parts-per-million), the minimum level for effective chlorination.

**RULE:** Maintain a chlorine residual no lower than 1.0 ppm.

## CONTROL OF pH

The term pH refers to the acid-alkaline balance of water expressed on a numerical scale from 0 to 14. A test kit for measuring pH balance of your pool water is available from your swimming pool dealer.

Strongly Acid					Neutral					Strongly Alkaline				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Muriatic Acid has a pH of about 1. Pure water is 7 (neutral). Weak Lye solutions have a pH of 10-12.

**RULE:** 7.4 to 7.6 is a desirable pH range.

It is essential to maintain correct pH. If pH becomes too high (over alkaline) it has these effects:

1. Greatly lowers the ability of chlorine to destroy bacteria and algae.
2. Water becomes cloudy.
3. There is more danger of scale formation on the plaster or in the coils of the heater.
4. Filter may become blocked.

If pH is too low (over acid) there may be:

1. Excessive eye burn or skin irritation.
2. Etching of the plaster.
3. Corrosion of metal fixtures in the circulation system, which may create brown, blue, green or sometimes almost black stains on the plaster.

**CAUTION:** False readings are given when testing for pH in the presence of chlorine residuals greater than 0.5. Some test kits, such as the Guardex 4-in-1 Test Kit, contain a dechlorinator to enable you to check pH in the presence of higher chlorine residuals.

**RULE:** Chemicals that are acid lower pH. Chemicals that are alkaline raise pH.

6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4
Add Soda Ash or Sodium Bicarbonate		Marginal	Ideal	Marginal	Add Acid			

## ALKALINITY High - Low

"Total alkalinity" is a measurement of the total amount of alkaline chemicals in the water and controls pH to a great degree. (It is not the same as pH which refers merely to the relative alkalinity-acidity balance). Your pool water's total alkalinity should be adjusted to 80-100 ppm to permit easier pH control.

A total alkalinity test is simple to perform, using the Guardex 4-in-1 Test Kit. You will need to test about once a week until alkalinity is in the proper range. Then, only once every month or so to be sure it is being maintained.



**PUREX**

T.M.

## **PUREX TAHITIAN HI-RATE SAND FILTER LIMITED WARRANTY**

Your Purex Tahitian Hi-Rate Sand Filter is a quality product of Purex Corporation, Pool Products Division (referred to as Purex), and Purex warrants that it is fit for the ordinary purposes for which such equipment is used, is adequately contained, packaged and labeled, and conforms to the representations made on the container or label. **This warranty only applies to the original purchaser.**

### **Filter Tank**

The filter tank is warranted for a period of three years from date of installation.

### **FILTER ACCESSORIES**

The valve, fittings, laterals and stand pipe are warranted for one year from date of installation.

THE ABOVE WARRANTY APPLIES ONLY IF THE FILTER IS INSTALLED AND OPERATED IN COMPLETE COMPLIANCE WITH THE INSTALLATION AND OPERATION MANUAL PROVIDED WITH EACH UNIT. Copies of this manual are available by writing the Purex factory at the address below.

Parts judged to be defective upon inspection by Purex will be repaired or replaced, F.O.B. Purex factory, free of charge, providing merchandise is returned freight prepaid to Purex Service Department, address below. All defective parts or equipment should be identified by serial number and packing slip, along with installation date, together with a written description of the problem.

PUREX ASSUMES NO LIABILITY EXCEPT FOR THE REPAIR OR REPLACEMENT OF PARTS AS SPECIFIED ABOVE. NO ALLOWANCE WILL BE MADE FOR CONSEQUENTIAL DAMAGES, LABOR, TRANSPORTATION OR OTHER CHARGES IN THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PARTS OR EQUIPMENT. **SOME STATES DO NOT ALLOW EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE MAY NOT APPLY TO YOU.**

NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY ON BEHALF OF PUREX OR ANY OF ITS DISTRIBUTORS OR DEALERS OTHER THAN AS SET FORTH HEREIN.

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.**

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FILTER SERIAL NO.