

**ASTRALPOOL**



# **Milenium Sand Filter System Installation Instructions**



**ASTRALPOOL**

## INSTALLATION AND OPERATING INSTRUCTIONS

**1800 SERIES SENA,  
ABOVE GROUND POOL PUMP.**



### IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following: Failure to follow instructions may result in injury.

### READ AND FOLLOW ALL INSTRUCTIONS

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

**2. CAUTION** - This pump is U.L. listed for permanently installed pools and may also be used with hot tubs and spas if so marked.

It is not U.L. listed for storable pools. A permanently installed pool is constructed in or on the ground and cannot be readily disassembled for storage. A storable pool is constructed so that it may be readily disassembled for storage and reassembled to its original integrity.

**4. - CAUTION** - For continued protection against possible electric shock this unit is to be mounted to the base in accordance with the installation instructions.

**NOTE:** If your pump is equipped with a 3 ft. (1 m) cord and twist lock plug, items 4 through 7 apply.

**3. WARNING** - Risk of Electric Shock. Connect only to a grounding-type receptacle protected by a ground fault circuit interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.

**4.** Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.

**5. WARNING** - To reduce the risk of electric shock, replace damaged cord immediately.

**6. WARNING** - To reduce the risk of electric shock, do not use extension cord to connect unit to electric supply; provide a properly located outlet.

### SAVE THESE INSTRUCTIONS

#### GENERAL TIPS ON PUMP INSTALLATION

For best pump performance, locate the system below the pool water line and as close to the pool as practical.

As your pump is an above-ground pool, please see Note: NSPI-4 Article V, for safe and proper installation of the equipment package. Make sure suction joints are tight. Suction pipe should be as large or larger than discharge pipe. Damp, non-ventilated locations should be avoided.

Motors require free circulation of air to aid in cooling.

Insure that the electrical supply available agrees with the motor's voltage, phase and cycle, and that wire size is adequate for the HP (KW) rating and distance from power source. Motor must always be properly grounded. If cord connected, use only a properly grounded outlet. Electrical circuits must be protected by proper size ground fault circuit interrupter (GFCI) as required by applicable electrical codes. All electrical wiring must be performed by qualified personnel, and must conform to local codes and regulations.

#### STARTING AND PRIMING INSTRUCTIONS

Fill strainer housing with water to suction pipe level. Never operate the pump without water. Water acts as a coolant and lubricant for the mechanical shaft seal.

Open all suction and discharge lines and valves, as well as air bleed (if available) on filter. (The air that is to be displaced from the suction line must have some place to go.)

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

Turn on power and allow a reasonable time for priming. Priming time depends on suction lift and horizontal length of suction piping. If the pump will not start, or will not prime, see TROUBLE SHOOTING GUIDE on back page.

**NOTE:** NSPI-4 Article V, standard for above-ground and on-ground pools, advises that components such as the filtration system, pumps and heater be positioned so as to prevent their being used as a means of access to the pool by young children.

## Introduction:

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## **WARNING**

*Warns about hazard that CAN cause serious personal injury and property damage if ignored.*



(For cord and plug connected units.) Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers and other lawn equipment.



(For cord and plug connected units) To reduce the risk of electric shock, replace damaged cord immediately.



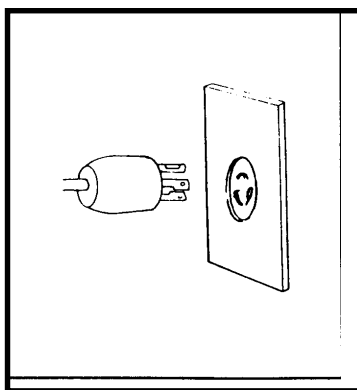
(For cord and plug connected units) Risk of electric shock. Connect only to a grounding type receptacle protected by a ground-fault circuit interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.



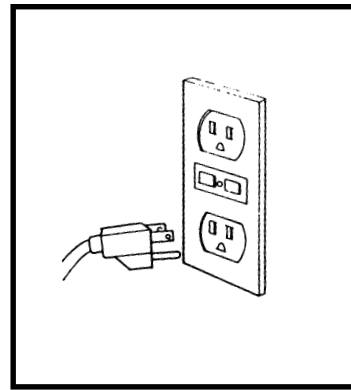
(For cord and plug connected units) To reduce the risk of electric shock, do not use an extension cord to connect unit to electric supply; provide a properly located outlet.

## Electrical Data

Refer to information on motor nameplate for electrical service data. If the pump on your system is supplied with a 3-prong twist lock 115V plug, then the appropriate male receptacle should be installed. For systems with a standard 3-prong 115V plug, we recommend a grounded receptacle be installed with a built-in Ground Fault Circuit Interrupter (GFCI). Motors should have fused disconnect switch or circuit breaker and wire size large enough for pump horsepower and distance from power source. Wiring should be done in accordance with applicable codes by a competent electrician.



**3-prong twist-lock plug**

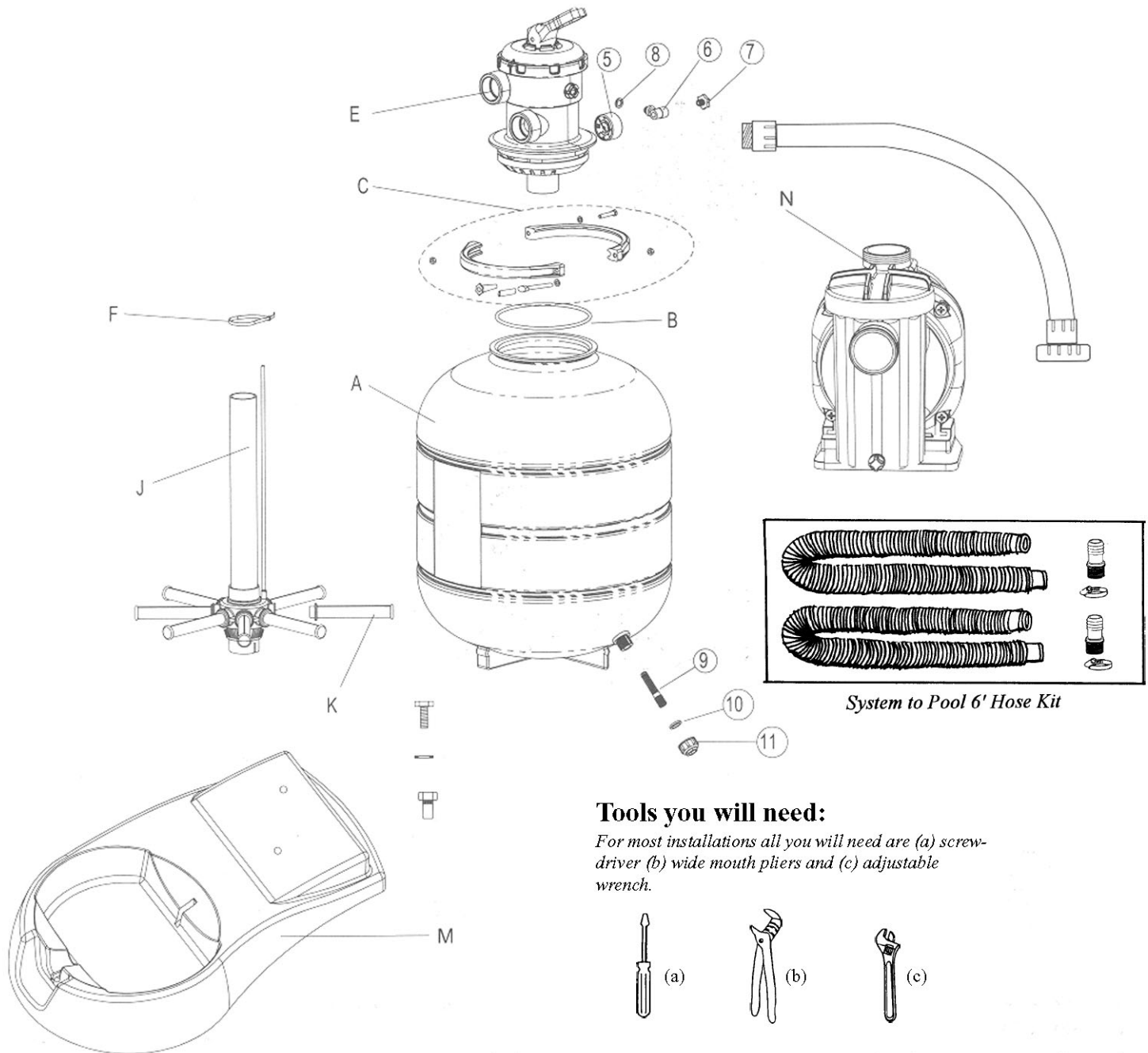


**Standard 3-prong plug**



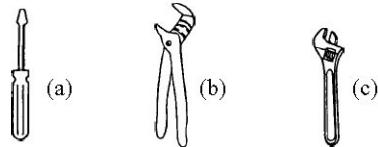
# What you should have:

## Contents of carton:



## Tools you will need:

For most installations all you will need are (a) screw-driver (b) wide mouth pliers and (c) adjustable wrench.



	Code	Description
A	24181-0100	Filter body
B	720R1750057	O-ring 170x5, 75
C	24182-1003	Plastic V-clamp set
E	22358	Selector valve / Multiport
F	24182-0007	Flange 24mm
J	22503-0017	Filter collector / Standpipe
K	00638	Collector arm / Lateral
M	19460R0001	Monobloc base
N	24457-1130	Pump 1.5CV

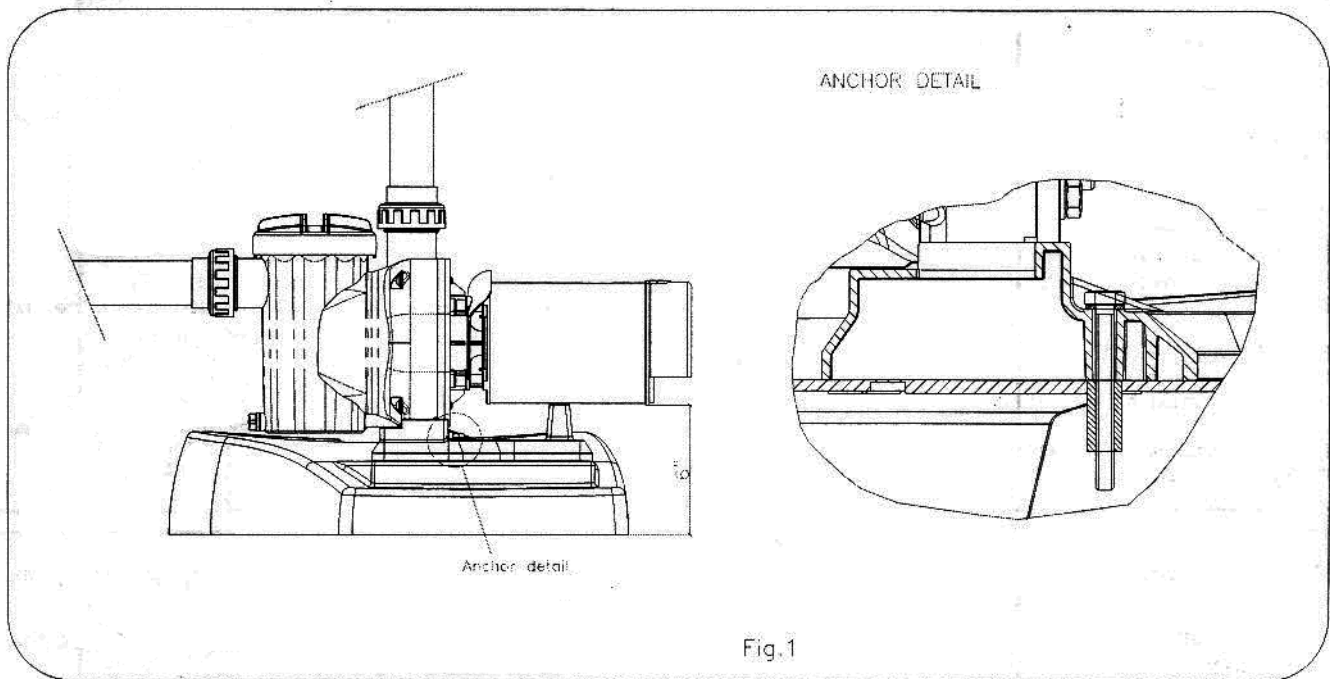
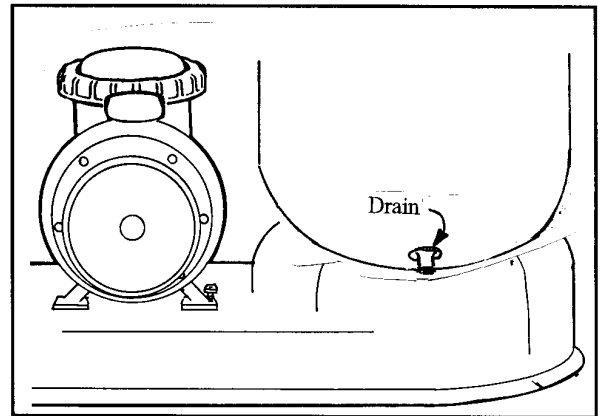
	Code	Description
5	22503-0050	Pressure gauge set
6	00555R0401	Tee adapter
7	074065008A	Air releif plug
8	00470R0319N	Gasket
9	24181-0004	Water drain set
10	24181-0006	Gasket
11	15780-0602	Water drain plug

## Setting up your system:

**System location:** Locate system on a solid foundation. Give consideration to U.L. requirements and specific local codes concerning distance that equipment can be installed from the pool. Be sure that the location allows for adequate drainage away from system. See location tips on page 7. When unit has been permanently arranged on its base you are ready to fill the tank with sand.

### Step 1

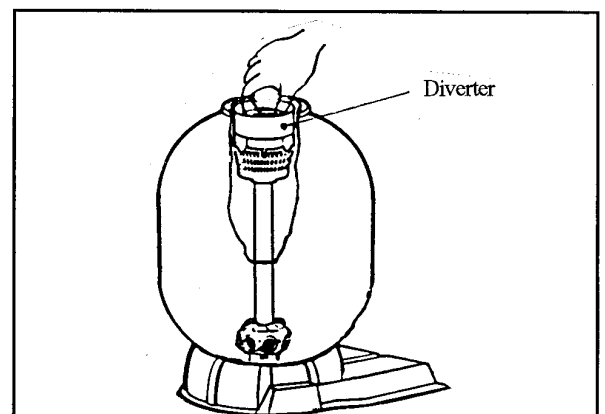
Remove filter, pump and base from the carton. Using (2) bolts and washers, mount pump to base. The pump should be positioned such that the pump strainer is supported by the system base.



### Step 2

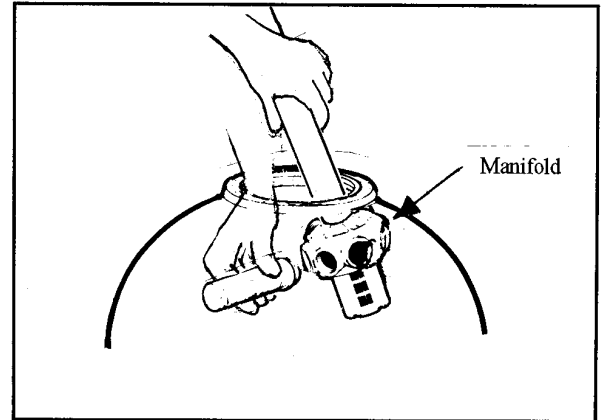
Remove diverter and entire standpipe assembly from the tank. The upper parts may come out separate, if so, grasp the lower standpipe and remove from the tank. You are now ready to assemble the lateral flow tubes to the manifold.

❖NOTE: Lateral flow tubes are factory installed in some models; however, follow procedure to insure they are hand tight in manifold.



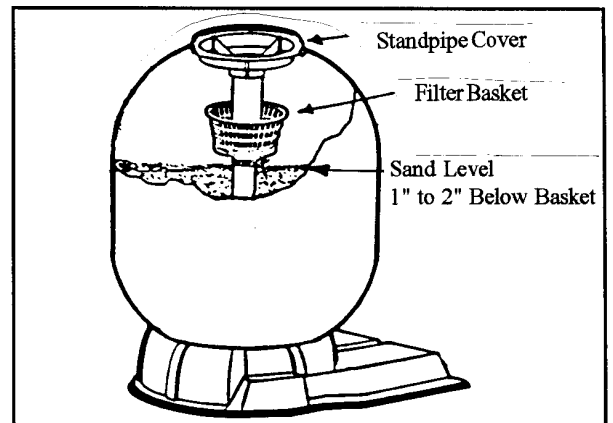
## Step 3

Grasp standpipe/manifold assembly as illustrated and lower into tank opening. Hold one of the lateral flow tubes in your other hand, lower into tank opening and screw the tube into one of the threaded openings in the manifold. Repeat this action until all eight (8) lateral flow tubes are installed. Be sure they are all hand tight. Lower assembly into tank and press down to insure that the manifold is securely seated and centered at bottom of the tank.



## Step 4

Remove the diverter and place the standpipe cover on the filter basket standpipe to prevent the entrance of sand. Fill the tank approximately 1/2 full of water. Now fill the tank with 150 Lbs. of sand. Be sure the standpipe assembly remains centered while pouring the sand. Now remove the standpipe cover and place the diverter on top of the filter basket.

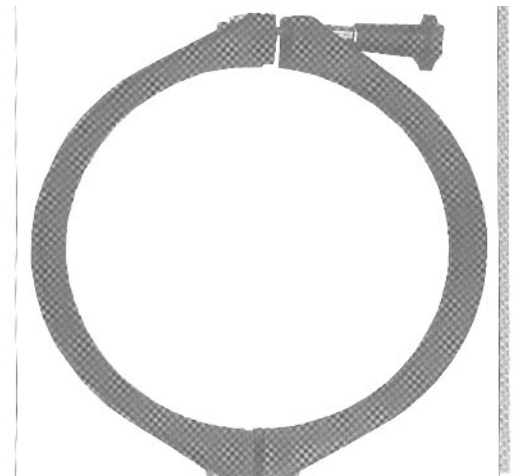
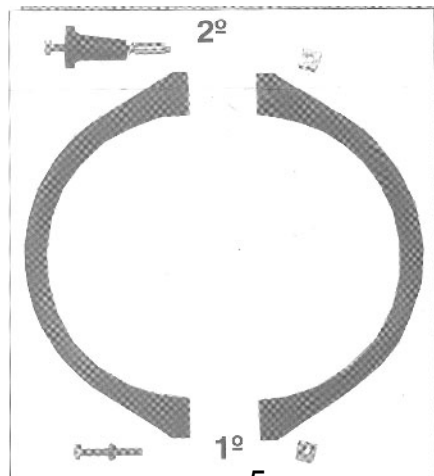
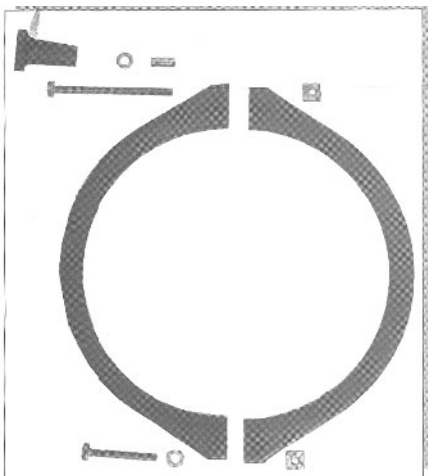
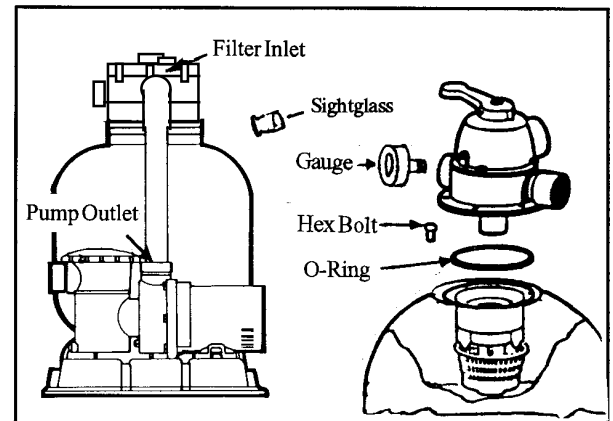


## Step 5

**DIAL VALVE INSTALLATION:** Carefully remove all sand particles from the mounting location, being especially careful of the O-ring groove. Position the O-ring around the bottom of the multiport. Place valve on tank and rotate until the valve inlet (marked "PUMP") is approximately in line with the pump outlet opening. Install the V-clamp set to connect the multiport to the filter body. Install pressure gauge, after wrapping brass threads with 4 wraps of teflon tape.

❖ **NOTE:** Selector Valve is equipped with a sight glass which must be **HANDTIGHT** only.

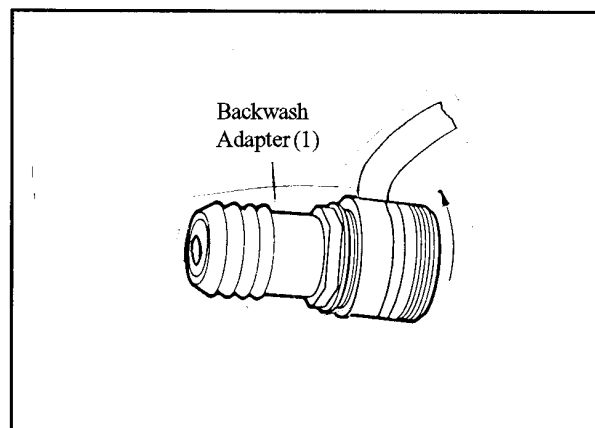
❖ Some pressure gauges come with teflon tape factory installed.



## Setting up your system:

### Step 6

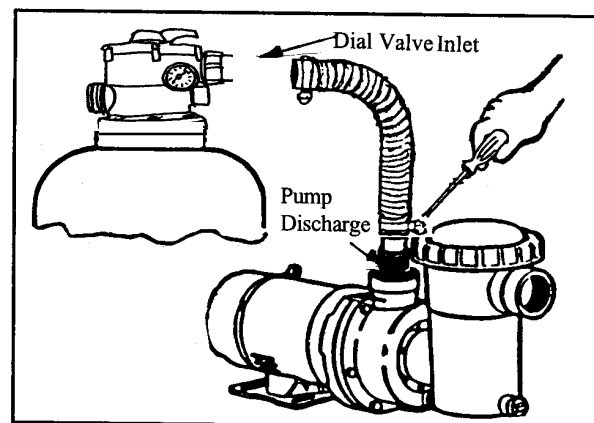
*If your system is supplied with a backwash adapter: Remove threaded adapter and tape from the hardware kit. Prepare backwash fittings by wrapping threads with teflon tape in a clockwise rotation, four to eight wraps is usually sufficient. Install adapter into the waste port of the filter.*



### Step 7

*Prepare pre-assembled plumbing connection by wrapping the threaded end with teflon tape in a clockwise rotation, four to eight wraps is usually sufficient. Connect the pre-assembled plumbing connection from the pump discharge to the valve inlet: tighten the threaded adapter end of the flexible hose into inlet on the multiport labeled pump handtight plus 1/2 turn; then attach the union nut end onto the pump discharge.*

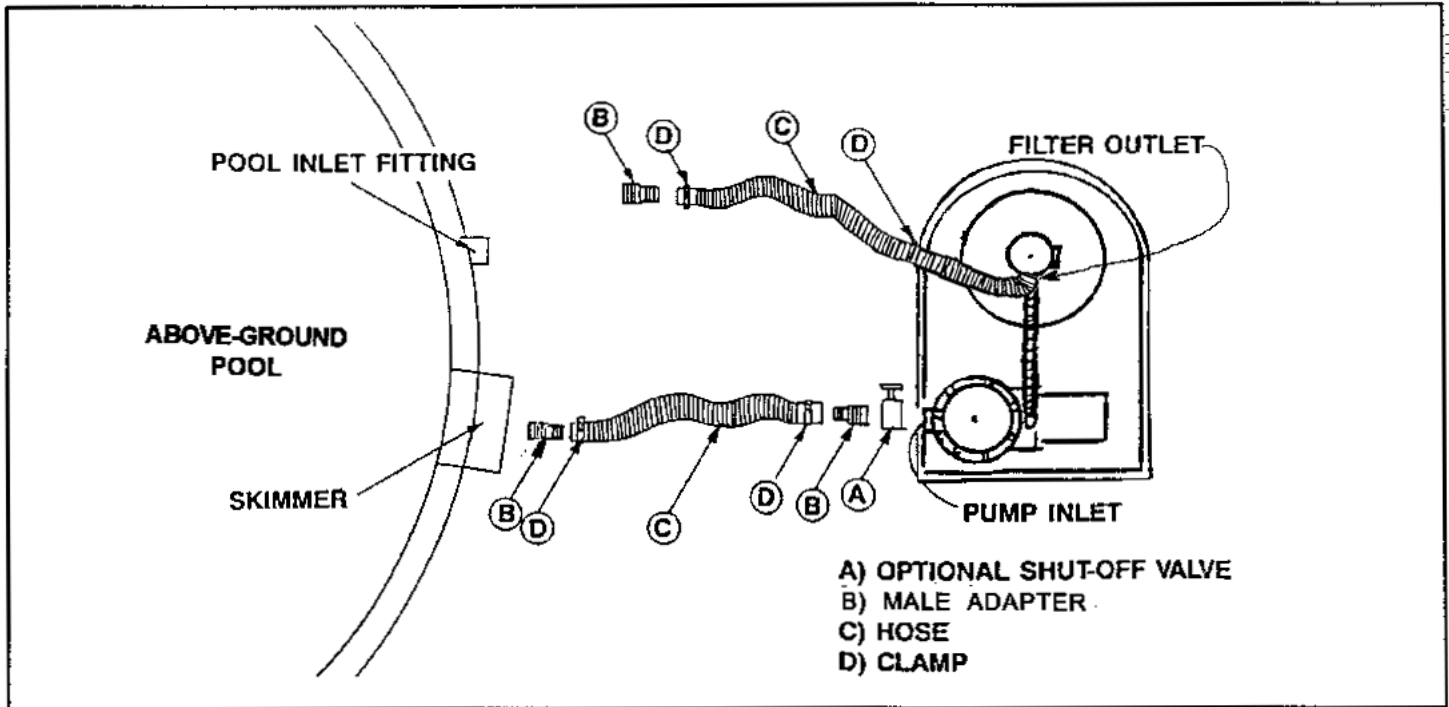
**IMPORTANT:** *Ensure the o-ring is in the adapter groove on the pump discharge. This o-ring was shipped installed at the factory and could dislodge during transit.*



❖ The adapter o-ring may be supplied in the system hardware kit.

**You are now ready to connect the system to your pool (see page 7)**

## Typical system -to-pool plumbing connection:



### □ LOCATION TIPS:

1. Locate system on solid foundation.
2. U.L. listed systems with 115V twist lock plug must be installed at least 5 feet from the pool. Give consideration to any other local codes that may apply.
3. Location should have adequate access for future servicing and winterizing.
4. Provide for adequate drainage away from equipment.
5. If you cover your system be certain to provide adequate ventilation.

## Step 1

*Although optional, we recommend a shut-off valve (A) be installed in the pump inlet for easy servicing when the system is installed below the water level of the pool.*

## Step 2

*Install four barbed adapters (B) using teflon tape in the following locations:*

- ❖ Pool skimmer (if one is not molded onto skimmer).
- ❖ Pump inlet (or optional shut-off valve).
- ❖ Filter outlet.
- ❖ Pool inlet fitting.

## Step 3

*Attach hose (C) using hose clamps (D) to adapters (B) according to the diagram shown.*

❖ **NOTE:** Refer to the pool manufacturer or skimmer manufacturer's installation instructions for more detail.

*You are now ready to fill your pool and begin system startup procedures (see page 8).*



## System startup:

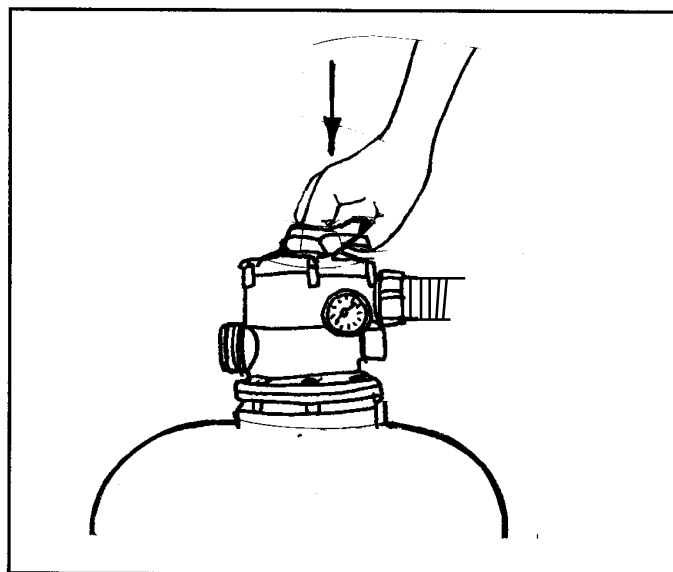
**CAUTION:** *Do not operate your pump until it has been filled with water (primed).*

❖For above-ground pools with system below the pool water level.

### Step 1A ❖ →

Press down on the valve handle and rotate to the **FILTER** position and release. Pool water will flow into the filter tank, pump and strainer. When water level reaches the clear strainer cover on the pump, the filter is ready for operation.

❖NOTE: If an optional shut-off valve is installed be sure that it is fully opened.

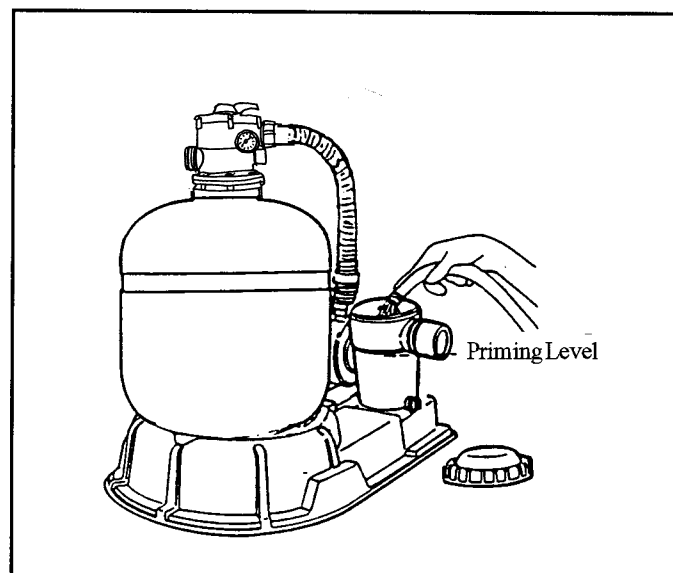


**OR**

❖For in-ground pools with systems above the pool water level.

### Step 1B ❖ →

Unscrew the **Ring-Lok nut** on the pump and remove the clear strainer cover. Prime the pump by filling the strainer with water to the bottom of the inlet fitting. Replace the clear cover and **Ring-Lok nut**. **HANDTIGHTEN ONLY.**

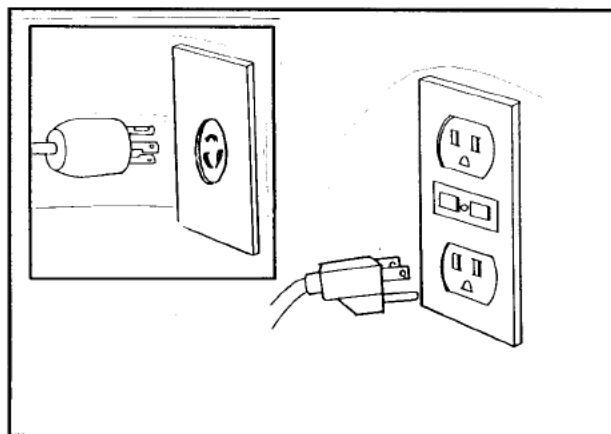


## Step 2

Turn the motor on (for only a few seconds) by plugging the unit into the grounded electrical receptacle.



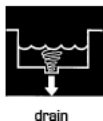
The use of an extension cord may result in a severe voltage drop which could cause damage or shorten the service life of your pump motor.



❖When it has been determined that the pump motor is operating properly, stop the pump and proceed to step 3.

## Step 3

1. Set dial valve to DRAIN position.

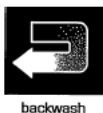


2. Start pump.

3. After flow has been established continue to pump for 30 seconds.

4. Stop pump.

5. Set valve to BACKWASH position.



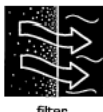
6. Start pump, run for one minute, (this action will clean and level the sand bed).

7. Stop pump.

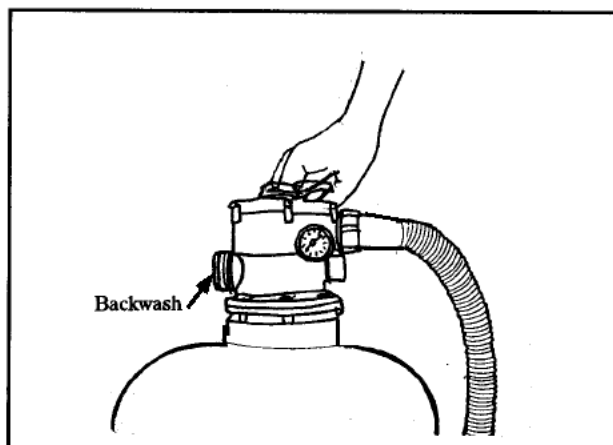
8. Set valve to RINSE position, run for 30 seconds. Stop pump. (7 position valve only)



9. Set valve to FILTER position.



10. Start pump - you are now in the first filtration cycle and your system is filtering your pool.



## Cleaning the pump strainer:

**⚠ WARNING** To avoid electrical shock, unplug the pump before performing any service or maintenance.

**Step 1** → **⚠ Unplug the pump cord.**

❖ For above-ground pools with the filter system located below the pool water level.



*Your system is full of water. If you remove the pump strainer cover, water will run out freely from your pool. You must close the shut-off valves, if installed, or make provisions to stop the flow of water from your pool.*

**OR**

❖ For in-ground pools with the filter system located above the pool water level.



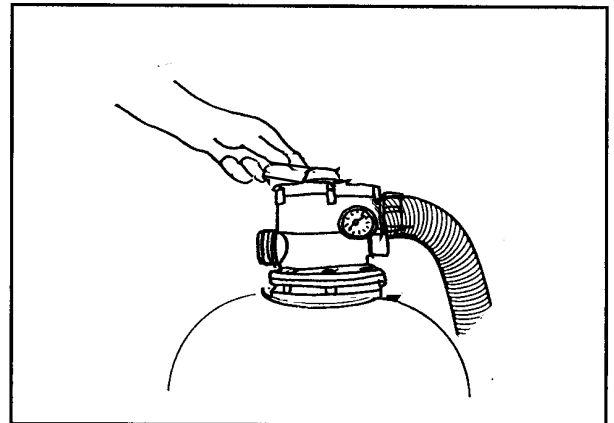
*Your system is full of water. If you remove the pump strainer cover, water will run out freely from your pool. You must close the shut-off valves, if installed, or make provisions to stop the flow of water from your pool.*

**Step 2** →

*Press down on the dial valve handle and rotate to WINTERIZE, release the handle. This action will allow air into the tank and prevent excessive back-flow through the strainer.*



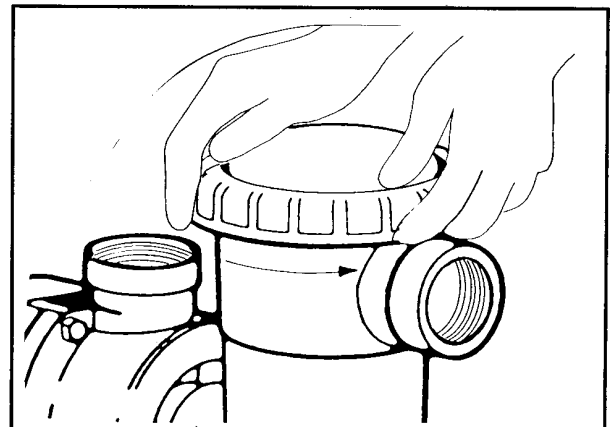
winterize



**Step 3** →

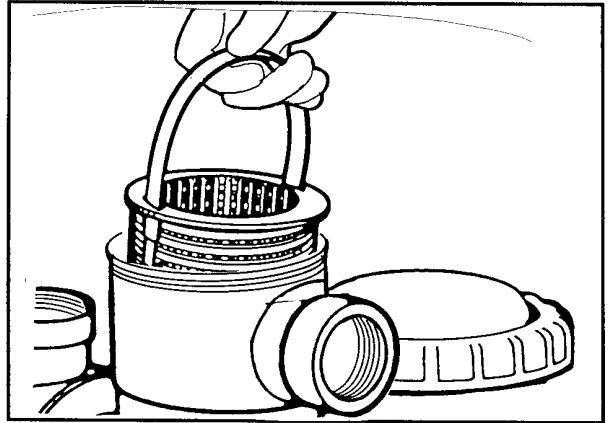
*Unscrew and remove the clear strainer cover.*

**CAUTION:** Some remaining water may spill out of the strainer body when the clear strainer cover is removed.



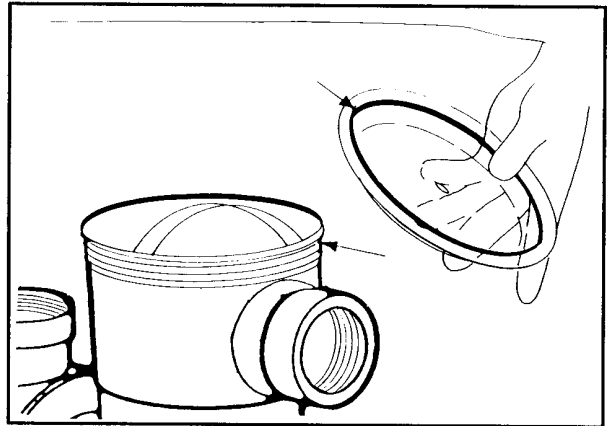
### Step 4 →

**Lift the basket out of the strainer and remove the debris. Reinstall the basket.**



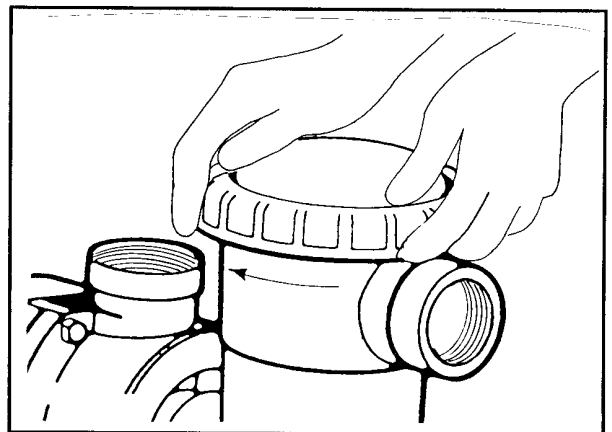
### Step 5 →

**Clean the O-ring on the clear cover and re-lubricate with petroleum jelly. Also, clean all surfaces that come in contact with the O-ring to assure a good seal.**



### Step 6 →

**Replace the clear strainer cover. HAND TIGHTEN ONLY. Open the optional valves if installed.**



**You are now ready to perform the system start-up (see page 8).**

## Backwashing (cleaning) the filter:

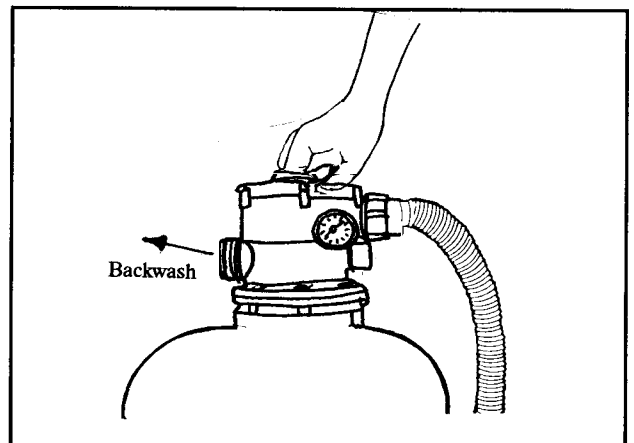
**⚠ WARNING** To avoid electrical shock, unplug the pump before performing any service or maintenance.

**IMPORTANT:** When the filter system is first placed in service, with service-line valves fully open, note the reading on the pressure gauge. When the gauge reads 10 PSI above the original reading it is time to backwash as indicated.

**Step 1** → ⚠ Unplug the pump cord.

**Step 2** →

1. Set dial valve to BACKWASH.
2. Start pump.
3. Observe water flow in sight glass and when clear (usually 2-3 minutes) stop pump.
4. Set valve to RINSE, run for 20-30 seconds. This action removes any debris trapped in the filter during backwash. (7 position valve only).
5. Stop pump.
6. Set valve to FILTER.
7. Start pump, you have now resumed filtering your pool.





## Winterizing the filter system:

**⚠ WARNING** To avoid electrical shock, unplug the pump before performing any service or maintenance.

**Step 1** → **⚠ Unplug the pump cord.**

❖ For above-ground pools with the filter system located below the pool water level.



*You must drain the water in the pool below the skimmer and inlet fitting. Follow pool manufacturer's recommendations for winterizing the pool. Your system is full of water. To remove the water that is still captured in your piping and system, drain the filter tank before proceeding.*

**OR**

❖ For in-ground pools with the filter system located above the pool water level.



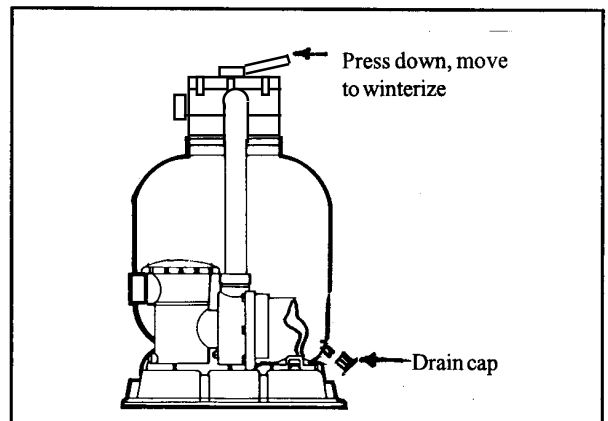
*Follow pool manufacturer's or pool builder's recommendations for winterizing the pool. Your system is full of water, winterize as directed below.*

**Step 2** →

*Drain the filter tank by first removing the drain and then set dial valve to WINTERIZE. Replace the drain cap once filter is drained.*

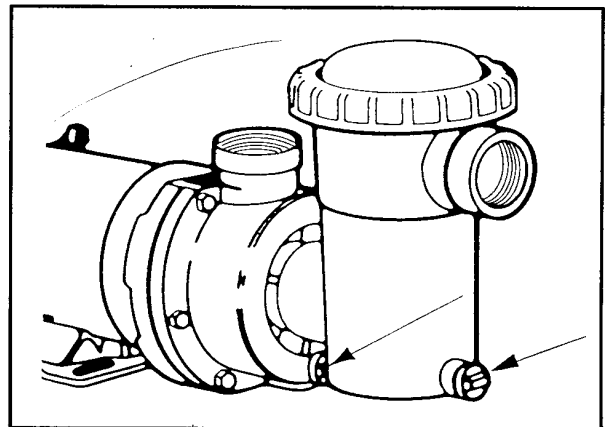


❖ **TIP:** A hose bib and garden hose can be connected to allow drainage into a convenient area.



**Step 3** →

*Drain the pump strainer and pump case by loosening the two plugs shown. The pump will drain without completely removing the plugs from the pump.*

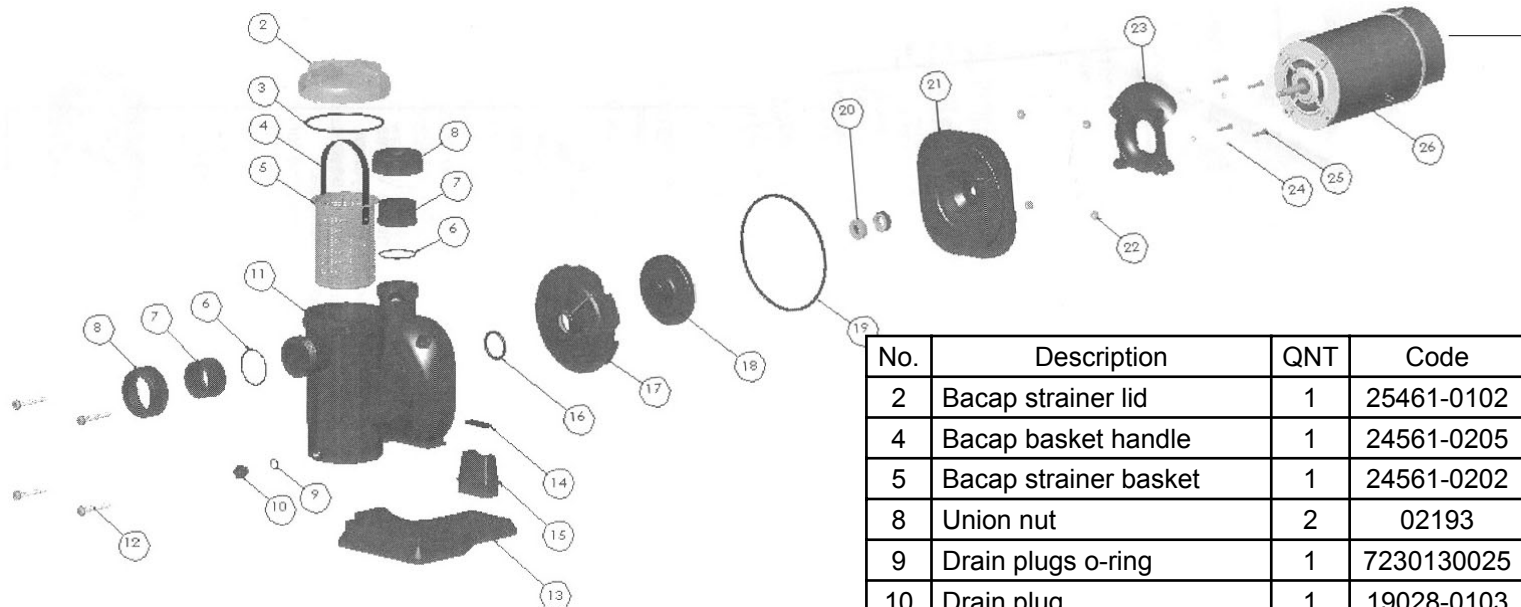


## Water maintenance:

**A proper and consistent use of chemicals is necessary to maintain clean, sanitary water, to prevent a spread of germ infection and control the growth of algae which can spoil the appearance and enjoyment of your pool or spa. See your pool professional for proper chemical maintenance.**

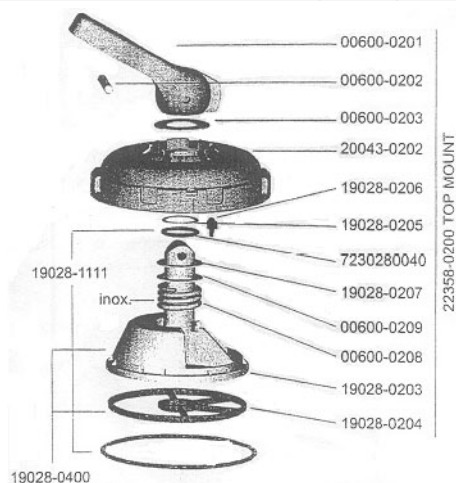


## Parts identification:

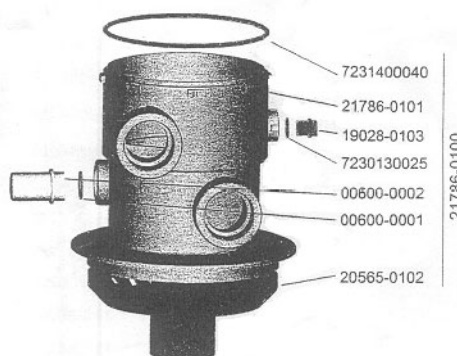


No.	Description	QNT	Code
2	Bacap strainer lid	1	25461-0102
4	Bacap basket handle	1	24561-0205
5	Bacap strainer basket	1	24561-0202
8	Union nut	2	02193
9	Drain plugs o-ring	1	7230130025
10	Drain plug	1	19028-0103
11	Bacap pump housing	1	25461-0203
13	Bacap pump base	1	25461-0502
14	Silen-block	1	27455-0100
15	Silen-block support	1	25461-0503
17	Diffuser	1	25463-0003
18	Impeller	1	27457-0712
21	C.48Y Bacap Motor Clamp	1	27455-0004
22	Nut M8 DIN934 A-2	4	7012108000
23	Motor adapter	1	27455-0476
26	Motor	1	27457-0485

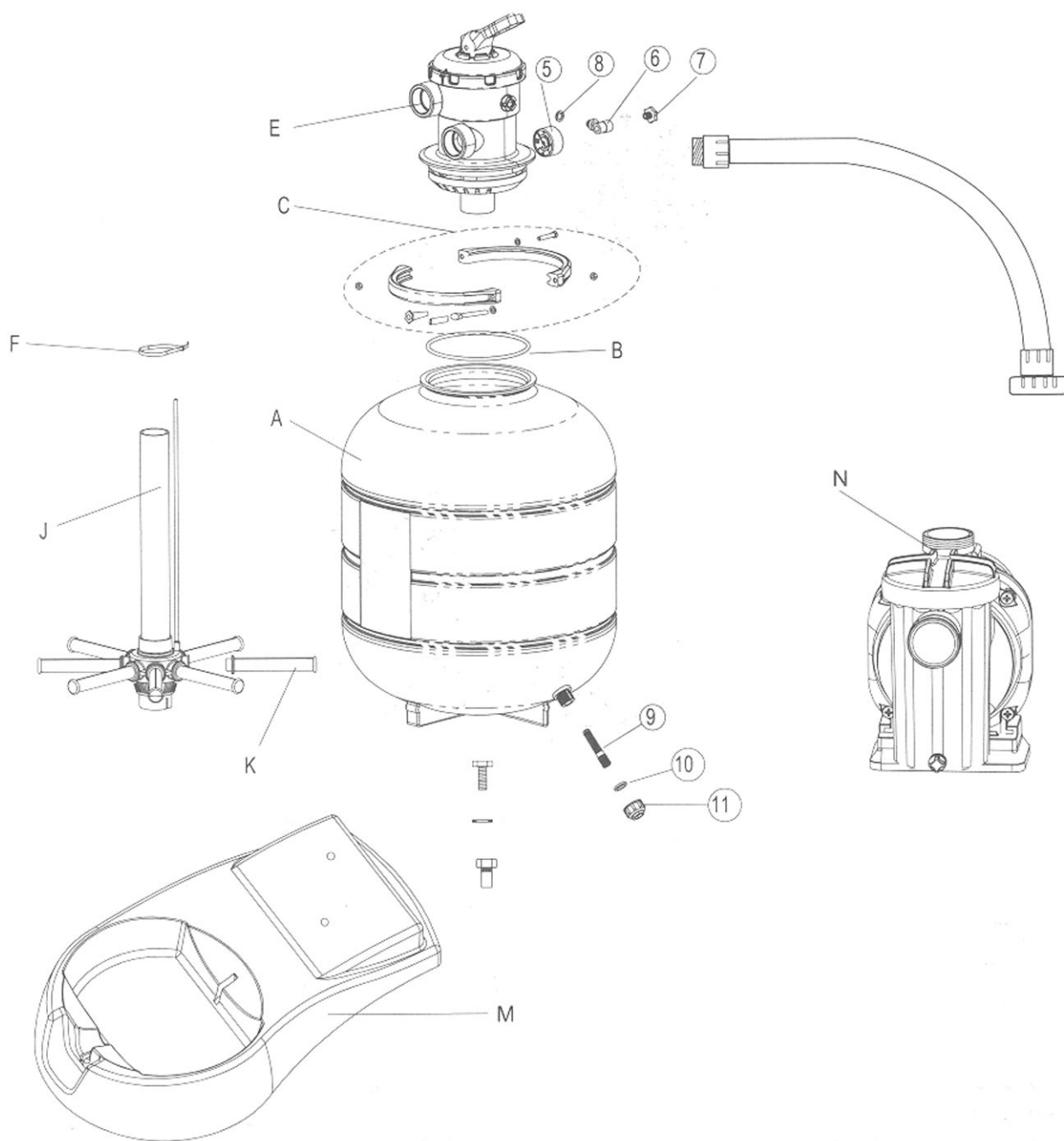
No.	Description	QNT	Code
3	Strainer lid O-ring 118x4 NBR 50 Sh(A)	1	77A1180040
6	Link flat gasket 54x2.5 mm NBR 70 Sh(A)	2	7730540025
7	Threaded union 1-1/2" NPT USA	2	27455-0206
12	Housing bolts DIN7985 A-4 M8x60 mm	4	7022908060
16	O-ring 38x5 mm NBR 70 Sh(A)	1	7730380050
19	Moter clamp o-ring 180x5 mm NBR 50 Sh(A)	1	77A1800050
20	Seal assembly: Type 6 5/8"	1	27455-9601
24	Motor Adapter washer D5 DIN912 A-4	4	7025105000
25	Motor adapter bolt M5x25 mm DIN912 A-4	4	7020705025



**Top mount  
Code: 22358**



## Parts identification:



	Code	Description
A	24181-0100	Filter body
B	720R1750057	O-ring 170x5, 75
C	24182-1003	Plastic V-clamp set
E	22358	Selector valve / Multiport
F	24182-0007	Flange 24mm
J	22503-0017	Filter collector / Standpipe
K	00638	Collector arm / Lateral
M	19460R0001	Monobloc base
N	24457-1130	Pump 1.5CV

	Code	Description
5	22503-0050	Pressure gauge set
6	00555R0401	Tee adapter
7	074065008A	Air releif plug
8	00470R0319N	Gasket
9	24181-0004	Water drain set
10	24181-0006	Gasket
11	15780-0602	Water drain plug

**⚠ WARNING** Disconnect power to motor main circuit breaker to avoid electrical shock.

**◆ THE MOTOR DOES NOT START WHEN YOU PLUG IT IN.**

- ✓ Disconnect the switch or circuit breaker in the OFF position.
- ✓ Fuses may be blown or the thermal overload is open.
- ✓ Motor shaft is locked.
- ✓ Motor windings are burned out.
- ✓ A defective starting switch inside the single-phase motor.
- ✓ Wiring may be disconnected or defective.
- ✓ Low voltage in outlet.

**◆ THE MOTOR DOES NOT REACH ITS FULL SPEED.**

- ✓ Low Voltage
- ✓ Two-speed model set on low speed.
- ✓ Motor windings connected for wrong voltage on dual voltage model.

**◆ THE MOTOR OVERHEATS AND THE PROTECTOR TRIPS.**

- ✓ Low Voltage
- ✓ Inadequate ventilation.
- ✓ Motor windings connected for wrong voltage on dual voltage model.

**◆ NO WATER IS DELIVERED BY PUMP.**

- ✓ Pump is not primed.
- ✓ Closed valve in suction or discharge line.
- ✓ Leakage of air into the suction system.
- ✓ Impeller clogged.

**◆ AIR BUBBLES APPEAR AT INLET FITTINGS.**

- ✓ Air may be leaking into the suction line at the connections or valve stem.
- ✓ Cover gasket or lint strainer may need cleaning.
- ✓ Restriction in suction line or low water level in pool.

**◆ LOW CAPACITY WHEN PUMP IS TURNED ON.**

- ✓ Valve in suction or discharge line is partly closed.
- ✓ Suction or discharge line is partly plugged.
- ✓ Suction or discharge line is too small.
- ✓ The basket in the skimmer or the lint strainer may be clogged.
- ✓ The filter may be dirty or the impeller may be clogged.

**◆ LOW PRESSURE WHEN PUMP IS TURNED ON.**

- ✓ The discharge valve or inlet fittings may be open too wide.

**◆ HIGH PRESSURE WHEN PUMP IS TURNED ON.**

- ✓ The discharge valve or inlet fittings may be closed too much.

**◆ EXCESSIVE NOISE COMING FROM PUMP OR MOTOR.**

- ✓ The basket in the skimmer or the lint strainer may be clogged.
- ✓ The motor bearing may be worn out.
- ✓ Valve in suction line may be partly closed.
- ✓ Suction line may be partly plugged.
- ✓ The vacuum hose may be plugged or too small.

- ✓ The pump may not be supported properly.

**◆ WATER LEAKS FROM SHAFT.**

- ✓ Shaft seal requires replacement

**◆ SERVICE & REPAIR PARTS**

Refer all service to your local dealer. Order all repair parts through your dealer. Give the following information when ordering repair parts:

- ✓ Unit nameplate information and description of part.

✓ If the recommendations in the "Questions?" portion of this manual do not solve your particular problem please contact your local dealer for service.



**WARNING** Disconnect power to motor main circuit breaker to avoid electrical shock.

## ◆ TROUBLE SHOOTING SAND FILTERS:

### ◆ SHORT FILTER CYCLE:

- ✓ Excessive dirt load.
- ✓ Excessive swimming load.
- ✓ Dirty make-up water.
- ✓ Algae growth.
- ✓ Excessive filter rate.
- ✓ Inadequately cleaned filter.
- ✓ Coagulants or algaecide added to pool.
- ✓ Inadequate backwash line.
- ✓ Calcification of filter media.
- ✓ Sand depth too low.

### ◆ INADEQUATE FILTERING ACTION:

- ✓ See possible causes above.
- ✓ Flow rate is too low.
- ✓ Improper media.
- ✓ Channeled filter media.
- ✓ Air accumulating in filter.
- ✓ Dial valve in intermediate position.

### ◆ DIRT OR RUST RETURNED TO POOL:

- ✓ Excessive dirt load.
- ✓ Excessive swimming load.
- ✓ Flow rate is too high.
- ✓ Dial valve in intermediate position.
- ✓ Air accumulating in filter.
- ✓ Pool water not kept in continuous chemical balance.
- ✓ Excessive chlorination.
- ✓ Non-use of "Rinse" position (6-position dial valves only).

### ◆ ABNORMAL LOSS OF POOL WATER:

- ✓ Excessive dirt load.
- ✓ Internal leak in dial valve to drain..
- ✓ Dial valve set to WINTERIZE or other intermediate position.

### ◆ SAND RETURNED TO THE POOL:

- ✓ Improper media.
- ✓ Flow rate is too high.
- ✓ Calcification of media.
- ✓ Air accumulating in filter tank.
- ✓ Damaged internal filter parts.

### ◆ LEAKS AT HOSE CONNECTION:

- ✓ Position hose clamp over barbed section of adapter.

❖NOTE: If these recommendations do not solve your particular problem(s), please contact your local dealer for service.

## SERVICE & REPAIR PARTS

*Refer all service to your local dealer as his knowledge of your equipment makes him the best qualified source of information. Order all repair parts through your dealer. Give the following information when ordering repair parts:*

1. Unit nameplate data.
2. Description of part.