



**Cycle Valve™**  
**Cycle Valve II™**  
**Cycle Valve III™**

## **Installation and Maintenance Manual**

The Cycle Valve is a unique device that allows a series of jets to pulsate in a predetermined pattern. The pattern or layout of the jets is infinite and even the speed at which they pulsate is adjustable.

The Cycle Valve is also unique in that it is water powered. There is no special requirement for electric motors or unsafe electrical wiring. The same water pump that powers the jets also powers the Cycle Valve.

The Cycle Valve has been designed for years of trouble free operation. However, a few installation tips will insure your continued satisfaction.

1. The Cycle Valve should be installed so that it is only operating when desired by the user. Never install the Cycle Jet on a time clock or filter cycle operation.
2. When sizing your system for pump requirements, we recommend approximately 8 to 10 GPM at 15 PSI for the motor end and 28 to 35 GPM at 15-18 PSI for the output housing or jet operation. **NEVER** exceed 20 PSI for the motor or output housing as it may cause damage to the Cycle Valve.
3. The Cycle Valve is designed to operate with jet orifice openings of 7/16" diameter, but can also operate on jets with 1/4" orifice size. When operating two jets per outlet, a smaller orifice size should be used. Always consider the orifice sizes when planning your installation and pump requirements. Do not use flow adjustable jets for the Cycle Valve. If the flow of water is interrupted by use of flow adjustable jets, a pressure spike could occur and cause damage to the Cycle Valve.
4. When installing the Cycle Valve for the first time, the spa or whirlpool manufacturer should install the unit as shown in the diagram marked "OEM FIRST TIME INSTALLATION". By using the valves and pressure gauges shown in the diagram, you can balance the system, evaluate and optimize the pressure of the massage delivered by the Jets as well as the duration and frequency of the massage delivered by the jets.

**NOTE:** Production installation will not require the valves and pressure gauges shown in the "OEM FIRST TIME INSTALLATION," but may require the use of a bypass valve or additional jets.

Once the level of performance and the system have been optimized, a standardized installation method can be used. Some standard installation methods are described below and shown in the accompanying diagrams.

**The Cycle Valve can be installed using several different options:**

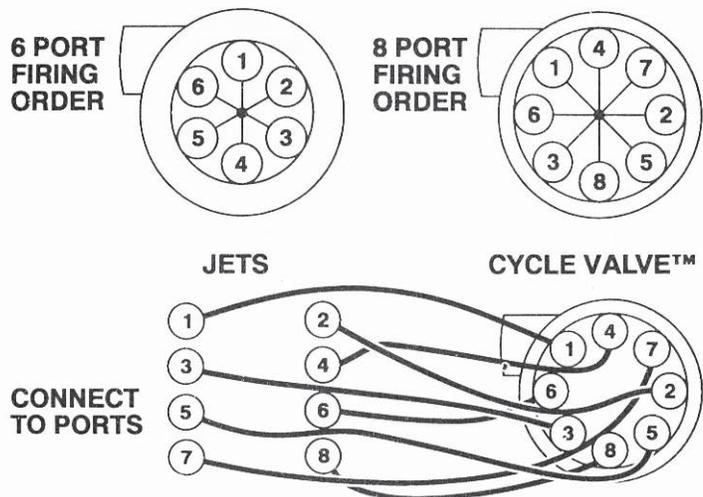
- A. When using the Cycle Valve with larger pumps or in conjunction with other jets or options, it can be installed using a 3 way valve to divert flow to and from another bank of jets or other option. (See the diagram labeled "CYCLE VALVE INSTALLATION USING A 3 WAY VALVE".)
- B. It can be installed on a pump designated solely for the Cycle Valve. The Cycle Valve will run very efficiently using a 1.0 HP Pump designated specifically for the Cycle Valve. See the diagram labeled "CYCLE VALVE INSTALLATION USING BOOSTER PUMP".
- C. When using a larger pump with a 3 way valve, it may be necessary to use a Bypass Valve to prevent applying too much pressure to the Cycle Valve. **NEVER** exceed 20 PSI to the motor or to the output housing of the Cycle Valve. See the diagram labeled "CYCLE VALVE INSTALLATION USING 3 WAY VALVE WITH BYPASS".

5. DO NOT use adjustable jets for the Cycle Valve. The user could turn them off which would increase the back pressure. This could damage the unit.
6. The plumbing to or from the motor end (1/2" socket) should never be reduced as this will hinder its performance.
7. The pipe from the motor outlet must be connected back to the suction line of the pump. Please refer to the plumbing diagrams and consult the factory should any questions or problems arise. NEVER block the outlet of the motor, the Cycle Valve™ will not operate.
8. The Cycle Valve™ can also be installed with the optional speed control valve. This allows the user the ability to vary the cycle speed at which the jets operate. The valve is mounted on the lip of the spa and the user can increase or decrease the speed at which the jets operate.
9. Do not bury the Cycle Valve in dirt, concrete, or foam as periodic maintenance may be necessary. The user should always allow for access to the top (motor end) of the Cycle Valve.
10. The Cycle Valve is available with 6 or 8 outlets and can operate up to 2 jets per outlet, depending on the size of the orifice in each jet. The order in which the jets will cycle is determined by the firing order of the outlet ports of the Cycle Valve and to which corresponding jet a particular outlet port is connected. The firing order for the 6 Port Cycle Valve and the 8 Port Cycle Valve is shown below.

EXAMPLE: If you plumb a spa with an 8 port Cycle Valve and two rows of 4 jets and you want to fire from top to bottom, you would plumb to the jets as noted below.

The following table shows typical cycling intervals of the 6 and 8 port Cycle Valve at various pressures.

CYCLE VALVE Housing & Motor Pressure (PSI)	6 & 8 Port RPM
8	7
10	7.5
12	8.5
15	10
17	12
20	12



## TROUBLESHOOTING

Motor Not Running - Jets are not on

- a. Turn pump on
- b. Check that valves are open
- c. Check that main line is not plugged
- d. Check that suction to pump is not blocked
- e. Make sure that excess glue is not on motor impeller

Motor Not Running: Jets are on

- a. Check for low pressure
- b. Check for a broken shaft
- c. Check for broken gears
- d. Make sure rotor is not locked up

Motor Running Slow: Jets have low pressure

- a. Check speed of pump
- b. Pump may be too small
- c. Too many other jets may share the same line
- d. Reduce orifice size of jets

(continued)

Motor Running Fast: Jets have too much pressure

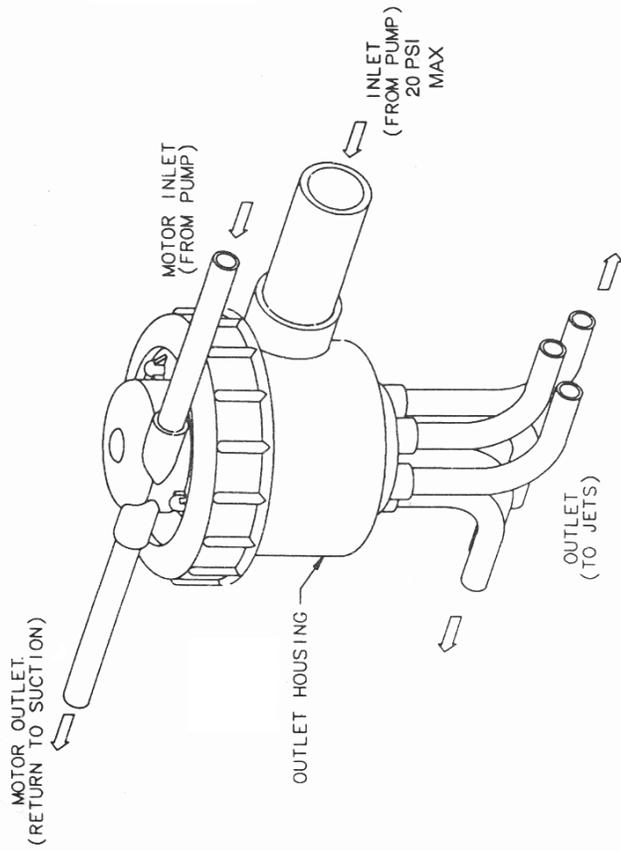
- a. Pump may be too big - check with pressure gauge
- b. Add jets to the system to decrease pressure
- c. Add bypass valve to system
- d. Enlarge orifice size in jets

Motor Running Fast: Jets are OK

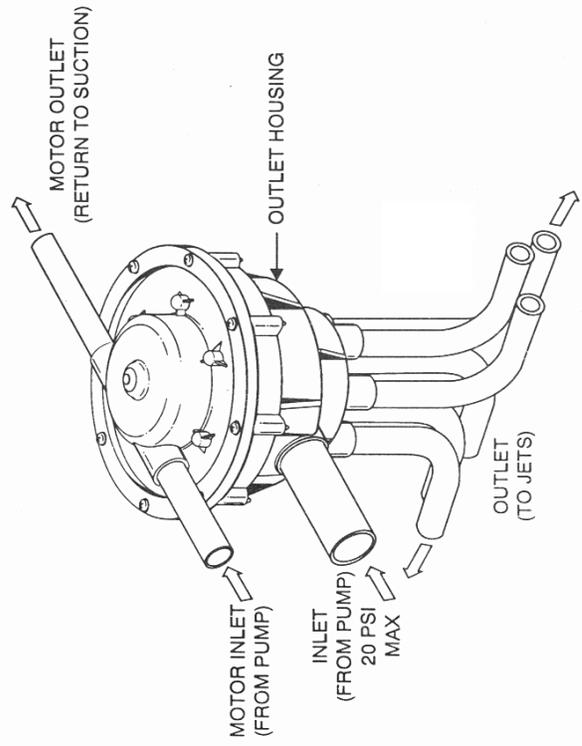
- a. May require a valve on the water line to the motor to decrease the flow and slow the motor

Motor Running Slow: Jets are OK

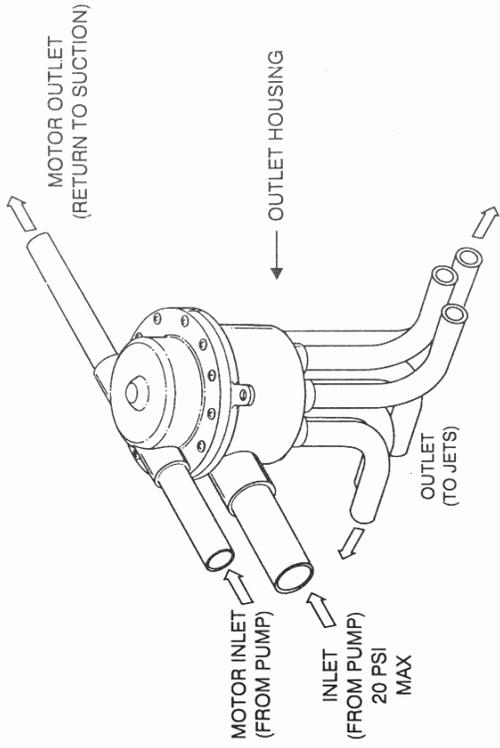
- a. Check that motor water return line is plumbed to suction line
- b. Impeller could be rubbing in the motor housing (check for damage)
- c. May require a valve on the housing water line (1-1/2" line) after the 1/2" tee takeoff to the motor. Decrease flow to jets, increase flow to motor.



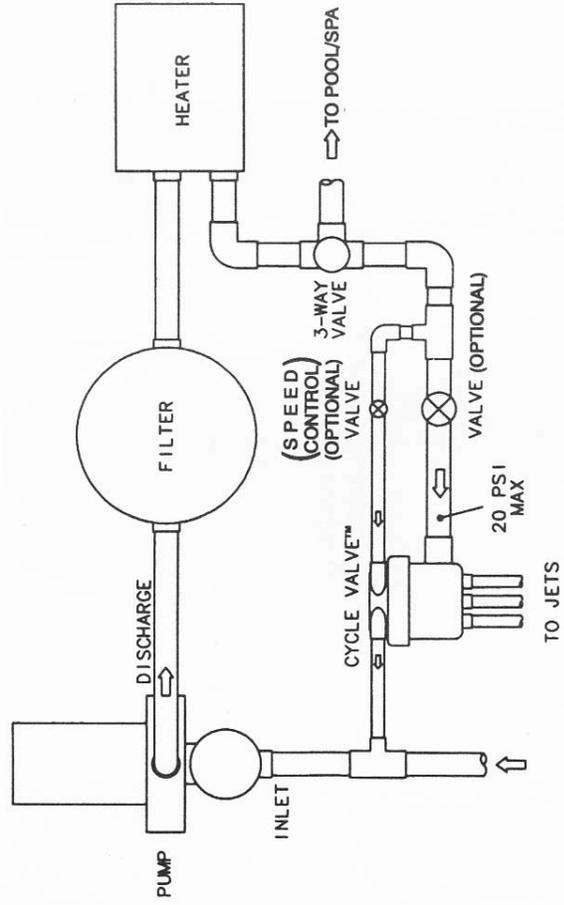
CYCLE VALVE™ ASSEMBLY



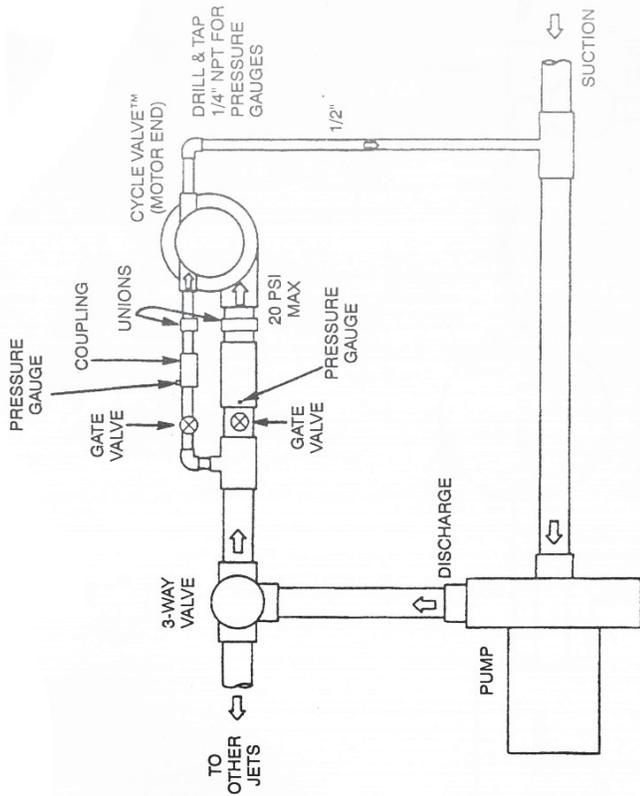
CYCLE VALVE II™ ASSEMBLY



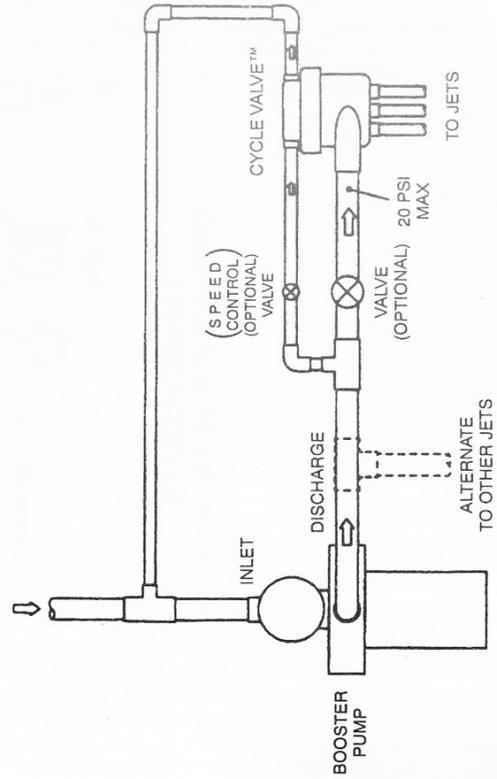
CYCLE VALVE III™ ASSEMBLY



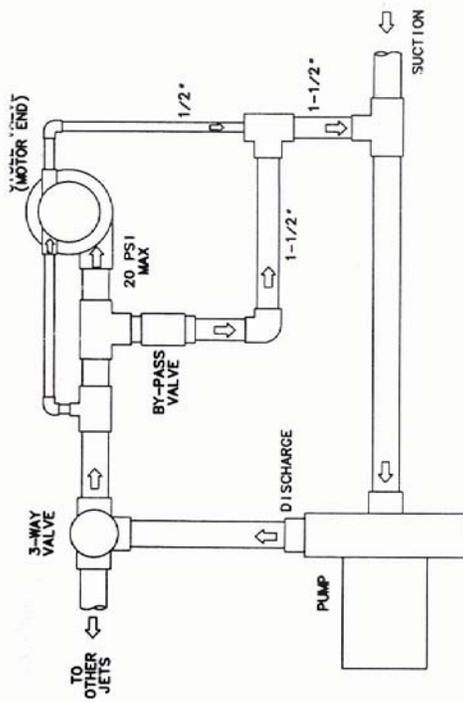
TYPICAL POOL/SPA  
CYCLE VALVE™ INSTALLATION



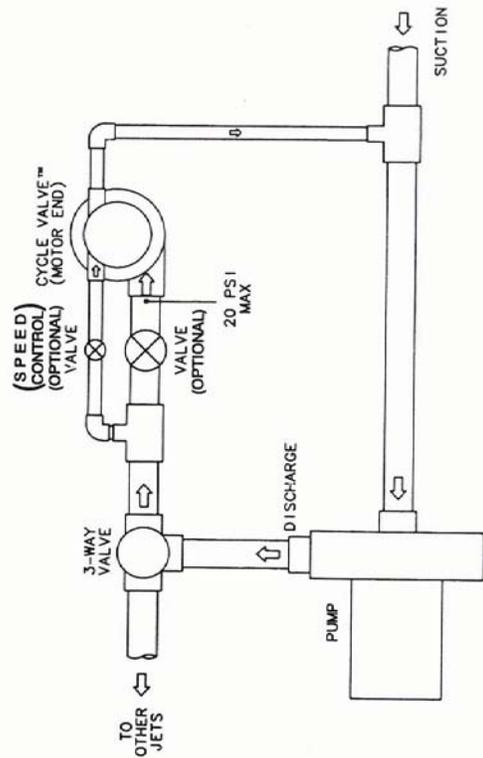
OEM FIRST TIME INSTALLATION  
CYCLE VALVE™ INSTALLATION  
USING 3-WAY VALVE



CYCLE VALVE™ INSTALLATION  
USING BOOSTER PUMP



CYCLE VALVE™ INSTALLATION  
USING 3-WAY VALVE WITH BYPASS



CYCLE VALVE™ INSTALLATION  
USING 3-WAY VALVE