



# DualFlo

## 2-Speed Pump

### Owner's Manual

#### Installation, Operation and Service

Models: DF102S, DF102STL  
DF152S, DF152STL

### 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.

The NOTICE label indicates special instructions that are important but not related to hazards.



#### Notice to Installer

This manual contains important information about the installation, operation and safe use of this product. Once installation is complete, this manual must be given to the owner/ operator of this equipment.



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POOL SYSTEMS

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## ■ Safety Information

### Important Safety Instructions

Be sure to read all instructions and warnings carefully. Refer to product data plate(s) for additional operating instruction and specifications. Safety precautions should always be followed, including the following:

**⚠ WARNING: DO NOT PERMIT CHILDREN TO USE OR CLIMB ON THIS PRODUCT.**

**⚠ WARNING: (For cord & plug connected units). Risk of Electrical 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. Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers and other equipment. Replace a damaged cord immediately. Do not use an extension cord to connect unit to electrical supply; provide a properly located outlet.**

**⚠ CAUTION: (For pumps with a 25 ft. cord. This pump is for use with storable pools only. Do not use with permanently installed pools. A storable pool is constructed so that it may be readily disassembled for storage and reassembled to its original integrity.**

**⚠ CAUTION: (For pumps with/without 3ft or 6ft. cord. This pump is for use with permanently installed pools and may also be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage.**

**⚠ WARNING:(For hot tub and spa pumps). Do not install within an outer enclosure or beneath the skirt of the hot tub or spa, unless so marked.**

### Hazardous Pressure and Separation

Pool and spa water circulation systems operate under hazardous pressure. Stand clear of circulation system equipment during startup. Failure to follow safety and operation instructions could result in violent separation of the pump housing, cover or filter housing due to pressure in the system, which could cause injury or death.

### Suction Entrapment Hazards

Suction in suction outlets sumps/suction outlet covers which are, damaged, broken, cracked, missing, or unsecured (faulty) can cause severe injury/death due to the following entrapment hazards.

**Hair Entrapment** - hair can become entangled in suction outlet cover.

**Limb Entrapment** - a limb inserted into an opening of a suction outlet sump or suction outlet cover that is faulty can result in a mechanical bind or swelling of the limb.

**Body Suction Entrapment** - a negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover that is faulty can result in evisceration/disembowelment.

**Mechanical Entrapment** - There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

**⚠ WARNING: Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.**

**⚠ WARNING: Failure to keep suction outlet components clear of debris can result in an increase potential for suction entrapment as described above**

**⚠ WARNING: Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every seven years or if found to be faulty.**

**⚠ WARNING: Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above**

# ■ Installation

## Installation Location

Locate pump as close to pool/spa as possible, preferably in a dry, well ventilated area away from direct sunlight. It should be on a hard, level surface. Give consideration to:

1. Drainage – away from pump.
2. Ventilation of pump motor.
3. Access for future servicing and winterizing.
4. Protection from the elements.

Pumps without strainer bodies are designed for flooded suction (all suction fittings and suction piping below water level) and will not self-prime. Consequently, the pump must be installed at an elevation that is below water level when pool or spa is filled; however, if suction line valves are installed, the pump may be closed for priming. Keep vertical distance to a minimum if you choose to mount pump above water level.

Pumps with strainer bodies are self-priming but should be mounted as close to the water level as possible or below for ease in priming.

## Vertical Water Discharge

DualFlo pumps come set for vertical discharge and can be changed to horizontal.

**⚠ WARNING: Make sure the power has been cut off before performing the below actions.**

1. Open the clear cover and remove the clip located inside the strainer housing. Then detach the strainer housing from the rest of the pump unit.
2. Unscrew and remove all the screws from the pump cover and remove the pump cover from the rest of the pump unit.
3. Unscrew and remove the cap from the back of the motor, then unscrew the four (4) long bolts located on the “four-corners” of the motor.
4. Using a screw driver, lock the middle Axis on the motor and turn the impeller (located on the other end of the motor) until the impeller is removed. Remove the pump housing from the motor.
5. Separate the motor mounting plate from the pump housing and rotate the pump housing 90 degrees. The discharge pipe area will now be facing side ways/ horizontal. Reconnect the motor mounting plate to the pump housing.
6. Reverse instructions 4 to 1 to reassemble the pump.

## Electrical Data

Refer to information on motor nameplate for electrical service data. All motors should have fused disconnect switch or circuit breaker. Be sure wire size is sufficient for pump HP and distance from power source. Wiring should be done in accordance with applicable codes by a competent electrician. We recommend the installation of a ground fault circuit interrupter for maximum safety.

## General Plumbing

**FOR SOLVENT WELD CONNECTION** - Rigid or flexible PVC pipe can be used. Pipe ends should be clean and free of any flash cause by the cutting operation. Be sure that the proper adhesive is used on the type of pipe specified.

**⚠ NOTE: A primer will assure that adhesive joints are superior. Suregard P-3000 has a purple tracer to qualify in areas where codes specify a primer must be used.**

**⚠ CAUTION: We recommend that you consider climatic conditions when applying adhesives. Certain atmospheric situations, such as high moisture content, make adhesive action of certain glues less effective. Check the manufacturer's instructions.**

**FOR THREADED CONNECTIONS** - Use only Teflon tape or equivalent on threaded plumbing connections. Other pipe compounds may damage threads. We do not recommend the use of silicone or petroleum based compounds.

**DO NOT OVER TIGHTEN – HAND TIGHTEN PLUS ½ TURN IS SUFFICIENT.**

## Pump Plumbing

Suction pipe should be as large or larger than discharge pipe. Avoid using suction pipe smaller than pump connection.

Keep the piping as straight and short as possible, and of suitable size. Avoid connecting an elbow directly into the pump inlet (use a length of straight pipe to allow a proper entry for the water). Arrange horizontal runs to slope upward to the pump to prevent high spots that could form air pockets. Support the pipe independently so that it places no strain on the pump. Keep as much of the suction line as possible below the water level to reduce priming time. Install valves and unions in the pump suction and return lines to facilitate servicing. Valves are recommended for throttling maintenance if the system is installed below deck level. Suction valves are essential for priming all pumps without strainer bodies installed above water level. Pumps with strainer bodies are self-priming, nevertheless, we recommend the use of check valve in the suction pipe at or below the water level if the suction lift is more than five feet or if the dry suction is more than ten feet long. Keep the valve in the suction line fully open during operation.

## ■ Initial Startup

Do not operate pump until it has been primed as water acts to cool and lubricate the seal. For pumps without strainer bodies and located above water, close suction line valve and fill pump with water in order to prime. For pumps with strainer bodies and located above water, prime by removing strainer cover and filling strainer body with water. Pumps located below water level will self prime if all piping is also below water level. After pump has been primed, energize motor and open all suction and discharge line valves. It may take some time for pump to remove air from suction lines. If no flow is observed in five minutes, stop the motor and re-prime. If the pump fails to operate, check for air leaks. Refer to Trouble Shooting section.

After about ten minutes of operation, check the return fittings for air bubbles. A continuous flow of air indicates leaks in suction line. Locate and correct any leaks immediately.

### Controlling The Output

Keep the gate valve in the suction line fully open during operation. Should it be necessary to control the output, use a valve in the return line.

⚠ **CAUTION:** Do not re-tighten strainer Ring-Lok during operation.

⚠ **CAUTION:** Do not operate pump with closed suction or discharge valves.

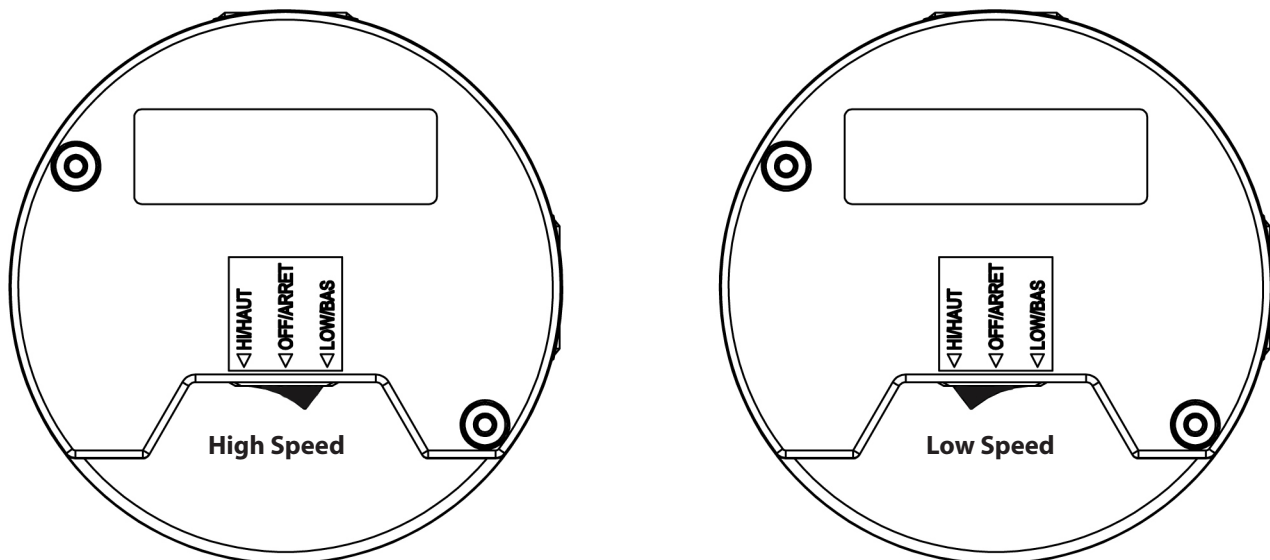
## ■ Specifications

### Two-Speed Pumps

Two-speed models are recommended in a swimming pool when high speed is needed for maximum filtration at peak periods and whenever turbidity levels are high. At other times, switch to low speed. For backwashing and vacuuming, high speed is required.

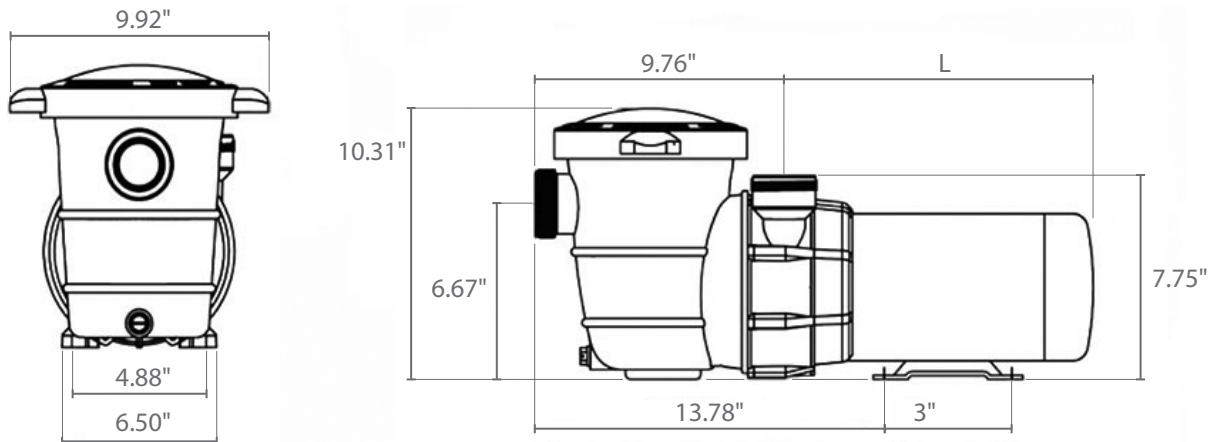
In spas and hot tubs, use high speed to attain full performance in the hydro-therapy mode. At other times, such as filter/heat cycle mode, use low speed. Low speed provides sufficient flow to activate most spa heaters and provides sufficient flow for filtration.

In jetted tubs, use high speed to attain full performance in the hydro-therapy mode and use low speed mode to prime. The below picture shows how to switch between the high speed and low speed.



## Technical Data

Model	HP	RPM	Volts / Hz	Amps	Motor Length (L)
DF102S	1.0	3450/1720	115V/60	10/3.2	11.9"
DF102STL	1.0	3450/1720	115V/60	10/3.2	11.9"
DF152S	1.5	3450/1720	115V/60	12/3.6	12.2"
DF152STL	1.5	3450/1720	115V/60	12/3.6	12.2"



## ■ Maintenance

### Water Chemistry

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

Chlorine is the most commonly used chemical to provide clean, sanitary water. Either dry or liquid chlorine (calcium or sodium hypochlorite) can be used which should be added daily as it is dissipated by dirt and germs as well as by the sun and wind.

It is also important that the correct level of acidity or alkalinity of the pool water be maintained. This is the pH of your pool with pH 7.0 being neutral. Readings above 7.0 are alkaline and below are acid. A desirable range is 7.2 – 7.4.

### Pump Maintenance

1. Motors are self-lubricating – no lubrication required.
2. Clean hair & lint strainer if you have a strainer body pump.
3. Visually inspect motor for blockage of air vents on motor shell. Remove any debris after breaker off.
4. Shaft seals may become worn and must be replaced if leakage is observed.

### Cleaning

Switch power off. Close valves in suction and return line. Unscrew strainer Ring-Lok counterclockwise and remove the strainer cover from hair and lint strainer and lift out strainer basket. Clean and replace the basket. Take care to seat basket properly. Clean O-Ring and re-lubricate with petroleum jelly if necessary. Clean O-Ring seats on cover and strainer. Refit cover and strainer – hand tighten only – and open valves. Put pump back into operation.

⚠ **CAUTION: Do not re-tighten strainer during operation.**

### 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.

## ■ Trouble Shooting

### **MOTOR DOES NOT START**

1. Disconnect switch or circuit breaker in OFF position.
2. Fuses blown/thermal overload open. Locked motor shaft.
3. Motor windings burned out.
4. Defective starting switch inside single-phase motor
5. Disconnected or defective wiring
6. Low voltage

### **MOTOR DOES NOT REACH FULL SPEED**

1. Low voltage
2. 2 speed model set on low speed
3. Motor windings connected for wrong dual voltage model.

### **MOTOR OVERHEATS (Protect trips)**

1. Low voltage
2. Motor windings connected for wrong dual voltage model.
3. Inadequate ventilation

### **PUMP DELIVERS NO WATER**

1. Pump is not primed
2. Closed valve in suction or discharge line
3. Leakage or air into suction system
4. Impeller clogged

### **LOW PUMP CAPACITY**

1. Valve in suction or discharge line partly closed
2. Suction or discharge line partly plugged
3. Suction or discharge line too small
4. Pump running at reduced speed (see above)
5. Plugged basket in skimmer or hair and lint strainer
6. Dirty filter
7. Impeller clogged
8. Wrong rotation (3 phase only)

### **LOW PUMP PRESSURE**

1. Pump running at reduced speed (see above)
2. Wrong rotation (3 phase only)
3. Discharge valve or inlet fittings closed too much

### **HIGH PUMP PRESSURE**

1. Discharge valve or inlet fittings closed too much
2. Return lines too small
3. Dirty filters

### **NOISY PUMP AND MOTOR**

1. Plugged basket in skimmer or hair in lint strainer
2. Worn motor bearings
3. Valve in suction line partly closed
4. Suction line partly plugged
5. Vacuum hose plugged or too small
6. Pump not supported properly

### **LEAKAGE OF WATER AT SHAFT**

1. Shaft seal requires replacement

### **AIR BUBBLES AT INLEY FITTINGS**

1. Leakage air into suction line at connections or valve stem
2. Cover gasket of hair and lint strainer needs cleaning
3. Restriction in suction line
4. Low water level in pool

**⚠ NOTE: If the recommendations in the Trouble Shooting portion of this manual do not solve your particular problem(s), please contact your local dealer for service.**

## ■ Winterizing

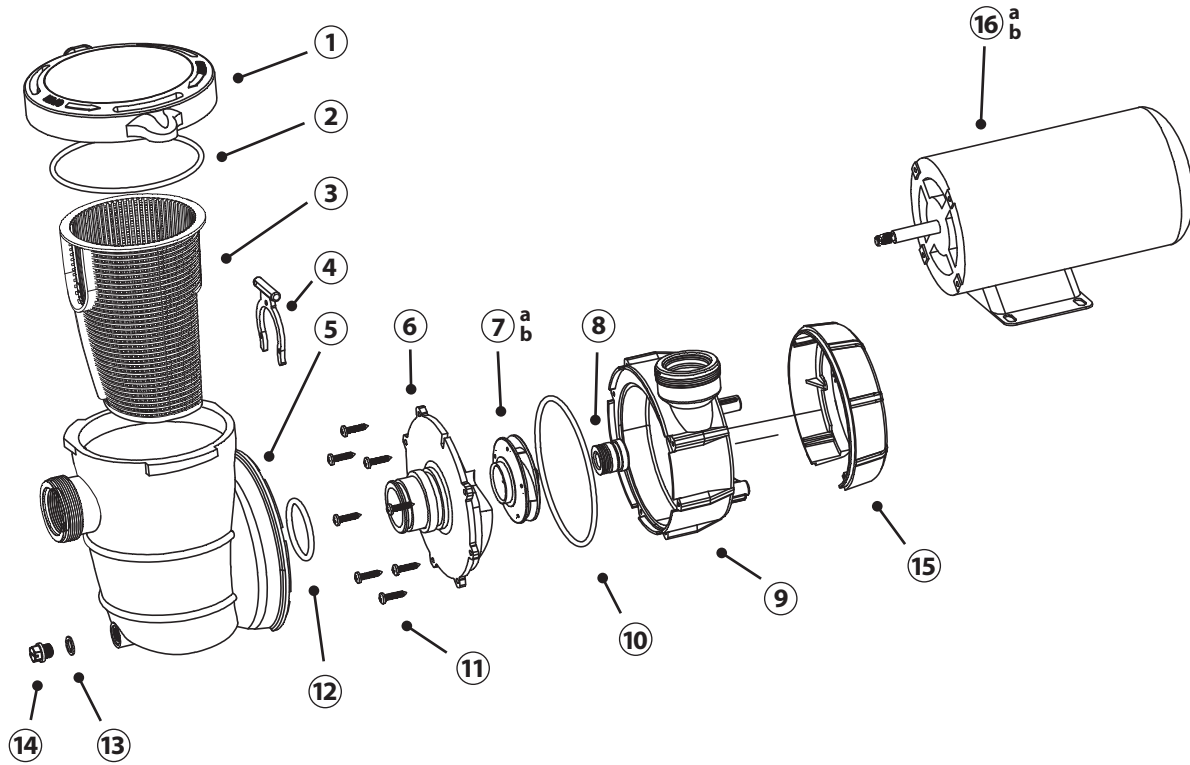
Consult your dealer for advice on winterizing your equipment if freezing temperatures occur in your locality. His knowledge of your equipment makes him the best qualified source of information. Follow his recommendations, and if these include draining the filter system, proceed as follows:

1. If your system does not contain a filter, proceed to step 2.
  - A. For sand filters: BACKWASH for 3 to 5 minutes and set dial valve to WINTERIZE.
  - B. For cartridge filters: Clean the filter element and store in a dry place.
2. Drain system by loosening drain plugs (will drain without completely removing plug from unit) and/or removing pipe caps.

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# DualFlo Parts Listing

Models: DF102S, DF102STL DF152S, DF152STL



No.	Part Number	Description	Req'd Qty
1	AGX252772	Strainer Cover	1
2	AGX310420	Strainer Cover O-Ring	1
3	AGX252704	Basket	1
4	AGX252705	Strainer Housing Clip	1
5	AGX252703	Strainer Housing	1
6	AGX252702	Housing Cover	1
7a	AGX252871	Impeller for DF102S and DF102STL	1
7b	AGX272971	Impeller for DF152S and DF152STL	1
8	AGX280030	Seal Assembly	1
9	AGX252701	Pump Housing	1
10	AGX310400	Housing O-Ring	1
11	AGX120160	Screw ST 5.5 x 25	8
12	AGX310290	Strainer O-Ring	1
13	AGX320020	Drain Plug Gasket	1
14	AGX886017	Drain Plug	1
15	AGX252708	Motor Mounting Plate	1
16a	AGX230810	1.0 HP Two-Speed Motor for DF102S and DF102STL	1
16b	AGX230840	1.5 HP Two-Speed Motor for DF152S and DF152STL	1

## ■ Limited Warranty

For one (1) year from the date of purchase, will repair or replace, at its option, for the original owner any parts of its filters ("Product") which are found upon examination to be defective in materials or workmanship. This Limited Warranty covers parts only for a period of one (1) year.

Please contact the store you purchased the filter from for instructions. Be prepared to provide a receipt, the model number and serial number when exercising this limited warranty.

Purchaser must pay all transportation charges on Products or parts submitted for repair or replacement.

All non-warranty service charges are the responsibility of the original owner. Failure to pay for non-warranty service charges will void this Limited Warranty.

This Limited Warranty does not cover Products that have been damaged as a result of accident, freezing, abuse, misuse, neglect, improper installation, improper maintenance or failure to operate in accordance with written instructions. All maintenance and service must be performed by service agents approved. Any unauthorized alteration or repairs will void this Limited Warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE (1) YEAR FROM THE DATE OF PURCHASE. THIS IS THE EXCLUSIVE REMEDY AND ANY LIABILITY FOR ANY AND ALL INDIRECT OR CONSEQUENTIAL DAMAGES OR EXPENSES WHATSOEVER IS EXCLUDED.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusions or limitations of incidental or consequential damages, so the above limitations might not apply to you. This limited warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

In no event, whether as a result of breach of contract warranty, tort (including negligence) or otherwise, shall its suppliers be liable for any special, consequential, incidental or penal damages including, but not limited to loss of profit or revenues, loss of use of the products or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, downtime costs, or claims of buyer's customers for such damages.

This Limited Warranty does not include freight charges for equipment or component parts, to and from the factory, services such as maintenance or inspection, repair or damage due to negligence such as freezing conditions, incorrect installation, nor acts of God. The liability shall not exceed the repair or replacement of defective parts under this Limited Warranty.

This Limited Warranty also does not include unnecessary service calls due to erroneous operational reports, external valve positions, or electrical service. If a non-warranty service call is made, and the homeowner is unwilling to pay for the service call, this Limited Warranty will be voided. This Limited Warranty is voided if the product is repaired or altered by any persons or agencies other than those authorized. This Limited warranty applies only within the continental USA. For warranty outside the continental USA.

You MUST retain your purchase receipt along with this form. In the event you need to exercise a warranty claim, you MUST present a copy of the purchase receipt at the time of service. Please contact the store you purchased the filter from for service or return authorization and instructions.

DO NOT MAIL THIS FORM. Use this form only to maintain your records.

MODEL NO. \_\_\_\_\_ SERIAL NO. \_\_\_\_\_ INSTALLATION DATE \_\_\_\_\_

# Thank you for choosing AquaGuard!