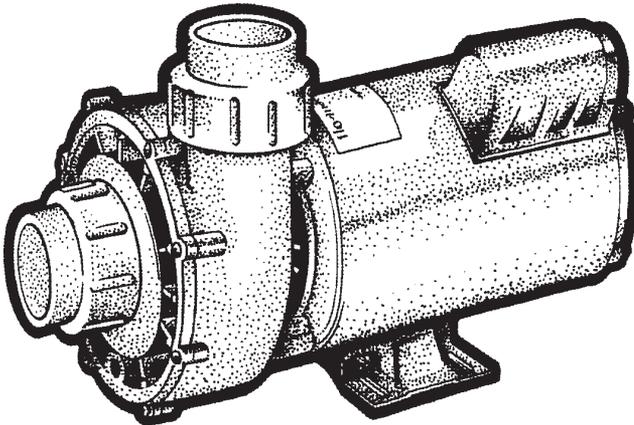




aqua flo

OWNER'S MANUAL

FLO-MASTER® "XP2" SERIES PUMPS



IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

1. **READ AND FOLLOW ALL INSTRUCTIONS.**

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

3. **CAUTION** - 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.

A storable pool is constructed so that it may be readily disassembled for storage and reassembled to its original integrity and has a maximum dimension of 18 feet (5.49m) and a maximum wall height of 42 inches (1.07m).

4. Do not install within an outer enclosure or beneath the skirt of a hot tub or spa unless so marked.

5. **SAVE THESE INSTRUCTIONS.**

INSTALLATION & OPERATING INSTRUCTIONS

GENERAL

Your AQUA-FLO pump has been quality built and engineered to give maximum efficiency under normal water pumping conditions. Consult the manufacturer for any other applications.

LOCATION OF PUMP

For best pump performance, locate the system as close to the water source as possible. Provide adequate access around the pump for inspection and maintenance.

MODELS LESS TRAP

This model was designed for below water level (flooded suction) applications. Make sure the pump is installed at a level that will allow the pump casing (volute) to completely fill with water.

Two quick disconnect compressions fittings are included with your pump for ease of installation and maintenance. Make sure the fittings are correctly aligned with pump connections to allow the O-ring to make the proper seal. **Hand tighten only. Do not use a wrench to tighten fittings.**

MODELS WITH TRAP

Avoid excessive tightening of pipe or fittings in any areas where threaded connections are used.

For NPT threaded connections, use Quick-Seal Teflon Thread Sealing Compound, Plasto-Joint Stick or any other sealants formulated specifically for plastics.

STARTING & PRIMING PUMP

Do not run unit dry. Always be certain that the pump casing and/or trap is filled with water before starting the unit. Allow a reasonable amount of time for priming. If pump will not start, or will not prime, see trouble shooting below.

MAINTENANCE

The trap basket should be inspected frequently and kept clean. To avoid damage to the basket, do not strike when cleaning. Inspect trap cover O-ring regularly and replace as necessary.

Keep motor clean. Insure that louvered openings are free from debris and obstructions. Over a period of time, the shaft seals may become damaged or worn and must be replaced.

WINTERIZATION

To prevent damage during freezing conditions, turn off all electrical power. Drain thoroughly and clean out any debris. Protect pump and motor from elements by covering or, if possible, store in a dry, well ventilated room.

WARNING - All electrical wiring of the motor installation must be done by a qualified electrician in accordance with applicable electrical codes. Before working on any motor be certain that the source of electrical power is off at the main junction box.

BONDING WIRE - Upon installation of the pump, the motor must be bonded with a No. 8 AWG (8.4mm²) solid copper conductor per National Electric Code. The connection should be from the accessible wire connector on the motor to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit and metal piping within 5 feet (1.5m) of the inside walls of a swimming pool, spa or hot tub, when the motor is installed within 5 feet of the inside walls of the swimming pool, spa, or hot tub.

NOTE: For electrical connections, see wiring diagram on motor rating plate.

TROUBLE SHOOTING

MOTOR WILL NOT START:

- 1.) Check Circuit Breakers
- 2.) Check for incorrect or loose wire connections.
- 3.) Make sure the correct power supply is being used.
- 4.) Any on/off switch or pneumatic switch should be in the "on" mode.

MOTOR OVERHEATING AND CYCLING ON AND OFF:

- 1.) Check for incorrect or loose wire connections.
- 2.) Check for low voltage supply (frequently caused by undersized wire).
- 3.) Make sure the motor gets a fresh air supply and the vents are kept unlogged.

MOTOR MAKES HUMMING NOISE BUT WILL NOT START:

- 1.) Make sure motor shaft turns free.
- 2.) Check for jammed impeller or an obstruction in (volute) casing.
- 3.) Check for low voltage and undersized wire.

PUMP WILL NOT PRIME:

- 1.) Make sure pump is installed at the proper level and the plumbing lines have been correctly installed to allow the water to enter pump freely.

- 2.) Open air control valves to release any possible air lock.
- 3.) Make sure all suction and discharge lines are clear and unobstructed and all valves are opened.
- 4.) Check for air leaks in the suction line.

LOW WATER FLOW:

- 1.) Check filter pressure gauge, filter may need cleaning.
- 2.) Check for clogged plumbing lines.
- 3.) Check for worn or damaged impeller.
- 4.) Check for low voltage.

WATER LEAKS

- 1.) Check contamination or damage to shaft rotary seal. Replace if necessary.
- 2.) Check compression fitting (union connectors), make sure they are properly aligned and secured. **Hand tighten only. Do not use tools.**
- 3.) Make sure O-ring is properly seated and not damaged.

NOISES:

- 1.) Check plumbing vibration-make sure lines are adequately supported.
- 2.) Check for cavitation, due to an obstruction in the suction line; or an undersized suction line.

FLO-MASTER® "XP2" REPLACEMENT PARTS

48-FRAME

REF. NO.	PART NO.	DESCRIPTION
1		Motor, 48 Frame
2	92770705	Volute, XP2 series, 48 Frame
3	92500150	Seal, replacement, #200, XP2
4	91694150	Impeller, XP2 Series, 1.5 HP
4	91694200	Impeller, XP2 Series, 2.0 HP
4	91694251	Impeller, XP2 Series, 2.5 HP
4	91694300	Impeller, XP2 Series, 3.0 HP
5	92830070	Wear Ring, Flanged, XP2 Series
6	92200300	O-ring, Volute XP2 Series, #164
7	91231606	Cover, Suction, XP2 Series, 2", Std Drain
7A	56910090	Replacement Kit Cover Complete, 2", XP2 Series, Std Drain

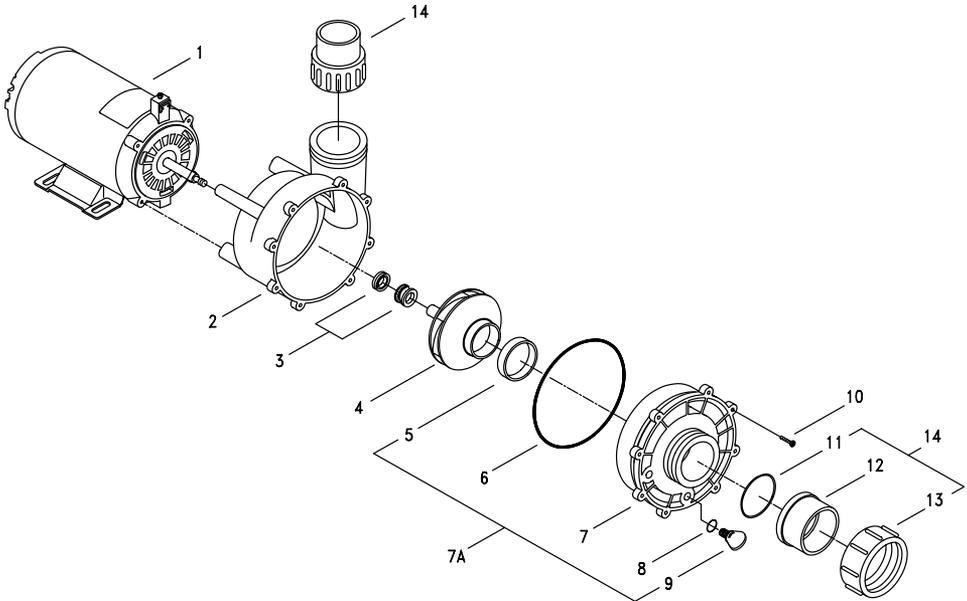
REF. NO.	PART NO.	DESCRIPTION
8	92200060	O-ring, Drain Plug, #111, XP2
9	92290070	Plug, Drain ¼ - 18 NPSM, Wing, XP2 Series
10	99730050	Screw, 8-32 x 5/8" Long, XP2
11	92200210	O-ring, #230
12	91431200	Fitting, Tail Piece, 2"
13	91431150	Fitting, Union Nut, 2"
14	52202000	Fitting, Compression Complete, 2" x 2"
*	91041609-000	1.5 HP Wet End, 2", XP2, Std. Drain
*	91041610-000	2.0 HP Wet End, 2", XP2, Std. Drain
*	91041611-100	2.5 HP Wet End, 2", XP2, Std. Drain
*	91041612-100	3.0 HP Wet End, 2", XP2, Std. Drain

56-FRAME

REF. NO.	PART NO.	DESCRIPTION
1		Motor, 56 Frame
2	92770715	Volute, XP2 series, 56 Frame, 6.1" Dia.
2A	92770725	Volute, XP2 series, 56 Frame, 6.3" Dia.
3	92500150	Seal, replacement, #200, XP2
4	See Chart Page 4	Impeller
5	92830070	Wear Ring, Flanged, XP2 Series
6	92200300	O-ring, Volute XP2 Series, #164
7	91231606	Cover, Suction, XP2 Series, 2", Std Drain

REF. NO.	PART NO.	DESCRIPTION
7A	56910090	Replacement Kit Cover Complete, 2", XP2 Series, Std Drain
8	92200060	O-ring, Drain Plug, #111, XP2
9	92290070	Plug, Drain ¼ - 18 NPSM, Wing, XP2 Series
10	99730050	Screw, 8-32 x 5/8" Long, XP2
11	92200210	O-ring, #230
12	91431200	Fitting, Tail Piece, 2"
13	91431150	Fitting, Union Nut, 2"
14	52202000	Fitting, Compression Complete, 2" x 2"
*	See Chart Below	Assembly, Wet End, Complete

* Includes Ref. Items #2-10



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FLO-MASTER® "XP2" REPLACEMENT PARTS

Flo-Master "XP2" 56 Frame Impeller & Wet End Guidelines

To order a replacement part, ALWAYS use the part number molded on the impeller being replaced. If the part number of the part to be replaced is not known, use the chart below as a guideline for replacement of impellers & wet ends.

XP2 Pump With 56 Frame

First 5 digits of Pump Model number

Single Speed	Two Speed	Impeller #	Wet End #
06015xxx, 06515xxx 07015xxx, 07515xxx	06115xxx, 06615xxx 07115xxx, 07615xxx	91694150	91041621-000
06020xxx, 06520xxx 07020xxx, 07520xxx	06120xxx, 06620xxx 07120xxx, 07620xxx	91694200	91041622-000
06025xxx, 06525xxx 07025xxx, 07525xxx	06125xxx, 06625xxx 07125xxx, 07625xxx	91694251	91041623-100
06030xxx, 06530xxx 07030xxx, 07530xxx	06130xxx, 06630xxx 07130xxx, 07630xxx	91694300	91041624-000

First 5 digits of Pump Model number

Single Speed	Two Speed	Impeller #	Wet End #
07210xxx, 07710xxx	07310xxx, 07810xxx	91694110	91041630-000
07215xxx, 07715xxx	07315xxx, 07815xxx	91694150	91041631-000
07220xxx, 07720xxx	07320xxx, 07820xxx	91694200	91041632-000
07225xxx, 07725xxx	07325xxx, 07825xxx	91694251	91041633-100
07230xxx, 07730xxx	07330xxx, 07830xxx	91694300	91041634-000
07240xxx, 07740xxx	07340xxx, 07840xxx	91694400	91041635-000

Consult Aqua-Flo Customer Service Dept. @ (909) 591-7453 for the following:

1. To Order FMXP Replacement Parts.
2. For part numbers not shown in table or unsure of the number.

It is necessary to have the pump model number available to receive service information.

Note: For FMXP Models - Volute (#2), O-ring, Volute (#6) and Cover, Suction (#7, 7A) are not interchangeable with XP2 parts. All other parts are interchangeable



ASSEMBLY INSTRUCTIONS

(Including Impeller & Seal Replacement)

WARNING: ALWAYS DISCONNECT THE ELECTRICAL POWER FROM THE PUMP MOTOR BEFORE PERFORMING ANY WORK ON THE PUMP UNIT.

To Disassemble Pump

CAUTION: DRAIN THE WATER FROM THE PLUMBING LINES BEFORE DISCONNECTING THE PUMP. ALWAYS PROTECT THE MOTOR FROM POSSIBLE WATER DAMAGE.

Removing the Suction Cover

1. Remove the cover by removing the screws securing the cover to the volute (casing). These screws are located at the perimeter of the cover.
2. Note the orientation of the loose wear ring on the impeller hub before disassembling.

Removing the Impeller

1. Hold the motor shaft from rotating as follows: At the rear of the motor, insert a wide blade screwdriver in the shaft end slot, or use a needle nose 'vise grip' or pliers to hold the shaft between the motor face and impeller sleeve opening. **Caution: Do not grip impeller sleeve.**
2. Turn the impeller counter clockwise until it is completely free from the motor shaft thread.

Removing the Volute (Casing) from the Motor

1. Unscrew the four (4) bolts located at the rear of the motor. These bolts extend through the entire length of the motor into the 4 legs of the volute.
2. When the 4 legs of the volute are completely disengaged from all the bolts, slide the volute off of the motor shaft.

Inspecting the Seal

1. Carefully examine the surfaces of the *carbon disk* (black rigid part of seal rotating assembly, mounted on impeller) and the white *ceramic ring* (at seal stationary assembly on volute) for edge chipping, surface scratches, or uneven wear. The surfaces should be smooth and free from damage.
2. The rest of the seal assembly should be free from cracks and should fit snugly with their respective mating parts.
3. Use alcohol wipes or isopropyl alcohol with clean 'lint free' soft cloth to clean the carbon disk and the ceramic ring surface if reusing the same assemblies.

NOTE: IT IS ADVISABLE TO REPLACE THE COMPLETE SEAL ASSEMBLY (BOH THE CERAMIC AND CARBON SIDES) EVERY TIME THE PUMP IS DISASSEMBLED.

Removing the Seal Assemblies

1. Remove the seal rotating assembly from the impeller by carefully sliding it off of the impeller sleeve.
2. Remove the ceramic ring and rubber boot by knocking it out and/or prying it loose through the rear opening of the volute. Be sure not to scratch or damage the ceramic surface if you are reusing this part. Caution must be used so as not to damage the volute wall.

Installing the New Seal Assemblies

1. Seal Rotating Assembly: Carbon Disk, Spring, Steel Collar, Rubber Ring
 - a. Before installing the seal rotating assembly, apply water to the shaft sleeve.
 - b. Grasp the assembly with the carbon disk facing outward. Insert the impeller sleeve through the steel collar side. Using a twisting motion, push until the steel collar touches the base of the sleeve.
2. Seal Stationary Assembly: Ceramic Ring, Rubber Boot
 - a. Before installing the stationary assembly, apply water to the rubber boot's ribbings.
 - b. Being careful not to damage the ceramic ring surface, press the seal assembly squarely into the seal cavity of the volute.

Reinstalling the Volute (Casing) to the Motor

1. Align the four bolts located at the rear of the motor, with the 4 volute legs. These bolts extend through the entire length of the motor, into the legs of the volute.
2. Pre-tighten the four bolts. Make sure that the motor shaft is accurately located in the center of (not touching) the ceramic ring.
3. When the motor shaft is properly located, tighten the four bolts to secure the volute in place.
(continued)

Reinstalling the Impeller

1. Hold the motor shaft from rotating as follows: At the rear of the motor, insert a wide blade screwdriver in the shaft end slot, or use a needle nose 'vise grip' or pliers to hold the shaft between the motor face and impeller sleeve opening.
2. Thread the impeller clockwise over the motor shaft. Hand tighten only. Make sure the seal carbon disk is in contact with ceramic ring. **Caution: Do not grip impeller sleeve.**

3. Reinstall the wear ring over the impeller hub in correct orientation.

Reinstalling the Suction Cover

1. Inspect the o-ring for damage. Replace if necessary.
2. Properly install the o-ring on the cover before mounting the cover to the volute.
3. Cover can be mounted to the volute in one orientation only. An 'aligning' feature is built-in with each part, to ensure proper mounting. When properly aligned, the cover should slide in easily.
4. Secure the cover to the volute with screws. Tighten all screws alternately (crisscrossing the cover) to achieve proper o-ring compression and cover seating.
5. Rotate the impeller by hand to make sure that it is rotating freely, without any interference.

Reconnecting the Pump Unit

1. Clean the seals, gaskets, or o-rings of the plumbing connectors. Replace if cracked, worn, or damaged.
2. Reconnect the plumbing lines to the pump. Hand tighten only.
3. Be sure that the pump unit is secured properly to the platform or base, if applicable. Tighten the bolts if necessary.
4. Reconnect the power supply. Be sure that all wires are properly and securely connected.

CAUTION: BEFORE TURNING THE POWER ON, BE SURE THAT: 1) THERE IS AN ADEQUATE AMOUNT OF WATER IN THE SYSTEM; 2) ALL VALVES ARE OPEN TO ALLOW WATER CIRCULATION; 3) ALL CONNECTORS AND FITTINGS ARE PROPERLY ALIGNED AND SECURE.

FLO-MASTER® "XP" SERIES PUMPS LIMITED WARRANTY

Aqua-Flo, Inc.

WARRANTS TO:

Third year	60%
Fourth year	40%
Fifth year	20%

EXCLUSIONS

the original retail purchaser only, that the products they manufacture are free from defects in material and/or workmanship for a period of five years (pump seals warranty for 30 days) from date of purchase. If within the first two years, any such products shall prove defective, it shall be repaired or replaced at AQUA-FLO'S option as follows:

The original retail purchaser shall first contact the installing dealer, as soon as possible after discovery of the defect, but in no event later than the expiration date of this warranty. Or upon notification,

AQUA-FLO, INC.
 Customer Service Department
 P.O. Box 2526, Chino, CA 91708

will advise the consumer of the address to which the defective item may be shipped, together with the model number, serial number and date of purchase of item claimed to be defective. The consumer must pay for all shipping charges.

If within the years three through five any such products shall prove defective, the original retail purchaser shall be entitled to purchase replacement equipment or components at the following percentage off the current published list price:

1. This warranty shall not apply to any failures resulting from negligence, abuse, misuse, misapplication, improper installation, alteration or modification, chemical corrosion, or improper maintenance.

2. Any items manufactured by other companies and used by AQUA-FLO in its products may carry warranties by the original manufacturers.

3. AQUA-FLO is not liable for incidental or consequential damages, loss of time, inconvenience, incidental expenses, labor or material charges in connection with removal or replacement of the equipment.

AQUA-FLO is not responsible for any implied warranties or representations by others and the foregoing warranty is exclusive and in lieu of all warranties provided herein.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.



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