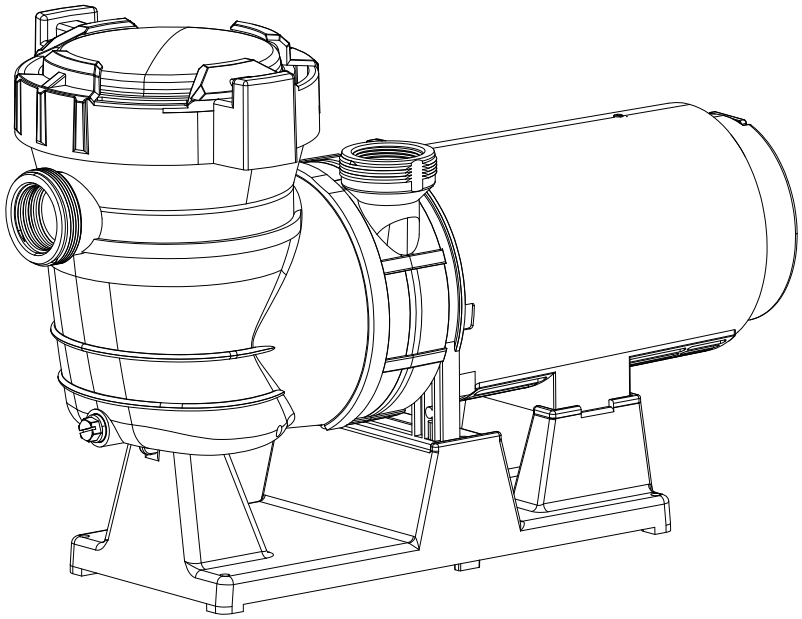
AG1 Pump

Owner's Manual



AG1-15151S | AG1-15152S | AG1-15152ST

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GoPool

Warranty registration

Thank you for choosing GoPool! Register your product today to activate your warranty and get quick, hassle-free support when you need it.

Scan to register your product warranty

WARNING

This equipment must be installed and serviced according to the information found in this manual. Improper installation can create hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

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Use only GoPool genuine replacement parts.

Important safety instructions

READ AND FOLLOW ALL INSTRUCTION

⚠ Pay attention to children

01. To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.

02. Though this product is designed for outdoor use, it is strongly advised to protect the electrical components from the weather. Select a well-drained area, one that will not flood when it rains. It requires free circulation of air for cooling. Do not install in a damp or non ventilated location.

03. Pool and spa components have a finite life. All components should be inspected frequently and replaced at least every five years, or if found to be damaged, broken, cracked, missing, or not securely attached.

⚠ Risk of electric shock

04. Hazardous voltage. Can shock, burn, or cause death. To reduce the risk of electric shock, do **NOT** use an extension cord to connect unit to electric supply. Provide a properly located outlet. It is required that licensed electricians do all electrical wiring. All electrical wiring **MUST** be in conformance with applicable local and national codes and regulations. Before working on pump or motor, disconnect motor wiring.

05. To reduce the risk of electric shock replace damaged cord immediately. Do **NOT** bury cord. Locate cord to prevent abuse from lawn mowers, hedge trimmers and other equipment.

06. Risk of Electric Shock. Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact only to a electrician if you cannot verify that the receptacles is protected by a GFCI. For pump models AG1-15151S, AG1-15152S and AG1-15152ST. **CONNECT ONLY TO GROUNDING TYPE RECEPTACLE PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER.**

07. Failure to bond pump to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond pump. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

08. Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No.8 AWG (8.4 mm2) solid copper bonding wire to the pressure wire connector provided on the motor housing and to all metal parts of swimming pool, spa, or hot tub, and to all electrical equipment, metal piping (except gas piping), and conduit within 5 ft. (1.5m) of inside walls of swimming pool, spa, or hot tub.

IMPORTANT -
Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

NOTE -
The National Electrical Code (NEC) permits use of a cord with a maximum 3 ft. (1 m) length. If your pump is equipped with a cord complying with the NEC, the preceding four (4) hazards appl.

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Important safety instructions

NOTE -
For all pump models, following UL requirements must be complied.

- The cord length for a *storable pool pump* shall be a minimum of 25 ft. (7.62 m).
- The cord length for *permanently-installed units shall* be a maximum of 3 ft. (0.91 m).
- The length is measured from the point at which the cord emerges from the unit to the face of the attachment plug.

09. Do not install within an outer enclosure or beneath the skirt of a hot tub or spa.

10. **SAVE THESE INSTRUCTIONS.**

⚠ Suction entrapment hazard

11. Suction in suction outlets and/or suction outlet covers, which are damaged, broken, cracked, missing, or unsecured cause severe injury and/or 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 damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.
- **Body suction entrapment:** A pressure applied to a large portion of the body or limbs can result in an entrapment.
- **Evisceration/Disembowelment:** A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is damaged, broken, cracked, missing, or unsecured can result in evisceration/disembowelment.
- **Mechanical entrapment:** There is potential for jewelry, swimsuits, hair decorations, fingers, toes, or knuckles to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠ To reduce the risk of entrapment hazards:

12. When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of 3 ft. (0.91 meter) apart, as measured from near point to near point.

- Dual suction fittings shall be placed in such locations and distances to avoid "dual blockage" by a user.
- Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- The maximum system flow rate shall not exceed the values shown in the "Pipe Sizing Chart" found at this manual.
- Never use pool or spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

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Important safety instructions

⚠ Hazardous pressure

13. Pool and spa water circulation systems operate under hazardous pressure during start-up, normal operation, and after pump shut-off. Stand clear of circulation system equipment during pump start-up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover due to pressure in the system, which could cause property damage, severe personal injury, or death.

Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool.

- Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve.
- Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged. All suction and discharge valves **MUST** be **OPEN** when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.

⚠ Separation hazard

14. Failure to follow safety and operation instructions could result in violent separation of pump components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position.

- Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing.
- Do not operate pool and spa circulation system unless filter air relief valve body is in locked position in filter upper body. All suction and discharge valves **MUST** be **OPEN** when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.

15. Never operate or test the circulation system at more than 40 PSI.

⚠ Fire and burn hazard

16. Motors operate at high temperatures and if they are not properly isolated from any flammable structures or foreign debris they can cause fires, which may cause severe personal injury or death. It is also necessary to allow the motor to cool for at least 20 minutes prior to maintenance to minimize the risk for burns.

17. Following contents should also be complied and appears on pump labels.

a) The motor must be grounded in accordance with local and international electrical machinery code regulations.

b) It is prohibited to allow the water pump to operate without water to prevent electric shock or other risks.

c) The installation of the water pump must be at least 10 feet away from the interior wall of the pool to reduce the risk of electric shock. Do not use an extension cord.

d) This type of water pump is only for use in permanently installed pools; it cannot be used in inflatable or portable pools.

Installation instructions

⚠ This product should be installed and serviced only by a qualified professional.

01. **Pump location**

Do **NOT** install pump in a damp or non-ventilated location. Keep motor clean. Pump motors require free circulation of air for cooling.

02. **Pump mounting**

Install pump on a firm, level base or pad to meet all local and national codes. Fasten pump to base or pad with screws or bolts to further reduce vibration and stress on pipe or hose joints. The base **MUST** be solid, level, rigid, and vibration free.

Pump mount must:

- Allow pump inlet height to be as close to water level as possible.
- Allow use of short, direct suction pipe (to reduce friction losses).
- Allow for gate valves in suction and discharge piping.
- Be protected from excess moisture and flooding.
- Allow adequate access for servicing pump and piping.
- Make sure suction joints are tight. Suction pipe should be as large or larger than discharge pipe.

Maximum recommended system flow rate by pipe size

Pipe size (mm)	1″ (32)	1 1/4″ (32)	1 1/2″ (50)	2″ (63)	2 1/2″ (50)	3″ (90)
Flow rate GPM (Liter/Min)	20″ (75)	30″ (110)	45″ (170)	80″ (300)	110″ (415)	160″ (600)

NOTE -
It is recommended that a minimum length of piping, equivalent to 10 pipe diameters, be used between the pump suction inlet and any plumbing fittings.

⚠ Hazardous pressure

Pumps, filters, and other equipment/components of a swimming pool filtration system operate under pressure. Incorrectly installed and/or improperly tested filtration equipment and/or components may fail resulting in injury and/or property damage.

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03. **Plumbing**

Use **Teflon tape** to seal threaded connections on molded plastic components. All plastic fittings must be new or thoroughly cleaned before use.

NOTE -

- Do **NOT** use Plumber's Pipe Dope as it may cause cracking of the plastic components. When applying **Teflon tape** to plastic threads, wrap the entire threaded portion of the male fitting with one to two layers of tape. Wind the tape clockwise as you face the open end of the fitting, beginning at the end of the fitting. The pump suction and outlet ports have molded-in thread stops.
- Do **NOT** attempt to force hose connector fitting past this stop. It is only necessary to tighten fittings enough to prevent leakage. Tighten fitting by hand and then use a tool to engage fitting an additional 1 1⁄2 turns. Use care when using **Teflon tape** as friction is reduced considerably ; do **NOT** over tighten fitting or you may cause damage. If leaks occur, remove connector, clean off old Teflon tape, re-wrap with one to two additional layers of Teflon tape, and re-install connector.

04. **Fittings**

Fittings restrict flow. For better efficiency, use the fewest possible fittings (but at least two suction outlets). Avoid fittings that could cause an air trap. Pool and spa fittings **MUST** conform to the International Association of Plumbing and Mechanical Officials (IAPMO) standards. Use a non-entrapping suction fitting in pool (multiple drains) or double suction (skimmer and main drain).

Electrical

01. Ground and bond motor before connecting to electrical power supply. Failure to ground and bond pump motor can cause serious or fatal electrical shock hazard.

02. Do **NOT** ground to a gas supply line.

03. To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

04. Ground Fault Circuit Interrupter (GFCI) tripping indicates electrical problem. If GFCI trips and won't reset, consult electrician to inspect and repair electrical system.

⚠ Fire hazard

05. Match supply voltage to motor nameplate voltage. Insure that the electrical supply available agrees with the motor's voltage, phase, and cycle, and that the wire size is adequate for the H.P. (KW) rating and distance from the power source.

Model	Max rate		Full rate		60 Hz, 1 PH		
	HP	KW	HP	KW	Voltage	Amps	Wire size
AG1-15151S	1	0.75	3/4	0.55	115	15A	14AWG
AG1-15152S AG1-15152ST	1-1/2	1.10	1	0.75	115	20A	12AWG

NOTE -
All electrical wiring **MUST** be performed by a licensed electrician, and **MUST** conform to local codes and NEC regulations. Use copper conductors only.

06. Voltage at motor **MUST NOT** be more than 10% above or below motor name plate rated voltage, or motor may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when motor is running at full load, consult Power Company.

07. Install, ground, bond, and wire motor in accordance with local or national electrical code requirements. Permanently ground motor. Use green ground terminal provided under motor canopy or access place; use size and type wire required by code. Connect motor ground terminal to electrical service ground. Bond motor to pool structure.

Bonding will connect all metal parts within and around the pool with a continuous wire. Bonding reduces the risk of a current passing between bonded metal objects, which could potentially cause electrical shock if grounded or shorted.

Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and general wiring procedures.

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Electrical

⚠ All wiring must be done by a licensed electrician.

08. Wiring Pump **MUST** be permanently connected to circuit. If other lights or appliances are also on the same circuit, be sure to add their amp loads before calculating wire and circuit breaker sizes. Use the load circuit breaker as the Master On-Off switch. Install a Ground Fault Circuit Interrupter (GFCI) in circuit; it will sense a short-circuit to ground and disconnect power before it becomes dangerous to pool users. For size of GFCI required and test procedures for GFCI, see manufacturer's instructions. In case of a power outage, check GFCI for tripping, which will prevent normal pump operation. Reset if necessary.

For pump models AG1-15151S, AG1-15152S and AG1-15152ST CONNECT ONLY TO GROUNDING TYPE RECEPTACLE PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER.

NOTE -
If you do not use conduit when wiring motor, be sure to seal wire opening on end of motor to prevent dirt, bugs, etc., from entering.

A wiring diagram is attached on motors for permanently-connected models.

CAUTION: For continued protection against possible electric shock use only identical replacement parts when servicing.

Start up & Operation

Prior to start-up

Notice: If it is necessary to perform a pressure test, prior to initial use to ensure pump is functioning properly, then the following criteria should be maintained for this test:

01. Have a professional perform this test.

02. Ensure all pump and system components are sealed properly to prevent leaks.

03. Remove any trapped air in the system by fully opening filter manual air relief valve until a steady stream of water is discharged.

04. Allow no more than 40 psi (276 kPa) at a water temperature no higher than 100°F (38°C).

05. Run pressure test for no longer than 24 hours. Immediately inspect all parts to verify they are intact and functioning properly.

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.

⚠ If pump is being pressure tested (40 PSI MAXIMUM), be sure pressure has been released, using the filter manual air relief valve, before removing strainer cover.

CAUTION: NEVER run pump dry. Running pump dry may damage seals, causing leakage, flooding, and voids warranty. Fill strainer housing with water before starting motor.

06. Do **NOT** add chemicals to pool/spa system directly in front of pump suction. Adding undiluted chemicals may damage pump and voids warranty.

07. Before removing strainer cover:

1). STOP PUMP before proceeding.

2). CLOSE VALVES in suction and outlet pipes.

3). RELEASE ALL PRESSURE from pump and piping system using filter manual air relief valve.

See filter owner's manual for more detail.

NOTE -
Tighten strainer cover by hand only (no wrenches).

CAUTION: Turn on power and wait for pump to prime, which may take up to five (5) minutes. Priming time will depend on vertical length of suction lift and horizontal length of suction pipe. If pump does **NOT** prime within five minutes, stop motor and determine cause. Be sure all suction and discharge valves are open when pump is running.

See troubleshooting guide.

Wait five (5) seconds before re-starting pump. Failure to do so may cause reverse rotation of motor and consequent serious pump damage. Close filter manual air relief valve after pump is primed.

Timer instructions

FOR DUAL SPEED PUMP WITH TIMER (AG1-15152ST)

Your integrated timer module is designed to be programmed to your filtration need, with four (5) possible settings.

To set timer

01. Move switch «OFF» to «PROGRAM» back to «OFF» - resulting single tone indicates **Setting 1**. Repeat until number of tones heard equals setting desired. ie 3 rapid tones is **Setting 3**.

02. Move switch from «OFF» to «RUN» to begin selected program setting.
Example : **Setting 3** starts at 6 AM, so the pump will run from 6 AM to 6 PM.

Two speed motor settings

- Setting 1 - Pump runs 24 hours on Hi Speed (single tone)
- Setting 2 - Pump runs 18 hours on Hi, 6 hours on Low (2 tones)
- Setting 3 - Pump runs 12 hours on Hi, 12 hours on Low (3 tones)
- Setting 4 - Pump runs 6 hours on Hi, 18 hours on Low (4 tones)
- Setting 5 - Pump runs 24 hours on Low after 5 minutes on Hi (5 tones)

To overide timer settings

Move switch from «RUN» to «OFF» and back to «RUN» within 3 seconds.The pump will run for 1 hour and then return to the previous programmed setting. If a power failure occurs the timer automatically returns to the programmed setting.

Maintenance

01. Clean strainer basket regularly.

02. Do **NOT** strike basket to clean. Inspect strainer cover gasket regularly and replace as necessary. pumps have self-lubricating motor bearings and shaft seals. No lubrication is necessary.

03. Keep motor clean. Insure air vents are free from obstruction to avoid damage.

04. Do **NOT** use water to hose off motor. Occasionally, shaft seals must be replaced, due to wear or damage.

05. Replace with seal assembly kit of SPLASH company. See "Shaft Seal Change Instructions" in this manual.

Storage / Winterization

⚠ Separation hazard

01. Do not purge the system with compressed air. Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.

02. Allowing the pump to freeze will void the warranty.

03. Use **ONLY** propylene glycol as antifreeze in your pool/spa system. Propylene glycol is nontoxic and will not damage plastic system components; other anti-freezes are highly toxic and may damage plastic components in the system.

04. Drain all water from pump and piping when expecting freezing temperatures or when storing pump for a long time (see instructions below).

05. Keep motor dry and covered during storage. To avoid condensation/corrosion problems, do **NOT** cover or wrap pump with plastic film or bags.

⚠ Storing pump for winterization

To avoid dangerous or fatal electrical shock hazard, turn **OFF** power to motor before draining pump. Failure to disconnect power may result in serious personal injury or death.

01. Drain water level below all inlets to the pool.

02. Remove drain plugs from bottom of strainer body, and remove strainer cover from strainer housing.

03. Disconnect pump from mounting pad, wiring system **(after power has been turned OFF)**, and piping system.

04. Once the pump is removed of water, re-install the strainer cover and drain plugs. Store pump in a dry area.

⚠ Shaft seal change instructions

IMPORTANT SAFETY INSTRUCTIONS. PLEASE READ AND FOLLOW ALL INSTRUCTIONS.

When servicing electrical equipment, basic safety precautions should always be observed including the following. Failure to follow instructions may result in injury.

a) To reduce risk of injury, do not permit children to use this product.

b) Disconnect all electrical power service to pump before beginning shaft seal replacement.

c) Only qualified personnel should attempt rotary seal replacement. Contact your local authorized Dealer or service center if you have any questions.

d) Exercise extreme care in handling both the rotating and the stationary sections of the two-part replacement seal. Foreign matter or improper handling will easily scratch the graphite and ceramic sealing surfaces.

Troubleshooting

Problem	Possible cause	Solution
Motor will not start Make sure the terminal board connections agree with the wiring diagram on motor data plate label. Be sure motor is wired for available field supply voltage (see pump operating label).	Improper or loose wiring connections; open switches or relays; tripped circuit breakers, GFCI's, or blown fuses.	Check all connections, circuit breakers, and fuses. Reset tripped breakers or replace blown fuses.
	Manually check rotation of motor shaft for free movement and lack of obstruction	Refer to "Shaft Seal Change Instructions" in this manual.
	If you have a timer, be certain it is working properly. Bypass it if necessary.	
Motor shuts OFF	Low voltage at motor or power drop (frequently caused by undersized wiring or extension cord use).	Contact qualified professional to check that the wiring gauge is heavy enough. **NOTE -** Your pump motor is equipped with an "automatic thermal overload protector." The motor will automatically shut off if power supply drops before heat damage can build up causing windings to burn out. The "thermal overload protector" will allow the motor to automatically restart once the motor has cooled. It will continue to cut **On/Off** until the problem is corrected. Be sure to correct cause of overheating.
Motor hums, but does NOT start	Impeller jammed with debris.	Have a qualified repair professional open the pump and remove the debris.
Pump won't prime	Empty pump/strainer housing.	Make sure pump/strainer housing is filled with water and cover o-ring is clean. Ensure o-ring is properly seated in the cover o-ring groove. Ensure o-ring is lubricated and that strainer cover is locked firmly in position. Lubricant will help to create a tighter seal.
	Loose connections on suction side.	Tighten pipe/union connections. **NOTE -** Any self-priming pump will not prime if there are suction air leaks. Leaks will result in bubbles emanating from return fittings on pool wall.
	Leaking O-ring or packing glands on valves.	Tighten, repair, or replace valves.
	Strainer basket or skimmer basket loaded with debris.	Remove strainer housing cover or skimmer cover, clean basket, and refill strainer housing with water. Tighten cover.

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Troubleshooting

Problem	Possible cause	Solution
Pump won't prime	Suction side clogged.	Contact a qualified repair professional. Block off to determine if pump will develop a vacuum. You should have 5"-6" of vacuum at the strainer cover **(Only your pool dealer can confirm this with a vacuum gauge).** You may be able to check by removing the skimmer basket and holding your hand over the bottom port with skimmer full and pump running. If no suction is felt, check for line blockage. a) If pump develops a vacuum, check for blocked suction line or dirty strainer basket. An air leak in the suction piping may be the cause. b) If pump does not develop a vacuum and pump has sufficient "priming water": **i.** Re-check strainer housing cover and all threaded connections for suction leaks. Check if all system hose clamps are tight. **ii.** Check voltage to ensure that the motor is rotating at full RPM's. **iii.** Open housing cover and check for clogging or obstruction in suction. Check impeller for debris. **iv.** Remove and replace shaft seal only if it is leaking.
	Make sure all suction and discharge valves are open and unobstructed, and that pool water level is above all suction openings.	
Low flow – Generally	Clogged or restricted strainer or suction line.	Contact a qualified repair professional.
	Undersized pool piping.	Correct piping size.
	Plugged or restricted discharge line of filter, valve partially closed (high gauge reading).	Sand filters – backwash as per manufacturer's instructions; D.E. filters – backwash as per manufacturer's instructions; Cartridge filters – clean or replace cartridge.
	Air leak in suction (bubbles issuing from return fittings).	Re-tighten suction and discharge connections using Teflon tape. Inspect other plumbing connections and tighten as required.
	Plugged, restricted, or damaged impeller.	Replace including new seal assembly.

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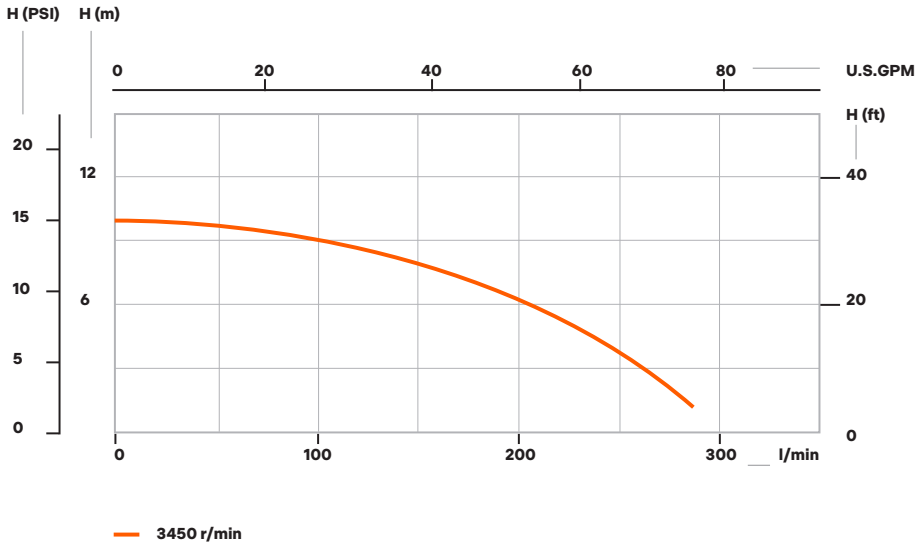
Troubleshooting

Problem	Possible cause	Solution
Noisy pump	Air leak in suction piping, cavitations caused by restricted or undersized suction line or leak at any joint, low water level in pool, and unrestricted discharge return lines.	Correct suction condition or throttle return lines, if practical. Holding hand over return fitting will sometimes prove this point or putting in a smaller eyeball fitting.
	Vibration due to improper mounting, etc.	Mount the pump on a level surface and secure the pump to the equipment pad.
	Foreign matter in pump housing. Loose stones/debris hitting impeller could be cause.	Clean the pump housing.
	Motor bearings noisy from normal wear, rust, overheating, or concentration of chemicals causing seal damage which will allow chlorinated water to seep into bearings wiping out the grease causing bearing to whine.	All seal leaks should be replaced at once.

Technical Data

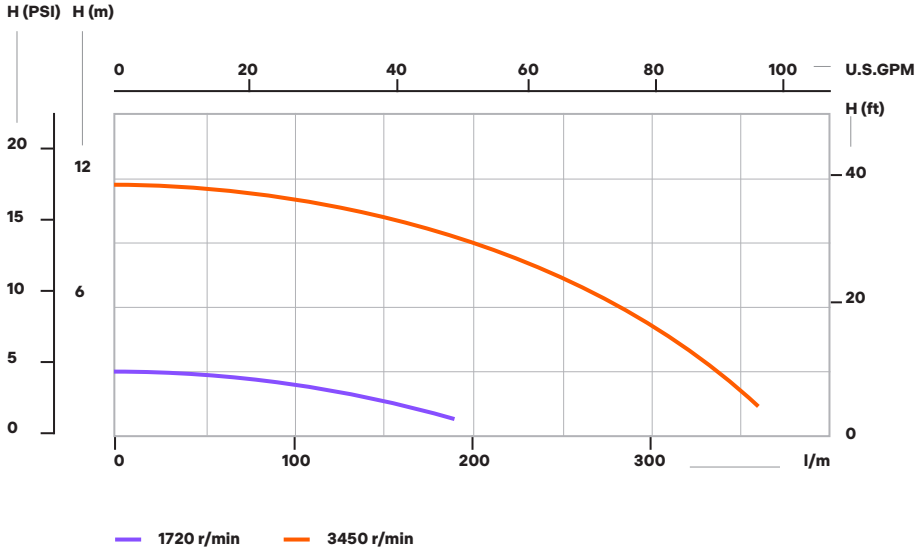
AG1-15151S

HP	1.5 HP
Volt/HZ	115V/60HZ
Amps	12
Q (GPM)	97
H (m)	11.5

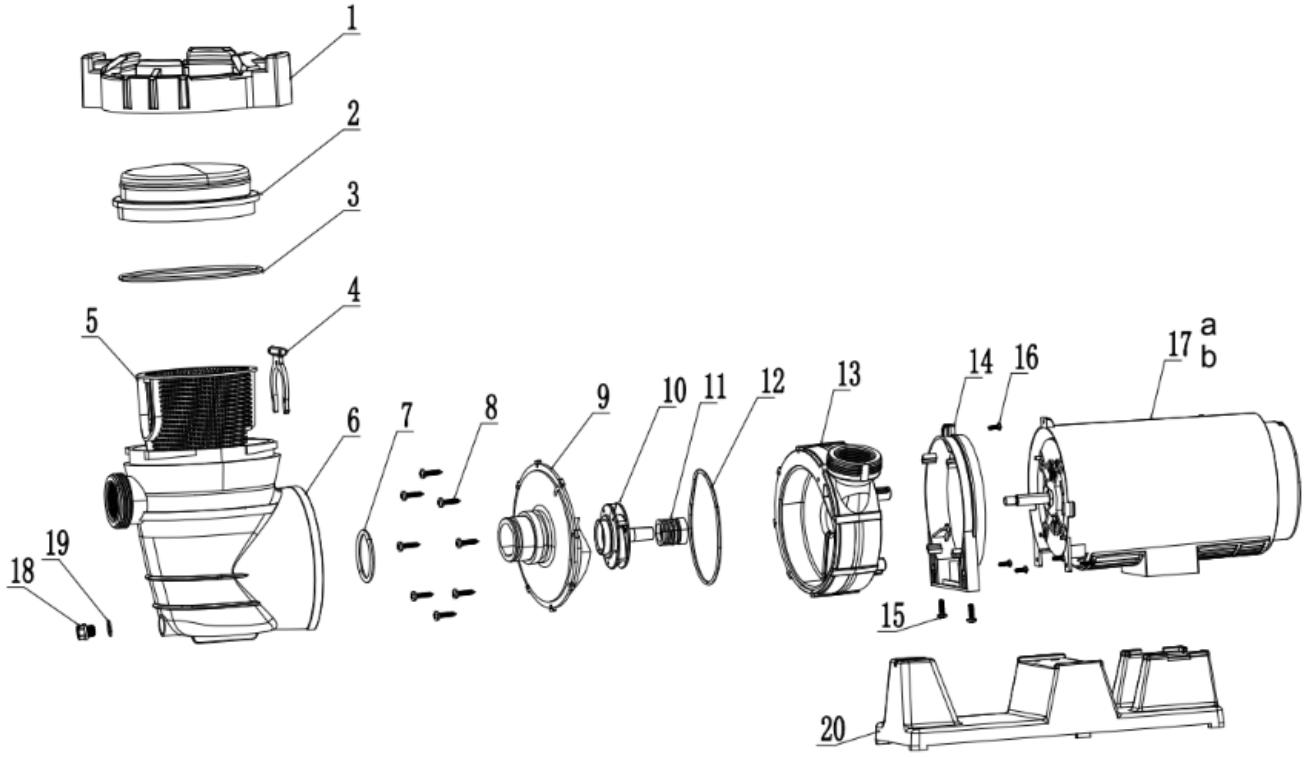


AG1-15152S | AG1-15152ST

HP	1.5 HP
Volt/HZ	115V/60HZ
Amps	11.6/3.7
Q (GPM)	97
H (m)	11.5



Pump structure & parts



Ref. No.	Part No.	Description	Quantity
1	47287103080	Cover	1
2	47287102089	Transparent cover	1
3	5431042080	O-ring 145*5	1
4	47252705080	Retainer clip	1
5	47287110001	Basket	1
6	47287101080	Strainer housing	1
7	5431029080	O-ring ø53*ø5.3	1
8	5212016000	Screw ST5.5*25	8
9	47288502080	Pump cover	1
10	647252771000	Impeller	1
11	5028003000	Seal assembly	1
12	5431042080	O-ring ø145*ø5	1
13	47288501080	Pump housing	1
14	47273201080	Connecting sleeve	1
15	5212032000	Screw ST5.5*18	2
16	5212006000	Screw ST4.2*12	3
17a	5023049000	Motor for AG1-15151S	1
17b	5023082000	Motor for AG1-15152S	1
18	48860105080	Drain plug	1
19	5432002080	Gasket D19*13*1.57	1
20	47273204080	Mounting foot	1

Use only GoPool genuine replacement parts.

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Need parts or accessories ?
GoPool.com