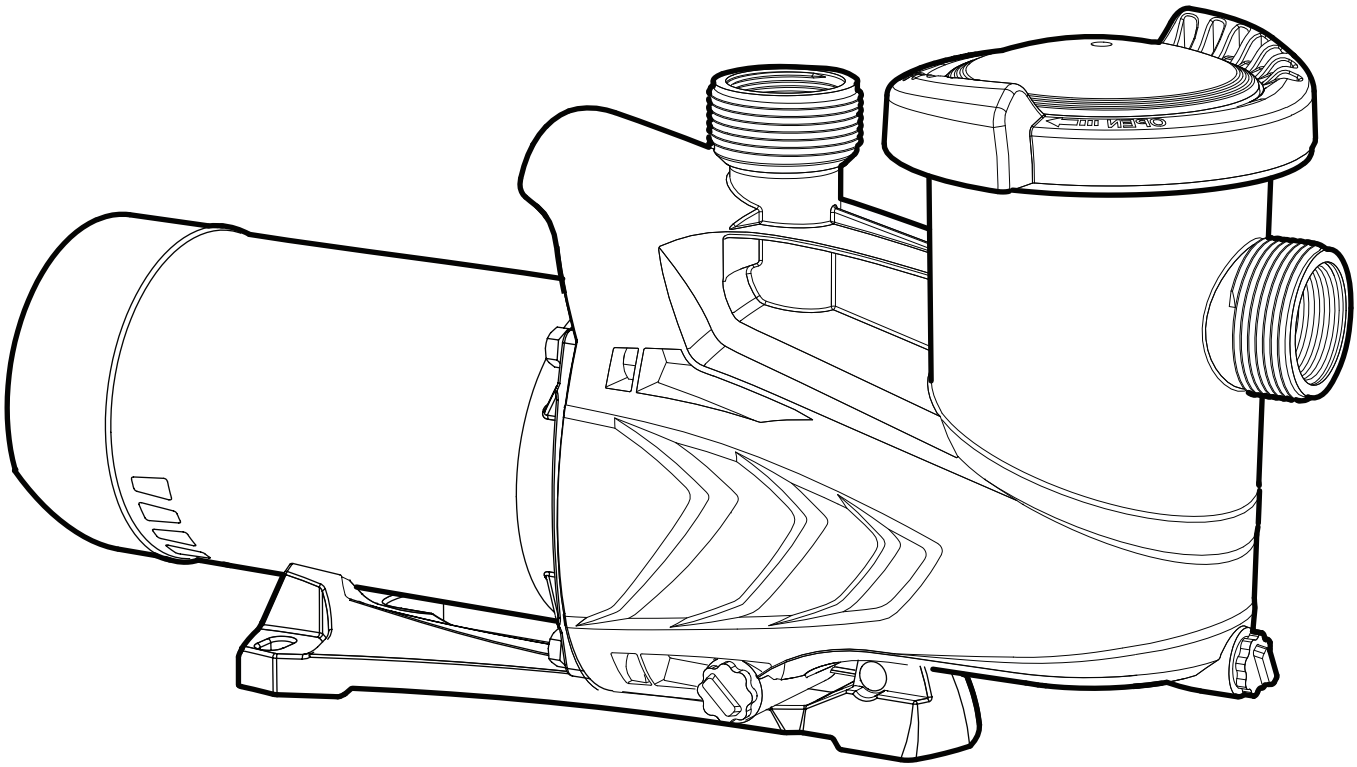
ORKA

INGROUND POOL PUMP

USER MANUAL AND INSTALLATION GUIDE



CARVIN® POOL ÉQUIPEMENT | 4000 boul. Casavant Ouest, Saint-Hyacinthe, Québec, Canada, J2S 9E3
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CARVIN ÉQUIPEMENTS DE PISCINE POOL EQUIPMENT

TABLE OF CONTENTS

INTRODUCTION	**2**
GENERAL	**3**
INSTALLATION OF ORKA™ PUMP BASE	**4**
INSTALLATION	4
PIPING	4
ELECTRICAL CONNECTIONS	4
STARTING UP	**4**
CONTROLLING THE OUTPUT	4
LUBRICATION	4
DRAINING	4
MAINTENANCE	4
MOTOR SPECIFICATIONS	4
CLEANING THE STRAINER BASKET	4
TO DISMANTLE THE PUMP	**5**
INSPECTION	5
SHAFT SEAL REPLACEMENT	5
FREQUENTLY ASKED QUESTIONS	**5**
REPLACEMENT PARTS	**6**
CONSUMER INFORMATION	7
REPLACEMENT PARTS AVAILABILITY	7
WARRANTY	7
TECHNICAL SUPPORT INFORMATION	7

INTRODUCTION

Thank you for purchasing the ORKA™ pump for in ground pools by CARVIN®

We want to help you get the best results from your new product and operate it safely. This manual contains information on how to do that; please read it carefully before installing and using the pool. If a problem should arise, or if you have any questions about your product, consult an authorized CARVIN® retailer or distributor.

All the information in this manual is based on the latest product information available at the time of publication. The manufacturer reserves the right to make changes at any time without notice and without incurring any obligation. No part of this publication may be reproduced without written permission.

READ AND FOLLOW ALL INSTRUCTIONS

Review all instructions provided with the product prior to its installation, startup, operation, shutdown, maintenance or winterizing.

Failure to follow warnings and safety messages may result in property damage or personal injury. The user assumes the bodily or material risks arising from any improper use of this product.

IMPORTANT SAFETY INSTRUCTIONS

Your safety and the safety of others are very important.

This manual provides important safety messages. A safety message alerts you to potential hazards that could hurt you or others. Each safety message is identified by a black box marked, WARNING.

⚠ WARNING **RISK OF SUCTION ENTRAPMENT HAZARD WHICH, IF NOT AVOIDED, MAY RESULT IN SERIOUS INJURY OR DEATH.**

Pumps can quickly generate high suction, which poses the risk of entrapment if improperly connected to suction outlets. Disembowelment, entrapment, or drowning is possible when body parts or hair contact damaged, cracked, missing, or unsecured drain covers and suction outlets. **Pumps and fittings shall be installed in accordance with the latest NSPI or IAF standards, CPSC guidelines, and national, state and local codes, to minimize this risk. Some of these requirements are as follows**. Always consult the latest regulations to ensure that your installation meets the necessary requirements to minimize suction entrapment.

1. All fully submerged Suction Outlet Covers shall be listed to ANSI/APSP 16-2017 / / VGB-2017 standard.
2. Do not use a pump in an installation where there is only one fully submerged single suction outlet.
3. If main drains are installed in your pool, there must be a minimum of two for each pumping system, and each drain must include a Listed Suction Outlet Cover. Wading pools may have additional requirements to minimize entrapment hazards.
4. Skimmers may supply 100% of the required flow to the pump, and must be vented to atmosphere. A skimmer is not considered a second main drain.
5. When two suction outlets are used, the maximum system flow rate shall not exceed the rating of any one of the listed suction outlet covers installed. When more than two are used, the sum of the ratings shall be at least twice the maximum system flow rate.
6. Each Suction Outlet Cover shall be separated by a minimum of three feet (3'), measured from center of suction pipes.
7. Avoid installing check valves. If check valves must be used, ensure that the installation conforms to applicable standards.
8. Never use the pool or spa if a Suction Outlet Cover is damaged, cracked, missing, or not securely attached. Suction outlet cover must be attached with stainless steel screws supplied with the cover. If screws are lost, order replacement parts from your supplier.

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

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

⚠ WARNING (For cord & plug connected units) To reduce the risk of electric shock, if the cord is damaged, replace it immediately with the same type of cord which is available from your local dealer. The new cord must be installed by a qualified electrician. Inspect the cord annually.

⚠ 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.

⚠ WARNING (For cord & 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.

⚠ WARNING Locate the pump at least five feet (1.5M) from the pool to prevent it being used as a means of access to the pool by young children. (See ANSI/NSPI-8 1996 "Model Barrier Code For Residential Swimming Pools, Spas and Hot Tubs").

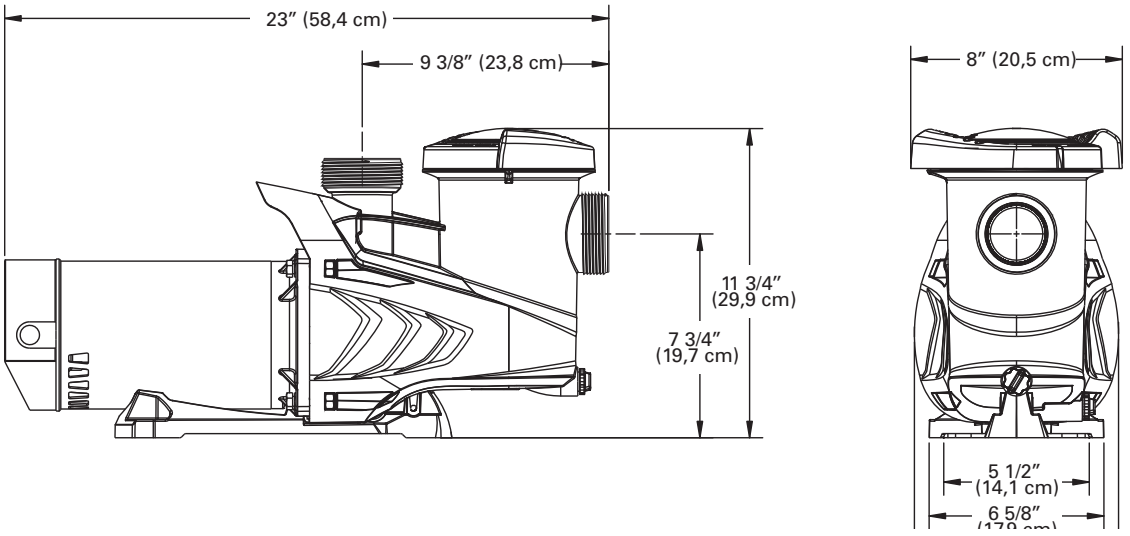
⚠ WARNING If permanently installed, a minimum 8 AWG (8.4 mm2) solid copper bonding conductor must be connected from the accessible wire connector on the motor to all metal parts of the structure of the swimming pool, spa or hot tub and to all electrical equipment, metal conduits and metal pipes within 5 feet (1.5 m) of the interior walls of a swimming pool, spa, or hot tub, when the motor is installed within 5 feet of the interior walls of the pool, spa or hot tub.

IMPORTANT: This product has been carefully inspected and packed at our factory. As the carrier has assumed full responsibility for its safe arrival, any claim for damage to the shipment, either visible or concealed, must be made on the carrier.

GENERAL

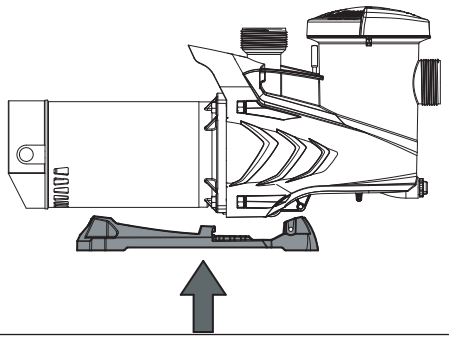
This is a self-priming pump, which means that it can raise water to itself through a dry suction line without using valves, provided the pump case and strainer body are full of water before the motor is started. We recommend the use of a swing check valve in the suction pipe, at or below water level, if the suction lift is more than 5 feet (1.5m) or if the dry suction line would be more than 10 feet (3.0 m) long. This arrangement makes the initial priming easy and keeps the suction pipe primed at all times. The pump is built from glass-reinforced thermoplastic moldings. These eliminate all corrosion problems and insulate the water passages from the electric motor. A closed impeller, which requires no field adjustment to maintain efficiency, runs inside a multi-vane separate diffuser .Ample running clearances between impeller and case promote long life and prevent seizure should sand enter the pump. The impeller hub forms an insulating sleeve over the motor shaft and carries the mechanical shaft seal. This seal, which has a pure-carbon rotating face working against a ceramic seat, requires no attention until leakage at the shaft shows that replacement is necessary. For easy routine servicing, the built-in hair and lint strainer has a transparent cover. For easy access to the working parts, the removal of four screws allows the motor, bracket, seal, impeller and diffuser to be withdrawn as a unit. ORKA™ assemblies were simplified for ease of maintenance and repair.

Dimensions (Fig.2)

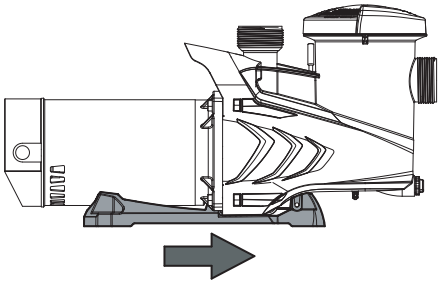


INSTALLATION OF ORKA™ ANTI-VIBRATION PUMP BASE

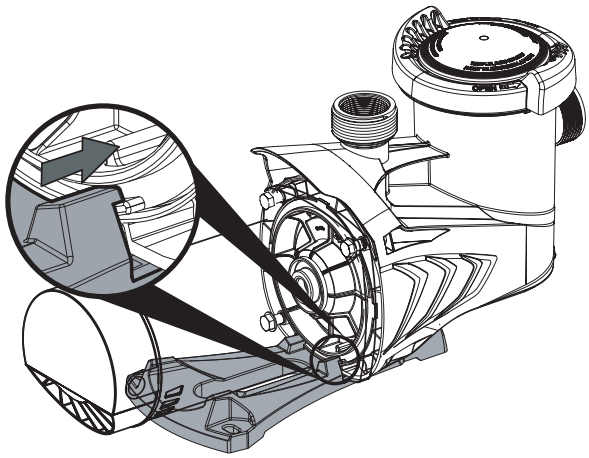
STEP 1



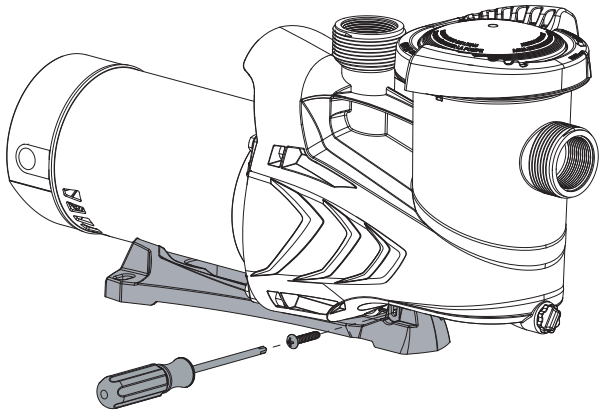
STEP 2



STEP 3



STEP 4



INSTALLATION

Locate the pump as close to the pool as possible, but keep at a minimum distance of at least five feet (1.5M) to prevent it being used as a means of access to the pool by young children (See previous Warning). Locate the pump preferably in a dry, shaded, and well-ventilated area. Should it be impossible to put the pump at or below water level, choose the lowest possible position. This simplifies priming, and adds to the pressure developed by the pump. Prepare a hard, level surface that is large enough to accommodate the associated equipment. Bear the following in mind: Drainage of the filter room or pit; Ventilation of the motor; Access for servicing and winterizing the equipment; Protection of the equipment. Make sure the bearing surface is leveled and straight to reduce vibrations.

PIPING

The pump has m a l e / female sockets to receive 1-1/2”(38 mm) or 2 (51 mm) ‘’ threaded fittings. Keep the piping as simple as possible, and avoid connecting an elbow directly to the pump inlet (use a length of straight pipe to allow a proper entry of the water). Keep as much of the suction pipe as possible below the water level of the pool. This will reduce the priming time but arrange the pipe to rise continuously toward the pump to prevent high, spots that could form air pockets. Support the pipes independently so that they do not place strain on the pump. Install gate valves in the pump suction and pool return lines close to the filter system for convenient servicing of the equipment. These valves are essential if the equipment is installed below water level. Keep the gate valve in the suction line fully open during operation, and make sure that its gland is kept tight to prevent the entrance of air around the valve stem. Take care during installation to keep the pipes clean, and make sure that the suction system is absolutely airtight.

ELECTRICAL CONNECTIONS

Check that the information on the pump nameplate corresponds to the power supply. Employ a competent electrician to make the wiring installation in accordance with the local electrical code. Every motor requires a fused disconnect switch. ORKA™ models are only compatible with 230 Volts.

STARTING UP

For 2-speed pumps, start and prime the pump at **HIGH SPEED** only. Do not change to **LOW SPEED** before the pump is working properly. At **HIGH SPEED** (3450 rpm approx.), the motor develops its full horsepower and the pump generates high capacity and pressure. Use high speed for maximum filtration at peak periods and whenever turbidity levels are high. At other times switch to **LOW SPEED** (1725 rpm approx.). For backwashing and vacuuming, **HIGH SPEED** is required. If the pump is supplied as part of a complete filter system, follow the starting-up procedure described in the separate instructions for the complete filter system. In other cases, proceed as follows:

1. Close the gate valves in the suction and return lines. Remove the cover from the hair and lint strainer and fill the pump completely with water. Replace the cover.
2. Open the gate valves in the suction and return lines and start the pump. If the pump fails to produce a full flow of water within four or five minutes, switch off the power and repeat Step 1. If the pump still fails to work, check for air leaks at the strainer cover, suction line connections, and valve stem glands before repeating Step 1.
3. After about ten minutes of operation check the pool return fittings for air bubbles. A continuous flow of air indicates leaks in the suction line. Locate and correct any leaks immediately.

⚠ WARNING **Never run the pump without water in the pump case because lack of water can damage the shaft seal.**

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.

LUBRICATION

The pump requires no lubrication. Refer to manufacturer’s recommendations.

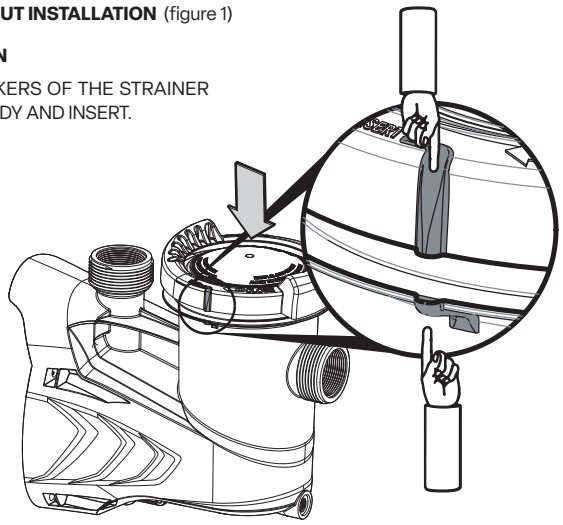
DRAINING

There are two drain plugs on the pump case. Note that the valves in the suction and return lines must be open to allow complete draining of the pump, but that other provisions may be necessary for draining the filter, heater, and pipe lines.

STRAINER NUT INSTALLATION (figure 1)

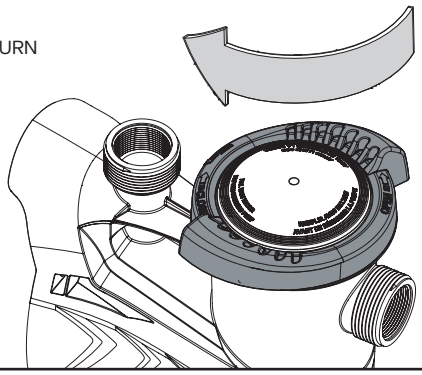
1. INSERTION

ALIGN MARKERS OF THE STRAINER NUT AND BODY AND INSERT.



2. TIGHTENING

TURN STRAINER NUT 1/4 TURN CLOCKWISE TO TIGHTEN



⚠ WARNING During periods when the pump is not in use, and always during servicing, switch the ON/OFF switch to OFF and pull the plug from the receptacle.

MAINTENANCE

The pump can be serviced without breaking the pipe connections. Close the gate valves, SWITCH THE **ON/OFF** SWITCH TO **OFF** AND PULL THE PLUG FROM THE RECEPTACLE before starting work on the pump.

MOTOR SPECIFICATIONS

For pump motor specifications. Please refer to the manufacturer specification sticker on the motor.

CLEANING THE STRAINER BASKET

Switch off the power. Close the valves in the suction and return lines. Remove the Strainer Nut and clear cover and lift out the strainer basket. Clean and replace the basket. Take care to clean o-ring and make sure that it is well seated underneath clear cover and place cover back on strainer body. Align and insert Strainer Nut, hand-tightened only (fig.1). Re-open valves. Put pump back into operation.

NOTE: Do not re-tighten Strainer Nut while pump is in operation.

TO DISMANTLE THE PUMP

IMPORTANT: BE SURE THE ELECTRICAL POWER IS DISCONNECTED BEFORE YOU CONTINUE. Refer to illustrated steps.

INSPECTION

Inspect all parts of the pump for wear or damage, and order replacements as necessary. Check the shaft seal (12) carefully. Look for cracks in the ceramic seat. Check the seal faces for wear and nicks. Flex the rubber parts and check them for holes and cracks. Replace the complete seal if any part is damaged, or if the seal leaks. Do not use old parts.

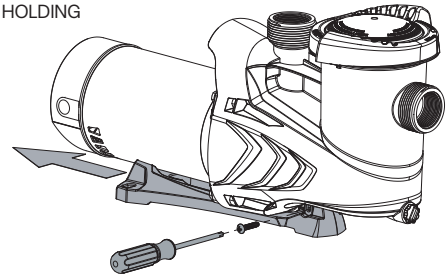
SHAFT SEAL REPLACEMENT

Take great care while handling the shaft seal (12) to avoid damage to its carbon and ceramic sealing faces. **DO NOT USE OIL OR GREASE ON THE SEAL PARTS**, because either may damage the thermoplastic material of the pump through overheating or chemical reaction. Make sure that the pump parts are clean, but be careful not to scratch the surfaces that come into contact with the seal. . The ceramic and it's rubber housing must be installed moistened with water by pressing them firmly by hand into the motor bracket (13). Make sure the at surface of the ceramic faces the pump body. Reassemble the pump retracing the steps illustrated on page 5. Reinstall the pump and run it for 5 minutes to ensure that no water leaks from the pump case (which would indicate improper seal installation). If any water is observed leaking from the pump case, repeat seal installation procedure.

DISMANTLING *(figure 3)*

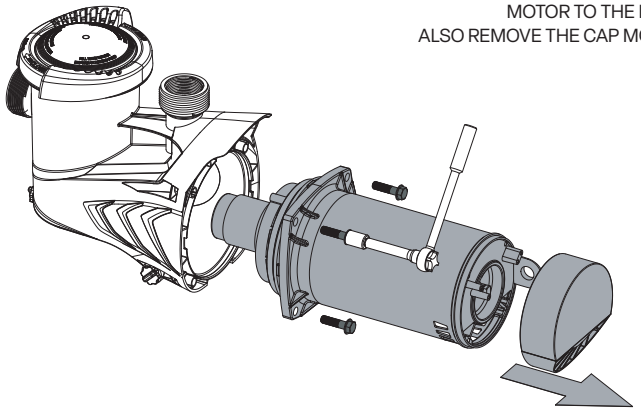
BASE REMOVAL

REMOVE SCREWS AS ILLUSTRATED. REMOVE BASE BY SLIDING IT BACKWARDS TO DISENGAGE THE TABS HOLDING THE MOTOR BRACKET.



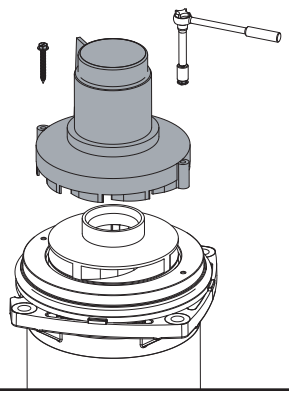
MOTOR REMOVAL *(figure 4)*

USING A 9/16'' SOCKET, REMOVE THE FOUR BOLTS HOLDING THE MOTOR TO THE BODY. ALSO REMOVE THE CAP MOTOR.



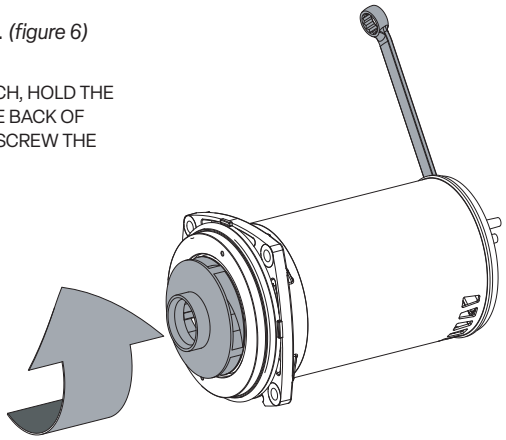
DIFFUSER REMOVAL *(figure 5)*

USING A 1/4'' SOCKET, REMOVE THE TWO SCREWS HOLDING THE DIFFUSER TO THE MOTOR BRACKET.



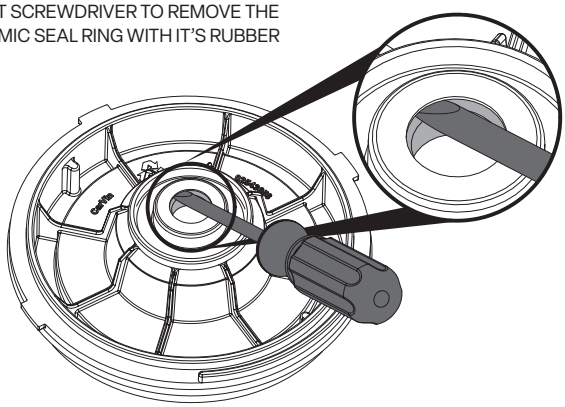
IMPELLER REMOVAL *(figure 6)*

USING A 3/8'' WRENCH, HOLD THE MOTOR SHAFT IN THE BACK OF THE MOTOR AND UNSCREW THE IMPELLER BY HAND.

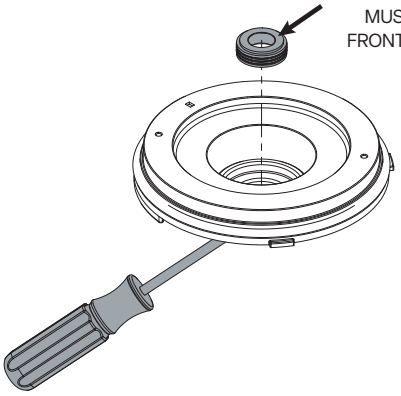


CERAMIC SEAL REMOVAL (figure 7)

USE A FLAT SCREWDRIVER TO REMOVE THE THE CERAMIC SEAL RING WITH IT'S RUBBER HOUSING.



FLAT POLISHED SURFACE MUST BE FACING THE FRONT OF PUMP WHEN REASSEMBLING



FREQUENTLY ASKED QUESTIONS

MOTOR DOES NOT START
Disconnect switch open; Fuses blown or thermal overload open; Motor windings burned out; Defective starting switch inside motor; Disconnected or defective wiring.

MOTOR DOES NOT REACH FULL SPEED
Low voltage; Motor windings connected for wrong voltage; Shaft binding or impeller rubbing.

MOTOR OVERHEATS (Protector trips)
Low voltage; Motor windings connected for wrong voltage; Inadequate ventilation.

PUMP DELIVERS NO WATER
Pump not primed; Closed valve in suction or discharge line; Suction or discharge line plugged; Leakage of air into suction system; Impeller plugged.

LOW PUMP CAPACITY
Check setting of dial valve; Valve in suction or discharge line partly closed; Suction or discharge line partly plugged; Suction or discharge line too small; Pump running at reduced speed (see above); Plugged basket in skimmer or hair in lint strainer; Dirty filter; Impeller plugged.

LOW PUMP PRESSURE
Check setting of dial valve; Pump running at reduced speed (see above); Discharge valve or inlet fitting opened too much; Leakage of air into suction system.

HIGH PUMP PRESSURE
Discharge valve or inlet fittings closed too much; Return lines too small; Dirty filter.

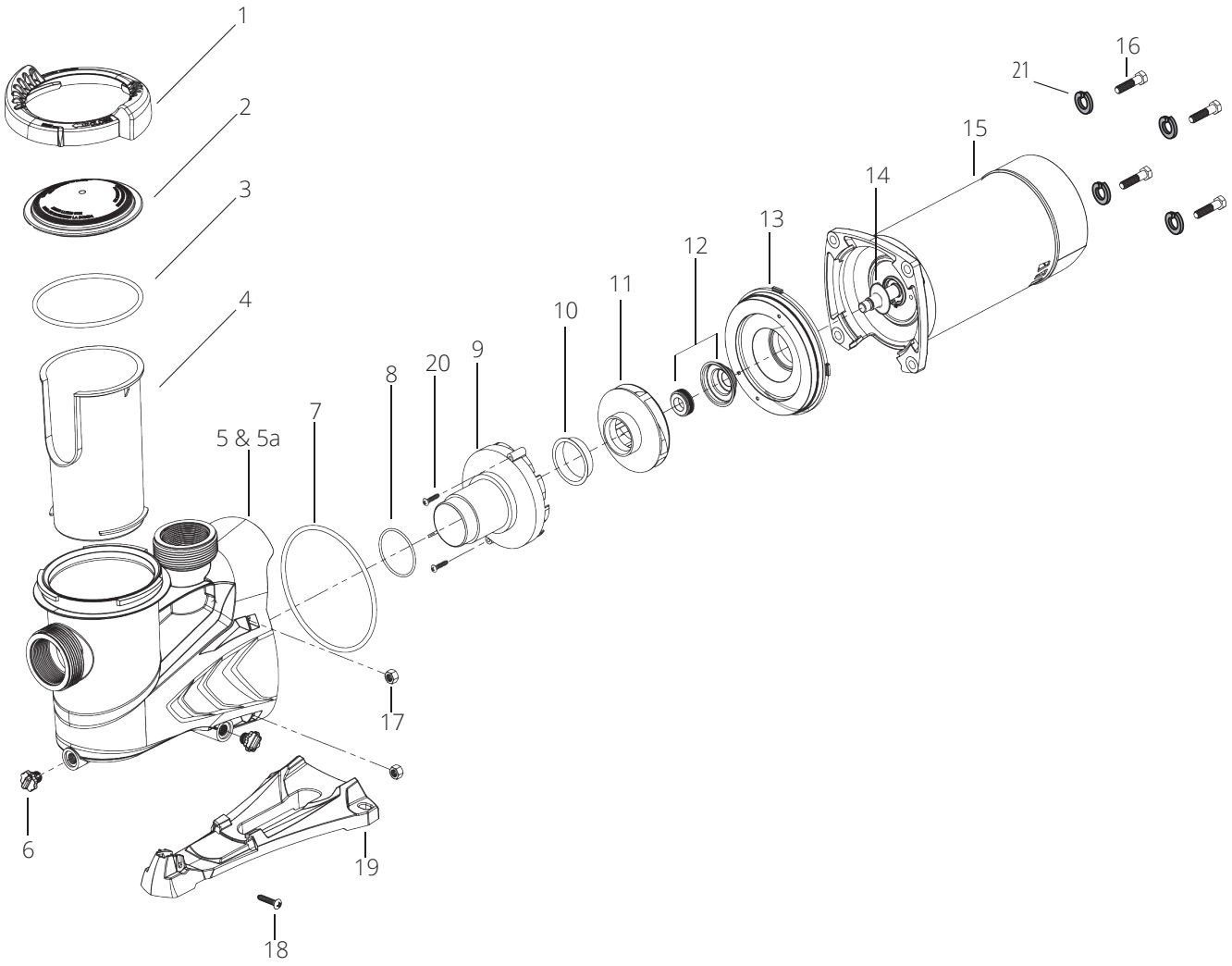
NOISY PUMP AND MOTOR
Plugged basket in skimmer or hair in lint strainer; Defective motor bearings; Valve in suction line partly closed; Suction line partly plugged; Vacuum cleaner hose plugged or too small; Piping causing strain on pump case; Impeller rubbing on pump case.

LEAKAGE OF WATER AT SHAFT
Shaft seal requires replacement.

AIR BUBBLES AT INLET FITTINGS
Leakage of air into suction line at connections; Cover of hair and lint strainer not airtight; Restriction in suction line; Low water level in pool.

ORKA™

REPLACEMENT PARTS



#	DESCRIPTION	PART NB.	#	DESCRIPTION	PART NB.
1	Strainer Quarter-Turn Ring-Lok	42167970R		Impeller for 1 hp motors	05393707R
2	Strainer cover	39078903R		Impeller for 1.5 hp motors	05393905R
3	Strainer cover O-Ring	47035241R	12	Mechanical Seal Assembly	10080208R
4	Strainer basket	16105215R	13	ORKA™ Motor Bracket for in ground pool pump	02543658R
5	ORKA™ In ground Strainer Pump Body 2''	16110247R	14	Flinger	22340305R
5a	ORKA™ In ground Strainer Pump Body 1½''	16110212R	15	Motor (contact your local dealer)	
6	Drain Plug with O-Ring (2 Per Bag)	31160906R2	16	Hex Cap Machine Screw #3/8-16 x 1½'' (4 per bag)	14129637R4
7	ORKA™ Strainer Body Main O-Ring	47036108R	17	Hex Nut #3/8-16 x 21/64'' THK - (4 per bag)	14436117R4
8	Diffuser O-Ring	47021406R	18	Robertson/Phillips Pan Head Self Tap Screw #1/4-20 x 1¼''	14263032R
9	Diffuser 5'' OD	06015309R	19	ORKA™ pump base	12273546R
10	Floating Eye Seal	10146207R	20	Hex Washer Self-Tap Screw #8-16 x 1¼'' Stn Stl 316	14420719R
11	Impeller for 3/4 hp motors	05393608R	21	⅜'' Stainless Steel Washer (4 per bag)	14072201R4

CONSUMER INFORMATION

Authorized CARVIN® retailer or distributor personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your retailer or distributor does not solve to your satisfaction, please discuss it with the retailer's or distributor's management. The Service Manager, General Manager, or Owner can help. Almost all problems are solved in this way.

If you are not satisfied with the decision made by the retailer's or distributor's management, contact the CARVIN® technical support.

When you write or call, please provide the following information:

- Product model, serial number and date code.
- Name of retailer or distributor who sold the Product to you.
- The original proof of purchase showing the date of purchase.
- Your name, address and telephone number.
- A detailed description of the problem.
- If sending an email, any relevant photos of the Product and its surroundings.

REPLACEMENT PARTS AVAILABILITY

Replacement parts are available through your CARVIN® retailer or distributor.

WARRANTY

A digital warranty is provided for your product.
https://carvinpool.com/link_waranty

TECHNICAL SUPPORT INFORMATION

After contacting your dealer or distributor, if you have any problems with your Product, contact CARVIN® Technical Support.

AMERICA

Web: carvinpool.com/support
Email: help@carvinpool.com
Phone: 1 (450) 250-4500 option 2
Fax: 1 (450) 250-4501
Toll Free: 1 866 979-4501
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