

OWNER'S MANUAL

Swimming Pool and Spa Pump

SPECK X
pumps

READ THIS MANUAL CAREFULLY BEFORE USING THE SPECK PUMP

Important Notice: This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment.

WARNING: *This product must be installed and serviced by a qualified pool professional, and must conform to all national, state, and local codes.*

WARNING: *Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 223-8538 or visit www.usa.speck-pumps.com for additional copies of these instructions.*

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. WARNING - Risk of Electrical Shock. Connect only to a branch circuit protected by a ground-fault circuit interrupter (GFCI). Contact a qualified electrician if you cannot verify that a circuit is protected by a GFCI.

4. WARNING - To reduce the risk of electric shock, replace any damaged cord immediately.

5. DO NOT install within an outer enclosure or beneath the skirt of a hot tub or spa.

6. 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 is capable of being readily disassembled for storage and reassembled to its original integrity.

7. The unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.

8. TO REDUCE RISK OF ELECTRICAL SHOCK, A copper bonding connector (8 AWG) is provided for bonding 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 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: To installer and/or operator of the Speck Swimming Pool Pump; the manufacturer's warranty will be voided if the pump is improperly installed and/or operated.

9. SAVE THESE INSTRUCTIONS!

SECTION 1 Installation Information

1/1 PREPARATION GUIDE

1. Upon receipt of the pump, check the carton for damage. Open the carton and check the pump for concealed damage, such as cracks, dents, or a broken base. If damage is found, contact the shipper for distributor where the pump was purchased.

2. Inspect the contents of the carton and verify that all parts are included. See *Parts List and Exploded View for details*.

1/2 PUMP LOCATION

NOTE: In Canada, the pump must be located a minimum of three (3) meters (approximately ten (10) feet) from the water (CSA C22.1).

1. For trouble-free self-priming, install the pump as close to the pool as practical. Consult local codes for minimum distance between pool and pump.

WARNING: Some Safety Vacuum Release System (SVRS) devices are not compatible with the installation of check valves. If the pool has an SVRS device, be sure to confirm that it will continue to safely operate if check valves are installed.

2. The piping should be as direct and free from turns or bends as possible, as elbows and other fittings greatly increase friction losses which reduce the flow of water.

3. Place pump on a solid foundation which provides a rigid and vibration-free support so that it is readily accessible for service and maintenance.

4. Install the pump in a well ventilated location protected from direct sunlight and excessive moisture (rain, sprinklers, etc.).

5. Protect the pump against flooding and excess moisture, and prevent foreign objects from clogging air circulation around motor. All motors generate heat that must be removed by providing proper ventilation.

6. **DO NOT** store or use gasoline or other flammable

7. **DO NOT** remove any safety alert labels such as **DANGER**, **WARNING**, or **CAUTION**. Keep safety labels in good condition and replace any missing or damaged labels.

8. Provide access for future services by leaving a clear area around the pump. Allow plenty of space above the pump to remove lid and basket for cleaning.

1/3 PIPE SIZING

NOTE: All pipe sizes are able to withstand the pressures the pump will deliver, but not necessarily the flow. If the pipe is too small for the pump, or is elevated above the water, the maximum gallons per minute (GPM) may not be delivered. If this happens, the pump will develop a pocket of air that makes noise (cavitation). This may shorten the life of the pump.

SUCTION & DISCHARGE:

1/4 PLUMBING INSTALLATION

1. When connecting piping to the threaded ports on the pump, it is recommended that thread seal tape be used. Hard-plumbed pipes must have proper solvent-weld connections. If the suction line is not sealed correctly, the pump will not prime properly and will pump small volumes of water or none at all.

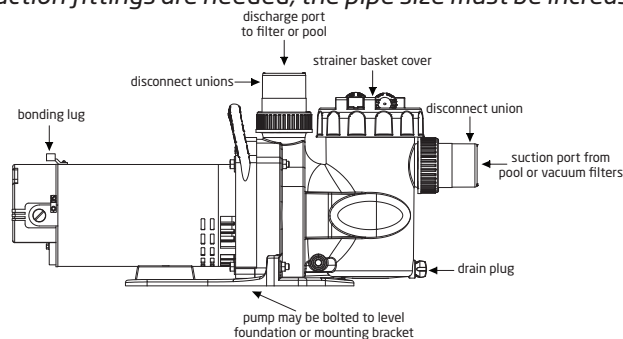
2. When installing the pump, care should be taken so that the suction line is below water level to a point immediately beneath the pump to ensure quick priming via a flooded suction line. The height between the pump and water level should not be more than five (5) feet.

3. Suction and discharge lines should be independently supported at a point near the pump to avoid strains being placed on the pump. Always use properly sized valves.

4. When installing the pump below water level, it is advisable to install a gate valve in both the suction and discharge line in the event that the pump must be removed for servicing.

5. Before starting the pump for the first time, remove the see-through lid. (Turn lid ring counter-clockwise to remove.) Fill strainer tank with water until it is level with the suction inlet. Replace lid with locking ring. Hand-tighten the lid to make an air-tight seal. **DO NOT** use any tools to tighten the lid.

6. Use the fewest number of fittings as possible. Each additional fitting has the effect of moving the equipment farther away from the water. *NOTE: If more than ten (10) suction fittings are needed, the pipe size must be increased.*



SECTION 1 Installation Information - continued

1/5 BONDING AND GROUNDING

When installing and using the motor, basic safety precautions should always be followed. The wiring of the motor should be done by a licensed electrician in accordance with local codes.

1. The motor frame must be grounded to a reliable grounding point using a solid copper conductor, No. 8 AWG or larger. In Canada, No. 6 AWG or larger must be used. If the pump is installed within five (5) feet of the inside walls of the swimming pool, spa, or hot tub, the motor frame must be bonded to all metal parts of the swimming pool, spa, or hot tub structure and to all electrical equipment, metal conduit, and metal piping within five (5) feet of the inside walls of the swimming pool, spa, or hot tub.

2. Bond the motor using the provided external lug.

WARNING: Always disconnect the power source before working on a motor or its connected load.

WARNING: In order to avoid the risk of property damage, severe personal injury, and/or death, make sure that the control switch, time clock, or control system is installed in an accessible location, so that in the event of an equipment failure or loose plumbing fitting, the equipment can be easily turned off.

CAUTION: The pump must be permanently connected to a dedicated electrical circuit. No other equipment, lights, appliances, or outlets may be connected to the pump circuit, with the exception of devices that may be required to operate simultaneously with the pump, such as a chlorinating device or heater.

WARNING: Motor is fitted with internal auto reset. May restart without warning!

1/6 ELECTRICAL INSTALLATION

1. The pump motor must be securely grounded inside the motor terminal compartment. **NOTE:** **DO NOT** connect to electric power supply until unit is permanently grounded.

2. Wire size must be adequate to minimize voltage drop during the start-up and operation of the pump.

3. Insulate all connections carefully to prevent grounding or short-circuits. Sharp edges on terminals require extra protection. To prevent the wire nuts from loosening, tape them using suitable, listed (UL, ETL, CSA) electrical insulating tape. For safety, and to prevent entry of contaminants, reinstall all conduit and terminal box covers. Do not force connections into the conduit box.

4. Connect L1, L2/N, and Ground to the terminal block as shown on the motor nameplate.

1/7 VOLTAGE CHECKS

The correct voltage, as specified on the pump data plate, is necessary for proper performance and long motor life. Incorrect voltage will cause the error light to turn on and cause damage to the motor if not turned off immediately.

It is the responsibility of the electrical installer to provide data plate operating voltage to the pump by ensuring proper circuit sizes and wire sizes for this specific application.

CAUTION: Failure to provide data plate voltage during operation will cause the motor to overheat and void the warranty.

1/8 PRESSURE TEST

WARNING: When pressure testing a system with water, air is often trapped in the system during the filling process. This air will compress when the system is pressurized. Should the system fail, this trapped air can propel debris at a high speed and cause injury. Every effort to remove trapped air must be taken, including opening the bleed valve on the filter and loosening the pump basket lid while filling the pump.

WARNING: Trapped air in the system can cause the filter lid to be blown off, which can result in death, serious injury, or property damage. Be sure all air is properly purged out of the system before operating. **DO NOT USE COMPRESSED AIR TO PRESSURE TEST OR CHECK FOR LEAKS.**

WARNING: When pressure testing the system with water, it is very important to make sure that the pump basket and lid is completely secure.

1. Fill the system with water, using care to eliminate trapped air.

2. Pressurize the system with water to no more than 35 PSI.

WARNING: DO NOT pressure test above 35 PSI. Pressure testing must be done by a trained pool professional. Circulation equipment that is not tested properly might fail, which could result in severe injury or property damage.

3. Close the valve to trap pressurized water in the system.

4. Observe system for leaks and/or pressure loss.

5. If there are leaks, repeat steps 1-3. For technical support call 800-223-8538 or +1 904-739-2626.

SECTION 2 EQUIPMENT OPERATION, SERVICE, AND MAINTENANCE

2/1 START UP GUIDE

CAUTION: Never run the pump without water. Running the pump “dry” for any length of time can cause severe damage to both the pump and the motor and will void the warranty.

If this is a new pool installation, make sure all piping is clear of construction debris and has been properly pressure tested. The filter should be checked for proper installation, verifying that all connections and clamps are secure according to the manufacturer’s recommendations.

WARNING: To avoid risk of property damage, severe personal injury or death, verify that all power is turned off before starting this procedure.

1. Release all pressure from the system and open the filter pressure release (air bleed) valve.
2. Depending on the location of the pump, do one of the following:
 - If the pump is located below the water level of the pool, open the filter valve to prime the pump with water.
 - If the pump is located above the water level of the pool, remove the lid and fill the basket with water before starting the pump.
3. Prior to replacing the lid, check for debris around the lid o-ring seat. Debris around the lid o-ring seat will make it difficult to prime the pump.
4. Hand-tighten the lid to make an air tight seal. **DO NOT** use any tools to tighten the lid; hand-tighten only. Make sure all valves are open and the unions are tight.
5. Once all the air has left the filter, close the pressure release valve.
6. Switch on power to the pump-motor to start.
7. Allow the pump to run for up to 10 minutes to allow air trapped in the suction line to be purged.
8. If the pump does not prime and all the instructions to this point have been followed, check for a suction leak. If there is a leak repeat Steps 2 through 6.

NOTE: It is normal for a few drops of water to escape from the mechanical seal from time to time. This is especially true during the break-in period.

9. For technical support, call 800-223-8538. If calling from outside the U.S. dial +1 904-739-2626.

2/2 ROUTINE MAINTENANCE

This pump requires little or no service other than reasonable care and periodic cleaning of the strainer basket. **DO NOT** strike basket to clean. When cleaning the basket inspect the lid o-ring for damage and replace if necessary.

1. Inspect the pump basket for debris by looking through the clear pump lid.
2. Turn OFF the power to the pump. If the pump is located below the water level, close isolation valves on the suction and discharge sides of the pump to prevent back flow of water.
3. Remove any debris, because as the debris accumulates, it will begin to block the flow of water through the pump. Keep the basket clean and clear to improve the performance of the pump.
4. Turn the lid ring counter-clockwise to remove. Carefully remove the lid and lock ring.
5. Remove the basket and properly dispose of the debris into the trash and rinse out the basket. Check basket for cracks, if crack is found replace basket.
6. Replace basket back into the pump, align the basket properly with the suction pipe. Then fill with water up to the suction pipe. Clean the clear lid, o-ring, and sealing surface of the pump of any debris.
7. Replace lid with lid ring. Hand-tighten the lid to make an air-tight seal. **DO NOT** use any tools to tighten the lid.
8. Verify that all valves have been returned to the proper position for normal operation. Turn ON the power to the pump.

NOTE: It is normal for a few drops of water to escape from the mechanical seal from time to time. This is especially true during the break-in period.

The mechanical seal may become worn or loose over the course of time, depending on the running time and water quality. If water continually leaks out, a new mechanical seal should be fitted. After long periods of no operation (seasonal storage, etc.), the pump must be checked for ease of rotation while it is switched off. Refer to Section 2/4 Removal and Replacement of the Impeller and/or Mechanical Seal.

WARNING: Before servicing the pump, switch off the circuit breakers at the power source. Severe personal injury or death may occur if the pump starts while your hand is inside the pump.

SECTION 2 EQUIPMENT OPERATION, SERVICE, AND MAINTENANCE - continued

2/3 WINTERIZING

CAUTION: The pump must be protected when freezing temperatures are expected. Allowing the pump to freeze will cause severe damage and void the warranty.

There are two options when winterizing the pump

OPTION 1:

1. Drain all the water from the pump, system equipment, and piping.

2. Remove drain plugs. **DO NOT** replace plugs. Store the plugs in the empty strainer basket for winter.

3. Keep the motor covered and dry.

OPTION 2:

1. Drain all the water from the pump, system equipment, and plumbing.

2. Remove the pump and motor from the plumbing and store indoors in a warm, dry location.

NOTE: When the winter season is over the pump will need to be check and primed prior to start.

CAUTION: DO NOT run the pump dry. If the pump is run dry, the mechanical seal will be damaged and the pump will start to leak at the seal. If this occurs, the mechanical seal will need to be replaced. **ALWAYS** maintain the proper water level in your pool. Continued operation in this manner could cause a loss of pressure, resulting in damage to the pump casing, impeller, and mechanical seal.

2/4 REMOVAL AND REPLACEMENT OF THE IMPELLER AND/OR MECHANICAL SEAL

WARNING: Before servicing the pump, switch off the circuit breakers at the power source. Severe personal injury or death may occur if the pump starts while your hand is inside the pump.

1. Turn OFF the pump. Switch off the circuit breaker to the pump motor. If you are not replacing the motor, do not disconnect the electrical wiring.

2. Turn OFF any valves to prevent pool water from reaching the pump. Drain water from the pump by loosening the unions or removing the drain plug.

3. Remove the four (4) thru-bolts and nuts connecting the pump casing/strainer tank to the pump flange.

4. Pull the motor and flange/seal housing out from the pump casing/strainer tank. Remove the pump casing o-ring. The impeller is connected to the motor shaft.

5. Remove the diffuser by gently pulling the diffuser (the diffuser is the cover over the impeller) horizontally until the pins clear the seal housing.

6. Remove the cap from the rear of the motor. Place a flat head screwdriver through into the screwdriver slot on the motor shaft.

7. While holding the motor shaft, turn the impeller counter-clockwise to remove from the shaft.

8. Gently pull the mechanical seal from the impeller shaft noting the way it was originally installed.

CAUTION: DO NOT damage the ceramic or carbon sealing surfaces of the seal. If the sealing surfaces are damaged, leaks will occur.

9. Using water with a small amount of dish soap, brush the impeller shaft for ease of assembly.

10. With the carbon side up, push the mechanical onto the impeller shaft and wipe carbon surface with a clean cloth. **CAUTION: DO NOT** use grease or lube to install seal. It will damage the seal and cause failure.

11. The ceramic side of the seal can be pushed out from the rear of the seal housing. Please note its position before removing.

12. Using water only, wet the ceramic side of the seal and using your thumbs push into the seal housing. Clean surface with a clean cloth.

13. Wipe the motor shaft of all debris and apply a single drop of LOCTITE® to the motor shaft threads.

14. Install impeller by spinning it clockwise onto the motor shaft. Continue to turn clockwise until the carbon and ceramic sides make contact and the seal spring slightly compresses.

15. Install the diffuser by aligning the diffuser pins with the holes in the seal housing and pressing together.

16. Make sure the diffuser and casing o-rings are in place and free of debris. Replace the casing O-ring. Slide the motor flange/seal housing into the casing.

SECTION 2 EQUIPMENT OPERATION AND MAINTENANCE - continued

17. Install the four casing thru-bolts and nuts using a cross pattern from side to side and top to bottom. **CAUTION: DO NOT over-tighten.**

2/5 MOTOR REPLACEMENT

WARNING: *The pump must serviced by a professional service technician qualified in pool/spa installation. The following procedures must be followed exactly. Improper installation and/or operation can create dangerous electrical hazards, which can cause high voltage to run through the electrical system. This can cause property damage, serious personal injury, and/or death. Improper installation and/or operation will void the warranty.*

- 1.** Disconnect the wiring from the side of the motor. (Refer to the Electrical Installation)
- 2.** Remove the four (4) thru-bolts and nuts holding the flange/seal housing to the pump casing/strainer tank.
- 3.** Slide the motor and flange/seal housing away from the casing/stainer tank.
- 4.** Remove the diffuser by gently pulling the diffuser horizontally until the pins are clear from the flange/seal housing.
- 5.** Remove the rear motor cap and place a flat heat screwdriver into the screwdriver slot on the rear of the motor shaft.
- 6.** While holding the motor shaft, turn the impeller counter-clockwise.

48-Frame Models:

- 7.** Using a 1/4" socket, remove the four thru-bolts from the rear of the motor.
- 8.** Remove one-piece flange/seal housing from the front of the motor.
- 9.** Remove the slinger from the old motor and install on to the new motor.
- 10.** Clean the surfaces of the seal. *Refer to Section 2/4 Removal and Replacement of the Impeller and/or Mechanical Seal.*

2/5 MOTOR REPLACEMENT - CONTINUED

56 Frame Models:

- 7.** Pull the seal housing with away from the pump flange.
- 8.** Remove the four flange bolts (7/32" allen head). Pull the flange away from the front of the motor.
- 9.** Remove the slinger from the old motor and install on to the new motor.
- 10.** Clean the surfaces of the seal. *Refer to Section 2/4 Removal and Replacement of the Impeller and/or Mechanical Seal.*

SECTION 3 TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES	SOLUTION
1. Pump will not prime.	<ul style="list-style-type: none"> a. Suction air leak. b. No water in pump. c. Closed valves or blocked lines. d. Low voltage to motor. 	<p>Make sure the see-through lid and o-ring are clean and properly positioned. Tighten see-through lid (hand tight). Tighten all pipes and fittings on suction side of the pump. Be sure water in the pool is high enough to flow through skimmer.</p> <p>Make sure strainer tank is full of water.</p> <p>Open all valves in system. Clean skimmer and strainer tank. Open pump and check for clogging of impeller.</p> <p>Check voltage at motor. If low, pump will not come up to speed.</p>
2. Motor does not turn.	<ul style="list-style-type: none"> a. No power to motor. b. Pump jammed. 	<p>Check that all power switches are on. Be sure fuse or circuit breaker is properly set. Time set properly? Check motor wiring at terminals.</p> <p>With power off, turn shaft. It should spin freely. If not, disassemble and repair.</p>
3. Low flow.	<ul style="list-style-type: none"> a. Dirty filter. b. No skimmer basket. c. Closed valves or blocked lines. d. Suction air leak. 	<p>Back wash filter when filter pressure is high, or clean cartridges.</p> <p>Clean skimmer and pump strainer basket.</p> <p>See problem 1.</p> <p>See problem 1.</p>
4. Noisy operation of motor.	<ul style="list-style-type: none"> a. Bad bearings. 	<p>Noise when shaft is turned up by hand. Motor is hot in bearing area when running. Replace bearing.</p>
5. Motor runs hot.	<p>These motors will run hot to the touch, however, this is normal. They are designed that way. Thermal overload protector will function to turn them off if there is an overload or high temperature problem. Excessive heat can be cause by:</p> <ul style="list-style-type: none"> a. Low voltage. b. Installed in direct sun. c. Poor ventilation. 	<p>Increase size of electrical wire. Be sure motor is operating on correct voltage.</p> <p>Shield motor from sun's rays.</p> <p>Do not tighten cover or enclosure motor.</p>
6. Noisy operation of pump.	<ul style="list-style-type: none"> a. Air leak in suction line. Bubbles in water returning to pool at inlet. b. Restricted suction line due to blockage or under size pipe. Indicated by high vacuum reading at pump suction. c. Foreign matter (gravel, metal, etc.) in pump impeller. d. Cavitation. 	<p>Repair leak. Check suction pipe, see-through lid in place? O-ring clean?</p> <p>Remove blockage or increase suction pipe size. Make sure strainer tank is clean. Are all suction valves fully open?</p> <p>Disassemble pump and remove foreign matter from impeller.</p> <p>Improve suction conditions. (Reduce suction life, reduce number of fittings, increase pipe size.) Increase discharge pressure and reduce flow by throttling discharge valve.</p>

SECTION 3 TROUBLESHOOTING GUIDE - continued

3. Low flow.	<p>a. Dirty filter.</p> <p>b. No skimmer basket.</p> <p>c. Closed valves or blocked lines.</p> <p>d. Suction air leak.</p>	<p>Back wash filter when filter pressure is high, or clean cartridges.</p> <p>Clean skimmer and pump strainer basket.</p> <p>See problem 1.</p> <p>See problem 1.</p>
4. Noisy operation of motor.	a. Bad bearings.	Noise when shaft is turned up by hand. Motor is hot in bearing area when running. Replace bearing.
5. Motor runs hot.	<p>These motors will run hot to the touch, however, this is normal. They are designed that way. Thermal overload protector will function to turn them off if there is an overload or high temperature problem. Excessive heat can be cause by:</p> <p>a. Low voltage.</p> <p>b. Installed in direct sun.</p> <p>c. Poor ventilation.</p>	<p>Increase size of electrical wire. Be sure motor is operating on correct voltage.</p> <p>Shield motor from sun's rays.</p> <p>Do not tighten cover or enclosure motor.</p>
6. Noisy operation of pump.	<p>a. Air leak in suction line. Bubbles in water returning to pool at inlet.</p> <p>b. Restricted suction line due to blockage or under size pipe. Indicated by high vacuum reading at pump suction.</p> <p>c. Foreign matter (gravel, metal, etc.) in pump impeller.</p> <p>d. Cavitation.</p>	<p>Repair leak. Check suction pipe, see-through lid in place? O-ring clean?</p> <p>Remove blockage or increase suction pipe size. Make sure strainer tank is clean. Are all suction valves fully open?</p> <p>Disassemble pump and remove foreign matter from impeller.</p> <p>Improve suction conditions. (Reduce suction life, reduce number of fittings, increase pipe size.) Increase discharge pressure and reduce flow by throttling discharge valve.</p>
7. Motor overload protection "kicks out".	<p>a. Motor is not connected properly.</p> <p>b. Low voltage due to under size wire or low incoming voltage.</p> <p>c. Wrong size heaters in protective device.</p> <p>d. Overload due to binding in pump or wrong size impeller.</p>	<p>Check wiring diagram on motor.</p> <p>Check with volt meter. Increase size of supply wire. Reports low supply voltage to power company. Voltage at motor must be within 10% of motor nameplate voltage.</p> <p>Heaters should be one size larger than full load amps shown on motor nameplate.</p> <p>Indicated by high amperage readings on motor, binding shaft. Disassemble unit and correct.</p>

SECTION 4 SERVICING INFORMATION

When calling the manufacturer regarding a question or problem with your pump, please have the serial number available. The serial number is located on the pump either on the flange or motor labels.

Replacement parts may be available from your installer. Call, fax, or write: Speck Pumps at 8125 Bayberry Road, Jacksonville, Florida 32256 Phone: (904) 739-2626 Fax: (904) 737-5261, e-mail: info.usa@speck-pumps.com

SECTION 5 LIMITED WARRANTY

Speck Pumps-Pool Products, Inc. grants solely to the original consumer purchaser ("Buyer") of the pump and motor the following personal, non-transferable and limited warranty on the following terms and conditions (the "Limited Warranty"): the pump and motor is warranted to be free of material defects in materials or workmanship under normal use for a period of two (2) year beginning on the date of the Buyer's purchase of the pump and motor. Notwithstanding any provisions herein to the contrary, the warranties and obligations hereunder shall not in any event extend for more than three (3) years beyond the date of shipment of the pump and motor from the factory (the "Limited Warranty Period"). The Limited Warranty is subject to each of the following additional terms and conditions:

1. IN THE EVENT OF ANY BREACH OF THE LIMITED WARRANTY, SPECK PUMPS - POOL PRODUCTS, INC.'S ENTIRE OBLIGATION AND LIABILITY TO BUYER, AND BUYER'S SOLE AND EXCLUSIVE REMEDY SHALL BE AS FOLLOWS: Speck Pumps - Pool Products, Inc. will, at its option, either repair or replace the pump and motor or refund to Buyer the purchase price actually paid by Buyer for the pump and motor subject to the Limited Warranty. Speck Pumps - Pool Products, Inc. shall have no obligations under the Limited Warranty unless Buyer delivers timely written notice to Speck Pumps - Pool Products, Inc. of the Limited Warranty claim within the Limited Warranty Period and returns the pump and motor to Speck Pumps - Pool Products, Inc. if requested. To the fullest extent permitted by law, Speck Pumps - Pool Products, Inc. expressly disclaims any liability for, and the Limited Warranty does not include or cover, any labor, costs or other expenses in connection with the removal, transportation, shipment, insurance, replacement, repair, or installation of repaired or replaced parts or for any other costs or expenses or damages to property or things including, but not limited to, those arising in connection with the use of, or inability to use, the pump and motor.

2. To the fullest extent permitted by law, the Limited Warranty will be void and of no force or effect and Speck Pumps - Pool Products, Inc. will have no liability, responsibilities or obligations to Buyer or with respect to the pump and motor in the event of the occurrence of any one or more of the following:

- (a) Any damage to the pump and motor caused by Buyer, any third party, ground movement, other natural forces, acts of God or any other sources or causes not arising from a breach of the Limited Warranty, excluding ordinary wear and tear;
- (b) Any replacement, modification, alteration or repair of any parts or components of the pump and motor by anyone other than Speck Pumps - Pool Products, Inc.;
- (c) Any abuse, misuse, accident, tampering with, improper installation or modification of the pump and motor or any other actions, inactions or failures to act that violate the terms and conditions of this Limited Warranty;
- (d) Buyer's failure or inability to present an invoice, bill, receipt or other documentation clearly evidencing that the pump and motor was installed and maintained in strict compliance with this Limited Warranty and that the claim was timely submitted within the Limited Warranty Period; and/or
- (e) Buyer's failure to comply with the conditions and contingencies set forth in paragraph 3 below.

3. The Limited Warranty is expressly conditioned and contingent upon Buyer's strict compliance with each of the following:

- (a) Installation of the pump and motor by an experienced and qualified pool industry professional and a licensed electrician who is licensed within the jurisdiction in which the pump and motor is installed and will be used; and
- (b) Buyer's operation and maintenance of the pump and motor in strict accordance with Speck Pumps - Pool Products, Inc.'s printed operator/maintenance manuals delivered with the pump and motor.

4. DISCLAIMER: THE LIMITED WARRANTY IS THE ONLY WARRANTY MADE AND IS IN LIEU OF ALL OTHER WARRANTIES, AND ANY AND ALL IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, THE IMPLIED WARRANTY AGAINST INFRINGEMENT, AND THE IMPLIED WARRANTY OR CONDITION OF FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED IN THEIR SCOPE AND DURATION TO THE TWO YEAR TERM OF THE LIMITED WARRANTY SET FORTH HEREIN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO THE BUYER.

SECTION 5 LIMITED WARRANTY - continued

5. TO THE FULLEST EXTENT PERMITTED BY LAW, IN NO EVENT SHALL SPECK PUMPS - POOL PRODUCTS, INC. OR ITS OFFICERS, DIRECTORS, EMPLOYEES, SHAREHOLDERS, AGENTS, OR REPRESENTATIVES BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSS, INCLUDING TIME, MONEY, GOODWILL, AND LOST PROFITS IN ANY WAY WHICH MAY ARISE HEREUNDER OR FROM THE USE OF OR INABILITY TO USE THE PUMP AND MOTOR OR THE PERFORMANCE OR NONPERFORMANCE OF ANY OBLIGATION UNDER THIS LIMITED WARRANTY. THIS PARAGRAPH, THE WARRANTY DISCLAIMERS IN PARAGRAPH 4 ABOVE, AND THE SOLE AND EXCLUSIVE REMEDY SET FORTH IN PARAGRAPH 1 ABOVE SHALL APPLY EVEN IF SPECK PUMPS - POOL PRODUCTS, INC. HAS BEEN NOTIFIED OF THE POSSIBILITY OR LIKELIHOOD OF SUCH DAMAGES OCCURRING, WHETHER SUCH LIABILITY IS BASED ON CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, PRODUCTS LIABILITY OR OTHERWISE, AND EVEN IF ANY REMEDY STATED HEREIN FAILS OF ITS ESSENTIAL PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSS, SO THE ABOVE EXCLUSIONS AND LIMITATIONS MAY NOT APPLY.

6. This Limited Warranty gives the Buyer specific legal rights, and the Buyer may also have other rights, which vary from state to state.

7. A return merchandise authorization ("RMA") must be obtained from Speck Pumps - Pool Products, Inc. before returning any product. Products returned without an RMA will be refused and returned, unopened, to the Buyer. All returned products are to be sent freight prepaid and insured for Buyer's protection to the manufacturer at 8125 Bayberry Road, Jacksonville, Florida 32256. Under no condition will products be accepted after the expiration of the Limited Warranty Period. Speck Pumps - Pool Products, Inc. shall not bear any costs or risks incurred by Buyer in shipping a defective pump and motor to Speck Pumps - Pool Products, Inc. or in shipping a repaired or replaced pump and motor to Buyer.

Technical Support:

Address: Speck Pumps
8125 Bayberry Road
Jacksonville, FL. 32256
USA

Hours: (Monday - Friday) 8:00 am to 5:00 pm EST

Toll Free: 800-223-8538

Phone: 904-739-2626

Fax: 904-737-5261

Website: www.usa.speck-pumps.com

Date of Installation:	
Installed by:	
Serial Number:	
For Service Call:	

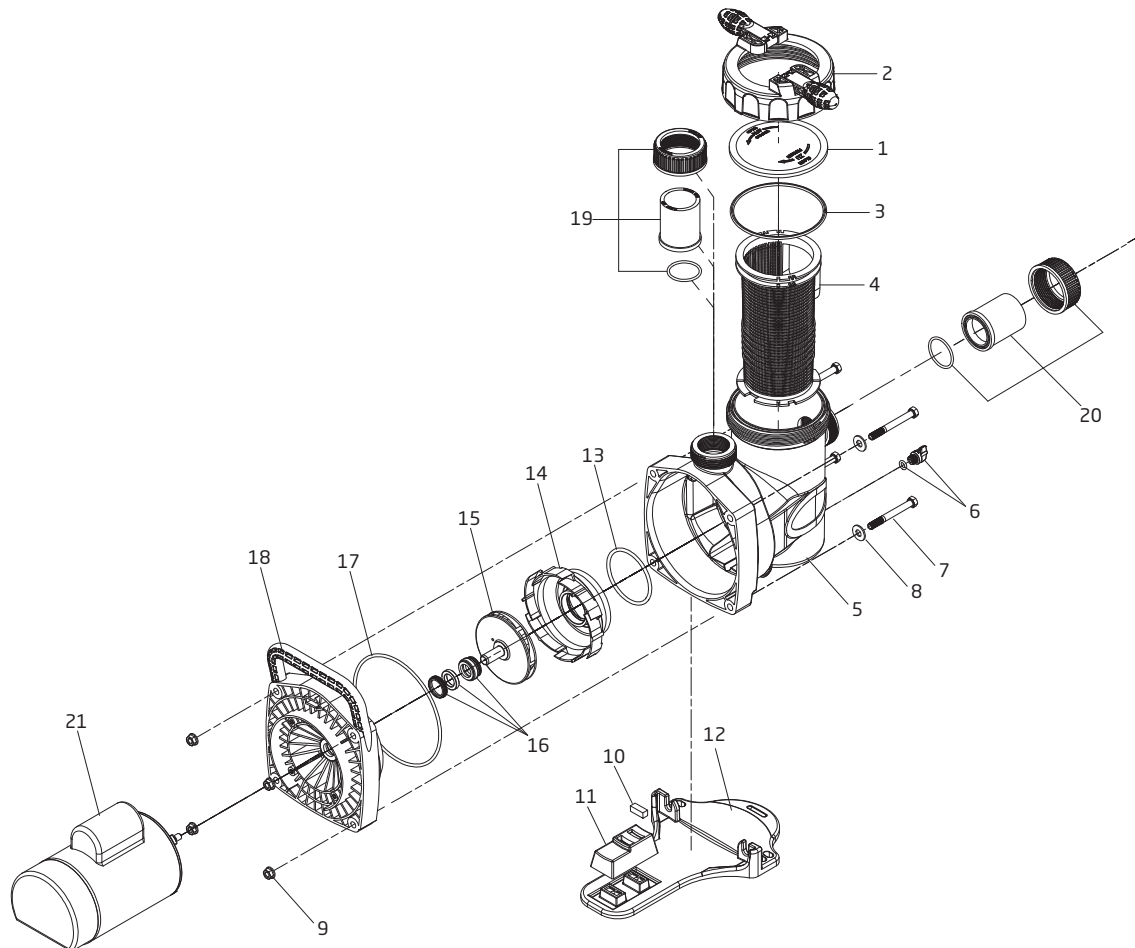
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BADU SuperPro E Series (48 frame) **SPECK X**

Swimming Pool Pump

Order #	Drawing Number	Qty Required	Description
2901116010	1	1	LID - CLEAR
2901116010B	NOT SHOWN	1	LID - CLEAR with LED LIGHT
2921116022	2	1	LOCK RING WITH HANDLES - LID
2921141210	3	1	O-RING - LID 137 x 5mm
2901114300	4	1	BASKET - ONE PIECE
2901510102	5	1	CASING - 1.5" NPT
2901490300	6	1	DRAIN PLUG - WINGED W/ O-RING
2991000154	7	4	SCREW - 3/8-16 X 3-1/2" HEX CAP SS
2991400035	8	4	WASHER - FLAT 3/8" SS
2991000155	9	4	NUT - 3/8-16 WHIZ FLANGE BRASS
2920359501	10	1	RUBBER BUFFER 10 x 10 x 27mm
2901591701	11	1	MOTOR SUPPORT FOR 48 FRAME
2901589400	12	1	BASE PLATE
2920141210	13	1	O-RING - DIFFUSER 90 x 5mm
2921117412	14	1	DIFFUSER
2921923091	15	1	IMPELLER (-I) 0.75 HP SF 1.0 99 / 4.5mm (3/8") 6V
2921923192	15.1	1	IMPELLER (-II) 1.0 HP SF 1.0 98 / 9mm (3/8") 6V w/ INSERT
2921923193	15.2	1	IMPELLER (-III) 1.5 HP SF 1.0 106 / 9mm (3/8") 6V w/ INSERT
2921923094	15.3	1	IMPELLER (-IV) 2.0 HP SF 1.0 111 / 9mm (3/8") 6V w/ INSERT
2921606204	16	1	MECHANICAL SEAL (5/8") - CARBON/CERAMIC
2901541220	17	1	O-RING - CASING 185 x 4.5mm
2901516102	18	1	FLANGE/SEAL HOUSING
2500300937	19 & 20	1	SET - SUCTION/DISCHARGE UNION COMPLETE



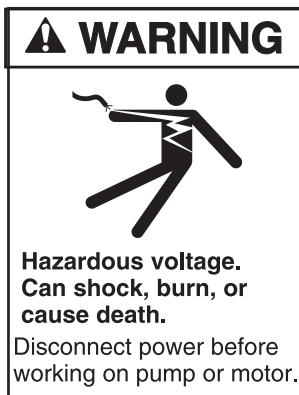
READ THIS MANUAL CAREFULLY BEFORE USING THE PUMP

⚠️ DANGER: DO NOT BLOCK SUCTION ⚠️



- Pump suction is hazardous and can trap and drown or disembowel swimmers.
- Blocking suction with body may cause severe or fatal injury.
- **DO NOT** use or operate swimming pools, spas, or hot tubs if a suction outlet cover is missing, broken, or loose.
- All suction outlet covers must be maintained. They must be replaced if cracked, broken, or missing.
- All suction outlets must have correctly installed screw-fastened cover in place.
- The pump suction system must provide protection against the hazard of suction entrapment or hair entrapment/entanglement.
- Provide at least two hydraulically balanced (3' apart) main drains, with covers as suction outlets for each circulating pump suction line.

⚠️ WARNING: RISK OF ELECTRICAL SHOCK ⚠️



Pool pump must be installed by a licensed or certified electrician or a qualified pool serviceman in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electric hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.

Always disconnect power to the pool pump at the circuit breaker before servicing the pump. Failure to do so could result in death or serious injury to serviceman, pool users, or others due to electric shock.

⚠️ SAVE THESE INSTRUCTIONS! ⚠️