

OWNER'S MANUAL

Swimming Pool and Spa Pump

SPECK X
pumps

READ THIS MANUAL CAREFULLY BEFORE USING THE SPECK PUMP

Notice: *The California Energy Commission requires all pumps purchased for sale or use in a residential pool for filtration in California be listed on their CEC website.*

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 U.S., 6 AWG Canada) 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.

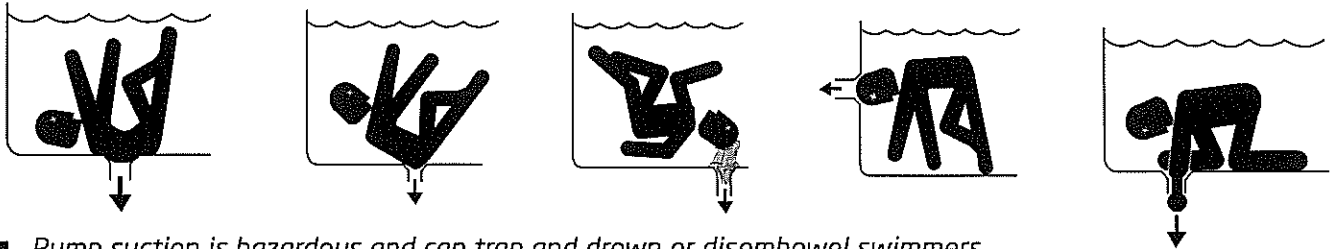
NOTE: To installer and/or operator of the Speck Swimming Pool Pump; the manufacturer's warranty will be voided if the pump is improperly installed and/or operated.

9. SAVE THESE INSTRUCTIONS!

General Safety Instructions

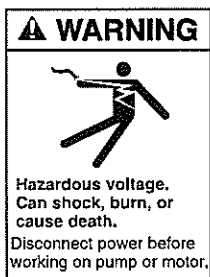
The following guidelines provide information to minimize the risk of injury to users of pools, spas, and hot tubs.

WARNING: TO REDUCE THE RISK OF ENTRAPMENT HAZARD



- 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 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 circulation pump suction line.

WARNING: RISK OF ELECTRICAL SHOCK OR ELECTROCUTION



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!

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.

SECTION 1 Installation Information

1/2 PUMP LOCATION - continued

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 and 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.

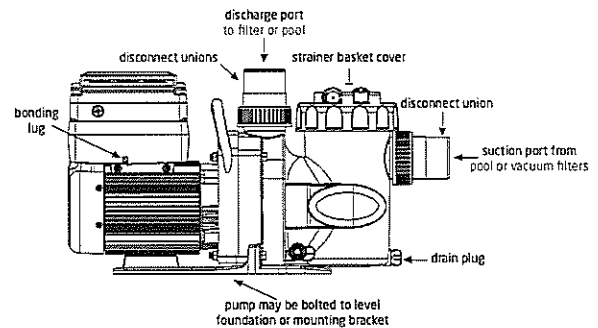
2. When installing the pump, care should be taken so that the suction line is below water level to a point immediately beneath the pump to ensure quick priming via a flooded suction line. The height between the pump and water level should not be more than five (5) feet.

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 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.*



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

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.

SECTION 1 Installation Information - continued

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 damage to the motor.

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.

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.

SECTION 2 EQUIPMENT OPERATION, SERVICE, AND MAINTENANCE

2/1 START UP GUIDE - continued

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.

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.

SECTION 2 EQUIPMENT OPERATION, SERVICE, AND MAINTENANCE - continued

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

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.

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.
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.	a. Suction air leak.	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.
	b. No water in pump.	Make sure strainer tank is full of water.
	c. Closed valves or blocked lines.	Open all valves in system. Clean skimmer and strainer tank. Open pump and check for clogging of impeller.
	d. Low voltage to motor.	Check voltage at motor. If low, pump will not come up to speed.
2. Motor does not turn.	a. No power to motor.	Check that all power switches are on. Be sure fuse or circuit breaker is properly set. Time set properly? Check motor wiring at terminals.
	b. Pump jammed.	With power off, turn shaft. It should spin freely. If not, disassemble and repair.
3. Low flow.	a. Dirty filter.	Back wash filter when filter pressure is high, or clean cartridges.
	b. No skimmer basket.	Clean skimmer and pump strainer basket.
	c. Closed valves or blocked lines.	See problem 1.
	d. Suction air leak.	See problem 1.
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.	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:	
	a. Low voltage.	Increase size of electrical wire. Be sure motor is operating on correct voltage.
	b. Installed in direct sun.	Shield motor from sun's rays.
	c. Poor ventilation.	Do not tighten cover or enclosure motor.
6. Noisy operation of pump.	a. Air leak in suction line. Bubbles in water returning to pool at inlet.	Repair leak. Check suction pipe, see-through lid in place? O-ring clean?
	b. Restricted suction line due to blockage or under size pipe. Indicated by high vacuum reading at pump suction.	Remove blockage or increase suction pipe size. Make sure strainer tank is clean. Are all suction valves fully open?
	c. Foreign matter (gravel, metal, etc.) in pump impeller.	Disassemble pump and remove foreign matter from impeller.
	d. Cavitation.	Improve suction conditions. (Reduce suction lift, reduce number of fittings, increase pipe size.) Increase discharge pressure and reduce flow by throttling discharge valve.

SECTION 3 TROUBLESHOOTING GUIDE - continued

PROBLEM	POSSIBLE CAUSES	SOLUTION
7. Motor overload protection "kicks out".	a. Motor is not connected properly.	Check wiring diagram on motor.
	b. Low voltage due to under size wire or low incoming voltage.	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.
	c. Wrong size heaters in protective device.	Heaters should be one size larger than full load amps shown on motor nameplate.
	d. Overload due to binding in pump or wrong size impeller.	Indicated by high amperage readings on motor, binding shaft. Disassemble unit and correct.

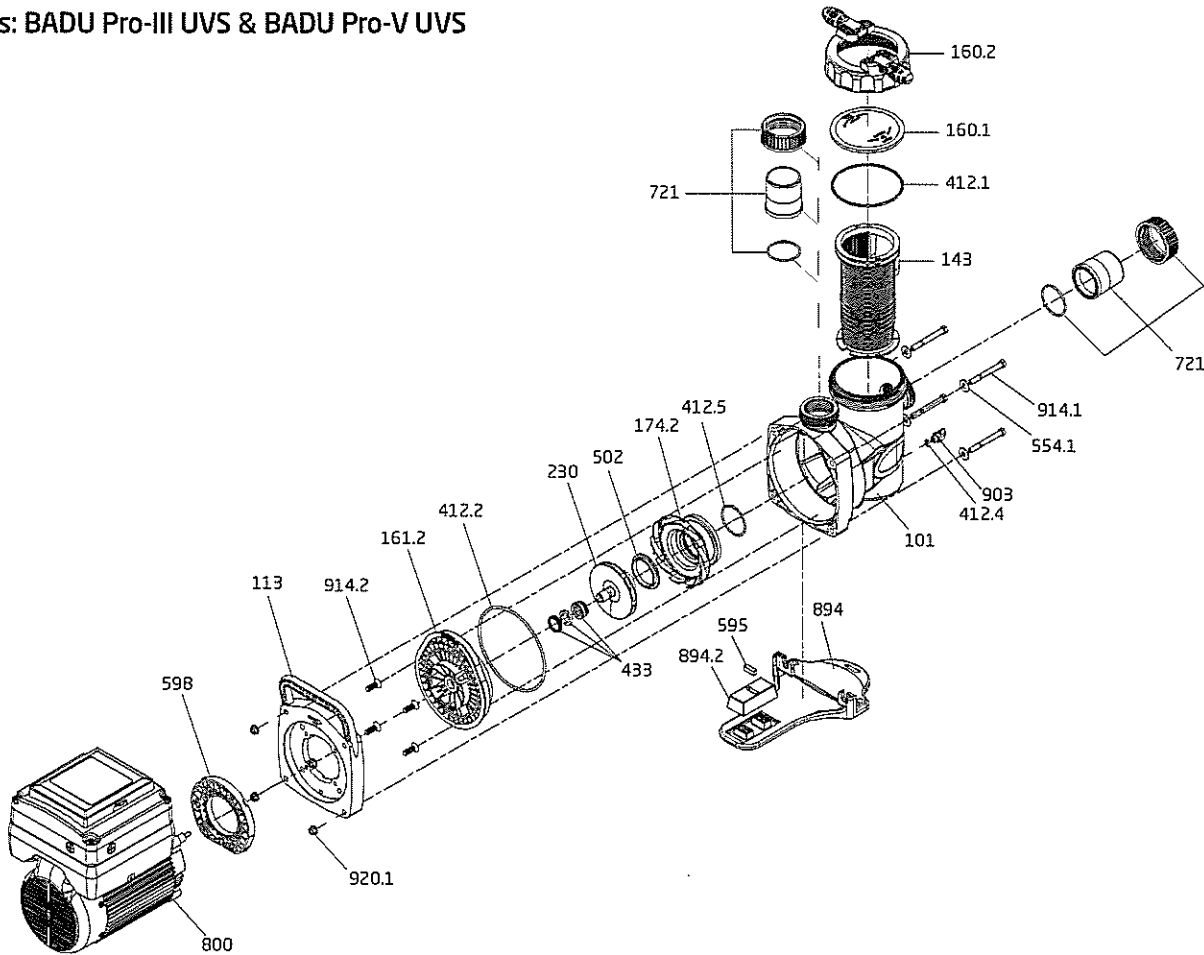
SECTION 4 SERVICING INFORMATION

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 REPLACEMENT PARTS AND EXPLODED VIEW

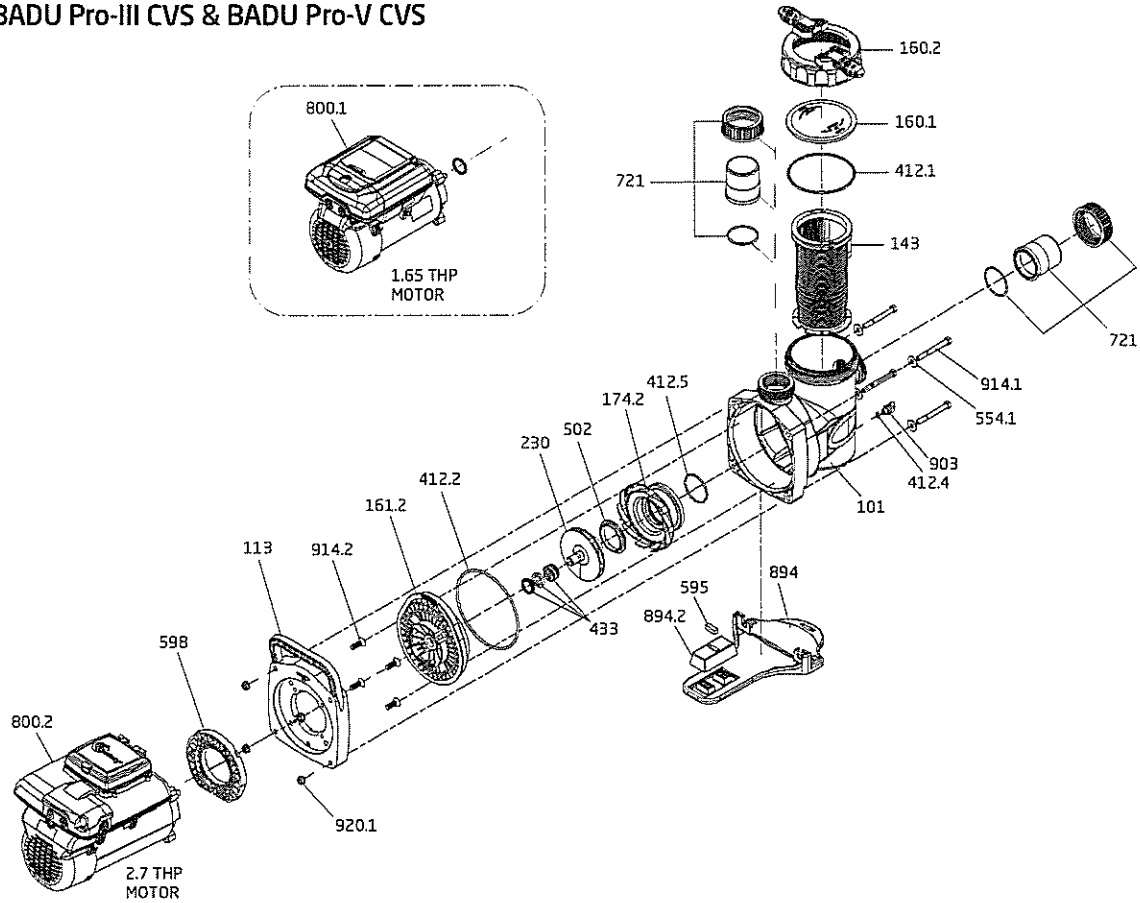
Models: BADU Pro-III UVS & BADU Pro-V UVS



Order#	Drawing #	Description	Order#	Drawing #	Description
2901116010	160.1	Lid - Clear	2901417422	174.2	Diffuser
2921116012B	Not Shown	Lid - Clear w/ Led Light	2901450700	502	Wear Ring
2921116022	160.2	Lid - Lock Ring w/ Handles	2901423110	230	Impeller (-III) - 110 x 8.7mm
2901141201	412.1	O-ring - Lid 137 x 5mm	2901423017	230	Impeller (-V) - 118 x 10mm
2901114300	143	Basket	2920343310	433	Mechanical Seal (20mm) - Carbon/Ceramic
2901510102	101	Casing (1.5")	2901541221	412.2	O-ring - Casing 190 x 5mm
2901510103	101	Casing (2.0")	2901516100	161.2	Seal Housing
2901490300	903	Drain Plug - Winged w/ O-ring	2991400028	914.2	Screw - 3/8-16 x 2" Allen Head (x4)
2302002062	412.4	O-ring - Drain Plug 11 x 2.5mm	2901511300	113	Flange
2991000154	914.1	Screw - 3/8-16 x 3-1/2" Hex Cap SS (x4)	2920110200	598	Motor Flange
2991400035	554.1	Washer - Flat 3/8" SS (x4)	2500300937	721	1.5" Union Package - Suction/Discharge
2991000155	920.1	Nut - 3/8-16 Brass (x4)	2500300936	721	2.0" Union Package - Suction/Discharge
2920359501	595	Rubber Buffer - 10 x 10 x 27mm	M55PWUFF225	800	Motor - 1.65 THP
2901591700	894.2	Motor Support	M55PWUFH227	800	Motor - 2.7 THP
2901589400	894	Base Plate			
2920141210	412.5	O-ring - Diffuser 90 x 5mm			

SECTION 5 REPLACEMENT PARTS AND EXPLODED VIEW

Models: BADU Pro-III CVS & BADU Pro-V CVS



Order#	Drawing #	Description	Order#	Drawing #	Description
2901116010	160.1	Lid - Clear	2920141210	412.5	O-ring - Diffuser 90 x 5mm
2921116012B	Not Shown	Lid - Clear w/ Led Light	2901417422	174.2	Diffuser
2921116022	160.2	Lid - Lock Ring w/ Handles	2901450700	502	Wear Ring
2901141201	412.1	O-ring - Lid 137 x 5mm	2901423110	230	Impeller (-III) - 110 x 8.7mm
2901114300	143	Basket	2901423017	230	Impeller (-V) - 118 x 10mm
2901510102	101	Casing (1.5")	2920343310	433	Mechanical Seal (20mm) - Carbon/Ceramic
2901510103	101	Casing (2.0")	2901541221	412.2	O-ring - Casing 190 x 5mm
2901490300	903	Drain Plug - Winged w/ O-ring	2901516100	161.2	Seal Housing
2302002062	412.4	O-ring - Drain Plug 11 x 2.5mm	2991400028	914.2	Screw - 3/8-16 x 2" Allen Head (x4)
2991000154	914.1	Screw - 3/8-16 x 3-1/2" Hex Cap SS (x4)	2901511300	113	Flange
2991400035	554.1	Washer - Flat 3/8" SS (x4)	2920110200	598	Motor Flange
2991000155	920.1	Nut - 3/8-16 Brass (x4)	2500300937	721	1.5" Union Package - Suction/ Discharge
2920359501	595	Rubber Buffer - 10 x 10 x 27mm	2500300936	721	2.0" Union Package - Suction/ Discharge
2901591701	894.2	Motor Support	M48AA85A01	800.1	Motor - 1.65 THP
2901589400	894	Base Plate	M48AA69D29	800.2	Motor - 2.7 THP

SECTION 6 PRODUCT REGISTRATION

Thank you for purchasing a SPECK PUMPS® product please take a few moments to register it online. Your registration helps us keep you up to date on product information and offers.

Before you register:

What do I need to get started?

- The Serial Number and the Model Name
- An email address. We will use this to send you confirmation of your registration.
- A copy of your sales receipt and/or qualified installer's invoice.

To register your SPECK equipment please register online at www.usa.speck-pumps.com

or
Scan QR code to register product



SECTION 7 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.

SECTION 7 LIMITED WARRANTY - continued

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.

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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Model: PX100 and PX100S - 100 Watt Transformers

INPUT: 120 V.AC, OUTPUT: 12 V.AC or 13 V.AC

Model: PX300 and PX300S - 300 Watt Transformers

INPUT: 120 V.AC, OUTPUT: 12 V.AC, 13 V.AC or 14 V.AC

IMPORTANT SAFETY INSTRUCTIONS

When installing and operating this Product and other associated equipment, basic safety precautions should always be followed, including the following:

1. Read and follow all instructions.
2. Do not submerge transformer.
3. Do not connect two or more transformers in parallel or use with dimmers.
4. This transformer must be installed by a qualified electrician, according to the National Electrical Code (including article 680) or Canadian Electrical Code (including section 68) and, local code requirements. For Canadian installations, supply circuit must be protected by a ground fault circuit interrupter.
5. If transformer is used for direct connection of underwater lights, refer to NEC 680-21(b) or CEC 68-060,062 AND 066 for further details.
6. Do not install this equipment within 5 feet (3 meters for Canadian installations) of any body of water. USE COPPER CONDUCTORS ONLY.
7. Do not exceed the maximum ratings of individual components, wiring devices, and current carrying capacity of conductors.
8. For grounding and bonding this transformer and the installation, refer to section 680 of the National Electrical Code or section 68 of the Canadian Electrical Code.

READ, FOLLOW AND SAVE THIS INSTRUCTION MANUAL

GENERAL INFORMATION

These Safety Transformers are specifically designed to supply 12 volts to pool/spa lights, submersible fixtures and outdoor garden lights. A grounded shield between the primary and secondary windings assures safe operation and the built-in circuit protection will disconnect power to the transformer in case of defect or overload. These transformers are suitable for direct connection to underwater Pool and Spa lights.

SPECIFICATIONS

Enclosure Size: 7 1/4" (19.4 cm) high x 5 1/4" (13.3 cm) wide x 4 1/2" (11.4 cm) deep. Mounting brackets top and bottom.

Enclosure Type: (A) 0.048" corrosion resistant steel with electrostatically applied beige coating. (B) 0.036" stainless steel.

Knockouts: Total of ten 1/2"-3/4" combination. (4) bottom, (2) right side, (2) left side, (2) back.

Model	Input 60 Hz.	Secondary Output		Enclosure Type
		Lamp Watts*	Volts	
PX100	120V. 1 Amp Max.	100 Max.	12 or 13	A
PX100S	120V. 1 Amp Max.	100 Max.	12 or 13	B
PX300	120V. 3 Amp Max.	300 Max.	12, 13 or 14	A
PX300S	120V. 3 Amp Max.	300 Max.	12, 13 or 14	B

* Any combination of bulbs, any tap.



INSTALLATION

Pool/Spa Underwater Lighting Application

For field wiring information, please refer to the instructions attached to inside of front cover.

- The enclosure of the transformer must be provided with a fail-proof ground as required by NEC, Article 680 and any applicable local codes For Canadian installations, the supply circuit must be protected by a ground fault circuit interrupter.
- For direct wiring of underwater lights, the installation must comply with article 680-21(b) of the National Electrical Code, or articles 68-060, 062 and 066 of the Canadian Electric Code.
- The transformer should be mounted at least 1 foot above the deck level with the field wiring compartment down.
- Make sure that all unused taps (leads) are separately insulated.
- Use the following tables as a guide to determine the correct wire size.
- Check voltage at lamp terminals after installation. It should be 12 ± 0.3 volts.

120 Volt Primary Input - 100 Watt Output

Distance* Feet	2#6AWG	2#8AWG	2#10AWG	2#12AWG	2#14AWG
5 Ft.	12V	12V	12V	12V	12V
30 Ft.	12V	12V	12V	13V	13V
60 Ft.	12V	12V	13V	13V	
90 Ft.	12V	13V	13V		
120 Ft.	13V	13V			
150 Ft.	13V	13V			
180 Ft.	13V				
210 Ft.	13V				
240 Ft.	13V				

* Length of run to light from transformer.

120 Volt Primary Input - 300 Watt Output

Distance* Feet	2#6AWG	2#8AWG	2#10AWG	2#12AWG
5 Ft.	12V	12V	12V	12V
10 Ft.	12V	12V	12V	13V
20 Ft.	12V	12V	13V	13V
30 Ft.	12V	13V	13V	14V
40 Ft.	13V	13V	14V	
50 Ft.	13V	13V	14V	
60 Ft.	13V	14V		
70 Ft.	13V	14V		
80 Ft.	13V	14V		
90 Ft.	14V			
100 Ft.	14V			
110 Ft.	14V			

* Length of run to light from transformer.

LANDSCAPE LIGHTING APPLICATIONS

For wiring diagram, please refer to the instructions attached to inside of front cover.

Using the correct gauge cable and wattage is essential to obtaining proper lighting performance. Use this chart to determine the minimum gauge cable to be used depending on the total lamp wattage for your light plan. Determine the total lamp wattage by adding together all the individual lamp wattage's being used. Do not exceed the maximum wattage rating for the transformer. Route low voltage cable to desired fixture locations. Hide cable as desired, only after entire installation is completed and lighting effect is achieved.

SERIES	TOTAL LAMP WATTAGE	RECOMMENDED GAUGE CABLE for up to 100 Ft. run*
PX300	201-300	12
PX300S	157-200	14 - 12
	121-156	16 - 14 - 12
	0-120	18 - 16 - 14 - 12
PX100		
PX100S	0-100	18 - 16 - 14 - 12

* For runs between 100 to 150 ft. long, increase cable size by one gauge.

WARRANTY

If this product fails due to a defect in material or workmanship, Intermatic Incorporated will repair or replace it free of charge.

Models PX100 and PX300 - within one (1) year from date of installation

Models PX100S and PX300S transformers - within ten (10) years from date of installation; enclosure - the life of the product.

The warranty does not cover labor for removal or reinstallation and does not apply to: (a) damage caused by accident, abuse, mishandling, or dropping; (b) a unit which has been subject to unauthorized repair; (c) units not used in accordance with directions; (d) damages exceeding the cost of the product. Some states do not allow a limitation of damages so the foregoing warranty 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.

This warranty service is available, if the defective product or its defective component is returned with proof of purchase and date of installation, either (a) to the dealer from whom the unit was purchased or (b) by shipping prepaid to the Intermatic Service Center, Intermatic Incorporated, Intermatic Plaza, Spring Grove IL 60081-9698

Because of our commitment to continuing research and improvements, Intermatic Incorporated reserves the right to make changes, without notice, in the specifications and material contained herein and shall not be responsible for any damages, direct or consequential, caused by reliance on the material presented.

INTERMATIC INCORPORATED, SPRING GROVE, IL 60081-9698

<http://www.intermatic.com>