



SPABRITE® & AQUALIGHT® UNDERWATER LIGHT

INSTALLATION GUIDE

**IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS**



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DANGER



Risk of Electrical Shock or Electrocution

This underwater light must be installed by a licensed or certified electrician in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installer, or others due to electrical shock, and may also cause damage to property. Read and follow the specific instructions below.

WARNING

Before installing this underwater light, read and follow all warning notices and instructions accompanying this light. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions.

Important Notice



Attention Installer.

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

⚠ DANGER! Risk of Electrical Shock or Electrocution!



This product 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 electrical 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 the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electrical shock. **READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL.**

⚠ WARNING — Important Safety Information for Pentair Niche and Light Installation

- All Niche and Light installations must conform with all codes. If local codes mandate a cord seal, use Pentair plastic niches (P/N 79206600 and P/N 79206700).
- Under no circumstances replace lights by splicing wire under water or behind niche.

⚠ WARNING — RISK OF ELECTRIC SHOCK AND INJURY.

USE ONLY THE INSTALLATION METHOD SPECIFIED BELOW.

Important Safety Information for Fountain Fixture Installations

Location of Luminaire (Light) Use	Pentair Fountain Fixture* (P/N 560000 – P/N 560001) (P/N 560002 – P/N 560003)	Required Installation Method
Swimming Pool or Spa	Wet-Niche Swimming Pool (or Spa) Luminaire (Light)	Fixture Housing (Forming Shell) ONLY. DO NOT USE Fountain Fixture Stand.
Fountain	Wet-Niche Submersible Swimming Pool (or Spa) Luminaire (Light)	Fixture Housing (Forming Shell) or Fountain Fixture Stand.

(* Note: Wet-niche luminaires complying with requirements for both uses may bear both the Listed Wet-Niche Swimming Pool (or Spa) Luminaire UL Mark and the Listed Wet-Niche Submersible Luminaire UL Mark. A luminaire not bearing the corresponding UL Listing Mark is not considered by UL to have been produced under UL's Listing and Follow-Up Service for the associated usage location.

⚠ WARNING — THE LIGHT LENS MAY GET HOT WHEN IN USE. USERS SHOULD AVOID CONTACT WITH THE LIGHT AS SERIOUS BURNS MAY RESULT FROM PROLONGED CONTACT WITH THE LIGHT.

Before Installing luminaries read the following:

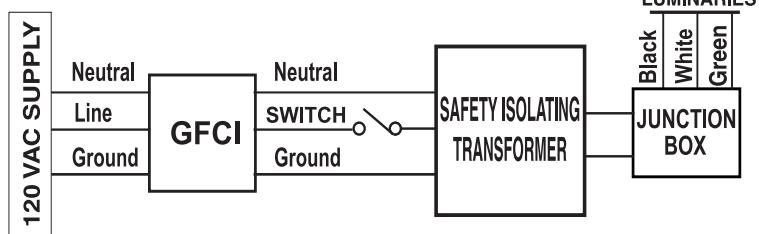
⚠ WARNING! Always install a new lens gasket (see part number in User's Guide), when ever reassembling the light. Failure to do so may permit water to leak into the assembly which could cause; (a) an electrical hazard resulting in death or serious injury to pool users, installer, or others due to electrical shock, or (b) breakage of the lamp or lens, which likewise could result in serious injury to pool user, installers, or bystanders, or in damage to property. **REPLACE ANY CRACKED PROTECTIVE SHIELD (CRACKED LENS) WITH NEW LENS AND GASKET.**

- FOR 12 VAC LUMINARIES: ALWAYS USE A SEPARATE SAFETY ISOLATION TRANSFORMER TO POWER LUMINARIES. See diagram on right. Note: Connect all three (or two wires) wires to the corresponding circuit wires in the Junction Box (black wire to power, white wire to common, and green wire to ground (for a 3-wire light)).

- 12 VAC LUMINARIES SPECIFICATION:

120VAC  , 50/60 Hz

Luminaires not suitable for direct mounting on normally flammable surfaces (suitable ONLY for mounting on non-combustible surfaces).



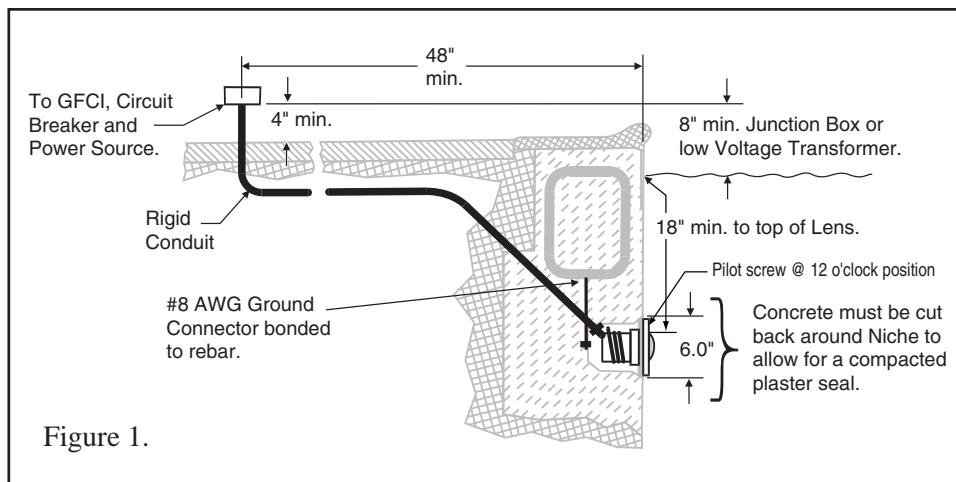
NOTE: FOR 120 VAC ILLUMINARIES, ISOLATION TRANSFORMER IS INCLUDED IN LIGHT FIXTURE.



Section I. Installing light fixture during new pool construction

A. The electrician must complete preparatory steps before light fixture is installed; see Figure 1.

1. Ensure that the pool meets the requirements of the current National Electrical Code and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the underwater light is installed.



Some of the requirements of the National Electrical Code which the pool's electrical system must meet are as follows:

- a. The lighting circuit must have a Ground Fault Circuit Interrupter (GFCI), and must have an appropriately rated circuit breaker.
- b. The Junction Box (or, for 12 volt models, the low voltage transformer) must be located at least eight (8) inches above water level, at least four (4) inches above ground level, and at least 48 inches from the edge of the pool; see Figure 1.
- c. The light fixture and all metal items within five (5) feet of the pool must be properly electrically bonded.
- d. The wet niche must be properly installed so the pilot screw hole is at the 12 o'clock position and that the top edge of the underwater light's lens is at least 18 inches below the surface of the water in the pool; see Figure 1.

NOTE

The required orientation of all Pentair lights is with the pilot screw at the 12 o'clock position. This is guaranteed by proper niche installation.

- e. The wet niche must be properly electrically bonded and grounded via the No. 8 AWG ground connector located at the rear of the niche; see Figure 1.

NOTE

The pool or spa electrical system can be verified with a Pool and Spa Electrical Qualification Test kit. The test kit is available from Pentair Water Pool and Spa, Inc. The electrical system inspection using this kit must be performed by trained and certified personnel.

2. To be certain that the pool's electrical system meets all applicable requirements, the electrician should also consult the local building department.
 3. Use only Pentair Aquatic Systems wet niches to insure proper bonding and grounding connections.
- B. Steps to perform after the electrical system requirements are met.
1. Feed cord through conduit to Junction box, leaving at least four (4) feet of cord at the light fixture to coil around the light; see Figure 1. This four (4) feet of cord around the light allows the light to be serviced after the pool is filled with water.
 2. Cut the cord at the Junction Box, leaving at least six (6) inches of cord to make connections.
 3. Strip six (6) inches of the outer cord jacket to expose the three insulated wires. Be careful not to damage the insulation on the three (3) inner wires.
 4. Connect all three (3) wires to the corresponding circuit wires in the Junction Box, and secure the Junction Box cover in place.
 5. For lights with 2-conductor cords only (no ground wire) connect two wires to the corresponding circuit wires in the Junction Box, black wire to power, white wire to common and secure the Junction Box cover in place.

WARNING

Never operate this underwater light for more than 10 seconds unless it is totally submerged in water. Without total submersion, the light assembly will get extremely hot, which may result in serious burns or in breakage of the lamp or lens. This may result in serious injury to pool users, installers, or bystanders, or in damage to property.

6. Replace the light assembly into niche and tighten special pilot screw.

⚠ WARNING

Use only the special pilot screw provided with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

7. Fill the pool until the underwater light is completely submerged in water before operating the light for more than 10 seconds. Turn on main switch or circuit breaker, as well as the switch which operates the underwater light itself, to check for proper operation.

Section II. Replacing light fixture in existing pool

⚠ DANGER

Risk of Electrical Shock or Electrocution



This underwater light 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 electrical 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 the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electrical shock.

A. Before replacing the light fixture.

1. Verify that the pool meets the requirements of the current National Electrical Code and all local codes and ordinances. A licensed or certified electrician must install the electrical system to meet or exceed those requirements before the underwater light is installed. Some of the requirements of the National Electrical Code which the pool's electrical system must meet are as follows:
 - a. The lighting circuit must have a Ground Fault Circuit Interrupter (GFCI), and must have an appropriately rated circuit breaker.
 - b. The Junction Box (or, for 12 volt models, the low voltage transformer) must be located at least 8 inches above ground or water level, at least four (4) inches above ground level, and at least 48 inches from the edge of the pool; see Figure 1.
 - c. The light fixture and all metal items within 5 feet of the pool must be properly electrically bonded.
 - d. The wet niche must be properly installed so that the top edge of the underwater light's lens is at least 18 inches below the surface of the water in the pool; see Figure 1.
 - e. The wet niche must be properly electrically bonded and grounded via the No. 8 AWG ground connector located at the rear of the niche; see Figure 1.

NOTE

The pool or spa electrical system can be verified with a Pool and Spa Electrical Qualification Test Kit. The test kit is available from Pentair Aquatic Systems. The electrical system inspection using this kit must be performed by trained and certified personnel.

2. To be certain that the pool's electrical system meets all applicable requirements, the electrician should also consult the local building department.
3. Use only Pentair Aquatic System wet niches to insure proper bonding and grounding connections.

B. Replacing the light fixture after electrical system requirements are met.

⚠ WARNING

Failure to bring the pool's electrical system up to code requirements before installing the underwater light will create an electrical 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.

1. Turn off main electrical switch or circuit breaker, as well as the switch which operates the underwater light itself.
2. To remove the light assembly, remove the special pilot screw at top of the face ring, remove the light assembly from the niche, and place the assembly on the deck.

⚠ WARNING

Be sure to keep the special pilot screw from this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

3. Remove Junction Box cover, disconnect the light fixture wires, and pull the cord through the conduit.
4. Feed the new light fixture cord through the conduit from the niche to the Junction Box.

NOTE

Depending on the length of the conduit, special tools may be required to pull the cord through the conduit.

5. Leave at least 4 feet of cord to coil around the light fixture; see Figure 1. This 4 feet of cord coiled around the light allows the light to be serviced after the pool is filled with water.
6. Cut the cord at the Junction Box, leaving at least 6 inches of cord to make connections.
7. Strip 6 inches of the outer cord jacket from the cord to expose the three insulated wires--be careful not to damage the insulation on the three inner wires.
8. Connect all three wires to the corresponding circuit wires in the Junction Box, black wire to power, white wire to common, and green wire to ground, and secure the Junction Box cover in place.

⚠ WARNING

Use only the special pilot screw provided with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

9. Replace light assembly into niche and tighten special pilot screw.

⚠ WARNING

Never operate this underwater light for more than 10 seconds unless it is totally submerged in water. Without total submersion, the light assembly will get extremely hot, which may result in serious burns or in breakage of the lamp or lens. This may result in serious injury to pool users, installers, or bystanders, or in damage to property.

10. Fill the pool until the underwater light is completely submerged in water before operating the light for more than 10 seconds. Turn on main switch or circuit breaker, as well as the switch which operates the underwater light itself, to check for proper operation.

Section III. Replacing a lamp only

⚠ DANGER



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

- A. Turn off main electrical switch or circuit breaker, as well as the switch which operates the underwater light itself.
- B. You will need the following items:
 1. A new lens gasket (part number 79108600).
 2. A lamp, refer to Table 1 for the correct type and wattage.

⚠ WARNING

Replace lamp with a similar type and wattage. Failure to replace lamp with the same type of lamp will damage the light assembly and may cause an electrical hazard resulting in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.

⚠ WARNING

Always install a new lens gasket (part number 79108600) whenever disassembling the light. Failure to do so may permit water to leak into the assembly which could cause:

- (a) An electrical hazard resulting in death or serious injury to pool users, installers, or others due to electrical shock.; or,
- (b) breakage of the lamp or lens, which likewise could result in serious injury to pool users, installers, or bystanders, or in damage to property.

- C. To remove light assembly, remove the special pilot screw at top of face ring, remove light assembly from niche, and place assembly on deck.

⚠ WARNING

Be sure to keep the special pilot screw from this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

- D. Disassemble light fixture and remove bulb. Remove and discard old gasket.
- E. Install new gasket during reassembly of light, Pentair Water Pool and Spa part number 79108600.
- F. Select the replacement bulb from Table 1.
 - 1. For AquaLight of 100 watt and 250 watt; see Figures 2-3.
 - 2. Squeeze wire form at rounded ends until the wire comes together and forms a diamond shape opening; see Figures 2-3.

Lamp Specifications:	12* volt Models
120 volt - 250 watt - T-4 lamp**	75 watt
120 volt - 100 watt - T-4 lamp**	100 watt
120 volt - 60 watt - PAR 16 lamp***	*Transformer required
12 volt - 100 watt - R-20 lamp***	
12 volt - 75 watt - MR-16 lamp**	120 volt Models
** AquaLight - *** SpaBrite	60 watt, 100 watt
Table 1.	250 watt

IMPORTANT

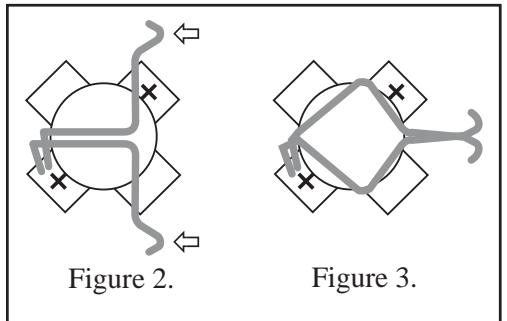
Be careful not to touch bulb with bare skin, as this will reduce the life of the bulb. Use the plastic wrapping of the new bulb, or a cloth to grasp the bulb.

- 3. While holding wire form in diamond shape, insert bulb through diamond opening and thread bulb into socket.

⚠ WARNING

Never operate the underwater light for more than 10 seconds unless it is totally submerged in water. Without total submersion, the light assembly will get extremely hot and may result in serious burns or in breakage of the lamp or lens. This may result in serious injury to pool users, installers, or bystanders, or in damage to property.

- 4. With the light resting on its base, place the gasket on top of the light shell. A NEW LENS GASKET MUST BE USED EACH TIME THE LIGHT IS REASSEMBLED. Locate the word "TOP" on the lens surface. Align the pilot screw on the face ring with the letter "O" in the word "TOP" and the arrow on the label marked, "Arrow on this label must line up with the pilot screw on the face ring."
 - 5. The semi-assembled light will now include the face ring and its new gasket properly aligned with the light shell. Place this light upside down on the old gasket, using the old gasket as an assembly fixture. This will keep the lens and gasket assembly from being pushed out of the face ring while you secure it to the light fixture.
- G. Secure the face ring to the light fixture. Sealing screws must be tightened in the following manner to ensure a proper seal.
1. For lights with chrome or brass face ring:
 - a. Partly tighten the screw at the 3 o'clock position, and then partly tighten the screw at the 9 o'clock position. Partly tighten the screw at another 'opposite' position, and then partly tighten the screw directly across from it.
 - b. Continue partly tightening all screws in the above sequence until all screws are evenly and securely tightened. Recommended 20 inch pounds torque.
 2. For lights with stainless steel face ring:
 - a. With the bent ends of the circular unitension clamp pointing down spread the clamp and place it in the "U" recesses of the locking levers. Ensure that the bent ends of the clamp are located between the pair of locking levers as shown in Figure 4, location A. Check to see that the clamp is properly engaged with all of the levers; see Figure 4.
 - b. Hold the ends of the unitension clamp together. Insert the bolt through one end of the bend end and then insert the other end through the other bent end and thread the bolt into the nut. Using a #3 Phillips head screwdriver tighten the screw and nut until the distance between the ends of the clamp equals $\frac{1}{4}$ inch or less, see Figure 5.



- H. Replace the light assembly into the niche and tighten the special pilot screw.

WARNING

Use only the special pilot screw provided with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock.

- I. Fill pool until the underwater light is completely submerged in water before operating the light for more than 10 seconds. Turn on main switch or circuit breaker, as well as the switch which specifically operates the underwater light, to check for proper operation.

Circular Clamp

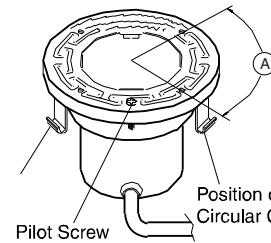
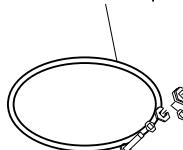


Figure 4.

Orientation of bolt and wire clamp.

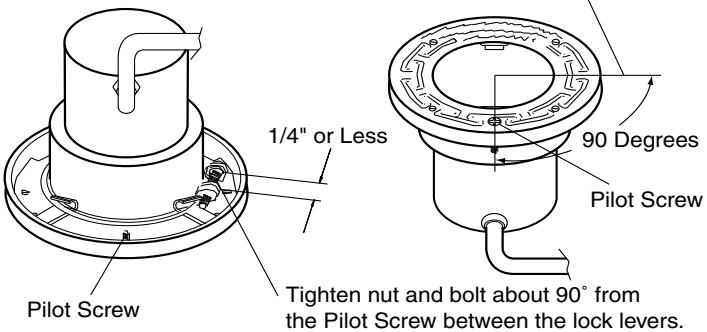
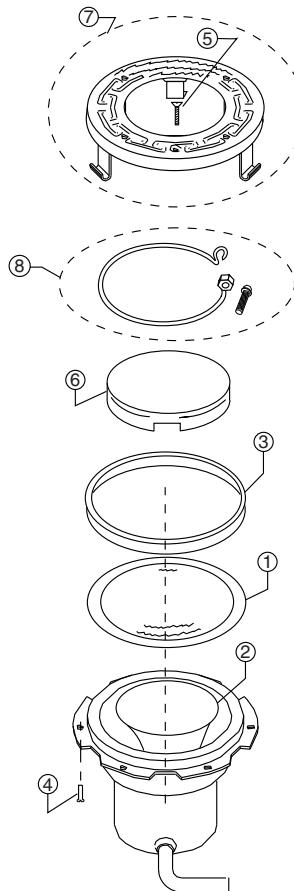


Figure 5.

Section IV. Replacement Parts



Item No.	Part No.	Description
1	79107800	Lens, clear, 4 in. dia., tempered (12 volt SpaBrite, 120 volt / 12 volt AquaLight)
1	650086	Lens, clear, 4 in. dia., tempered (120 volt SpaBrite only)
2	650139Z	Bulb, 60W, 120VAC, PAR16 (SpaBrite)
2	79108100	Floodlamp, med. base, 100 watt, 12 volt, (SpaBrite)
2	79102900	100 watt halogen quartz screw base, (AquaLight)
2	79113800	250 watt halogen quartz screw base, (AquaLight)
2	79112400	Bulb, 75 watt, 12 volt, bi-pole, (AquaLight)
2	070517	Bulb, 100 watt, 120 volt, bayonet, (AquaLight)
2	79112700	Bulb, 250 watt, 120 volt, bayonet, (AquaLight)
3	79108500	Gasket, 4 in. dia. lens (12 volt SpaBrite only)
3	79108600	Gasket, silicone, 100 watt, 250 watt (AquaLight and 120 volt SpaBrite)
4	98208600	Screw, S/S 10-24 x 3/8 in., 6 required, for chrome-brass
5	79104800	Pilot Screw with captive gum washer, brass
5	619355	Pilot Screw with captive gum washer, S/S
6	79108900	Kwik-change color lens, red
6	79109000	Kwik-change color lens, blue
6	650015	Kwik-change color lens, magenta
6	650016	Kwik-change color lens, purple
6	650017	Kwik-change color lens, teal
6	650018	Kwik-change color lens, green
6	650019	Kwik-change color lens pack (5 colors)
7	79111600	Face Ring assy, S/S
8	79210400	Uni-tension wire assy., S/S with welded nut

SAVE THESE INSTRUCTIONS



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