

Spectrum *AquaLight*[®] (**SAL**[®]) Color Underwater Light Owner's Manual

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 or spa 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.

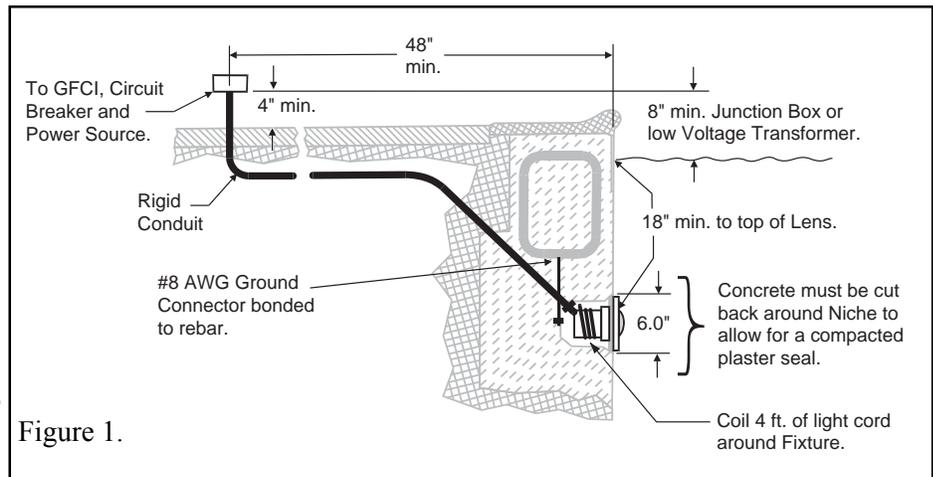
Section I. Installing Light Fixture During New Pool or Spa Construction

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

1. Ensure that the pool or spa 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 or spa's electrical systems must meet are as follows.

- a. The lighting circuit must have a Ground Fault Circuit Interrupter (GFCI) for line voltage models, 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 or spa; see Figure 1.
- c. The light fixture and all metal items within five (5) feet of the pool or spa 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 or spa; see Figure 1. (*Not more than 48 inch depth in Canada.*)
- 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 Pool Products. The electrical system inspection using this kit must be performed by trained and certified personnel.

2. To be certain that the pool or spa's electrical system meets all applicable requirements, the electrician should also consult the local building department.
3. Use only Pentair Pool Products 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 or spa 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. Install strain relief over cord jacket and connect all three (3) wires to the corresponding circuit wires in the Junction Box. Install the Junction Box cover.

⚠ 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 or spa users, installers, or bystanders, or in damage to property.

5. Coil the 4 foot length of cord around the fixture and place the light assembly into the niche.
6. Engage the retainer tab on the bottom of the face ring, then pivot the top of the fixture inward 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 or spa users, installers or others due to electrical shock.

7. Fill the pool or spa 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, and the switch which operates the underwater light, to check for proper operation. Refer to Operating Instructions, Section IV.

Section II. Replacing Light Fixture in an Existing Pool or Spa

⚠ DANGER



Risk of Electrical Shock or Electrocution.

This underwater light must be installed by a licensed or certified electrician or a qualified pool or spa 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 or spa users, installers or others due to electrical shock, and may also cause damage to property.

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

A. Before replacing the light fixture.

1. Verify that the pool or spa 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 or spa's electrical system must meet are as follows:
 - a. The lighting circuit must have a Ground Fault Circuit Interrupter (GFCI) for line voltage models, 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 or spa; see Figure 1.
 - c. The light fixture and all metal items within 5 feet of the pool or spa 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 or spa; 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 Pool Products. The electrical system inspection using this kit must be performed by trained and certified personnel.

2. To be certain that the pool or spa's electrical system meets all applicable requirements, the electrician should also consult the local building department.
3. Use only Pentair Pool Products 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 or spa'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 or spa users, installers, or others due to electrical shock, and may also cause damage to property.

NOTE

The light fixture may be replaced without removing water from the pool or spa.

1. Turn off main electrical switch or circuit breaker, as well as the switch which operates the underwater light.
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 or spa users, installers or others due to electrical shock.

3. Remove Junction Box cover, disconnect the light fixture wires and strain relief, then pull the cord out of the conduit from the niche.
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 allows the light to be serviced after the pool or spa 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. Install the strain relief over the cord jacket and 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. Install the Junction Box cover.

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 or spa users, installers or others due to electrical shock.

9. Replace light assembly into the niche and tighten the 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 or spa users, installers, or bystanders, or in damage to property.

10. Fill the pool or spa 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, to check for proper operation. Refer in Operating Instructions, Section IV.

Section III. Switch Options for Synchronizing Multiple SAL/SAm Fixtures

A. Multiple SALs and/or SAmS with colors ALWAYS synchronized.

1. To the extent allowed by code and capacity of the electrical equipment, multiple SALs and SAmS may be controlled with a single switch so their colors will always be synchronized.

B. Multiple SALs and SAmS controlled separately with color synchronization capability.

1. Separate switches may be used to control the on/off and color functions of each SAL/SAm. It is recommended that these switches are located next to each other to facilitate simple color synchronization when desired.

Section IV. SAL Operating Instructions

- A. Switch ON -- The **SAL** turns on with the color it displayed when it was turned off.
- B. 1st OFF/ON -- The **SAL** illuminates white for up to 30 seconds to synchronize with other **SALs** or **SAMs** (Spectrum **Amerlites**), then rolls through the spectrum until receipt of the next switch command.
- C. 2nd OFF/ON -- The **SAL** locks onto the color displayed.
- D. OFF/ON -- Repeats 1st OFF/ON action (B).
- E. OFF/ON -- Repeats 2nd OFF/ON action (C).

NOTE: The OFF/ON switch action must be done in less than 5 seconds.

NOTE

To synchronize colors on multiple **SALs** (or **SAMs**), perform the above actions on both of their switches simultaneously.

Section V. Replacing Lamps (see Figure 2)

⚠ DANGER



Always disconnect power to the pool or spa light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to installer, serviceman, pool or spa 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.
- B. The following items will be needed:
 1. A new lens gasket (p/n 79108500).
 2. Four (4) new lamps. See Table 1.

Lamp Specifications*					Table 1.
Lamp Voltage	Lamp Wattage	Lamp Size	Lamp Type	No. per Fixture	P/N
12V	35W	MR8		1	650036
12V	35W	MR11	FTF	3	650037

* NOTE: Both 120V and 12V SALs use the same 12V lamps.

⚠ WARNING

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

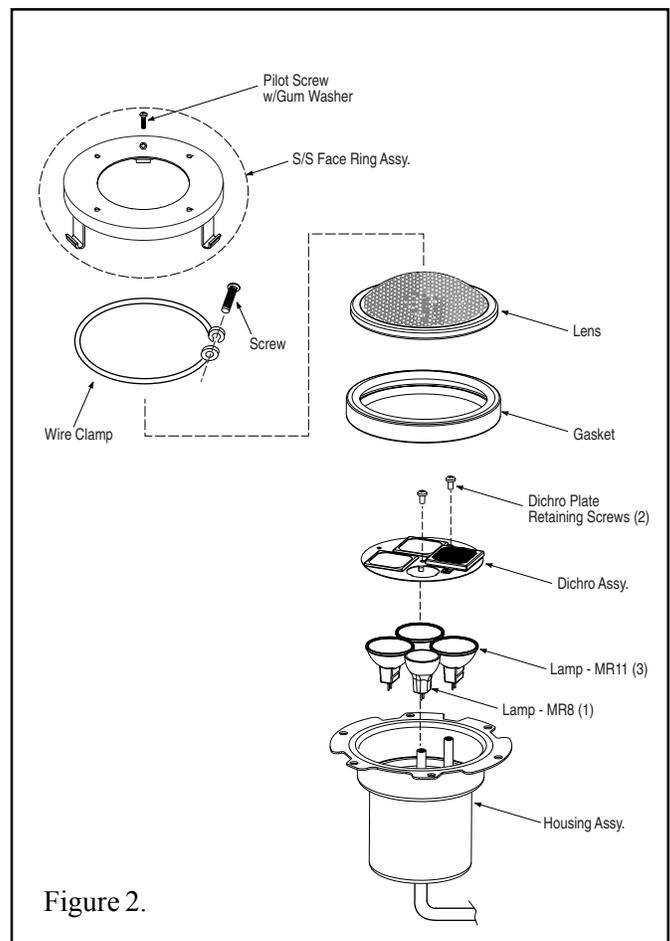
- C. To remove light assembly, remove the special pilot screw at top of face ring, remove light assembly from niche, and gently place assembly on deck. It is not necessary to drain down the pool or spa.

⚠ 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 or spa users, installers or others due to electrical shock.

⚠ WARNING

Be sure the power of **OFF** before removing or installing lamps. Allow lamps to cool before re-lamping. This light fixture uses quartz halogen lamps. Hold lamps on the outside only. **DO NOT** touch the bulb or inside reflector surface with bare hands; doing so could severely reduce lamp life.



- D. Disassemble the light fixture and remove lamps. See Figure 2.

1. Remove the Phillips hex head screw from the wire spring clamp.
 2. Remove the wire spring clamp, face ring, lens and gasket from the housing. Remove the gasket from the lens.
 3. Remove the two Phillips hex head Dichro Plate retaining screws.
 4. Carefully remove the Dichro Plate and four lamps. Discard lamps.
- E. Install the new lamps. See Figure 2.
1. Install the MR8 (small) lamp in the socket labeled "SMALL LAMP".
 2. Install the three MR11 lamps in the remaining sockets.
 3. Position the Dichro Plate over the lamps with round opening over the MR8 (small) lamp. Insure that all three guide tabs are inside of the lamp reflector.
 4. Install the two Dichro Plate retaining screws. Do not over-tighten.

 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 or spa users, installers, or bystanders, or in damage to property.

 WARNING

Always install a new lens gasket (part number 79108500) 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 or spa 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 or spa users, installers, or bystanders, or in damage to property.

- F. Reassemble the fixture. See Figure 3.
1. Remove the gasket from the lens and install a new gasket, p/n 79108500, on the lens. **A NEW LENS GASKET MUST BE USED EACH TIME THE LIGHT IS REASSEMBLED.**
 2. While holding the fixture upright, place the lens with gasket and face ring on top of the light shell. Align the pilot screw in the face ring with the arrow on the label marked "Arrow on this label must line up with the pilot screw on the face ring".
 3. While holding the aligned face ring and shell together, turn the assembly upside down and set it 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. See Figure 4.
 4. With the bent ends of the circular wire clamp pointing up, spread the clamp and place it in the "U" recesses of the face ring clips. Ensure that the bent ends of the clamp are located between the pair of clips as shown in Figure 3, location A. Check to see that the clamp is properly engaged with all of the clips.
 5. Hold the ends of the wire clamp together. Insert the bolt through the open loop and thread it into the nut. Using a Phillips head screwdriver or a 3/8 in. hex nut driver, tighten the screw until the distance between the ends of the clamp equals 1/4 inch or less. See Figure 4.
 6. Discard the old gasket.
- G. Reinstall the fixture.
1. Coil the extra cord around the fixture and place the light assembly into the niche.
 2. Engage the retainer tab on the bottom of the face ring, then pivot the top of the fixture inward 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 or spa users, installers or others due to electrical shock.

- H. Fill pool or spa 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.

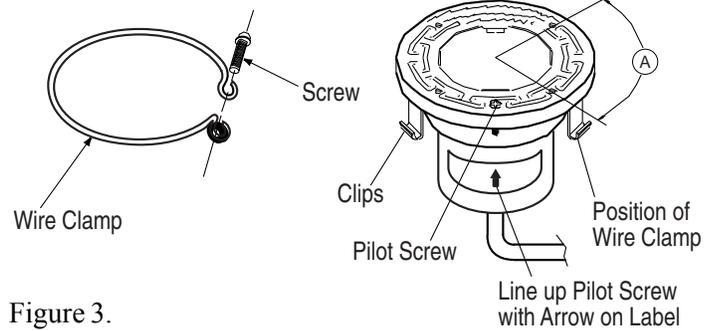


Figure 3.

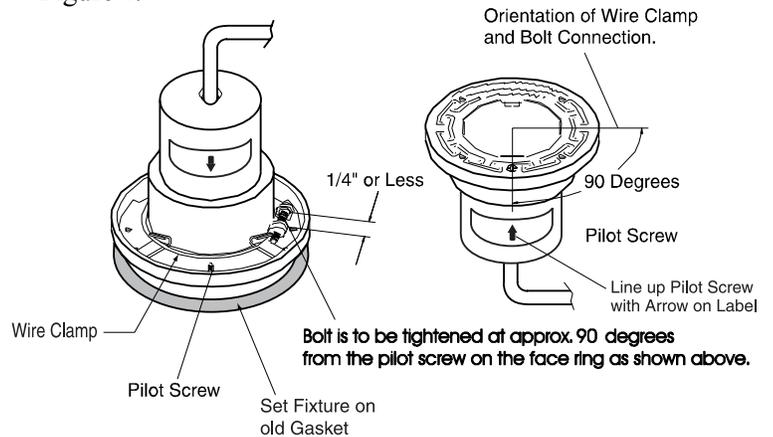
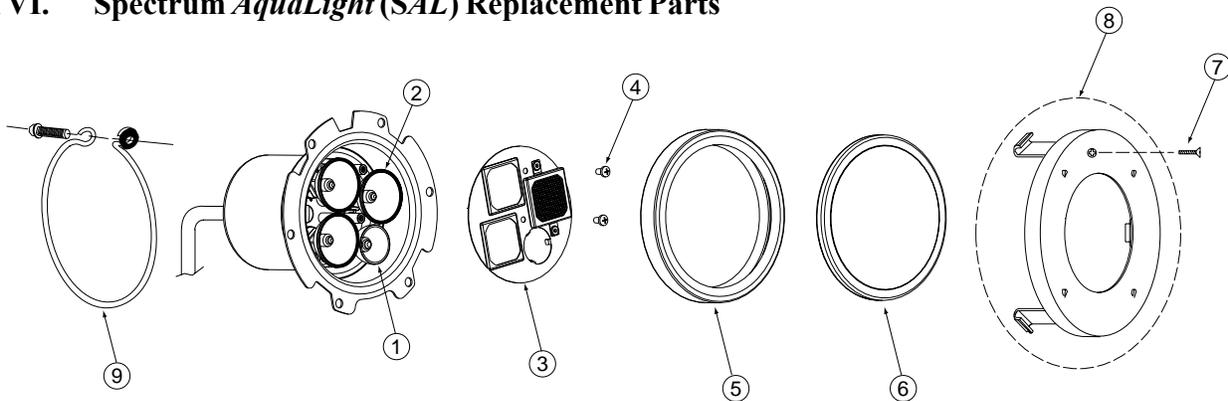


Figure 4.

Section VI. Spectrum AquaLight (SAL) Replacement Parts



1	650036	Lamp, MR8, 35W 12V, (1 req.)
2	650037	Lamp, MR11 FTF, 35W 12V, (3 req.)
3	650066	Dichro Assembly
4	650052	Screw, S/S, Phillips hex hd., 6-32 x 3/8 in.
5	79108500	Gasket, Lens
6	650045	Lens, clear, 4 in. dia., tempered
6	79107800	Lens, clear, 4 in. dia., tempered (Canada only)
7	79104800	Pilot Screw with captive gum washer, brass
7	619355	Pilot Screw with captive gum washer, S/S
8	79111600	Face Ring Assembly, S/S
9	79210400	Uni-tension wire assy., S/S w/ welded nut
		NOT SHOWN
	619570	XPS3-Receiver, X-10

SAVE THESE INSTRUCTIONS.

Pentair Pool Products

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