

SAL[®] Spectrum *AquaLight*[®] 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.

Pentair Water Pool and Spa, Inc.

1620 Hawkins Ave., Sanford, NC 27330 • (800) 831-7133 • (919) 566-8000
10951 West Los Angeles Ave., Moorpark, CA 93021 • (800) 831-7133 • (805) 553-5000
Visit us on the Internet at: www.pentairpool.com or www.staritepool.com



⚠ 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 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.

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10951 West Los Angeles Ave., Moorpark, CA 93021 • (800) 831-7133 • (805) 553-5000

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Section I. Installing light fixture during new pool construction

A. Preparatory steps which must be completed by the electrician before the light fixture is installed; see Figure 1.

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.
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 Water Pool and Spa™ wet niches to insure proper bonding connections and minimize risk of corrosion.
4. The wet niche must be properly installed so that the pilot screw hole is at the 12 o'clock position.

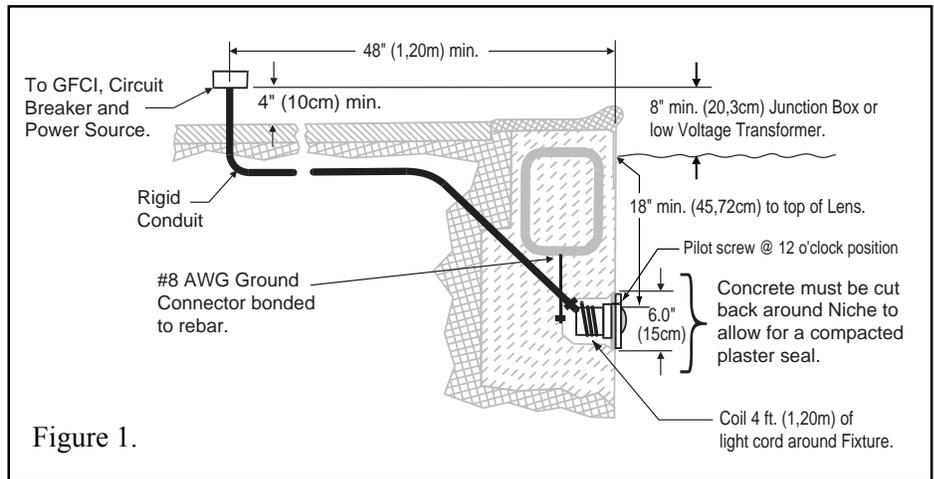


Figure 1.

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.

5. The connection box or Junction Box must be rated IP54 minimum. The terminal block shall conform to EN 60998-2-1 and/or EN 60998-2-2 and should be rated for 2.5mm² wires.
- B. Steps to perform after the electrical system requirements are met.
1. Feed cord through conduit to Junction Box, leaving at least 4 feet (1,20m) of cord at the light fixture to coil around the light; see Figure 1. This 4 feet (1,20m) 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 6 inches (15cm) of cord to make connections.
 3. Strip 6 inches (15cm) of the outer cord jacket to expose the two insulated wires--be careful not to damage the insulation on the inner wires.
 4. Connect both wires to the corresponding circuit wires in the Junction Box 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.

5. 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.

6. 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. Refer to Operating Instructions, Section IV., for full function test.

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.
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 Water Pool and Spa™ wet niches to insure proper bonding connections and minimize risk of corrosion.
4. The connection box or Junction Box must be rated IP54 minimum. The terminal block shall conform to EN 60998-2-1 and/or EN 60998-2-2 and should be rated for 2.5mm² wires.

B. Replacing 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 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.

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 (1,20m) of cord to coil around the light fixture; see Figure 1. This 4 feet (1,20m) 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 (15cm) of cord to make connections.
7. Strip 6 inches (15cm) of the outer cord jacket from the cord to expose the two insulated wires – be careful not to damage the insulation on the inner wires.
8. Connect both wires to the corresponding circuit wires in the Junction Box 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.

9. Replace 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.

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. Refer to Operating Instructions, Section IV., for full function test.

Section III. Switch Options for Synchronizing Multiple *SAL*[®]/*SAm*[®] Fixtures

- A. Multiple *SAL* and/or *SAm* lights with colors *ALWAYS* synchronized.
 1. To the extent allowed by code and capacity of the electrical equipment, multiple *SAL* and *SAm* lights may be controlled with a single switch so their colors will always be synchronized.
- B. Multiple *SAL* and *SAm* lights 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 *SAL* or *SAm* Spectrum *Amerlite*[®] lights, 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 *SAL* or *SAm* lights, 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 *SAL* lights 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.

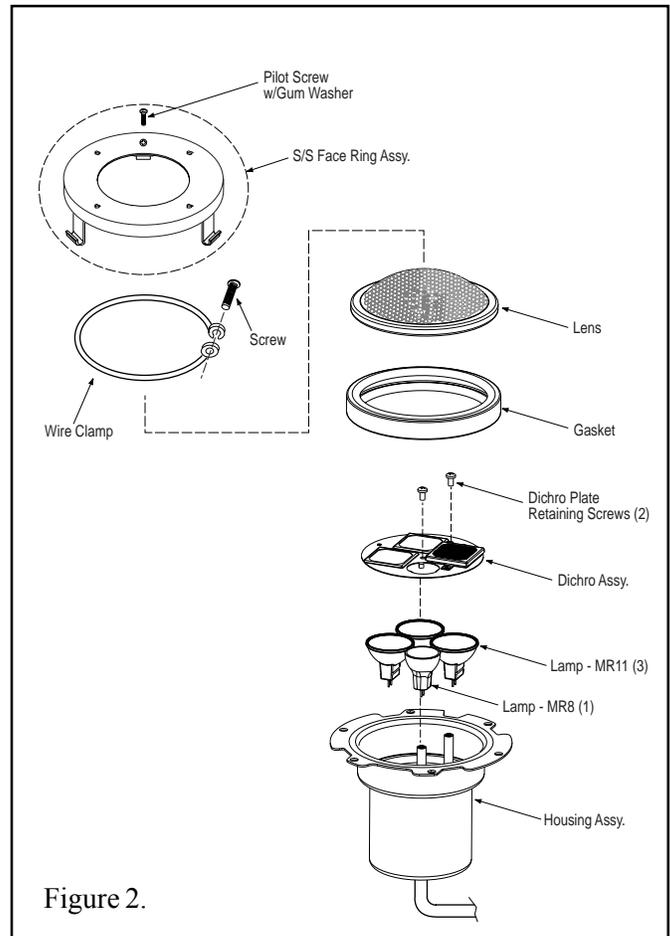
⚠ WARNING

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

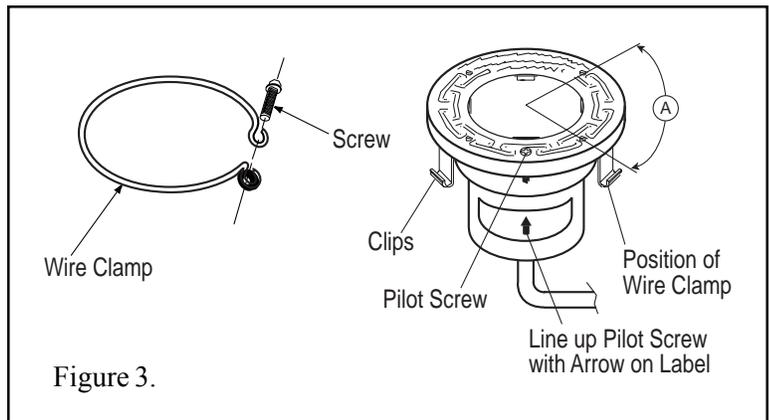
Always install a new lens gasket (P/N 79108500) whenever disassembling the light. Failure to do so may permit water to leak into the assembly which could cause:

- (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 (0.6cm) or less. See Figure 4.
6. Discard the old gasket.

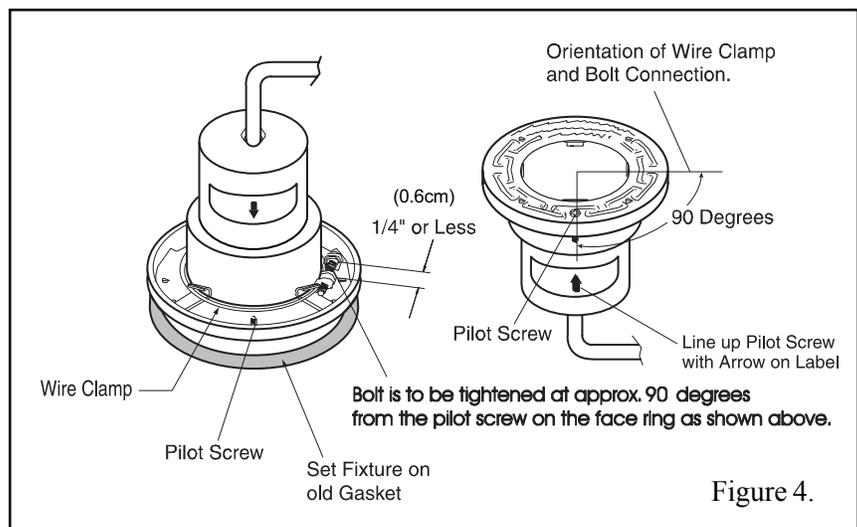
G. Reinstall the fixture.

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.

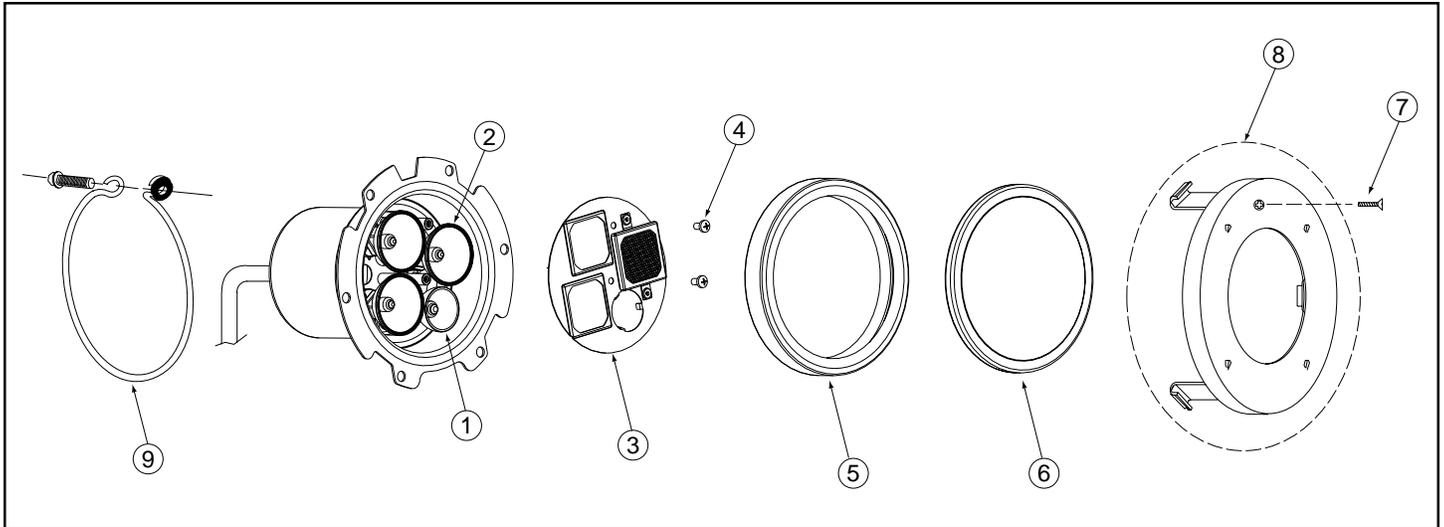
⚠ WARNING

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.



Section VI. SAL® Spectrum AquaLight® Replacement Parts



Item No.	Part No.	Description
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
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

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