

AMERLITE® UNDERWATER LIGHT

INSTALLATION INSTRUCTIONS

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 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) 831-7133 for additional free copies of this manual.

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.

PRODUCT LABELING: Certain product labeling has been provided in French and Spanish.

Install these labels over the corresponding English text label if the personnel operating or servicing the product is fluent in either of these languages.

If more than one language is spoken by personnel operating or servicing this equipment, then install the additional labels of the required language adjacent to the English text label. If insufficient space is available on the product to install multiple labels, then these labels should be placed on a placard or sign and posted near the equipment where it is visible to all who operate or service this equipment.

Before installing the label, remove all dirt or grease from the surface that the labels will be installed upon using a mild detergent solution.

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:

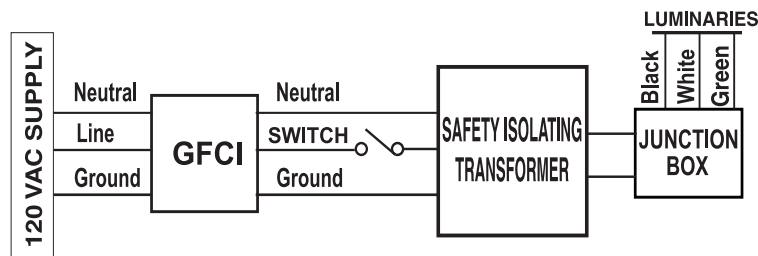
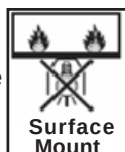
 **WARNING!** Always install a new lens gasket (see part number in User's Guide), when ever reassembling the light. Failure to do so may permit water to leak into the assembly which could cause; (a) an electrical hazard resulting in death or serious injury to pool users, installer, or others due to electrical 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:**
12 0VAC  , 50/60 Hz

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

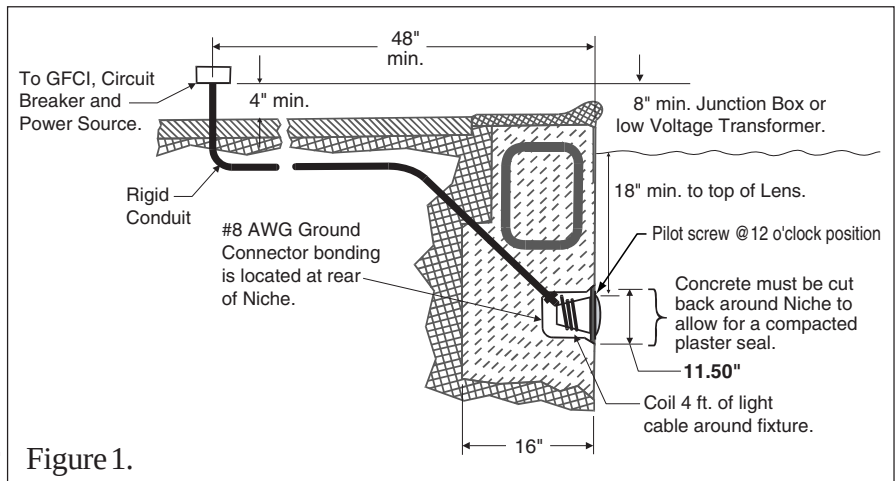


NOTE: FOR 120 VAC ILLUMINARIES, ISOLATION TRANSFORMER IS INCLUDED IN LIGHT FIXTURE.

SECTION I. Installing light fixture during new pool construction

A. Preparatory steps which must be completed by the electrician before 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. Some of the requirements of the National Electrical Code which the pool's electrical system must meet are listed below.
 - a. The lighting circuit must have a Ground Fault Circuit Interrupter (GFCI), and 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 water level, 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 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.
 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 4 feet of cord at the light fixture to coil around the light; see Figure 1. This 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 6 inches of cord to make connections.
 3. Strip 6 inches of the outer cord jacket to expose the three insulated wires. Be careful not to damage the insulation on the three inner wires.
 4. 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.
 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 has a Ground Fault Circuit Interrupter (GFCI), and has an appropriately rated circuit breaker.
 - b. The Junction Box (or, for 12 volt models, the low voltage transformer) is located at least 8 inches above water level and at least 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 are properly electrically bonded.
 - d. The wet niche is 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 is properly electrically bonded and grounded via the No. 8 AWG ground connector located at the rear of the niche; see Figure 1.
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 and grounding connections.

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.
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 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

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 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.

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, and the switch that 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.

1. Turn off main electrical switch or circuit breaker, as well as the switch which operates the underwater light itself.
2. You will need the following items.
 - a. A new lens gasket (p/n 79101600).
 - b. A lamp, for proper type and wattage; see Table 1.

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.

Table 1.

Lamp Specifications:

120 volt - 300 watt - R-40 lamp
120 volt - 400 watt - R-40 lamp
120 volt - 500 watt - R-40 lamp
12 volt - 300 watt - R-40 lamp
12 volt - 100 watt - R-40 lamp

12* volt Models

100 watt
300 watt

120 volt Models

300 watt
400 watt
500 watt

*Trnsfmr. req.

⚠ WARNING

Always install a new lens gasket (part number 79101600) 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 could result in serious injury to pool users, installers, bystanders, or in property damage.

3. 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.

4. Disassemble light fixture and remove bulb. Remove and discard old gasket; see Figure 2.
5. Install new gasket during reassembly of light, Pentair Aquatic Systems part number 79101600.

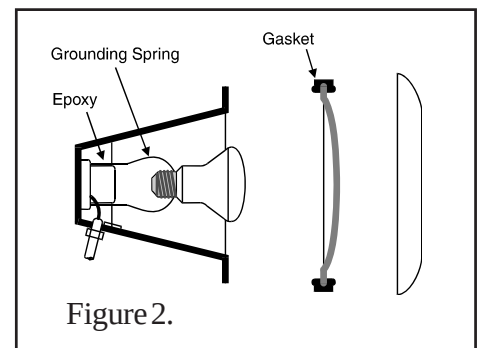
⚠ WARNING

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, bystanders, or in damage to property.

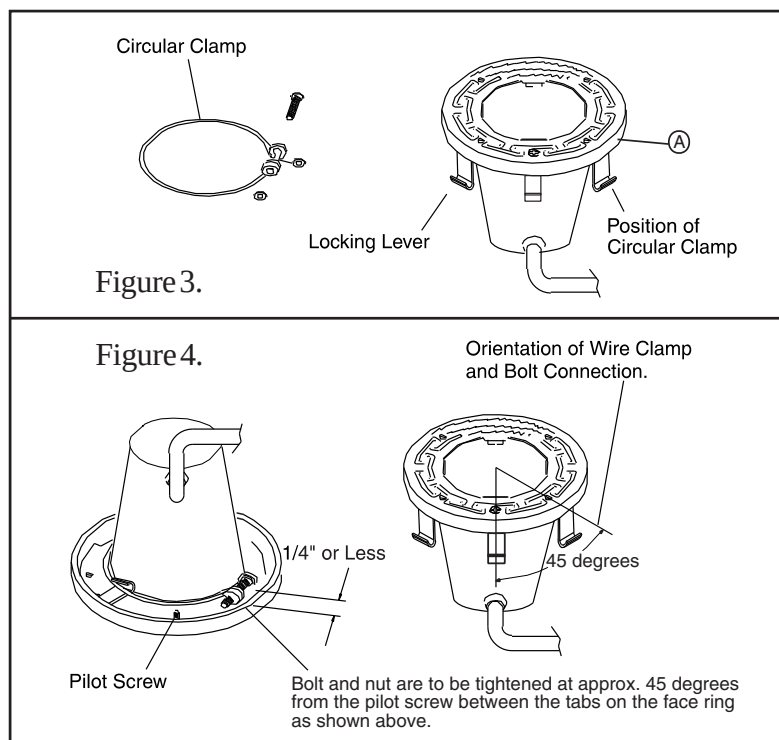
6. Align the pilot screw on the face ring with the first “E” in the word “BEFORE” on the lens face. Then align the lens/facing assembly to the housing by lining up the pilot screw with the arrow on the warning label.
7. Secure ring to light fixture. Sealing screws must be tightened in the following manner to assure a proper seal;
 - a. For lights with chrome or brass face ring:
 - (1) Partly tighten the screw at the 12 o’ clock position, and then partly tighten the screw at the 6 o’ clock position. Partly tighten the screw at another ‘opposite’ position, and then partly tighten the screw directly across from it.
 - (2) Continue partly tightening all screws in the above sequence until all screws are evenly and securely tightened. Recommended 20 inch pounds torque.
 - b. For lights with stainless steel face ring:
 - (1) With the light resting on its base, align the face ring, and lens/gasket on top of the light shell as described in Step 6. A NEW LENS GASKET MUST BE USED EACH TIME THE LIGHT IS REASSEMBLED. The locking levers should all be hanging freely down to install over the lens and gasket. Before installing the Unitension Clamp be sure that the gap at the ends of the clamp is approximately 1 in. apart. Pull the ends of the Unitension Clamp past one another to accomplish this.
 - (2) 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. Be sure the bent ends of the clamp are located between the pair of locking levers as shown in Figure 3, location A. Check to see that the clamp is properly engaged with all of the levers.
 - (3) Turn the light so that it is now resting on its lens. Tighten the bolt and nut until the distance between the ends of the clamp equals 1/4 inch or less; see Figure 4.
8. Replace light assembly into niche and tighten special pilot screw.

⚠ WARNING

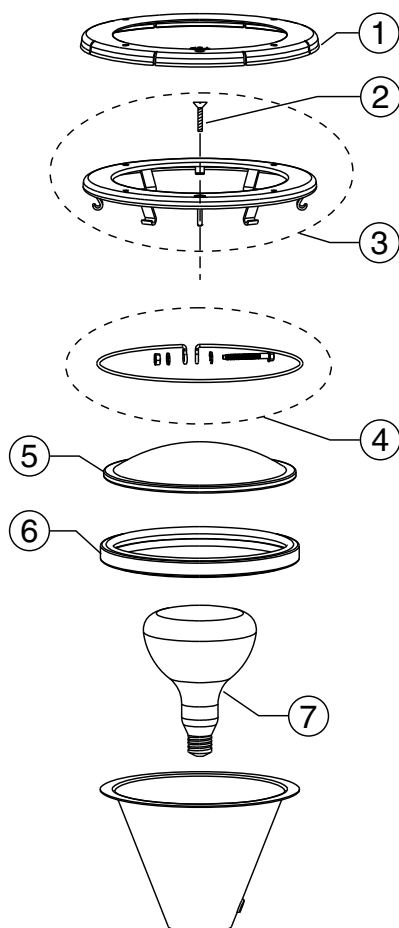
Use only the special pilot screw provided with this underwater light. This screw mounts and electrically grounds the housing securely to the mounting ring and wet niche. Failure to use the screw provided could create an electrical hazard which could result in death or serious injury to pool users, installers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



9. 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 operates the underwater light itself, to check for proper operation.



SECTION IV. Amerlite Replacement Parts



Item No.	Part No.	Description
1	79212100	Face ring, large plastic, for S/S only, white
1	79212165	Face ring, large plastic, for S/S only, gray
1	79212111	Face ring, large plastic, for S/S only, black
2	79104800	Pilot Screw, with captive gum washer, brass
2	619355	Pilot Screw, with captive gum washer, S/S
3	79110600	Face ring assembly, S/S
4	79111000	Uni-tension wire clamp assy.
5	79100100	Lens, clear, 8-3/8 in. dia., tempered
5	79100200	Lens, med. blue, 8-3/8 in. dia., heat resistant
6	79101600	Gasket, 8-3/8 in. lens
7	79101800	Floodlamp, med. base, 100 watt, 12 volt
7	79101900	Floodlamp, med. base, 300 watt, 12 volt
7	79102100	Floodlamp, med. base, 500 watt, 120 volt
7	79107600	Floodlamp, med. base, 300 watt, 120 volt
7	79102200	Floodlamp, med. base, 400 watt, 120 volt
	78900700	Kwik-change lens cover, green
	78900800	Kwik-change lens cover, blue
	78900900	Kwik-change lens cover, red

SAVE THESE INSTRUCTIONS



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LÁMPARA SUBACUÁTICA AMERLITE®

MANUAL DEL PROPIETARIO

IMPORTANTES INSTRUCTIVOS DE SEGURIDAD

LEA Y SIGA TODOS LOS INSTRUCTIVOS

PROTEJA ESTOS INSTRUCTIVOS

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PELIGRO



Riesgo de choque eléctrico o electrocución

Esta lámpara subacuática tiene que instalarse por un electricista con licencia o certificación y de acuerdo con el Código Eléctrico Nacional (EE. UU.) y todos los códigos y reglamentos locales respectivos. La instalación inadecuada creará un riesgo eléctrico que podría resultar en la muerte o en lesiones graves a los usuarios de la piscina, a los instaladores o a otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad. Lea y siga los instructivos específicos abajo.

ADVERTENCIA

Antes de instalar esta lámpara subacuática de Pentair Aquatic Systems, lea y siga todos los avisos de advertencia y los instructivos que acompañan a la lámpara subacuática. El no apegarse a los avisos de seguridad y a los instructivos podría dar por resultado una lesión grave, la muerte o daños a la propiedad. Comuníquese con su proveedor local para obtener ejemplares gratuitos o llame a Pentair Aquatic Systems al (805) 553-5000.

Aviso importante



A la atención del instalador(a):

Este manual contiene información importante sobre la instalación, operación y uso en forma segura de este producto. Esta información debe dársele al dueño(a)/operador(a) de este equipo.

Etiquetado del Producto

En ciertos productos, hemos provisto el etiquetado en francés y en español.

Ponga estas etiquetas sobre la etiqueta del texto inglés correspondiente si el personal que opera o que da servicio al producto sabe bien cualquiera de estos idiomas.

Si el personal que opera o que da servicio al equipo consiste de personas que hablan diferentes idiomas, entonces puede colocar las etiquetas adicionales del idioma requerido junto a la etiqueta en inglés. Si no hay suficiente espacio en el producto para instalar varias etiquetas, entonces dichas etiquetas deberán ponerse en una placa o letrero y colocarse cerca del equipo donde puedan ser vistas por quienes operan o dan servicio a este equipo.

Antes de poner la(s) etiqueta(s), quite toda la mugre o grasa que haya en la superficie sobre la que se va(n) a poner usando una solución de detergente blando.

⚠ ¡PELIGRO! ¡Riesgo de Golpe Eléctrico o Electrocución!



Este producto debe ser instalado por un electricista certificado o licenciado o por un representante de servicio de mantenimiento de piscinas calificado de acuerdo con el Código Nacional de Electricidad y todas las regulaciones y códigos locales aplicables. Una instalación inapropiada creará un peligro eléctrico que podría resultar en muerte — o lesiones graves a los usuarios de la piscina, instaladores u otras personas debido a un golpe eléctrico y puede causar daño a la propiedad. Siempre desconecte la fuente de poder de las luces de la piscina en la caja de fusibles antes de realizar un servicio de mantenimiento de las luces. El no hacerlo de esta forma puede resultar en la muerte o lesiones serias al representante de servicios de mantenimiento, usuarios de la piscina u otros debido a un golpe eléctrico. LEA Y SIGA TODAS LAS INSTRUCCIONES DE ESTE MANUAL.

⚠ ADVERTENCIA — Importante información de seguridad para la instalación de luces y nichos Pentair

- Todas las instalaciones de nichos y luces deben estar en conformidad con todos los códigos. Si un código local exige un sello para cable, utilice nichos plásticos Pentair (P/N 79206600 y P/N 79206700).
- Por ningún motivo reemplace luces empalmando cables bajo el agua o detrás del nicho.

⚠ ADVERTENCIA — RIESGO DE GOLPE ELÉCTRICO Y LESIONES.

UTILICE SOLO EL MÉTODO DE INSTALACIÓN ESPECIFICADO MÁS ABAJO.

Importante información de seguridad para instalaciones de reflectores de fuentes

Lugar de uso de Lámpara (Luz)	Reflector de Fuente Pentair* (P/N 560000 – P/N 560001) (P/N 560002 – P/N 560003)	Método de Instalación Requerido
Piscina o Spa	Lámpara (Luz) para Piscina (o Spa) con nicho impermeables	SÓLO carcasa de reflector (Casco de molde). NO UTILIZAR Soporte para reflector de fuente.
Fuente	Lámpara (Luz) para Piscina (o Spa) con nicho impermeable sumergible	Carcasa para reflector (Casco de molde) o soporte para reflector de fuente.

(*) **Nota:** Las lámparas de nicho impermeable que cumplen con los requisitos para ambos usos, pueden llevar ya sea la marca de certificación UL para Lámparas listadas para piscinas (Spa) de nicho impermeable, como la marca de certificación UL para Lámparas listadas de nicho impermeable sumergible. Una Lámpara que no lleva la marca de Listado UL correspondiente, no es considerada por UL como fabricada bajo el Listado y Servicio de Seguimiento UL para el lugar de uso asociado.

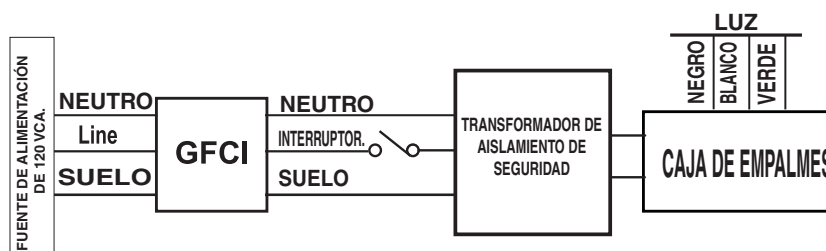
⚠ **ADVERTENCIA —** *El lente de la luz pueden calentarse durante su uso. Los usuarios deben evitar contacto con la luz como quemaduras graves pueden resultar del contacto prolongado con el LUZ.*

⚠ **¡ADVERTENCIA!** Siempre instale una nueva lente la junta (ver el número de pieza en la Guía de usuario), cuando nunca montar la luz. De no hacerlo, podría permitir fugas de agua en la asamblea general, que podría causar; (a) el peligro de descarga eléctrica que provoca la muerte o lesiones graves a la piscina los usuarios, instalador, o a otras personas debido a una descarga eléctrica, o (b) rotura de la lámpara o del cristalino, que también podría resultar en lesiones graves para usuario grupo, instaladores, o de las personas, o daños a la propiedad.

SUSTITUIR LAS ROTURAS PROTECTOR DE LALENTE (FISURAS) CON UNA NUEVALENTE Y LA EMPAQUETADURA. • PARA 12

VAC luminarias: UTILIZAR SIEMPRE UN TRANSFORMADOR DE AISLAMIENTO DE SEGURIDAD DE luminarias. Vea el diagrama a la derecha. Nota: Conecte los tres (o dos cables) los cables de los cables del circuito correspondiente en la caja de conexión (cable negro al poder, cable blanco en común, y el cable verde a tierra (para una luz de 3 cables).

•12 VCA luminarias ESPECIFICACIÓN:
120 VCA  , 50/60 Hz



SECCIÓN I. Instalación del accesorio para lámpara durante la construcción de una piscina nueva

A. Los siguientes pasos de preparación tienen que haberse completado por el electricista antes de instalar el accesorio para lámpara. (Vea la figura 1 abajo.)

1. Verifique que la piscina cumpla con todos los requisitos del Código Eléctrico Nacional vigente y con todos los códigos y reglamentos locales. Un electricista con licencia o certificación tiene que ser la persona que instale el sistema eléctrico el cual deberá cumplir o exceder dichos requisitos antes de instalar la lámpara subacuática. Algunos de los requisitos del Código Eléctrico Nacional que el sistema eléctrico de la piscina tiene que cumplir aparecen en seguida. Verifique que:
 - a. El circuito de luz tenga un interruptor por corriente de pérdida a tierra (GFCI), y un disyuntor clasificado correctamente.
 - b. La caja de empalmes (o, para los modelos de 12 voltios, el transformador de baja tensión) esté colocada por lo menos a 20.3 centímetros (8 pulgadas) arriba del nivel de tierra y por lo menos a 1.22 m (48 pulgadas) de distancia del borde de la piscina. (Vea la figura 1 abajo.)
 - c. El accesorio para lámparas y todos los artículos metálicos que estén a menos de 1.5 metros (5 pies) de distancia tienen que estar unidos eléctricamente en la forma correcta.
 - d. El nicho en húmedo debe estar correctamente instalado de manera que el tornillo piloto se encuentre en la posición de las 12 del reloj y que el borde superior del lente de la lámpara subacuática se encuentre a un mínimo de 45.72 cm (18 pulg.) por debajo de la superficie del agua de la piscina. (Vea la figura 1 abajo.)

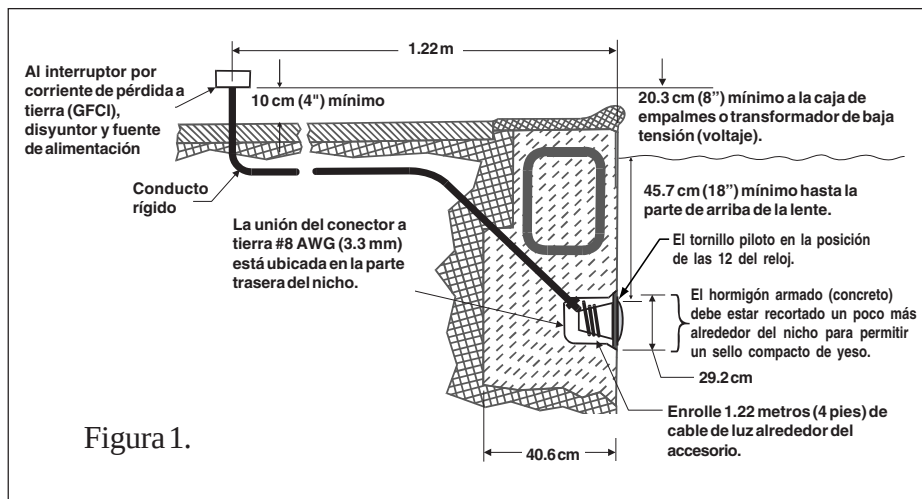


Figura 1.

NOTA

La orientación requerida para todas las lámparas Pentair es con el tornillo piloto en la posición de las 12 del reloj. Esto es garantizado por la instalación correcta del nicho.

- e. El nicho mojado está unido eléctricamente en la forma correcta y conectado a tierra a través del conector a tierra Núm. 8 AWG (3.3 mm) ubicado en la parte trasera del nicho. (Vea la figura 1.)
2. Para estar seguro de que el sistema eléctrico de la piscina satisface todos los requisitos aplicables, el electricista también deberá consultar al departamento de construcciones de la localidad.
3. Sólo use los nichos mojados de Pentair Water Pool and Spa, Inc. para cerciorarse de una unión eléctrica y de una conexión a tierra correctas.
- B. Pasos que deben realizarse después de que se haya cumplido con los requisitos del sistema eléctrico.
1. Pase el cordón a través del conducto hasta la caja de empalmes, dejando por lo menos 1.22 metros (4 pies) de cordón o cable en el accesorio para lámpara para enrollarlo en la misma lámpara. (Vea la figura 1.) Este metro veintidós centímetros (4 pies) de cordón alrededor del accesorio de la lámpara le permitirá darle servicio a dicha lámpara después de que se llene de agua la piscina.
 2. Corte el cordón en la caja de empalmes, dejando por lo menos 15 cm (6 pulgadas) de cordón para hacer las conexiones.
 3. Pele 15 cm (6 pulgadas) de la punta de la envoltura externa del cordón para poner al descubierto los tres alambres aislados — tenga cuidado de no dañar el aislante de los tres alambres internos.
 4. Conecte los tres alambres a los alambres correspondientes en el circuito en la caja de empalmes y fije la tapa de la caja de empalmes en su lugar.
 5. Para luces con 2-los conductores (sin cable de puesta a tierra) conecte dos cables a los cables del circuito correspondiente en la caja de empalmes, el cable negro a la toma eléctrica, cable blanco común y seguro de la cubierta de la caja de empalmes en el lugar.

⚠️ ADVERTENCIA

Riesgo de choque eléctrico. Conéctese sólo a un receptáculo del tipo que tiene conexión a tierra protegido mediante un interruptor por corriente de pérdida a tierra (GFCI). No use cables o cordones de extensión para la conexión. El no hacer esto en la forma indicada podría resultar en la muerte o en lesiones personales graves.

¿¿¿QUÉ ES UN GFCI???

Un interruptor por corriente de pérdida a tierra (GFCI), es un dispositivo eléctrico de seguridad diseñado con el fin de medir fugas eléctricas en un circuito. Es mucho más sensible que un disyuntor estándar. Las combinaciones de interruptores equipados con un GFCI y tomacorrientes reaccionan ante las fugas inseguras y apagan la corriente antes de que pueda ocurrir una lesión por choque eléctrico. Cualquier dispositivo eléctrico que se use a menos de 3 metros (10 pies) de una piscina tiene que estar protegido por un tomacorrientes equipado con un GFCI o por un disyuntor equipado con un GFCI hecho para usarse precisamente con ese fin.

⚠️ ADVERTENCIA

Nunca encienda esta lámpara subacuática durante más de 10 segundos a no ser que ésta esté completamente sumergida en el agua. Si no está totalmente sumergida, el conjunto de la lámpara se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto a su vez podría causar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o daños a la propiedad.

6. Vuelva a colocar el conjunto de la lámpara en el nicho y apriete el tornillo piloto especial de acero inoxidable.

⚠️ ADVERTENCIA

Use solamente el tornillo piloto especial de acero inoxidable suministrado con esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

7. Llene la piscina hasta que la lámpara subacuática quede completamente sumergida en el agua antes de encender la luz durante más de 10 segundos. Encienda el interruptor principal o el disyuntor, así como también el interruptor que hace funcionar la lámpara subacuática en sí, para verificar que esté funcionando adecuadamente.

SECCIÓN II. Cambio del accesorio para lámpara en una piscina

⚠️ PELIGRO

Riesgo de choque eléctrico o electrocución



Esta lámpara subacuática tiene que instalarse por un electricista con licencia o certificación y de acuerdo con el Código Eléctrico Nacional (EE. UU.) y todos los códigos y reglamentos locales respectivos. La instalación inadecuada creará un riesgo eléctrico que podría resultar en la muerte o en lesiones graves a los usuarios de la piscina, a los instaladores o a otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

Siempre desconecte la alimentación eléctrica de la luz de la piscina en el disyuntor antes de darle servicio a la lámpara. El no hacerlo podría resultar en la muerte o en lesiones graves a la persona que esté dando servicio, a los usuarios de la piscina o a otras personas debido a un choque eléctrico.

A. Antes de cambiar el accesorio para lámpara.

1. Verifique que la piscina satisfaga los requisitos del Código Eléctrico Nacional vigente y todos los códigos y reglamentos de la localidad. Un electricista con licencia o certificación es quien tiene que instalar el sistema eléctrico con el fin de cumplir o exceder dichos requisitos antes de que se instale la lámpara subacuática. Algunos de los requisitos del Código Eléctrico Nacional que el sistema eléctrico de la piscina tiene que cumplir son los siguientes. Verifique que:
 - a. El circuito de luz tiene que tener un interruptor por corriente de pérdida a tierra (GFCI), y tener un disyuntor clasificado correctamente.
 - b. La caja de empalmes (o, para los modelos de 12 voltios, el transformador de baja tensión) debe estar por lo menos a 20.3 centímetros (8 pulgadas) arriba del nivel de tierra y por lo menos a 1.22 m (48 pulgadas) de distancia del borde de la piscina. (Vea la figura 1 abajo.)

- c. El accesorio para lámpara y todos los artículos metálicos que estén a menos de 1.5 metros (5 pies) de distancia tienen que estar unidos eléctricamente en la forma correcta.
- d. El nicho mojado está instalado correctamente de tal manera que el borde superior de la lente de la lámpara subacuática está por lo menos a 45.72 cm (18 pulgadas) por debajo de la superficie del agua en la piscina. (Vea la figura 1 abajo.)
- e. El nicho mojado está unido eléctricamente en la forma correcta y conectado a tierra a través del conector a tierra Núm. 8 AWG ubicado en la parte trasera del nicho. (Vea la figura 1.)

NOTA

El sistema eléctrico de la piscina o bañera de hidromasaje (spa) se puede verificar con un Pool and Spa Electrical Qualification Test Kit (Juego de Prueba para Calificar Piscinas y Bañeras de Hidromasaje). Este juego de prueba está disponible con Pentair Aquatic Systems. La inspección del sistema eléctrico utilizando el juego arriba indicado tiene que realizarse por personal certificado y capacitado para ello.

- 2. Para estar seguro de que el sistema eléctrico de la piscina satisface todos los requisitos aplicables, el electricista también deberá consultar al departamento de construcciones de la localidad.
- 3. Sólo use los nichos mojados de Pentair Water Pool and Spa, Inc. para cerciorarse de una unión eléctrica y de una conexión a tierra correctas.

B. Cambio del accesorio para lámpara después de cumplir con los requisitos del sistema eléctrico.

ADVERTENCIA

El no asegurarse de que el sistema eléctrico de la piscina cumpla con los requisitos vigentes del código antes de instalar la lámpara subacuática creará un peligro eléctrico que podría resultar en la muerte o en una lesión grave de los usuarios de la piscina, instaladores, u otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

- 1. Apague el interruptor eléctrico principal o el disyuntor, así como también el interruptor que opera la lámpara subacuática en sí.
- 2. Para quitar el conjunto de la lámpara, saque el tornillo piloto especial de acero inoxidable que está en la parte de arriba del aro de la carátula, saque del nicho al conjunto de la lámpara y póngalo en el piso junto a la piscina.

ADVERTENCIA

Cerciórese de guardar el tornillo piloto especial de acero inoxidable de esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

- 3. Quite la cubierta de la caja de empalmes, desconecte los alambres del accesorio para lámpara, y tire del cordón a través del conducto.
- 4. Pase el nuevo cordón del accesorio para lámpara a través del conducto desde el nicho hasta la caja de empalmes.

NOTA:

Dependiendo de la longitud del conducto, podrían necesitarse herramientas especiales para tirar del cordón a través del conducto.

- 5. Deje por lo menos 1.22 metros (4 pies) de cordón o cable alrededor del accesorio de la lámpara. (Vea la figura 1.) Este metro veintidós centímetros (4 pies) de cordón enrollado alrededor del accesorio de la lámpara permitirá que se le dé servicio a la lámpara después de que se llene de agua la piscina.
- 6. Corte el cordón en la caja de empalmes, dejando por lo menos 15 cm (6 pulgadas) de cordón para hacer las conexiones.
- 7. Pele 15 cm (6 pulgadas) de la punta de la envoltura externa del cordón para poner al descubierto los tres alambres aislados — tenga cuidado de no dañar el aislante de los tres alambres internos.
- 8. Conecte los tres alambres a los alambres correspondientes en el circuito en la caja de empalmes (el alambre negro a la fuente de alimentación, el blanco al común de masa y el verde a tierra) y fije la tapa de la caja de empalmes en su lugar.

ADVERTENCIA

Nunca encienda esta lámpara subacuática durante más de 10 segundos a no ser que ésta esté completamente sumergida en el agua. Si no está totalmente sumergida, el conjunto de la lámpara se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto a su vez podría causar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o daños a la propiedad.

9. Vuelva a colocar el conjunto de la lámpara en el nicho y apriete el tornillo piloto especial de acero inoxidable.

ADVERTENCIA

Use solamente el tornillo piloto especial de acero inoxidable suministrado con esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

10. Llene la piscina hasta que la lámpara subacuática quede completamente sumergida en el agua antes de encender la luz durante más de 10 segundos. Encienda el interruptor principal o el disyuntor, así como también el interruptor que hace funcionar la lámpara subacuática en sí, para verificar que esté funcionando adecuadamente.

SECCIÓN III. Cambio de la bombilla (foco) únicamente

PELIGRO



Siempre desconecte la alimentación eléctrica de la luz de la piscina en el disyuntor antes de darle servicio a la lámpara. El no hacerlo podría resultar en la muerte o en lesiones graves al instalador, a la persona que esté dando servicio, a los usuarios de la piscina o a otras personas debido a un choque eléctrico.

1. Apague el interruptor eléctrico principal o el disyuntor, así como también el interruptor que opera la lámpara subacuática en sí.
2. Necesitará conseguir lo siguiente:
 - a. Un empaque nuevo de lente (número de parte 79101600).
 - b. El tipo correcto de lámpara y el vataje adecuado (vea la tabla 1).

ADVERTENCIA

Reemplace la lámpara por otra que sea de tipo y vataje similares. El no reemplazar la lámpara con el mismo tipo de lámpara dañará el conjunto de la misma y podría causar un peligro eléctrico que dé por resultado la muerte o lesiones graves a los usuarios de la piscina, instaladores, u otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

ADVERTENCIA

Siempre instale un empaque nuevo para la lente (número de parte 79101600) cada vez que desarme la luz. El no hacer esto podría permitir que el agua entrase al conjunto, lo cual podría causar:

- (a) un peligro eléctrico que podría resultar en la muerte o en una lesión seria a los usuarios de la piscina, instaladores u otras personas debido a un choque eléctrico, o
- (b) la ruptura de la lámpara o lente que, en forma similar, podría resultar en una lesión seria a los usuarios de la piscina, instaladores o personas cercanas, o daños a la propiedad.

3. Para quitar el conjunto de la lámpara, saque el tornillo piloto especial de acero inoxidable que está en la parte de arriba del aro de la carátula, saque del nicho al conjunto de la lámpara y póngalo en el piso junto a la piscina.

ADVERTENCIA

Cerciórese de guardar el tornillo piloto especial de acero inoxidable de esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

4. Desarme el accesorio para lámpara y quite la bombilla (foco). Quite y deseche el viejo empaque (junta). (Vea la figura 2.)

5. Instale el nuevo empaque al armar de nuevo la luz, el número de parte de Pentair Aquatic Systems es el 79101600.

⚠️ ADVERTENCIA

Nunca encienda esta lámpara subacuática durante más de 10 segundos a no ser que ésta esté completamente sumergida en el agua. Si no está totalmente sumergida, el conjunto de la lámpara se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto a su vez podría causar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o daños a la propiedad.

6. Alinee el tornillo piloto del aro de la carátula con la primera letra «E» de la palabra «BEFORE» que está en el frente de la lente. Después alinee este conjunto de aro de lente/carátula con el bastidor, alineando para ello el tornillo piloto con la flecha en la etiqueta de advertencia.

7. Asegure el aro al accesorio de iluminación. Los tornillos de sellado tienen que apretarse de la siguiente forma para asegurar un sellado adecuado:

a. Para los faros con un aro de carátula de cromo o de latón:

- (1) Apriete parcialmente el tornillo en la posición de las 12 horas, y después apriete parcialmente el tornillo en la posición de las 6 horas. Apriete parcialmente el tornillo en alguna otra posición «opuesta», y después apriete parcialmente el tornillo que esté directamente opuesto a ese tornillo.
- (2) Continúe apretando parcialmente todos los tornillos en la secuencia arriba indicada hasta que todos los tornillos estén apretados en forma pareja y segura. (Se recomienda una torsión de 20 pulgadas libra.)

b. Para los faros con un aro de carátula de acero inoxidable: Coloque el tornillo y la tuerca aproximadamente a 45 grados a la derecha del tornillo piloto especial y apriete la tuerca en la abrazadera de unitensión hasta que la distancia entre los extremos de la abrazadera sea igual a 1/4 de pulgada.

(1) Con el faro descansando sobre su base, coloque la junta en la parte superior de la armazón del faro como se describió en el paso 7. **SE TIENE QUE USAR UNA JUNTA NUEVA DE LENTE CADA VEZ QUE SE VUELVA A ARMAR EL FARO.** Centre el aro de carátula de acero inoxidable y colóquelo encima del grupo formado por la lente y la junta. Todas las palancas de bloqueo deben estar colgando libremente y hacia abajo con el fin de instalar encima la lente y la junta. Antes de instalar la abrazadera de unitensión cerciórese de que la separación entre las puntas de la abrazadera sea de aproximadamente 1 pulgada (2.5 cm). (Tire de las puntas de la abrazadera de unitensión para lograr esto.)

(2) Con las puntas dobladas de la abrazadera circular de unitensión apuntando hacia abajo abra la abrazadera y colóquela en las muescas en «U» de las palancas de bloqueo. Cerciórese de que las puntas dobladas de la abrazadera estén colocadas entre el par de palancas de bloqueo como se muestra en la figura 3, indicación A. Verifique que la abrazadera esté bien enganchada con todas las palancas.

(3) Déle vuelta al faro de manera que éste repose sobre la lente. Apriete el perno y la tuerca hasta que la distancia entre las puntas de la abrazadera sea igual a 1/4 de pulgada o menos; vea la figura 4.

8. Vuelva a colocar el conjunto del faro en el nicho y apriete el tornillo piloto especial.

TABLA 1.

Especificaciones de la lámpara:	Modelos de 12 ^o voltios
120 voltios - 300 vatios - R-40 lámp.	100 vatios
120 voltios - 400 vatios - R-40 lámp.	300 vatios
120 voltios - 500 vatios - R-40 lámp.	* Se requiere transformador
12 voltios - 300 vatios - R-40 lámp.	Modelos de 120 voltios
12 voltios - 100 vatios - R-40 lámp.	300 vatios
	400 vatios
	500 vatios

⚠️ ADVERTENCIA

Use solamente el tornillo piloto especial de acero inoxidable suministrado con esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

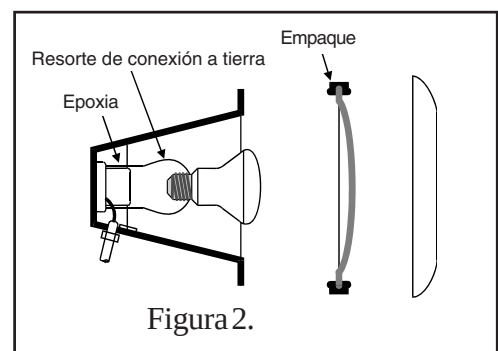


Figura 2.

9. Llene la piscina hasta que la lámpara subacuática quede completamente sumergida en el agua antes de encender la luz durante más de 10 segundos. Encienda el interruptor principal o el disyuntor, así como también el interruptor que hace funcionar la lámpara subacuática en sí, para verificar que esté funcionando adecuadamente.

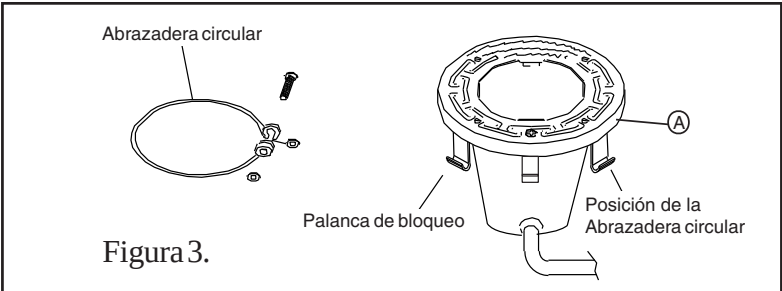


Figura 3.

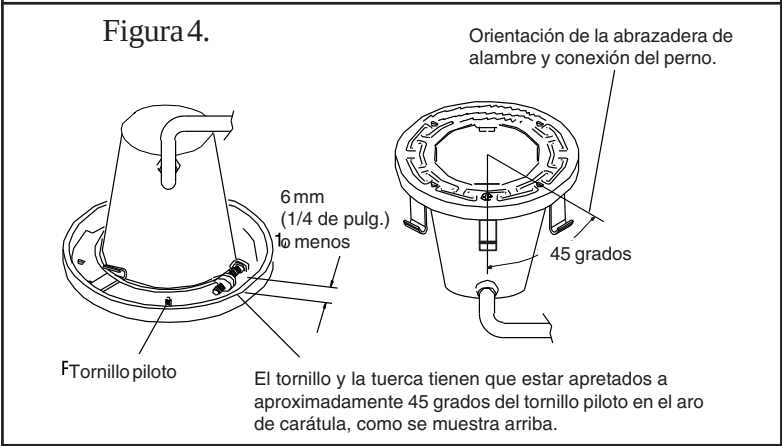
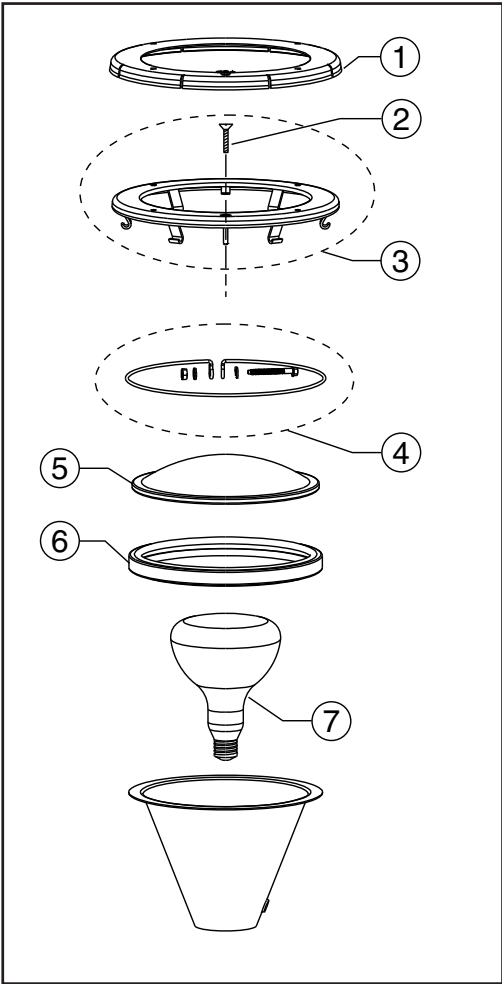


Figura 4.

SECCIÓN IV. Desglose de las partes



Artículo No.	No. del Repuesto	Descripción
1	79212100	Aro frontal, grande de plástico, sólo para acero inoxidable, blanco
1	79212165	Aro frontal, grande de plástico, sólo para acero inoxidable, gris
1	79212111	Aro frontal, grande de plástico, sólo para acero inoxidable, negro
2	79104800	Tornillo piloto, con arandela de caucho cautiva, latón
2	619355	Tornillo piloto, con arandela de caucho cautiva, acero inoxidable
3	79110600	Conjunto del aro de carátula, acero inoxidable
4	79111000	Conjunto de abrazadera del alambre de unitensión
5	79100100	Lente, transparente, 21.27 cm (8 3/8 pulgadas) de diámetro, templada
5	79100200	Lente, azul medio, 21.27 cm (8 3/8 pulgadas) de diámetro, resistente al calor
6	79101600	Empaque, 21.27 cm (8-3/8 pulgadas), lente
7	79101800	Reflector, base med., 100 vatios, 12 voltios
7	79101900	Reflector, base med., 300 vatios, 12 voltios
7	79102100	Reflector, base med., 500 vatios, 120 voltios
7	79107600	Reflector, base med., 300 vatios, 120 voltios
7	79102200	Reflector, base med., 400 vatios, 120 voltios
	78900700	Cubierta de lente Kwik-change, verde
	78900800	Cubierta de lente Kwik-change, azul
	78900900	Cubierta de lente Kwik-change, roja

¡LEA Y PROTEJA ESTOS INSTRUCTIVOS!

NOTICE D'EMPLOI DES LAMPES IMMERGÉES AMERLITE®

CONSIGNES DE SÉCURITÉ IMPORTANTES *PRIÈRE DE LIRE ET D'OBSERVER TOUTES LES CONSIGNES* CONSERVER CETTE NOTICE

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DANGER



Risque de choc électrique ou d'électrocution

Cette lampe immergée doit obligatoirement être installée par un électricien agréé ou breveté conformément au Code national de l'électricité et à tous les codes et ordonnances locaux applicables. Une installation incorrecte risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels. Prière de lire et d'observer les directives spécifiques ci-dessous.

AVERTISSEMENT

Avant d'installer cette lampe immergée d>Pentair Aquatic Systems, prière de lire et de suivre tous les avertissements et instructions qui l'accompagnent. Toute infraction aux consignes de sécurité et d'emploi risque de provoquer blessures graves, décès ou dégâts matériels. Pour obtenir des exemplaires gratuits, prière de s'adresser au fournisseur local ou d'appeler Pentair Aquatic Systems au 805-553-5000.

Avis important



À l'attention de l'installateur.

La présente notice contient des renseignements importants sur l'installation, le fonctionnement et l'utilisation de ce produit en toute sécurité. Prière de fournir ces informations au propriétaire et (ou) à l'opérateur de ce matériel.

Étiquetage des Produits

Les étiquettes de certains produits sont fournies en français et en espagnol.

Si le personnel opérateur ou de maintenance du produit parle couramment l'une de ces deux langues mieux que l'anglais, installer ces étiquettes par-dessus l'étiquette en anglais correspondante.

Si le personnel consiste de personnes qui parlent plusieurs langues, installer les étiquettes supplémentaires de la langue voulue à côté de l'étiquette en anglais. S'il n'y a pas assez de place sur le produit pour installer plusieurs étiquettes à la fois, apposer ces étiquettes sur un panneau ou une pancarte installée à proximité de l'équipement de manière à ce qu'elles soient visibles par tous les opérateurs ou personnel de maintenance de ce matériel.

Avant d'installer les étiquettes, nettoyer toute la poussière ou graisse de la surface qui devra les recevoir avec une solution de détergent doux.

⚠ DANGER! Risque de décharge électrique ou d'électrocution!



Ce produit doit être installé par un électricien agréé ou qualifié ou un technicien spécialisé, conformément au Code National d'Electricité et à tous les codes et règlements locaux en vigueur. Toute mauvaise installation crée un danger électrique pouvant causer la mort ou des blessures graves - par décharge électrique - aux utilisateurs, aux installateurs ou à des tiers, et pouvant également provoquer des dégâts matériels. Avant de commencer l'entretien du luminaire, veuillez toujours couper le courant électrique du luminaire au niveau du disjoncteur. Le non-respect de cette consigne peut entraîner la mort ou des blessures graves par décharge électrique pour le technicien, les utilisateurs ou des tiers. **VEUILLEZ LIRE ET OBSERVER TOUTES LES CONSIGNES DE CE GUIDE.**

⚠ AVERTISSEMENT — Importantes consignes de sécurité pour l'installation du luminaire et de la niche Pentair

- Toutes les installations de niche et de luminaire doivent être faites conformément à tous les codes. Si les codes locaux exigent un joint d'étanchéité à cordon, veuillez utiliser les niches en plastique Pentair (P/N 79206600 et P/N 79206700).
- Ne tenter en aucun cas de remplacer les luminaires en épissant les câbles sous l'eau ou derrière la niche.
- 12 VAC LUMINAIRES SPECIFICATION: 120 VAC , 50/60 Hz

⚠ AVERTISSEMENT — RISQUE DE DÉCHARGE ÉLECTRIQUE OU DE BLESSURE.

UTILISEZ UNIQUEMENT LA MÉTHODE D'INSTALLATION SPÉCIFIÉE CI-DESSOUS.

Importantes consignes de sécurité pour l'installation d'un appareil d'éclairage pour fontaine

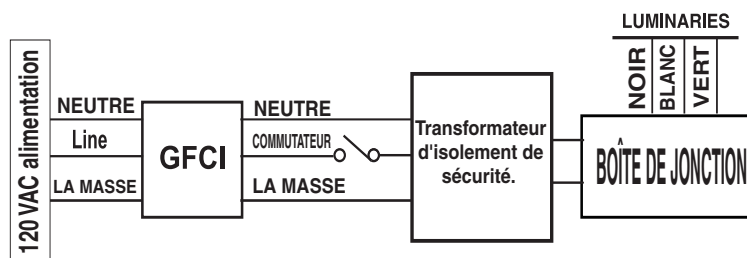
Emplacement/Utilisation du Luminaire (lumière)	Luminaire pour Fontaine Pentair* (P/N 560000 – P/N 560001) (P/N 560002 – P/N 560003)	Méthode d'Installation Requise
Piscine ou spa	Luminaire (lumière) pour niche étanche pour piscine (ou spa)	Bâti de luminaire (coque) SEULEMENT. NE PAS UTILISER le support pour fontaine.
Fontaine	Luminaire (lumière) pour niche submersible de pour piscine (ou spa)	Bâti de luminaire (coque) ou support luminaire pour fontaine.

(*) **Remarque :** Les luminaires pour niches étanches se conformant aux règlements pour les deux applications peuvent porter la marque UL listée pour les luminaires pour niches étanches pour piscine (ou spa) ainsi que pour les luminaires pour niches submersibles. Un luminaire ne portant pas la marque UL listée correspondante n'est pas considéré comme ayant été produit conformément aux normes de la marque UL listé et au service de suivi de la production UL pour cet emplacement.

⚠ AVERTISSEMENT — La lumière peut devenir chaud pendant l'utilisation. Les utilisateurs doivent éviter contact avec la lumière comme Burns sérieuse peut résulter d'un contact prolongé avec la lumière.

IMPORTANT : Le câblage luminaires - Lire la suite

⚠ AVERTISSEMENT ! Toujours installer une nouvelle lentille joint (voir numéro de référence du Guide de l'utilisateur), quand jamais du remontage de la lumière. Le défaut de le faire peut permettre l'eau de s'écouler dans l'assemblée qui pourrait causer; (a) un risque électrique entraînant la mort ou des blessures graves pour les utilisateurs piscine, installation, ou d'autres, en raison d'un choc électrique, ou (b) rupture de la lampe ou de la lentille, qui de même risque d'entraîner des blessures graves pour l'utilisateur piscine, installateurs, ou des passants, ou des dommages à la propriété. **Remplacer tout fissuré PROTECTION (FISSURÉ LENTILLE)** avec nouvelle lentille et le joint. Pour 12 VCA luminaires : Toujours utiliser un transformateur de séparation de sécurité D'ALIMENTATION DE luminaires. Voir bouton droit sur la droite. Remarque : Brancher tous les trois (ou deux fils) les fils vers le circuit correspondant les fils dans la boîte de jonction (fil noir à la source d'alimentation, fil blanc en commun, et le fil vert à la masse (pour un 3-fils de lumière).



⚠️ AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

6. Remettre l'ensemble lampe dans la niche et serrer la vis sans tête spéciale en acier inoxydable.

⚠️ AVERTISSEMENT

N'utiliser que la vis sans tête spéciale en acier inoxydable livrée avec cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

7. Ne pas utiliser la lampe pendant plus de 10 secondes avant que la piscine ne soit suffisamment remplie pour que la lampe soit totalement immergée dans l'eau. Mettre alors en marche l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe afin d'en vérifier le bon fonctionnement.

SECTION II. Remplacement de l'appareil d'éclairage d'une piscine existante

⚠️ DANGER



Risque de choc électrique ou d'électrocution

Cette lampe immergée doit obligatoirement être installée par un électricien agréé ou breveté ou par un technicien qualifié dans la maintenance des piscines conformément au Code national de l'électricité et à tous les codes et ordonnances locaux applicables. Une installation incorrecte risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels.

Sous peine de provoquer le décès ou des blessures graves pour le technicien de maintenance, les utilisateurs de la piscine ou d'autres personnes par suite d'un choc électrique, veiller à toujours déconnecter la lampe de la piscine du secteur au niveau du disjoncteur avant de procéder au remplacement de la lampe.

A. Avant de remplacer l'appareil d'éclairage.

1. S'assurer d'abord que la piscine est conforme aux spécifications courantes du Code national de l'électricité et de tous les codes et ordonnances locaux. Avant que la lampe immergée ne puisse être installée, il faut qu'un électricien agréé ou breveté installe un circuit électrique qui soit conforme à ces spécifications ou qui les dépasse. Certaines des spécifications du Code national de l'électricité applicables aux circuits électriques des piscines sont indiquées ci-dessous. Vérifier ainsi que:
 - a. Le circuit d'éclairage comporte un interrupteur à détection de courant de terre (GFCI) et un disjoncteur du calibre approprié.
 - b. La boîte de dérivation (ou, pour les modèles de 12 volts, le transformateur basse tension) est située à au moins 20,3 cm (8 pouces) au-dessus du niveau du sol et à au moins 1,22 m (48 pouces) du bord de la piscine (cf. figure 1 ci-dessous).
 - c. L'appareil d'éclairage et tous les éléments métalliques situés à moins de 1,5 m (5 pieds) de la piscine comportent des joints électriques appropriés.
 - d. La niche immergée est correctement installée de manière à ce que le bord supérieur de la lentille de la lampe soit à au moins 45,7 cm (18 pouces) au-dessous de la surface de l'eau dans la piscine (cf. figure 1 ci-dessous).
 - e. La niche immergée comporte des joints électriques appropriés et est convenablement reliée à la terre au moyen du connecteur de terre n° 8 AWG (3,3 mm) situé à l'arrière de la niche (cf. figure 1).

REMARQUE

Le circuit électrique peut être vérifié au moyen d'un kit d'essai de qualification électrique pour piscines et bains tourbillon, kit disponible auprès d'Pentair Aquatic Systems. L'inspection du circuit au moyen du kit en question doit être réalisée par un personnel breveté et bien formé.

2. Pour s'assurer que le circuit électrique de la piscine est conforme à toutes les spécifications applicables, l'électricien devra aussi consulter le service de construction local.
 3. Pour réaliser une connexion à la terre et des joints électriques satisfaisants, n'utiliser que des niches immergées d'Pentair Aquatic Systems.
- B. Pour remplacer l'appareil d'éclairage une fois le circuit électrique installé conformément aux spécifications, procéder comme suit.

AVERTISSEMENT

Avant d'installer la lampe immergée, veiller à rendre le circuit électrique de la piscine conforme aux spécifications du code, car on risquerait autrement de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique, et entraîner également des dommages matériels.

1. Mettre à l'arrêt l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe immergée.
2. Pour retirer l'ensemble lampe, ôter la vis de guide spéciale en acier inoxydable située au sommet de la bague avant, retirer l'ensemble de la niche et le placer sur la plate-forme.

AVERTISSEMENT

Veiller à conserver la vis de guide spéciale en acier inoxydable de cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

3. Enlever le couvercle de la boîte de dérivation, débrancher les fils électriques de l'appareil d'éclairage et tirer le cordon à travers le conduit.
4. Acheminer le cordon du nouvel appareil à travers le conduit depuis la niche jusqu'à la boîte de dérivation.

REMARQUE :

Selon la longueur du conduit, il se pourrait que l'on ait besoin d'outils spéciaux pour tirer le cordon à travers le conduit.

5. Laisser au moins 1,22 m (4 pieds) de cordon à enrouler autour de la lampe (cf. figure 1). Ce mètre vingt-deux permet de procéder au remplacement de la lampe une fois la piscine remplie d'eau.
6. Couper le cordon au niveau de la boîte de dérivation en laissant au moins 15 cm (6 pouces) pour les raccordements.
7. Couper la gaine extérieure du cordon sur 15 cm (6 pouces) afin de mettre à nu les trois conducteurs internes isolés en veillant à ne pas endommager leur isolement.
8. Raccorder les trois conducteurs aux fils correspondants du circuit électrique dans la boîte de dérivation (conducteur noir raccordé au fil de tension, conducteur blanc au fil de retour et conducteur vert au fil de terre) et refermer solidement le couvercle de la boîte.

AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

9. Remettre l'ensemble lampe dans la niche et serrer la vis de guide spéciale en acier inoxydable.

SECTION III. Remplacement d'une ampoule uniquement

⚠ DANGER



Sous peine de provoquer le décès ou des dommages corporels graves pour l'installateur, le technicien de maintenance, les utilisateurs de la piscine ou d'autres personnes par suite d'un choc électrique, veiller à toujours déconnecter la lampe de la piscine du secteur au niveau du disjoncteur avant de procéder à son entretien.

1. Mettre à l'arrêt l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe immergée.
2. Se procurer les éléments suivants :
 - a. Un nouveau joint de lentille (référence 79101600).
 - b. Une ampoule du type correct et de la puissance qui convient (cf. tableau 1).

TABLEAU 1.

Spécifications de l'ampoule:	Modèles 12* volts
120 volts - 300 watts - ampoule R-40	100 watts
120 volts - 400 watts - ampoule R-40	300 watts
120 volts - 500 watts - ampoule R-40	* Transformateur nécessaire
12 volts - 300 watts - ampoule R-40	Modèles 120 volts
12 volts - 100 watts - ampoule R-40	300 watts
	400 watts
	500 watts

⚠ AVERTISSEMENT

Ne remplacer l'ampoule que par un modèle de type et de puissance semblables, faute de quoi on risque d'endommager l'ensemble lampe et de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels.

⚠ AVERTISSEMENT

Installer toujours un nouveau joint de lentille (référence 79101600) lorsque l'on démonte la lampe, faute de quoi de l'eau pourrait pénétrer dans l'ensemble et :

- (a) créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique, ou
- (b) briser la lampe ou la lentille, ce qui pourrait de même provoquer des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou entraîner des dégâts matériels.

3. Pour retirer l'ensemble lampe, ôter la vis de guide spéciale en acier inoxydable située au sommet de la bague avant, retirer l'ensemble de la niche et le placer sur la plate-forme.

⚠ AVERTISSEMENT

Veiller à conserver la vis de guide spéciale en acier inoxydable de cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

4. Démontez l'appareil d'éclairage et retirez l'ampoule. Ôtez le vieux joint et s'en débarrasser, cf. Figure 2.
5. Lors de la pose de la lampe, installer un nouveau joint Pentair Aquatic Systems référence 79101600.

⚠ AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille, et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

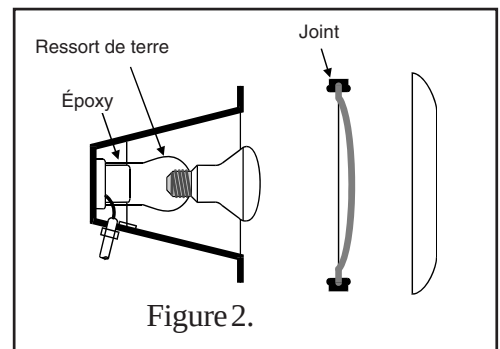


Figure 2.

SECTION III. Remplacement d'une ampoule uniquement

⚠ DANGER

Sous peine de provoquer le décès ou des dommages corporels graves pour l'installateur, le technicien de maintenance, les utilisateurs de la piscine ou d'autres personnes par suite d'un choc électrique, veiller à toujours déconnecter la lampe de la piscine du secteur au niveau du disjoncteur avant de procéder à son entretien.

1. Mettre à l'arrêt l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe immergée.
2. Se procurer les éléments suivants :
 - a. Un nouveau joint de lentille (référence 79101600).
 - b. Une ampoule du type correct et de la puissance qui convient (cf. tableau 1).

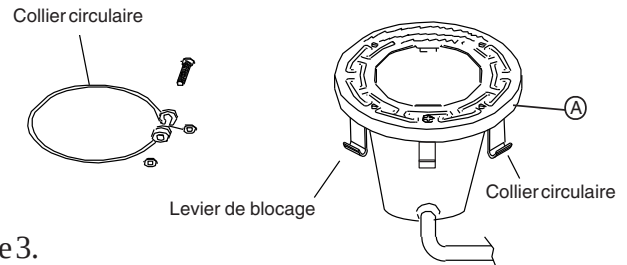
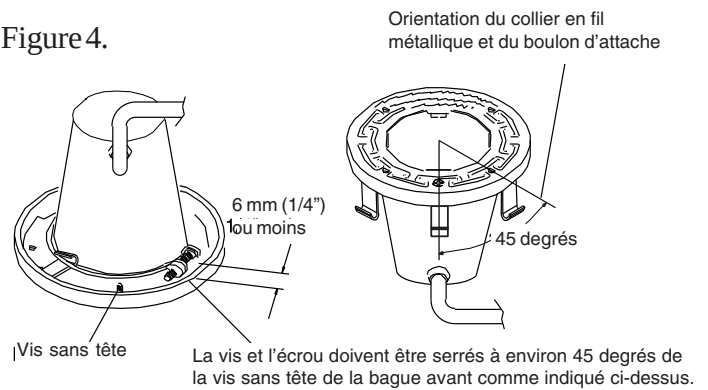


Figure 3.

Figure 4.



⚠ AVERTISSEMENT

Ne remplacer l'ampoule que par un modèle de type et de puissance semblables, faute de quoi on risque d'endommager l'ensemble lampe et de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels.

⚠ AVERTISSEMENT

Installer toujours un nouveau joint de lentille (référence 79101600) lorsque l'on démonte la lampe, faute de quoi de l'eau pourrait pénétrer dans l'ensemble et :

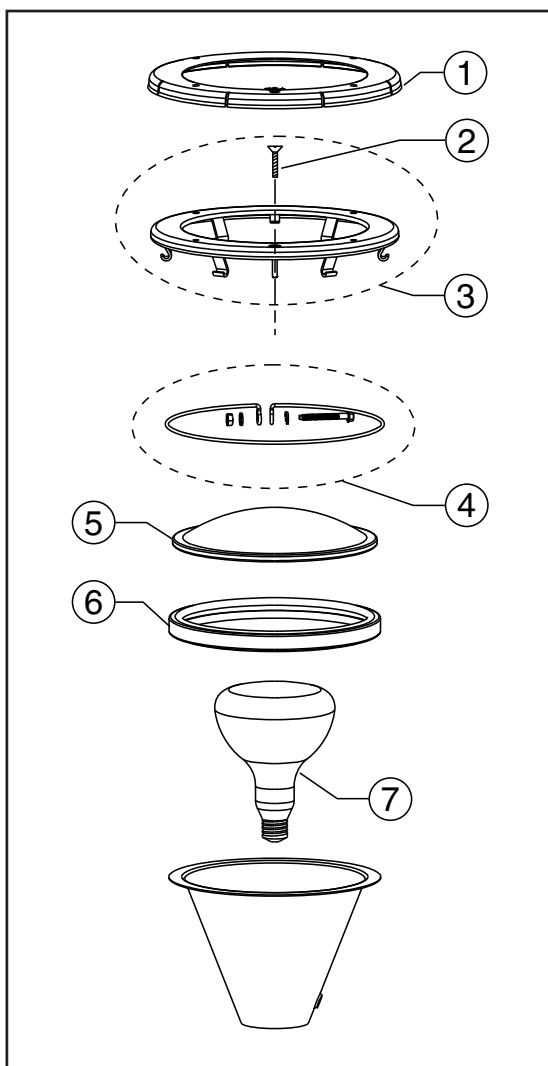
- (a) créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique, ou
 - (b) briser la lampe ou la lentille, ce qui pourrait de même provoquer des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou entraîner des dégâts matériels.
3. Pour retirer l'ensemble lampe, ôter la vis de guide spéciale en acier inoxydable située au sommet de la bague avant, retirer l'ensemble de la niche et le placer sur la plate-forme.

⚠ AVERTISSEMENT

Veiller à conserver la vis de guide spéciale en acier inoxydable de cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

4. Démonter l'appareil d'éclairage et retirer l'ampoule. Ôter le vieux joint et s'en débarrasser, cf. Figure 2.
5. Lors de la repose de la lampe, installer un nouveau joint Pentair Aquatic Systems référence 79101600.

SECTION IV. Nomenclature des pièces



Article No.	Pièce No.	Description
1	79212100	Bague avant grande en plastique, pour inox seulement, blanche
1	79212165	Bague avant grande en plastique, pour inox seulement, grise
1	79212111	Bague avant grande en plastique, pour inox seulement, noire
2	79104800	Vis pilote avec rondelle captive en caoutchouc, laiton
2	619355	Vis pilote avec rondelle captive en caoutchouc, inox
3	79110600	Ensemble bague avant, inox
4	79111000	Ensemble collier en fil métallique unitension
5	79100100	Lentille transparente en verre trempé, 21,3 cm (8-3/8") de diamètre
5	79100200	Lentille bleu moyen résistant à la chaleur, 21,3 cm (8-3/8") de diamètre
6	79101600	Joint pour lentille 21,3 cm (8-3/8")
7	79101800	Ampoule, base moyenne, 100 watts, 12 volts
7	79101900	Ampoule, base moyenne, 300 watts, 12 volts
7	79102100	Ampoule, base moyenne, 500 watts, 120 volts
7	79107600	Ampoule, base moyenne, 300 watts, 120 volts
7	79102200	Ampoule, base moyenne, 400 watts, 120 volts
	78900700	Couvercle de lentille vert à changement rapide
	78900800	Couvercle de lentille bleu à changement rapide
	78900900	Couvercle de lentille rouge à changement rapide

PRIÈRE DE LIRE ET DE CONSERVER CETTE NOTICE !

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SERIES CL100/110 SERIES CL200/220 by **HAYWARD®** AUTOMATIC CHLORINE FEEDERS



Owner's Manual

IMPORTANT SAFETY INSTRUCTIONS

Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause severe injury and/or death.

⚠ This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ WARNING warns about hazards that **could** cause serious personal injury, death or major property damage and if ignored presents a potential hazard.

⚠ CAUTION warns about hazards that **will** or **can** cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

⚠ DANGER indicates an imminently hazardous situation which, if not avoided, **will** result in death, serious injury, or major property damage.

The **NOTICE** label indicates special instructions that are important but not related to hazards.

Hayward Pool Products
620 Division Street, Elizabeth, NJ 07207
Phone: (908) 351.5400
www.haywardpool.com



⚠ WARNING - Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.

⚠ WARNING – Suction Entrapment Hazard.



Suction in suction outlets and/or suction outlet covers which are, damaged, broken, cracked, missing, or unsecured can cause severe injury and/or death due to the following entrapment hazards:



Hair Entrapment- Hair can become entangled in suction outlet cover.



Limb Entrapment- A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.

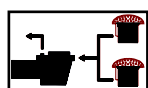


Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

Evisceration/ Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/ disembowelment.

Mechanical Entrapment- There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠ WARNING - To Reduce the risk of Entrapment Hazards:



- o When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [1 meter] apart, as measured from near point to near point.
- o Dual suction fittings shall be placed in such locations and distances to avoid “dual blockage” by a user.
- o Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- o The maximum system flow rate shall not exceed the flow rating of as listed on Table 1.
- o Never use Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- o Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- o In addition two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.
- o Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

⚠ WARNING – Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every ten years or if found to be damaged, broken, cracked, missing, or not securely attached.

⚠ CAUTION – Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children.

⚠ WARNING – Never operate or test the circulation system at more than 50 PSI.

⚠ WARNING – Never change the filter control valve position while the pump is running.

⚠ WARNING – To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.



⚠ WARNING – Hazardous Pressure. Pool and spa water circulation systems operate under hazardous pressure during start up, normal operation, and after pump shut off. Stand clear of circulation system equipment during pump start up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover, and/or filter housing and clamp due to pressure in the system, which could cause property damage, severe personal injury, or death. Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged.



⚠ WARNING – Separation Hazard. Failure to follow safety and operation instructions could result in violent separation of pump and/or filter components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa circulation system, filters manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body.



⚠ WARNING – Risk of Electric Shock. All electrical wiring **MUST** be in conformance with applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock, do **NOT** use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. Before working on any electrical equipment, turn off power supply to the equipment.

⚠ WARNING – To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment.

⚠ WARNING – Electrical ground all electrical equipment before connecting to electrical power supply. Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard.

⚠ WARNING – Do **NOT** ground to a gas supply line.

⚠ WARNING – To avoid dangerous or fatal electrical shock, turn **OFF** power to all electrical equipment before working on electrical connections.

⚠ WARNING – Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

Notes to electrician: Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm²) [No. 6 AWG (13.3 mm²) for Canada] solid copper bonding wire to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

IMPORTANT - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

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

⚠ WARNING – Risk of Electric Shock. The electrical equipment 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 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 electrical equipment without the test button being pushed, a ground current is flowing, indicating the possibility of an electrical shock. Do not use this electrical equipment. Disconnect the electrical equipment and have the problem corrected by a qualified service representative before using.

⚠ CAUTION – The pump is intended for use with permanently-installed pools and may 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.

SAVE THESE INSTRUCTIONS

HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its chemical feeders to be free from defects in materials and workmanship for a period of ONE (1) year from the date of purchase, when used in single family residential applications.

The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at www.haywardpool.com.

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation 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.

***Supersedes all previous publications.**

Hayward Pool Products
620 Division Street
Elizabeth, NJ 07207

 **⚠ DANGER** Mixing Chemicals or using fast dissolving chemicals may result in explosion and/or fire. To avoid death, serious injury or major property damage:

- ⚠ Use only slow dissolving Trichlor Chlorine tablets.
- ⚠ Never use fast dissolving Trichlor Chlorine tablets.
- ⚠ Never mix chemicals.
- ⚠ Never mix Trichlor Chlorine tablets with Calcium Hypochlorite, or with any other form of concentrated chlorine or other chemicals. Fire and/or explosion may result.
- ⚠ Never add any other types of chlorine, pH adjusters, shock treatments or algaecides through the skimmer. If these products must be used, they should be added directly into the pool water.
- ⚠ Never isolate chlorine feeder with valves or other devices.

 **⚠ WARNING** Wear eye and skin protection while maintaining or servicing this unit.

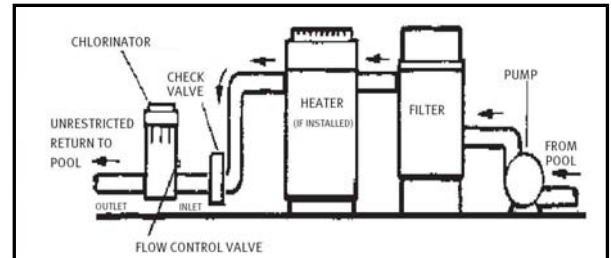
 **⚠ WARNING** Do not inhale fumes from the chlorinator or chemical container.

 **⚠ WARNING** Chlorine feeder may be under pressure. Use caution removing cover.

INSTALLATION:

CL-100/200

1. Your CL-100/200 automatic chlorine feeder is designed for permanent installation in the pool water return line.
2. Always install the chlorine feeder **after** the heater. If there is no heater, install **after** the filter.



 **⚠ CAUTION** Damage to the heater or filter may result if concentrated chlorine is allowed to flow through them.

An in-line positive seal corrosion resistant check valve should be installed to reduce backflow of chlorine gas when the system is shut off. If the chlorine feeder is located below water level, you may want to install a check valve to prevent water backflow when operating/servicing the unit. The CL100 has this feature built in.

3. Both the CL-100/200 are furnished with 1 1/2" female threads. If PVC socket (solvent weld) connections are desired, order SP1500UNPAK2, socket flush union end connectors package. For threaded male and union connectors, order SP1500UNMPAK1 male union connector package (two required). Thread or socket adapters may also be used. Only use pipe sealants formulated and approved for use with ABS plastic connections (e.g. Teflon Tape, Permatex Form-A-Gasket No. 2, Laco Plasto-Joint stick). Do not over tighten pipe fitting. Proper fitting makeup is hand tight plus 1 to 1 1/2 turns maximum.

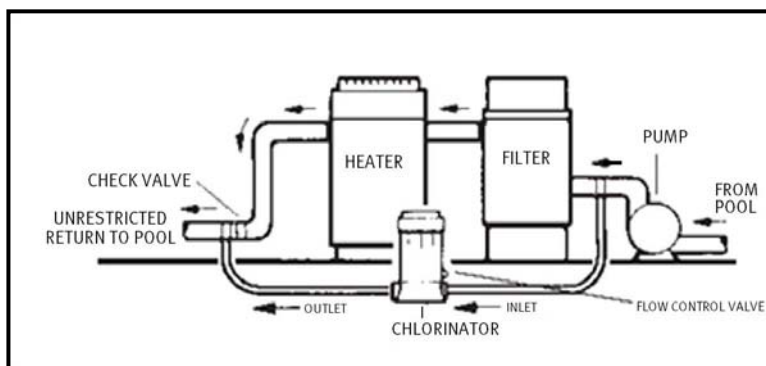
NOTICE: After starting up system, re-check all connections for leaks. Re-tighten as required.

 **⚠ CAUTION** Never install chlorine feeder directly into copper plumbing as pipe damage may occur. If you have brass or bronze backwash valves, or other sensitive metallic components, consult your dealer for precautions or recommendations for your particular system.

CL-110/220

1. The inlet connection should be made in the piping after the pump and before the filter. Mark location on pipe.
2. The outlet connection should be made in the piping after the heater. If no heater is being used, connection should be made after the filter. Mark location on pipe.
3. Based on the locations from steps. No. 1 and No. 2, cut tubing to required lengths. Be sure ends are cut evenly and cleanly.
4. Wrap Teflon tape on larger male thread of Check Valve and thread it hand tight plus 1/2 turn into outlet port of chlorinator. DO NOT OVER TIGHTEN.

NOTICE: The Check Valve is marked with a "dot". It also has a ball that "clicks" when you shake it.



5. Wrap Teflon tape on larger male thread of the Inlet Fitting Adapter and thread it hand tight plus 1/2 turn into the inlet port of chlorinator. **DO NOT OVER TIGHTEN.**
6. To connect inlet tubing to chlorinator, place Compression Nut over inlet tubing and slide nut up about 2". Insert the tubing all the way into the Inlet Fitting Adapter socket and, holding tubing in place, tighten nut firmly by hand. Do not over tighten.
7. Connect outlet tubing to the Check Valve in the same manner as in step 6 above.

NOTICE: The saddle fittings and clamps are designed to fit the O.D. of 1 1/2" or 2" pipe.

8. Drill a 3/8" hole at location identified in Step 1 of Planning Installation section. Clean all burrs, shavings etc. Fit Saddle Fitting, with gasket, into oval shaped hole in clamp and insert fitting into the 3/8" hole. Secure clamp around Saddle Fitting, gasket and pipe and tighten securely to achieve a good seal. Do not over tighten clamp.
9. Drill a 3/8" hole at location identified in Step 2 of Installation section for CL-110/220. Install Saddle Fitting as in Step 8 above.
10. Connect inlet and outlet tubing to the Saddle Fittings with Compression Nuts as in Step 6 above. Do not over tighten.

▲ CAUTION Never install chlorine feeder directly into copper plumbing as pipe damage may occur. If you have brass or bronze backwash valves, or other sensitive metallic components, consult your dealer for precautions or recommendations for your particular system.

NOTICE: After starting up system, re-check all connections for leaks. Re-tighten as required.

DIRECTIONS FOR USE:

GENERAL

Before using your chlorinator, your pool/spa water should be properly balanced and conditioned and should have a chlorine residual of approximately 1.0 to 1.5 ppm. Follow dealer and chemical manufacturer's directions and instructions.

Check chlorine residual daily and adjust the dial valve for more or less chlorine. The chlorine demand for pools and spas varies based on usage, temperature, sunlight, etc. Initially, you'll have to experiment to determine the proper amount of chlorine and the correct valve setting required for your pool and filter time cycle. Follow chemical manufacturer's instructions for proper chlorine level.

▲ DANGER Mixing Chemicals or using fast dissolving chemicals may result in explosion and/or fire.

To avoid death, serious injury or major property damage:

- ▲ Use only slow dissolving Trichlor Chlorine tablets.
- ▲ Never use fast dissolving Trichlor Chlorine tablets.
- ▲ Never mix chemicals.
- ▲ Never mix Trichlor Chlorine tablets with Calcium Hypochlorite, or with any other form of concentrated chlorine or other chemicals. Fire and/or explosion may result.
- ▲ Never add any other types of chlorine, pH adjusters, shock treatments or algaecides through the skimmer. If these products must be used, they should be added directly into the pool water.
- ▲ Never isolate chlorine feeder with valves or other devices.

▲ WARNING Wear eye and skin protection while maintaining or servicing this unit.

USE ONLY GENUINE HAYWARD PARTS





- ⚠ WARNING** Do not inhale fumes from the chlorinator or chemical container.
- ⚠ WARNING** Chlorine feeder may be under pressure. Use caution removing cover.

REFILLING CHORINATOR

1. Shut off all pumps and pump timers.
2. Turn chlorine feeder flow control valve to "OFF".
3. Verify chlorine feeder return line to pool is unrestricted.
4. Wait one minute to relieve system pressure before attempting to remove cover.
5. If installed in a flooded system, shut off valves to isolate chlorinator.
6. Remove cover.
7. Refill chlorine feeder with slow dissolving Trichlor-Chlorine Tablets.
8. Secure cover to chlorine feeder.
9. If installed in a flooded system, open valves to assure flow from pump to pool.
10. Turn flow control valve on chlorinator to desired setting and restart pump.

MAINTENANCE:

TO CHANGE O-RING CL100/110

1. Read and follow instructions in Steps 1 to 5 in Refilling Chlorinator section.
2. Remove the O-Ring and replace with a Genuine Hayward Part O-Ring (part no. CLX110K).
3. Replace cover. If chlorinator needs to be refilled, read and follow instructions in Steps 6 to 8 in Refilling chlorinator section.

TO CHANGE O-RING CL200/220

1. Read and follow instructions in Steps 1 to 5 in Refilling Chlorinator section.
2. Pry off Logo Cap, located on the cover of the chlorinator. Unscrew and remove retainer screw. Cover may now be slipped free of the Cover Cap.
3. Replace O-ring with a Genuine Hayward Part O-ring (part no. CLX200K). Reassemble being sure Slip Washers are in place on stem of Cover (inside), and under head of Retaining Screw.
4. Replace cover. If chlorinator needs to be refilled, read and follow instructions in Steps 6 to 8 in Refilling Chlorinator section.

TO REMOVE FLOW CONTROL VALVE HANDLE

Set pointer to FULL. Insert screwdriver in slot opposite pointer, lift up and rotate handle counterclockwise. This allows the handle index lock tab to clear the body ridge.

TO INSTALL FLOW CONTROL VALVE HANDLE

1. The flow control valve handle Genuine Hayward Part (CLX200PA) is furnished in two pieces.
2. To install push the handle into the stem and fully install stem into body. You may have to remove handle and reposition to assure the stem is fully seated.
3. Remove handle by pulling straight out.
4. Apply a single drop of Super Glue to the end of the stem, push on handle, positioned in the OFF position. Apply pressure for 30 seconds.

WINTERIZING

Where freezing temperatures can be expected, drain all water and remove all chlorine from chlorinator. (For in-line permanently installed unit remove drain plug). Carefully remove all tablets and pieces of tablets. Rinse out chlorinator thoroughly with water. Replace cover and drain plug.

VACUUMING

When vacuuming, close flow control valve to prevent bypass of sediment and possible clogging of control valve.

LUBRICATION

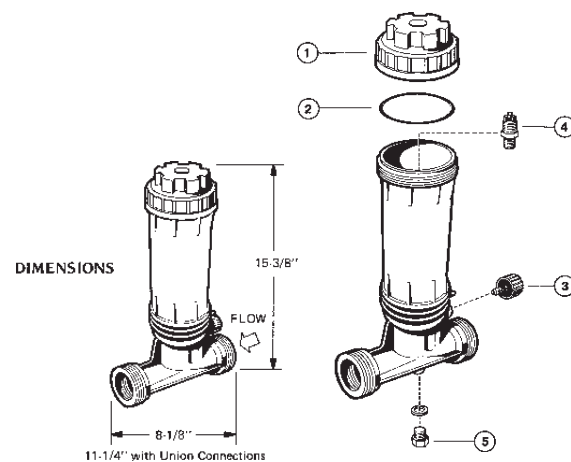
Never use petroleum type lubricants on Cover O-Ring. To lubricate use Genuine Hayward Part Jack's Lube No. 327 (Part No. SP032712).

USE ONLY GENUINE HAYWARD PARTS

SPARE PARTS

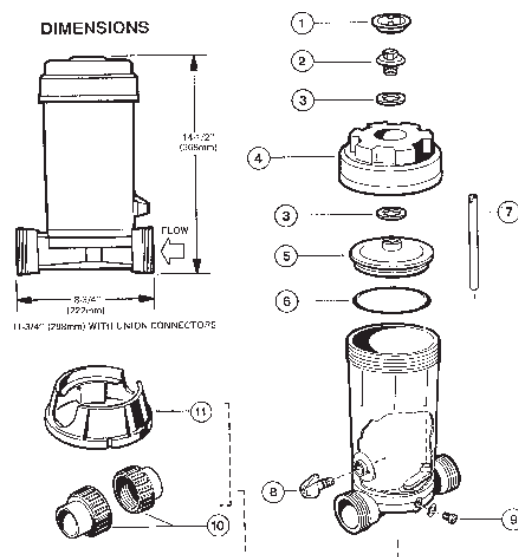
CL100

Ref No.	Part Number	Description	No. Req'd
1	CLX110C	Cover	1
2	CLX110K	O-Ring	1
3	CLX110FA	Control Knob Assembly	1
4	CLX220CV	Check Valve Assembly	1
5	SPX1700FGV	Drain Plug w/Gasket	1
	SP032712	Hayward Jack's Lub #327	1



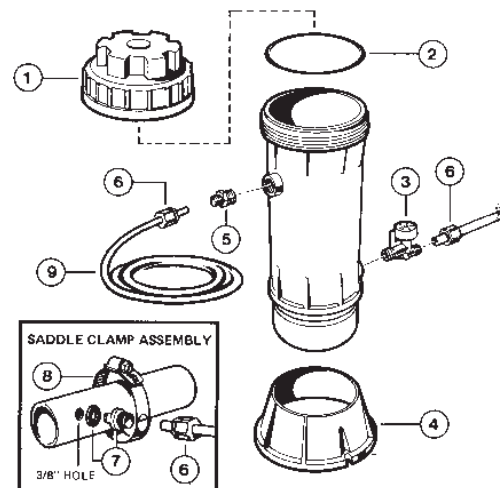
CL200

Ref No.	Part Number	Description	No. Req'd
1	CLX200E	Logo Cap	1
2	CLX200G	Cover Retaining Screw	1
3	CLX200W	Slip Washer	2
4	CLX200C	Cover Cap	1
5	CLX200B	Cover	1
6	CLX200K	O-Ring	1
7	CLX200H	Feeder Tube (some models)	1
8	CLX200PA	Control Valve Assembly	1
9	SPX1700FA	Drain Plug w/Gasket	1
10	SPX1500UNPAK	Union Connectors--Socket (2)	-
11	CLX200BS	Base	1
	SP032712	Hayward Jack's Lub #327	1



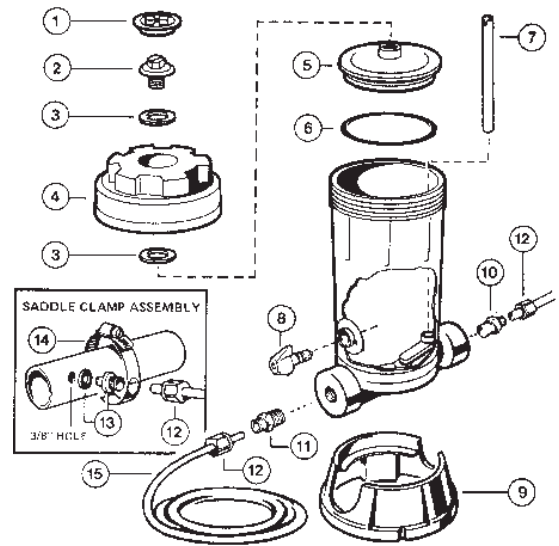
CL110

Ref No.	Part Number	Description	No. Req'd
1	CLX100C	Cover	1
2	CLX110K	O--Ring	1
3	CLX110DA	Dial Flow Valve	2
4	CLX110B	Base	1
5	CLX220CV	Check Valve Assembly	1
6	CLX220H	Compression Nuts	4
7	CLX220G	Saddle Fitting	2
8	CLX220K	Saddle Clamp	2
9	CLX220J	Plastic Tubing--8 Ft.	1
	SP032712	Hayward Jack's Lub #327	1



USE ONLY GENUINE HAYWARD PARTS

Ref No.	Part Number	Description	No. Req'd
1	CLX200E	Logo Cap	1
2	CLX200G	Cover Retaining Screw	1
3	CLX200W	Slip Washer	2
4	CLX200C2	Cover Cap	1
5	CLX200B	Cover	1
6	CLX200K	O-Ring	1
7	CLX200H	Feeder Tube (some models)	1
8	CLX200PA	Control Valve Assembly	1
9	CLX220B	Base	1
10	CLX220CV	Check Valve Assembly	1
11	CLX220D	Inlet Fitting Adapter	1
12	CLX220H	Compression Nuts	4
13	CLX220G	Saddle Fitting	2
14	CLX220K	Saddle Clamp	2
15	CLX220J	Plastic Tubing—8 ft.	1
	SP032712	Hayward Jack's Lub #327	1



(Retain For Your Records)

▲ Retain this Warranty Certificate (upper portion) in a safe and convenient location for your records.



DETACH HERE: Fill out bottom portion completely and mail within 10 days of purchase/installation or register online.

Warranty Card Registration

Register online at www.haywardpool.com

Or REGISTER YOUR WARRANTY ON-LINE AT WWW.HAYWARDPOOL.COM

Years Pool has been in service ☐ < 1 year ☐ 1-3 ☐ 4-5 ☐ 6-10 ☐ 11-15 ☐ >15	
Purchased from _____ ☐ Builder ☐ Retailer ☐ Pool Service ☐ Internet/Catalog	
Company Name _____ Address _____ City _____ State _____ Zip _____ Phone _____	
Type of Pool: ☐ Concrete/Gunite ☐ Vinyl ☐ Fiberglass ☐ Other _____	
☐ New Installation ☐ Replacement	
Installation for: ☐ In Ground ☐ Above Ground ☐ Spa	



Hayward is a registered trademark of Hayward Industries, Inc.



MASTERTEMP® POOL AND SPA HEATER

INSTALLATION AND USER'S GUIDE

⚠ WARNING FOR YOUR SAFETY - READ BEFORE OPERATING

If you do not follow these instructions exactly, a fire or explosion may result, causing property damage, personal injury or loss of life. For additional free copies of this manual; call (800) 831-7133.

FOR YOUR SAFETY - This product must be installed and serviced by authorized personnel, qualified in pool/spa heater installation. Improper installation and/or operation can create carbon monoxide gas and flue gases which can cause serious injury, property damage, or death. For indoor installations, as an additional measure of safety, Pentair Aquatic Systems strongly recommends installation of suitable **Carbon Monoxide detectors** in the vicinity of this appliance and in any adjacent occupied spaces. Improper installation and/or operation will void the warranty.

120/240 VAC NATURAL GAS/LP GAS

Models	Natural	Propane
175K BTU/HR	460792	460793
200K BTU/HR (ASME)	461000	461001
200K BTU/HR	460730	460731
200K BTU/HR (HD ASME)	461032	—
250K BTU/HR	460732	460733
250K BTU/HR (HD)	460806	—
250K BTU/HR (ASME)	460771	460772
250K BTU/HR (HD ASME)	461020	—
300K BTU/HR	460734	460735
400K BTU/HR	460736	460737
400K BTU/HR (HD)	460805	—
400K BTU/HR (ASME)	460775	460776
400K BTU/HR (HD ASME)	461021	—



OWNER:
Retain For
Future
Reference

⚠ WARNING Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or death. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

FOR YOUR SAFETY

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

DO NOT store or use gasoline or other flammable vapors and liquids in the vicinity of this or other appliances.

Pentair Water Pool and Spa, Inc.
1620 Hawkins Ave., Sanford, NC 27330 • (800) 831-7133 or (919) 566-8000
10951 W. Los Angeles Ave., Moorpark, CA 93021 • (800) 831-7133 or (805) 553-5000

Customer Service and Tecnincal Support

If you have questions about ordering Pentair Aquatic Systems replacement parts, and pool products, please call:

Phone: (800) 831-7133

Fax: (800) 284-4151

(8 A.M. to 4:30 PM Eastern Time/Pacific Time)

Web sites: www.pentairpool.com - www.staritepool.com

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Section 1: Heater Identification Information

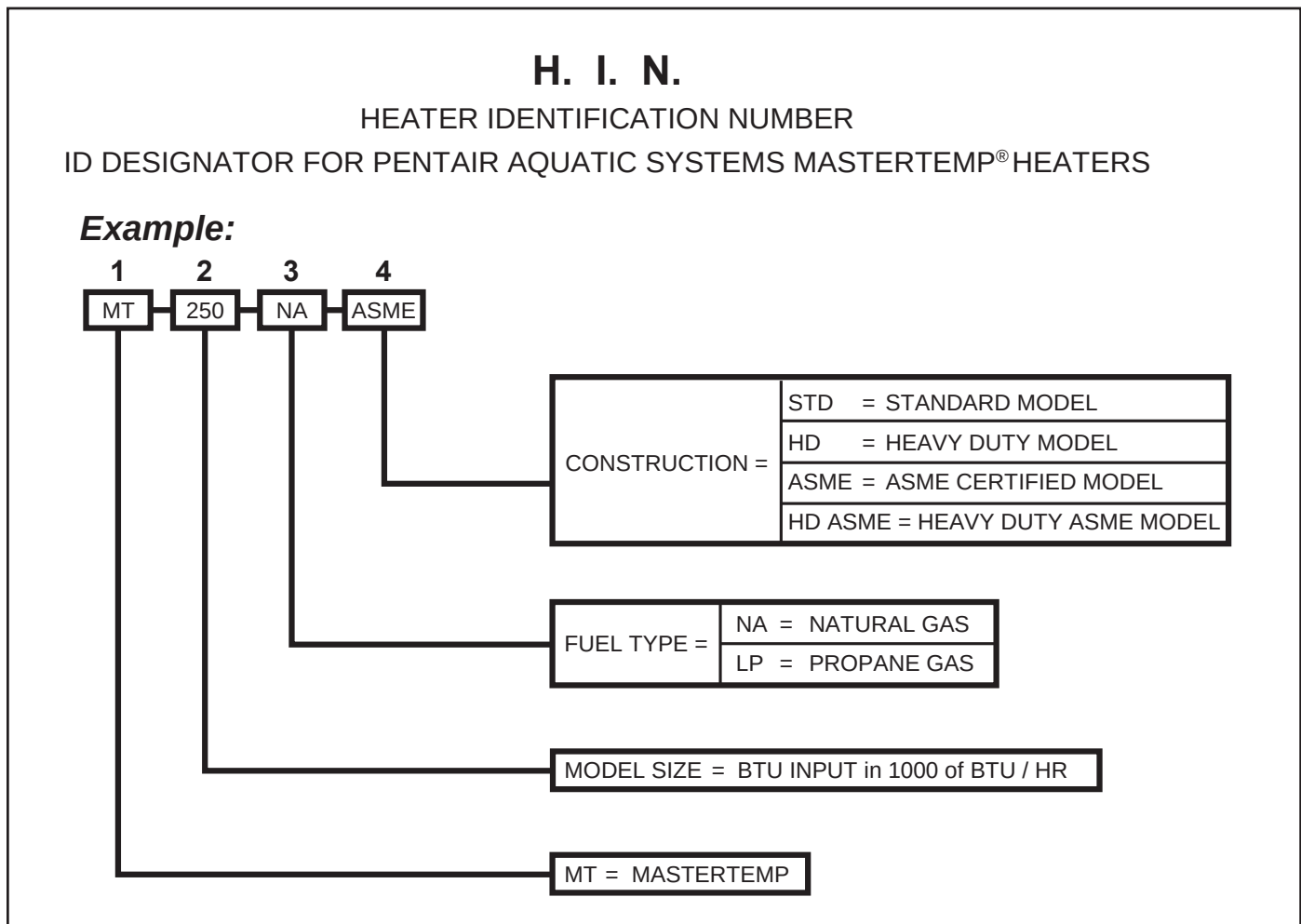
To identify the heater, see rating plate on the inner front panel of the heater. There are two designators for each heater, one is the Model Number and the other is the Heater Identification Number (HIN).

a. Heater Identification Number (HIN)

The following *example* simplifies the identification system:

- 1) **MT** : MasterTemp
- 2) **Model Size** : (175, 200, 250, 300 or 400) : Input rating (Btu/hr) X 1000
- 3) **Fuel Type** : (LP = Propane gas or NA = Natural gas)
- 4) **Construction** : (STD = Standard Model)
(HD = Heavy Duty Model)
(ASME = ASME Certified Model)
(HD ASME = Heavy Duty ASME Model)

HEATER IDENTIFICATION INFORMATION — (HIN)



Section 2: Warning and Safety Instructions

IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS

MASTERTEMP® Pool and Spa Heater

Congratulations on your purchase of the MasterTemp Pool and Spa Heater. Proper installation and service of your new heating system and correct chemical maintenance of the water will ensure years of enjoyment. The MasterTemp heater is a compact, lightweight, efficient, induced-draft, gas fired high performance pool and spa heater that can be directly connected to schedule 40 PVC pipe. The MasterTemp heater also comes equipped with the Pentair multifunction temperature controller which shows, at a glance, the proper functioning of the heater. All MasterTemp heaters are designed with a direct ignition device, HSI (hot-surface ignition), which eliminates the need for a standing pilot. The MasterTemp heater requires an external power source (120/240 VAC 60 Hz) to operate.

SPECIAL INSTRUCTIONS TO OWNER: Retain this manual for future reference. This instruction manual provides operating instructions, installation and service information for the MasterTemp high performance heater. The information in this manual applies to all MasterTemp heater models. **READ AND REVIEW THIS MANUAL COMPLETELY**, it is very important that the owner/installer read and understand the section covering installation instructions, and recognize the local and state codes before installing the MasterTemp heater. Its use will reduce service calls and chance of injury and will lengthen product life. History and experience has shown that most heater damage is caused by improper installation practices.

IMPORTANT NOTICES

For the installer and operator of the MasterTemp heater: The manufacturer's warranty may be void if, for any reason, the heater is improperly installed and/or operated. Be sure to follow the instructions set forth in this manual. If you need any more information, or if you have any questions regarding to this pool heater, please contact Pentair Aquatic Systems at (800) 831-7133.

WARRANTY INFORMATION

The MasterTemp pool and spa heater is sold with a limited factory warranty. ***Specific details are described on the warranty registration card which is included with the product.*** Return the warranty registration card after filling in the serial number from the rating plate inside the heater.

Pentair Aquatic Systems high standards of excellence include a policy of continuous product improvement resulting in your state-of-the-art heater. We reserve the right to make improvements which change the specifications of the heater without incurring an obligation to update the current heater equipment.

These heaters are designed for the heating of chlorine, bromine or salt system swimming pools and spas or in non-stationary installations, and should never be employed for use as space heating boilers or general purpose water heaters. The manufacturer's warranty may be void if, for any reason, the heater is improperly installed and/or operated. Be sure to follow the instructions set forth in this manual.

CAUTION

OPERATING THIS HEATER CONTINUOUSLY AT WATER TEMPERATURE BELOW 68° F. WILL CAUSE HARMFUL CONDENSATION AND WILL DAMAGE THE HEATER AND VOID THE WARRANTY. Do not use the heater to protect pools or spas from freezing if the final maintenance temperature desired is below 68° F., as this will cause condensation related problems.

CODE REQUIREMENTS

Installation must be in accordance with all local codes and/or the latest edition of the National Fuel Gas Code, ANSI Z223.1 and the latest edition of the National Electrical Code, NFPA 70 (US).

Installation in Canada must be in accordance with the latest CAN/CGA-B149.1 or .2 and CSA C22.1 Canadian Electric Code, part 1.

The heater, when installed, must be electrically grounded and bonded in accordance with local codes, or, in absence of local codes, with the National Electrical Code, ANSI/NFPA70 (US) or in Canada in accordance with the Canadian Electric Code, part 1.as applicable.



DANGER

CARBON MONOXIDE GAS IS DEADLY – Exhaust from this pool heater contains toxic levels of carbon monoxide, a dangerous, poisonous gas you cannot see or smell.

CONSUMER INFORMATION AND SAFETY

WARNING

The U.S. Consumer Product Safety Commission warns that elevated water temperature can be hazardous. See below for water temperature guidelines before setting temperature.

1. Spa or hot tub water temperatures should never exceed 104° F (40° C). A temperature of 100° F (38° C) is considered safe for a healthy adult. Special caution is suggested for young children.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 102° F (39° C) can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should stick to the 100° F (38° C) maximum rule.
4. Before entering the spa or hot tub, the user should check the water temperature with an accurate thermometer. Spa or hot tub thermostats may err in regulating water temperatures by as much as 4° F (2.2° C).
5. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain their physician's advice before using spas or hot tubs.
6. Persons taking medication which induce drowsiness, such as tranquilizers, antihistamines or anticoagulants should not use spas or hot tubs.

WARNING

Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the heater. Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of control system and gas control which has been under water.

SAFETY INFORMATION

The MasterTemp® pool heaters are designed and manufactured to provide many years of safe and reliable service when installed, operated and maintained according to the information in this manual. Throughout the manual, safety warnings and cautions are identified by the “” symbol. Be sure to read and comply with all of the warnings and cautions.

DANGER — CARBON MONOXIDE GAS IS DEADLY

READ OWNERS MANUAL COMPLETELY BEFORE OPERATING

THIS PRODUCT MUST BE INSTALLED AND SERVICED BY A PROFESSIONAL SERVICE TECHNICIAN, QUALIFIED IN POOL HEATER INSTALLATION. Some jurisdictions require that installers be licensed. Check with your local building authority about contractor licensing requirements. Improper installation and/or operation could create carbon monoxide gas and flue gases which could cause serious injury or death. Improper installation and/or operation will void the warranty.

Exhaust from this pool heater contains toxic levels of carbon monoxide, a dangerous, poisonous gas you cannot see or smell. Symptoms of carbon monoxide exposure or poisoning include dizziness, headache, nausea, weakness, sleepiness, muscular twitching, vomiting and inability to think clearly. IF YOU EXPERIENCE ANY OF THE ABOVE SYMPTOMS, IMMEDIATELY TURN OFF THE POOL HEATER, LEAVE THE VICINITY OF THE POOL OR SPA AND GET INTO FRESH AIR IMMEDIATELY. THE POOL HEATER MUST BE THOROUGHLY TESTED BY A GAS PROFESSIONAL BEFORE RESUMING OPERATION.

EXCESSIVE CARBON MONOXIDE EXPOSURE CAN CAUSE BRAIN DAMAGE OR DEATH.

NEVER use this pool heater indoors without specified ventilation system (and properly installed vent pipe).

NEVER use this pool heater in the home or in partly enclosed areas (such as garages), unless the specified ventilation system is used. If used outdoors, install far from open windows, doors, vents and other openings.

Pentair strongly recommends that all vents, pipes and exhaust systems be initially and periodically tested for proper operation. This testing can be accomplished by using a hand-held carbon monoxide meter and/or by consulting with a gas professional.

Pool heaters must be used in conjunction with carbon monoxide detectors installed near the pool heater. The carbon monoxide detectors must be periodically inspected for proper operation so as to insure continued safety. Broken or malfunctioning carbon monoxide detectors must be replaced immediately.

WARNING — FOR YOUR SAFETY

This product must be installed and serviced by a professional service technician, qualified in pool heater installation. Some jurisdictions require that installers be licensed. Check with your local building authority about contractor licensing requirements. Improper installation and/or operation could create carbon monoxide gas and flue gases which could cause serious injury or death. Improper installation and/or operation will void the warranty.

 **WARNING — This heater is equipped with an unconventional gas control valve that is factory set with a manifold pressure of -.2 inches wc.** Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation or service must be performed by a qualified installer, service agency or the gas supplier. If this control is replaced, it must be replaced with an identical control.

Do not attempt to adjust the gas flow by adjusting the regulator setting.

SAFETY INFORMATION, (cont'd.)

 **WARNING** — **Risk of fire or explosion from incorrect fuel use or faulty fuel conversion.** Do not try to run a heater set up for natural gas on propane gas or vice versa. Only qualified service technicians should attempt to convert heater from one fuel to the other. Do not attempt to alter the rated input or type of gas by changing the orifice. If it is necessary to convert to a different type of gas, consult your Pentair dealer. Serious malfunction of the burner can occur which may result in loss of life. Any additions, changes, or conversions required in order for the appliance to satisfactorily meet the application needs must be made by a Pentair dealer or other qualified agency using factory specified and approved parts. The heater is available for use with natural gas or LP (propane) gas only. It is not designed to operate with any other fuels. Refer to the nameplate for the type of gas the heater is equipped to use.

- Use heater only with the fuel for which it is designed.
- If a fuel conversion is necessary, refer this work to a qualified service technician or gas supplier before putting the heater into operation.

 **WARNING** — **Risk of fire or explosion from flammable vapors.** Do not store gasoline, cleaning fluids, varnishes, paints, or other volatile flammable liquids near heater or in the same room with heater.

 **WARNING** — **Risk of explosion if unit is installed near propane gas storage.** Propane (LP) gas is heavier than air. Consult local codes and fire protection authorities about specific installation requirements and restrictions. Locate the heater away from propane gas storage and filling equipment as specified by the Standard for the Storage and Handling of Liquefied Petroleum Gases, CAN/CSA B149.2 (latest edition) or ANSI/NFPA 58 (latest edition).

 **WARNING** — **Risk of fire, carbon monoxide poisoning, or asphyxiation if exhaust venting system leaks.** Only qualified service technicians should attempt to service the heater, as leakage of exhaust products or flammable gas may result from incorrect servicing.

 **WARNING** — **Risk of asphyxiation if exhaust is not correctly vented. Follow venting instructions exactly when installing heater.** Do not use a draft hood with this heater, as the exhaust is under pressure from the burner blower and a draft hood will allow exhaust fumes to blow into the room housing the heater. The heater is supplied with an integral venting system for outdoor installation. A vent conversion kit (See Page 24 for Part Numbers for Conversion Kits) is available for installations in enclosures (Canada) or indoors (U.S.). Use the specified venting, and only the specified venting, when heater is installed in an enclosure or indoors. In Canada, this pool heater can only be installed outdoors or in an enclosure that is not normally occupied and has no openings directly into occupied areas. See Page 19 for enclosure venting requirements.

 **CAUTION** — **Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Wiring errors can also destroy the control board.**

- Connect heater to **120** or **240** Volt, 60 Hz., Single Phase power only.
- Verify proper operation after servicing.
- Do not allow children to play on or around heater or associated equipment.
- Never allow children to use the pool or spa without adult supervision.
- Read and follow other safety information contained in this manual prior to operating this pool heater.

CONSUMER INFORMATION AND SAFETY

WARNING

The U.S. Consumer Product Safety Commission warns that carbon monoxide is an "invisible killer". Carbon monoxide is a colorless and odorless gas.

1. Carbon monoxide is produced by burning fuel, including natural gas and propane.
2. Proper installation, operation and maintenance of fuel-burning appliances in the home is the most important factor in reducing carbon monoxide poisoning.
3. Be sure that fuel burning appliances such as heaters are installed by professionals according to manufacturer's instructions and codes.
4. Always follow the manufacturer's directions for safe operation.
5. Have the heating system (including vents) inspected and serviced annually by a trained service technician.
6. Examine vents regularly for improper connections, visible cracks, rust or stains.
7. Install battery-operated carbon monoxide alarms. The alarms should be certified to the requirements of the most recent UL, IAS, CSA and IAPMO standard for carbon monoxide alarms. Test carbon monoxide alarms regularly and replace dead batteries.

GENERAL SPECIFICATIONS

NOTICE:

- Combustion air contaminated by corrosive chemical fumes can damage the heater and will void the warranty.
- The Combination Gas Control Valve on this heater differs from most appliance gas controls. If it must be replaced, for safety reasons replace it only with an identical gas control.
- The access door panels must be in place to provide proper ventilation. Do not operate the heater for more than five (5) minutes with the access door panels removed.
- This heater is design certified by CSA International as complying with the Standard for Gas Fired Pool Heaters, ANSI Z21.56/CSA 4.7, and is intended for use in heating fresh water swimming pools or spas.
- The heater is designed for the heating of chlorine, bromine or salt system swimming pools and spas. It should **NOT** be used as a space heating boiler, or general purpose water heater.
- The heater is design certified by CSA International for installation on combustible flooring. Specified minimum clearances must be maintained to combustible surfaces (see "Heater Clearances", [page 18](#)).
- The heater should be located in an area where leakage of the heater or connections will not result in damage to the area adjacent to the heater or to the structure. When such locations cannot be avoided, it is recommended that a suitable drain pan, adequately drained, be installed under the heater. The pan must not restrict air flow.
- The heater may not be installed within 5 ft. (1.5M) of the inside surface of a pool or spa unless it is separated by a solid fence, wall or other permanent barrier.

Section 3: Installation Instructions

HEATER DESCRIPTION

Figure 1 is a diagram of the heater showing how it operates. Precisely matched orifice plates meter the air and gas into the mixer. The blower draws the air and gas through the mixer and forces it into the burner's flame holder. A sealed heat exchanger surrounds the flame holder, discharging exhaust gases out the flue.

Two inch PVC water piping connects directly to the manifold/header on the heat exchanger using 2" PVC slip unions provided with the heater. The outer manifold remains cool; no heat sinks are required. A thermal regulator and an internal bypass regulate the water flow through the heat exchanger to maintain the correct outlet temperature. The heater operator control panel board assembly is located on top of the heater.

SEQUENCE OF OPERATION

An electronic temperature sensing **thermistor** in the manifold adapter inlet controls the heater operation. When the inlet water temperature drops below the temperature set on the **operating control**, the **burner controller** supplies power to the combustion **air blower** through a series of **safety interlocks**. The interlocks consist of:

- the **pressure switch (PS)**, which senses that the pump is running,
- the **high limit switch (HLS)**, which opens if the heat exchanger outlet temperature goes above 135° F (57° C), and
- the **air flow switch (AFS)**, which senses the pressure drop across the air metering orifice,
- the **automatic gas shut-off (AGS)** switch, which opens if the heat exchanger outlet temperature goes above 140° F (60° C).
- the **stack flue sensor (SFS)**, which shuts down the heater if the flue gas temperature reaches 480° F (249° C).

The air flow switch (AFS) senses the pressure drop across the air metering orifice. As soon as there is sufficient air flow, the AFS closes, closing the circuit to the **hot surface igniter (HSI)**, which ignites the fuel mixture. On a call for heat, the blower and HSI are energized. In about 20 seconds, the gas valve opens and ignition occurs. The HSI then switches to a sensing mode and monitors the flame.

The heater is equipped with a digital operating control that enables the user to pre-set the desired pool and spa water temperatures. The control enables the user to select between pool and spa heating, and features a digital display that indicates the water temperature.

PUTTING THE HEATER INTO SERVICE

If the heater is installed below the level of the pool, or more than two feet above pool level, the pressure switch setting should be adjusted. See WATER PRESSURE SWITCH, in the SAFETY CONTROLS Section.

Before putting the heater into service for the first time, follow the instructions under "BEFORE START-UP" (page 33) in the front of this manual. Check for proper operation of the heater by following the steps under "OPERATION INSTRUCTIONS."

Damage to equipment caused by improper installation or repair will void the warranty.

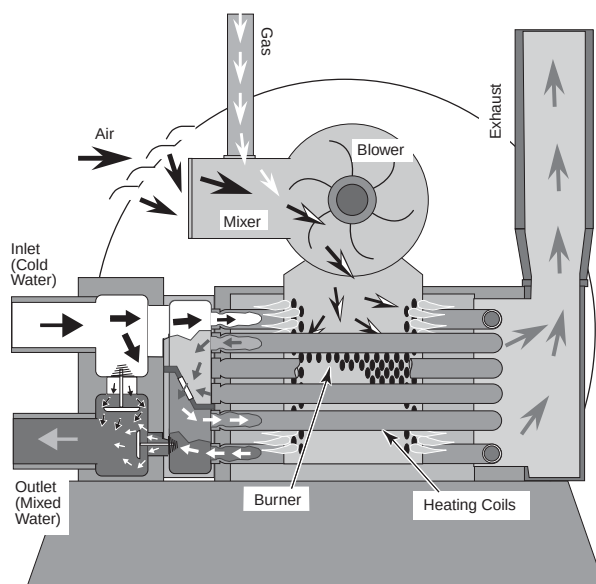


Figure 1.

SPECIFICATIONS

These installation instructions are designed for use by qualified personnel only, trained especially for installation of this type of heating equipment and related components. Some states require installation and repair by licensed personnel. If this applies in your state, be sure your contractor bears the appropriate license. See **Figure 2** for Outdoor and Indoor Installations.

DIMENSIONS IN INCHES

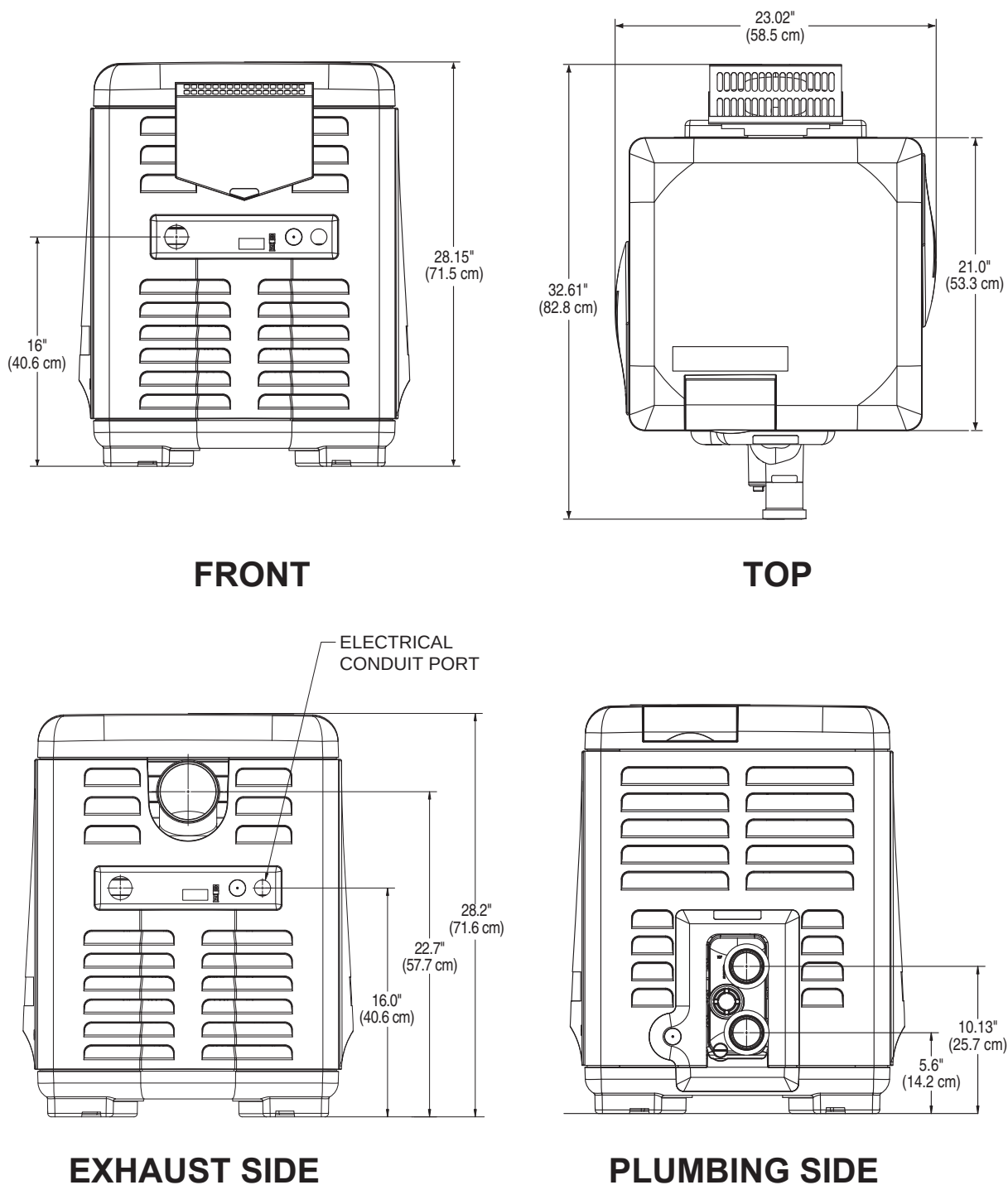


Figure 2.

PLUMBING CONNECTIONS

The MasterTemp heater has the unique capability of direct schedule 40 PVC plumbing connections. A set of bulkhead fittings is included with the MasterTemp heater to insure conformity with Pentair's recommended PVC plumbing procedure. Other plumbing connections can be used. See [Figure 3](#) for plumbing connections.

CAUTION

Before operating the heater on a new installation, turn on the circulation pump and bleed all the air from the filter using the air relief valve on top of the filter. Water should flow freely through the heater. Do not operate the heater unless water in the pool/spa is at the proper level. If a manual by-pass is installed, temporarily close it to insure that all air is purged from the heater.

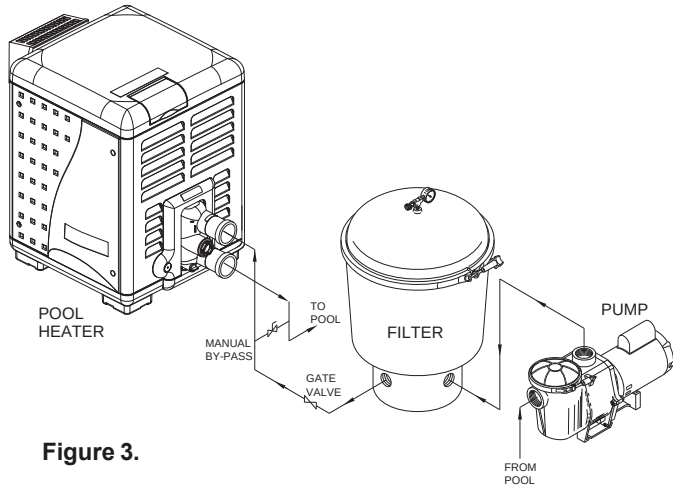


Figure 3.

WATER CONNECTIONS

The heater requires proper water flow and pressure for its operation. See [Figure 5](#) for the recommended installation. The filter pump discharges to the filter, the filter discharges to the heater, and the heater discharges directly to the pool or spa.

A manual bypass valve should be installed across the heater when the pump flow exceeds 120 GPM (454 LPM). See "WATER FLOW RATE" on [page 13- Table 1](#) for setting of the manual by-pass valve.

Make sure that the outlet plumbing from the heater contains no shut-off valves or other flow restrictions that could prevent flow through the heater (except for pool installations as noted below, or winterizing valves where needed). To switch flow between the pool and spa, use a diverter valve. Do not use any valve that can shut off the flow.

Install the chemical feeder downstream of the heater. Install a chemical resistant one-way check valve between the heater and the chemical feeder to prevent back-siphoning through the heater when the pump is off.

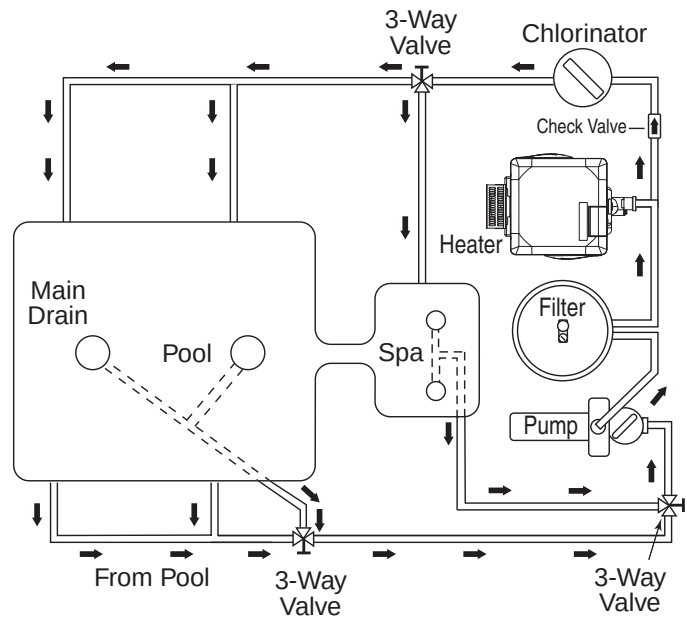


Figure 5.

NOTICE: If the heater is plumbed in backwards, it will cycle continuously. Make sure piping from filter is not reversed when installing heater.

Connect the heater directly to 2" PVC pipe, using the integral unions provided. Heat sinks are not required. The low thermal mass of the heater will prevent overheating of the piping connected to the pump even if the heater shuts down unexpectedly.

Occasionally a two-speed pump will not develop enough pressure on the low speed to operate the heater. In this case, run the pump at high speed only to operate the heater. If this does not solve the problem, do not try to run the heater. Instead, correct the installation.

Do not operate the heater while an automatic pool cleaner is also operating. If the circulation pump suction is plugged (for example by leaves), there may not be adequate flow to the heater. Do not rely on the pressure switch in this case.

VALVES

When any equipment is located below the surface of the pool or spa, valves should be placed in the circulation piping system to isolate the equipment from the pool or spa. Check valves are recommended to prevent back-siphoning. Back-siphoning is most likely to occur when the pump stops, creating a pressure-suction differential. Do **NOT** sanitize the pool by putting chlorine tablets or sticks into the skimmer(s). When the pump is off, this will cause a high concentration of chlorine to enter the heater, which could cause corrosion damage to the heat exchanger.

⚠ CAUTION

Exercise care when installing chemical feeders so as to not allow back siphoning of chemical into the heater, filters or pump. When chemical feeders are installed in the circulation of the piping system, make sure the feeder outlet line is down stream of the heater, and is equipped with a positive seal noncorrosive “Check Valve”, (P/N R172288), between the feeder and heater.

MANUAL BY-PASS

Where the water flow rate exceeds the maximum 120 GPM, a manual bypass should be installed and adjusted. After installing the valve, adjust the valve to bring the flow rate within the acceptable range. Then remove the valve handle or lock it in place to avoid tampering. See Figure 4.

Model	Min. (GPM) (LPM)	Max. (GPM) (LPM) *
175	20 (76)	120 (454)
200	20 (76)	120 (454)
250	25 (95)	120 (454)
300	30 (114)	120 (454)
400	40 (152)	120 (454)
* Do not exceed the maximum recommended flow rate for the connecting piping.		
* Pumps 2 HP or larger can produce water pressure flow in excess of 120 GPM. For these pumps, a BY-PASS VALVE is recommended.		

Table 1.

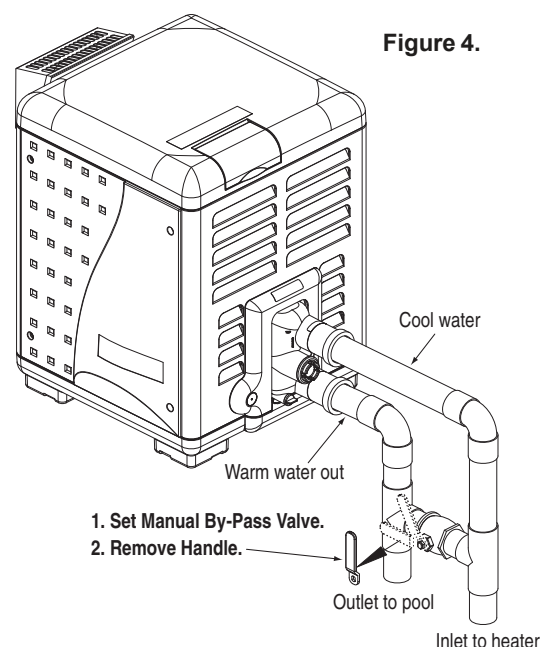


Figure 4.

See page 46 for Pressure Relief Valve Installations.

BELOW POOL LEVEL INSTALLATION

If the heater is below water level, the pressure switch must be adjusted. This adjustment must be done by a qualified service technician. See following **CAUTION** before installation.

⚠ CAUTION

BELOW OR ABOVE POOL INSTALLATION

The water pressure switch is set in the factory at 3.00 PSI (± 0.75 PSI). This setting is for a heater installed at pool level. If the heater is to be installed more than 1' above or below, the water pressure switch must be adjusted by a qualified service technician. See page 35, Figure 29.

FLOW SWITCH

If the heater is installed more than 5' above the pool or more than 4' below the pool level, you will be beyond the limits of the pressure switch and a flow switch must be installed. Locate and install the flow switch externally on the outlet piping from the heater, as close as possible to the heater. Connect the flow switch wires in place of the water pressure switch wires.

GAS CONNECTIONS

GAS LINE INSTALLATIONS

Before installing the gas line, be sure to check which gas the heater has been designed to burn. This is important because different types of gas require different gas pipe sizes. The rating plate on the heater will indicate which gas the heater is designed to burn. The Table 2, shown on [page 15](#), show which size pipe is required for the distance from the gas meter to the heater. The table is for natural gas at a specific gravity of .65 and propane at a specific gravity of 1.55.

When sizing gas lines, calculate three (3) additional feet of straight pipe for every elbow used. When installing the gas line, avoid getting dirt, grease or other foreign material in the pipe as this may cause damage to the gas valve, which may result in heater failure.

The gas meter should be checked to make sure that it will supply enough gas to the heater and any other appliances that may be used on the same meter. The gas line from the meter will usually be of a larger size than the gas valve supplied with the heater. Therefore a reduction of the connecting gas pipe will be necessary. Make this reduction as close to the heater as possible.

The heater requires a gas supply of not less than 4" (10.2 cm) wc and not more than 14" (35.6 cm) wc. Gas supply pressures outside of this range may result in improper burner operation. A minimum flowing or dynamic inlet pressure (while the heater is running) of 4" (10.2cm) wc is required to maintain input rating with no more than a 2" pressure drop between static and dynamic. The gas supply must be installed in accordance with the *National Fuel Gas Code, ANSI Z223.1*, or standard *CSA B149.1, Natural Gas and Propane Installation Codes*, as applicable and all applicable local codes. Install a manual shut-off valve and a sediment trap and union located outside the heater panels, see [Figure 6](#). Do not use a restrictive gas cock. The following minimum gas pipe sizes are recommended for natural gas supply piping, see [Table 2](#) on [page 15](#). For low pressure LP gas, pipe size may be reduced by 1/4", with a minimum pipe size of 1/2". Check for compliance with local codes.

The heater and any other gas appliances must be disconnected from the gas supply piping system during any pressure testing on that system, (greater than ½ PSI). The heater and its gas connection must be leak tested before placing the heater in operation. **Do not use flame to test the gas line.** Use soapy water or another nonflammable method.

NOTE

A manual main shut-off valve must be installed externally to the heater.

⚠ WARNING

DO NOT INSTALL THE GAS LINE UNION INSIDE THE HEATER CABINET. THIS WILL VOID YOUR WARRANTY.

SEDIMENT TRAPS

Install a sediment trap and union located outside the heater panels in accordance with National code requirements. Do not use a restrictive gas cock. The sediment trap shall be either a tee fitting with a capped nipple in the bottom outlet which can be removed for cleaning, as illustrated in [Figure 6](#), or an other device recognized as an effective sediment trap. All gas piping should be tested after installation in accordance with local codes.

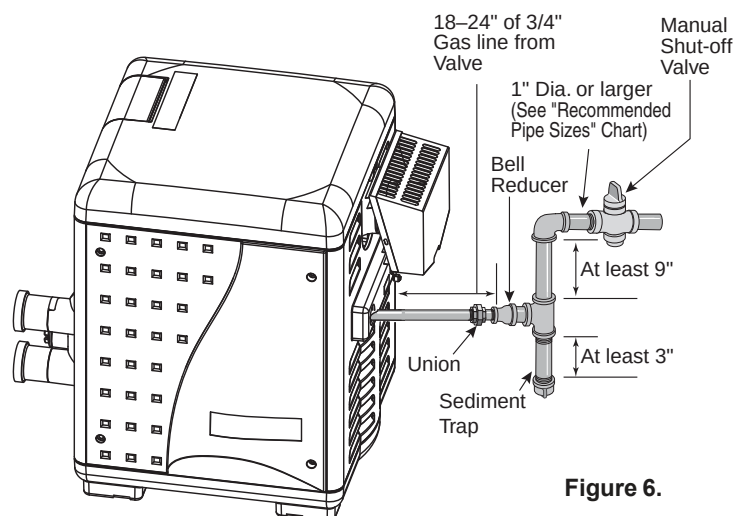


Figure 6.

GAS PIPE SIZING

STAGE TWO “LOW PRESSURE” GAS PIPE SIZING

PIPE SIZING FOR GAS LINE CONNECTIONS														
MAXIMUM EQUIVALENT PIPE LENGTH (Ft.)														
Natural Gas at 1000 B.T.U. per Cubic Foot														
Propane Gas at 2500 B.T.U. per Cubic Foot														
MODEL	1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"	
	NAT	PRO	NAT	PRO	NAT	PRO	NAT	PRO	NAT	PRO	NAT	PRO	NAT	PRO
175	-	20'	30'	80'	125'	250'	450'	600'	-	-	-	-	-	-
200	-	20'	30'	80'	125'	250'	450'	600'	-	-	-	-	-	-
250	-	10'	20'	50'	70'	150'	250'	500'	600'	-	-	-	-	-
300	-	-	10'	30'	50'	100'	200'	350'	400'	600'	-	-	-	-
400	-	-	-	10'	20'	60'	100'	150'	200'	450'	400'	-	-	-

Table 2.

TESTING GAS PRESSURE

Before operating the heater, the heater and its gas connections must be leak tested. **Do NOT use an open flame to test for leaks.** Test all gas connections for leaks with soapy water or another non-flammable method (see page 14).

The heater and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

The heater must be isolated from the gas supply system by closing its individual manual shut-off valve during any pressure testing of the gas supply at test pressures equal to or less than 1/2 psig (3.5 kPa).

CHECKING THE GAS PRESSURE THROUGH THE COMBINATION GAS CONTROL VALVE

⚠ WARNING

Risk of fire and explosion. Improper installation, incorrect adjustment, alteration, service, or maintenance of the Combination Gas Control Valve can lead to fire or explosion, causing loss of life, personal injury, and/or property damage. If it is necessary to adjust the gas valve, this must be done by only by a qualified service agency. **These instructions are for the use of qualified service technicians only!**

This appliance is equipped with an unconventional gas control valve that is factory set with a manifold pressure of $-0.2''$ (-0.5cm) wc. Installation or service must be performed by a qualified installer, service agency, or the gas supplier. If this control valve is replaced, it must be replaced with an identical control.

The combination gas

valve incorporates dual shut-off valves and a negative-pressure regulator. For proper operation, the regulated pressure at the outlet manifold of the valve must be $-0.2''$ (-0.5cm) wc below the reference pressure at the blower mixer inlet, and the gas valve ‘VENT’ tap must be connected to the end cap air orifice as shown in **Figure 7**.

Do not attempt to adjust the gas input by adjusting the regulator setting. The correct gas regulator setting is required to maintain proper combustion and must NOT be altered.

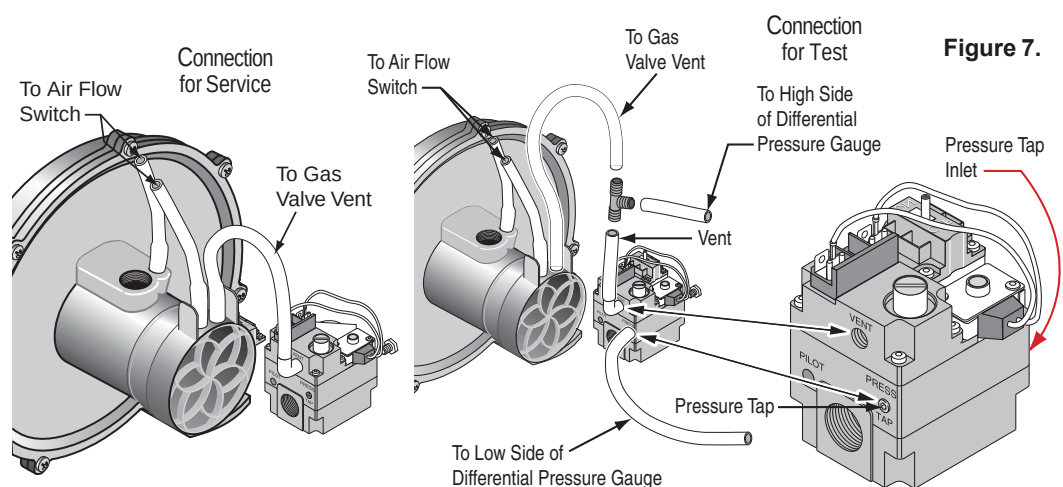


Figure 7.

⚠ CAUTION

The use of Flexible Connectors (FLEX) is NOT recommended unless they are properly sized according to the supplier recommendations for the heater rating.

GAS PRESSURE REQUIREMENTS

Gas Pressure	Model	Natural	Propane
		Inches W.C.	
Maximum Inlet	MT	14	14
Minimum Inlet	MT	4	4
Manifold	MT	-0.2 ± 0.1	-0.2 ± 0.1

NOTE: All readings must be taken while heater is operating. Any adjustments or readings made while heater is off will result in performance problems.

Table 3.

OUTDOOR INSTALLATION (U.S. and Canada)

For heaters located outdoors, using the built-in stackless venting system.

⚠ WARNING

Risk of explosion if a unit burning propane gas is installed in a pit or other low spot. Propane is heavier than air. Do not install the heater using propane in pits or other locations where gas might collect. Consult your local building code officials to determine installation requirements and specific installation restrictions of the heater relative to propane storage tanks and filling equipment. Installation must meet the requirements for the Standard for the Storage and Handling of Liquid Petroleum Gases, ANSI/NFPA 58 (latest edition) in the U.S., or CAN/CSA B149.2 (latest edition) in Canada. Consult local codes and fire protection authorities about specific installation restrictions.

Locate the heater on a level surface in an open area that is protected from drainage or run-off. Install the heater in an area where leaves or other debris will not collect on or around the heater.

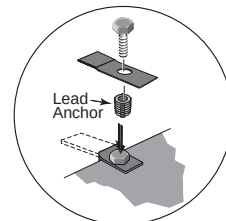
To avoid damage to the electronic components in the heater, take care to prevent prolonged exposure to driving sources of water (such as lawn sprinklers, heavy roof runoff, hoses, etc.). Avoid operation in persistent, extreme, moist or salty environments. In extreme weather, shut down the heater and disconnect the power to it until the weather has moderated. In areas subject to hurricanes or very high winds, purchase the Bolt Down Bracket Kit, P/N 460738.

HEATER CLEARANCES – OUTDOOR**IMPORTANT!**

- In an outdoor installation it is important to ensure water is diverted from overhanging eaves with a proper gutter/drainage system. The heater must be set on a level foundation for proper drainage.
- This unit shall not be operated outdoors at temperatures below -20°F.

If the heater is located under a roof overhang, there must be at least three (3) feet (1m) of clearance between the bottom of the overhang and the top of the heater exhaust vent, see **Figure 8**. If the heater is under a roof overhang, the space around the heater must be open on three sides. **DO NOT, under any circumstances, install the heater under ANY deck.**

For Heater mounting bolts and clamps, purchase separately Bolt Down Bracket Kit, Part No. 460738.



For minimum exhaust vent clearances for all building openings, including but not limited to vented eaves, doors, windows, gravity air inlet, see **Figure 9**, show below.

In Canada, the heater must be installed with the top of the vent at least 10 feet (3m) below, or to either side of, any opening into a building.

Orient the heater for convenient access to the water connections and the gas and electrical connections.

Note: Check local building codes for installing the heater from any property line set back requirements (see the installation diagram below).

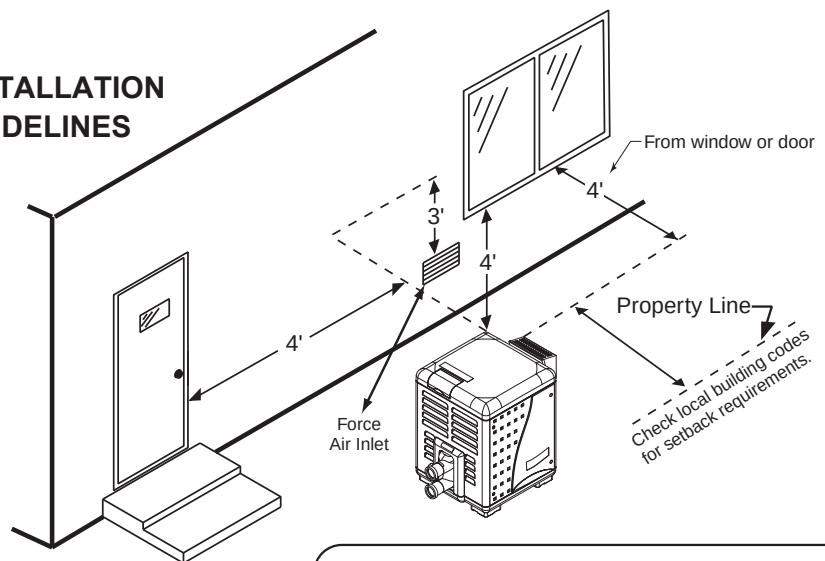
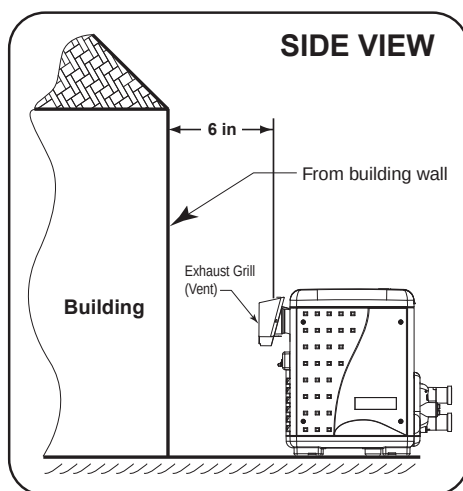
CAUTION

If installing the heater next to or near an air conditioning unit or a heat pump, allow a minimum of 36 in. (91.4 cm) between the air conditioning unit and the heater.

3 ft. (1 M) or more

Figure 8.

OUTDOOR INSTALLATION VENTING GUIDELINES



Vent Termination:

- Must be at least 3 ft. above any forced air inlet located within a 10 ft. radius.
- Must be located 6 in. away from the building wall and the following distances away from any building wall openings, included but not limited to vented eaves, doors, windows, gravity air inlet:
 - 4 ft. below,
 - 4 ft. horizontally

Figure 9.

INDOOR VENTING — General Requirements

The heater may be installed as a Category I or Category III appliance.

Vented Appliance (Category I) – Vertical only

An appliance that operates with a *nonpositive* vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent, see [pages 20-23](#).

Vented Appliance (Category III) – Vertical or Horizontal

An appliance that operates with a *positive* vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent, see [pages 24-26](#).

If you are considering connecting this heater to a pre-existing vent system, make sure that the vent system meets the appropriate venting requirements as given in this manual on [pages 18-28](#). If not, replace the vent system. **DO NOT** use a draft hood with this heater.

The MasterTemp heaters are capable of a 270-degree discharge rotation and operate with a positive vent static pressure and with a vent gas temperature less than 400° F (204° C). The total length of the horizontal run must not exceed the length that is listed in [Table 11](#) on [page 21-22](#).

HEATER CLEARANCES — General Requirements

INDOOR INSTALLATION (U.S.) OR OUTDOOR SHELTER (CANADA)

The following clearances must be maintained from combustible surfaces:

TOP	6 in. (15 cm)
EXHAUST SIDE	6 in. (15 cm)
HEADER SIDE	6 in. (15 cm)
DOOR PANELS†	6 in. (15 cm)

Note (†) For service access it is advisable to allow for sufficient clearance on at least one door panel. The heater is design certified by CSA International for installation on combustible flooring. For installation on carpeting, the heater must be mounted on a metal or wood panel that extends at least three inches (10cm) beyond the base of the heater. If the heater is installed in a closet or alcove, the entire floor shall be covered by the panel. On an outdoor shelter installation, the exhaust discharges into a vent pipe. Orient the heater so that the vent pipe does not interfere with adjustment of the operating controls. The control panel located on the top panel can be rotated to any of the three sides of the heater for easy access. However, the control panel must not be located on the side where the vent is located.

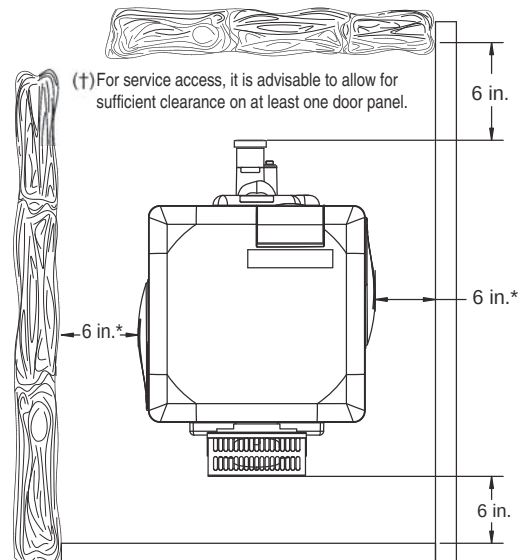


Figure 10.

OUTSIDE VENT COVER REMOVAL

The heater is supplied from the factory with a built-in stackless outside vent for outdoor installation. Remove the outside vent cover for outdoor shelter installation.

COMBUSTION AIR SUPPLY

For indoor installation, the heater location must provide sufficient air supply for proper combustion and ventilation of the surrounding area.

The minimum requirements for the air supply specify that the room in which a heater is installed should be provided with two permanent air supply openings; one within 12 inches (30cm) of the ceiling, the other within 12 inches (30cm) of the floor for combustion air, in accordance with the latest edition of ANSI Z223.1, or the National Fuel Gas code, the CSA B149.1, Natural Gas and Propane Installation Codes, as applicable, and any local codes that may apply. These openings shall directly, or through duct, connect to outdoor air.

Note: For indoor installations where combustion air might be insufficient, see “Direct Air Intake Duct with 3-inch PVC Pipe (Indoor Installation)” below.

Air Supply Requirements Guide for MasterTemp Heaters

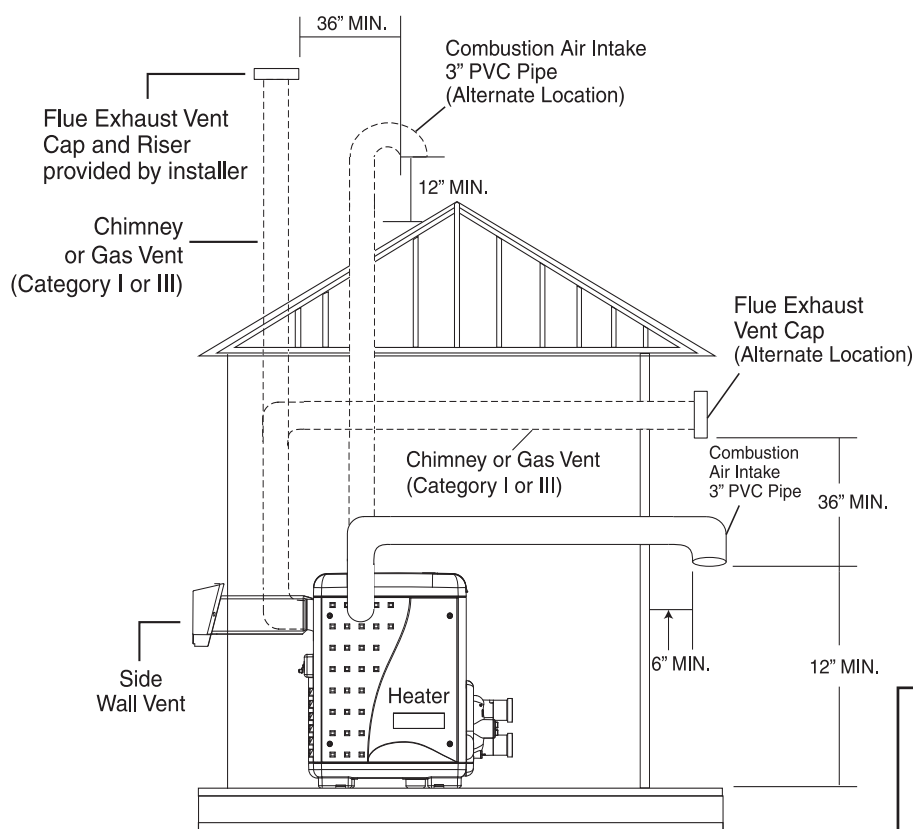
Minimum Net Free Open Area for Each Opening* (Square Inches/Centimeters)				
Model	All Air From Inside Building		All Air From Outside Building	
	Combustion	Vent	Combustion	Vent
175	200 sq. in. 1290 sq. cm.	200 sq. in. 1290 sq. cm.	50 sq. in. 323 sq. cm.	50 sq. in. 323 sq. cm.
200	200 sq. in. 1290 sq. cm.	200 sq. in. 1290 sq. cm.	50 sq. in. 323 sq. cm.	50 sq. in. 323 sq. cm.
250	250 sq. in. 1613 sq. cm.	250 sq. in. 1613 sq. cm.	63 sq. in. 406 sq. cm.	63 sq. in. 406 sq. cm.
300	300 sq. in. 1935 sq. cm.	300 sq. in. 1935 sq. cm.	75 sq. in. 484 sq. cm.	75 sq. in. 484 sq. cm.
400	400 sq. in. 2580 sq. cm.	400 sq. in. 2580 sq. cm.	100 sq. in. 645 sq. cm.	100 sq. in. 645 sq. cm.
* Area indicated is for one of two openings; one at floor level and one at the ceiling.				

Table 4.

Direct Air Intake Duct with 3-inch PVC Pipe (Indoor Installation)

For indoor heater installations where combustion air supply might be insufficient, the MasterTemp® Heater is certified for a direct air intake duct using 3-inch PVC pipe. If outside air is drawn through 3” PVC duct directly into the heater, PVC pipe can be installed in accordance with the following requirements:

The air intake opening **MUST** be installed at least 1 ft. above the roof line or normal snow levels for free air flow. The Category I or III exhaust vent termination cap must have at least 3 ft. minimum vertical clearance from air intake duct. (See diagram on page 20).



Combustion 3 in. PVC Pipe Inlet Air Intake Duct Requirements*

Combustion Air Intake 3 in. Pipe (Vertical or Horizontal)	
No. of 90° Elbows	Maximum Length in Feet (M)
0	70 ft. (21.3 M)
1	58 ft. (17.7 M)
2	46 ft. (14.0 M)
3	34 ft. (10.4 M)
4	22 ft. (6.7 M)

Table 5.

⚠ WARNING!

DO NOT USE PVC PIPE FOR FLUE EXHAUST VENT. FLUE EXHAUST VENT TEMPERATURES CAN BE IN EXCESS OF 400° F. FLUE EXHAUST VENT **MUST BE** CATEGORY I or CATEGORY III METAL VENT.

Note (*): Combustion Air Intake Duct Connection Kit (Part Number 461031) for all MasterTemp heater models can be purchased separately. See page 52 for parts list.

NOTE

Each 90-degree elbow reduces the maximum horizontal PVC air intake duct run by 12 feet and each 45-degree elbow in the PVC air intake duct run reduces the maximum run by 6 feet. See the Table 5 above for the maximum lengths using 90-degree elbows.

Corrosive Vapors and Possible Causes

Area	Likely Contaminants
Chlorinated swimming pools and spas	Pool or spa cleaning chemicals. Acids, such as hydrochloric or muriatic acid.
New construction and remodeling areas	Glues and cements, construction adhesives, paints, varnishes, and paint and varnish strippers. Waxes and cleaners containing calcium or sodium chloride.
Beauty parlors	Permanent wave solutions, bleaches, aerosol cans containing chlorocarbons or fluorocarbons.
Refrigeration plants or various industrial finishing and processing plants	Refrigerants, acids, glues and cements, construction adhesives.
Dry cleaning and laundry areas	Bleaches, detergents, or laundry soaps containing chlorine. Waxes and cleaners containing chlorine, calcium or sodium chloride.

Table 6.

⚠ CAUTION

Chemicals should not be stored near the heater installation. Combustion air can be contaminated by corrosive chemical fumes which can void the warranty.

VENT INSTALLATION – INDOOR INSTALLATION (U.S.) OR OUTDOOR SHELTER (CANADA)

(Category I)

Always vent the heater to the outdoors, see Note*.

- Vent it vertically using Type “B” double wall vent connector pipe.

Locate the heater so as to minimize the length of horizontal venting and the number of vent elbows required. Horizontal vent runs must slope up 1/4" per foot (2cm/M) from the heater to allow exhaust condensate to drain and it is recommended to have a condensate drain as described in the venting installation instructions.

VERTICAL VENTING - NEGATIVE PRESSURE

(See Figures 11, 12 and 13)

Vent the heater vertically in a negative pressure (positive draft) system in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54 and/or CSA B149.1, Natural Gas and Propane Installation Codes, and local codes. Type “B” Double-wall vent connector is recommended; however single-wall pipe is allowed by the National Fuel Gas Code in some circumstances. Consult your local code official for detailed information. **Do not** use a draft hood with this heater.

To connect a negative pressure metal gas vent to the heater, order the appropriate Metal Flue Collar from the chart below:

Metal Flue Collar	Part No.
4 x 6"	77707-0076
4 x 8"	77707-0077

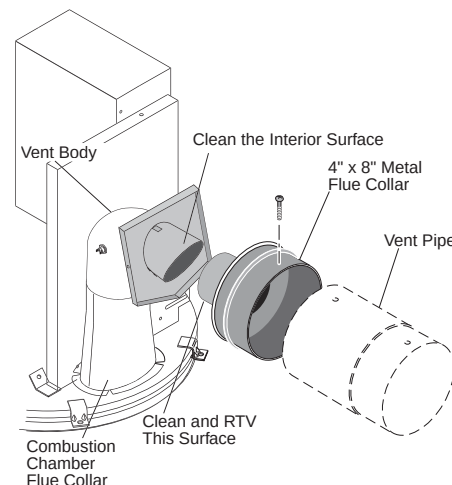


Figure 11.

1. See Table 7, to determine allowable vent sizes for your heater.

NOTICE: Table 7 is for installations in which the total lateral vent length (that is, the horizontal distance from the flue collar to the main vertical portion of the vent) is less than 1/2 the total vent height (the vertical distance from the flue collar to the vent termination) and which have three or less elbows in the system. For venting systems which do not meet these conditions, consult the National Fuel Gas Code, ANSI Z223.1 (U.S.), or the standards CSA B149.1 and B149.2 (Canada).

Read “VERTICAL VENTING – NEGATIVE PRESSURE” before using this table.

Table 7. – Permitted Minimum and Maximum Vent Heights By Size and Heater Model

Type “B” Double-Wall Vent with Type “B” Double-Wall Connector in Feet (Meters)					
Vent Size	Model 175 Height min./max.	Model 200 Height min./max.	Model 250 Height min./max.	Model 300 Height min./max.	Model 400 Height min./max.
6 in.	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)	18 ft. (5.5)/100 ft. (30.5)	30 ft. (9)/100 ft. (30.5)	Not Rec.
7 in.	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)	8 ft. (2.4)/100 ft. (30.5)	10 ft. (3)/100 ft. (30.5)	15 ft. (4.6)/100 ft. (30.5)
8 in.	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)	8 ft. (2.4)/100 ft. (30.5)
9 and 10 in.	6 ft. (1.8)/50 ft. (15.3)	6 ft. (1.8)/50 ft. (15.3)	6 ft. (1.8)/50 ft. (15.3)	6 ft. (1.8)/100 ft. (30.5)	6 ft. (1.8)/100 ft. (30.5)
Type “B” Double-Wall Vent with Single-Wall Connector in Feet (Meters)					
Vent Size	Model 175 Height min./max.	Model 200 Height min./max.	Model 250 Height min./max.	Model 300 Height min./max.	Model 400 Height min./max.
6 in.	6 ft. (1.8)/15 ft. (4.6)	6 ft. (1.8)/15 ft. (4.6)	6 ft. (1.8)/15 ft. (4.6)	Not Rec.	Not Rec.
7 in.	6 ft. (1.8)/8 ft. (2.4)	6 ft. (1.8)/8 ft. (2.4)	6 ft. (1.8)/8 ft. (2.4)	10 ft. (3)/20 ft. (6)	15 ft. (4.6)/50 ft. (15.3)
8 in.	Not Rec.	Not Rec.	Not Rec.	6 ft. (1.8)/20 ft. (6)	8 ft. (2.4)/20 ft. (6)
9 in.	Not Rec.	Not Rec.	Not Rec.	Not Rec.	6 ft. (1.8)/6 ft. (1.8)
10 in.	Not Rec.	Not Rec.	Not Rec.	Not Rec.	Not Rec.

NOTE

The allowable vent runs for each vent pipe diameter are different and can not be exceeded.

Each 90-degree elbow reduces the maximum horizontal vent run by 12 feet and each 45-degree elbow in the vent run reduces the maximum vent run by 6 feet. See Table 7 on page 21 for the maximum vent lengths using 90-degree and 45-degree elbows.

2. Install the metal Flue Collar in the Vent Body of the heater (located under the outside vent cover). Fasten the metal Flue Collar to the Vent Body with two #10 sheet metal screws. Use high temperature silicone RTV to seal the Flue Collar to the Vent Body. Before connecting the metal Flue Collar to the Vent Body, wet a clean cloth or paper towel with isopropyl alcohol (rubbing alcohol) and vigorously wipe the socket of the Vent Body. Immediately wipe the cleaned surfaces dry with a clean cloth or paper towel. Repeat for the exterior of the 4" end of the metal Flue Collar. Attach the metal Flue Collar to the Vent Body using the RTV supplied with the kit, following the vent manufacturer's instructions (included with kit).
3. Attach the vent pipe to the metal Flue Collar with sheet-metal screws.

⚠ WARNING

Risk of fire or asphyxiation if vent is not assembled according to manufacturer's instructions or if vent parts from different manufacturers are mixed. Vent parts from different manufacturers ARE NOT interchangeable. Mixing parts from more than one manufacturer may cause leaks or damage to vent. When assembling a vent, pick one manufacturer and be sure that all vent parts come from that manufacturer and are specified by the manufacturer for your system. Follow manufacturer's instructions, local code requirements, National Fuel Gas Code requirements (U.S.) or standards CSA B149.1 and B149.2 (Canada) carefully during assembly and installation.

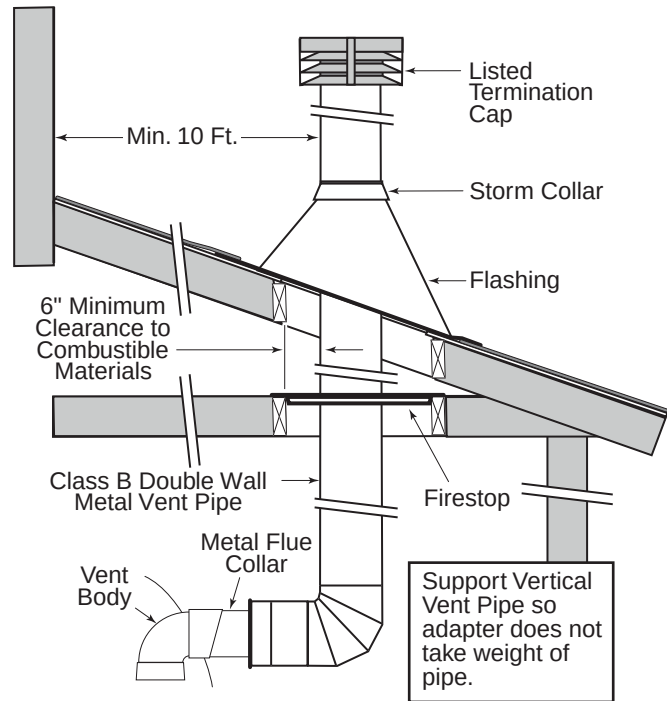


Figure 12. – Typical Metal Vent Pipe Installation - U.S.
(Vertical – Negative Pressure)

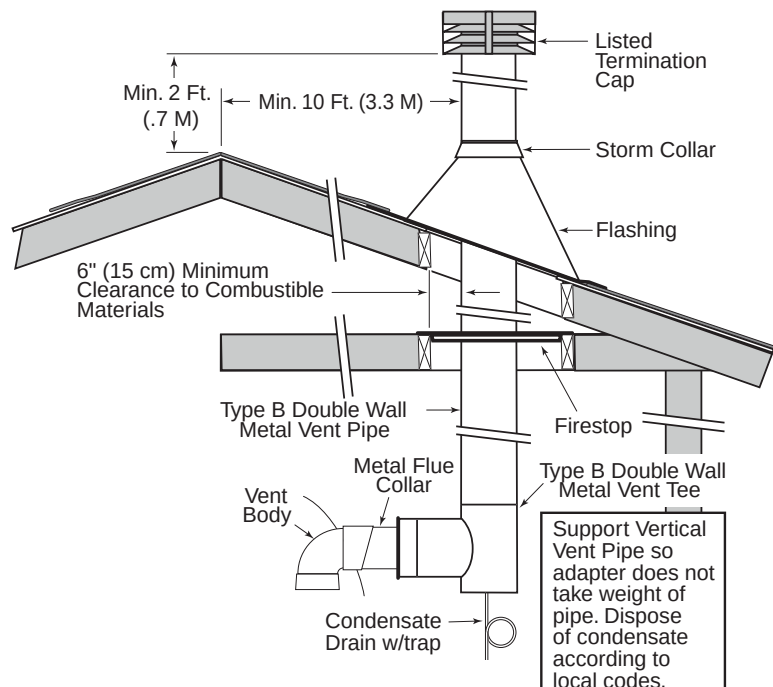


Figure 13. – Typical Metal Vent Pipe Installation - Canada
(Vertical – Negative Pressure)

4. Install vent pipe so that it can expand and contract freely as the temperature changes. Support the vent pipe according to applicable codes and the vent manufacturer's instructions. Pipe support must allow the vent pipe free movement out and back, from side to side, or up and down as necessary, without putting a strain on the heater or vent body. Slope horizontal pipe runs up from the heater at least 1/4" per foot (2cm per meter). Install Listed condensate drains at low points where condensate might collect. Plumb condensate drains to a drain through hard piping or high temperature tubing such as silicone rubber or EPDM rubber – do not use vinyl or other low temperature tubing. Follow drain manufacturer's installation instructions.
5. Use Listed fire stop for floor and ceiling penetrations. Use Listed thimble for wall penetrations. Use a Listed roof flashing, roof jack, or roof thimble for all roof penetrations. Do not fill the space around the vent (that is, the clear air space in the thimble or fire stop) with insulation. The roof opening must be located so that the vent is vertical.
6. **Do not run the heater vent into a common vent with any other appliance.**

WARNING

Fire Hazard. Do not vent the heater directly into a masonry chimney. Installation into a masonry chimney must use a chimney liner and must meet the National Fuel Gas Code, ANSI Z223.1/NFPA 54 and/or CSA B149.1, Natural Gas and Propane Installation Codes requirements and all local code requirements.

WARNING

Risk of fire, carbon monoxide poisoning, or asphyxiation. It is recommended to use a CO Monitor and Fire Alarm in rooms that contain gas fired appliances.

HORIZONTAL OR VERTICAL VENTING - POSITIVE PRESSURE (See Figures 14, 15, and 16)

(Category III)

Vent the heater either horizontally or vertically using an optional vent adapter of the 4-inch special gas approved Category III vent pipes. Install the vent pipe in accordance with local codes and the provisions of the National Fuel Gas Code, ANSI Z223.1 (U.S.), or the standards CSA B149.1, Natural Gas and Propane Installation Codes (Canada), and the vent manufacturer's instructions. Do not use a draft hood with this heater. Install the vent according to the vent manufacturer's detailed instructions. **Note:** Maintain clearance between the vent pipe and combustible surfaces according to the vent manufacturer's instructions and code requirements. Do not place any insulating materials around the vent or inside the required clear air space surrounding the vent. See Table 11 for maximum permissible vent lengths.

NOTE

The allowable vent runs for each vent pipe diameter are different and can not be exceeded. Each 90° elbow reduces the maximum horizontal vent run by 12 feet and each 45-degree elbow in the vent run reduces the maximum vent run by 6 ft. See the Table 8 below for the maximum vent lengths using 90° elbows.

The MasterTemp heater is a "Category III" appliance (**which requires a four (4) inch special gas approved "Category III" vent pipe**) and is a forced-draft pool and spa heater which uses positive pressure to push flue gases through the vent pipe to the outside. **Flue gases under positive pressure may escape into the dwelling with any cracks or loose joints in the vent pipe, or improper vent installation.** The vent pipe must be of a sealed-seam construction, such as those listed for use with "Category III Appliances", and for operating temperatures less than 400°F (204°C). Vent pipe construction will be of UL 1738 approved non-corrosive material, such as stainless steel. A condensate trap may be needed. The use of "Approved" thimbles, roof jacks and/or side vent terminals are required; and the proper clearances to combustible materials must be maintained in accordance with type of vent pipe employed—in the absence of a clearance recommendation by the vent pipe manufacturer, the requirements of the Uniform Mechanical Code should be met. **See page 19, for heater ventilation air requirements.** It is recommended that vent runs over 18 feet may need to be insulated to reduce condensation related problems and/or the use of a condensate trap in the vent run close to the heater may be necessary in certain installations such as cold climates. Horizontal vents 3' (1M) or less in length do not require a condensate tee. The MasterTemp heater is suitable for through-the-wall venting.

Table 8.

4 in. Special Gas Vent (Vertical or Horizontal)*	
No. of 90° Elbows	Maximum Length in Feet (M)
0	70 ft. (21.3M)
1	58 ft. (17.7M)
2	46 ft. (14.0M)
3	34 ft. (10.4M)
4	22 ft. (6.7M)

*Minimum vent length is one foot (.34M), or in accordance with vent manufacturer's instruction, and local and national codes. Horizontal vents 3'(1M) or less in length do not require a condensate tee, but must slope down toward the outlet at 1/4" to the foot (2cm/M) to allow condensate to drain.

⚠ CAUTION

Do **NOT** combine exhaust vent pipes to a common exhaust vent in multiple unit installations. Run separate vent pipes.

CONNECTING SPECIAL METALIC GAS VENT TO THE HEATER

1. Order an optional appliance adapter kit, (*Pentair offers optional appliance adapter kits, call Customer Service at (800) 831-7133 for more information*): Part No. 77707-0086 for Saf-T Vent® or Saf-T Vent® CI. Part No. 77707-0087 for Z-Vent.
2. Remove the outside vent cover.
3. Install the Appliance Adapter in the Vent Body of the heater (located under the outside Vent Cover). Before connecting the Appliance Adapter to the Vent Body, wet a clean cloth or paper towel with isopropyl alcohol (rubbing alcohol) and vigorously wipe the socket of the Vent Body. Immediately wipe the cleaned surfaces dry with a clean cloth or paper towel. Repeat for the exterior of the heater end of the Appliance Adapter. Attach the appliance adapter to the vent body using the adhesive specified by the vent manufacturer, following the vent manufacturer's instructions.

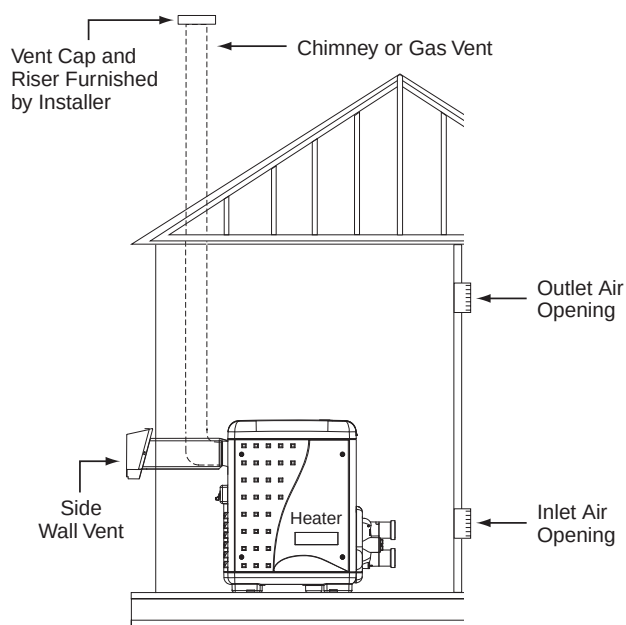
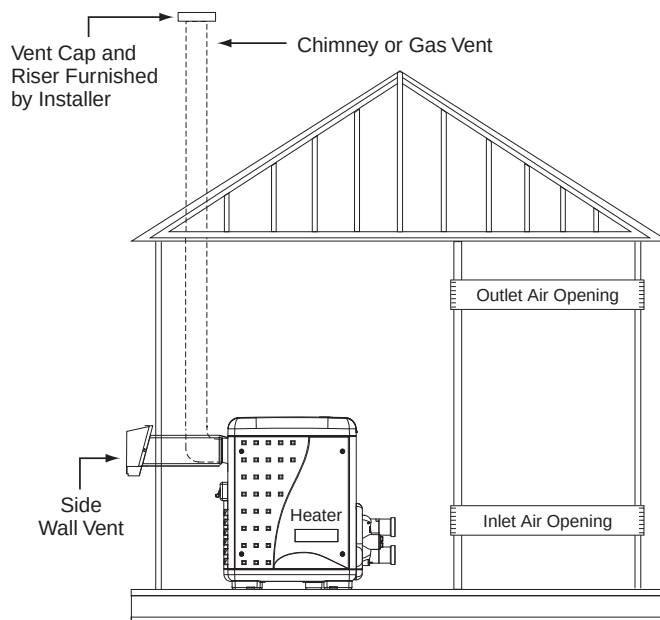
⚠ WARNING

Risk of carbon monoxide poisoning if adapter is improperly attached. Mechanical connections (such as screws) can cause cracking and leaks in the adapter. Do **NOT** drill holes or use screws to connect the appliance adapter to the heater vent body. Attach with manufacturer's specified adhesive.

⚠ WARNING

Risk of fire or asphyxiation if vent is not assembled according to manufacturer's instructions or if vent parts from different manufacturers are mixed. Vent parts from different manufacturers ARE NOT interchangeable. Mixing parts from more than one manufacturer may cause leaks or damage to vent. When installing a vent, pick one manufacturer and be sure that all vent parts come from that manufacturer and are specified by the manufacturer for your system. Follow manufacturer's instructions and local and National Fuel Gas Code (U.S.) or CSA B149.1, Natural Gas and Propane Installation Codes (Canada) requirements carefully during assembly and installation.

4. Install vent pipe so that it can expand and contract freely as the temperature changes. Support the vent pipe according to applicable codes and vent manufacturer's instructions. Pipe support must allow the vent pipe free movement out and back, from side to side, or up and down as necessary, without putting a strain on the heater or vent body. It is recommended to slope the horizontal pipe runs up from the heater at least 1/4" per foot (2cm/M). Install "Approved" condensate drains at low points where condensate might collect. Plumb condensate drains to a drain through hard piping or high-temperature tubing such as silicone rubber or EPDM rubber – do not use vinyl or other low temperature tubing. Follow drain manufacturer's installation instructions.
5. Use an "Approved" firestop for floor and ceiling penetrations. Use an "Approved" thimble for wall penetrations. Use an "Approved" roof flashing, roof jack, or roof thimble for all roof penetrations. Do not fill the space around the vent (that is, the clear air space in the thimble or firestop) with insulation. The roof opening must be located so that the vent is vertical.
6. **Vent Termination – Vertical** (See Figures 14 and 15), for height of vent termination above the roof. Use an "Approved" vent terminal specified by local and national codes and your manufacturer's instructions. A roof termination must be vertical. In Canada, the Vent Cap location shall have a minimum clearance of 4 feet (1.2M) horizontally from electric meters, gas meters, regulators, and relief openings.
7. Make sure entire installation is sealed according to approved standard.

**Figure 14.****Figure 15.**

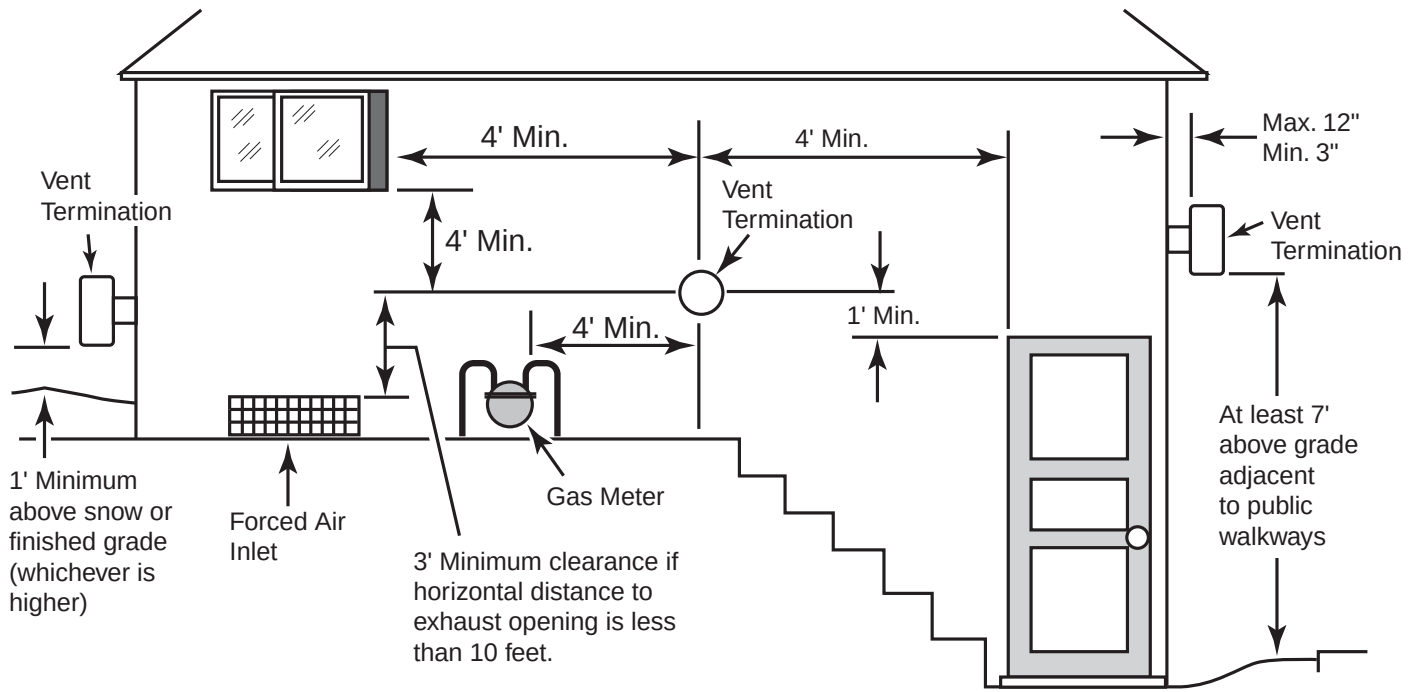


Figure 16.

8. Vent Termination – Horizontal

The terminal must be located (U.S. – See Figure 16):

- at least 3" and at most 12" out from the wall (see Figure 17), following the vent manufacturer's instructions
- at least 12" above finished grade or the normally expected snow accumulation level, whichever is higher
- at least 4 feet below or horizontally from, or 1 foot above, any doors or windows or gravity air inlet to a building
- at least 3 feet above any forced air inlet located within 10 feet
- at least 4 feet horizontally from electric meters, gas meters, regulators and relief equipment
- at least 7 feet above grade adjacent to walkways or similar traffic areas

The terminal must be located (Canada – See Figure 16):

- at least 10 feet (3.3M) from any opening into a building
- at least 12" (.3M) above finished grade or the normally expected snow accumulation level, whichever is higher
- at least 4 feet (1.2M) horizontally from electric meters, gas meters, regulators and relief equipment
- at least 7 feet (2.1M) above grade adjacent to walkways or similar traffic areas

Allow at least three feet (1M) vertical clearance over vent termination when terminating under an overhang.

Avoid corners or alcoves where snow or wind could have an effect. Exhaust may affect shrubbery and some building materials. Keep shrubbery away from termination. To prevent staining or deterioration, sealing or shielding exposed surfaces may be required.

⚠ WARNING

Fire Hazard. Do not run the heater vent into a common vent with any other appliance. Do not run the Special Gas Vent into, through, or within any active vent such as a factory built or masonry chimney.

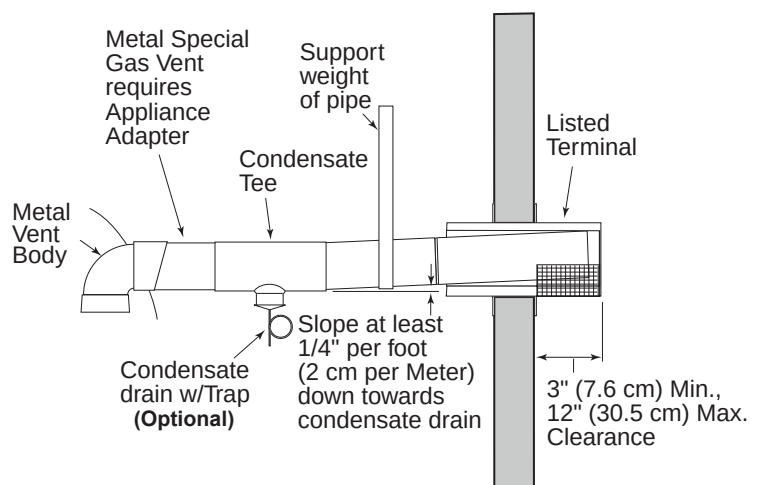


Figure 17.

OUTDOOR SHELTER INSTALLATION

In Canada, this pool heater can only be installed outdoors or in an enclosure that is not normally occupied and has no direct openings into occupied areas.

⚠ WARNING

Risk of asphyxiation if exhaust is not correctly vented. Follow venting instructions exactly when installing heater. Do not use a draft hood with this heater, as the exhaust is under pressure from the burner blower and a draft hood will allow exhaust fumes to blow into the room housing the heater. Exhaust venting to the outdoors is required for all outdoor shelter installations.

⚠ WARNING

Risk of explosion if a unit burning propane gas is installed in a pit or other low spot. Propane is heavier than air. Do not install the heater using propane in pits or other locations where gas might collect. Consult your local building code officials to determine installation requirements and specific installation restrictions of the heater relative to propane storage tanks and filling equipment. Installation must meet the requirements for the Standard for the Storage and Handling of Liquefied Petroleum Gases, CAN/CSA B149.2 (latest edition) or ANSI/NFPA 58 (latest edition). Consult local codes and fire protection authorities about specific installation restrictions.

The heater is design certified by CSA International for installation on combustible flooring; in alcoves; basements; in closet or utility rooms (in the U.S.).

GARAGE OR UTILITY ROOM INSTALLATION

In Canada, the heater must be installed in a room that is not normally occupied and has no openings directly to occupied areas.

⚠ WARNING

Risk of fire and explosion if installed at floor level in an automotive garage or near gasoline or flammable liquid storage. Gasoline fumes are heavier than air and will settle to floor level in closed spaces. Gasoline fumes and spilled gasoline or other volatile liquids (such as some paints and varnishes) will travel across the floor and can be ignited by a gas appliance.

In any utility room or residential garage installation, install the heater with the base at least 18 inches (.5M) above the floor, see [Figure 18](#). In a garage, install a rail or wall to protect the heater from physical damage by a moving vehicle.

Provide an adequate ventilation air supply (See [Table 4, page 19](#)).
Choose a location that will avoid contamination by chemical fumes.

⚠ CAUTION

A Propane (LPG) fired heater must not be installed in a garage in Massachusetts, by order of the Massachusetts State Fire Marshal. For more information, call the Massachusetts State Fire Marshal's office.

NOTICE: Combustion air contaminated by corrosive chemical fumes can damage the heater and will void the warranty (See [Table 6, page 20](#)).

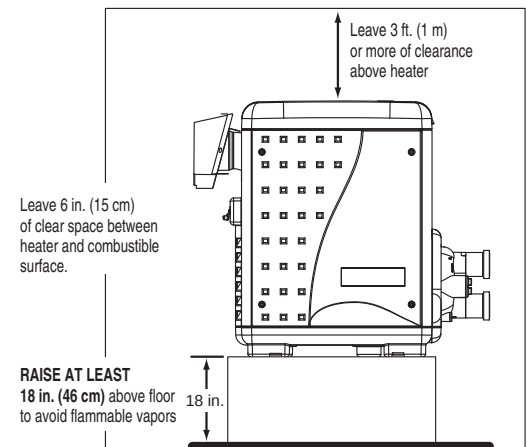


Figure 18.

CONTROL PANEL INDEXING

On an outdoor shelter installation, the exhaust discharges into a vent pipe. Orient the heater so that the vent pipe does not interfere with adjustment of the operating controls. The control panel located on the top panel can be rotated to any of the three sides of the heater for easy access, see **Figure 19**.

1. Remove the bolts from the door panels. Remove both door access panels.
2. Remove the four corner wing nuts that secure the top panel. Lift the top panel upward to remove the top panel.
3. Rotate the top panel to the desired position located at 90° angles. *Note that the control panel must **NOT** be located on the side where the vent is located.*
4. Replace the top panel down onto the side panels. Be sure that there are no wires caught under the panel.
5. Secure the top panel using the four corner wing nuts.
6. Reattach the door access panels.

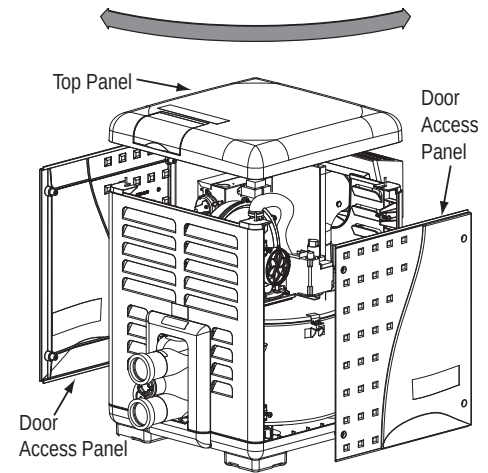


Figure 19.

FINAL INSTALLATION CHECK

Check that horizontal vent pipe runs slope uniformly at least 1/4" per foot (2cm per meter) to condensate drain(s). No sags, no dips, no high or low spots.

Check that vent is supported at elbows, tees, and horizontal and vertical runs according to manufacturer's instructions and code requirements.

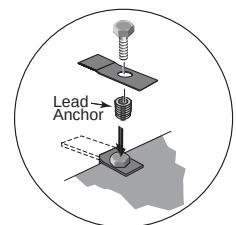
Check that vent supports and wall and ceiling penetrations allow free movements up, down, and sideways without putting any strains on the heater or vent body.

Check for at least six inch (15cm) free air clearance between the heater vent pipe and combustible materials.

Check that all joints are completely together and sealed.

In Florida, building codes require that the heater be anchored to the equipment pad or platform to withstand high wind pressures created during hurricanes. A Bolt Down Bracket Kit, P/N 460738, is available with anchor clamps designed to hold the unit to the equipment pad in high wind conditions. Installation of the anchor clamps are recommended in all installations and are required in Florida, (See Florida Building Code 301.13).

For Heater mounting bolts and clamps, purchase separately Bolt Down Bracket Kit, Part No. 460738.



ELECTRICAL CONNECTIONS

Electrical Rating: 60 Hz 120 / 240 Volts AC, single phase

Enclose the incoming AC power line to the heater, in an approved flexible conduit connected directly to the junction box on the inside of the access door panel. Line voltage field wiring should be 14 gauge, with a circuit capacity of 15 Amps.

⚠ CAUTION

This heater is designed to operate at 120 or 240 VAC. It is not recommended to be connected to OR operate on a 208 VAC.

NOTE

- Before making any electrical connections to the power supply, remove the access door panels, open the control box and plug in the correct plug (120 VAC or 240 VAC). See plugs below.

⚠ CAUTION

The heater ships from the Factory with the 240 VAC plug installed. Installing the 120V plug and then connecting the heater to 240V line current will immediately destroy the transformer, control board and ignition control module, and will void warranty. If you install the 240V plug and connect the heater to 120 VAC line current, the heater will not operate.

- If any of the original wiring supplied with this heater must be replaced, installer must supply (No. 18 AWG, 600V, 105° C. U.L. approved AWM low energy stranded) copper wire or it's equivalent.

Please read the boxes headed **“IMPORTANT! READ ME FIRST!”** on [pages 38](#) and [42](#) before proceeding.

1. All wiring must be in accordance with all applicable codes.
2. The heater, when installed, must be electrically grounded and bonded in accordance with local codes or, in the absence of local codes, with the National Electrical Code or the Canadian Electrical Code (as applicable). A bonding lug is provided on the outside of the panel under the vent for this purpose.
3. Electrical power circuits to the pool heater must follow local codes and National Electrical Code or Canadian Electrical Code (as applicable).
4. All wiring between the heater and devices not attached to it, or between separate devices which are installed in the field, must be “Type T” wire rated for 35°C rise.
5. All line voltage wiring shall be enclosed in approved flexible conduit, and shall be securely attached to the field wiring box located inside the access door panel. The conduit or cable connector at the field wiring box should contain an insulating bushing or its equivalent to prevent abrasion of the wires as they enter the box.
6. **The filter pump should run continuously when the heater is on, and for at least 5 minutes after the heater turns off.** Any switches in the pump circuit (including circuit breakers) that can disconnect the pump must also disconnect the heater.
7. Do not wire single-pole switches, including protective devices, into a grounded line. The heater is not sensitive to polarity.

Connect the **L1** of the power supply to the **black** wire, the **L2** or neutral lead to the **red** wire, and the **ground** wire to the **green** wire. A time clock controlling the filter pump should have a low-voltage Fireman's Switch that switches off the heater at least 15 minutes before shutting off the pump.



Always use crimp type connectors when connecting two wires.

AC VOLTAGE SELECT PLUGS:
(120 VAC or 240 VAC)

AC Plug
120 Volt
or
240 Volt

Figure 20.



CONNECTION OF FIREMAN'S SWITCH OR REMOTE CONTACT

⚠ CAUTION

If, while there is line voltage connected to the heater, you touch either line voltage terminal with any 24VAC wire that is connected to the control board (including the Fireman's Switch jumper), you will immediately destroy the control board and void the warranty.

REMOTE CONTROL CONNECTIONS

1. Switch off power to heater at main circuit breaker panel.
2. Unbolt and remove the access door panels.
3. Open control box cover (see [Figure 21](#)).
- 4a. To connect a 2-Wire Control (such as Pentair's IntelliTouch® or EasyTouch® Control Systems) or a timer:
 - Remove the factory installed jumper from the Fireman's Switch terminals.
 - Connect wires between the Fireman's Switch terminals on the heater and the relay. Connect wires from the controller or timer to the Fireman's Switch. Controller, timer or relay should be sized to handle 24VAC at 0.5 Amp (because it will be completing the 24VAC control board circuit on the heater as shown in [Figure 22](#)). DO NOT apply line voltage to the Fireman's Switch terminals. Use 18 gauge wire with a minimum 3/64" (1.2mm) thick insulation rated for a temperature rise of at least 105°C.
 - Knock-outs are provided to route the wires through the bottom of the control box and past the junction box.
- 4b. To connect a 3-Wire Control:
 - Connect wires between the control board terminals on the heater and the external relays, as shown in [Figure 23](#). Use at least 2 relays per heater, to allow for an "OFF setting" on each heater mode. Select relays that can handle logic level switching. DO NOT apply line voltage to control board terminals.
 - Move jumper (as shown on [Figure 23](#)) to enable external control and to disable the heater membrane pad's "Pool ON" and "Spa ON" buttons (the "OFF" key on the membrane pad remains functional).
 - Knock-outs are provided to route the wires through the bottom and the top of the control box and past the junction box.
5. Close control box cover.
6. Re-install the access door panels.

To control heaters that are operated in parallel, connect wiring at same locations on heater as 2-Wire or 3-Wire Control. It is imperative that each control circuit is isolated from the other control circuits, to avoid that current will flow from one heater to another through the control circuits.

NOTICE: The fuse for the Fireman's Switch is a 1.25 Amp 1¼ x ¼" fast blow fuse, which is commonly available.

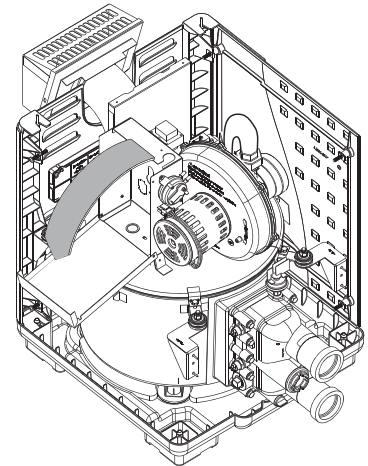


Figure 21.

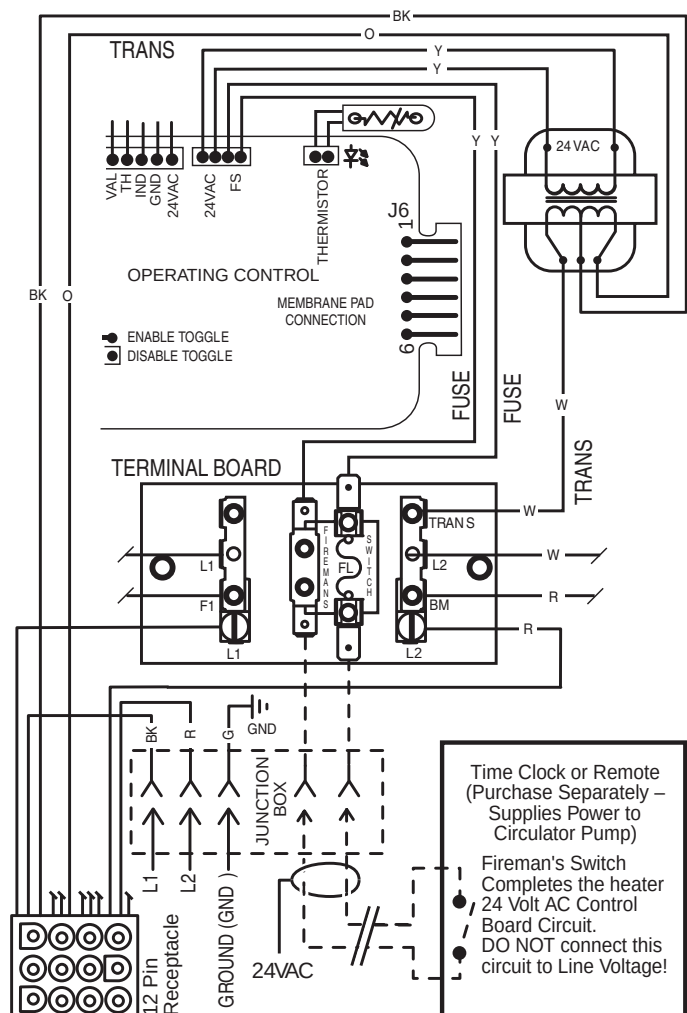


Figure 22.

MASTERTEMP HEATER WIRING DIAGRAM

(3-WIRE SYSTEM)

CONNECTION DIAGRAM

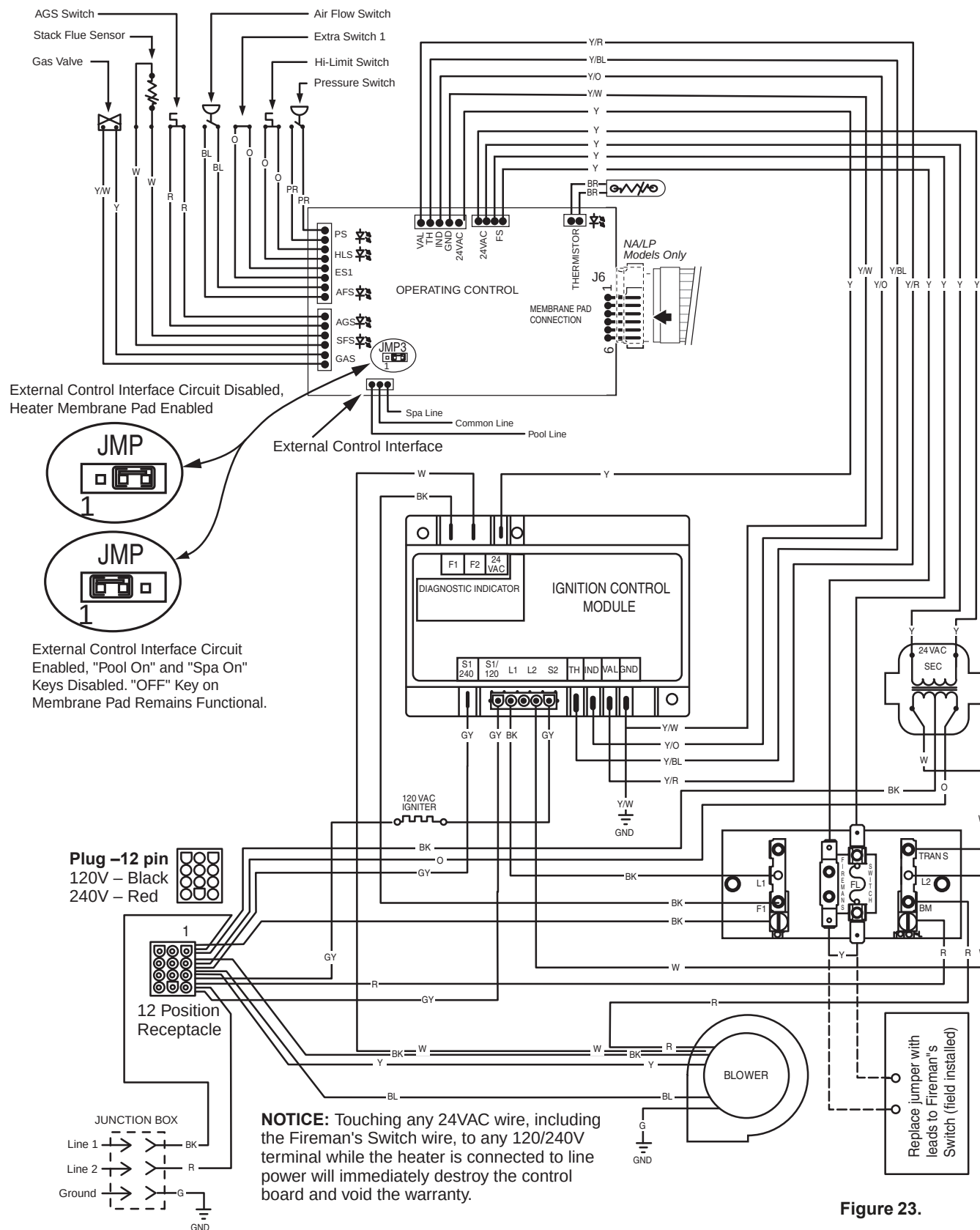
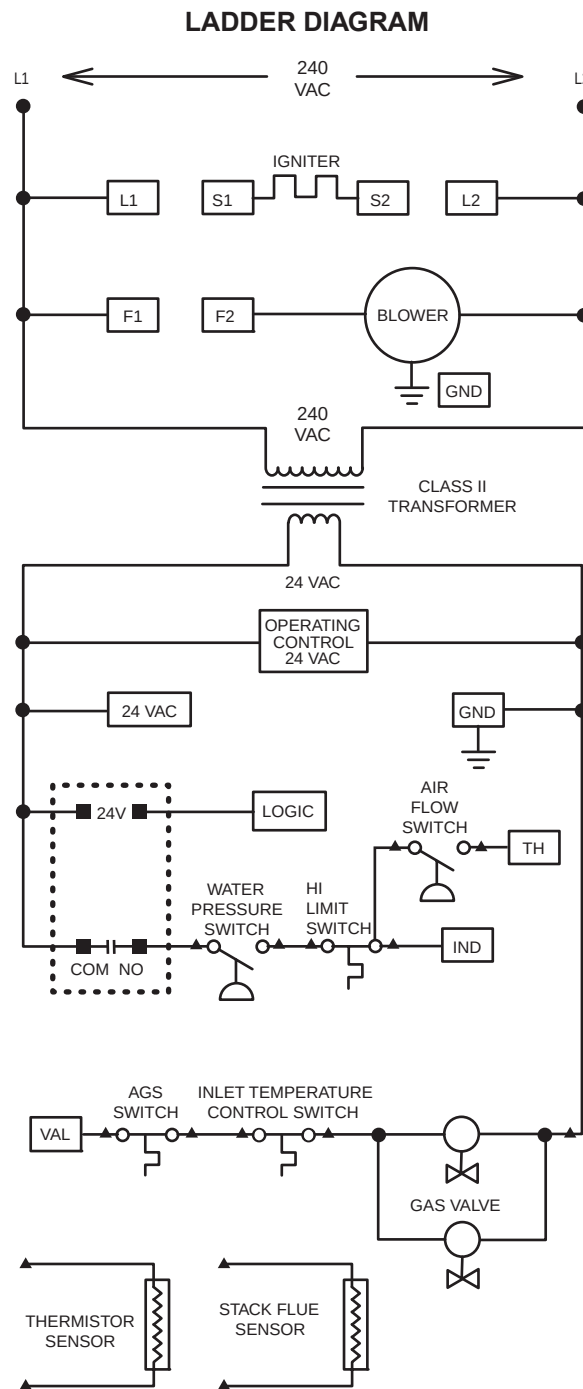


Figure 23.

MASTERTEMP HEATER ELECTRICAL SCHEMATIC LADDER DIAGRAM



NOTES:

- 1.)

L1	L2	F1	F2	S1	24 VAC
S2	GND	IND	VAL	AND	TH

ARE CONNECTED ON THE IGNITION MODULE.
- 2.) ▲ PIN AND SOCKET CONNECTOR.
- 3.) IF ANY OF THE ORIGINAL WIRES AS SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, THEY MUST BE REPLACED WITH TYPE 105° C OR ITS EQUIVALENT.

Figure 24.

Operation Instructions

BASIC SYSTEM OPERATION

Start pump, make sure the pump is running and is primed, to close the water pressure switch and supply power to heater. Be sure the pool and/or spa is properly filled with water. Follow the Lighting/Operating instructions below.

MASTERTEMP HEATER HSI ELECTRONIC IGNITION LIGHTING/OPERATION

FOR YOUR SAFETY: READ BEFORE LIGHTING

 WARNING	
	If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.
	Do not attempt to light the heater if you suspect a gas leak. Lighting the heater can result in a fire or explosion which can cause personal injury, death, and property damage.

START-UP AND OPERATION

START-UP AND SHUTDOWN INSTRUCTIONS ARE ON THE LABEL ATTACHED TO THE COVER OF THE APPLIANCE CONTROL BOX.

BEFORE START-UP

- A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burners. Do not try to light the burners by hand.
- B. **BEFORE OPERATING**, smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
- E. Do not operate the pool heater unless the pool or spa is properly filled with water.
- F. Before operating the appliance for the first time or after it has been off for an extended time, perform the following checklist:
 1. Remove debris or other articles from inside the heater and the area around the heater and its exhaust vent. Make sure the ventilation openings are clear of debris or obstruction. For installations in an enclosed space, make sure openings for combustion and ventilation air are unobstructed.
 2. Keep heater area clear and free from combustibles, flammable liquids and chemicals.
 3. Check that all water connections are tight.
 4. Water must be flowing through the heater during operation. Make sure that pool/spa is filled with water and have pump operating. Check that water flow is unobstructed from the appliance. When operating for the first time or after an extended shut-down, run filter pump for several minutes to clear all air from the system.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the Fire Department.
- C. Use only your hand to turn the gas control on or off. Never use tools. If you cannot change the ON/OFF setting by hand, don't try to repair it, call a qualified service technician. Forced or attempted repair may result in a fire or explosion.
- D. Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control which has been under water.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information on (page 33).
2. Set both pool and spa thermostats to the lowest settings.
3. Turn off all electric power to the appliance.
4. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. Remove the access door panels by unfastening the four screws located on each door, then lift up and out from the bottom of the panel to remove. If necessary, the screws may be used as handles, see Figure 25.
6. **Toggle-Style Valve:** Pull toggle toward you to turn gas off, see Figure 26.
7. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow “B” in the “Before Start-up” instructions (page 33). If you don’t smell gas, go to the next step.
8. Push the toggle switch away from you to switch the gas on.
9. Replace the Door Access Panels. All panels must be in place when operating the heater.
10. Set 3-way valves on inlet and outlet to pool or spa, as appropriate.
11. Turn on all electric power to the appliance.
12. Press either the POOL ON or SPA ON button switch on the operating control.
13. Set the thermostat to desired setting (**NOTICE:** Setpoint must be above actual water temperature or burner will not fire). See “OPERATING the CONTROL PANEL”.
14. The blower should come on immediately, and after about 20 seconds, the burner should fire. When operating for the first time, the burner may not fire on the first try because of air in the gas line. If it does not fire at first, push the OFF switch, wait five minutes, and again push the POOL or SPA ON switch. The burner should fire after about 20 seconds. You may have to repeat this until all of the air has cleared the gas line.
15. The burner should fire until the pool/spa temperature reaches the desired temperature set on the thermostat. The blower will continue to run for about 45 seconds after the burner shuts off. If any of the safety interlocks should open during burner operation, the burner shuts off immediately, but the blower continues to run for about 45 seconds. Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the appliance.
16. If the appliance will not operate, follow the instructions below “TO TURN OFF GAS TO THE APPLIANCE”, and call your service technician or gas supplier.

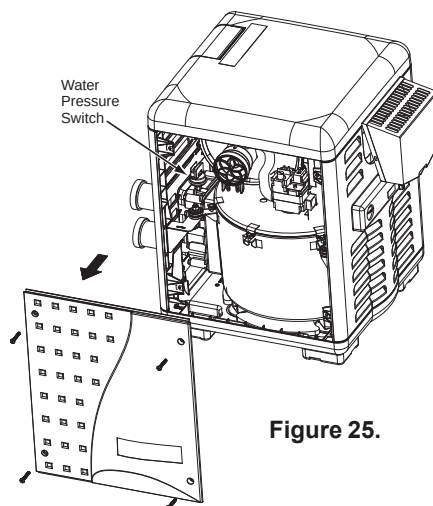


Figure 25.

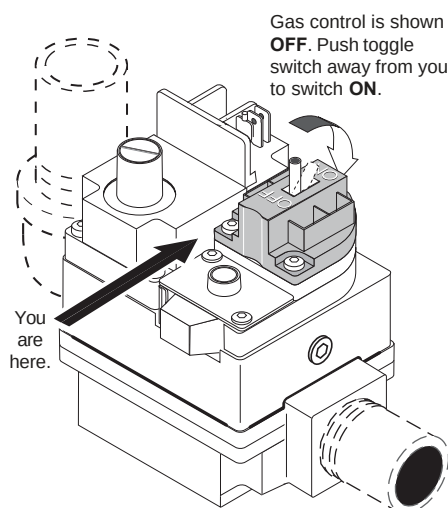


Figure 26.

TO TURN OFF GAS TO APPLIANCE

1. Press the OFF button on operating control.
2. Switch off all electric power to the unit.
3. Remove the access door panels, see Figure 25.
4. **Toggle-Style Valve:** Pull toggle toward you to turn gas off, see Figure 26.
5. Replace the Access Door Panels.

SAFETY CONTROLS

AIR FLOW SWITCH (AFS)

The air flow switch, (see **Figure 27**), is a safety device used to insure that the combustion air blower (fan) is operating and has been designed to monitor the vacuum (negative) pressure within the blower housing. The air flow switch is factory set and is connected upstream of the ignition module. The ignition module does not operate unless the air pressure switch and all safety switches are closed.

WATER PRESSURE SWITCH

⚠ WARNING

Hazardous pressure. Do not bypass the Water Pressure Switch or render it inoperable.

The water pressure switch, (see **Figure 28**). If the water flow is restricted, the water pressure switch may prevent the burner from firing and cause the “Service System” light to go on. If the light remains on after the filter has been serviced, have a qualified service technician check the system.

For deck-level heater installations, the Water Pressure Switch is factory set at 3.00 psi (20.6 kPa). **NOTE:** See, *Below Pool Level Installation Instructions on page 13*. If the pressure switch is one foot (.3M) below or above the pool water level, reset the switch so that it is open when the pump is off and closed when the pump is running. Turn the star-wheel on the switch clockwise (↻) to raise setting (heater below the pool) and counterclockwise (↺) to lower the setting (heater above the pool – see **Figure 29**. Test the switch after resetting.

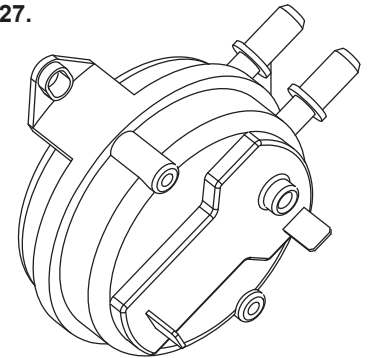
NOTICE: When the heater is mounted more than five feet (1.5M) above or four feet (1.2M) below the deck level, a Pressure Switch is no longer adequate. A Flow Switch must be installed instead.

NOTICE: Heater operation with incorrect Pressure Switch setting may cause operation with no water flow. Operation of the heater without sufficient water flow may severely damage it.

HIGH LIMITS

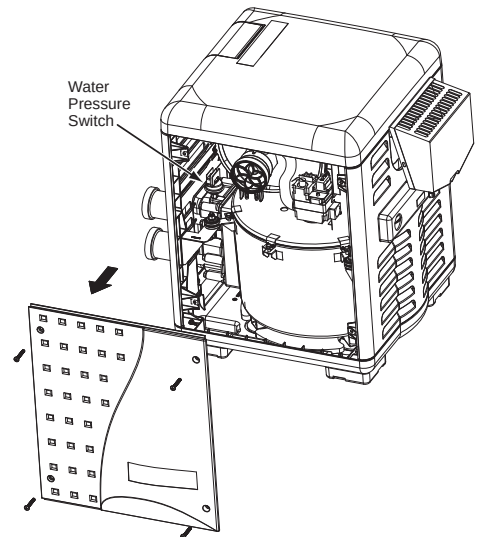
A “High Limit”, is a safety device that opens the electrical circuit and shuts off the heater based on a water temperature set point within the “High Limit Device”. The MasterTemp heater series of heaters contains two (2) high limit devices which are located on the main inlet / outlet header.

Figure 27.

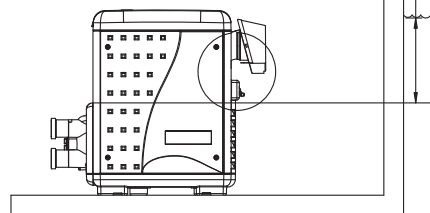


Air Flow Switch

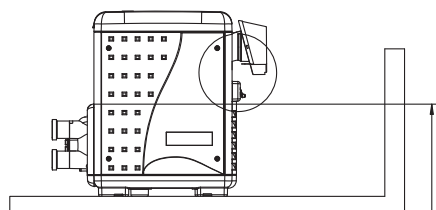
Figure 28.



Turn star wheel **clockwise** to raise pressure set point if pressure switch is more than 4 feet (1.2M) below water level



A reference scale is on the back of pressure switch



Turn star wheel **counterclockwise** to lower pressure set point if pressure switch is more than 5 feet (1.5M) above water level

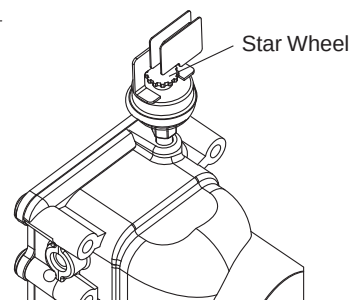


Figure 29.

SAFETY CONTROLS, (cont'd.)

OPERATION OF IGNITION MODULE

The Ignition Module, (see [Figure 30](#)), is microprocessor based and operates on 24VAC supplied by the transformer. The control utilizes a microprocessor to continually and safely monitor, analyze, and control the proper operation of the gas flame holder. The module with the presence of the flame sensor, using flame rectification, allows the heater to operate.

OPERATING THE CONTROL PANEL

The five operating switches are:

- POOL ON** Press this button to govern heater operation by the pool temperature setting.
- SPA ON** Press this button to govern heater operation by the spa temperature setting.
- HEATER OFF** Press this button to switch off the heater.
- ▲ TEMP** Press this button to raise the temperature setting.
- ▼ TEMP** Press this button to lower the temperature setting.

To toggle the display between degrees Centigrade (°C) and degrees Fahrenheit (°F):

1. Turn the Operating Control OFF.
2. Press **▲TEMP** or **▼TEMP** for 5 seconds. The display will flash once and change modes (°C to °F or vice versa).
3. Turn the Operating Control ON.

When either the **▲TEMP** or **▼TEMP** buttons are depressed, the digital display will indicate the temperature setting. After five seconds, the display will return to the actual pool/spa temperature.

In addition to the digital temperature display, there are five indicator lights:

The **POOL ON** light indicates that the pool water temperature is governing operation of the heater.

The **SPA ON** light indicates that the spa water temperature is governing operation of the heater.

The **HEATING** light comes on and stays on when the burner is firing. This light should be on whenever the burner is on. It blinks when the heater is calling for heat but not firing. If this light is on but the burner fails to come on, one of the “service” lights should come on, indicating a fault in the system.

The **SERVICE SYSTEM** light indicates that there is insufficient water flow to the heater. If the pump is operating, this usually indicates that the filter and/or skimmers should be cleaned (some filters may require back-washing). If the light remains on after the filter/skimers have been serviced, the system should be checked by a qualified service technician.

The **SERVICE HEATER** light indicates a fault in the heater or its controls. If this light comes on, shut down the heater (See “TO TURN OFF GAS TO THE APPLIANCE” on [page 34](#)), and have a qualified service technician check the system.

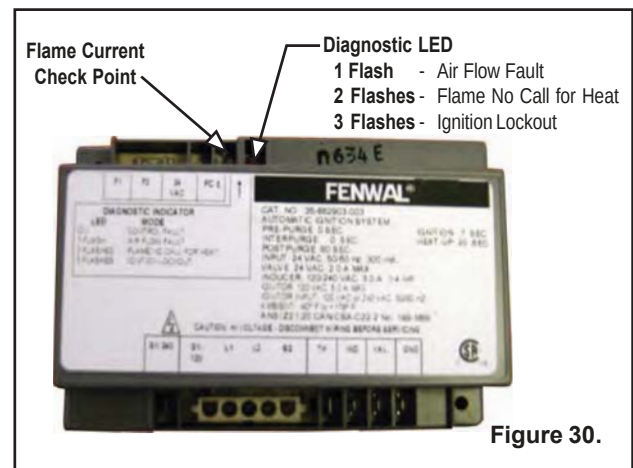


Figure 30.

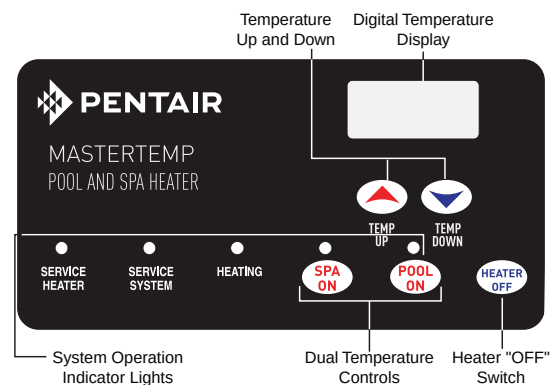


Figure 31.

⚠ WARNING

Risk of explosion or fire causing burns or death if safety interlocks are disabled. DO NOT attempt to operate heater when SERVICE HEATER light is on or if blower or burner will not start. Instead, follow instructions under “To Switch Off Gas to the Appliance,” and call a qualified service technician to repair unit.

TEMPERATURE SETTING

The heater comes factory set at 78° F. for the pool mode and 100° F. for the spa mode. Using the up and down arrows, you can set the thermostats to a minimum temperature of 65° F., or a maximum of 104° F. If you desire to heat only one body of water, the thermostat is capable of an off mode. As an example, if you only wish to heat the spa and not the pool, simply depress and hold the pool down arrow, and the thermostat will lower its setting to 65° F. then go to an off mode.

MAXIMUM TEMPERATURE SET POINT

1. Unbolt and remove the door panels (see [Figure 32](#)).
2. Access the control panel board on the underside of the top cover. Locate the yellow button on the corner of the control board.
3. Push the **Max. Temp. Set Point** button on the back of the control board (see [Figure 33](#)).

The following sequence should happen:

- A. The unit will come on and the **POOL ON** light will come on.
 - B. Press the **▲TEMP** or **▼TEMP** pad (on TOP of the panel) to set maximum pool temperature.
 - C. Wait up to 30 seconds; the **POOL ON** light will go off and the **SPA ON** light will come on. To override the time delay, push the **Max. Temp. Set Point** button again.
 - D. Press the **▲TEMP** or **▼TEMP** button on the control panel and set maximum spa temperature to 104°F (40°C) or less.
 - E. Wait up to 30 seconds; the **SPA ON** light will go off and the unit will shut down. To override the time delay, push the **Max. Temp. Set Point** button again.
4. Reinstall the access door panels.

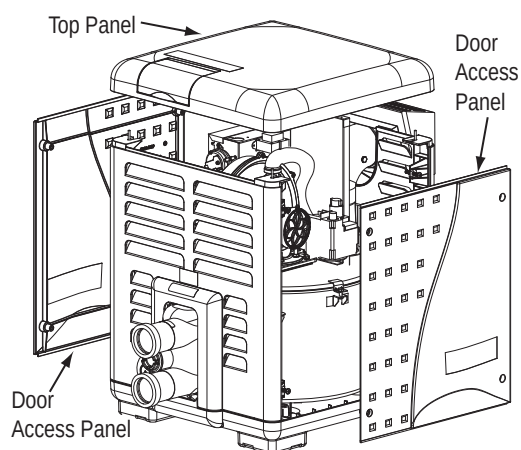


Figure 32.

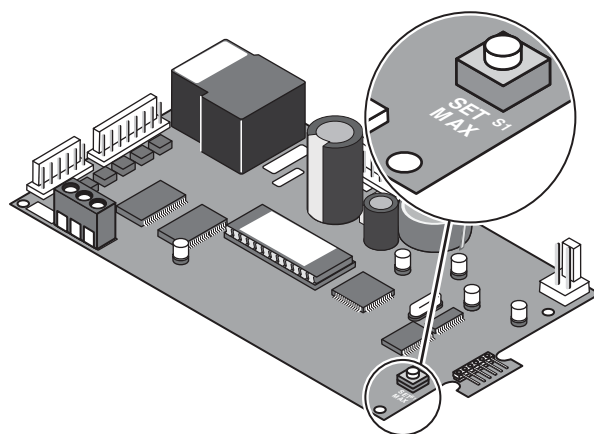


Figure 33.

Troubleshooting Instruction

Initial Troubleshooting

Only qualified, trained service technicians with appropriate test equipment should service the heater. Remember that all parts of the system affect heater operation. Before starting this troubleshooting procedure, make sure that the pump is running correctly, that there are no blockages in the system, that the valves are correctly set and that the time clock is correctly set and is running.

IMPORTANT! READ ME FIRST!

NOTICE: Installing the **black 120 volt** plug in the control box and then connecting the heater to a **240 volt line** will **destroy the transformer, control board, and ignition control module, and will void the warranty.** If you install the red 240 volt plug and then connect the heater to a 120 volt line, the heater will not operate.

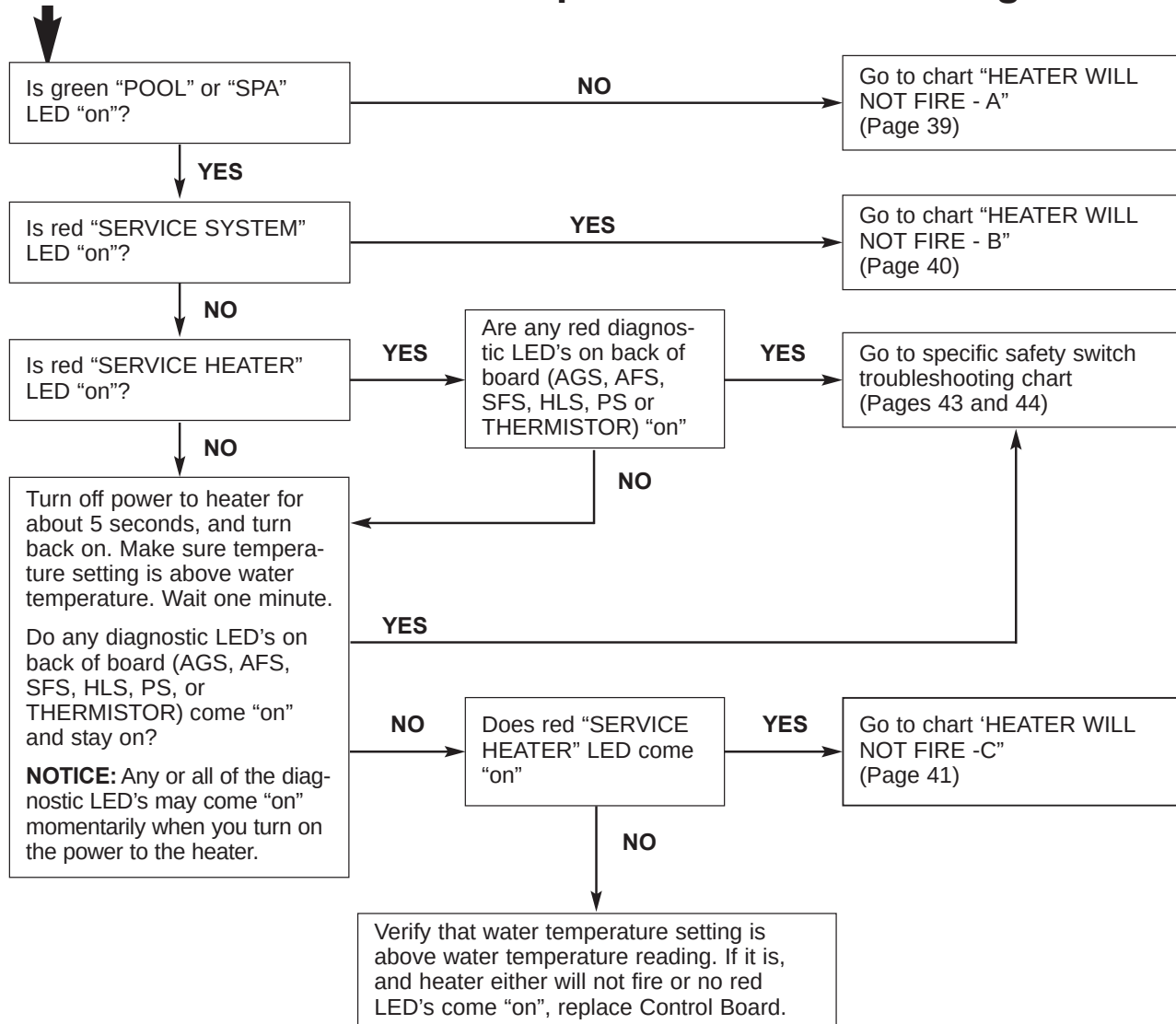
READ THE FOLLOWING CAREFULLY:

1. Check the line voltage to your heater. This heater will operate

on either 120 Volts AC or 240 Volts AC.

2. Remove the covers and check the 12-pin plug in the back of the control box. The plug must match the voltage in the heater circuit.
3. If the 12-pin plug is not plugged into the back of the control box, select the correct plug from the bag in the control box and plug it in. The **BLACK** plug is for **120 volts**, the **RED** plug is for **240 volts**.

Start here for directions to specific Troubleshooting Chart

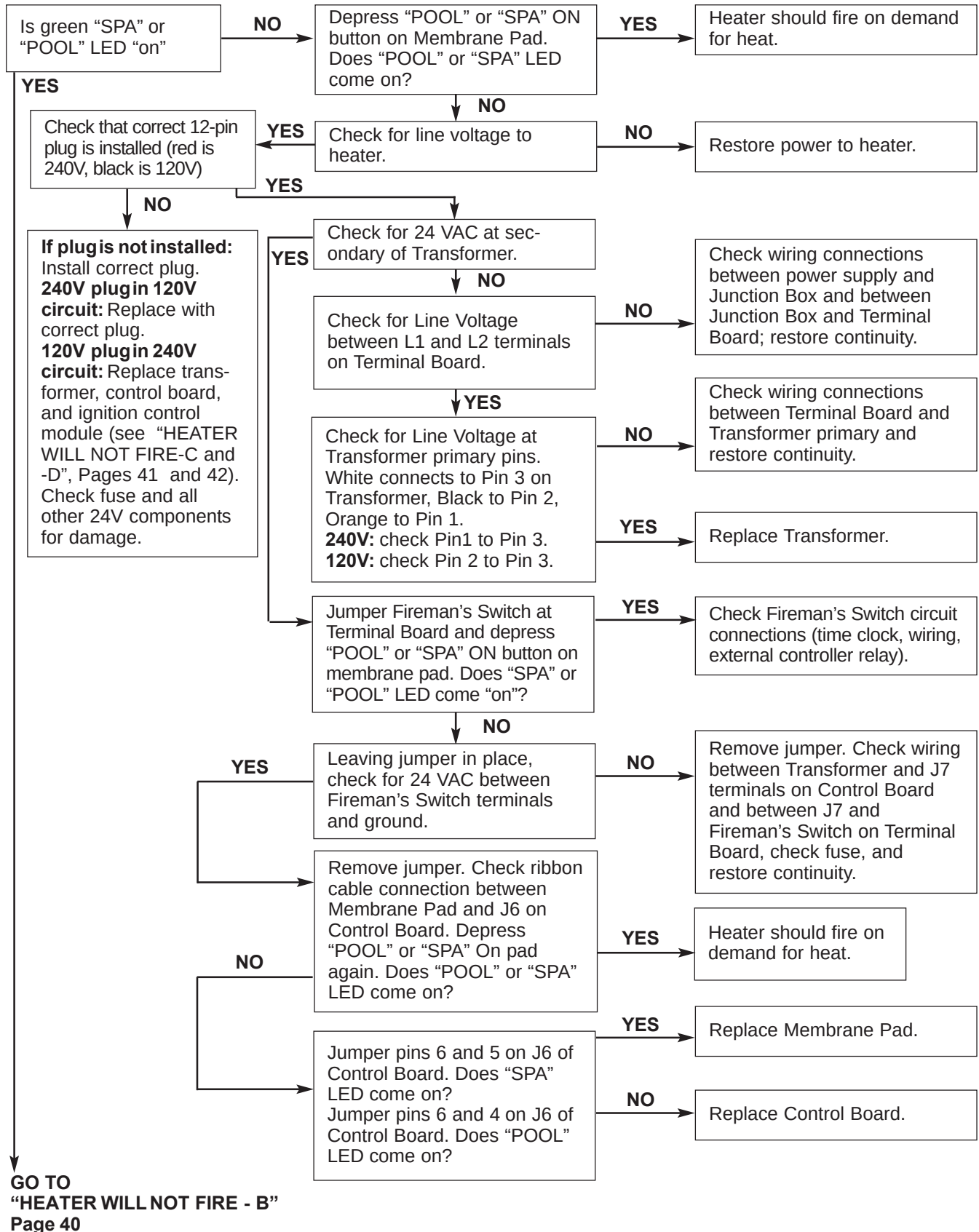


⚠ WARNING Hazardous voltage. Can shock, burn or kill. Disconnect power before servicing any components.

⚠ WARNING Fire and Explosion hazard. Do not jumper switch terminals to remedy a failed safety switch.

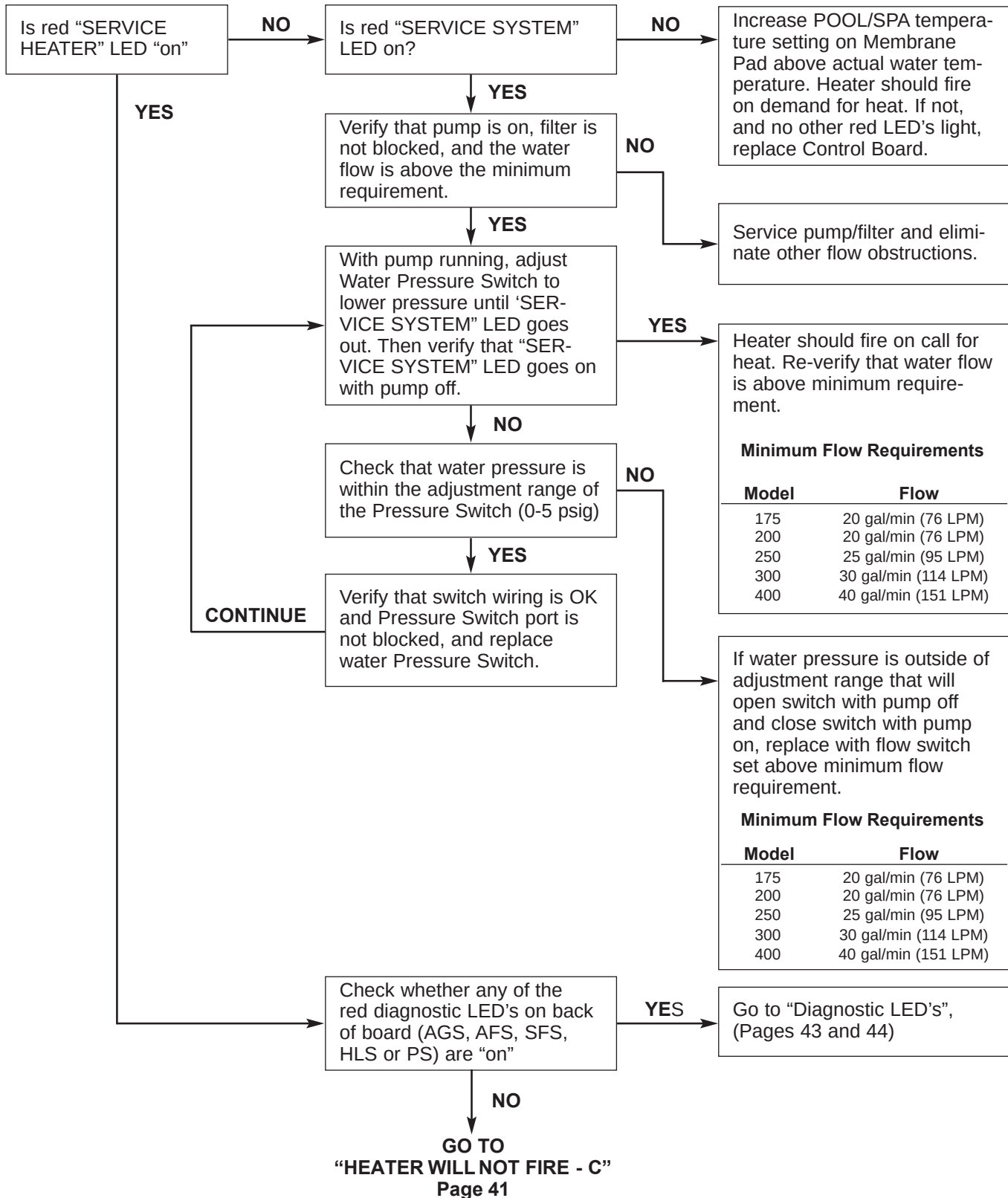
Heater Will Not Fire - A

Start



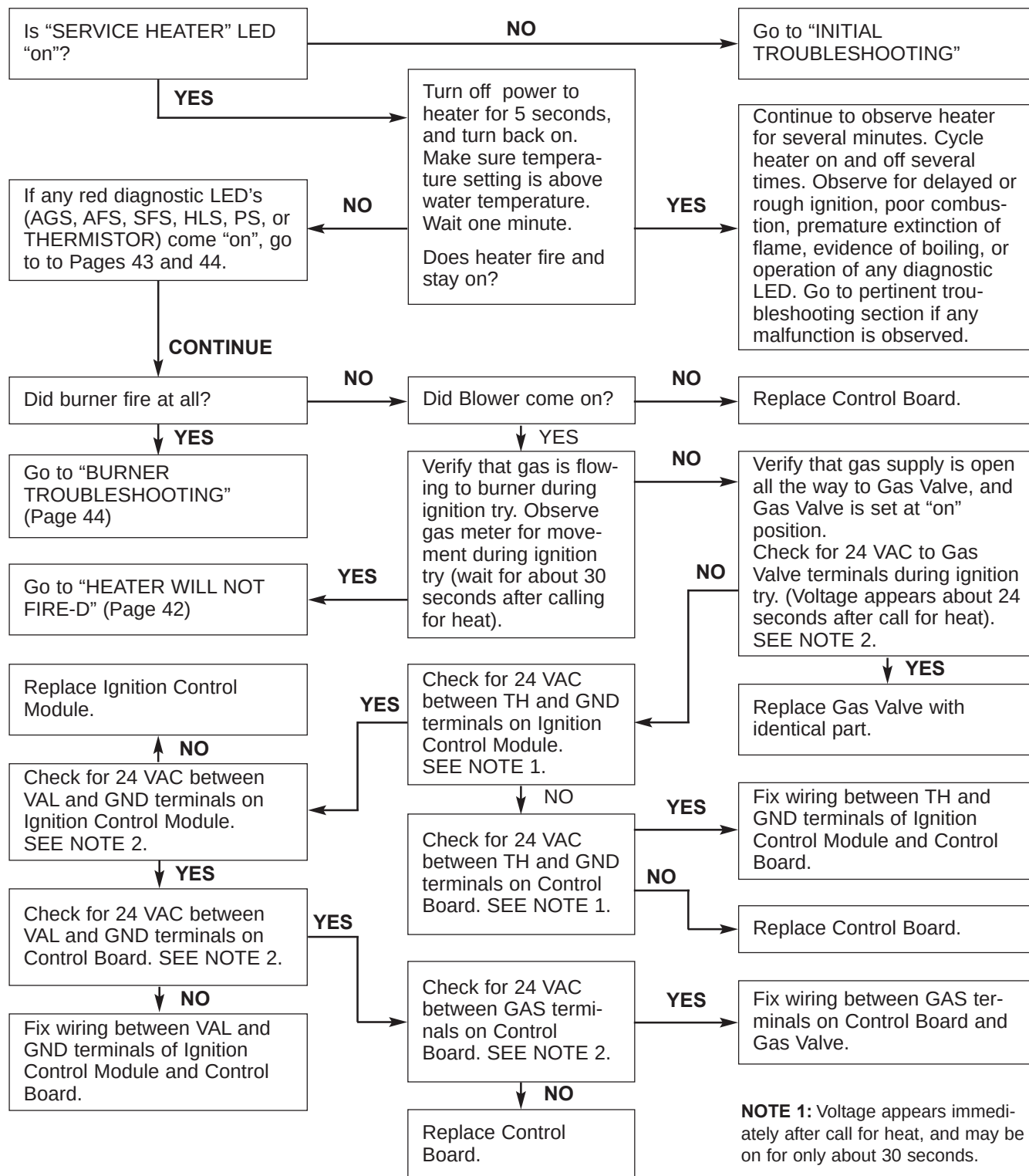
Heater Will Not Fire - B

Start



Heater Will Not Fire - C

Start



Heater Will Not Fire - D

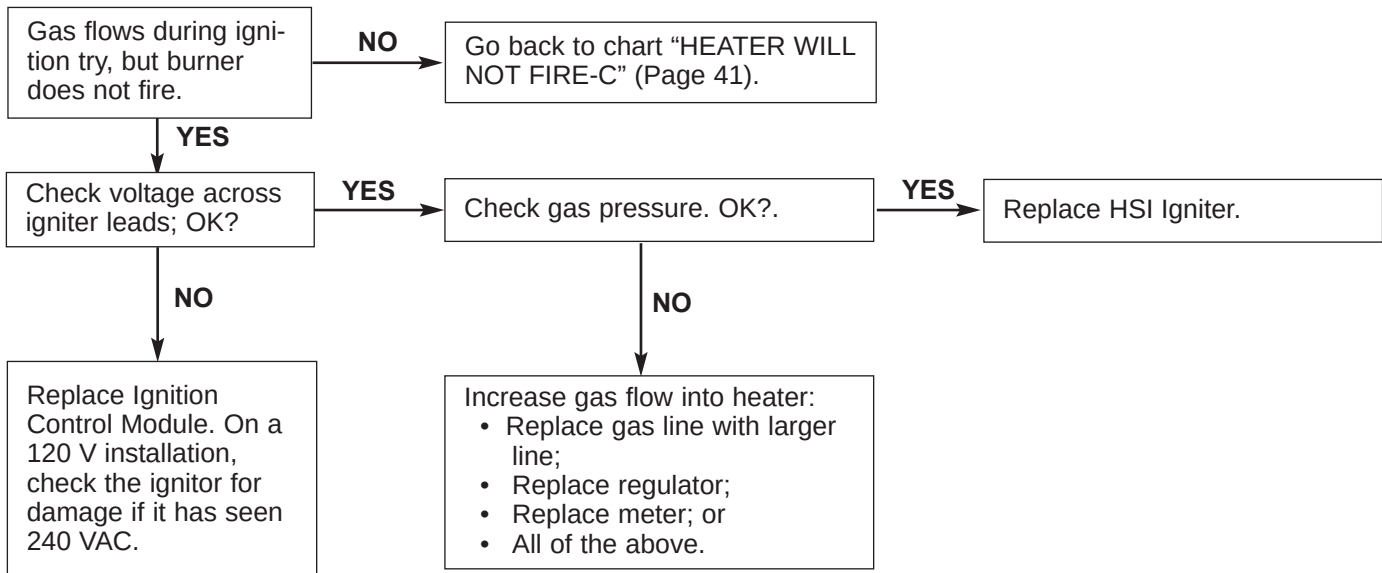
IMPORTANT! READ ME FIRST!

IMPORTANT! READ ME FIRST!!

If your heater is correctly connected to **240 Volts AC**, the Ignition Control Module (ICM) will convert the 240VAC to an intermittent pulse to the ignitor. Digital meters don't read this type of signal well. (An analog meter will give a better reading than a digital meter). If the ICM is bad, your volt-

meter will read either 0 VAC or 240 VAC. If your ICM is good, your meter will read some voltage between 0 and 240 VAC. Exactly what reading you get will depend on the meter, but with a good ICM, the reading won't be 0 VAC or 240 VAC, but somewhere in between.

Start




```

graph TD
    subgraph AGS_HLS_on [AGS or HLS "on"]
        A1[Verify that water flow rate is above minimum required for heater.] -- NO --> A1_1[Service pump and filter to restore proper flow. After servicing, verify proper operation of Pressure Switch (PS).]
        A1 -- YES --> A2[Verify that inlet water temperature is below 104° F.]
        A2 -- YES --> A2_1[Replace High Limit Switch (HLS) or Automatic Gas Shutoff (AGS)]
        A2 -- NO --> A2_2[Replace thermistor or Control Board to correct overheating.]
        A2_1 --> A3[CONTINUE]
        A3 --> A3_1[If problem persists, verify proper operation of Internal Bypass Valve and Thermal Governor, and check for Heat Exchanger blockage.]
    end

    subgraph PS_on [PS "on"]
        B1[Verify that water flow rate is above minimum required for heater.] -- NO --> B1_1[Service pump and filter to restore proper flow.]
        B1 -- YES --> B2[Verify that wiring is OK and pressure tap is not blocked. Replace Pressure Switch]
        B1_1 --> B2_1[CONTINUE]
        B2 --> B2_2[Adjust Water Pressure Switch to close with pump running and open with pump off.]
    end

    subgraph AFS_on [AFS "on"]
        C1[Does Blower operate?] -- YES --> C1_1[Verify that there is no blockage in Blower intake, Heat Exchanger, and exhaust and that exhaust is not too long (see "Indoor Vent Installation", Page 18).  
Verify correct connection of wiring and that pressure taps to AFS are OK.  
Verify that vinyl tubing to AFS and Blower is not misrouted, kinked, disconnected, or punctured.  
Replace Air Flow Switch (AFS).  
If problem persists, replace Blower.]
        C1 -- NO --> C2[Disconnect Blower and check for line voltage between pins 1 and 3 of Blower Connector on ignition try.]
        C2 -- YES --> C2_1[Replace Blower.]
        C2 -- NO --> C3[Check for 24 VAC between 24 VAC and GND terminals on Ignition Control Module on ignition try. Check that IND wire is correctly connected.]
        C3 -- YES --> C3_1[Connect correctly and retry. Does Blower start?]
        C3 -- NO --> C3_2[Verify correct connection of wiring between 24 VAC and IND terminals on Ignition Control Module and Control Board, and replace Control Board.]
        C3_2 --> C3_3[Connect correctly and retry. Does Blower start?]
        C3_3 -- YES --> C3_4[Replace Blower. Does Blower start on ignition try?]
        C3_3 -- NO --> C3_5[Replace Ignition Control Module.]
        C3_4 -- YES --> C3_5
        C3_4 -- NO --> C3_6[Replace Blower.]
        C3_6 --> C3_7[Disconnect wires F1 and F2 from Ignition Control Module and short them together. Does Blower come on?]
        C3_7 -- YES --> C3_5
        C3_7 -- NO --> C3_6
    end

    subgraph THERMISTOR_on [THERMISTOR "on"]
        D1[Verify Thermistor wiring. If OK, replace Thermistor.]
    end
  
```

AGS or HLS "on"

- Verify that water flow rate is above minimum required for heater.
 - NO**: Service pump and filter to restore proper flow. After servicing, verify proper operation of Pressure Switch (PS).
 - YES**: Verify that inlet water temperature is below 104° F.
 - YES**: Replace High Limit Switch (HLS) or Automatic Gas Shutoff (AGS). **CONTINUE**
 - NO**: Replace thermistor or Control Board to correct overheating.
- If problem persists, verify proper operation of Internal Bypass Valve and Thermal Governor, and check for Heat Exchanger blockage.

PS "on"

- Verify that water flow rate is above minimum required for heater.
 - NO**: Service pump and filter to restore proper flow. **CONTINUE**
 - YES**: Verify that wiring is OK and pressure tap is not blocked. Replace Pressure Switch.
 - Adjust Water Pressure Switch to close with pump running and open with pump off.

AFS "on"

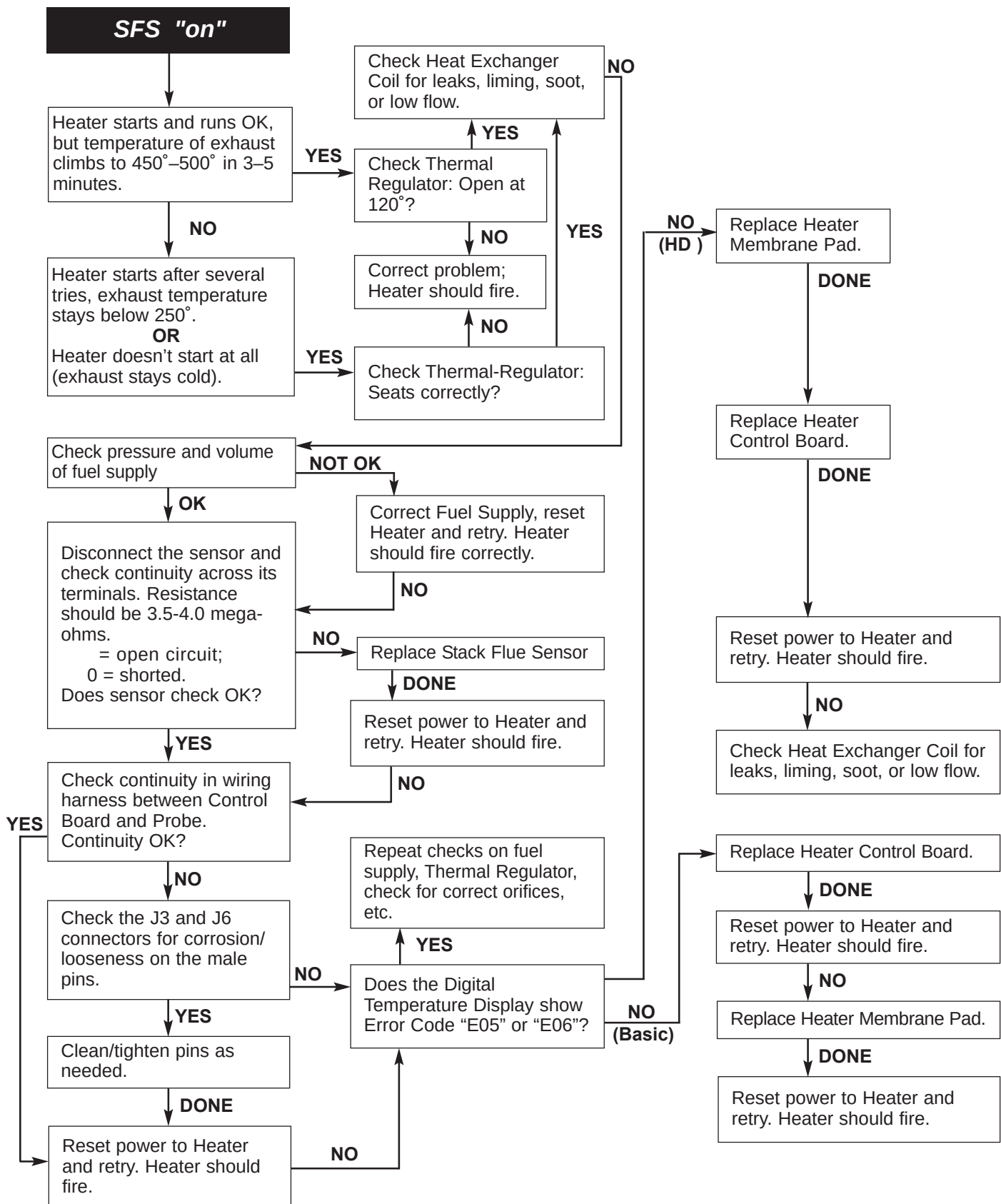
- Does Blower operate?
 - YES**: Verify that there is no blockage in Blower intake, Heat Exchanger, and exhaust and that exhaust is not too long (see "Indoor Vent Installation", Page 18). Verify correct connection of wiring and that pressure taps to AFS are OK. Verify that vinyl tubing to AFS and Blower is not misrouted, kinked, disconnected, or punctured. Replace Air Flow Switch (AFS). If problem persists, replace Blower.
 - NO**: Disconnect Blower and check for line voltage between pins 1 and 3 of Blower Connector on ignition try.
 - YES**: Replace Blower.
 - NO**: Check for 24 VAC between 24 VAC and GND terminals on Ignition Control Module on ignition try. Check that IND wire is correctly connected.
 - YES**: Connect correctly and retry. Does Blower start?
 - YES**: Replace Blower. Does Blower start on ignition try?
 - YES**: Replace Ignition Control Module.
 - NO**: Replace Blower.
 - NO**: Disconnect wires F1 and F2 from Ignition Control Module and short them together. Does Blower come on?
 - YES**: Replace Ignition Control Module.
 - NO**: Replace Blower.
 - NO**: Verify correct connection of wiring between 24 VAC and IND terminals on Ignition Control Module and Control Board, and replace Control Board.
 - Connect correctly and retry. Does Blower start?
 - YES**: Replace Blower. Does Blower start on ignition try?
 - YES**: Replace Ignition Control Module.
 - NO**: Replace Blower.
 - NO**: Disconnect wires F1 and F2 from Ignition Control Module and short them together. Does Blower come on?
 - YES**: Replace Ignition Control Module.
 - NO**: Replace Blower.

THERMISTOR "on"

 - Verify Thermistor wiring. If OK, replace Thermistor.

NOTE: ES1 is a spare and should be jumpered.

Diagnostic LED's: SFS



Burner Troubleshooting

SYMPTOM	CAUSE	REMEDY
Loud, high-pitched whine	Flame is too rich.	Verify pressure tap between gas valve and blower inlet. See page 15 and verify that the gas regulator setting is $-0.2''$ (-0.5cm) wc. Contact a qualified technician or service agency to replace the gas orifice.
Flame is “fluttery.” Exhaust may have acrid smell or burner may fail to stay lit.	Flame is too lean.	See page 16 and verify that the gas regulator setting is $-0.2''$ (-0.5cm) wc. Contact a qualified technician or service agency to replace the gas orifice.
Burner pulsates or surges, especially on ignition.	Exhaust vent is too long.	Reduce length of exhaust vent and/or number of elbows.
Combustion appears normal, but flame does not stay lit.	Flame current is not being sensed.	Check for wet or damaged igniter with low resistance to ground. Replace with new igniter. Verify burner flameholder is properly grounded. Replace Ignition Control Module.

Heat Exchanger Troubleshooting

SYMPTOM	CAUSE	REMEDY
Boiling in heat exchanger. May be accompanied by “bumping” sounds.	Low water flow to heater. Heat exchanger plugged. Bypass valve stuck open. Thermal governor stuck closed.	Service pump and or filter. Service heat exchanger. Correct water chemistry. Service bypass valve. Replace thermal governor.
Sweating.	Thermal governor failed.	Replace thermal governor.

Maintenance Instructions

CARE AND MAINTENANCE

⚠ WARNING

Risk of fire or explosion from flammable vapors. Do not store gasoline, cleaning fluids, varnishes, paints, or other volatile flammable liquids near heater or in the same room with heater.

The following maintenance is recommended every six months and at the start of every swimming season:

1. Inspect the heater panels and venting system to make sure that there are no obstructions to the flow of ventilating air or burner exhaust. Check that room air intakes are open and clear of obstructions.
2. Keep the area in and around the heater clear and free from combustible materials, gasoline and other flammable vapors and corrosive liquids.
3. Test the operation of the pressure relief valve by lifting the valve lever (if installed).
4. Test for proper operation of the water pressure switch. (See “WATER PRESSURE SWITCH” (page 35) for testing instructions).
5. On enclosed installations with high-temperature Special Gas Vent systems, repeat the “Final Installation Check,” [page 28](#). Check for evidence of joint leakage. Make sure that joints have not slipped partially or completely apart. Check pipe and fittings for cracks or breaks. The combustion air blower is permanently lubricated, and does not require periodic lubrication. The burner does not require maintenance or adjustment by the user. Call a qualified service technician if you suspect that the burner may require maintenance.

PRESSURE RELIEF VALVE (NOT FACTORY INSTALLED)

Canadian code requires and some U.S. local codes may require installation of a Pressure Relief Valve (PRV). Purchase separately and install (P/N 460925) a 3/4" pressure relief valve complying with the ANSI/ASME Boiler and Pressure Vessel Code, having a capacity equal to the Btu/hr rating of the heater.

The relief pressure of the valve **MUST NOT EXCEED 50 PSI**. The relief valve must be installed vertically. To install the valve, use a 3/4" x 3-1/2" brass nipple at the manifold and one brass elbow and nipple (supplied), as shown in Figure 34. No valve is allowed to be placed between the manifold adapter and the relief valve.

To avoid water damage or scalding from operation of the relief valve, install a drain pipe in the outlet of the pressure relief valve that will direct water discharging from the valve to a safe place for disposal. Do not install any reducing couplings or valves in the drain pipe. The drain pipe must be installed so as to allow complete drainage from the valve and drain line. ***The relief valve should be tested at least once a year by lifting the valve lever.***

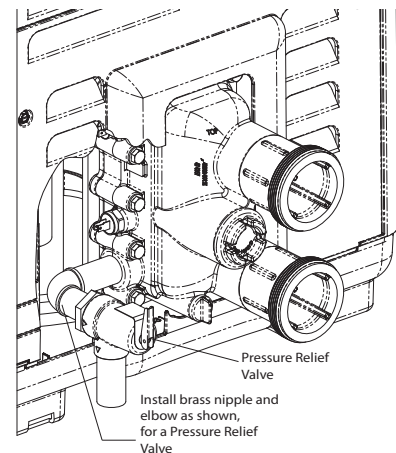


Figure 34.

⚠ WARNING

Explosion hazard. Any heater installed with restrictive devices in the piping system downstream from the heater, (including check valves, isolation valves, flow nozzles, or therapeutic pool valving), must have a relief valve installed as described above.

AFTER START-UP

CHECKING WATER FLOW

WARNING

Fire or flooding hazard. If the unit overheats and the burner fails to shut off, follow instructions under “To Turn Off Gas to the Appliance”, [page 34](#), and call a qualified service technician to repair unit.

After start-up, the outlet water pipe should feel slightly warmer than the inlet pipe. If it feels hot, or if you hear the water in the heater boiling, there may not be enough water flow to the appliance. Make sure that the filter is not plugged. If water temperature remains high but the unit continues to operate, turn off the appliance and call your service technician.

SPRING AND FALL OPERATION

If the pool is only used occasionally, lower the pool thermostat to 68° F (20° C) and leave the heater on. This will keep the pool and the surrounding ground warm enough so that the heater should restore the pool to a comfortable temperature within about one day.

WINTER OPERATION

CAUTION

- Operating this heater continuously at water temperatures below 68° F. (20° C) will cause harmful condensation and will damage the heater and void the warranty.
- If the heater has been drained for freezing condition, do NOT turn "ON" until the system is circulating water.
- Water trapped in the heat exchanger can result in freeze damage to the exchanger or headers. Freeze damage is specifically not covered by the warranty.
- When starting the heater for the swimming season with a water temperature below 50° F (10° C), the heater may be used to heat the water; however, make sure that the heater operates continuously until the water temperature reaches the heater's minimum setting of 68° F (20° C). During cold weather, if there is no danger of freezing, operate the filter pump continuously even if the heater is not operating. If air temperatures are expected to drop below freezing (32° F/0° C), shut down the heater and winterize it.

For outdoor heaters in freezing climates, shut the heater down and drain it for winter as follows:

1. Turn off electrical supply to the heater and pump.
2. Close main gas control valve and manual gas valve (located outside the heater). Turn switch on heater gas valve to OFF.
3. In northern climates where they may be required, open drain cock located on the bottom of the manifold adapter, and drain the heat exchanger and manifold adapter completely. If heater is below pool water level, be sure to close isolation valves to prevent draining the pool (isolation valves are not required and should not be used on heaters installed above pool water level except when needed for winterizing valves). Assist the draining by blowing out the heat exchanger through the pressure switch fitting with low pressure compressed air (less than 5 PSI or 35 kPa).

WARNING

Explosion hazard. Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI or 35 kPa), high volume blower when air purging the heater, pump, filter, or piping.

4. Remove the Water Pressure Switch. Plug the port in the manifold to prevent bugs and dirt from getting into the manifold.
5. Drain the plastic inlet/outlet manifold through the outlet pipe. If the pipe does not drain naturally to the pool, install a drain cock in the outlet pipe to drain the manifold.
6. Cover air inlet grate with a plastic bag to prevent bugs, leaves, etc., from getting into the heater.

NOTICE: Water trapped in the heater can cause freeze damage. Allowing the heater to freeze voids the warranty.

To return the heater to service after winterizing:

1. Close drain cock and fittings.
2. Before starting the heater, circulate water through the heater for several minutes until all air noises stop. See also “BEFORE START-UP” ([page 33](#)) and “CARE AND MAINTENANCE” ([page 46](#)).

(See additional notes under Important Notices in Introduction.)

MAINTAINING POOL TEMPERATURE

To maintain pool temperature, make sure that the heater switch and valving are reset to pool settings after using the spa.

ENERGY SAVING TIPS

1. Keep the pool or spa covered when not in use. This will reduce heating costs, reduce water evaporation, conserve chemicals and reduce load on the filtering system.
2. Reduce pool thermostat to 78° F (25° C) or lower; reduce spa temperature to 100° F (38° C). This is accepted as being the most healthy temperature for swimming by the American Red Cross.
3. Use a time clock to start the filter pump at 6 a.m. or later. The swimming pool loses less heat after daybreak.
4. For pools used only on weekends, lower the thermostat setting by 10° F to 15° F (5° C to 8° C) during the week to reduce heat loss. A properly sized heater will restore normal temperature within one day.
5. Turn the heater off when the pool will not be used for an extended period.
6. Follow a regular program of preventive maintenance for the heater each new swimming season. Check operation of the heater and its controls.

CHEMICAL BALANCE

POOL AND SPA WATER

Your pool heater was designed specifically for your spa or pool and will give you many years of trouble-free service, provided you keep your water chemistry in proper condition.

Water chemistry should follow good swimming pool water chemistry practices. When using a chlorinator, install it down stream from the heater and at a lower level than the heater outlet. Install a corrosion resistant positive seal “Check Valve”, (P/N R172288), between the heater and the chlorinator to prevent concentrated chemicals from back-siphoning into the heater. Back-siphoning is most likely to occur when the pump stops, creating a pressure-suction differential. Do NOT sanitize the pool by putting chlorine tablets or sticks into the skimmer(s). When the pump is off, this will cause a high concentration of chlorine to enter the heater, which could cause corrosion damage to the heat exchanger.

Three major items that can cause problems with your pool heater are: improper pH, disinfectant residual, and total alkalinity. These items, if not kept properly balanced, can shorten the life of the heater and cause permanent damage.

CAUTION

Heat exchanger damage resulting from chemical imbalance is not covered by the warranty.

WHAT A DISINFECTANT DOES

Two pool guests you do not want are algae and bacteria. To get rid of them and make pool water sanitary for swimming - as well as to improve the water's taste, odor and clarity - some sort of disinfectant must be used.

Chlorine and bromine are universally approved by health authorities and are accepted disinfecting agents for bacteria control.

WHAT IS A DISINFECTANT RESIDUAL?

When you add chlorine or bromine to the pool water, a portion of the disinfectant will be consumed in the process of destroying bacteria, algae and other oxidizable materials. The disinfectant remaining is called chlorine residual or bromine residual. You can determine the disinfectant residual of your pool water with a reliable test kit, available from your local pool supply store.

You must maintain a disinfectant residual level adequate enough to assure a continuous kill of bacteria or virus introduced into pool water by swimmers, through the air, from dust, rain or other sources.

CHEMICAL BALANCE, (cont'd.)

It is wise to test pool water regularly. Never allow chlorine residual to drop below 0.6 ppm (parts per million). The minimum level for effective chlorine or bromine residual is 1.4 ppm.

pH - The term pH refers to the acid/alkaline balance of water expressed on a numerical scale from 0 to 14. A test kit for measuring pH balance of your pool water is available from your local pool supply store; see [Table 9](#).

Muriatic Acid has a pH of about 0. Pure water is 7 (neutral). Weak Lye solution have a pH of 13-14.

RULE: 7.4 to 7.6 is a desirable pH range. It is essential to maintain correct pH, see [Table 9](#).

If pH becomes too high (over alkaline), it has these effects:

1. Greatly lowers the ability of chlorine to destroy bacteria and algae.
2. Water becomes cloudy.
3. There is more danger of scale formation on the plaster or in the heat exchanger tubing.
4. Filter elements may become blocked.

If pH is too low (over acid) the following conditions may occur:

1. Excessive eye burn or skin irritation.
2. Etching of the plaster.
3. Corrosion of metal fixtures in the filtration and recirculation system, which may create brown, blue, green, or sometimes almost black stains on the plaster.
4. Corrosion of copper tubes in the heater, which may cause leaks.
5. If you have a sand and gravel filter, the alum used as a filter aid may dissolve and pass through the filter.

CAUTION: *Do not test for pH when the chlorine residual is 3.0 ppm or higher, or bromine residual is 6.0 ppm or higher. See your local pool supply store for help in properly balancing your water chemistry.*

RULE: Chemicals that are acid lower pH. Chemicals that are alkaline raise pH.

ALKALINITY High or Low:

"Total alkalinity" is a measurement of the total amount of alkaline chemicals in the water, and control pH to a great degree. (It is not the same as pH which refers merely to the relative alkalinity/acidity balance.) Your pool water's total alkalinity should be 100 - 140 ppm to permit easier pH control.

A total alkalinity test is simple to perform with a reliable test kit. You will need to test about once a week and make proper adjustments until alkalinity is in the proper range. Then, test only once every month or so to be sure it is being maintained. See your local pool dealer for help in properly balancing the water chemistry.

WATER CHEMISTRY PARAMETERS

Table 9.

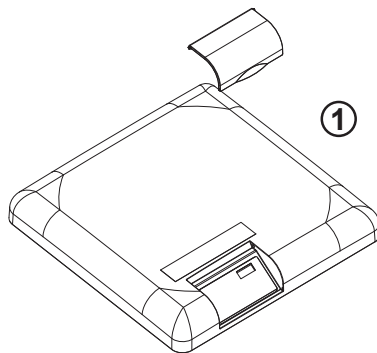
Disinfectant levels	Minimum	Ideal	Maximum
Free Chlorine, ppm	1.0	2.0-4.0	5.0**
Combined Chlorine, ppm	None	None	0.2
Bromine, ppm	2.0	4-6	10.0
Other Sanitizers	Levels not established. Consult local health department before use.		
Chemical Values			
pH	7.2	7.4-7.6	7.8**
Total Alkalinity (Buffering), ppm as CaCO3	60	80-100	180
Salt ppm	2000	3200	5000**
Total Dissolved Solids, ppm	N/A	N/A	1,500 ppm > TDS at startup*
Calcium Hardness, ppm, as CaCO3	150	200-400	500-1,000
Heavy Metals	None	None	None
Biological Values			
Algae	None	None	None
Bacteria	None	None	Refer to Local Code

*Start-up TDS includes source water TDS and any other inorganic salt added at start-up.

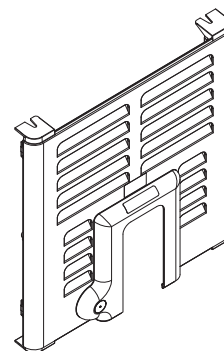
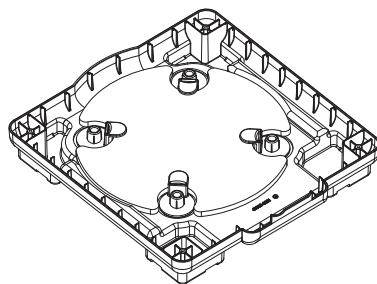
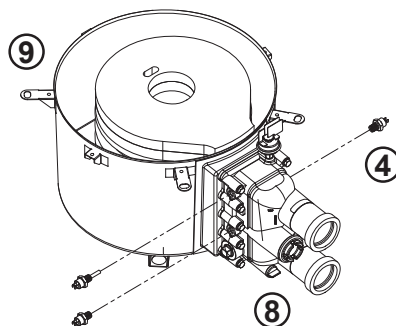
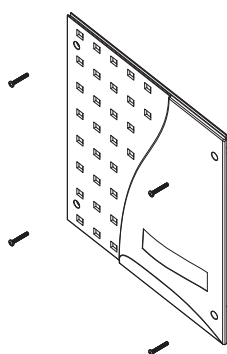
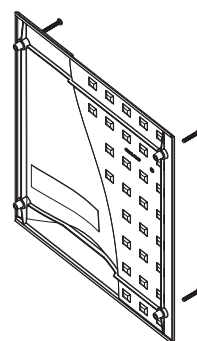
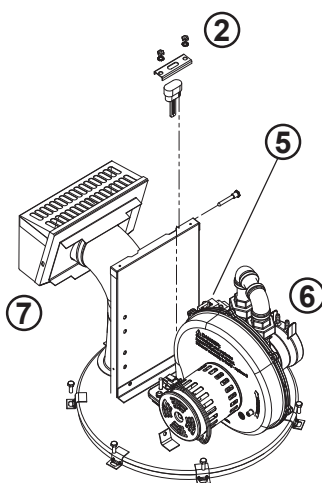
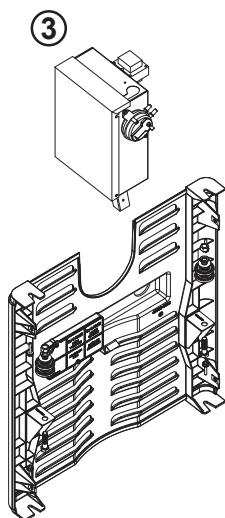
NOTE ():** Failure to adhere to the listed water chemistry parameters may result in premature failure of the heat exchanger and will void the heater warranty.

MASTERTEMP HEATER REPLACEMENT PARTS

For complete
Electrical System
parts breakdown
(Key Nos. 1 through 4),
See Page 53



For complete
Burner System
parts breakdown
(Key Nos. 5 through 7),
See Page 51



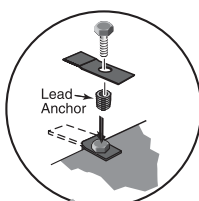
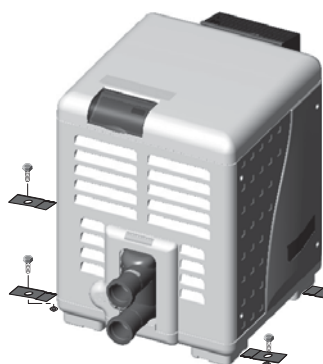
For complete
Water System
parts breakdown
(Key Nos. 8 through 9),
see Page 52

Repair Parts are available from your Pentair dealer.

If your dealer cannot supply you, call Customer Support at 1-800-831-7133.

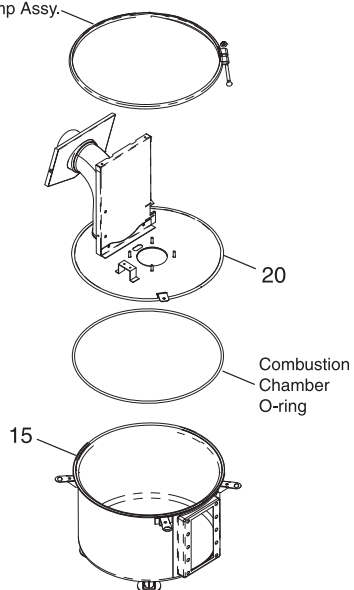
MASTERTEMP HEATER REPLACEMENT PARTS

For Heater mounting bolts and clamps, purchase separately Bolt Down Bracket Kit, Part No. 460738.

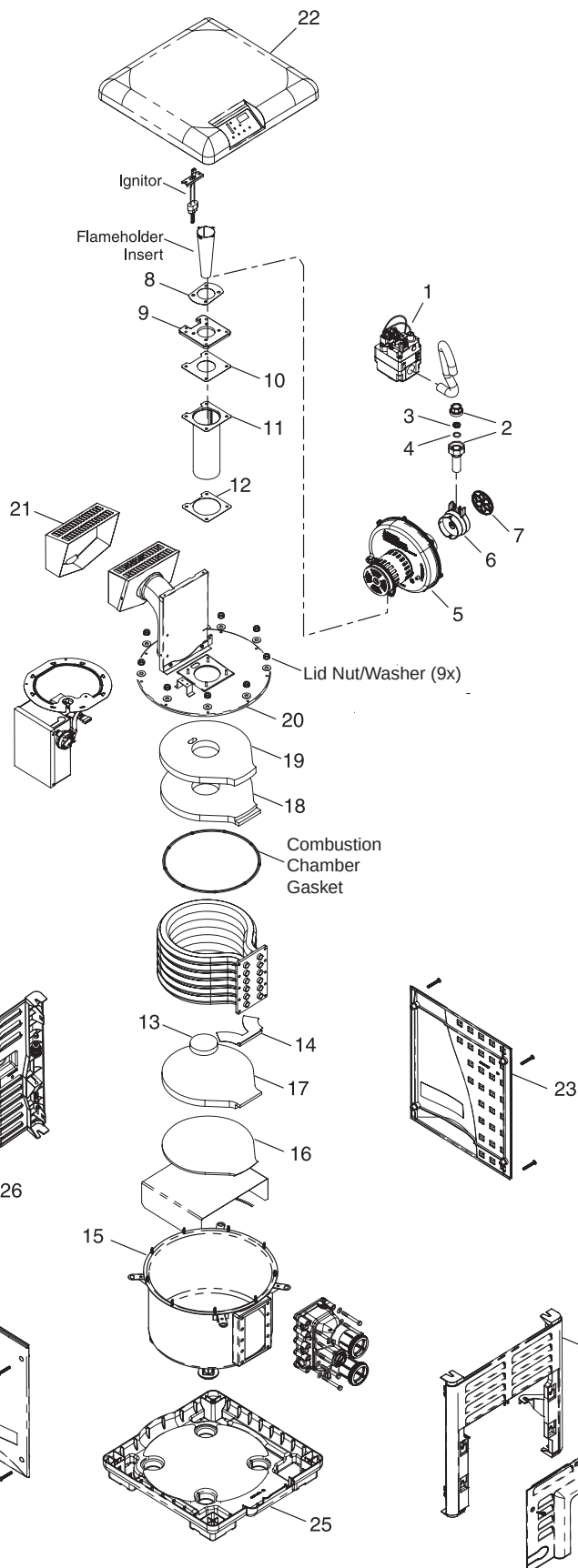


CLAMP LID TUB DESIGN

Combustion Chamber Clamp Assy.



For heaters manufactured between 1/12/2009 and 10/31/2013 (clamp lid tub design)
Note: Kits also include Clamp Assembly, O-Ring and Silicon Tube (see page 52)



MASTERTEMP HEATER REPLACEMENT PARTS

REPAIR PARTS – BURNER SYSTEM

Key No.	Part Description	Qty.	Model				
			175NA 175LP	200NA 200LP	250NA 250LP	300NA 300LP	400NA 400LP
1	Combination Gas Control Valve Kit	1	42001-0051S	42001-0051S	42001-0051S	42001-0051S	42001-0051S
2	3/4" Union	2	38404-4097S	38404-4097S	38404-4097S	38404-4097S	38404-4097S
3	Gas Orifice	1					
4	Gas Orifice O-Ring	1					
•	Gas Orifice Kit – NG (Incl. Key Nos. 3 and 4)†		460794	77707-0431	460739	460753	77707-0411
•	Gas Orifice Kit – Propane (Incl. Key Nos. 3 and 4)†		460795	77707-0461	460740	460754	77707-0441
•	NG to Propane Conversion Kit (Incl. Key Nos. 3 and 4)†		460794	77707-1461	460741	460755	77707-1441
•	Propane to NG Conversion Kit (Incl. Key Nos. 3 and 4)†		460795	77707-1431	460742	460756	77707-1411
5	Air Blower Kit						
	Natural Gas Units	1	77707-0251	77707-0251	460743	460757	77707-0253
	Propane Units	1	77707-0254	77707-0254	460744	460758	77707-0256
•	Air Orifice Kit (Includes Key Nos. 6 and 7)	1	460798	77707-0111	460745	460759	77707-0113
6	Air Orifice	1					
7	Air Orifice Grill	1	42001-0114S	42001-0114S	42001-0114S	42001-0114S	42001-0114S
•	Blower/Adapter Plate Gasket Kit (Includes Key Nos. 8, 9, 10, 12)	1	77707-0011	77707-0011	77707-0011	77707-0011	77707-0011
•	Flameholder Kit (Includes Key Nos. 10, 11, 12, 13 and on 300 & 400 models only - Flameholder Insert)	1	77707-0202	77707-0202	460746	77707-0203	77707-0204
8	Blower/Adapter Plate Gasket	1					
9	Blower Adapter Plate	1					
10	Flameholder/Adapter Plate Gasket	1					
11	Flameholder Assembly	1					
12	Flameholder/Combustion Chamber Gasket*	1					
13	Flameholder Insulation Cap	1					
•	Flameholder Insert	1					
14	Condensate Evaporator Plate	1					
15	One Piece Metal Chamber/Combustion Chamber Assembly	1	474095♦ 474957♦♦ 42001-0200S♦♦♦ 77707-0008	474095♦ 474957♦♦ 42001-0200S♦♦♦ 77707-0008	474095♦ 474957♦♦ 42001-0200S♦♦♦ 77707-0008	474095♦ 474957♦♦ 42001-0200S♦♦♦ 77707-0008	474095♦ 474957♦♦ 42001-0200S♦♦♦ 77707-0008
•	Insulation Kit (Includes Key No. 13,14,16,17,18,19)	1					
16	Bottom Outer Insulation Blanket*	1					
17	1" Bottom Inner Insulation	1					
18	1" Top Insulation	1					
19	Top Outer Insulation Blanket*	1					
•	Lower Enclosure Insulation	1	42001-0074S	42001-0074S	42001-0074S	42001-0074S	42001-0074S
20	One Piece Metal Elbow/Combustion Chamber Cover Assembly	1	474094♦ 474958♦♦ 42001-0214S♦♦♦ 474201♦ 474952♦♦	474094♦ 474958♦♦ 42001-0214S♦♦♦ 474201♦ 474952♦♦	474094♦ 474958♦♦ 42001-0214S♦♦♦ 474201♦ 474952♦♦	474094♦ 474958♦♦ 42001-0214S♦♦♦ 474201♦ 474952♦♦	474094♦ 474958♦♦ 42001-0214S♦♦♦ 474201♦ 474952♦♦
•	Combustion Chamber O-Ring Kit	1					
21	Metal Vent Cover	1	42002-0005S	42002-0005S	42002-0005S	42002-0005S	42002-0005S
	Cover Assembly	1	42001-0214S	42001-0214S	42001-0214S	42001-0214S	42001-0214S
22	Heater Top	1	42002-0034Z	42002-0034Z	42002-0034Z	42002-0034Z	42002-0034Z
23	Side Panel {Service Panel}	1	42002-0039	42002-0039	42002-0039	42002-0039	42002-0039
24	Side Panel {Manifold}	1	42002-0033	42002-0033	42002-0033	42002-0033	42002-0033
25	Heater Bottom	1	42002-0031	42002-0031	42002-0031	42002-0031	42002-0031
26	Side Panel {Flue Stack}	1	42002-0032	42002-0032	42002-0032	42002-0032	42002-0032
27	J-Box Cover	1	42002-0041	42002-0041	42002-0041	42002-0041	42002-0041
28	Screw Kit, Panel	1	474292	474292	474292	474292	474292
•	Combustion Air Intake Duct Connection Kit	1	461031	461031	461031	461031	461031

* Not available separately.

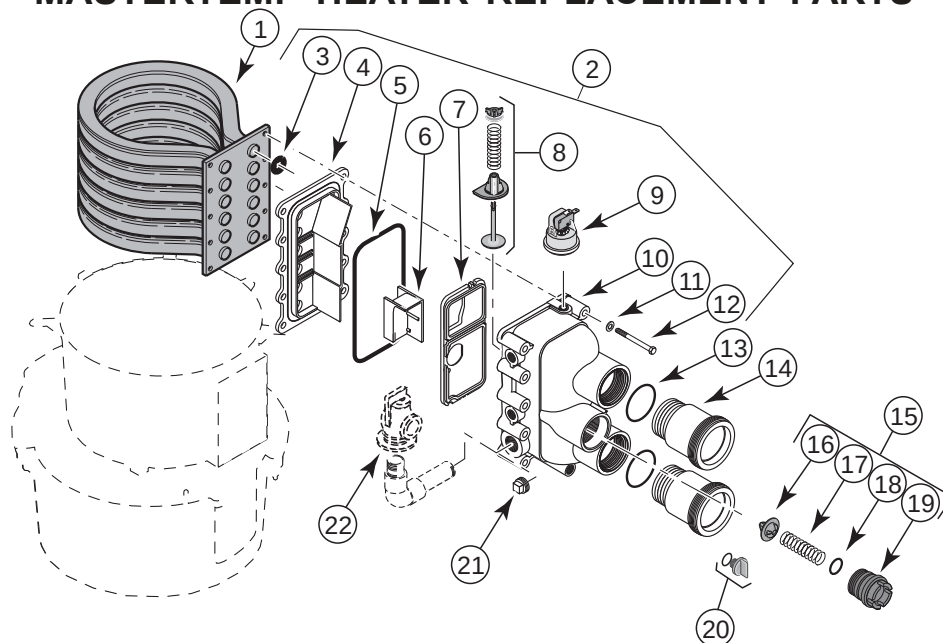
† Not included with heater. Order separately.

♦ For heaters manufactured between 1/12/2009 and 10/31/2013 (clamp lid tub design)
Note: Kits also include Clamp Assembly, O-Ring and Silicon Tube.

♦♦ For heater manufactured AFTER 10/31/2013 (New 9-bolt lid tub design)

♦♦♦ For heater manufactured BEFORE 1/12/2009

MASTERTEMP HEATER REPLACEMENT PARTS



REPAIR PARTS – WATER SYSTEM

Key No.	Part Description	Qty.	Model			
			175NA - 200NA 175LP - 200LP	250NA 250LP	300NA 300LP	400NA 400LP
1	Tube Sheet Coil Assembly Kit (NA, LP Series) (Includes Key No.3)	1	77707-0232 474058♦	460747 474059♦	77707-0233 474060♦	77707-0234 474061♦
1	Tube Sheet Coil Assembly Kit (NA - HD Series) (Includes Key No.3)	1	— —	473710 474063♦	— —	77707-0244 474065♦
1	Tube Sheet Coil / Combustion Chamber Kit (ASME SERIES) Bronze Header - Key Nos. 3-12, 15, 20-22,	1	— 472732Z	460941 474097♦ 474955♦♦	— — —	460940 474096♦ 474956♦♦
1	Tube Sheet Coil / Combustion Chamber Kit (HD ASME SERIES)	—	—	474349, 474954♦♦	—	474350, 474953♦♦
2	Manifold Kit (Includes Key Nos. 3-14, 21, & Key Nos. 5-7 in "Electrical System", Page 53	1	77707-0014 474200	460748 474200	77707-0015 474200	77707-0016 474200
•	Basic Manifold Kit (includes Key No. 3,5,10-14)	()	77707-0117(6)	460749(8)	77707-0118(10)	77707-0119(12)
3	Coil/Tubesheet Sealing O-Ring Kit	()	77707-0117(6)	460749(8)	77707-0118(10)	77707-0119(12)
4	Manifold Bottom Plate	1				
5	Manifold O-Ring	1				
•	O-Ring Kit (Incl. Key Nos. 3, 5)	1	77707-0120	77707-0120	77707-0120	77707-0120
6	Manifold Insert*	1				
7	Manifold Baffle Plate	1				
8	Manifold Bypass Valve	1	77707-0001	77707-0001	77707-0001	77707-0001
9	Water Pressure Switch	1	42001-0060S	42001-0060S	42001-0060S	42001-0060S
10	Manifold	1				
11	5/16" Washer, S.S.	10				
12	5/16x18x2-3/4" Hex Cap screw	10				
13	Connector Tube O-Ring	2				
14	Connector Tube Kit (Includes 1 Connector Tube and 1 O-Ring)	2	77707-0017	77707-0017	77707-0017	77707-0017
15	Thermal Regulator Kit (Incl. Key No. 16, 17, 18, 19 and Spring Clip)	1	77707-0010	77707-0010	77707-0010	77707-0010
16	Thermal Regulator (Includes Spring Clip)	1	38000-0007S	38000-0007S	38000-0007S	38000-0007S
17	Thermal Regulator Spring	1				
18	Thermal Regulator Cap O-Ring	1	35505-1313	35505-1313	35505-1313	35505-1313
•	Thermal Regulator Spring Clip	1				
19	Thermal Regulator Cap	1				
20	Drain Plug	1	U178-920P	U178-920P	U178-920P	U178-920P
21	3/4" Pipe Plug	1	U78-60ZPS	U78-60ZPS	U78-60ZPS	U78-60ZPS
22	Pressure Relief Valve (Recommended - (Purchase Separately)	1	38674-0719	38674-0719	38674-0719	38674-0719

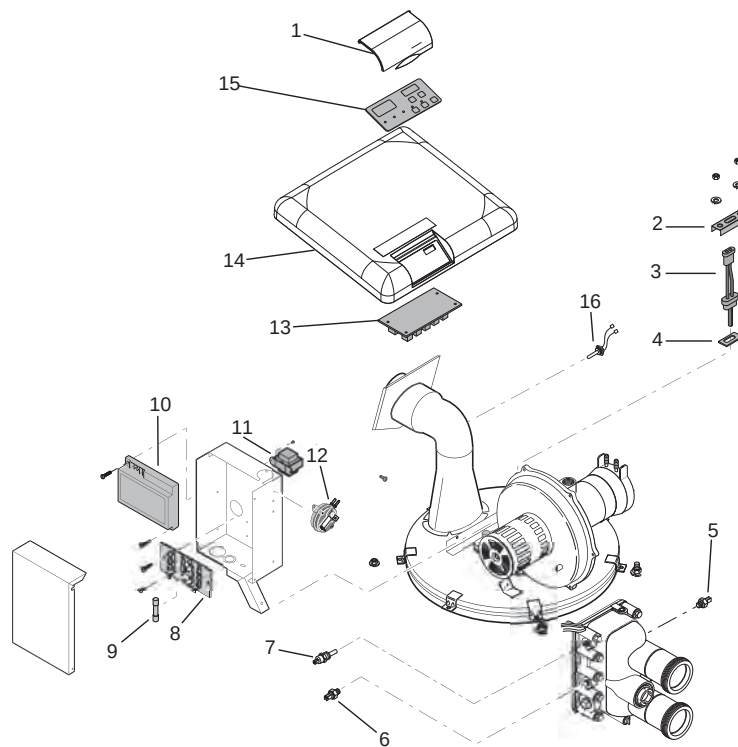
* Not available separately. • Not illustrated.

♦ For heaters manufactured between 1/12/2009 and 10/31/2013 (clamp lid tub design) - Note: Kits also include Clamp Assembly, O-Ring and Silicon Tube.

♦♦ For ASME heater manufactured AFTER 10/31/2013 (New 9-bolt lid tub design)

♦♦♦ For heater manufactured BEFORE 1/12/2009

MASTERTEMP HEATER REPLACEMENT PARTS



REPAIR PARTS – ELECTRICAL SYSTEM

Key No.	Part Description	Qty.	Model			
			175NA - 200NA 175LP - 200LP	250NA 250LP	300NA 300LP	400NA 400LP
1	Heater Display Cover	1	42002-0035	42002-0035	42002-0035	42002-0035
2	Igniter Bracket	1	42001-0030S	42001-0030S	42001-0030S	42001-0030S
3	Igniter/Igniter Gasket Kit Incl. Key Nos. 3 and 4)	1	77707-0054	77707-0054	77707-0054	77707-0054
4	Igniter Gasket	1	42001-0066S	42001-0066S	42001-0066S	42001-0066S
5	Automatic Gas Shutoff Switch (AGS)	1	42002-0025S	42002-0025S	42002-0025S	42002-0025S
6	High Limit Switch	1	42001-0063S	42001-0063S	42001-0063S	42001-0063S
7	Thermistor	1	42001-0053S	42001-0053S	42001-0053S	42001-0053S
8	Terminal Board	1	42001-0056S	42001-0056S	42001-0056S	42001-0056S
9	Fireman's Switch Fuse (1.25A, 1-1/4")	1	32850-0099	32850-0099	32850-0099	32850-0099
10	Ignition Control Module	1	42001-0052S	42001-0052S	42001-0052S	42001-0052S
11	Transformer, 120/240V	1	42001-0107S	42001-0107S	42001-0107S	42001-0107S
12	Air Flow Switch	1	42001-0061S	42001-0061S	42001-0061S	42001-0061S
13	Control Board Kit (NA, LP Series)	1	42002-0007S	42002-0007S	42002-0007S	42002-0007S
•	Heater Wiring Harness - 120/240V	1	42001-0104S	42001-0104S	42001-0104S	42001-0104S
•	120/240 Volt Plug Kit	1	42001-0105S	42001-0105S	42001-0105S	42001-0105S
14	Heater, Top	1	42002-0034Z	42002-0034Z	42002-0034Z	42002-0034Z
15	Membrane Pad (NA, LP Series)	1	472610Z	472610Z	472610Z	472610Z
16	Stack Flue Sensor	1	42002-0024S	42002-0024S	42002-0024S	42002-0024S

• Not available separately.

* Kit parts not available separately.

NOTES

[illegible]



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P/N 472592 REV. L 8/14

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.

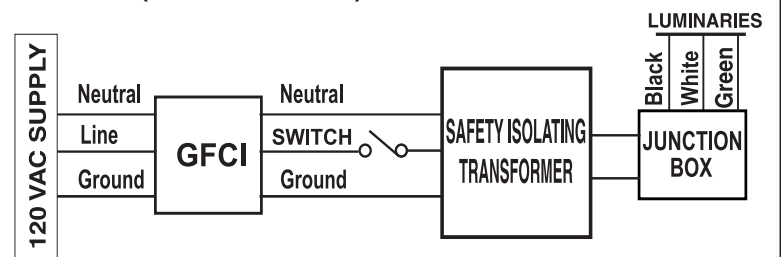
Before Installing luminaries read the following:

⚠ 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.



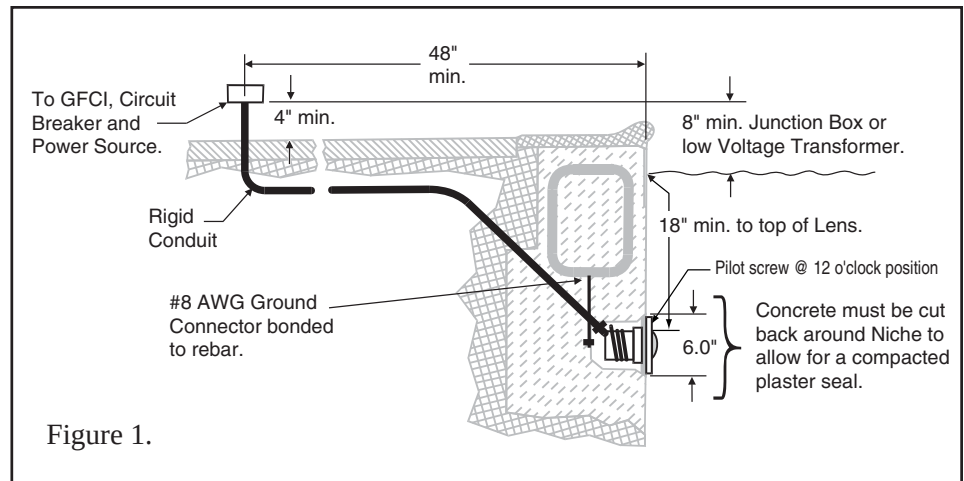
Section I. Installing light fixture during new pool construction

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

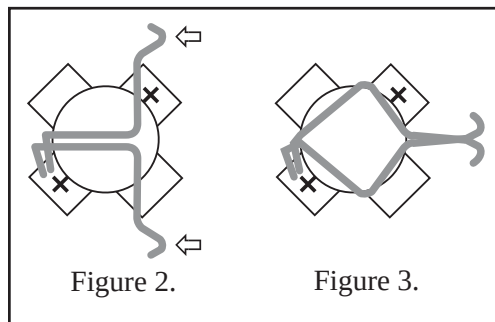
Be careful not to touch bulb with bare skin, as this will reduce the life of the bulb. Use the plastic wrapping of the new bulb, or a cloth to grasp the bulb.

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 ¼ inch or less, see Figure 5.

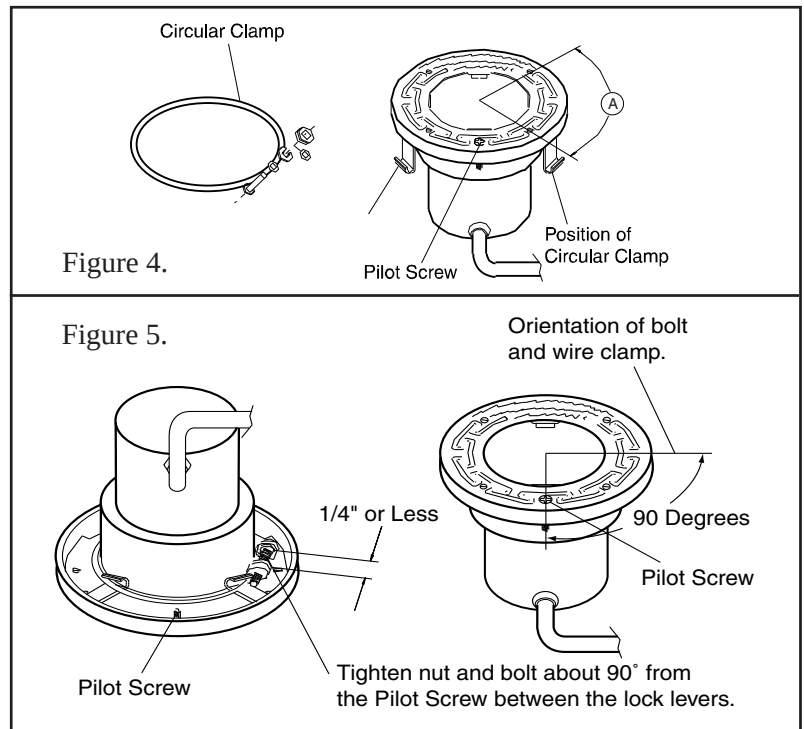


H. Replace the light assembly into the niche and tighten the special pilot screw.

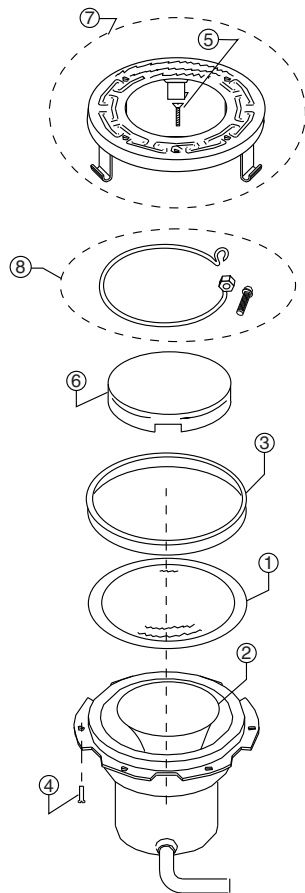
⚠ WARNING

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.



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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LÁMPARA SUBACUÁTICA SPABRITE™ / AQUALIGHT™

Manual del Propietario

IMPORTANTES INSTRUCCIONES DE SEGURIDAD *LEA Y SIGA TODAS LAS INSTRUCCIONES* GUARDE ESTAS INSTRUCCIONES



Índice

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PELIGRO



Riesgo de choque eléctrico o electrocución

Esta lámpara subacuática debe ser instalada por un electricista con certificado de aptitud con el Código Eléctrico Nacional (EE. UU.) y todos los códigos y reglamentos locales respectivos. La instalación inadecuada creará un riesgo eléctrico que podría resultar en la muerte o en lesiones graves a los usuarios de la piscina, a los instaladores o a otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad. Lea y siga las instrucciones específicas que aparecen abajo.

ADVERTENCIA

Antes de instalar esta lámpara subacuática, lea y siga todas las advertencias e instrucciones adjuntas. No apegarse a los avisos de seguridad y a las instrucciones pudiera ocasionar una lesión grave, la muerte o daños a la propiedad. Favor de llamar al (805) 553-5000 para obtener ejemplares gratuitos de estos instructivos.

AVISO IMPORTANTE



Para información del instalador.

Este manual contiene información importante sobre la instalación, operación y uso en forma segura de este producto. Esta información debe dársele al dueño(a)/operador(a) de este equipo.

⚠ ¡PELIGRO! ¡Riesgo de Golpe Eléctrico o Electrocutación!



Este producto debe ser instalado por un electricista certificado o licenciado o por un representante de servicio de mantenimiento de piscinas calificado de acuerdo con el Código Nacional de Electricidad y todas las regulaciones y códigos locales aplicables. Una instalación inapropiada creará un peligro eléctrico que podría resultar en muerte — o lesiones graves a los usuarios de la piscina, instaladores u otras personas debido a un golpe eléctrico y puede causar daño a la propiedad. Siempre desconecte la fuente de poder de las luces de la piscina en la caja de fusibles antes de realizar un servicio de mantenimiento de las luces. El no hacerlo de esta forma puede resultar en la muerte o lesiones serias al representante de servicios de mantenimiento, usuarios de la piscina u otros debido a un golpe eléctrico. LEA Y SIGA TODAS LAS INSTRUCCIONES DE ESTE MANUAL.

⚠ ADVERTENCIA —

Importante información de seguridad para la instalación de luces y nichos Pentair

- Todas las instalaciones de nichos y luces deben estar en conformidad con todos los códigos. Si un código local exige un sello para cable, utilice nichos plásticos Pentair (P/N 79206600 y P/N 79206700).
- Por ningún motivo reemplace luces empalmando cables bajo el agua o detrás del nicho.

⚠ ADVERTENCIA —

RIESGO DE GOLPE ELÉCTRICO Y LESIONES.

UTILICE SOLO EL MÉTODO DE INSTALACIÓN ESPECIFICADO MÁS ABAJO.

Importante información de seguridad para instalaciones de reflectores de fuentes

Lugar de uso de Lámpara (Luz)	Reflector de Fuente Pentair* (P/N 560000 – P/N 560001) (P/N 560002 – P/N 560003)	Método de Instalación Requerido
Piscina o Spa	Lámpara (Luz) para Piscina (o Spa) con nicho impermeables fuente.	SÓLO carcasa de reflector (Casco de molde). NO UTILIZAR Soporte para reflector de
Fuente	Lámpara (Luz) para Piscina (o Spa) con nicho impermeable sumergible	Carcasa para reflector (Casco de molde) o soporte para reflector de fuente.

(*) **Nota:** Las lámparas de nicho impermeable que cumplen con los requisitos para ambos usos, pueden llevar ya sea la marca de certificación UL para Lámparas listadas para piscinas (Spa) de nicho impermeable, como la marca de certificación UL para Lámparas listadas de nicho impermeable sumergible. Una Lámpara que no lleva la marca de Listado UL correspondiente, no es considerada por UL como fabricada bajo el Listado y Servicio de Seguimiento UL para el lugar de uso asociado.

⚠ ADVERTENCIA —

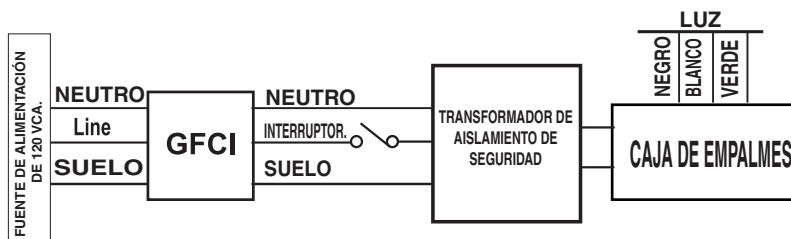
El lente de la luz pueden calentarse durante su uso. Los usuarios deben evitar contacto con la luz como quemaduras graves pueden resultar del contacto prolongado con el LUZ.

⚠ ¡ADVERTENCIA! Siempre instale una nueva lente la junta (ver el número de pieza en la Guía de usuario), cuando nunca montar la luz. De no hacerlo, podría permitir fugas de agua en la asamblea general, que podría causar; (a) el peligro de descarga eléctrica que provoca la muerte o lesiones graves a la piscina los usuarios, instalador, o a otras personas debido a una descarga eléctrica, o (b) rotura de la lámpara o del cristalino, que también podría resultar en lesiones graves para usuario grupo, instaladores, o de las personas, o daños a la propiedad.

SUSTITUIR LAS ROTURAS PROTECTOR DE LALENTE (FISURAS) CON UNA NUEVALENTE Y LA EMPAQUETADURA. • PARA 12

VAC luminarias: UTILIZAR SIEMPRE UN TRANSFORMADOR DE AISLAMIENTO DE SEGURIDAD DE luminarias. Vea el diagrama a la derecha. **Nota:** Conecte los tres (o dos cables) los cables de los cables del circuito correspondiente en la caja de conexión (cable negro al poder, cable blanco en común, y el cable verde a tierra (para una luz de 3 cables).

•12 VCA luminarias ESPECIFICACIÓN:
120 VCA  50/60 Hz



Sección I. Instalación del accesorio para lámpara durante la construcción de una piscina nueva.

A. Antes de instalar el accesorio portalámparas, el electricista debe haber completado los siguientes pasos de preparación, ver la figura 1.

1. Verifique que la piscina cumpla con todos los requisitos del Código Eléctrico Nacional vigente y con todos los códigos y reglamentos locales. Antes de instalar la luz subacuática, un electricista con certificado de aptitud debe instalar el sistema eléctrico para que cumpla o sobrepase dichos requisitos. Algunos de los requisitos del Código Eléctrico Nacional que debe satisfacer el sistema eléctrico de la piscina son los siguientes.

- a. El circuito de alumbrado debe tener un interruptor de circuito de pérdida a tierra (*Ground Fault Circuit Interrupter, GFCI*), y un disyuntor clasificado correctamente.
- b. La caja de conexiones (o, para los modelos de 12 voltios, el transformador de bajo voltaje) debe estar colocada al menos a 20 centímetros (8 pulgadas) sobre el nivel del agua y debe estar colocada al menos a 10 centímetros (4 pulgadas) sobre el nivel de tierra al menos un metro veintidós centímetros (48 pulgadas) del borde de la piscina, vea la figura 1.
- c. El sujetador de la lámpara y todos los artículos metálicos que estén a menos de 1.5 metros (5 pies) de distancia tienen que estar unidos eléctricamente en la forma correcta.
- d. El nicho en húmedo debe estar correctamente instalado de manera que el tornillo piloto se encuentre en la posición de las 12 del reloj y que el borde superior del lente de la lámpara subacuática se encuentre a un mínimo de 45.7 cm (18 pulgadas) por debajo de la superficie del agua de la piscina; vea la figura 1.

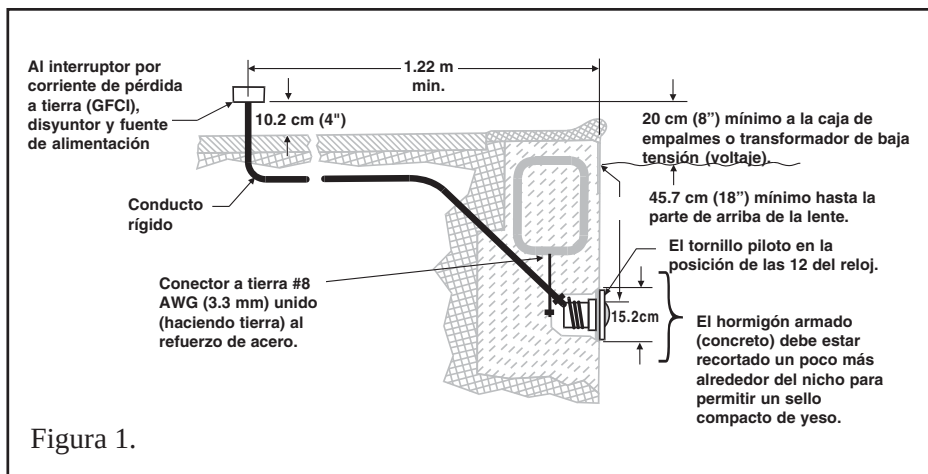


Figura 1.

NOTA

La orientación requerida para todas las lámparas Pentair es con el tornillo piloto en la posición de las 12 del reloj. Esto es garantizado por la instalación correcta del nicho.

- e. El nicho mojado está unido eléctricamente en la forma correcta y conectado a tierra a través del conector a tierra Núm. 8 AWG (3.3 mm) ubicado en la parte trasera del nicho, vea la figura 1.

NOTA:

El sistema eléctrico de la piscina o bañera de hidromasaje (spa) se puede verificar con un Pool and Spa Electrical Qualification Test Kit (Juego de Prueba para Calificar Piscinas y Bañeras de Hidromasaje). Puede obtener este estuche para pruebas en Pentair Aquatic Systems. La inspección del sistema eléctrico utilizando el juego arriba indicado tiene que realizarse por personal certificado y capacitado para ello.

2. Para estar seguro de que el sistema eléctrico de la piscina satisface todos los requisitos aplicables, el electricista también deberá consultar al departamento de construcciones de la localidad.
3. Use únicamente los nichos para inmersión en el agua de Pentair Water Pool and Spa para cerciorarse de que la unión eléctrica y la conexión a tierra queden exactas.

B. Pasos que deben realizarse después de haber satisfecho los requisitos del sistema eléctrico.

1. Pasar el cordón a través del tubo para paso de cables eléctricos a la caja de conexiones, dejar un mínimo de 1.22 metros (4 pies) de cable en el portalámparas para enrollar alrededor de la luz; ver figura 1. Este metro y veintidós centímetros (4 pies) de cable alrededor de la luz permitirán darle servicio cuando la piscina ya esté llena de agua.
2. Corte el cordón en la caja de empalmes, dejando por lo menos 15 cm (6 pulgadas) de cordón para hacer las conexiones.
3. Pele 15 cm (6 pulgadas) de la punta de la envoltura externa del cordón para poner al descubierto los tres alambres aislados — tenga cuidado de no dañar el aislante de los tres alambres internos.
4. Conecte los tres alambres a los hilos de conexión correspondientes en el circuito de la caja de conexiones y asegure la tapa de dicha caja en su lugar.
5. Para luces con 2-los conductores (sin cable de puesta a tierra) conecte dos cables a los cables del circuito correspondiente en la caja de empalmes, el cable negro a la toma eléctrica, cable blanco común y seguro de la cubierta de la caja de empalmes en el lugar.



ADVERTENCIA

Nunca encienda esta lámpara subacuática durante más de 10 segundos a menos que esté completamente sumergida en el agua. Si la lámpara no está totalmente sumergida, el conjunto de sus componentes se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto a su vez podría causar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o en daños a la propiedad.

6. Vuelva a colocar los componentes de la lámpara en el nicho y apriete el tornillo piloto especial de acero inoxidable.

ADVERTENCIA

Use solamente el tornillo guía especial proporcionado con esta lámpara subacuática. Este tornillo monta y conecta eléctricamente a tierra en forma segura la cubierta protectora al aro de montaje y al nicho para inmersión en agua. No usar el tornillo provisto podría ocasionar un peligro eléctrico que pudiera resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

7. Llene la piscina hasta que la lámpara subacuática quede completamente sumergida en el agua antes de encender la luz durante más de 10 segundos. Encienda el interruptor principal o el disyuntor, así como también el interruptor que hace funcionar la lámpara subacuática, para verificar que esté funcionando adecuadamente.

Sección II. Cambio del portalámparas en una piscina ya instalada

PELIGRO



Riesgo de choque eléctrico o electrocución

Esta lámpara subacuática debe ser instalada por un electricista con certificado de aptitud con el Código Eléctrico Nacional (EE. UU.) y todos los códigos y reglamentos locales respectivos. La instalación inadecuada creará un riesgo eléctrico que podría resultar en la muerte o en lesiones graves a los usuarios de la piscina, a los instaladores o a otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

Siempre desconecte la corriente eléctrica de la luz de la piscina en el disyuntor antes de darle servicio a la lámpara. El no hacerlo podría resultar en la muerte o en lesiones graves a la persona que esté dando servicio, a los usuarios de la piscina o a otras personas debido a un choque eléctrico.

A. Antes de cambiar el portalámparas:

1. Verifique que la piscina satisfaga los requisitos del Código Eléctrico Nacional vigente y todos los códigos y reglamentos de la localidad. Antes de instalar la lámpara subacuática, un electricista con certificado de aptitud debe instalar el sistema eléctrico para que cumpla o sobrepase dichos requisitos. Algunos de los requisitos del Código Eléctrico Nacional que el sistema eléctrico de la piscina tiene que cumplir son los siguientes.
 - a. El circuito de luz debe tener un interruptor del circuito de pérdida de tierra (*Ground Fault Circuit Interrupter, GFCI*), y tener un disyuntor clasificado correctamente.
 - b. La caja de conexiones (o, para los modelos de 12 voltios, el transformador de bajo voltaje) debe estar colocada al menos a 20 centímetros (8 pulgadas) sobre el nivel del agua y debe estar colocada al menos a 10 centímetros (4 pulgadas) sobre el nivel de tierra al menos un metro veintidós centímetros (48 pulgadas) del borde de la piscina, ver figura 1.
 - c. El portalámparas y todos los artículos metálicos deben estar a menos de 1.5 metros (5 pies) de distancia de la piscina y deben estar unidos eléctricamente en la forma correcta.
 - d. El nicho para inmersión en agua está colocada en la piscina al menos a 45.7 cm (18 pulgadas) del borde superior del lente de la lámpara subacuática por debajo de la superficie del agua. Ver figura #1.
 - e. El nicho está unido eléctricamente en la forma correcta y conectado a tierra a través del conector a tierra Núm. 8 AWG ubicado en la parte trasera del nicho, ver figura 1.

NOTA:

El sistema eléctrico de la piscina o bañera de hidromasaje (spa) se puede verificar con un Pool and Spa Electrical Qualification Test Kit (Juego de Prueba para Calificar Piscinas y Bañeras de Hidromasaje). Estuche para efectuar Pruebas Este estuche para prueba se puede obtener en Pentair Aquatic Systems. La inspección del sistema eléctrico utilizando el juego arriba indicado tiene que realizarse por personal certificado y capacitado para ello.

2. Para estar seguro de que el sistema eléctrico de la piscina satisface todos los requisitos aplicables, el electricista también deberá consultar al departamento de construcciones de la localidad.
3. Para cerciorares de que la unión eléctrica y la conexión a tierra queden correctas se deben usar únicamente nichos para inmersión en agua de Pentair Aquatic Systems.

B. Cambio del accesorio para lámpara después de cumplir con los requisitos del sistema eléctrico.

⚠ ADVERTENCIA

No asegurarse de que el sistema eléctrico de la piscina cumpla con los requisitos vigentes del código antes de instalar la lámpara subacuática creará un peligro eléctrico que podría resultar en la muerte o en una lesión grave de los usuarios de la piscina, instaladores, u otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

1. Apague el interruptor eléctrico principal o el disyuntor, así como también el interruptor que opera la lámpara subacuática.
2. Para quitar los componentes de la lámpara, quite el tornillo guía especial en la parte superior del aro de la carátula, saque los componentes de la lámpara del nicho y colóquelos en la cubierta de la piscina.

⚠ ADVERTENCIA

Asegúrese de guardar el tornillo guía especial de esta lámpara subacuática. Este tornillo monta y conecta eléctricamente a tierra en forma segura la cubierta protectora al aro de montaje y al nicho para inmersión en agua. No usar el tornillo proporcionado podría ocasionar un peligro eléctrico que pudiera ocasionar la muerte o una lesión grave a los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

3. Quite la cubierta de la caja de conexiones, desconecte los cables del portalámparas y tire el cable a través del tubo para paso de cables eléctricos.
4. Pase el nuevo cable del portalámparas por el tubo para paso de cables eléctricos desde el nicho hasta la caja de conexiones.

NOTA:

Dependiendo de la longitud del tubo para paso de cables eléctricos, pudieran requerirse herramientas especiales para jalar el cable.

5. Dejar un mínimo de 1.22 metros (4 pies) de cable para enrollar alrededor de la luz; ver figura #1. Este metro y veintidós centímetros (4 pies) de cable alrededor de la luz permitirán darle servicio cuando la piscina ya esté llena de agua.
6. Corte el cable en la caja de conexiones, deje al menos 15 cm (6 pulgadas) de cordón para hacer las conexiones.
7. Pele 15 cm (6 pulgadas) de la punta de la envoltura externa del cordón para poner al descubierto los tres alambres aislados — tenga cuidado de no dañar el aislante de los tres alambres internos.
8. Conecte los tres alambres a los hilos de conexión correspondientes en el circuito de la caja de conexiones y asegure la tapa de dicha caja en su lugar. (El alambre negro a la fuente de alimentación, el blanco al común de masa y el verde a tierra) y fije la tapa de la caja de empalmes en su lugar.

⚠ ADVERTENCIA

Use solamente el tornillo guía especial proporcionado con esta lámpara subacuática. Este tornillo monta y conecta eléctricamente a tierra en forma segura la cubierta protectora al aro de montaje y al nicho para inmersión en agua. No usar el tornillo provisto podría ocasionar un peligro eléctrico que pudiera resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

9. Vuelva a colocar los componentes de la lámpara y apriete el tornillo guía especial.

⚠ ADVERTENCIA

Nunca encienda esta lámpara subacuática por más de 10 segundos a menos que esté completamente sumergida en el agua. Si la lámpara no está totalmente sumergida, el conjunto de sus componentes, se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto a su vez podría causar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o en daños a la propiedad.

10. Antes de encender la luz por más de 10 segundos, debe llenar la piscina hasta que la lámpara subacuática quede completamente sumergida. Encienda el interruptor principal o el disyuntor, así como también el interruptor que hace funcionar la lámpara subacuática, para verificar que esté funcionando adecuadamente.

Sección III. Cambio de la bombilla (foco) únicamente

⚠ PELIGRO



Siempre desconecte la corriente eléctrica de la luz de la piscina en el disyuntor antes de darle servicio a la lámpara. El no hacerlo podría resultar en la muerte o en lesiones graves al instalador, a la persona que esté dando servicio, a los usuarios de la piscina o a otras personas debido a un choque eléctrico.

1. Siempre apague el interruptor eléctrico principal o el disyuntor, así como también el interruptor que opera la lámpara subacuática.
2. Se necesita lo siguiente:
 - a. Un empaque nuevo para lente (número de parte 79108600).
 - b. Un foco, consultar el cuadro #1 para saber cual es el tipo y la potencia en vatios adecuados.

Especificaciones de la lámpara

120 voltios - 250 vatios - T-4 lámp**
 120 voltios - 100 vatios - T-4 lámp**
 120 voltios - 60 vatios - PAR 16 lámp***
 12 voltios - 100 vatios - R-20 lámp***
 12 voltios - 75 vatios - MR-16 lámp**

** AquaLight - ***SpaBrite
 Tabla 1.

Modelos de 12* voltios

75 vatios
 100 vatios
 *Se requiere transformador

Modelos de 120 voltios

60 vatio, 100 vatios
 250 vatios

⚠ ADVERTENCIA

Reemplace la lámpara por otra que sea del tipo y la potencia en voltios similar. Si no reemplaza la lámpara con otra del mismo tipo pudiera dañar sus componentes y podría causar un peligro eléctrico que pudiera ocasionar la muerte o lesiones graves a los usuarios de la piscina, instaladores, u otras personas debido a un choque eléctrico, y también podría causar daños a la propiedad.

⚠ ADVERTENCIA

Siempre que desarme la luz, póngale un empaque nuevo a la lente (número de parte 79108600) cada vez que desarme la luz. No hacerlo pudiera permitir la entrada el agua a los componentes, lo cual pudiera ocasionar:

- (a) un peligro eléctrico que podría resultar en la muerte o en una lesión seria a los usuarios de la piscina, instaladores u otras personas debido a un choque eléctrico, o
- (b) la ruptura de la lámpara o lente que, en forma similar, podría resultar en una lesión seria a los usuarios de la piscina, lo que a su vez instaladores, personas cercanas, o daños a la propiedad.

3. Para quitar los componentes de la lámpara, quite el tornillo guía especial en la parte superior del aro de la carátula, saque los componentes de la lámpara del nicho y colóquelos en la cubierta de la piscina.

⚠ ADVERTENCIA

Asegúrese de guardar el tornillo guía especial de esta lámpara subacuática. Este tornillo monta y conecta eléctricamente a tierra en forma segura la cubierta protectora al aro de montaje y al nicho para inmersión en agua. No usar el tornillo proporcionado podría ocasionar un peligro eléctrico que pudiera ocasionar la muerte o una lesión grave a los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

4. Desarmar los componentes de la lámpara y quitar el foco (bombilla). Quite y deseche el empaque viejo (junta).
5. Instale el empaque nuevo al armar de nuevo la luz, el número de parte de Pentair Water Pool and Spa es el 79108600.
6. Seleccione el foco (bombilla) del cuadro 1.
 - a. Para la AquaLight de 100 vatios y de 250 vatios, vea las figuras 2 y 3.
 - b. Apriete el alambre formado como lo indican, vea la figura 3, hasta que el alambre se junte y forme una abertura en forma de diamante, vea la figura 3.
 - c. Mientras mantiene el alambre formando un diamante, vea la figura 3, inserte la bombilla a través de la abertura en forma de diamante y enrósquela en el portalámparas (zócalo).
 - d. Cerciórese de no tocar la bombilla con las manos desnudas, pues como lo indican reducirá la vida de la bombilla.

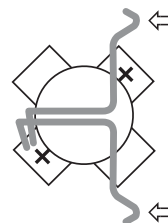


Figura 2.

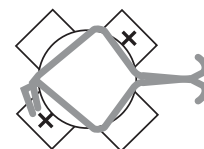


Figura 3.

ADVERTENCIA

Nunca encienda esta lámpara subacuática por más de 10 segundos a menos que esté completamente sumergida en el agua. Si la lámpara no está totalmente sumergida, el conjunto de sus componentes se pondrá sumamente caliente, lo cual podría causar quemaduras graves o la rotura de la lámpara o lente. Esto pudiera ocasionar lesiones graves a los usuarios de la piscina, a los instaladores, a las personas que se encuentren cerca o daños a la propiedad.

6. Fije el aro al lámpara. Los tornillos de sellado deben apretarse de la siguiente manera para asegurarse de un sellado adecuado;
 - a. Para las lámparas con carátula con aro de cromo o latón:
 - (1) Apriete parcialmente el tornillo que está en el lugar correspondiente a las 3 horas en punto y, después, apriete parcialmente el que se encuentra en la posición de las 9 horas. Apriete parcialmente el tornillo en otra posición «opuesta» y después apriete parcialmente el tornillo que está directamente al lado contrario del mismo.
 - (2) Continúe apretando parcialmente todos los tornillos en la secuencia de arriba hasta que todos los tornillos estén apretados en forma pareja y segura. (Se recomienda un par de torsión de 20 libras [9 kilos].)
 - b. Para las lámparas carátula con aro de acero inoxidable:

Coloque el tornillo y la tuerca a aproximadamente a 45 grados a la derecha del tornillo guía especial de acero inoxidable y de la tuerca en la abrazadera de unitensión hasta que la distancia entre las puntas de la abrazadera sea igual a 6 mm (1/4 de pulgada).

Vea los instructivos adjuntos para el armado del aro de carátula de acero inoxidable en la página 15.
7. Vuelva a colocar el conjunto de la lámpara en el nicho y apriete el tornillo piloto especial de acero inoxidable.

ADVERTENCIA

Use solamente el tornillo piloto especial de acero inoxidable suministrado con esta lámpara subacuática. Este tornillo monta y conecta el bastidor a tierra en forma segura conectándolo al aro de montaje y al nicho mojado. El no usar el tornillo provisto podría causar un peligro eléctrico que a su vez podría resultar en la muerte o lesión grave de los usuarios de la piscina, instaladores u otros debido a un choque eléctrico.

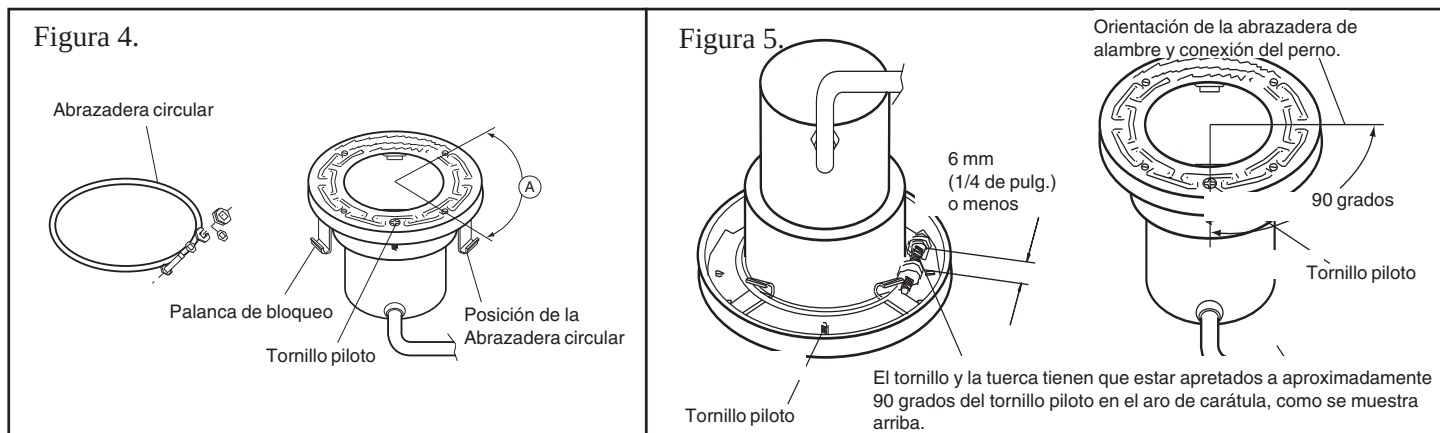
8. Llene la piscina hasta que la lámpara subacuática quede completamente sumergida en el agua antes de encender la luz durante más de 10 segundos. Encienda el interruptor principal o el disyuntor, así como también el interruptor de la lámpara subacuática, para verificar que esté funcionando adecuadamente.

Instrucciones para el armado del aro de carátula de acero inoxidable.

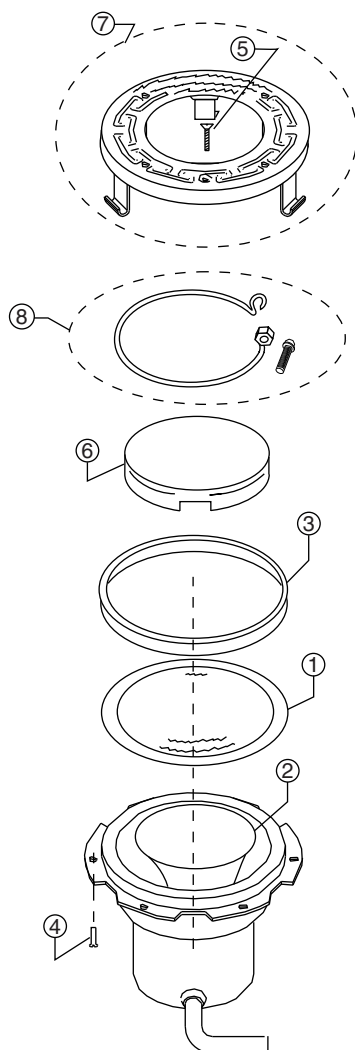
1. Con la luz descansando sobre la base, coloque el encima del armazón de la luz, como se muestra. (Vea la figura 4.)

SE TIENE QUE USAR UN SE DEBE USAR UN EMPAQUE NUEVO PARA LA LENTE CADA VEZ QUE SE VUELVE A MONTAR LA LÁMPARA. Localizar la palabra “TOP” en la superficie de la lente. Alinear el tornillo guía en la carátula del aro que tenga la letra “O” de la palabra “TOP” y la flecha de la etiqueta marcada, “La flecha en esta etiqueta debe tiene que estar alineada con el tornillo piloto en el aro de carátula.

 - a. La luz semimontada ahora incluirá la carátula del aro y su nuevo empaque alineado con el armazón de la luz. Mantenga la lámpara hacia abajo sobre el empaque viejo, y usar éste como dispositivo para armar. Esto evitará que la lente y el empaque sean empujados fuera de la carátula del aro mientras es asegurado al portalámparas.
 - b. Con las puntas dobladas de la abrazadera circular de unitensión apuntando hacia abajo, abra la abrazadera y colóquela en las ranuras en «U» de las palancas de bloqueo. Cerciórese de que las puntas dobladas de la abrazadera estén ubicadas entre el par de palancas de bloqueo como se muestra en la figura 4, ubicación A. Verifique que la abrazadera esté empotrada adecuadamente con todas las palancas. Vea la figura 5.
 - c. Voltee la luz de tal manera que ahora esté descansando sobre la lente. Apriete el tornillo y la tuerca hasta que la distancia entre las puntas de la abrazadera sea igual a 6.4 mm (1/4 de pulgada) o menos (figura 5).



Sección IV. Desglose de las partes



Artículo No.	No. del Repuesto	Descripción
1	79107800	Lente, transparente, de 10 cm. (4 pulgadas) de diámetro, templada (12 voltios SpaBrite, 120 voltios / 12 voltios AquaLight)
1	650086	Lente, transparente, de 10 cm. (4 pulgadas) de diámetro, templada (120 voltios SpaBrite)
2	650139Z	Bombilla (foco), 60 vatio, 120 voltios, PAR 16, (SpaBrite)
2	79108100	Proyector, base med., 100 vatios, 12 voltios, (SpaBrite)
2	79102900	Base para atornillar de cuarzo halógeno de 100 vatios, (AquaLight)
2	79113800	Base para atornillar de cuarzo halógeno de 250 vatios, (AquaLight)
2	79112400	Bombilla (foco), 75 vatios, 12 voltios, bipolar, (AquaLight)
2	070517	Bombilla (foco), 100 vatios, 120 voltios, bayoneta
2	79112700	Bombilla (foco), 250 vatios, 120 voltios, bayoneta (AquaLight)
3	79108500	Empaque, lente de 10 cm (4 pulg.) de diámetro (12 voltios SpaBrite)
3	79108600	Empaque, silicona, 100 vatios, 250 vatios (AquaLight, 120 voltios SpaBrite)
4	98208600	Tornillo, acero inoxidable de 10-24 x 3/8 pulg. (9 mm), se necesitan 6, para latón-cromo
5	79104800	Tornillo guía con arandela de caucho cautiva, latón
5	619355	Tornillo guía con arandela de caucho cautiva, acero inoxidable
6	79108900	Lente de color Kwik-change, roja
6	79109000	Lente de color Kwik-change, azul
6	650015	Lente de color Kwik-change, magenta
6	650016	Lente de color Kwik-change, púrpura
6	650017	Lente de color Kwik-change, azul/verde
6	650018	Lente de color Kwik-change, verde
6	650019	Lente de color Kwik-change, paquete (5 colors)
7	79111600	Conjunto del aro de carátula, acero inoxidable
8	79210400	Conjunto del alambre de unitensión, de acero inoxidable con tuerca soldada

GUARDE ESTAS INSTRUCCIONES

NOTICE D'EMPLOI DES LAMPES IMMERGÉES SPABRITE® ET AQUALIGHT®

CONSIGNES DE SÉCURITÉ IMPORTANTES *PRIÈRE DE LIRE ET D'OBSERVER TOUTES LES CONSIGNES* CONSERVER CETTE NOTICE



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DANGER



Risque de choc électrique ou d'électrocution

Cette lampe immergée doit obligatoirement être installée par un électricien agréé ou breveté conformément au Code national de l'électricité et à tous les codes et ordonnances locaux applicables. Une installation incorrecte risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels. Prière de lire et d'observer les directives spécifiques ci-dessous.

AVERTISSEMENT

Avant d'installer cette lampe immergée de Pentair Water Pool and Spa, prière de lire et de suivre tous les avertissements et instructions qui l'accompagnent. Toute infraction aux consignes de sécurité et d'emploi risque de provoquer blessures graves, décès ou dégâts matériels. Pour obtenir des exemplaires gratuits, prière de s'adresser au fournisseur local ou d'appeler Pentair Water Pool and Spa au (805) 553-5000.

Avis important



À l'attention de l'installateur.

La présente notice contient des renseignements importants sur l'installation, le fonctionnement et l'utilisation de ce produit en toute sécurité. Prière de fournir ces informations au propriétaire et (ou) à l'opérateur de ce matériel.

DANGER! Risque de décharge électrique ou d'électrocution!



Ce produit doit être installé par un électricien agréé ou qualifié ou un technicien spécialisé, conformément au Code National d'Electricité et à tous les codes et règlements locaux en vigueur. Toute mauvaise installation crée un danger électrique pouvant causer la mort ou des blessures graves - par décharge électrique - aux utilisateurs, aux installateurs ou à des tiers, et pouvant également provoquer des dégâts matériels. Avant de commencer l'entretien du luminaire, veuillez toujours couper le courant électrique du luminaire au niveau du disjoncteur. Le non-respect de cette consigne peut entraîner la mort ou des blessures graves par décharge électrique pour le technicien, les utilisateurs ou des tiers. **VEUILLEZ LIRE ET OBSERVER TOUTES LES CONSIGNES DE CE GUIDE.**

AVERTISSEMENT — Importantes consignes de sécurité pour l'installation du luminaire et de la niche Pentair

- Toutes les installations de niche et de luminaire doivent être faites conformément à tous les codes. Si les codes locaux exigent un joint d'étanchéité à cordon, veuillez utiliser les niches en plastique Pentair (P/N 79206600 et P/N 79206700).
- Ne tenter en aucun cas de remplacer les luminaires en épissant les câbles sous l'eau ou derrière la niche.

AVERTISSEMENT — RISQUE DE DÉCHARGE ÉLECTRIQUE OU DE BLESSURE. UTILISEZ UNIQUEMENT LA MÉTHODE D'INSTALLATION SPÉCIFIÉE CI-DESSOUS.

Importantes consignes de sécurité pour l'installation d'un appareil d'éclairage pour fontaine

Emplacement/Utilisation du Luminaire (lumière)	Luminaire pour Fontaine Pentair* (P/N 560000 – P/N 560001) (P/N 560002 – P/N 560003)	Méthode d'Installation Requise
Piscine ou spa	Luminaire (lumière) pour niche étanche pour piscine (ou spa)	Bâti de luminaire (coque) SEULEMENT. NE PAS UTILISER le support pour fontaine.
Fontaine	Luminaire (lumière) pour niche submersible de pour piscine (ou spa)	Bâti de luminaire (coque) ou support luminaire pour fontaine.

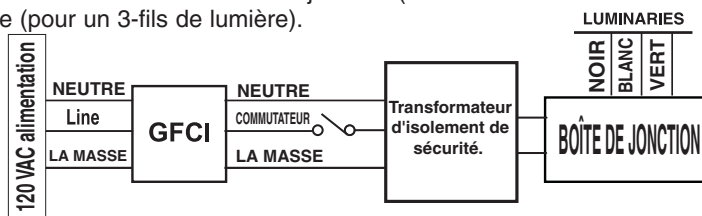
(*) **Remarque** : Les luminaires pour niches étanches se conformant aux règlements pour les deux applications peuvent porter la marque UL listée pour les luminaires pour niches étanches pour piscine (ou spa) ainsi que pour les luminaires pour niches submersibles. Un luminaire ne portant pas la marque UL listée correspondante n'est pas considéré comme ayant été produit conformément aux normes de la marque UL listée et au service de suivi de la production UL pour cet emplacement.

AVERTISSEMENT — La lumière peut devenir chaud pendant l'utilisation. Les utilisateurs doivent éviter contact avec la lumière comme Burns sérieuse peut résulter d'un contact prolongé avec la lumière.

IMPORTANT : Le câblage luminaires - Lire la suite

 **AVERTISSEMENT !** Toujours installer une nouvelle lentille joint (voir numéro de référence du Guide de l'utilisateur), quand jamais du remontage de la lumière. Le défaut de le faire peut permettre l'eau de s'écouler dans l'assemblée qui pourrait causer: (a) un risque électrique entraînant la mort ou des blessures graves pour les utilisateurs piscine, installation, ou d'autres, en raison d'un choc électrique, ou (b) rupture de la lampe ou de la lentille, qui de même risque d'entraîner des blessures graves pour l'utilisateur piscine, installateurs, ou des passants, ou des dommages à la propriété. **Remplacer tout fissuré PROTECTION (FISSURÉ LENTILLE)** avec nouvelle lentille et le joint. Pour 12 VCA luminaires : Toujours utiliser un transformateur de séparation de sécurité D'ALIMENTATION DE luminaires. Voir bouton droit sur la droite. Remarque : Brancher tous les trois (ou deux fils) les fils vers le circuit correspondant les fils dans la boîte de jonction (fil noir à la source d'alimentation, fil blanc en commun, et le fil vert à la masse (pour un 3-fils de lumière).

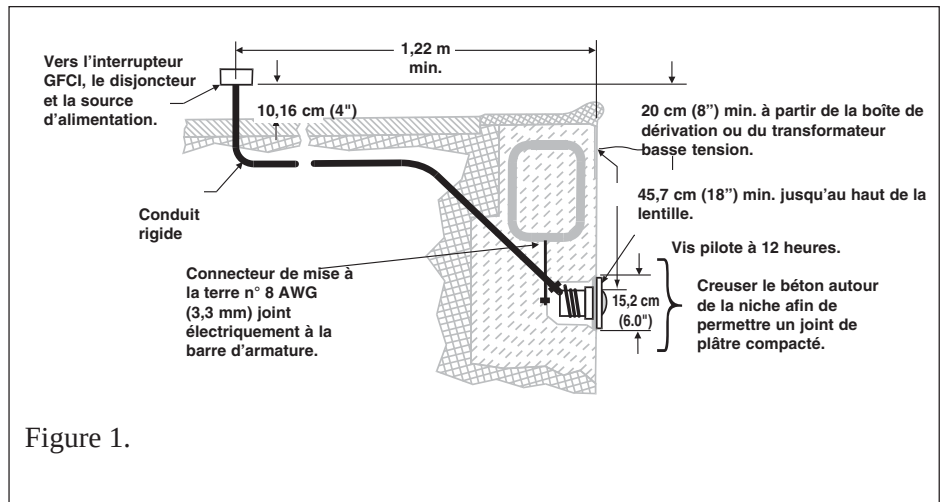
12 VAC LUMINARIES SPECIFICATION:
120 VAC  , 50/60 Hz



Section I. Installation de l'appareil d'éclairage lors de la construction d'une nouvelle piscine

A. Avant que l'appareil d'éclairage ne puisse être installé, l'électricien devra procéder aux préparatifs suivants, cf. figure 1 ci-dessous.

1. S'assurer d'abord que la piscine est conforme aux spécifications courantes du Code national de l'électricité et de tous les codes et ordonnances locaux. Avant que la lampe immergée ne puisse être installée, il faut qu'un électricien agréé ou breveté installe un circuit électrique qui soit conforme à ces spécifications ou qui les dépasse. Certaines des spécifications du Code national de l'électricité applicables aux circuits électriques des piscines sont indiquées ci-dessous. Vérifier ainsi que :
 - a. Le circuit d'éclairage comporte un interrupteur à détection de courant de terre (GFCI) et un disjoncteur du calibre approprié.
 - b. La boîte de dérivation (ou, pour les modèles de 12 volts, le transformateur basse tension) est située à au moins 20 cm (8 pouces) au-dessus du niveau du sol et à au moins 1,22 m (48 pouces) du bord de la piscine, cf. figure 1 ci-dessous.
 - c. L'appareil d'éclairage et tous les éléments métalliques situés à moins de 1,5 m (5 pieds) de la piscine comportent des joints électriques appropriés.
 - d. La niche submersible doit être installée convenablement, de telle manière que le trou de la vis soit à 12 heures et que le rebord supérieur de la lentille du luminaire soit à une profondeur d'au moins 45,7 cm (18 pouces) au-dessous de la surface de l'eau dans la piscine, cf. figure 1 ci-dessous.



REMARQUE

La position requise de tous les luminaires Pentair est d'avoir la vis pilote à 12 heures. Ceci est garanti par l'installation correcte de la niche.

- e. La niche immergée comporte des joints électriques appropriés et est convenablement reliée à la terre au moyen du connecteur de terre n° 8 AWG (3,3 mm) situé à l'arrière de la niche, cf. figure 1.

REMARQUE :

Le circuit électrique peut être vérifié au moyen d'un kit d'essai de qualification électrique pour piscines et bains tourbillon, kit disponible auprès de Pentair Aquatic Systems. L'inspection du circuit au moyen du kit en question doit être réalisée par un personnel breveté et bien formé.

2. Pour s'assurer que le circuit électrique de la piscine est conforme à toutes les spécifications applicables, l'électricien devra aussi consulter le service de construction local.
 3. Pour réaliser une connexion à la terre et des joints électriques satisfaisants, n'utiliser que des niches immergées de Pentair Aquatic Systems.
- B. Une fois le circuit électrique installé conformément aux spécifications, procéder comme suit :
1. Acheminer le cordon à travers le conduit jusqu'à la boîte de dérivation en laissant au moins 1,22 m (4 pieds) à enrouler autour de la lampe au niveau de l'appareil d'éclairage, cf. figure 1. Ce mètre vingt-deux permet de procéder au remplacement de la lampe une fois la piscine remplie d'eau.
 2. Couper le cordon au niveau de la boîte de dérivation en laissant au moins 15 cm (6 pouces) pour les raccordements.
 3. Couper la gaine extérieure du cordon sur 15 cm (6 pouces) afin de mettre à nu les trois conducteurs internes isolés en veillant à ne pas endommager leur isolement.
 4. Raccorder les trois conducteurs aux fils correspondants du circuit électrique dans la boîte de dérivation et refermer solidement le couvercle de cette dernière.

AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

5. Remettre l'ensemble lampe dans la niche et serrer la vis de guide spéciale en acier inoxydable.

AVERTISSEMENT

N'utiliser que la vis de guide spéciale en acier inoxydable livrée avec cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

6. Ne pas utiliser la lampe pendant plus de 10 secondes avant que la piscine ne soit suffisamment remplie pour que la lampe soit totalement immergée dans l'eau. Mettre alors en marche l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe afin d'en vérifier le bon fonctionnement.

Section II. Remplacement de l'appareil d'éclairage d'une piscine existante

DANGER



Risque de choc électrique ou d'électrocution

Cette lampe immergée doit obligatoirement être installée par un électricien agréé ou breveté ou par un technicien qualifié dans la maintenance des piscines conformément au Code national de l'électricité et à tous les codes et ordonnances locaux applicables. Une installation incorrecte risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels.

Sous peine de provoquer le décès ou des blessures graves pour le préposé à l'entretien, les utilisateurs de la piscine ou d'autres personnes par suite d'un choc électrique, veiller à toujours déconnecter la lampe de la piscine du secteur au niveau du disjoncteur avant de procéder au remplacement de la lampe.

A. Avant de remplacer l'appareil d'éclairage.

1. S'assurer d'abord que la piscine est conforme aux spécifications courantes du Code national de l'électricité et de tous les codes et ordonnances locaux. Avant que la lampe immergée ne puisse être installée, il faut qu'un électricien agréé ou breveté installe un circuit électrique qui soit conforme à ces spécifications ou qui les dépasse. Certaines des spécifications du Code national de l'électricité applicables aux circuits électriques des piscines sont indiquées ci-dessous. Vérifier ainsi que :
 - a. Le circuit d'éclairage comporte un interrupteur à détection de courant de terre (GFCI) et un disjoncteur du calibre approprié.
 - b. La boîte de dérivation (ou, pour les modèles de 12 volts, le transformateur basse tension) est située à au moins 20 cm (8 pouces) au-dessus du niveau du sol et à au moins 1,22 m (48 pouces) du bord de la piscine, cf. figure 1.
 - c. L'appareil d'éclairage et tous les éléments métalliques situés à moins de 1,5 m (5 pieds) de la piscine comportent des joints électriques appropriés.
 - d. La niche immergée est correctement installée de manière à ce que le bord supérieur de la lentille de la lampe soit à au moins 45,7 cm (18 pouces) au-dessous de la surface de l'eau dans la piscine, cf. figure 1.
 - e. La niche immergée comporte des joints électriques appropriés et est convenablement reliée à la terre au moyen du connecteur de terre n° 8 AWG (3,3 mm) situé à l'arrière de la niche, cf. figure 1.

REMARQUE :

Le circuit électrique peut être vérifié au moyen d'un kit d'essai de qualification électrique pour piscines et bains tourbillon, kit disponible auprès de Pentair Water Pool and Spa, Inc. L'inspection du circuit au moyen du kit en question doit être réalisée par un personnel breveté et bien formé.

2. Pour s'assurer que le circuit électrique de la piscine est conforme à toutes les spécifications applicables, l'électricien devra aussi consulter le service de construction local.
3. Pour réaliser une connexion à la terre et des joints électriques satisfaisants, n'utiliser que des niches immergées de Pentair Aquatic Systems.

- B. Pour remplacer l'appareil d'éclairage une fois le circuit électrique installé conformément aux spécifications, procéder comme suit.

AVERTISSEMENT

Avant d'installer la lampe immergée, veiller à rendre le circuit électrique de la piscine conforme aux spécifications du code, car on risquerait autrement de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique, et entraîner également des dommages matériels.

1. Mettre à l'arrêt l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe immergée.
2. Pour retirer l'ensemble lampe, ôter la vis de guide spéciale en acier inoxydable située au sommet de la bague avant, retirer l'ensemble de la niche et le placer sur la plate-forme.

AVERTISSEMENT

Veiller à conserver la vis de guide spéciale en acier inoxydable de cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

3. Enlever le couvercle de la boîte de dérivation, débrancher les fils électriques de l'appareil d'éclairage et tirer le cordon à travers le conduit.
4. Acheminer le cordon du nouvel appareil à travers le conduit depuis la niche jusqu'à la boîte de dérivation.

REMARQUE :

Selon la longueur du conduit, il se pourrait que l'on ait besoin d'outils spéciaux pour tirer le cordon à travers le conduit.

5. Laisser au moins 1,22 m (4 pieds) de cordon à enrouler autour de la lampe, cf. figure 1. Ce mètre vingt-deux permet de procéder au remplacement de la lampe une fois la piscine remplie d'eau.
6. Couper le cordon au niveau de la boîte de dérivation en laissant au moins 15 cm (6 pouces) pour les raccordements.
7. Couper la gaine extérieure du cordon sur 15 cm (6 pouces) afin de mettre à nu les trois conducteurs internes isolés en veillant à ne pas endommager leur isolement.
8. Raccorder les trois conducteurs aux fils correspondants du circuit électrique dans la boîte de dérivation (conducteur noir raccordé au fil de tension, conducteur blanc au fil de retour et conducteur vert au fil de terre) et refermer solidement le couvercle de la boîte.

AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

9. Remettre l'ensemble lampe dans la niche et serrer la vis de guide spéciale en acier inoxydable.

AVERTISSEMENT

N'utiliser que la vis de guide spéciale en acier inoxydable livrée avec cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

10. Ne pas utiliser la lampe pendant plus de 10 secondes avant que la piscine ne soit suffisamment remplie pour que la lampe soit totalement immergée dans l'eau. Mettre alors en marche l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe afin d'en vérifier le bon fonctionnement.

Sction III. Remplacement d'une ampoule uniquement

DANGER



Sous peine de provoquer le décès ou des dommages corporels graves pour l'installateur, le technicien de maintenance, les utilisateurs de la piscine ou d'autres personnes par suite d'un choc électrique, veiller à toujours déconnecter la lampe de la piscine du secteur au niveau du disjoncteur avant de procéder à son entretien.

- A. Mettre à l'arrêt l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe immergée.
- B. Se procurer les éléments suivants :
1. Un nouveau joint de lentille (référence 79108600).
 2. Une ampoule du type correct et de la puissance qui convient, cf. tableau ci-contre.

Spécifications de l'ampoule :

120 volts - 250 watts - ampoule T-4**
120 volts - 100 watts - ampoule T-4**
120 volts - 60 watts - ampoule PAR 16***
12 volts - 100 watts - ampoule R-20***
12 volts - 75 watts - ampoule MR-16**

** AquaLight - *** SpaBrite

Modèles 12* volts

75 watts
100 watts
*Transformateur néces
saire

Modèles 120 volts

60 watts, 100 watts
250 watts

Tableau 1.

AVERTISSEMENT

Ne remplacer l'ampoule que par un modèle de type et de puissance semblables, faute de quoi on risque d'endommager l'ensemble lampe et de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique et pouvant également entraîner des dégâts matériels.

AVERTISSEMENT

Installer toujours un nouveau joint de lentille (référence 79108600) lorsque l'on démonte la lampe, faute de quoi de l'eau pourrait pénétrer dans l'ensemble et :

- (a) créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique, ou
- (b) briser la lampe ou la lentille, ce qui pourrait de même provoquer des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou entraîner des dégâts matériels.

- C. Pour retirer l'ensemble lampe, ôter la vis de guide spéciale en acier inoxydable située au sommet de la bague avant, retirer l'ensemble de la niche et le placer sur la plate-forme.

AVERTISSEMENT

Veiller à conserver la vis de guide spéciale en acier inoxydable de cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

- D. Démontez l'appareil d'éclairage et retirez l'ampoule. Ôtez le vieux joint et s'en débarrasser.
- E. Lors de la repose de la lampe, installez un nouveau joint Pentair Water Pool and Spa référence 79108600.
- F. Sélectionner l'ampoule de remplacement dans le tableau 1.

1. Pour les lampes AquaLight de 100 et 250 watts, voir les figures 2 et 3 ci-dessous.
2. Rapprocher les extrémités du fil de fer au niveau des flèches, cf. figure 2, jusqu'à le refermer en formant une ouverture en losange, cf. figure 3.
3. Tout en maintenant le fil dans cette forme, cf. figure 3, introduire l'ampoule à travers l'ouverture en losange et la visser dans la douille.
4. Veiller à ne pas laisser l'ampoule entrer en contact avec la peau nue car cela risquerait d'en réduire la durée de service.

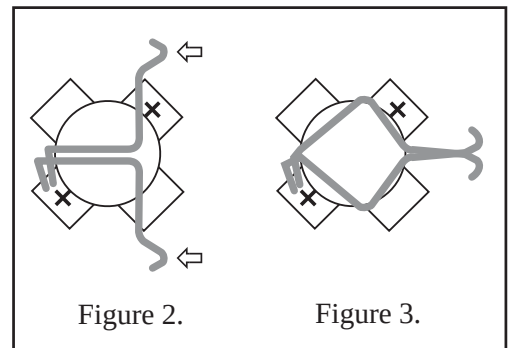


Figure 2.

Figure 3.

AVERTISSEMENT

À moins qu'elle ne soit totalement immergée dans l'eau, ne jamais utiliser cette lampe pendant plus de 10 secondes, car elle atteindrait alors des températures excessives susceptibles de provoquer des brûlures graves ou de casser l'ampoule ou la lentille, et d'entraîner par là des blessures graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes, ou encore des dégâts matériels.

G. Fixer la bague à l'appareil d'éclairage. Pour assurer l'étanchéité, les vis d'étanchéité doivent être serrées de la manière suivante:

1. Pour les lampes à bague avant en chrome ou en laiton :

- (a) Serrer partiellement la vis à la position 3 heures, puis partiellement encore celle à la position 9 heures. Serrer partiellement une vis du côté opposé, puis partiellement encore celle placée dans la position diamétralement opposée.
- (b) Continuer à serrer partiellement toutes les vis comme indiqué ci-dessus jusqu'à ce qu'elles soient toutes solidement et uniformément vissées (on recommande un couple de 20 pouces-livres [22,5 kg-cm]).

2. Pour les lampes à bague avant en acier inoxydable:

Monter la vis et l'écrou à 45 degrés environ à droite de la vis de guide spéciale en acier inoxydable et de l'écrou correspondant sur le collier unitension jusqu'à ce que la distance entre les extrémités du collier soit égale à 6 mm (1/4 de pouce).

Voir à la page 23 les consignes de montage de la bague avant en acier inoxydable.

H. Remettre l'ensemble lampe dans la niche et serrer la vis sans tête spéciale en acier inoxydable.

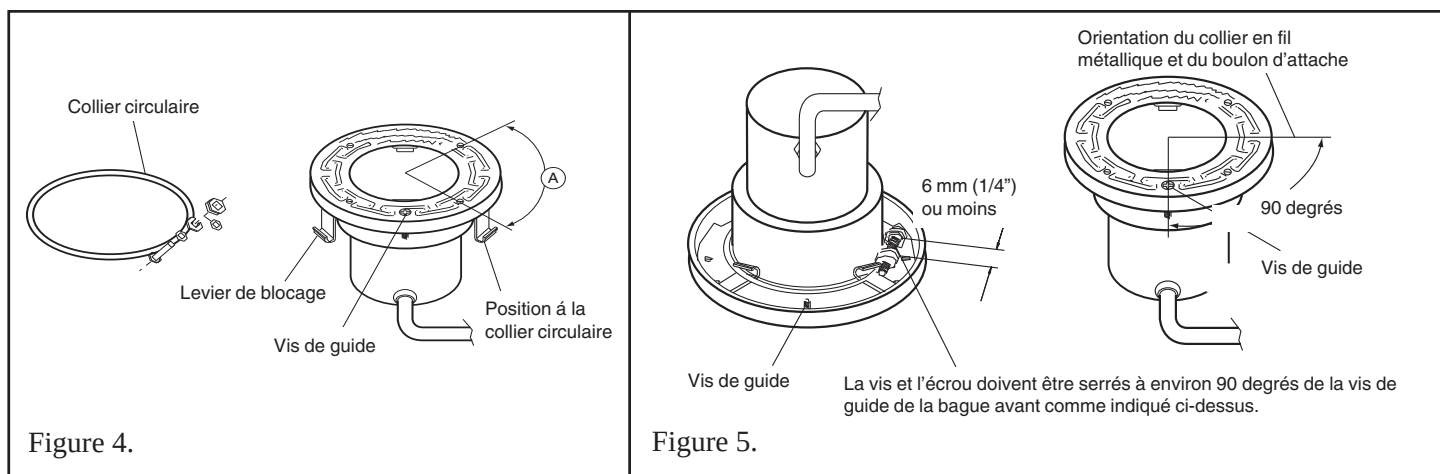
AVERTISSEMENT

N'utiliser que la vis de guide spéciale en acier inoxydable livrée avec cette lampe immergée. Cette vis fixe solidement le logement à la bague de montage et à la niche immergée et assure la mise à la terre. L'emploi de toute autre vis risque de créer un danger électrique pouvant provoquer le décès ou des dommages corporels graves pour les utilisateurs de la piscine, les installateurs ou d'autres personnes par suite d'un choc électrique.

I. Ne pas utiliser la lampe pendant plus de 10 secondes avant que la piscine ne soit suffisamment remplie pour que la lampe soit complètement immergée dans l'eau. Mettre alors en marche l'interrupteur ou le disjoncteur principal ainsi que l'interrupteur de commande de la lampe afin d'en vérifier le bon fonctionnement.

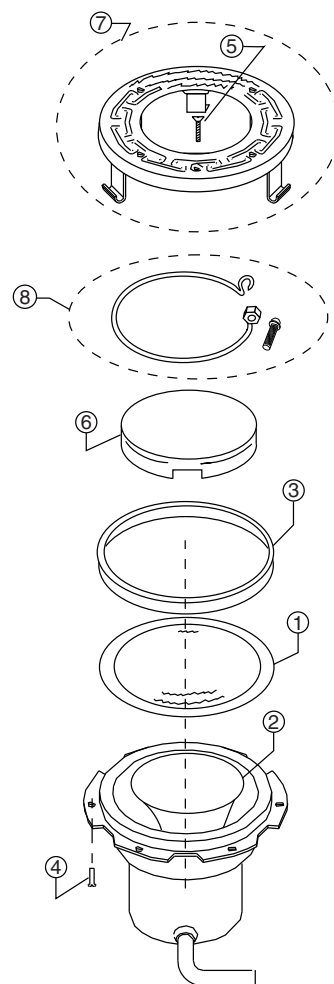
Consignes de montage de la bague avant en acier inoxydable

1. La lampe étant posée sur sa base, placer l'ensemble joint sur son logement comme indiqué (cf. figure 4). **UN NOUVEAU JOINT DE LENTILLE DOIT OBLIGATOIREMENT ÊTRE UTILISÉ CHAQUE FOIS QUE LA LAMPE EST RÉASSEMBLÉE.** Centrer la bague avant en acier inoxydable et la placer par-dessus l'ensemble lentille et joint. Pendant l'installation de cet ensemble, les leviers de blocage devraient être libres en position basse. Aligner la vis de guide spéciale en acier inoxydable de la bague avant sur la flèche de l'étiquette marquée « TOP » (Haut) – la flèche de cette étiquette doit s'aligner sur la vis de guide de la bague.
2. Les extrémités pliées du collier circulaire unitension étant dirigées vers le bas, ouvrir ce dernier et l'insérer dans les rainures en « U » des leviers de blocage. S'assurer que les extrémités pliées du collier se trouvent bien entre les deux leviers comme indiqué sur la figure 4, emplacement A. Vérifier que le collier est correctement engagé dans les rainures de tous les leviers, cf. figure 5.
3. Tourner la lampe de manière à ce qu'elle repose sur sa lentille. Serrer la vis et l'écrou jusqu'à ce que les extrémités du collier ne soient plus séparées que par 6 mm (1/4 de pouce) tout au plus, cf. figure 5.



Section IV. Nomenclature des pièces

Article No.	Pièce No.	Description
1	79107800	Lentille transparente en verre trempé, 10 cm (4") de diamètre (12 volts SpaBrite, 120 volts / 12 volts AquaLight)
1	650086	Lentille transparente en verre trempé, 10 cm (4") de diamètre (120 volts SpaBrite)
2	650139Z	Ampoule 60 watts, 120 volts, PAR 16, (SpaBrite)
2	79108100	Projecteur, base moyenne, 100 watts, 12 volts (SpaBrite)
2	79102900	Douille à vis pour ampoule quartz-halogène 100 watts (AquaLight)
2	79113800	Douille à vis pour ampoule quartz-halogène 250 watts (AquaLight)
2	79112400	Ampoule 75 watts, 12 volts, 2 pôles (AquaLight)
2	070517	Ampoule à baïonnette 100 watts, 120 volts (AquaLight)
2	79112700	Ampoule à baïonnette 250 watts, 120 volts (AquaLight)
3	79108500	Joint de lentille, 10 cm (4") de diamètre (12 volts SpaBrite)
3	79108600	Joint en silicone, pour 100 watts, 250 watts (AquaLight, et 120 volts SpaBrite)
4	98208600	Vis inox 10-24 x 3/8" (9 mm), 6 requises, pour laiton-chrome
5	79104800	Vis de guide avec rondelle captive en caoutchouc, laiton
5	619355	Vis de guide avec rondelle captive en caoutchouc, inox
6	79108900	Lentille colorée en rouge à changement rapide
6	79109000	Lentille colorée en bleu à changement rapide
6	650015	Lentille colorée en magenta à changement rapide
6	650016	Lentille colorée en pourpre à changement rapide
6	650017	Lentille colorée en teal à changement rapide
6	650018	Lentille colorée en vert à changement rapide
6	650019	Lentille colorée en emballent (cing colorée) à changement rapide
7	79111600	Ensemble bague avant inox
8	79210400	Ensemble fil inox unitension avec écrou soudé



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