



# 70W and 140W Junction Box Transformer Kit

For ColorLogic® and CrystaLogic™ Pool, Spa and Accent Lights Spa Lights

## Owner's Manual



### MODELS:

LRBUY11H70

LTBUY11H70

LRBUY11H14

LTBUY11H14

## 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.

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.hayward.com](http://www.hayward.com)



**⚠ WARNING – Read, understand, 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 – 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. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do **NOT** ground to a gas supply line.

**⚠ WARNING – Risk of Electric Shock.** Networked ColorLogic Lights and related electrical connections are receiving electrical power at all times even when the lights are off! Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock Turn off power at main breaker before servicing ColorLogic lights.

**Notice:-** This product should be installed and serviced only by a qualified professional.

**ATTENTION INSTALLER –THIS MANUAL CONTAINS IMPORTANT INFORMATION ABOUT THE INSTALLATION, OPERATION, AND SAFE USE OF THIS PRODUCT. THIS MANUAL SHOULD BE FURNISHED TO THE END USER.**

## Introduction

The Hayward Junction Box Transformer Kits LRBUY11H70, and LRBUY11H14 are for use when retrofitting an existing Hayward series LJBUY00PP1 Junction Box for use with Hayward Universal ColorLogic® and CrystaLogic™ pool, spa, and accent lights. The assemblies consist of a cover, and one or two class 2 swimming pool power units. Each light requires one Hayward transformer. The LRBUY11H14 can support 2 lights.

LTBUY11H70 and LTBUY11H14 Hayward Junction Box Transformer Kits are for new installations. The assemblies consist of a cover, base and one or two class 2 swimming pool power units. Each light requires one Hayward transformer. The LTBUY11H14 can support 2 lights.

For Metal Conduit Installation, please purchase adapter kit LJADAPTMM1.

Junction Box transformer kits are compatible with Hayward Universal ColorLogic® and CrystaLogic™ pool, spa, and accent lights:

LPCUS11XXX	LPCUN11XXX	LSCUS11XXX
LSCUN11XXX	LSLUS11XXX	LPLUS11XXX
LPWUSXXX	LACUSXXX	LYCUSXXX
LACUNXXX	LYCUNXXX	

## Transformer and Wiring

The transformers are designed to fit on the junction box base and within the cover. There are wiring compartments above and below the transformer platform.

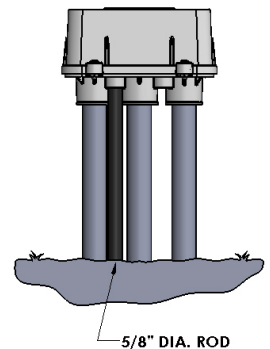
Note: Lever action terminal blocks are provided to aid in the installation. Open the levers all the way before inserting the wires. Close the levers to lock the wires in place.



## ASSEMBLY INSTRUCTIONS

To assure the assembly is water tight; the kits must be installed per the following instructions. Following the instructions will assure the assemblies meet UL 1241 "Junction Boxes for Swimming Pool Luminaries". See illustration on **Page 7**

- ▲ **WARNING – Risk of Electric Shock.** Hazardous voltage can shock, burn, and cause death or serious property damage. Before working on any electrical equipment, **turn off power** supply to the equipment.
  - ▲ **WARNING – Risk of Electric Shock.** Hazardous voltage can shock, burn, and cause death or serious property damage. Networked ColorLogic Lights and related electrical connections are receiving electrical power at all times, even when off. To reduce the risk of electric shock, **turn off power** supply at the main breaker before servicing ColorLogic lights.
- 1) If this is an existing installation with a Hayward LJBUYooPP1 junction box, remove the four screws and the cover. The original cover can be discarded.
  - 2) For new installations the base has three 1" Conduit connections. Polymer conduit must be cemented to the base. Water tight connections are required. The Base should be a minimum of 12" above the pool surface. If required cement the 3/4" x 1" bushings into place. A recommended epoxy is Oatey® clear primer and clear medium cement for PVC and CPVC. Connect the conduit from the pool niche to the either outside hole. Additional mechanical support of the base is required by NEC code. The base has two 5/8" diameter bosses that will accept 1/2" copper rigid tubing or 5/8" rod. At least one rod must be supported in the ground and properly located to go into one of the bosses. (See illustration)
  - 3) Install the Light in the niche. Pull the light cord through the conduit. Install the Strain relief bushing over the cable. NOTE: The strain relief SPo68oK is designed for 16 gauge 3 conductor STW cord and 12 gauge 2 conductor SJTW cord. The package includes two plastic sleeves to secure 14 gauge 2 conductor wire SJTW cord. These sleeves are to be used over the light's wire and into the rubber strain relief.
  - 4) Place the washer, small side up, over the cord and onto the rubber strain relief. Install the Locking nut, screw clockwise, to fully tighten on the base.
  - 5) For metallic niches, a bonding wire is required from the niche to the Junction Box. This bonding wire must comply with local codes (No. 8 or 6 AWG). It is to be secured to one of the holes in the ground strip on the inside of the junction box base.
  - 6) Run electrical cable through the conduit per NEC code, and applicable local codes from the power source to the Junction Box. The design is for center hole power installation.
  - 7) Connect the green ground lead from the power source to the ground terminal strip in the junction box.
  - 8) If no additional conduits are to be installed in the base, seal by cementing, the unused hole with the plug provided.
  - 9) Connect the junction box to the Bonding grid utilizing the provided bonding lug, as required by paragraph 680.26 of the NEC.
  - 10) Assemble the electrical connections per the following pages.
  - 11) Make sure a gasket is in place. If the original gasket is in good shape it can be used, or use the replacement gasket.
  - 12) The Hayward cover is held on by four screws through the four holes in the cover, and through the base. The screw to nut should be torqued to 19 inch\*pounds.





**▲ WARNING – Risk of Electric Shock.** Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock all unused openings in the junction box base must be closed with acceptable plugs.

### Wiring Networked Universal ColorLogic Lights

If networked communications between a Hayward Pro Logic controller and Universal ColorLogic light will be employed, a Coupler, Hayward LKBUN1000, must first be installed.

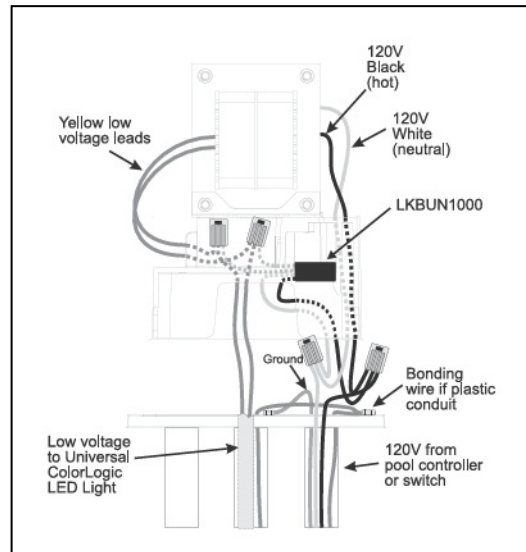
Refer to the Coupler's manual for detailed installation instructions.

Be sure that the high voltage and low volt connections are separated as shown in the diagram at the right (high voltage connections underneath the transformer housing, low voltage connections above).

On the input side, the LKBUN1000's black and white wires are connected in parallel with the 120V input wires and the transformer's black and white primary wires.

On the output side, the LKBUN1000's orange wires are connected in parallel with the transformer's yellow wires and the yellow leads from the Universal ColorLogic light.

**NOTE:** The illustration above may not be the same entry conduit for the high voltage line as encountered in the field. Wiring for two transformers may be required.



### Wiring Non-Networked Universal ColorLogic Lights

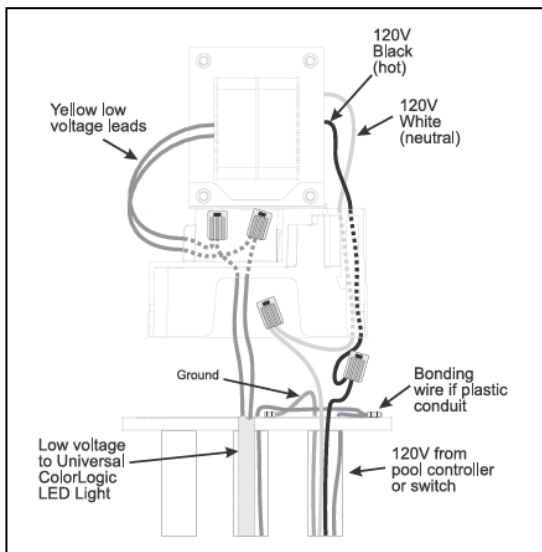
Be sure that the high voltage and low volt connections are separated as shown in the diagram below (high voltage connections underneath the transformer housing, low voltage connections above).

On the input side, the black and white 120V input wires connect to the transformer's black and white primary wires.

On the output side, the transformer's yellow wires are connected to the yellow leads from the Universal ColorLogic/CrystalLogic light.

**NOTE:** The illustration below may not be the same entry conduit for the high voltage line as encountered in the field. Wiring for two transformers may be required.

**NOTE:** After wiring, the cover must be securely fastened to the junction box with four (4) screws and nuts.





# HAYWARD®



**⚠ 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.



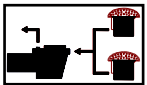
**Body Suction Entrapment-** A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

**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.** 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. **Never operate or test the circulation system at more than 50 PSI. Do not purge the system with compressed air.** 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), high volume blower when air purging the pump, filter, or piping.





# HAYWARD®



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

**⚠ WARNING – Risk of Electric Shock** 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 mm<sup>2</sup>) [No. 6 AWG (13.3 mm<sup>2</sup>) 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 .** 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 – HAYWARD® pumps** are 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.

**⚠ WARNING – Risk of Hyperthermia.** To avoid hyperthermia the following “Safety Rules for Hot Tubs” are recommended by the U.S. Consumer Product Safety Commission.

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. Prolonged immersion in hot water can induce hyperthermia.
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 100°F [38°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 adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users 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 taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anti-coagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physician's advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

**The effects of Hyperthermia include:**

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

**SAVE THESE INSTRUCTIONS**

### SPARE PARTS

REF NO.	PART NUMBER	DESCRIPTION	NO. REQ'D
1	SPXo68oBICL	Cap, Insert, 4 Cover Screws, Nuts and Cover gasket	1
2	SPX15ooNPAK4	Cover screws and nut kit (4)	1
3	SPXo68oTRF	UCL transformer	1 or 2
4	SPXo683PAK	Locknut, Washer & Strain Relief	1 or 2
5	SPXo683J	Gasket	1

