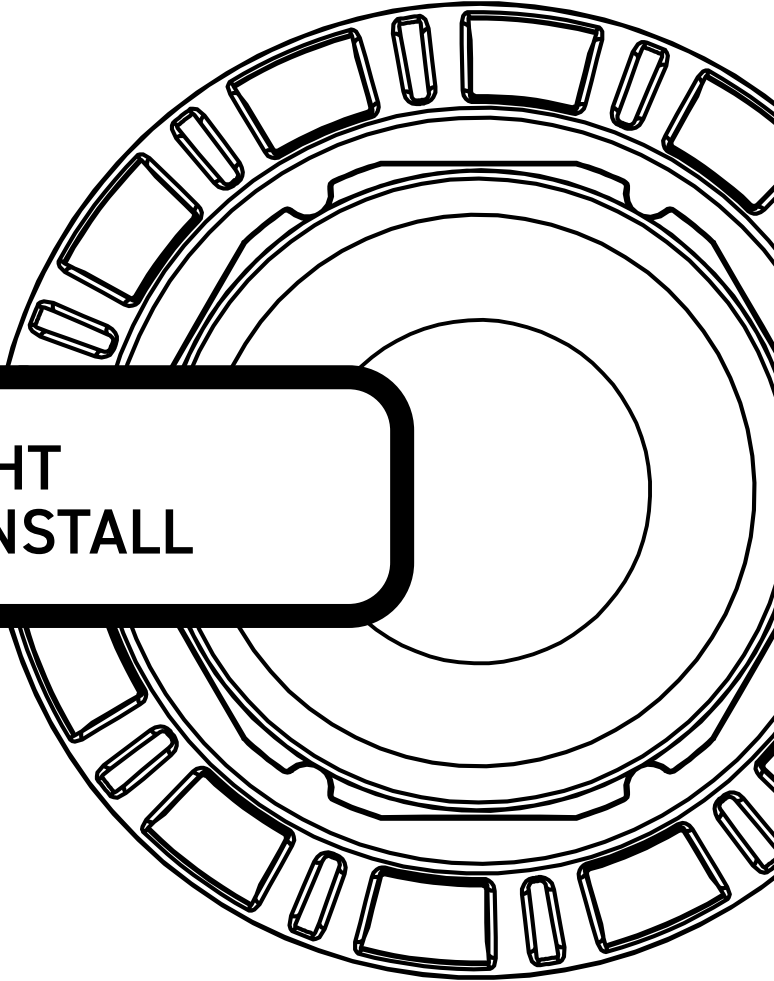


SE Spa Electrics®

retro

REPLACEMENT LED POOL LIGHT



POOL LIGHT CARVIN INSTALL

T1K

R1 - CARVIN
INSTALLATION & OWNER'S MANUAL

CONTENTS

READ THIS FIRST	5
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IMPORTANT



A **12V AC** TRANSFORMER MUST BE INSTALLED.
DC POWER SUPPLIES ARE NOT COMPATIBLE.

NOTE

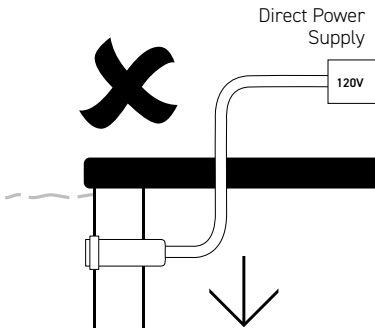


FRESH WATER USE ONLY
NOT INTENDED FOR OPERATION OUT OF WATER

PRE-INSTALLATION CHECK

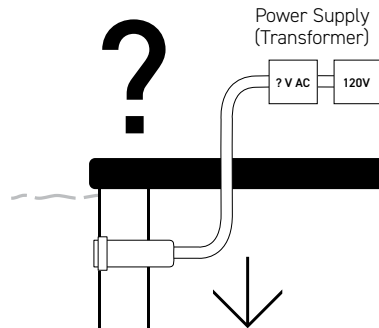
1 CHECK POWER SUPPLY

1A: IF THE POOL LIGHTS ARE DIRECTLY CONNECTED TO A 120V POWER SUPPLY, DO NOT CONTINUE INSTALLATION.



1B: A 12V AC TRANSFORMER **MUST** BE INSTALLED BETWEEN THE 120V POWER SUPPLY AND POOL LIGHT.

2A: IF THE POOL LIGHTS ARE CONNECTED TO A TRANSFORMER CHECK THAT IT MEETS STEP 2 REQUIREMENTS.



2B: IF THE TRANSFORMER DOES NOT MEET THE REQUIREMENTS, IT WILL REQUIRE REPLACEMENT.

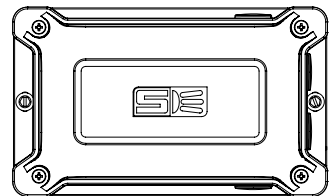
2 ADD TRANSFORMER (IF NEEDED)

EXISTING TRANSFORMER MUST BE:

- UL Listed Isolating Low Voltage power supply, evaluated for swimming pool use
- Installed as per current NEC wiring rules
- 12~14v AC output
- Minimum 8w per **Retro T1** light
- In good working order

EXISTING TRANSFORMER MUST NOT BE:

- DC or 'LED Driver'
- Electronic or Switch mode
- Weather damaged or in otherwise poor condition



Spa Electric recommends "LVX" safety transformers for use with **Retro T1** lights

(LVX 50 & LVX 100)

PRE-INSTALLATION CHECK

3 CHECK CABLE THICKNESS

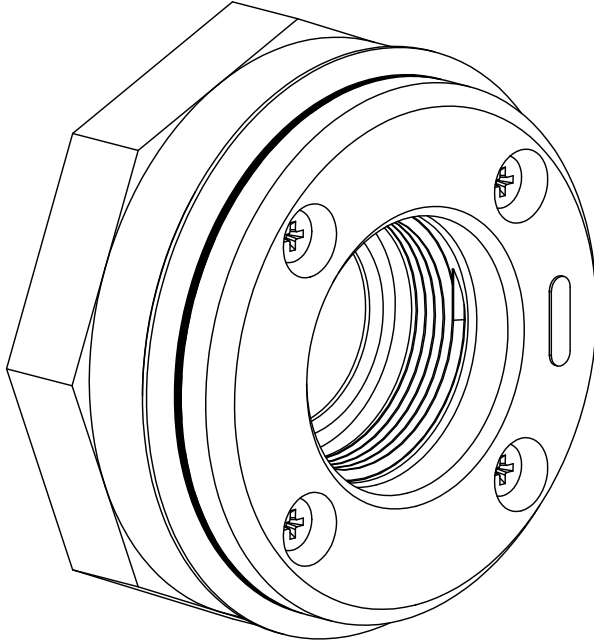
RETRO T1 CAN BE FITTED TO CABLES FROM 9/32" (7MM) UP TO 15/32" (12MM) DIAMETER.

Max \varnothing
15/32 inch
(12mm)



4 CHECK FITTING TYPE

THIS SPA ELECTRICS RETRO T1K LIGHT IS DESIGNED TO BE INSTALLED IN A CARVIN 1 1/2" THREADED FITTING. SEE THE FOLLOWING ILLUSTRATION OF AN EXAMPLE FOR REFERENCE ONLY.



READ THIS FIRST

Congratulations on your purchase of a Spa Electrics **Retro T1** Series Pool Light. This light has been designed in conjunction with leading pool professionals across the USA and manufactured solely in Australia.

The **Retro T1** Series light is designed to quickly and easily replace existing LOW VOLTAGE, nicheless light fittings from major brands.

For safe and proper installation, please read this manual in full before commencing installation and use only the parts (screws, plugs, sealant etc) as provided.

For operating instructions, please refer to the MULTI PLUS Installation & User Guide.

- For safe and proper installation, ensure that only those parts supplied with the system are used.
- Maximum installation depth for the **Retro T1** light is 20" below water line (to top of light).
- The **Retro T1** light must be correctly installed in or on the wall of the pool with the top of the lens no less than **4"** below the nominal water level.
- All lights should be mounted in a location that is easily accessible without the need for entering or lowering the pool water.
- If cleaning the product is required, only use warm water and a soft brush or cloth to clean **Retro T1** lights. **DO NOT** use detergents or spirits as this can damage the light and void your warranty.
- Operating the light for at least 30 minutes every week is advised (unless removed and stored safely for winter months).
- **Retro T1** lights are suited for both domestic and commercial installations and can be operated continuously (24/7) if required.
- Temperature range for installation, operation and servicing: +32°F ~ +104°F (0°C ~ +40°C)

WARNING



- The **Retro T1** Light must be water cooled at all times. DO NOT switch the light on until installation is complete and the light is fully submerged in water.
- Ensure only circular cable not exceeding 15/32" (12mm) diameter is connected to the **Retro T1** Light. The use of Fig. 8 or non circular cable will not seal correctly & will void the product warranty.
- The **Retro T1** LED Light does not contain any user serviceable parts, opening the light will void the product warranty.
- Pool chemicals & pH levels: Due to the corrosive nature of unbalanced pool chemicals, Spa Electrics strongly recommend that your pool water is balanced prior to installing your pool Lights or any plastic or stainless steel components, and tested weekly to maintain these levels. pH levels should be maintained between 7.2- 7.6 at all times to ensure the longevity of these components.
 - Failure to do so can result in chemical damage to the light housing and pool fittings, including stainless steel components.
 - Please note: Lights or components found to have excessive chemical damage will not be covered under our manufacturer's warranty policy

TOOLS REQUIRED

✓ Draw wire

✓ Small flat-blade screw driver

✓ Pliers or side cutters

IMPORTANT NOTES



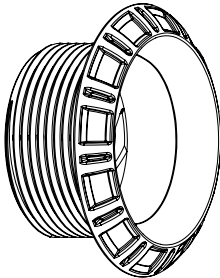
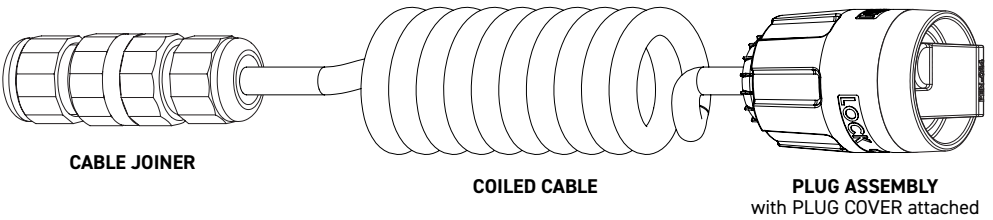
- The use of power tools during installation is **not** recommended as these devices can cause faults and damage to light components.
- All installation steps should be carried out with manual tools only.
- The enclosed images are for illustrative purposes only. Appearances of parts and assemblies may vary from the enclosed illustrations
- Please contact Spa Electrics or contact us below if you have any questions regarding the correct installation of this product.

PRODUCT SUPPORT AND INFORMATION

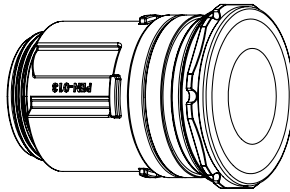
For the most up to date installation information and contact information for assistance in your region, please visit www.spaelectrics.com

INCLUDED PARTS

CABLE ASSEMBLY (P/N: T1 18AWG 0.5)



CARVIN ADAPTER
(P/N: T1K 004)



LIGHT ASSEMBLY



LIGHT INSTALLATION TOOL
(P/N: T1 018)

REQUIRED PART (NOT INCLUDED)



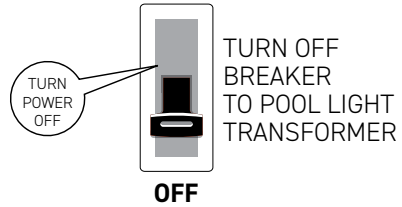
UL LISTED ISOLATING LOW VOLTAGE POWER SUPPLY, EVALUATED FOR SWIMMING POOL USE.

Installed as per current NEC wiring rules. 12~14v AC output. Minimum 8W per Retro Series Pool Light. Spa Electrics recommends "LVX" safety transformers for use with Retro Universal lights

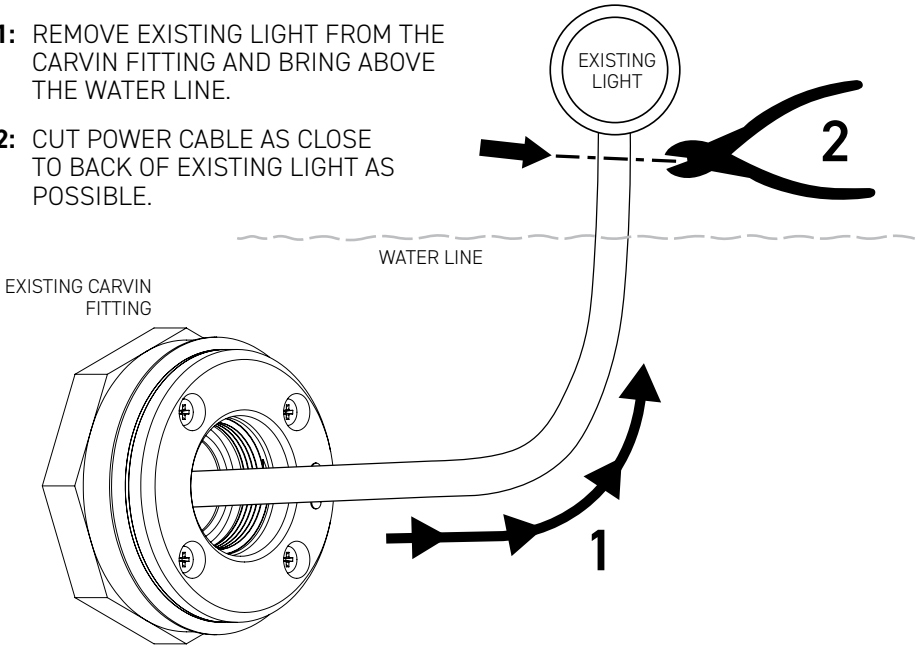
1: REMOVE EXISTING LIGHT

**STOP! WARNING
ELECTROCUTION**

CHECK POWER
IS TURNED OFF
FIRST



- 1: REMOVE EXISTING LIGHT FROM THE CARVIN FITTING AND BRING ABOVE THE WATER LINE.
- 2: CUT POWER CABLE AS CLOSE TO BACK OF EXISTING LIGHT AS POSSIBLE.



IMPORTANT NOTE



ALL CABLE & PLUG CONNECTIONS ARE TO BE DONE AT SURFACE LEVEL, AND OUT OF WATER.

IF EXISTING CABLE IS NOT LONG ENOUGH TO BRING ABOVE WATER LINE, THE CABLE WILL NEED TO BE DRAWN THROUGH CONDUIT/PIPE. ENSURE APPROPRIATE MEASURES ARE TAKEN TO PULL BACK CABLE FOR RE-CONNECTION.

FOR COLDER CLIMATES, IT IS RECOMMENDED TO LOWER THE WATER LEVEL TO BELOW THE EXISTING LIGHT TO AVOID TRAPPING WATER IN THE PIPE DURING INSTALLATION.

2: CONNECTION TO CABLE

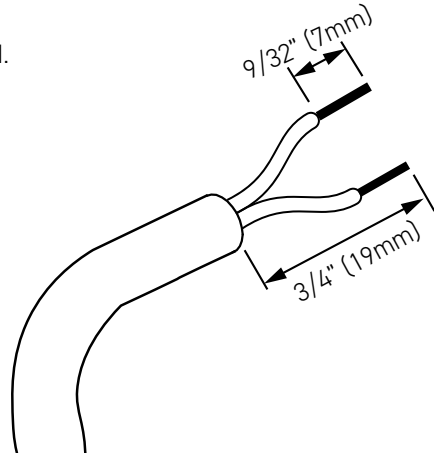
2.1 CABLE PREPARATION

STRIP THE END OF THE EXISTING POWER CABLE TO SPECIFIED LENGTH.

NOTE



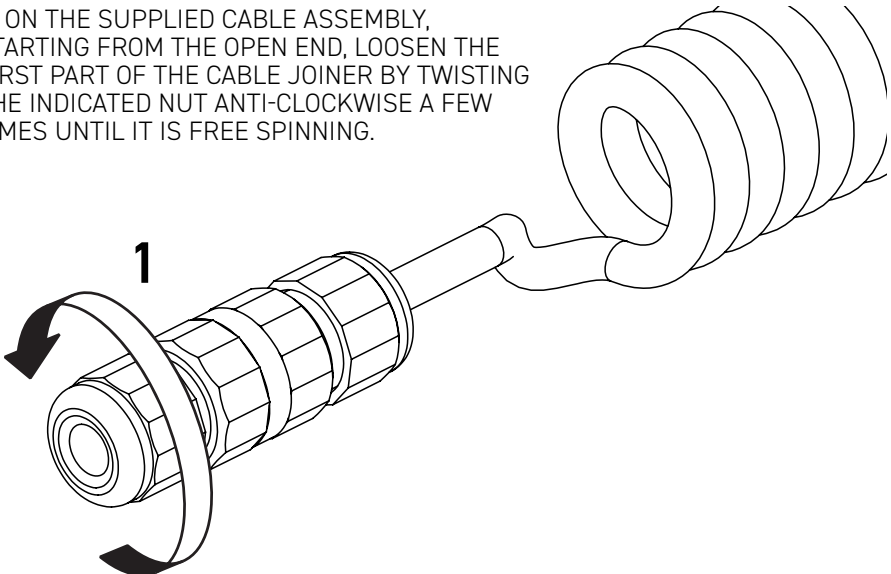
IF CABLE LENGTH ALLOWS, CUT CABLE BACK UNTIL FRESH COPPER APPEARS.



ALL CABLE & PLUG CONNECTIONS ARE TO BE DONE AT SURFACE LEVEL, AND OUT OF WATER.

2.2 DISASSEMBLE CABLE JOINER

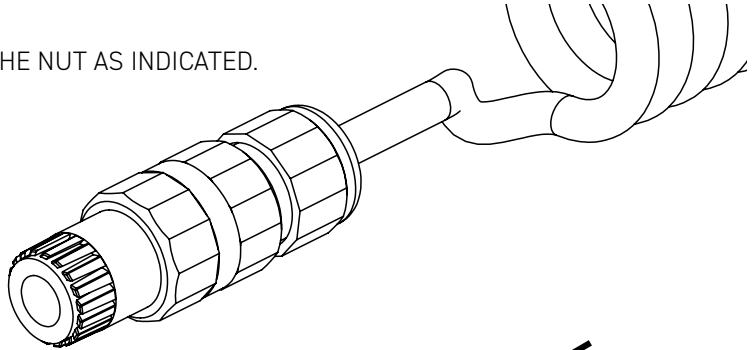
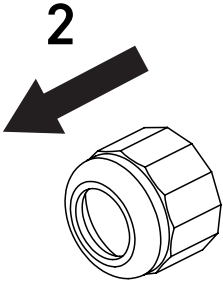
1: ON THE SUPPLIED CABLE ASSEMBLY, STARTING FROM THE OPEN END, LOOSEN THE FIRST PART OF THE CABLE JOINER BY TWISTING THE INDICATED NUT ANTI-CLOCKWISE A FEW TIMES UNTIL IT IS FREE SPINNING.



2.3

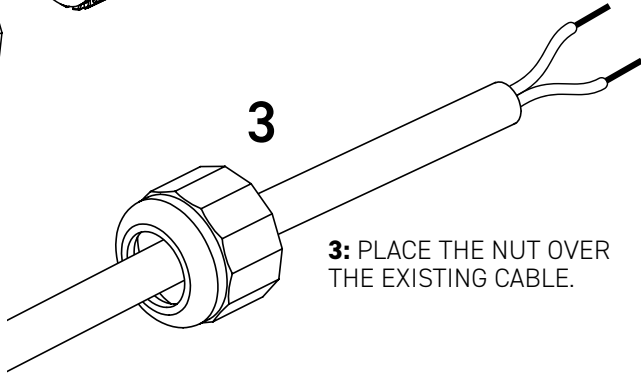
DISASSEMBLE CABLE JOINER ...CONTINUED

2: PULL OFF THE NUT AS INDICATED.

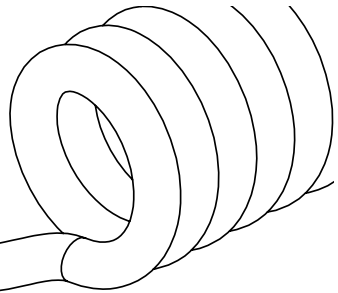
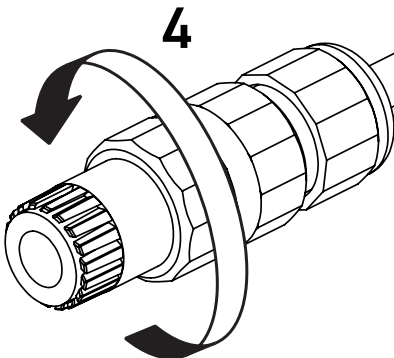


3

3: PLACE THE NUT OVER THE EXISTING CABLE.

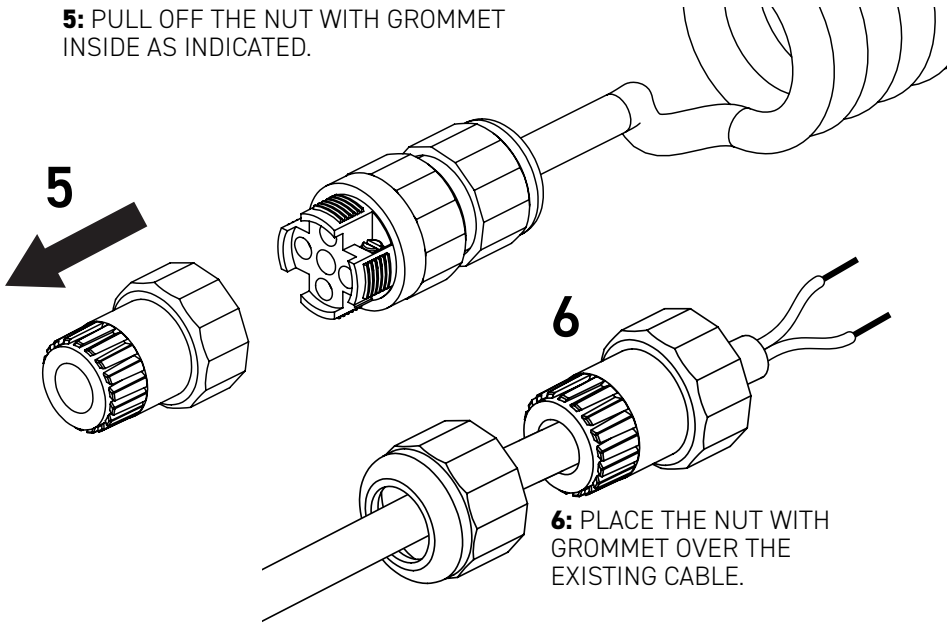


4: LOOSEN THE SECOND PART OF THE CABLE JOINER BY TWISTING THE INDICATED NUT ANTI-CLOCKWISE A FEW TIMES UNTIL IT IS FREE SPINNING.



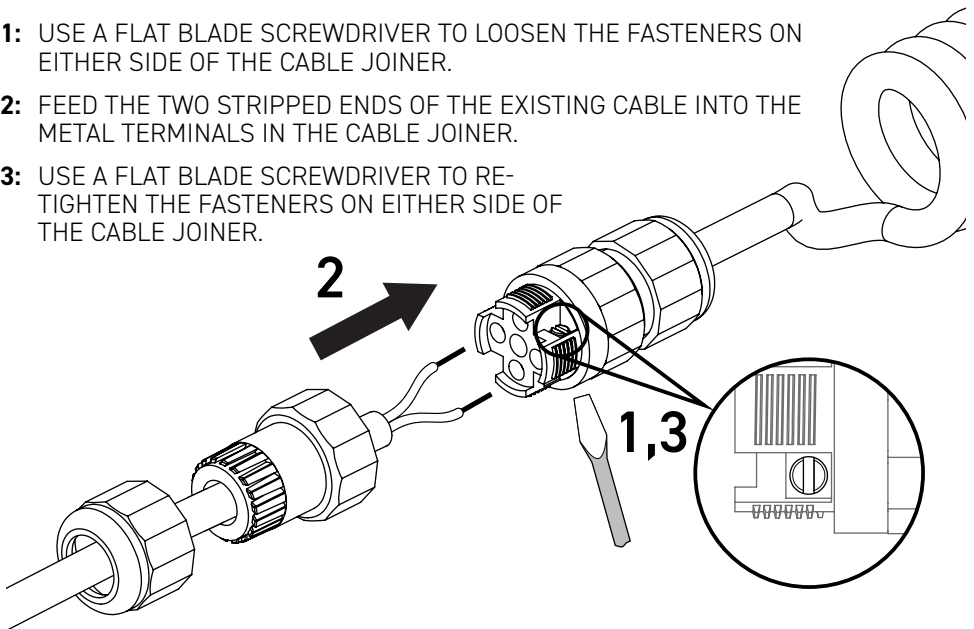
2.4 DISASSEMBLE CABLE JOINER ...CONTINUED

5: PULL OFF THE NUT WITH GROMMET INSIDE AS INDICATED.

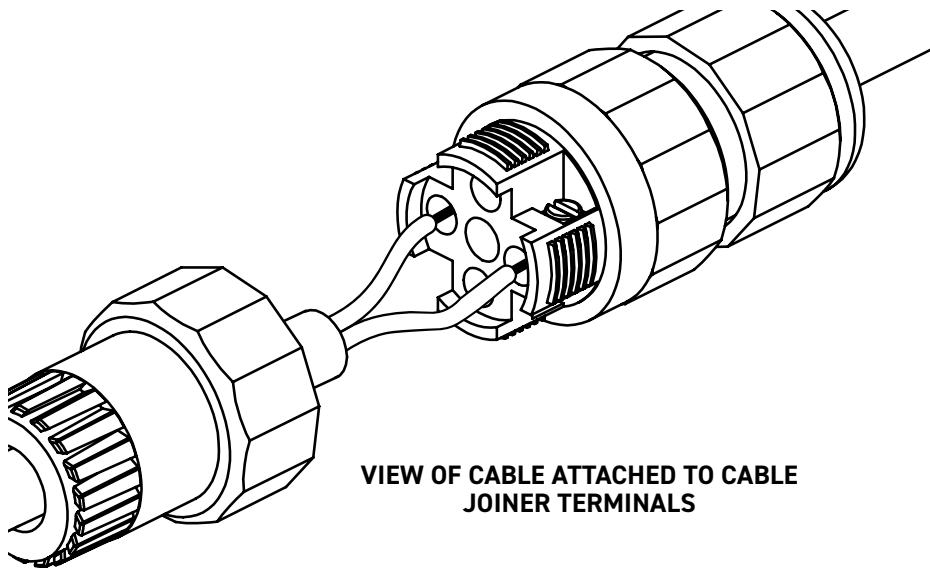


2.5 ATTACH EXISTING CABLE TO JOINER

- 1: USE A FLAT BLADE SCREWDRIVER TO LOOSEN THE FASTENERS ON EITHER SIDE OF THE CABLE JOINER.
- 2: FEED THE TWO STRIPPED ENDS OF THE EXISTING CABLE INTO THE METAL TERMINALS IN THE CABLE JOINER.
- 3: USE A FLAT BLADE SCREWDRIVER TO RE-TIGHTEN THE FASTENERS ON EITHER SIDE OF THE CABLE JOINER.



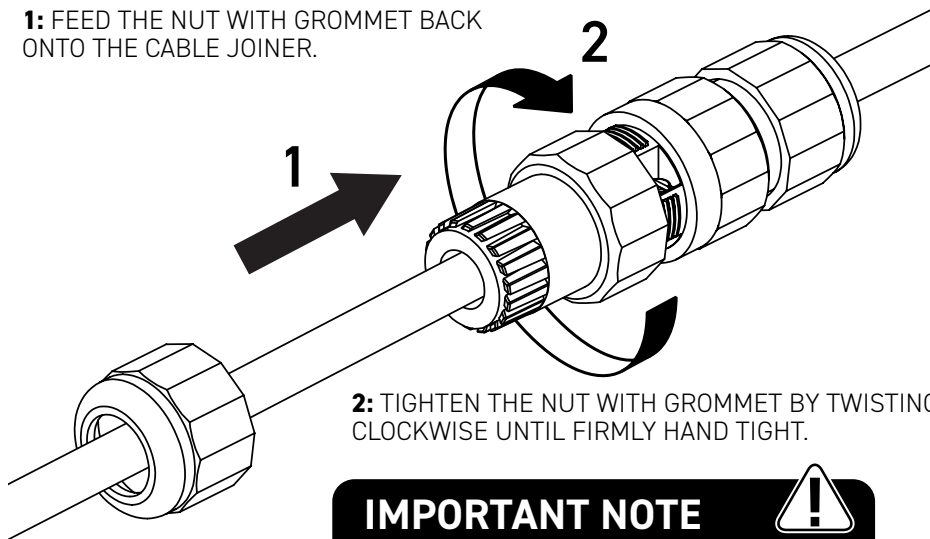
2.5 ATTACH EXISTING CABLE TO JOINER ...CONTINUED



VIEW OF CABLE ATTACHED TO CABLE JOINER TERMINALS

2.6 REASSEMBLE CABLE JOINER

1: FEED THE NUT WITH GROMMET BACK ONTO THE CABLE JOINER.



2: TIGHTEN THE NUT WITH GROMMET BY TWISTING CLOCKWISE UNTIL FIRMLY HAND TIGHT.

IMPORTANT NOTE

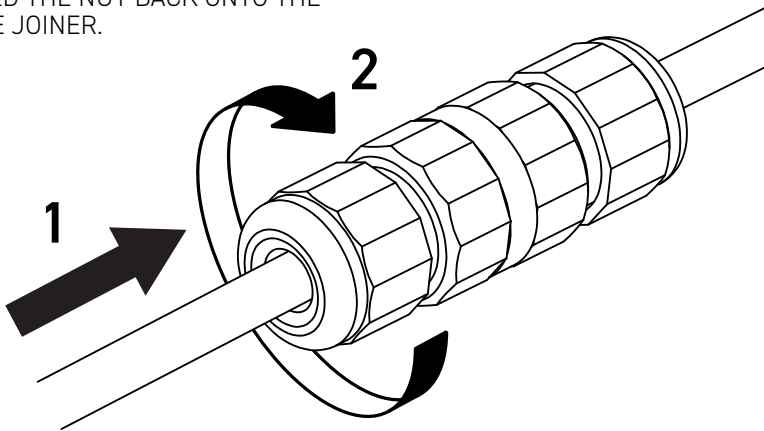


ENSURE NUT IS NOT CROSS-THREADED AND EVENLY SEATED ONCE RE-ATTACHED.

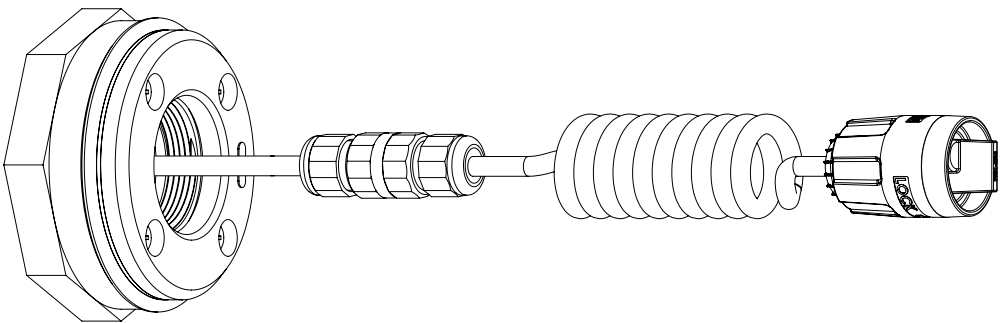
2.7

REASSEMBLE CABLE JOINER ...CONTINUED

1: FEED THE NUT BACK ONTO THE CABLE JOINER.

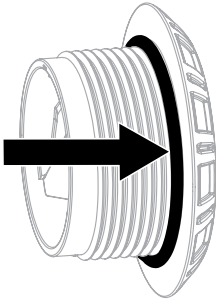


2: TIGHTEN THE NUT BY TWISTING CLOCKWISE UNTIL FIRMLY HAND TIGHT.



**VIEW OF COMPLETED CABLE ASSEMBLY
ATTACHED TO EXISTING CABLE.**

3: CARVIN ADAPTER

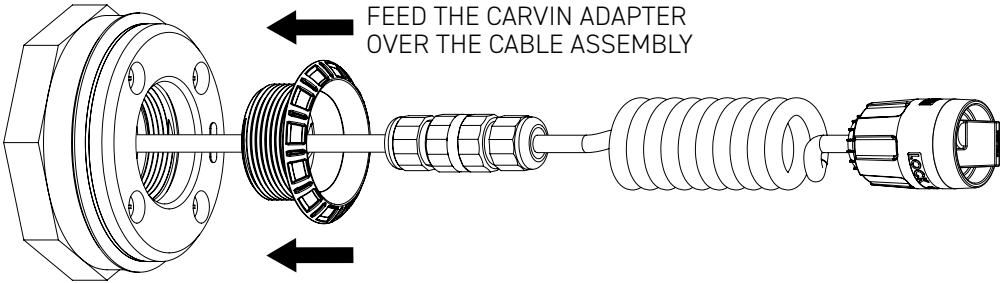


IMPORTANT NOTE



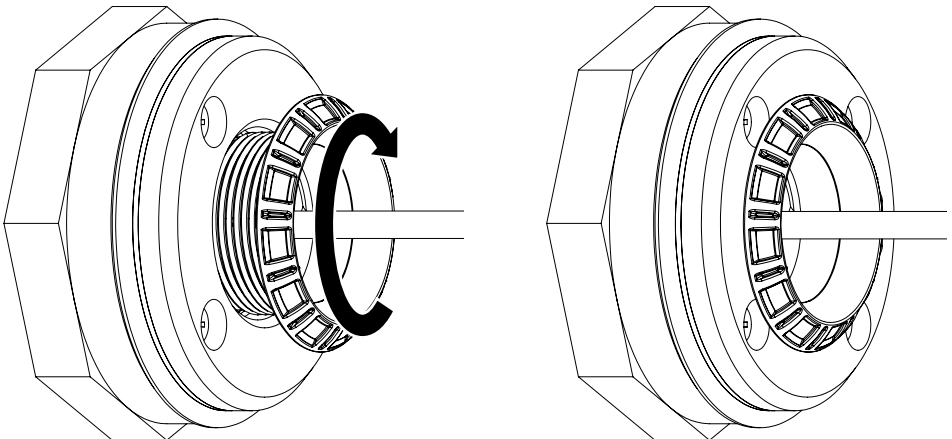
BEFORE INSTALLING THE CARVIN ADAPTER, CHECK AND ENSURE THERE IS AN ORING IN POSITION AS PER THE ILLUSTRATION.

3.1 FEED CARVIN ADAPTER OVER CABLE



3.2 THREAD THE ADAPTER INTO THE FITTING

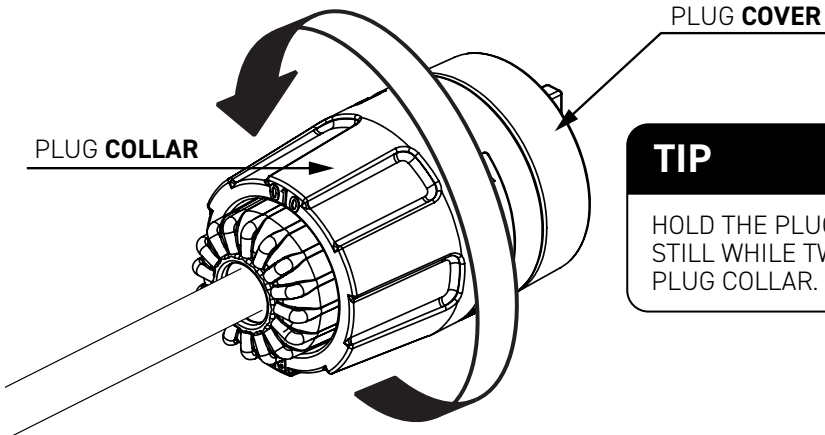
THREAD THE CARVIN ADAPTER INTO THE EXISTING CARVIN FITTING CLOCKWISE BY HAND.



4: LIGHT ASSEMBLY

4.1 REMOVE PLUG COVER

WHEN READY TO ATTACH THE LIGHT ASSEMBLY, REMOVE THE PLUG **COVER** BY TWISTING THE **COLLAR** ANTI-CLOCKWISE A FEW TIMES UNTIL IT IS FREE SPINNING.



TIP

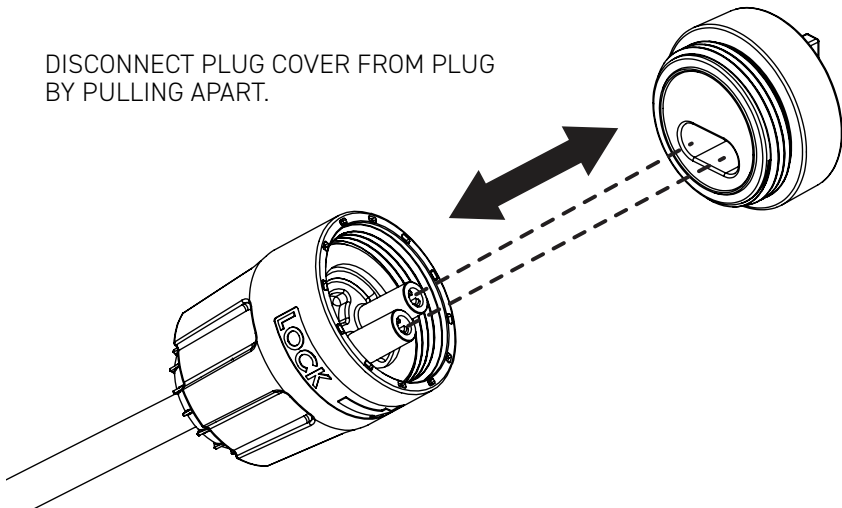


HOLD THE PLUG COVER STILL WHILE TWISTING THE PLUG COLLAR.

ALL CABLE & PLUG CONNECTIONS ARE TO BE DONE AT SURFACE LEVEL, AND OUT OF WATER.

4.2 REMOVE PLUG COVER

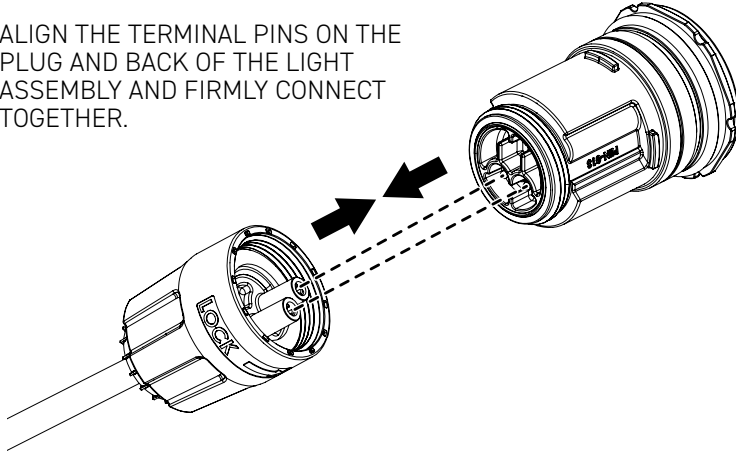
DISCONNECT PLUG COVER FROM PLUG BY PULLING APART.



4.3

CONNECT THE TERMINALS

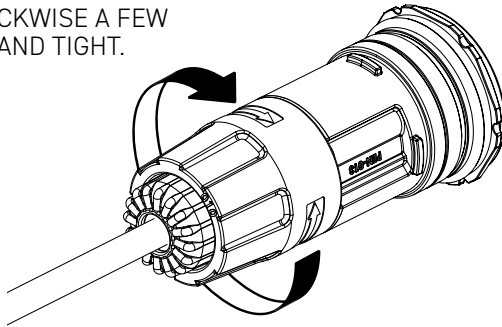
ALIGN THE TERMINAL PINS ON THE PLUG AND BACK OF THE LIGHT ASSEMBLY AND FIRMLY CONNECT TOGETHER.



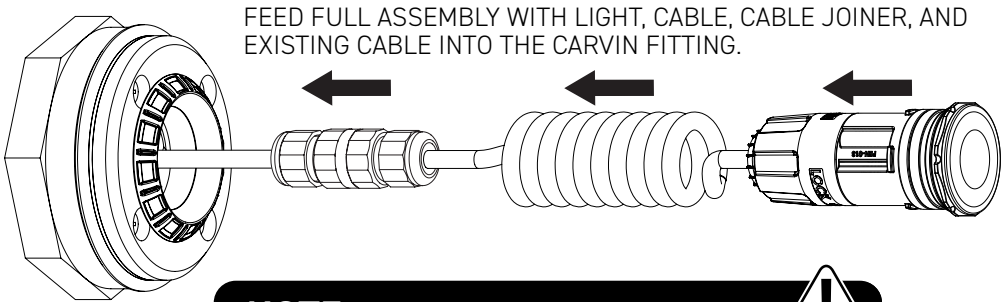
4.4

FASTEN PLUG TO LIGHT

TO LOCK INTO PLACE:
TWIST COLLAR CLOCKWISE A FEW
TIMES UNTIL IT'S HAND TIGHT.



4.5 FEED FULL ASSEMBLY INTO BULKHEAD



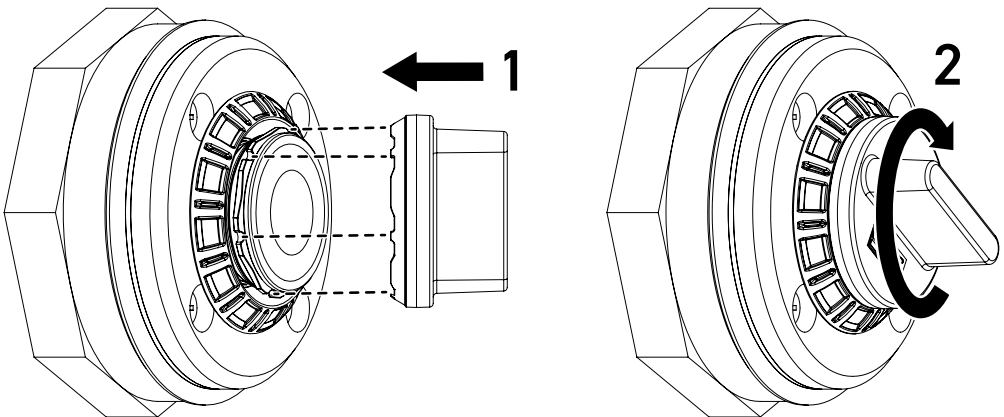
NOTE



IF FITMENT INTO THE PIPE IS TIGHT, ROTATING THE COILED CABLE SECTION CLOCKWISE WILL HELP PROVIDE CLEARANCE TO THE PIPE.

4.6 LOCK LIGHT INTO CARVIN ADAPTER

1. INSERT THE LIGHT INSTALLATION TOOL INTO THE FRONT OF THE LIGHT ASSEMBLY, ALIGNING THE FEATURES ON THE TOOL WITH THE FRONT OF THE LIGHT.
2. TWIST THE LIGHT ASSEMBLY WITH THE TOOL CLOCKWISE INTO THE CARVIN ADAPTER APPROXIMATELY 45 DEGREES. THERE WILL BE A HARD STOP ONCE FULLY INSTALLED.



INSTALLATION COMPLETED

WINTERIZATION

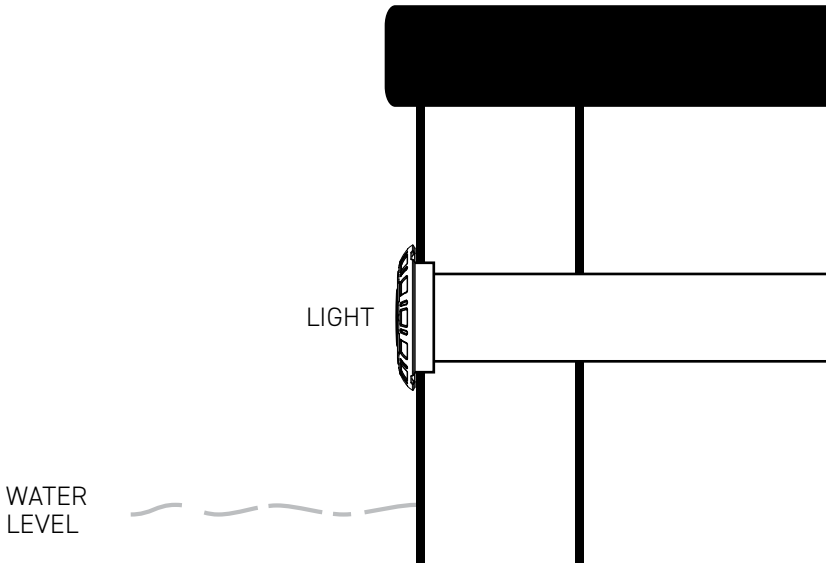
THE FOLLOWING WINTERIZATION PROCESS IS HIGHLY RECOMMENDED TO AVOID DAMAGE TO THE LIGHT ASSEMBLY AND THE SUPPORTING FIXTURES.

SELECT FROM COMMONLY AVAILABLE WINTERIZATION FITTINGS TO SEAL THE NICHELESS FITTING/ BULKHEAD. IT IS IMPORTANT TO ENSURE THEY ARE APPROPRIATELY SELECTED AND FITTED TO ENSURE A WATER TIGHT SEAL IS ACHIEVED. ANY WATER IN THE PIPE MUST BE BLOWN OUT BEFORE SEALING OFF.

THIS PROCESS IS RECOMMENDED. ANY DAMAGE TO THE TERMINAL PLUG OR PIPE FITTING DUE TO INADEQUATE SEALING OF THE 1 ½" FITTING WILL NOT BE WARRANTED BY SPA ELECTRICS.

1 LOWER WATER LEVEL

LOWER WATER LEVEL TO BELOW THE LIGHT.

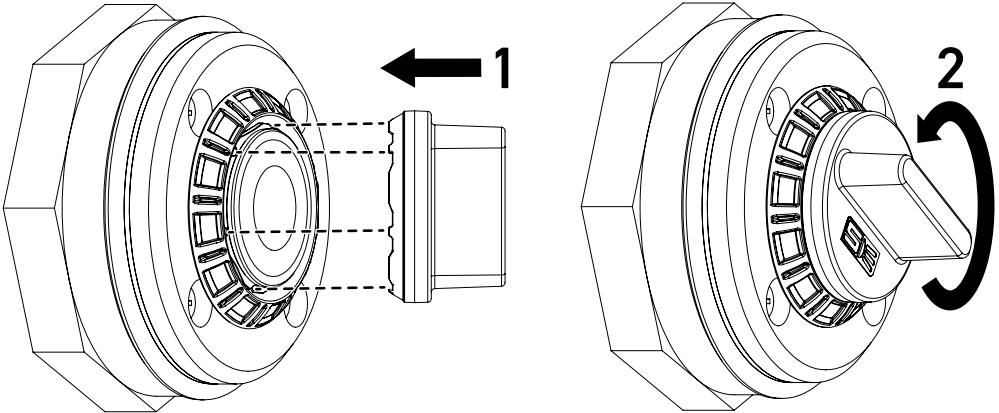


2

UN-LOCK LIGHT FROM CARVIN ADAPTER

1. INSERT THE LIGHT INSTALLATION TOOL INTO THE FRONT OF THE LIGHT ASSEMBLY, ALIGNING THE FEATURES ON THE TOOL WITH THE FRONT OF THE LIGHT.

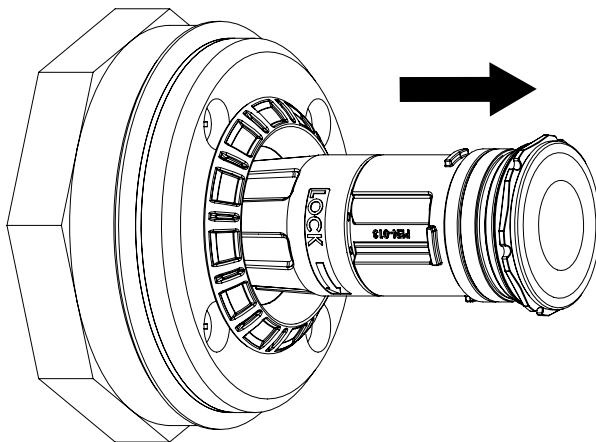
2. TWIST THE LIGHT ASSEMBLY WITH THE TOOL ANTI-CLOCKWISE TO UN-LOCK FROM THE LOCKING RING. NOTE: YOU MAY NEED TO HOLD THE LOCKING RIM IN PLACE TO STOP IT FROM UNTHREADING WITH THE LIGHT.



3

PULL LIGHT OUT

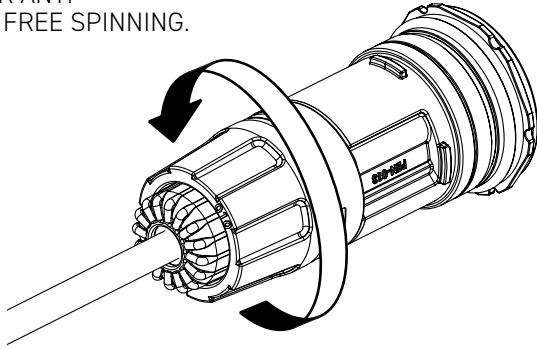
PULL OUT THE LIGHT ASSEMBLY WITH PLUG ATTACHED.



4

REMOVE PLUG FROM LIGHT

UNSCREW PLUG COLLAR ANTI-CLOCKWISE UNTIL IT IS FREE SPINNING.



IMPORTANT NOTES

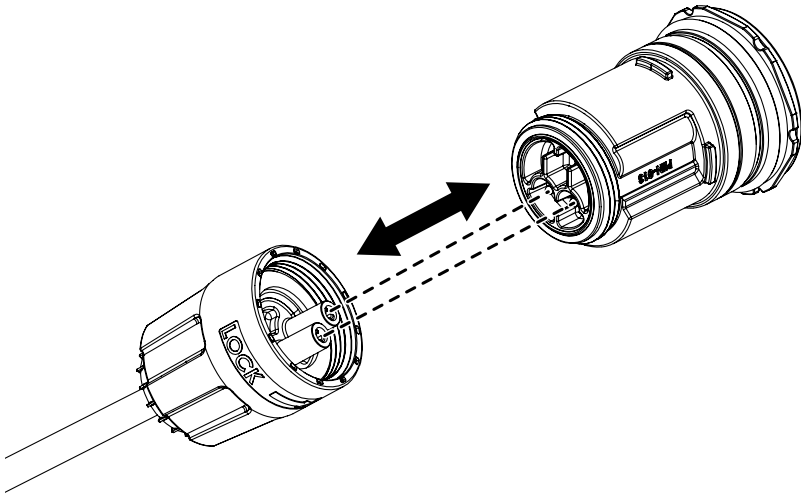


CABLE SHOULD BE SECURED ABOVE WATER AND WEATHER PROTECTED WHILE LIGHT IS DETACHED.

5

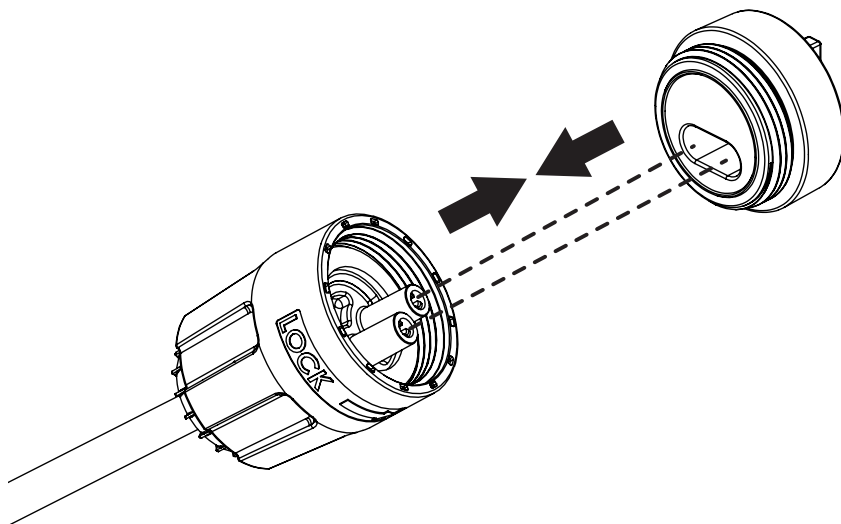
REMOVE PLUG FROM LIGHT

DISCONNECT LIGHT ASSEMBLY FROM PLUG BY PULLING APART.



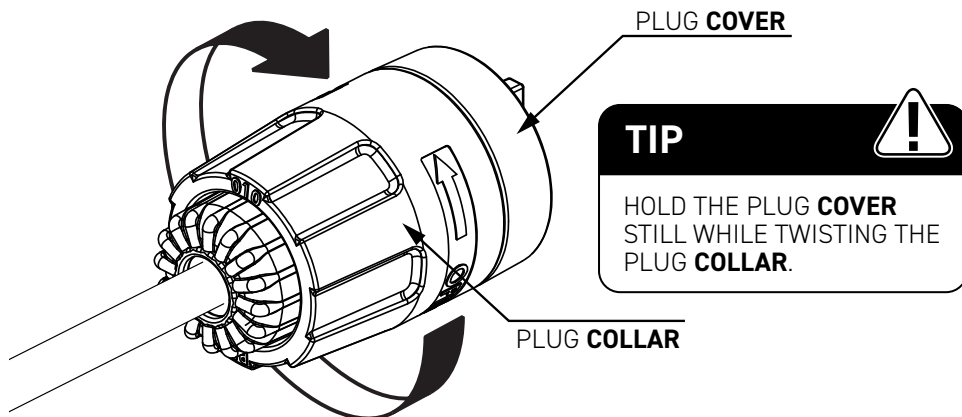
6 ATTACH PLUG COVER TO PLUG

ALIGN THE TERMINAL PINS ON THE PLUG WITH THE SLOT ON THE PLUG COVER AND CONNECT TOGETHER.



7 FASTEN PLUG COVER

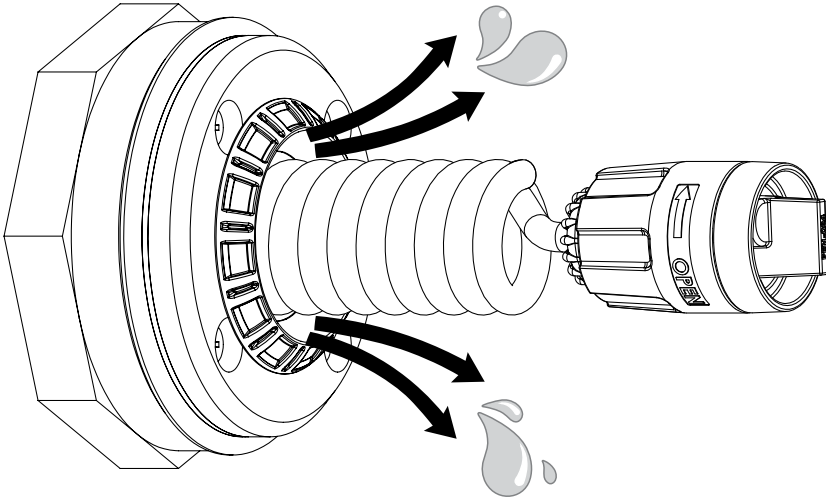
TO LOCK INTO PLACE:
TWIST THE PLUG **COLLAR** CLOCKWISE A FEW TIMES UNTIL IT'S HAND TIGHT.



8

REMOVE WATER FROM PIPE

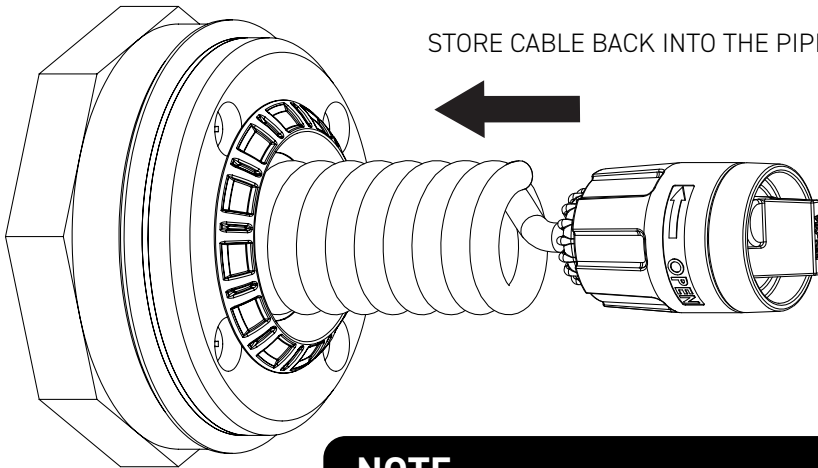
REMOVE THE REMAINING WATER FROM THE PIPING, THIS MAY INVOLVE BLOWING OUT WITH COMPRESSED AIR.



9

STORE CABLE

STORE CABLE BACK INTO THE PIPING.



NOTE

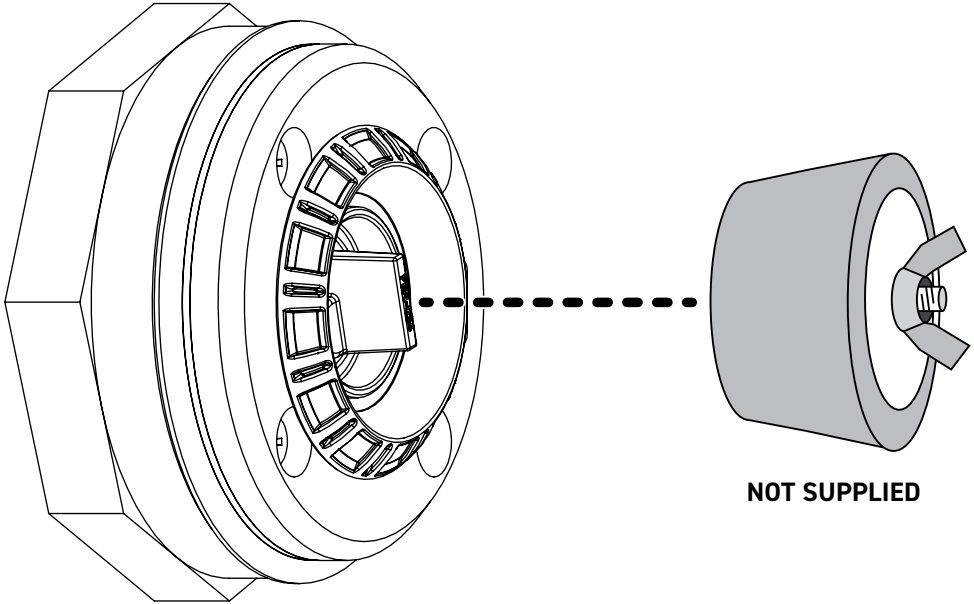


IF FITMENT INTO THE PIPE IS TIGHT, ROTATING THE COILED CABLE SECTION CLOCKWISE WILL HELP PROVIDE CLEARANCE TO THE PIPE.

10

SEAL PIPE OPENING

SELECT FROM COMMONLY AVAILABLE WINTERIZATION FITTINGS TO SEAL OFF THE BULKHEAD FITTING, IT IS IMPORTANT TO ENSURE THEY ARE APPROPRIATELY SELECTED AND INSTALLED TO ACHIEVE A WATER TIGHT SEAL.

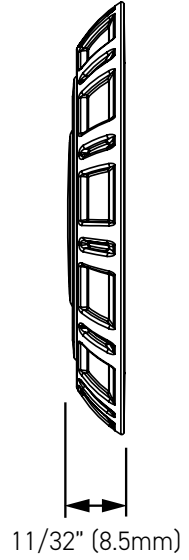
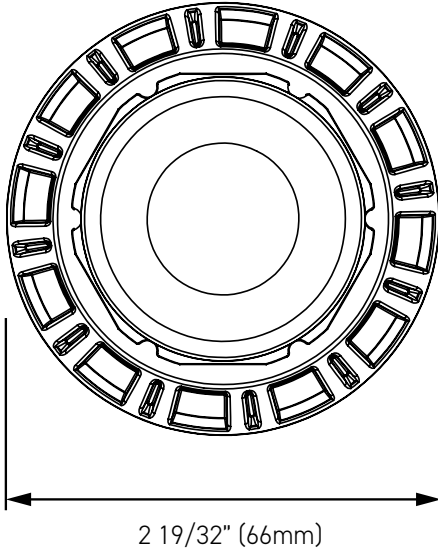


IMPORTANT NOTE



IMAGE OF SEALED FITTING SHOWN FOR REFERENCE ONLY. ENSURE THE CORRECT TYPE IS SELECTED TO SEAL OFF BULKHEAD FITTING.

KEY DIMENSIONS



TROUBLESHOOTING

ISSUE	REASON	ACTION
Light returns to WHITE color during manual color change	Light synchronization process has been triggered	Refer to MULTI PLUS Installation & User Guide
Light flashes 2 times (RED)	Light over heating.	Check light is fully submerged. Check vents are not obstructed
Light not operating (1)	Faulty connection to transformer	Ensure low voltage cable is correctly connected to transformer terminals
Light not operating (2)	Main power not connected	Check transformer is connected to Main power (hardwired or plugged into a certified outlet) and the breaker is switched on
Light not operating (3)	Damaged cable	Disconnect plug top and test voltage under load using multi-meter (ie. 20w 12v)
Light not operating (4)	Transformer not working	Check fuses & test transformer using multimeter under load (ie.15W 12V)
Light colors not synchronized	Incorrect operating mode selected.	Refer to MULTI PLUS setup procedure

If these issues cannot be resolved with the above recommended actions, please contact your local Spa Electrics reseller or Spa Electrics directly.

www.spaelectrics.com

ELECTRICAL GROUNDING

Underwriters Laboratories (UL) Statement

Per the NEC, NFPA 70, Article 680.23 (B)(5), states that bonding shall not be required for luminaires that are listed for the application and have no non-current carrying metal parts. In addition, per Article 680.26 (B)(4), exception states that Listed low-voltage lighting systems with non-metallic forming shells shall not require bonding.

Therefore, luminaires with polymeric/non-current carrying metal parts are not required to be grounded / bonded.

Manufacturers Statement

Spa Electrics **Retro T1** luminaires with their plastic housing designs do not require grounding / bonding.

Spa Electrics **Retro T1** lights have also been determined to comply with the applicable requirements for wet-niche, LED type Swimming Pool and Spa Luminaires.

FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC rules. Operation is subject to the following two (2) conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- **Reorient or relocate the receiving antenna.**
- **Increase the separation between the equipment and receiver.**
- **Connect the equipment into an outlet on a circuit different to that to which the receiver is connected.**
- **Consult the dealer or an experienced radio / TV technician for help.**

Do not make any changes or modifications to the equipment unless otherwise specified in the manual.

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IMPORTANT NOTE

PLEASE STORE THIS MANUAL IN A SAFE PLACE
FOR FUTURE REFERENCE



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The underwater lighting specialists

spaelectrics.com

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