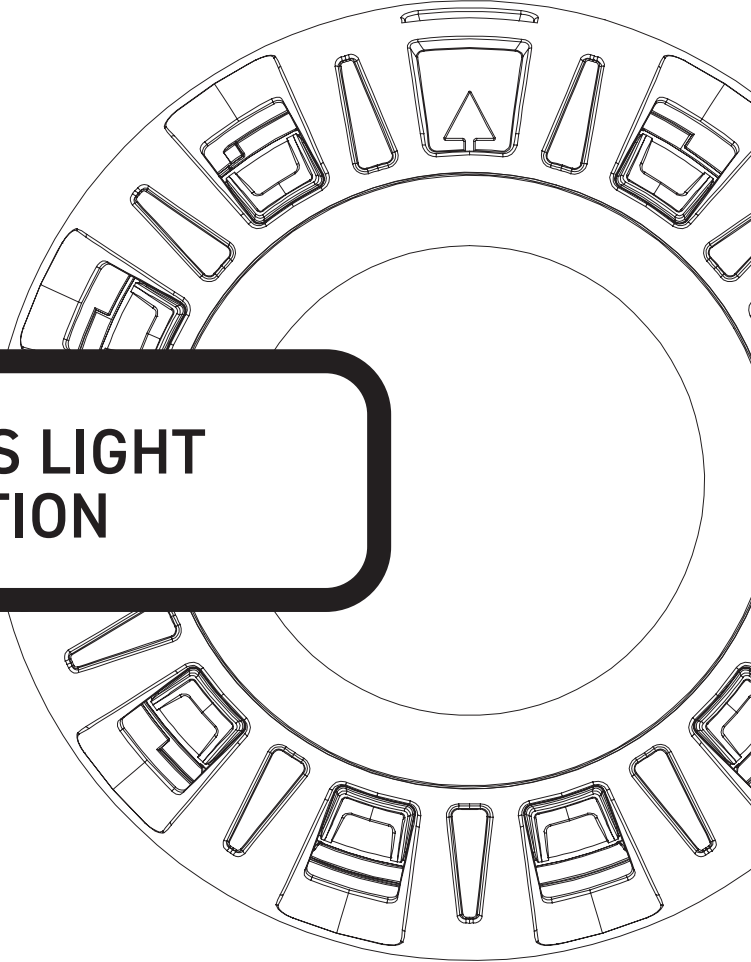


SE Spa Electrics®

retro®

REPLACEMENT LED POOL LIGHT



NICHELESS LIGHT INSTALLATION

N1

**R1 - PLUG ASSEMBLY KIT
INSTALLATION & OWNER'S MANUAL**

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TROUBLESHOOTING	29
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FCC COMPLIANCE STATEMENT	30

NOTE

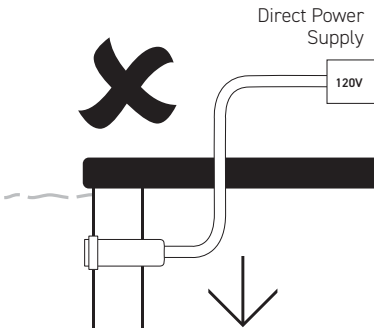


FRESH WATER USE ONLY
NOT INTENDED FOR OPERATION OUT OF WATER

PRE-INSTALLATION CHECK

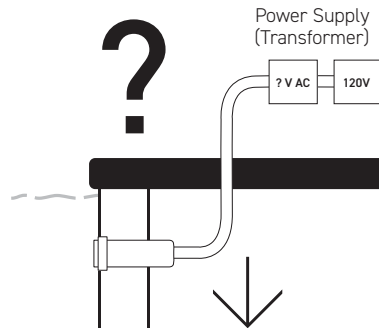
1 CHECK POWER SUPPLY

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.

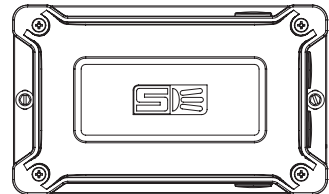
2 ADD TRANSFORMER (IF NEEDED)

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 18w per Retro Series N1 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 Universal** lights

(LVX 50 & LVX 100)

PRE-INSTALLATION CHECK

3 CHECK PLUG CABLE THICKNESS

RETRO UNIVERSAL CAN BE FITTED TO PLUG CABLES FROM 9/32" (7MM) UP TO 9/16" (14MM) DIAMETER.

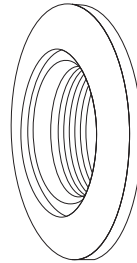
Max \varnothing
9/16 inch
(14mm)



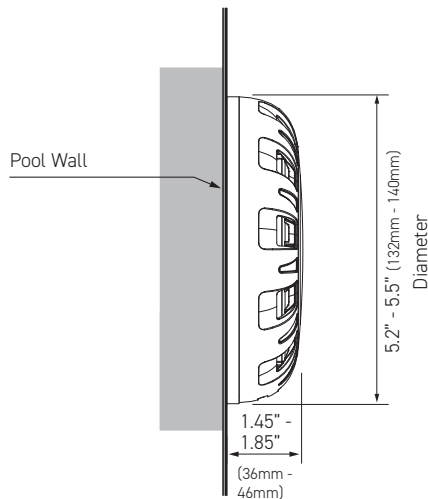
Actual Size

4 CHECK FITTING TYPE

THE RETRO N1 LIGHT IS DESIGNED TO FIT STANDARD THREADED 'NICHELESS' 1022, 1023, 1408, 1.5" F.I.P FITTINGS.



KEY DIMENSIONS



READ THIS FIRST

Congratulations on your purchase of a Spa Electrics **Retro N1** Series Pool Light. This light has been designed in conjunction with leading pool professionals across the USA and manufactured solely in Australia.

The Retro Series light is designed to quickly and easily replace existing LOW VOLTAGE, nicheless light fittings (1022) 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 Operating Manual. (Provided)

Note: The use of DC / Electronic (or Switch mode) power supplies is not permitted as they can cause disruptions in the lights normal operation & in some cases damage the lights internal electronic components. For more information, please contact Spa Electrics Inc.

WARNING



- The **Retro N1** 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 9/16" (14mm) diameter is connected to the **Retro N1** Light. The use of Fig. 8 or non circular cable will not seal correctly & will void the product warranty.
- The **Retro N1** 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

- ✓ Phillips head screwdriver
- ✓ Draw wire
- ✓ Small flat-blade screw driver
- ✓ Pliers or side cutters

IMPORTANT NOTES

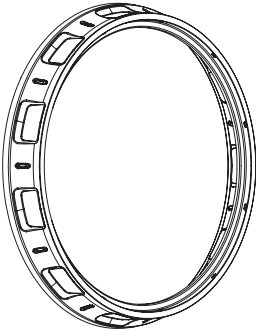


- The use of power tools during installation is **not** recommended as these devices can cause faults and damage to light components.
- All installation steps should be carried out with manual tools only.
- The enclosed images are for illustrative purposes only. Appearances of parts and assemblies may 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.

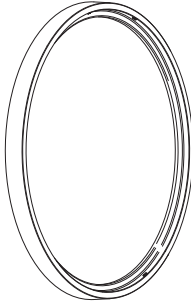
PRODUCT SUPPORT AND INFORMATION

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

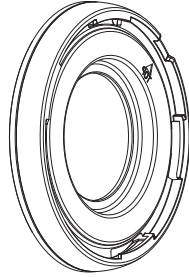
INCLUDED PARTS



SPACER RING
Fiberglass/Vinyl



SPACER RING
Concrete



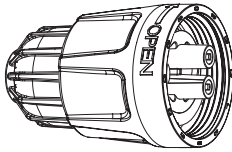
ADAPTER PLATE



THREADED COLLAR



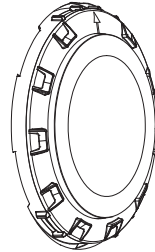
ADAPTER TOOL



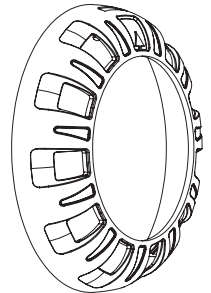
PLUG ASSEMBLY
Supplied as loose parts
(See below)



LANOLIN



LIGHT ASSEMBLY

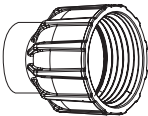


LIGHT RIM

PLUG ASSEMBLY COMPONENTS



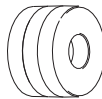
Connector Collar



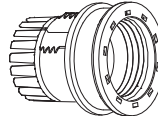
Large Gland Nut
(also supplied)



Gland Nut



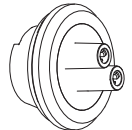
Glands X 3 Sizes Provided



Connector Barrel



Strain Relief Clip
(Optional)



Screw Terminal End with filling screws attached



1 X INSTALLATION MANUAL



1 X WARRANTY CARD



1 X MULTIPLUS MANUAL

REQUIRED PART (NOT INCLUDED)



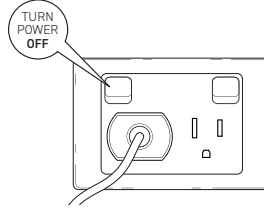
UL LISTED ISOLATING LOW VOLTAGE POWER SUPPLY, EVALUATED FOR SWIMMING POOL USE.

Installed as per current NEC wiring rules. 12~14V AC output. Minimum 50W per Retro Series Pool Light. Spa Electrics recommends "LVX" safety transformers for use with Retro Universal lights

A: CONNECTION TO CABLE

**STOP! WARNING
ELECTROCUTION**

CHECK POWER
IS TURNED OFF
FIRST

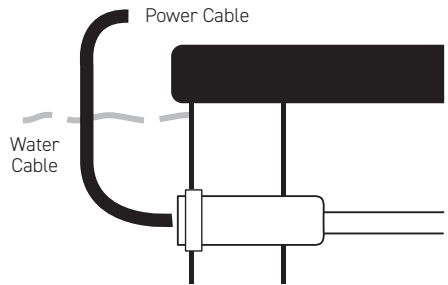


1

REMOVE EXISTING LIGHT

REMOVE EXISTING LIGHT FROM NICHE AND BRING TO THE SURFACE FOR CONNECTION.

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

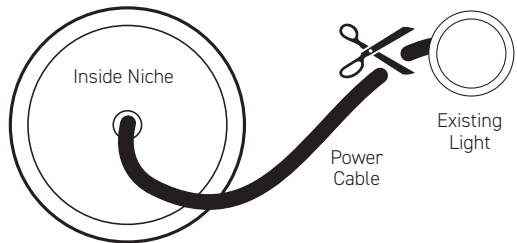


2

DISCONNECT EXISTING LIGHT

DISCONNECT LIGHT FROM POWER CABLE.

CUT POWER CABLE AS CLOSE TO BACK OF EXISTING LIGHT AS POSSIBLE.



3

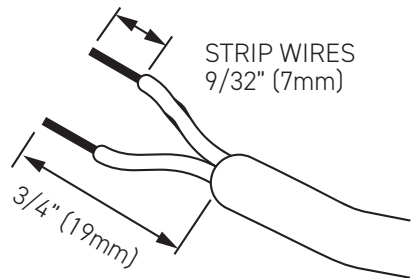
CABLE PREPARATION

STRIP POWER CABLE TO SPECIFIED LENGTH.

NOTE



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



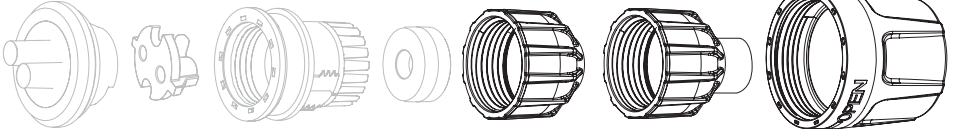
4

START ASSEMBLY OF CONNECTOR PLUG

LANOLIN USE



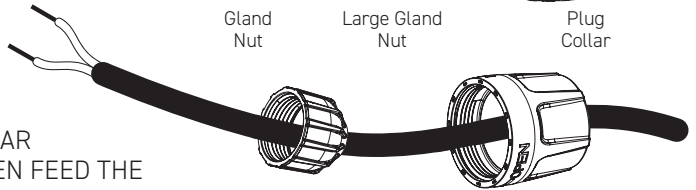
GENTLY WARM
LANOLIN
BEFORE USE



Gland Nut

Large Gland Nut

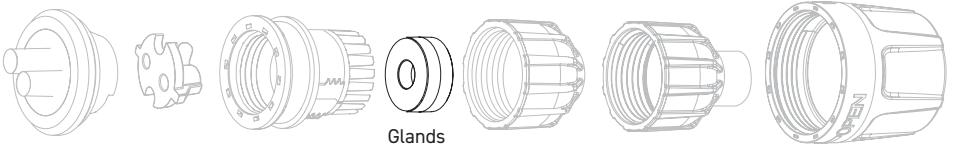
Plug Collar



FEED THE PLUG COLLAR
ONTO THE CABLE, THEN FEED THE
APPROPRIATE GLAND NUT ONTO THE CABLE.

5

CHOOSE THE APPROPRIATE GLAND



Glands
X 3 Sizes
Provided

SELECT THE **APPROPRIATE**
CABLE GLAND FROM THE
THREE SUPPLIED THAT
SNUGLY FITS THE EXISTING
POWER CABLE WITHOUT
BULGING.



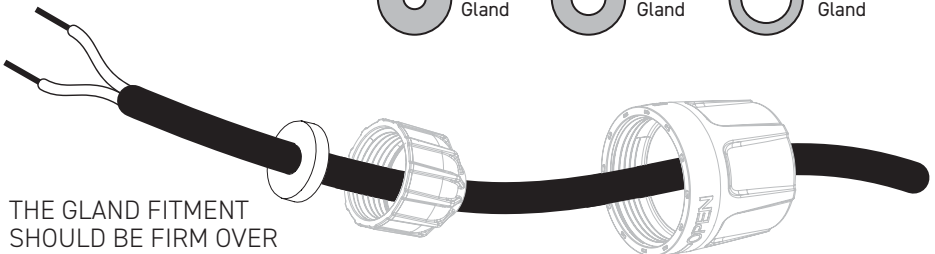
Small Gland



Medium Gland



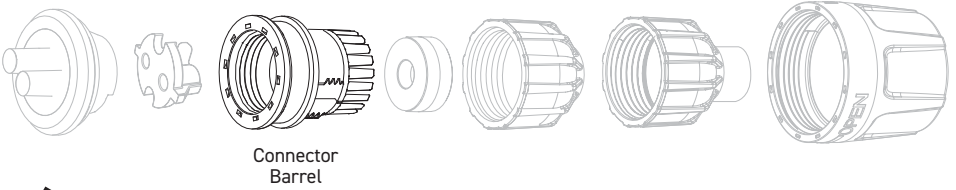
Large Gland



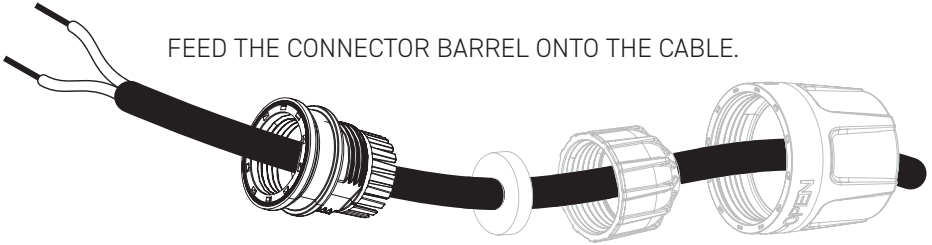
THE GLAND FITMENT
SHOULD BE FIRM OVER
THE CABLE WITHOUT BULGING
OR DEFORMING THE GLAND.

6

CONTINUE ASSEMBLY OF CONNECTOR PLUG

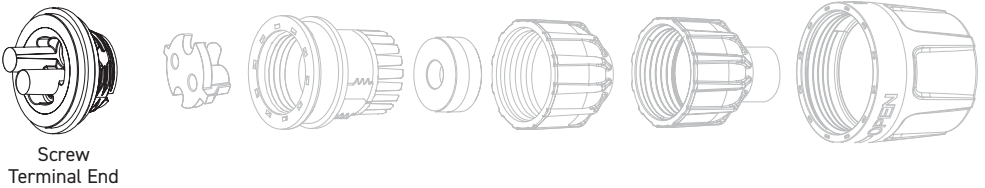


FEED THE CONNECTOR BARREL ONTO THE CABLE.



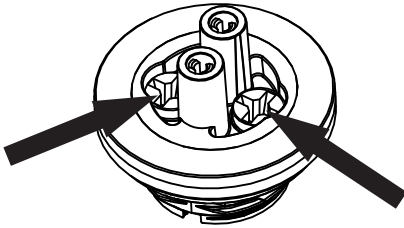
7

CHECK SCREWS ON SCREW TERMINAL END



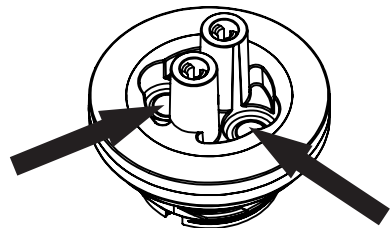
CHECK IF SCREWS ARE PRESENT IN THE TOP OF THE SCREW TERMINAL END

WITH SCREWS



USE A MANUAL PHILLIPS HEAD SCREWDRIVER TO ENSURE THAT THE 2 SCREWS INDICATED ARE FULLY SEATED. PROCEED TO STEP 8.

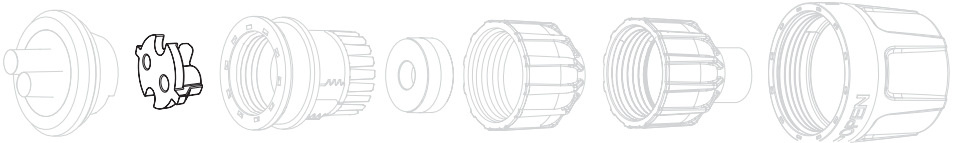
WITHOUT SCREWS



CHECK THERE ARE NO HOLES IN THE INDICATED LOCATIONS. PROCEED TO STEP 8.

8

STRAIN RELIEF CUP



Strain Relief Cup
(Optional)

- OPTION 1:** WHEN USING THE MEDIUM OR LARGE CABLE GLANDS, THE STRAIN RELIEF CLIP IS NOT REQUIRED. FOLLOW STEP 9A (IGNORE STEP 9B).
- OPTION 2:** THE STRAIN RELIEF CLIP MUST BE USED WHEN THE SMALL CABLE GLAND IS USED. FOLLOW STEP 9B (IGNORE STEP 9A).

STRAIN RELIEF CUP REQUIRED



Small Gland



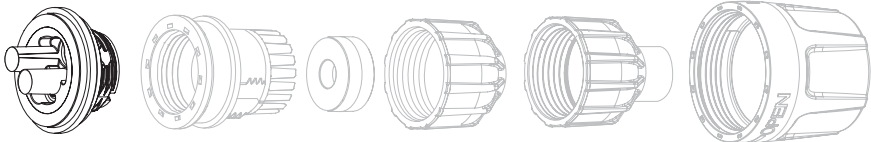
Medium Gland



Large Gland

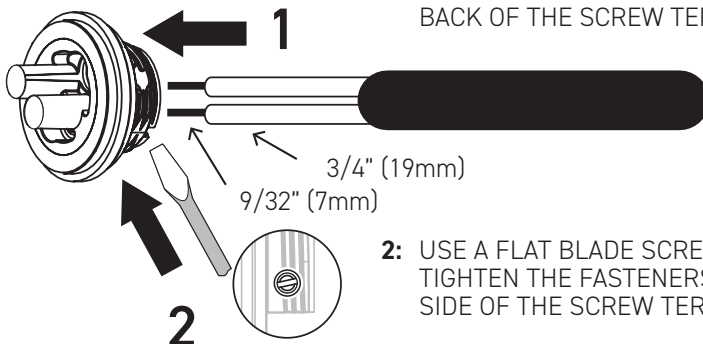
9A

CONNECT THE SCREW TERMINAL END



Screw
Terminal End

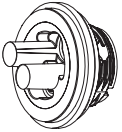
- 1:** FEED THE TWO STRIPPED CABLE ENDS THROUGH THE TWO HOLES IN THE BACK OF THE SCREW TERMINAL END.



- 2:** USE A FLAT BLADE SCREWDRIVER TO TIGHTEN THE FASTENERS ON EITHER SIDE OF THE SCREW TERMINAL.

9B

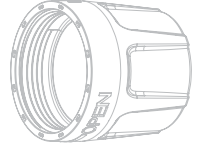
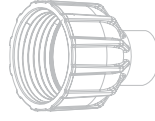
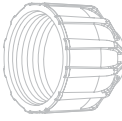
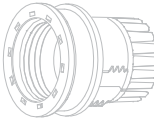
CONNECT THE SCREW TERMINAL END



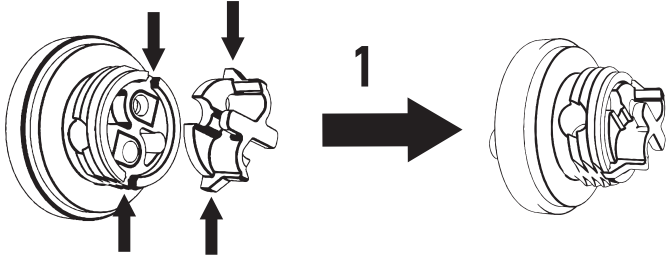
Screw Terminal End



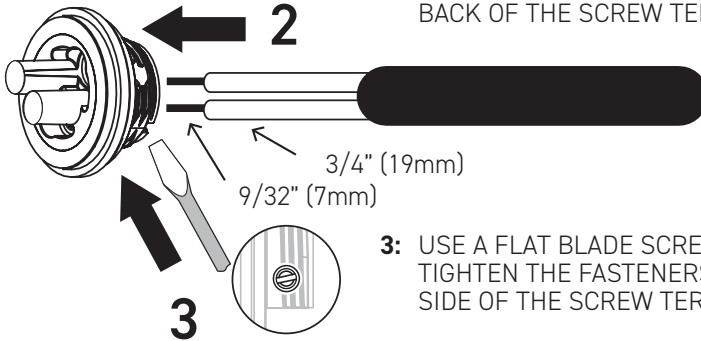
Strain Relief Clip



- 1:** ATTACH THE STRAIN RELIEF CLIP TO THE SCREW TERMINAL END.

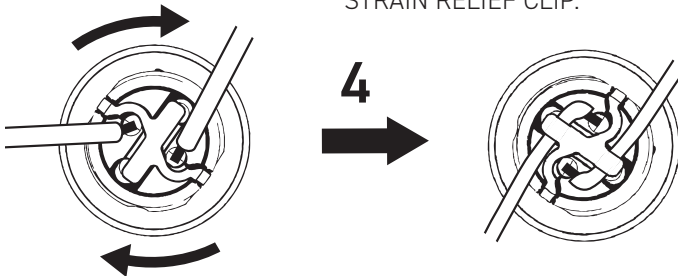


- 2:** FEED THE TWO STRIPPED CABLE ENDS THROUGH THE TWO HOLES IN THE BACK OF THE SCREW TERMINAL END.



- 3:** USE A FLAT BLADE SCREWDRIVER TO TIGHTEN THE FASTENERS ON EITHER SIDE OF THE SCREW TERMINAL.

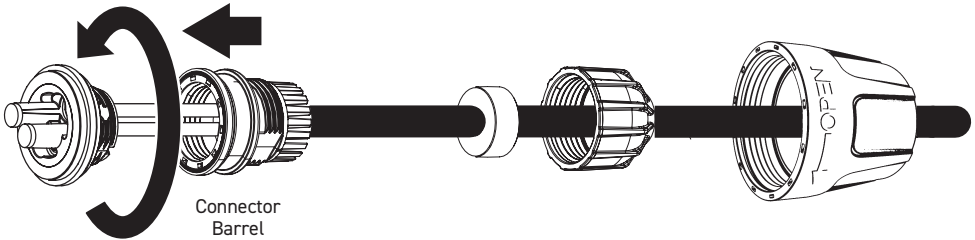
- 4:** TWIST THE SCREW TERMINAL AND LOOP CABLE ENDS UNDER THE STRAIN RELIEF CLIP.



10

START ASSEMBLY OF CONNECTOR PLUG

CAREFULLY THREAD CONNECTOR BARREL ONTO SCREW TERMINAL AND TIGHTEN FIRMLY BY HAND.



LEAVE THESE PARTS DISASSEMBLED UNTIL AFTER ADDING LANOLIN.

11

ADD LANOLIN

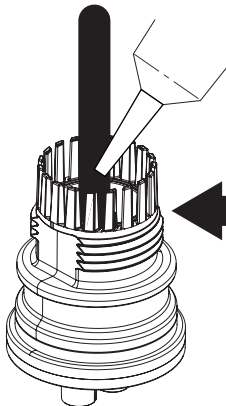
LANOLIN USE



GENTLY WARM
LANOLIN
BEFORE USE



LANOLIN



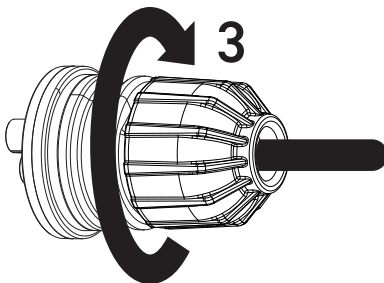
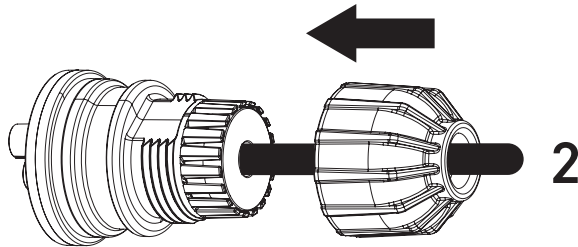
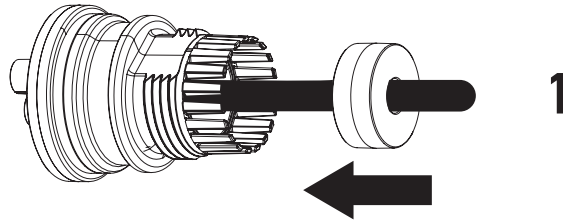
FILL BACK OF CONNECTOR BARREL WITH LANOLIN UP TO THE INDICATED POINT.

FILL TO HERE
(ALLOWING ROOM FOR GLAND)

12

CONTINUE ASSEMBLY OF CONNECTOR PLUG

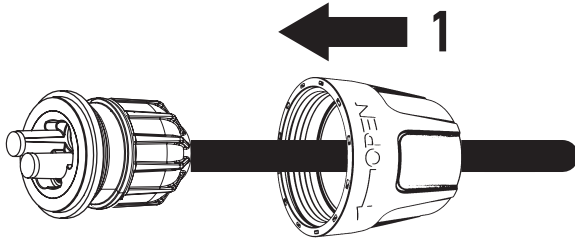
- 1: SEAT CABLE GLAND ALL THE WAY INTO CONNECTOR (DO A VISUAL CHECK TO MAKE SURE A SEAL BETWEEN GLAND AND CABLE).
- 2: CAREFULLY THREAD GLAND NUT ONTO CONNECTOR BARREL.
- 3: TIGHTEN GLAND NUT FIRMLY BY HAND.



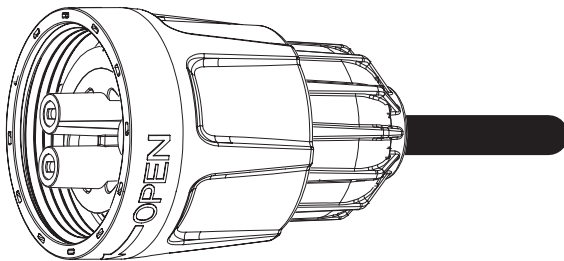
13

CONTINUE ASSEMBLY OF CONNECTOR PLUG

- 1: POSITION CONNECTOR COLLAR ALL THE WAY TO THE END READY FOR ATTACHMENT TO THE LIGHT ASSEMBLY.



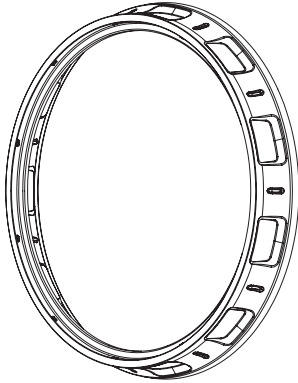
ASSEMBLED VIEW OF CONNECTOR PLUG



B: ATTACH NICHE ADAPTER

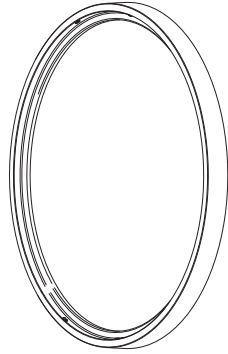
1 CHOOSE A SPACER RING

CHOOSE THE APPROPRIATE SPACER RING OUT OF THE TWO PROVIDED DEPENDING ON THE INSTALLATION TYPE.



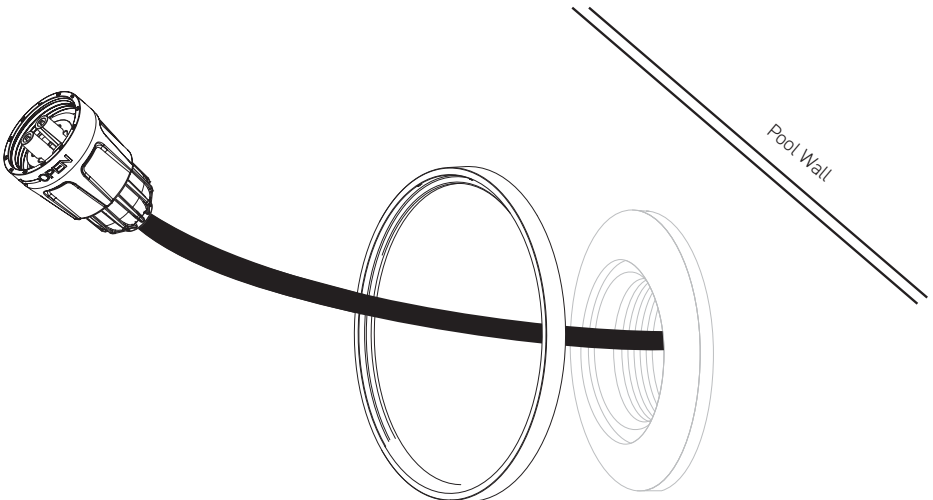
Vinyl/ Fiberglass
Installation

CHOOSE
ONE (1)



Concrete
Installation

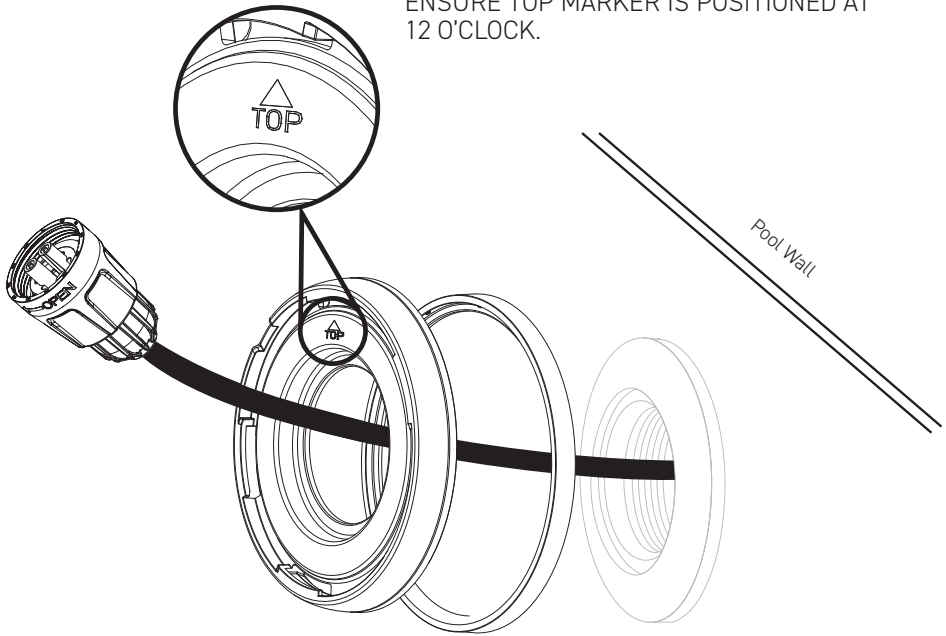
2 ATTACH A SPACER RING



3

ATTACH ADAPTER

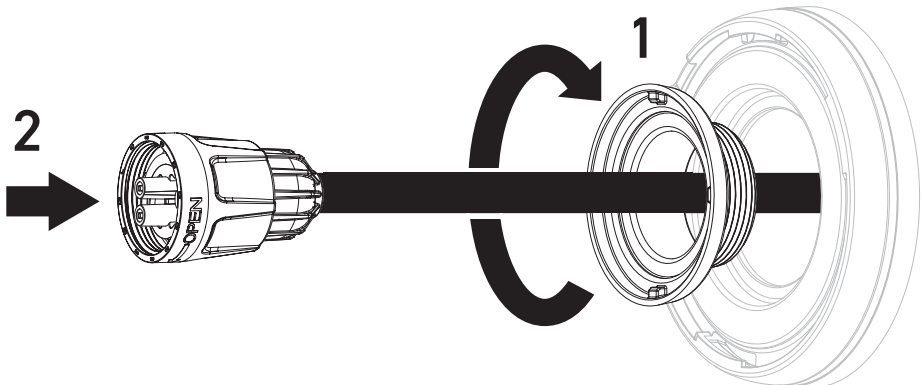
FEED THE ADAPTER PLATE ONTO THE CABLE AS SHOWN. ENSURE TOP MARKER IS POSITIONED AT 12 O'CLOCK.



4

ATTACH THREADED COLLAR

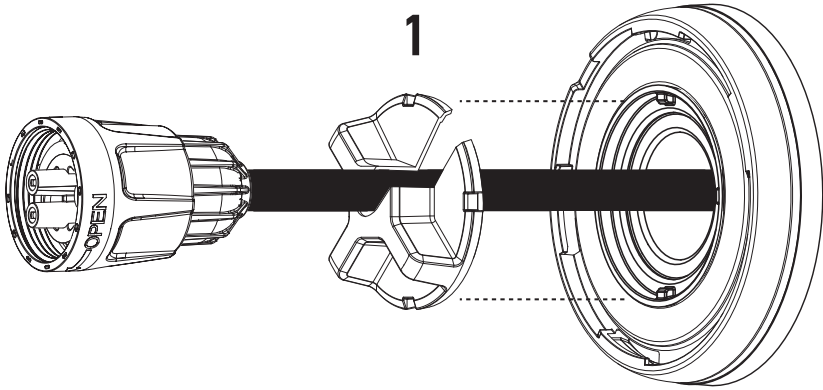
FEED THREADED COLLAR ONTO ASSEMBLY AND THREAD INTO COUPLING BY HAND.



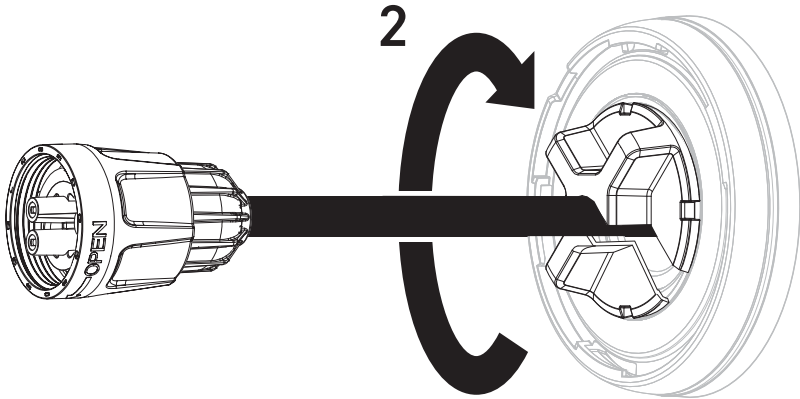
5

ADD ADAPTER TOOL

ALIGN ADAPTER TOOL WITH THREADED COLLAR ENSURING THE CABLE IS PULLED THROUGH THE HOLE IN THE ADAPTER TOOL.



TIGHTEN FIRMLY BY HAND.



REMOVE ADAPTER TOOL AND STORE SAFELY FOR WINTERIZATION.

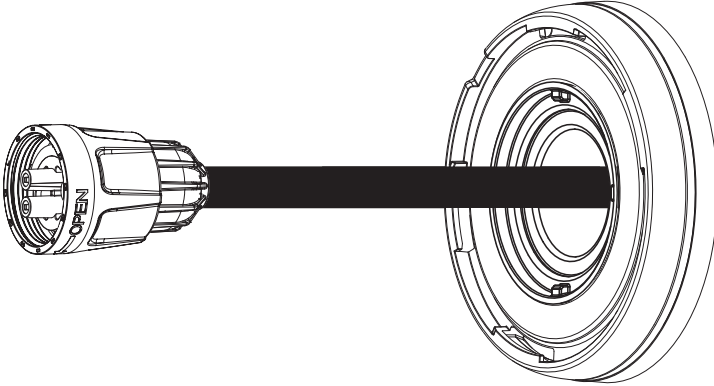
IMPORTANT NOTES



ENSURE ADAPTER TOOL IS SAFELY
STORED FOR WINTERIZATION

C: LIGHT ASSEMBLY

1 PULL OUT PLUG AND A LENGTH OF CABLE



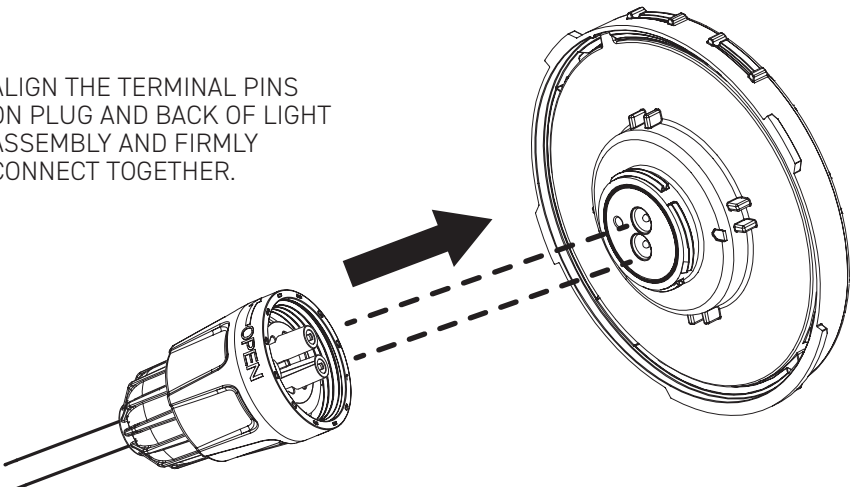
IMPORTANT NOTES



- DO NOT ADD SEALANTS, GREASES OR ADHESIVES
- ENSURE ALL SURFACES ARE CLEAN AND DRY
- **DO NOT ASSEMBLE UNDERWATER**

2 CONNECT THE TERMINALS

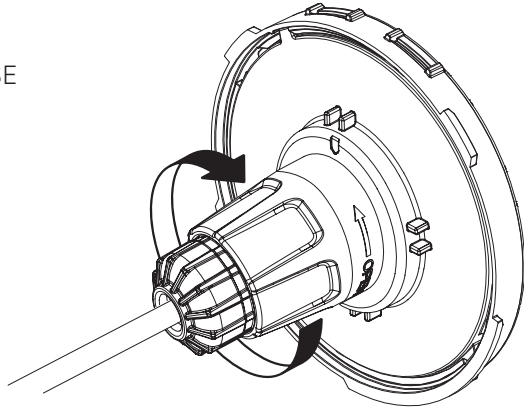
ALIGN THE TERMINAL PINS ON PLUG AND BACK OF LIGHT ASSEMBLY AND FIRMLY CONNECT TOGETHER.



3

FASTEN PLUG TO LIGHT

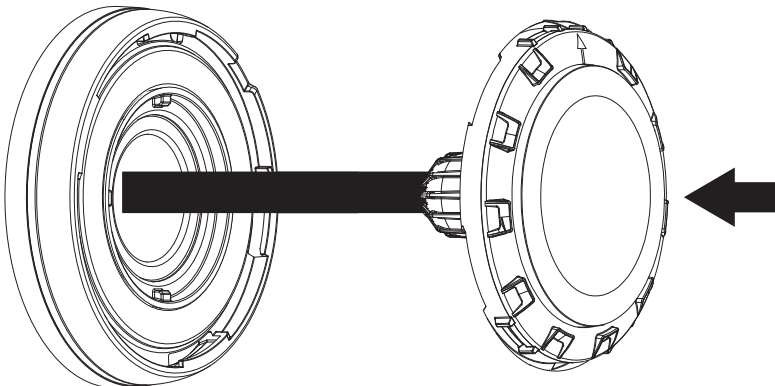
TO LOCK INTO PLACE:
TWIST COLLAR CLOCKWISE
A FEW TIMES UNTIL IT'S
HAND TIGHT.



4

PULL THROUGH CABLE

PULL CABLE THROUGH CONDUIT TO DRAW LIGHT INTO ADAPTER.

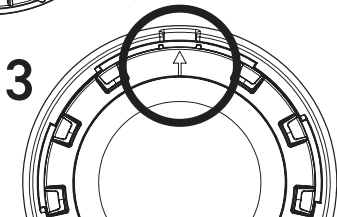
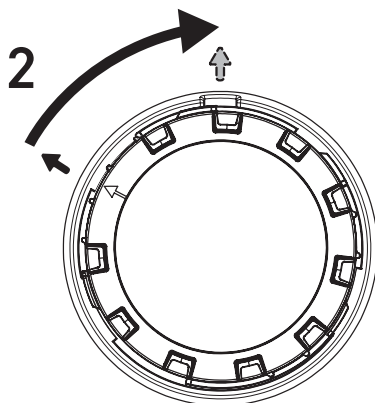
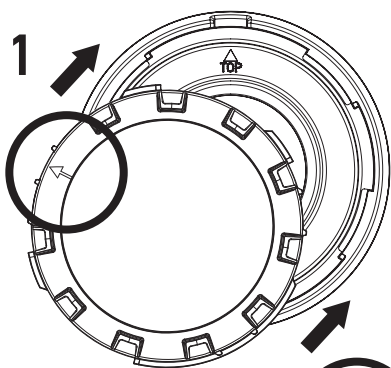


5

TWIST ON THE LIGHT ASSEMBLY TO CLAMP RING

1: PLACE THE LIGHT ASSEMBLY OVER THE CLAMP RING AT 10 O'CLOCK...

2: ... AND THEN TWIST CLOCKWISE TO 12 O'CLOCK.



2: ENSURE THE 12 O'CLOCK MARKER ON THE CLAMP RING LINES UP WITH THE 12 O'CLOCK MARKER ON THE LIGHT ASSEMBLY.

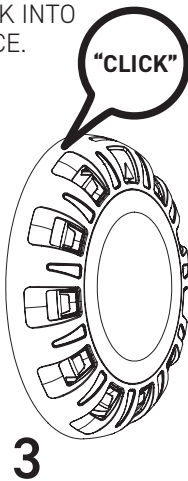
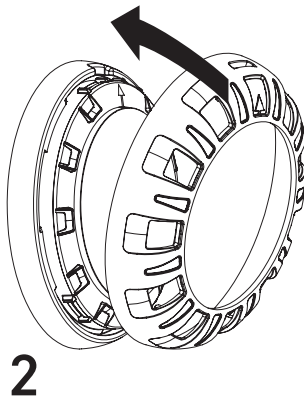
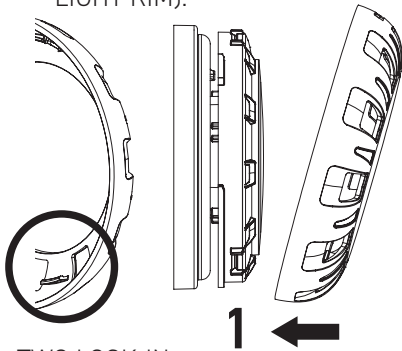
6

CONNECT ON LIGHT RIM

1: LINE UP BASE OF LIGHT RIM WITH BASE OF LIGHT ASSEMBLY (NOTE LOCK-IN TABS AT BASE OF INSIDE OF LIGHT RIM).

2: CLICK ON AND PUSH IN AT TOP.

3: ENSURE LIGHT RIM CLICK INTO PLACE.



TWO LOCK-IN TABS AT BASE

WINTERIZATION

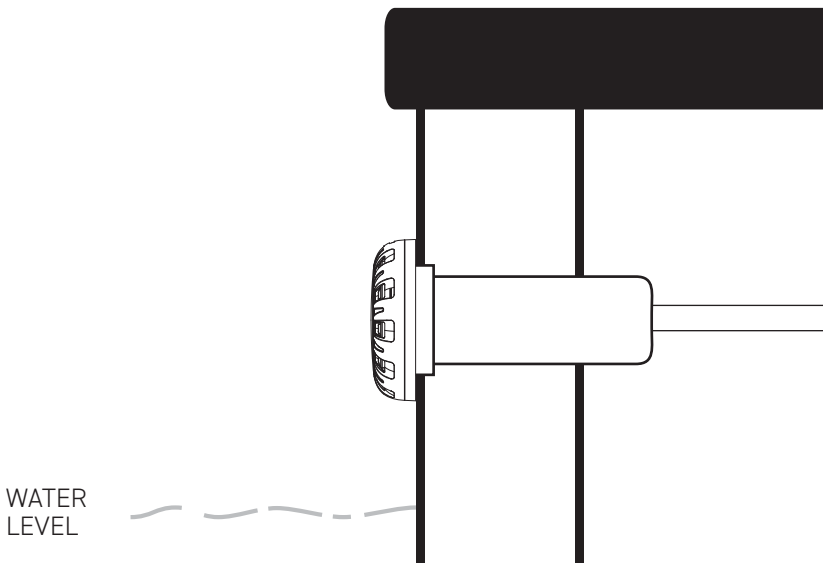
THE FOLLOWING WINTERIZATION PROCESS IS HIGHLY RECOMMENDED TO AVOID DAMAGE TO THE LIGHT ASSEMBLY AND THE SUPPORTING FIXTURES.

SELECT FROM COMMONLY AVAILABLE WINTERIZATION FITTINGS TO SEAL THE NICHELESS FITTING. 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 1.5" WALL FITTING WILL NOT BE WARRANTED BY SPA ELECTRICS.

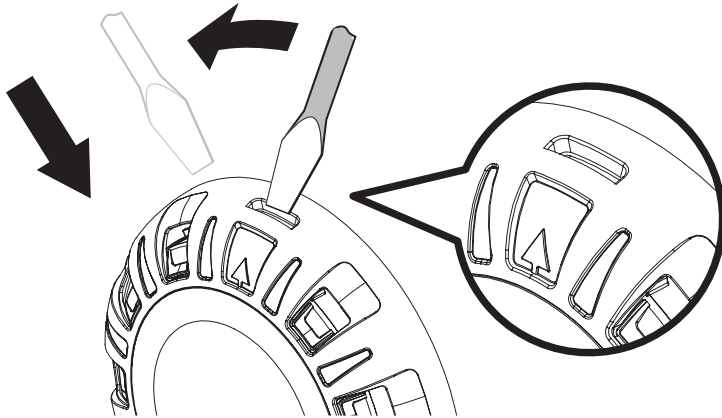
1 LOWER WATER LEVEL

LOWER WATER LEVEL TO BELOW THE LIGHT.

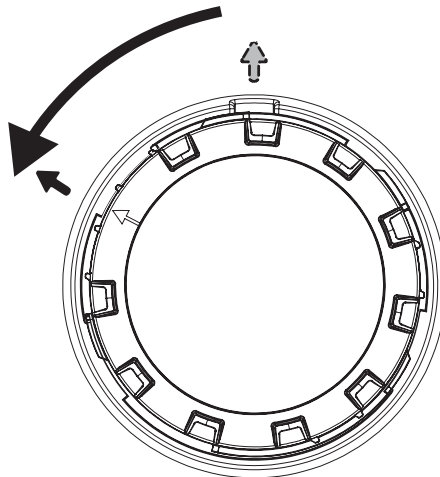


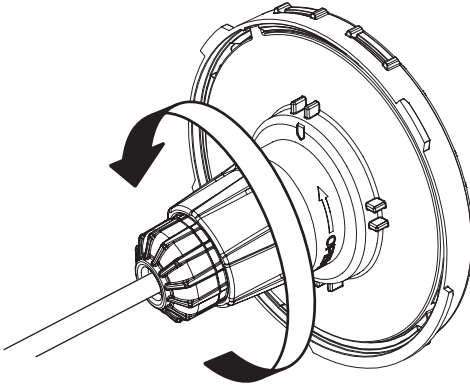
2**PUSH AND LEVER OFF LIGHT RIM WITH FLAT BLADE**

INSERT FLAT BLADE SCREWDRIVER INTO NICHE ABOVE TOP 12 O'CLOCK ARROW AND LEVER OFF LIGHT RIM.

**3****ROTATE AND PULL OUT LIGHT ASSEMBLY**

ROTATE LIGHT ASSEMBLY COUNTER-CLOCKWISE SO THE ARROW ON THE LIGHT ASSEMBLY IS AT 10 O'CLOCK AND THEN PULL OUT THE LIGHT ASSEMBLY FROM NICHE.



4**REMOVE PLUG FROM LIGHT**

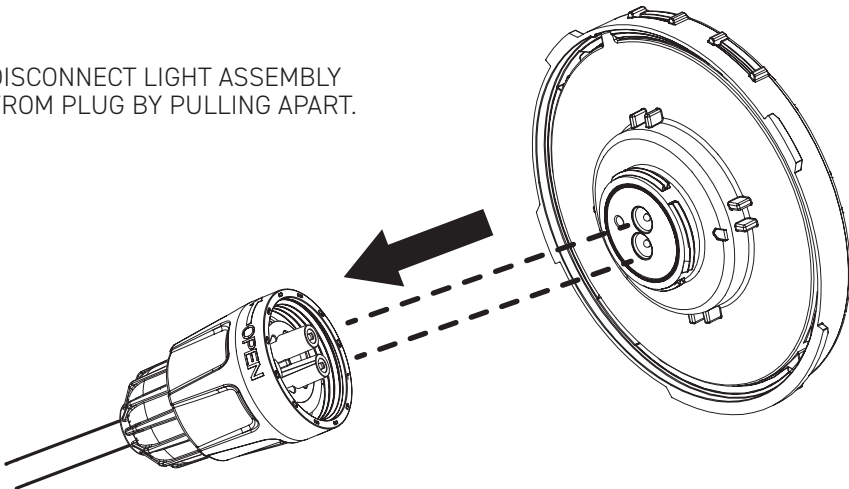
UNSCREW PLUG COLLAR
COUNTER-CLOCKWISE
UNTIL IT IS FREE SPINNING.

IMPORTANT NOTES

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

5**REMOVE PLUG FROM LIGHT**

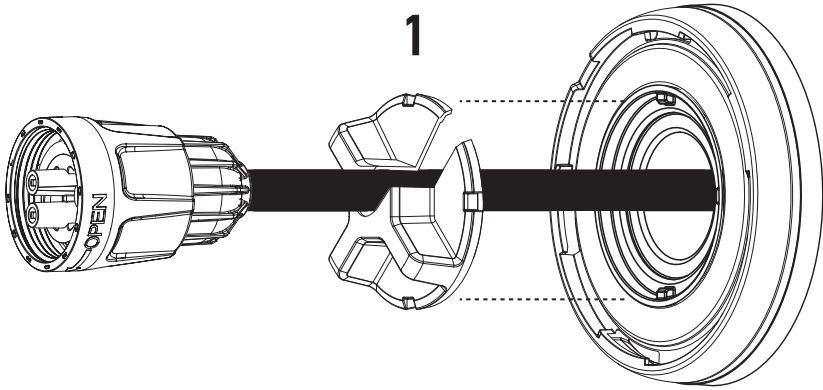
DISCONNECT LIGHT ASSEMBLY
FROM PLUG BY PULLING APART.



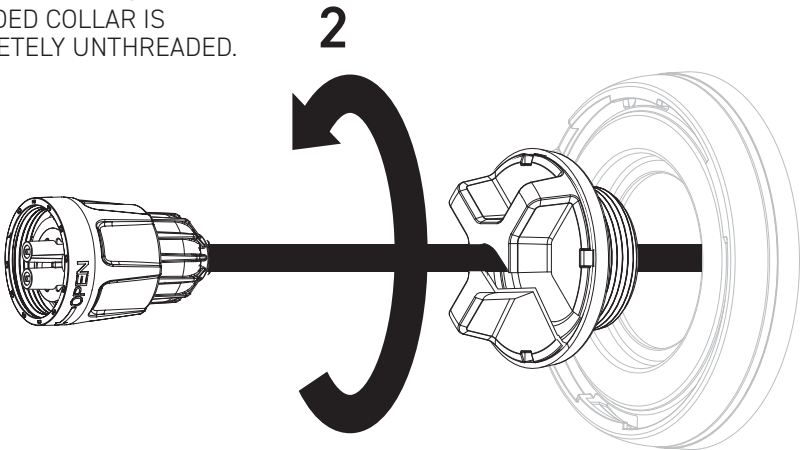
6

REMOVE THREADED COLLAR

ALIGN ADAPTER TOOL WITH THREADED COLLAR ENSURING THE CABLE IS PULLED THROUGH THE HOLE IN THE ADAPTER TOOL.



LOOSEN BY HAND UNTIL THREADED COLLAR IS COMPLETELY UNTHREADED.

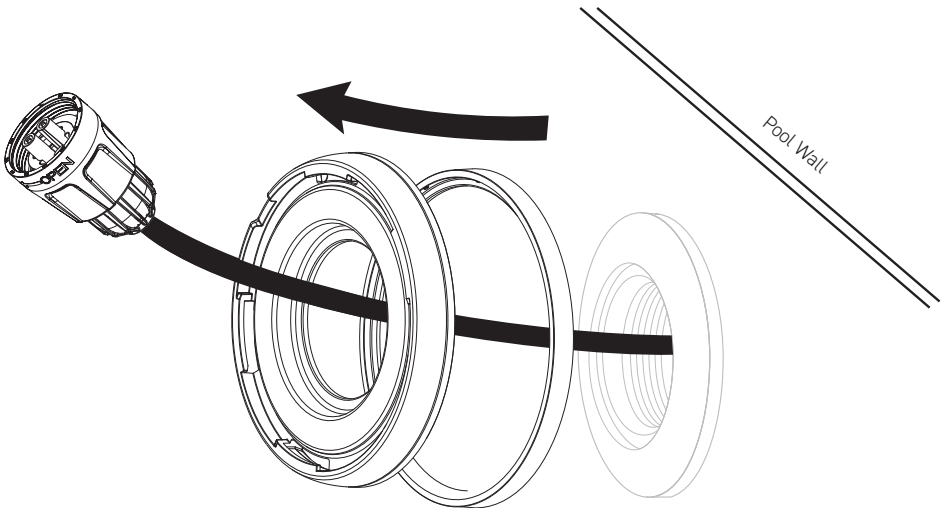


REMOVE ADAPTER TOOL AND STORE SAFELY FOR WINTERIZATION.

7

REMOVE ADAPTER AND SPACER RING

REMOVE ADAPTER PLATE AND SPACER RING FROM AROUND THE CABLE AS SHOWN.



STORAGE

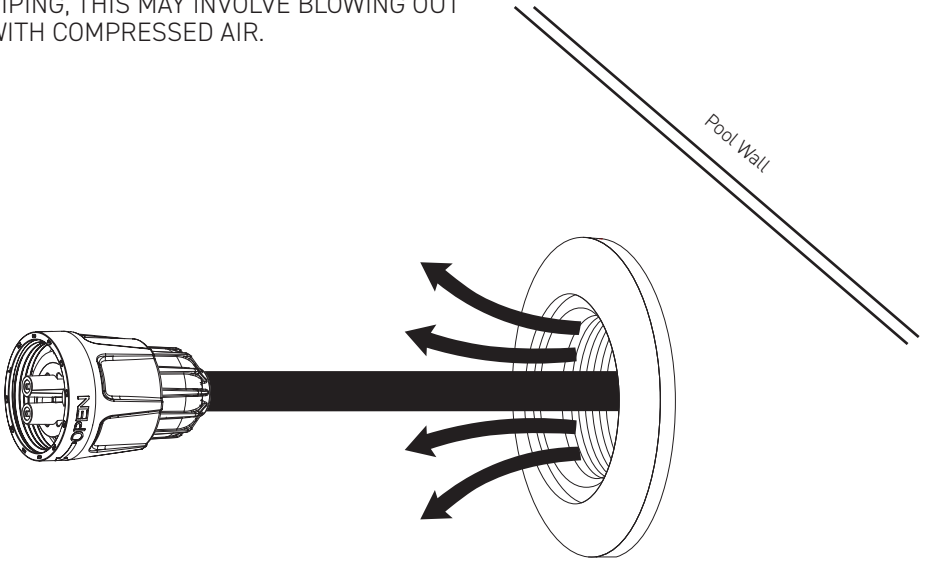


ENSURE REMOVED PARTS ARE STORED FOR USE NEXT SEASON.

8

REMOVE WATER FROM PIPING

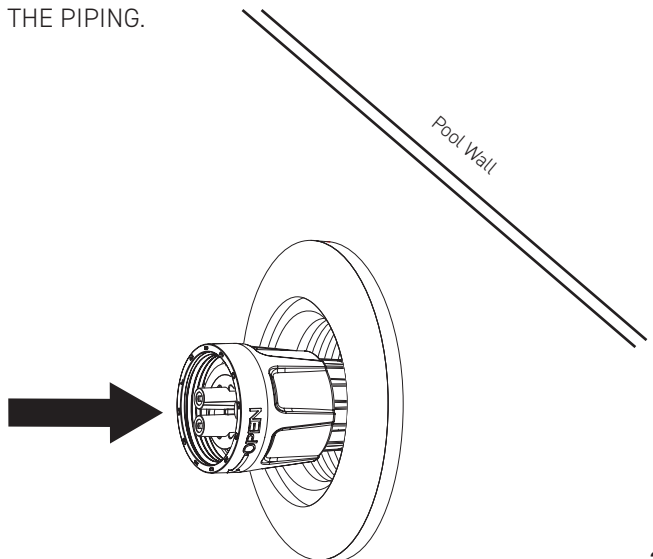
REMOVE THE REMAINING WATER FROM THE PIPING, THIS MAY INVOLVE BLOWING OUT WITH COMPRESSED AIR.



9

STORE CABLE

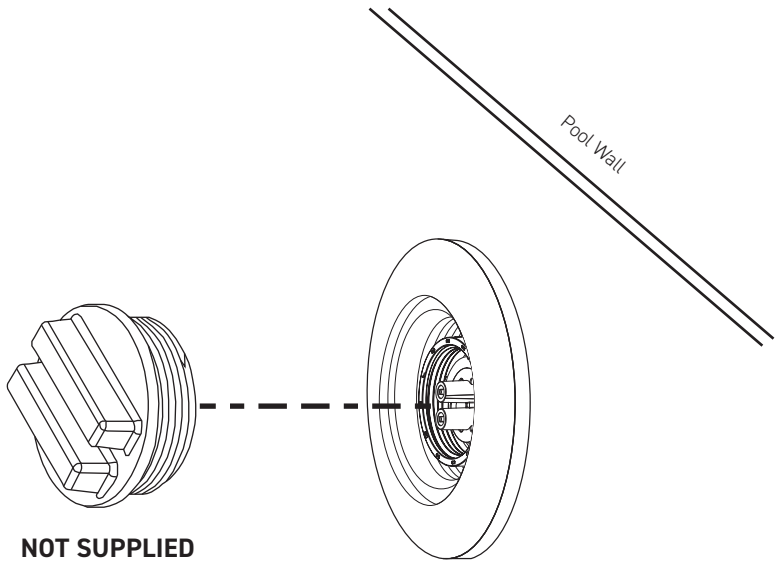
STORE CABLE BACK INTO THE PIPING.



10

SEAL PIPE OPENING

SELECT FROM COMMONLY AVAILABLE WINTERIZATION FITTINGS TO SEAL OFF THE NICHELESS 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 NICHELESS FITTING.

TROUBLESHOOTING

ISSUE	REASON	ACTION
Light returns to WHITE color during manual color change	Light synchronization process has been triggered	Refer to MULTI PLUS User Guide Instructions
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 cable correctly connected to transformer terminals
Light not operating (2)	Mains power not connected	Check transformer is plugged in to GPO and 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 Universal** luminaires with their plastic housing designs do not require grounding / bonding.

Spa Electrics **Retro Universal** 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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