

 Spa Electrics®

retro®

REPLACEMENT LED POOL LIGHT



**NICHELESS LIGHT
INSTALLATION**

N1 R1 - PLUG ASSEMBLY KIT
INSTALLATION & OWNER'S MANUAL

CONTENTS

PRE-INSTALLATION CHECK	2	
KEY DIMENSIONS	3	
READ THIS FIRST	4	
TOOLS REQUIRED	5	
INCLUDED PARTS	6	
INSTALLATION	A: CONNECTION TO CABLE	7
	B: ATTACH NICHE ADAPTOR	15
	C: LIGHT ASSEMBLY	18
WINTERIZATION	21	
TROUBLESHOOTING	28	
ELECTRICAL GROUNDING	29	
FCC COMPLIANCE STATEMENT	29	

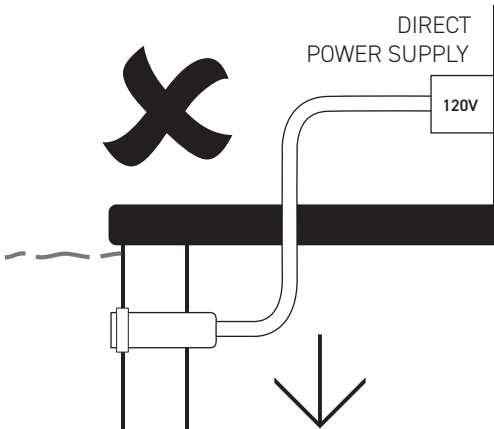
NOTICE

FRESH WATER USE ONLY
NOT INTENDED FOR OPERATION OUT OF WATER

PRE-INSTALLATION CHECK

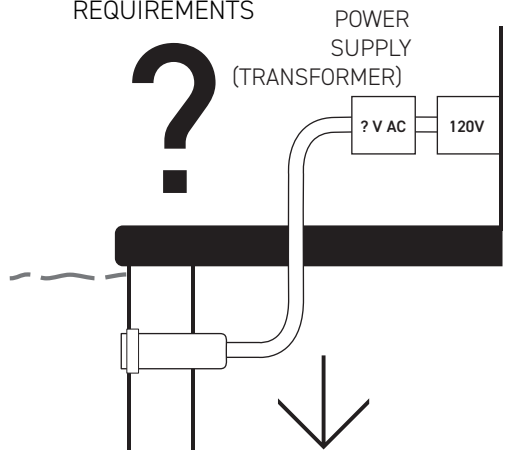
1 CHECK POWER SUPPLY

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

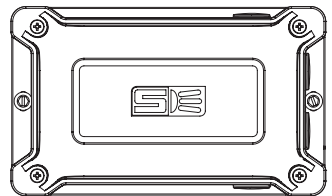
2 ADD TRANSFORMER (if needed)

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

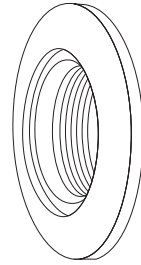
Max \emptyset
9/16 inch
(14mm)



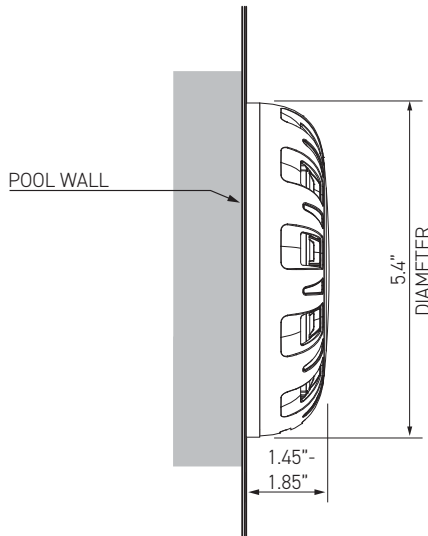
7mm inc
to 14mm

4 CHECK FITTING TYPE

THE RETRO N1 LIGHT IS DESIGNED TO FIT STANDARD '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.

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
- Small flat-blade screw driver
- Draw wire
- Pliers or side cutters



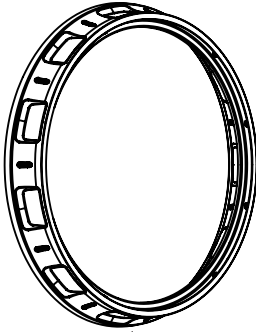
IMPORTANT NOTES

- 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 your reseller if you have any questions regarding the correct installation of this product.

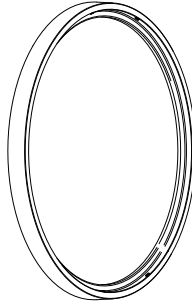
PRODUCT SUPPORT & INFORMATION

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

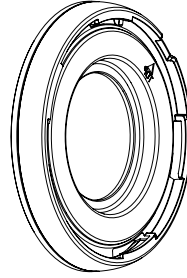
INCLUDED PARTS



SPACER RING
FIBREGLASS/ VINYL



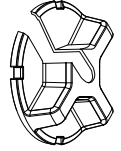
SPACER RING
CONCRETE



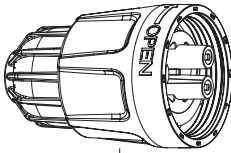
ADAPTOR
PLATE



THREADED
COLLAR



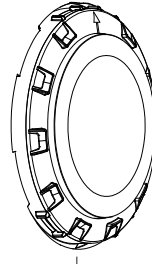
ADAPTOR
TOOL



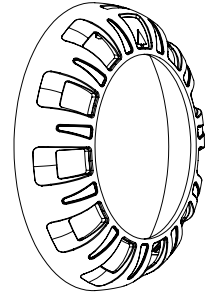
PLUG ASSEMBLY -
Supplied as loose parts
(see below)



LANOLIN

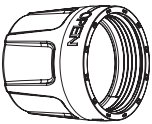


LIGHT
ASSEMBLY

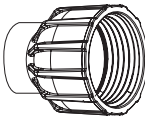


LIGHT
RIM

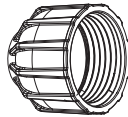
PLUG ASSEMBLY COMPONENTS



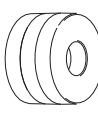
Connector
Collar



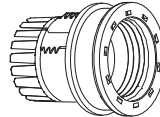
Large
Gland Nut
(also supplied)



Gland
Nut



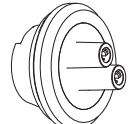
Glands
X 3 Sizes
Provided



Connector
Barrel



Strain Relief
Clip
(Optional)



Screw Terminal
End with filling
screws attached



1x INSTALLATION
MANUAL



1x WARRANTY
CARD



1x 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

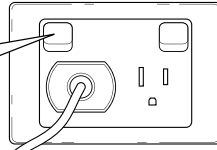
A: CONNECTION TO CABLE

**STOP! WARNING
ELECTROCUTION**

CHECK POWER IS
TURNED OFF
FIRST



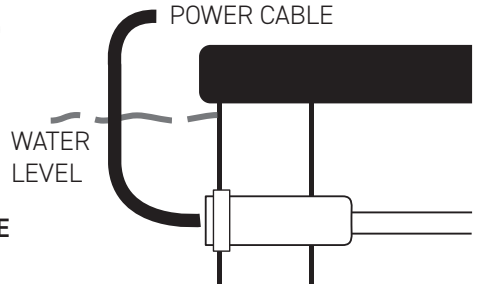
TURN
POWER
OFF



TO LOW VOLTAGE TRANSFORMER

1 REMOVE EXISTING LIGHT

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

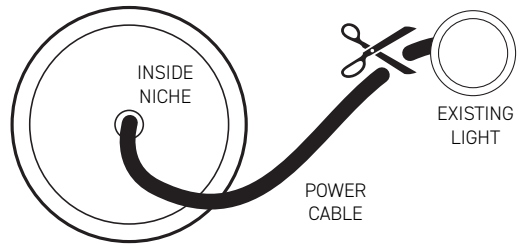


ALL CABLE CONNECTIONS ARE TO BE DONE
AT SURFACE LEVEL, AND OUT OF WATER.

2 DISCONNECT EXISTING LIGHT

DISCONNECT LIGHT
FROM POWER CABLE

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



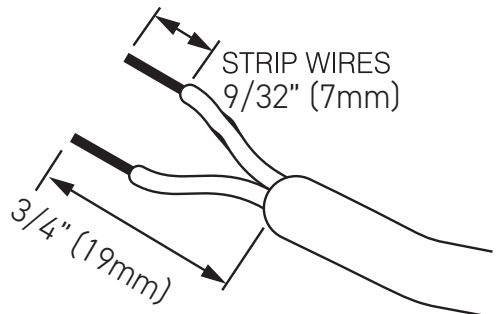
3 CABLE PREPARATION

STRIP POWER CABLE TO
SPECIFIED LENGTH



NOTE

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



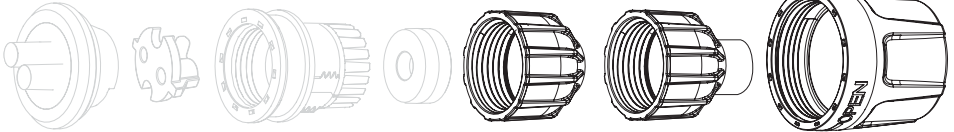
4

START ASSEMBLY OF CONNECTOR PLUG

LANOLIN USE



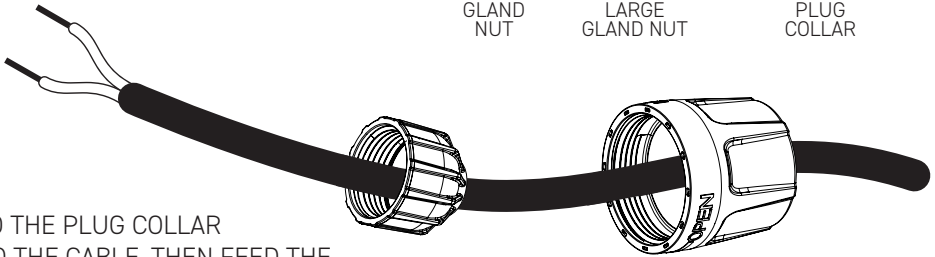
GENTLY WARM
LANOLIN
BEFORE USE



GLAND
NUT

LARGE
GLAND NUT

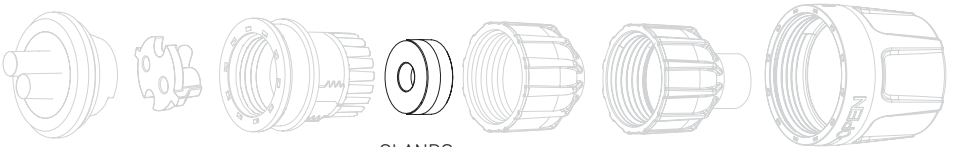
PLUG
COLLAR



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

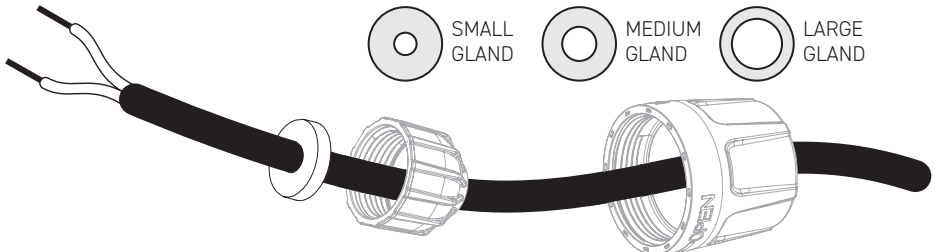
5

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

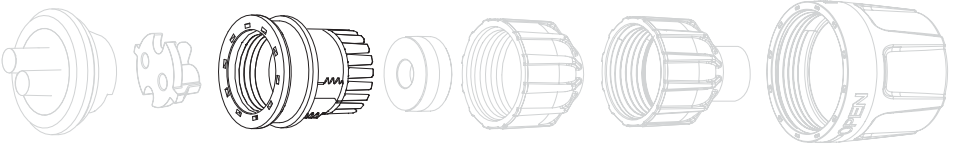


SMALL
GLAND

MEDIUM
GLAND

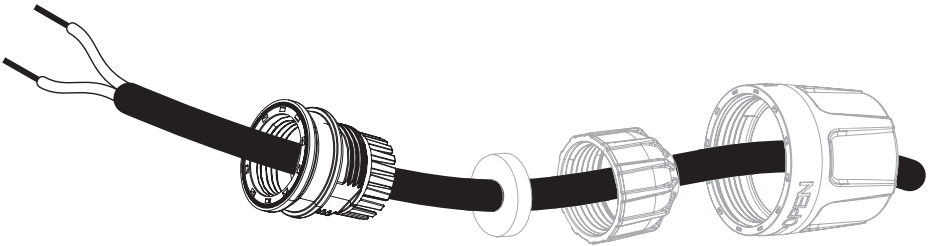
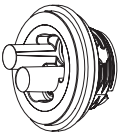
LARGE
GLAND

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

6**CONTINUE ASSEMBLY OF CONNECTOR PLUG**

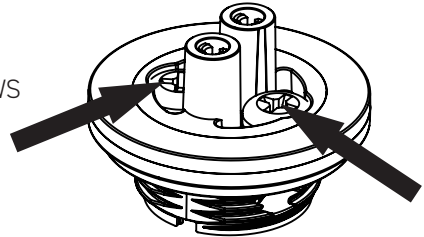
CONNECTOR
BARREL

FEED THE CONNECTOR BARREL ONTO THE CABLE

**7****CHECK SCREWS ON SCREW TERMINAL END**

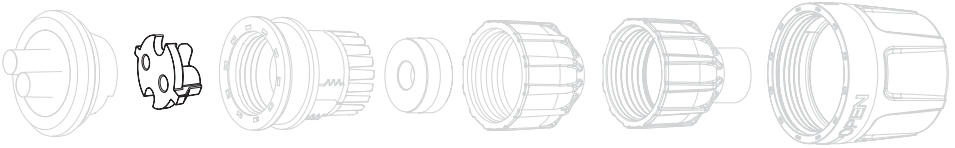
SCREW
TERMINAL END

USING A MANUAL PHILLIPS HEAD
SCREWDRIVER, ENSURE THAT THE 2 SCREWS
INDICATED ARE FULLY SEATED



8

STRAIN RELIEF CLIP



STRAIN RELIEF CLIP
(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 CLIP REQUIRED



SMALL
GLAND



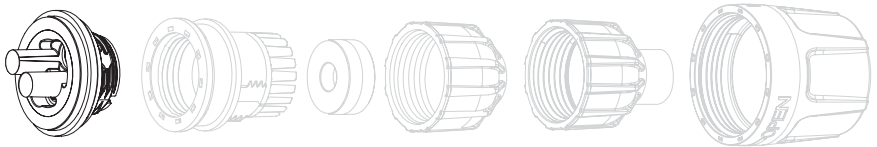
MEDIUM
GLAND



LARGE
GLAND

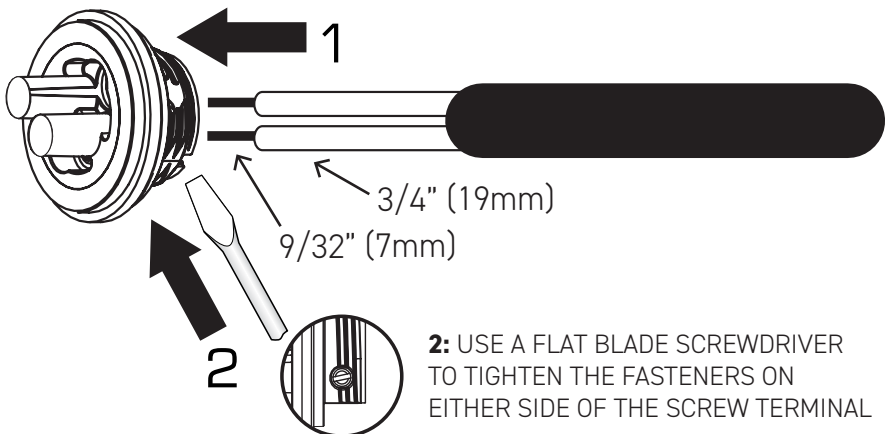
9A

CONNECT THE SCREW TERMINAL END



SCREW TERMINAL END

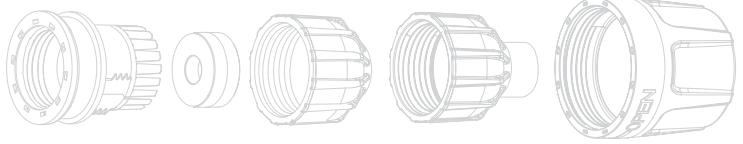
1: FEED THE TWO STRIPPED CABLE ENDS THROUGH THE TWO HOLES IN THE BACK OF THE SCREW TERMINAL END



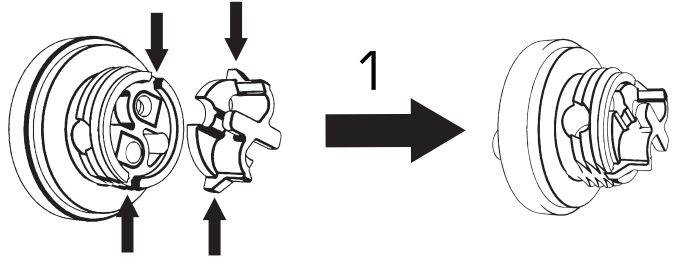
2: USE A FLAT BLADE SCREWDRIVER TO TIGHTEN THE FASTENERS ON EITHER SIDE OF THE SCREW TERMINAL

9B

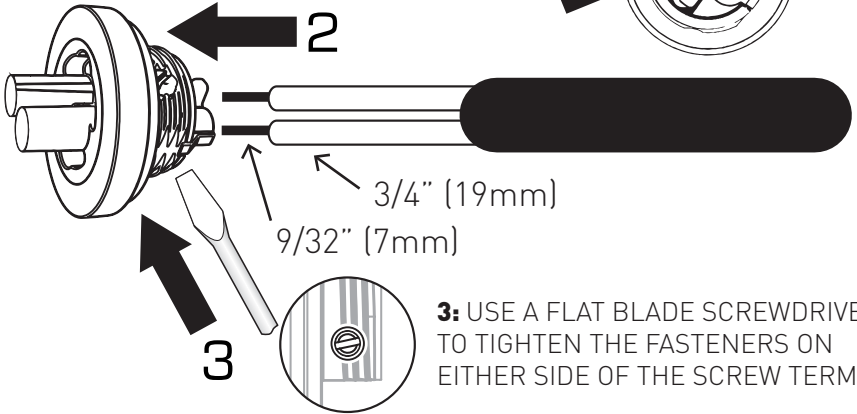
CONNECT THE SCREW TERMINAL END



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



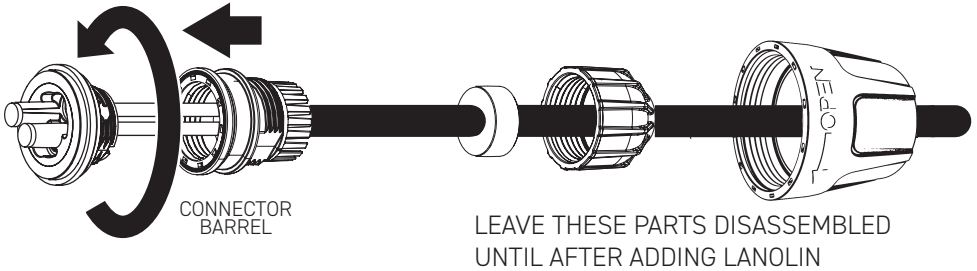
3: USE A FLAT BLADE SCREWDRIVER TO TIGHTEN THE FASTENERS ON EITHER SIDE OF THE SCREW TERMINAL

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

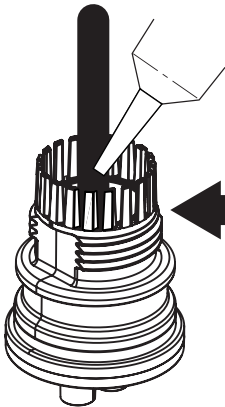


11 ADD LANOLIN

LANOLIN USE



GENTLY WARM
LANOLIN
BEFORE USE



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

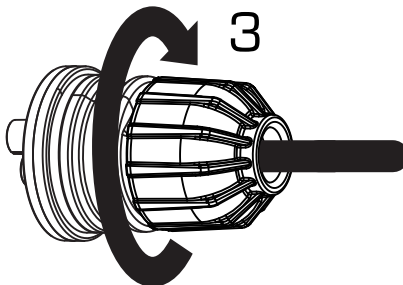
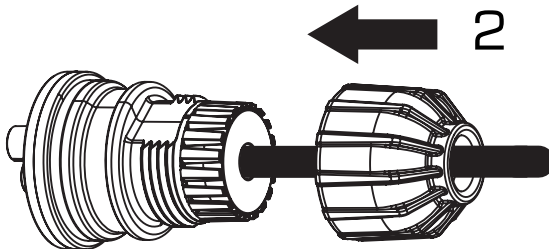
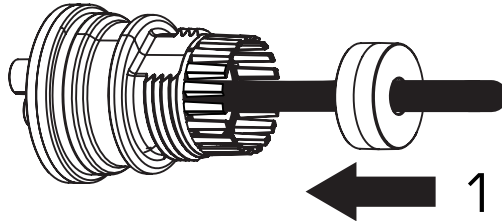
FILL TO HERE
(ALLOWING ROOM FOR GLAND)

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)

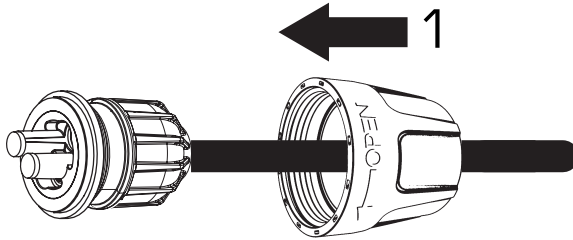
2: CAREFULLY THREAD GLAND NUT ONTO CONNECTOR BARREL

3: TIGHTEN GLAND NUT FIRMLY BY HAND

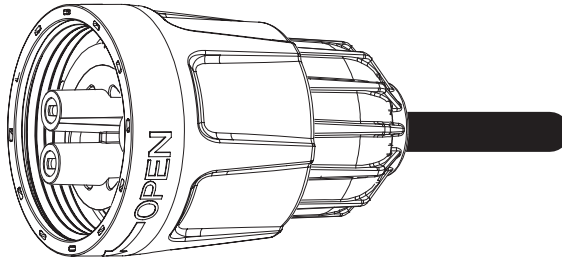


13 CONTINUE ASSEMBLY OF CONNECTOR PLUG

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



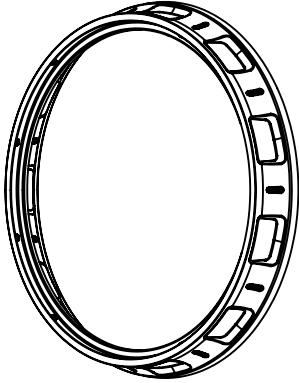
ASSEMBLED VIEW OF CONNECTOR PLUG



B: ATTACH NICHE ADAPTOR

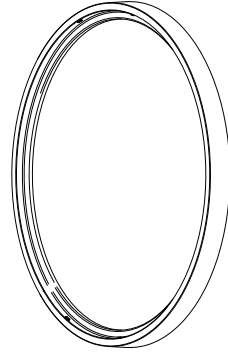
1 CHOOSE A SPACER RING

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



VINYL/ FIBREGLASS
INSTALLATION

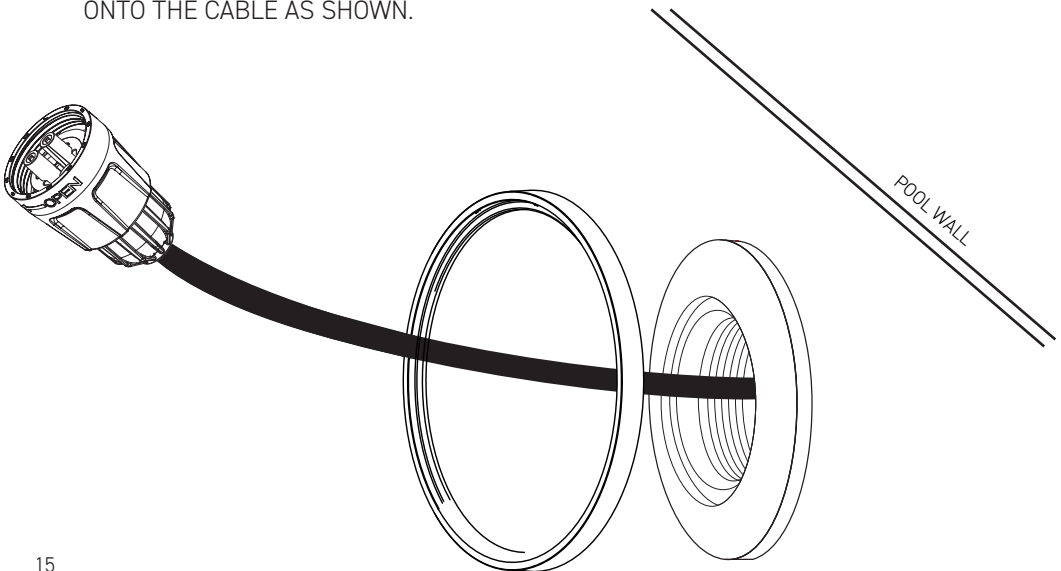
**CHOOSE
ONE (1)**



CONCRETE
INSTALLATION

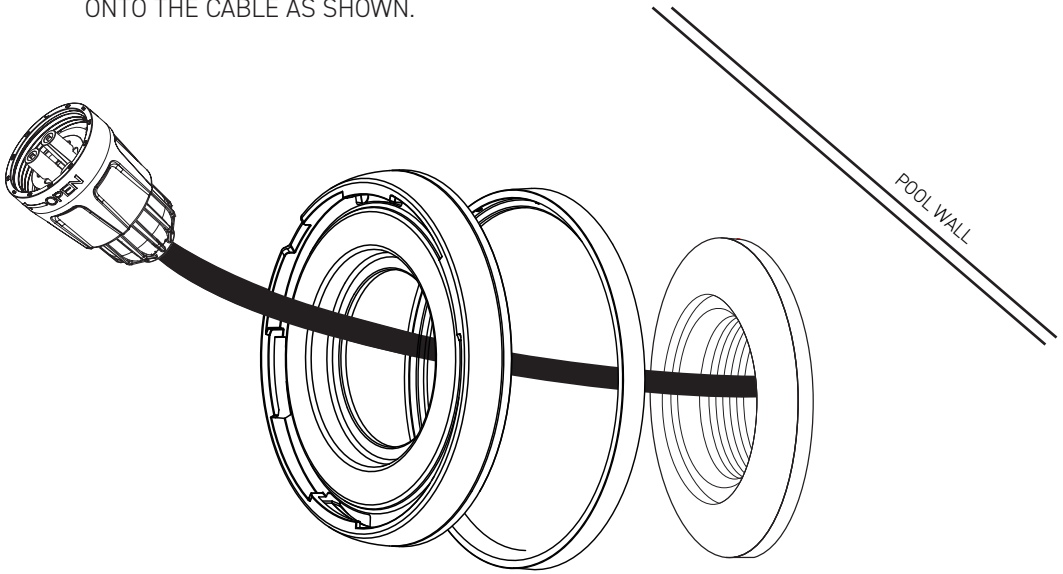
2 ATTACH SPACER RING

FEED THE CHOSEN SPACER RING
ONTO THE CABLE AS SHOWN.



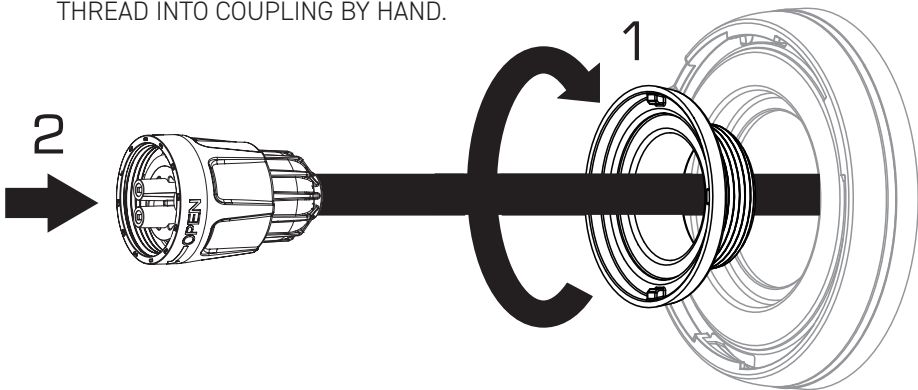
3 ATTACH ADAPTOR

FEED THE ADAPTOR PLATE
ONTO THE CABLE AS SHOWN.



4 ATTACH THREADED COLLAR

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

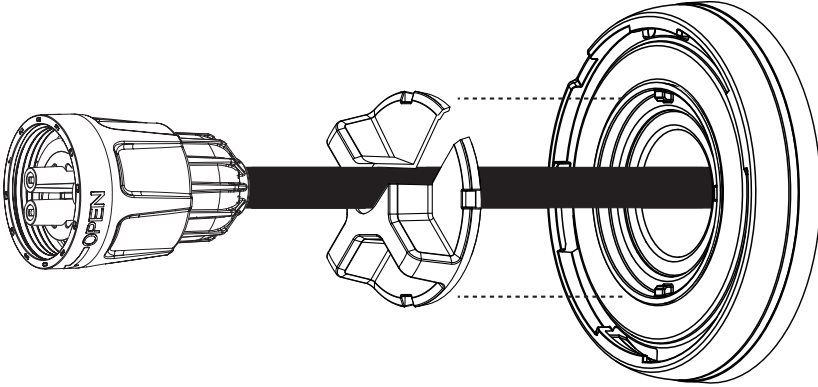


5

ADD ADAPTOR TOOL

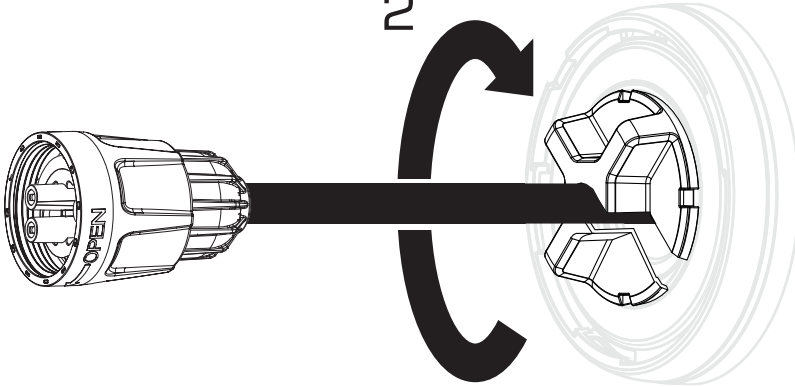
ALIGN ADAPTOR TOOL WITH THREADED COLLAR ENSURING THE CABLE IS PULLED THROUGH THE HOLE IN THE ADAPTOR TOOL

1



TIGHTEN FIRMLY BY HAND

2



REMOVE ADAPTOR TOOL AND STORE SAFELY FOR WINTERIZATION

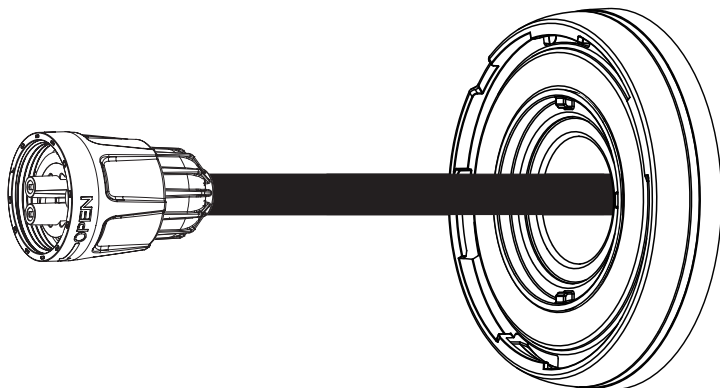


IMPORTANT NOTES

ENSURE ADAPTOR TOOL IS SAFELY STORED FOR WINTERIZATION

C: LIGHT ASSEMBLY

1 PULL OUT PLUG AND A LENGTH OF CABLE

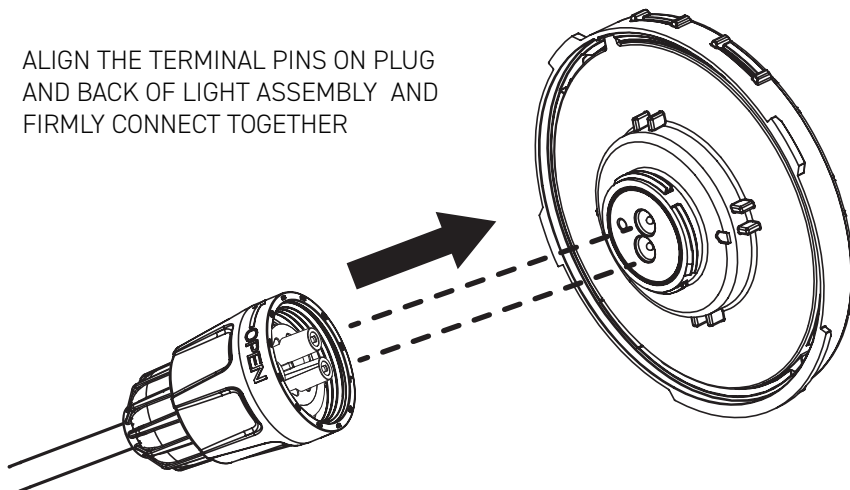


IMPORTANT NOTES

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

2 CONNECT THE TERMINALS

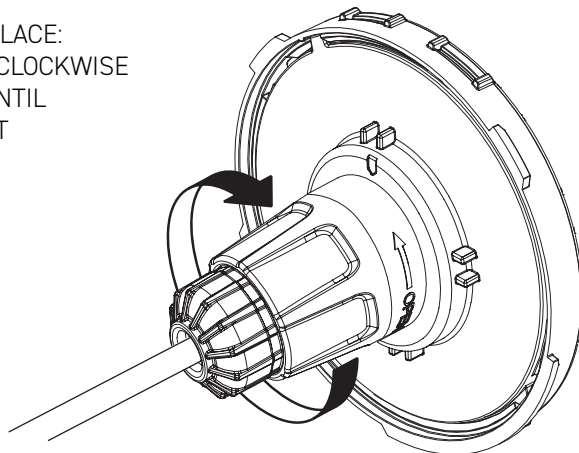
ALIGN THE TERMINAL PINS ON PLUG AND BACK OF LIGHT ASSEMBLY AND FIRMLY CONNECT TOGETHER



3

FASTEN PLUG TO LIGHT

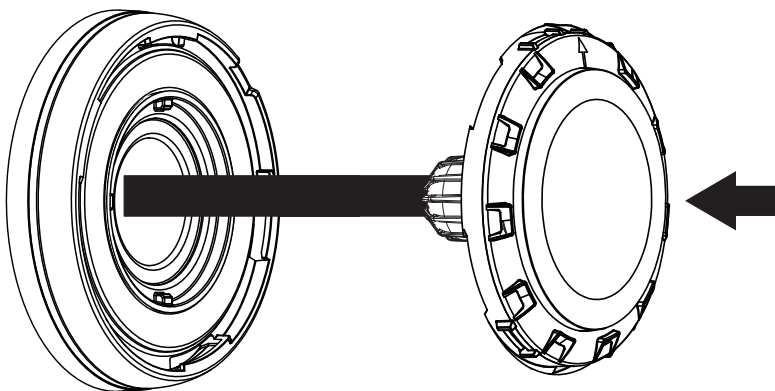
TO LOCK INTO PLACE:
TWIST COLLAR CLOCKWISE
A FEW TIMES UNTIL
IT'S HAND TIGHT



4

PULL THROUGH CABLE

PULL CABLE THROUGH CONDUIT TO DRAW LIGHT INTO ADAPTOR.

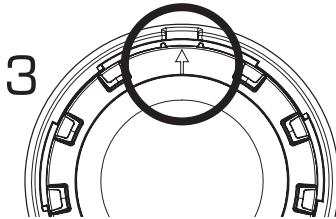
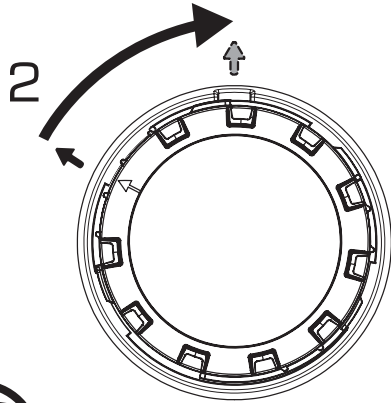
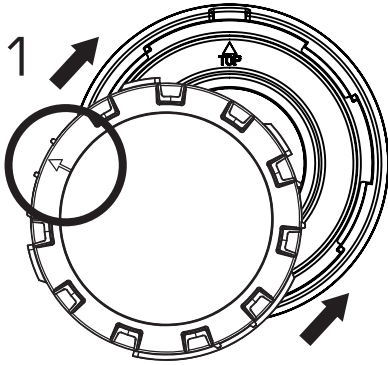


5

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



3 ENSURE THE 12 O'CLOCK MARKER ON THE CLAMP RING LINES UP WITH THE 12 O'CLOCK MARKER ON THE LIGHT ASSEMBLY

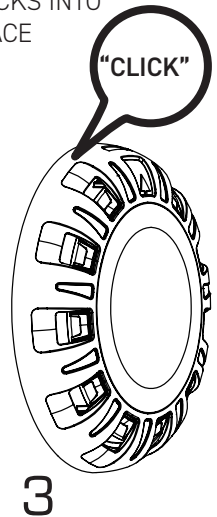
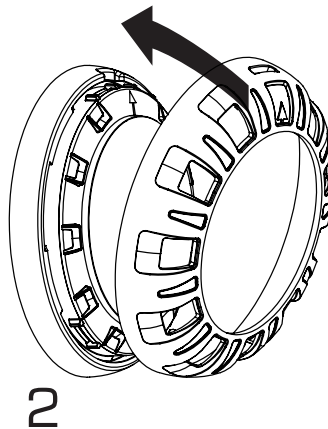
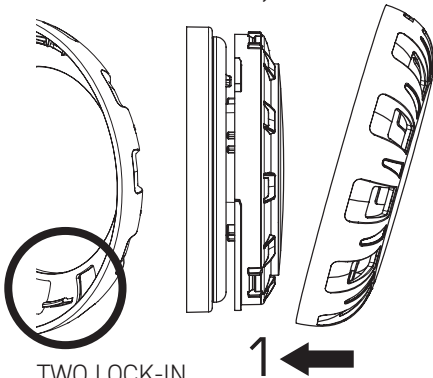
6

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 CLICKS INTO PLACE



TWO LOCK-IN TABS AT BASE

WINTERIZATION

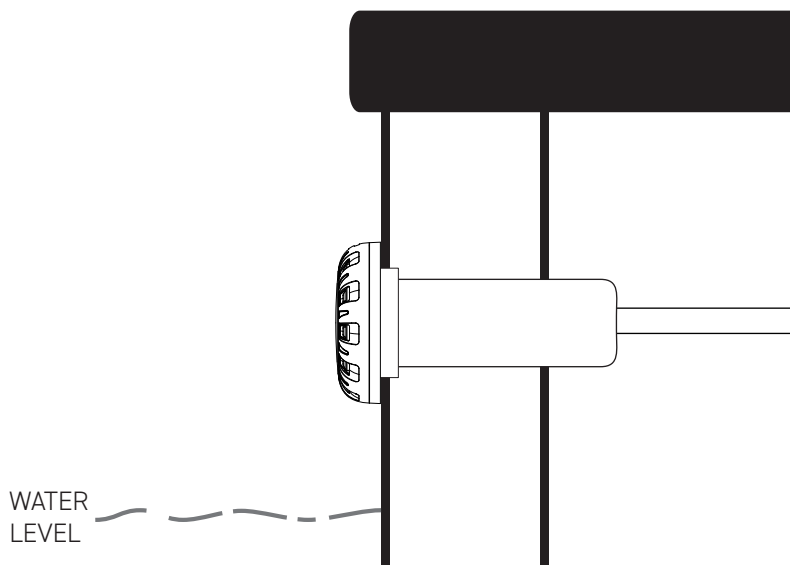
THE FOLLOWING WINTERIZATION PROCESS IS HIGHLY RECOMMENDED TO AVOID DAMAGE TO THE LIGHT ASSEMBLY AND THE SUPPORTING FIXTURES.

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.

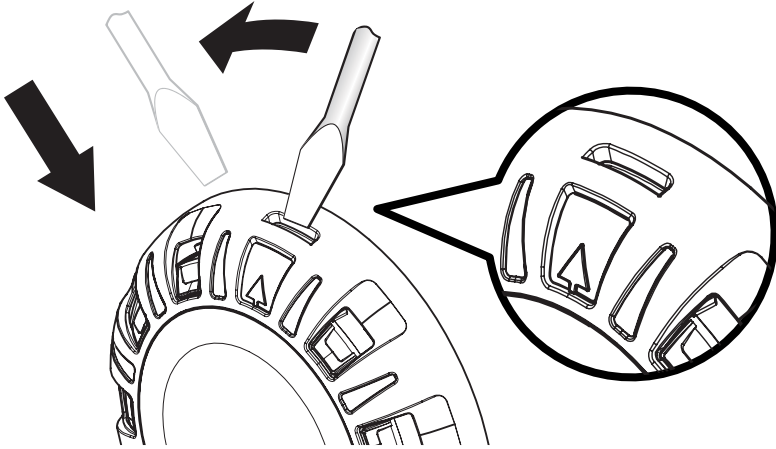
1 LOWER WATER LEVEL

LOWER WATER LEVEL TO BELOW THE LIGHT



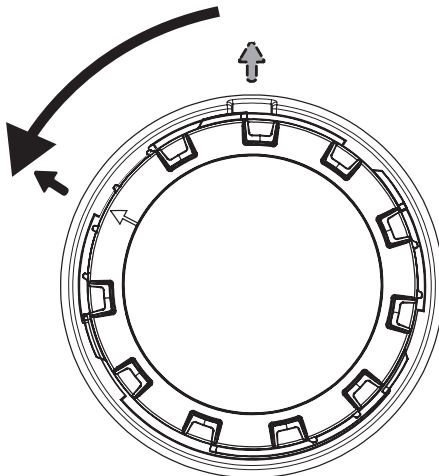
2 PUSH AND LEVER OFF LIGHT RIM WITH FLAT BLADE

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



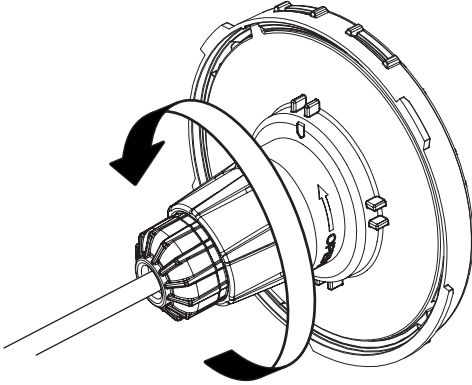
3 ROTATE AND PULL OUT LIGHT ASSEMBLY

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



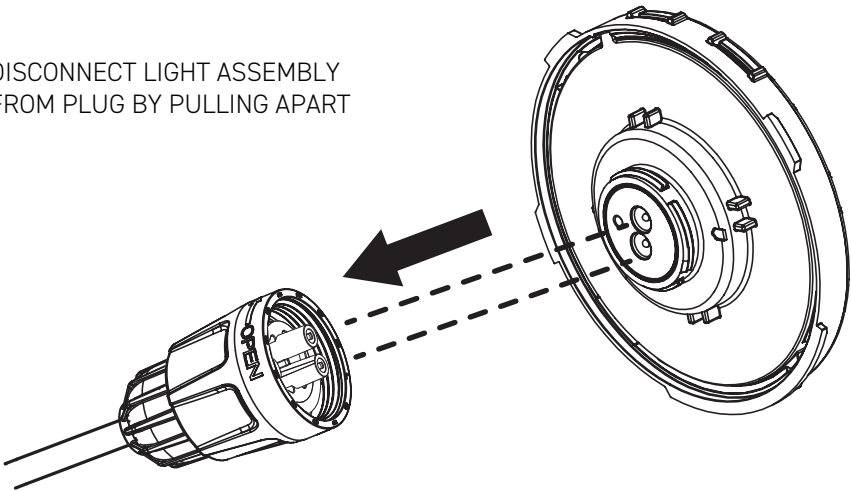
IMPORTANT NOTE

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

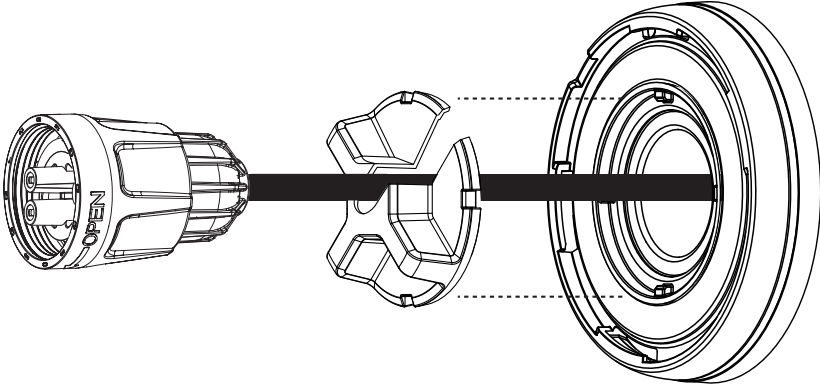


6

REMOVE THREADED COLLAR

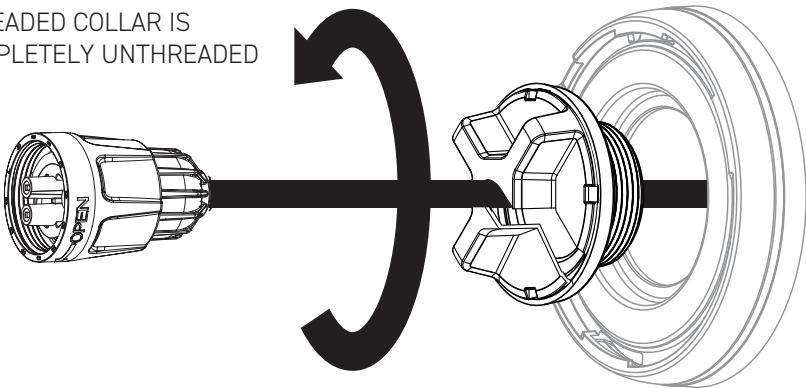
ALIGN ADAPTOR TOOL WITH THREADED COLLAR ENSURING THE CABLE IS PULLED THROUGH THE HOLE IN THE ADAPTOR TOOL

1



2

LOOSEN BY HAND UNTIL
THREADED COLLAR IS
COMPLETELY UNTHREADED

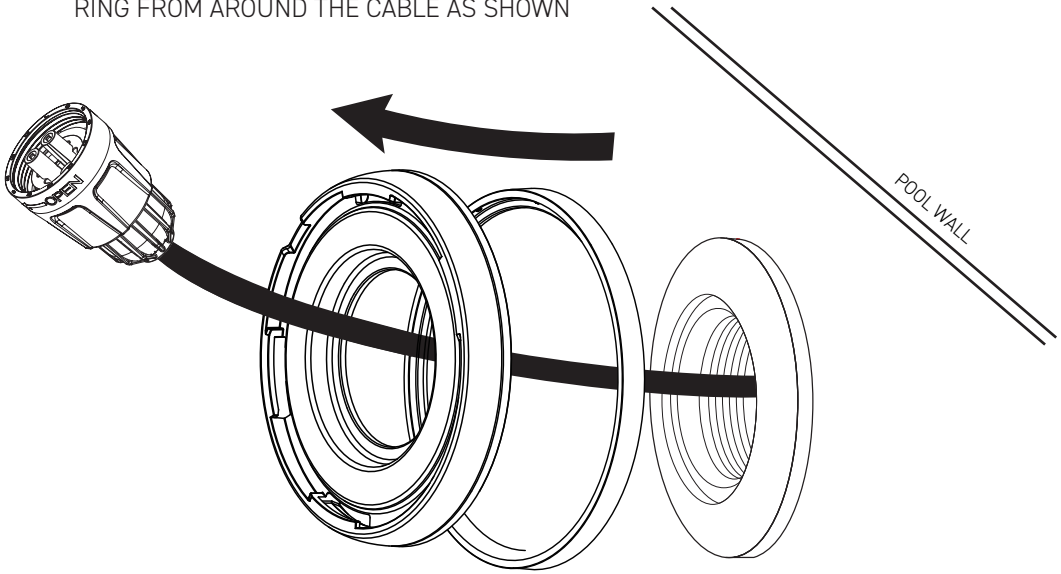


REMOVE ADAPTOR TOOL AND STORE SAFELY FOR WINTERIZATION

7

REMOVE ADAPTOR AND SPACER RING

REMOVE ADAPTOR PLATE AND SPACER RING FROM AROUND THE CABLE AS SHOWN



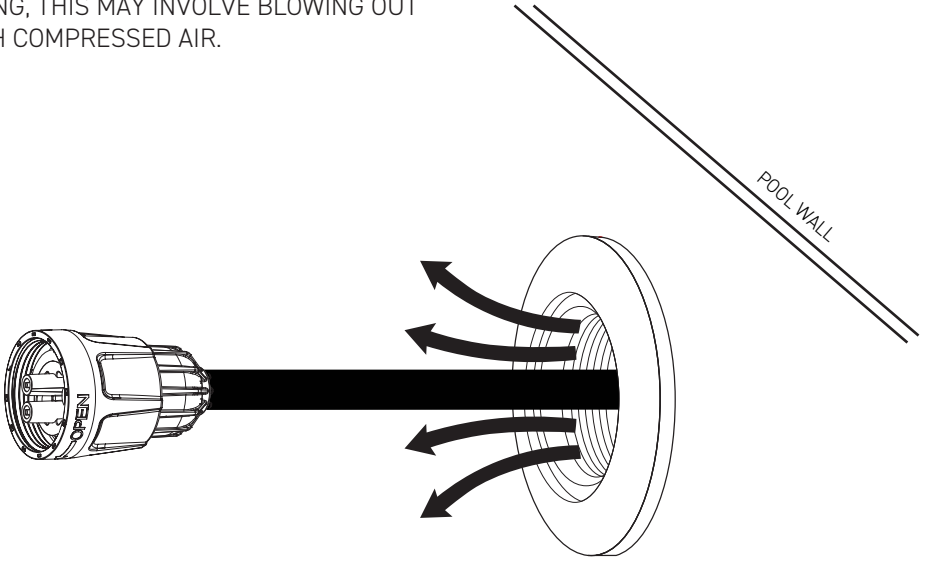
STORAGE

ENSURE REMOVED PARTS ARE STORED FOR USE NEXT SEASON

8

REMOVE WATER FROM PIPING

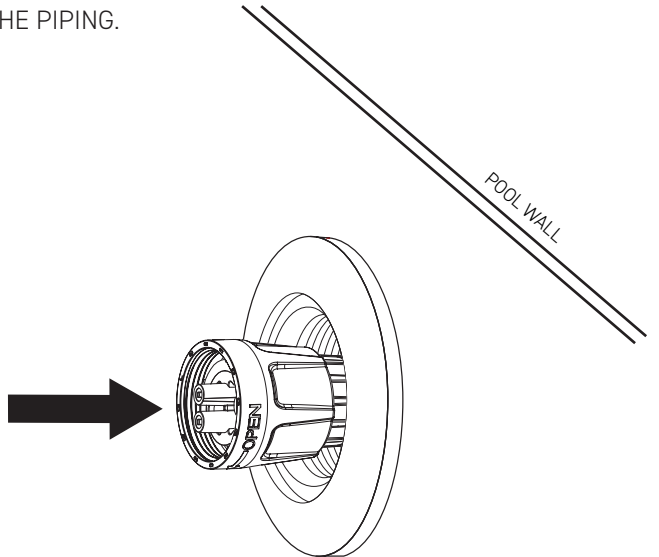
REMOVE THE REMAINING WATER FROM THE PIPING, THIS MAY INVOLVE BLOWING OUT WITH COMPRESSED AIR.



9

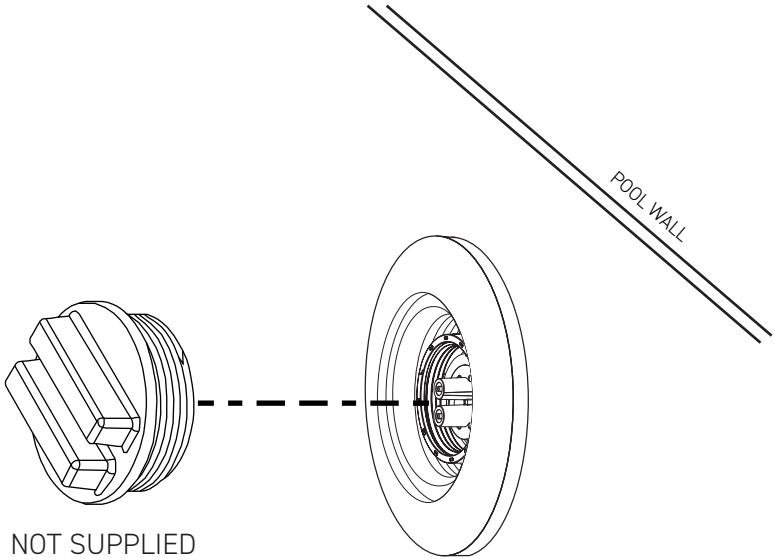
STORE CABLE

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 not operating (5)	Damage caused by high voltage and/or incorrect power supply.	Return product to your local Spa Electrics reseller or Spa Electrics for repair
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.

PAGE INTENTIONALLY LEFT BLANK



NOTE

PLEASE STORE THIS
MANUAL IN A SAFE PLACE
FOR FUTURE REFERENCE



Proudly manufactured by

Spa Electrics



www.spaelectrics.com

© COPYRIGHT 2023 SPA ELECTRICS PTY. LTD.
ALL RIGHTS RESERVED

US 2023 12 19