

STA-RITE®

SWIMQUIP BRAND

UNDERWATER POOL LIGHTS AND NICHES

FOR 12 and 120 Volt Light Fixtures

O W N E R ' S M A N U A L



INSTALLATION, OPERATION & PARTS

Sta-Rite Pool/Spa Group

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
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
S344 (Rev. 5/6/99)

READ AND FOLLOW SAFETY INSTRUCTIONS!

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


 **DANGER** warns about hazards that **will** cause death, serious personal injury, or major property damage if ignored.

 **WARNING** warns about hazards that **can** cause death, serious personal injury, or major property damage if ignored.

 **CAUTION** warns about hazards that **will** or **can** cause minor personal injury or property damage if ignored.

NOTICE indicates special instructions not related to hazards.


Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

 **WARNING** Incorrectly installed or tested equipment may fail, causing severe injury or property damage. Read and follow instructions in owner's manual when installing and operating equipment. Have a trained pool professional perform all tests.


Use equipment only in a pool or spa installation.

IMPORTANT SAFETY INSTRUCTIONS

Always follow basic safety precautions with this equipment, including the following.

 **WARNING** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

SAVE THESE INSTRUCTIONS

 **CAUTION** Glass breakage hazard. Do not push off from side of pool against light.

GENERAL NOTES

1. Install a GFCI as required by the National Electric Code and the Canadian Electrical Code.
2. All wiring should be done by a licensed electrical contractor in accordance with local electrical codes and as required by the National Electric Code or the Canadian Electrical Code, as applicable.
3. See Table I for recommended pool lighting levels. See Table II, Page 4, for light niche bulb and cord specifications.
4. **CAUTION** Risk of burns. Lights over 100W. not recommended for spa installation.

Table I: Typical Lighting Requirements

Type of Pool	Allowance of Watts/Sq. Foot of Pool Area
Small Residential Pools (Less than 800 sq. ft. (75 sq. m.))	1/2 to 1*
Large Public Pools	1 to 1-1/2
Diving Pools (Less than 12 ft. (3.65M) deep)	1-1/2 to 2
Diving Pools (12 to 20 ft. (3.65 to 6M) deep)	2 to 3
Competition Pools	2 to 3**

* One 500 Watt light at deep end of pool is recommended.

** For competition pools:

1. Make sure that the start/finish ends of lanes are well lit.
2. Never install lights in end walls at end of swimming lanes. However, if short course racing is provided across the width of a 50 meter course, light fixtures may be installed between lanes (under racing lines) on a separate switch.

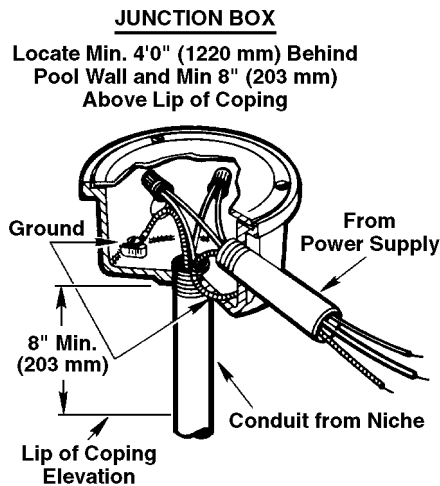


Figure 1: Junction Box, Part #05730-0021

SPECIFICATIONS for WET NICHE LUMINAIRES:

- The light itself is a copper housing with thermostat and porcelain lamp base imbedded in epoxy, heat resistant glass lens, and bulb. It is designed to operate only when fully submerged (recommended submersion depth is from 18 to 60 inches [.5M to 1.5M]). Except when installed in an area of the swimming pool that is not used for swimming and when the lens is adequately guarded to keep

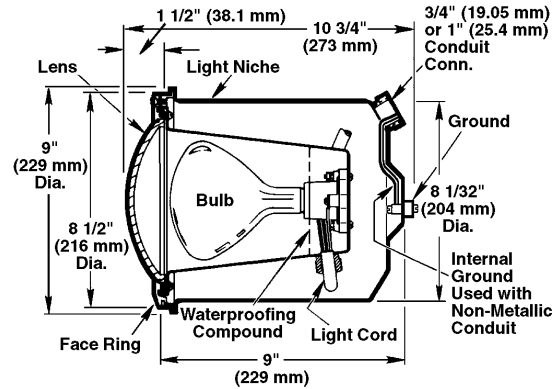


Figure 2: Niche Dimensions

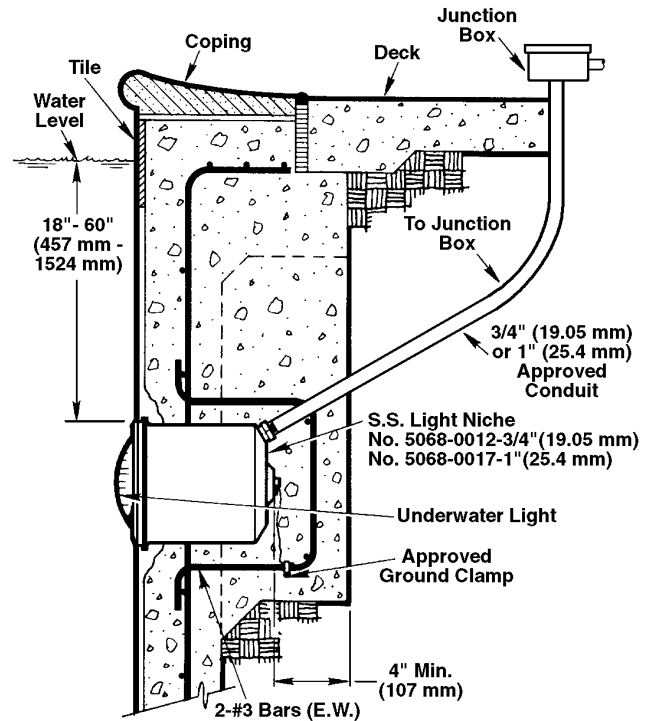


Figure 3: Niche Installation In Gunite Pool

any person from contacting it, install the fixture in or on a pool wall with the top of the lens opening at least 18 in. (.5M) below the normal water level of the pool.

- Lights and niches shall be used in fresh water pools only.
- The lens is heat resistant glass and focuses the light beam in a 30° horizontal arc, with 15° downward deflection, and is sealed by a molded one-piece wrap-around neoprene gasket. A stainless steel face ring with 10 mounting studs fastens the lens to the housing. The studs give uniform pressure around the lens between the face ring and the light housing.
- The housing includes a thermostat switch attached to a porcelain medium base socket, two power terminals, and a ground wire connection. This assembly and the cord terminals are encapsulated in epoxy ("potted") to waterproof all connections. Housings for 120-volt systems include a "current collector" to ground the system in case of lens and bulb breakage.

- The light niche is formed stainless steel with 3/4" (19.05mm) or 1" (25.4 mm) I.P.S. stainless steel conduit connection and a cast bronze mounting ring. The mounting ring has a locking lug at the bottom and a tapped boss for a vandal proof securing screw at the top. Niches are provided with a No. 6 grounding connector inside for use with non-metallic conduit. Encapsulate this connection after installation of a No. 8 AWG (8,4 mm²) copper bonding wire in USA (as stated in NEC) or No. 6 AWG (14 mm²) copper bonding wire in Canada (as stated in CEC). Bulb shall be medium base, 12 volt, 100 or 300 watts (as appropriate) or medium base 120 volt 500 watts.
- The light niche is formed stainless steel with an I.P.S. stainless steel conduit connection (see Figures 2 and 3) and a mounting ring. The mounting ring has a locking lug matching the bottom of the light face ring and at the top is provided with a tapped boss for a vandal proof lock screw.
- Transformers for 12 volt light systems shall meet all requirements of NEC and UL, or CEC and CSA. Secondary (output) voltage shall be 12 volts AC. Secondary (output) current shall be 25 amps for each 300 watt light, or 8.5 amps for each 100 watt light.

Niche Installation in Gunite Pools:

1. Prior to guniting pool, put light niche in place.
2. Connect all conduit according to NEC or CEC requirements.
3. Bond niche to pool re-bar according to NEC or CEC requirements.
4. Place plastic niche cover over niche to avoid gunite entering niche cavity. Hook bottom of cover into mounting ring locking lug and thread retaining screw at top of cover into threaded boss in niche.
5. Gunite pool.
6. Remove cover and clean out niche.
7. Install light, leaving enough cable in niche to allow fixture to be removed and brought up to pool deck level for re-lamping or servicing.

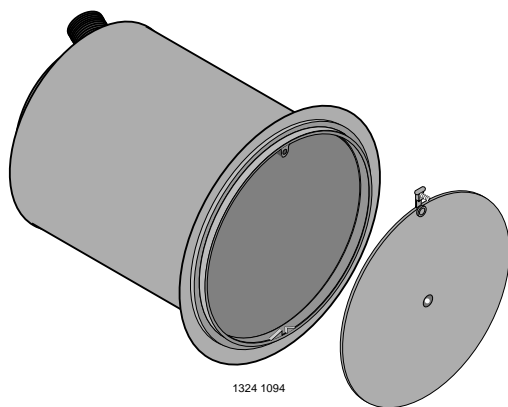


Figure 4: Gunite (concrete) pool niche with cover. Cover will keep niche clean during pool construction. Remove before use.

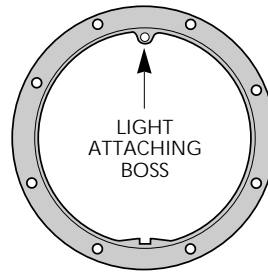


Figure 5: Niche Face Ring

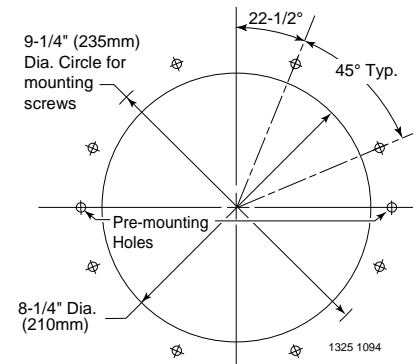


Figure 6: Hole Pattern for Niche Face Ring

Niche Installation in Fiberglass Pools WITHOUT vinyl Liner:

1. Place one gasket on back side of panel making sure holes are aligned properly. Hold gasket in place with masking tape.
2. Slip back ring over niche, aligning the two pre-mounting holes with niche pre-mounting lugs.
3. Pre-mount niche to panel and back ring with two 1/4-20 x 1" slotted flat head screws.
4. Bond back ring and niche to ground using a #8 AWG (8,4 mm²) copper wire in USA (use #6 AWG [14 mm²] copper wire in Canada).
5. Place second gasket on back side of niche face ring and align with mounting holes in panel.
6. Fasten niche face ring to back ring with eight 1/4-20 x 1-1/4" screws. Tighten securely.
7. If non-metallic conduit is used, provide #8 (8,4 mm²) copper ground wire attached to the ground lug located on inside of niche.
8. Install light, leaving enough cable in niche to allow fixture to be removed and brought up to pool deck level for re-lamping or servicing.

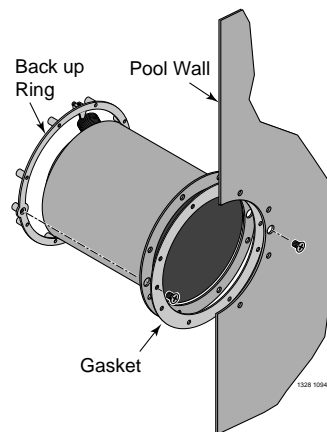


Figure 7: Install niche in pool wall; add gasket and backing ring behind wall. Secure with 2 flat-head screws supplied.

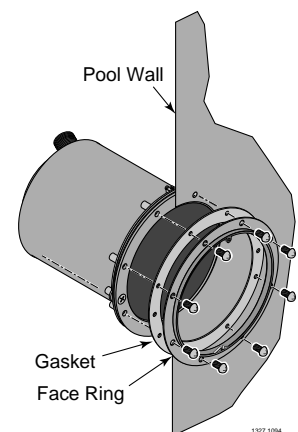


Figure 8: Add gasket and niche face ring to front of niche. Secure through pool wall with 8 round head screws supplied.

Niche Installation in Fiberglass Pools WITH Vinyl Liner:

1. Place one gasket on back side of niche making sure holes are aligned properly. Hold gasket in place with masking tape.
2. Slip niche through panel hole. Slip back ring over niche, aligning the two pre-mounting holes with niche pre-mounting lugs.
3. Pre-mount niche to back ring with two 1/4-20 x 5/8" slotted flat head screws.
4. Bond back ring and niche to ground using a #8 AWG (8,4 mm²) copper wire in USA (use #6 AWG [14 mm²] copper wire in Canada).
5. Install liner.
6. Locate panel holes and pierce liner to allow mounting screws to pass through.
7. Place second gasket on back side of face ring and align with mounting holes in liner and panel.
8. Fasten face ring to back ring with eight 1/4-20 x 1" screws. Tighten securely.
9. Cut opening in liner to accept light assembly.
10. If non-metallic conduit is used, provide #8 (8,4 mm²) copper ground wire attached to the ground lug located on inside of niche.

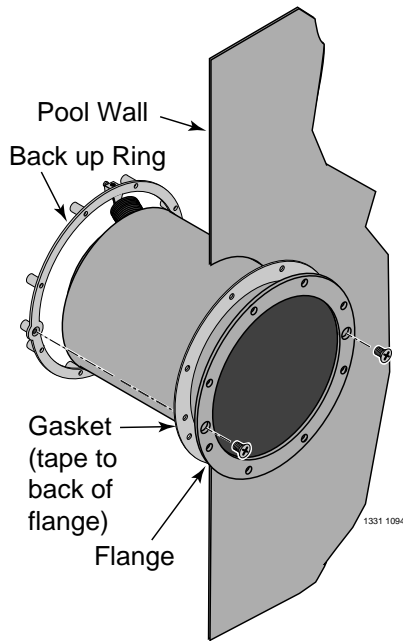


Figure 9: Temporarily mount gasket to back of niche flange with masking tape. Install niche in wall, add backing ring and fasten with two flat-head screws supplied. Bond back ring to pool structure with #8 (8,4 mm²) wire.

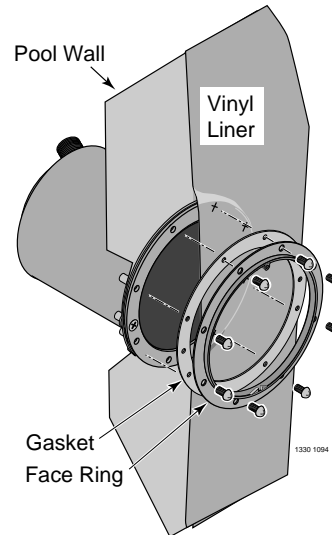


Figure 10: Install pool liner; install niche face ring with 8 round head screws supplied.

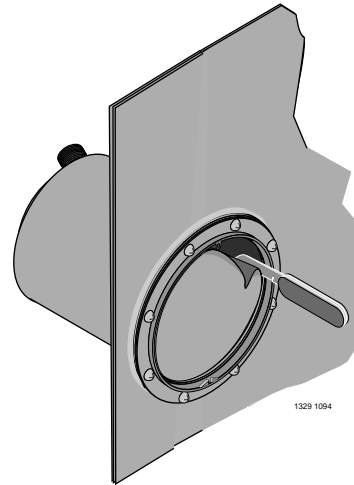


Figure 11: Cut liner out of niche opening with sharp knife. Niche is ready for light.

Table II: Bulb and Cord Specifications

Catalog No.	Cord Length	Watts/Volts	Cable Size/Type
05081-0015	15'(4.6M)	100W/12V	16/3 STW-A
05081-0025	25'(7.6M)		
05081-0035	35'(10.7M)		
05081-0050	50'(15.2M)		
05082-0025	25'(7.6M)	300W/12V	12/3 STW-A or SJTW-A
05082-0035	35'(10.7M)		
05082-0050	50'(15.2M)		
05086-0025	25'(7.6M)	500W/120V	16/3 STW-A
05086-0025	25'(7.6M)		
05086-0035	35'(10.7M)		
05086-0050	50'(15.2M)		
05057-0025	9'(2.7M)	500W/120V	14/3 SOW-A

All lights accept Color-Kit lenses No. 05070-0046.

All cables are marked "Water Resistant".

LIGHT HOUSING – ALL INSTALLATIONS



WARNING

Risk of electrical shock, cuts and burns. Make sure circuit breaker is off before re-lamping. Avoid direct impacts on glass lens. Do not install damaged or broken lens. Instead, replace lens.

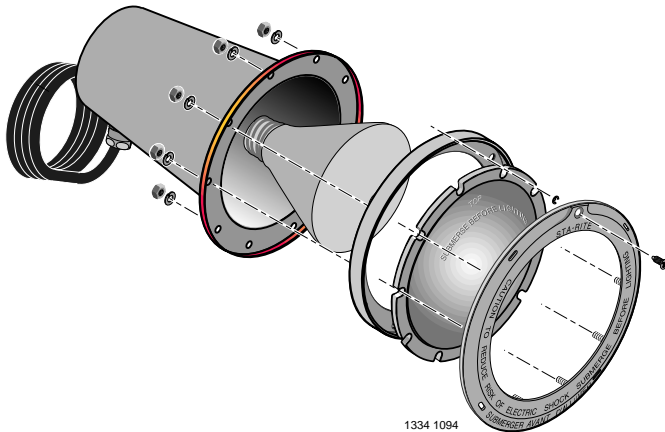


Figure 12: Light assembly for installation in niche. Make sure lens gasket (Key No. 4, Page 6) is free of cuts, cracks, or deterioration before assembling light housing.

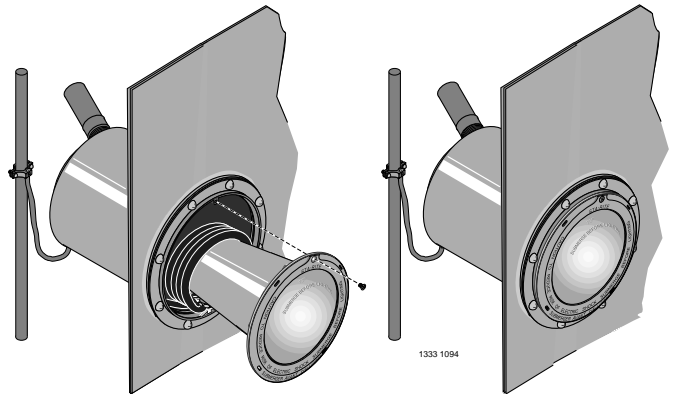


Figure 13: Install light assembly in niche. Note that enough cable is coiled around rear of light housing to allow lamp to be removed and brought up to pool deck level for service. To install, slip hook on bottom of light face ring over lug in bottom of niche face ring. Fasten light with screw at top of face ring.

NOTICE: To prevent light housing overheating, do not plug vent slots in face ring.

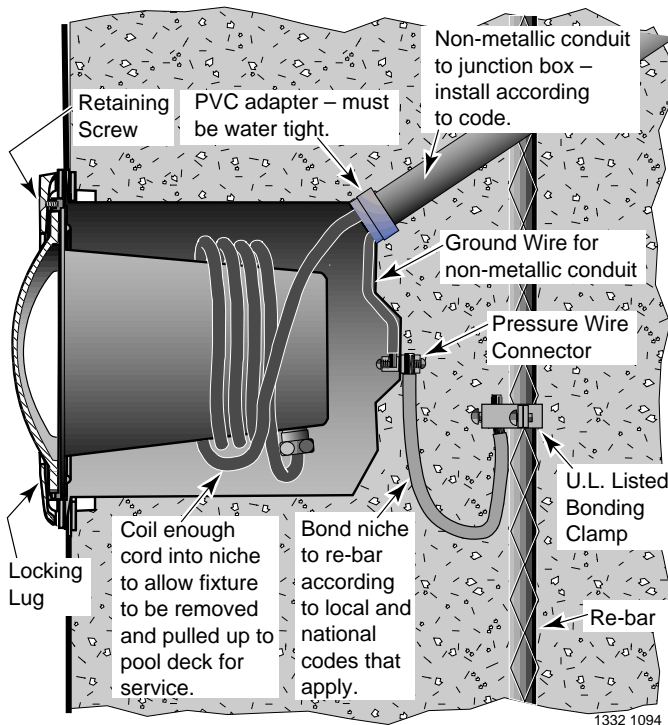


Figure 14: Details of wiring. Light must be installed with cord connector at bottom of light as shown. See Decal on light housing.

NOTICE: All wiring should be done by a licensed electrical contractor in accordance with local codes and National Electrical Code or Canadian Electrical Code. Install on a GFCI protected circuit; regularly test GFCI's according to manufacturer's instructions.

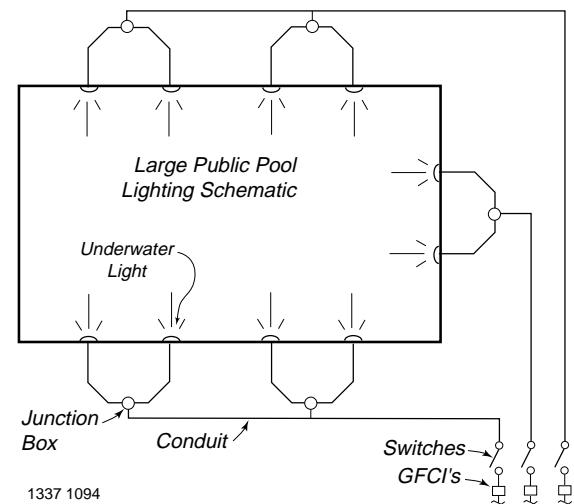
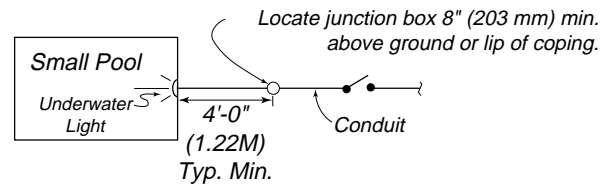
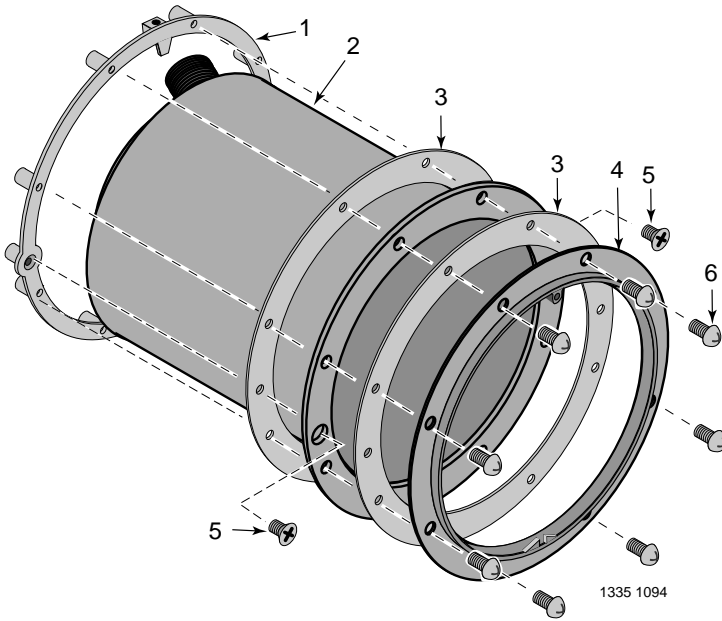


Figure 15: Lighting schematic for small private pools and large public pools. 12-Volt system transformer installations must meet all applicable code requirements.

Repair Parts – Light Niche for Vinyl liner Pools

Niche #05068-0121 for 3/4" Conduit, Niche #05068-0171 for 1" Conduit

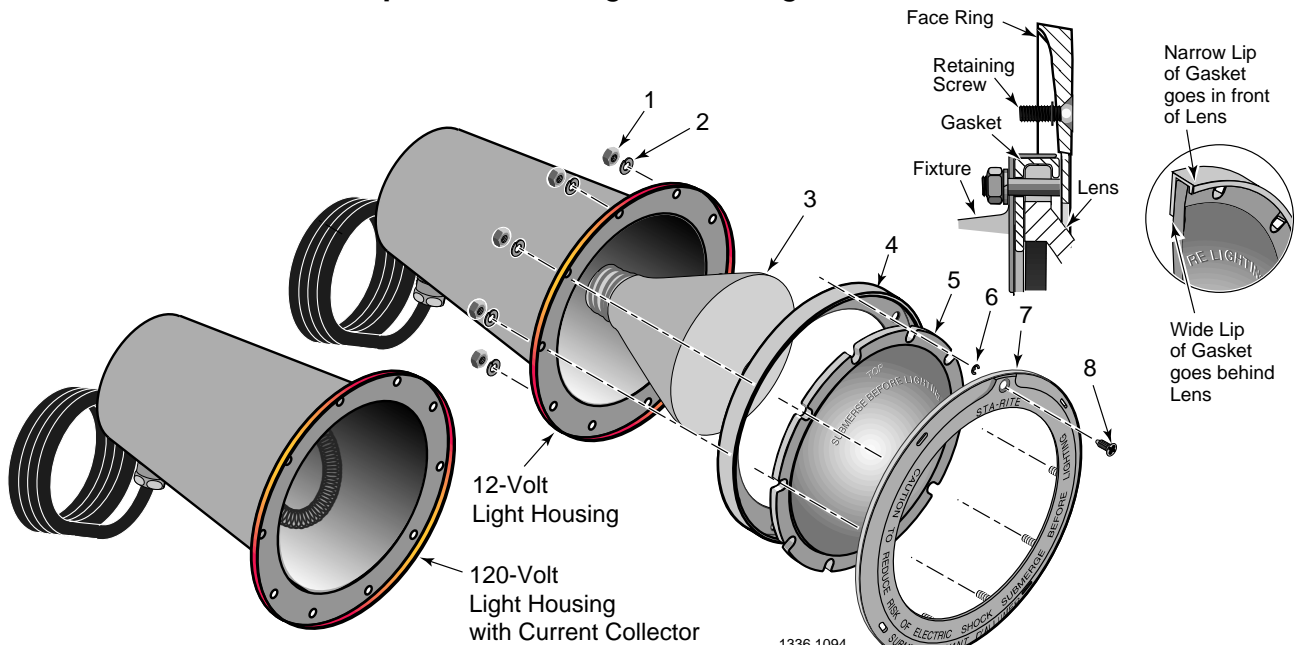


Key No.	Part Description	Qty	Part No.
1	Back up Ring	1	05057-0343
2	Niche Only (3/4" Conduit)	1	05068-0122
2	Niche Only (1" Conduit)	1	05068-0172
3	Rubber Gasket	2	05057-0667
4	Niche Face Ring	1	WC3-53SS
5	1/4-20x5/8" SS FH Screw	2	37057-0209
6	1/4-20x1" RH Screw	8	37067-0712
5	1/4-20x1" SS FH Screw	2	37057-0712
6	1/4-20x1-1/4" RH Screw	8	37067-0714
•	1/4-28 x 1/4" Set Screw	1	37157-0152

• Not shown.

NOTE: Two complete sets of mounting screws (one long, one short) are shipped with each niche. When ordering replacements, order the set which matches your pool wall thickness.

Repair Parts – Light Housing (All Models)



Key No.	Part Description	Qty	Part No.	Key No.	Part Description	Qty	Part No.
1	10-32 Lock nuts	10	U36-106SS	4	Lens Gasket	1	05057-0118
2	#10 Lockwasher	10	38917-0206	5	Clear Lens	1	05055-0003
3	Light Bulb (12V, 100W)	1	34600-0005	6	E-Ring	1	33103-0006
3	Light Bulb (12V, 300W)	1	34600-0004	7	Face Ring	1	WC203-52SS
3	Light Bulb (120V, 500W)	1	34600-0003	8	Retaining Screw	1	37337-0079

STA-RITE LIMITED WARRANTY

Pumps, filters, skimmers, underwater lights (except bulbs), accessories and fittings manufactured by Sta-Rite are warranted to be free of defects in material and workmanship for one (1) year from date of installation.

Product specific warranties:	Year from date of installation
<i>HRPB, DEPB and System 3</i> – Tanks	10 years
Internal filter components and valves	1 year
<i>Max-E-Therm</i> – Pool/Spa Heaters	2 years
Heater Enclosure only (Upper RH & LH; lower enclosure; and control board enclosure)	10 years
<i>Automatic Pool Cleaners including Hose</i>	2 years
<i>Cristal-Flo filters</i> – Tanks	10 years pro-rated*
Valve and internal components.	1 year
<i>Posi-Flo II</i> – Tanks	10 years
Elements	1 year
<i>Waterford Sand</i> – Tanks	10 years pro-rated*
Pumps	1 year
Valve and Internals	1 year
<i>Waterford Cartridge</i> – Filter Tank	10 years
Pumps	1 year
<i>System 3 Above Ground Systems</i> – Tanks	10 years
Pumps	1 year
Platform and Internals	1 year
<i>Pumps</i>	1 year
When equipped with A.O. Smith 2-compartment motors (Does not include pumps sold as part of a systems package)	2 years

* Full warranty coverage is in effect for one year after installation. The pro-rated warranty covers the *tank only* during

the 2nd through 10th year after installation. The amount covered decreases by 10% each year. (ie., 2nd year 90% covered, 3rd year 80% covered, etc.).

The foregoing warranties relate to the original consumer purchaser ("Purchaser") only. Sta-Rite shall have the option to repair or replace the defective product, at its sole discretion. Purchasers must pay all labor and shipping charges necessary to replace the product covered by this warranty. Requests for warranty service must be made through the installing dealer. This warranty shall not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance, or other circumstances which are not in Sta-Rite's direct control.

This warranty sets forth Sta-Rite's sole obligation and Purchaser's exclusive remedy for defective products.

STA-RITE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE DURATION OF THE APPLICABLE EXPRESS WARRANTIES PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Supersedes all previous publications.

Sta-Rite Industries, Inc.
293 Wright Street
Delavan, WI 53115

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

DETACH HERE: Fill out bottom portion completely and mail within 10 days of purchase/installation to:

▼ Sta-Rite, Attn: Warranty Dept., 293 Wright St., Delavan, WI 53115



Warranty Registration Card

Name _____

Years pool has been in service less than 1 1-3 3-5 5-10 _____

Address _____

Purchased from:
 Company name _____

City _____ State _____ Zip _____

Address _____

Purchase Date _____

City _____ State _____ Zip _____

Product Purchased _____

New installation Replacement _____

Please send me more information on these other products from Sta-Rite.

Type of Pool Inground Vinyl Fiberglass Gunite _____

Pumps Filters Automatic Pool Cleaners
 Maintenance Equipment Test Strips
 Heaters

Size of Pool _____