



Source Four CE Assembly Guide

Production Dates: September 2004–Present

Part Number: 7060M2510-06.01 Rev: F

Released: 2021-11

To view a list of ETC trademarks and patents, go to etcconnect.com/ip. All other trademarks, both marked and not marked, are the property of their respective owners.

ETC intends this document, whether printed or electronic, to be provided in its entirety.

Table of Contents

Introduction	1
Document Conventions.	1
Help from ETC Technical Services.	2
Basic Luminaire	3
Assembling the Basic Luminaire	4
Lamp Socket Assembly	5
Assembling the Lamp Socket	6
Reflector Housing Assembly	9
Removing the Reflector	9
Installing the Reflector	10
Cleaning the Reflector	10
Shutter Barrel Assembly	11
Assembling the Shutter Barrel	12
Lens Tubes: 19°, 26°, 36°, and 50°	13
Assembling the Lens Tube: 19°, 26°, 36°, and 50°	14
Lens Positions.	14
Lens Markings	15
Assembling the Lens Tube	16
Cleaning the Glass Lens: 19°, 26°, 36°, 50°, and all EDLT lenses	17
Lens Tube: 10°	18
Lens Tube: 5°	19
Assembling the Lens Tubes: 5° and 10°	20
Cleaning the Polymer Lenses: 5° and 10°	20
Lens Tube: 14°	21
Lens Markings and Positions: 14°	22
Assembling the Lens Tube: 14°	22
Cleaning the Glass Lenses: 14°	22

Lens Tube: 70°	23
Lenses: 70°	24
Lens Markings and Positions: 70°	25
Assembling the Lens Tube: 70°	25
Cleaning the Glass Lens: 70°	25
Lens Tube: 90°	26
Lenses: 90°	27
Lens Markings and Positions: 90°	28
Assembling the Lens Tube: 90°	28
Cleaning the Glass Lens: 90°	28

Introduction

Welcome to the *Source Four CE Assembly Guide*.

Please note that the part numbers listed in this guide may differ from the parts required for your particular Source Four fixture. Part numbers for fixtures change occasionally as parts are replaced or upgraded.

To ensure that you are ordering the proper part for your specific fixture, please contact your ETC dealer, or ETC Customer Service for assistance.

Document Conventions

This document uses the following conventions to draw your attention to important information.



Note: *Notes are helpful hints and information that is supplemental to the main text.*



CAUTION: *A Caution statement indicates situations where there may be undefined or unwanted consequences of an action, potential for data loss or an equipment problem.*



WARNING: A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.



WARNING: RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.

All ETC documents are available for free download from our website: etconnect.com.

Please email comments about this manual to: TechComm@etconnect.com.

Help from ETC Technical Services

If you are having difficulties, and your problem is not addressed by this document, try the ETC support website at support.etconnect.com or the main ETC website at etconnect.com. If none of these resources are sufficient, contact ETC Technical Services directly at one of the offices identified below. Emergency service is available from all ETC offices outside of normal business hours.

When calling for help, take these steps first:

- Prepare a detailed description of the problem
- Go near the equipment for troubleshooting
- Find your notification number if you have called in previously

ETC, Inc.

Americas

Technical Services Department
3031 Pleasant View Road
Middleton, WI 53562
800-775-4382 (USA, toll-free)
+1-608 831-4116
service@etconnect.com

ETC Austin

High End Systems Products

Technical Services Department
2105 Gracy Farms Lane
Austin, TX 78758 USA
800-890-8989 (USA, toll-free)
+1-512 836-2242
hesservice@etconnect.com

ETC Ltd

Europe, Middle East, and Africa

Technical Services Department
26-28 Victoria Industrial Estate
Victoria Road,
London W3 6UU England
+44 (0)20 8896 1000
techservltd@etconnect.com

ETC GmbH

Germany, Austria, Switzerland, Eastern Europe, and Russia

Technical Services Department
Ohmstrasse 3
83607 Holzkirchen, Germany
+49 (80 24) 47 00-0
techserv-germany@etconnect.com

ETC France

France

Zone Urbaparc -
Bâtiment E
6 Boulevard de la Libération
Saint-Denis, 93200
+33 1 4243 3535
techservfrance@etconnect.com

ETC Asia

Asia

Technical Services Department
Room 1801, 18/F
Tower 1, Phase 1 Enterprise Square
9 Sheung Yuet Road
Kowloon Bay, Kowloon, Hong Kong
+852 2799 1220
techserv-asia@etconnect.com

Basic Luminaire

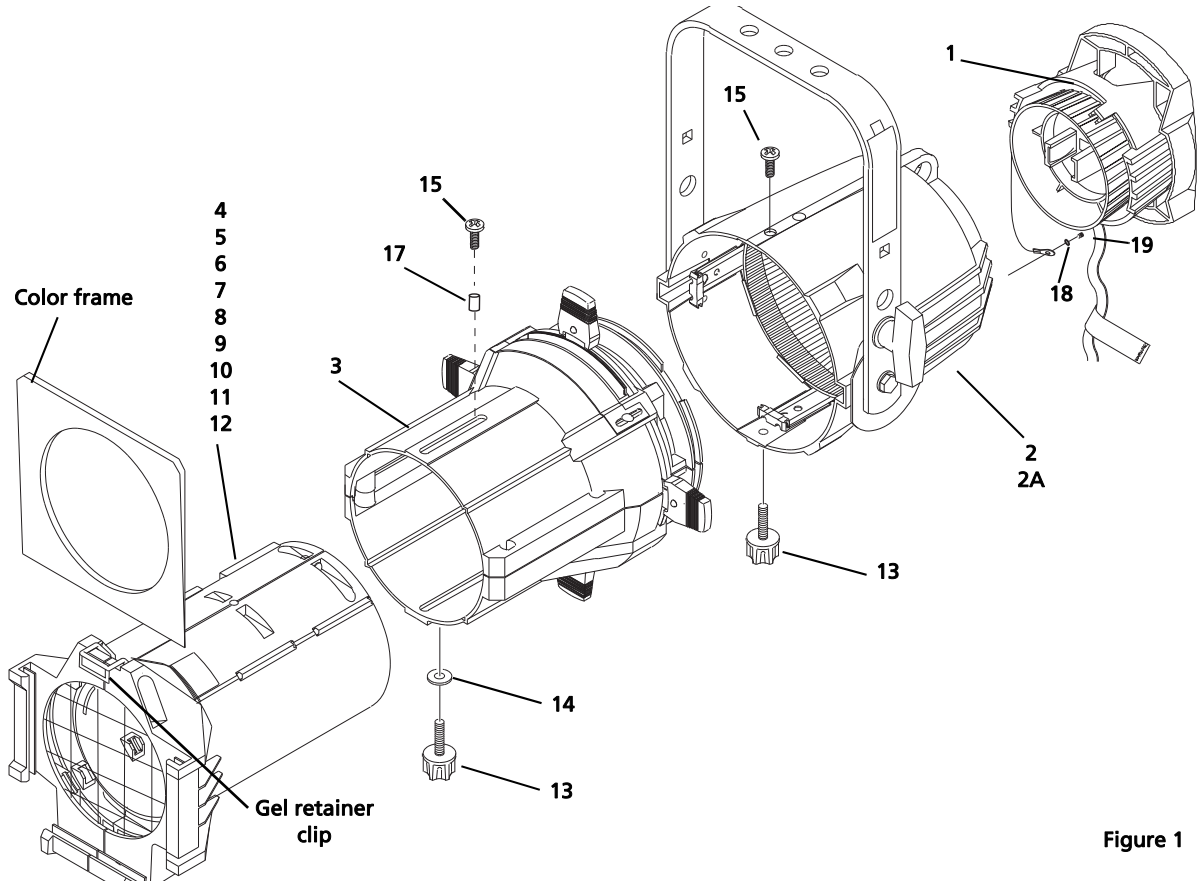


Figure 1

Reference	Part Number	Description	Quantity
1	7060A2208	Lamp socket assembly (See page 6)	1
2	7060A2211-K	Reflector housing assembly, single clutch	1
2A	7060A2220-K	Reflector housing assembly, double clutch	1
3	7060A2012-K	Shutter barrel assembly	1
4	7060A2000-K	5° lens tube, with knob (See page 19)	1
5	7060A2001-K	10° lens tube, with knob (See page 18)	1
6	7060A2050-K	14° lens tube, with knob (See page 21)	1
7	7060A2202-K	19° lens tube (6 x 16), with knob (See page 13)	1
8	7060A2203-K	26° lens tube (6 x 12), with knob (See page 13)	1
9	7060A2204-K	36° lens tube (6 x 9), with knob (See page 13)	1
10	7060A2205-K	50° lens tube (4.5 x 6), with knob (See page 13)	1
11	7060A2051-K	70° lens tube, with knob (See page 23)	1
12	7060A2052-K	90° lens tube, with knob (See page 26)	1
13	7060A4008-01	Knob set with male insert	2
14	HW5143	Washer, flat fiber	1
15	HW5197	Screw, 1/4-20 x 5/8, black zinc	2
17	HW5200	Washer, spacer, .253 x .281 x .438	1
18	HW349	Washer, Ext #8, .170 x .381 x .023, zinc	1
19	HW3117	Screw, 8-32 x 3/8, Taptite	1

Assembling the Basic Luminaire

- 1: Follow instructions under [Assembling the Lamp Socket](#) on [page 6](#).
- 2: Follow instructions under [Reflector Housing Assembly](#) on [page 9](#).
- 3: Follow instructions under [Shutter Barrel Assembly](#) on [page 11](#).
- 4: Assemble Lens Tubes following the instructions for your applicable lens degree application.
- 5: Insert lens tube assembly (4–12) fully into the shutter barrel assembly (3). Align the mounting hole with the slot and secure with knob (13). Install screw (15) and spacer (16) on top of shutter barrel. See [Figure 1](#).
- 6: Install reflector housing (2) onto shutter barrel assembly (3) and align the two mounting holes. Secure with screw (15) top of reflector housing and knob (13) on bottom. Tighten both securely. See [Figure 1](#).
- 7: Install the lamp socket assembly (1) to the reflector housing (2) and secure with brass knurled screw on rear of lamp socket assembly.
- 8: Secure the earth bond wire to the luminaire body using screw (19) and washer (18).
- 9: Release the gel retaining clip by pushing it sideways while gently pulling backwards.
- 10: Insert the color frame.
- 11: Lock the clip by pushing sideways while gently pushing it forward.

Lamp Socket Assembly

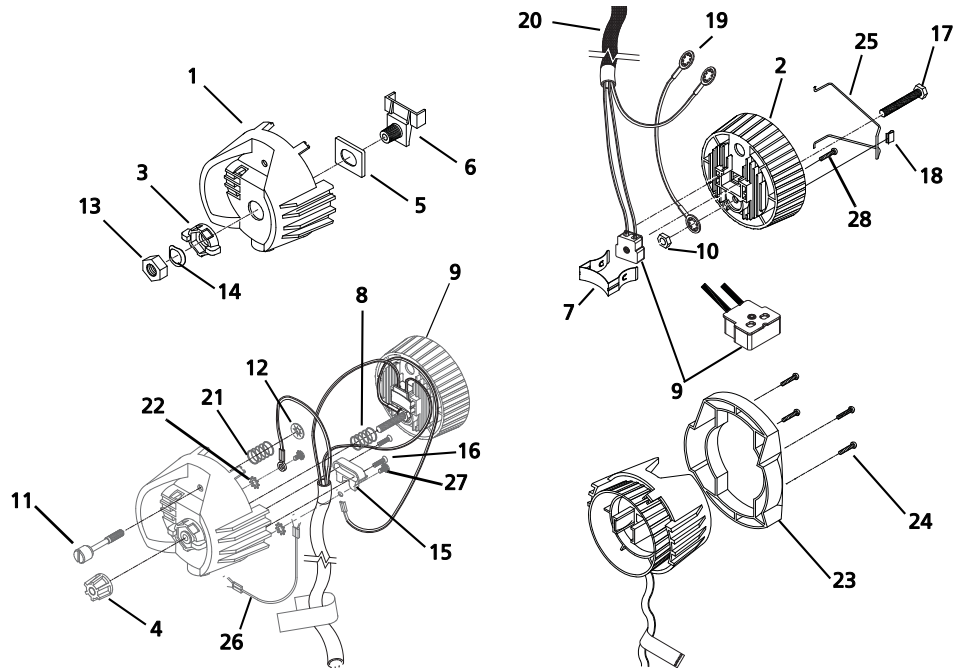


Figure 2

Reference	Part Number	Description	Quantity
1	7060A3055	Housing, socket, casting, painted	1
2	7060A3007	Socket, light baffle casting, raw	1
3	7060A4007	Knob, X-Y, lamp set	1
4	7060A4008-02	Knob, Z, lamp set w/female insert	1
5	7060A4011	Bushing, cup	1
6	7060A3011	Hub, index, casting	1
7	7060A3012-0	Spring, lamp retainer, black oxide	1
8	HW748	Spring, compression	1
9	7060B7013	Complete CE socket assembly, socket + wires = 1.5 m	1
	7060B7013-L	Complete CE socket assembly, socket + wires = 3 m	
	7060B7013-5M	Complete CE socket assembly, socket + wires = 5 m	
10	HW534	Nut, hex, 1/4-20, black zinc	1
11	7060A3025	Screw, 1/4-20 knurled head	1
12	HW746	Retaining ring, flat, Southco	1
13	HW5123	Nut, hex, 9/16-18, black zinc	1
14	HW747	Washer, wave	1
15	7060A3056	Clamp, strain relief, painted	1
16	HW3103	Screw, 8-32 x 5/8 PhFHMS, black zinc	2
17	7060A3204	Bolt, 1/4-20 x 1.75, hex head cap screw, full thread	1
18	HW8209	Clip Tinnerman	1
19	7060B7014	Source Four CE ground wire	1
20	7060B7013	Source Four CE cable assembly	1
21	HW749	Spring, ground	1
22	HW349	Washer, ext. #8	1
23	7060A4037	Handle, insulated rear, black	1
24	HW2181	Screw, 6-32 x 3/4, Taptite	4
25	7060A3085	Source Four lamp retainer wire	1
26	7060B7017	Source Four retainer wire	1
27	HW385	Screw, 8-32 x 3/8, PhPHMS, SEMS	2
28	HW2125	Screw, 6-32 x 3/8, PhFHTC, Typ 1, zinc	1

Assembling the Lamp Socket

Tools Required:

- Open-end adjustable wrench or a 7/16" (11 mm) socket
- Needle-nose pliers
- #2 Phillips screwdriver

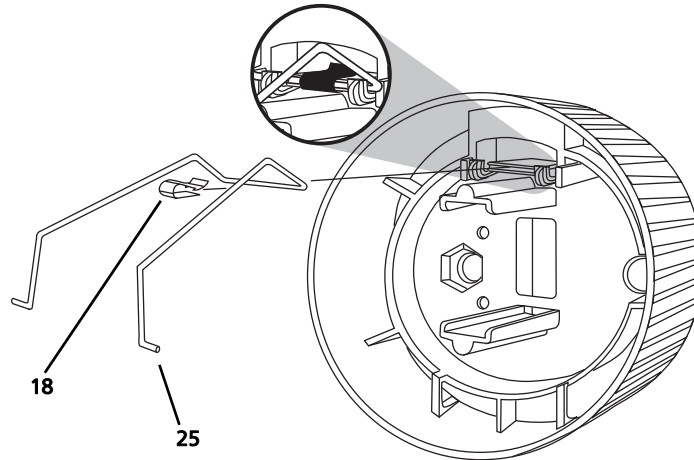


Figure 3

- 1: Set the crossbar of the retainer clip (25) under the two hooks on the clip bracket as shown in [Figure 3](#).
- 2: Place the Tinnerman clip (18) over the retainer clip crossbar between the two hooks and press it down firmly until it snaps into place.

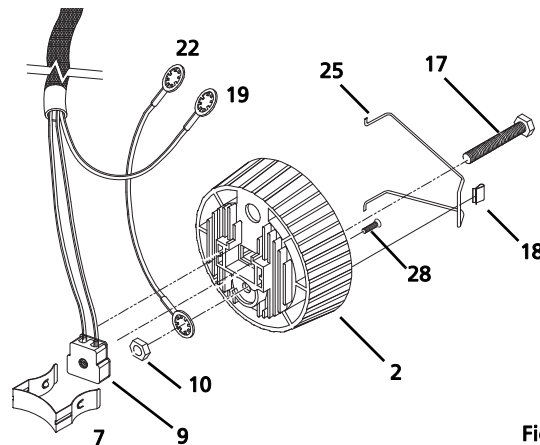


Figure 4

- 3: Insert the bolt (17) through the light baffle socket casting (2). See [Figure 4](#).
- 4: Install the green and yellow ground wire assemblies (19 and 22) on the bolt (17) with the prongs on the crimped connectors toward the casting. Run both wires through the indent in the lip around the bolt hole. Secure with nut (10) and tighten securely (6.7 Newton meters).
- 5: Place the socket assembly (9) into the light baffle socket casting (2). Be sure it is well seated.
- 6: Install the lamp retainer spring (7). The lamp retainer spring secures the socket. Insert the spring one end at a time, making sure that the rectangular slot in each side of the spring seats on the corresponding tab in the casting. See [Figure 4](#).



Note: *If the spring does not seat correctly, coax it into place with a screwdriver or needle-nose pliers.*

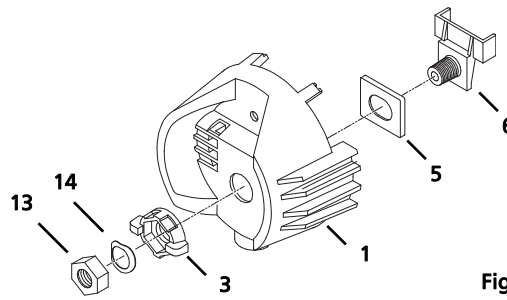


Figure 5

- 7: Install the bushing cup (5) into the housing socket casting (1) as shown in [Figure 5](#). The cup should slide smoothly up and down, but not side to side.
- 8: Insert the threaded end of the index hub (6) through the holes in the bushing cup and the back of the housing socket casting (1).
- 9: Slide the X-Y knob (3) over the exposed index hub bolt (6), then insert the wave washer (14) on the bolt and secure with the 9/16 hex nut (13). Hand-tighten the X-Y knob (3).



Note: *Install the wave washer with the upward curve toward the hex nut.*

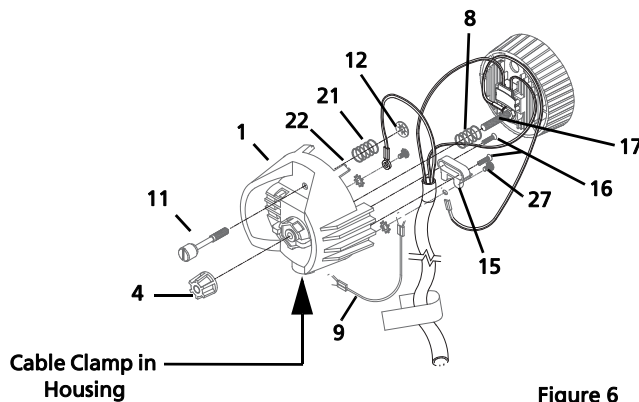


Figure 6

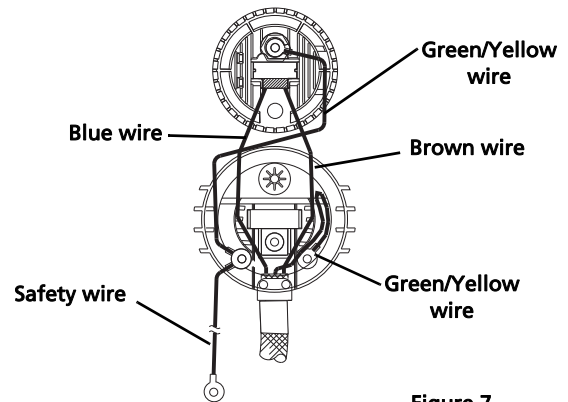


Figure 7

- 10: Insert the knurled head screw (11) through the housing socket casting (1) as shown in [Figure 6](#).
- 11: Install the ground spring (21) onto the screw and secure it with the Southco flat retaining ring (12). Install the Southco ring with its prongs away from the casting.



Note: *Use pliers to straighten the Southco retaining ring (12) if it bends when you install it on the bolt.*

- 12: Lay the leads in the bottom half of the cable clamp (located in the housing socket casting [1]), making sure that the cable insulation jacket extends slightly past the screw holes in the housing socket casting. Then, route the wires as shown in [Figure 7](#).



CAUTION: *You must follow the wire routing diagram to ensure that the socket leads do not interfere with the lamp focus mechanism.*

- 13: Install the top half of the cable clamp (15) and secure it with the two screws (16). Tighten the screws alternately to ensure a solid connection.



Note: *Make sure that the top edge of the cable clamp is even with the edge of the socket to prevent interference with lamp focus movement. Make sure that the insulation jacket is not pinched.*

- 14: Using the four screws (24), attach the handle (23) to the lamp socket assembly. See [Figure 2](#).
- 15: Place the compression spring (8) on the protrusion on the inside of the index hub. See [Figure 6](#).
- 16: Insert bolt (17) through spring (8) and through the index hub (6) of the housing socket (1), joining the two castings as shown in [Figure 6](#). Make sure that the wires are not pinched between the two pieces.
- 17: Before proceeding, check again to make sure that the wires are still positioned as indicated in [Figure 7](#). Adjust if necessary.
- 18: Press the two castings together firmly so the bottom of the light baffle (2) sits on top of the cable clamp (15), then install the Z knob (4). Hand-tighten the knob all the way to the right. See [Figure 6](#).



CAUTION: *You must install the Z knob as described above to ensure proper lamp focus travel.*

Reflector Housing Assembly

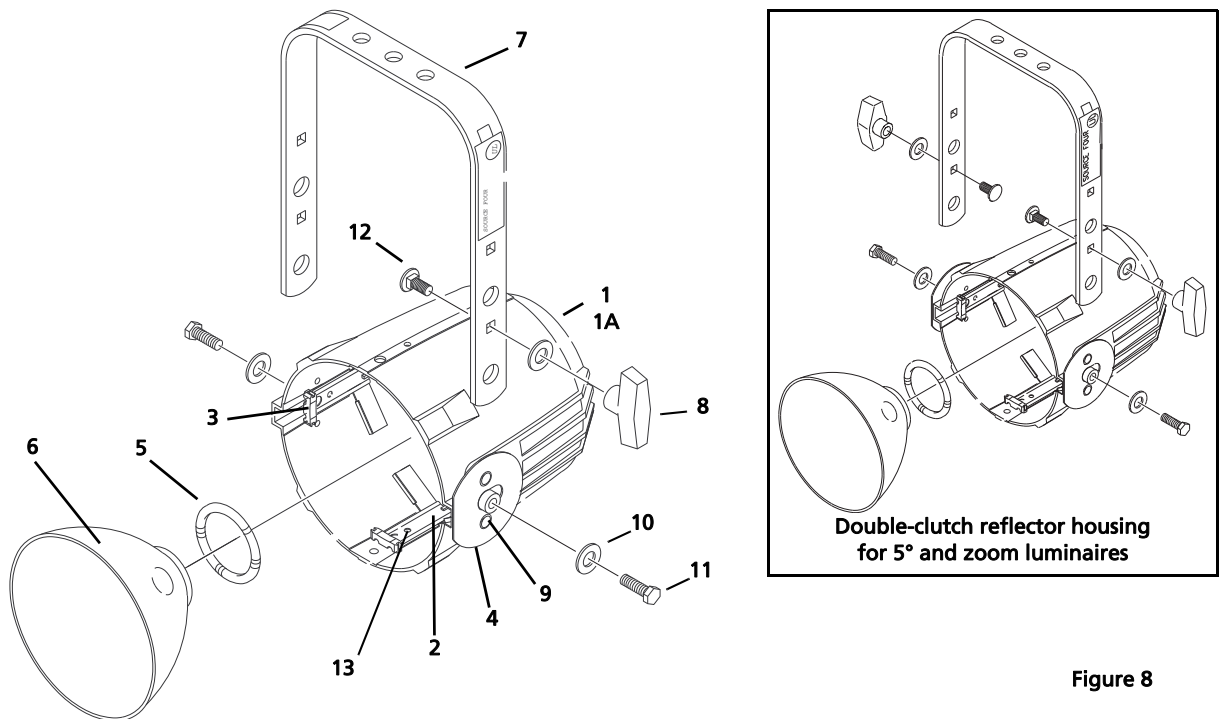


Figure 8

Reference	Part Number	Description	Quantity
1	7060A2013-K	Housing, reflector casting, single clutch	1
1A	7060A2019-K	Housing, reflector casting, double clutch	1
2	7060A3006	Clip, reflector retainer	4
3	7060A4010	Bushing, gate	4
4	7060A3016	Plate, clutch	1
5	7060A3019	Spring, reflector support	1
6	7060A4015	Reflector, molded glass, coated	1
7	7060A3058	Bracket, yoke, painted	1
8	HW8144	Handle, yoke knob, 5/16 - 18	2
9	HW753	Rivet, machine, 3/16 x .720, flat head, black zinc	2
10	HW5126	Washer, flat, 5/16, black zinc	4
11	HW5193	Bolt 5/16-18 x 3/4, black zinc	2
12	HW5125	Bolt, carriage, 5/16-18 x .75, black zinc	2
13	HW752	Rivet machine, 3/16 x 5/16, black zinc	4

Removing the Reflector

Tools Required:

- Minimally padded work surface (cardboard, carpet, or rubber mat recommended)



WARNING: This procedure may crack or break the reflector. Always wear gloves, safety glasses, and a dust mask when performing this procedure.

- Place the reflector housing facedown on your work surface so that the concave reflector surface points downward.
- Loosen the clutch and rotate the yoke so that it is perpendicular to the housing at roughly a 90° angle. Tighten the clutch.

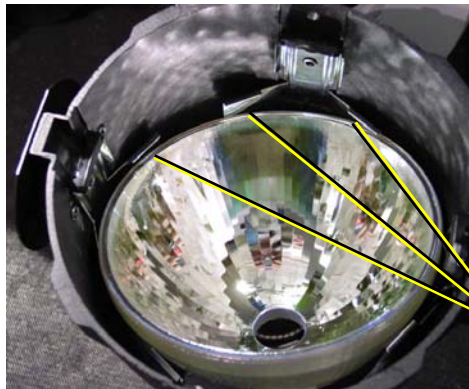
- 3: Using the yoke as your handle, raise the housing assembly off of the work surface a few inches and then firmly tap the housing on the work surface. This should force the reflector out of its clips.
- 4: Carefully lift the housing to see if the reflector is released. If it is not, repeat step 3 with slightly more force.

Installing the Reflector



Note: *The following assumes that all four reflector retainer clips (2) have already been riveted to the reflector housing casting (1) and the gate bushings (3) have been installed on the retainer clips. See [Figure 8](#).*

- 1: Place the reflector housing casting (1) on a flat work surface with the large opening facing up.
- 2: Install the reflector support spring (5) in the circular opening at the base of the casting.
- 3: Insert the reflector (6) at an angle, under any three adjacent legs of the reflector's clips.
- 4: Gently press down on the opposite side of the reflector until it snaps into place under the remaining clips.



Step 3

Under three adjacent legs of the reflector's clips



Step 4



Note: *If the reflector does not snap in, turn the casting over. Gently pull on the side of the reflector that has not snapped in until the rest of the reflector slides into place.*

Cleaning the Reflector



WARNING: Do not use ammonia-based or other harsh commercial cleaners. Clean reflector only as directed.

Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.

Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.

Shutter Barrel Assembly

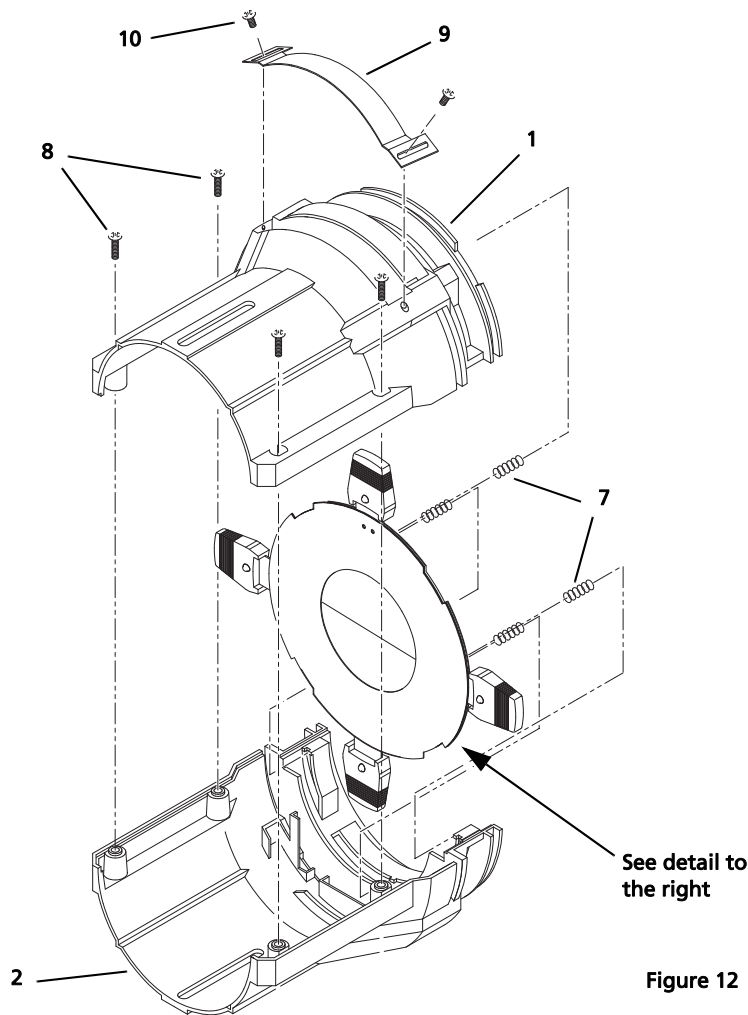


Figure 12

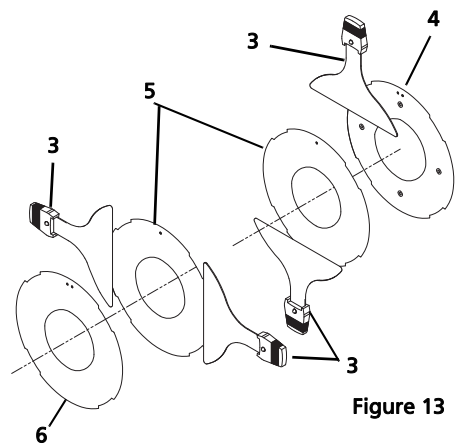


Figure 13

Shutter Assembly: The bottom divider plate (4) has four dimples punched into the surface; the top plate (6) has none. The middle divider plates (5) are noticeably thinner metal than the other two.

Reference	Part Number	Description	Quantity
1	7060A3052	Shutter barrel, top casting, black	1
2	7060A3053	Shutter barrel, bottom casting, black	1
3	7060A2025	Shutter blade assembly, 0.65 mm	4
4	7060A3001-01	Plate, divider with dimples (bottom)	1
5	7060A3003	Plate, gate (middle)	2
6	7060A3001-02	Plate, divider (top)	1
7	HW754	Shutter spring	4
8	HW3165	Screw, 8/32 x 1/2, Taptite	4
9	7060A3045	Cover, iris slot	1
10	HW372	Screw, 8-32 x 1/4, black zinc	2

Assembling the Shutter Barrel

Tools Required:

- #2 Phillips head screwdriver



WARNING: During assembly, the shutter springs can pop out of place. Always wear protective eyewear during this procedure.

- 1: Stand the top and bottom shutter barrel castings (1 and 2) upright with the shutter end of the castings toward the bottom.



Note: *The top shutter barrel casting contains the iris slot.*

- 2: Slide the bottom divider plate (4) into its place in the bottom casting (2). The dimples on the divider plate must point down.



Note: *The bottom divider plate (4) has four dimples punched into the surface; the top plate (6) has none. The middle divider plates (5) are noticeably thinner-gauge metal than the other two.*

The notches on the divider plates must fit against the flanges in the casting so that the plates do not move.



WARNING: Divider plate edges are sharp. Handle with caution.

- 3: Assemble the divider plates and shutter blades as shown in [Figure 13](#). For the shutter blade between the divider (5) and the bottom divider plate (4), pull the blade and plate assembly slightly forward to allow the handle to slip through the slot in the bottom casting, and then fully seat the blade assembly into the casting.



Note: *Make sure that no shutter assembly components are under the gobo holder guides.*

- 4: With both shutter barrel castings still standing upright, join the two halves, sliding the handle of the top shutter blade through the slot in the top shutter barrel casting (1).
- 5: Starting at the bottom of the castings (closest to the shutters), use four PHMS screws (9) to fasten the shutter barrel casting halves together, as shown. Hand-tighten only (2.8 Newton meters).



Note: *The ends of the two shutter barrel castings must be even. Adjust them as necessary before completely tightening the nuts and screws. Failure to do this could interfere with the barrel rotation.*

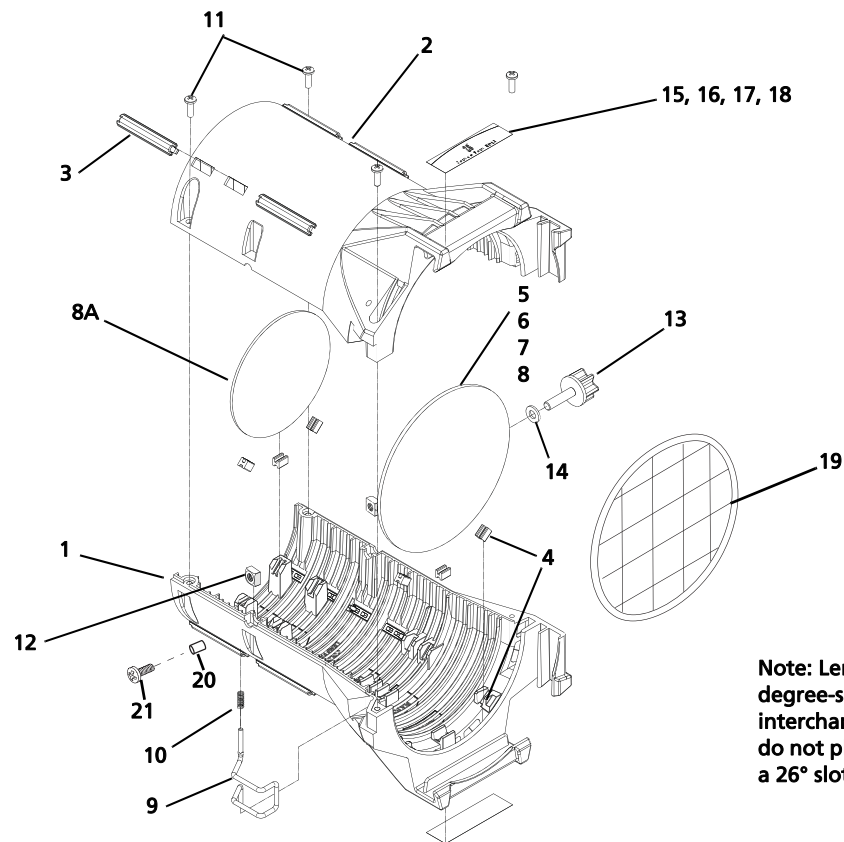
- 6: Turn over the shutter barrel assembly so that the narrower end is on your work surface.
- 7: Install the four shutter springs (7) between the four dimples in the shutter plate and the tabs in the lip of the casting.



Note: *Install the springs at the joints in the castings on either of the tabs at the joint. Once they are installed, the springs at the joints will sit at a slight angle.*

- 8: Place the iris slot cover (9) over the iris slot. Use two screws (10) to secure the cover.

Lens Tubes: 19°, 26°, 36°, and 50°



Note: Lenses are degree-specific. Do not interchange lenses (i.e., do not place a 19° lens in a 26° slot).

Figure 14

Reference	Part Number	Description	Quantity
1	7060A3169	Lens tube, left, black	1
2	7060A3171	Lens tube, right, black	1
3	7060A4009	Bushing, guide	8
4	7060A4012	Pad lens support - asphere	5
		Pad lens support - meniscus set	10
5	7060A4077	Aspheric lens, 19°	1
6	7060A4001	Aspheric lens, 26°	1
7	7060A4004	Aspheric lens, 50°	1
8	7060A4020	Meniscus lens, 36° set, front	1
8A	7060A4123	Bi-convex lens, 36° set, coated, rear (36° Only)	1
9	7060A3079	Clip, gel retainer, 90° bend	1
10	HW750	Spring, retainer	1
11	HW369	Screw, Phillips, 8-32 x 5/8, Taptite	4
12	HW5494	Nut, 1/4-20, 7/16, 7/32, square steel	2
13	7060A4008-01	Knob set with male insert	1
14	HW5143	Washer, flat, 1/4	1
15	7060A4033	19° lens tube label	1
16	7060A4034	26° lens tube label	1
17	7060A4035	36° lens tube label	1
18	7060A4036	50° lens tube label	1
19	7060A1047	Safety Screen, S4 Enhanced	1
20	HW5200	Washer, .251 x .281 x .438, brass	1
21	HW5197	Screw, 1/4-20 x 5/8, PHRMS, black zinc	1

Assembling the Lens Tube: 19°, 26°, 36°, and 50°

Lens Positions

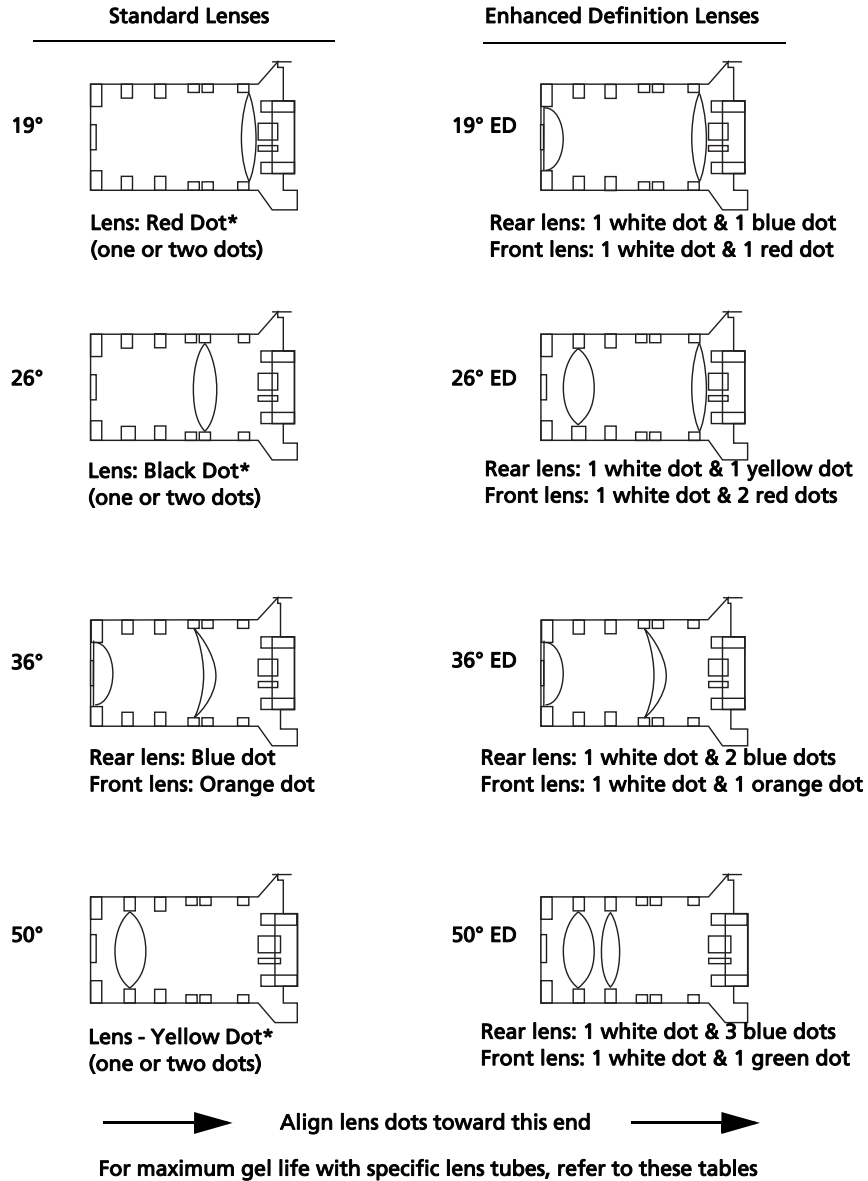
The lens tube casting can accept either original or Enhanced Definition (ED) lenses. The lens positions are color-coded within the lens casting to match the colored dots on the lenses (see [Figure 15](#)). Only lenses bearing at least one dot of the indicated color should be placed in that position.



Figure 15

Lens Markings

The lenses are color-coded for identification. Normal lenses have a single dot of color while Enhanced Definition lenses have a combination of white dots and color dots. See [Figure 16](#) for lens color coding.



* Some pre-2006 luminaires have lenses with two color-code dots. There is no difference between lenses with one dot or two dots.

Figure 16

For maximum gel life with specific lens tubes, refer to the tables below.

Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
19°	worse	better	better	not applicable
26°	worse	better	better	not applicable
36°	better	better	worse	not applicable
50°	worse	better	better	not applicable

ED Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
19°	worse	better	better	not applicable
26°	better	better	worse	not applicable
36°	better	better	worse	not applicable
50°	better	better	worse	not applicable

Assembling the Lens Tube

Tools Required:

- #2 Phillips head screwdriver

- 1: Place the left and right lens tubes (1 & 2) faceup on your work surface. Align the tubes so the color frame grooves are to your left.
- 2: Install lens support pads (4) as required inside both lens tubes. Four pads are required per lens. Insert pads short-side down, as shown in [Figure 19](#).
- 3: Install the 1/4-20 nut (12) in the left lens tube as shown.

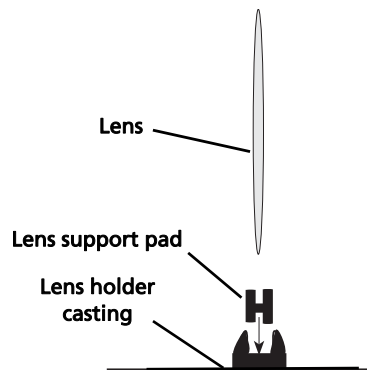


Figure 17

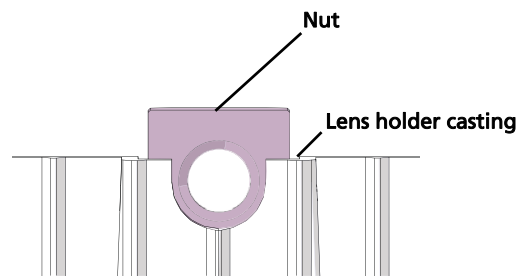


Figure 18

- 4: Install the short end of the gel retainer clip (9) in the left lens tube (1).
- 5: Position the clip in the forward, locked position, and then install the retainer spring (10) on the clip.

- 6: Install the required lens (or lenses) (5, 6, 7, or 8 & 8A) in the correct position as shown on [Figure 15](#).



Note: *Install the lens with the painted dot facing the front of the tube. Seat the lens in the support pads so the dot remains visible.*

- 7: See [Figure 14](#). Invert the right lens tube (2) and hold it above the left lens tube (1). Fit the clip (9) and spring (10) into the right lens tube. Gently place the right lens tube onto the left lens tube, making sure that the 1/4-20 nut and retaining clip assembly stay properly seated. Make sure that the lens stays straight by looking into the lens holder. The top edge of the lens should seat properly in the support pads.
- 8: Install the PHMS screws (11) in four locations with nuts (12). The PHMS screw location on the bottom of the color frame holder is threaded and does not require a nut. Hold the nuts tightly against the casting and torque the screws to 2.8 Newton meters (25 inch pounds).
- 9: Install the eight bushing guides (3). Point the narrow tab on the bottom toward the back of the tube; point the square tab toward the front. Squeeze the guides slightly so they bend in the middle and then snap into place. Make sure that the rounded side of the guide faces outward from the tube.

Cleaning the Glass Lens: 19°, 26°, 36°, 50°, and all EDLT lenses



WARNING: Do not use ammonia-based or other harsh commercial cleaners. Clean lens only as directed.

Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents, or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.

Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.

Lens Tube: 10°

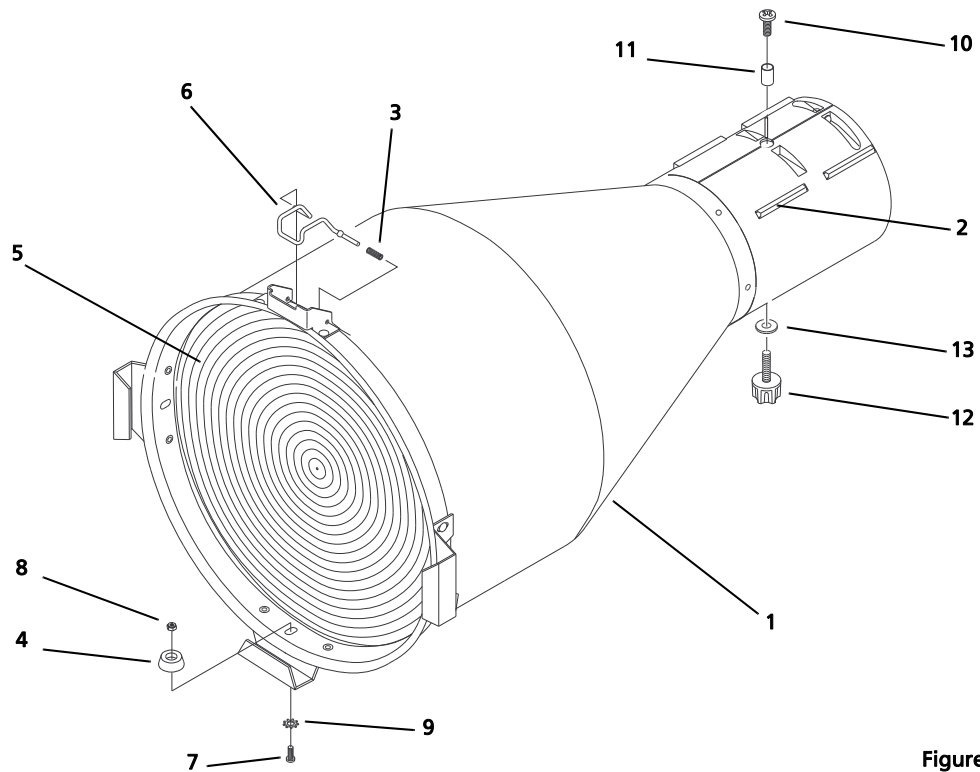


Figure 19

Reference	Part Number	Description	Quantity
1	7060A3096	10° lens tube assembly, painted	1
2	7060A4009	Bushing, guide	8
3	HW750	Spring, retainer	1
4	HW6122	Bumper, recess rubber	4
5	7060A4025	Lens, 10°, 10"	1
6	7060A3079	Clip, gel retainer	1
7	HW307	Screw, 8-32 x.38 lg, SPHMS, black zinc	4
8	HW370	Nut, 8-32, 3/8, 1/4, black zinc	4
9	HW3104	Washer, .170 x.381 x.023, black zinc	4
10	HW5197	Screw, 1/4, 20x58 PHRMS, black zinc	1
11	HW5200	Washer, SH,.253 x.281 x.438, black zinc	1
12	7060A4008	Knob, Z lamp, with male insert	1
13	HW5143	Washer, Flt. 1/4,.252 x.500 x.060, FL	1

Lens Tube: 5°

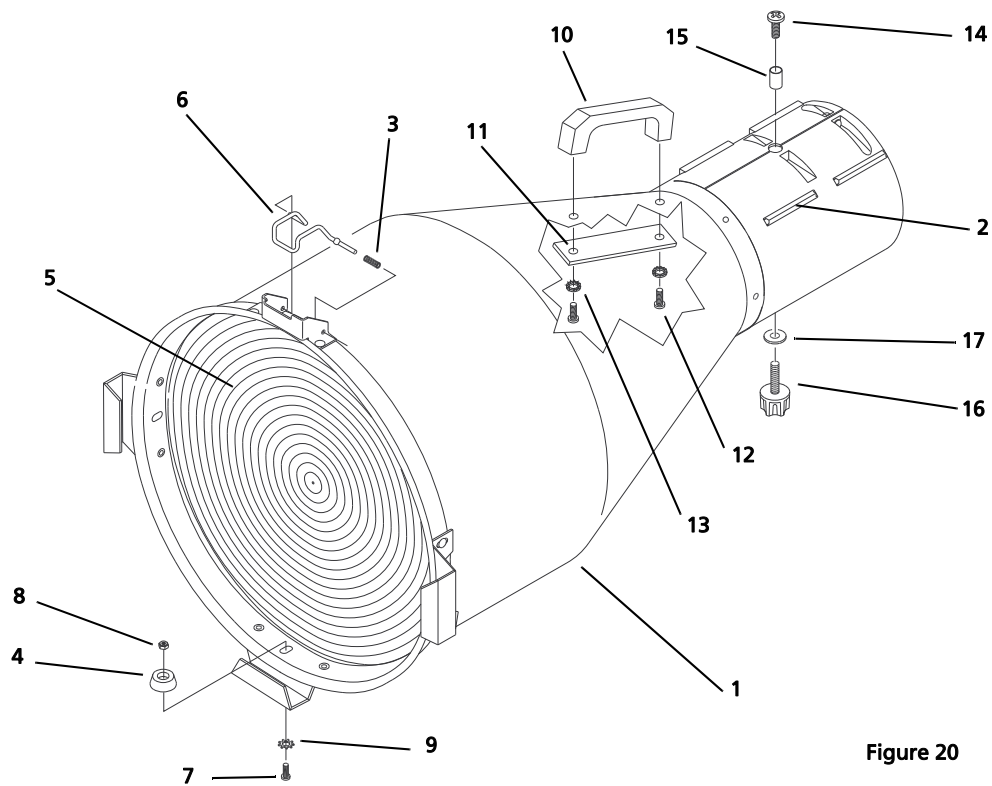


Figure 20

Reference	Part Number	Description	Quantity
1	7060A3095	5° lens tube assembly, painted	1
2	7060A4009	Bushing, guide	8
3	HW750	Spring, retainer	1
4	HW6122	Bumper, recess rubber	4
5	7060A4024	Lens, 5°, 10"	1
6	7060A3079	Clip, gel retainer	1
7	HW307	Screw, 8-32 x.38 lg, SPHMS, black zinc	4
8	HW370	Nut, 8-32, 3/8, 1/4, black zinc	4
9	HW3104	Washer, .170 x.381 x.023, black zinc	4
10	HW8170	Handle, 10-32 inserts	1
11	7060A3073	Handle backing plate	1
12	HW467	Screw, 10-32 x 1/2 PHTRMS	2
13	HW443	Washer, .195 x.410 x.025 black zinc	2
14	HW5197	Screw, 1/4, 20x58 PHRMS, black zinc	1
15	HW5200	Washer, SH, .253 x.281 x.438, black zinc	1
16	7060A4008	Knob, Z lamp, with male insert	1
17	HW5143	Washer, Ft. 1/4, .252 x.500 x.060, FL	1

Assembling the Lens Tubes: 5° and 10°

Tools Required:

- #2 Phillips head screwdriver
- 1: Place the lens tube assembly (1) on your work surface. Align the assembly so that the color frame grooves are to your left.
 - 2: If you are assembling a 5° tube, attach the handle (10) as shown in [Figure 20](#), using the screws (12), washers (13), and backing plate (11).
 - 3: Install the required lens as shown in [Figure 19](#) or [Figure 20](#) in the tube using required bumpers (4), screws (7), nuts (8), and washers (9). The side of the lens with the fresnel grooves should face the front of the tube. The smooth side should face the rear.

Cleaning the Polymer Lenses: 5° and 10°



WARNING: Handle polymer lenses by their edges only. Never rub anything dry on a polymer lens. Do not use glass and window cleaners on the lens. This will damage the lens.

Remove dust with a blast of oil-free air. If this is not sufficient, follow the instructions below.

- 1: Dip the lens in a clean isopropyl alcohol/water mixture (9 parts water to 1 part isopropyl alcohol).
- 2: Use a soft moistened nylon bristle brush to wash the lens' smooth side in a linear (non-circular) motion.
- 3: Use the same brush to lightly wash the ridged side of the lens by following its ridges.
- 4: Dip the lens in a clean isopropyl alcohol/water mixture (9 parts water to 1 part isopropyl alcohol).
- 5: Use an air gun to dry the smooth surface. Use an air gun to dry the ridged surface. Use the air stream to move the liquid away from you. Using this method, remove as much liquid as possible. Inspect the lens for dirt. If necessary, repeat the entire process.

Lens Tube: 14°

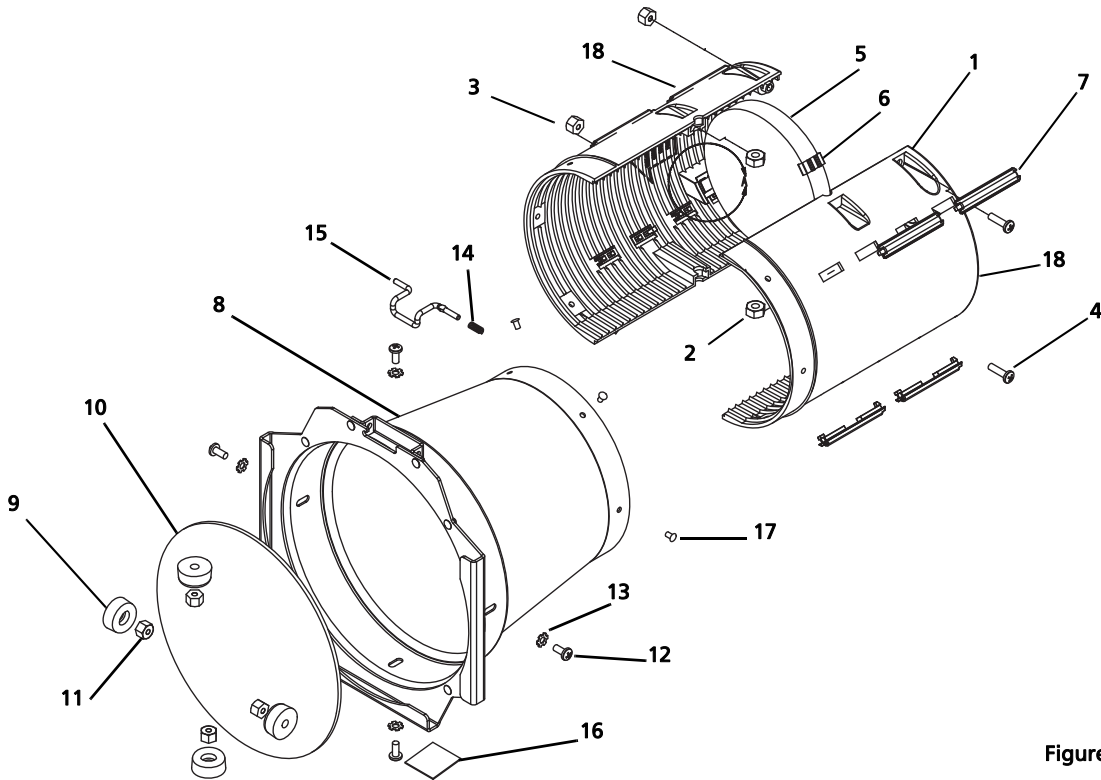


Figure 21

Reference	Part Number	Description	Quantity
1	7060A3152	14° Lens tube, painted	2
2	HW534	Nut, 1/4-20, hex, 7/16 7/32 BZ	2
3	HW370	Nut, 8-32	2
4	HW369	Screw, Phillips, 8-32, PhFHMS	2
5	7060A4124	14° Lens, rear	1
6	7060A4142	Lens pad	4
7	7060A4009	Bushing guide	8
8	7060A2055	14° Lens tube spin assembly	1
9	HW6122	Bumper, rubber	4
10	7060A4125	14° Lens, front	1
11	HW370	Nut, 8-32	4
12	HW307	Screw, Phillips, 8-32 x 3/8, PHMS	4
13	HW3104	Washer, #8	4
14	HW750	Spring retainer	1
15	7060A3180	Gel clip, lens tube	1
16	7060A4143	Label	1
17	HW7289	Rivet	6
18	7060A3152	Lens tube casting, painted	2

For maximum gel life with specific lens tubes, refer to the table below.

Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
14°	worse	good	best	good

Lens Markings and Positions: 14°

The lenses are color-coded for identification. The rear lens has two brown dots and the front lens has one brown dot. The lens positions are color-coded within the lens casting to match the colored dots on the lenses (see [Figure 22](#)).

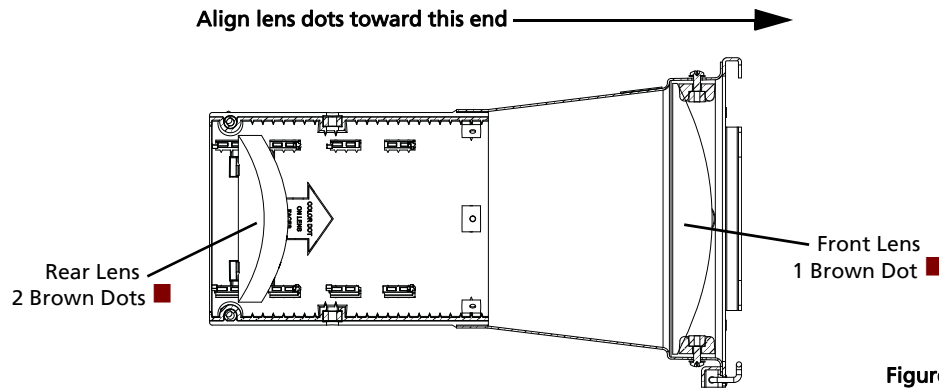


Figure 22

Assembling the Lens Tube: 14°

Tools Required:

- #2 Phillips head screwdriver

- 1: Place lens tube assembly faceup on your work surface.
- 2: Install the eight bushing guides (7). Point the narrow tab on the bottom toward the back of housing; point the square tab toward the front. Squeeze the guides slightly so that they end in the middle, and then snap them into place. Make sure that the rounded side of the guide faces outward from the tube.
- 3: Install the front lens (10) in the tube using required bumpers (9), screws (12), nuts (11), and washers (13) as shown in [Figure 21](#). The colored dot on the lens should face towards the front.

Cleaning the Glass Lenses: 14°



WARNING: Do not use ammonia-based or other harsh commercial cleaners. Clean lens only as directed.

Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.

- 1: Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.
- 2: If necessary, remove the front lens to access the front surface of the rear lens for cleaning. Remove the four screws (12), nuts (11), washers (13), and bumpers (9), and gently lift out the front lens as shown in [Figure 21](#). Reassemble in reverse order.

Lens Tube: 70°

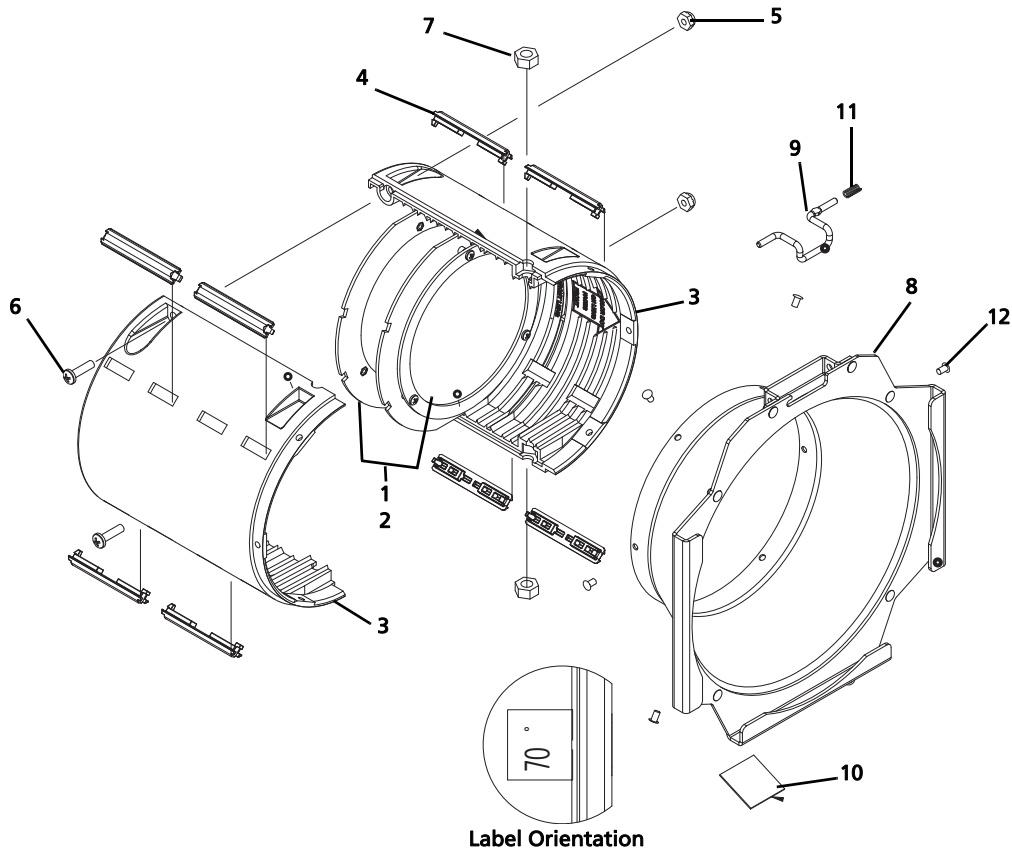


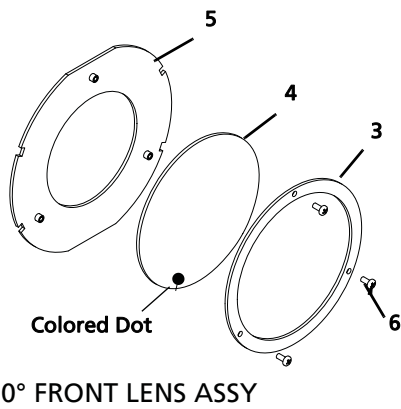
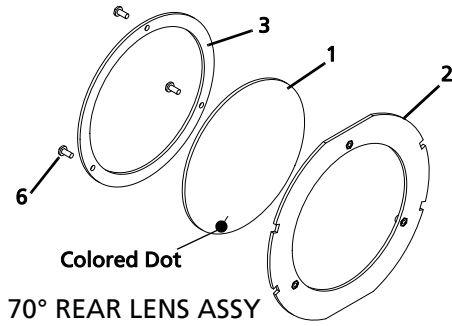
Figure 23

Reference	Part Number	Description	Quantity
1	See Figure 24	70° rear lens assembly	1
2	See Figure 24	70° front lens assembly	1
3	7060A3179	Lens tube casting, painted	2
4	7060A4009	Bushing, guide	8
5	HW370	Nut, 8-32	2
6	HW369	Screw, Phillips, 8-32 x.62, LG, PHMS	2
7	HW534	Nut, Hex, 1/4-20	2
8	7060A2057	Spin Assembly, lens tube	1
9	7060A3180	Gel clip	1
10	7060A4144	Label, 70° lens	1
11	HW750	Spring, latch return	1
12	HW7289	Rivet	6

For maximum gel life with specific lens tubes, refer to the table below.

Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
70°	best	good	worse	good

Lenses: 70°



Install rear lens assembly in slot labeled "70° DEG REAR LENS". Colored dot faces front.

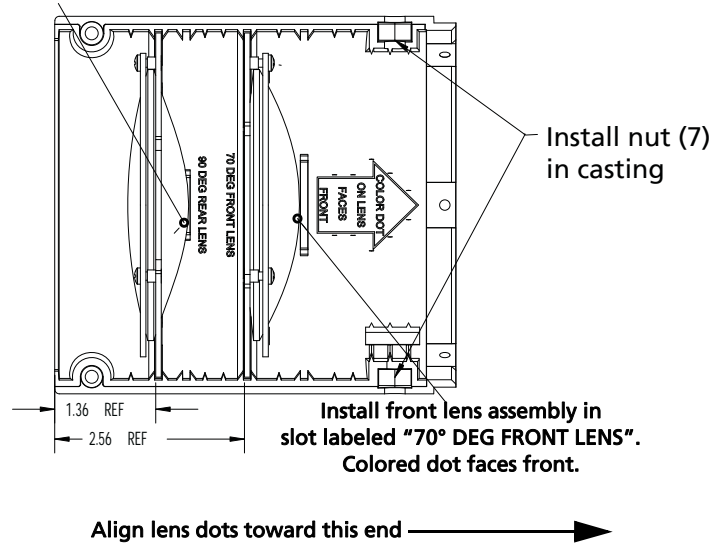


Figure 24

Reference	Part Number	Description	Quantity
1	7060A4134	Rear lens, 70°	1
2	7060A3185	Mounting Plate, 70° rear lens	1
3	7060A3186	Retaining ring	2
4	7060A4135	Front lens, 70°	1
5	7060A3187	Mounting Plate, 70°, front lens	1
6	HW1119	Screw, Phillips, 4-40 x 1/4, SEMS, PHMS	6

Lens Markings and Positions: 70°

The lenses are color-coded for identification. The rear lens has two green dots and the front lens has one green dot. The lens positions are color-coded within the lens tube casting to match the colored dots on the lenses (see [Figure 25](#)).

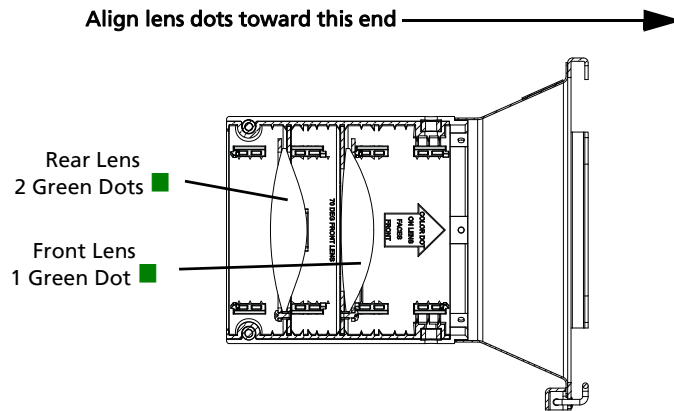


Figure 25

Assembling the Lens Tube: 70°

Tools Required:

- #2 Phillips head screwdriver

- 1: See [Figure 24](#). Place the rear lens (1) into the mounting plate (2) with paint dots facing forward. Center the lens in the mounting plate and secure with the retaining ring (3) and screws (6). Lightly tighten all three screws while maintaining the lens position, and then tighten the screws securely.
- 2: See [Figure 24](#). Place the front lens (4) into the mounting plate (5) with paint dots facing forward. Center the lens in the mounting plate and secure with the retaining ring (3) and screws (6). Lightly tighten all three screws while maintaining the lens position, and then tighten the screws securely.

Cleaning the Glass Lens: 70°



WARNING: Do not use ammonia-based or other harsh commercial cleaners. Clean lens only as directed.

Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.

Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.

Lens Tube: 90°

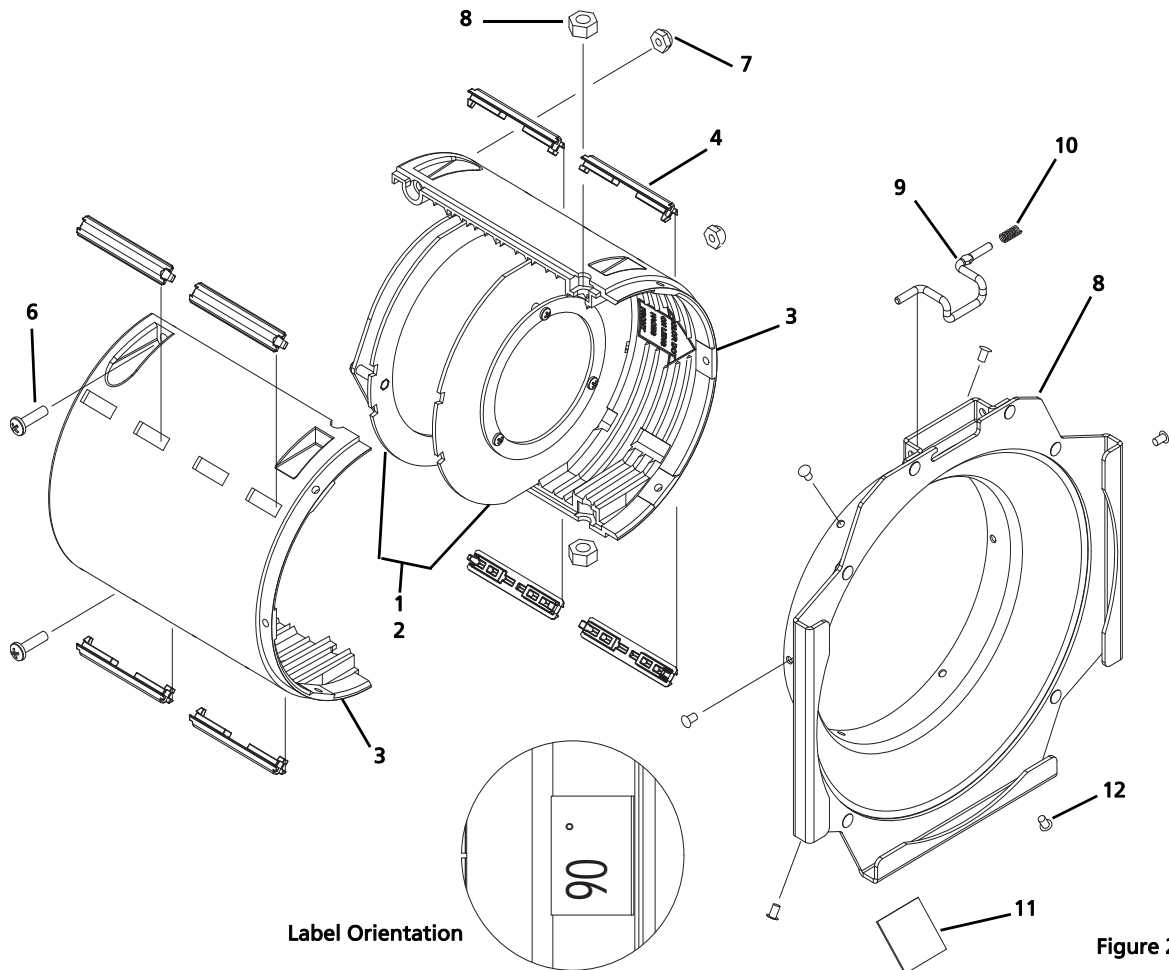


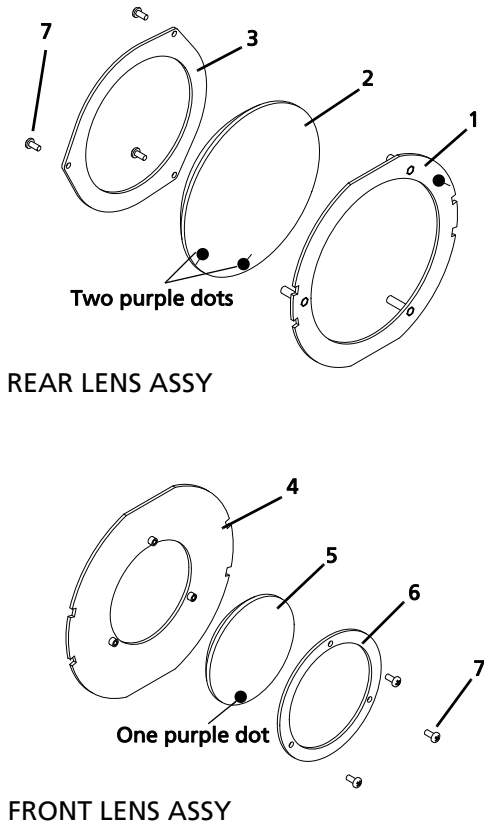
Figure 26

Reference	Part Number	Description	Quantity
1	See Figure 27	90° rear lens assembly	1
2	See Figure 27	90° front lens assembly	1
3	7060A3179	Lens tube casting, painted	2
4	7060A4009	Bushing, guide	8
5	HW370	Nut, 8-32	2
6	HW369	Screw, Phillips, 8-32 x.62, LG, PHMS	2
7	HW534	Nut, Hex, 1/4-20	2
8	7060A2059	Spin Assembly, lens tube	1
9	7060A3180	Gel clip	1
10	HW750	Spring, latch return	1
11	7060A4145	Label, 90° lens	1
12	HW7289	Rivet	6

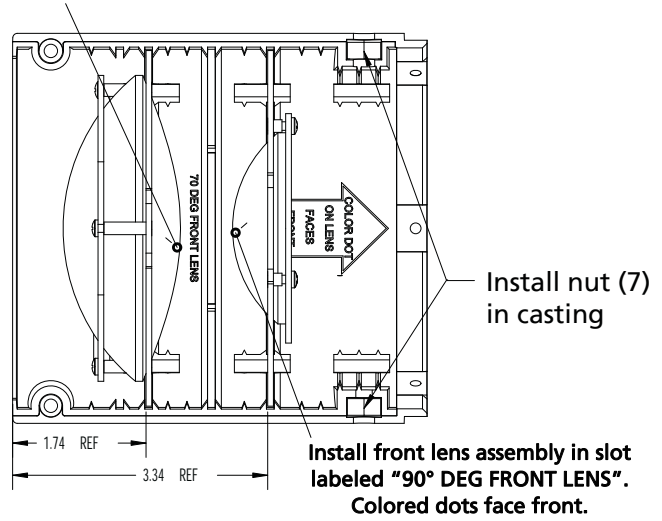
For maximum gel life with specific lens tubes, refer to the table below.

Lens Tube	Soft Focus Back (Lamp "flat")	Sharp Focus (Lamp "cosine")	Soft Focus Forward (Lamp "peak")	Soft Focus Forward (Lamp "cosine")
90°	best	good	good	worse

Lenses: 90°



Install rear lens assembly in slot labeled "90° DEG REAR LENS". Colored dots face front.



Align lens dots toward this end →

Figure 27

Reference	Part Number	Description	Quantity
1	7060A3181	Mounting plate, 90° rear lens	1
2	7060A4136	Rear lens, 90°	1
3	7060A3182	Retaining ring, 90°, rear lens	1
4	7060A3183	Mounting plate, 90°, front lens	1
5	7060A4137	Front lens, 90°	1
6	7060A3184	Retaining ring, 90°, front lens	1
7	HW1119	Screw, Phillips, 4-40 x 1/4, SEMS, PHMS	6

Lens Markings and Positions: 90°

The 90° lenses are color-coded for identification. The rear lens has two purple dots and the front lens has one purple dot. The lens positions are color-coded within the lens casting to match the colored dots on the lenses (see [Figure 28](#)).

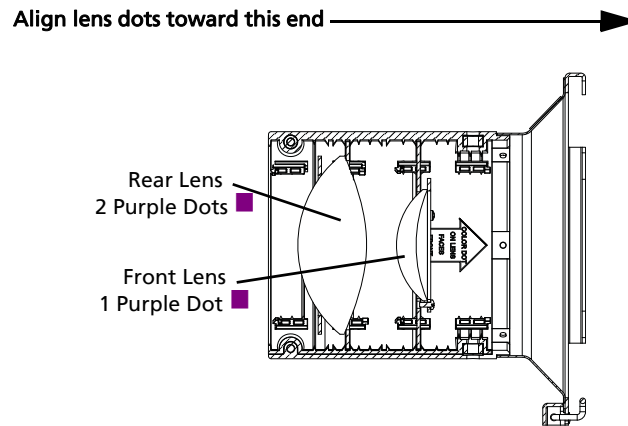


Figure 28

Assembling the Lens Tube: 90°

Tools Required:

- #2 Phillips head screwdriver

- 1: See [Figure 27](#). Place the rear lens (2) into the mounting plate (1) with paint dots facing forward. Center the lens in the mounting plate and secure with the retaining ring (3) and screws (7). Lightly tighten all three screws while maintaining the lens position, and then tighten screws securely.
- 2: See [Figure 27](#). Place the front lens (5) into the mounting plate (4) with paint dots facing forward. Center the lens in the mounting plate and secure with the retaining ring (6) and screws (7). Lightly tighten all three screws while maintaining the lens position, and then tighten screws securely.

Cleaning the Glass Lens: 90°



WARNING: Do not use ammonia-based or other harsh commercial cleaners. Clean lens only as directed.

Commercially available glass cleaning agents should be avoided as they may contain ammonia, other harsh chemical detergents or abrasive agents. These cleaners may damage the glass surface and the Anti-Reflective coatings. Do not immerse or soak the glass in any cleaning solution.

Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.



Corporate Headquarters ■ Middleton, WI, USA | +1 608 831 4116
Global Offices ■ London, UK | Rome, IT | Holzkirchen, DE | Paris, FR | Hong Kong | Dubai, UAE | Singapore
New York, NY | Orlando, FL | Los Angeles, CA | Austin, TX
Web etcconnect.com | **Support** support.etcconnect.com | **Contact** etcconnect.com/contactETC
© 2021 Electronic Theatre Controls, Inc. | Trademark and patent info: etcconnect.com/ip
Product information and specifications subject to change. ETC intends this document to be provided in its entirety.
7060M2510-06.01 Rev F Released 2021-11