Source Four TM Zoom Assembly Guide

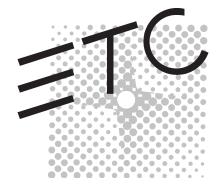
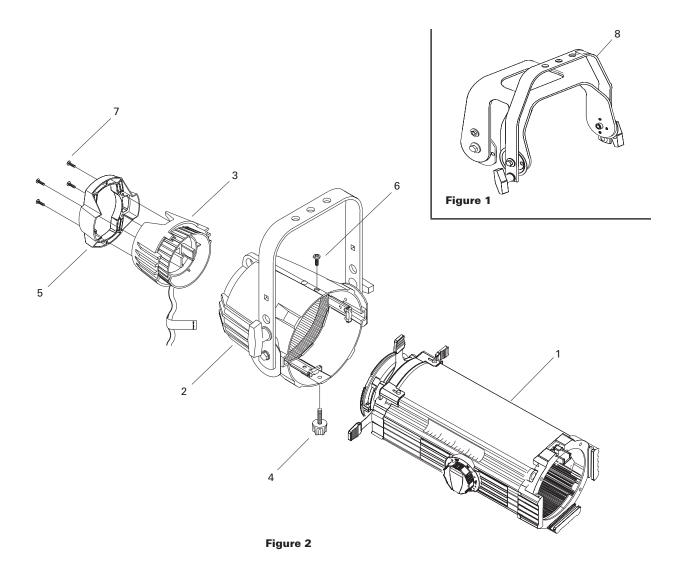


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15° - 30° Final assembly-

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Reference Number	Part Number	Description	Quantity Required
1	7060A2030	15°-30° lens tube	1
2	7060A2020	Rear housing assembly, double clutch	1
3	7060A2408	Lamp socket assembly	1
4	7060A4008-01	Knob set with male insert	1
5	7060A4037	Handle, insulated rear	1
6	HW5197	Screw, 1/4-20 x 5/8, black zinc	1
7	HW2181	Screw, 6-32x3/4, black Taptite	4
Optional equip	oment		
8	7060A2028	Balance yoke	1

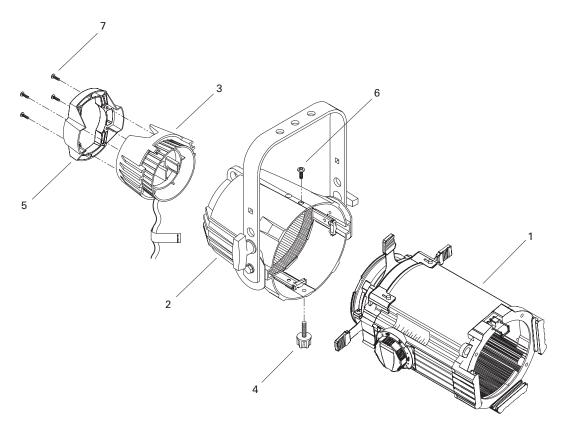
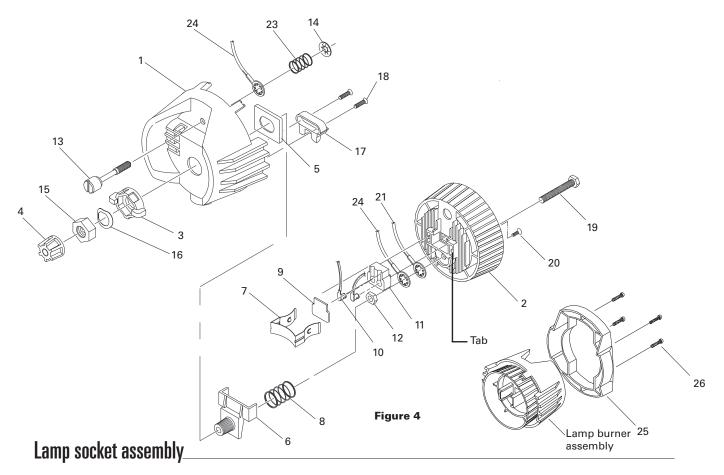


Figure 3

25° - 50° Final assembly -

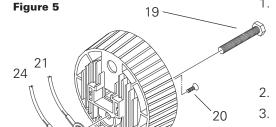
Reference Number	Part Number	Description	Quantity Required
1	7060A2032	25°-50° lens tube	1
2	7060A2020	Rear housing assembly, double clutch	1
3	7060A2408	Lamp socket assembly	1
4	7060A4008-01	Knob set with male insert	1
5	7060A4037	Handle, insulated rear	1
6	HW5197	Screw, 1/4-20 x 5/8, black zinc	1
7	HW2181	Screw, 6-32x3/4, black Taptite	4



Reference Number	Part Number	Description	Quantity Required
1	7060A3055	Housing, socket, casting, painted	1
2	7060A3057	Socket, light baffle casting, painted	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	Spring, lamp retainer	1
8	HW748	Spring, compression	1
9-11	M718	Complete TP22 CLCM assembly	1
9	W330-03	TP22 CLCM assembly, mica	1
10	W330-04	TP22 CLCM 16-gauge, 1/4" semi-striped, Ni-gold contacts, 600V, 450°C	2
11	W330-02	TP22 CLCM assembly, ceramic	1
12	HW534	Nut, hex, 1/4-20, black zinc	1
13	7060A3025	Screw, 1/4-20 knurled head	1
14	HW746	Retaining ring, flat, Southco	1
15	HW5123	Nut, hex, 9/16-18, black zinc	1
16	HW747	Washer, wave	1
17	7060A3056	Clamp, strain relief, painted	1
18	HW3103	Screw, 8-32 x 5/8 PhFHMS, black zinc	2
19	HW5122	Bolt, 1/4-20 x 1.75, full thread, black zinc	1
20	HW2125	Screw, self tap, 6-32 x 1/4, black zinc	1
21	7060B7003	48" W420 wire, 16 gauge, 200° C/300V, green	
		UL 1180/CSA AWM with lug J490T installed	1
22	W689	36" sleeve, fiberglass (not pictured)	1
23	HW749	Spring, ground	1
24	7060B7007	4" W420 wire, 16 gauge, 200° C/300V, green,	
		UL 1180/CSA AWM with two J490T lugs installed	1
25	7060A4037	Insulated rear handle	1
26	HW2181	Screw, 6-32x3/4, black Taptite	4
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Lamp socket assembly

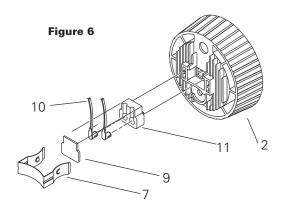
Tools required: Open-end adjustable wrench or a 7/16" socket, needle-nose pliers, screwdriver.



1. Install the screw (20) into the light socket baffle casting as shown in figure 5. (Also see figure 12 on page 9.)

Note: Do not install the screw if the fixture will be used with 77V lamps and ETC's Dimmer Doubler. This screw prevents 77V lamps from being installed.

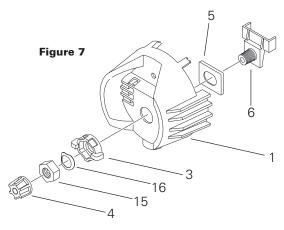
- 2. Insert the bolt (19) through the light baffle socket casting (2).
- 3. Install the green ground wire assemblies (21 and 24) on the bolt (19) with the prongs on the crimped connectors toward the casting. Run both wires through the indent in the lip around the bolt hole. Secure with nut (12) and torque to 60 inch pounds.



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- 4. Place the ceramic TP22 socket (11) into the light baffle socket casting (2) as shown in figure 6. Be sure it is well seated. Firmly push the connectors on the white TP22 leads (10) into the grooves in the socket.
- 5. Place the TP22 mica (9) over the leads, then install the lamp retainer spring (7). The lamp retainer spring secures the mica. Insert the spring one end at a time, making sure the rectangular slot in each side of the spring seats on the corresponding tab in the casting.

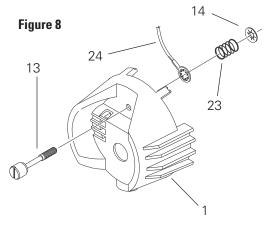
Important: If the spring does not seat correctly, coax it into place with a screwdriver or needle-nose pliers.



- 6. Install the bushing cup (5) into the housing socket casting (1) as shown in figure 7. The cup should slide smoothly up and down, but not side to side.
- 7. 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).
- 8. Slide the X-Y knob (3) over the exposed index hub bolt (6), then insert the wave washer (16) on the bolt and secure with the 9/16 hex nut (15). Hand tighten the X-Y knob (3).

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

9. Lay the leads in the bottom half of the cable clamp, making sure that the fiberglass sleeving extends slightly past the screw holes in the housing socket casting, (install new sleeving if necessary)



- 10. Insert the knurled head screw (13) through the housing socket casting (1) as shown in figure 8.
- 11. Install the shorter green ground wire (24) with the prongs on the crimped connector toward the casting onto the screw.
- 12. Install the ground spring (23) onto the screw and secure it with the Southco flat retaining ring (14). Install the Southco ring with its prongs away from the casting.

Note: Use pliers to straighten the Southco retaining ring (14) if it bends when you install it on the bolt.

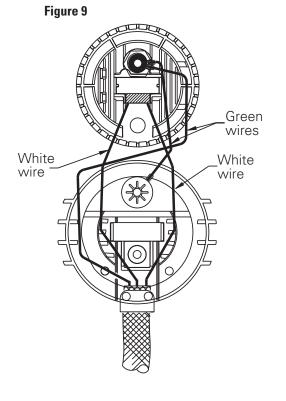
13. Lay the leads in the bottom half of the cable clamp, making sure that the fiberglass sleeving extends slightly past the screw holes in the housing socket casting. Install new sleeving if necessary. Then, route the wires as shown in figure 9.

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

14. Install the top half of the cable clamp (17) and secure it with the two screws (18) as shown in figure 10. Tighten the screws alternately to ensure a solid connection.

Note: To ensure that the clamp holds the cable tightly, flatten the cable, then fold over the sleeving before you install the top half of the clamp. Make sure the top edge of the cable clamp is even with the edge of the socket to prevent interference with lamp focus movement. Make sure sleeving is not pinched.

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3

8

2

19

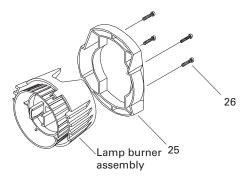


Figure 11

- 15. Using the four screws (25), attach the handle (26) to the lamp socket assembly.
- 16. Place the spring (8) on the protrusion on the inside of the index hub (6).
- 17. Insert bolt (19) through the light socket baffle (2), thread nut (12), through spring (8) and through the index hub (6) of the housing socket (1), joining the two castings. Make sure wires are not pinched between the two pieces.
- 18. Before proceeding, check again to make sure the wires are still positioned as indicated in figure 9. Adjust if necessary.
- 19. Press the two castings together firmly so the bottom of the light baffle (2) sits on top of the cable clamp (17), then install the X-Y lampset (3) and Z lamp knob (4). Hand tighten the knob all the way to the right.
 - **Important**: You must install Z knob as described above to ensure proper lamp focus travel.
- 20. Set the crossbar of the retainer clip (25) under the two hooks on the clip bracket as shown in figure 11.
- 21. Place the Tinnerman clip (26) over the retainer clip crossbar between the two hooks and press it down firmly until it snaps into place.

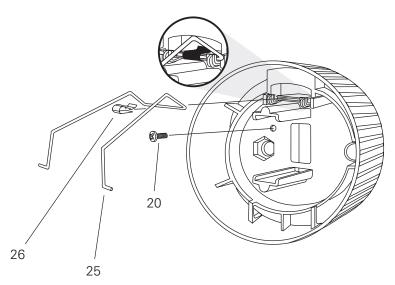
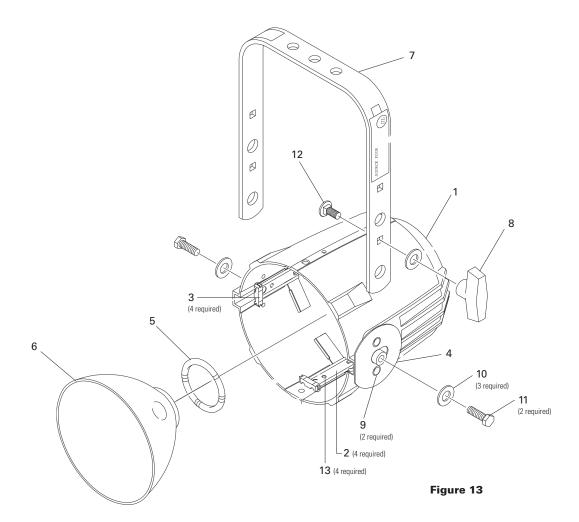


Figure 12

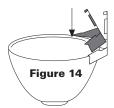


Reflector housing assembly

Reference Number	Part Number	Description Required	Quantity
1	7060A3054	Housing, reflector casting, painted black	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	1
9	HW753	Rivet, machine, 3/16 x .720, flat head, black zinc	2
10	HW5126	Washer, flat, 5/16, black zinc	3
11	HW5193	Bolt, hex, 5/16-18 x 3/4, black zinc	2
12	HW5125	Bolt, carriage, 5/16-18 x .75, black zinc	1
13	HW752	Rivet machine, 3/16 x 5/16, black zinc	4

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To remove a reflector







Tools required: Two spare reflector retainer clips (2).

- Wedge one arm of a spare retainer clip between the lip of one of the installed clips and the rim of the reflector, then slide the arm down between the installed clip and the reflector as shown in figure 14.
- 2. Insert the other arm of the spare clip between the other arm of the installed clip and the reflector, as shown in figure 15.
 - **Warning:** Do not slide the spare clip all the way in or it will be very difficult to remove...leave at least a quarter inch exposed.
- 3. Now slide the entire clip between the reflector and the installed clip as shown in figure 16. Remember, do not slide it all the way in.
- 4. Repeat this procedure with the second spare clip, inserting it between an adjacent installed clip and the reflector.
- 5. Turn the reflector housing casting over, so that the rear of the reflector is in view. Gently push on the reflector, toward the side of the housing where the extra clips were placed. The reflector will slip off to the side at an angle.
- 6. Turn the reflector housing casting back over and gently slide the reflector out from under the retaining clips.

To install a reflector

Note: The following assumes all four reflector retainer clips (2) have already been riveted to the reflector housing casting (1) and the gate bushings (3) installed on the retainer clips.

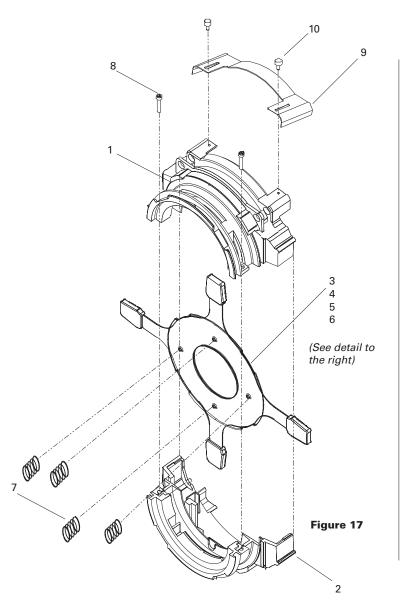
- 1. Place the reflector housing casting (1) on a flat work surface with the large opening facing up.
- 2. Install the reflector support spring (5) in the circular opening at the base of the casting.
- 3. Insert the reflector (6) at an angle, under any three legs of the reflector's clips.
- 4. Gently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

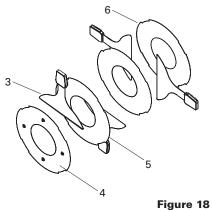
Note: If the reflector does not snap in, turn the casting over. Gently pull on the side of the reflector that has not snapped in until the rest of the reflector slides into place.

To clean the reflector

Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth using alcohol or distilled water (alcohol is recommended).

Warning: Do not use glass and window cleaners on the reflector. Chemicals in these cleaners will stain the reflector.





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.

Gate Housing assembly

Reference Number	Part Number	Description	Quantity Required
1	7060A3112	Gate barrel, top casting, painted	1
2	7060A3113	Gate barrel, bottom casting, painted	1
3	7060A2025	Shutter blade assembly, 22 gauge	4
4	7060A3001-01	Plate, divider with dimples (bottom)	1
5	7060A3003	Plate, gate (middle)	1
6	7060A3001-02	Plate, divider (top)	1
7	HW754	Shutter spring	4
8	HW391	Screw, PHMS 8-32 x 3/4, black zinc	2
9	7060A3045	Cover, iris slot	1
10	HW2177	Thumb screw, 8-32 x 1/4, black zinc	2

Gate Housing assembly

Tools required: Phillips head screwdriver.

1. Stand the top and bottom gate barrel castings (1 and 2) upright with the shutter openings down.

Note: The top gate barrel casting contains the iris slot.

2. Slide in the bottom divider plate (4). The dimples on the divider plate must point down.

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

Warning: Divider plate edges are sharp. Handle with caution!

3. With the bottom barrel to your left, place one shutter blade (3) on top of dimple plate (4), handle facing outward, up and down.

Note: Install shutter blades with the rounded side facing up toward the front of the casting.

- 4. Place a divider plate (5) on top of the shutter blade.
- 5. Place another shutter blade on top of the divider plate. Then place another divider plate on top.
- 6. Place the two shutter blades on top of the divider. Pull the blade and plate assembly slightly forward to allow the handle to slip through the slot in the bottom casting.
- 7. Place the top divider plate (6) on top of the two shutter blades.

Note: Make sure no shutter assembly components are under the pattern holder guides.

- 8. With both gate barrel castings still standing upright, join the two halves, sliding the handle of the top shutter blade through the slot in the top gate barrel casting (1).
- 9. Connect the halves of the gate assembly together using the two PHMS screws (8).

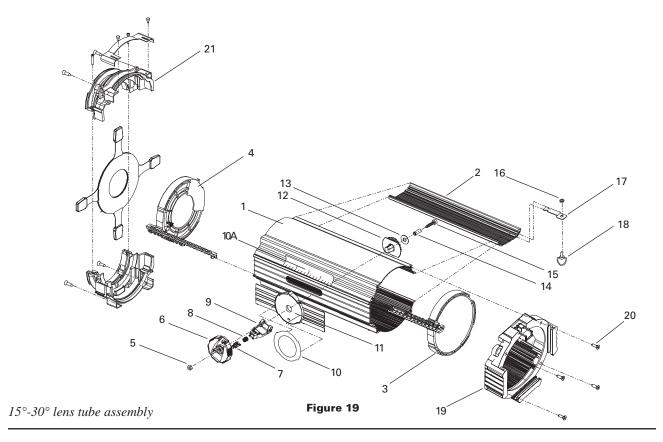
Note: The tops of the two gate barrel castings must be even. Adjust as necessary before completely tightening the nuts and screws. Failure to do this could interfere with the barrel rotation.

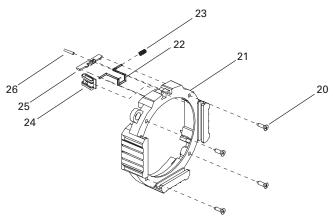
- 10. Turn the gate barrel assembly over so that the narrower end is on your work surface.
- 11. Install the four shutter springs (7) between the four dimples in the shutter plate and the tabs in the lip of the casting.

Note: Install the springs at the joints in the castings on either of the tabs at the joint.

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

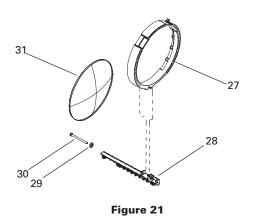
12. Place iris slot cover (9) over the iris slot. Use two screws (10) to secure the cover.



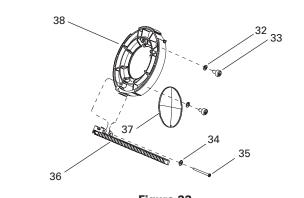


Gel frame endcap assembly





Front lens assembly



Rear lens assembly

Figure 22

14

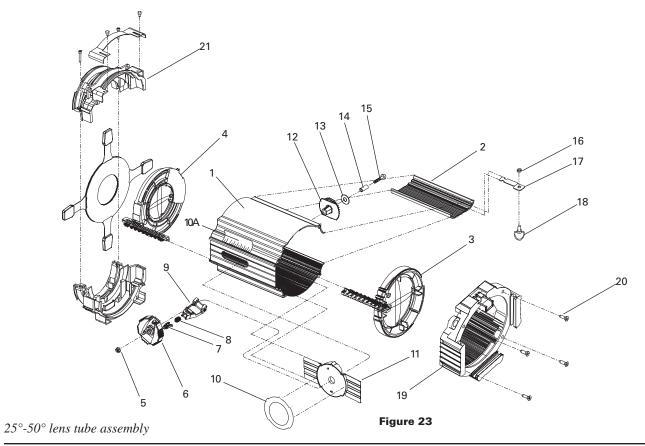
15°-30° lens tube assembly_____

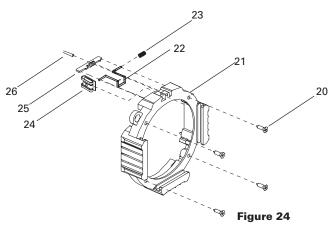
Reference Number	Part Number	Description	Quantity Required
1	7060A2030	15°-30° lens tube	1
2	7060A3091-01	Extrusion door	1
3	See below	Front lens assembly	1
4	See below	Rear lens assembly	1
5	HW5218	Nut 1/4-20 metal lock Lowpro	1
6	7060A4056	Dial adjustment	1
7	7060A4066	Button, push, CAM lever	1
8	HW776	Spring, push-button	1
9	7060A4057	Lever, CAM	1
10	7060A4082	Zoom field angle label	1
10A	7060A4081	S4 Zoom rangle label, 15-30	1
11	7060A4054	Light baffle	1
12	7060A4058	Gear, spur	1
13	HW777	Wash spring	1
14	HW9200	Spacer, 1/4-20 x 0.875, round, aluminum	1
15	HW5224	Screw, 1/4-20 x 1-1/4, PHMS	1
16	HW8227	Retainer, 1/4 turn stud	1
17	7060A3114	Latch bracket	1
18	HW8225	Fasterner, bail style	1
19	See below	Gel frame endcap	1
20	HW5217	Screw, 1/4-14 x 1, OHSL	4
21	See page12	Gate housing assembly	1
Gel frame endcap	assembly———		

Reference Number	Part Number	Description	Quantity Required
20	HW5217	Screw, 1/4-14 x 1, OHSL	4
21	7060A3111	Endcap, gal frame, black	1
22	7060A3100	Gel clip	1
23	HW750	Spring retainer	1
24	HW8226	Receptable, 1/4 turn stud	1
25	7060A3097	Plate, gel clip retainer	1
26	HW369	Screw, 8-32 x 5/8, PHMS	1
Front lens assembl	ly		

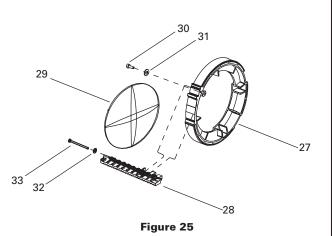
Reference Number	Part Number	Description	Quantity Required
27	7060A4046	Front lens holder	1
28	7060A4050	Front gear rack	1
29	HW3118	Washer, flat #8, black	1
30	HW3114	Screw, 8-32 x 2, PHST, plastic	1
31	7060A4067	Front lens glass	1
Rear lens assembly	<i></i>		

Reference Number	Part Number	Description	Quantity Required
32	HW4117	Washer, flat, Teflon	2
33	HW4112	Screw, #10-14 x 5/8, plastic	2
34	HW3118	Washer, flat #8, zinc	1
35	HW3114	Screw, 8-32 x 2, PHST plastic	1
36	7060A4051	Rear gear rack	1
37	7060A4068	Rear lens glass	1
38	7060A4048	Rear lens holder	1

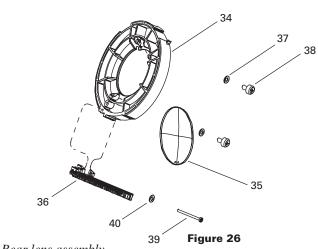




Gel frame endcap assembly



Front lens assembly



Rear lens assembly

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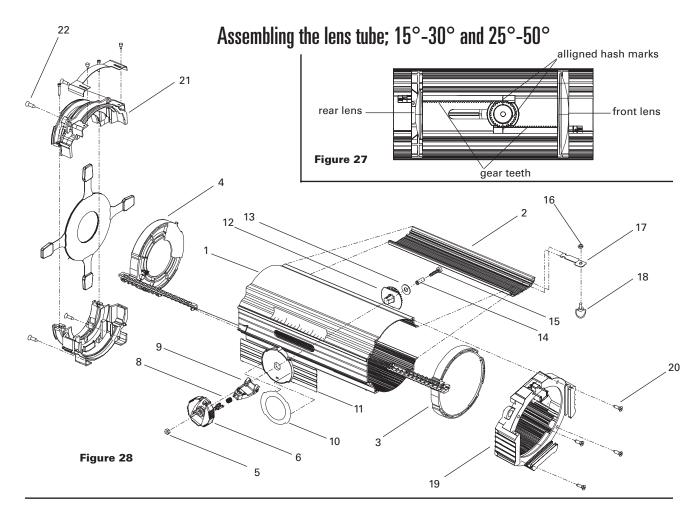
25°-50° lens tube assembly_____

Reference Number	Part Number	Description	Quantity Required
1	7060A3090-02	25°-50° lens tube	1
2	7060A3091-02	Extrusion door	1
3	See below	Front lens assembly	1
4	See below	Rear lens assembly	1
5	HW5218	Nut 1/4-20 metal lock Lowpro	1
6	7060A4056	Dial adjustment	1
7	7060A4066	Button, puch, CAM lever	1
8	HW776	Spring, push-button	1
9	7060A4057	Lever, CAM	1
10	7060A4084	Zoom field angle label	1
10A	7060A4080	S4 Zoom range angle, 25-50	1
11	7060A4055	Light baffle	1
12	7060A4058	Gear, spur	1
13	HW777	Wash spring	1
14	HW9200	Spacer, 1/4-20 x 0.875, round, aluminum	1
15	HW5224	Screw, 1/4-20 x 1-1/4, PHMS	1
16	HW8227	Retainer, 1/4 turn stud	1
17	7060A3114	Latch bracket	1
18	HW8225	Fasterner, bail style	1
19	See below	Gel frame endcap	1
20	HW5217	Screw, 1/4-14 x 1, OHSL	4
21	See page12	Gate housing assembly	1
Gel frame endcap a	assembly		

Reference Number	Part Number	Description	Quantity Required
20	HW5217	Screw, 1/4-14 x 1, OHSL	4
21	7060A3111	Endcap, gal frame, black	1
22	7060A3100	Gel clip	1
23	HW750	Spring retainer	1
24	HW8226	Receptable, 1/4 turn stud	1
25	7060A3097	Plate, gel clip retainer	1
26	HW369	Screw, 8-32 x 5/8, PHMS	1
Front lens assemb	ly		

Reference Number	Part Number	Description	Quantity Required
27	7060A4047	Front lens holder	1
28	7060A4052	Front gear rack	1
29	7060A4069	Front lens glass	1
30	HW4112	Screw, #10 - 10x5/8, plastic	1
31	HW4117	Washer, flat, Teflon	1
32	HW3118	Washer, flat #8, zinc	1
Rear lens assembly	HW3114	Screw, 8-32 x 2, PHST, plastic	1
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Reference Number	Part Number	Description	Quantity Required
34	7060A4048	Rear lens holder	1
35	7060A4070	Rear lens glass	1
36	7060A4053	Rear gear rack	1
37	HW4117	Washer, flat, Teflon	2
38	HW4112	Screw, #10 - 10x5/8, plastic	2
39	HW3116	Screw, 8-10x1-1/2	1
40	HW3118	Washer, flat #8, zinc	1



- 1. Slide the front lens holder (3) into the left-hand top raceway as shown in figure 27.
- 2. Slide the rear lens holder (4) into the left-hand bottom raceway as shown in figure 27.
- 3. Position the lens assembly gear teeth as shown in figure 27.
- 4. From inside the unit, place the gear spur (12) between the lens assemblies. make sure the vertical hash marks on the gear spur line up with the hash marks on both the front and rear gear teeth. See figure 26.
- 5. Slide the spacer (14) onto the screw (15).
- 6. From inside the unit, pass the screw (15) and spacer (14) through the washer (13) and insert into the hole on the gear spur (12).
- 7. On the outside of the unit, place the adjustment dial (6) over the screw end (15) and secure with the metal nut (5).
- 8. Slide the light baffle (11) into the opening of the lens tube.
- 9. Place the gate assembly (21) onto the rear of the lens tube and secure with four screws (22).
- 10. With the extrusion door open, place the gel cap (19) on the front of the unit and secure with four screws (20).
- 11. Once the gel cap is in place, close the extrusion door and turn the fastener (18) one-quarter turn clockwise to secure the baffle in place.

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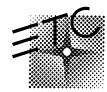
Cleaning 15°-30° and 25°-50° glass lenses

1. Dampen a clean, lint-free cloth with vinegar or household ammonia. You may use water, but it leave spots. You can remove by polishing the lens gently with a clean, dry cloth.

Warning: Never use glass and window cleaner or any abrasive material to clean lenses. Glass and window cleaners will stain the lens surface. Abrasive materials (such as steel wool) will damage the surface of the lens.

2. Starting from the center, gently wipe the lens.

Note: Refer to the Source Four Zoom User Guide instruction booklet, included with your fixture, for information regarding lens tube orientation and lens position when cleaning.



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Revised 2/00. Part number 7060M1010

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