

**Service Instructions
and Parts Catalog for**

**AUTOLOAD®
FILMOSOUND® PROJECTOR
(AUTOMATIC THREADING)**

**Models
1595C, 2585C, 2592C**

BELL+HOWELL

**GENERAL SERVICE DEPT.
7100 McCORMICK ROAD
CHICAGO, IL 60645**

**Service Instructions
and Parts Catalog for**

**AUTOLOAD®
FILMOSOUND® PROJECTOR
(AUTOMATIC THREADING)**

**Models
1595C, 2585C, 2592C**

BELL+HOWELL

**GENERAL SERVICE DEPT.
7100 McCORMICK ROAD
CHICAGO, IL 60645**

TABLE OF CONTENTS

	Page
List of Illustrations	ii
Service Tools & and Supply Chart	iii
 INTRODUCTION	
1. Special Maintenance Precautions	1
2. Cleaning Instructions	1
3. Lubrications Instructions	1
4. General Replacement Data	1
5. Fuse Replacement	1
6. Lamp Replacement	1
 DISASSEMBLY REASSEMBLY PROCEDURE	
7. General Precautions	1
8. Drive Belt Replacement	2
9. Internal Speaker Replacement	2
10. Power Transformer Replacement	2
11. Reel Arm Replacement	2
12. Amplifier Repair	2
13. Main Plate Removal	2
14. Soundhead Replacement	2
15. Mechanism Replacement	2
16. General Instructions	2
17. Optical Alignment	3
18. Adjusting the Intermittent Mechanism	3
19. Lens Carrier Adjustment	5
20. Adjusting the Run-Still Clutch (Code B&C)	5
21. Adjusting the Reel Arm Gears	7
22. Adjusting the Rewind Clutch	7
23. Adjusting the Loop Former	7
24. Adjusting the Auto Loop Restorer	8
25. Timing the Sprockets	8
26. Drive Belt Tracking/Shifting	8
27. Adjusting the Sound System	8
28. Projector Speed Checks	9
 TROUBLE SHOOTING	
29. Miscellaneous Trouble and Remedies	10
30. Picture Trouble and Remedies	11
31. Film Transport Troubles and Remedies	12
32. Sound System Troubles and Remedies	13
33. Automatic Threading System Troubles and Remedies	15
NUMERICAL INDEX	70

LIST OF ILLUSTRATIONS

	Caption	Page
Figure A.	Service tools	iv
Figure B.	Aligning the Optical System	3
Figure C.	Shuttle tooth clearance	3
Figure D.	Shuttle Arms and Cam Assembly	4
Figure E.	Adjusting Shuttle Height	4
Figure F.	Shuttle Stroke Adjustment	5
Figure G.	Run-Still Clutch Adjustments	6
Figure H.	Adjusting Reel Arms	7
Figure J.	Photocell and Sound Drum Alignment	8
Figure 1.	Projector Covers	21
Figure 2.	End Caps and Lamp Components	23
Figure 3.	Electrical Components	25
Figure 4.	Gears and Reel Arms	27
Figure 5.	Run-Still Linkage, Belt Shifter and Flywheel	29
Figure 6.	Projector Base Electrical Components	31
Figure 7.	Projector Base Mechanical Components	33
Figure 8.	Mechanism Assembly-View I	35
Figure 9.	Mechanism Assembly-View II	37
Figure 10.	Mechanism Assembly-View III	39
Figure 11.	Mechanism Assembly-View IV	41
Figure 12.	Mechanism Assembly-View V	43
Figure 13.	Power Transformer Module (Code A, B & D)	44
Figure 14.	Power Transformer Module (Code C)	45
Figure 15.	Soundhead Assembly	47
Figure 16.	Front Reel Arm Assembly	49
Figure 17.	Rear Reel Arm Assembly	51
Figure 18.	Main Control Switch (Codes A, B & D)	52
Figure 19.	Main Control Switch (Code C)	53
Figure 20.	Exciter Lamp Cover Assembly	54
Figure 21.	Lamphouse Cover Assembly	55
Figure 22.	Aperture Plate Assembly	56
Figure 23.	Cord Wrap Assembly (Code C)	57
Figure 24.	Front Cover with Speaker Assembly	59
Figure 25.	Amplifier Pictorial Wiring Diagram	60
Figure 26.	Amplifier Schematic Wiring Diagram	61
Figure 27.	Pictorial Wiring Diagram (Code A)	62
Figure 28.	Electrical Schematic (Code A)	63
Figure 29.	Pictorial Wiring Diagram (Code B)	64
Figure 30.	Electrical Schematic (Code B)	65
Figure 31.	Pictorial Wiring Diagram (Code C)	66
Figure 32.	Electrical Schematic (Code C)	67
Figure 33.	Pictorial Wiring Diagram (Code D)	68
Figure 34.	Electrical Schematic (Code D)	69

SERVICE TOOLS AND SUPPLIES CHART

Figure A Index No.	Tool No.	Tool Description	Tool Usage
1	S-078175-6-F1	Lamp Plug	Optical system alignment (Fig. B)
2	S-550-2-N1	Lens Plug	Optical system alignment (Fig. B)
3	S-550-2-N2	Alignment Rod	Optical system alignment (Fig. B)
4	S-550-2-N3	Aperture Plug	Optical system alignment (Fig. B)
5	P/N 44507	Compression Spring	Optical system alignment (Fig. B)
6	Make in Shop	Torque Wrench	Adjust rewind torque (par. 22).
7	P/N 710365	Rewind Torque Reel	Adjust rewind torque (par. 22).
—	Purchase	Push-Pull Torque Scale (Chatillon #LP-72, Master Gage Co., Chicago, IL 60622)	Adjust rewind torque (par. 22).
8	S-09701-35-N2	Shuttle Height Gage	Check shuttle protrusion (par. 18, step b).
9	Make in Shop	Alignment Tool	Align sound drum (Fig. J).
10	S-552-1-N1	Timing and Alignment Plate	Timing the sprockets (par. 25-2)
11	S-552-2-N1	Loop Restorer Roller Gage	Adjust loop restorer (par. 24-1).
12	P/N 48478	Cleaning Pad	Clean film path.
	G1271-F1	Setscrew Wrench and Handle	For 4-40 Bristol type setscrews.
	G1271-X2	Setscrew Wrench	For 4-40 Bristol type setscrews.
	STK3852-B	Setscrew Wrench and Handle	For 6-32 Bristol type setscrews.
	STK3863-B	Setscrew Wrench	For 6-32 Bristol type setscrews.
	G165-F1	Setscrew Wrench and Handle	For 8-32 Bristol type setscrews.
	G165-F3	Special Setscrew Wrench	For setscrews in wrench handles.
	P/N 078215	Lubricating Oil	See Parts Catalog illustrations.
	P/N 070034	General Purpose Grease	See Parts Catalog illustrations.
	P/N 070043	Special Grease	See Parts Catalog illustrations.
	P/N 070047	Special Grease	See Parts Catalog illustrations.
	TFL-55-NX1	Test Film Loop	Adjust centering and framing.
	TFL-37-NX1	Test Film Loop	Check buzz track
	TFL-2575-NX2	Test Film Loop	Check 7000Hz azimuth.
	Purchase	3M Co. Adhesive #EC847	See paragraph 7, step A.
	Purchase	3M Co. Adhesive #EC1711	See figures 7 & 24.
	Purchase	3M Co. Adhesive #EC4475	See figure 25.
	Purchase	Loctite Corp. Sealant #222	See figure 25.
	Purchase	Dow Corning Corp. Heat Sync Compound #DC340	See figure 25.

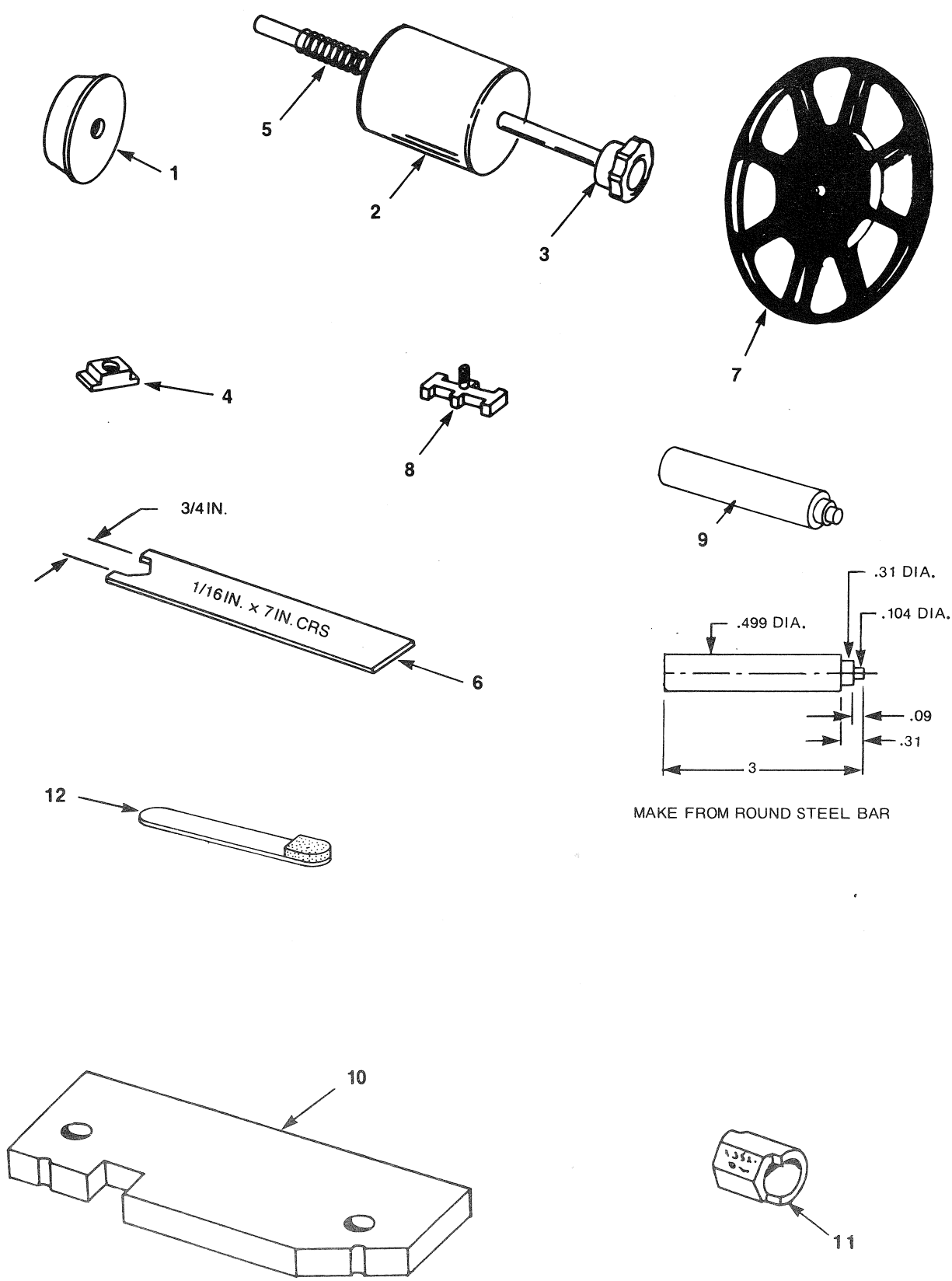


Figure A. Service Tools

INTRODUCTION

1. SPECIAL MAINTENANCE PRECAUTIONS.

Refer to projector's serial number nameplate for correct model number and suffix letter to be used with code charts throughout the parts catalog.

Before beginning repairs, check specific customer complaints against the trouble shooting charts in this service manual for the most probable causes and suggested remedies. When repairs have been made, be sure to clean and lubricate the projector before it is returned to the customer.

2. CLEANING INSTRUCTIONS.

Use isopropyl alcohol and the special cleaning pad (Figure A-12) to remove hardened emulsion, and be careful not to scratch the surfaces that contact the film. Pay particular attention to the sound drum and the soundhead rollers.

Use isopropyl alcohol to clean plastic parts and be careful not to remove lubricants from critical areas, especially in the film threading linkage. Blow away dust and film chips with a low-pressure jet of compressed air and wipe with a soft, lint-free cloth.

3. LUBRICATIONS INSTRUCTIONS.

Parts and areas that require lubrication are shown in the Parts Catalog illustrations by means of ballooned letters "L" (for oil) and "G" (for grease). Specified lubricants are available from the Bell & Howell Company. Be sure that the part or area to be lubricated is clean before lubricant is applied, and be careful not to over-lubricate. A drop or two of oil or a very light film of grease will be adequate. Apply grease with a camel's hair brush and wipe away excess lubricant with a lint-free cloth.

Felt pads and wicks should be placed in a shallow pan containing the specified grease and allowed to stand until they are completely saturated. Wipe away excess grease before installing these felt parts.

4. GENERAL REPLACEMENT DATA.

The rear cover is secured to the projector base with three screws and to the end caps with two screws each. When these seven screws have been removed, carefully work the cover free from the projector to the limit of the inter-connecting leadwires. The rear cover may be completely separated from the projector by disconnecting the input line at the power transformer module. The covers on the underside of the base can be removed to expose the amplifier and its controls.

5. FUSE REPLACEMENT.

a. The amplifier power input circuit and exciter supply is protected by two 2.0A Slo-Blo fuses which are located on the printed circuit assembly. The bottom cover must be removed to gain access to the fuse.

b. The electrical system of these projectors is protected against overheating by special thermal fuses. Fuses are installed in the drive motor windings and in the power transformer and can not be replaced. In the event a thermal fuse opens, repair cause of overheating and replace defective item.

6. LAMP REPLACEMENT.

CAUTION: Turn projector off and disconnect the line cord before removing lamps.

a. **Projection Lamp.** Press in on the top of the lamp retainer spring to release the lamp from its holder. Pull the lamp straight out from its socket (do not twist or wiggle the lamp during removal). Assemble the new lamp into the socket, position lamp in the lamp holder and clamp in place with the retainer spring.

b. **Exciter Lamp.** Note position of the orientation notch in the lamp base. Rotate lamp release ring (Figure 15-14). Twist the lamp counterclockwise and lift it from the contact pins. Position the new lamp on the lamp socket pins with notch oriented as above and twist clockwise to set in place. Return lamp release ring to original position.

c. Remove finger prints from the lamp with lens tissue or a lint-free cloth.

DISASSEMBLY/ REASSEMBLY PROCEDURES

7. GENERAL PRECAUTIONS.

a. Cemented or adhesive-backed parts are so noted in the parts lists and can be removed by carefully prying up one edge. Be careful not to scratch surrounding areas and remove traces of old adhesive with solvent before installing new labels or nameplates. If the new item is to be cemented in place, use 3M Co. Adhesive #EC 847. If the new item is adhesive-backed, peel off the protective tissue and smooth the item in place.

b. When removing riveted parts for replacement, drill out the old rivets with a drill equal in size or slightly smaller than the diameter of the rivets. Use screws and nuts of corresponding size to attach the replacement parts, making sure that these parts do not interfere with the proper operation of the equipment.

8. DRIVE BELT REPLACEMENT.

a. If the drive belt is badly worn or frayed and in need of replacement, cut the belt and remove it. Clean both belt pulleys with isopropyl alcohol.

b. Unplug the motor leads from the connector located atop the power transformer module. Remove the motor bracket strap from each end of the drive motor. Starting from the end of the motor nearest to the power transformer module, loop the new drive belt around the motor onto the motor pulley. Engage the upper end of the belt around the upper (mechanism) pulley with as little stretching as possible.

c. Reassemble the motor bracket straps and insert the motor leads connector.

9. INTERNAL SPEAKER REPLACEMENT.

When reattaching wire leads to the speaker refer to wiring diagram for proper connection to color coded terminal.

10. POWER TRANSFORMER REPLACEMENT.

Use care when positioning the transformer to avoid pinching wire leads between components. In model 2592CX position the transformer to attain a minimum gap where the connectors panel (Figure 14-16) passes through the rear cover.

11. REEL ARM REPLACEMENT.

Be prepared for sudden pop-out of the lock button (Figure 4-29 and 4-30) and compression spring (Figure 4-31) when removing either reel arm. The lock button cups (Figure 4-32) may be removed by applying finger pressure to the cup from the gear side of the mainplate.

12. AMPLIFIER REPAIR.

NOTE: Amplifier circuit board repairs are not recommended except as an emergency measure and then only if qualified electronics personnel and test equipment are available. Using standard electronic shop test equipment and techniques, check the amplifier assembly and its components for continuity and for shorts and open circuits. Refer to the appropriate wiring diagram for voltages and ratings of components and for test points. If a faulty condition is tracked to the amplifier, replace the complete assembly (Figure 6-11).

13. MAIN PLATE REMOVAL.

The main plate is secured to the base with four screws (Figure 7-8). Before removing the main plate it will be necessary to unsolder the lead at the exciter lamp socket (Figure 15-13). Also disconnect the photocell (Figure 15-19) from the amplifier. Remove the soundhead assembly (Figure 7-4) to gain access to two of the four screws. A free hanging connector, located near the blower, is provided to disconnect the projection lamp socket (Figure 2-11).

14. SOUNDHEAD REPLACEMENT.

The center-to-center distance (2.391 inches) from the lower sprocket to the sounddrum is critical and if improperly set will affect sound reproduction. The sprocket/sounddrum distance is precisely set with a gage at the factory. Before removing the soundhead trace the outline of the soundhead onto the mainplate. When reassembling, hold the soundhead within that outline while securing the screws.

15. MECHANISM REPLACEMENT.

The mechanism (Figure 7-7) is secured to the main plate with four screws (Figure 7-5). To gain access to the two lower screws it will be necessary to remove or raise the drive motor (Figure 3-12).

Take care when moving the mechanism through the main plate opening to avoid bending sheet metal parts such as the shutter (Figure 11-5), and, in model 2592 the safety shutter rod (Figure 5-8).

16. GENERAL INSTRUCTIONS.

The alignment and adjustments covered in this section are necessary to the proper operation of the projector. Even though the projector may not have undergone a complete overhaul and repair, it is recommended that all adjustments be checked as a routine measure.

All special tools, test films and fixtures required to perform the adjustment procedures are illustrated and listed in Figure A. In addition, special electronic test equipment (volt ohmmeter, oscillator and tachometer or Strobotac) are needed to check and adjust the sound system of the projector. For accurate results, connect the projector to a line variable transformer set at 120V. In model 2592 CX set the variable transformer to match the setting of the voltage selector switch in the cord wrap panel.

WARNING

Many of the procedures listed in this section require operation with rear cover removed. To avoid shock hazards, disconnect the power and, if applicable, discharge the motor starting capacitor when not required. The use of an isolation transformer is recommended.

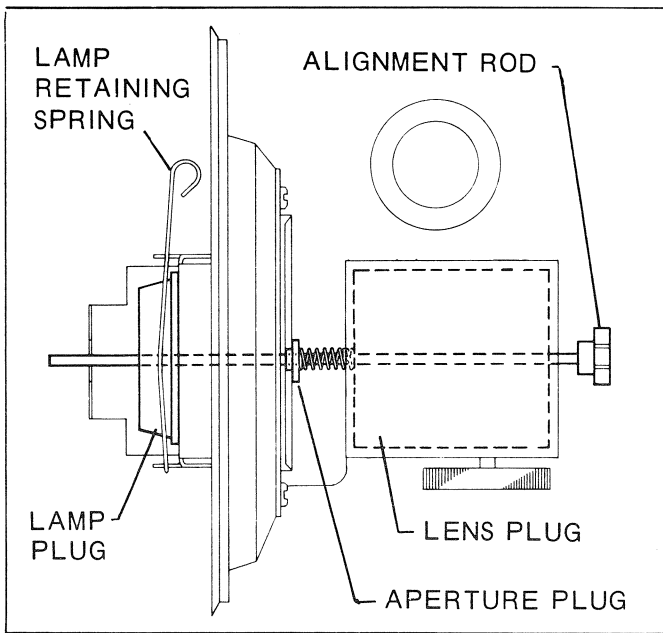


Figure B. Aligning the Optical System

17. OPTICAL ALIGNMENT (Figure B).

It is important that these alignments be performed in the following listed sequence (steps a and b). Be sure to turn the mechanism manually until the shutter blade is clear of the aperture opening, before inserting alignment tools.

a. Aligning the Aperture Plate (Figure B).

- (1) Remove the projection lens and the projection lamp.
- (2) Disassemble the pressure plate from the lens carrier.
- (3) Loosen the two aperture plate mounting screws just enough to permit movement of the aperture plate, and insert the aperture plug (Figure A-4) into the aperture opening.
- (4) Insert the alignment rod (Figure A-3) through the lens plug until the rod end protrudes enough to install the spring (Figure A-5). Insert the lens plug into the lens carrier until the tip of the alignment rod engages the aperture plug previously installed. Tip the projector carefully onto its rear end cap (lens opening facing up). The alignment rod must slide freely through the aperture plug without binding. If necessary, shift the aperture plate slightly keeping it horizontal (shuttle tooth travel is even from top to bottom) until free rod movement is obtained; then tighten aperture plate screws.

b. Aligning the lamp.

- (1) Loosen the heat shutter assembly mounting screws just enough to permit movement of the heat shutter assembly. Insert lamp plug (Figure

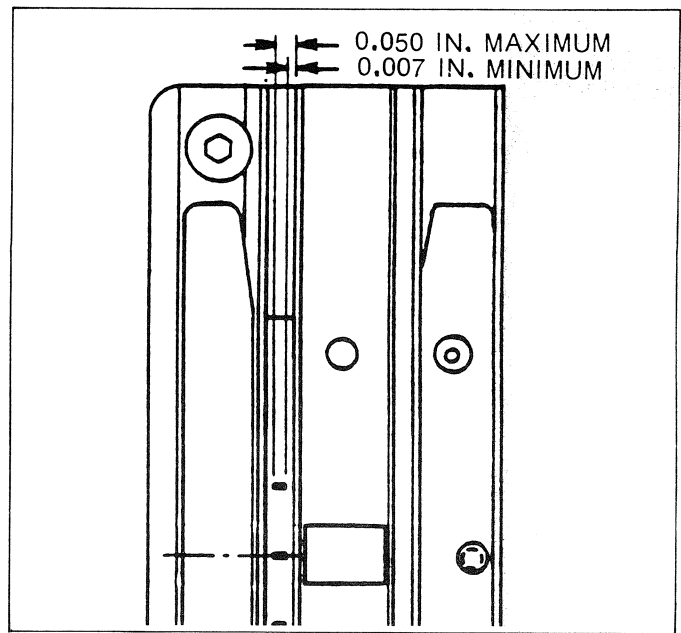


Figure C. Shuttle Tooth Clearance

A-1) into lamp position and secure the lamp retainer spring. Insert the lens plug (Figure A-2) into the lens carrier. Slide the alignment rod completely into place until the tip of the rod engages the hole in the lamp plug. Shift the heat shutter assembly as necessary until rod slides freely in the lamp plug hole. Then tighten the screws securely.

NOTE: After alignment has been completed, touch up the aperture area with a flat black paint as required. This will prevent any reflections which may occur from the aperture.

18. ADJUSTING THE INTERMITTENT MECHANISM.

NOTE: All of the following mechanism adjustments must be made with framer knob in the "center" position. After each adjustment, manually rotate the cam shaft to "SEAT" the adjusted component and recheck the adjustment.

a. Checking Shuttle Tooth Side Clearance. Advance the mechanism manually until the shuttle is at the center of its stroke as shown in Figure C. The clearance from the edge of the shuttle slot to the inner end of the shuttle tooth (nearest the aperture opening) should be 0.007-inch (0.178mm) minimum. From the edge of the shuttle slot to the outer end of the shuttle tooth, the distance should be 0.050-inch (1.27mm) maximum. Check these clearances at both the upper tooth and lower tooth. If the clearances vary at the upper and lower teeth and inner clearance is less than 0.007-inch (0.178mm) at either end, the following possible causes should be checked and corrected:

- (1) Aperture plate out-of-alignment:
See paragraph 17, step a, for aperture plate alignment.

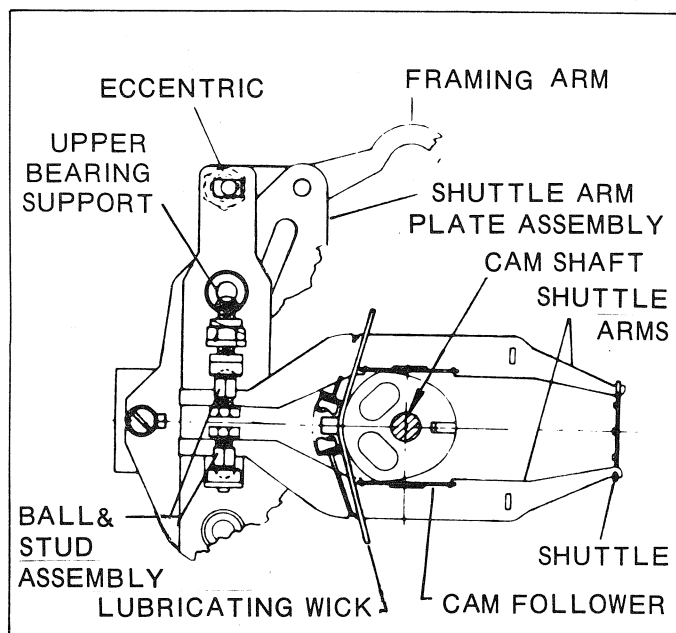


Figure D. Shuttle Arms and Cam Assembly

- (2) Shuttle stroke incorrect:
See paragraph 18, step d, for shuttle stroke adjustment.
- (3) Link bearing missing from end of shuttle arm:
Partial disassembly is required to remove and replace the shuttle arm. Refer to Parts Catalog Figure 11.
- (4) Ball and stud assembly loose on shuttle arm:
Reposition the shuttle arm (Figure D) and tighten stud nut securely.
- (5) The shuttle tooth side clearances can be adjusted by loosening the ball and stud assembly nuts. Slide the shuttle arms as required to obtain the clearances as specified in Figure C. This adjustment may cause the shuttle to exceed the stroke limits.

b. Checking Shuttle Tooth Height. Carefully place the projector on its rear end cap with the front of the projector facing you. The steps at either end of the shuttle tooth height gage (Figure A-8) are the height limits and are marked "GO" and "NO-GO." Insert the gage into the film channel between the rails of the aperture plate and attempt to slide it over the shuttle teeth. The "GO" step should pass over the shuttle teeth without catching. The "NO-GO" step must not pass over the shuttle teeth. If the shuttle teeth are too high or too low, adjust height as follows:

- (1) Remove the belt from the mechanism pulley. Turn the mechanism drive pulley manually until the access hole in the shutter and setscrew (Figure 11-17A) on the in-out bracket are aligned (Figure E).

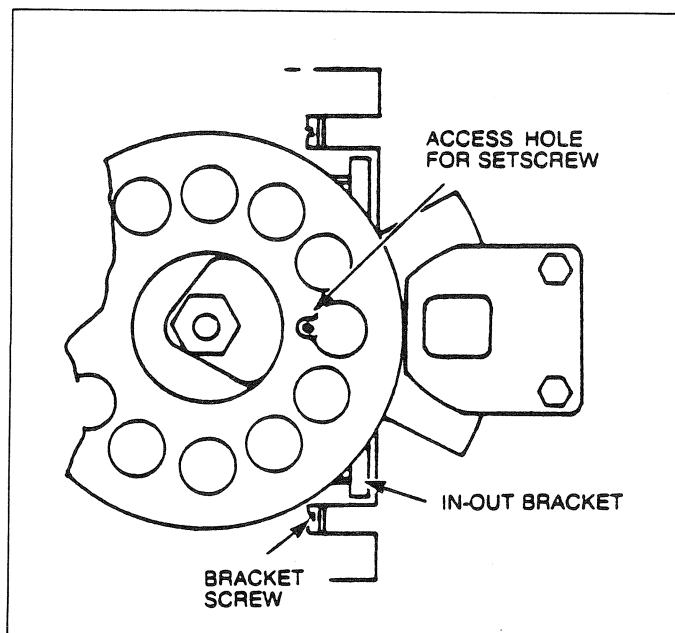


Figure E. Adjusting Shuttle Tooth Height

- (2) If the shuttle teeth were too low ("NO-GO" step passes over the shuttle teeth), turn the cam follower screw counter-clockwise to increase tooth height. If the shuttle teeth were too high ("GO" step catches against shuttle teeth), turn the adjusting screw clockwise. Recheck shuttle tooth height and continue to adjust the follower screw until the proper height is obtained.
- (3) If only one tooth cannot be brought into tolerance, it may be necessary to loosen the screws (Figure 11-15) which secure the in-out bracket (Figure E) and adjust the bracket slightly. Then retighten the mounting screws and adjust shuttle tooth height as outlined above.

c. Checking Fit of Shuttle arms to Pull-Down Cam.

NOTE: If the projector has just been lubricated, run for two or three minutes before proceeding with this adjustment.

- (1) Open the lens carrier and turn the projector mechanism by hand until the shuttle teeth are retracted and have moved downward to approximately the center of the stroke (center tooth approximately on horizontal center line of aperture). Tighten the upper bearing support assembly to the point of having a slight binding or ratcheting while turning the camshaft. Turn the upper bearing support assembly counter-clockwise approximately 1/16 turn, allowing the cam to turn freely without binding.

CAUTION

Do not tighten shuttle arms more than is specified in an

attempt to remove cam noise. Excessive tightening of shuttle arms for the purpose of reducing other noises will affect speed, reduce life of cam, cam shoes and possible use of excess current by loading the motor.

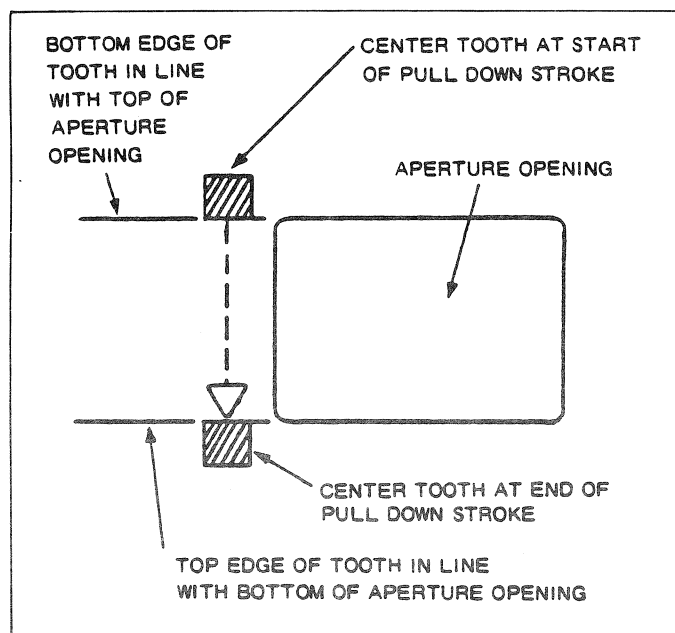


Figure F. shuttle Stroke Adjustment

d. Checking and Adjusting Shuttle Stroke (Figure F). Shuttle stroke (vertical travel on down stroke) is precision set at the factory. Therefore, the procedures for checking and adjusting shuttle stroke are required only when the shuttle arm plate assembly or arms have been moved. Before starting these procedures, make sure the mechanism is assembled correctly.

- (1) Procedure for Checking Shuttle Tooth Stroke. Check for proper setting of the shuttle tooth side clearance (paragraph 18, step a), shuttle tooth height (paragraph 18, step b) and fit of the shuttle arms (paragraph 18, step c).

Manually rotate the cam shaft to position the shuttle at the extreme top of its movement. Turn the framer knob as required until the bottom edge of the center shuttle tooth is in line with the top edge of the aperture opening (Fig.F). Rotate the cam shaft until the shuttle is at the extreme bottom of its stroke. In this position the top edge of the center shuttle tooth should be in line with the bottom edge of the aperture opening for a close proximity of the factory setting without the use of special gages.

To further check the shuttle stroke, project a trial length of film. The projected image should be steady and there should be no noise as the shuttle teeth penetrate the film perforations. If these conditions are not present proceed to step 2.

- (2) Procedure for Adjusting Shuttle Stroke. Loosen the two shuttle plate mounting screws (Figure 11-18) just enough to permit movement of the shuttle arm plate.

- (a) To lengthen the stroke, shift the shuttle arm plate toward the pull-down cam.
- (b) To shorten the stroke, shift the shuttle arm plate assembly away from the pull-down cam.
- (c) After adjusting stroke, recheck shuttle tooth side clearance as instructed in paragraph 18, step a, and readjust the shuttle arms for proper tooth side clearance.

e. Framing Adjustment. Thread the projector with test film TFL-55-NX1. Project the film and turn framing knob from one limit to the other. If at one limit a frame line is not visible, loosen the nut on the framing eccentric located at the top of the shuttle arm plate assembly (Figure D) and turn the eccentric until the frame line appears. Hold the eccentric while tightening the nut. Check the adjustment by again turning the framing knob from limit to limit while observing the picture. When the eccentric is properly adjusted, either frame line can be projected and movement of film should be approximately equal at top and bottom of framer travel.

19. LENS CARRIER ADJUSTMENT.

Angular relationship between the lens and the aperture plate is controlled by the lens mount stop screw (Figure 10-20). Thread the projector with roll title or target film TFL-55-NX1 having sharp images in the corners and project a picture approximately 30 inches high onto a matte surface. The projector must be square with the screen. Focus the picture and compare resolution of the two sides of the image when viewed from a distance approximately twice the width of the picture. If one side appears to be soft, refocus to sharpen that edge of the picture and note whether the lens is moved toward or away from the aperture. For example, if image at right hand edge of the screen is soft until the lens is moved toward the aperture, then the lens stop screw is set too far forward and should be turned clockwise.

CAUTION

This adjustment is critical. Turn the lens stop screw only a few degrees between tests for sharpness.

20. ADJUSTING THE RUN-STILL CLUTCH (Figure G). (MODEL 2592)

a. Checking Stop Pawl to Trigger Clearance. Move the run-still lever to the run position. Rotate the mechanism by hand until the finger of the trigger is adjacent to the inner

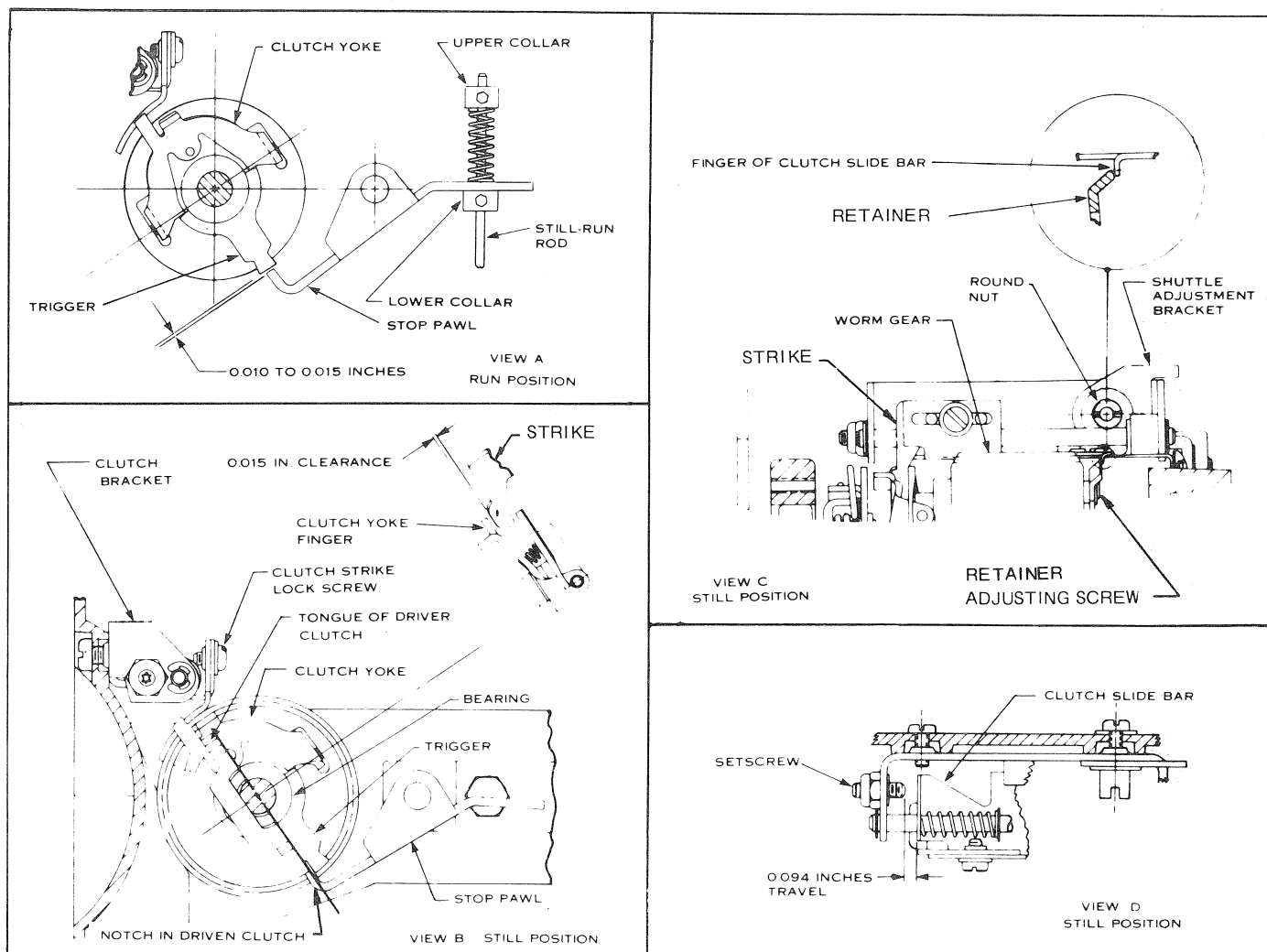


Figure G. Run-Still Clutch Adjustments

bent ear of the stop pawl as shown in view A, Figure G. Clearance between the stop pawl and trigger should be approximately .010 to .015-inch. To adjust, move the lower collar up or down, as required, on the still-run rod. The upper collar should be approximately .09-inch from the top of the still-run rod. Move the run-still lever to the still position. Rotate the mechanism worm by hand until the trigger is against the stop pawl. The stop pawl should move into the notch in the flange adjacent to the trigger as in View B. Adjust position of upper collar as required to seat the stop pawl in the notch.

b. Checking Shuttle Retraction. When the still-run clutch is in the still mode the slide bar assembly (Figure 12-7) must move the in-out assembly (Figure 11-17) so that the in-out follower is held .010 away from the high dwell of the in-out cam. Adjust as follows:

- (1) Move the run-still lever to the run position. Rotate the mechanism pulley and observe the vertical clearance between the finger of the clutch slide bar and the retainer (View C). Bend the finger up or down as required to set to .030 clearance.

- (2) Move the run-still lever to the still position. Rotate the worm until the stop pawl drops into the notch of the driven clutch (View B). Move the slide bar (View D) until its finger moves over the retainer as shown (View C). Loosen the round nut and temporarily move the shuttle adjustment bracket forward.

- (3) Turn the retainer adjusting screw (View C) clockwise to move the in-out follower away from the in-out cam and counterclockwise to allow it to move closer. Turn the screw $\frac{1}{4}$ to $\frac{1}{2}$ revolution, rotate the shutter and then inspect for .010 clearance between the in-out follower and the high dwell of the in-out cam. Move the shuttle adjustment bracket back allowing .015 clearance between it and the leaf spring of the slide bar and fasten the round nut securely.

- (4) Loosen the strike screw and adjust the .015 clearance between the strike and the clutch yoke (View B). Retighten the strike screw. Adjust the depth of the set screw (View D) so that it provides .094 travel for the slide bar.

21. ADJUSTING THE REEL ARM GEARS. (Figure H)

Only the upper face gears of the reel arms are shown in Figure H; however, the lower face gears are adjusted in a similar manner. With the reel arm cover removed, check the backlash between the face gear and its mating spur gear through a full 360-degrees rotation of the gears. Gear backlash should be a minimum of 0.005-inch (0.127mm) and a maximum of 0.018-inch (0.460mm). To adjust the backlash of either face gear in the front reel arm and the upper face gear only in the rear reel arm, loosen the set screws in the face gear hubs and shift the gears as necessary. To adjust the lower face gear in the rear reel arm, loosen the set screw (Fig. 17-12) in the tapped hole in the reel arm casting and move the lower gear shaft back and forth.

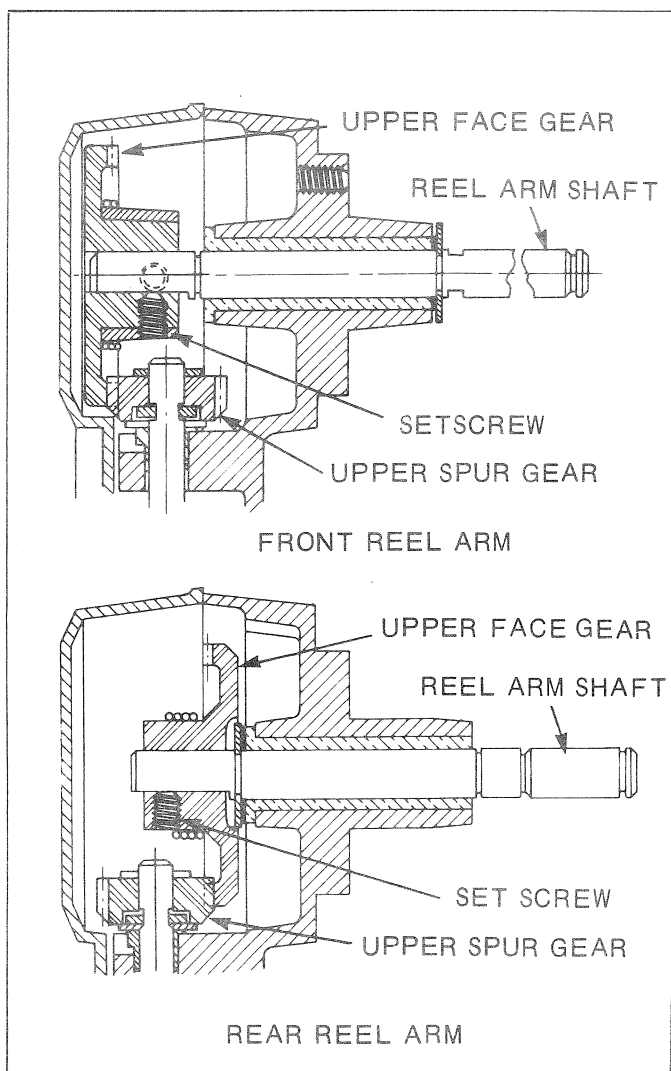


Figure H. Adjusting Reel Arms

22. ADJUSTING THE REWIND CLUTCH.

The rewind clutch must be adjusted to produce a supply spindle torque for the rewind mode of operation. Install an

empty reel (Figure A-7) on the supply spindle and wrap several turns of a short film strip around the reel hub. Hook a spring scale to the free end of the film strip, turn the control knob to "REVERSE" and press the rewind button. The spring scale must register between 28 and 44 ounces at the point when the rewind clutch begins to slip.

A special wrench (Figure A-6) must be used for adjusting the rewind clutch (Fig.4-14). Tighten or loosen the hex nut on the clutch hub.

23. ADJUSTING THE LOOP FORMERS.

a. Loosen the two set screws (Figure 9-39) that secure the upper loop former (Figure 10-1G). Loosen the entrance channel screw (Figure 9-34). Loosen the screws that secure the upper and lower sprocket plates (Figure 9-38 and 9-25C). Close the threading system with the threading arm (Figure 9-4) and hold in this position while retightening the screws to secure the lower sprocket plate. Hold the guide bracket (Figure 9-20) counterclockwise and retighten its screw. Remove the retaining ring (Figure 9-7) and film guide (Figure 9-8). Loosen the film guide stud (Figure 9-12) and rotate the locking lever eccentric (Figure 9-13) so that the Autoload latch assembly (Figure 9-14) holds the loop formers in the position described above. Attempt to slide a .015 inch thick feeler gage between the aperture rails and the loop former (Figure 9-32B). It should enter the space freely. A .025 inch thick feeler gage should not enter the space.

b. Close the threading system. Move the upper loop former (Figure 10-1) so that its inside surface overhangs the aperture rails by .005(+.005) inch. This overhang is to prevent the leading edge of the film from stubbing the upper edge of the aperture plate during threading. Retighten the two set screws in the loop former hub.

c. Place a short strip of film between the upper sprocket and its guard and in the entrance channel. Hold the guard against the film and retighten the upper sprocket plate screws. Close the threading system and retighten the entrance channel screw.

d. Loosen the shuttle retractor screw (Figure 9-32C). Close the threading system. Move the shuttle retractor so that it holds the shuttle below the aperture rails. Retighten the screw.

e. With the threading system latched for threading, try to lift the escape hatch of the loop former (Figure 10-1G). If it opens, the locking pawl (Figure 10-1E) does not have sufficient engagement in the loop former. Adjust by loosening the screw (Figure 10-1D) and repositioning the pawl as required. Release the autoload latch allowing the system to snap open. The locking pawl should exit the loop former as its bracket strikes the underside of the hood (Figure 8-8). Shift or bend the hood as required to assist release of the locking pawl.

24. ADJUSTING THE AUTO LOOP RESTORER.

a. Open the threading system. Check the loop restorer cam (Figure 12-27) to be sure that it is secured against the shoulder of the cam shaft toward the shutter and the set screw (Figure 12-11) is on the flat of the shaft. Place the loop restorer gage (Figure A-11) over the loop restorer roller. The gage should touch the adjacent sprocket guard roller (Figure 8-25) without putting any load on the roller. To adjust the position of the loop restorer roller loosen the two screws (Figure 10-11) and move the self centering assembly (Figure 10-14) as required. Be sure that the two flat strips in the self centering assembly lay flat against the bracket faces.

b. With the threading system open, the cam follower (Figure 10-7E) should be centered in the space between the long tang of the cast housing and the first face of the loop restorer cam. To adjust, loosen the screw (Figure 10-5) and move the cam follower as required.

c. The clearance between the formed edge of the cam follower and the cylindrical part of the cam where the set screw enters should be .060 inch. To adjust, loosen the two screws (Figure 10-7A) and move the cam follower as required.

NOTE: Timing of the sprockets and shuttle is essential to loop restorer function.

25. TIMING THE SPROCKETS.

a. Turn the framer knob (Figure 11-21) CW as far as it will go. Manually turn the mechanism pulley in the forward transport direction until the shuttle is at the bottom of the stroke with its teeth fully protruding and the trailing edge of the shutter blade bisects the aperture opening. If the projector is equipped with a still clutch, push upward on the underside of the worm to remove excess play.

b. Place the timing and alignment plate (Figure A-10) over the sprocket hubs. A sprocket tooth should be in a direct line of sight with the notch in the plate at both the upper and lower sprocket. To adjust, loosen the sprocket gear set screws (Figure 8-9) without disturbing the radial position of the gears. Rotate the sprocket as required and retighten the set screws.

26. DRIVE BELT TRACKING/SHIFTING.

The drive belt should run in the center of the belt shifter and each pulley crown. Move the mechanism pulley and/or the motor pulley as required to accomplish proper tracking and shifting. If pulley positioning alone does not cause the belt to track in the center of the pulleys, raise the front or rear of the motor by placing shims as required between the motor bracket and the projector base.

27. ADJUSTING THE SOUND SYSTEM.

a. Photocell and Sound Drum Alignment.

(1) Loosen the photocell set screw (Figure 15-15), clamping screw (Figure 15-3) and the two sound drum mounting screws (Figure 15-16). Remove the exciter lamp and the optical slit.

(2) Insert the sound drum alignment tool (Figure A-9) into the optical slit opening as shown in Figure J.

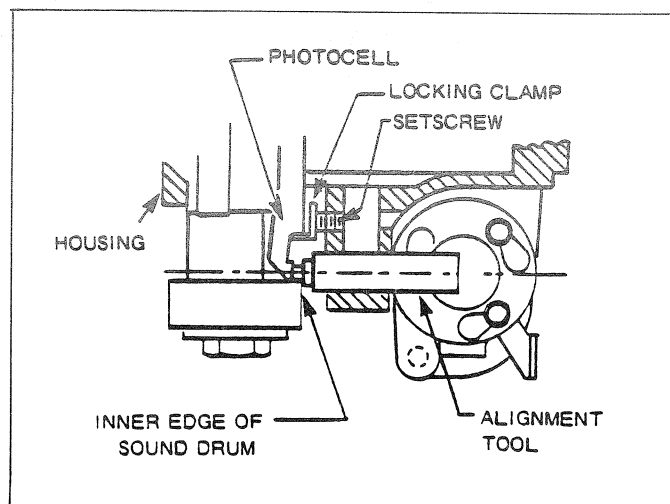


Figure J. Photocell and Sound Drum Alignment

(3) Press the sound drum in until its inner face just makes contact with the first step (.104 dia.) of the alignment tool, and maintain this contact while tightening the two sound drum mounting screws securely.

(4) Move the photocell so that its T-shaped face is flush with the face of the housing. Move the locking clamp against the T-shaped face of the photocell and tighten the set screw.

b. Stabilizer Roller Tension Adjustment. Thread the projector with film and run with projection lamp on. Turn the adjusting screw (Figure 15-24) until the tension on the counter-balance spring is equalized and holds the rollers at equal distance from the threading guides. Finer adjustment will be made in the next step.

c. Optical Slit Adjustment.

(1) Insert the optical slit into its opening in the soundhead. The adjusting hole in the barrel of the slit must be at top center.

(2) Insert a 0.050-inch (1.27mm) feeler gage between the tip of the optical slit and the sound drum and press the optical slit in against the feeler gage. Hold in this position while tightening the clamp screw just enough to hold the slit in place.

(3) Thread the projector with 7000Hz optical setting film TFL-2575-NX2 (film emulsion toward slit lens) and connect an 8-ohm, 50-watt load resistor and voltmeter to the speaker jack.

NOTE: A pair of hairpin tongs approximately 6 inches long and formed with the ends turned inward and tapered to engage holes in end of slit barrel are very useful in adjusting the optical slit. They can be made from 20 to 26 gage music wire or 1/16 inch diameter drill rod.

- (4) Set the volume and tone controls at approximately midposition and start the projector. Move slit toward or away from film, as required, to obtain an output reading. Rotate the slit to obtain peak reading and simultaneously move in or out until maximum output is obtained. Tighten slit clamping screw securely to lock the adjustment. Fine tune the stabilizer roller adjustment for minimum flutter.

d. Buzz Track Adjustment. The lateral position of the film at the "soundhead" location is controlled by the flanged roller (Figure 15-6) and the edge guide screw (Figure 15-20). Turn the edge guide screw in or out for precise lateral positioning of the optical sound track in front of the optical slit.

- (1) Connect a voltmeter with 8-ohm load to the speaker jack output, and thread the projector with buzz track test film TFL-37-NX1.

- (2) Run the projector with the projection lamp on and adjust for minimum output on the voltmeter. Disconnect the voltmeter and adjust the volume control to a suitable listening level. Then check centering by listening to audio.
- (3) Reconnect the voltmeter and adjust the lateral position of the edge guide until the minimum voltage output reading is obtained. Remove buzz track film and voltmeter.

28. PROJECTOR SPEED CHECKS.

Speed of the projector is not adjustable. Therefore, speed checks are primarily for the purpose of determining that the equipment is operating properly and as a means of detecting excessive mechanism loads, damaged drive belt or similar conditions.

Speeds at Nominal Voltage:

Sound Speed	24FPS +/-2%
Shutter	1440RPM +/-2%
Sprocket	102.86RPM +/-2%

TROUBLESHOOTING

29. MISCELLANEOUS TROUBLES AND REMEDIES.

Trouble	Probable Cause	Remedy
Nothing runs	1. Main switch off. (Model 2592 CX) 2. Defective switch. 3. Damaged line cord. 4. Loose connections. 5. Blown thermal fuse.	1. Press main switch to ON. 2. Determine which switch is defective and replace. 3. Repair or replace line cord. 4. Repair connections. 5. Replace drive motor and check for proper operation.
Motor hums but does not run	1. Starting circuit open or shorted. 2. Defective capacitor or drive motor. 3. Foreign object(s) in mechanism.	1. Replace loose or transposed connections. 2. Replace defective capacitor or drive motor. 3. Locate and remove.
Motor runs but mechanism does not run	1. Drive belt broken or unhooked from pulley. 2. Motor pulley loose on shaft. 3. In Still mode. (Model 2592)	1. Reinstall or replace drive belt (para. 8). 2. Reposition motor pulley and tighten setscrews. 3. Reposition Run/Still lever to run position.
Rewind does not operate/stalls.	1. Rewind gears not engaged. 2. Clutch slipping. 3. Projector in "still" position. (Model 2592)	1. Press rewind button. 2. Adjust (para.22). 3. Place still/run lever in "run" position.
Rear spindle does not rotate for take-up.	1. Take-up belt worn/broke. 2. Take-up sleeve slipping. 3. Override clutch slipping or improperly installed. 4. Idler arm (Fig.4-11C) not functioning.	1. Replace belt. 2. Replace take-up sleeve (Fig.17-11). 3. Check installation. Replace Clutch & Gear Assembly (Fig.4-2). 4. Clean idler arm and adjust.

29. MISCELLANEOUS TROUBLES AND REMEDIES (Continued)

Trouble	Probable Cause	Remedy
Short lamp life	1. Voltage at lamp too high. 2. Dirt and lint clogging blower housing. 3. Blower fan loose on drive motor shaft. 4. Contacts burned in lamp connector.	1. a) Check for proper lamp use. b) Check voltage selector for proper setting. (Model 2592 CX) 2. Clean blower housing. 3. Tighten or replace blower fan setscrew. 4. Replace lamp connector.
Projector speed slow.	1. Voltage at motor too low. 2. Binding in mechanism. 3. Drive belt slipping. 4. Defective capacitor or motor.	1. Check voltage selector for proper setting. (Model 2592 CX) 2. Free binding condition. 3. Clean or replace drive belt (para.8). 4. Replace defective component.
Projector runs fast or slow	1. Drive belt incorrectly tracking on pulley.	1. Align and adjust pulleys (para.26).

30. PICTURE TROUBLES AND REMEDIES.

Film jump	1. Damaged film. 2. Loose shuttle arms. 3. Dirty film aperture. 4. Damaged or lost pressure plate spring. 5. Pressure plate misaligned. 6. Incorrect shuttle stroke.	1. Repair or replace. 2. Adjust and tighten (para.18, step c). 3. Clean film aperture. 4. Replace spring. 5. Realign pressure plate. 6. Adjust (para.18, step d).
Double image	1. Incorrect shuttle stroke. 2. Excessive shuttle protrusion.	1. Adjust (para.18, step d). 2. Adjust (para.18, step b).
Weave (due to faulty aperture plate)	1. Side tension spring missing. 2. Sticking edge guide. 3. Fixed edge guide out of position.	1. Replace spring (Fig.22-7). 2. Clean edge guide. 3. Reposition edge guide.

30. PICTURE TROUBLES AND REMEDIES (Continued)

Trouble	Probable Cause	Remedy
Poor illumination	1. Optics out-of-line. 2. Projection lamp wearing out. 3. Dirt on projection lens. 4. Low voltage at lamp.	1. Realign (para.17). 2. Replace projection lamp. 3. Clean front and rear elements. 4. Check voltage selector for proper setting.
Poor focus	1. Dirty lens and/or aperture. 2. Warped film. 3. Pressure plate spring lost. 4. Bent pressure plate. 5. Pressure plate out-of-line. 6. Defective lens.	1. Clean lens and/or aperture. 2. Recondition or replace film. 3. Replace pressure plate spring. 4. Replace pressure plate. 5. Realign pressure plate. 6. Replace lens.
Frame line creeps	1. Framer eccentric loose.	1. Align and tighten (para.18, step e).
Insufficient framing	1. Framer eccentric out-of-adjustment.	1. Adjust (para.18, step e).
Trailer ghost	1. Shutter out-of-alignment.	1. Reassemble properly.

31. FILM TRANSPORT TROUBLES AND REMEDIES.

Loss of loops	1. Damaged film. 2. Inadequate shuttle protrusion. 3. Inadequate or excessive shuttle stroke. 4. Pressure plate spring lost. 5. Pressure mounting plate screws loose. 6. Sprocket guards not closing. 7. In-out bracket spring broken. 8. Supply reel too small. 9. Excessive film tension.	1. Repair or replace film. 2. Adjust (para.18, step b). 3. Adjust (para.18, step d). 4. Replace spring. 5. Tighten mounting screws. 6. Clean and adjust. 7. Replace in-out bracket spring. 8. Use 400 foot reel with hub 2-1/2 inches in diameter (minimum). 9. Replace holdback spring (Fig. 16-11).
---------------	---	---

31. FILM TRANSPORT TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Excessive film slap	1. Damaged film. 2. Green film. 3. Dirty pressure plate. 4. Pressure plate rubbing on aperture plate guide rails. 5. Incorrect shuttle stroke.	1. Recondition or replace film. 2. Age or buff film. 3. Clean pressure plate. 4. Realign pressure plate. 5. Adjust (para.18, step d).
Splices jam in sprocket shoes	1. Bad splices. 2. Emulsion build-up.	1. Replace splices. 2. Clean film path components.
Shuttle runs but sprockets do not revolve	1. Worm loose on cam shaft. (Model 1595 or 2585) 2. Run-still clutch torsion spring defective. (Model 2592)	1. Tighten set screws. 2. Replace spring (Figure 12-14).
Run/still clutch will not operate. (Model 2592)	1. Excessive stop pawl clearance. 2. Run/still lever spring missing or defective.	1. Adjust stop pawl clearance (para.21, step a). 2. Replace spring (Figure 5-18).
Run/still clutch stops the sprocket but shuttle continues to pull film (Model 2592)	1. Shuttle not retracting properly.	1. Adjust shuttle for proper retraction (para.20, step b).

32. SOUND SYSTEM TROUBLES AND REMEDIES.

Projector runs, no voltage at PC board	1. Loose connection or connector. 2. Blown fuses on PC assembly.	1. Repair connection. 2. Replace blown fuses.
Projector runs, voltage at PC board, but exciter lamp does not light	1. Exciter lamp cable disconnected. 2. Exciter lamp fuse open. 3. Wrong exciter lamp used. 4. Defective amplifier.	1. Connect cable. 2. Replace fuse. 3. Replace with correct lamp. 4. Repair or replace (para.12).

32. SOUND SYSTEM TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Voltage at PC board, exciter lamp lights, but no sound	1. Speaker jack disconnected or speaker jack switch open. 2. Photocell cable disconnected. 3. Photocell out-of-line. 4. Dirt on end of photocell. 5. Defective amplifier.	1. Connect leads. Repair or replace jack. 2. Connect cable. Connect leads to proper terminals. 3. Realign (para.27, step a). 4. Clean photocell. 5. Repair or replace (para.12).
Low volume	1. Trouble in amplifier PC board. 2. Photocell out-of-line. 3. Dirt on photocell or slit. 4. Slit misaligned. 5. Buzz track misaligned.	1. Check out the circuit board; replace if faulty (para.12). Circuit trace with schematic using test points 1, 2, 3, 4 etc. 2. Realign (para.27, step a). 3. Clean photocell and slit. 4. Realign (para.27, step c). 5. Realign (para.27, step d).
Distortion at all volume levels	1. Trouble in amplifier PC board. 2. Improper film loops.	1. Repair or replace (para.12). Circuit trace with schematic using test points 1, 2, 3, 4 etc. 2. Rethread film.
Crackling noises	1. Buzz track out-of-line. 2. Broken cable shield. 3. Defective amplifier.	1. Realign (para.27, step d). 2. Repair shield or replace cable. 3. Repair or replace (para.12). Circuit trace with schematic using test points 1, 2, 3, 4 etc.
High frequencies fade (jumps focus)	1. Warped film. 2. Dirt on sound drum. 3. Slit lens out-of-focus or dirty.	1. Recondition or replace film. 2. Clean sound drum. 3. Clean and/or adjust.
Hum	1. Ground wiring. 2. Trouble in amplifier PC board. 3. Broken cable shield.	1. Correct grounded condition. 2. Repair or replace (para.12). 3. Repair or replace cable shield.

32. SOUND SYSTEM TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Wow or flutter	1. Stabilizer roller sticking.	1. Clean roller and roller shaft.
	2. Stabilizer roller spring broken, unhooked or lost.	2. Repair or replace spring.
	3. Loose flywheel.	3. Replace bowed washer (Fig.5-30).
	4. Damaged sound drum bearing.	4. Replace sound drum (para.27).
	5. Dirt causing stabilizer roller arm pivot bearing to bind.	5. Clean pivot shaft bearing.
	6. Photocell cable rubbing against flywheel.	6. Reposition cable.
	7. Chips or dirt in take-up sprocket gear teeth.	7. Remove and clean sprocket gear.
	8. Bent take-up reel.	8. Replace take-up reel.
	9. Dirt on sound drum.	9. Clean sound drum.
	10. External drags on flywheel.	10. Repair and adjust as required.
Clicking noises	1. Dirt on sound drum.	1. Clean sound drum.

33. AUTOMATIC THREADING SYSTEM TROUBLES AND REMEDIES.

Any obstruction in the film patch, such as caked emulsion, film chips or splicing tape interfere with the proper threading of the projector. Before attempting to localize the trouble, brush or blow away all accumulations of dirt and film chips with a low-pressure jet of compressed air. Inspect all threading guides, shoes and rollers. Clean the film path of emulsion with isopropyl alcohol and the special cleaning pad (Figure A-12).

Trouble	Probable Cause	Remedy
Film cannot be inserted into the feed sprocket	1. Obstruction below roller of channel (see inset, Figure 9).	1. Remove obstruction.
	2. Roller channel bent or binding.	2. Straighten or replace channel and roller assembly.
	3. Excessive pressure on leaf spring.	3. Adjust leaf spring (Figure 9-29).
Film will not pull between feed sprocket and sprocket shoe	1. Entrance channel misaligned.	1. Realign (para.23, step c).
	2. Feed sprocket guard sticking.	2. Clean sprocket shoe pivot.
	3. Feed sprocket guard spring broken.	3. Replace sprocket guard spring.
Film comes out the side of the top sprocket.	1. Obstruction in sprocket guard.	1. Remove obstruction.
	2. Damaged sprocket guard.	2. Replace sprocket guard.

33. AUTOMATIC THREADING SYSTEM TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Film strikes top of aperture plate and begins to pile up.	1. Upper loopformer bent or out of adjustment. 2. Lower loopformer set too close to aperture plate.	1. Straighten or replace if bent; readjust (para.23, step b). 2. Readjust (para.23, step a).
Film butt into or goes under top end of aperture plate side tension rail or strikes	1. Upper loopformer bent causing sidewise deflection of film. 2. Lower loopformer bent or out of adjustment.	1. Straighten or replace if bent; readjust (para.23). 2. Straighten or replace if bent; readjust (para.23).
Film butts against top of film pressure plate or passes over outside of pressure plate	1. Lower loopformer out of adjustment. 2. Pressure plate not lifting off of aperture plate.	1. Readjust (para.23, step a). 2. Bent parts (Figure 8-4C and/or 9-32G) need straightening or replacement.
Film ejects between bottom of film gate and top of take-up sprocket or piles up in this area	1. Lower loopformer bent or sticking. 2. Lower loopformer spring broken. 3. Obstruction in take-up sprocket upper guard. 4. Sprockets out-of-time.	1. Straighten, remove bind or replace lower loopformer (Figure 9-17). 2. Replace lower loopformer spring (Figure 9-18). 3. Remove obstruction. 4. Time sprockets (para.25).
Film not threading over take-up sprocket	1. Obstruction in take-up sprocket guard. 2. Sprocket guard spring broken. 3. Take-up sprocket shaft loose in gear.	1. Remove obstruction. 2. Replace sprocket guard spring (Figure 8-26). 3. Retime sprocket (para.25) and tighten gear setscrews.
Film piles up ahead of sound drum	1. Back-up bracket bent downward. 2. Exciter lamp cover loose. 3. Obstruction in gap between sound drum and exciter lamp cover. 4. Edge guide adjusting screw out too far.	1. Straighten back-up bracket (Figure 9-20) 2. Tighten cover retaining screw. 3. Remove obstruction. 4. Adjust buzz (para.27 step d).

33. AUTOMATIC THREADING SYSTEM TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Film ejects ahead of lower take-up sprocket shoe or piles up in this area	1. Obstruction in lower take-up sprocket guard. 2. Film guide improperly positioned.	1. Clear out obstruction. 2. Reposition film guide (Figure 20-5).
Film sticks in or is ejected from lower take-up sprocket guard	1. Obstruction in lower take-up sprocket guard. 2. Sprocket guard sticking. 3. Broken sprocket guard spring.	1. Clear out obstruction. 2. Clean sprocket guard pivot. 3. Replace sprocket guard spring (Figure 8-26).
Film piles up ahead of flanged roller (Figure 19-11) or is ejected from this area	1. Auto-thread lever bent or its roller shaft loose. 2. Idler roller sticking.	1. Straighten or replace auto-thread lever (Figure 9-14). 2. Remedy sticking condition.
Automatic loading system will not lock	1. Auto-thread lever binding. 2. Release spring disengaged or broken. 3. Eccentric pivot improperly adjusted.	1. Repair or replace auto-thread lever (Figure 9-14). 2. Engage spring (Figure 9-15) with locking lever, or replace spring. 3. Readjust pivot (para.23, step a).
Loop restorer cycles continuously	1. Shuttle retractor pin sticking; restorer out-of-adjustment. 2. Pressure plate binding on aperture plate edge guide.	1. Clean and lubricate pin. Adjust loop restorer (para.24). 2. Realign pressure plate.
Slack film in soundhead area	1. Sprocket guards sticking or take-up jerking. 2. Soundhead jockey rollers sticking. 3. Soundhead improperly positioned.	1. Clean sprocket shoe pivots; check take-up torque and check for binding in take-up reel arm. 2. Clean and lubricate. 3. Reposition (para.14).
Film scratches	1. Caked emulsion on film path parts. 2. Film chips in sprocket guards. 3. Scratches or burrs on film guides, guards, aperture or pressure plate. 4. Soundhead jockey rollers sticking.	1. Clean film path. 2. Remove film chips. 3. Polish with crocus cloth to remove burrs; replace part(s) if necessary. 4. Clean and lubricate.

AUTOMATIC THREADING SYSTEM TROUBLES AND REMEDIES. (Continued)

Trouble	Probable Cause	Remedy
Perforations checked	1. Shuttle not retracing. 2. Excessive hold-back tension.	1. Adjust (para.23, step d). 2. Check for binding in front reel arm and correct.
Film dimpled between perforations	1. Sprocket shoes sticking. 2. Shuttle not retracting. 3. Sprockets out-of-time. 4. Not enough pressure on leaf spring. 5. End of film leader not cut clean and square.	1. Clean sprocket shoe pivots. 2. Adjust (para.23, step d). 3. Retime (para.25). 4. Adjust spring (Figure 9-29). 5. Check film cutter; replace if dull or broken.
Film escape mechanism does not open to permit exit of film	1. Film escape latching is out-of-adjustment.	1. Readjust (para.23, step e).
Film escape locking pawl does not seat properly, film exits constantly	1. Torsion spring disconnected. 2. Locking pawl out-of-adjustment.	1. Reconnect torsion spring (Figure 10-1C). 2. Readjust locking pawl (para.23, step e).

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
PROJECTOR COVERS				
1-1	078146	COVER ASSEMBLY, Front, With Speakers (See Figure 24 for Replacement Parts).....	REF	
-1	016684	COVER ASSEMBLY, Front.....	1	ABC
-1	087218	COVER ASSEMBLY, Front.....	1	D
-1A	700816	• RIVET, Semi-Tubular	4	
-1B	045083	• LATCH, Cover Release.....	2	
-1C	49283	• SPRING, Latch, Front	1	
-1D	707751	• SPRING, Latch, Rear	1	
-1E	710456	• NAMEPLATE, Front Cover	1	ABC
-1E	710435	• NAMEPLATE, Front Cover	1	D
-1F	No Number	• COVER, Front (Replace Complete Assembly)	NP	
-2	204641	LENS, 2 inch f1.2	1	
-3	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch	3	
-4	No Number	LAMPHOUSE COVER ASSEMBLY (See Figure 21 for Replacement Parts)	1	
-5	710468	LAMPHOUSE NAMEPLATE	1	AB
-5	713295	LAMPHOUSE NAMEPLATE	1	D
-5	115017	LAMPHOUSE NAMEPLATE	1	C
-6	710474	LENS CARRIER NAMEPLATE.....	1	ABC
-6	713294	LENS CARRIER NAMEPLATE.....	1	D
-7	710475	RUN-STILL NAMEPLATE.....	1	B
-7	710644	RUN-STILL NAMEPLATE.....	1	C
-8	No Number	COVER ASSEMBLY, Exciter Lamp (See Figure 20 for Replacement Parts)	NP	
-9	49275	SCREW, Rear Cover, Lower.....	3	
-10	49637	SCREW, Rear Cover, Upper.....	4	
-11	No Number	REAR COVER ASSEMBLY	NP	
-11A	49638	• SCREW, Hex Washer Head #6-32 x 1/2 inch	2	ABD
-11A	49638	• SCREW, Hex Washer Head, #6-32 x 1/2 inch	4	C
-11B	45718	• SCREW, #4-40 x 3/4; Hex Washer Head	2	ABD
-11C	48186	• CORD WRAP	1	ABD
-11C	NO NUMBER	• CORD WRAP ASSEMBLY (See Figure 23 for Replacement Parts)	1	C
-11D	711642	• COVER, Rear	1	ABD
-11D	713598	• COVER, Rear	1	C
-11E	708629	• NAMEPLATE, Cord Wrap (Adhesive Backed)	1	ABD
-11F	707472	• HOUSING (socket).....	1	ABD
-11G	48610	• STRAIN RELIEF	1	ABD
-11H	079616	• POWER CORD ASSEMBLY	1	ABD
-11J	715139	• STRAIN RELIEF PLATE	1	ABD
-12	766109	PAD, Damper (Adhesive Backed)	3	
-13	49638	SCREW, Hex Washer Head, #6-32 x 1/2 inch	2	
-14	NO NUMBER	COVER AND HANDLE ASSEMBLY, Top (order parts)	NP	
-14A	707449	• SCREW, Hex Washer Head, 8-18.....	4	
-14B	48063	• BRACKET, Cover Mounting	2	
-14C	48052	• HANDLE, Carrying	1	
-14D	078586	• COVER AND STRIKERS ASSEMBLY, Top	1	
-15	710442	HANDLE NAMEPLATE	1	A
-15	710444	HANDLE NAMEPLATE	1	BC
-15	710432	HANDLE NAMEPLATE	1	D

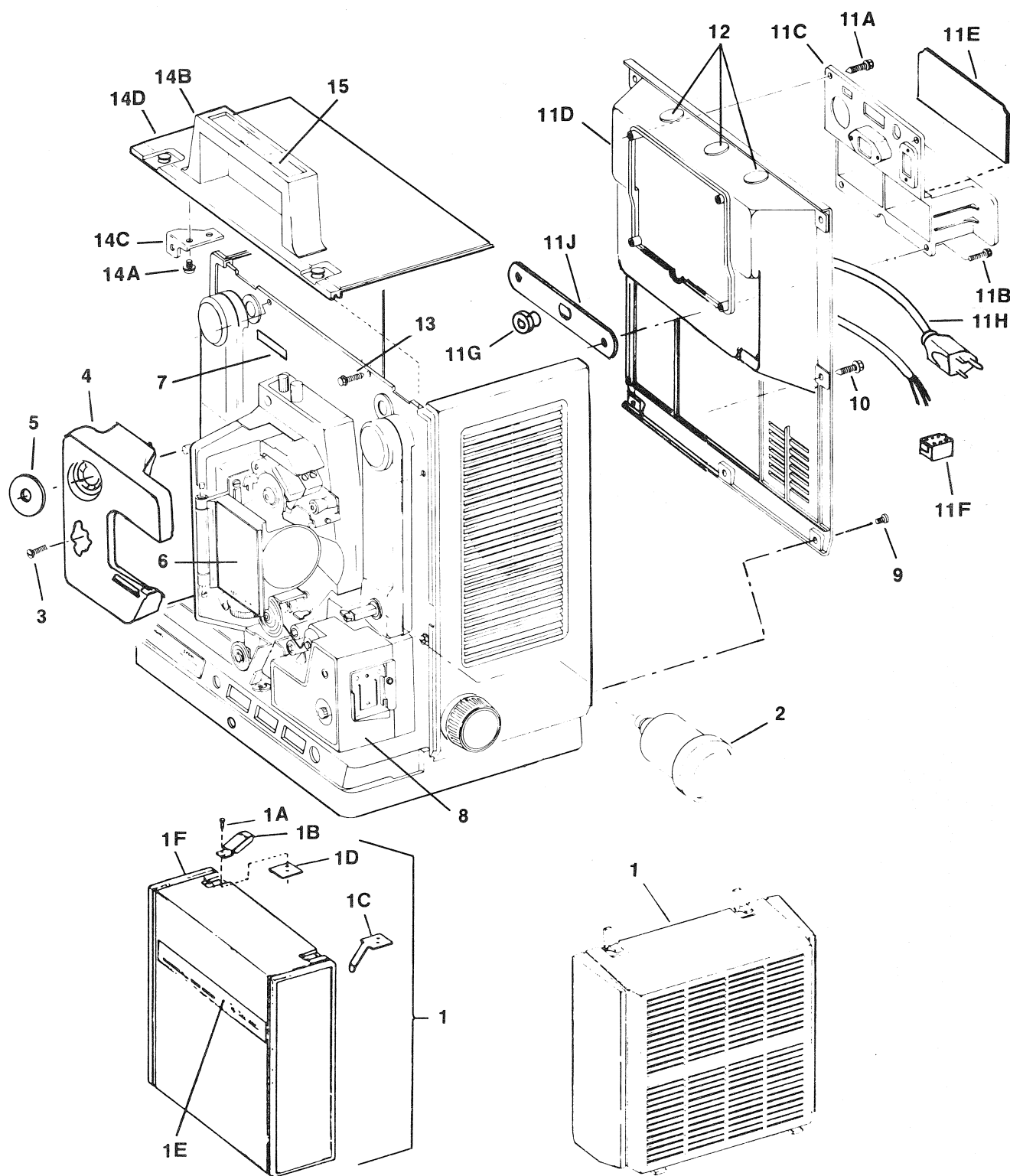


FIGURE 1. PROJECTOR COVERS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
END CAPS AND LAMP COMPONENTS				
2-1	36769	SETSCREW, Fluted Socket Cup Pt, #8-32 x 1/4 inch	1	
-2	09807	TILT KNOB ASSEMBLY	1	
-3	49637	SCREW, Hex Washer Head, #6-20 x 3/4 inch, Type AB.....	4	
-4	49637	SCREW, Hex Washer Head, #6-20 x 3/4 inch, Type AB.....	4	
-5	No Number	END CAP ASSEMBLY, Front	NP	
-5A	45102	• NUT, Sheet Metal	4	
-5B	708994	• SPEAKER	1	
-5C	709218	• NUT, Speed #6-20	6	
-5D	710482	• END CAP, Front	1	
-6	No Number	END CAP ASSEMBLY, Rear	NP	
-6A	709218	• SPEED NUT, #6-20	6	
-6B	715155	• NAMEPLATE, Rear End Cap	1	ACD
-6B	115103	• NAMEPLATE, Remote Receptacle	1	B
-6C	44298	• RIVET, Oval Head, .146 Dia. x 3/16 inch Lg.....	2	B
-6D	115101	• RECEPTACLE, Remote, Control	1	B
-6E	710481	• END CAP, Rear	1	
-7	710465	KNOB, Switch	1	
-8	30211	RING, External Retaining, Grip Type (1/4 inch)	1	
-9	710396	LAMP, Projection (ELC)	1	ABC
-9	715168	LAMP, Projection (EYK)	1	D
-10	710845	STRAIN RELIEF, Lamp Socket	1	
-11	115123	SOCKET, Projection Lamp	1	D
-11	115076	SOCKET, Projection Lamp	1	ABC
-12	715153	NAMEPLATE, Volume/Tone (Adhesive Backed)	1	ABC
-12	115127	NAMEPLATE, Volume/Tone (Adhesive Backed)	1	D
-13	711662	NAMEPLATE, Serial No. (See Note)	1	ABC
-13	115157	NAMEPLATE, Serial No. (See Note)	1	D
-14	44461	SOUND/SILENT NAME PLATE (Adhesive Backed)	1	B
-14	44490	NAMEPLATE, 50/60 Hz.	1	C
-15	710653	NAMEPLATE, Threading (Adhesive Backed)	1	

NOTE: When replacing the Serial No. nameplate, return the old nameplate for transfer of the Serial No. and Model No. to the new nameplate.

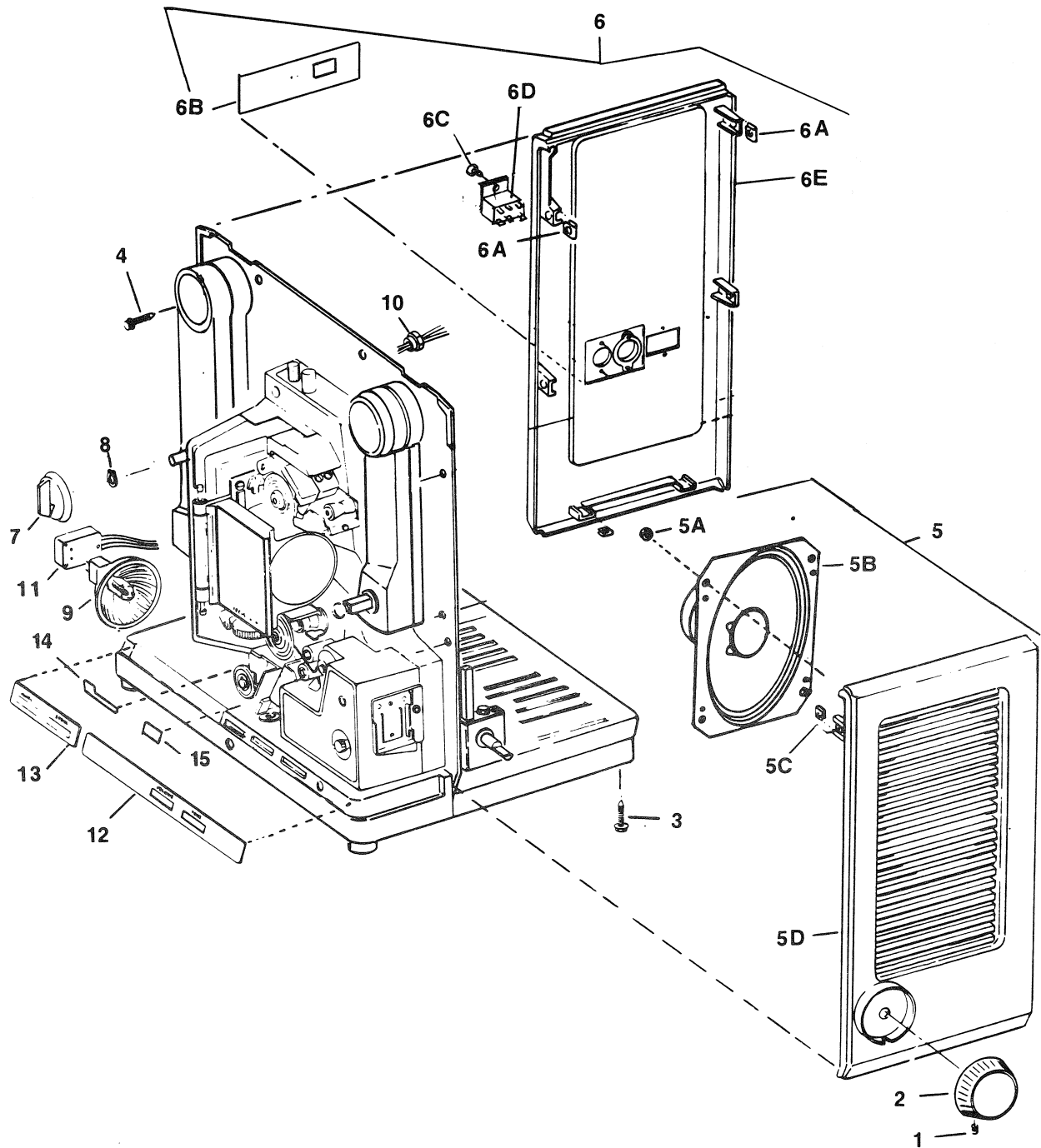


FIGURE 2. END CAPS AND LAMP COMPONENTS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
ELECTRICAL COMPONENTS				
3-1	No Number	MAIN CONTROL SWITCH (See Figure 18 for Replacement Parts)	NP	ABD
-1	No Number	MAIN CONTROL SWITCH (See Figure 19 for Replacement Parts)	N	C
-2	No Number	TRANSFORMER MODULE (See Figure 14 for Replacement Parts)	NP	C
-2	No Number	TRANSFORMER MODULE (See Figure 13 for Replacement Parts)	NP	ABD
-3	30810	#6-32 x 1/2 inch Lg. Hex Washer Head Screw	3	
-4	078503	WIRE TIE	1	
-5	30809	#6-32 x 3/8 inch Lg. Hex Washer Head Screw	2	
-6	44377	BLOWER HOUSING (R.H.)	1	
-7	80408	#6-32 x 3/16 inch Lg. Fluted Socket, Flat Point Set Screw	2	
-8	014538	FAN ASSEMBLY, Blower	1	
-9	30809	#6-32 x 1/2 inch Lg. Hex Washer Head Screw	2	
-10	44376	BLOWER HOUSING (L.H.)	1	
-11	41323	MOTOR BRACKET STRAP (Includes Screw and Nut)	2	
-12	079654	MOTOR ASSEMBLY	1	ABD
-12	087185	MOTOR ASSEMBLY	1	C
-12A	No Number	• MOTOR (Replace Complete Assembly)	NP	
-12B	711308	• 6 PIN CONNECTOR HOUSING (Socket)	1	ABD
-12B	713376	• 4 PIN CONNECTOR HOUSING (Plug)	1	C
-13	709679	DRIVE BELT	1	
-14	80408	#6-32 x 3/16 inch Lg. Fluted Socket, Flat Point Set Screw	2	
-15	44433	MOTOR PULLEY (Alternates: 44457/44458/115135/710979/710980)	1	B
-15	710725	MOTOR PULLEY (Alternates: 710726/710727)	1	C
-15	709458	MOTOR PULLEY (Alternates: 48320/709459/710947)	1	AD
-16	30822	#10-32 x 7/16 inch Lg. Hex Washer Head Screw	4	
-17	079650	WIRE TIE	2	
-18	44356	MOTOR BRACKET	2	
-19	30822	#10-32 x 7/16 inch Lg. Hex Washer Head Screw	1	
-20	709659	LOCKWASHER, Internal Tooth	1	
-21	36763	SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/8 inch Lg.	2	B
-22	36533	COLLAR, Solenoid Rod	2	B
-23	700103	SCREW, Slotted Bindubg Head, #10-32 x 1/4 inch Lg.	2	B
-24	077734	SOLENOID ASSEMBLY, Animation	1	B

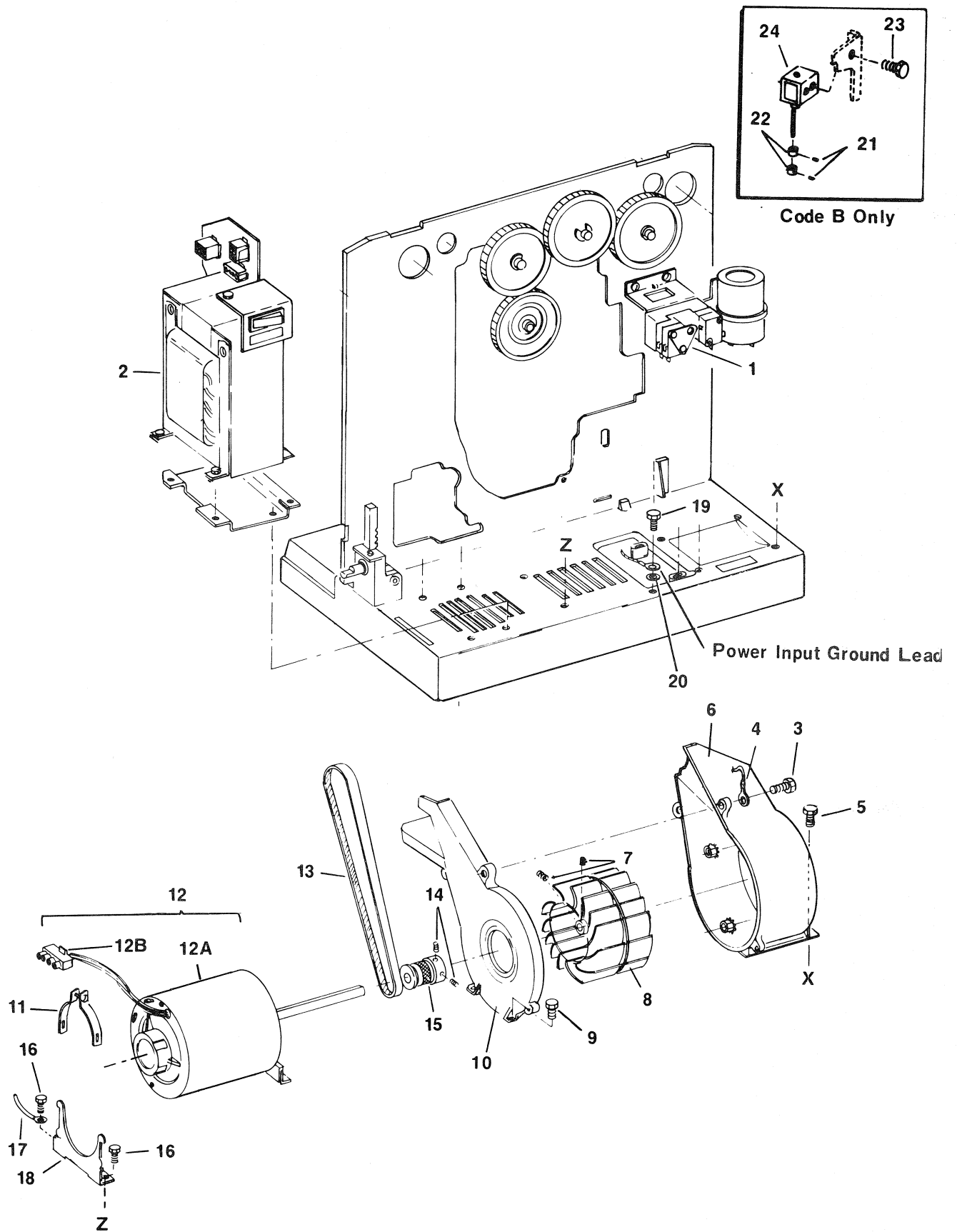


FIGURE 3. ELECTRICAL COMPONENTS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
GEARS AND REEL ARMS				
4-1	765777	RING, Retaining, External, 0.250 inch ID	2	
-2	014947	GEAR AND BEARING ASSEMBLY	1	
-3	34861	WASHER, Flat	AR	
-4	765777	RING, Retaining, External, 0.250 inch ID	2	
-5	44370	GEAR, Idler	2	
-6	31029	WASHER, Flat	2	
-7	30211	RING, Retaining, Grip-Type	1	
-8	39092	WASHER, Spring Tension, Bowed	1	
-9	44371	GEAR, Spur	1	
-10	47137	WASHER, Friction	1	
-11	No Number	IDLER ASSEMBLY, Arm and Gear	NP	
-11A	765777	● RING, Retaining, External, 0.250 inch ID	1	
-11B	44370	● GEAR, Spur	1	
-11C	014526	● ARM ASSEMBLY, Idler	1	
-12	44312	KEY, Gear retaining	1	
-13	44317	WASHER, Flat	1	
-14	015919	CLUTCH ASSEMBLY, Rewind	1	
-15	765777	RING, Retaining, External, 0.250 inch ID	1	
-16	016394	CLUTCH AND BEARING ASSEMBLY, Take-up	1	
-17	707112	GEAR, Clutch	1	
-18	707110	GEAR, Rewind	1	
-19	44312	KEY, Gear Retaining	1	
-20	36083	RING, Retaining, External, 0.250 inch ID	1	
-21	1953	WASHER, Flat	1	
-22	44372	GEAR, Idler	1	
-23	44537	SPRING, Torsion	1	
-24	No Number	LEVER AND GEAR ASSEMBLY, Rewind	NP	
-24A	36083	● RING, Retaining, External, 0.250 inch ID	2	
-24B	44486	● WASHER, Flat	1	
-24C	44373	● GEAR, Spur	2	
-24D	014529	● LEVER ASSEMBLY, Rewind	1	
-25	30809	SCREW, Hex Washer Head, #6-32 x 3/8 inch	6	
-26	44313	DISC, Reel Arm	2	
-27	078106	REEL ARM ASSEMBLY, Front (See Figure 16 for Replacement Parts)	1	ABD
-27	078166	REEL ARM ASSEMBLY, Front (See Figure 16 for Detail parts)	1	C
-28	078107	REEL ARM ASSEMBLY, Rear (See Figure 17 for Replacement Parts)	1	ABD
-28	078167	REEL ARM ASSEMBLY, Rear (See Figure 17 for Detail Parts)	1	C
-29	078108	BUTTON ASSEMBLY, Front Reel Arm Lock	1	
-30	079318	BUTTON ASSEMBLY, Rear Reel Arm Lock	1	
-31	44507	SPRING, Lock Button	2	
-32	712250	CUP, Lock Button	2	
G	070047	GREASE		

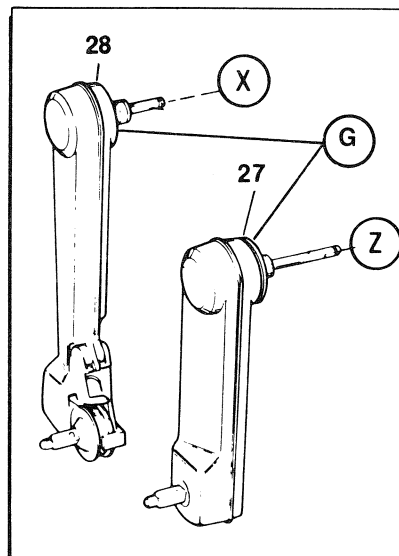
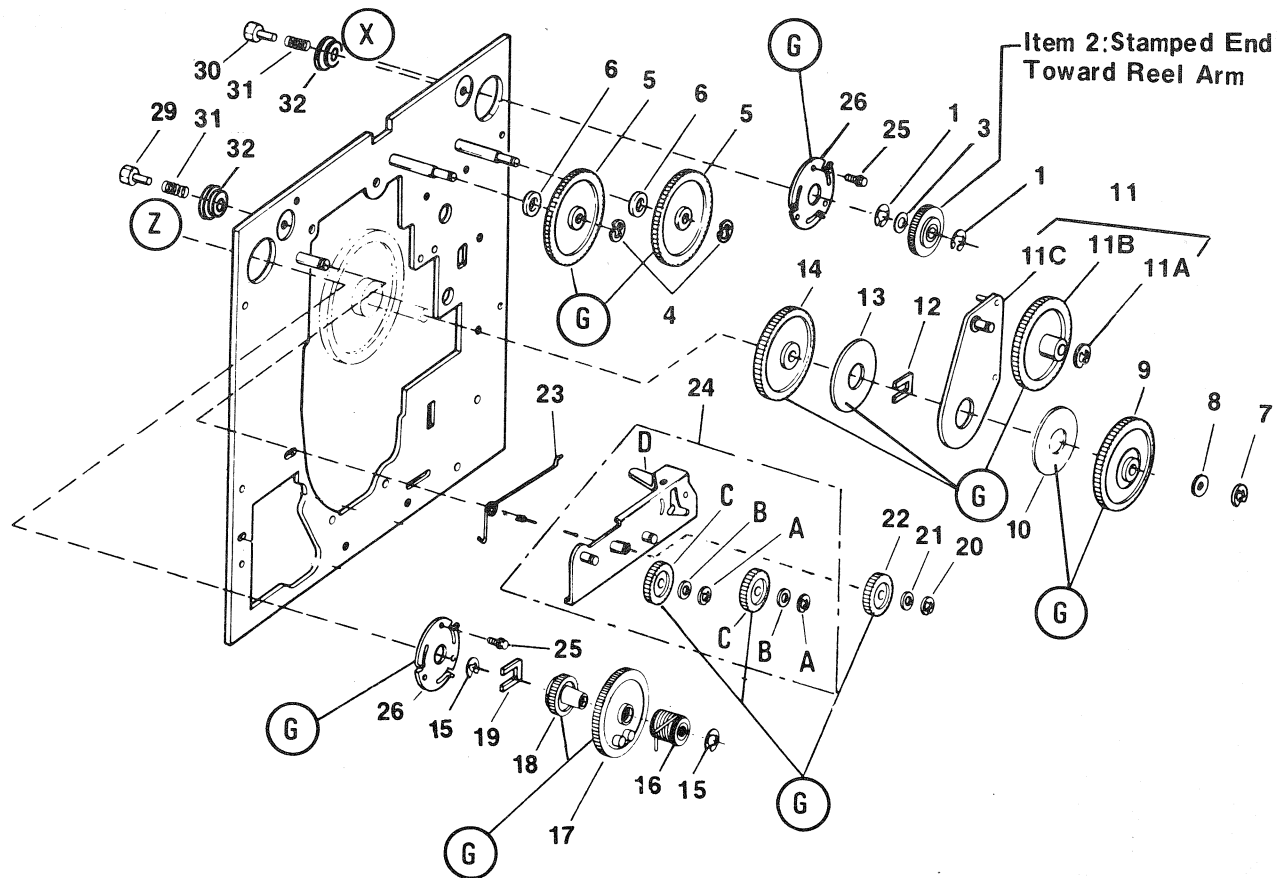


FIGURE 4. GEARS AND REEL ARMS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
RUN-STILL LINKAGE, BELT SHIFTER AND FLYWHEEL				
5-1	36763	SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/8 inch	2	BC
-2	36533	COLLAR	2	BC
-3	48176	SPRING	1	BC
-4	44516	ROD, Still-Run	1	BC
-5	36763	SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/8 inch	1	BC
-6	36533	COLLAR	1	BC
-7	44395	SPRING	1	BC
-8	710508	ROD, Fire Shutter	1	BC
-9	709040	LEVER, Still-Run	1	BC
-10	44424	SCREW, Shoulder	2	BC
-11	014539	LINK ASSEMBLY, Sliding	1	BC
-12	44427	SPACER	2	BC
-13	44429	SCREW, Pivot	1	BC
-14	765449	RING, Retaining, External, 0.188 inch ID	1	BC
-15	700710	WASHER, Flat	1	BC
-16	014547	LINK ASSEMBLY, Pivoting	1	BC
-17	44430	SPACER	1	BC
-18	44514	SPRING, Torsion	1	BC
-19	700710	WASHER, Flat	1	BC
-20	31245	RING, Retaining, External, 0.187 inch ID	2	BC
-21	44526	SPRING, Torsion	1	BC
-22	44294	STUD, Shoulder	2	BC
-23	014579	BRACKET ASSEMBLY, Belt Shifter	1	BC
-24	47408	SPACER	2	BC
-25	300797	SCREW, Slotted Binding Head, #6-32 x 3/8 inch	1	BC
-26	765777	RING, Retaining, External, 0.250 inch ID	1	
-27	45581	WASHER, Flat	1	
-28	713255	FLYWHEEL DISC	3	
-29	713233	FLYWHEEL SPACER	1	
-30	44512	WASHER, Bowed	1	
-31	700672	WASHER, Flat	1	
-G	070034	GREASE		

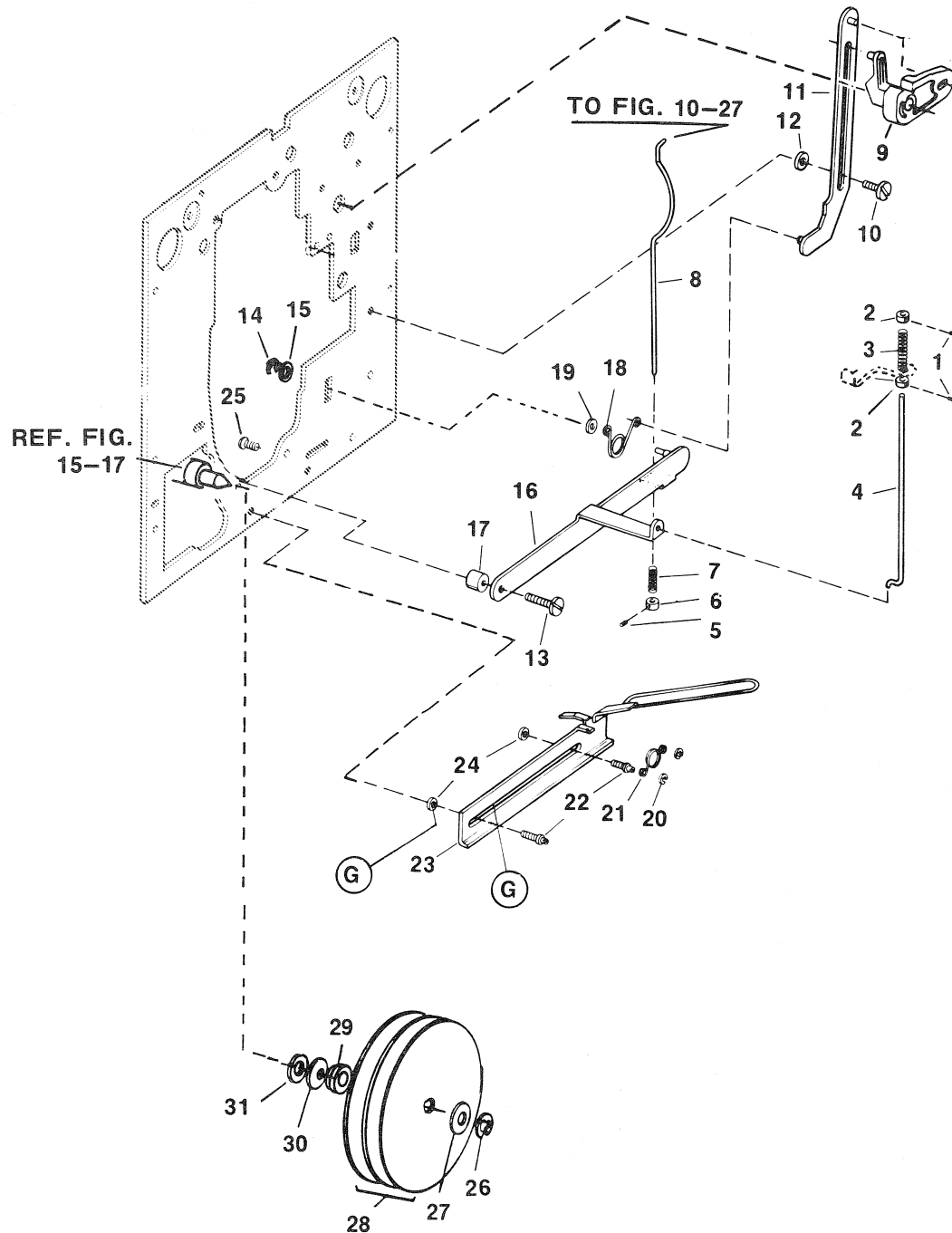


FIGURE 5. RUN-STILL LINKAGE, BELT SHIFTER AND FLYWHEEL

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
PROJECTOR BASE ELECTRICAL COMPONENTS				
6-1	766221	SCREW, Hex Washer Head, #6-32 x 3/8 inch	5	
-2	713527	COVER.....	1	
-3	766109	DISC, Insulation	1	
-4	766221	SCREW, Hex Washer, #6-32 x 3/8 inch.....	5	
-5	715612	COVER.....	1	
-6	30812	SCREW, Hex Washer Head, #6-32 x 3/4 inch	1	
-7	710257	SPACER	1	
-8	30809	SCREW, Hex Washer Head, #6-32 x 3/8 inch	2	
-9	766221	SCREW, Hex Washer Head, #6-32 x 3/8 inch	2	
-10	87098	SCREW, Posidriv Pan Head, #6-32 x 5/16 inch	1	
-11	087059	AMPLIFIER ASSEMBLY	1	
-11A	48075	● TRIMPLATE, Volume Knob (Adhesive Backed)	1	
-11B	48076	● TRIMPLATE, Tone Knob (Adhesive Backed)	1	
-11C	48074	● KNOB, Control	2	
-11D	79651	● CONTROL, Volume	1	
-11E	79652	● CONTROL, Tone	1	
-12	715698	THERMAL CONDUCTOR.....	1	

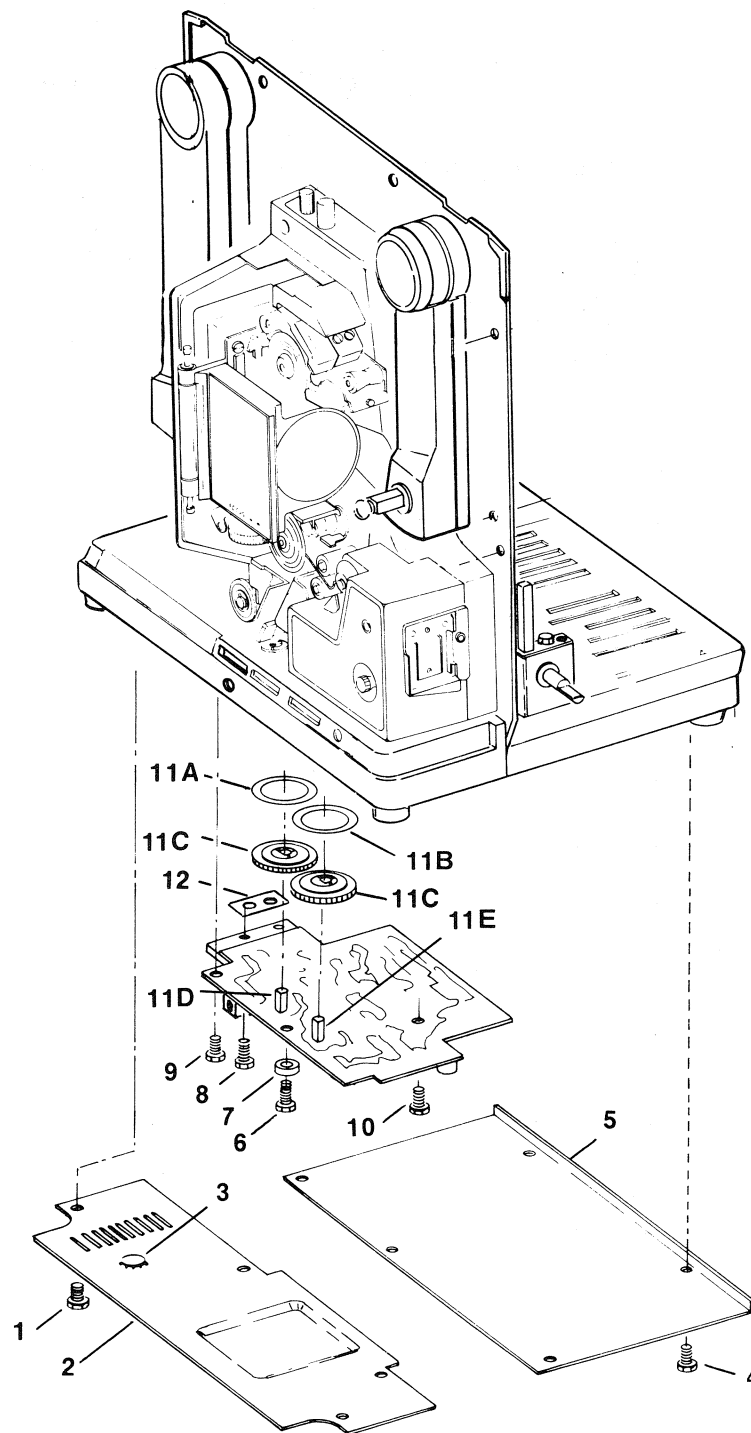


FIGURE 6. PROJECTOR BASE ELECTRICAL COMPONENTS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
PROJECTOR BASE MECHANICAL COMPONENTS				
7-1	710645	PLATE, Instruction (Adhesive Backed)	1	ABD
-1	115019	PLATE, Instruction (Adhesive Backed)	1	C
-2	48028	SCREW, Slotted Hex Washer Head, #8-32 x 1/2 inch	3	
-3	31243	WASHER, Flat	3	
-4	No Number	SOUND HEAD ASSEMBLY (See Figure 15 for Parts)	NP	
-5	44297	SCREW, Hex Washer Head, #10-32x5/8 inch	4	
-6	44348	BRACKET, Idler Gear Adjustment	1	
-7	No Number	MECHANISM ASSEMBLY (See Figure 8 thru 12 for Replacement Parts)	NP	
-8	30810	SCREW, Hex Washer Head, #6-32 x 1/2 inch	4	
-9	31585	CLAMP, Cable	1	
-10	078128	MAINPLATE ASSEMBLY	1	
-11	766181	SCREW, Hex Washer Head, #4-40 x 5/16 inch	1	
-12	709215	STOP, Threading Lever	1	
-13	30816	SCREW, Hex Washer Head, #8-32 x 5/8 inch	4	
-14	44532	FOOT, Rubber	4	
-15	712203	WASHER, Flat	4	
-16	34889	SCREW, Slotted Binding Head, #1 4-28 x 3/8 inch	1	
-17	8179	LOCKWASHER, Internal Tooth	1	
-18	077920	TILT BAR ASSEMBLY	1	ABD
-18	087171	TILT BAR ASSEMBLY	1	C
-18A	31561	• FOOT, Tilt Bar (Secure with Adhesive)	2	
-19	No Number	• BASE ASSEMBLY, Complete	NP	
-19A	30809	• SCREW, Hex Washer Head, #6-32 x 3/8 inch	1	
-19B	48070	• ADAPTER, Tilt Rack	1	
-19C	48071	• TILT RACK	1	
-19D	21736	• RING, Retaining, (1 4")	1	
-19E	48073	• TILT WORM	1	
-19F	31039	• WASHER, Flat	1	
-19G	34822	• WASHER, Spring Tension	1	
-19H	44533	• PIN, Spring	1	
-19J	48072	• TILT PINION	1	
-19K	713547	• BASE, Projector	1	
A	NO NUMBER	ADHESIVE, 3M Co. #EC1711		
G	070034	GREASE		

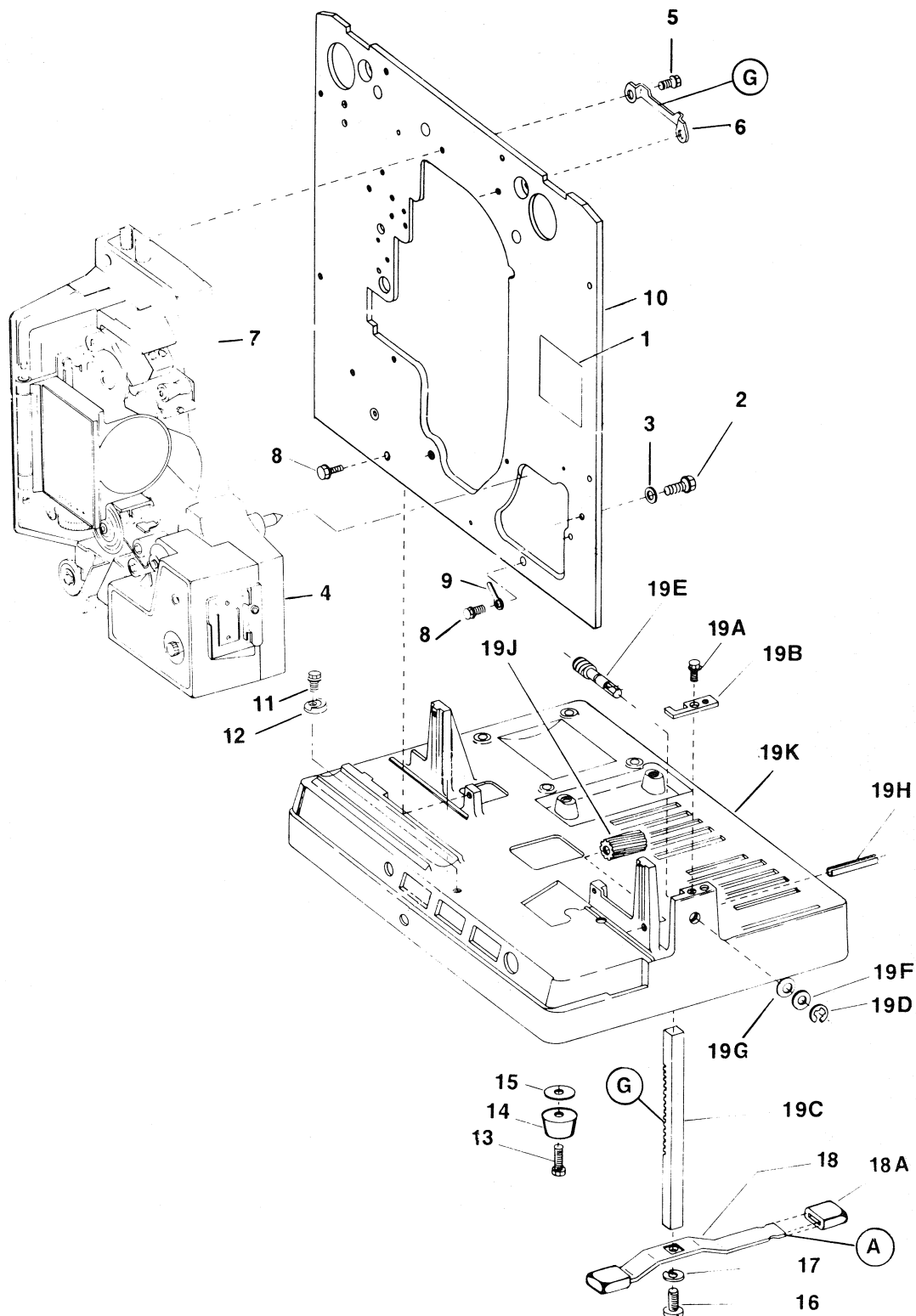


FIGURE 7. PROJECTOR BASE MECHANICAL COMPONENTS

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MECHANISM ASSEMBLY — VIEW I				
8-1	31957	PIN, Hinge	2	
-2	31019	WASHER, Spring Tension	1	
-3	31020	WASHER, Flat	1	
-4	No Number	LENS CARRIER ASSEMBLY	NP	
-4A	45688	• SCREW, Truss Head, Special	2	
-4B	31092	• PLATE, Pressure	1	
-4C	35819	• LEVER, Pressure Plate	1	
-4D	45687	• WASHER, Flat	2	
-4E	34897	• SPRING, Compression	2	
-4F	30804	• SCREW, Hex Washer Head, #4-40 x 1/4 inch	2	
-4G	31095	• PLATE, Adjustment	1	
-4H	30804	• SCREW, Hex Washer Head, #4-40 x 1/4 inch	2	
-4J	31093	• SPRING, Pinion	1	
-4K	016841	• KNOB AND PINION ASSEMBLY	1	
-4L	014576	• CARRIER AND PIN ASSEMBLY	1	
-5	765449	RING, Retaining, 0.145 inch ID	1	
-6	711667	LEVER, Actuating	1	
-7	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch	2	
-8	707162	HOOD	1	
-9	36771	SETSCREW, Fluted Socket Cup Pt. #8-32 x 3/8 inch	4	
-10	016808	GEAR ASSY, Sprocket, Upper	1	
-11	016807	GEAR ASSY, Sprocket, Lower	1	
-12	31015	WASHER, Spring Tension	2	
-13	708640	WASHER, Flat	2	
-14	077453	SPROCKET ASSEMBLY, Upper	1	
-15	710012	FLANGE, Sprocket, Upper	1	
-16	31017	WASHER, Thrust	1	
-17	077456	SPROCKET ASSEMBLY, Lower	1	
-18	35910	FLANGE, Sprocket, Lower	1	
-19	31017	WASHER, Thrust	1	
-20	765449	RING, Retaining, External, 0.188 inch	1	
-21	710203	BUTTON, Rewind	1	
-22	712243	SPRING, Rewind Button	1	
-23	27640	SCREW, Slotted Binding Head, #4-40 x 3/16 inch	3	
-24	711680	GUARD, Sprocket	3	
-25	48438	ROLLER,	3	
-26	35830	SPRING, Torsion	3	
-27	36764	SETSCREW, Fluted Socket Cup Points, #6-32 x 3/16 inch Long	1	B
-28	710469	NAMEPLATE, Directamotion® (Adhesive Backed)	1	B
-29	44381	LEVER, Directamotion®	1	B
-30	31038	RING, Grip, .156 inch	1	B
-31	44535	CRANK, Directamotion® Lever	1	B
-GI	070043	GREASE		
-G2	713278	GREASE		

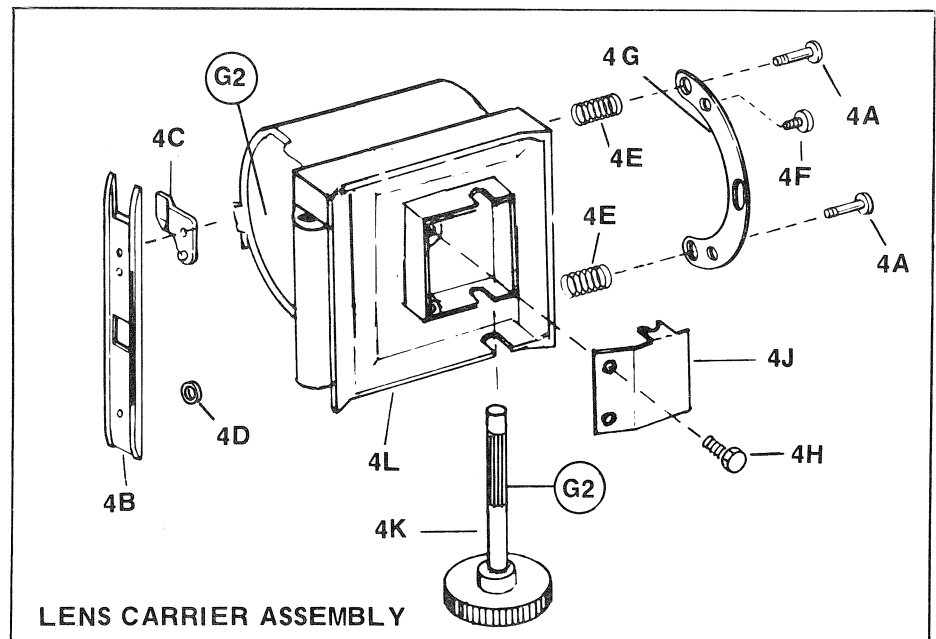


FIGURE 8. MECHANISM ASSEMBLY VIEW I

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MECHANISM ASSEMBLY — VIEW II				
9-1	27640	SCREW, Binding Head, #4-40 x 3/16 inch	3	ABC D
-2	48437	ROLLER, Flanged	3	
-3	97509	RING, Retaining, External, 0.250 inch	1	
-4	48939	ARM, Threading	1	
-5	710472	DECAL, No. 2 (Adhesive Backed)	1	
-5	713292	DECAL, No. 2 (Adhesive Backed)	1	
-6	710033	TIP, Flat Plastic	1	
-7	308858	RING, Retaining, External, 0.188 inch	1	
-8	709873	FILM GUIDE	1	
-9	308858	RING, Retaining	1	
-10	710493	WASHER, Flat	1	
-11	41330	ROLLER, Flanged	1	
-12	709872	STUD, Film Guide	1	
-13	44359	ECCENTRIC, Locking Lever	1	
-14	078149	LATCH ASSEMBLY, Autoload	1	
-15	49979	SPRING, Extension	1	
-16	17676	RING, Retaining, External, 0.156 inch	1	
-17	35874	LOOPFORMER, Lower	1	
-18	35838	SPRING, Torsion	1	
-19	31551	SCREW, Pan Head, #5-40 x 1/4 inch	1	
-20	35822	BRACKET, Back-up	1	
-21	87030	RING, Retaining, 0.416 inch	1	
-22	35834	WASHER, Flat	2	
-23	35850	GUIDE, Film, Lower	1	
-24	31551	SCREW, Pan Head, #5-40 x 1/4 inch	2	
-25	No Number	PLATE ASSEMBLY, Guard Mounting, Lower	NP	
-25A	17639	● RING, Retaining, External, 0.125 inch	1	
-25B	011221	● LEVER AND PIVOT ASSEMBLY, Toggle	1	
-25C	011213	● PLATE AND POSTS ASSEMBLY	1	
-26	35846	GUIDE, Film, Lower	1	
-27	303541	SCREW, Binding Head, #3-56 x 1/8 inch	2	
-28	31451	WASHER, Flat	2	
-29	36018	SPRING, Leaf	1	
-30	33347	SCREW, Locking, Hex Head	1	
-31	09789	LEVER ASSEMBLY, Threading	1	
-32	No Number	LOOPFORMER ASSEMBLY, Lower	NP	
-32A	17639	● RING, Retaining, External, 0.125 inch	1	
-32B	011233	● LOOPFORMER ASSEMBLY, Upper	1	
-32C	31555	● SCREW, Pan Head, #3-56 x 3/16 inch	1	
-32D	83663	● WASHER, Lock	1	
-32E	31451	● WASHER, Flat	1	ABC D
-32F	35820	● RETRACTOR, Shuttle	1	
-32G	011218	● LINK AND STUD ASSEMBLY, Connecting	1	
-33	710473	DECAL, No. 4 (Adhesive Backed)	1	
-33	713293	DECAL, No. 4 (Adhesive Backed)	1	
-34	30804	SCREW, Hex Washer Head (#4-40 x 1/4 inch)	1	
-35	34784	WASHER, Flat	1	
-36	078132	CHANNEL AND POST ASSEMBLY	1	
-37	31551	SCREW, Pan Head, #5-40 x 1/4 inch	2	
-38	077738	PLATE ASSEMBLY, Guard Mounting, Upper	1	
-39	36763	SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/8 inch	2	
-40	34878	WASHER, Flat	1	
-41	011214	SHAFT AND LINK ASSEMBLY, Upper Loopformer	1	
-42	44513	SPRING, Torsion	1	
-43	31049	SCREW, Binding Head, #6-32 x 1/4 inch	1	
-44	44321	GUIDE, Film Exit	1	

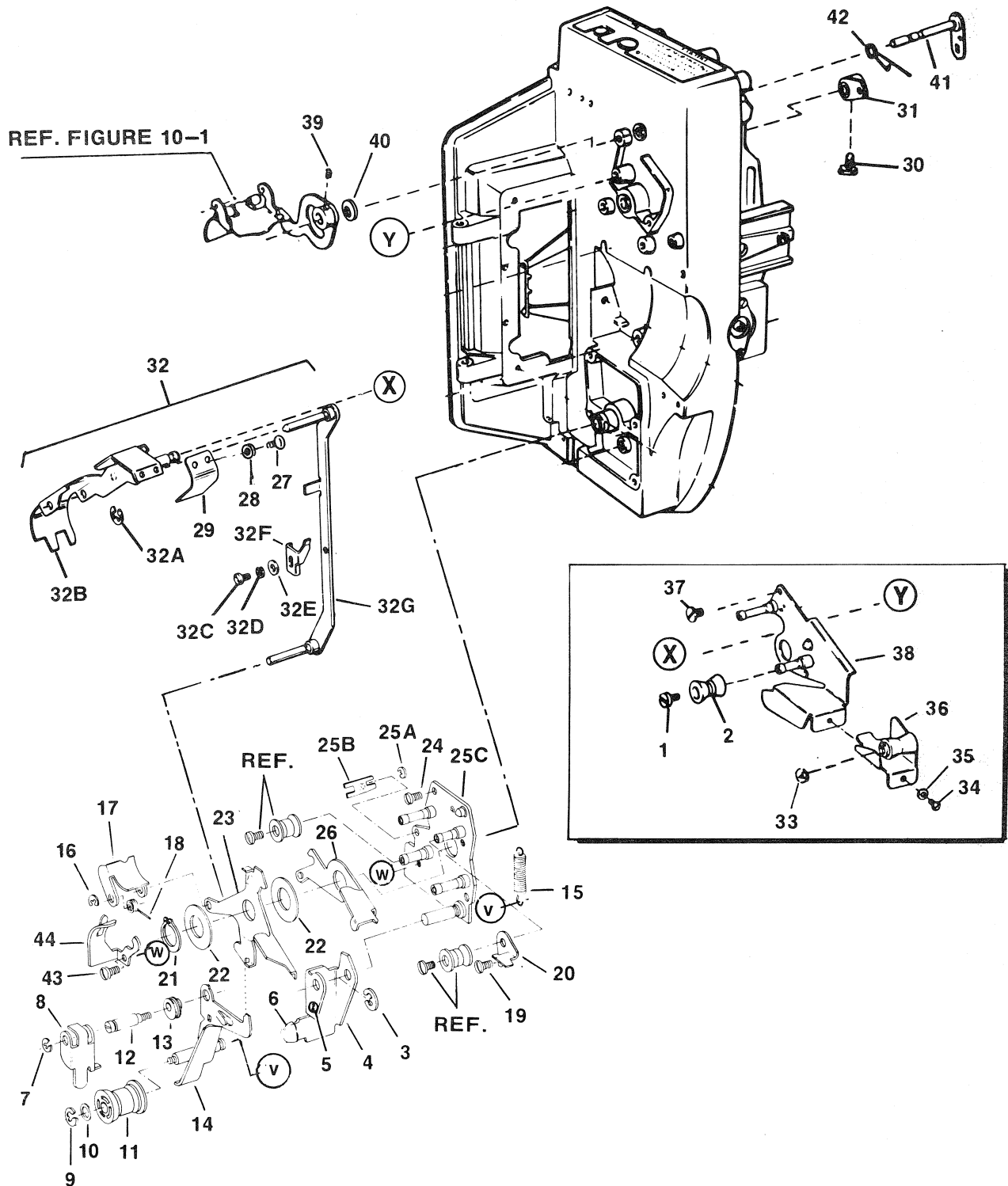


FIGURE 9. MECHANISM ASSEMBLY VIEW II

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MECHANISM ASSEMBLY — VIEW III				
10-1	013962	LOOPFORMER AND LOCK PAWL ASSEMBLY	1	
-1A	99828	● RING, Retaining, External, 0.062 inch ID	2	
-1B	37303	● SHAFT, Locking Pawl	1	
-1C	37304	● SPRING, Tension	1	
-1D	27640	● SCREW, Binding Head, #4-40 x 3/16 inch	1	
-1E	37302	● PAWL, Locking	1	
-1F	012134	● HUB ASSEMBLY, Pawl Bracket	1	
-1G	012133	● LOOPFORMER ASSEMBLY, Upper	1	
-2	30808	SCREW, Hex Head Washer, #6-32 x 5/16 inch	1	
-3	21238	WASHER, Flat	1	
-4	36044	SPRING, Tension	1	
-5	36801	SCREW, Sems, #6-32 x 1/4 inch	1	
-6	21238	WASHER, Flat	1	
-7	011249	CAM FOLLOWER AND SUPPORT ASSEMBLY	1	
-7A	31555	● SCREW, Pan Head, #3-56 x 3/16 inch	2	
-7B	31474	● BRACKET, Alignment	1	
-7C	36027	● SPRING, Cam Follower	2	
-7D	36099	● DAMPER, Spring	1	
-7E	36047	● FOLLOWER, Cam	1	
-7F	36028	● SUPPORT, Cam Follower	1	
-8	33347	SCREW, Hex Head Cup Pt, #6-32 x 1/4 inch	1	
-9	011250	ARM ASSEMBLY	1	
-10	34878	WASHER, Flat	1	
-11	31551	SCREW, Pan Head, #5-40 x 1/4 inch	2	
-12	31977	WASHER, Lock	2	
-13	31020	WASHER, Flat	2	
-14	011248	SELF-CENTERING ASSEMBLY	1	
-15	31049	SCREW, Binding Head, #6-32 x 1/4 inch	2	
-16	No Number	APERTURE PLATE ASSEMBLY (See Figure 22 for parts)	NP	
-17	710476	NAMEPLATE, Rewind	1	ABD
-17	115040	NAMEPLATE, Rewind	1	C
-18	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch	1	
-19	49980	CATCH, Lens Carrier	1	
-20	41342	SCREW, Hex Washer Head, #10-32 x 1/4 inch	1	
-21	27640	SCREW, Binding Head, #4-40 x 3/16 inch	1	
-22	35840	ROLLER, Plain	1	
-23	765449	RING, Retaining, 0.145 inch ID	1	
-24	011219	LEVER AND SHAFT ASSEMBLY	1	
-25	30809	SCREW, Hex Washer Head, #6-32 x 3/8 inch	4	
-26	711604	RETAINER, Lamp	1	
-27	078689	LAMP HOLDER ASSEMBLY	1	AD
-27	078688	LAMP HOLDER ASSEMBLY	1	BC
-27A	31143	● SPRING, Tension	1	BC
-27B	711601	● SPRING, Filter Retainer	1	BC
-27C	31407	● DISC, Heat Filter	1	BC
-27D	204129	● FILTER, Heat	1	BC
-27E	No Number	● HOLDER, Heat Filter and Lamp	NP	BC
		(Order Complete Assembly)		
-28	30809	SCREW, Hex Washer Head, #6-32 x 3/8 inch	2	
-29	36662	BAFFLE, Heat	1	

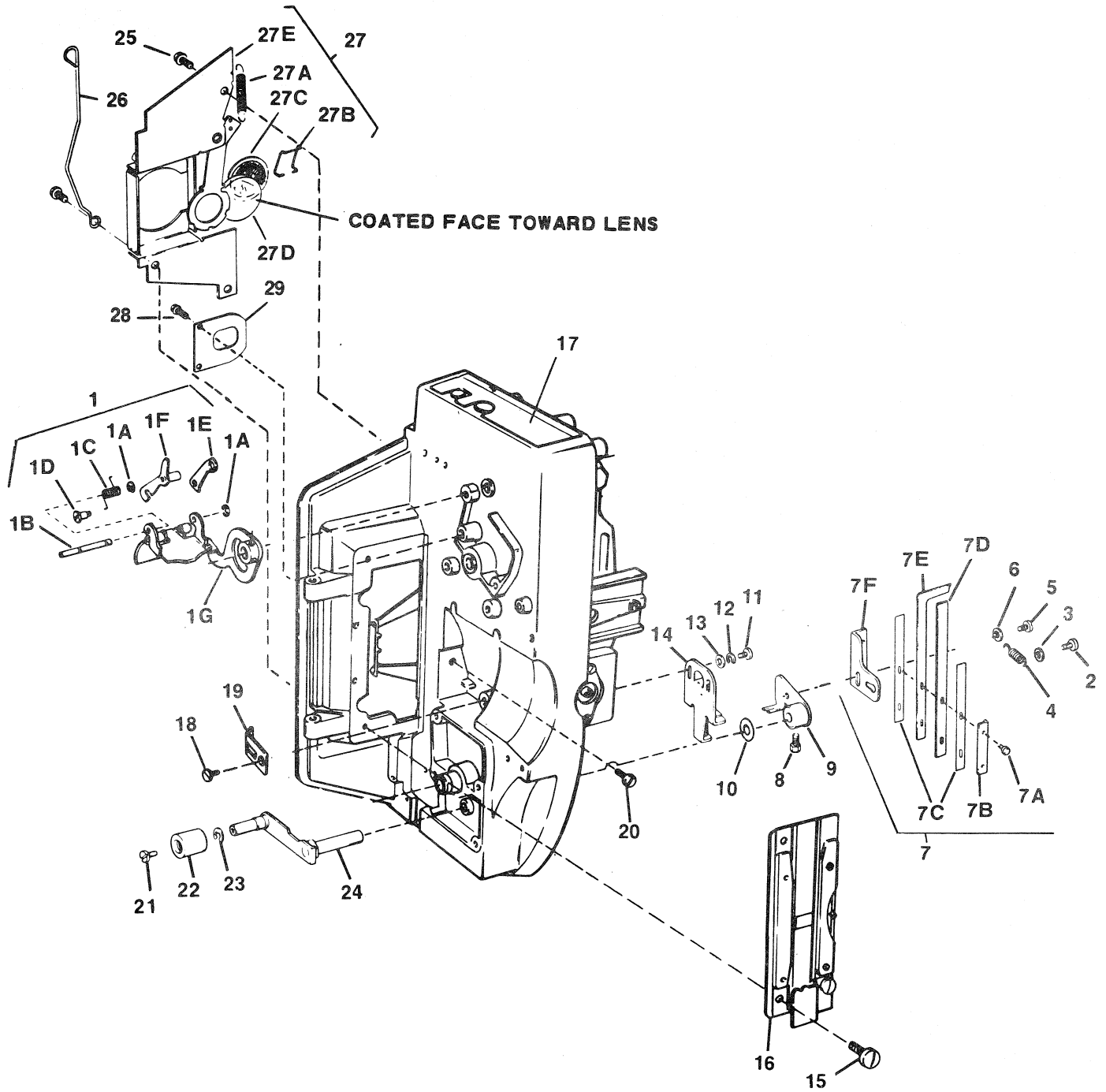


FIGURE 10. MECHANISM ASSEMBLY VIEW III

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MECHANISM ASSEMBLY (VIEW IV)				
11-1	36770	SETSCREW, Fluted Socket Cup Pt, #8-32 x 1/4 inch	2	
-2	44261	PULLEY, Mechanism	1	ABC
-2	709593	PULLEY, Mechanism	1	D
-3	31005	NUT, Shutter	1	
-4	31037	WEIGHT, Counterbalance	1	
-5	41308	SHUTTER, 3-Blade	1	AB
-5	41309	SHUTTER, 2-Blade	1	CD
-6	34797	WASHER, Fiber	1	
-7	46464	NUT, Hex	2	
-8	011886	BALL AND STUD ASSEMBLY	2	
-9	36015	SPRING, Extension	1	
-10	36013	WIPER, Felt	1	
-11	36014	WICK, Felt	1	
-12	31557	SHUTTLE	1	
-13	011235	ARM AND BEARING ASSEMBLY, Shuttle	2	
-13A	31003	● FOLLOWER, Pull-Down Cam	2	
-14	41307	CAM, Pull-Down	1	
-15	36668	SCREW, Pan Head Sems. #6-32 x 5/16 inch	2	
-16	31001	CAM, In-Out	1	
-17	011236	BRACKET ASSEMBLY, In-Out Cam	1	
-17A	09702	● FOLLOWER, In-Out Cam	1	
-17B	707211	● SPRING, Tension, In-Out Cam	1	
-18	30817	SCREW, Hex Washer Head, #8-32 x 1/2 inch	2	
-19	013917	PLATE ASSEMBLY, Shuttle Arm	1	
-19A	09712	● SUPPORT ASSEMBLY, Bearing	1	
-20	36048	● PIN, Stop, Framer	1	
-21	078581	KNOB AND SHAFT ASSEMBLY, Framer	1	
-22	30801	SCREW, Hex Washer Head, #2-56 x 3/16 inch	1	
-23	709860	SPRING, Pin Return	1	
-24	709859	PIN, Shuttle Retractor	1	
-25	30808	SCREW, Hex Washer Head, #6-32 x 5/16 inch	2	BC
-26	710504	BRACKET, Stop	1	C
-27	41377	SCREW, Shoulder	2	BC
-28	No Number	BRACKET ASSEMBLY, Stop Pawl Shaft	NP	BC
-28A	24852	● GROMMET, Rubber	2	BC
-28B	44325	● BRACKET, Stop Pawl	1	BC
-29	20808	RING, Retaining, External, 0.145 inch ID	2	BC
-30	31396	SHAFT, Stop Pawl	1	BC
-31	48177	PAWL, Stop	1	BC
-32	710339	BRACKET, Solenoid	1	B
-32	31398	BRACKET, Bearing	1	C
-G	070034	GREASE		

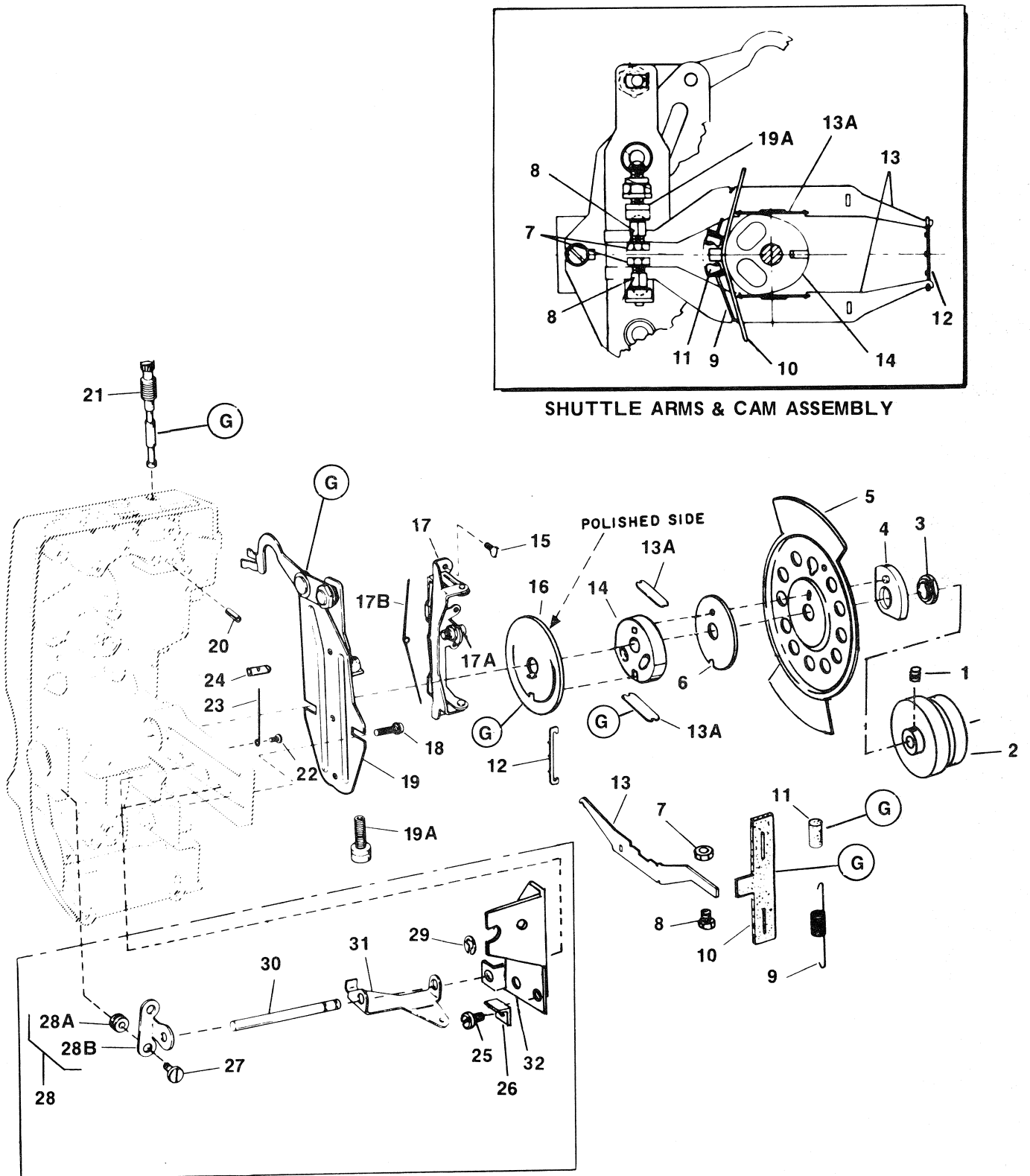


FIGURE 11. MECHANISM ASSEMBLY VIEW IV

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MECHANISM ASSEMBLY (VIEW V)				
12-1	709756	NUT, Round.....	1	BC
-2	31020	WASHER, Flat.....	1	BC
-3	31048	BRACKET, Shuttle Adjustment.....	1	BC
-4	31976	SCREW, Pan Head, #5-40 x 0.312 inch.....	1	BC
-5	30162	SCREW, Binding Head, #5-40 x 3/8 inch.....	1	BC
-6	31977	WASHER, Lock.....	1	BC
-7	09870	SLIDE BAR ASSEMBLY, Animated Clutch.....	1	BC
-7A	31405	● SETSCREW, Fluted Socket Oval Pt, #4-40 x 3/8 inch.....	1	BC
-7B	17639	● RING, Retaining, External, 0.125 inch.....	3	BC
-7C	31403	● SHAFT, Clutch Bracket.....	1	BC
-7D	31399	● BUMPER, Slide.....	1	BC
-7E	31456	● WASHER, Flat.....	1	BC
-7F	31036	● SPRING, Compression.....	1	BC
-7G	09886	● BAR ASSEMBLY, Clutch Slide.....	1	BC
-7H	30803	● SCREW, Strike, #4-40 Hex Washer Head.....	1	BC
-7J	34784	● WASHER, Flat.....	1	BC
-7K	41318	● STRIKE.....	1	BC
-7L	09885	● BRACKET ASSEMBLY, Clutch.....	1	BC
-8	31009	RING, Retaining, Internal, Bowed, 0.866 inch.....	1	
-9	30804	SCREW, Hex Washer Head, #4-40 x 1/4 inch.....	2	
-10	710436	SPRING, Bearing Loading.....	1	
-11	36763	SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/8 inch.....	1	
-12	31007	BEARING, Ball.....	1	
-13	09710	CLUTCH ASSEMBLY, Driver.....	1	BC
-14	31035	SPRING, Torsion, Clutch.....	1	BC
-15	09711	CLUTCH ASSEMBLY, Driven.....	1	BC
-16	21736	RING, Retaining, External, 0.250 inch.....	2	BC
-17	31029 and/or			
	44205	WASHER, Shim.....	AR	BC
-18	31400	BEARING, Sleeve.....	1	BC
-19	31145	TRIGGER.....	1	BC
-20	31149	PIN, Shoulder.....	2	BC
-21	31147	YOKE, Clutch.....	1	BC
-22	31148	SPRING, Compression.....	1	BC
-23	09728	BEARING ASSEMBLY.....	1	BC
-24	012666	WORM GEAR ASSEMBLY.....	1	AD
-24	09709	WORM GEAR ASSEMBLY.....	1	BC
-24A	36769	● SETSCREW, Fluted Socket Cup Pt, #8-32 x 1/4 inch.....	2	AD
-25	31031	BUSHING, Rubber.....	3	BC
-26	31029 and/or			
	44205	WASHER, Shim.....	AR	BC
-27	36042	CAM, Loop Restorer.....	1	
-28	31078	RING, Retaining, Bowed, 0.312 inch.....	1	
-29	31006	BEARING, Ball.....	1	
-30	36065	CAMSHAFT.....	1	AD
-30	36039	CAMSHAFT.....	1	BC
-31	078147	HOUSING ASSEMBLY, Mechanism.....	1	
-G	070043	GREASE		

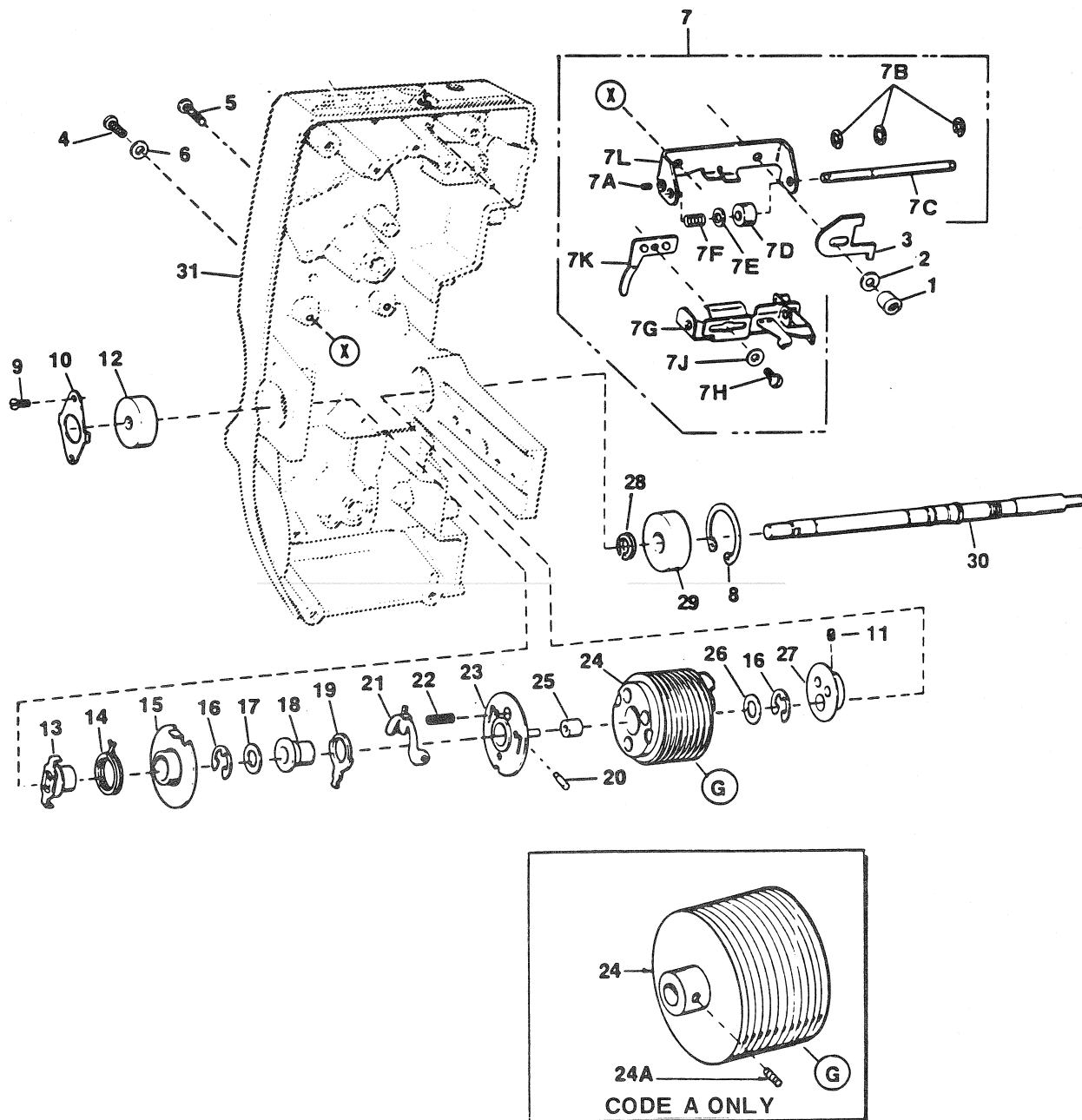


FIGURE 12. MECHANISM ASSEMBLY VIEW V

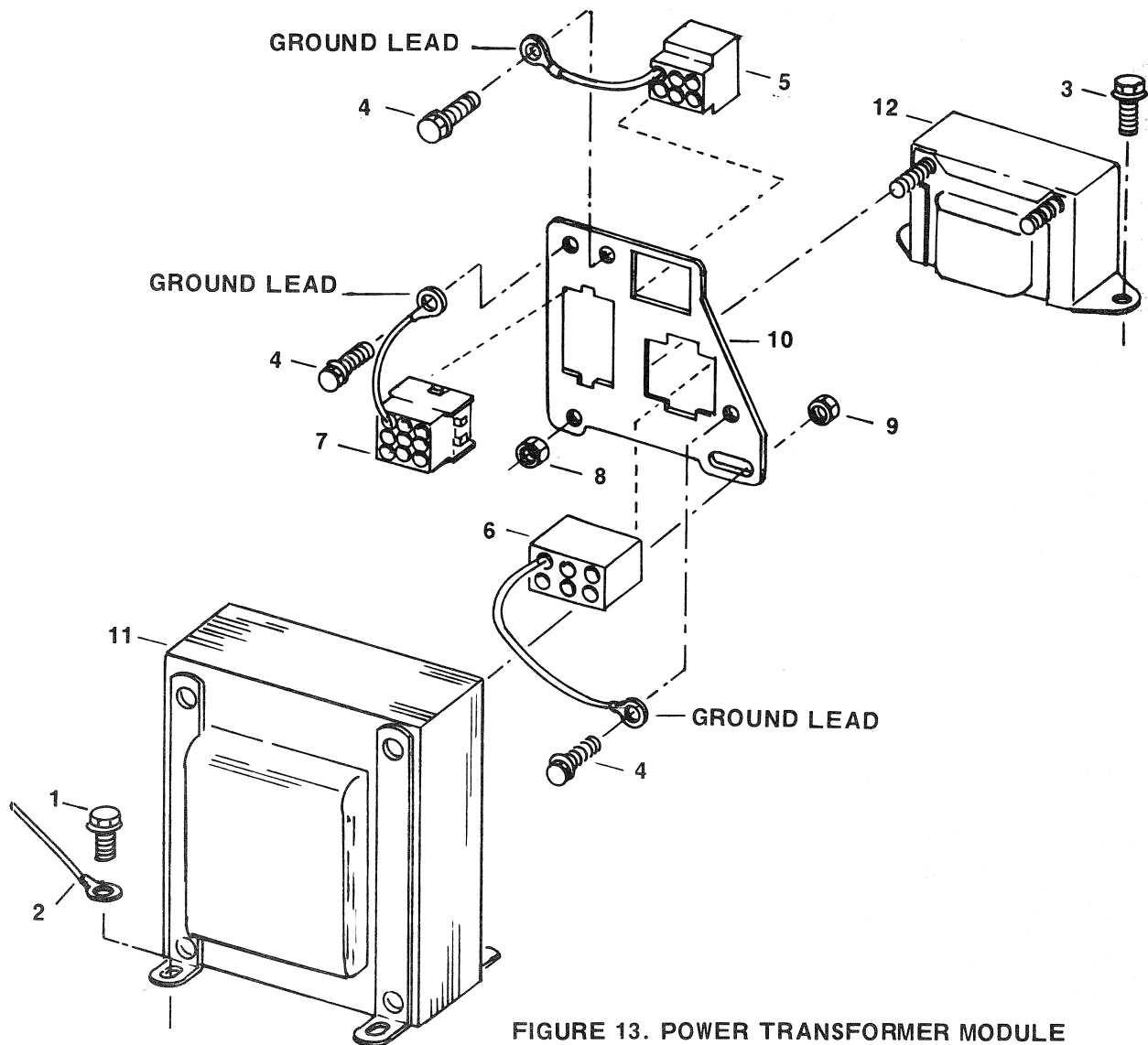


FIGURE 13. POWER TRANSFORMER MODULE

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
POWER TRANSFORMER MODULE				
13-1	30815	SCREW, Hex Washer Head, #8-32 x 3/8 inch Lg	4	AB
-2	078503	WIRE TIE	1	AB
-3	30809	SCREW, Hex Washer, #6-32 x 3/8 inch Lg	2	D
-4	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch Lg	3	ABD
-5	715158	HOUSING, Cap Connector 6 Pin	1	ABD
-6	711307	HOUSING, Cap Connector, 6 Pin	1	ABD
-7	713535	HOUSING, Cap Connector, 9 Pin	1	ABD
-8	19327	HEX NUT, #6-32	2	D
-9	19037	HEX NUT, #8-32	2	AB
-10	115099	PANEL, Connectors	1	ABD
-11	079677	TRANSFORMER ASSEMBLY (Lugged)	1	AB
-12	087208	TRANSFORMER ASSEMBLY (Lugged)	1	D

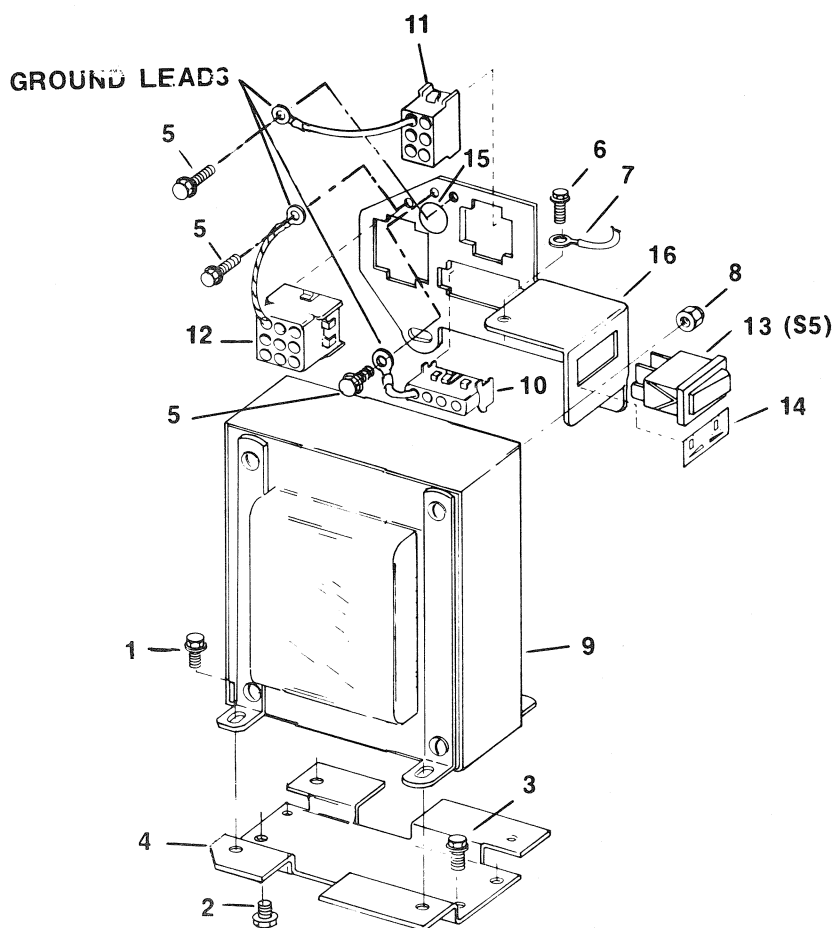


FIGURE 14. POWER TRANSFORMER MODULE

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
POWER TRANSFORMER MODULE				
14-1	30815	SCREW, Hex Washer Head, #8-32 x 3/8 inch Lg	4	C
-2	30817	SCREW, Hex Washer Head, #8-32 x 1/2 inch Lg	2	C
-3	30815	SCREW, Hex Washer Head, #8-32 x 3/8 inch Lg	2	C
-4	713380	PLATFORM, Transformer	1	C
-5	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch Lg	3	C
-6	30807	SCREW, Hex Washer Head, #6-32 x 1/4 inch Lg	1	C
-7	078503	WIRE TIE	1	C
-8	19037	HEX NUT, #8-32	2	C
-9	087232	TRANSFORMER ASSEMBLY (Lugged)	1	C
-10	713374	HOUSING, Cap Connector, 4 Pin	1	C
-11	713378	HOUSING, Cap Connector, 6 Pin	1	C
-12	715675	HOUSING, Cap Connector, 9 Pin	1	C
-13	715673	SWITCH, Rocker	1	C
-14	715690	NAMEPLATE, Lamp Brightness	1	C
15	48266	GROUND LABEL	1	C
-16	713381	PANEL, Connectors	1	C

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
SOUNDHEAD ASSEMBLY				
15-1	34884	LAMP, Exciter (BAK)	1	
-2	34892	NAMEPLATE, Lamp Designation	1	
-3	49932	SCREW, Optical Slit	1	
-4	712299	SLIT ASSEMBLY, Optical	1	
-5	24443	RING, External Retaining (0.141 inch)	2	
-6	713211	ROLLER, Flanged, Upper	1	
-7	712225	ROLLER, Plain, Lower	1	
-8	765449	RING, External Retaining (0.188 inch)	1	
-9	078857	ARM ASSEMBLY, Stabilizer, Lower	1	
-10	709028	SPRING, Torsion	1	
-11	078856	ARM ASSEMBLY, Stabilizer, Upper	1	
-12	31638	SCREW, Fillister Head, #6-32 x 0.438 inch	2	
-13	09828	CONTACT ASSEMBLY, Exciter Lamp	1	
-14	31636	RING, Lamp Release	1	
-15	36765	SETSCREW, Fluted Socket Cup Pt., #6-32 x 1/4 inch	1	
-16	36668	SCREW, Pan Head Sems, #6-32 x 5/16 inch	2	
-17	078920	SOUND DRUM AND SHAFT ASSEMBLY	1	
-18	31669	RETAINER, Photocell	1	
-19	087085	PHOTOCELL ASSEMBLY	1	
-20	09826	SCREW ASSEMBLY, Edge Guide	1	
-21	31673	SPRING, Stabilizer Arm Tension	1	
-22	17676	RING, Retaining, External, 0.156 inch	1	
-23	33837	WASHER, Friction, 0.096 inch ID	1	
-24	44420	ADJUSTER, Stabilizer Tension	1	
-25	44511	RETAINER, Stabilizer Tension Spring	1	
-26	078854	HOUSING ASSEMBLY, Soundhead	1	
-26A	41321	● PIN, Lamp Mounting	3	
-26B	41320	● BUSHING, Mounting Pin	3	
-26C	602339	● SPRING, Tension	3	
-G	070034	GREASE		
-G1	No Number	PML STEM GREASE W 10, William F. Nye, Inc.	NP	

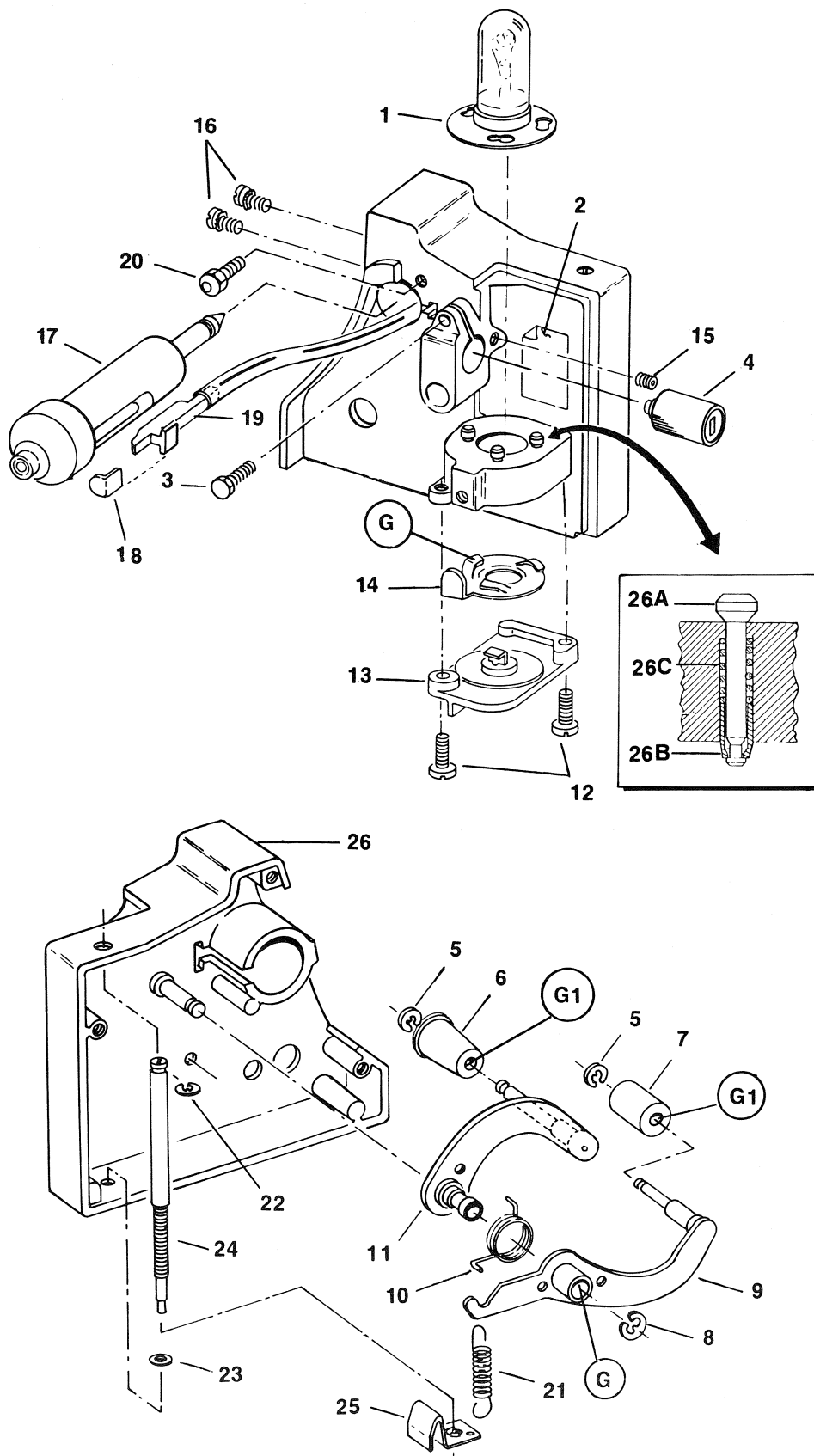


FIGURE 15. SOUND HEAD ASSEMBLY

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
FRONT REEL ARM ASSEMBLY				
16-0	078106	REEL ARM ASSEMBLY, Front.....	REF	ABD
-0	078166	REEL ARM ASSEMBLY, Front.....	REF	C
-1	706193	● SCREW, Recessed Pan Head, #6-20 x 1/2 inch	2	
-2	713241	● COVER, Front Reel Arm	1	
-3	078119	● ARM AND BEARING ASSEMBLY, Front Reel	1	
-4	31247	● SCREW, Hex Socket Button Head, #10-32 x 1/4 inch	1	
-5	No Number	● SPINDLE ASSEMBLY, Feed	NP	
-5A	36769	● ● SETSCREW, Fluted Socket Cup Pt, #8-32 x 3/16 inch	2	
-5B	709806	● ● FACE GEAR, Lower (B&H 070034 Grease to Teeth)	1	
-5C	016952	● ● SPINDLE ASSEMBLY, Feed	1	ABD
-5C	087177	● ● SPINDLE ASSEMBLY, Feed	1	C
-6	31038	● RING, Retaining, Grip Type, 0.156 inch ID	1	
-7	36764	● SETSCREW, Fluted Socket Cup Pt, #6-32 x 3/16 inch	1	
-8	36765	● SETSCREW, Fluted Socket Cup Pt, #6-32 x 1/4 inch	1	
-9	45577	● FACE GEAR, Upper (B&H 070047 Grease to Teeth)	1	
-10	45578	● SLEEVE, Face Gear	1	
-11	45579	● SPRING, Torsion (B&H 070047 Grease to Coils)	1	
-12	765777	● RING, Retaining, External, 0.250 inch ID	1	
-13	31017	● WASHER, Thrust	1	
-14	707111	● SHAFT, Front Reel Arm	1	
-15	31245	● RING, Retaining, Grip Type, 0.187 inch ID	1	
-16	33385	● SPUR GEAR, Upper (B&H 070047 Grease to Teeth)	1	
-17	31241	● CLIP, Gear Retaining	2	
-18	31243	● WASHER, Flat	1	
-19	31239	● SPUR GEAR, Lower (B&H 070034 Grease to Teeth)	1	
-20	44407	● GEAR SHAFT	1	
-21	31236	● BEARING, Nylon	2	
G	070034	GREASE		
G1	070047	GREASE		
L1	No Number	OIL, MOBILE [®] CO. DTE 25	NP	
L2	078215	GRAPHITE IMPREGNATED SYNTHETIC OIL		

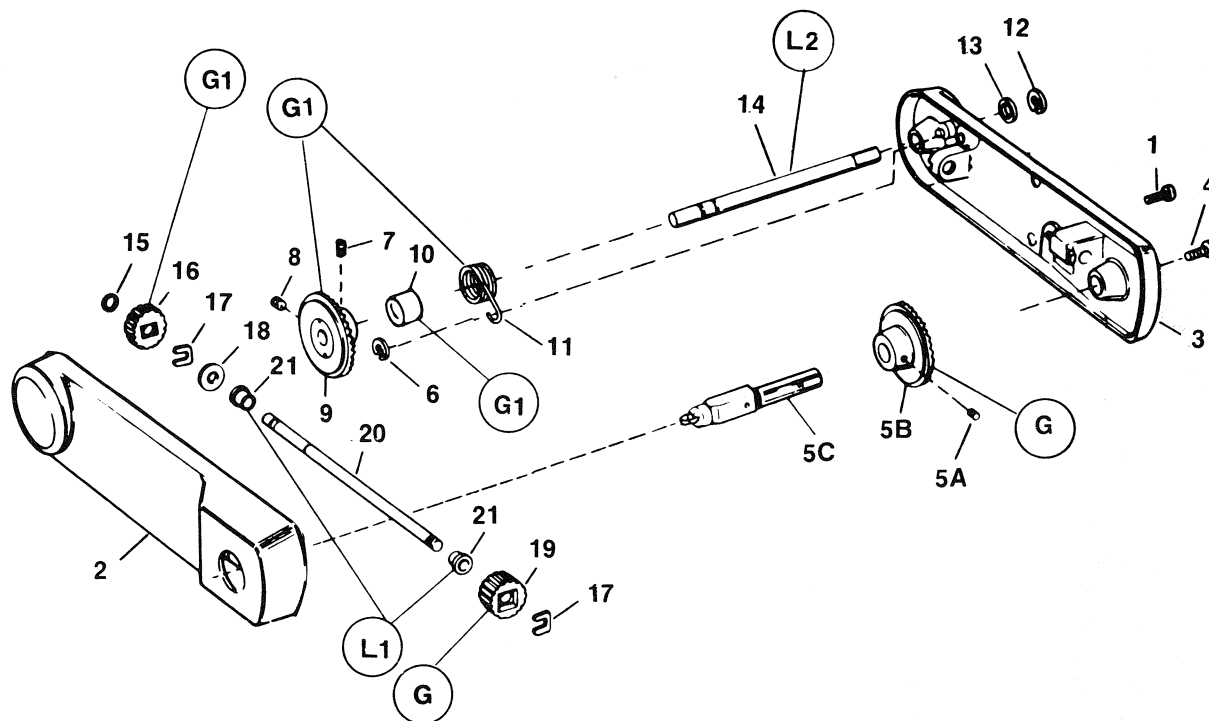


FIGURE 16. FRONT REEL ARM ASSEMBLY

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
REAR REEL ARM ASSEMBLY				
17-0	078107	REEL ARM ASSEMBLY, Rear	REF	ABD
-0	078167	REEL ARM ASSEMBLY, Rear	REF	C
-1	706193	• SCREW, Recessed Pan Head, #6-20 x 1/2 inch	2	
-2	713242	• COVER, Rear Reel Arm	1	
-3	41331	• PIN, Rear and Take-up Reel Arm Assembly	1	
-4	24047	• BELT, Take-up	1	
-5	36038	• SPRING, Compression	1	
-6	31247	• SCREW, Hex Socket Button Head, #10-32 x 1/4 inch	1	
-7	016546	• SPINDLE AND PULLEY ASSEMBLY, Take-Up	1	ABD
-7	087178	• SPINDLE AND PULLEY ASSEMBLY, Take-up	1	C
-8	700672	• WASHER, Shim	1	
-9	765449	• RING, Retaining, External, 0.188 inch	1	
-10	45580	• WASHER, Flat	1	
-11	713253	• SLEEVE, Face Gear	1	
-12	36764	• SETSCREW, Fluted Socket Cup Pt, #6-32 x 3/16 inch	1	
-13	713254	• FACE GEAR, Lower (B&H 070034 Grease to Teeth)	1	
-14	34101	• WASHER, Shim	1	
-15	45683	• SHAFT, Lower Face Gear	1	
-16	31038	• RING, Retaining, Grip Type, 0.156 inch ID	1	
-17	707136	• SPRING, Torsion (B&H 070047 Grease in Coils)	1	
-18	31245	• RING, Retaining, Grip Type, 0.187 inch ID	1	
-19	33385	• SPUR GEAR, Upper (B&H 070047 Grease to Teeth)	1	
-20	31241	• CLIP, Gear Retaining	2	
-21	31239	• SPUR GEAR, Lower (B&H 070034 Grease to Teeth)	1	
-22	34101	• WASHER, Flat	1	
-23	44412	• GEAR SHAFT	1	
-24	31236	• BEARING, Nylon	2	
-25	36764	• SETSCREW, Fluted Socket Cup Pt, #6-32 x 3/16 inch	1	
-26	44367	• FACE GEAR, Upper (B&H 070047 Grease to Hub & Teeth)	1	
-27	765777	• RING, Retaining, External, 0.250 inch ID	1	
-28	700672	• WASHER, Spacer	1	
-29	49532	• SHAFT, Rear Reel Arm	1	
-30	078120	• ARM AND BEARING ASSEMBLY, Rear Reel	1	
-30A	014611	• • BEARING ASSEMBLY, Rear and Take-up Reel Arm	1	
G	070034	GREASE		
G1	070047	GREASE		
L1	No Number	OIL, MOBILE® CO. DTE 25	NP	
L2	078215	GRAPHITE IMPREGNATED SYNTHETIC OIL		

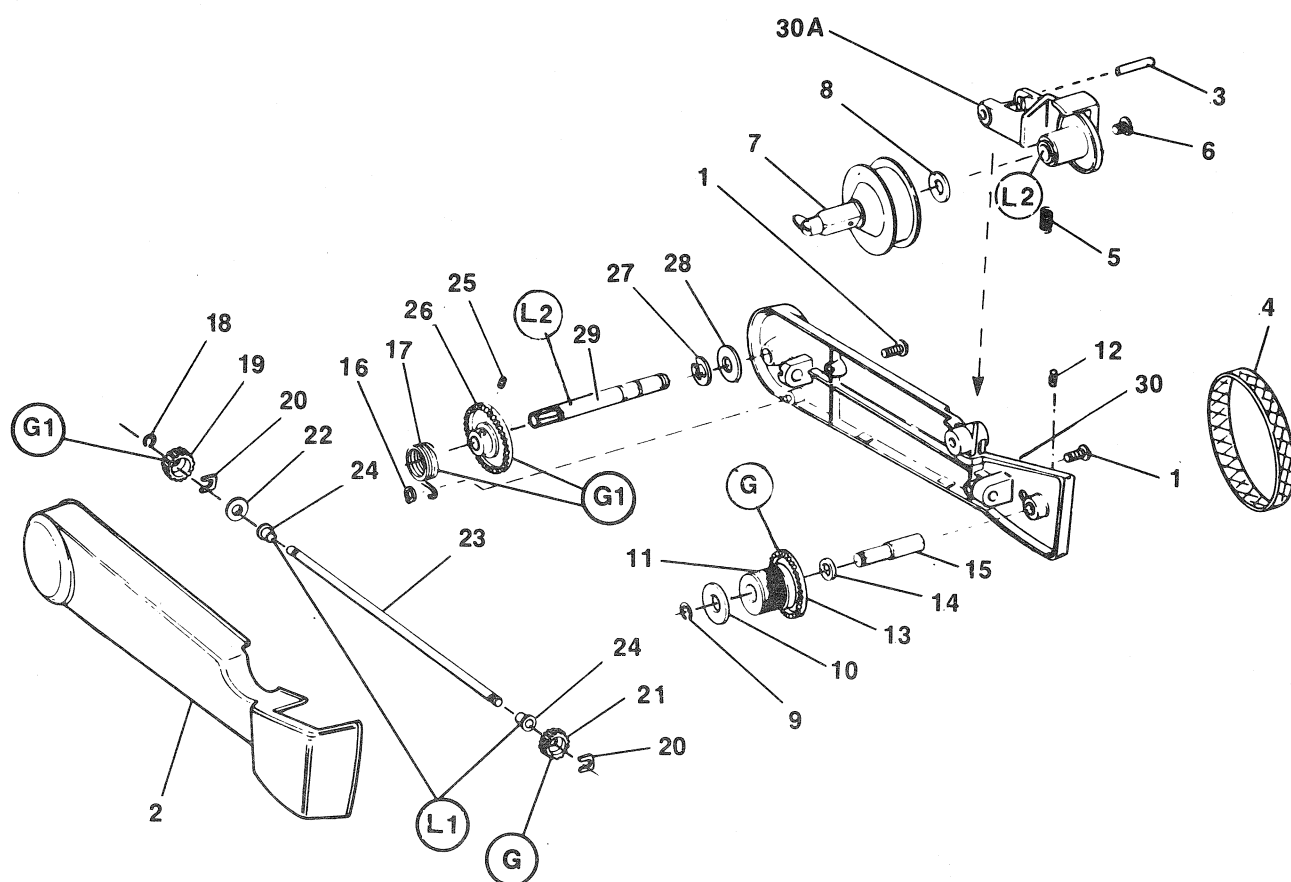


FIGURE 17. REAR REEL ARM ASSEMBLY

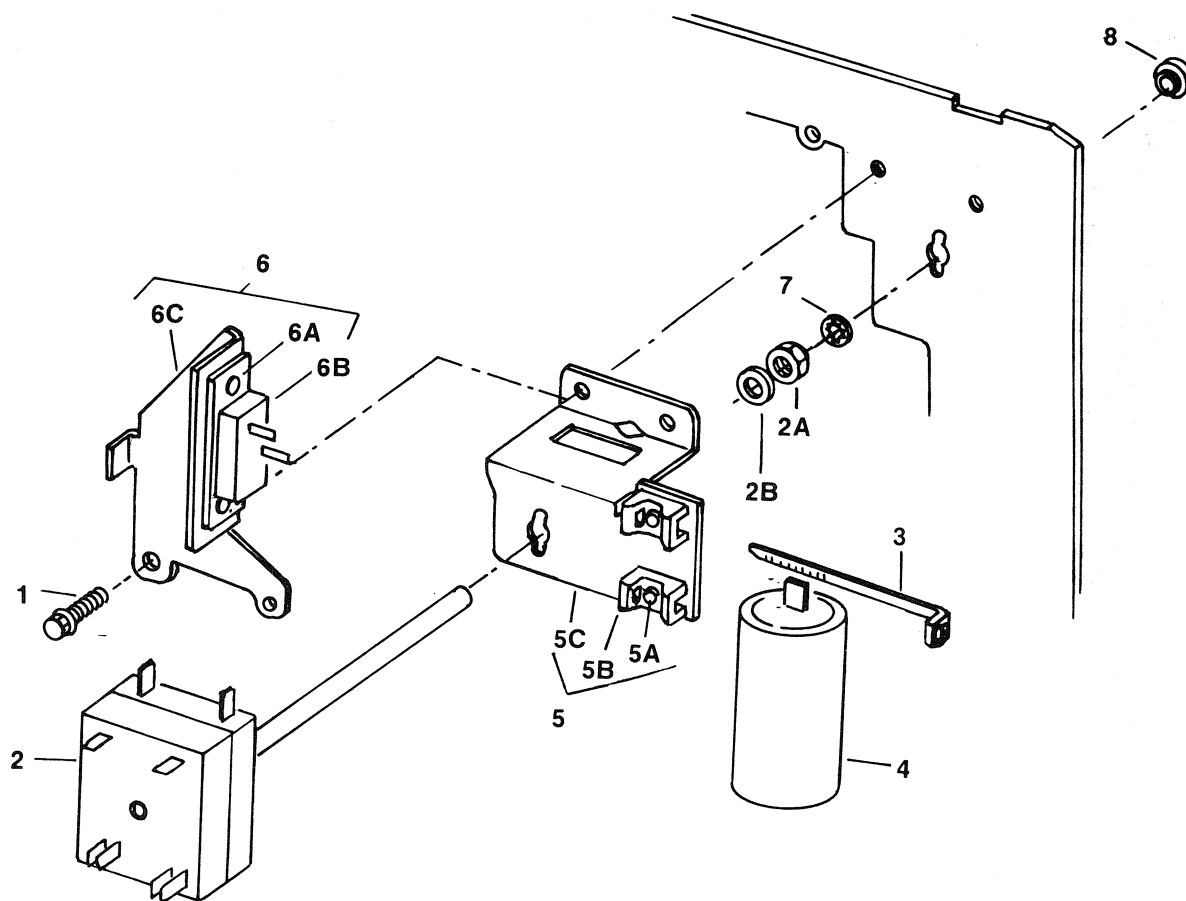


FIGURE 18. MAIN CONTROL SWITCH (FOR CODE A,B&D)

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MAIN CONTROL SWITCH				
18-1	30809	#6-32 x 3/8 inch Lg. Hex Washer Head Screw	2	ABD
-2	713582	ROTARY SWITCH (Includes Items 2A and 2B)	1	ABD
-2A	44467	• 3/8-24 N.S. Hex Nut	1	ABD
-2B	600736	• LOCKWASHER, Internal Tooth	1	ABD
-3	711665	WIRE TIE	2	ABD
-4	707281	CAPACITOR, Motor Start	1	ABD
-5	087038	SWITCH BRACKET ASSEMBLY	1	ABD
-5A	44835	• .123 Dia. x 3/16 inch Lg. Oval Head Rivet	2	ABD
-5B	711664	• WIRE TIE MOUNT	2	ABD
-5C	No Number	• SWITCH BRACKET (Order Complete Assembly)	NP	ABD
-6	087190	SWITCH ASSEMBLY, Animation	1	B
-6A	44536	• .123 Dia. x 9/64 inch Lg. Oval Head Rivet	2	B
-6B	115132	• SWITCH, Animation	1	B
-6C	No Number	• BRACKET, Animation Switch (Order Complete Assembly)	NP	B
-7	36142	RING, Self Locking External, 3/8 inch	1	AD
-8	115121	BUSHING	1	AD

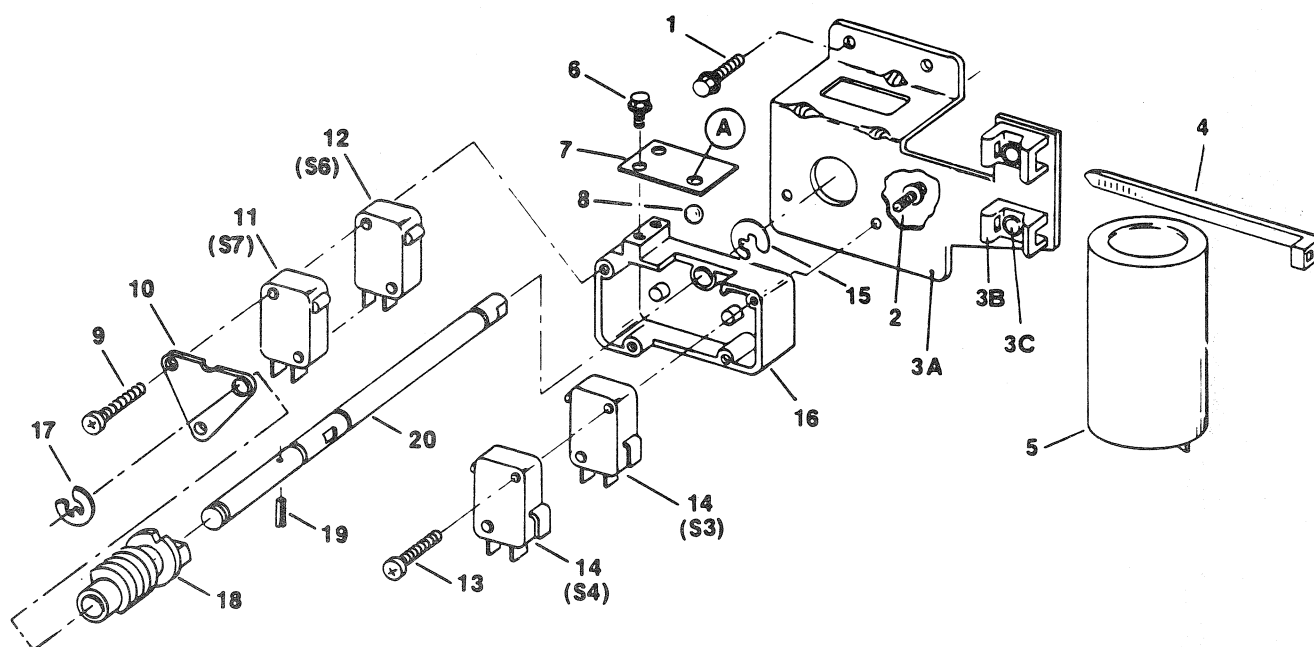


FIGURE 19. MAIN CONTROL SWITCH (CODE C ONLY)

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
MAIN CONTROL SWITCH				
19-1	30809	#6-32 x 3/8 inch Lg. Hex Washer Head Screw	2	C
-2	30804	#4-40 x 1/4 inch Lg. Hex Washer Head Screw	2	C
-3	087065	SWITCH BRACKET ASSEMBLY	1	C
-3A	No Number	• SWITCH BRACKET (Order Complete Assembly)	NP	C
-3B	711664	• WIRE TIE MOUNT	2	C
-3C	44835	• .123 Dia. x 1.8 inch Lg. Oval Head Rivet	2	C
-4	711665	TIE	2	C
-5	715664	MOTOR CAPACITOR	1	C
-6	30804	#4-40 x 1/4 inch Lg. Hex Washer Head Screw	2	C
-7	713305	MAIN SWITCH SPRING	1	C
-8	11722	BALL	1	C
-9	715648	#4-40 x 1 inch Lg. Hex Washer Head Screw	2	C
-10	713311	SUPPORT PLATE	1	C
-11	713307	MINIATURE SWITCH	1	C
-12	713353	MINIATURE SWITCH	1	C
-13	715648	#4-40 x 1 inch Lg. Hex Washer Head Screw	2	C
-14	713307	MINIATURE SWITCH	2	C
-15	765777	RING, Retaining, External, 1 1/4"	1	C
-16	713308	SWITCH BASE	1	C
-17	765777	RING, Retaining, External, 1 1/4"	1	C
-18	713310	SWITCH CAM	1	C
-19	83803	.062 Dia. x 1.2 inch Lg. Roll Pin	1	C
-20	713304	MAIN SWITCH SHAFT	1	C
A	No Number	ADHESIVE, 3M Co. #EC1711		

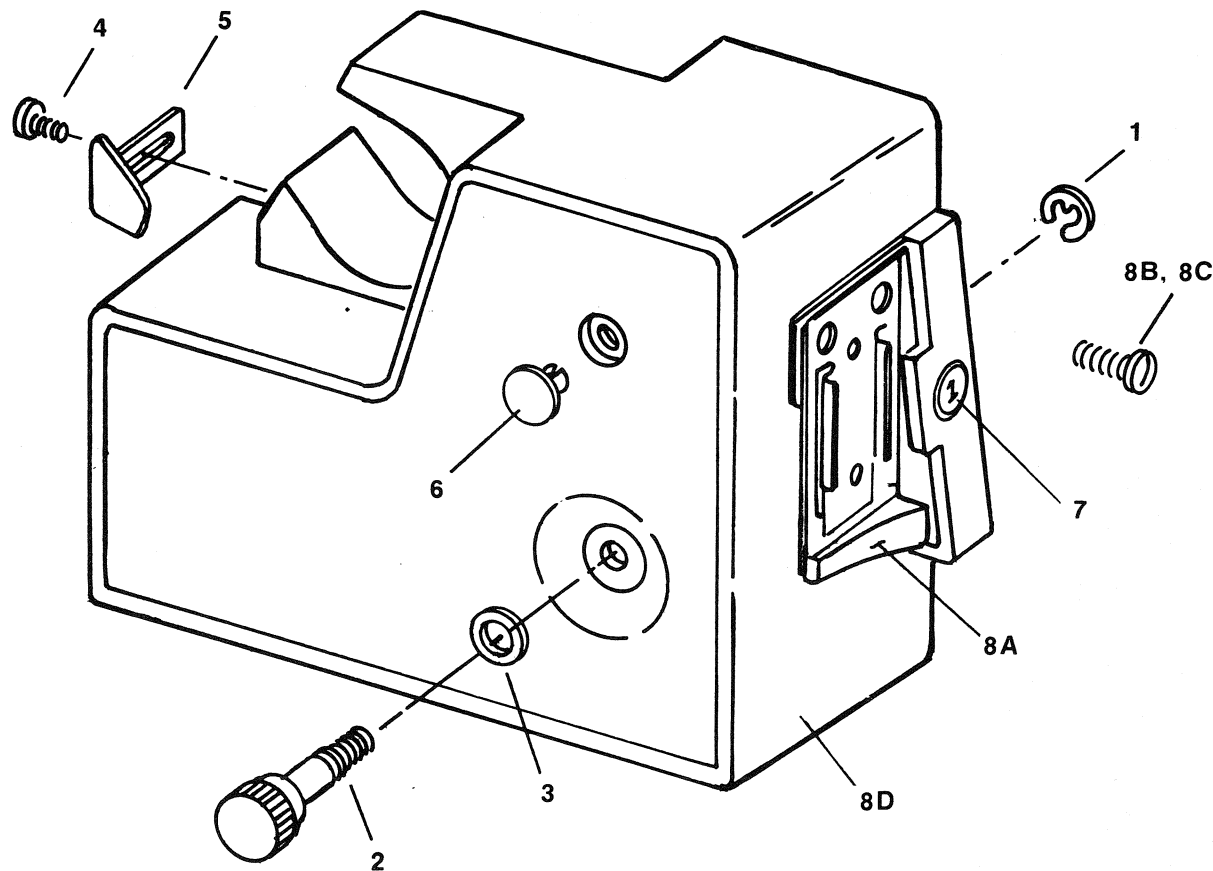


FIGURE 20.EXCITER LAMP COVER ASSEMBLY

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
EXCITER LAMP COVER ASSEMBLY				
20-1	20808	RING, Retaining, 0.145 inch ID	1	
-2	710424	SCREW, Cover Retaining	1	
-3	31243	WASHER, Flat	1	
-4	30149	SCREW, Binding Head, #6-32 by 1/4 inch	2	
-5	35823	GUIDE, Film	1	
-6	34787	PLUG, Hole	1	
-7	710471	DECAL, No. 1 (Adhesive Backed)	1	ABC
-7	713293	DECAL, No. 1 (Adhesive Backed)	1	D
-8	078130	COVER ASSEMBLY, Exciter Lamp	1	
-8A	078129	• FILM CUTTER ASSEMBLY	1	
-8B	32456	• SCREW, Film Cutter	2	
-8C	600987	• NUT, Hex	2	
-8D	710056	• COVER	1	

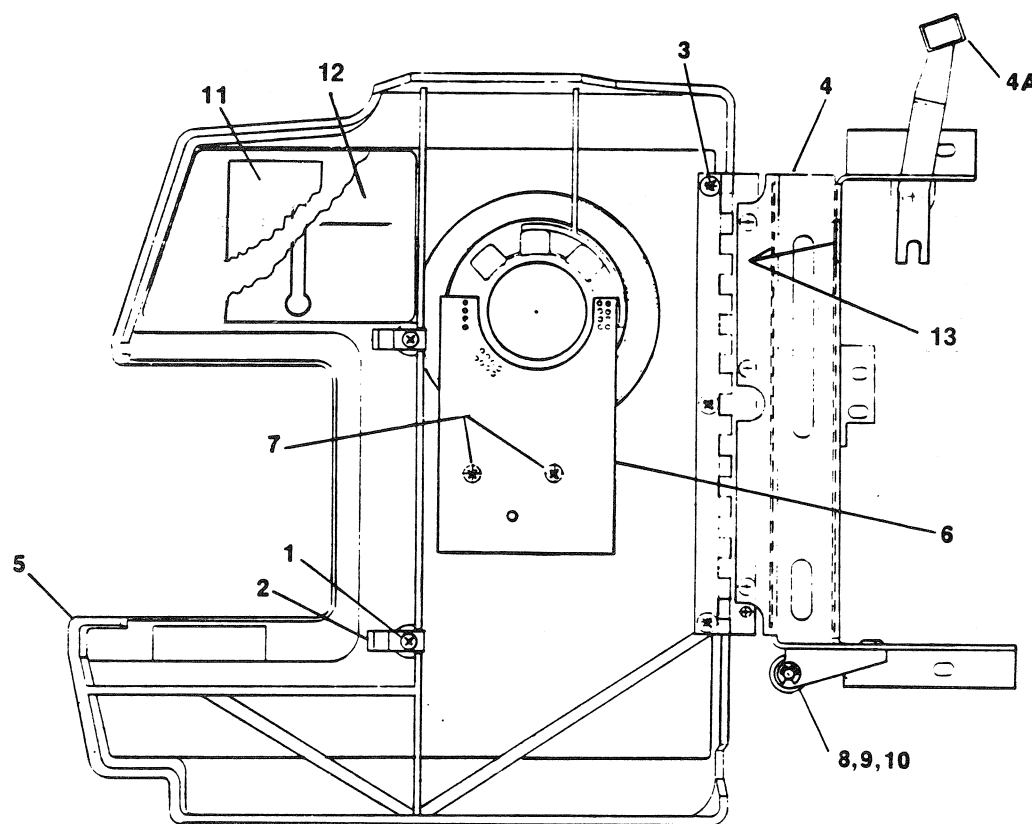


FIGURE 21. LAMPHOUSE COVER ASSEMBLY

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
LAMPHOUSE COVER ASSEMBLY				
21-1	707443	SCREW, Phillips Head Tapping	2	
-2	707081	LATCH, Lamphouse	2	
-3	48493	SCREW, Cover Hinge	3	
-4	078678	HINGE AND BRACKET ASSEMBLY	1	AD
-4	078677	HINGE AND BRACKET ASSEMBLY	1	BC
-4A	44173	● KNOB, Still—Run Lever	1	BC
-5	711606	COVER, Lamphouse	1	
-6	710714	REFLECTOR, Heat	1	
-7	48493	SCREW, Heat Reflector	2	
-8	710995	EXIT ROLLER	1	
-9	710996	EXIT ROLLER SHAFT	1	
-10	17676	RING, External Retaining (5/32 inch)	2	
-11	710546	LABEL, ELC Lamp (Adhesive Backed)	1	AB
-11	715156	LABEL, EYK Lamp (Adhesive Backed)	1	D
-12	713325	LABEL, ELC Lamp (Adhesive Backed)	1	C
-13	710718	SHIELD, Heat	2	

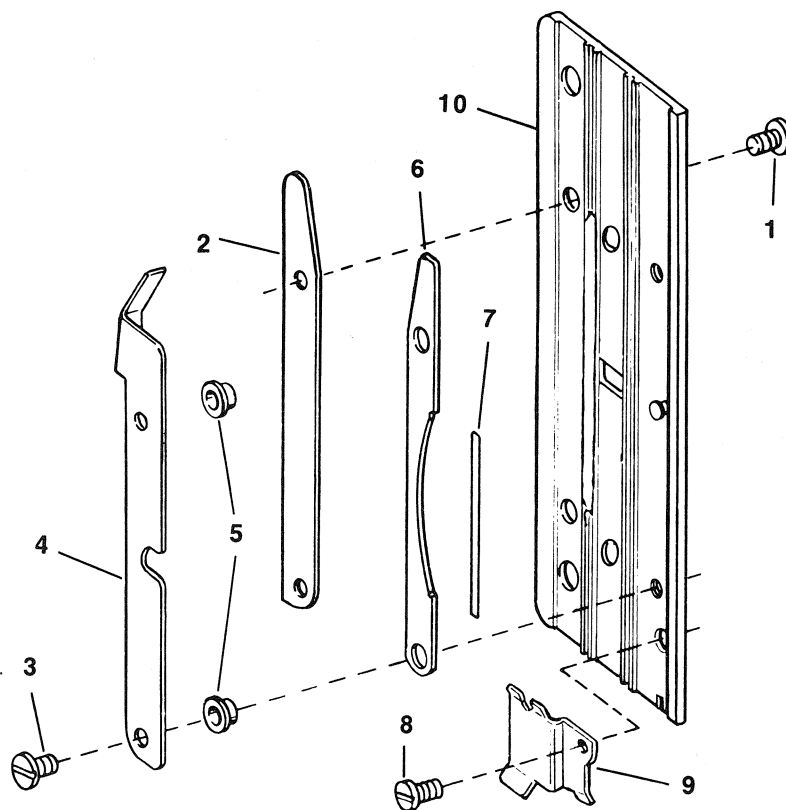


FIGURE 22. APERTURE PLATE ASSEMBLY

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
APERTURE PLATE ASSEMBLY				
22-0	No Number	APERTURE PLATE ASSEMBLY (See Figure 10 for mounting)	REF	
-1	31978	● SCREW, Slotted Pan Head, #3-56 x 1/8 inch	2	
-2	36064	● RAIL, Film Guide	1	
-3	37296	● SCREW, Slotted Pan Head, #3-56 x 1/4 inch	2	
-4	36078	● COVER, Film Rail	1	
-5	48432	● BUSHING, Spacer	2	
-6	37293	● RAIL, Film Tension	1	
-7	31135	● SPRING, Side Tension	1	
-8	31978	● SCREW, Slotted Pan Head, #3-56 x 1/8 inch	1	
-9	36075	● GUIDE, Film	1	
-10	012132	● PLATE, Aperture	1	

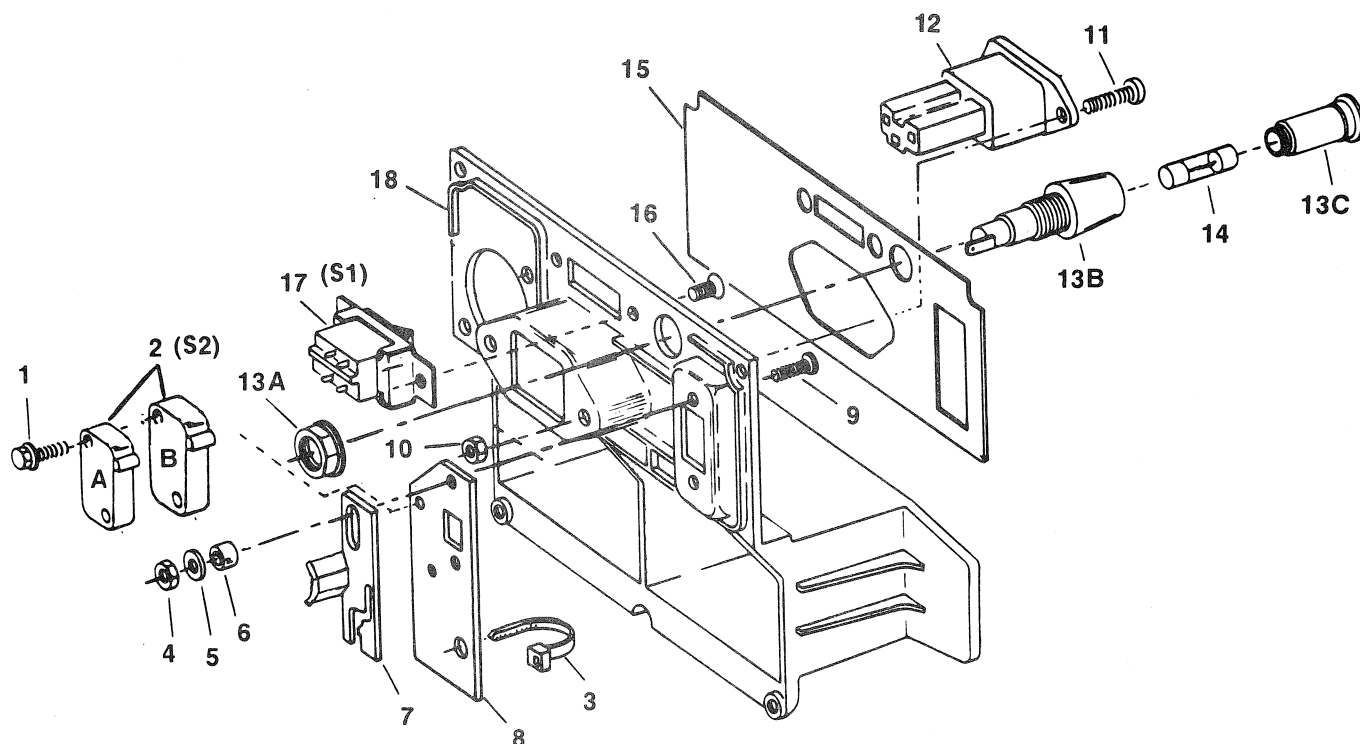


FIGURE 23. CORD WRAP ASSEMBLY (CODE C ONLY)

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
CORD WRAP ASSEMBLY				
23-1	715648	#4-40 x 9/16 inch Lg. Hex Washer Head Screw.....	2	C
-2	713307	MINIATURE SWITCH	2	C
-3	711665	WIRE TIE	1	C
-4	600987	#2-56 Hex Nut.....	2	C
-5	31674	FLAT WASHER	2	C
-6	713534	ACTUATOR SPACER	2	C
-7	115130	SWITCH ACTUATOR	1	C
-8	713343	SWITCH PLATE	1	C
-9	204357	#2-56 x 1/2 inch Lg. Slotted Pan Head Screw	2	C
-10	436950	M3 Hex Nut	2	C
-11	434198	M3 x 0.5 x 5/8 inch Lg. Recessed Pan Head Screw	2	C
-12	709737	INPUT SOCKET	1	C
-13	435177	FUSE HOLDER (Includes 13A, 13B, 13C)	1	C
-13A	No Number	• M12.7 x 1.5 Hex Nut (Included With #13)	NP	C
-13B	No Number	• FUSE HOLDER BODY (Included with #13)	NP	C
-13C	No Number	• FUSE CARRIER (Included with #13)	NP	C
-14	432672	4AT MINIATURE FUSE.....	1	C
-15	115139	CORD WRAP NAMEPLATE.....	1	C
-16	436948	M3 x 0.5 x 15/64 inch Lg. Recessed Oval Head Screw.....	2	C
-17	49052	ROCKER SWITCH	1	C
-18	48186	CORD WRAP	1	C

CODE	A	B	C	D
MODEL	2585C	2592C	2592CX	1595C

Fig. & Index No.	Part No.	Description	Units Per Assy	Usable On Code
FRONT COVER AND SPEAKER ASSEMBLY				
24-0	078146	COVER AND SPEAKER ASSEMBLY, Front	REF	
-1	710448	● NAMEPLATE, Front Cover (Adhesive Backed)	1	
-2	710774	● SCREW, Slotted Flat Head	1	
-3	309923	● NUT, Hex Sems	1	
-4	707414	● CLAMP, Leadwire	1	
-5	45012	● NUT, Tinnermann	7	
-6	710651	● GRILLE CLOTH	1	
-7	707415	● LINE CORD (See Wiring Diagram)	1	
-8	712232	● SCREW, Slotted Flat Head	8	
-9	35164	● NUT, Plain Hex	8	
-10	440662	● SPEAKER	2	
-11	707416	● SCREW, Slotted Flat Head	4	
-12	710650	● CUSHION	1	
-13	707770	● CUSHION	1	
-14	707413	● NAMEPLATE, Speaker	1	
-15	436895	● CORD WRAP	1	
-16	710728	● BAFFLE BOARD	1	
-17	078271	● COVER ASSEMBLY	1	
-17A	765460	● ● RIVET, Semi-Tubular	4	
-17B	45083	● ● LATCH, Cover Release	2	
-17C	707751	● ● SPRING, Latch	2	
-17D	49284	● ● PLATE, Stiffener	1	
-17E	710682	● ● DAMPER, Vibration (adhesive Backed)	1	
-17F	31561	● ● FOOT, Rubber (Secure with Adhesive)	2	
-17G	No Number	● ● COVER, Front (Order Complete Assembly)	NP	
-A	No Number	ADHESIVE, 3M Co. #EC1711		

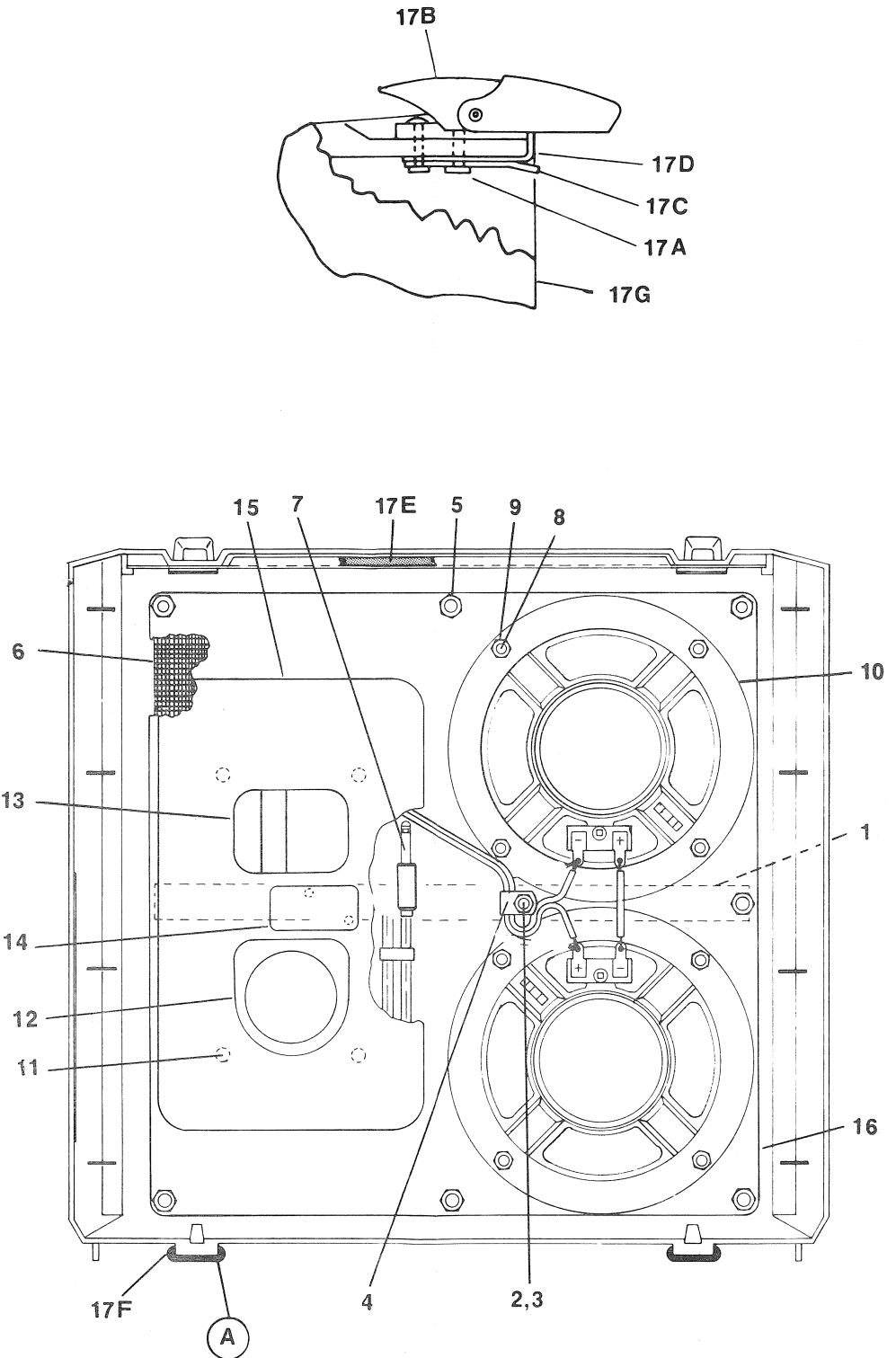


FIGURE 24. FRONT COVER AND SPEAKER ASSEMBLY

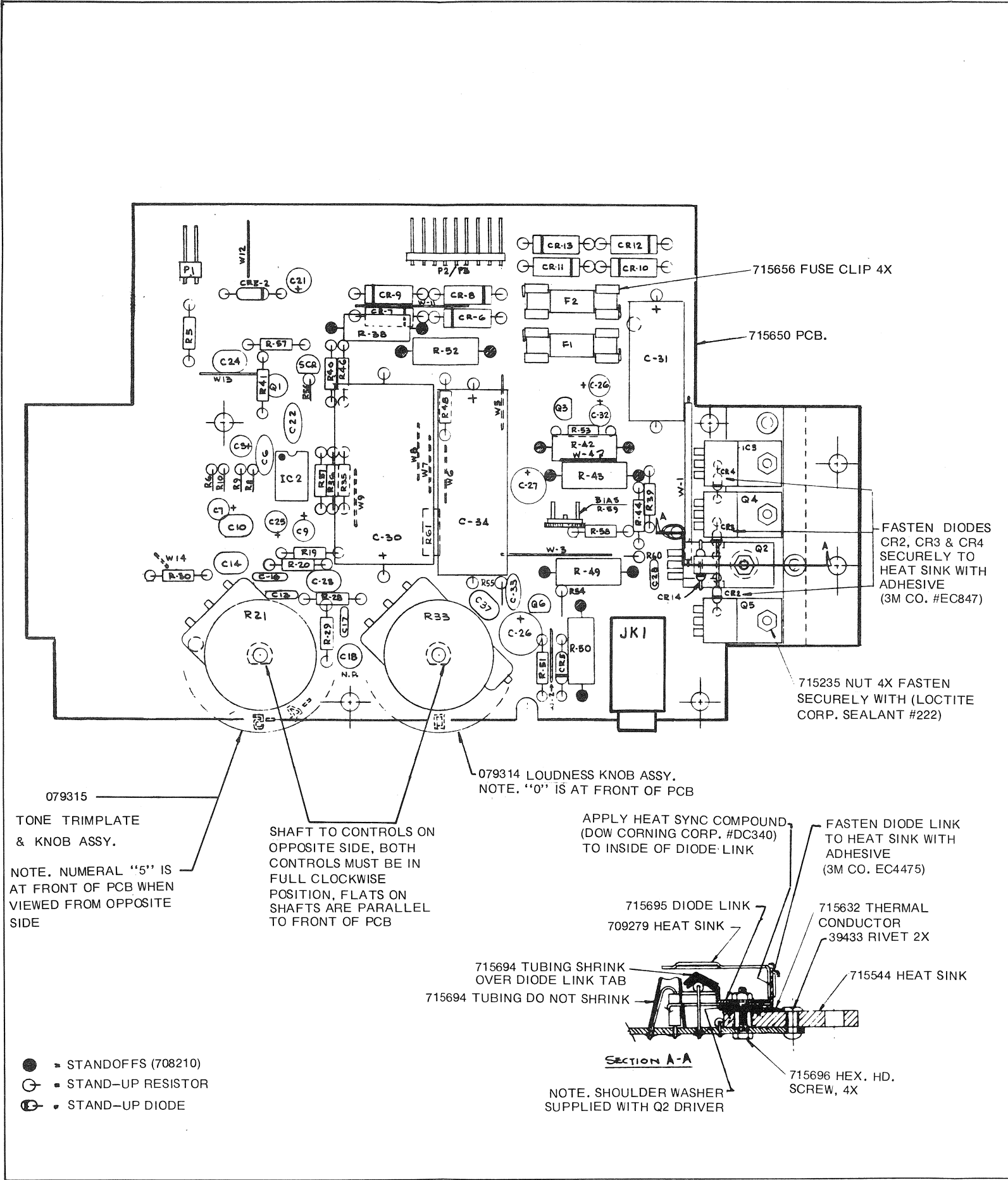
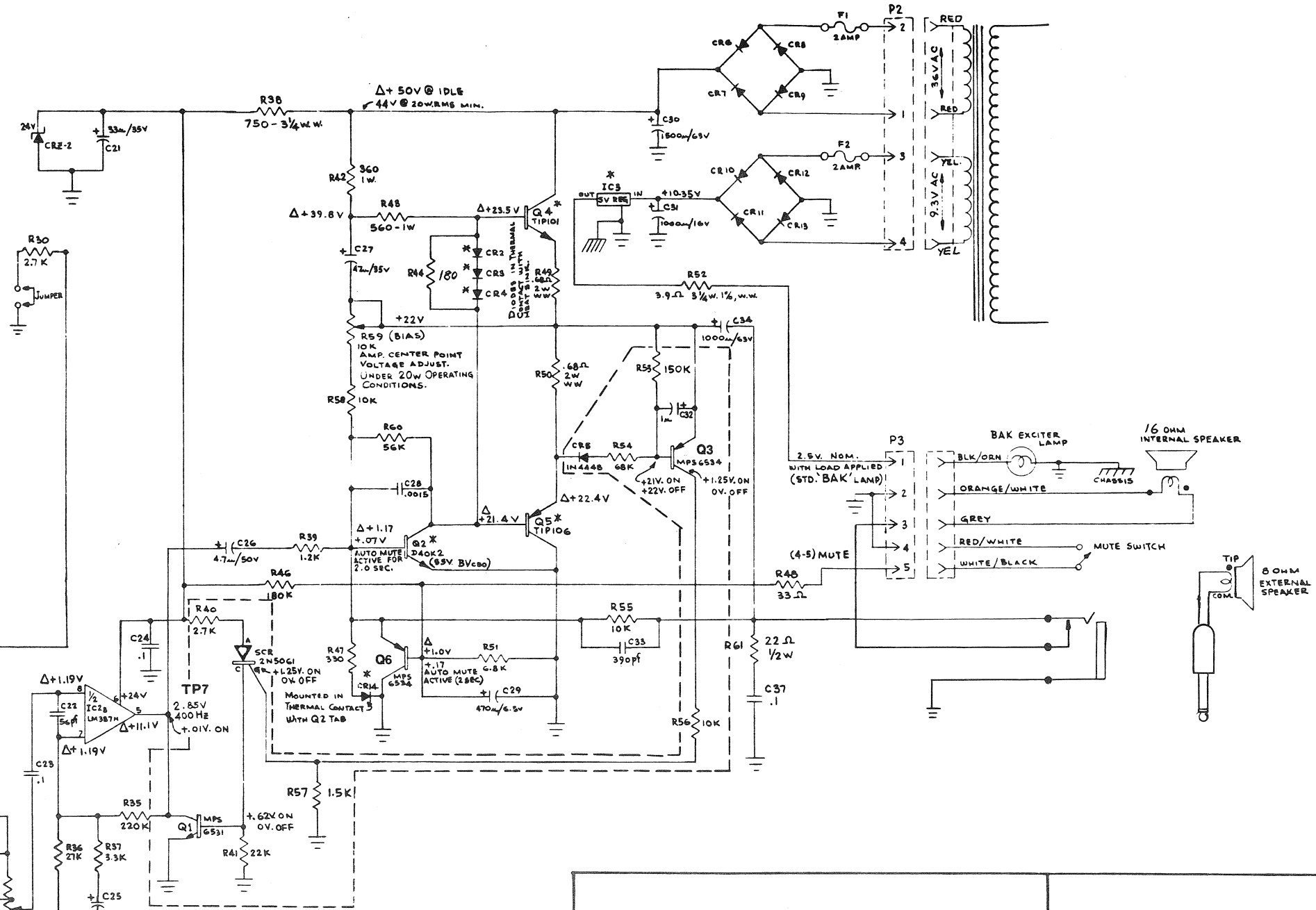
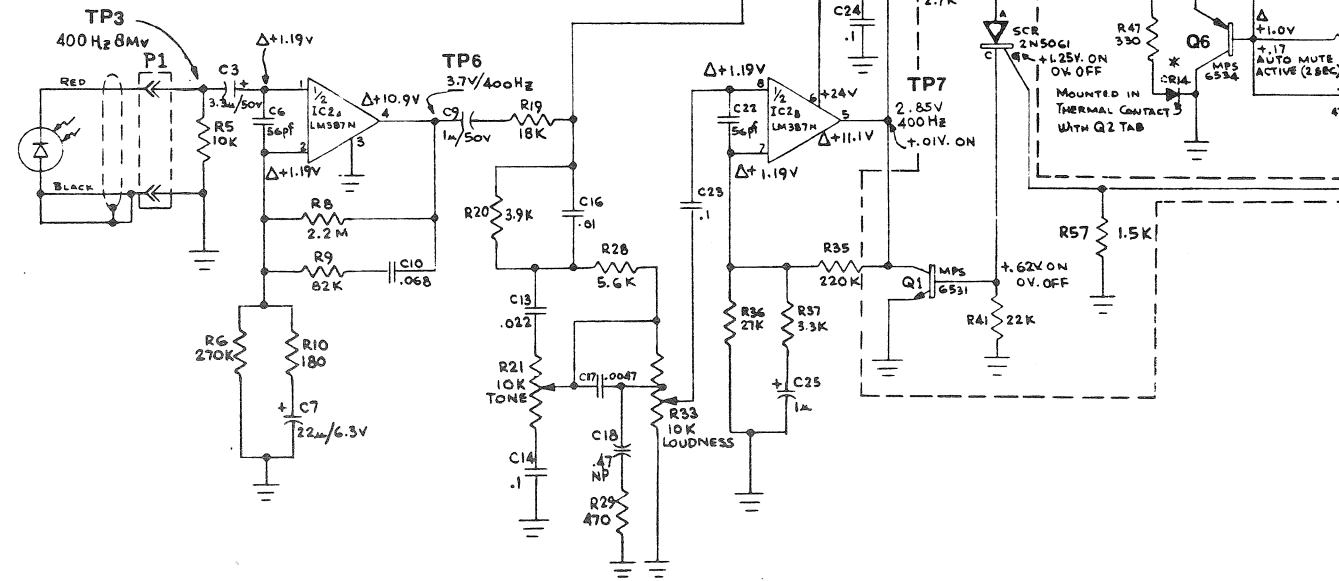
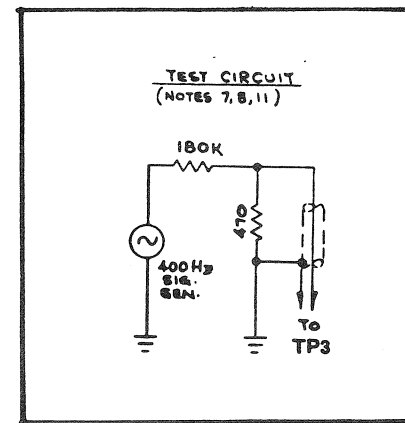


FIGURE 25 AMPLIFIER

Sym/Pt. No.	Description	Sym/Pt. No.	Description	Sym/Pt. No.	Description
39433	Rivet	CR 4 671009	Diode (Heat Sensing)	R30	100783 2.7K Ohm 1/4W
708210	Stand-off; Insulator	CR 5 671002	Diode	R33	079651 10K Ohm Loudness Control
709279	Heat Dissipator	CR 6 671008	Diode (Bridges)	R35	100852 220K Ohm 1/4W
713544	Heat Sink	CR 7 671008	Diode (Bridges)	R36	100819 27K Ohm 1 4W
715235	Nut; Hex: #3-48	CR 8 671008	Diode (Bridges)	R37	100786 3.3K Ohm 1/4W
715632	Thermo Conductor	CR 9 671008	Diode (Bridges)	R38	671085 750 Ohm 3-1 4W
715650	P.C.B.	CR10 671008	Diode (Bridges)	R39	100771 1.2K Ohm 1 4W
715656	Fuse Clip	CR11 671008	Diode (Bridges)	R40	100783 2.7K Ohm 1/4W
715694	Heat Shrink Sleeveing	CR12 671008	Diode (Bridges)	R41	100816 22K Ohm 1 4W
715695	Diode Link	CR13 671008	Diode (Bridges)	R42	671092 360 Ohm 1W
715696	Screw; Hex Head: #3-48	CR14 671014	Diode (Heat Sensing)	R43	671093 560 Ohm 1W
079314	Loudness Trimplate & Knob Assembly	CR22 671015	Diode (Zener +24V)	R44	100741 180 Ohm 1/4W
079315	Tone Trimplate & Knob Assembly	F 1 713413	Fuse: 2 Amp	R46	100849 180K Ohm 1 4W
C 3 671176	3.3MFD/50V	F 2 713413	Fuse: 2 Amp	R47	115568 330 Ohm 1/4W Stand-Up
C 6 715224	56PFD/100V	IC2 708957	LM387AN	R48	100714 33 Ohm 1 4W
C 7 671177	22MFD/25V	JK1 713909	Loudspeaker Jack, 1.4"	R49	671095 0.68 Ohm 2W
C 9 671164	1MFD/50V	P 1 715251	2 Pin Header (Right Angle)	R50	671095 0.68 Ohm 2W
C10 671292	0.068MFD/100V	P 2 715657	9 Pin Header (Right Angle)	R51	100798 6.8K Ohm 1/4W
C13 671188	0.022MFD/100V	P 3 715657	9 Pin Header (Right Angle)	R52	671091 3.9 Ohm 3-1/4W
C14 671189	0.1MFD/100V	Q 1 671230	Transistor: MPS6531 NPN	R53	100846 150K Ohm 1/4W
C16 671205	0.01MFD/100V	Q 2 671221	Transistor: NPN: D40	R54	115624 68K Ohm 1/4W
C17 671202	0.0047MFD/100V	Q 3 671231	Transistor: MPS6534 PNP	R55	115604 10K Ohm 1/4W Stand-Up
C18 671182	0.47MFD/50V N.P.	Q 4 671209	Transistor: NPN: TIP101	R56	115604 10K Ohm 1 4W Stand-Up
C21 671178	33MFD/35V	Q 5 671214	Transistor: PNP: TIP106	R57	100774 1.5K Ohm 1/4W
C22 715224	56PFD/100V	Q 6 671231	Transistor: MPS6534 PNP	R58	100804 10K Ohm 1/4W
C23 671189	0.1MFD/100V	R 5 100804	10K Ohm 1 4W	R59	715659 Bias: 10K Ohm Pot
C24 671189	0.1MFD/100V	R 6 115638	0.27Meg Ohm 1 4W Stand-Up	R60	115622 56K Ohm 1/4W Stand-Up
C25 671164	1MFD/50V	R 8 115660	2.2Meg Ohm 1 4W Stand-Up	R61	100456 22 Ohm 1 2W
C26 671134	4.7MFD/50V	R 9 115626	82K Ohm 1 4W Stand-Up	SCR 671220	SCR 2N5061
C27 671180	47MFD/35V	R10 115662	180 Ohm 1 4W Stand-Up	W 1	Jumper: Insulated
C28 671304	0.0015MFD/100V	R19 100813	18K Ohm 1 4W	W 2	Jumper
C29 671181	470MFD 6.3V	R20 100789	3.9K Ohm 1 4W	W 3	Jumper
C30 671157	1500MFD 63V	R21 079652	10K Ohm Tone Control	W 4	Jumper
C31 671159	1000MFD 16V	R28 100795	5.6K Ohm 1 4W	W 5	Jumper
C32 671164	1MFD/50V	R29 100756	470 Ohm 1 4W	W 6	Jumper
C33 715634	390PFD/500V			W 7	Jumper
C34 671160	1000MFD 63V			W 8	Jumper
C37 671189	0.1MFD/100V			W 9	Jumper
CR 2 671009	Diode (Heat Sensing)			W11	Jumper
CR 3 671009	Diode (Heat Sensing)			W12	Jumper
				W13	Jumper
				W14	Jumper

FIGURE 25 AMPLIFIER PICTORIAL WIRING DIAGRAM



GENERAL NOTES

- 1.- * (B) PARTS IN THERMAL CONTACT WITH PC HEAT SINK.
- 2.- RESISTORS 1/4 WATT 5% CARBON FILM UNLESS OTHERWISE SPECIFIED.
- 3.- CAPACITORS RATED IN MICRO-FARADS UNLESS OTHERWISE SPECIFIED.
- 4.- Q4 & Q5 MUST BE OF THE SAME OEM MANUFACTURER
- 5.- AUTO/MUTE WILL LIMIT ALL POWER AMP. SIGNAL FUNCTIONS FOR APPROX. 2 SECONDS AFTER TURN-ON VIA R/C TIME CONSTANTS OF R46, R51, C29.
- 6.- SHORT CIRCUIT PROTECTION WILL ACTUATE WITH LOAD CURRENTS EXCEEDING 3.65A PEAK.
SCR 2N5061 CAN BE RESET BY TURNING SYSTEM OFF FOR APPROX. 6 SECONDS.

SIGNAL CONDITIONS

NOTE: PHOTO DIODE MUST BE DIS-CONNECTED FOR THE FOLLOWING TESTS.

7. - ALL VOLTAGES MEASURED WITH REFERENCE TO SIGNAL GROUND AFTER TEMPERATURE STABILIZATION PERIOD OF 4 MINUTES; TONE CONTROL SET AT '0'; LOUDNESS CONTROL ADJUSTED FOR 2.65 VRMS ACROSS A 8 OHM/50W NON-INDUCTIVE DUMMY LOAD. Δ = DC VOLTAGES WITH NO SIGNAL PRESENT.
8. - 400HZ SINE WAVE SIGNAL INPUT FOR ABOVE TEST CONDITIONS TO BE INJECTED PER TEST CIRCUIT AT FAR LEFT (8.0 MV TYP.)
9. - TOTAL HARMONIC DISTORTION UNDER ABOVE TEST CONDITIONS NOT TO EXCEED 1% (ADJ. R59 FOR MINIMUM DISTORTION).
10. - FREQUENCY RESPONSE (TYPICAL)
 - A. - SET LOUDNESS AT ELECTRICAL TAP OR "3 3/4" CONTROL KNOB NUMBER POSITION.
 - B. - SET SIGNAL GENERATOR LEVEL TO 1.0 MV AT TP3

	TONE CONTROL SETTING		
	-5	0	+5
50 Hz	+9	+9	+9
100 Hz REF.	0 DB	0 DB	0 DB
10K Hz	-15	+6	+6

- 11.-OPTICAL SIGNAL TO NOISE REFERENCE. 20W POWER OUT WITH INPUT TP3 SHORTED. TONE SET AT '0' POSITION — -70 DB MINIMUM HUM & NOISE.

FIGURE 26. AMPLIFIER SCHEMATIC WIRING DIAGRAM

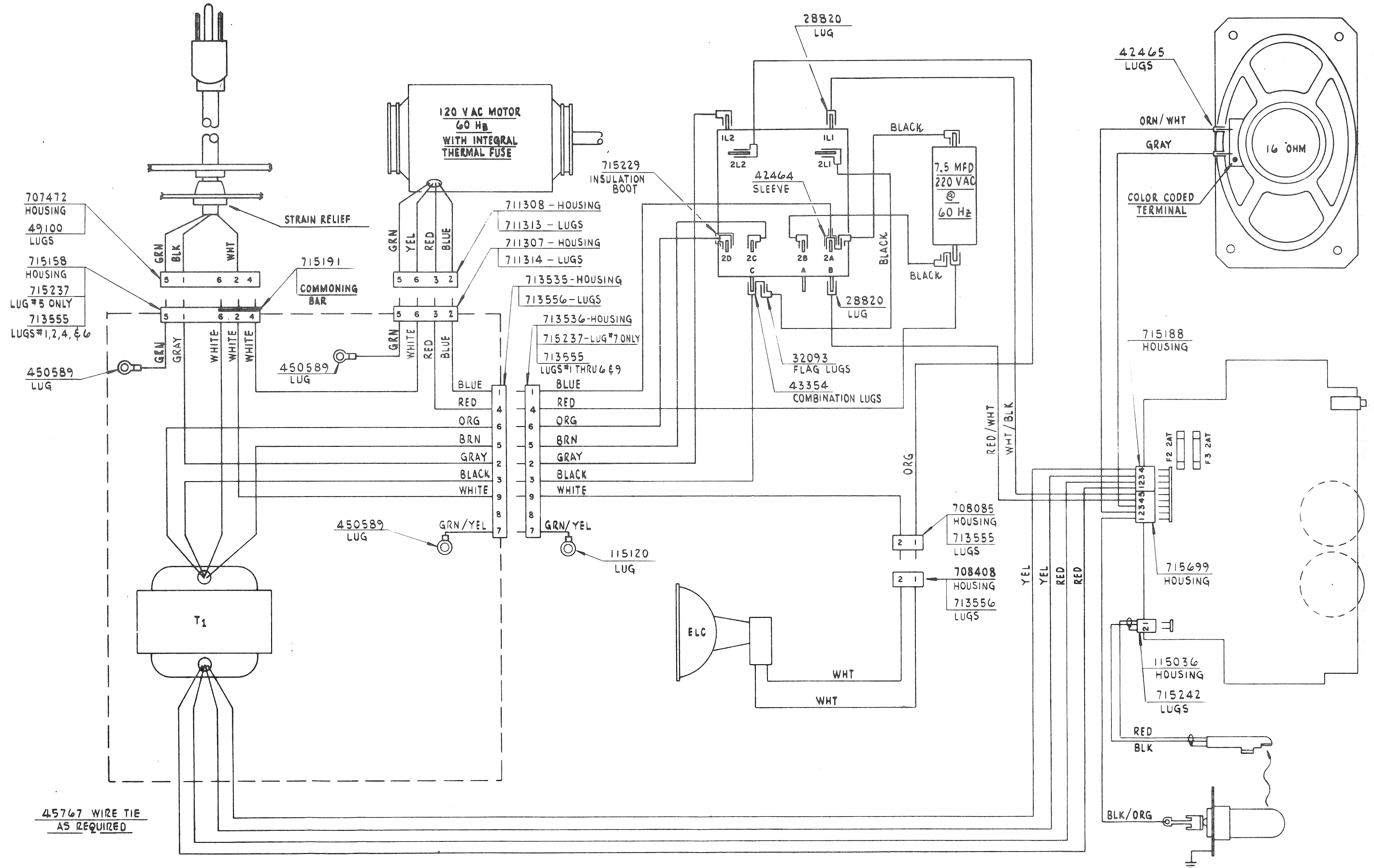


FIGURE 27. PICTORIAL WIRING DIAGRAM CODE A

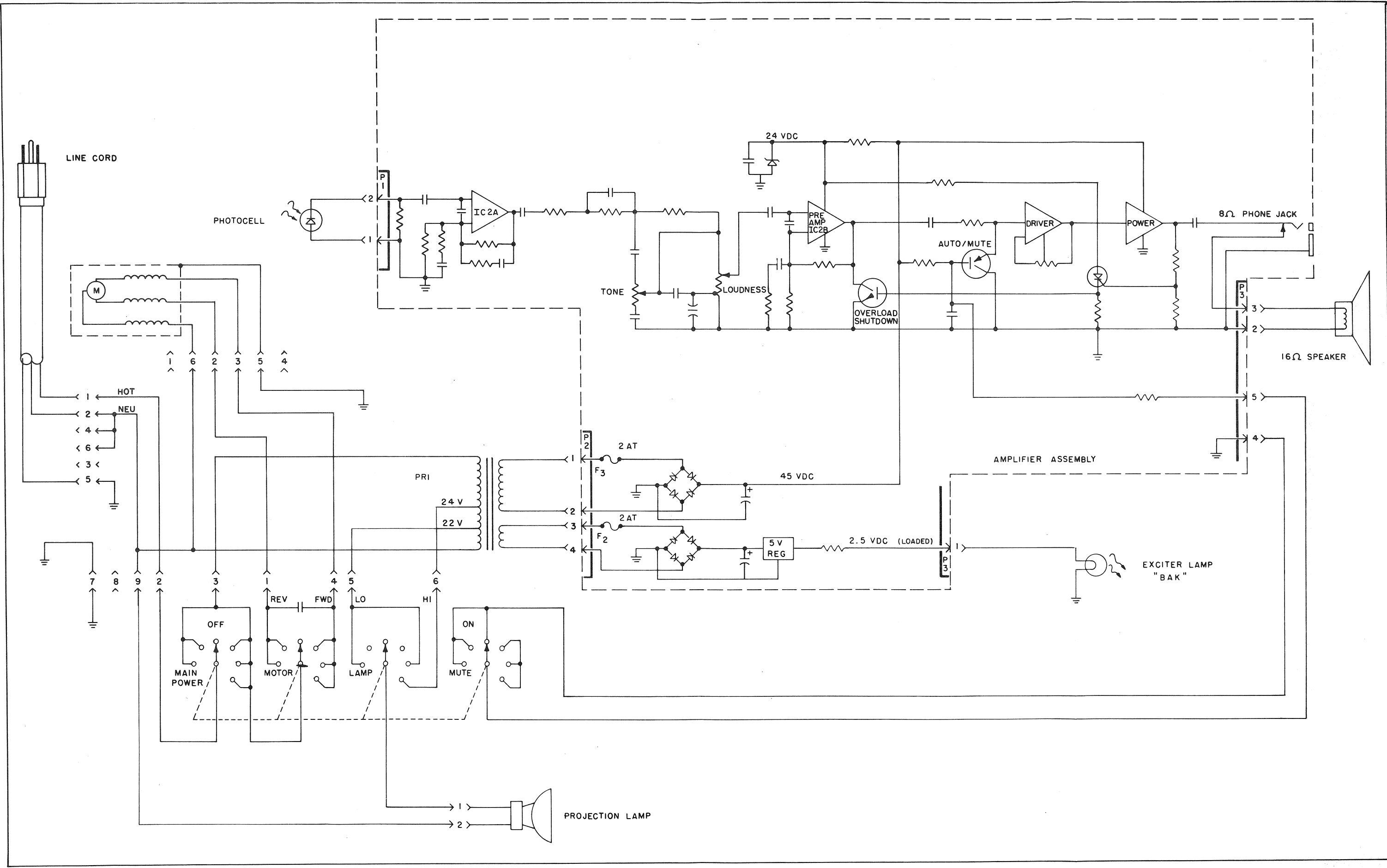
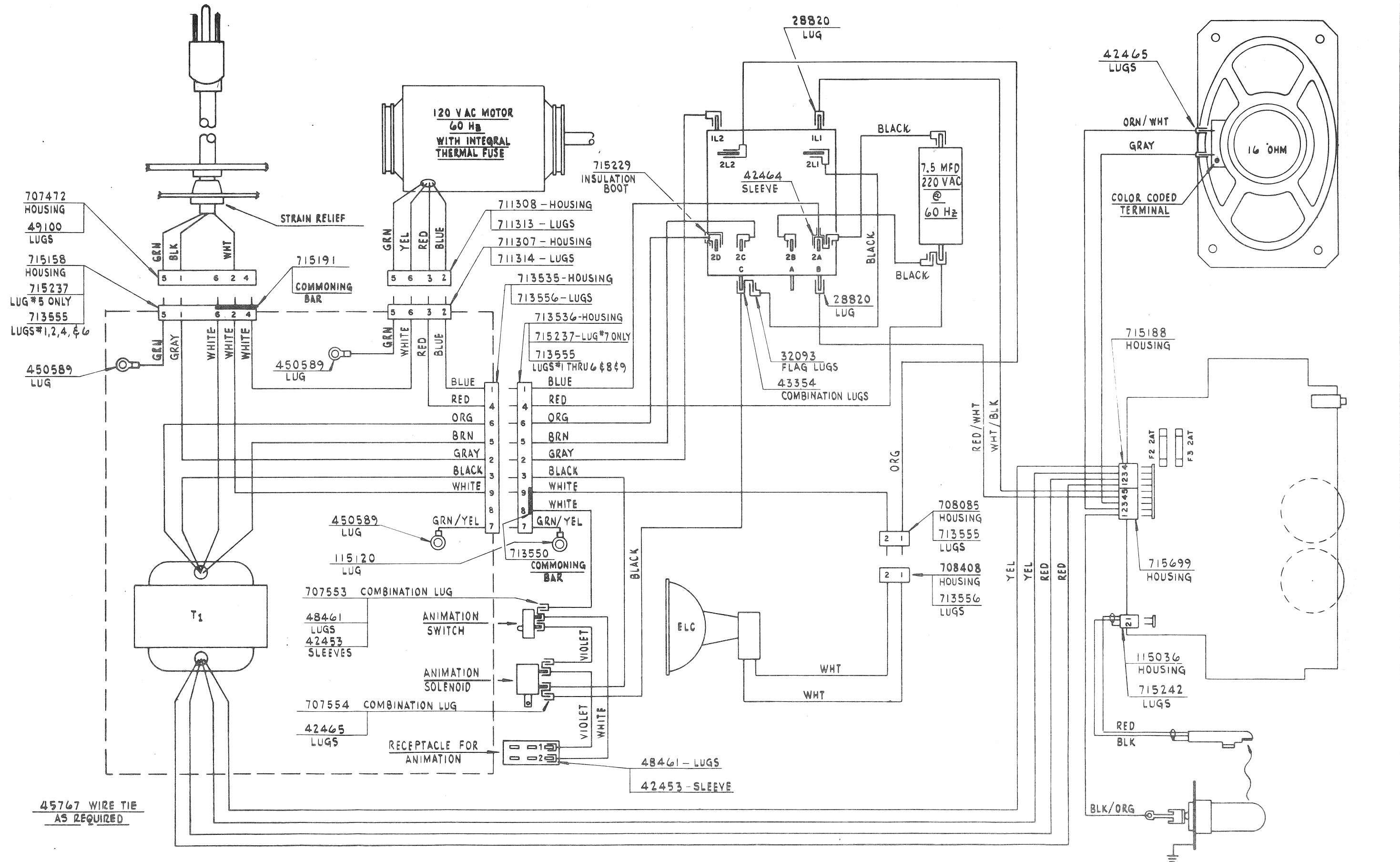


FIGURE 28. ELECTRICAL SCHEMATIC CODE A



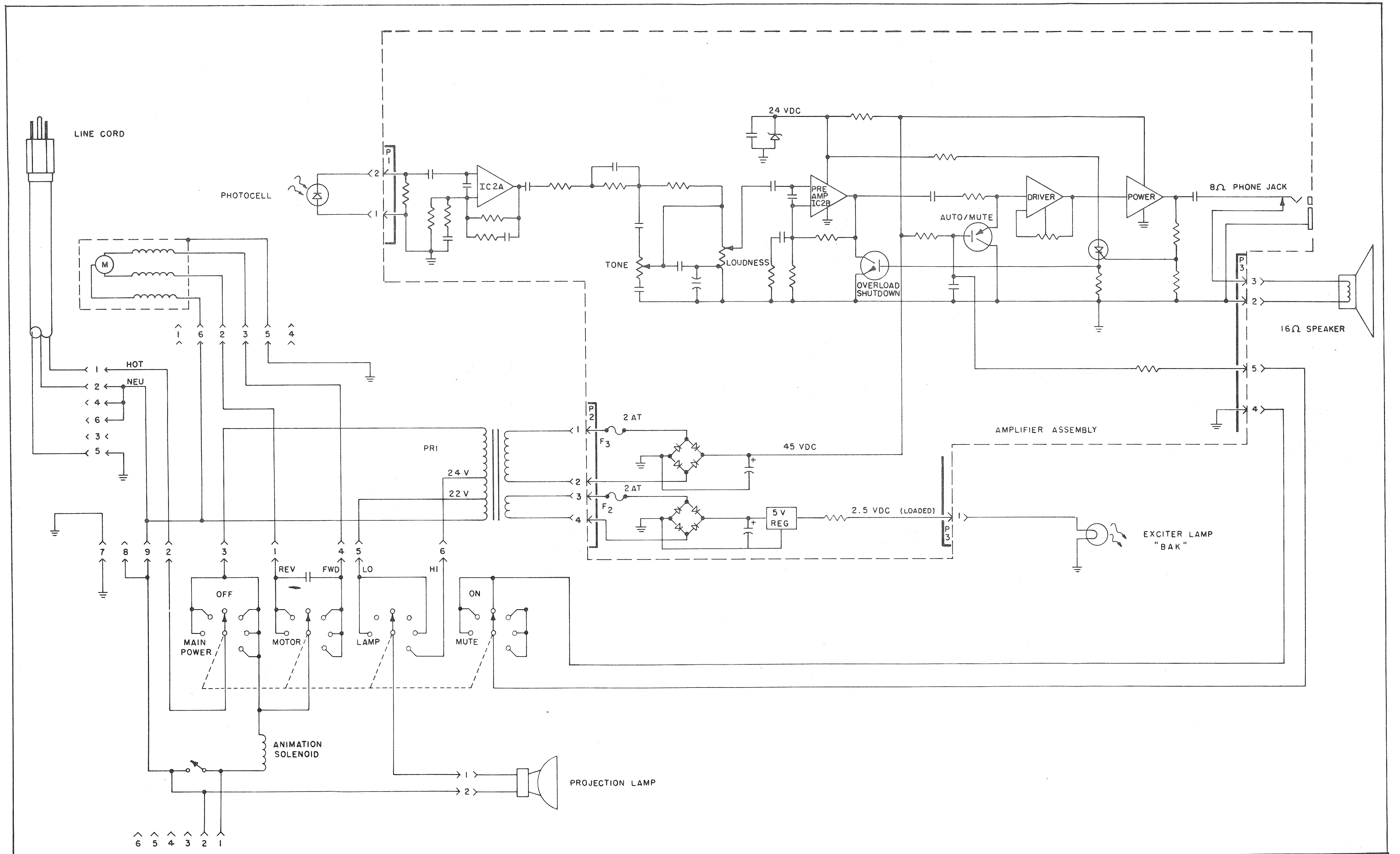


FIGURE 30. ELECTRICAL SCHEMATIC CODE B

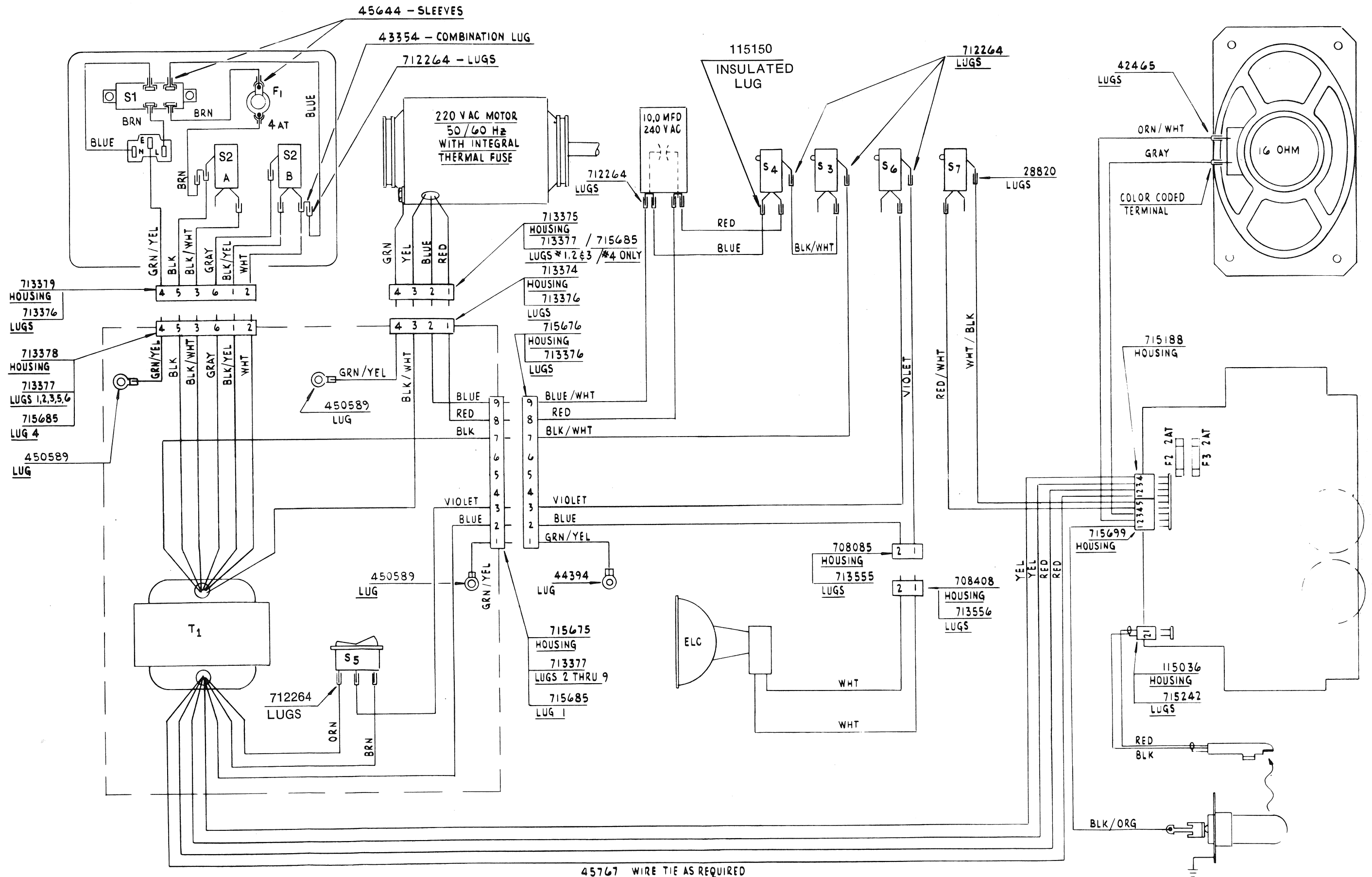


FIGURE 31. PICTORIAL WIRING DIAGRAM CODE C

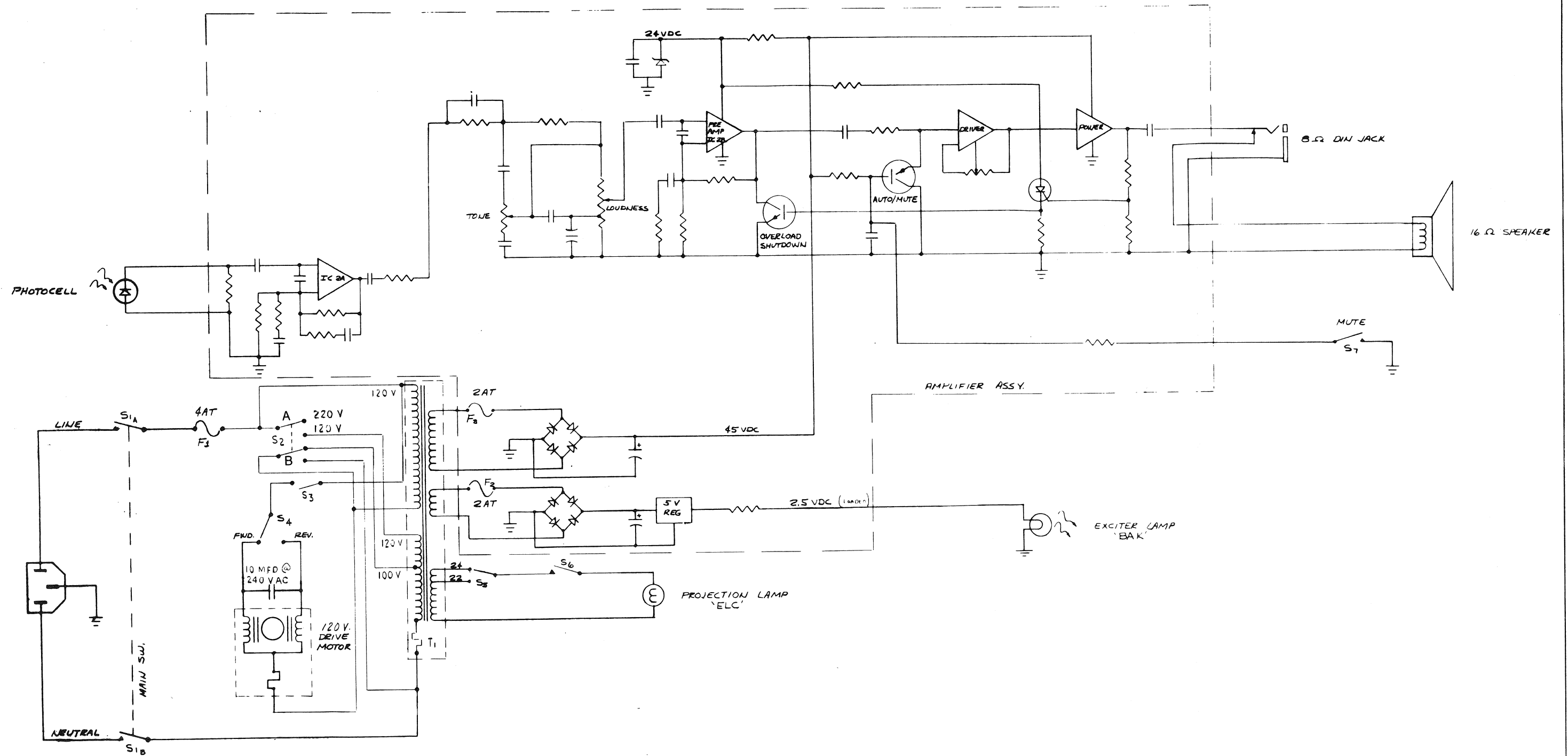


FIGURE 32. ELECTRICAL SCHEMATIC CODE C

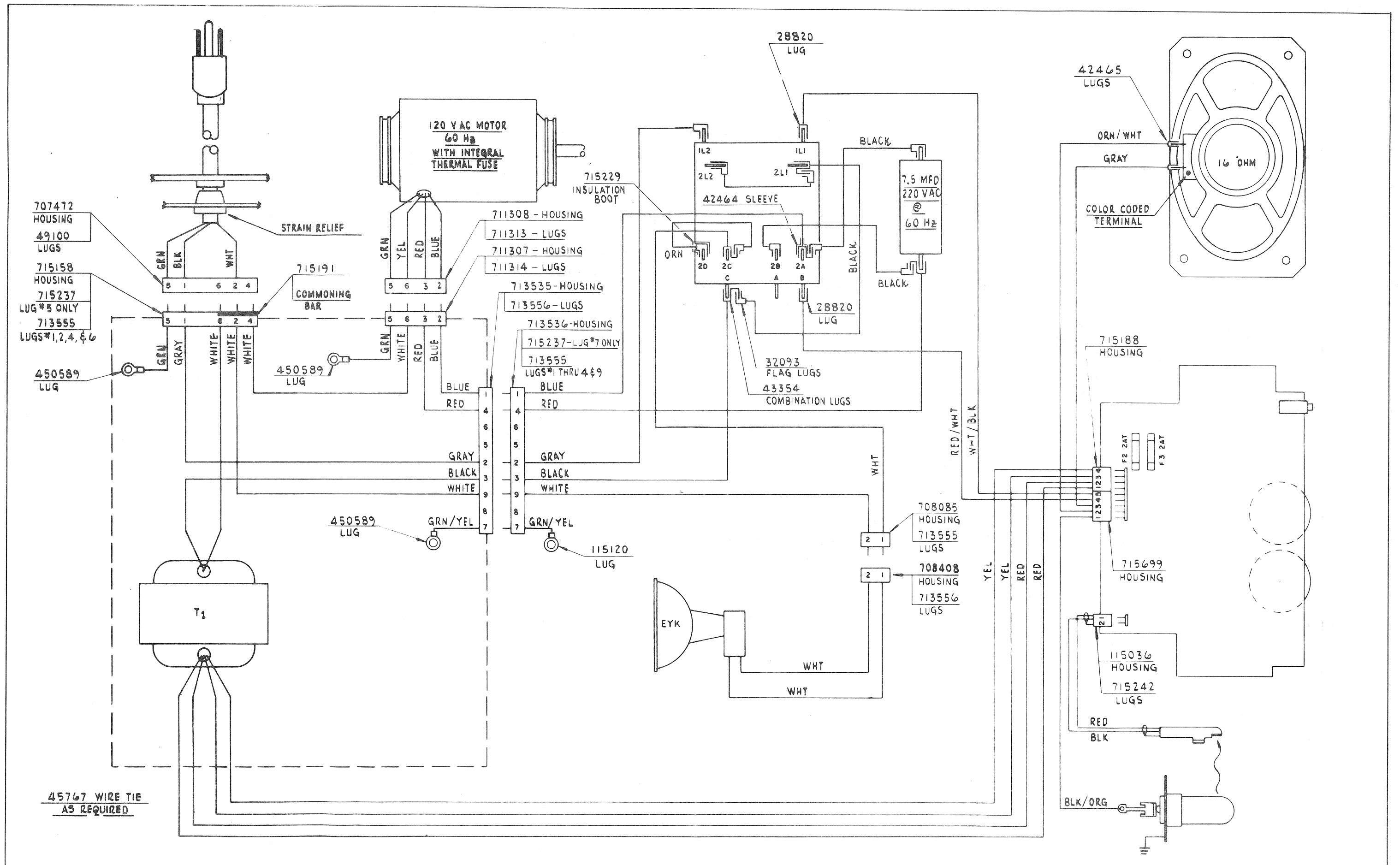


FIGURE 33 . PICTORIAL WIRING DIAGRAM CODE D

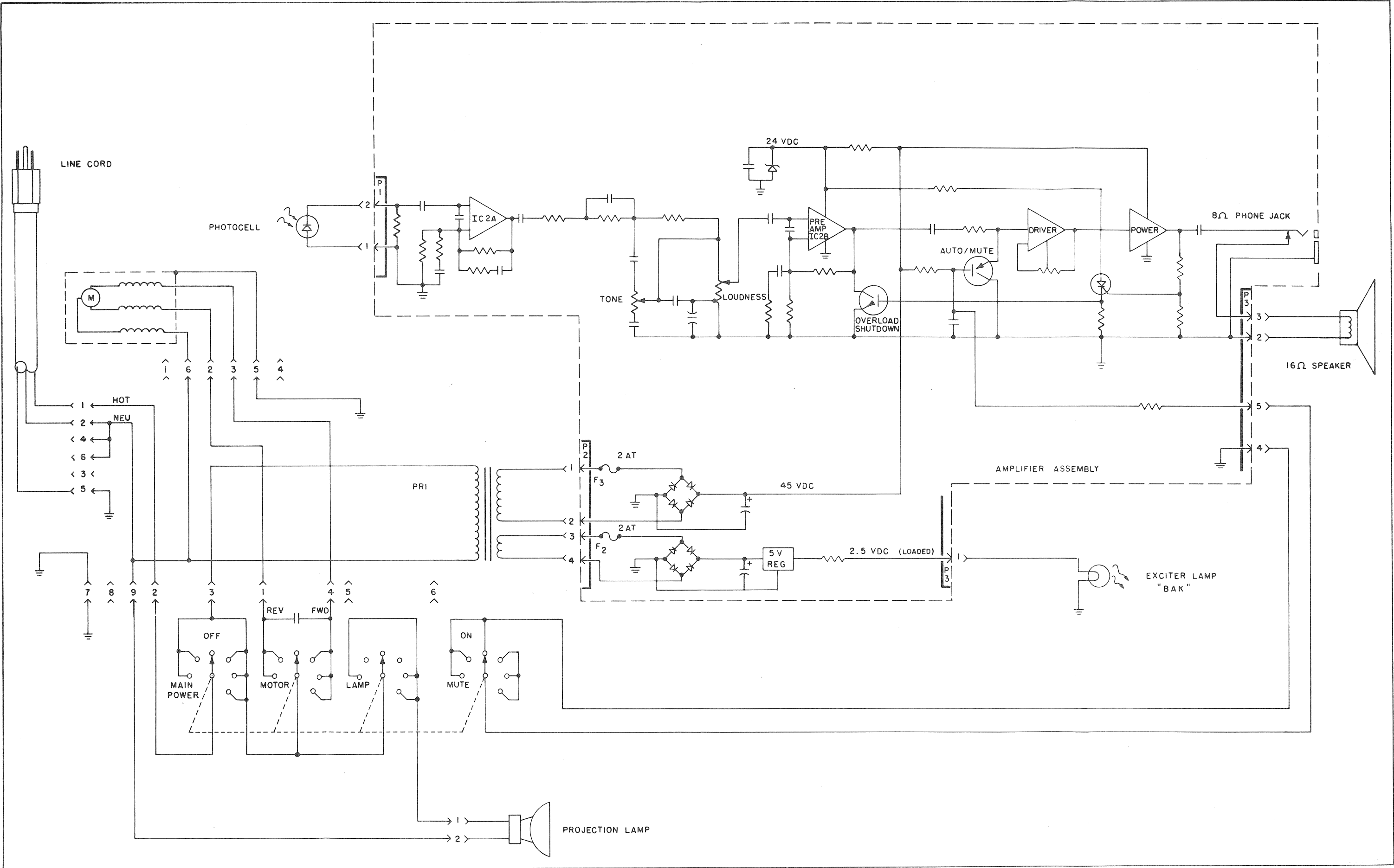


FIGURE 34. ELECTRICAL SCHEMATIC CODE D

Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.
09702	11-17A	078107	4-28	20808	11-29	31020	8-3	31978	22-1	36764	8-27	44412	17-23	48493	21-3
09709	12-24		17-0		20-1		10-13		22-8		16-7	44420	15-24		21-7
09710	1213	078108	4-29	21238	10-3		12-2	32092	4-8		17-12	44424	5-10	48610	1-11G
09711	12-15	078119	16-3		10-6	31029	4-6	32093	27-0		17-25	44427	5-12	48939	9-4
09712	11-19A	078120	17-30	21736	7-19D		12-17		29-0	36765	15-15	44429	5-13	49052	23-17
09728	12-23	078128	7-10		12-16		12-26		33-0		16-8	44430	5-17	49100	27-0
09789	9-31	078129	20-8A	24047	17-4	31031	12-25	32456	20-8B	36769	2-1	44433	3-15		29-0
09807	2-2	078130	20-8	24443	15-5	31035	12-14	33347	9-30		12-24A	44457	3-15		33-0
09826	15-20	078132	9-36	24852	11-28A	31036	12-7F		10-8		16-5A	44458	3-15	49275	1-9
09828	15-13	078146	1-1	27640	8-23	31037	11-4	33385	16-16	36770	11-1	44461	2-14	49283	1-1C
09870	12-7		24-0		9-1	31038	8-30		17-19	36771	8-9	44467	18-2A	49284	24-17D
09885	12-7L	078147	12-31		10-1D		16-6	33837	15-23	36801	10-5	44486	4-24B	49532	17-29
09886	12-7G	078149	9-14		10-21		17-16	34101	17-14	37293	22-6	44490	2-14	49637	1-10
011213	9-25C	078166	4-27	28820	27-0	31039	7-19F		17-22	37296	22-3	44507	A-5		2-3
011214	9-41		16-0		29-0	31048	12-3	34784	9-35	37302	10-1E		4-31		2-4
011218	9-32G	078167	4-28		31-0	31049	9-43		12-7J	37303	10-1B	44511	15-25	49638	1-11A
011219	10-24		17-0		33-0		10-15	34787	20-6	37304	10-1C	44512	5-30		1-13
011221	9-25B	078215	A-0	30149	20-4	31078	12-28	34797	11-6	39433	25-0	44513	9-42	49932	15-3
011233	9-32B		16-L2	30162	12-5	31092	8-4B	34822	7-19G	41307	11-14	44514	5-18	49979	9-15
011235	11-13		17-L2	30211	2-8	31093	8-4J	34861	4-3	41308	11-5	44516	5-4	49980	10-19
011236	11-17	078503	3-4		4-7	31095	8-4G	34878	9-40	41309	11-5	44526	5-21		3-7
011248	10-14		13-2	30801	11-22	31135	22-7		10-10	41318	12-7K	44532	7-14		3-14
011249	10-7		14-7	30803	12-7H	31143	10-27A	34884	15-1	41320	15-26B	44533	7-19H	83663	9-32D
011250	10-9	078581	11-21	30804	8-4F	31145	12-19	34889	7-16	41321	15-26A	44535	8-31	83803	19-19
011886	11-8	078586	1-14D		8-4H	31147	12-21	34892	15-2	41323	3-11	44536	18-6A	87030	9-21
012132	22-10	078677	21-4		9-34	31148	12-22	34897	8-4E	41330	9-11	44537	4-23	87098	6-10
012133	10-1G	078678	21-4		12-9	31149	12-20	35164	24-9	41331	17-3	44835	18-5A	97509	9-3
012134	10-1F	078688	10-27		19-2	31236	16-21	35819	8-4C	41342	10-20		19-3C	99828	10-1A
012666	12-24	078689	10-27		19-6		17-24	35820	9-32F	41377	11-27	45012	24-5	100456	25-R61
013917	11-19	078728	24-17	30807	1-3	31239	16-19	35822	9-20	42453	29-0	45083	1-1B	100714	25-R48
013962	10-1	078854	15-26		8-7		17-21	35823	20-5	42464	27-0		24-17B	100741	25-R44
014526	4-11C	078856	15-11		10-18	31241	16-17	35830	8-26		29-0	45102	2-5A	100756	25-R29
014529	4-24D	078857	15-9		13-4		17-20	35834	9-22		33-0	45577	16-9	100771	25-R39
014538	3-8	078920	15-17		14-5	31243	7-3	35838	9-18	42465	27-0	45578	16-10	100774	25-R57
014539	5-11	079314	25-0		14-6		16-18	35840	10-22		29-0	45579	16-11	100783	25-R30
014547	5-16	079315	25-0	30808	10-2		20-3	35846	9-26		31-0	45580	17-10		25-R40
014576	8-4L	079318	4-30		11-25	31245	5-20	35850	9-23		33-0	45581	5-27	100786	25-R37
014579	5-23	079616	1-11H	30809	3-5		16-15	35874	9-17	43354	27-0	45644	31-0	100789	25-R20
014611	17-30A	079650	3-17		3-9		17-18	35910	8-18		29-0	45683	17-15	100795	25-R28
014947	4-2	079651	6-11D		4-25	31247	16-4	36013	11-10		31-0	45687	8-4D	100798	25-R51
015919	4-14		25-R33		6-8	31396	11-30	36014	11-11		33-0	45688	8-4A	100804	25-R 5
016394	4-16	079652	6-11E		7-19A	31398	11-32	36015	11-9	44173	21-4A	45718	1-11B		25-R58
016546	17-7		25-R21		10-25	31399	12-7D	36018	9-29	44205	12-17	45767	31-0	100813	25-R19
016684	1-1	079654	3-12		10-28	31400	12-18	36027	10-7C		12-26		33-0	100816	25-R41
016807	8-11	079677	13-11		18-1	31403	12-7C	36028	10-7F	44261	11-2	45787	27-0	100819	25-R36
016808	8-10	079679	3-13		19-1	31405	12-7A	36038	17-5	44294	5-22		29-0	100846	25-R53
016841	8-4K	087038	18-5		13-3	31407	10-27C	36039	12-30	44297	7-5	46464	11-7	100849	25-R46
016952	16-5C	087059	6-11	30810	3-3	31451	9-28	36042	12-27	44298	2-6C	47137	4-10	100852	25-R35
070034	A-0	087065	19-3		7-8		9-32E	36044	10-4	44312	4-12	47408	5-24	115017	1-5
	7-G	087085	15-19	30812	6-6	31456	12-7E	36047	10-7E		4-19	48028	7-2	115019	7-1
	5-G	087171	7-18	30815	13-1	31474	10-7B	36048	11-20	44313	4-26	48052	1-14C	115036	27-0
	11-G2	087177	16-5C		14-1	31551	9-19	36064	22-2	44317	4-13	48063	1-14B		29-0
	15-G	087178	17-7		14-3		9-24	36065	12-30	44321	9-44	48070	7-19B		31-0
	16-G	087185	3-12	30816	7-13		9-37	36075	22-9	44325	11-28B	48071	7-19C		33-0
	17-G	087190	18-6	30817	11-18		10-11	36078	22-4	44348	7-6	48072	7-19J		
070043	A-0	087208	13-12		14-2	31555	9-32C	36083	4-20	44356	3-18	48073	7-19E		
	8-G1	087218	1-1	30822	3-16		10-7A		4-24A	44359	9-13	48074	6-11C	115040	10-17
	12-G	087232	14-9		3-19	31557	11-12	36099	10-7D	44367	17-26	48075	6-11A	115076	2-11
070047	A-0	1953	4-21	31001	11-16	31561	7-18A	36142	18-7	44370	4-5	48076	6-11B	115099	13-10
	4-G	8179	7-17	31003	11-13A		24-17F	36533	3-22		4-11B	48176	5-3		
	16-G1	11722	19-8	31005	11-3	31585	7-9		5-2	44371	4-9	48177	11-31	115101	2-6D
	17-G1	17639	9-25A	31006	12-29	31636	15-14		5-6	44372	4-22	48186	1-11C	115103	2-6B
077290	7-18		9-32A	31007	12-12	31638	15-12	36662	10-29	44373	4-24C		23-18	115120	27-0
077453	8-14		12-7B	31009	12-8	31669	15-18	36668	11-15	44376	3-10	48266	14-15		29-0
077456	8-17	17676	9-16	31015	8-12	31673	15-21		15-16	44377	3-6	48320	3-15		33-0
077734	3-24		15-22	31017	8-16	31674	23-5	36763	3-21	44381	8-29	48432	22-5	115121	18-8
077738	9-38		21-10		8-19	31957	8-1		5-1	44394	31-0	48437	9-2	115123	2-11
078106	4-27	19037	13-9		16-13	31976	12-4		5-5	44395	5-7	48438	8-25	115127	2-12
	16-0	19327	14-8	31019	8-2	31977	10-12		9-39	44407	16-20	48461	29-0	115130	23-7
			13-8				12-6		12-11			48478	A-12		

Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	Part No.	Fig. and Index No.	
115132	18-6B	671188	25-C13	709459	3-15	711313	27-0	713536	27-0	715699	29-0	
115135	3-15	671189	25-C14	709593	11-2		29-0		29-0		31-0	
115139	23-15		25-C23	709659	3-20		33-0	713544	25-0	765449	33-0	
115150	31-0		25-C24	709679	3-13	711314	27-0		7-19K		5-14	
115157	2-13		25-C37	709737	23-12		29-0	713547	29-0		8-5	
115568	25-R47	671202	25-C17	709756	12-1		33-0	713550	27-0		8-20	
115604	25-R55	671205	25-C16	709806	16-5B	711601	10-27B	713555	29-0		10-23	
	25-R56	671209	25-Q4	709859	11-24	711604	10-26		29-0		15-8	
		671214	25-Q5	709860	11-23	711606	21-5		31-0		17-9	
115622	25-R60	671220	25-SCR	709872	9-12	711642	1-11D		33-0	765460	24-17A	
115624	25-R54	671221	25-Q2	709873	9-8	711662	2-13	713556	27-0	765777	4-1	
115626	25-R 9	671222	25-IC3	710012	8-15	711664	18-5B		29-0		4-4	
115638	25-R 6	671230	25-Q1	710033	9-6		19-3B		31-0		4-11A	
115660	25-R 8	671231	25-Q3	710056	20-8D	711665	18-3		33-0		4-15	
115662	25-R10		25-Q6	710203	8-21		19-4	713582	18-2		5-26	
204129	10-27D		25-C10	710257	6-7		23-3	713598	1-11D		16-12	
204357	23-9	671292	25-C28	710339	11-32	711667	8-6	715139	1-11J		17-27	
204641	1-2	671304	3-23	710365	A-7	711680	8-24	715153	2-12		19-15	
300797	5-25	700103	5-31	710396	2-9	712203	7-15	715155	2-6B		19-17	
303541	9-27	700672	17-8	710424	20-2	712225	15-7	715156	21-11	766109	1-12	
308858	9-9		17-28	710432	1-15	712232	24-8	715158	13-5		6-3	
		700710	5-15	710435	1-1E	712243	8-22		27-0	766181	7-11	
309923	24-3		5-19	710436	12-10	712250	4-32		29-0	766221	6-1	
432672	23-14		1-1A	710442	1-15	712264	31-0		33-0		6-4	
434198	23-11	700816	16-1	710444	1-15	712299	15-4	715168	2-9		6-9	
435177	23-13	706193	17-1	710448	24-1	713211	15-6	715188	27-0			
436895	24-15		21-2	710456	1-1E	713233	5-29		29-0			
436948	23-16	707081	4-18	710465	2-7	713241	16-2		31-0			
436950	23-10	707110	16-14	710468	1-5	713242	17-2		33-0			
440662	24-10	707111	4-17	710469	8-28	713253	17-11	715191	27-0			
450589	27-0	707112	17-17	710471	20-7	713254	17-13		29-0			
	29-0	707136	8-8	710472	9-5	713255	5-28		33-0			
	31-0	707162	11-17B	710473	9-33	713278	8-G2	715224	25-C 6			
	33-0	707211	18-4	710474	1-6	713292	9-5		25-C22			
600736	18-2B	707281	24-14	710475	1-7	713293	9-33	715229	27-0			
600987	20-8C	707413	24-4	710476	10-17		20-7		29-0			
	23-4	707414	24-7	710481	2-6E	713294	1-6		33-0			
602339	15-26C	707415	24-11	710482	2-5D	713295	1-5	715235	25-0			
671002	25-CR5	707416	21-1	710493	9-10	713304	19-20	715237	27-0			
671008	25-CR6	707443	1-14A	710504	11-26	713305	19-7		29-0			
	25-CR7	707449	1-11F	710508	5-8	713307	19-11		33-0			
	25-CR8	707472	27-0	710546	21-11		19-14	715242	27-0			
	25-CR9		29-0	710644	1-7		23-2		29-0			
	25-CR10		33-0	710645	7-1	713308	19-16		31-0			
	25-CR11		29-0	710650	24-12	713310	19-18		33-0			
	25-CR12	707553	29-0	710651	24-6	713311	19-10	715251	25-P1			
	25-CR13	707554	1-1D	710653	2-15	713325	21-12	715612	6-5			
671009	25-CR2	707751	24-17C	710682	24-17E	713343	23-8	715632	25-0			
	25-CR3		27-0	710714	21-6	713353	19-12	715634	25-C33			
	25-CR4	707770	27-0	710718	21-13	713374	14-10	715648	19-9			
671014	25-CR14	708085	29-0	710725	3-15		31-0		19-13			
671015	25-CRZ2		31-0	710726	3-15	713375	31-0		23-1			
671085	25-R38		33-0	710727	3-15	713376	3-12B	715650	25-0			
671091	25-R52		25-0	710728	24-16		31-0	715656	25-0			
671092	25-R42	708210	27-0	710774	24-2	713377	14-11	715657	25-P2			
671093	25-R43	708408	29-0	710845	2-10	713378	31-0		25-P3			
671095	25-R49		31-0	710947	3-15		31-0	715659	25-R59			
	25-R50		33-0	710979	3-15	713379	31-0	715664	19-5			
671134	25-C26		1-11E	710980	3-15	713380	14-4	715669	27-0			
671157	25-C30	708629	8-13	710995	21-8	713381	14-16	715673	14-13			
671159	25-C31	708640	25-IC2	710996	21-9	713413	25-F1	715675	14-12			
671160	25-C34	708957	15-10	711307	13-6		25-F2		31-0			
671164	25-C 9	708994	27-0		29-0	713527	6-2	715676	31-0			
	25-C25	709028	5-9		33-0	713534	23-6	715685	31-0			
	25-C32	709040	7-12		3-12B	713535	13-7	715690	14-14			
671176	25-C 3	709215	27-0	711308	29-0		27-0	715694	25-0			
671177	25-C 7	709218	29-0		33-0		29-0	715695	25-0			
671178	25-C21		2-6A				33-0	715696	25-0			
671180	25-C27	709279	25-0					715698	6-12			
671181	25-C29	709458	3-15									
671182	25-C18											