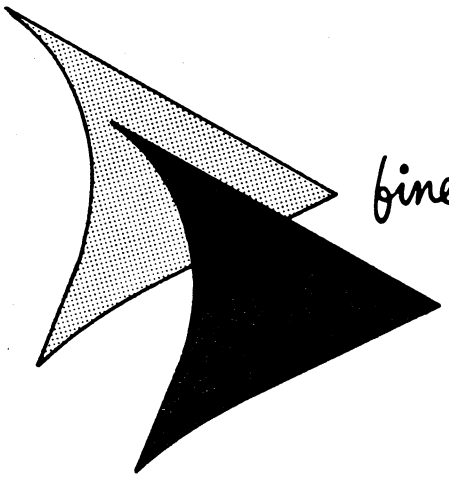
**SERVICE INSTRUCTIONS**

# 8-MM AUTOLOAD PROJECTOR

## DESIGN 266A



*finer products through imagination*

**Bell & Howell**

**GENERAL SERVICE DEPT.**
**7125 N. KIMBALL AVE.**
**CHICAGO 45, ILLINOIS**

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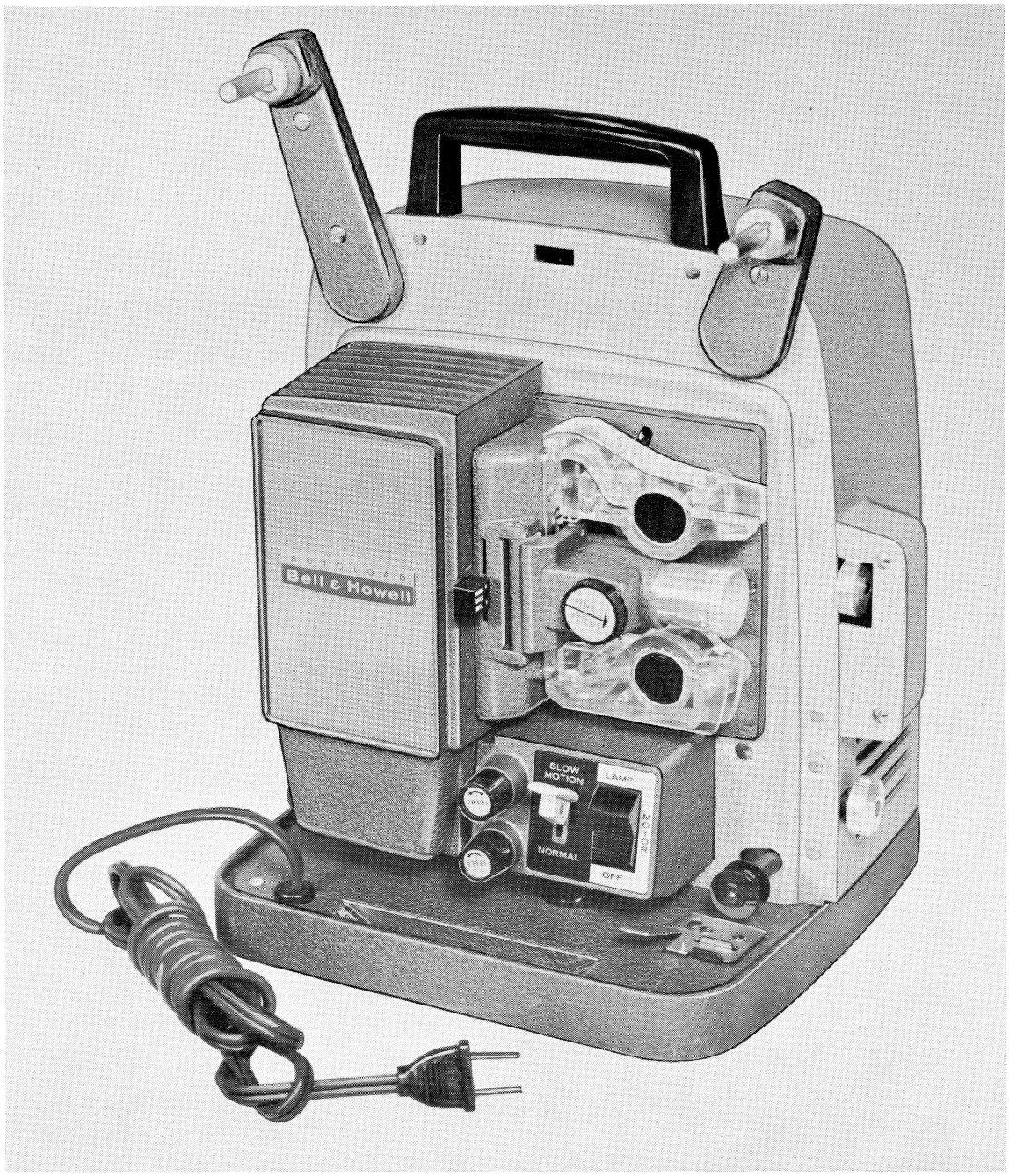



Figure A. Design 266A Autoload 8-mm Projector

# Introduction

GENERAL.

This manual has been prepared to aid in servicing the Bell & Howell Design 266 Autoload 8-mm Movie Projector. An illustrated Parts Catalog is included at the rear of the manual to identify replacement parts and to aid the serviceman in the disassembly, reassembly, and adjustment of the projector.

All parts in the exploded view illustrations in the Parts Catalog section are indexed in their suggested order of removal. Where disassembly and reassembly of parts is quite obvious, no attempt has been made to elaborate on the removal and installation of such parts. When making specific projector repairs, the serviceman must use his own judgment in eliminating unnecessary steps of procedure.

In the disassembly and reassembly instructions, illustrations referred to by number (Figure 1, Figure 2, etc.) are those located in the Parts Catalog section. Those referred to by letter (Figure A, Figure B, etc.) will be found in the instruction portion of the book.

PRINCIPLES OF AUTO-LOAD THREADING. (Figure B.)

a. The operator depresses the upper loop former (4), which pivots to position A. This actuates a linkage system which automatically pivots the lower loop former (10) to position A. A spring-loaded latch, to which the take-up idler (14) is attached, locks the loop formers in position A and, at the same time, shifts the take-up idler (14) to position A.

b. The end of the film leader is trimmed with the cutter mounted on the projector base. The projector is started and the cut end of the leader is inserted into opening (1). The film must be pushed past the roller (2) and against the sprocket (3) where a sprocket tooth can engage a perforation. This starts the self-threading cycle.

c. Since the loop former (4) keeps the film on the sprocket (3), the sprocket advances the film past the roller (5) and through the passage between the loop former and upper bracket (6). The upper loop former guides the film downward between the aperture plate (7) and pressure shoe (8). When the film reaches the shuttle (9), the shuttle tooth engages a perforation and assists in transporting the film.

d. When the film reaches the lower loop former (10), it turns upward and passes through the passage between the loop former and lower bracket (11), where it is guided to the take-up sprocket (12). The film then passes out through the opening (13).

e. After 20 to 24 inches of film have passed through the projector film path, the operator stops the projector, threads the film under the guide rollers, and inserts the loose end of the film in the take-up reel. When idler roller (14) is pressed back to position B, the spring-loaded latch is released and loop formers (4 and 10) automatically return to open position B.

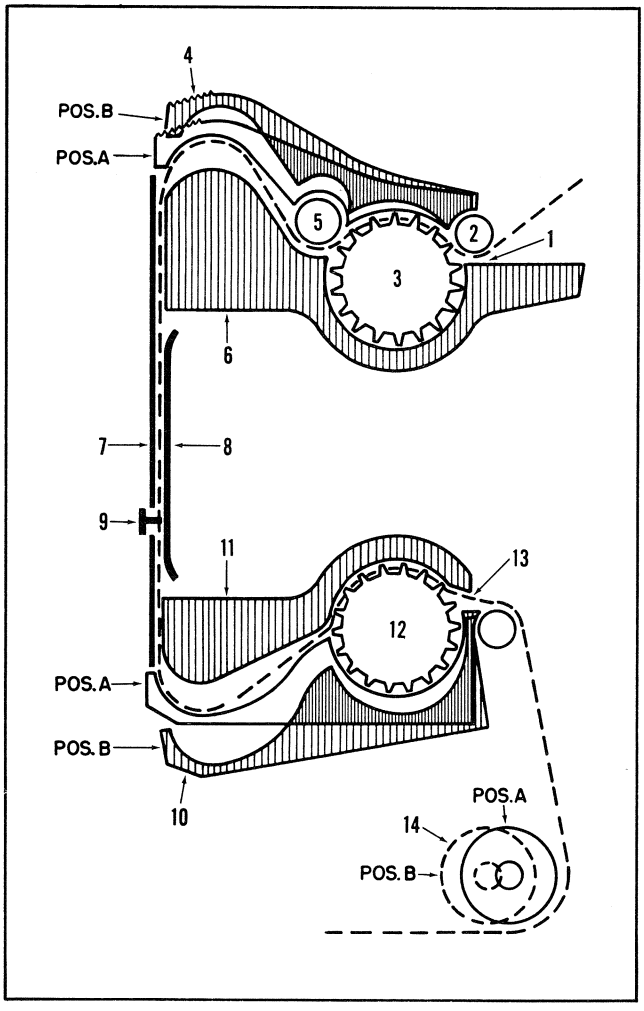



Figure B. Film Path - Self-Threading Procedure

SPECIAL MAINTENANCE PRECAUTIONS.

For the most part, disassembly and reassembly of the projector is comparatively simple. However, be sure to note the special precautions and adjustment procedures listed in the instructions.

When lubricating projector parts during reassembly, it is recommended that only Bell & Howell grease (Spec. 1956) and oil (Spec. 310) be used.

If Bell & Howell lubricants are not immediately available, use only the best grades of ball-bearing grease and projector oil which are commercially available.

Special tools and fixtures required for the proper repair and adjustment of the projector are illustrated in Figure C.

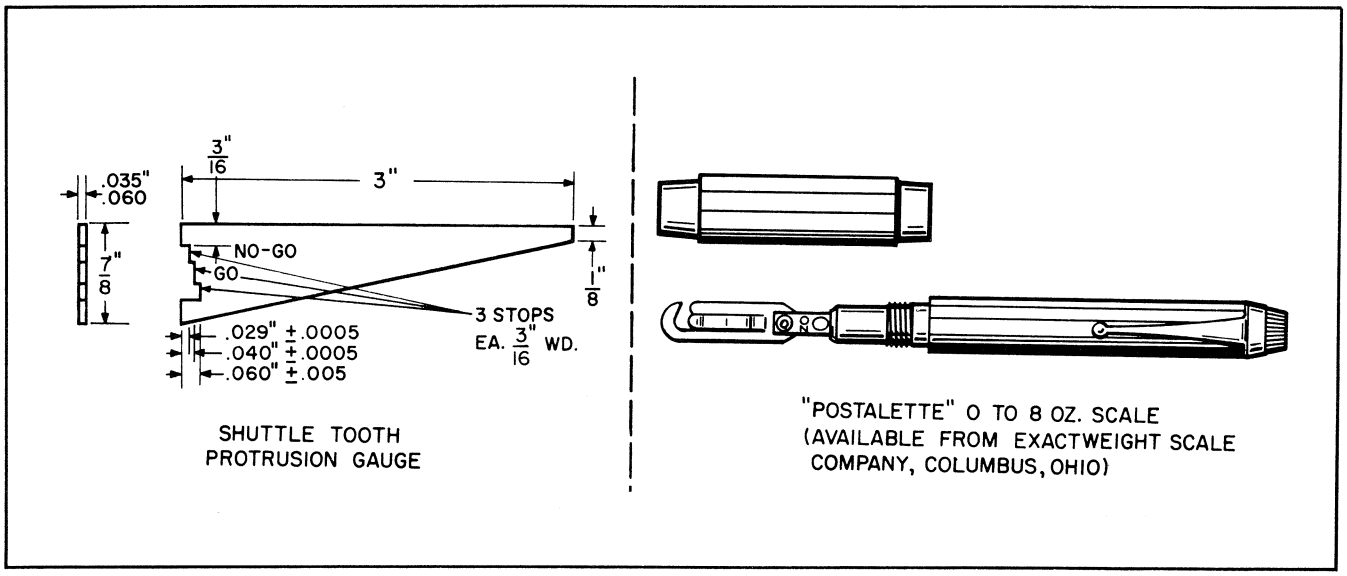



Figure C. Special Tools

# Disassembly

1. GENERAL INSTRUCTIONS.

a. When optical parts, such as the projection lamp and lens, are removed from a projector, wrap them in tissue paper to protect them from possible damage.

b. When removing riveted parts for replacement, the old rivet must be drilled out of the casting. Use a drill equal to, or slightly smaller than, the diameter of the rivet to be installed.

c. When repairing projectors, remember that cleanliness of surroundings and orderliness of disassembled parts is very important. When attaching parts (screws, nuts, washers) are removed, reattach them loosely to the removed part or the casting to prevent loss.

2. REMOVAL OF PARTS IN FIGURE 1. Remove parts as necessary, in their indexed order of disassembly, noting the following special precautions.

a. To remove the front cover assembly (1), the catch button (1C) must be pressed downward to release the cover catch (1B) from the slot in the mechanism plate.

b. The integral studs of the rewind shield (25) are heat sealed to secure the shield to the base. Do not attempt to remove this shield unless actually in need of replacement.

3. REMOVAL OF PARTS IN FIGURE 2. Remove parts, as necessary, in their indexed order of disassembly, noting the following special precautions.

a. Removal of screw (1) will permit the withdrawal of the feed reel arm assembly (3) and the assembled spindle parts (5 through 9) which are secured by screw (2). The spur gear (4) can be lifted from the gear stud of the feed reel arm support assembly (33).

b. Loosen setscrew (10) and remove spur gear (11), shaft assembly (12) and torque spring (13). Note the manner in which the spring (13) is installed.

c. Removal of two screws (14) will permit the withdrawal of the take-up reel arm assembly (16) and the assembled spindle parts (19 through 23) which are secured by screw (15). The three spur gears (17 and 18) can be lifted from the gear studs of the take-up reel arm support assembly (34).

d. Loosen the setscrew (24) to disassemble the spur gear (25) and take-up gear and shaft assembly (26) from the mechanism plate.

e. Removal of two retaining rings (31) will permit the disassembly of the bearings (32) and reel arm supports (33 and 34). The tension springs (37), cam washers (38 and 38A) and steel balls (39) will fall from position when the bearings (32) are withdrawn from the casting.

4. REMOVAL OF PARTS IN FIGURE 3. Remove parts, as necessary, in their indexed order of disassembly.

5. REMOVAL OF PARTS IN FIGURE 4. Remove parts, as necessary, in their indexed order of disassembly, noting the following special precautions.

a. Note the manner in which springs (10 and 11) are hooked into place so that they can be properly reinstalled. The return linkage staked to the rear of the mechanism plate must not be removed.

b. The pin screws (16) which attach the upper and lower loop former assemblies (17 and 18) also serve as shafts for the film rollers (19).

c. The spring (31), retainer plate (27D), and pressure plate (27E) can be removed from the lens carrier subassembly (27) without disassembling the carrier from the mechanism plate. Swing open the lens carrier, and grasp the top and bottom of the pressure plate (27E) between the thumb and forefinger of the right hand. Press the upper end of the retainer plate (27D) away from the lens carrier casting to disengage the retainer plate and spring (27C) from the pins in the casting. To remove the lens carrier subassembly (27F), the hinge pins (26) must be pried out.

6. REMOVAL OF PARTS IN FIGURE 5. Remove parts, as necessary, in their indexed order of disassembly, noting the following special precautions.

a. One of the drive roller assemblies (7) is exposed and can be serviced quite easily. To gain access to the rollers (7 and 8), remove retaining ring (3) and lift the assembled pulley mounting bracket assembly (4) and roller parts (5 through 9) from the projector.

b. To free the safety shutter and bracket assembly (15), remove the pivot screw (12), pivot spring (13), knob screw (10), "forward-still-reverse" knob (11), and screw (14). Note manner in which legs of pivot spring (11) are engaged.

c. Note carefully the engagement of cam shoes (24) with surface of pulldown cam (38) before disassembling the shutter (18), shuttle and framing lever assembly (23), or pulldown cam (38).

# Reassembly and Adjustments

7. GENERAL INSTRUCTIONS.

a. When the reassembly procedure includes the staking of rivets or other parts, all riveting and staking should be done first to avoid the possibility of damage to other parts. Be sure to support the casting solidly before riveting or staking.

b. Parts which must be lubricated during reassembly are listed in the following lubrication table. Lubricate sparingly, and wipe away excess lubricant with a lint-free cloth. Use only Bell & Howell grease (Spec. 1516 or 1544 as noted) and oil (Spec. 1543) or the best available commercial grades of ball bearing grease or projector oil.

8. REASSEMBLY OF PARTS IN FIGURE 5. Reassemble parts in reverse order of disassembly, noting the following special precautions.

a. Assemble framer knob (58) and washer (57) to control housing (51) with retaining ring (56). Assemble speed control link (52) to spring (54) and fasten spring to control housing with screws (53). Screw framer shaft (48) into mechanism plate (46) and install retaining ring (49) to groove in shaft. Attach assembled control housing to mechanism plate with four screws (50) and fasten mechanism plate to projector base (47) with four screws (45).

b. Hold the drive pinion (42) in position between the two cast arms of mechanism plate while installing the main shaft (41) with friction washer (43).

c. Assemble shutter washer (17), shutter (18), in-out cam (19) and pulldown cam (38) with screws (16). Select any combination of white and/or black cam shoes (24) for proper cam fit when assembling shuttle and framing lever assembly (23) to pulldown cam (38). Install thrust washer (39) over end of main shaft (41); then hold assembled shutter and shuttle parts in position and press main shaft all the way into place. Insert a 0.002 inch feeler gage between the washer (43) and the bearing pressed into the cast arm of the mechanism plate. Press the main shaft knob and shutter toward one another until the feeler gage is held in place; then tighten pulldown cam setscrews (37) securely and remove feeler gage. Engage lower end of shuttle with groove in framer shaft (48).

d. Assemble the adjusting screw (36) and lock nut (35) to the roller bracket assembly (34) and fasten the bracket to the speed change lever (27) with the two screws (33). Assemble low speed roller (31) to bracket with flat washer (30) and retaining ring (29).

e. Install washer (22) on pivot (21) and insert the threaded end of pivot shaft through shuttle (23), eccentric washer (25), torsion spring (26), speed change lever (27), spacer (28) and cast arm of mechanism plate. Install pivot nut (20) loosely. Engage forked lower end of speed change lever with bent arm of the speed control link (52); then tighten nut (20). Note that the small hook of torsion spring (26) hooks around the leading edge of the speed change lever while the

Table I. Lubrication

| ITEM | LUBRICATION |
|---|---|
| Rollers (item 28, Figure 1) | Apply grease (1516) to roller shafts with brush. |
| Spur gear (item 4, Figure 2) | Apply grease (1544) to face of gear before installing spacer (item 5, Figure 2). |
| Spur gears (items 6 and 20, Figure 2) | Apply grease (1544) to both faces of each gear. |
| Gear and shaft assemblies (items 12 and 26, Figure 2) | Apply grease (1544) between faces of bearings (item 32, Figure 2) and faces of gears. |
| Reel arm supports (items 33 and 34, Figure 2) | Apply grease (1544) between supports and mechanism plate. |
| Bearing balls (item 39, Figure 2) | Speck of grease on each bearing ball. |
| Projector gear train, complete | After gears are assembled, apply grease (1544) with brush to entire gear train for one revolution of the gears. |

larger hook engages the underside of the cast arm of the mechanism plate.

f. Assemble rollers (7 and 8) to the pulley mounting bracket (4) with washers (6) and retaining rings (5). Insert pivot stud of mounting bracket through bearing hole of safety shutter (15) and secure with retaining ring (3). Fasten spring loading bracket (2) to pulley mounting bracket with screws (1). Hold safety shutter in position while installing pivot screw (12) and spring (13). Cross the legs of the pivot spring and engage spring ends with the groove in a spring stud protruding from the safety shutter. Screw (14) is installed in the upper corner of the lamp house casting on the front side of the mechanism plate. Install Forward-Reverse knob (11) with screw (10).

g. With screws (1) loose and knob (11) in the "Still" (center) position, insert a 0.062 inch shim between the upper drive roller (8) and the rim of the shutter. Press lightly against the roller to hold the shim in place while tightening screws (1); then withdraw the shim. Final adjustment is outlined in paragraph 17.

9. REASSEMBLY OF PARTS IN FIGURE 4. Reassemble parts in reverse order of disassembly, observing the following special precautions.

a. If the lens mount catch (37) was removed for replacement, the 0.095-inch-diameter rivet holes should be tapped with a No. 4-40NC thread tap. Reinstall catch with two No. 4-40 binder head screws, part number 30243.

b. Assemble the side tension arm (32) and spring (31) to the aperture plate assembly (33). Note that the loop of the spring encircles the aperture plate stud and the spring legs enter the holes at the top and bottom of the side tension arm. Hold the aperture plate in position against the casting so that the shuttle tooth is approximately in the center of the slot, and install the four screws (28 and 30) and film guide (29).

c. Assemble the spring (27C), retainer plate (27D), and pressure plate (27E). Compress these parts, and engage the upper and lower slots of the pressure plate with the cast ears at top and bottom of lens carrier subassembly (27F). Release the pressure on the parts, guiding the retainer plate and spring as necessary to engage the pins protruding from the lens carrier casting.

d. Assemble the sprockets and loop formers (16 through 25) to the mechanism plate. The short spring (11) is located just behind the upper sprocket and engages a hole in the mechanism plate and the upper end of the mechanism plate linkage. Install the bushing (13), trip lever assembly (14), and spacer (15), and hook the long spring (10) between the trip lever and a hole in the mechanism plate just behind the motor.

e. The mechanism plate linkage is secured at one point by two binding head screws (35) located on a diagonal just to the right of the trip lever. Loosen these two screws, and move the protruding shaft of the trip lever toward the rear of the mechanism plate so that the loop formers open. Grasp the upper and lower loop formers with thumb and forefinger just in front of the lamp housing, and hold them in a closed position. Adjust the linkage so that the upper end of the trip lever engages an ear of the linkage, locking the linkage in place. Tighten screws (35) securely, and check the operation of the trip lever several times.

f. Install upper and lower sprocket gearing (1 through 9) on sprocket shafts. When installing inner gear (6) on upper shaft, position the drive pinion (42, Figure 5) so that the worm gear teeth are centered at the bottom of the sprocket gear and tighten setscrew (40, Figure 5) securely. Short ends of tension springs (1) must engage slots in sprocket shafts.

g. Thread the end of a 6-inch length of 8-mm film one inch beyond upper sprocket and hook a 0 to 10 lb. spring scale to end of film strip. Pull film steadily straight toward front of projector while watching spring scale. Sprocket must turn or ratchet at 2 to 5 pounds on scale. Lower sprocket must ratchet at 1-1/2 to 5 pounds. Bend the flat spring (3, Figure 4) carefully to increase or decrease the tension.

10. REASSEMBLY OF PARTS IN FIGURE 3. Reassemble parts in reverse order of disassembly, noting the following special precautions.

a. If the dowel pin (18) was removed for replacement, the new pin must be pressed into the left half pulley (19) until flush or no more than 0.005 inch below the outer face of the pulley.

b. With the pulley halves (17 and 19) and thrust bearing (20) installed on motor shaft, engage the drive belt (8) around the rollers and pulley halves and slip the fan (7) onto the shaft before securing the motor (22) with screws (11). Align the pulley halves on the motor shaft so that the drive belt is vertical; then tighten setscrew (16) securely. Position the blower fan in the exact center of its housing and tighten its setscrew (7A). Install blower housing cover (6) and seal (2).

c. The speed control knob parts (23 thru 25) are shown for reference only. These parts are installed to the shaft outside the control housing (paragraph 14).

d. Refer to Figure D for wiring connections.

11. REASSEMBLY OF PARTS IN FIGURE 2. Reassemble parts in reverse order of disassembly, noting the following special precautions.

a. Assemble reel arm supports (33 and 34), bearings (32), cam washers (38 and 38A), tension springs (37) and gear mounting plate (36) to the mechanism plate with screw (35) tightened just enough to hold all parts together. Insert a steel ball (39) between each cam washer and a detent hole in the mechanism plate and tighten screw (35) securely. Install the two bearing retaining rings (31).

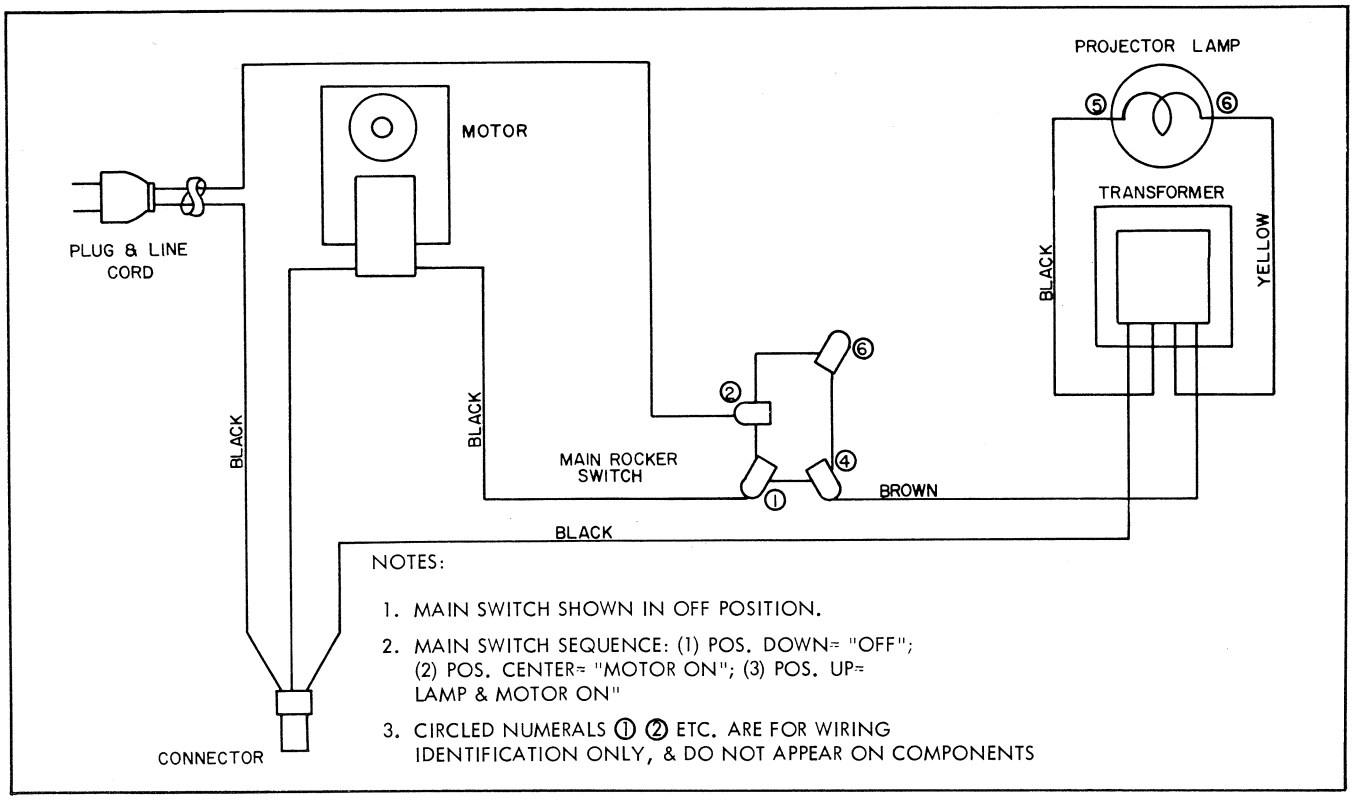



Figure D. Wiring Diagram

b. Install spur gears (17 and 18) and the take-up gear and shaft (26) into the take-up arm support (34). Install spur gear (4) and the feed arm gear and shaft (12) into the feed reel arm support (33). Lubricate gears as instructed in Table I.

c. Assemble take-up spindle parts (19 through 23), using a new spring washer (22), to the take-up arm (16) and install screw (15). Assemble reel arm to reel arm support (34), rotating take-up gear shaft (26) until gear teeth mesh. Install and tighten screws (14).

d. Assemble feed spindle parts (5 through 9), using a new spring washer (8), into feed reel arm (3), and install screw (2). Insert torque spring (13) into reel arm so that it will apply tension to the gear and shaft assembly (12). Assemble reel arm to reel arm support (33), rotating feed gear shaft (12) until gear teeth mesh. Install and tighten screw (1).

e. Install gears (11 and 25) on gear shafts, using a 0.003-inch shim between gears and bearings (32) to obtain proper end play before tightening setscrews (10 and 24). Install gear (28) to gear stud of mounting plate (36) with retaining ring (27). Install spur gear (30) on remaining gear stud with retaining ring (29). Lubricate entire gear train as instructed in Table I.

12. REASSEMBLY OF PARTS IN FIGURE 1. Reassemble parts in reverse order of disassembly, noting the following special precautions.

a. Refer to Figure D for wiring connections.

b. Do not install back cover (7) until all final projector adjustments have been made.

13. ADJUSTING TAKE-UP AND REWIND TORQUE. The take-up torque of the rear (take-up) spindle should measure 1 to 3-1/2 inch-ounces; the rewind torque of the front (feed) spindle should measure 3 to 6 inch-ounces. Torque can be measured with a 0 to 8 ounce Postalette scale and a modified 8-mm film reel as shown in Figure E. The method of checking take-up torque is illustrated in Figure E; to measure rewind torque, the film reel must be rotated so that the sheet metal screw is at position A, with the scale held directly above the screw. Torque can be increased or decreased by either tightening or loosening the respective screw (2 or 15, Figure 2).

14. ADJUSTING SHUTTLE TOOTH PROTRUSION. Excessive or inadequate protrusion of the shuttle tooth will result in improper film transport during operation. Proper shuttle tooth protrusion is checked with the shuttle tooth protrusion gauge shown in Figure C. Proceed as follows:

a. Set the framer knob in the approximate center of its travel range, and swing open the lens carrier.

b. Rotate the main shaft knob (41, Figure 5) until the shuttle teeth reach the approximate center of the downstroke.

c. Place the base (notched edge) of the gauge against the aperture plate with the deepest notch positioned

directly over the shuttle teeth.

d. Holding the base of the gauge firmly against the aperture plate, slowly slide the gauge downward. If the shuttle teeth catch against the "go" step of the gauge, the teeth are protruding too far beyond the surface of the aperture plate. If the teeth pass the "go" step of the gauge but fail to catch against the "no go" step, the teeth are not protruding far enough.

e. Shuttle tooth protrusion is adjusted by bending the shuttle arm carefully to obtain the desired protrusion (0.034 inch). A bending tool S-35975 F-1-D may be used.

f. When the shuttle tooth protrusion has been properly adjusted, check the position of the shuttle teeth in relation to the sides of the slot in the aperture plate. By means of the eccentric washer (item 25, Figure 5), the shuttle teeth can be shifted toward one side or the other of the slot. The teeth must be adjusted so that they enter the center of the film perforations.

15. ADJUSTING PICTURE FRAMING. The framing mechanism must be adjusted to permit maximum picture framing in either direction. Proceed as follows:

a. Turn the framing knob carefully from extreme clockwise to extreme counterclockwise position, counting the number of revolutions of the knob. Then turn the knob back to midposition.

b. Thread the projector with film known to be in correct frame. Start projector and focus picture on screen.

c. Note the binding head screw in the elongated hole at the bend or "knee" of the framing lever (23, Figure 5). Loosen this screw and shift the shuttle bracket arm (Figure 5) up or down, as necessary, to center the frame in the aperture. Then tighten binding head screw securely without disturbing the position of the bracket arm.

CAUTION: Keep hands and tools away from the motor fan while adjusting the framing lever.

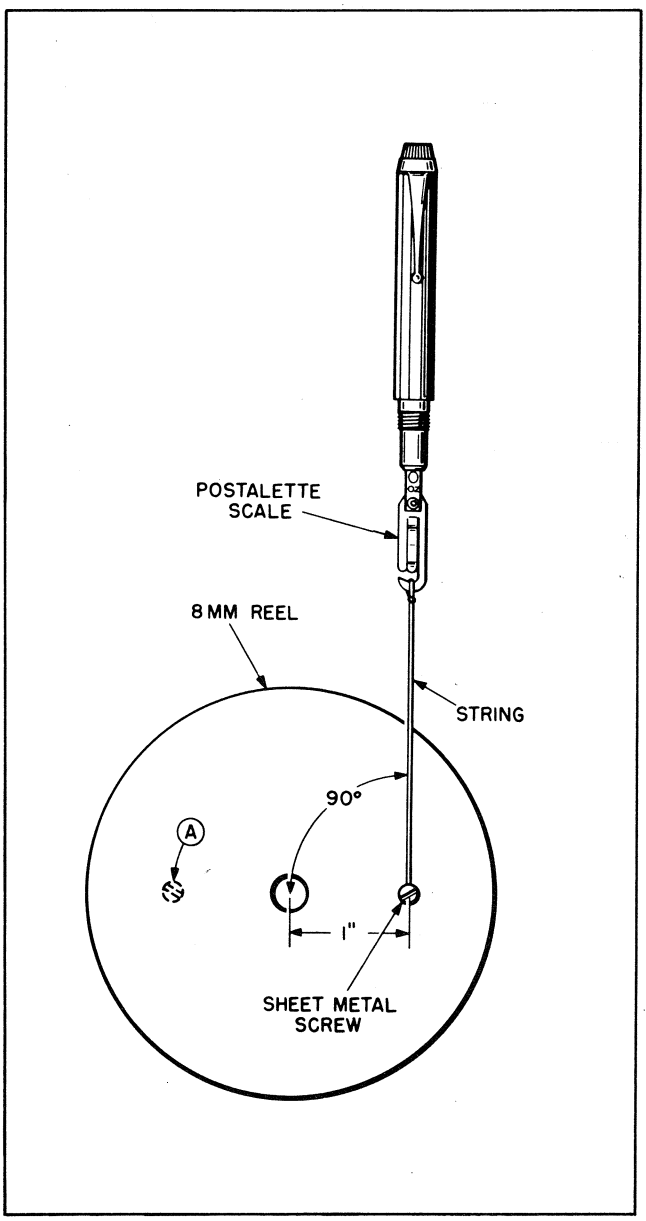



Figure E. Checking Reel Arm Torque

# Final Test

16. GENERAL INSTRUCTIONS.

This section contains specific tests to be performed to ensure that the projector is in proper working order. Tests will also serve to indicate the possible trouble or malfunction in the projector so that time can be saved in troubleshooting and servicing. Note that the projector is to be operated only from a 115-volt ac, 60-cycle power source.

17. SAFETY SHUTTER OPERATION TEST. It is important that the drive rollers, which drive the shutter pulley, make contact and begin driving the mechanism (either in forward or reverse) before the fire shutter clears the aperture opening. With the back cover removed and the projector connected to the power source, switch on the projector. This test is to be made without film.

a. Operate the projector, first in the forward direction and then in the reverse direction. Watch carefully as the lever is moved from the "still" position to either of the operating positions.

b. If the fire shutter clears the aperture opening before the shutter begins to revolve, the clearance between the drive rollers and edge of shutter pulley must be readjusted, as follows.

c. Proper operation of the safety shutter is controlled by the clearance between the upper drive roller (8, Figure 5) and the rim of the shutter. The nominal clearance is 0.062 inch (±0.015 inch). If the safety shutter (15) tends to clear the aperture opening before the shutter (18) begins to revolve when operating in reverse, this clearance should be increased toward the high (0.077 inch) tolerance. If the same thing happens when operating in forward, this clearance should be reduced toward the lower (0.047 inch) tolerance. To adjust, place the Forward-Reverse lever in the "still" position and loosen screws (1, Figure 5). Insert shim stock of proper thickness between drive roller (8) and rim of shutter and, while maintaining light pressure on the roller, tighten screws (1) securely.

d. Place the Slow Motion lever in "slow motion" position. Loosen lock nut (35, Figure 5) and adjust screw (36) until rollers (7 and 8) are just disengaged from the rim of the shutter (18). Then tighten lock nut (35) securely.

18. OPTICAL ALIGNMENT TEST. The alignment of the optical axis of the projection lens in the vertical plane is held to very close tolerances in the machining of the lens mount pivot. However, alignment in a horizontal plane is subject to possible variation, and provision has been made for adjusting the lens carrier accordingly. Check alignment as follows:

a. Thread the projector with resolution test film, roll title film, or other film known to have good resolution at the edges of the frame.

b. Project and focus the picture on a matte-surface screen. If the picture is "soft" along either edge, remove the back cover to gain access to the adjusting setscrew (item 34, Figure 4). This setscrew bears against the machined surface of the lens carrier and determines the angular relationship between the optical axis and the aperture plate.

c. Turn adjusting setscrew in or out to obtain equal sharpness of the image along both sides of the picture. If the lens carrier is far out of alignment, it may be necessary to refocus the picture during the alignment procedure.

19. OPERATIONAL TEST. Thread the projector with film, using a full reel, and run the projector to check for proper operation. Check the following items during the test.

a. Listen for unusual noises that may indicate insufficient lubrication.

b. If film should spill from the feed reel during operation, it may be necessary to tighten screw (2, Figure 2) slightly to apply additional tension.

c. If the film fails to maintain its loop above or below the aperture, check the shuttle tooth protrusion as described in paragraph 14, and readjust if necessary.

d. If the projected image appears soft at the edges, check the alignment of the optical axis as instructed in paragraph 18, and adjust if necessary.

# Trouble Shooting

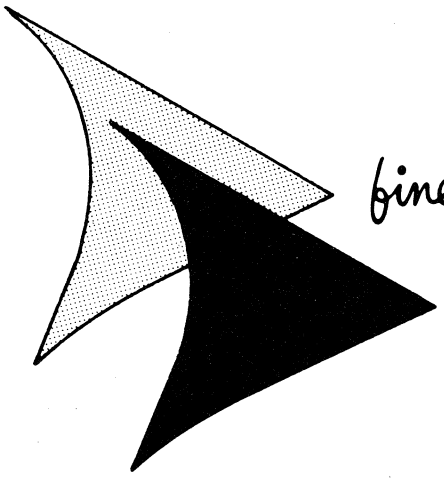
| TROUBLE | PROBABLE CAUSE | REMEDY |
|---|---|---|
| Projector inoperative with switch in the MOTOR or LAMP position. | 1. No electrical power | 1. Check power source. |
| | 2. Loose drive pulley | 2. Tighten pulley setscrew. |
| | 3. Broken drive belt | 3. Replace belt. |
| | 4. Defective switch or wiring | 4. Check circuit. |
| Picture flicker | 1. Drive roller assemblies not adjusted properly | 1. Readjust as instructed in paragraph 18. |
| | 2. Defective drive belt pulley | 2. Replace drive belt pulley. |
| | 3. Dirt, wear or binding | 3. Clean and repair or adjust gearing as instructed in paragraph 11. |
| Film scratches | 1. Excessively dirty film channel parts (sprockets, guides, etc.) | 1. Clean projector thoroughly. |
| | 2. Worn pressure and aperture plates (27E and 33, Figure 4) | 2. Replace if worn or marred. |
| | 3. Worn or damaged film guide (29, Figure 4) | 3. Replace film guide. |
| Jumpy picture | 1. Loss of film loop due to damaged film | 1. Inspect and splice as required. |
| | 2. Green film | 2. Run film through projector two or three times to age the film. |
| | 3. Shuttle tooth worn | 3. Replace shuttle assembly (23, Figure 5). |
| | 4. Misaligned shuttle tooth | 4. Adjust and align shuttle as instructed in paragraph 14. |
| | 5. Grooves worn in film guide (29, Figure 4) | 5. Replace film guide. |
| Soft focus | 1. Dirty projection lens | 1. Clean projector lens. |
| | 2. Lens mount out of alignment | 2. Readjust as instructed in paragraph 18. |
| | 3. Loose lens mount catch (37, Figure 4) | 3. Reset tension by bending catch carefully. |

| TROUBLE | PROBABLE CAUSE | REMEDY |
|---|---|---|
| Auto-threading not operating properly | 1. Loop former linkage improperly adjusted or binding<br>2. Loop formers not releasing | 1. Realign loop formers and reset linkage (paragraph 9, step e).<br>2. Linkage binding or springs stretched or broken on linkage. |
| Film spills | 1. Insufficient tension on feed spindle | 1. Adjust, paragraph 20, step b. |
| Fails to take up or rewind | 1. Defective drive belt<br>2. Worn rim on drive roller<br>3. Drive rollers not adjusted properly<br>4. Broken clutch springs (items 12, 28 and 30, Figure 2) | 1. Replace belt.<br>2. Replace rim (7A, Figure 5).<br>3. Readjust as instructed in paragraph 18.<br>4. Replace springs. |
| Noisy | 1. Loose attaching parts<br>2. Gearing dry | 1. Tighten as necessary.<br>2. Lubricate as necessary. |

**PARTS CATALOG**

# 8-MM AUTOLOAD PROJECTOR

## DESIGN 266A



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**Bell & Howell**

**GENERAL SERVICE DEPT.**
**7125 N. KIMBALL AVE.**
**CHICAGO 45, ILLINOIS**

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# Replacement Parts

The following pages illustrate and list by part number and part name all replacement parts of the Design 266A Autoload 8-mm projector. Since the illustrations are arranged in the suggested order of disassembly, they will serve as an aid to the repairman during disassembly and reassembly of the projector. Be sure to check footnotes which appear on some pages for special instructions regarding replacement procedures.

| FIG. & INDEX NO. | PART NO. | DESCRIPTION 1 2 3 4 5 6 7 | UNITS PER ASSY | USABLE ON CODE |
|---|---|---|---|---|
| | | COVERS, LAMP AND TRANSFORMER | | |
| 1-1 | 011115 | COVER ASSY, Front | 1 | |
| -1A | 19025 | . RIVET, Front cover catch | 1 | |
| -1B | 26321 | . CATCH, Front cover | 1 | |
| -1C | 26320 | . BUTTON, Front cover catch | 1 | |
| -1D | 33739 | . NAMEPLATE, Autoload | 1 | |
| -2 | 33734 | SCREW, Threading knob plate | 2 | |
| -3 | 33738 | PLATE, Cover, threading knob | 1 | |
| -4 | 29065 | SCREW, Hex head self threading | 4 | |
| -5 | 30029 | SCREW, Hex head self threading | 2 | |
| -6 | 14175 | WASHER, Lock | 2 | |
| -7 | 33704 | COVER, Back | 1 | |
| -8 | 011116 | COVER ASSY, Lamphouse | 1 | |
| -8A | 34941 | . STUD, Ball | 1 | |
| -8B | 33916 | . NAMEPLATE, Lamphouse cover | 1 | |
| -9 | 35300 | LAMP, Projection (Tru-Flector) | 1 | |
| -10 | 26329 | SCREW, Hex head self tapping | 2 | |
| -11 | 34784 | WASHER | 2 | |
| -12 | 32478 | BAFFLE, Lamp | 1 | |
| -13 | 34577 | SCREW, Rd head | 2 | |
| -14 | 3637 | NUT, Plain hex | 2 | |
| -15 | 011089 | BRACKET ASSY, Lamphouse cover | 1 | |
| -16 | 26906 | NUT (with lock washer) | 4 | |
| -17 | 609051 | WASHER, Flat | 4 | |
| -18 | 011801 | TRANSFORMER (with mtg screws) | 1 | |
| -19 | 30529 | . SLEEVE, Insulation | 1 | |
| -20 | 28820 | TERMINAL, Spade | 3 | |
| -21 | 32136 | SCREW, Round hd | 3 | |
| -22 | 010608 | SOCKET AND BRACKET ASSY, Lamp | 1 | |
| -23 | 30648 | RIVET, Tubular | 2 | |
| -24 | 30628 | CUTTER, Film | 1 | |
| -25 | 010177 | BRACKET ASSY, Film cutter | 1 | |
| -26 | 30663 | SHIELD, Rewind | 1 | |
| -27 | 20808 | RING, Retaining (guide roller) | 2 | |
| -28 | 30662 | ROLLER, Film guide | 2 | |
| -29 | 12636 | SETSCREW, Speed control knob | 1 | |
| -30 | 35310 | KNOB, Speed control | 1 | |
| -31 | 34283 | INSERT, Speed control knob | 1 | |
| -32 | 34688 | SETSCREW, Slow motion knob | 1 | |
| -33 | 35324 | KNOB, Slow motion | 1 | |
| -34 | 35325 | NAMEPLATE, Projector | 1 | |
| -35 | 30093 | RIVET, Carrying handle | 2 | |
| -36 | 17632 | WASHER, Flat | 2 | |
| -37 | 30659 | HANDLE, Carrying | 1 | |
| -38 | 010169 | KNOB ASSY, Tilt | 1 | |
| -39 | 22113 | RING, Retaining | 1 | |
| -40 | 010187 | SHAFT ASSY, Tilt | 1 | |
| -41 | 28145 | SPRING, Tilt shaft | 1 | |
| -42 | 26170 | RIVET, Tubular | 2 | |
| -43 | 26135 | FOOT, Rubber | 2 | |
| -44 | 011802 | CORD, Power | 1 | |
| -45 | 22464 | BUSHING, Strain relief | 1 | |
| -46 | 35327 | NAMEPLATE, Serial number | 1 | |

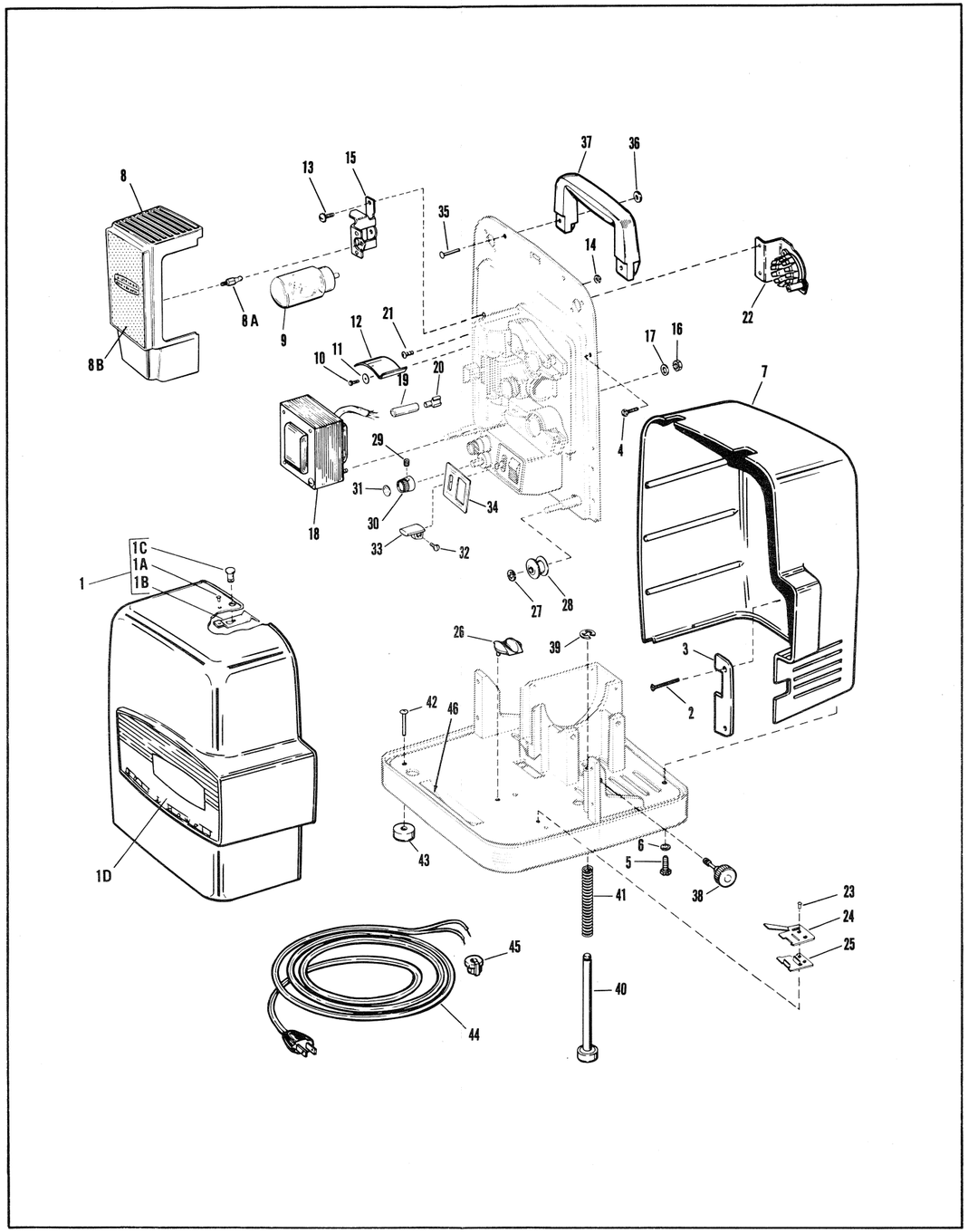


Figure 1. Covers, Lamp and Transformer

| FIG. & INDEX NO. | PART NO. | DESCRIPTION 1 2 3 4 5 6 7 | UNITS PER ASSY | USABLE ON CODE |
|---|---|---|---|---|
| | | REEL ARMS AND GEARS | | |
| 2-1 | 23822 | SCREW, Binding head | 1 | |
| -2 | 32861 | SCREW, Tension adjusting | 1 | |
| -3 | 010195 | ARM ASSY, Feed reel | 1 | |
| -4 | 29706 | GEAR, Spur | 1 | |
| -5 | 29726 | SPACER, Tension adjusting | 1 | |
| -6 | 29723 | GEAR, Spur | 1 | |
| -7 | 29725 | DISC, Friction | 2 | |
| -8 | 29724 | WASHER, Spring | 1 | |
| -9 | 010062 | SPINDLE ASSY, Feed | 1 | |
| -10 | 29192 | SETSCREW | 1 | |
| -11 | 35176 | GEAR, Spur | 1 | |
| -12 | 010189 | GEAR AND SHAFT ASSY, Feed arm | 1 | |
| -13 | 32979 | SPRING, Torque | 1 | |
| -14 | 23822 | SCREW, Binding head | 2 | |
| -15 | 32861 | SCREW, Tension adjusting | 1 | |
| -16 | 010196 | ARM ASSY, Take-up | 1 | |
| -17 | 29706 | GEAR, Spur | 1 | |
| -18 | 29707 | GEAR, Spur | 2 | |
| -19 | 29726 | SPACER, Tension adjusting | 1 | |
| -20 | 29723 | GEAR, Spur | 1 | |
| -21 | 29725 | DISC, Friction | 2 | |
| -22 | 29724 | WASHER, Spring | 1 | |
| -23 | 010062 | SPINDLE ASSY, Take-up | 1 | |
| -24 | 29192 | SETSCREW | 1 | |
| -25 | 30203 | GEAR, Spur | 1 | |
| -26 | 010190 | GEAR AND SHAFT ASSY, Take-up | 1 | |
| -27 | 20808 | RING, Retaining | 1 | |
| -28 | 010179 | GEAR ASSY, Large | 1 | |
| -29 | 21736 | RING, Retaining | 1 | |
| -30 | 29706 | GEAR, Spur | 1 | |
| -31 | 29744 | RING, Retaining | 2 | |
| -32 | 34705 | BEARING | 2 | |
| -33 | 09569 | SUPPORT ASSY, Feed reel arm | 1 | |
| -34 | 09568 | SUPPORT ASSY, Take-up arm | 1 | |
| -35 | 80147 | SCREW, Binding head | 1 | |
| -36 | 05631 | PLATE ASSY, Gear mounting | 1 | |
| -37 | 30238 | SPRING, Reel arm tension | 2 | |
| -38 | 29736 | WASHER, Cam (feed arm) | 1 | |
| -38A | 32948 | WASHER, Cam (take-up arm) | 1 | |
| -39 | 145 | BALL, Steel | 4 | |

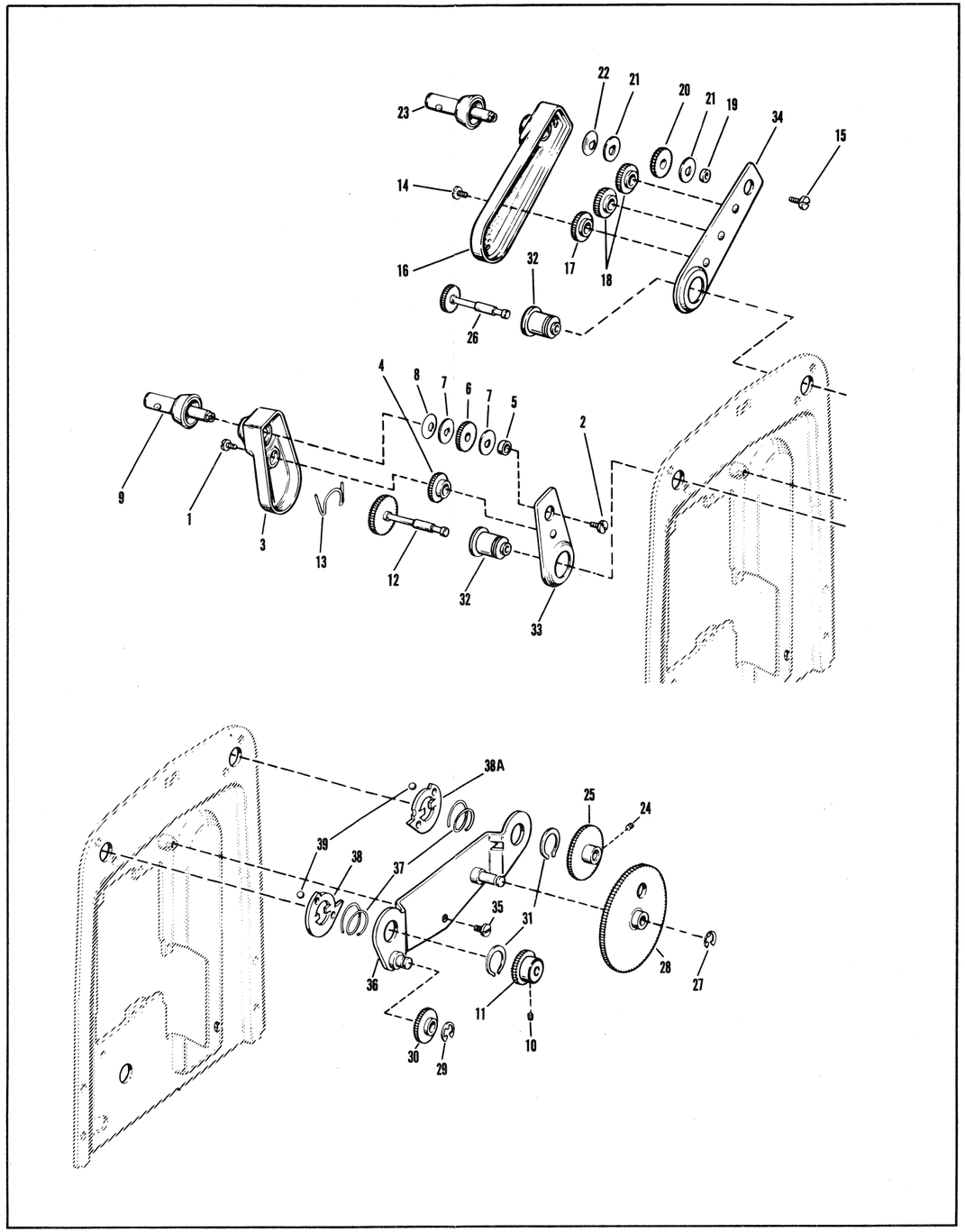


Figure 2. Reel Arms and Gears

| FIG. & INDEX NO. | PART NO. | DESCRIPTION 1 2 3 4 5 6 7 | UNITS PER ASSY | USABLE ON CODE |
|---|---|---|---|---|
| | | MOTOR, FAN, AND SPEED CONTROL | | |
| 3-1 | 30237 | SCREW, Hex head self tapping | 2 | |
| -2 | 32498 | SEAL, Blower housing | 1 | |
| -3 | 29065 | SCREW, Hex head thread forming | 1 | |
| -4 | 17632 | WASHER. | 1 | |
| -5 | 83286 | CLIP, Cable | 1 | |
| -6 | 32123 | COVER, Blower housing | 1 | |
| -7 | 34639 | FAN, Blower | 1 | |
| -7A | 32974 | SETSCREW, Fluted socket | 1 | |
| -8 | 32858 | BELT, Drive | 1 | |
| -9 | 32486 | FAN, 10-bladed | 1 | |
| -9A | 32974 | SETSCREW, Fluted socket | 1 | |
| -10 | 32767 | WASHER, Spring | 1 | |
| -11 | 26923 | SCREW, Round head | 4 | |
| -12 | 82794 | CONNECTOR, Wire | 1 | |
| -13 | 33188 | DAMPER, Vibration | 2 | |
| -14 | 32726 | BUSHING, Motor | 4 | |
| -15 | 33189 | BUSHING, Stem-type (rubber) | 4 | |
| -16 | 12498 | SETSCREW | 1 | |
| -17 | 32140 | HALF PULLEY, Drive (right half) | 1 | |
| -18 | 33 | PIN, Dowel | 1 | |
| -19 | 010285 | HALF PULLEY ASSY, Drive (left half) | 1 | |
| -20 | 32622 | BEARING, Thrust | 1 | |
| -21 | 21736 | RING, Retaining. | 1 | |
| -22 | 35341 | MOTOR, 60-cycle | 1 | |
| -23 | 35310 | KNOB, Speed control (REF. ONLY, See 1-30) | 1 | |
| -24 | 34283 | INSERT, Speed control knob (REF. ONLY, See 1-31) | 1 | |
| -25 | 12636 | SETSCREW, Speed control knob (REF. ONLY, See 1-29) | 1 | |
| -26 | 20808 | RING, Retaining. | 2 | |
| -27 | 32653 | SETSCREW, Socket head | 1 | |
| -28 | 32146 | CAM, Speed control | 1 | |
| -29 | 34359 | SHAFT, Speed control | 1 | |
| -30 | 32161 | RIVET | 2 | |
| -31 | 32621 | SPRING, Actuating | 1 | |
| -32 | 30778 | FOLLOWER, Cam (nylon pressure button) | 1 | |
| -33 | 29248* | NUT, Speed | 1 | |

*NOTE: Nut (33) is attached 3/16 inch above notch in spring (31) to eliminate vibration and noise.

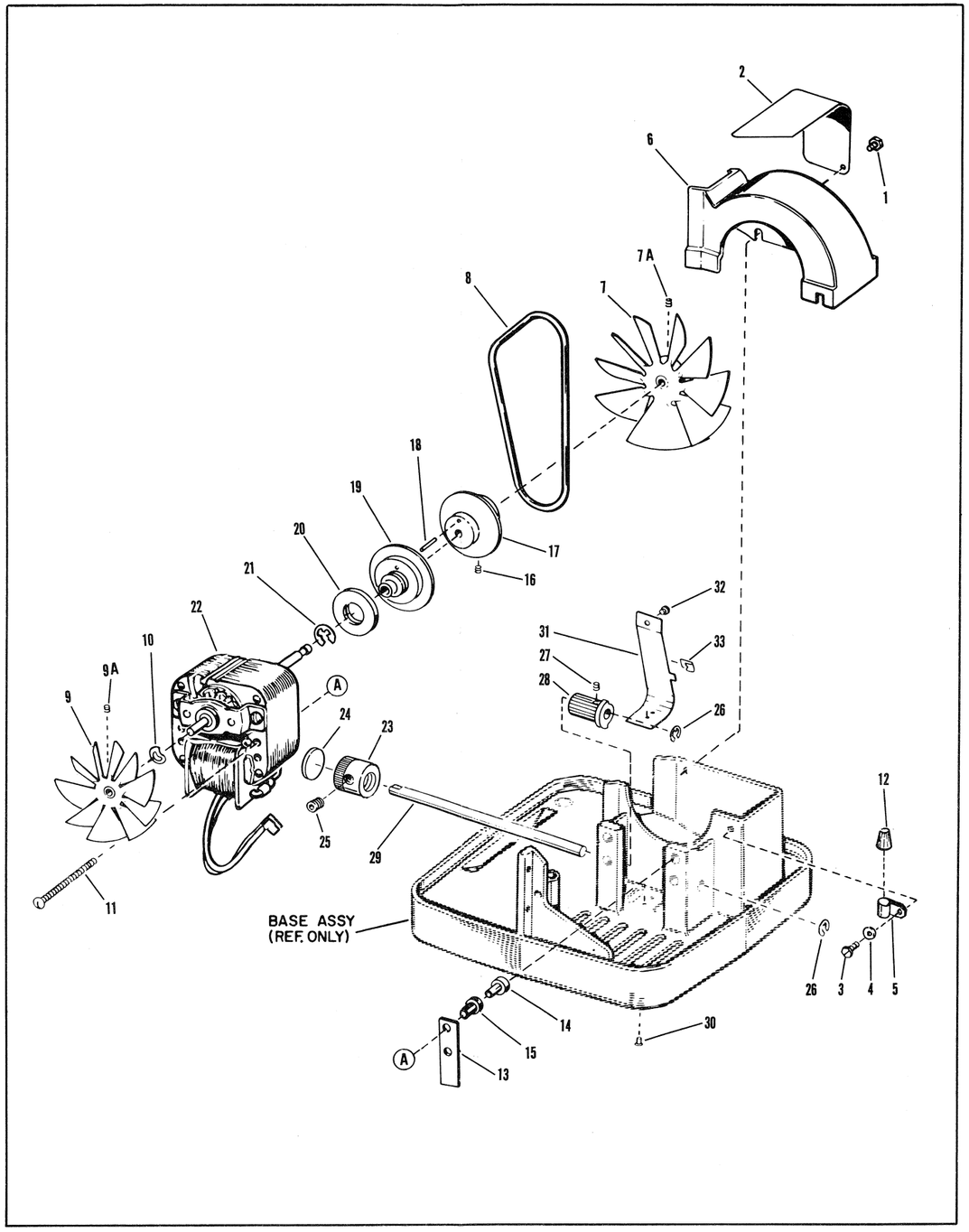


Figure 3. Motor, Fan, and Speed Control

| FIG. & INDEX NO. | PART NO. | DESCRIPTION 1 2 3 4 5 6 7 | UNITS PER ASSY | USABLE ON CODE |
|---|---|---|---|---|
| | | SPROCKETS, LOOP FORMERS & LENS CARRIER | | |
| 4-1 | 35181 | SPRING, Tension | 2 | |
| -2 | 30667 | WASHER, Friction (lower drive only) | 1 | |
| -3 | 35184 | SPRING, Ratchet | 2 | |
| -4 | 35186 | WASHER, Flat | 2 | |
| -5 | 35153 | GEAR, Lower drive | 1 | |
| -6 | 35177 | GEAR, Spur | 3 | |
| -7 | 21736 | RING, Retaining | 1 | |
| -8 | 34718 | GEAR, Spur | 1 | |
| -9 | 011459 | LEVER ASSY, Gear shift | 1 | |
| -10 | 30650 | SPRING, Trip roller lever | 1 | |
| -11 | 30651 | SPRING, Lever return | 1 | |
| -12 | 32624 | RIVET, Tubular | 1 | |
| -13 | 32623 | BUSHING, Triplever | 1 | |
| -14 | 010178 | LEVER ASSY, Trip | 1 | |
| -15 | 30633 | SPACER, Triplever | 1 | |
| -16 | 30612 | SCREW, Pin | 2 | |
| -17 | 011457 | LOOP FORMER ASSY, Upper | 1 | |
| -18 | 010637 | LOOP FORMER ASSY, Lower | 1 | |
| -19 | 30611 | ROLLER, Film | 2 | |
| -20 | 30613 | WASHER, Spacer | 2 | |
| -21 | 30625 | ROLLER, Upper loop former | 1 | |
| -22 | 34580 | SCREW, Binding head | 2 | |
| -23 | 011319 | BRACKET ASSY, Upper loop former | 1 | |
| -24 | 33588 | BRACKET, Lower loop former | 1 | |
| -25 | 011454 | SPROCKET ASSY, Film | 2 | |
| -26 | 26030 | PIN, Hinge (lens carrier) | 2 | |
| -27 | 011314 | CARRIER ASSY, Lens | 1 | |
| -27A | 30631 | . SPRING, Focusing knob | 1 | |
| -27B | 33591 | . KNOB, Focusing | 1 | |
| -27C | 34291 | . SPRING, Tension | 1 | |
| -27D | 30627 | . PLATE, Retainer | 1 | |
| -27E | 33680 | . PLATE, Pressure | 1 | |
| -27F | 011313 | . CARRIER SUB ASSY, Lens | 1 | |
| -28 | 30621 | SCREW, Truss head | 2 | |
| -29 | 30626 | GUIDE, Film | 1 | |
| -30 | 30620 | SCREW, Truss head | 2 | |
| -31 | 28067 | SPRING, Side tension | 1 | |
| -32 | 30639 | ARM, Side tension | 1 | |
| -33 | 011114 | PLATE ASSY, Aperture | 1 | |
| -34 | 30634 | SCREW, Lens mount adjusting | 1 | |
| -35 | 30619 | SCREW, Trip linkage adjusting | 2 | |
| -36 | 26642 | RIVET, Lens mount catch | 2 | |
| -37 | 30615 | CATCH, Lens mount | 1 | |

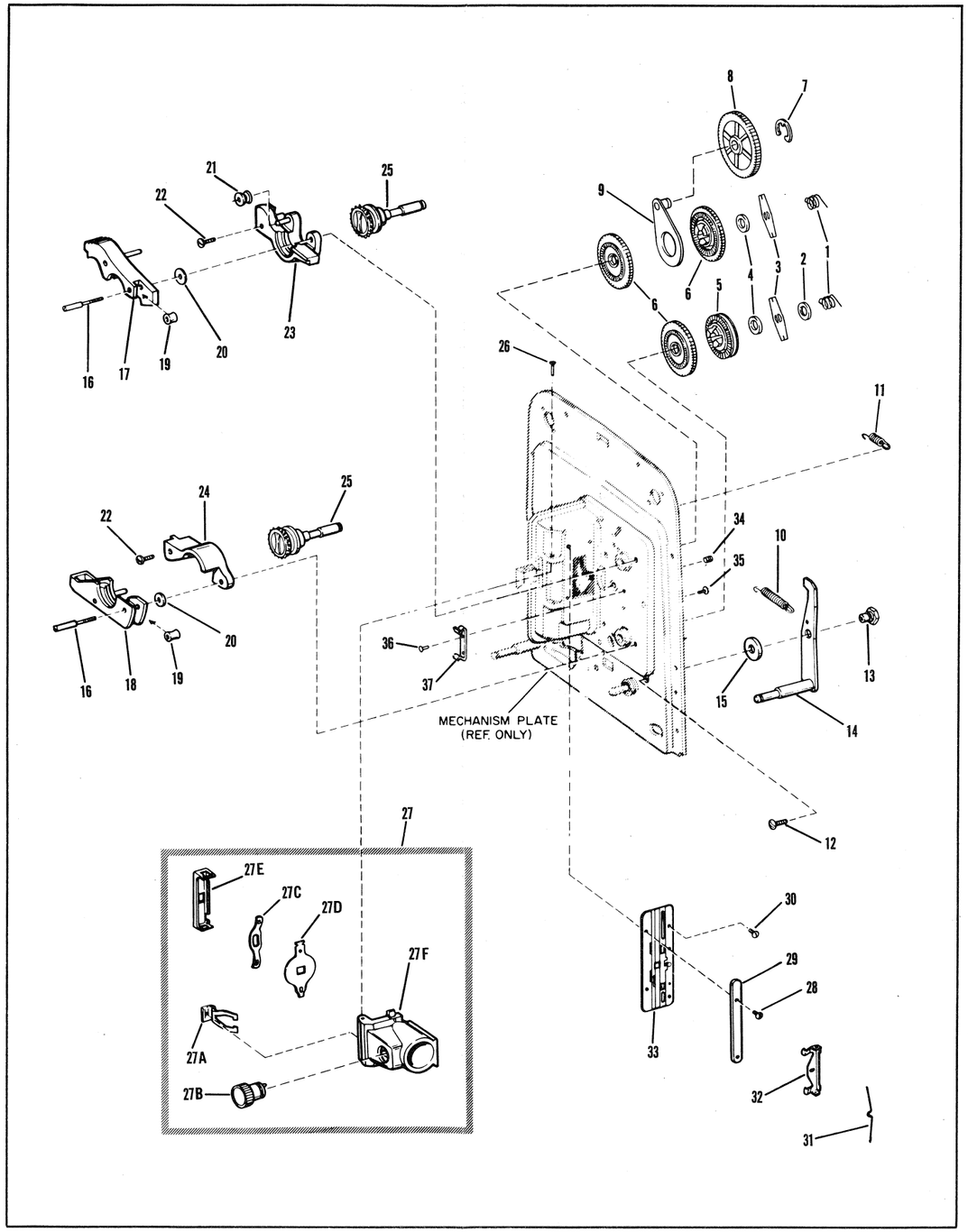


Figure 4. Sprockets, Loop Formers and Lens Carrier

| FIG. & INDEX NO. | PART NO. | DESCRIPTION 1 2 3 4 5 6 7 | UNITS PER ASSY | USABLE ON CODE |
|---|---|---|---|---|
| | | SHUTTER AND SHUTTLE MECHANISM | | |
| 5-1 | 27641 | SCREW, Fil-hd | 2 | |
| -2 | 010181 | BRACKET ASSY, Spring loading | 1 | |
| -3 | 25715 | RING, Retaining, pulley mounting bracket | 1 | |
| -4 | 010278 | BRACKET ASSY, Pulley mounting | 1 | |
| -5 | 27322 | RING, Retaining, drive roller | 2 | |
| -6 | 32172 | WASHER, Flat | 4 | |
| -7 | 011791 | ROLLER ASSY, Drive (includes one of item 9) | 1 | |
| -8 | 011792 | ROLLER ASSY, Drive (includes one of item 9) | 1 | |
| -9 | 27313 | . RIM, Drive roller | 2 | |
| -10 | 30714 | SCREW, Forward-Reverse knob | 1 | |
| -11 | 32348 | KNOB, Forward-Reverse | 1 | |
| -12 | 29472 | SCREW, Pivot | 1 | |
| -13 | 32169 | SPRING, Pivot | 1 | |
| -14 | 32136 | SCREW, Safety shutter | 1 | |
| -15 | 05670 | SHUTTER ASSY, Safety | 1 | |
| -16 | 30551 | SCREW, Shutter retaining | 2 | |
| -17 | 35305 | WASHER, Shutter | 1 | |
| -18 | 05669 | SHUTTER ASSY | 1 | |
| -19 | 29040 | CAM, In-out | 1 | |
| -20 | 26906 | NUT, Pivot | 1 | |
| -21 | 32117 | PIVOT, Shuttle mounting | 1 | |
| -22 | 30800 | WASHER, Spring | 1 | |
| -23 | 011093 | SHUTTLE AND FRAMING LEVER ASSY | 1 | |
| -24 | 32947 (Note A) | SHOE, Cam (white) | AR | |
| -24 | 33712 (Note A) | SHOE, Cam (black) | AR | |
| -25 | 35319 | WASHER, Eccentric | 1 | |
| -26 | 35318 | SPRING, Torsion | 1 | |
| -27 | 05667 | LEVER ASSY, Speed change | 1 | |
| -28 | 35317 | SPACER, Shuttle | 1 | |
| -29 | 27322 | RING, Retaining | 1 | |
| -30 | 32172 | WASHER, Flat | 2 | |
| -31 | 011793 | ROLLER ASSY, Low speed | 1 | |
| -32 | 27313 | . RIM, Roller | 1 | |
| -33 | 80147 | SCREW, Fil-hd | 2 | |
| -34 | 05666 | BRACKET ASSY, Roller | 1 | |
| -35 | 83447 | NUT, Lock | 1 | |
| -36 | 35334 | SCREW, Roller adjusting | 1 | |
| -37 | 80591 | SETSCREW, Pull-down cam | 2 | |
| -38 | 29184 | CAM, Pull-down | 1 | |
| -39 | 26085 | WASHER, Thrust | 1 | |
| -40 | 12498 | SETSCREW, Drive pinion | 1 | |
| -41 | 010448 | SHAFT ASSY, Main | 1 | |
| -42 | 33196 | PINION, Drive | 1 | |
| -43 | 30667 | WASHER, Friction | 1 | |
| -44 | 26131 | RING, Retaining | 1 | |
| -45 | 29065 | SCREW, Hex hd | 4 | |
| -46 | No Number | PLATE ASSY, Mechanism | NP | |
| -47 | 35335 | BASE, Projector | 1 | |
| -48 | 33929 | SHAFT, Framer | 1 | |
| -49 | 21736 | RING, Retaining | 1 | |
| -50 | 33146 | SCREW, Control housing | 4 | |
| -51 | 35329 | HOUSING, Control | 1 | |
| -52 | 05668 | LINK ASSY, Speed control | 1 | |
| -53 | 80147 | SCREW, Fil hd | 4 | |
| -54 | 35323 | SPRING, Speed control | 1 | |
| -55 | 35331 | SWITCH, Motor-Lamp | 1 | |
| -56 | 34539 | RING, Retaining, framer knob | 1 | |
| -57 | 33931 | WASHER, Flat | 1 | |
| -58 | 35311 | KNOB, Framer | 1 | |
| -59 | 33936 | INSERT, Framer knob | 1 | |

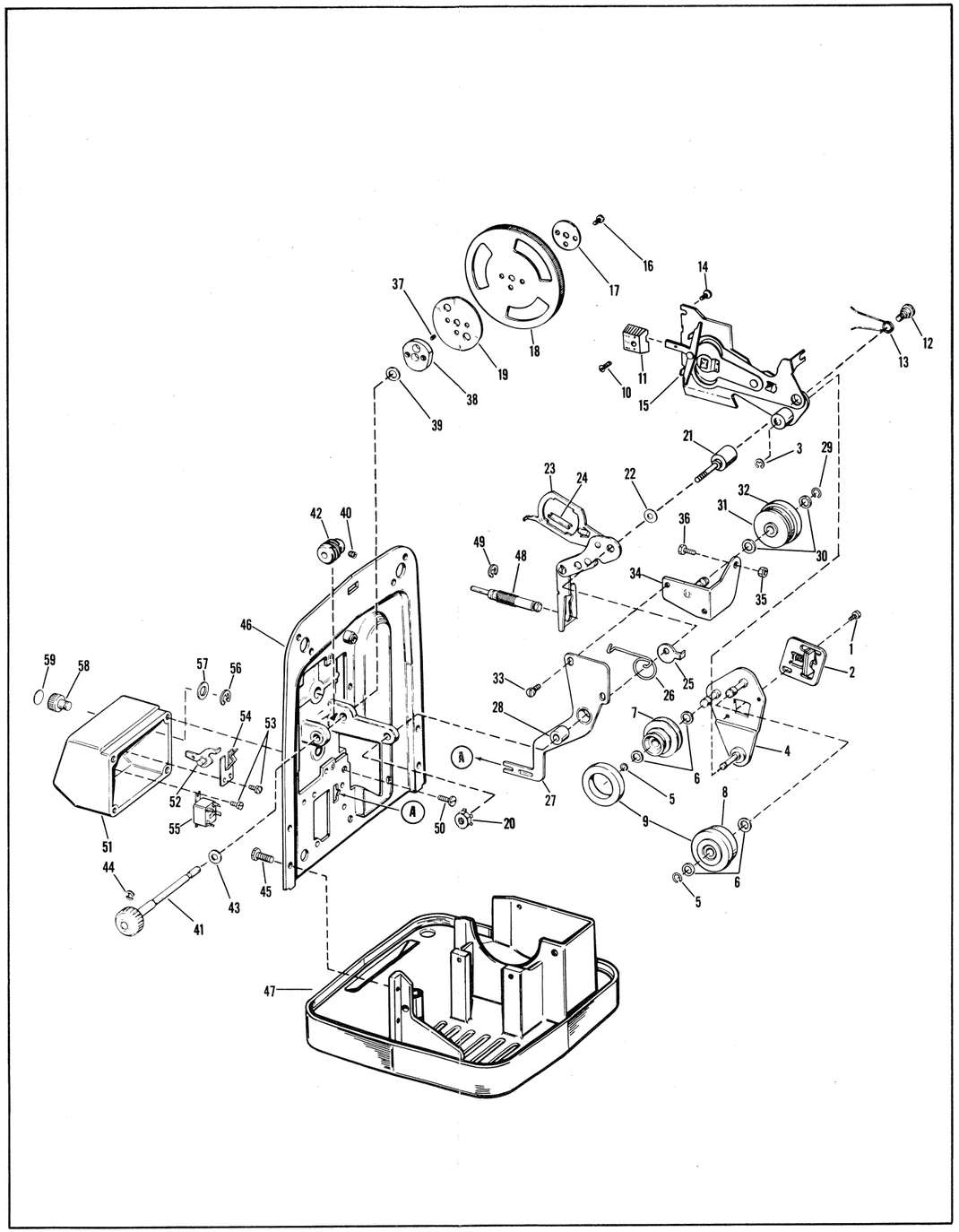


Figure 5. Shutter and Shuttle Mechansim

# SUPPLEMENT NO. 1
# DESIGN 266 PROJECTOR

NOTE: USE THIS SUPPLEMENT TOGETHER WITH INSTRUCTION BOOK NO. 70420 DATED MAY, 1963, TO SERVICE LATEST EXPORT MODELS OF THE DESIGN 266 AUTOLOAD PROJECTOR.

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**PHOTO SALES COMPANY**

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**CHICAGO 45, ILLINOIS**

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# INTRODUCTION

This Supplement has been prepared to provide the information for the repair and parts replacement of current export models of Design 266 projector (266EXY, 266EXLY, 266EXLY-2 and 266 EXP). Wherever possible, changes indicated herein should be noted in the basic Instruction Book.

The export models are very similar in design and construction to the 266A Projector covered in the basic Instruction Book, and some of the parts changes are reflected in current models of the Design 266A. Electrically, the major changes include the addition of a voltage selector switch (exposed by removing the lamphouse cover), the relocation of the transformer in the projector back cover, and the differences in motor ratings to permit projector operation with available foreign currents. The voltage switch provides for 220 or 240-volt, 50 cycle operation for the 266EXY projector and for 115 or 220-volt, 50 cycle operation for the 266EXLY, 266 EXLY-2 and 266EXPY projectors. Refer to figures A and B, schematic diagrams for the export models of the 266 projector.

NOTE: The only difference between 266EXLY and 266EXLY-2 is in the power cable. The 266EXLY projector uses cable part no. 012068 while the 266EXLY-2 uses cable part no. 012195. In all other respects, the two projectors are identical.

The only recommended change in the Service Instructions portion of the book occurs in the Trouble-shooting chart, page 10. Under "Fails to take-up or rewind", remove cause and remedy number 4.

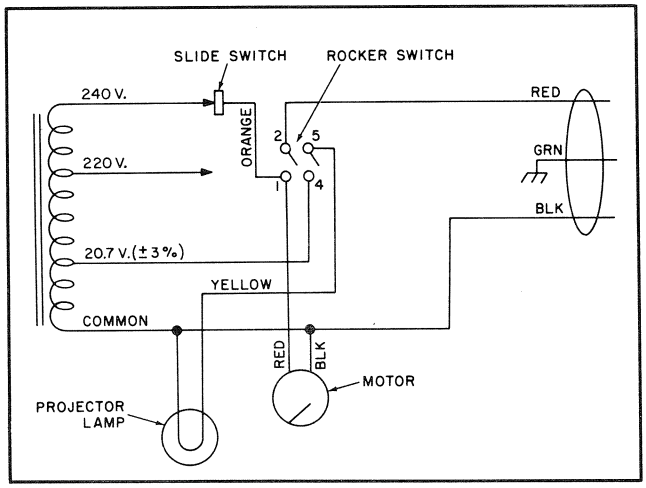


Figure A. Schematic Wiring Diagram for Design 266EXY only

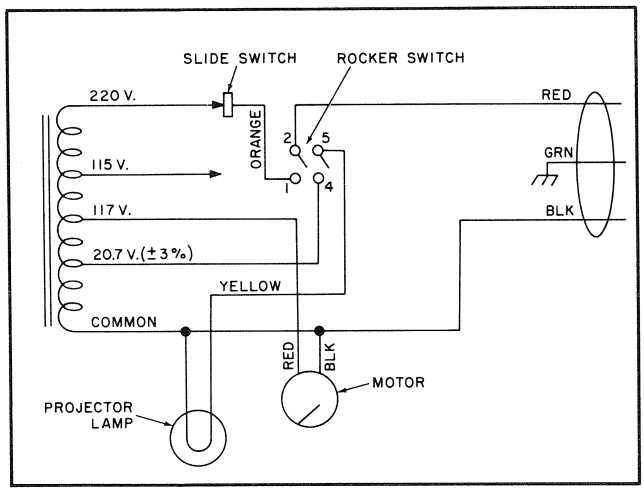


Figure B. Schematic Wiring Diagram for Designs 266EXLY, 266EXLY-2, 266EXPY

# PARTS CATALOG CHANGES

NOTE: Unless otherwise noted in the following list of changes, the parts listed in the Parts Catalog section of the basic Instruction Book apply both to the Design 266A and to all export models.

IN FIGURE 1:

Item 1-1; Front cover assembly, part no. 011115, is used only on 266A projectors. Add part no. 05211 front cover assembly for all export models.

Item 1-1D; Nameplate, part no. 33739, is used only on 266A projectors. Add part no. 36613 nameplate for all export models.

Item 1-7; Back cover, part no. 33704, is used only on 266A projectors. Add part no. 33611 back cover for all export models.

Items 1-8, 1-8A, 1-8B; These lamphouse cover parts are used only on early model 266A projectors. Refer to figure C, this Supplement, for lamphouse cover parts used on all export models and latest 266A projectors.

Items 1-10, 1-11; These parts are used to attach the lamp baffle (item 1-12) on early model 266A projectors only. Add rivets, part no. 30226, for attaching baffle on all export models and latest 266A projectors.

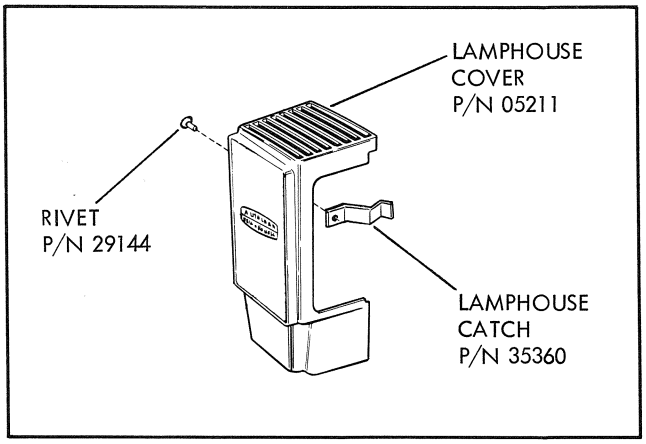


Figure C. Current Lamphouse Cover Parts

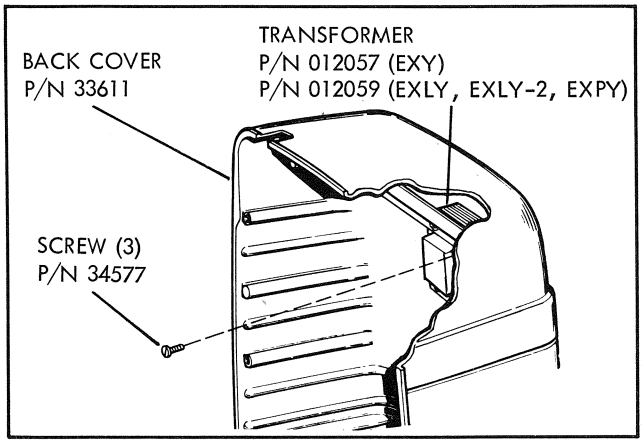


Figure D. Transformer Mounting (Export Models)

Item 1-18; Note that transformer, part no. 0118-1, is used only 266A projectors and that current models require three each nut (p/n 26906), spacer (p/n 36694) and screw (p/n 36695) for mounting. Refer to figure D, this Supplement, for the back cover mounted transformer used in export models only.

NOTE: Figure D illustrates the transformers and mounting parts (three #34577 screws) currently being installed in export models. In early 266EX projectors, this transformer was mounted with one #36606 screw and #36607 nut and two #34577 screws. It should be noted that all early export models were equipped with transformers which are no longer available and have been replaced by the current part indicated in figure D. In order to install this new transformer in early export models, it will be necessary to interchange the lower mounting brackets of the old and new transformers.

Items 1-24, 1-25; Note that the two-piece film cutter is used only on early model 266A projectors. Add one-piece film cutter, part no. 36115, for all export models and latest 266A projectors.

Item 1-32; Change setscrew part no. 34688 to 36831 (all models).

Item 1-37; Change handle part no. 30659 to 36103 (all models).

Items 1-40, 1-41; Note that these tilt parts are used only on 266A projectors. Refer to figure E, this Supplement, for tilt mechanism used on all export models.

Item 1-44; Power cord part no. 011802 is used only on 266A projectors. Add part no. 012068 power cord (less plug) for 266EXY and EXLY projectors; add part no. 012195 power cord for 266EXLY-2 and 266 EXPY projectors.

Item 1-45; Relief bushing part no. 22464, is used only on 266A projectors. Add part no. 706011 bushing for all export models.

Item 1-46; Nameplate, part no. 35327, is used only on 266A projectors. Add part no. 36610 nameplate for 266EXY, part no. 36618 nameplate for 266EXLY and 266EXLY-2, and part no. 37416 nameplate for the 266EXPY.

NOTE: All export models are equipped with a voltage selector switch located behind the lamphouse cover. Refer to figure F, this supplement, for identification of switch parts.

IN FIGURE 2:

Item 2-6; Change spur gear part no. from 29723 to 35579 (all models).

Item 2-7; Change friction disc part no. from 29725 to 35580 (all models).

Item 2-9; Feed spindle assembly, part no. 010062, is used only on 266A projectors. Add part no. 05639 spindle assembly for all export models.

Item 2-20; Change spur gear part no. from 29723 to 35579 (all models).

Item 2-21; Change friction disc part no. from 29725 to 35580 (all models).

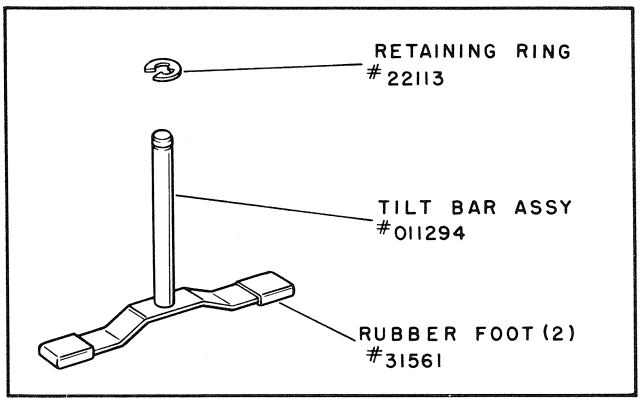


Figure E. T-style Tile Mechanism Parts

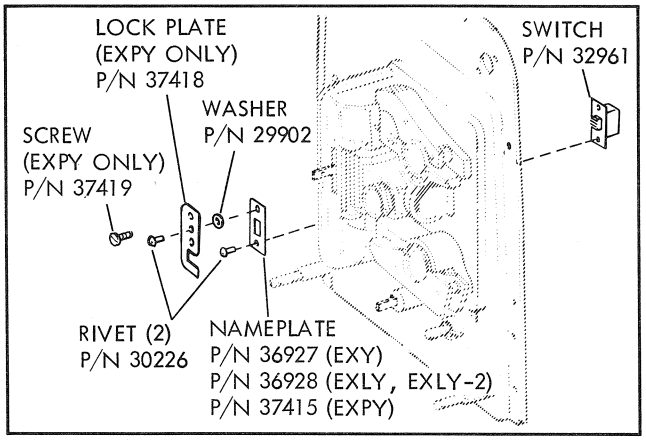


Figure F. Voltage Selector Switch Parts

Item 2-23; Take-up spindle assembly, part no. 010062, is used only on 266A projectors. Add part no. 05639 spindle assembly for all export models.

Item 2-28; Change gear assembly part no. from 010179 to 35919 (all models).

IN FIGURE 3:

Item 3-6; Change cover part no. from 32123 to 35595 (all models).

Item 3-7; Change blower fan part no. from 34639 to 012169 (all models).

Items 3-13, 3-15; Note that these items are no longer available and have been replaced by a one-piece vibration damper, part no. 36690 (all models).

Item 3-22; Motor, part no. 35341, is used only on 266A projectors. Add part no. 36593 motor (220/240 volt, 50 cycle) for 266EXY projectors and part no. 36617 motor (115/220 volt, 50 cycle) for the 266EXLY, 266EXLY-2 and 266EXPY projectors.

NOTE: In 266EXPY models only, the motor (item 22) is grounded to the projector base by means of a hex head self-tapping screw, part no. 700334. The ground wire lug terminal bears part no. 700733.

IN FIGURE 4:

Items 4-5, 4-6; The 266A projector uses one of the part no. 35153 gear (item 4-5) and three of the part no. 35177 gear. Export models do not use the part no. 35153 gear but, instead, use four of the part no. 35177 gear.

Item 4-19; In all current Design 266 projectors, the film roller in the upper loop former (17) still bears part no. 30611. However, a tapered roller, part no. 37266, now is being used in the lower loop former (18) of all projectors. Install this roller with tapered end toward main mechanism plate.

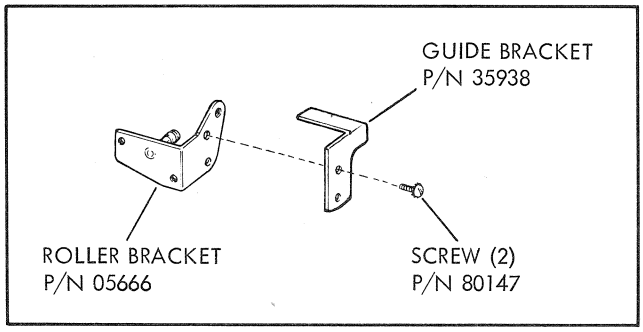


Figure G. Roller Alignment Bracket Parts

Item 4-27; The complete lens carrier assembly, part no. 011314, is no longer available and has been replaced by part no. 05213 lens carrier assembly (without focusing knob). It should be noted, however, that the focusing knob spring (27A) and focusing knob (27B) are still available for piece part replacement.

Item 4-27C; Change tension spring part no. from 34291 to 34960 (all models).

Item 4-27D; Change retainer plate part no. from 30627 to 33937 (all models).

Item 4-27F; Lens carrier casting, part no. 011313, is no longer available. If the casting is damaged, replace complete lens carrier assembly with part no. 05213.

Item 4-35; Change screw part no, from 30619 to 35956 (all models).

IN FIGURE 5:

Item 5-8; Drive roller assembly, part no. 011792, is used on all export models only. Add part no. 012086 drive roller for 266A projectors.

Item 5-24; Select any combination of cam shoes, part no. 32947 and 33712 to obtain proper fit on pull-down cam (item 38).

Item 5-34; Two holes are drilled and tapped in the current roller bracket assembly, part no. 05666, to permit the mounting of a roller guide bracket (part no. 35938) with two screws (part no. 80147). See figure G, this Supplement, for parts identification. All current projector models (266A and export) reflect this change.

Item 5-37; Change setscrew part no. from 80591 to 36763 (all models).

Item 5-47; Projector base, part no. 35335, is used only on 266A projectors. Add part no. 36609 base for all export models.

Item 5-55; Motor-Lamp switch, part no. 35331, is used only on 266A projectors. Add part no. 36594 switch for all export models.