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Servicing the

KODAK CAROUSEL PROJECTORS

Models 760, 760H, 850, 850H, 860 and 860H



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1. GENERAL INFORMATION

1.1 ELECTRICAL SPECIFICATIONS

1.1.1 OPERATING VOLTAGE
105-125 volts, 60 Hz

1.1.2 PROJECTION LAMPS
For 760, 850 and 860 Models
500-watt horizontal burning, ANSI Code DEK lamp.
115-120 volt.
For 760H, 850H and 860H Models
300-watt horizontal burning, ANSI Code ELH lamp, 115-120 volts.

1.1.3 DROPPING RESISTOR
Extends lamp life when power switch is in "Low" position.

3 ohms (850 and 860 Models)
5 ohms (850H and 860H Models)

1.1.4 DIELECTRIC STRENGTH TEST

A dielectric strength test should be performed on the projector and meet the following requirements:

Leakage current must not exceed 2.5 milliamperes with 900 volts, 60 Hz, applied for one minute between the shorted prongs of the power plug and the frame with the power switch in the lamp or high position.

1.2 OPTICAL SYSTEM

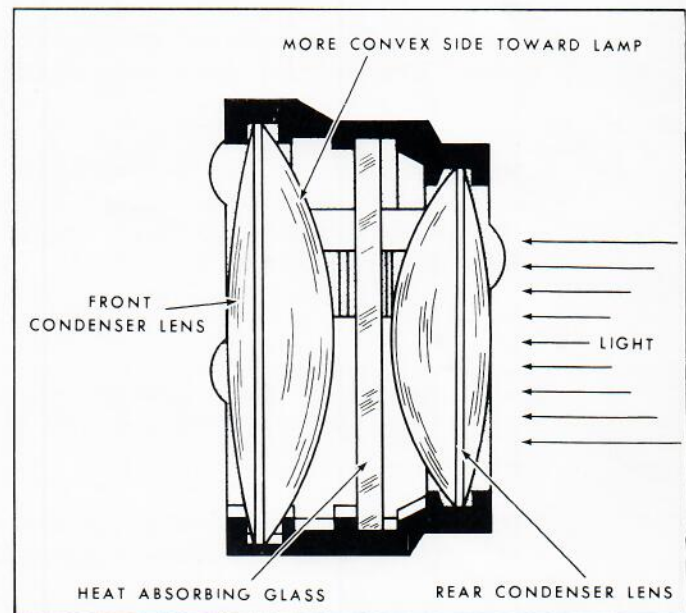
1.2.1 The current line of *KODAK* Projection *EKTANAR* and *EKTANON* Lenses may be used with all models.

1.2.2 The condenser system in the 760, 850 and 860 models contains two condenser lenses and a heat-absorbing glass. Install as indicated in sketch.

1.2.3 The condenser system in the 760H, 850H and 860H models contains the front condenser lens and the heat-absorbing glass. Install as indicated in the sketch for the front condenser and the heat glass only.

1.3 SLIDE TRAY

1.3.1 The slide tray is high quality molding with one index position and either eighty or one hundred-forty slide positions (depending on the tray).



- 1.3.2 There are four models of the tray that may be used: the *KODAK CAROUSEL* Slide Tray, (black), *KODAK CAROUSEL* Universal Slide Tray (gray), the *KODAK CAROUSEL* 140 Slide Tray, and *KODAK CAROUSEL* Slide Tray for *KODAK CAROUSEL* S Projector (German-made).
- 1.3.3 Emergency release of the slide tray: Insert a coin in wide slot in center spindle. Turn coin left or right and lift tray from projector.

1.4 SELECT BUTTON

The select button is not designed to advance the tray, but when DEPRESSED ALL THE WAY AND HELD will advance the mechanism to HALF-CYCLE or SELECT position (see 2.2). When the select button is depressed, the tray is free to rotate to any position or to move to the indexed area for tray removal.

1.5 AUTOMATIC TIMER (850, 850H, 860 AND 860H)

Automatic operation is provided on these models. It is accomplished by setting the timer knob to 5, 8 or 15 seconds. The remote cord is not required for automatic operation, but may be used for either forward or reverse actuation to override the automatic operation. The built-in forward and reverse switch will also override the automatic operation.

1.6 REMOTE CONTROL CORD

- 1.6.1 Models 760, 760H, 850, and 850H include "FOR." button for forward operation and "REV." button for reverse operation.

Forward operation is controlled by momentary pressure all the way down on the "FOR." button, followed by immediate release.

Reverse operation requires a slightly longer hold all the way down on the "REV." button, followed by immediate release.

If pressure and release on the reverse button is quick, or if it is not pushed all the way down, the slide tray may be "tricked" into advancing instead of reversing.

- 1.6.2 Models 860 and 860H - In addition to the forward and reverse buttons described in 1.6.1 above, the remote control cord used on these models has a focus button for remotely adjusting focus in addition to the automatic focus feature of the projectors (2.5).

1.7 THERMAL FUSE

The thermal fuse is a safety device which protects the projector from overheating and possible damage caused by overheating within the projector housing.

There is no visible change in the appearance of the fuse when it burns out. The most obvious symptoms: projector will stop running or cannot be turned on.

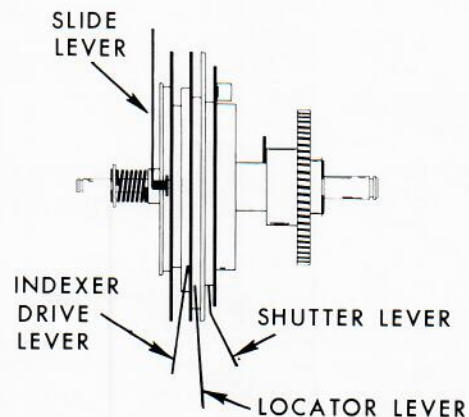
1.8 CAPACITOR

The capacitor suppresses electrical noise which otherwise might be picked up by either an associated tape recorder or a public address system.

2. SEQUENCE OF OPERATION

2.1 FULL CYCLE, FORWARD (See foldout from Page 9.)

- 2.1.1 When projector is turned on, main drive motor runs continuously. Power is transferred to the fan by a belt and to the worm pulley by a second belt.
- 2.1.2 The worm pulley (10) rotates worm gear and clutch sleeve driver (11) continuously. The clutch spring (9) is held in relaxed position by clutch contact lever (4) which allows cam stack and shaft (8) to remain stationary.
- 2.1.3 A forward cycle is started when solenoid (5) momentarily pulls cycle lever (17) away from clutch spring (9). This action simultaneously breaks electrical contact to solenoid and allows clutch spring (9) to tighten on revolving clutch sleeve, starting cam shaft rotation. The cams move mechanism levers and one revolution accomplishes one cycle.
- 2.1.4 As shutter (13) closes, drive lever (6) and indexer (1) begin to move and slide lever (7) begins to eject slide from gate (16).
- 2.1.5 As slide lever ejects slide from gate, shutter lever (12) continues moving and, in turn, opens pressure pads (15).
- 2.1.6 When slide lever lifts slide completely into tray, locator (14) disengages tray lugs and indexer (1) continues its movement to rotate slide tray forward.
- 2.1.7 Indexer completes moving tray forward, then withdraws and locator moves to engage tray lugs which accurately aligns tray over gate.
- 2.1.8 As slide lever descends, slide drops by gravity into open gate. When slide lever hits bottom, pressure pads close, indexer returns to starting position and shutter (13) opens.
- 2.1.9 The clutch spring (9) contacts clutch contact lever (4), clutch begins to slip, and cam shaft (8) ceases to rotate.



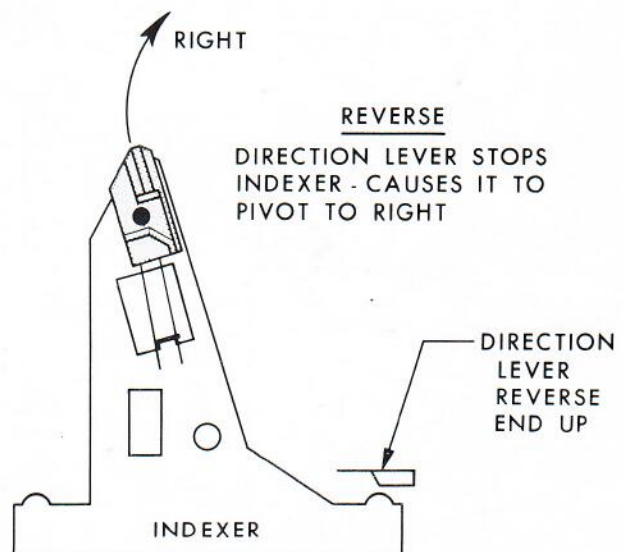
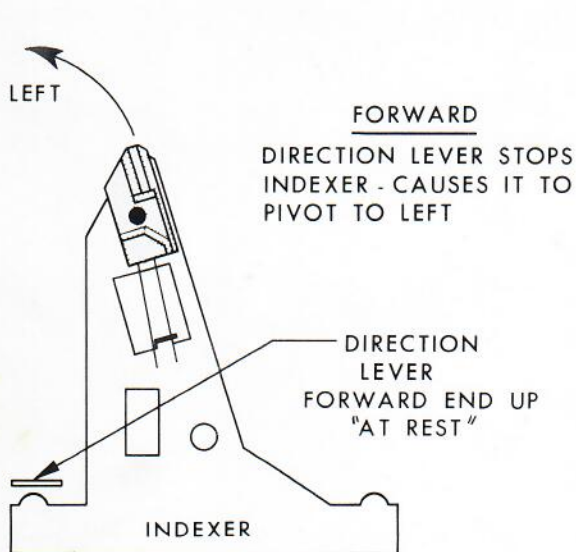
2.2 HALF-CYCLE

- 2.2.1 The purpose of half-cycle or use of SELECT button is to:
 - a. Return slide from gate to tray for editing.
 - b. Allow tray to be rotated manually to any numbered slide position, or to "0" position for removal of tray from projector.
 - c. Allow slide opposite gate index to drop and be shown when button is released.

- 2.2.2 When SELECT button is pressed ALL THE WAY DOWN and HELD, the select lever (18) moves cycle lever (17) to disengage clutch spring (9). The clutch spring tightens on rotating clutch sleeve (11) and cam shaft (8) starts to rotate.
- 2.2.3 The drive lever (6) is pushed off its cam by select lever (18) blocking its movement.
- 2.2.4 All other levers operate as in first half of a full cycle forward. Shutter closes, slide lever pushes slide into tray and locator pulls out of contact with lugs of tray.
- 2.2.5 With SELECT button still depressed ALL THE WAY DOWN, the clutch spring is stopped by half-cycle arm (3) of cycle lever, approximately 180° from its starting position. The cam shaft stops rotating and all lever action stops at this point.
- 2.2.6 When SELECT button is released, the half-cycle arm of cycle lever releases clutch spring and remaining half-cycle is performed as in full cycle; locator positions tray, slide lever descends, pressure pads close and shutter opens.

2.3 REVERSING

- 2.3.1 Forward or reverse is determined by the position of direction lever (2). Normal or "at rest" position is forward operation.
- 2.3.2 When reverse button is pushed and held for a slightly longer time than required for forward operation, cycle lever (17) pivots "reverse" end of direction lever (2) up for a long enough time to trap indexer (1) as it moves. Indexer then pivots in opposite (or reverse) direction from forward operation. Cycle switch does not open solenoid circuit during reverse operation.

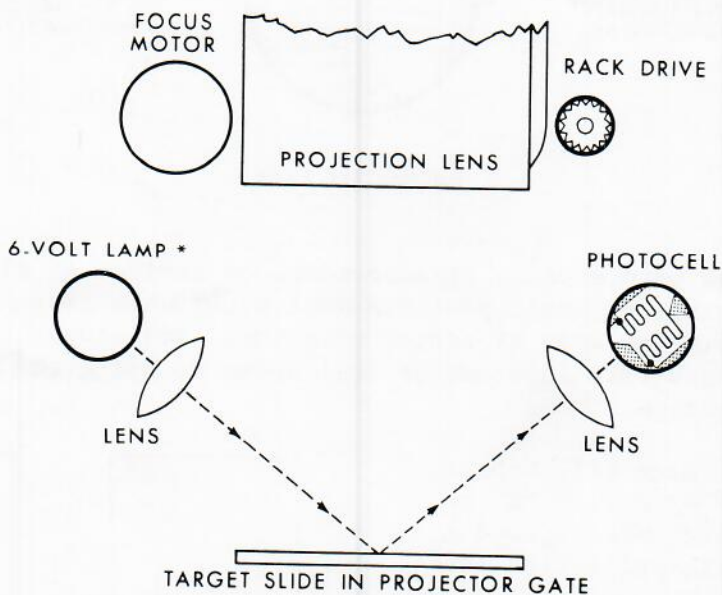


2.4 AUTO-FOCUS

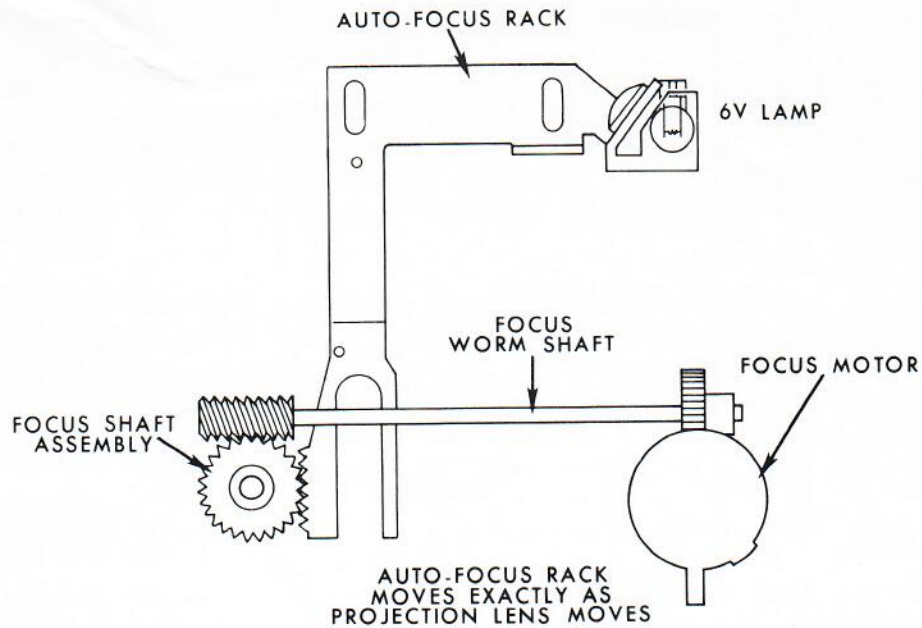
The purpose of the auto-focus feature is to make sure that the front surface of each slide will be same distance from mounting rack of projection lens and, therefore, from lens itself. It will accomplish this whether or not image on screen is in focus, or even when there is no projection lens in projector.

For normal operation, first slide is placed in gate and auto-focus mechanism allowed to position rack relative to the front surface of that slide. The operator then focuses image on screen by moving projection lens with the focus knob on projector, or on 860 and 860H models, with focus knob on projector or button on remote control. Thereafter, each succeeding slide's front surface will be at the same distance from rear of lens. If slides are similar (all glass or all cardboard-mounted, etc), each screen image will be brought into focus, automatically adjusted for reasonable warpage.

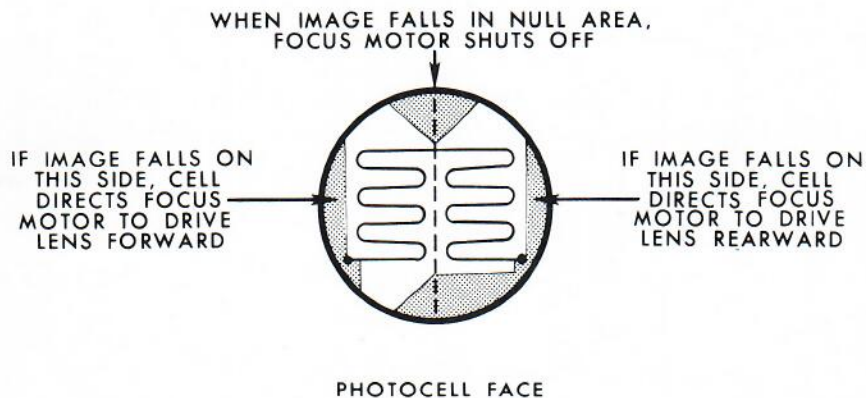
- 2.4.1 Auto-focusing is accomplished by directing the filament image of a 6-volt lamp through a lens and onto the center of a slide in the gate. This image is reflected from the slide through a collecting lens and onto the photocell. The projection lamp does not need to be turned on for the auto-focus to function.
- 2.4.2 The auto-focus rack, with 6-volt lamp, will be driven forward or backward, depending on where light (filament image) strikes the photocell. As rack moves, the image will move toward center of cell. Movement of the auto-focus rack also moves the projection lens through the focus shaft assembly.



*Lamp is actually lower; a mirror brings it to position shown in sketch.

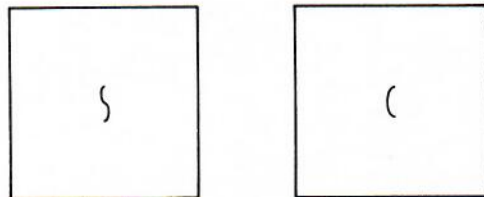


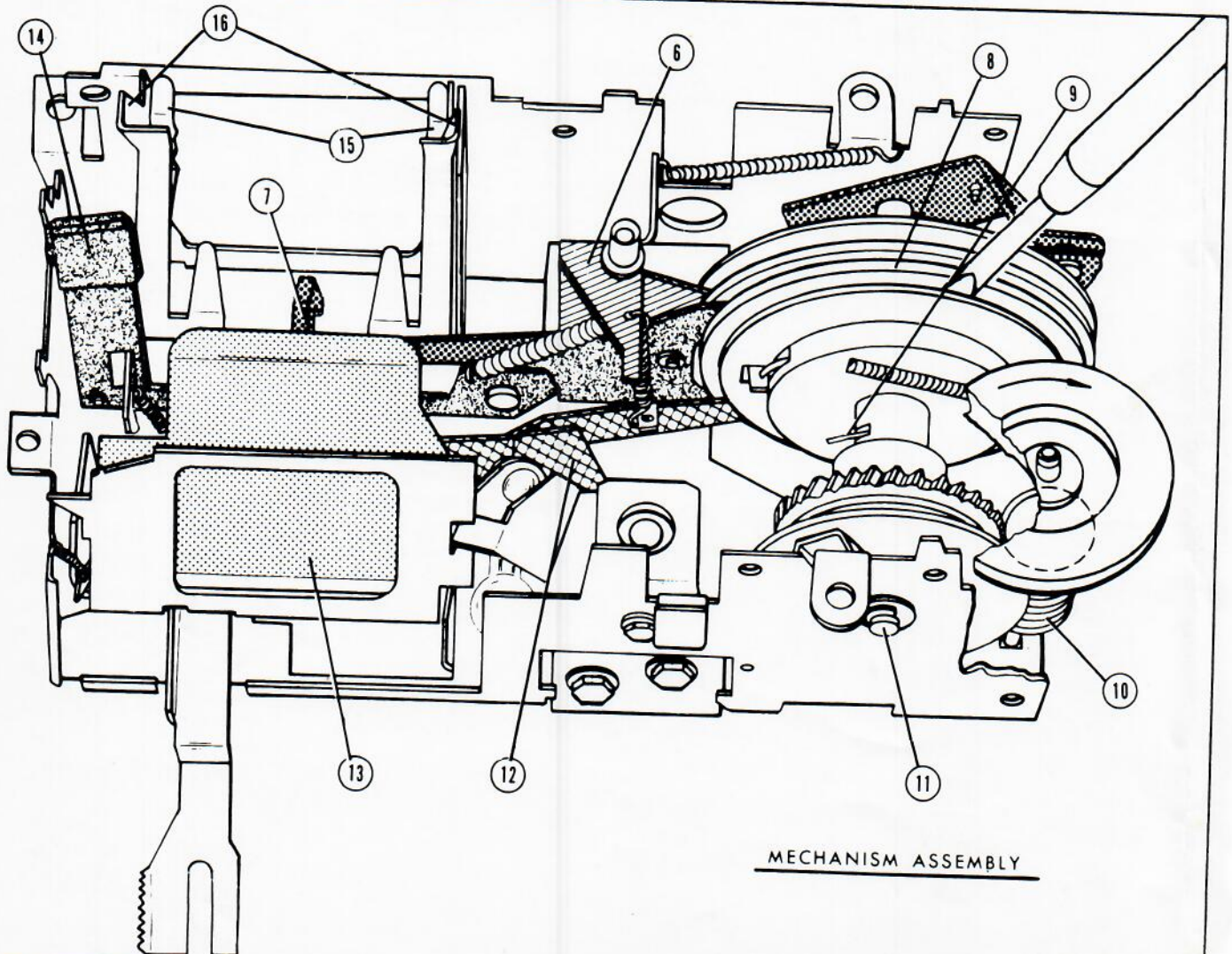
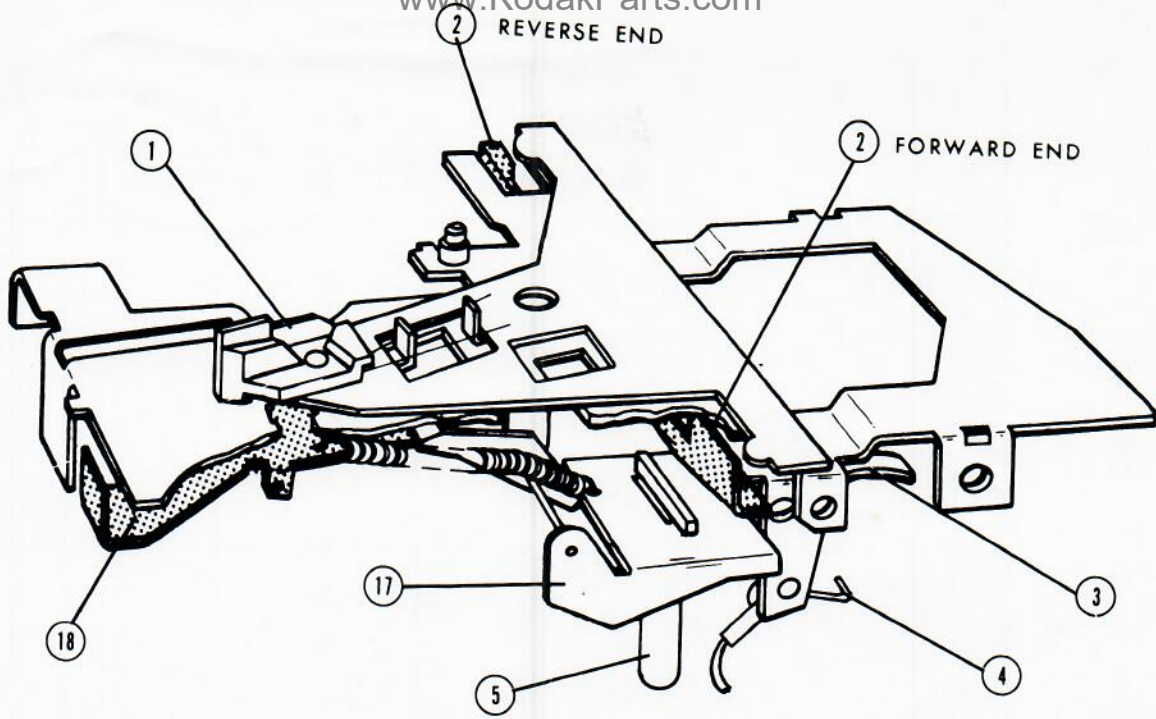
- 2.4.3 Auto-focus rack movement continues until the filament image falls within the center or null area of the photocell.



- 2.4.4 As image moves across cell, it also moves on surface of slide. For proper auto-focus operation, null position must occur when image on slide is within a rather limited area at center of slide. Adjustment therefore consists of positioning 6-volt lamp and/or cell so as to bring the image within tolerance on slide.

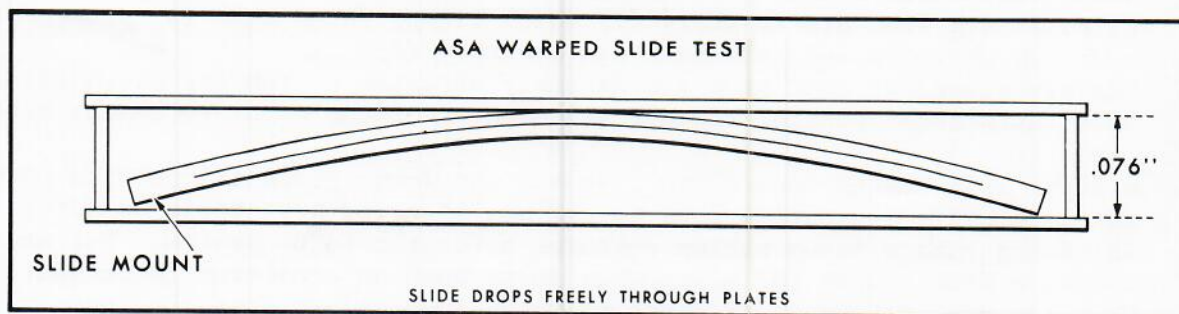
- 2.4.5 The filament image will appear as a flat "S" or a flat "C" on surface of slide when viewed from front with projection lens removed.





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- 2.4.6 In a properly adjusted projector, and after first slide has been focused on the screen, succeeding slides will be brought into focus provided they are not warped more than .076-inch. Slides warped more than .076-inch will cause the reflected filament's image to be beyond the face of the photocell.



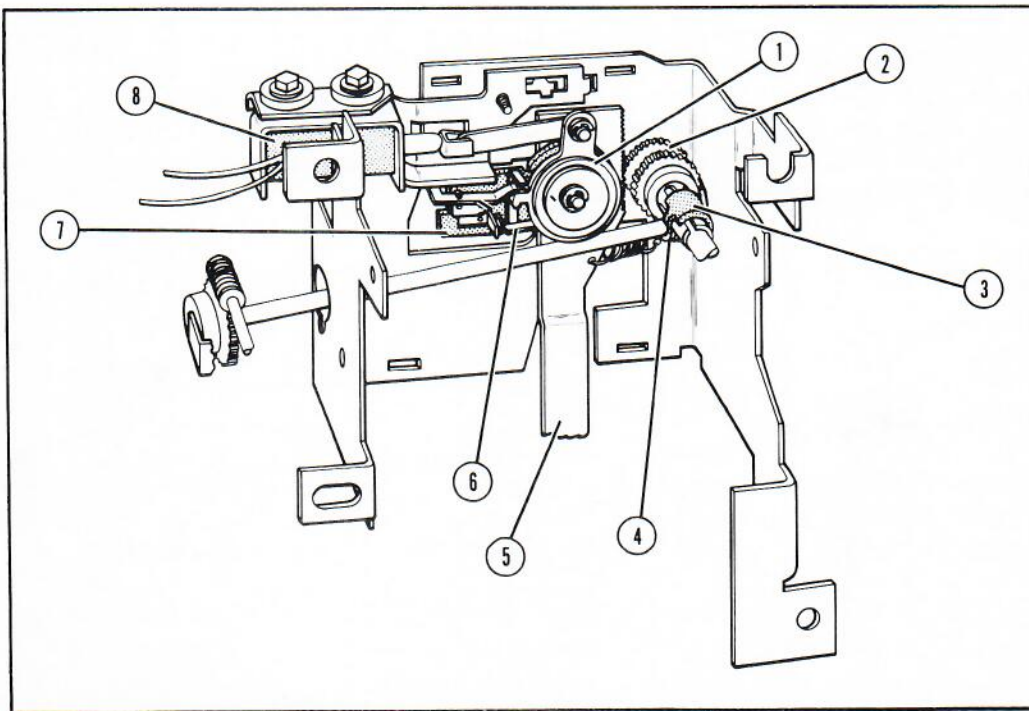
- 2.4.7 Do not mix glass-mounted and cardboard-mounted slides. Reflection is off first surface light source strikes. Glass-mounted slides put reflection surface .030-inch ahead (thickness of one glass panel) of transparency surface of a cardboard-mounted slide.

If first slide is glass-mounted, only glass-mounted slides will be in focus in a mixed tray. If first slide is cardboard-mounted, only cardboard-mounted slides will be in focus in a mixed tray.

2.5 MODELS 860 AND 860H REMOTE FOCUS

2.5.1 Remote focusing on 860 and 860H models is accomplished by the following sequence:

- a. Actuating remote focus button backward or forward causes locking solenoid (8) to pull rack stop arm assembly (1) which clamps focus rack (5) between rack stop arm assembly and rack lock cam assembly (7).
- b. Further travel of rack stop arm assembly actuates switch (6) which disconnects auto-focus control circuit and connects focus motor to remote switch circuit.
- c. A light slip clutch (not shown) between two lower gears (2) permits focus motor to drive projection lens to any position for best focus on screen.
- d. Releasing remote focus button restores automatic focus system. For manual focus, a firm clutch (3) slips when focus knob on projector is turned. The worm gear (4) on cross shaft prevents lower gears from turning.



3.1 REMOVAL OF BASE COVER

- 3.1.1 Turn projector upside down; remove one (1) Phillips head screw visible next to leveling foot. Note that this is a machine screw thread and must be re-placed in the same location.
- 3.1.2 Remove remaining three (3) Phillips head tapping screws. One (1) is visible, No. 2 is hidden by the lamphouse door and No. 3 is hidden by cord compartment door.
- 3.1.3 Remove screw from center of rubber foot and washer on fully retracted elevation leg; guide base cover over elevating knob.
- 3.1.4 In reassembling base cover, make sure all electrical wires are dressed in their proper positions so they will not be pinched by cover.
- 3.1.5 Guide base cover over elevating knob.
- 3.1.6 Replace screws, rubber elevation foot and washer; run elevation up before tightening foot screw.

3.2 REMOVAL AND REPLACEMENT OF THERMAL FUSE ASSEMBLY

- 3.2.1 Models 760H, 850H and 860H:
- 3.2.2 Remove base cover (3.1).
- 3.2.3 Disengage spring clamp for condenser lenses and remove lenses.
- 3.2.4 Remove three (3) 1/4-inch hex head screws. One is directly in front of the lamp opening, the second is in the same piece of metal toward the front of the projector holding the black mask, and the third is toward the outer edge of the projector holding the lens clamp assembly.

NOTE: The two (2) hex head screws closest to the lamp are nickel-plated, while the one farthest away is not plated.

- 3.2.5 Guide the lamp and mirror mount assembly out of the projector, over the two (2) locating lugs in the housing.
- 3.2.6 Remove screw holding thermal fuse assembly to blower cover.
- 3.2.7 Guide fuse assembly out of slot in blower cover and from under edge of casting.
- 3.2.8 Unsolder two (2) leads to switch.
- 3.2.9 Install new thermal fuse assembly.
- 3.2.10 Reassemble in reverse order of disassembly.
- 3.2.11 Models 760, 850 and 860:
- 3.2.12 Remove base cover by removing five (5) Phillips head screws (3.1).

- 3.2.13 Remove the screw holding the burned-out fuse.
- 3.2.14 Lift out fuse and cut leads at sleeving. Remove sleeving and strip wire for 1/2-inch.
- 3.2.15 Cut leads on replacement fuse to approximately 3 inches. Strip wire for 1/2-inch. Join old leads to new leads with wire connectors (part No. 145161).
- 3.2.16 Install new thermal fuse; secure phenolic mounting board with hex head screw.

NOTE: Dress wires and connectors into space between lamphouse door hinge post and rear nameplate. Be sure everything is clear. Try lamp-house door and other moving parts for clearance.

- 3.2.17 Reassemble in reverse order of disassembly.

3.3 REMOVAL OF LAMP AND MIRROR MOUNT BRACKET (MODELS 760H, 850H AND 860H)

- 3.3.1 Remove base cover (3.1).
- 3.3.2 Remove condenser lens and heat-absorbing glass by disengaging the wire clamp from under the hook and swinging it out of the way. Lift the two (2) pieces of glass out of the projector.
- 3.3.3 Remove the lamp by similarly disengaging the wire clamp. As the wire clamp is swung out of the way, the lamp is disengaged from the socket and is lifted free.

CAUTION: Lamp must be cool before removal.

- 3.3.4 Remove the thermal fuse assembly from the blower cover (3.2).
- 3.3.5 Remove four (4) 1/4-inch hex head screws. One is directly in front of the lamp opening, the second is in the same piece of metal toward the front of the projector holding the black mask, the third is toward the outer edge of the projector holding the lens clamp assembly, and the fourth is toward the front of the projector at the mechanism housing.

NOTE: The two (2) hex head screws closest to the lamp are nickel-plated, while the one farthest away is not plated.

- 3.3.6 Guide the lamp and mirror mount assembly out of the projector, over the two (2) locating lugs in the housing.
- 3.3.7 Reassemble in reverse order. Mirror adjustment is covered under Section 4, Adjustments.

3.4 REMOVAL AND REPLACEMENT OF LAMPHOUSE DOOR ASSEMBLY (MODELS 760, 850 AND 860)

- 3.4.1 Remove base cover (3.1).
- 3.4.2 Open lamphouse door, remove three (3) glass lenses. Loosen 1/4-inch hex head screw at pivot of door between switch nameplate (rear) and lamphouse door assembly. Loosen 1/4-inch hex head screw at pivot point near front condenser lens position.

3.4.3 Guide door assembly out as far as wires will allow, disconnect wires and remove door.

3.4.4 Reassemble in reverse order. Lenses will fit only in their proper locations (see Illustration 1.2.3).

3.5 REMOVAL OF MAIN DRIVE MOTOR

3.5.1 Remove base cover (3.1).

3.5.2 Remove three (3) 1/4-inch hex head mounting screws.

3.5.3 Disengage fan belt and worm pulley belt as motor is lifted out of projector housing.

3.5.4 Electrically disconnect motor by removing all *WIRE-NUTS* securing motor wires.

3.5.5 To reassemble, worm pulley belt should be positioned first, then fan belt.

NOTE: Take care not to nick or cut belts as this will cause belts to tear.

3.6 FAN REPLACEMENT AND/OR FAN BELT REPLACEMENT

3.6.1 Remove base cover (3.1).

3.6.2 Remove timer lever. (Models 850, 850H, 860 and 860H)

- a. Remove paper tie from wires secured to frame of mechanism assembly near cam shaft.
- b. Remove "E" ring from brass pivot.
- c. Lift timer lever off pivot, disengage from lug on end of timer contact arm and finally disengage from timer link.

3.6.3 Remove thermal fuse (3.2). (Models 760H, 850H and 860H)

3.6.4 Remove four (4) 1/4-inch hex head screws from blower housing cover, then remove paper baffle and cover. If anchor foot for plastic grille interferes, snap it back out of the way.

3.6.5 Remove plastic fan cap, "E" ring, spring, washer, fan bushing; next disengage fan belt and remove fan. This leaves a plain washer and a cork washer on fan shaft.

3.6.6 Loosen three (3) hex head mounting screws holding main drive motor, lift motor and remove belt.

3.6.7 To reassemble, place belt over fan shaft; then lubricate shaft with Plastilube #1.

3.6.8 Place fan over shaft; then fill its cavity with Plastilube #1.

3.6.9 Reassemble remaining fan mounting parts.

3.6.10 Position belt on fan pulley, lift motor, stretch belt and position around motor pulley, reposition motor and tighten motor mounting screws.

NOTE: Fan belt must be placed on fan pulley first, then motor pulley. Otherwise, belt may be nicked or cut when stretched past upper blower baffle cover.

3.6.11 Replace blower housing cover, paper baffle, timer lever, redress wires with a wire tie and finally replace base cover.

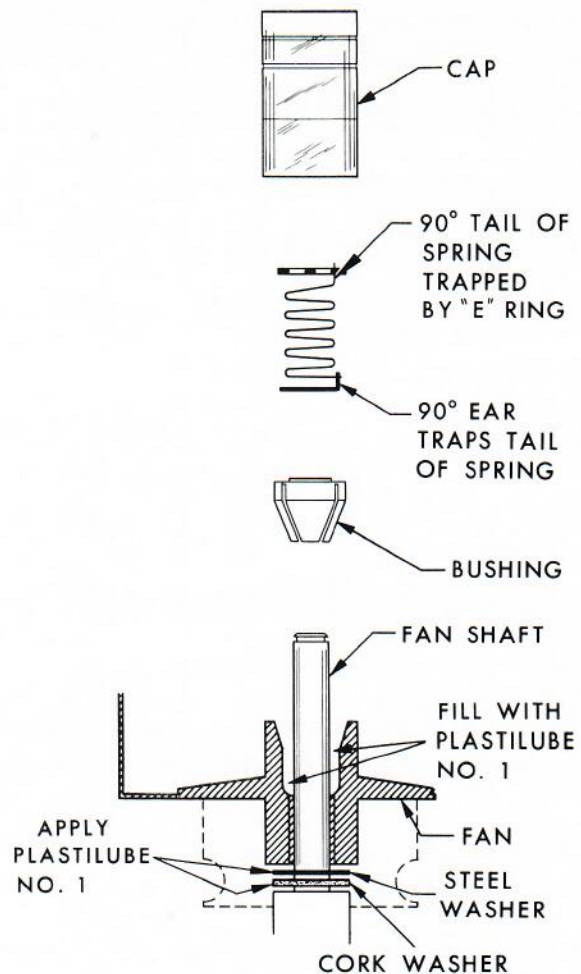
3.7 REMOVAL OF GRILLE ASSEMBLY

3.7.1 Remove base cover, thermal fuse (Models 760H, 850H and 860H only), and blower housing cover (3.1, 3.2 and 3.6.4).

3.7.2 Remove 1/4-inch hex head screw from timer knob and timing lever link. Remove flat beryllium spring from under timing lever link.

3.7.3 In Models 760, 850 and 860 having fuse, remove 1/4-inch hex head screw from fuse board.

3.7.4 Unsolder leads from lamp socket and dropping resistor; remove *WIRE-NUTS* which connect grille leads to leads of other components.



- 3.7.5 The grille is held in position by six (6) bosses that snap into openings in projector housing. The grille may be removed by applying pressure to the bosses with a flat-blade screwdriver. Pull out on grille until two (2) Phillips head screws retaining plug receptacle are exposed. Remove screws and finish pulling grille from housing.
- 3.7.6 In replacing grille assembly, dress the sleeve so as to give as much room as possible toward junction with *WIRE-NUTS*; resolder lamp wires and be sure all wire is secured.
- 3.7.7 Replace fuse, timer assembly, blower housing cover and base cover.
- 3.8 REMOVAL OF MECHANISM ASSEMBLY AND LENS MOUNT ASSEMBLY
- 3.8.1 Remove focus knob by pulling straight off.
- 3.8.2 Turn projector upside down and remove base cover and blower housing (3.1 and 3.6.4), also remove thermal fuse assembly (3.2) on Models 760H, 850H and 860H; lamphouse door assembly need not be removed on Models 760, 850 and 860.
- 3.8.3 Remove main drive motor (3.5) without disconnecting its 110-volt leads.
- NOTE: When replacing motor, belt from mechanism is driven by pulley closer to motor and belt from fan is driven by other pulley.
- 3.8.4 Disconnect low voltage system leading to mechanism assembly, focus motor, component board, and on 860 and 860H Models, remote focus switch.
- 3.8.5 Remove cord compartment wall and elevation assembly (four (4) 1/4-inch hex head screws), and swing out to side of housing on 860 and 860H Models; remove remote focus solenoid [two (2) 1/4-inch hex head screws].
- 3.8.6 Remove spring hooked between auto-focus rack and lens mount.
- 3.8.7 Remove six (6) 1/4-inch hex head screws holding lens mount and mechanism assemblies.
- 3.8.8 Grasp lens mount and mechanism assemblies with both hands and carefully lift out of housing. After removal from housing, very carefully separate assemblies.
- NOTE: It is possible to operate mechanism assembly by hand, duplicating all the functions of the projector related to cycling.
- 3.8.9 In reassembling, nest lens mount and mechanism assemblies together, then locate both in housing. Make sure that the auto-focus rack properly engages the lower focus shaft gear.
- 3.8.10 Reassemble balance of components in reverse order of disassembly.
- NOTE: Do not forget "Select" button and "Forward and Reverse" buttons. Position both before locating lens mount and mechanism assemblies.

3.9 DISASSEMBLY OF LENS MOUNT ASSEMBLY

- 3.9.1 Remove lens mount assembly (3.8).
- 3.9.2 Remove focus motor.
 - a. Remove two (2) Phillips head screws which secure motor to motor bracket.
 - b. When reassembling motor, position ear on end bell in recess in bracket and replace screws.
- 3.9.3 Remove lower lens barrel rails by grasping tines of rail with thumb and forefinger, squeeze together and push out.
- 3.9.4 Remove upper lens barrel rails by first removing two (2) lens rail springs, then remove rails as in 3.9.3.
- 3.9.5 Built-in forward and reverse switch may be removed by removing 1/4-inch hex head screw and disengaging tabs from slot.
- 3.9.6 Remove focus shaft by disengaging focus shaft spring and then tip and pull from square bearing hole.
- 3.9.7 Remove focus motor bracket [three (3) 1/4-inch hex head screws through rubber grommets] and then the focus worm shaft assembly.
- 3.9.8 Reassemble components of lens mount assembly in reverse order.

3.10 DISASSEMBLY OF MECHANISM ASSEMBLY

- 3.10.1 Remove mechanism assembly (3.8).
- 3.10.2 Remove six (6) 1/4-inch hex head screws and disconnect direction lever spring; then carefully lift off top plate assembly.
- 3.10.3 Remove one (1) 1/4-inch hex head screw and slide solenoid mount assembly out of mechanism assembly.
- 3.10.4 Cam shaft assembly. Remove two (2) bronze bearings from ends of cam shaft [one (1) "E" ring and one (1) "C" ring]. Remove spring between index lever and mechanism frame, disconnect spring between slide lever and mechanism frame, then remove timer contact spacer in Models 850, 850H, 860, and 860H.
- 3.10.5 Remove slide lever bracket [two (2) 1/4-inch hex head screws] and slide lever with its spring; then spread sides of mechanism assembly frame and lift out cam shaft.

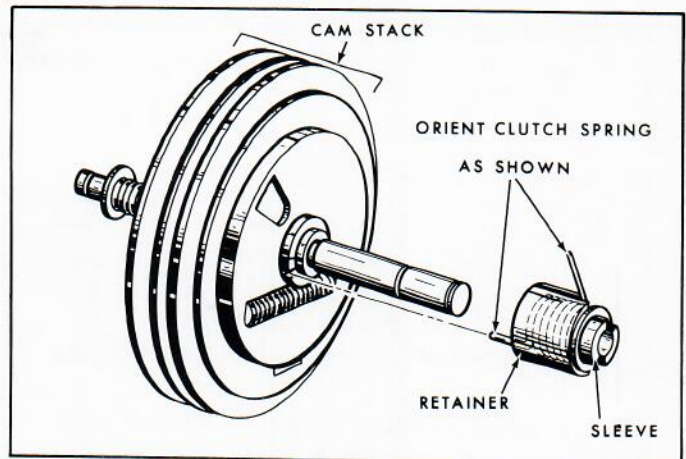
3.11 DISASSEMBLY OF CAM SHAFT

3.11 REMOVE: Cam Shaft (see sec. 3.10).

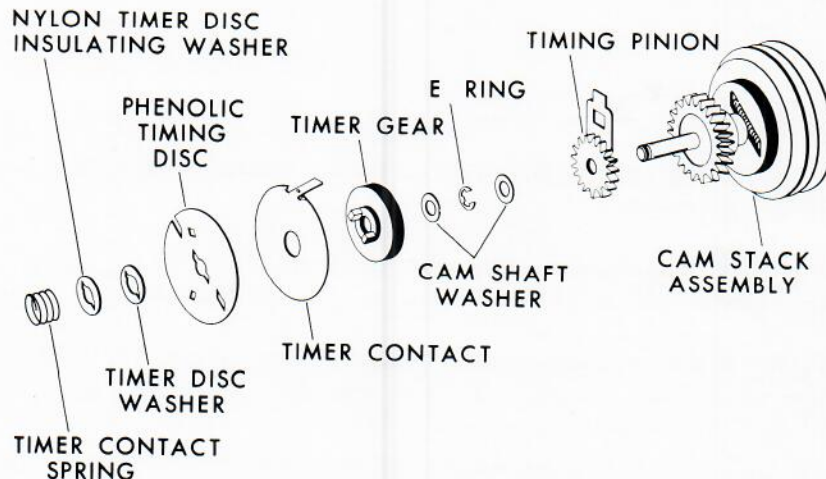
3.11.2 Remove components:

- a. "E" ring, washer, worm gear, clutch spring retainer, clutch spring and sleeve.
- b. Replace any defective parts and lubricate clutch spring shaft and sleeve.
- c. Reassemble in reverse order.

NOTE: Clutch spring must be assembled as shown for correct timing.



3.12 AUTOMATIC TIMER (MODELS 850, 850H 860 AND 860H)



The parts comprising the timer are mounted on the cam shaft as shown, but are not part of the cam shaft assembly. The phenolic timer disc may become torn or the timer contact disc tab broken; otherwise, no replacements are likely.

3.13 WORM PULLEY REPLACEMENT AND/OR MECHANISM BELT REPLACEMENT

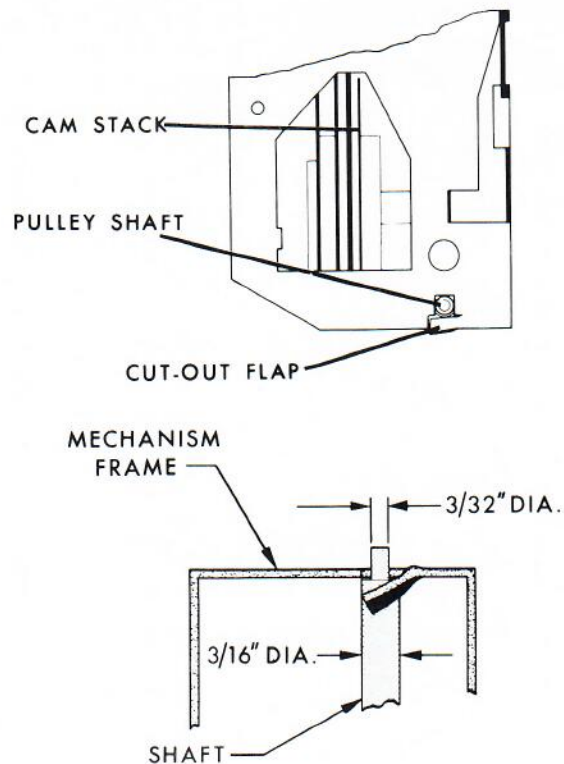
3.13.1 Remove base cover (3.1) and main drive motor (3.5). Lift motor out and set aside without disconnecting wires.

3.13.2 Bend flap of mechanism frame down to release shaft.

3.13.3 Lift out entire shaft and worm pulley. Replace worm pulley, lubricate shaft with light coat of Plastilube #1, replace mechanism belt and reassemble.

NOTE: Bend flap in mechanism frame slowly and easily so it will not break off.

3.13.4 When repositioning shaft, make sure that flap presses against 3/16-inch diameter with enough force to keep shaft from rotating. Worm pulley rotates on shaft.



3.14 REMOVAL OF SLIDE LEVER RAMP

3.14.1 Remove the retaining rivet by any suitable means (hand file, punch or small electric grinder.)

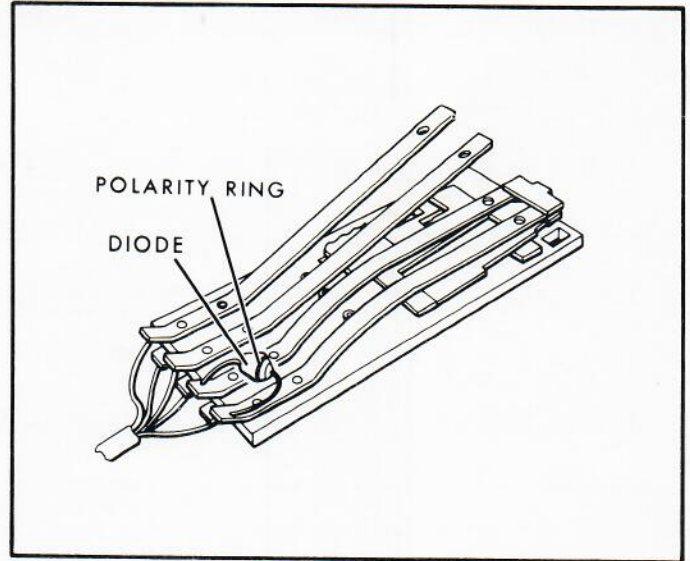
NOTE: In all instances, be sure not to bend the slide lever and keep the filings and grindings out of the mechanism.

3.14.2 When replacing the new ramp, insert the screw (part No. 171244), through the ramp and drive the screw into the metal. Be sure the screw is fully seated.

3.15 DISASSEMBLY OF REMOTE CONTROL

- 3.15.1 Remove three (3) Phillips head screws and lift half of switch housing.
- 3.15.2 Remove cycle button and focus lever (focus lever on Models 860 and 860H only).
- 3.15.3 Disengage remote cord from switch housing and lift out cord with contact assembly attached.
- 3.14.4 Diode may be removed in 860 and 860H Models by unsoldering leads.

NOTE: Observe polarity of diode when removing, and replace new diode in same direction.



3.16 REMOVAL OF CARRYING HANDLE AND FRONT NAMEPLATE

- 3.16.1 Remove base cover (3.1).
- 3.16.2 Remove compartment wall with elevating knob assembly by removing the four (4) 1/4-inch hex head screws.
- 3.16.3 Remove handle, handle bracket and nameplate by knocking out two (2) knurled pins in handle with a 1/16-inch punch.
- 3.16.4 Replace nameplate or handle as necessary. If bracket does not hold nameplate in tightly, bend fingers of bracket as required.

3.17 REMOVAL OF COMPONENT BOARD ASSEMBLY

- 3.17.1 Remove base cover (3.1).
- 3.17.2 Disconnect component board wiring and remove compartment wall (3.8.4 and 3.8.5).
- 3.17.3 Remove component board cover by forming two (2) tabs so they will pass through slots in compartment wall.
- 3.17.4 Form tab on cover so component board may be unlocked from cover.
- 3.17.5 Disconnect electrical leads (*WIRE-NUTS*) and remove cell (3.20).

3.18 REMOVAL OF REMOTE FOCUSING SOLENOID IN MODELS 860 AND 860H

- 3.18.1 Remove base cover (3.1).
- 3.18.2 Remove component board assembly (3.16). Cell does not have to be removed.

3.18.3 Unsolder the two (2) leads from component board to solenoid.

NOTE: Use minimum amount of heat to unsolder leads from circuit board; excess heat may damage board and other printed circuitry.

3.18.4 Remove solenoid by removing two (2) screws.

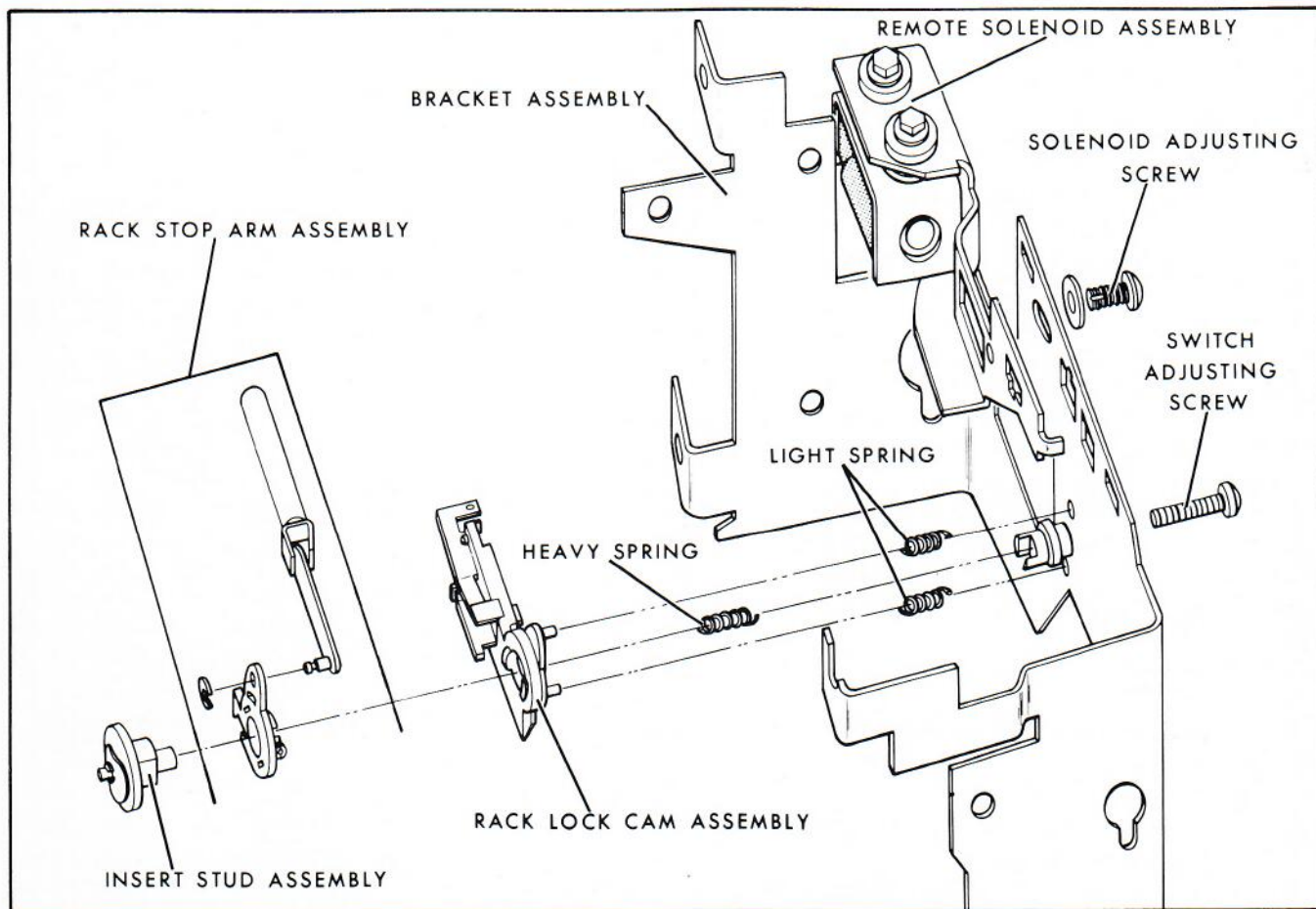
3.18.5 Reassemble in reverse order of disassembly.

3.19 REMOVAL OF REMOTE FOCUSING SWITCH IN MODELS 860 AND 860H

3.19.1 Remove base cover assembly (3.1).

3.19.2 Remove main projection lens.

3.19.3 Unsolder three (3) leads to switch.



3.19.4 Break cement seal and remove adjusting screw holding switch to lens mount housing.

3.19.5 Reassemble switch components as shown in illustration.

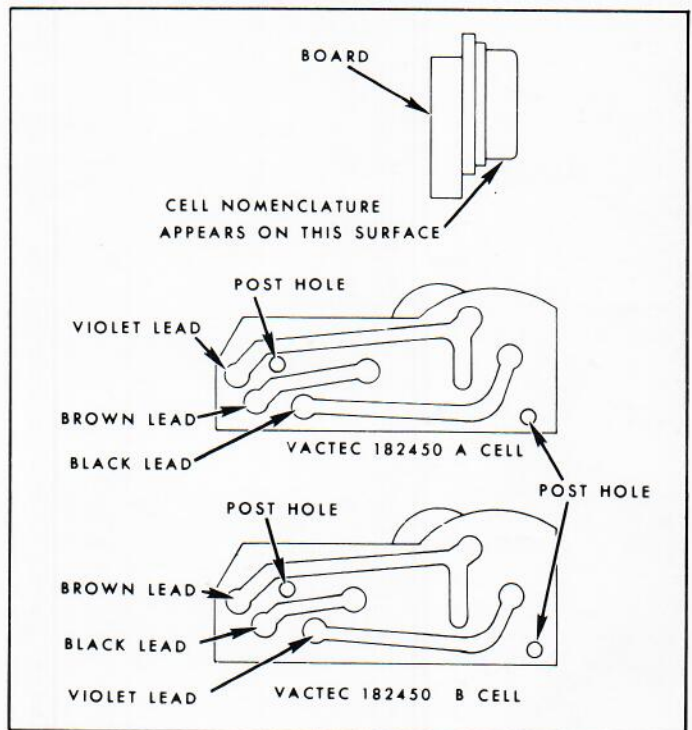
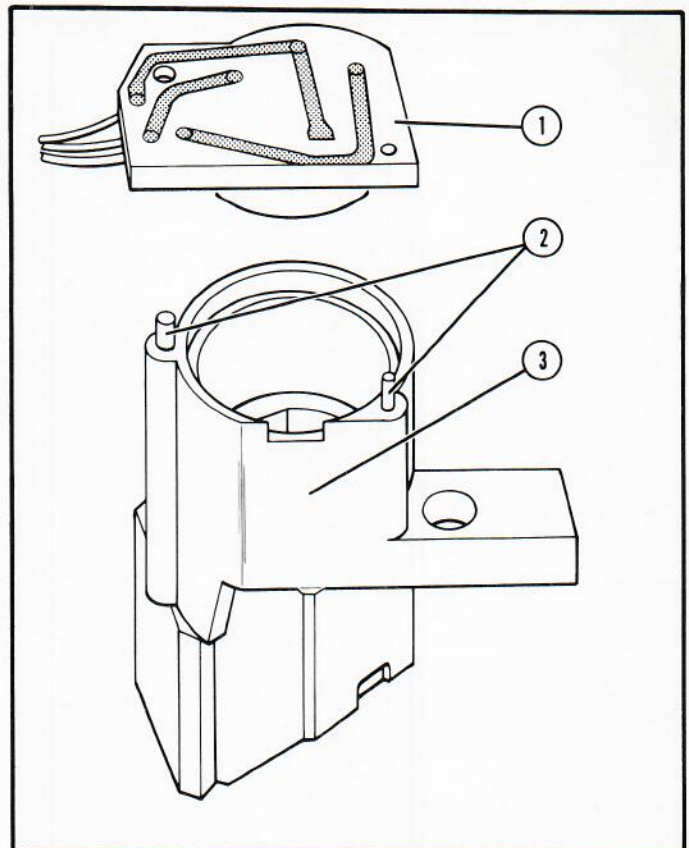
3.20 REMOVAL AND INSTALLATION OF PHOTOCELL ASSEMBLY

- 3.20.1 Remove base cover (3.1).
- 3.20.2 Remove the cell circuit board and cell (1) by applying heat from a fine tipped soldering iron to the two polystyrene posts (2) which fasten the circuit board to the black plastic cell housing. When the plastic flows, lift the cell from its housing (3).
- 3.20.3 Unsolder the three wires which are attached to the circuit board.
- 3.20.4 Reassemble in the reverse order.

NOTE: If there is not sufficient post (2) material to heat-seal the circuit board, replace the cell housing (remove one Phillips head screw).

- 3.20.5 When replacing the cell circuit board (part No. 182450) check the cell number and letter, which appear on the outside diameter of the cell housing (see illustration). There are two cell board assemblies: "A" and "B" which look alike but must be wired differently. Failure to wire as illustrated (i.e., "A" cell wired like "B" cell or vice versa) will cause the focus motor to drive continuously.

NOTE: When installing a new photocell or cell housing, align the cell following the procedure in 4.6.



3.21 REMOVAL OF LEVELING FOOT ASSEMBLY

3.21.1 Remove base cover (3.1).

3.21.2 Grasp leveling foot and unscrew past the bind until removed. If the plastic knob is broken, use pliers to grasp leveling foot.

3.21.3 Install new leveling foot.

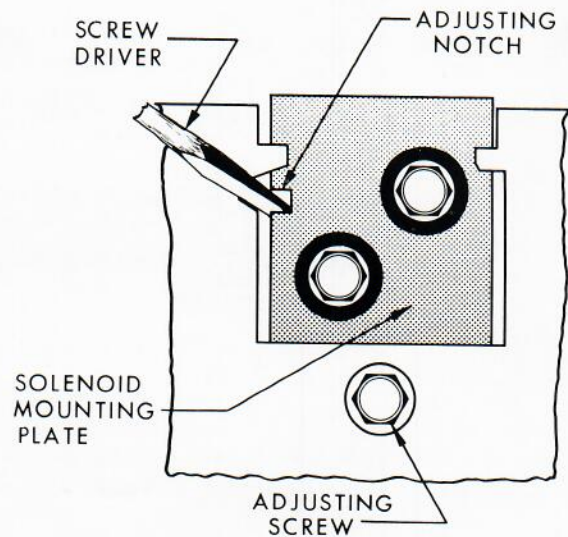
3.21.4 Crimp the top three (3) or four (4) threads perpendicular to the thread using a pair of diagonal cutters.

3.21.5 Replace base cover.

4.1 CYCLE SOLENOID

- 4.1.1 Solenoid should operate without chattering.
- 4.1.2 To adjust for minimum noise, loosen adjusting screw slightly, insert screwdriver into notch, and raise or lower solenoid mount as necessary. Tighten screw. If solenoid stroke is too short, reverse cycle will not work.

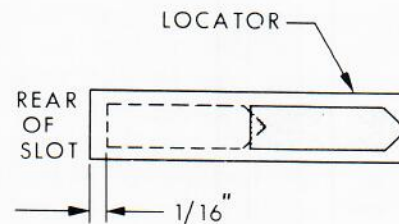
NOTE: This adjustment may be done with only the base cover removed.



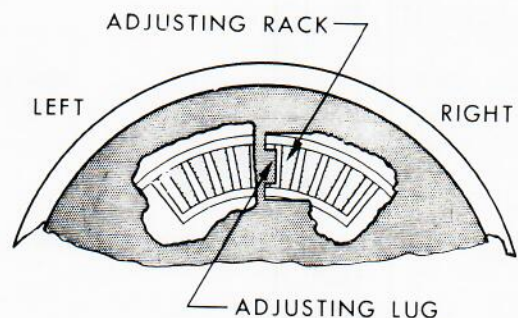
4.2 LOCATOR LEVER

- 4.2.1 Locator should withdraw from lugs of slide tray and stop within 1/16-inch of, but not touching, rear of slot in the mechanism frame.

When locator moves again, any movement to rear indicates that the cam is "out of time".



- 4.2.2 Erratic or jerky movement of the slide tray is an indication that the cam shaft is "out of time".
- 4.2.3 Disengage clutch spring from contact. Rotate cam shaft with thumb, so top moves toward main motor until the cam has rotated approximately 180°.
- 4.2.4 Insert screwdriver in cam shaft and spread spacer and cam as indicated in Mechanism Assembly drawing.

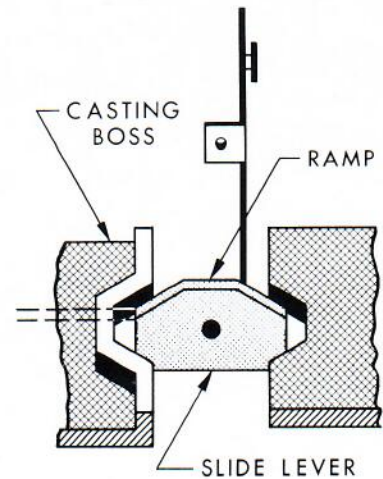


- 4.2.5 Adjusting lug will probably be found in or near center of adjusting rack.
- 4.2.6 Moving lug to the left (toward motor) will cause locator to move closer to rear of slot.

NOTE: This adjustment must be done with base cover removed.

4.3 SLIDE LEVER

- 4.3.1 Slide lever must raise slides fully into tray so tray may rotate to the next slide. It must not raise slide so high that tray is raised by slide going into its compartment.
- 4.3.2 Loosen the inner screw on slide lever bracket, and with a small adjustable wrench, grasp bracket and move it to change pivot location of slide lever. Tighten screw.



- 4.3.3 This adjustment may be made with mechanism in projector housing and only base cover removed. Turn projector over and observe ramp of slide lever; at half-cycle position, its lower shoulder should be roughly level with surrounding casting boss of projector.

4.4 STRAY OR BACKGROUND LIGHT

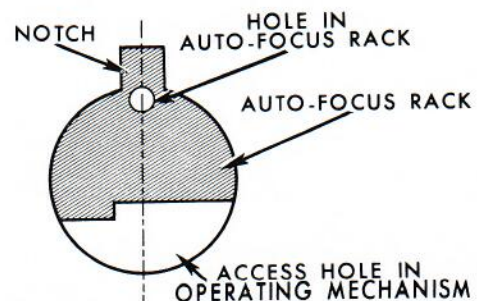
- 4.4.1 Front condenser lens is unsymmetrical (very slightly - look for it). The front condenser lens in some older and other models of the *KODAK CAROUSEL* Projectors is symmetrical. If the front condenser lens is in backward, it can cause "focus drift". The FLATTER side of the front condenser lens should be toward the gate and the other more convex side, toward the lamp. The rear condenser lens and heat-absorbing glass in Models 760, 850 and 860 remain the same as illustrated (1.2.3).
- 4.4.2 Do not attempt to use the earlier style front condenser lens. Use of the current style front condenser lens, either coated or uncoated, will give satisfactory results.
- 4.4.3 Early models (850 only) may not have all required baffles - replace lamp-house door (see 3.4).

4.5 NULL ADJUSTMENT

- 4.5.1 Remove base cover (3.1) and projection lens.
- 4.5.2 Plug projector into a normal 110-120 voltage supply; turn projector upside down.

WARNING: DANGEROUS VOLTAGE

- 4.5.3 With projector switch on "Fan" and a glass slide in projector gate, observe action of auto-focus rack as you move the slide forward and backward in gate. Each time slide is "at rest" or in a projection position, small hole in auto-focus rack should line up in center of access hole and notch in mechanism frame. This is the "Null Alignment".

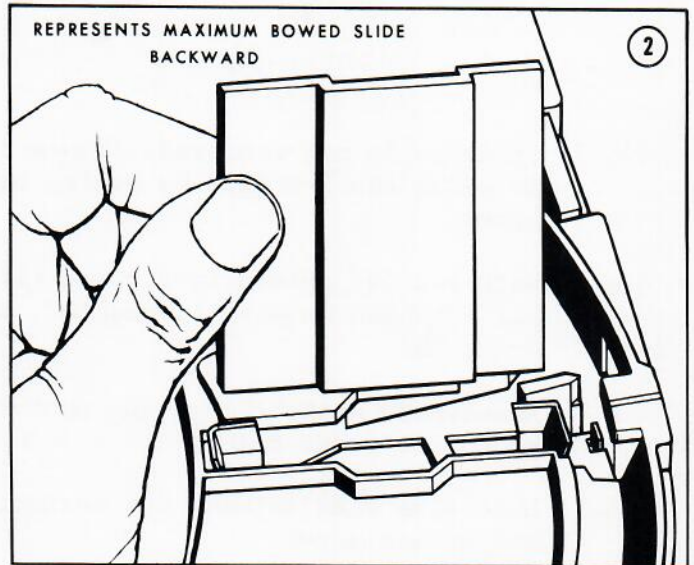
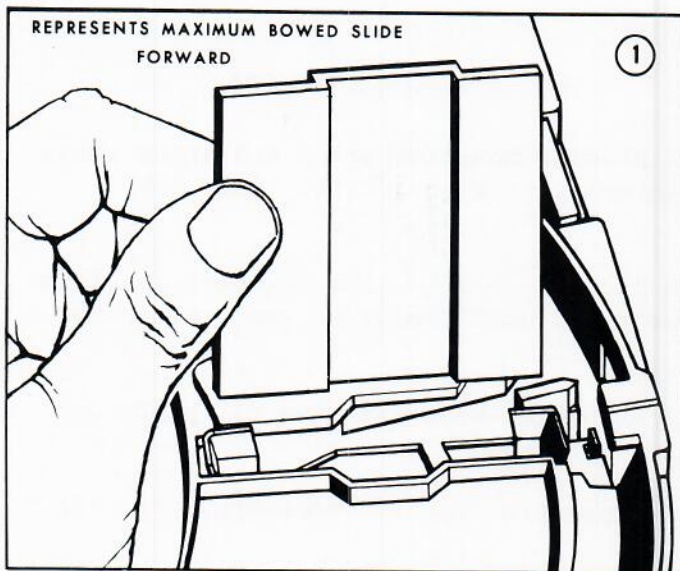


NULL ADJUSTMENT

- 4.5.4 If it does not line up, proceed with null adjustment, loosen cell housing screw and move cell housing in or out for correct null. Tighten screw and cement screw head to cell housing.

NOTE: Correct null adjustment will fix most projectors that lens drives in or out continuously with a slide in the gate.

- 4.5.5 Check accuracy of the null position by inserting the Tool #TL1744 in the gate as shown in illustration No. 1 below and allow the focus motor time to drive the lens forward. Reverse the tool as shown in illustration No. 2 and allow the focus motor to drive the lens backward.

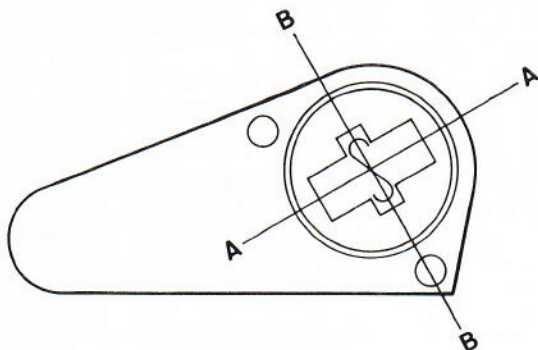


- 4.5.6 If the focus motor does not come to a stop with the tool in the gate in either of the directions, the null position requires further adjustment. If the focus motor fails to stop in the forward direction, be sure the rack is not being stopped by the shutter pin.

4.6 CELL ALIGNMENT

- 4.6.1 Place a glass-metal-mounted slide in gate. (It may be Tool #TL1298 mounted as currently supplied.)
- 4.6.2 Check to see that null position of the auto-focus rack is as pictured in null adjustment section (4.5).
- 4.6.3 Disconnect focus motor.
- 4.6.4 Remove filter and mask.
- 4.6.5 Position Cell Adjusting Tool #TL1297 over posts of cell housing or use fan cap (part No. 172115) placed in cell housing (closed end in).

- 4.6.6 After making sure auto-focus is in proper null position, "S" or "C" image should fall as pictured when using Tool #TL1297, or centered on center dot when using fan cap.



TOOL #TL1297



FAN CAP

- 4.6.7 If image is not centered, loosen cell housing mounting screw and bring image in along the B-B axis by moving cell housing back and forth. Snug down screw.
- 4.6.8 With two (2) screwdrivers, one (1) in back of cell housing for support, form ear on which housing is mounted, up or down, until image is centered in the A-A axis.
- 4.6.9 Reassemble mask, filter and photocell assembly: heat-seal two (2) posts and reconnect focus motor.
- 4.6.10 Make fine readjustment for correct null positioning, if necessary. Tighten and cement screw.

NOTE: This adjustment (4.6) is necessary if new cell or cell housing is installed. This may also be necessary if cell housing tab has been deformed.

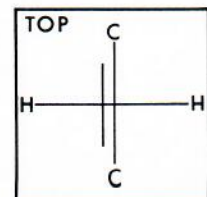
4.7 TARGET SLIDE ADJUSTMENT

NOTE: This entire adjustment (4.7) should not be performed unless a new rack assembly is installed in an old mechanism. This is a factory adjustment and should not be disturbed.

- 4.7.1 Place projector on bench upside down, remove base cover, place switch in "Fan" position, disconnect focus motor; plug projector into normal 110-120 voltage supply.

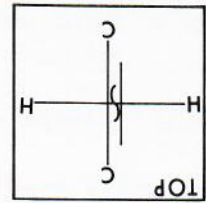
WARNING: DANGEROUS VOLTAGE

- 4.7.2 Insert glass-mounted target slide, Tool #TL1298, into gate. "Top" indicates top of projector when projector is right side up. Lock rack in null position.



TOOL #TL1298

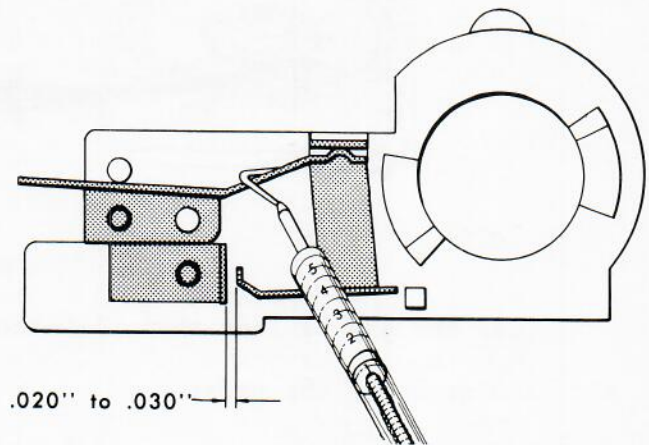
- 4.7.3 Looking through the empty projection lens opening in the projector, the 6-volt lamp filament image should fall on the target slide as pictured.



- 4.7.4 The short line denotes a tolerance of .050-inch. Images should fall within this tolerance, or an additional .050-inch, and be equally spaced above and below horizontal line H-H, as illustrated.
- 4.7.5 If it does not appear as illustrated, it can be brought into alignment by forming the lamp mounting end of the auto-focus rack.
- 4.7.6 Focus rack may be adjusted with Tool #TL1299 (revised) by reaching through opening in mechanism base plate near 6-volt lamp.
- 4.7.7 The null adjustment may be relaxed to aid in engaging tool to auto-focus rack. Once engaged, and while re-forming, null adjustment must be mechanically maintained by inserting a pointed tool into hole in rack and locked into notch in plate. Form (bend) rack as necessary to obtain correct alignment. To disengage tool, relax null adjustment again. Remember to check null position after performing this procedure.

4.8 SWITCH ADJUSTMENT FOR AUTO-FOCUS MODE OF 860 AND 860H MODELS

- 4.8.1 Remove switch (3.18), if normally closed contact is not providing a reliable circuit for auto-focus.
- 4.8.2 Check switch for proper contact settings.
- Normally closed contacts should break between 1 1/2 oz to 4 oz
 - Normally open gap between contacts should be between .020-inch and .030-inch.
- 4.8.3 Reassemble adjusted switch.



4.9 SWITCH AND SOLENOID ADJUSTMENTS FOR REMOTE FOCUS MODE OF 860 AND 860H MODELS

- 4.9.1 Projector should be plugged into normal 110-120-volt line, and remote control cord plugged into projector.
- 4.9.2 Loosen solenoid adjusting screw. Place flat-blade screwdriver into slot, and move solenoid bracket back and forth until it just operates switch in both directions while actuating remote switch back and forth (focus motor operates). Now move bracket toward solenoid the thickness of the tab that protrudes through the lens mount plate.
- 4.9.3 Tighten solenoid adjusting screw to lock solenoid bracket in position.

4.9.4 Turn switch adjusting screw until focus rack just slips when actuated in either direction. Tighten screw 1/4 turn.

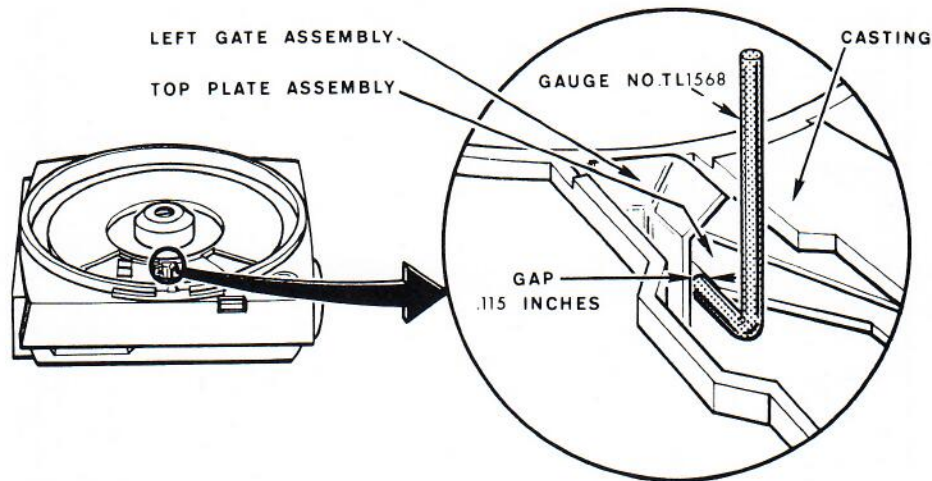
4.9.5 Cement both adjusting screw heads to lock in position.

4.10 GATE ALIGNMENT

4.10.1 Remove the slide tray and any slide left in the projector gate.

4.10.2 Check the gap between the LEFT GATE ASSEMBLY and the edge of the TOP PLATE ASSEMBLY of the mechanism, with gauge (#TL1568). The diameter of this tool is .115-inch. The tool should just pass through the gap. Clearance should not be excessive.

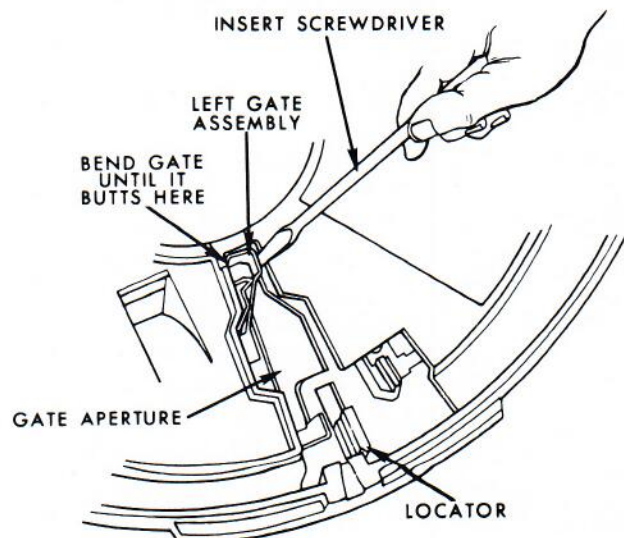
NOTE: Make sure the measurement is checked between the shiny, plated portion of the GATE ASSEMBLY and the gray sheet-metal TOP PLATE of the internal projector mechanism. Avoid measuring to either the main cast housing of the projector, or the black baffle, which is attached to the GATE ASSEMBLY of auto-focus models.



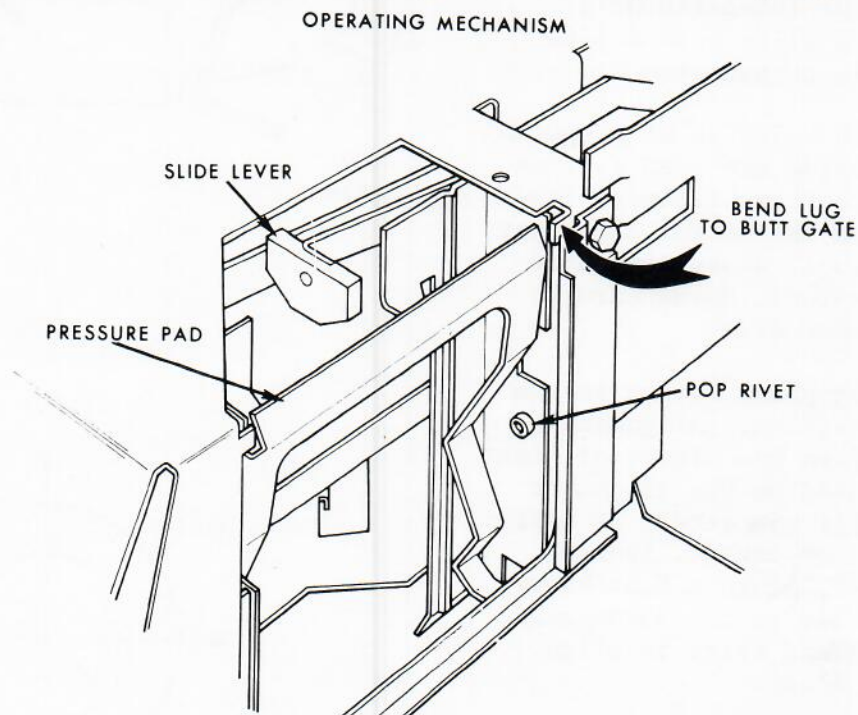
If the gap is less than .115-inch, follow steps 4.10.3 through 4.10.8.

4.10.3 Disconnect the power cord.

4.10.4 Insert a flat-blade screwdriver between the front edge of the LEFT GATE ASSEMBLY and the top of the main projector housing, as shown. Move the screwdriver handle toward the front of the projector to pry the top of the GATE ASSEMBLY toward the rear of the projector. Pry the assembly until it touches the housing casting at the point indicated in the diagram. The prying action will cause the GATE ASSEMBLY to pivot on the RIVET. When the screwdriver is withdrawn, the GATE ASSEMBLY will spring back slightly.



- 4.10.5 Check to see that the gap between the LEFT GATE ASSEMBLY and the TOP PLATE ASSEMBLY is at least .115-inch. If it is not, repeat 4.10.4 and check again.
- 4.10.6 Turn the projector upside down, open the lamphouse door, and remove the front condenser lens and the heat-absorbing glass. Locate the LUG (indicated by the heavy arrow immediately to the right of the cover assembly lip as you look toward the front of the projector). Bend the LUG in the direction shown by the arrow, until it just touches the GATE ASSEMBLY. This can be accomplished by placing the end of a screwdriver against the LUG and tapping the handle lightly with a small hammer. It will guard against the GATE ASSEMBLY slipping out of alignment again.



NOTE: Auto-focus projectors have a black shield covering most of the LUG; however, enough of the LUG is exposed to permit bending as described.

- 4.10.7 Replace the heat-absorbing glass and the front condenser lens.
- 4.10.8 Close and lock the lamphouse cover.

4.11 MIRROR ALIGNMENT

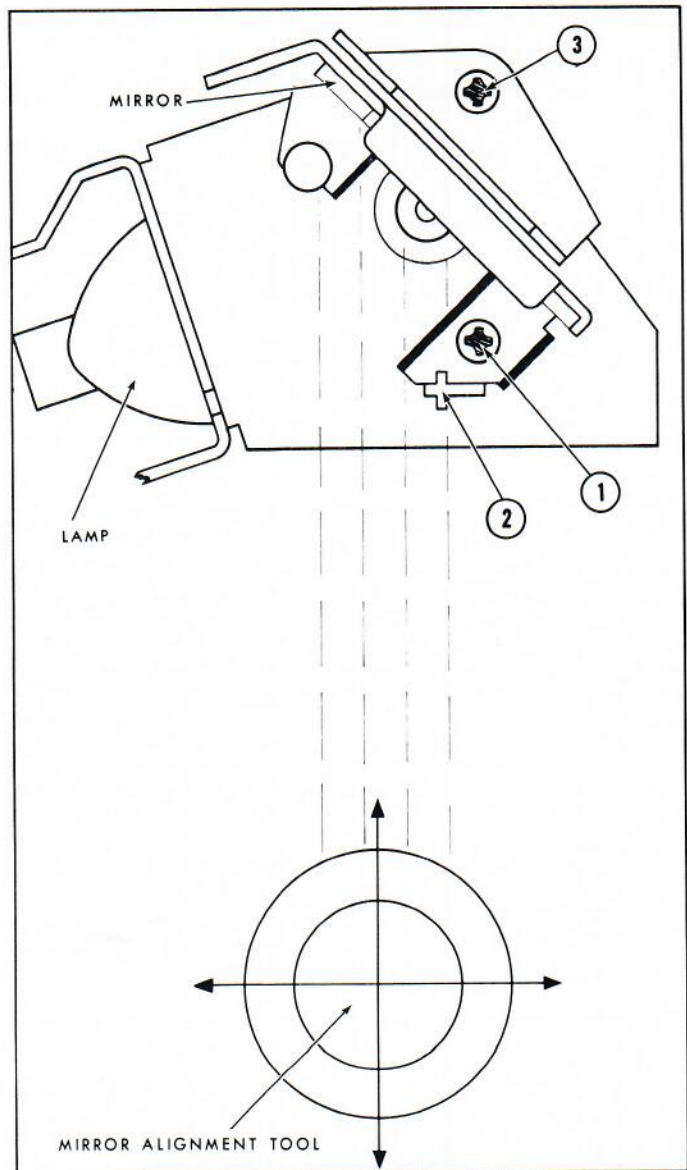
- 4.11.1 Remove projection lens and replace with mirror alignment lens (Tool #TL1759).
- 4.11.2 Plug the projector into a variable voltage source (*VARIAC*) set at 40 volts ac. If you do not have a variable voltage supply, you may use either a neutral density slide to reduce light intensity or a cardboard slide with a 1/4-inch hole at center.

NOTE: 40 volts ac or a special slide are used so that the lamp filament image on the mirror alignment tool can be looked at without doing harm to your eyes.

- 4.11.3 Place the power switch in the "Low" position. Alignment is proper when the circle of light is centered on the alignment tool. [If the circle is left or right of center, loosen screw (1), place a flat-blade screwdriver in the adjustment slot (2) and twist to align.] Tighten screw.

- 4.11.4 If the circle is up or down from center, adjust by turning screw (3) clockwise to move up and counterclockwise to move down.

- 4.11.5 After adjustment is complete, cement screw heads.



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5. TROUBLESHOOTING

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
5.1 Projector will not cycle (forward).	<ol style="list-style-type: none"> 1. Cycle solenoid failure. 2. Clutch spring may be bent. 3. Check for bind in cycle lever. 4. Check for clearance between clutch contact arm of cycle lever and TIP of clutch spring. 	<ol style="list-style-type: none"> 1. Check 24-volt supply; replace defective solenoid (3.10.3). 2. Replace spring (3.11) or replace cam shaft assembly (3.10). 3. Remove bind. 4. Form cycle lever.
5.2 Continuous cycling.	<ol style="list-style-type: none"> 1. Clutch spring bent or broken. 2. Short in remote cord. 3. Bind in select, cycle, or direction lever. 4. Clutch spring not being stopped by contact arm of cycle lever. 5. 6-volt lamp terminal contacting mechanism frame. 	<ol style="list-style-type: none"> 1. Replace spring (3.11) or replace cam shaft (3.10). 2. Check cord (3.14); replace if necessary. 3. Re-form levers for bind and lubricate. 4. Replace spring (3.11), replace cam shaft (3.10) or re-form contact arm of cycle lever. 5. Add glass or electrical tape to mechanism frame at contact point.
5.3 Projector will not index (forward or reverse).	<ol style="list-style-type: none"> 1. Select lever interfering with movement of index lever, as in half-cycle operation. 2. Index lever not shifting to low side of cam. 	<ol style="list-style-type: none"> 1. Check for binds in select lever. 2. Check for burr on index lever.
5.4 Projector will not reverse.	<ol style="list-style-type: none"> 1. Cycle solenoid out of adjustment. 2. Bind in cycle lever and/or direction lever. 	<ol style="list-style-type: none"> 1. Readjust (4.1). 2. Check and remove bind; lubricate if necessary.

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
	3. Direction lever hairspring missing or bent. 4. Clutch spring bent. 5. Reverse button of remote control cord not held long enough. 6. Cycle solenoid does not operate.	3. Remove mechanism (3.8) and replace spring. 4. Replace spring (3.11) or replace cam shaft (3.10). 5. Customer error. 6. Check 24-volt supply. If 24 volts ac \pm 4Vac is not present, replace main motor. If present, replace solenoid.
5.5 Projector always reverses.	1. Bind between direction lever and mechanism frame. 2. Defective remote cord.	1. Remove bind and lubricate if necessary. 2. Check for bind between reverse and forward contacts (3.14).
5.6 Noisy operation.	1. Broken or malformed ribs on fan causing "fluttering" noise. 2. Lack of lubrication on fan shaft. 3. Fan cap not fully seated. 4. Worm pulley with a high spot will cause a "fluttering" noise. 5. Gear noise from focus motor.	1. Replace fan (3.6). 2. Lubricate shaft (3.6). 3. Seat with thumb. 4. Replace worm pulley (3.13). 5. Increase backlash between gears or install new motor (3.9.2).
5.7 Tray cannot be rotated when "Select" button is held down.	1. Projector not on. 2. Locator does not withdraw from tray lugs.	1. Projector must be turned "On". 2. Check locator adjustment (4.2).

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
	3. Slide lever not raising slide fully into tray.	3. Check slide lever adjustment (4.3).
5.8 Shutter "hang-up".	1. Shutter spring unhooked or missing. 2. Shutter may be striking cycle lever.	1. Remove mechanism (3.8) and replace spring. 2. Remove mechanism (3.8); file cycle lever at point of contact with shutter. Do not file shutter or light leak on projection screen may result.
5.9 Projection lens drifts on "High". No slide in gate.	1. Stray light. 2. Null position incorrect. 3. Cell housing filter(s), steel mask missing or defective or mirror missing or defective. 4. If drift continues after steps 1-3 at 130 volts.	1. a. Check for baffling (4.4). b. Check front condenser lens for proper orientation (flatter side of lens toward gate). See illustration in 1.4.3. 2. Adjust null-cell alignment (4.5 and 4.6). 3. Add or replace items which are missing or defective. If mirror in cell housing is at all questionable, replace cell housing. 4. Replace cell and component board (3.16).
5.10 Projection lens drifts on "Fan". No slide in gate.	1. Focus rack off or under drive gear. 2. Rack binding. 3. Main drive motor.	1. Reposition focus rack. Replace rack spring if off or missing. 2. Leave slack in 6-volt lamp leads. 3. Disconnect orange and red wires from secondary of main drive motor. If focus motor stops, check secondary for short with continuity checker. If there is no continuity between orange and red leads, install new main drive motor (3.5).

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
		<p><u>NOTE:</u> Orange and red are <u>isolated</u> secondaries and should show no continuity to gray, yellow, green, and blue secondaries.</p> <p>If orange or red wires show continuity to yellow, install new main drive motor (3.5).</p> <p><u>CAUTION:</u> Make all continuity checks with power cord disconnected.</p> <p>If orange and red leads show continuity, replace cell and component board. If focus motor does not stop with orange and red leads disconnected, replace cell and component board.</p>
5.11 Projection lens drifts on "Fan". Slide in gate.	<ol style="list-style-type: none"> 1. Focus rack off or under drive gear. 2. Rack bindings. 3. If drift continues. 	<ol style="list-style-type: none"> 1. Reposition focus rack. Replace rack spring if missing or off. 2. Leave slack in 6-volt lamp leads. 3. Adjust null alignment (4.5).
5.12 Focus motor drives in one direction.	<ol style="list-style-type: none"> 1. Null alignment. 2. Cell filter(s). 	<ol style="list-style-type: none"> 1. Adjust null alignment. Add missing filters and mask. Replace cell housing if mirror is questionable. 2. See section 5.9.3. <p>If the above does not correct condition, replace cell and component board (3.16).</p>
5.13 Focus motor dead.	<ol style="list-style-type: none"> 1. Possible loose <i>WIRE-NUTS</i> on focus motor or 6-volt lamp. 2. 6-volt lamp burned out. 3. Null-cell alignment. 	<ol style="list-style-type: none"> 1. Tighten <i>WIRE-NUTS</i>. 2. Replace rack assembly lamp. 3. Adjust as necessary (4.5 and 4.6).

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
	4. Dead spots in focus motor.	4. Replace focus motor (3.9.2).
5.14 Focus motor oscillates, with slide in gate and lamp on "High".	1. Defective focus motor.	1. Replace focus motor. Be sure to dress <i>WIRE-NUTS</i> away from worm gear (3.9.2).
5.15 Focus motor runs continuously.	1. Transistor defective. 2. Photocell wired incorrectly. 3. Rack strikes shutter pin.	1. Replace circuit board (3.16). 2. Rewire correctly (3.20.5). 3. Remove base cover. Remove 6-volt lamp and socket from the focus rack assembly (Pops out). Clean the divider wall area adjacent to the bent-over end of the shutter pin. Turn the end of the bent shutter pin toward the front of the projector and tape the pin to the divider wall in this position, using tape, part No. 186560, or equivalent. Replace 6-volt lamp assembly and base cover.
5.16 Remote focus fails.	1. Diode in remote control defective. 2. Main motor 24-volt winding burned out. 3. Focus motor dead. 4. Switch and solenoid adjustments incorrect.	1. Replace diode (3.14). 2. Replace motor (3.5) and circuit board (3.16). 3. Replace focus motor (3.9.2). 4. Adjust as necessary (4.9).
5.17 Fails to focus on warped slides.	1. Check null and cell alignment.	1. Adjust null and cell alignment as necessary (4.5 and 4.6).
5.18 Slides jam.	1. Gate not properly aligned.	1. Align gate (4.10).
5.19 Projector stops running or will not turn on.	1. No power to projector.	1. Check power supply and power cord.

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
	2. Thermal fuse open.	2. Check fuse with continuity checker. If it shows open, replace fuse (3.2).
5.20 Illumination uneven.	1. Mirror alignment incorrect.	1. Adjustment mirror alignment (4.11).

6. TOOLS, CEMENTS AND LUBRICANTS

6.1 SPECIAL SERVICE TOOLS

Tool #TL862	Glass-mounted test slide
Tool #TL972	KODAK READY-MOUNT Test Slide
Tool #TL1031	1/4-inch hex socket wrench with 6 inch shank and plastic handle
Tool #TL1115	Mechanism operating fixture (optional)
Tool #TL1297	Cell Adjusting Tool (No longer available) Use fan cap.
Tool #TL1298	Target Slide
Tool #TL1299	Rack Forming Tool (revised)
Tool #TL1568	Gate Alignment Tool
Tool #TL1744	Auto-Focus Gauge
Tool #TL1759	Mirror Alignment Tool

6.2 CEMENT

G-135 GLYPTAL

Adjustment screw on cell housing
Adjustment screw on remote solenoid
Adjustment screw on rack lock cam assembly
Adjustment screws on mirror bracket

6.3 LUBRICANTS (Application - see 6.4)

763001	(A&O 61-3686) SAE #20 CITGO PACEMAKER T-30 Oil
763002	(A&O 61-3655) Plastilube #1
763003	(A&O 10-592) Plastilube #1 Grease plus 12% Moly

6.4 LUBRICATION

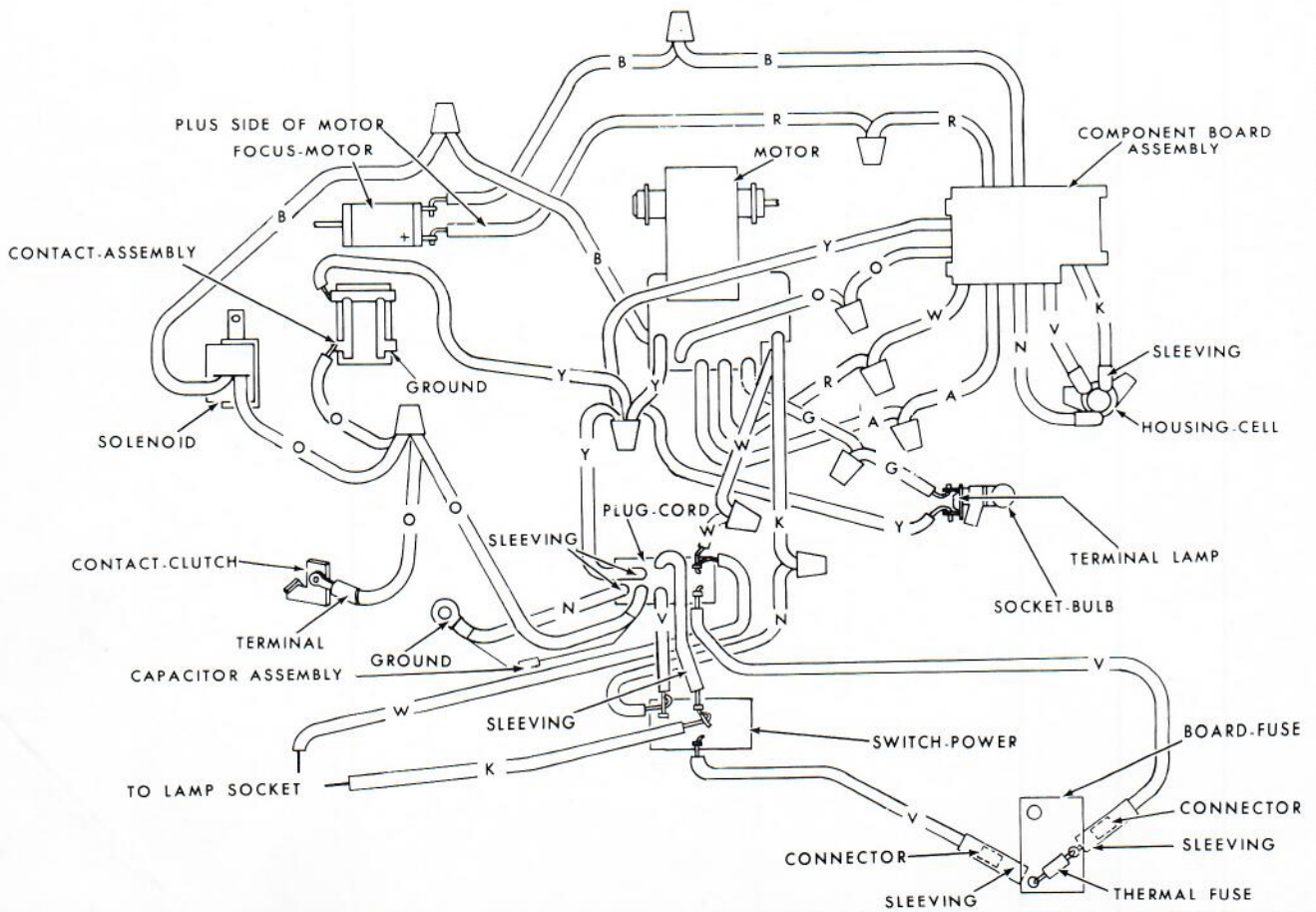
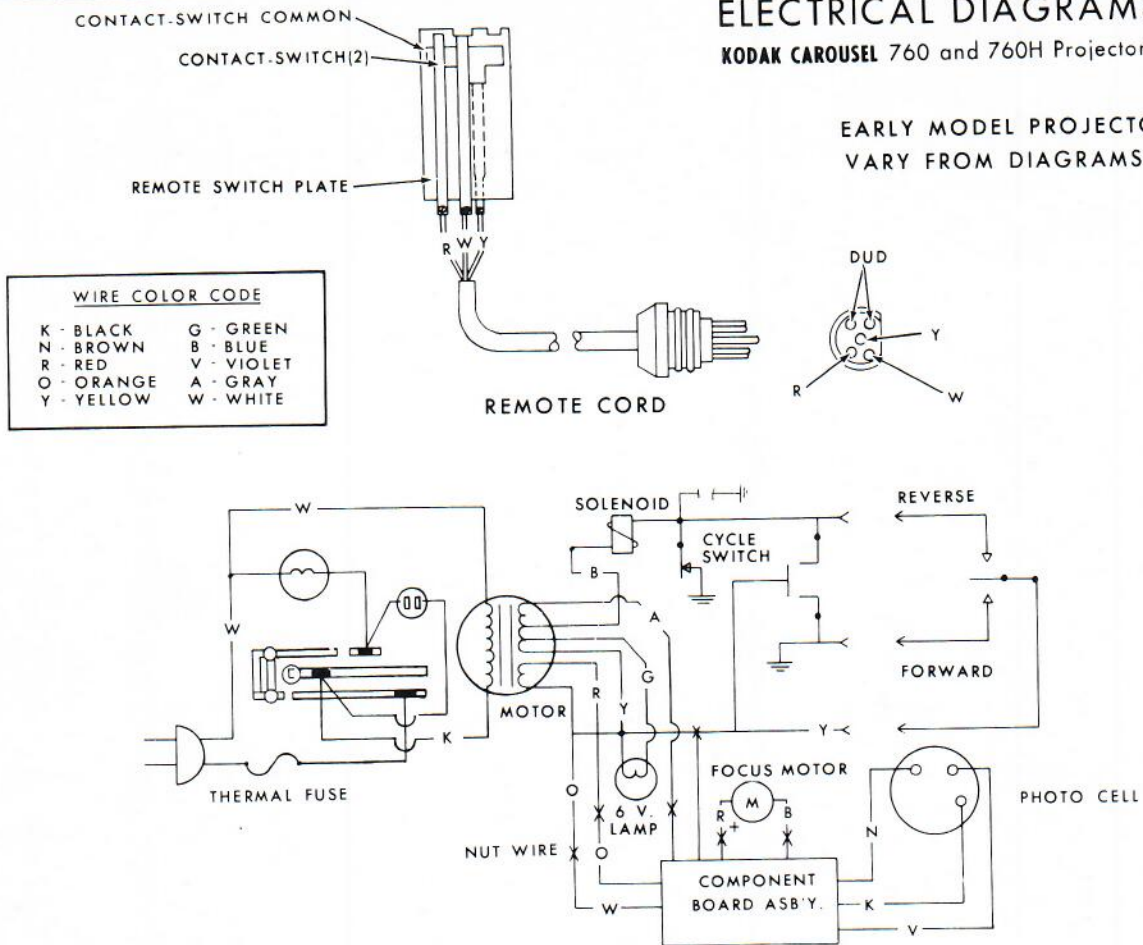
LUBRICATION POINTS	AMOUNT	LUBRICANT
Bearings of main drive motor when motor has been removed for other repairs.	2 drops	763001
Bearing of clutch shaft	2 drops	"
All worms and gears	Light coat	763002
Nylon cam surfaces	Light coat	"
Fan and fan shaft	Pack cavity	"
Steel and cork fan washer	Heavy coat	"
Pivot point of levers and cam levers	Generous	763003
Nylon bushing on drive lever	Medium	"
Dimples on indexer lever (underside)	Medium	"
Slot at end of shutter lever	Medium	"
Clutch assembly	Generous	"

Lubricate all points with a light coat. A little lubrication applied frequently is better than overlubrication. The serviceman should use his judgment and lubricate points as needed.

ELECTRICAL DIAGRAMS

KODAK CAROUSEL 760 and 760H Projectors

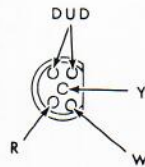
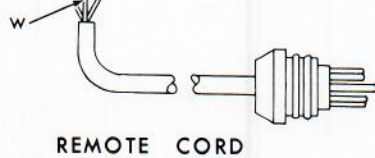
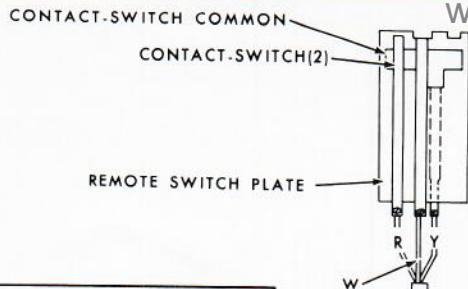
EARLY MODEL PROJECTORS MAY
VARY FROM DIAGRAMS SHOWN



ELECTRICAL DIAGRAMS

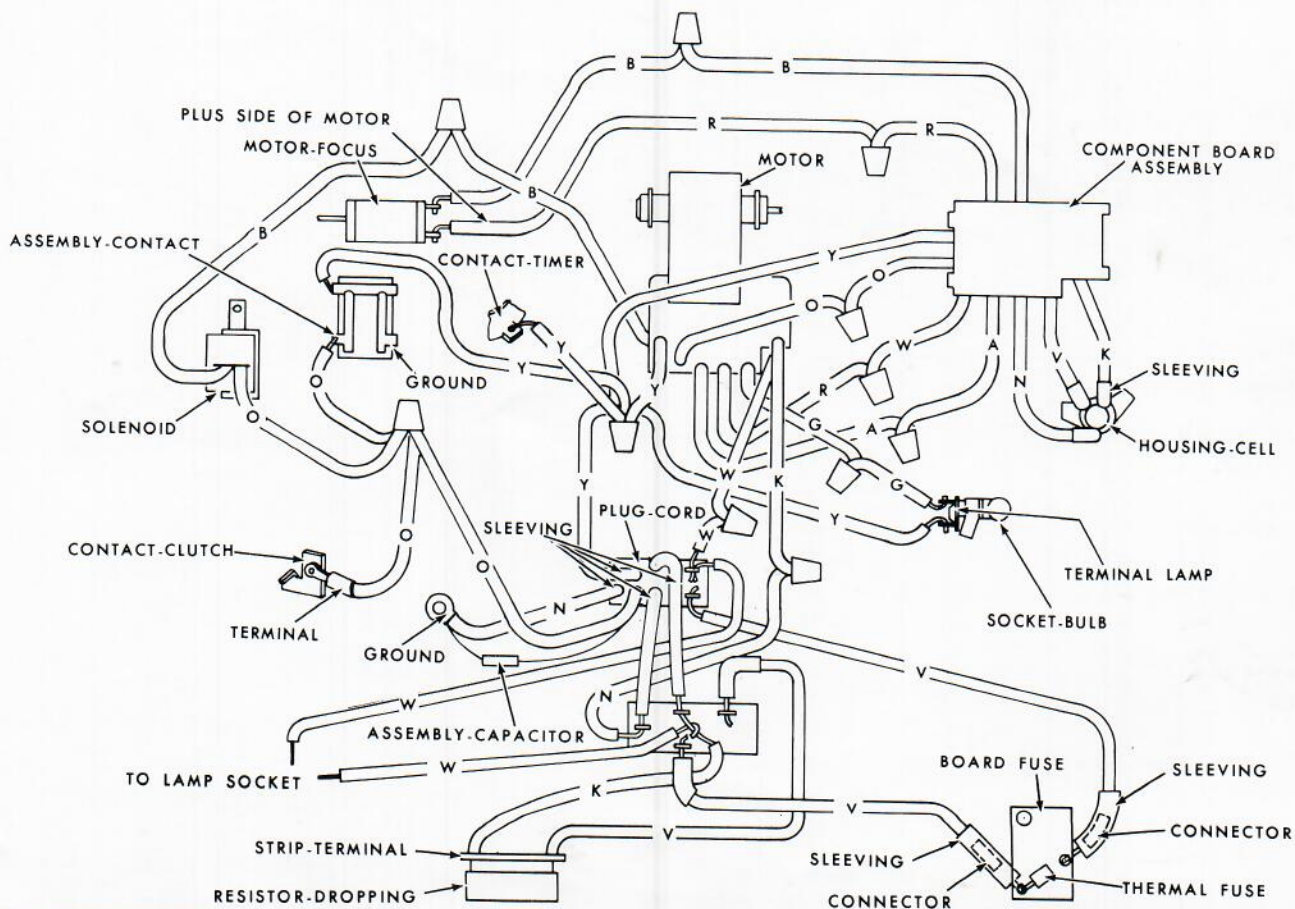
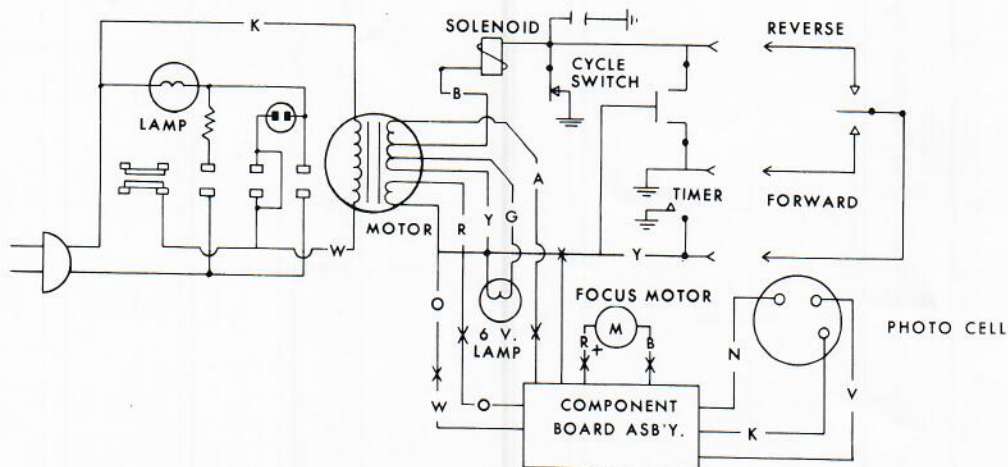
KODAK CAROUSEL 850 and 850H Projectors

EARLY MODEL PROJECTORS MAY
VARY FROM DIAGRAMS SHOWN



WIRE COLOR CODE

K - BLACK	G - GREEN
N - BROWN	B - BLUE
R - RED	V - VIOLET
O - ORANGE	A - GRAY
Y - YELLOW	W - WHITE

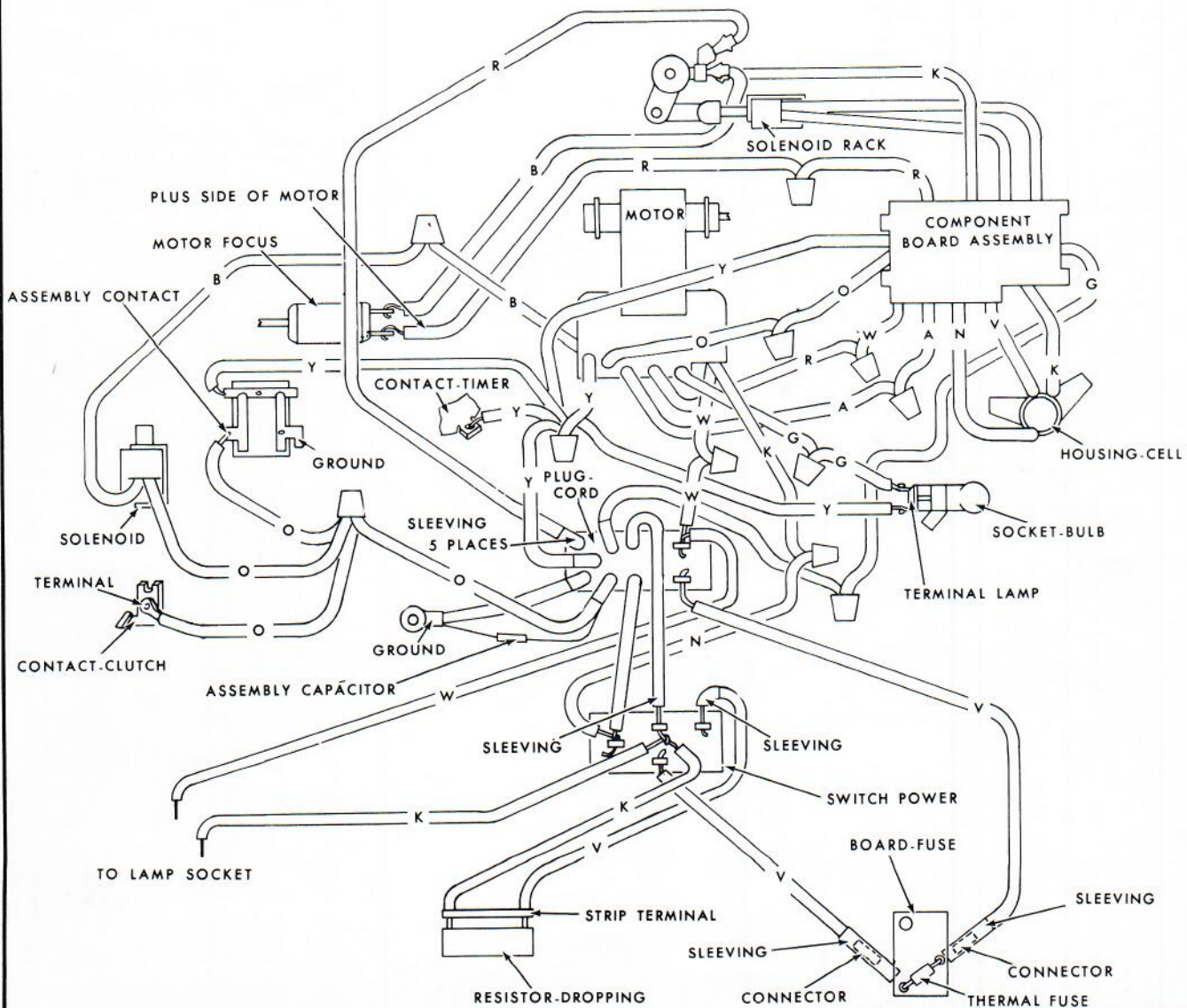
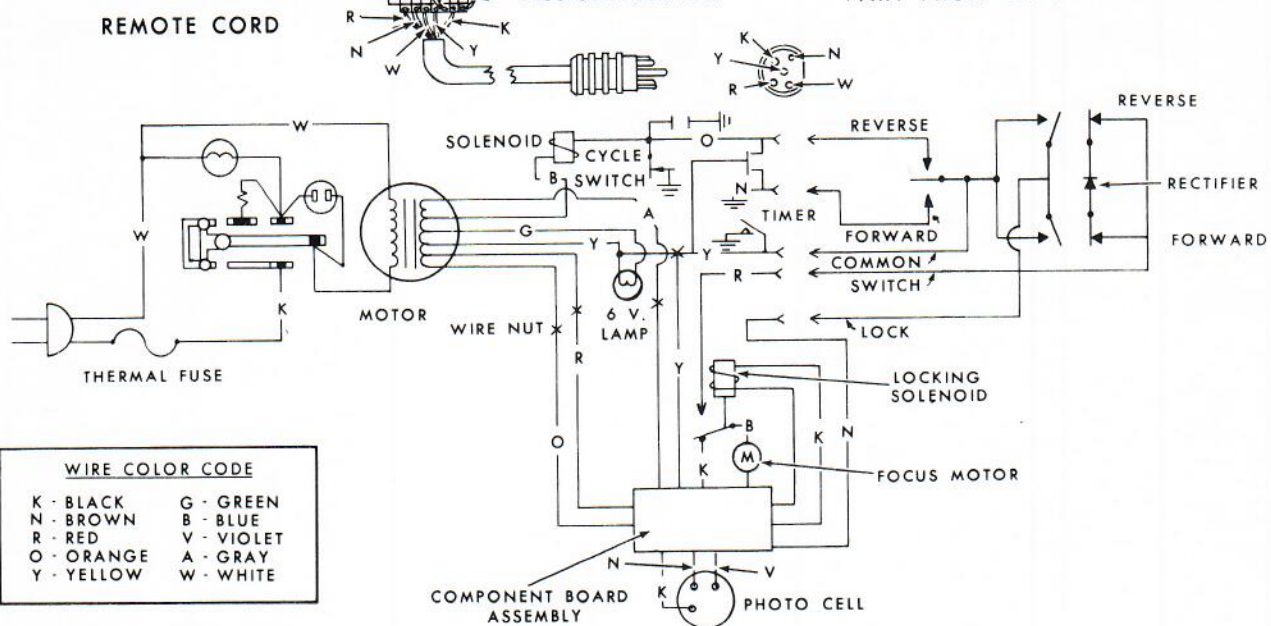


ELECTRICAL DIAGRAMS

KODAK CAROUSEL 860 and 860H Projectors

EARLY MODEL PROJECTORS MAY VARY FROM DIAGRAMS SHOWN

CONTACT-SWITCH AUTO FOCUS
CONTACT-SWITCH DOUBLE
CONTACT-SWITCH COMMON
REMOTE SWITCH PLATE
CONTACT-SWITCH
REMOTE CORD



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