Film-Tech

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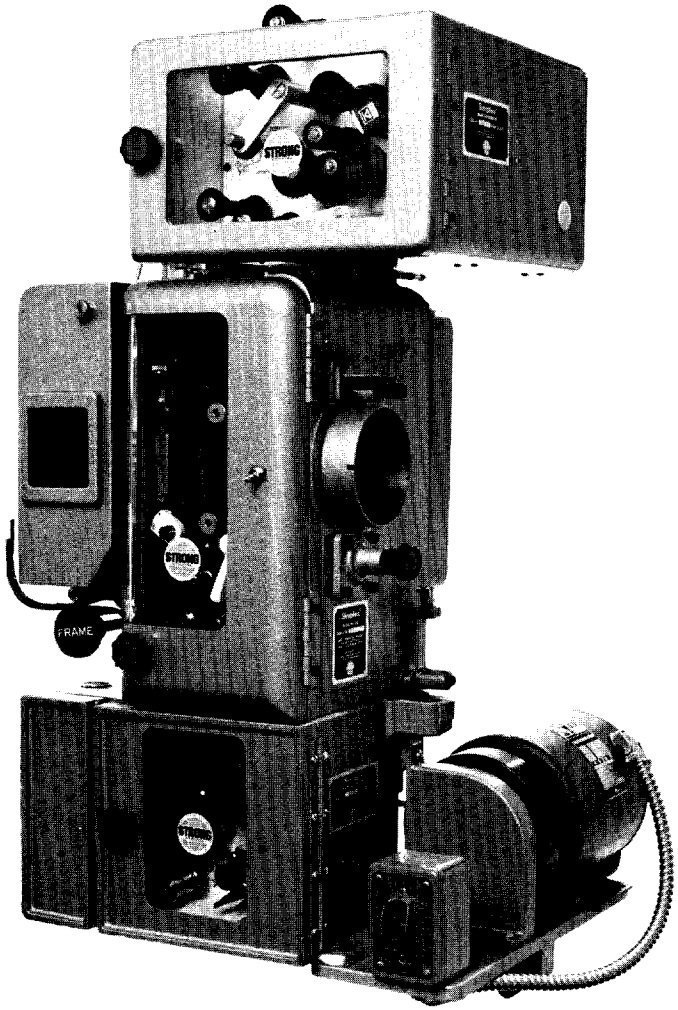
Simplex 35/70

35/70mm Projector Mechanism

INSTRUCTION MANUAL **PARTS CATALOGUE**



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A member of the Strong International team

CONTENTS

Issue 10-85 Strong International Engineering/Sales Omaha, NE

PREFACE

THE SIMPLEX 35/70 PROJECTOR, combining rugged construction with ease of operation, provides theatre owners with a superior mechanism, engineered to the high standards set for Strong International products. The following design features illustrate why the Simplex 35/70 Projector is able to give continuously excellent performance throughout its long operating life.

UNIT METHOD OF DESIGN simplifies component replacement and maintenance. All units may be quickly removed and replaced. Components within a particular unit are as easily handled.

THE MAIN DRIVE and idler gear assemblies are easily installed, insure proper driving from the soundhead, and are adjustable.

AN ADJUSTABLE CONICAL SHUTTER, positioned close to the picture aperture, provides very high light efficiency. The lens holder will accommodate lenses up to four inches in diameter. Lens adapters are supplied to mount currently available lenses. Operation of a single lever positions the lens barrel to either 35mm or 70mm optical center.

THE FILM COMPARTMENT door is hinged, has rounded corners, and the entire compartment is finished in white baked enamel to simplify regular cleaning. The gear compartment has a removable cover, rounded edges, and a baked enamel finish to facilitate cleaning.

THE MAIN FRAME forms a unit with the base, top, and front; a design noteworthy for its simplicity and strength.

THE UPPER FEED and lower holdback sprockets, having twenty-four teeth each, reduce shaft speeds to prolong operating life, permit smooth wrap-around, and minimize the risk of splice breakage. The pad rollers are made of lightweight delron.

THE FILM TRAP is designed to conform with a curved gate, enabling the mechanism to project a steady, easily focused picture. The trap may be easily removed for cleaning and repair, and is easily replaced.

THE CURVED GATE, together with the film trap, controls the movement of the film past the aperture by five different tension settings. Gate curvature provides compensation for heat-induced warping of the film at the aperture, thus insuring a sharper image on the screen. The gate is easily removed for cleaning.

THE UNIQUE SIMPLEX LUBRICATION SYSTEM, employing a gear-driven pump, completely lubricates all moving parts. These parts, in the gear compartment, are visible through the glass panel in the oil-sealed cover. The intermittent movement lubricates itself by pump action, aided by action of the overall lubrication system. An oil level indicator sight glass on the outside of the mechanism permits visual inspection of the oil level.

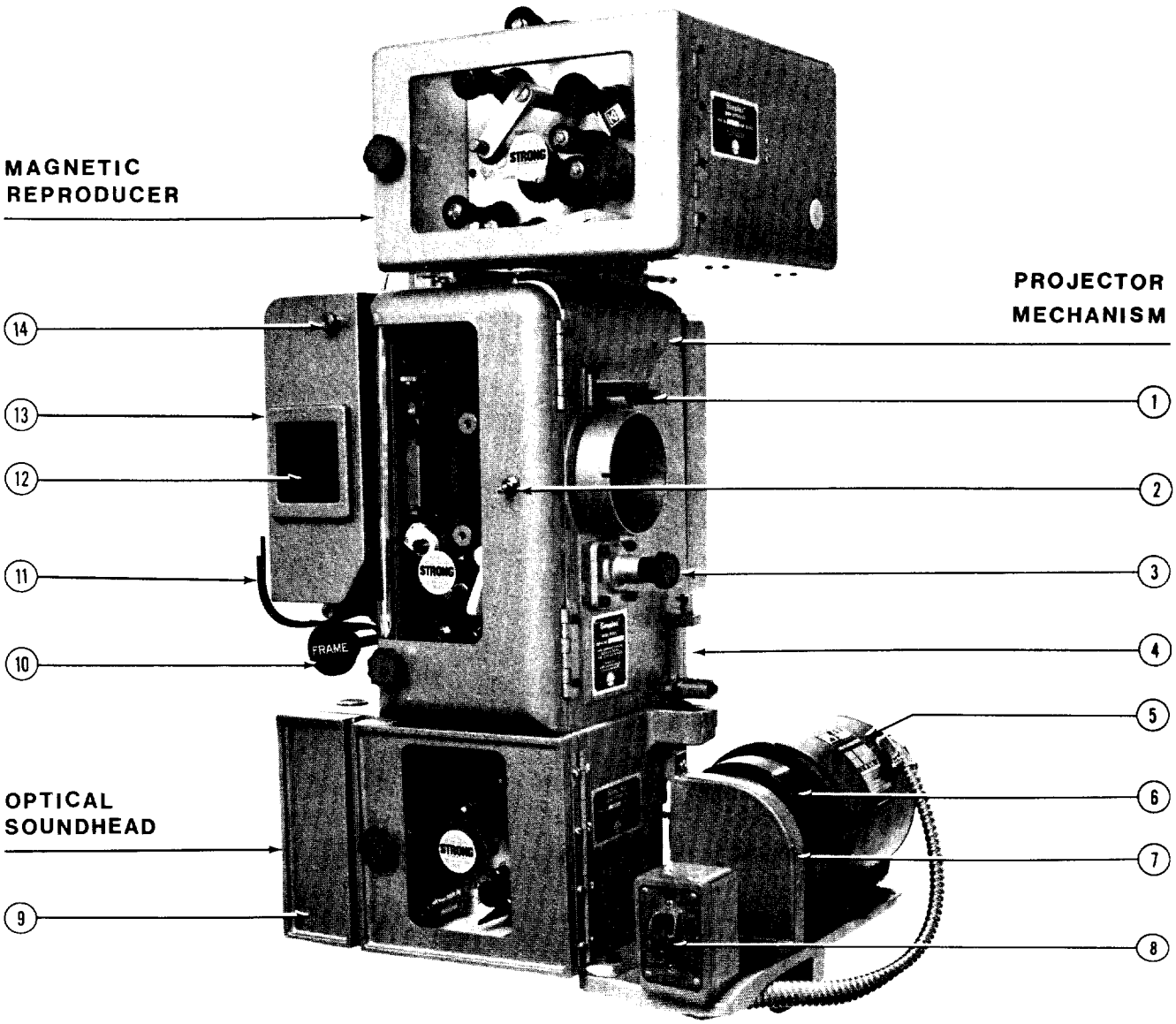
THE SIMPLEX 35/70 PROJECTOR is equipped with water cooled film traps as standard equipment. To prolong print life, it is highly recommended to utilize this feature.

THIS MANUAL, furnished with the mechanism, should be carefully studied by installation, projection, and maintenance personnel. Regular and thorough cleaning, proper maintenance, and intelligent handling will result in years of unequaled operating life.

IF AT ANY TIME you have a suggestion, or desire aid in securing anticipated results, please feel free to write to STRONG INTERNATIONAL, 1712 Jackson Street, Omaha, Nebraska 68102.

FIGURE 1

1. Lens Positioning Control, 35/70mm
2. Work Light Switch
3. Focus Control Knob
4. Oil Level Indicator
5. Drive Motor
6. Flywheel/Inching Knob
7. Belt Guard
8. Drive Motor Switch
9. Exciter Lamp Access Door
10. Framing Control Knob
11. Water Line
12. Sight Glass
13. Shutter Housing
14. Shutter Housing Mounting Nut


MAGNETIC
REPRODUCER
PROJECTOR
MECHANISM
OPTICAL
SOUNDHEAD
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STRONG
FRAME

FIGURE 1

FIGURE 2

1. Impedance Roller
2. Four-Channel Magnetic Head
3. Impedance Roller
4. Six-Channel Magnetic Head
5. Impedance Roller
6. Upper Feed Sprocket
7. Lens Barrel
8. Lens Locking Screw
9. Focus Control Torque Adjusting Screw
10. Soundhead Bypass Rollers, 70mm
11. Soundhead Holdback Sprocket, 35mm
12. Optical Sound Loop Damper, 35mm
13. Impedance Drum, 35mm Optical Sound
14. Lateral Guide Roller, 35mm Optical Sound
15. Soundhead Bypass Roller, 70mm
16. Lower Holdback Sprocket
17. Shutter Housing Mounting Nut
18. Intermittent Sprocket
19. Film Gate
20. Film Trap
21. Shutter Housing Mounting Nut
22. Picture Changeover
23. Threading Guide

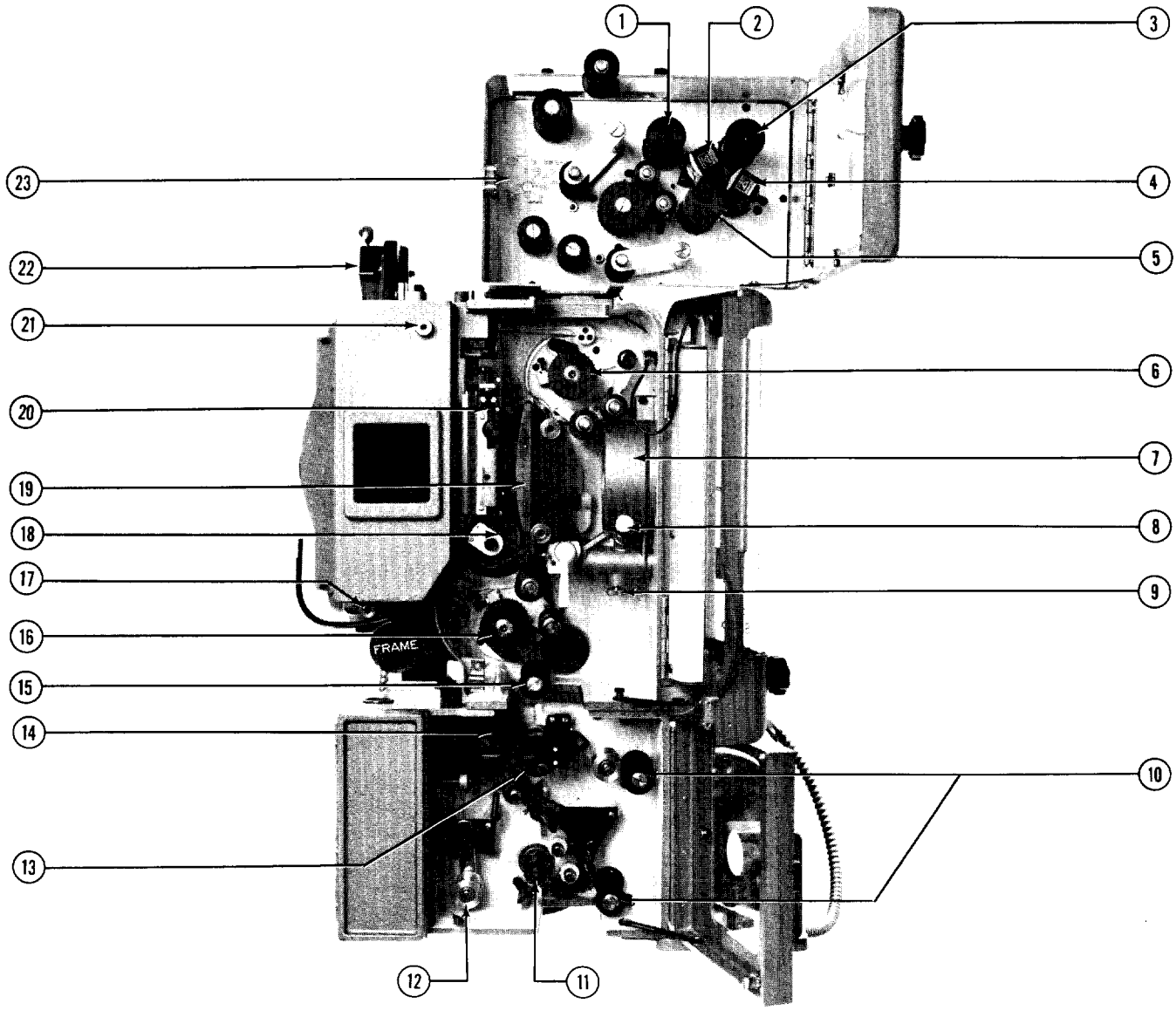


FIGURE 2

FIGURE 3

1. Adjustable Pad Roller, 35/70mm
2. Fixed Pad Roller, 70mm
3. Eccentric Pad Roller, 35/70mm
4. Film Gate Mounting Nut
5. Film Gate Opening Lever
6. Solar Cell, 35mm Optical Sound
7. Lateral Guide Roller Release Lever
8. Lock Screw, Lateral Guide Roller Adjustment
9. Slit Lens Focus Control
10. Exciter Lamp Adjustment Control
11. Exciter Lamp Mounting Bracket
12. Slit Lens Mounting Bracket
13. Fixed Pad Roller, 70mm
14. Eccentric Pad Roller, Adjustable 35/70mm
15. Intermittent Shoe
16. Aperture Plate
17. Picture Changeover Douser
18. Film Trap Mounting Screw
19. Framing Light Switch

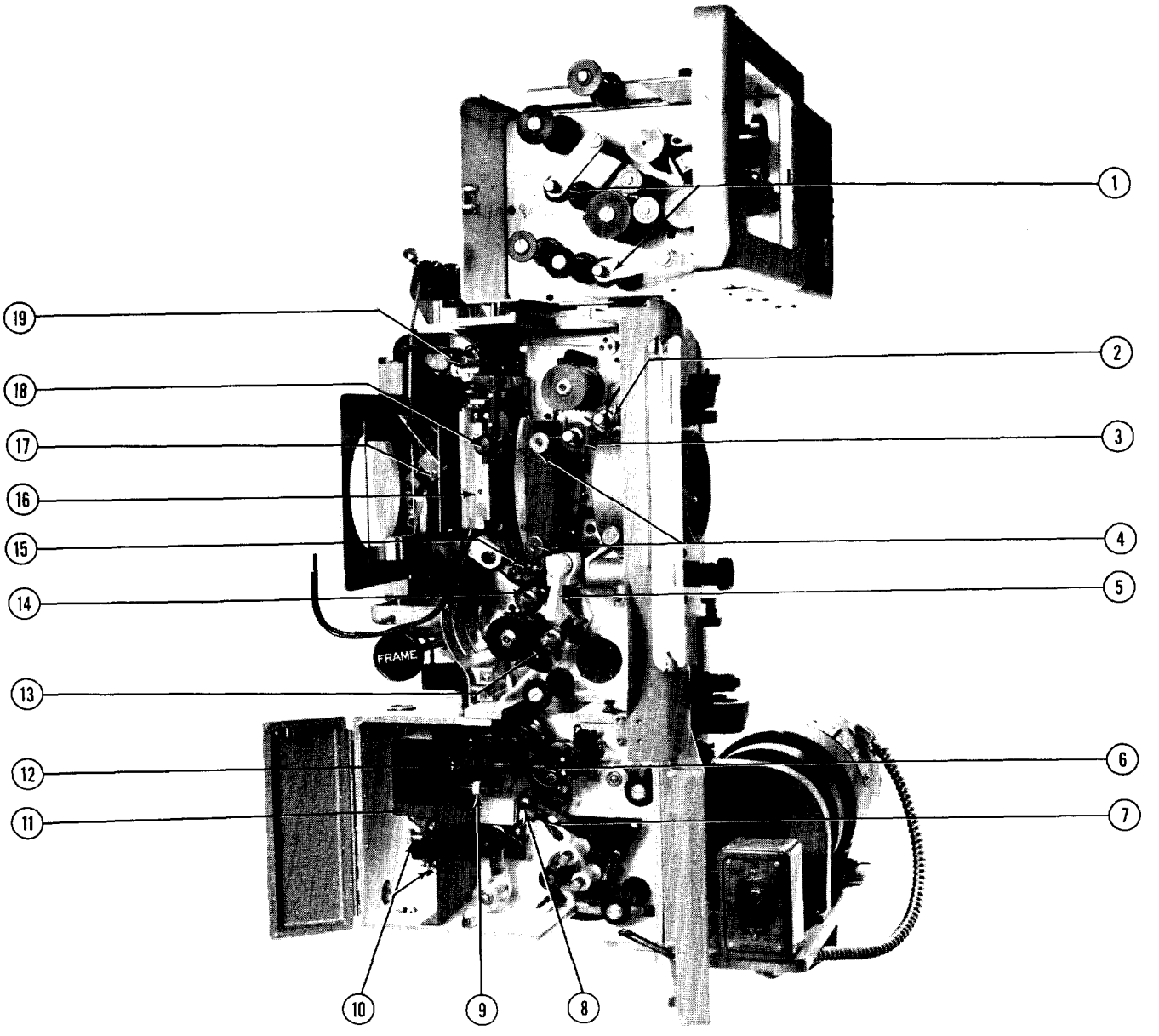


FIGURE 3

FIGURE 4

1. Fire Shutter Reset Button
2. Oil Collector
3. Shutter Shaft
4. Intermittent Flywheel
5. Framing Gear
6. Projector Driven Pulley
7. Projector Drive Belt
8. Terminal Strip; Solar Cell Output, Exciter Lamp Input
9. Belt Tensioner
10. Projector Drive Pulley
11. Soundhead Drive Belt
12. Impedance Drum Shaft (Flywheel not illustrated)
13. Oil Pump
14. Vertical Shaft
15. Governor, Fire Shutter
16. Fire Shutter Trip Lever
17. Terminal Strips, Magnetic Sound Output

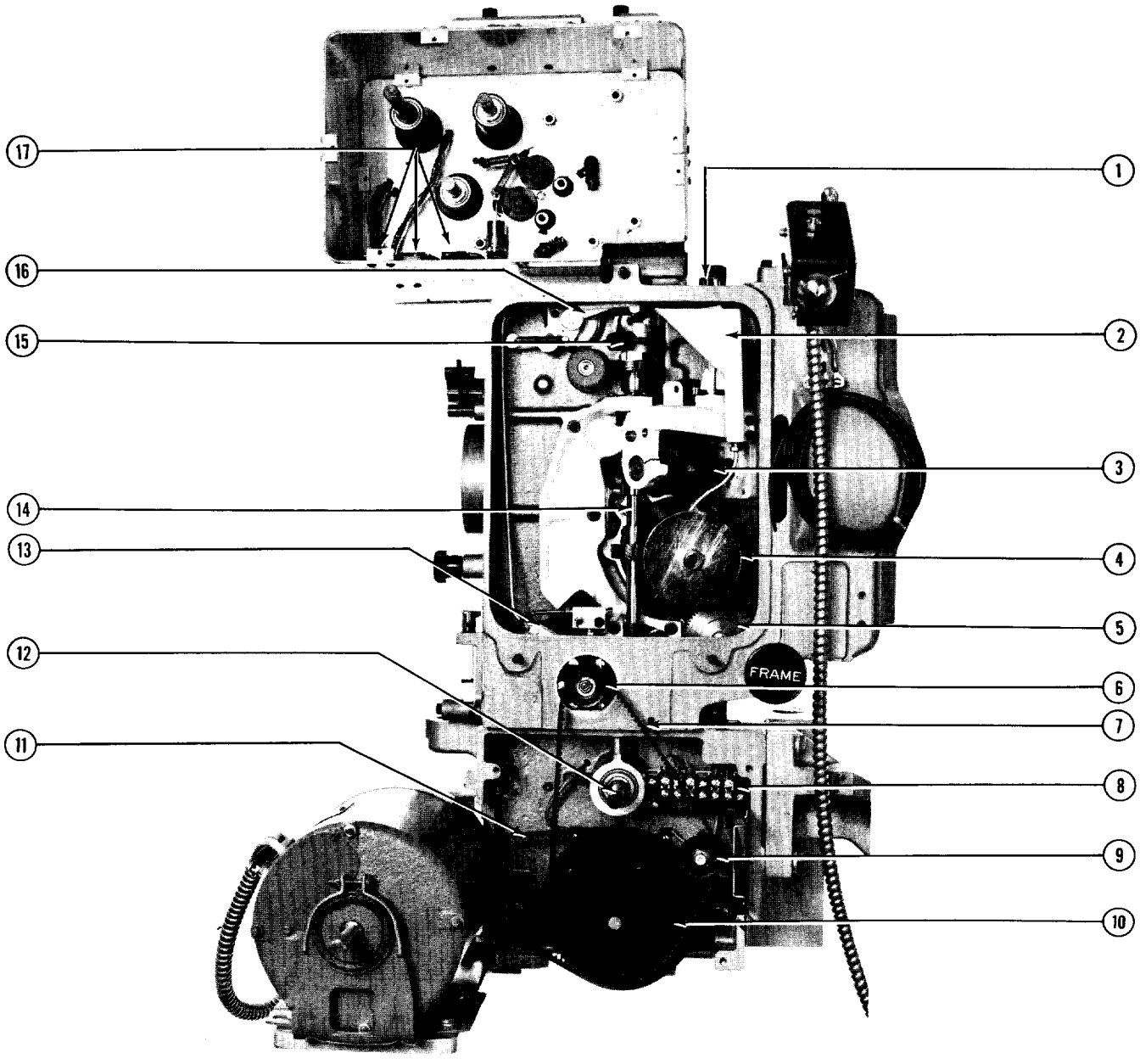
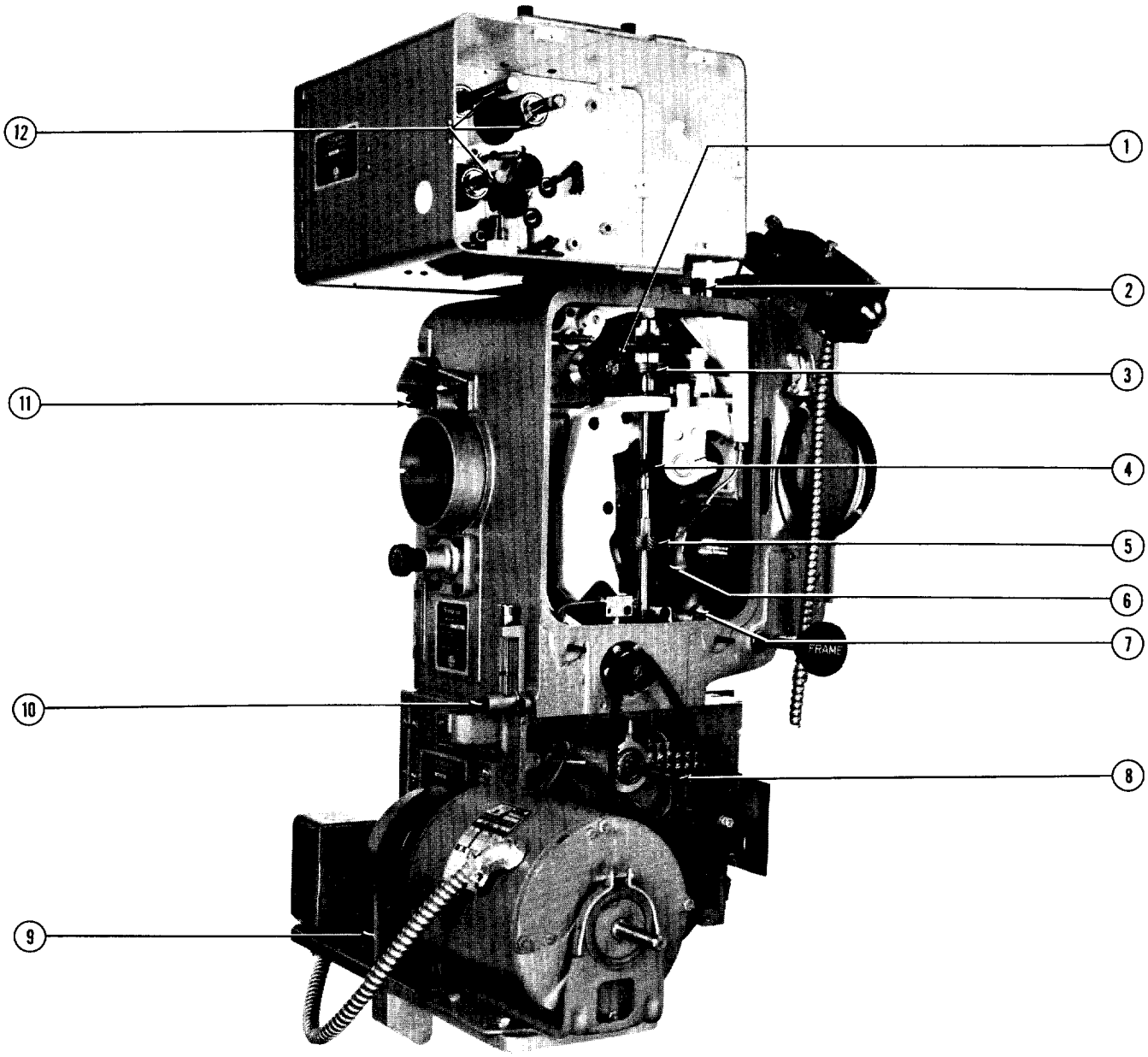


FIGURE 4

FIGURE 5

1. Upper Feed Sprocket Driven Gear
2. Shutter Timing Fine Adjustment Control
3. Upper Feed Sprocket Drive Gear
4. Shutter Drive Gear
5. Intermittent Drive Gear
6. Intermittent Movement
7. Framing Gear
8. Impedance Drum Shaft (Flywheel not illustrated)
9. Belt Guard
10. Oil Drain Plug
11. Lens Positioning Control, 35/70mm
12. Impedance Roller Shafts (Flywheels not illustrated)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FRAME
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RECEIVING & INSTALLATION

INSPECT THE PROJECTOR thoroughly on receipt. Before leaving the factory, each unit is carefully tested and inspected, and packed in a sturdy wooden crate to prevent shipping damage. Report any shipping damage to the carrier immediately; it is the responsibility of the consignee, not the shipper, to initiate this action.

REMOVE THE PROJECTOR from the crate and remove any foreign matter which may have entered in transit. Locate the accessory kit supplied with projector; this kit includes all items (less common hand tools) required to install the projector. This kit, or components of the kit, will be required for future projector maintenance; store the kit in a secure location.

MOUNT THE SOUNDHEAD to the pedestal or console. Attach the soundhead/projector mounting bar to the bottom of the projector main frame. Place the projector head on the soundhead and install the (2) mounting screws fingertight. Thread a length of scrap film from the projector through the soundhead, and position the projector to the point where the film runs straight into the soundhead, and lies flat against the scanning surface of the impedance drum. Tighten both screws securely.

IF THE DRIVE PULLEY is not factory installed, remove the lock nut and retainer from the horizontal drive shaft, taking care that the woodruff key remains in place in the horizontal shaft keyway. Install the drive pulley and secure with the lock nut. When installing the projector drive belt, visually check the alignment of the belt and pulleys. Tolerance is allowed in the motor mounts to compensate for misalignment. DO NOT overtighten the projector drive belt; overtightening may shorten horizontal shaft and/or bearing life.

CONNECT THE FRAMING/THREADING LIGHT input leads to the output (low voltage) leads of the transformer (furnished separately). Connect the transformer input leads to 115 V. AC.

ALIGN THE LAMPHOUSE to the projector in accordance to the instructions furnished by the lamphouse manufacturer. DO NOT operate the Simplex 35/70 projector without heat filters provided by the lamphouse manufacturer (as required).

IGNITE THE LAMPHOUSE with the douser closed, start the projector motor, and project a white light to the screen. File aperture plates as required. Consult your Strong International dealer if special application aperture plates are required.

INITIAL LUBRICATION (See Figures 1, 6, 7)

NOTE

When the Simplex 35/70 Projector is used in drive-in theatres, the oil gauge is mounted at the rear of the Projector and the oil filter is located in the rear of the gear compartment, instead of as shown in photographs.

a. Set black oil level indicator ring on the oil sight gauge as shown in figure 6 or 7. The drain plug in the oil gauge must be tight.

NOTE

When the projection angle is not exactly as shown in the chart, select the nearest angle, and raise or lower this ring to conform to the actual projection angle.

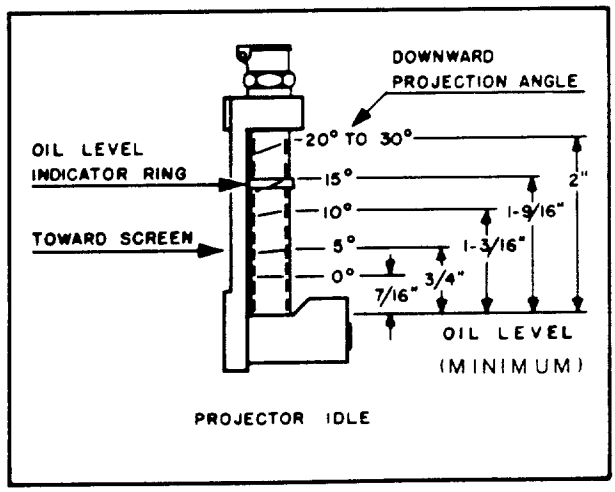


Figure 6. Oil Level (Projection Angles 0° to 30° Downward)

b. Raise sleeve around the shutter adjusting knob and, using it as a funnel, pour Simplex Projector oil into the mechanism until the oil level is at the black indicator ring.

CAUTION

Only genuine Simplex Projector oil should be used. Any other oil may cause serious operating difficulties and will void the factory guarantee.

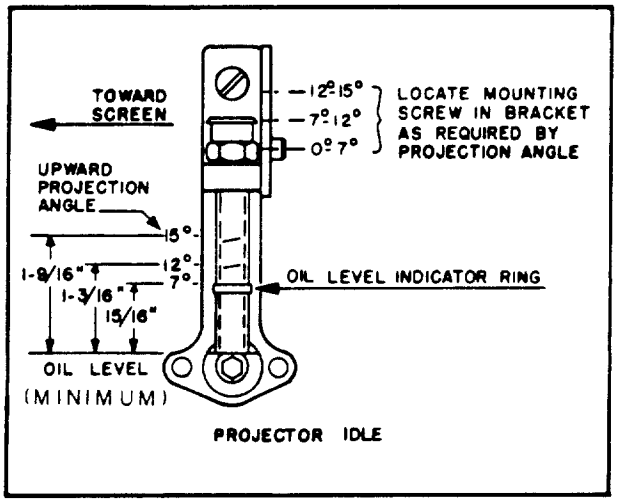


Figure 7. Oil Level (Projection Angles 0° to 15° Upward)

c. Start Projector and run for at least one minute. Check for an oil splash on the gear compartment cover glass.

d. Rotate Projector over by hand and observe operation on both film and gear sides. It should turn freely and smoothly.

CAUTION

Only when absolutely necessary, remove gear compartment cover and only after releasing all three cover fastening screws. Before replacing the cover, wipe all oil from the cover gasket and the mating surface on the Projector. Any oil remaining on these surfaces will provide an oil creepage path after the cover is fastened. Tighten all three cover fastening screws (figure 15) equally and finger tight, just enough to form an oil-tight seal.

PROJECTION LENS INSTALLATION

1. Adjust focus knob (E) to the center of its travel. The amount of torque required to operate the focus adjustment is controlled by tightening or loosening thumb screw (H).

2. Insert lens adapter (A) into lens barrel (C) with pin (B) seated in notch. Secure the adapter in place by tightening knob (D).

3. Install projection lens (F) into lens adapter and adjust for correct focus. When installing anamorphic lens and adapter, make certain that the picture is on the correct horizontal plane as well as in focus.

4. When the picture is correctly focused and positioned, lock the lens to the lens adapter by tightening set screw (G). Loosen knob (D), remove lens and adapter, and tighten set screw (I).

5. With the lens mated to the adapter in this manner, little or no adjustment of focus control knob (E) will be required when changing projection format; i.e. Cinemascope to wide-screen (anamorphic to flat).

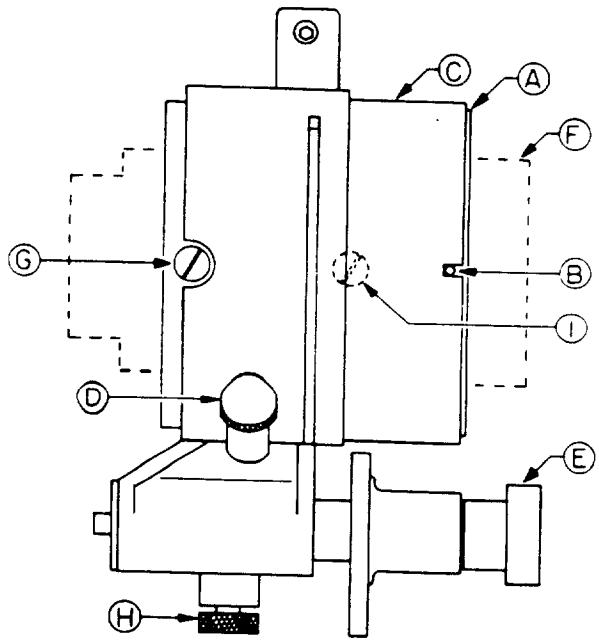
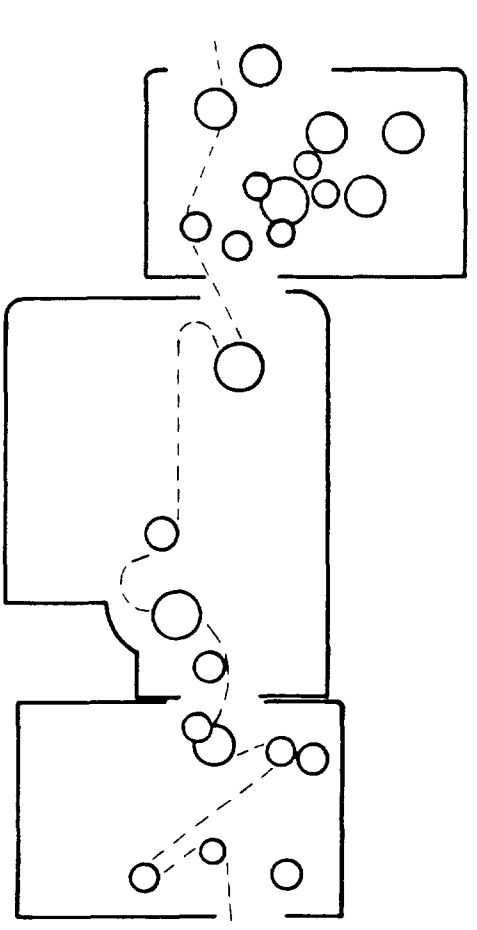
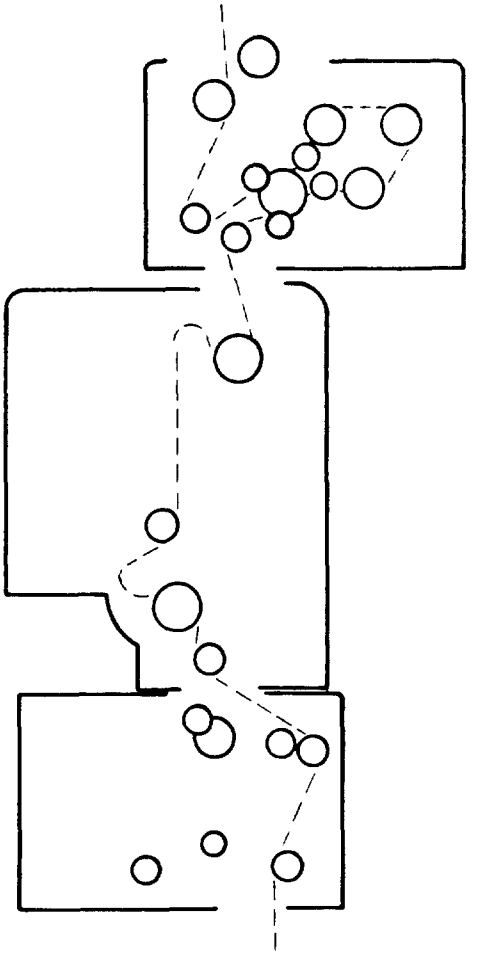


Figure 8

THREADING DIAGRAM



35mm



70mm

For detailed Penthouse threading, see Fig. 2, Item 23.

35/70mm CONVERSION

CONVERSION ELEMENTS for 70 mm operation are carefully and correctly matched to each individual projector. While parts are interchangeable, it is advised to mate conversion elements to their matching projector in order to expedite 35/70mm conversion.

CONVERSION TO 70 mm OPERATION

1. Turn off the water supply. Drain lines as required.

2. Dismount the shutter guard/sight glass cover by removing the (2) knurled nuts. Remove the 35mm film gate. Remove the 5/16" socket head cap screw in the water junction block. Loosen and remove the knurled thumb screw in the 35mm film trap; remove the trap and junction block from the mechanism.

3. Set the upper and lower pad roller assemblies, and the magnetic penthouse pad rollers, to the 70mm position.

4. Install the 70mm film trap, making certain that all surfaces in the projector and on the trap are free of dust and dirt particles. Locate the trap on the 5/32" mounting pins in the gate and trap carriage mount; tighten the knurled thumb screw to secure the trap to the projector main frame.

5. Replace the 5/16" socket head cap screw in the water junction block, making certain that the original gaskets are in place.

6. Install the 70mm gate and secure with the (2) thumb screws.

7. Relax the tension on the trap film straps. Thread a length of 70mm film into the mechanism. Inch the projector by hand, rotating the motor flywheel in a clockwise direction, and check for correct tracking and undue stress.

8. Rotate the lens barrel positioning lever to the 70mm position (counterclockwise to stop). This positions the lens barrel to the 70mm optical center.

9. Restore the water supply. Thread the projector, ignite the lamphouse, and project a picture to the screen. Adjust film trap tension straps as required for a steady, well-focused picture. Do not apply excessive tension.

THE SAME PROCEDURE applies to restoring the mechanism for 35mm operation. Return the lens barrel positioning lever to the 35mm setting (clockwise to stop).

OPERATION

GENERAL.

The projectionist should become thoroughly familiar with the following instructions before actually starting regular operation of the Projector. The operating procedure is extremely simple. All parts are readily accessible for cleaning and ample space around the parts promotes rapid, easy threading.

BEFORE THE SHOW.

a. Examine each sprocket daily and remove foreign material carefully.

b. Inspect film magazine fire rollers daily and remove any foreign material thoroughly.

c. Clean film compartment daily with a clean cloth.

NOTE

The baked white enamel finish inside the Projector, the round corners, and the accessibility of all parts simplify this extremely necessary duty.

d. Clean projection lens with lens tissue. The method of removal and replacement is described in Chapter I.

e. Clean spot sight box periodically.

NOTE

The spot sight box may be removed as a unit or the glass removed separately, after opening the film compartment door, by depressing the glass slightly and sliding it toward the front of the Projector.

f. Check oil level daily and add Simplex Projector oil, as required, to maintain the proper level.

g. Rotate Projector over by hand, each day, to check operation and to ensure that it turns freely and smoothly.

h. Run Projector for a brief period, to check lubrication and overall performance. When the Projector reaches high speed, there should be an oil splash on the gear compartment cover glass.

STARTING THE SHOW.

a. Thread Projector. (See Page 14)

b. Start Projector, make picture and sound changeover, and check running of the film.

c. Rotate framing knob (figure 1), if required, for proper framing.

d. If required, manipulate shutter adjusting knob (figure 5) to eliminate picture "ghosts."

e. Check picture focus and adjust, as required, according to Chapter I.

DURING THE SHOW.

a. Observe instructions in above paragraph, for each reel, making sound and picture changeover at the cues.

b. Clean film trap gate and the film trap after each reel.

c. If the fire shutter is tripped during a reel, be sure to depress fire shutter reset button (figure 4) to reset the fire shutter, after remedial action for the shutter tripping has been taken.

d. Check oil level five minutes after the Projector is stopped, and add Simplex Projector oil to raise the oil level to the indicated level on the indicator. Refer to Chapter I for oiling instructions.

END OF SHOW.

As soon as the Projector is stopped (after the last reel), inspect the Projector to insure its operational readiness for the next show.

ADJUSTMENTS AND REPLACEMENTS

GENERAL.

When adjustments and needed replacements are made, according to the maintenance routines described in Chapter III, excellent performance will be obtained at all times. Adjustments are quickly accomplished, and replacements performed, as all units and components are readily removed. Adjustments and replacements described below may be made by qualified projection room personnel. All other repairs or replacements, which may be required at long intervals, should be made at an authorized Simplex repair shop.

FILM TRAP GATE ASSEMBLY.

FILM TRAP GATE ASSEMBLY REMOVAL. (See figure 2).

a. Open film compartment door.

b. Unfasten upper and lower film trap gate fastening nuts.

c. Remove gate.

d. Install replacement gate and refasten the nuts.

INTERMITTENT TENSION SHOE REPLACEMENT. (See figure 3, item 15).

a. Remove film trap gate. (Refer to above paragraph.)

b. Remove intermittent tension shoe fastening screw.

c. Replace parts, as required, and reassemble with the larger radius of the outer tension shoe uppermost. For Projectors using wide perforation film, the word **Front** on the tension shoe must be visible after the door is installed.

d. Reinstall film trap gate. (Refer to above paragraph.)

INTERMITTENT TENSION SHOE AND INTERMITTENT SPROCKET ALIGNMENT.

a. Place straight edge across the outboard face of the intermittent sprocket and the outer face of the tension shoe.

b. Loosen tension shoe fastening screw and slide tension shoe, as required, for exact alignment. Tighten fastening screw securely.

FILM TRAP GATE OPERATING LEVER ADJUSTMENT. (See figure 3, item 5).

The film trap gate should close completely when the latch is released. If movement of the operating lever in a counterclockwise direction further closes the film trap gate, additional spring tension should be obtained as follows:

a. Remove Projector lens. (Refer to Chapter I.)

b. Remove film trap gate. (Refer to above paragraphs.)

c. Insert a pin in one of the holes in the spring tension collar on the operating lever shaft and loosen locking screw in the bottom of the operating lever assembly bracket.

d. Rotate collar counterclockwise by means of the pin, until the next hole is engaged by the locking screw, as it is tightened.

e. Reinstall film trap gate and check closure.

f. Repeat adjustment procedure until proper tension is obtained.

FILM TRAP ASSEMBLY.

FILM TRAP ASSEMBLY REMOVAL. (See figure 2)

a. Remove film trap gate. (Refer to above paragraphs.)

b. Loosen single captive film trap fastening screw, remove film trap and ensure that contacting surface on the main frame and the film trap are clean.

c. Slide replacing film trap in so that it registers with the two dowel pins on the main frame. Depress fire shutter reset button (figure 10) at the same time, and securely tighten the captive screw.

CAUTION

It is necessary that the reset button be depressed while the film trap is being installed. Otherwise, the fire shutter stop pin (figure 4) on the film trap will strike the fire shutter and make it inoperative until the film trap is properly installed.

d. Operate reset button a few times to ensure that the fire shutter is functioning correctly.

e. Check alignment of the film trap and the intermittent sprocket. (Refer to following paragraph titled "Intermittent Assembly".)

FILM TRAP GUIDE ROLLER REPLACEMENT. (See figure 2)

a. Remove film trap. (Refer to above paragraph.)

b. Loosen two guide roller pivot set screws, one at each end of the film trap casting.

c. Slide guide roller pivots out of the casting and remove guide rollers and spring, from the rear of the casting.

d. Replace parts, and reassemble.

e. Reinstall film trap. (Refer to above paragraphs.)

HEAT SHIELD REPLACEMENT.

a. Remove Film Trap. (Refer to above paragraphs.)

b. Remove two heat-shield assembly fastening screws and assembly.

c. Replace parts, reassemble and reinstall the film trap. (Refer to above paragraphs.)

PRESSURE STRAP REPLACEMENT.

a. Unscrew film trap fastening screw, which is located below and in line with the numbered pressure strap tension knob. Carefully remove trap.

b. Turn pressure strap tension knob to the number 1 position.

c. Unscrew two screws at the bottom of the trap.

d. Unscrew two screws on the top of the pressure strap arms, and remove the two pressure straps.

e. Make replacement and tighten four pressure strap screws.

f. Reinstall film trap.

THREADING GUIDE REMOVAL.

If it becomes necessary to remove the threading guide, do the following:

a. Remove film trap.

b. Unscrew four threading guide screws, in any convenient order, and remove threading guide.

c. Position replacement threading guide and redrive four screws removed above.

d. Replace film trap.

FIRE SHUTTER ADJUSTMENT.

a. Remove spot sight box. (Refer to following paragraphs.)

b. With the fire shutter closed and against its stop on the rear of the film trap (figure 2), loosen two fire shutter operating arm adjustment plate fastening screws until it just clears the top of the fire shutter operating rod. Tighten two fastening screws.

c. Remove gear compartment cover.

d. Hold governor in its operating position by hand.

e. Loosen fire shutter adjusting collar fastening screw (figure 4), and rotate adjusting collar until the bottom of the fire shutter just clears the top of the picture aperture. Tighten fastening screws.

f. Check operation of the fire shutter by holding governor in operating position and releasing it. Readjust, if necessary.

g. Depress fire shutter reset button to check its operation, then reassemble.

HEAT BAFFLE REPLACEMENT.

a. Remove spot sight box. (Refer to following paragraphs.)

b. Remove heat baffle fastening screws from the rear of the intermediate baffle, as required.

c. Remove the baffles.

d. Replace parts and reassemble.

INTERMITTENT ASSEMBLY.

INTERMITTENT ASSEMBLY REPLACEMENT.

a. Open film trap gate.

b. Rotate framing knob (figure 1) to the extreme counterclockwise position (gear side).

c. Set shutter adjusting knob (figure 5) in mid-position.

d. Remove gear compartment cover (figure 5) and ensure that no foreign material is deposited in the compartment while the cover is off.

e. Rotate vertical shaft until the intermittent drive gear fastening screw is accessible. Remove screw and slide the gear downward.

f. Loosen two intermittent retaining clamp fastening screws on the framing cam and rotate clamps to clear the intermittent case.

g. Withdraw intermittent assembly from the gear compartment, taking care not to strike the intermittent oil tube just above the intermittent assembly.

h. Slide replacement intermittent assembly into position, as the keyway in the case is aligned with the key in the framing cam.

i. Rotate intermittent retaining clamps to retain the intermittent assembly and tighten fastening screws securely.

j. Remove spot sight box (Refer to following paragraphs.), and then depress fire shutter reset button (figure 4) so that the fire shutter clears the picture aperture. Then, time shutter according to the following paragraph:

k. Align intermittent sprocket with the film trap. (Refer to following paragraphs:)

TIMING.

a. Rotate shutter counterclockwise (from rear of Projector) until its leading edge is exactly in line with the upper edge of the picture aperture (aperture just completely blocked).

b. Rotate intermittent flywheel until the intermittent sprocket turns clockwise and one of the four index lines on the outboard bearing collar is in alignment with the index line on the outboard bearing casting.

c. Continue to rotate flywheel in the same direction until the intermittent sprocket just begins to move.

d. Reverse rotation of the flywheel until the sprocket stops. Then, turn flywheel counterclockwise until the start of rotation of the sprocket is felt.

e. Continue to rotate flywheel until the precise point at which the sprocket is about to move is reached and retain that setting.

f. Raise intermittent drive gear and rotate it tooth by tooth until it meshes with the intermittent driven gear. At the same time, the mounting hole in the drive gear and in the shaft should be in alignment.

CAUTION

Do not rotate the vertical shaft or intermittent driven gear.

g. Insert fastening screw and tighten securely.

INTERMITTENT SPROCKET REPLACEMENT.

a. Remove film trap gate and film trap.

b. Rotate framing knob clockwise (film side) until the stripper fastening screw is accessible. Remove screw and stripper.

c. Rotate Projector so that one of the index lines on

the intermittent outboard collar is in alignment with the index line on the intermittent outboard bracket and retain this setting.

d. Remove intermittent sprocket fastening screw and nut.

e. Loosen two intermittent outboard collar fastening screws and remove collar.

f. Remove two intermittent outboard bracket fastening screws and bracket.

g. Remove intermittent sprocket.

h. Slide replacement sprocket on the shaft, ensuring that Simplex trademark is readable when viewed from the outboard end of the shaft.

i. Position intermittent outboard bracket with two fastening screws. Finger tighten screws.

j. Adjust bracket, as required, so that the bearing is precisely centered with respect to the intermittent shaft and tighten fastening screws.

k. Fasten intermittent sprocket to the shaft with the fastening screw and nut.

l. Slide intermittent outboard collar on the shaft with one of its index lines in alignment with the index line on the intermittent outboard bracket.

m. Pull sprocket forward and at the same time, press collar inward, so that end play is just perceptible.

n. Tighten collar fastening screws securely and check that end play is just perceptible.

o. Reinstall film trap. Then, align film trap and intermittent sprocket, as described below.

p. Reinstall film trap door.

q. Align film tension shoe with the intermittent sprocket, if necessary. (Refer to above paragraphs.)

INTERMITTENT SPROCKET AND FILM TRAP ALIGNMENT.

a. Loosen intermittent sprocket fastening screw and slide sprocket on the shaft, as required, until the sprocket is flush with a straight edge placed on the outside face of the lower feed sprocket.

b. Tighten sprocket fastening screw securely.

NOTE

Gauge No. T1-9096, which is special equipment, may be used to align the intermittent sprocket. This operation is performed by loosening the intermittent sprocket, substituting the gauge for the trap, adjusting the outer face of the sprocket teeth until they contact the inside face of the gauge, and then tightening the intermittent sprocket screw.

LAMP REPLACEMENT.

FRAMING LAMP.

a. Loosen upper spot sight box fastening screw and remove lower knurled fastening nut and spot sight box.

b. Replace lamp and spot sight box.

THREADING LAMPS.

a. Remove three threading lamp cover fastening screws inside the film compartment door.

b. Remove cover.

c. Replace lamps and cover.

LAMP SWITCH REPLACEMENT.

FRAMING LAMP SWITCH.

a. Remove spot sight box.

b. Unsolder switch lead.

c. Remove four switch fastening screws with an offset screw driver.

d. Remove switch.

e. Install replacement switch with the contact pin toward the front and resolder lead.

f. Adjust switch contact screw (figure 10) on the film compartment door, as follows, so that the light is off when the door is closed and on when the door is open. Ensure that connections to the light supply transformer have been properly made.

1. Loosen switch contact screw locknut inside the film compartment door.

2. Turn contact screw clockwise, approximately two turns, and close door. The light should remain lighted.

3. Readjust this contact screw so that the light is off when the door is completely closed.

4. Tighten locknut securely.

THREADING LAMP SWITCH.

a. Remove three threading lamp cover fastening screws inside the film compartment door.

b. Remove cover.

c. Unsolder switch lead, replace switch, resolder lead, and replace access plate.

LOWER FEED SPROCKET ASSEMBLY.

LOWER FEED SPROCKET ASSEMBLY REMOVAL.

a. Remove four lower feed sprocket assembly fastening screws and withdraw assembly from the film compartment.

NOTE

Ensure that neoprene gasket is in the groove in the sprocket assembly bracket.

b. Reinstall assembly with the four fastening screws. Finger tighten screws.

c. Position assembly so that there is slight backlash between the meshing gears. The four mounting holes in the casting are sufficiently oversize to permit this adjustment.

d. Tighten fastening screws securely. Check backlash and readjust, if necessary.

LOWER FEED SPROCKET REPLACEMENT.

a. Remove one lower feed sprocket stripper fastening screw, loosen the other, and rotate stripper to clear the sprocket.

b. Open pad rollers.

c. Remove hexagonal sprocket fastening screw on the outboard end of the feed sprocket shaft and slide sprocket from the shaft. Ensure that the spring washer and the flat washer remain on the shaft.

d. Slide replacement sprocket on the shaft with the key pin and keyway in alignment, and secure with the sprocket fastening screw.

e. Insert stripper fastening screw and tighten both screws.

LOWER FEED SPROCKET DRIVEN GEAR REPLACEMENT.

a. Remove lower feed sprocket assembly. (Refer to above paragraphs.)

b. Remove gear fastening screw and slide gear from the shaft.

c. Slide replacement gear on the shaft, insert fastening screw, position gear to have slight end play, and tighten screw securely.

d. Reinstall sprocket assembly and adjust for backlash. (Refer to above paragraphs.)

LOWER FEED SPROCKET PAD ROLLER ASSEMBLY REPLACEMENT.

a. Remove sprocket assembly as a unit. (Refer to above paragraphs.)

b. Open pad rollers, compress actuating spring on the sprocket assembly so that the small hole in the forked spring guide is accessible, and pass a pin (a paper clip is satisfactory) through this hole to relieve the spring tension.

c. Remove pad roller, assembly fastening screw, and pad roller assembly.

d. Loosen pad roller stud set screws in the pad roller arm bracket and remove pad roller on rollers, as required.

e. Replace parts as necessary, reassemble, and remove pin.

f. Position pad roller arm adjusting screw on the sprocket assembly casting so that, with two thicknesses of film between the sprocket and pad rollers, both pad rollers just rotate. Ensure that the adjusting screw locknut is then securely tightened.

g. Reinstall sprocket assembly and adjust for backlash. (Refer to above paragraphs.)

PICTURE CHANGEOVER.

REPLACEMENT.

a. Remove all connections to the changeover.

b. Remove spot sight box.

c. Loosen two swivel mounting pin fastening screws on the changeover dowser (figure 3) and withdraw flexible shaft from the hole in this pin.

d. Remove two changeover fastening screws and changeover dowser.

e. Position changeover dowser replacement on the bracket as the flexible shaft and protective tubing are slid through the hole in the top of the Projector. Replace two changeover screws.

f. Reconnect wires.

g. Insert flexible shaft in the hole in the swivel pin on the dowser, adjust per the following paragraph, and secure with fastening screws.

NOTE

Form protecting tube over the flexible shaft to avoid unnecessary friction in operation and to prevent interference with the dowser.

ADJUSTMENT.

a. Loosen two swivel mounting pin fastening screws and position flexible shaft in the pin so that changeover dowser rests on the dowser stop plate with just enough pressure to prevent any bounce that might uncover the lower portion of the aperture. The dowser must be completely clear of this aperture when the dowser is in the upper position. Tighten two fastening screws.

b. Adjust changeover tension screw for the minimum tension that will hold the dowser in up position while the projector is running.

c. Check operation.

SHUTTER REPLACEMENT.

a. Remove spot sight box.

b. Loosen two swivel mounting pin fastening screws on the changeover dowser and withdraw flexible shaft from the hole in this pin.

c. Remove the five rear cover fastening screws and the cover.

d. Loosen two shutter clamping screws and remove shutter.

e. Set shutter adjusting knob (figure 5) in mid-position.

f. Manually rotate Projector in the direction of normal rotation until one of the four index lines on the intermittent outboard collar is aligned with the index line on the intermittent outboard bracket.

g. Continue to rotate Projector until the intermittent sprocket begins to move.

h. Reverse rotation until the intermittent sprocket stops; then turn in the normal direction until the sprocket starts to rotate.

i. Continue to rotate Projector as indicated above until the precise point at which the sprocket is about to move is obtained. Retain that setting.

j. Slide replacement shutter on the shaft to the shaft bearing, set so that its leading edge (counterclockwise rotation from the rear of the Projector) is exactly in line with the upper edge of the picture aperture (aperture completely blocked) and tighten two shutter clamping screws securely.

k. Complete reassembly.

NOTE

When a new adjustable shutter is installed, the procedures outlined in Chapter I should be followed to obtain the correct shutter opening.

UPPER FEED SPROCKET ASSEMBLY.

UPPER FEED SPROCKET ASSEMBLY REMOVAL.

a. Remove four upper feed sprocket assembly fastening screws and withdraw assembly, as a unit, from the film compartment.

NOTE

Ensure that the neoprene gasket is in the groove in the sprocket assembly casting.

b. Reinstall assembly with the four fastening screws. Finger tighten screws.

c. Position assembly so that there is slight backlash between the meshing gears. The four holes in the assembly bracket are sufficiently oversize to permit this adjustment.

d. Tighten fastening screws securely, check backlash, and readjust, if necessary.

UPPER FEED SPROCKET REPLACEMENT.

a. Remove one upper feed sprocket stripper fastening screw, loosen the other, and rotate stripper to clear the sprocket.

b. Open pad rollers.

c. Remove hexagonal sprocket fastening screw on the outboard end of the feed sprocket shaft and slide sprocket from the shaft.

d. Slide replacement sprocket on the shaft with the key pin and keyway in alignment and secure with the sprocket fastening screw.

e. Insert stripper fastening screw and tighten both screws.

UPPER FEED SPROCKET DRIVEN GEAR REPLACEMENT.

a. Remove gear compartment cover.

b. Remove gear fastening screw and slide gear from the shaft.

c. Slide replacement gear on the shaft, insert fastening screw, position gear to have slight end play, and tighten screw securely.

d. Check backlash between drive and driven gears and adjust as required. (Refer to above paragraphs.)

e. Replace the cover. (Refer to Chapter I, paragraph titled "Initial Lubrication".)

UPPER FEED SPROCKET PAD ROLLER ASSEMBLY REPLACEMENT.

a. Remove upper feed sprocket assembly as a unit. (Refer to above paragraphs.)

b. Open pad rollers, compress actuating spring on the sprocket assembly so that the small hole in the forked spring guide is accesssible, and pass a pin (a paper clip is satisfactory) through this hole to relieve the spring tension.

c. Remove pad roller assembly fastening screw and pad roller assembly.

d. When the pad roller operating knob has a set screw, loosen set screw, remove knob and pad rollers.

NOTE

When the pad roller operating knob does not have a set screw, loosen the associated pad roller stud set screw, remove the stud from the pad roller arm and the pad rollers from the stud. Remove the other pad rollers in the same manner.

e. Replace as necessary, reassemble and remove pin. Ensure that any spacing washers remain on the stud and that the pad rollers are centered with respect to the sprocket.

OIL LINE FEED LEAD REVERSAL (DRIVE-IN THEATER OPERATION).

a. Remove gear box door.

b. Remove compression nut, compression bushing, and oil and filter tube from the left-hand side of the oil tube connector.

c. Reconnect parts removed (as described in above step) on the right-hand side and tighten.

d. Replace gear compartment door. (Refer to Chapter I, paragraph titled "Initial Lubrication".)

INSTALLATION OF THE AIR-COOLED HEAT SHIELD.

a. Remove spot sight box from the main frame by loosening the fastening screw and nut.

b. Loosen film trip fastening screw, lift automatic fire shutter, and remove curved trap with its water-cooled heat shield assembly. Refer to applicable paragraphs in Chapter IV.

c. Remove water-cooled heat shield by removing the two screws which fasten it to the trap. Set heat shield aside.

d. Position air-cooled heat shield, align holes in the shield with the holes in the trap, and join shield and trap with the two screws removed in step (c) above.

e. Reinstall trap with air-cooled heat shield.

NOTE

The air-cooled shield should fit snugly against the aperture plate so that maximum heat transfer takes place. Be certain that the aperture plate is flat where it contacts the air-cooled shield.

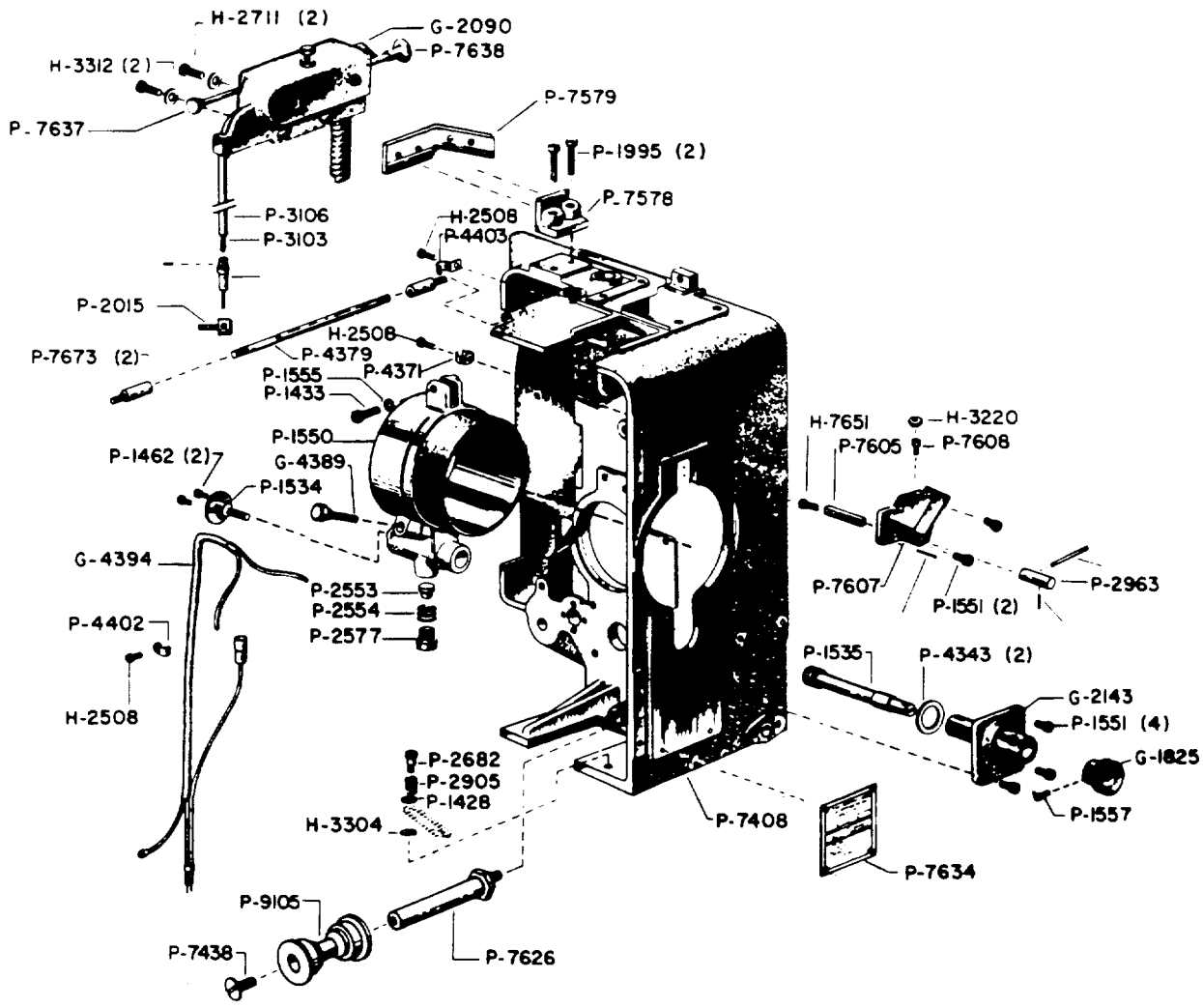
Simplex 35/70

PARTS CATALOGUE

Simplex replacement parts are available through any authorized

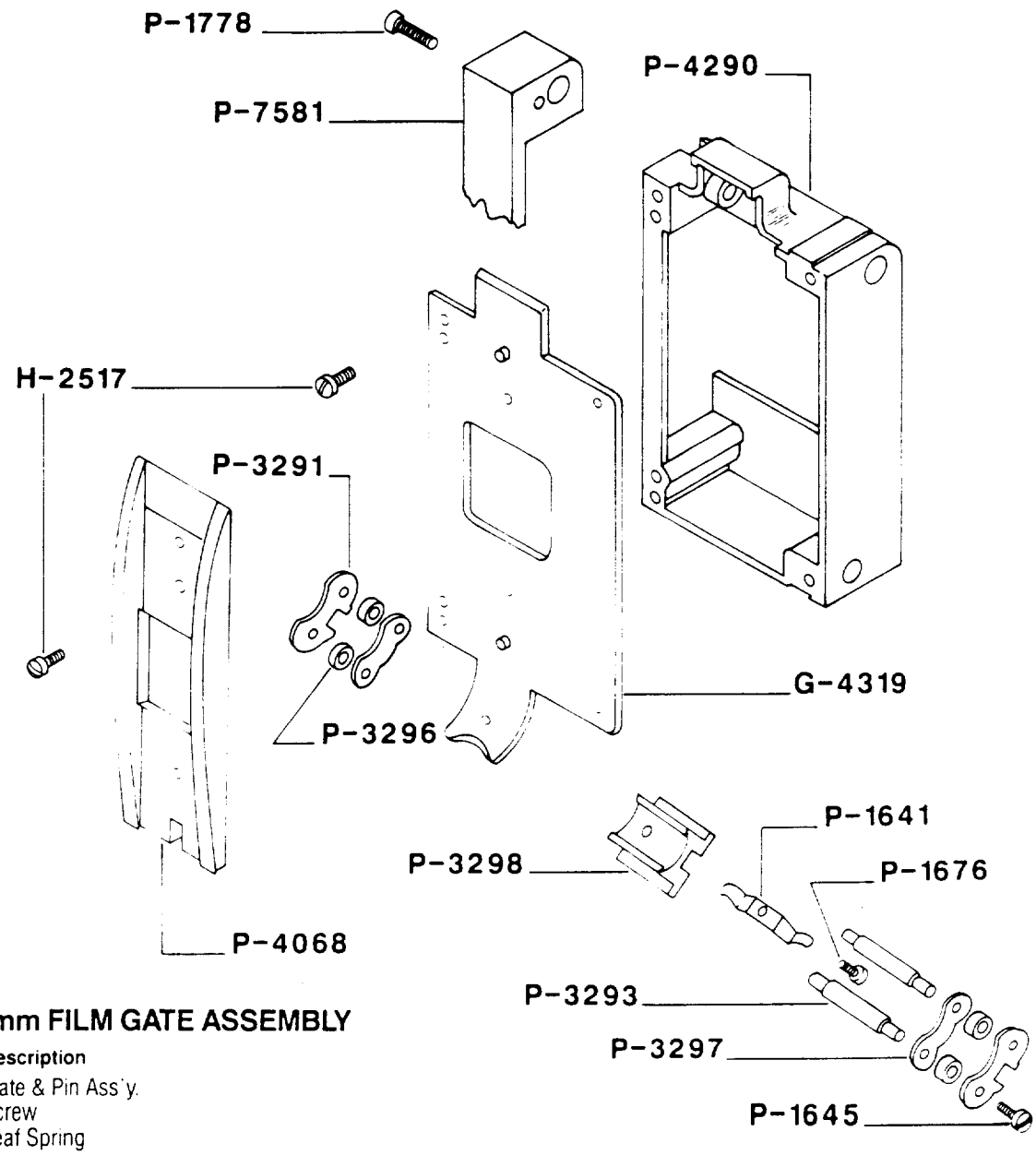
Strong International Theatre Equipment Dealer.

Please order by Part Number and Description.



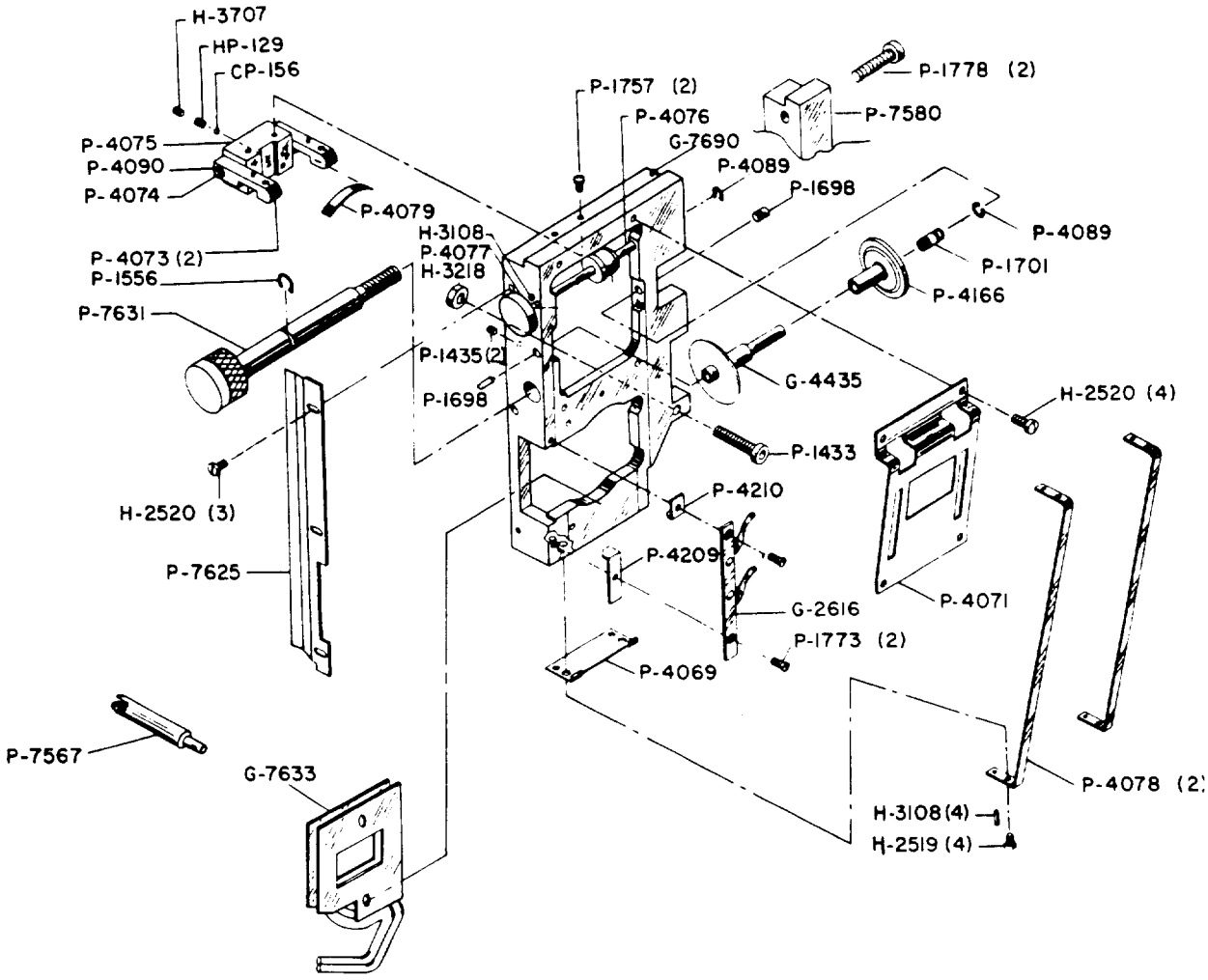
MAIN FRAME & LENS BARREL ASSEMBLY

Part No.	Description
G-1825	Knob
G-2143	Bracket & Sleeve Ass'y.
G-2090	Changeover Ass'y. (115 V.AC)
G-4389	Lens Holder Clamping Screw
G-4394	Cable Ass'y.
H-2508	Screw
H-2711	Screw
H-3304	Washer
H-3312	Washer
P-1428	Washer
P-1433	Screw
P-1462	Screw
P-1534	Flanged Screw
P-1535	Focus Adjust Shaft
P-1550	Lens Barrel
P-1551	Screw
P-1555	Lockwasher
P-1557	Screw
P-1995	Screw
P-2553	Pressure Plate
P-2554	Spring
P-2577	Screw
P-2682	Shoulder Screw
P-2905	Spring
P-4343	Washer
P-4371	Clip
P-4379	Stud
P-4402	Clamp
P-4403	Clamp



G-7716 35mm FILM GATE ASSEMBLY

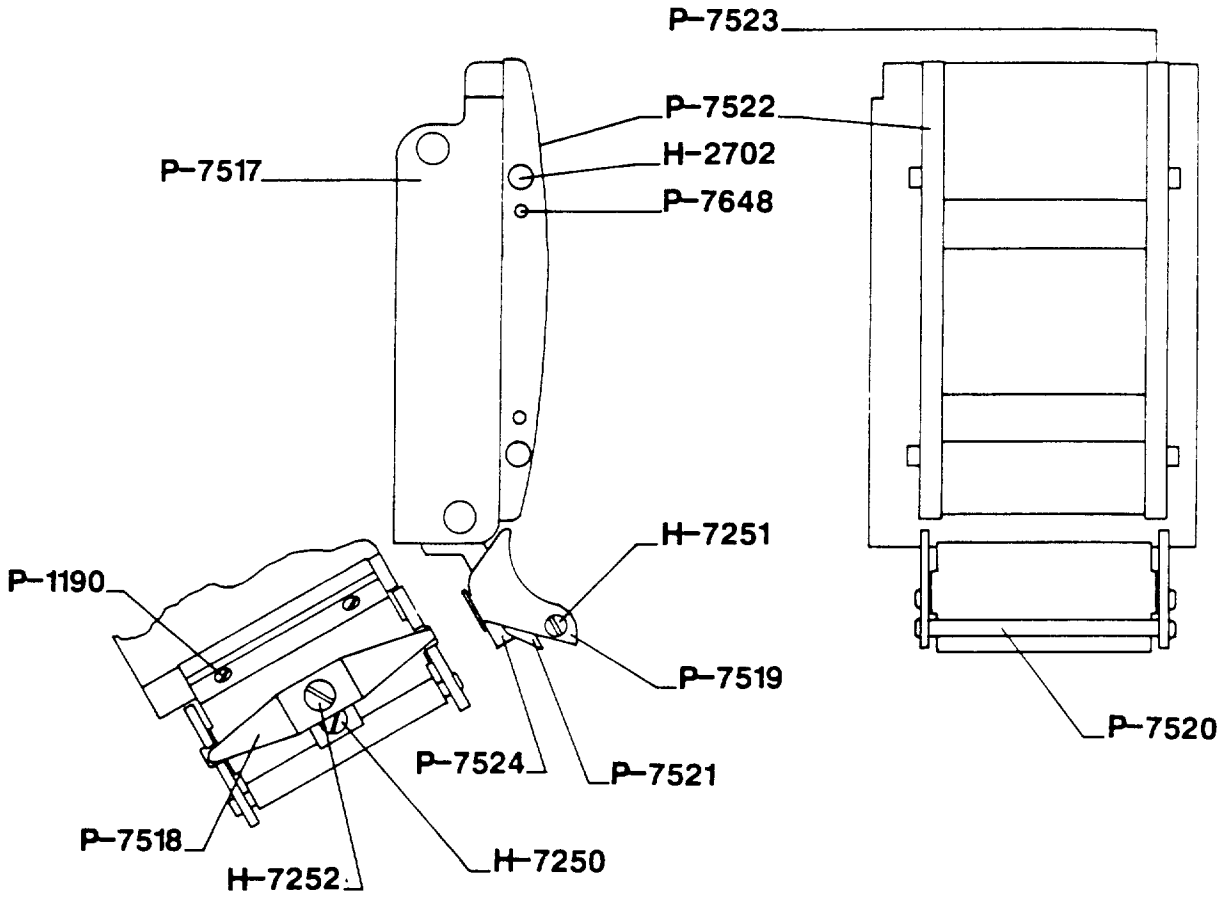
Part No.	Description
G-4319	Plate & Pin Ass'y.
H-2517	Screw
P-1641	Leaf Spring
P-1645	Screw
P-1676	Screw
P-1778	Screw
P-3291	Outer Tension Shoe
P-3293	Stud
P-3296	Spacer
P-3297	Inner Tension Shoe
P-3298	Spacer Block
P-4068	Pressure Pad
P-4290	Cover Casting
P-7581	35mm Gate Spacer



G-7584 35mm FILM TRAP ASSEMBLY

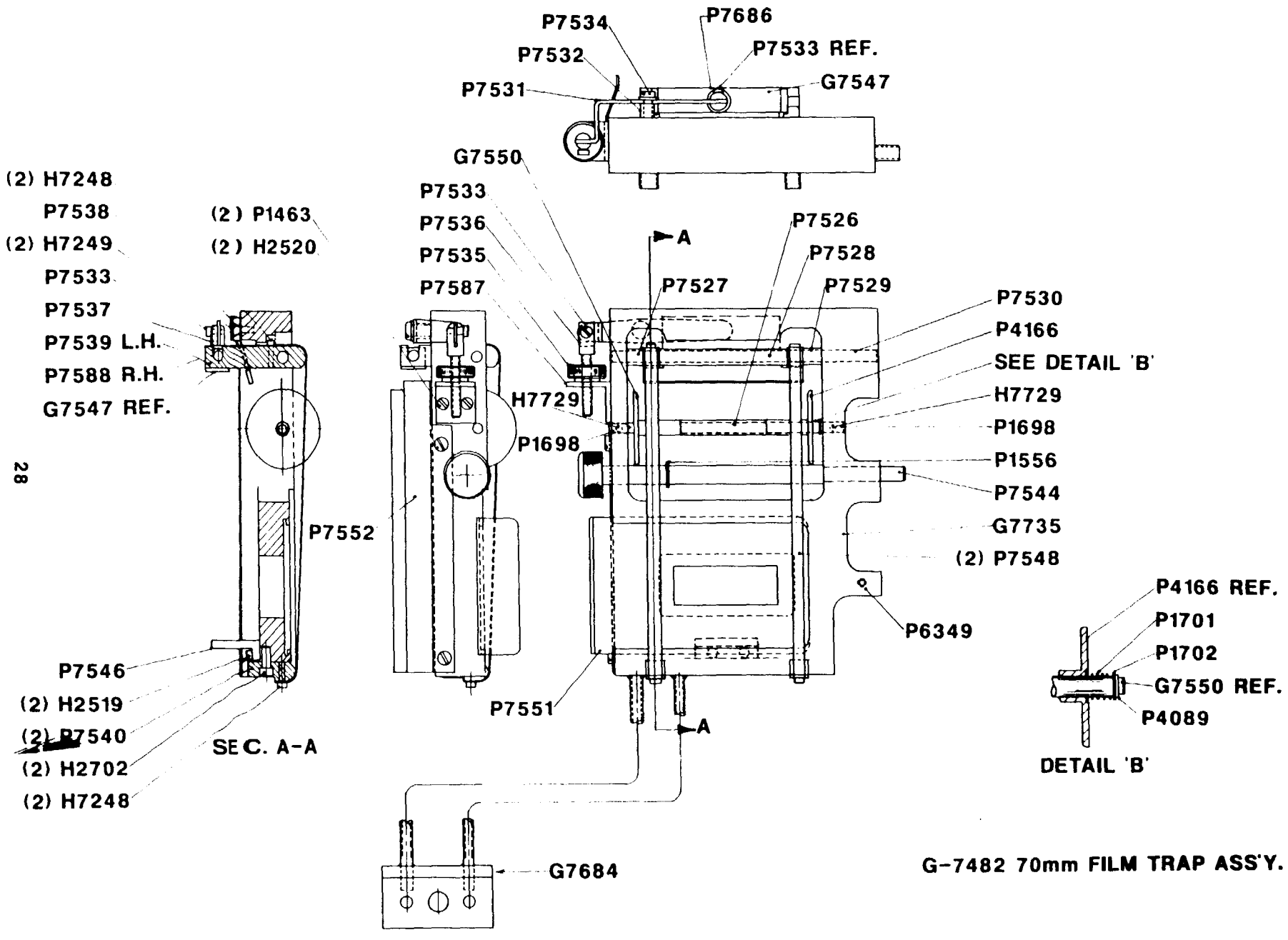
Part No.	Description
CP-156	Ball
G-2616	Aperture Tension Spring
G-4435	Lateral Guide Roller & Shaft Ass'y.
G-7633	Heat Shield Ass'y.
G-7690	Film Trap Casting
H-2519	Screw
H-2520	Screw
H-3107	Pin
H-3108	Pin
H-3218	Nut
H-3707	Screw
HP-129	Spring
P-1433	Screw
P-1435	Set Screw
P-1556	Snap Ring
P-1698	Pivot Pin
P-1701	Spring
P-1757	Screw
P-1773	Screw

Part No.	Description
P-1778	Screw
P-4069	Pressure Strap Support
P-4071	Threading Guide
P-4073	Pressure Strap Arm
P-4074	Pivot Shaft
P-4075	Mounting Block
P-4076	Cam Shaft
P-4077	Knob
P-4078	Pressure Strap
P-4079	Spring
P-4089	Snap Ring
P-4090	Snap Ring
P-4166	Lateral Guide Roller
P-4209	Aperture Plate Guide (long)
P-4210	Aperture Plate Guide (short)
P-7567	Fire Shutter Stop
P-7580	Trap Extension—35 mm
P-7625	Light Shield—35mm
P-7631	Captive Screw



G-7481 70mm FILM GATE ASSEMBLY

Part No.	Description
H-2702	Screw
H-7250	Screw
H-7251	Screw
H-7252	Screw
P-1190	Screw
P-7517	Gate Casting
P-7518	Tension Shoe Spring
P-7519	Tension Shoe
P-7520	Tension Shoe Stud
P-7521	Tension Shoe Block
P-7522	Gate Pressure Runner (Left)
P-7523	Gate Pressure Runner (Right)
P-7524	Tension Shoe Stud Retainer
P-7648	Dowel Pin

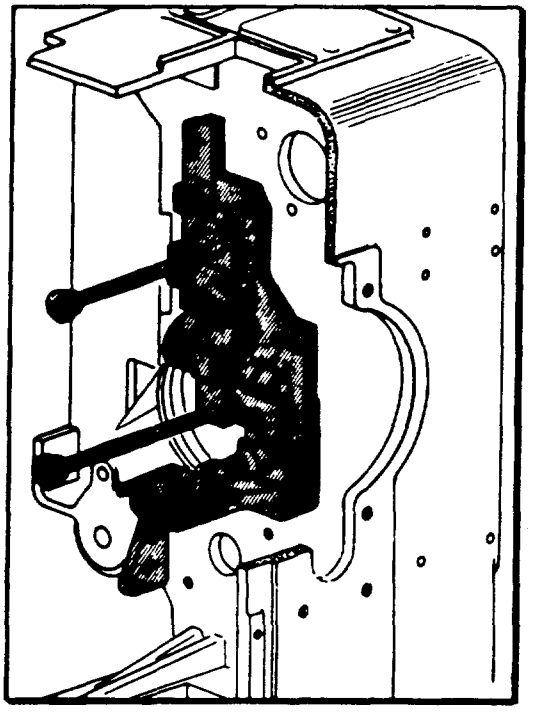


G-7482 70mm FILM TRAP ASS'Y.

G-7482 70mm FILM TRAP ASSEMBLY

Part No.	Description
G-7547	Trunnion Tension Adjustment
G-7547	Trunnion
G-7550	Guide Roller & Shaft Ass'y.
G-7684	Water Coupling Ass'y.
G-7735	Trap & Tube Ass'y.
H-2519	Screw
H-2520	Screw
H-2702	Screw
H-7248	Screw
H-7249	Screw
H-7729	Set Screw
P-1463	Screw
P-1556	Snap Ring
P-1698	Guide Roller Shaft Pivot
P-1701	Compression Spring
P-1702	Washer
P-4089	Snap Ring
P-4166	Lateral Guide Roller, Moveable
P-6349	Screw
P-7526	Lateral Spacer
P-7527	Tension Spacer
P-7528	Tension Spacer
P-7529	Tension Strap Spacer
P-7531	Tension Adjustment Lever
P-7532	Bushing
P-7533	Pivot Screw
P-7533	Pivot Screw
P-7534	Shoulder Screw
P-7535	Knurled Knob
P-7536	Clevis Tension Adjustment
P-7537	Clevis Spring Retainer
P-7538	Stop Plate
P-7539	Pressure Strap Arm (Left)
P-7540	Lower Pressure Arm
P-7544	Trap Mounting Screw, Captive
P-7546	Fire Shutter Stop
P-7548	Tension Strap
P-7551	Aperture Plate, 70mm (.630 x 1.69)
P-7552	Light Shield, 70mm
P-7587	Bracket Retainer Nut
P-7588	Pressure Strap Arm (Right)
P-7686	Film Trap Spring
P-7930	Tension Arm Shaft

G-7553 FILM GATE CARRIAGE ASS'Y.

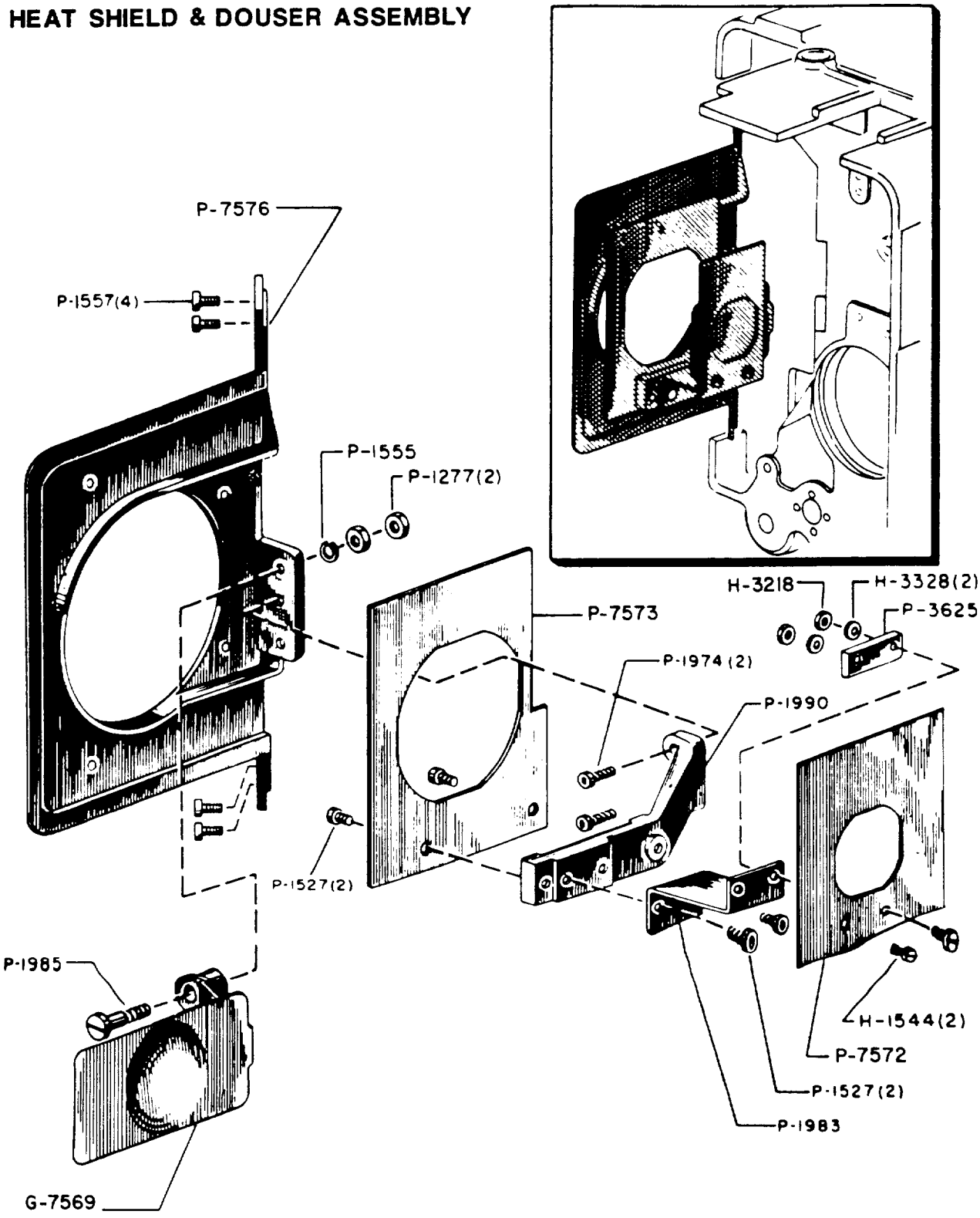


G-7553 FILM GATE CARRIAGE ASSEMBLY

Part No.	Description
G-1843	Operating Lever*
H-2709	Screw
H-3453	Screw
H-7604	Screw
P-1423	Screw
P-1424	Screw
P-1432	Adjusting Screw
P-1445	Snap Ring
P-1469	Screw
P-1511	Screw
P-1607	Collar Link Stud
P-1611	Tension Spring
P-1614	Release Lever
P-1616	Upper Guide Rod
P-1617	Lower Guide Rod
P-1620	Support Casting
P-1621	Gate Drive Support Casting
P-1628	Release Lever Pin
P-1629	Operating Lever Shaft*
P-1630	Spring Tension Adjusting Collar
P-1631	Operating Lever Tension Spring
P-1636	Upper Guide Rod Clamp
P-1648	Screw
P-1660	Light Shield
P-1666	Snap Ring
P-1827	Pivot Arm*
P-2960	Pin*
P-6821	Pin
P-7554	Operating Lever Plate
P-7555	Operating Lever Stud
P-7556	Knurled Nut
P-7558	Support Stud
P-7559	Gate Lever Extension

*Replace with G-1863

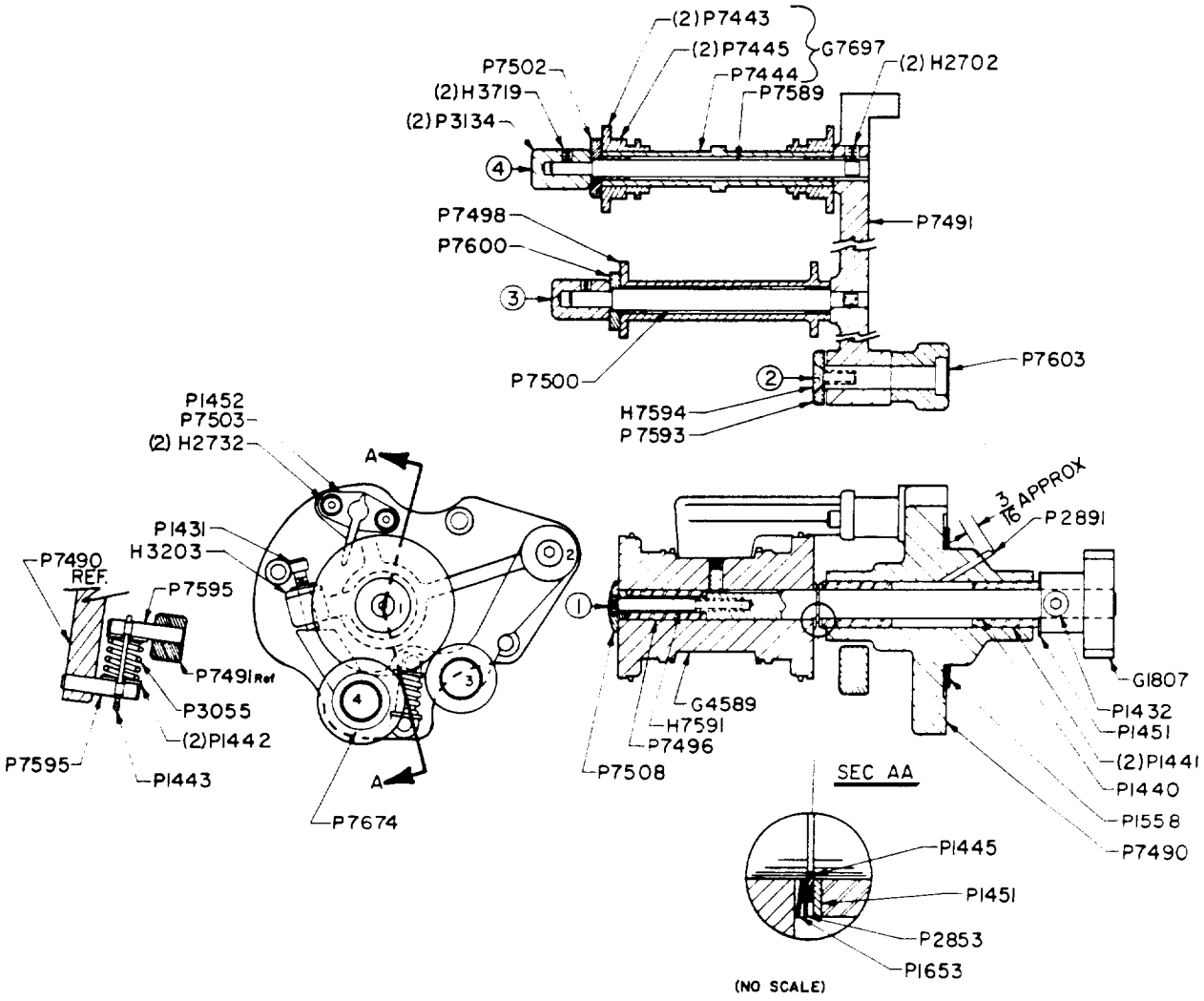
HEAT SHIELD & DOUSER ASSEMBLY



HEAT SHIELD/DOUSER

Part No.	Description
G-7569	Douser, 70mm
H-1544	Screw
H-3328	Washer
P-1277	Nut (Order 41-35010)
P-1527	Screw
P-1555	Lockwasher
P-1557	Screw
P-1974	Screw
P-1983	Bracket
P-1985	Pivot Screw
P-1990	Bracket

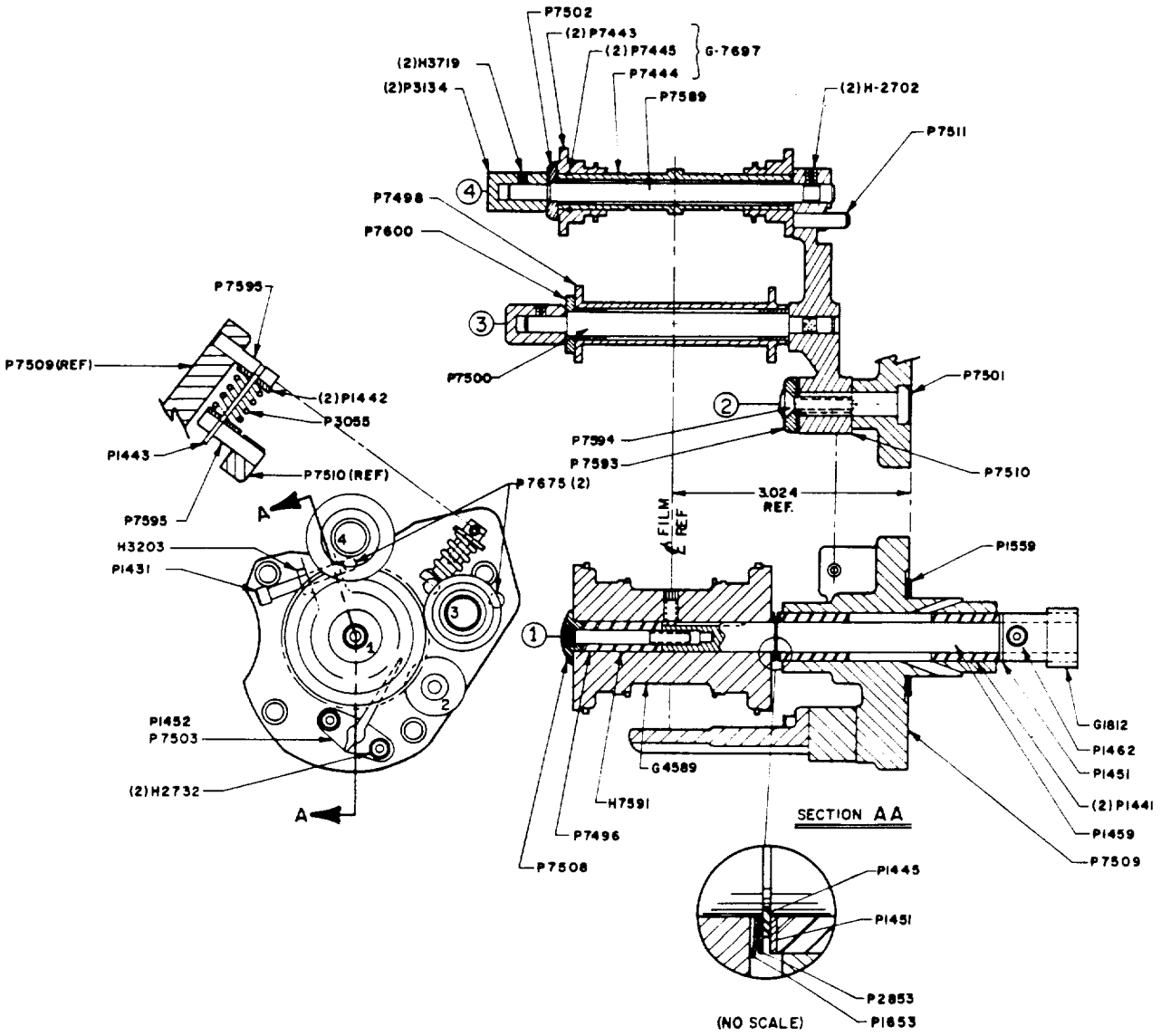
UPPER FEED SPROCKET ASS'Y G-7477



UPPER FEED SPROCKET ASS'Y 35/70 G-7477

Part No.	Description
G-1807	Gear
G-7697	Pad Roller Ass'y
Consists of:	
P-7443	Snap Idler
P-7444	Shaft
P-7445	Snap Ring
G-4589	Sprocket, 35/70mm
H-2702	Set Screw
H-2732	Screw
H-3203	Link Spacer
H-3719	Set Screw
H-7591	Screw
H-7594	Screw
P-1431	Screw
P-1432	Screw
P-1440	Sprocket Shaft
P-1441	Sleeve Bearing
P-1442	Spring Retainer
P-1443	Spring Guide
P-1445	Retaining Ring
P-1451	Thrust Washer
P-1452	Stripper Plate
P-1558	Gasket
P-1653	Spring Washer
P-2853	Washer
P-2891	Bearing Wick
P-3055	Spring
P-3134	Stud Knob
P-7490	Cstg
P-7491	Cstg
P-7496	Spacer
P-7498	Pad Roller
P-7500	Pad Roller Shaft
P-7502	Spacer
P-7503	Stripper
P-7508	Washer
P-7589	Shaft
P-7593	Washer
P-7595	Stud
P-7600	Washer
P-7603	Pad Roller Stud

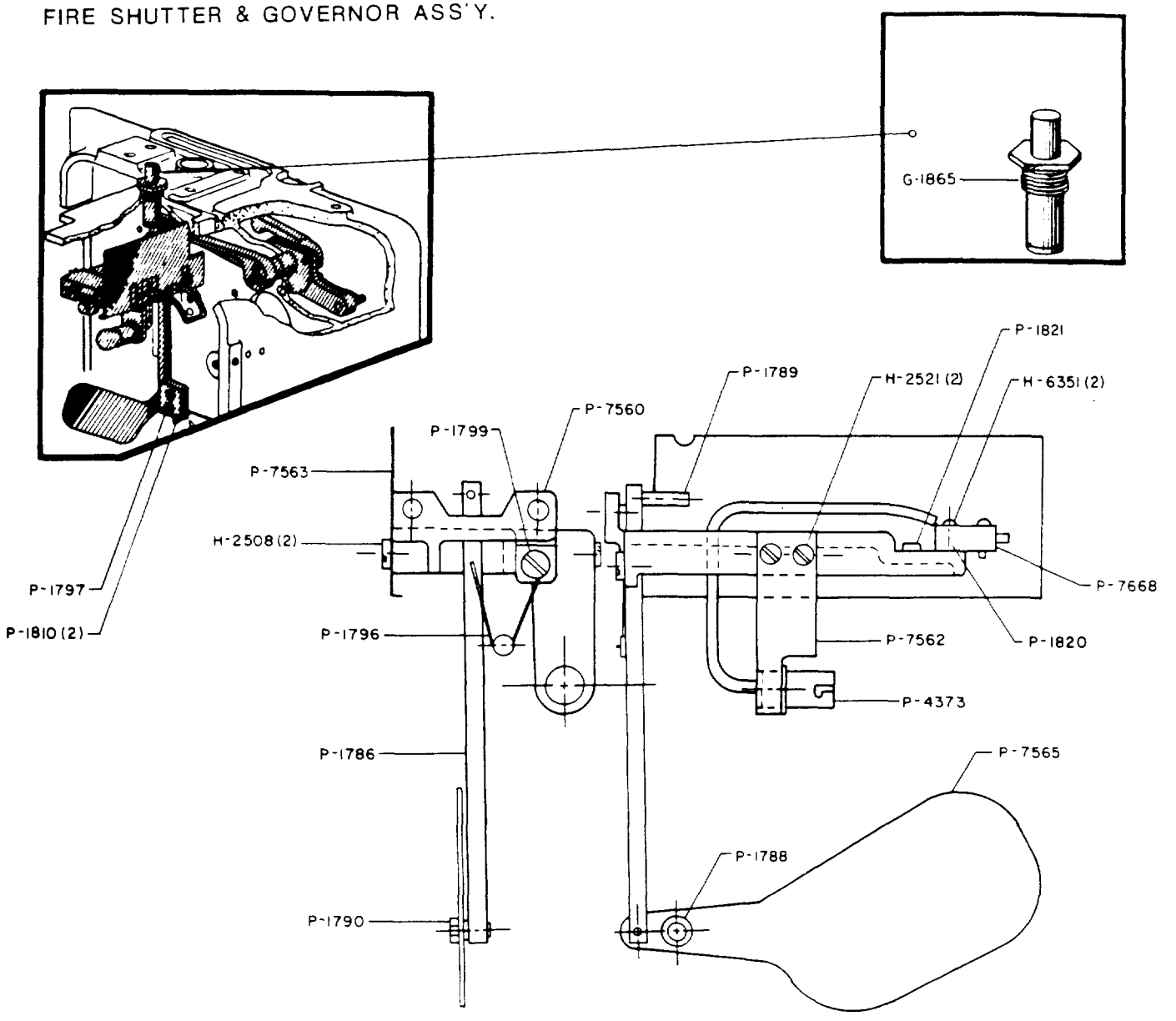
LOWER HOLDBACK SPROCKET ASS'Y G-7478

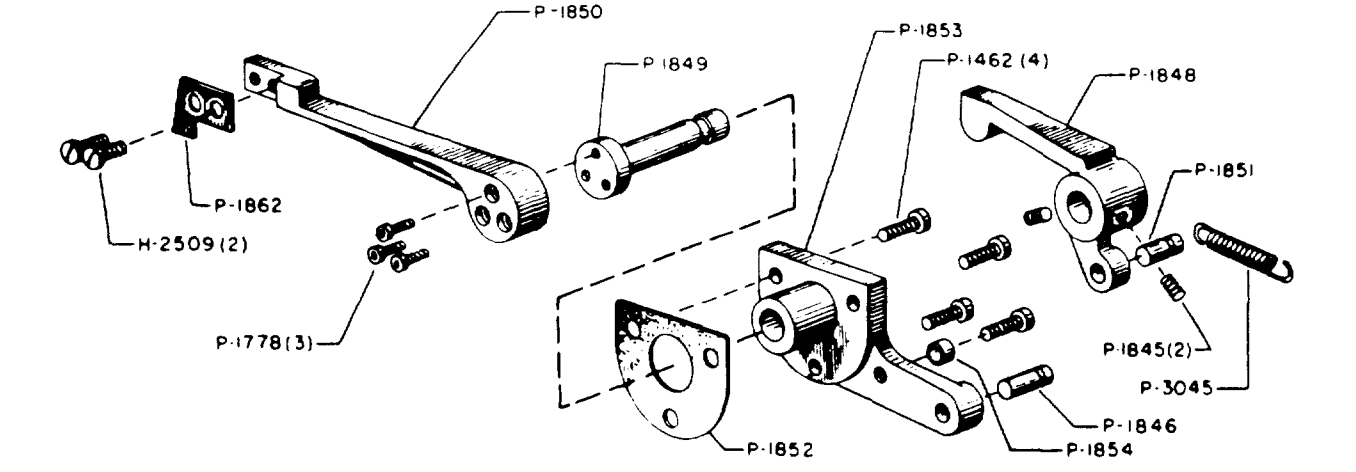


HOLDBACK SPROCKET ASS'Y G-7478

Part No.	Description
G-1812	Gear
G-4589	Sprocket
G-7697	Snap Idler Ass'y
Consists of:	
P-7443	Snap Idler
P-7444	Shaft
P-7445	Snap Ring
H-2702	Set Screw
H-2732	Screw
H-3203	Hexnut
H-3719	Set Screw
H-7591	Screw
H-7594	Screw
P-1431	Screw
P-1441	Sleeve Bearing
P-1442	Spring Retainer
P-1443	Spring Guide
P-1445	Ring
P-1451	Thrust Washer
P-1452	Stripper Plate
P-1459	Sprocket Shaft
P-1462	Screw
P-1559	Gasket
P-1653	Spring Washer
P-2853	Thrust Washer
P-3055	Spring
P-3134	Stud Knob
P-7496	Spacer
P-7498	Pad Roller
P-7500	Pad Roller Shaft
P-7501	Pad Roller Stud
P-7502	Trim Washer
P-7503	Stripper Spacer
P-7508	Washer
P-7509	Mounting Brkt.
P-7510	Pad Roller Arm
P-7511	Pin
P-7589	Snap Shaft Roller
P-7593	Washer
P-7595	Pin
P-7600	Trim Washer
P-7675	Stop Pin

FIRE SHUTTER & GOVERNOR ASS'Y.



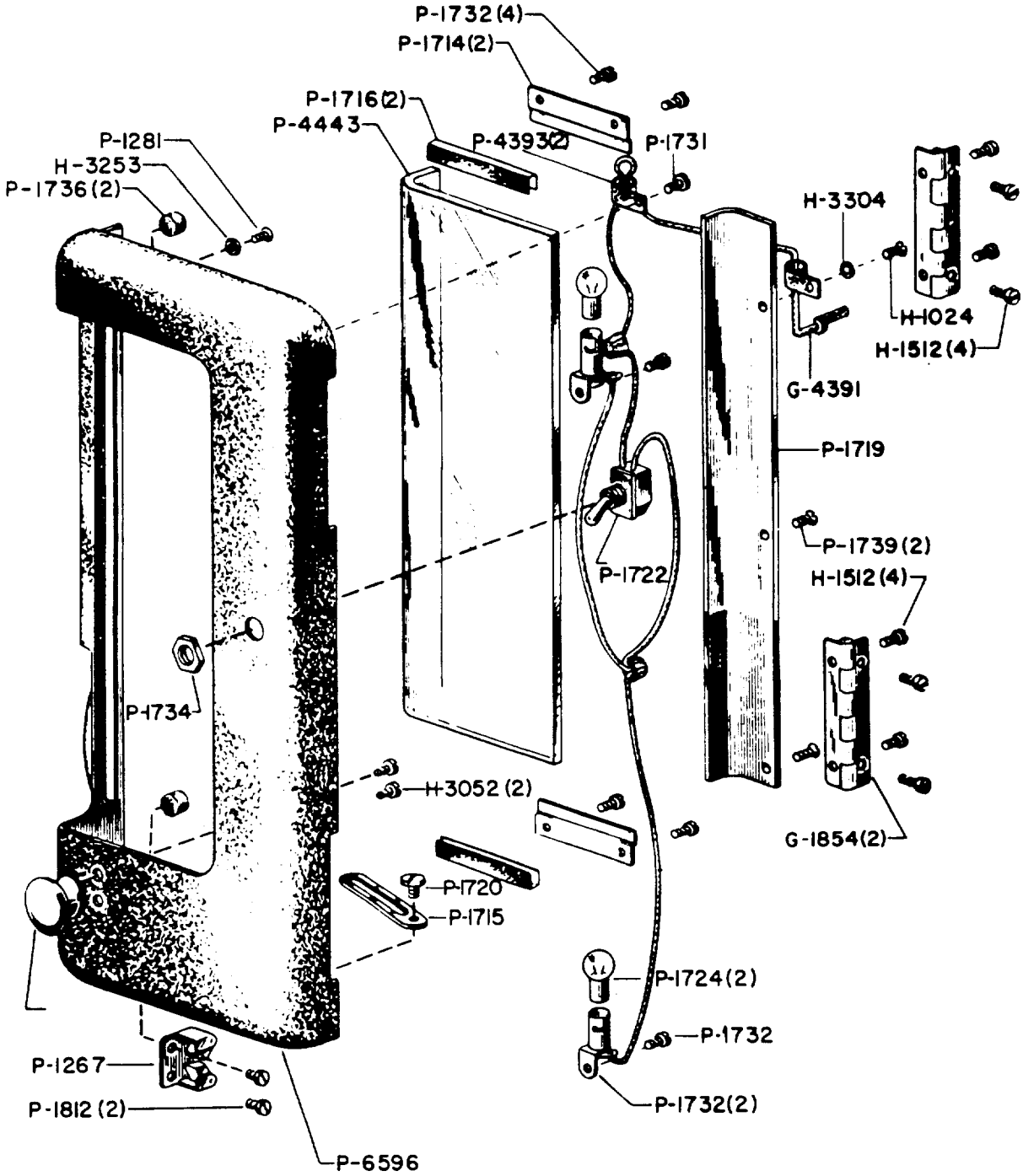


FIRE SHUTTER & GOVERNOR ASSEMBLY

Part No.	Description	Part No.	Description
G-1865	Reset Button	P-1845	Set Screw
H-2508	Screw	P-1846	Stud
H-2509	Screw	P-1848	Governor Operating Arm
H-2521	Screw	P-1849	Shaft, Operating Arm
H-6351	Screw	P-1850	Operating Arm
P-1462	Screw	P-1851	Stud
P-1778	Screw	P-1852	Gasket
P-1786	Shaft	P-1853	Support Bracket
P-1788	Bushing	P-1854	Adjusting Cam
P-1789	Reset Stud	P-1862	Adjusting Plate, Operating Arm
P-1790	Shoulder Screw	P-3045	Spring
P-1796	Reset Spring	P-4373	Framing Light Socket
P-1797	Pivot Mounting Block	P-7560	Fire Shutter Bracket
P-1799	Screw	P-7562	Light Socket Holder
P-1810	Screw	P-7563	Partition Plate
P-1820	Framing Light Switch	P-7565	Fire Shutter
P-1821	Screw	P-7668	Switch Plate

NOTE: Not sold as an assembly
Order components only

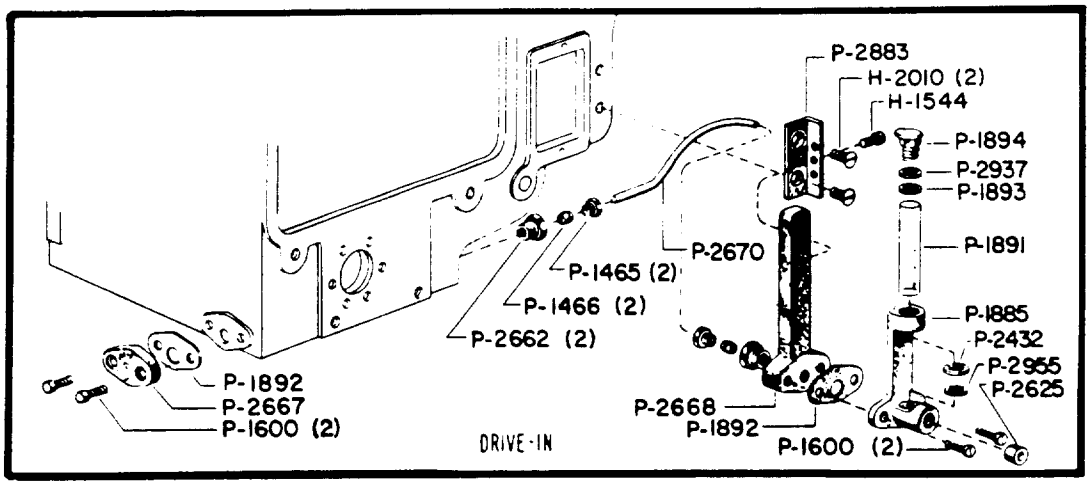
G-2168 FILM COMPARTMENT DOOR

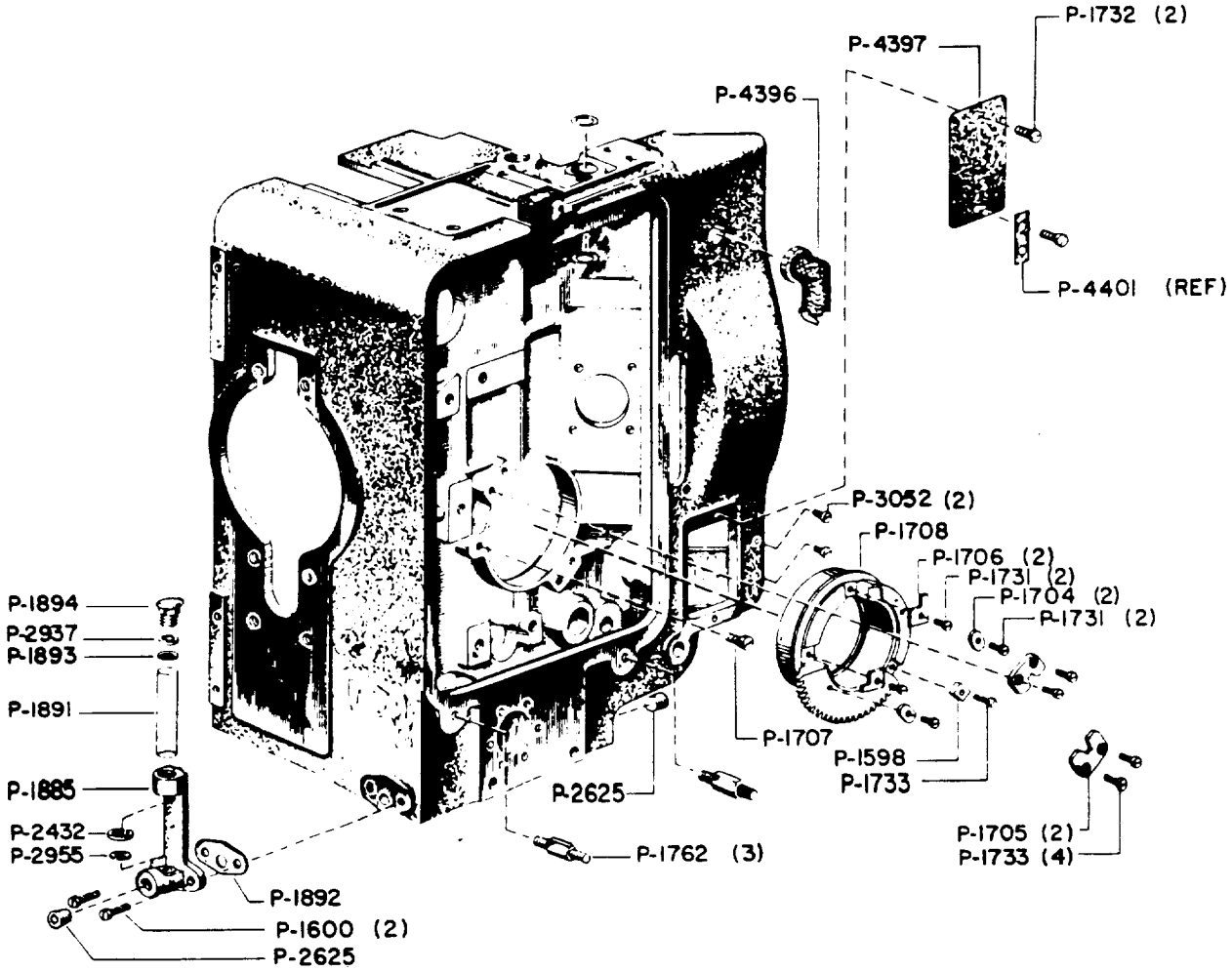


G-2168 FILM COMPARTMENT DOOR

Part No.	Description
G-1854	Hinge
G-4391	Connector
H-1024	Screw
H-1512	Screw
H-3052	Screw
H-3253	Nut
H-3304	Washer
P-1267	Door Catch
P-1281	Screw
P-1714	Clip
P-1715	Door Stay
P-1716	Window Gasket
P-1719	Light Cover
P-1720	Screw
P-1722	Switch
P-1723	Socket
P-1724	Bulb
P-1731	Screw
P-1732	Screw
P-1734	Nut
P-1736	Bumper
P-1739	Screw
P-1812	Screw
P-4393	Clamp
P-4443	Window Glass

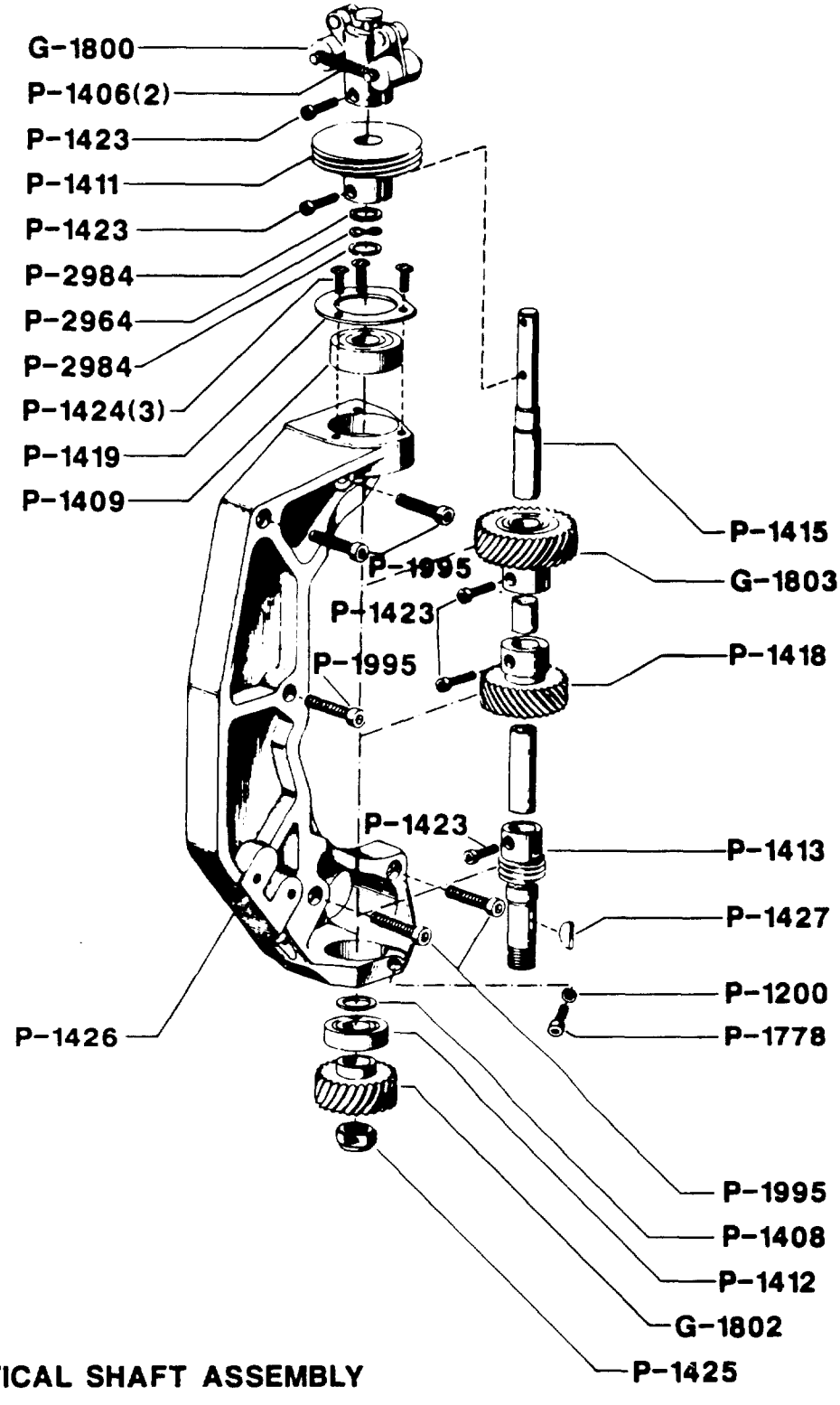
OIL LEVEL INDICATOR/FRAMING CAM





OIL LEVEL INDICATOR/FRAMING CAM

Part No.	Description	Part No.	Description
H-1544	Screw	P-1732	Screw
H-2010	Screw	P-1733	Screw
P-1465	Compression Nut	P-1762	Stud
P-1466	Compression Bushing	P-1885	Oil Gauge Bracket
P-1598	Intermittent Locating Key	P-1891	Gauge Glass
P-1600	Screw	P-1892	Gasket
P-1704	Retaining Clip	P-1893	Gasket
P-1705	Retaining Spring	P-1894	Oil Cap
P-1706	Stop Plate	P-2432	Oil Level Indicator
P-1707	Screw	P-2625	Oil Drain Plug
P-1708	Framing Cam	P-2662	Oil Hole Adapter
P-1731	Screw	P-2667	Cover



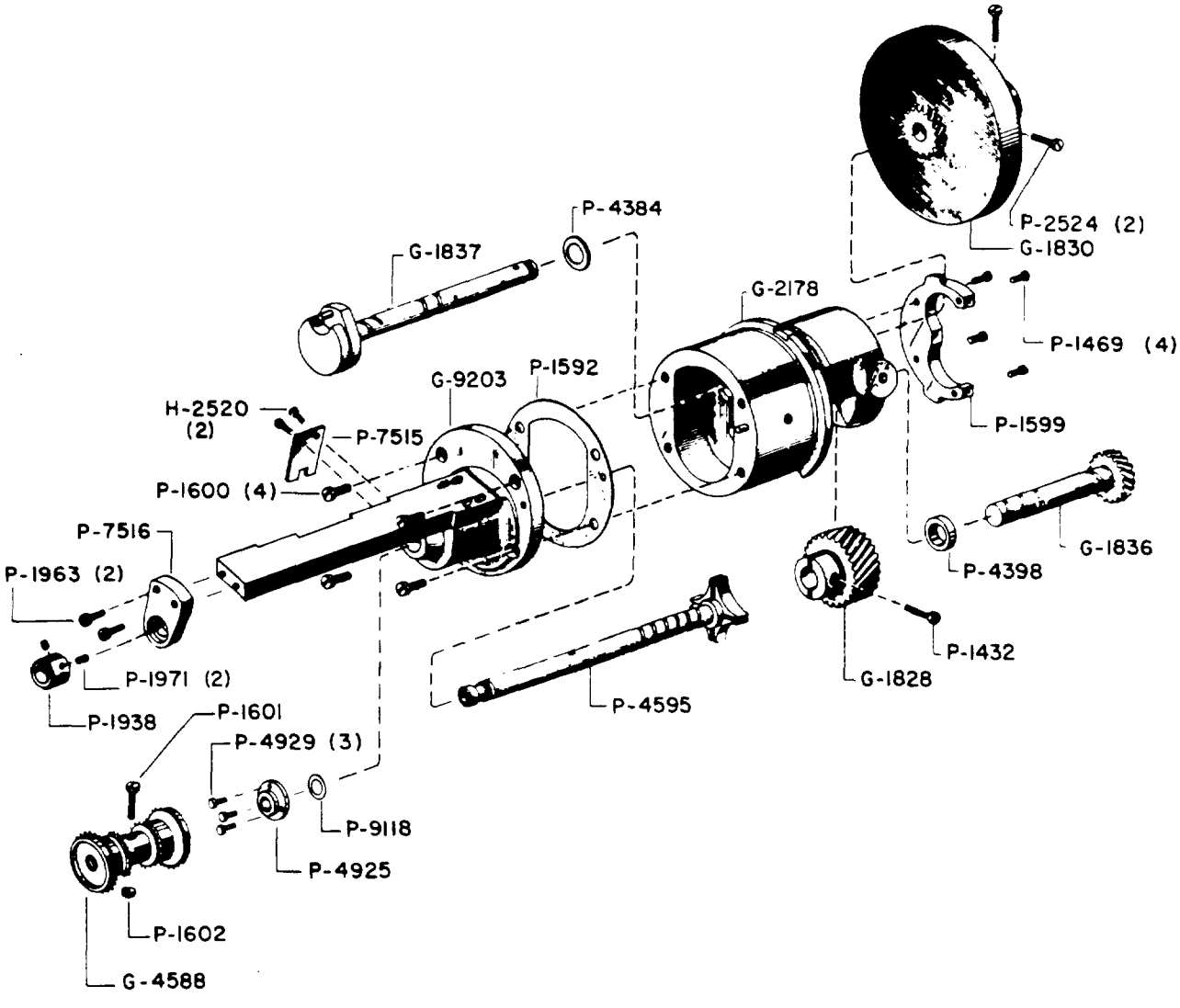
G-1801 VERTICAL SHAFT ASSEMBLY

G-1801 VERTICAL SHAFT ASSEMBLY

Part No.	Description
G-1800	Governor Ass'y. Complete
G-1802	Main Driven Gear, Vertical Shaft
G-1803	Drive Gear, Shutter & Framing Ass'y.
P-1200	Lockwasher
P-1406	Governor Spring
P-1408	Washer
P-1409	Bearing
P-1411	Drive Gear, Upper Feed Sprocket Ass'y.
P-1412	Bearing
P-1413	Drive Gear, Lower Holdback Sprocket Ass'y.
P-1415	Vertical Shaft
P-1418	Drive Gear, Intermittent Movement
P-1419	Bearing Retainer Plate
P-1423	Screw
P-1424	Screw
P-1425	Nut
P-1426	Support Casting
P-1427	Woodruff Key
P-1779	Screw
P-1995	Screw*
P-2964	Wave Spring Washer
P-2984	Thrust Washer

*Not included with G-1801; must be ordered separately (5) required

NOTE: G-1800 Governor Ass'y. includes (2) P-1406 Springs.



G-7485 35/70mm INTERMITTENT MOVEMENT ASSEMBLY

Part No.	Description	Part No.	Description
G-1828	Intermittent Driven Gear	P-1600	Screw
G-1830	Flywheel & Driven Gear Ass'y.	P-1601	Screw
G-1836	Flywheel Drive Gear & Shaft Ass'y.	P-1602	Locknut
G-1837	Cam Shaft & Pin Ass'y.	P-1938	Starwheel Collar
G-2178	Intermittent Case	P-1963	Screw
G-4588	Intermittent Sprocket, 35/70mm	P-1971	Set Screw
G-7672	Intermittent Cover	P-2524	Screw
H-2520	Screw	P-4384	Camshaft Spacer
P-1432	Screw	P-4398	Drive Gear Spacer
P-1469	Screw	P-4595	Starwheel Shaft
P-1592	Gasket	P-7515	Film Stripper
P-1599	Oil Trap	P-7516	Front Bearing Arm

NOTE:

Simplex intermittent movements are serialized separately from projector mechanisms.

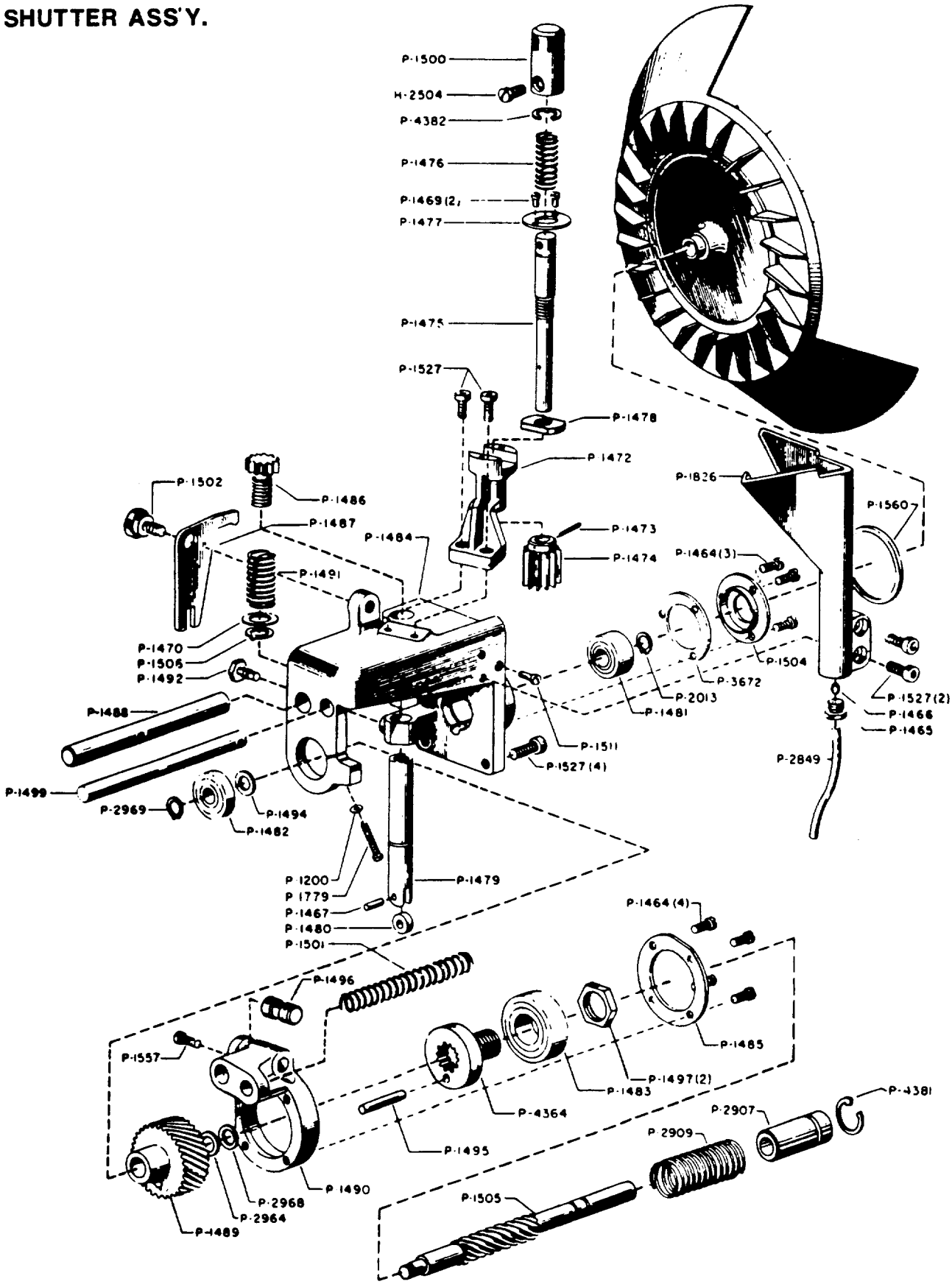
Replacement movements are available either new or rebuilt.

All replacement movements carry a (1) year warranty.

Simplex intermittent movements can also be returned to Strong International for factory rebuild. Customer is invoiced for parts and labor.

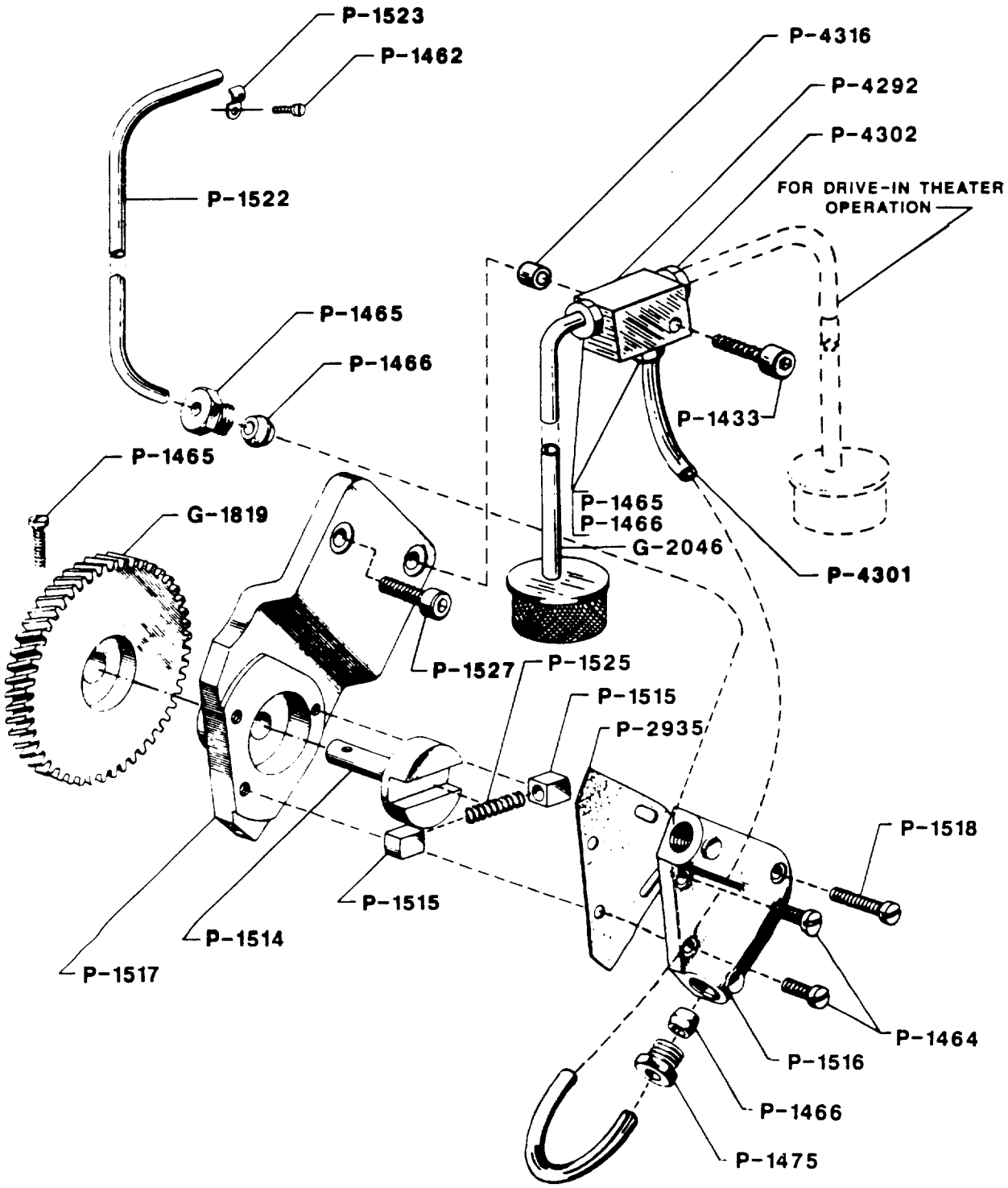
Contact your authorized Strong International Dealer for details.

SHUTTER ASS'Y.



SHUTTER ASS'Y

Part No.	Description
H-2504	Screw
P-1200	Lock Washer
P-1464	Screw
P-1465	Compression Nut
P-1466	Compression Bushing
P-1467	Pin
P-1469	Screw
P-1470	Washer
P-1472	Bracket
P-1473	Gear Pin
P-1474	Gear
P-1475	Shaft
P-1476	Spring
P-1477	Retainer Plate
P-1478	Stop Nut
P-1479	Framing Rod
P-1480	Rod Roller
P-1481	Bearing
P-1482	Bearing
P-1483	Bearing
P-1484	Bracket Casting
P-1485	Plate
P-1486	Gear
P-1487	Lever
P-1488	Slide Rod
P-1489	Gear
P-1490	Bracket
P-1491	Spring
P-1492	Screw
P-1494	Spacer
P-1495	Pin
P-1496	Lever Pin
P-1497	Lock Nut
P-1499	Guide Rod
P-1500	Adjustment Rod
P-1501	Spring
P-1502	Screw
P-1504	Retainer Plate
P-1505	Geared Shaft
P-1506	Ring
P-1511	Screw
P-1527	Screw
P-1557	Screw
P-1560	Gasket
P-1779	Screw
P-1826	Oil Collector
P-2013	Snap Ring
P-2849	Oil Tube
P-2907	Collar
P-2909	Spring
P-2964	Spring Washer
P-2968	Washer
P-2969	Snap Ring
P-3672	Oil Seal
P-4364	
P-4382	Snap Ring

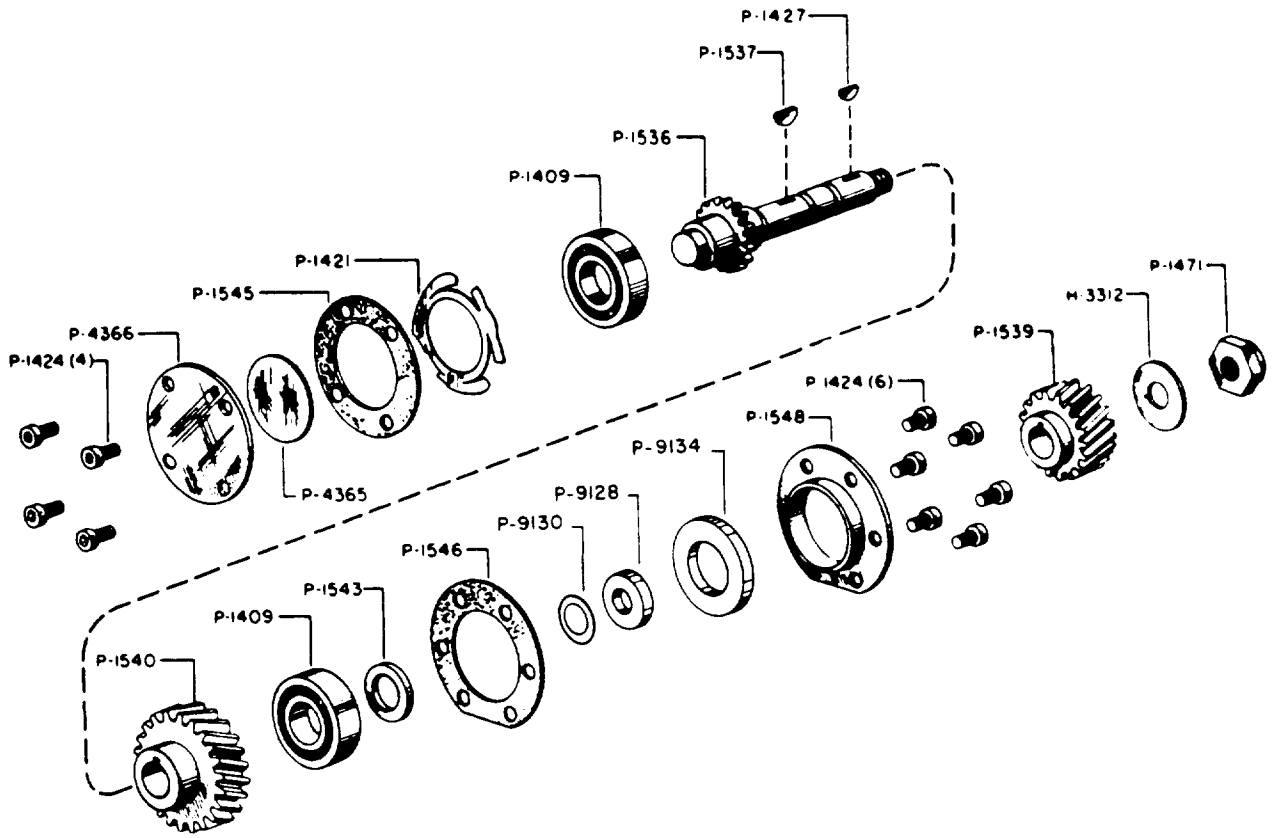

P-1523
P-1462
P-1522
P-1465
P-1466
P-1465
G-1819
P-4316
P-4292
P-4302
FOR DRIVE-IN THEATER OPERATION
P-1433
P-1465
P-1466
G-2046
P-4301
P-1527
P-1525
P-1515
P-2935
P-1518
P-1515
P-1514
P-1517
P-1464
P-1516
P-1466
P-1475

G-1822 OIL PUMP PARTS

Part No.	Description
G-1819	Drive Gear
*G-2046	Filter and Oil Tube
*P-1462	Screw
*P-1433	Junction-3 Way Fastening Screw
P-1464	Cover-Drive Gear Fastening Screw (Short) (3)
*P-1465	Compression Nut (4)
*P-1466	Compression Bushing (4)
P-1514	Drive Shaft and Rotor
P-1515	Vane (2)
P-1516	Housing Cover
P-1517	Housing
P-1518	Cover Fastening Screw (Long)
*P-1522	Oil Tube
*P-1523	Oil Tube Clamp
P-1525	Vane Spring
*P-1527	Pump Fastening Screw
P-2935	Cover Gasket
*P-4292	Junction-3 Way
*P-4301	Connecting Oil Tube
*P-4302	Closure Plug
*P-4316	Spacer (Junction Screw)

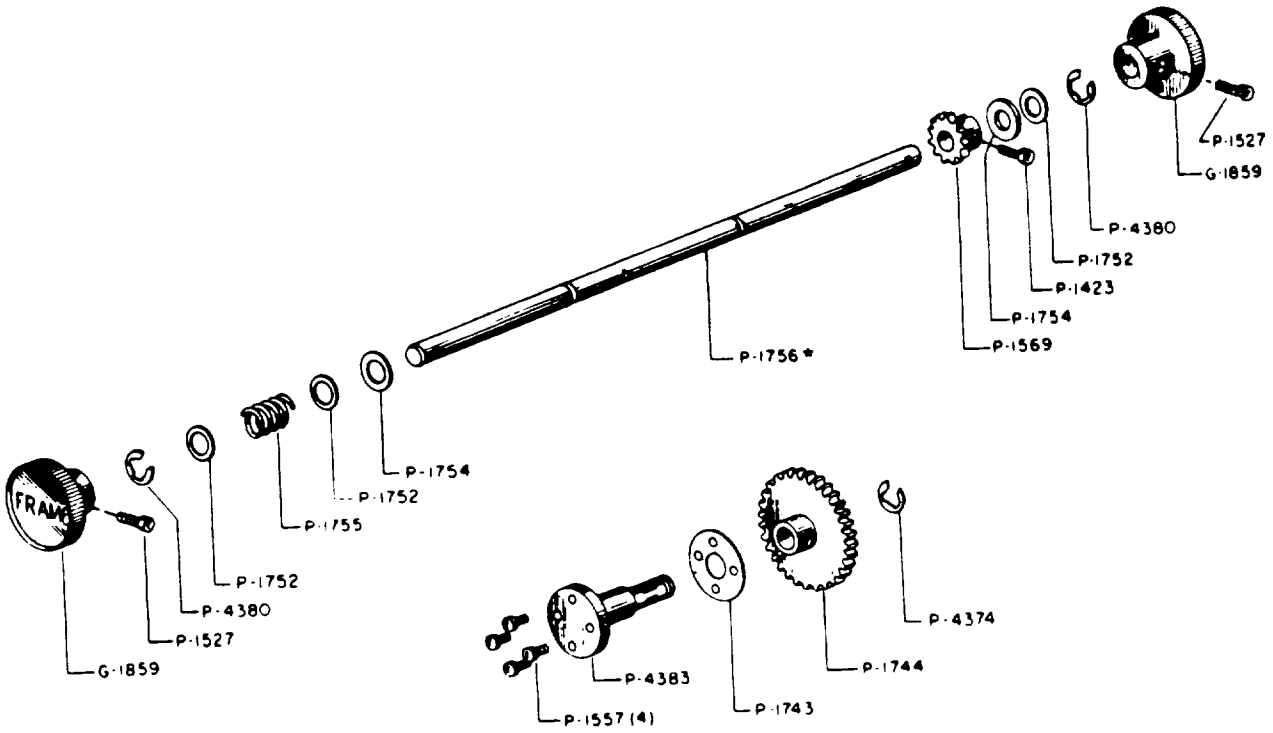
*Not Supplied with G-1822

Allen Wrench No.	Required for
P-2711	P-1433, P-1527



HORIZONTAL DRIVE SHAFT ASS'Y

Part No.	Description
H-3312	Thrust Washer
P-1409	Bearing
P-1421	Spring Washer
P-1424	Screw
P-1427	Woodruff Key
P-1471	Locking Nut
P-1536	Horizontal Shaft & Gear
P-1537	Woodruff Key
P-1539	Projector Main Drive Gear
P-1540	Vertical Shaft Drive Gear
P-1543	Thrust Washer
P-1545	Gasket
P-1546	Gasket
P-1548	Bearing Retainer
P-4365	Bearing Spacer
P-4366	Bearing Cover
P-9128	"O" Ring Cover
P-9130	"O" Ring
P-9134	Oil Seal



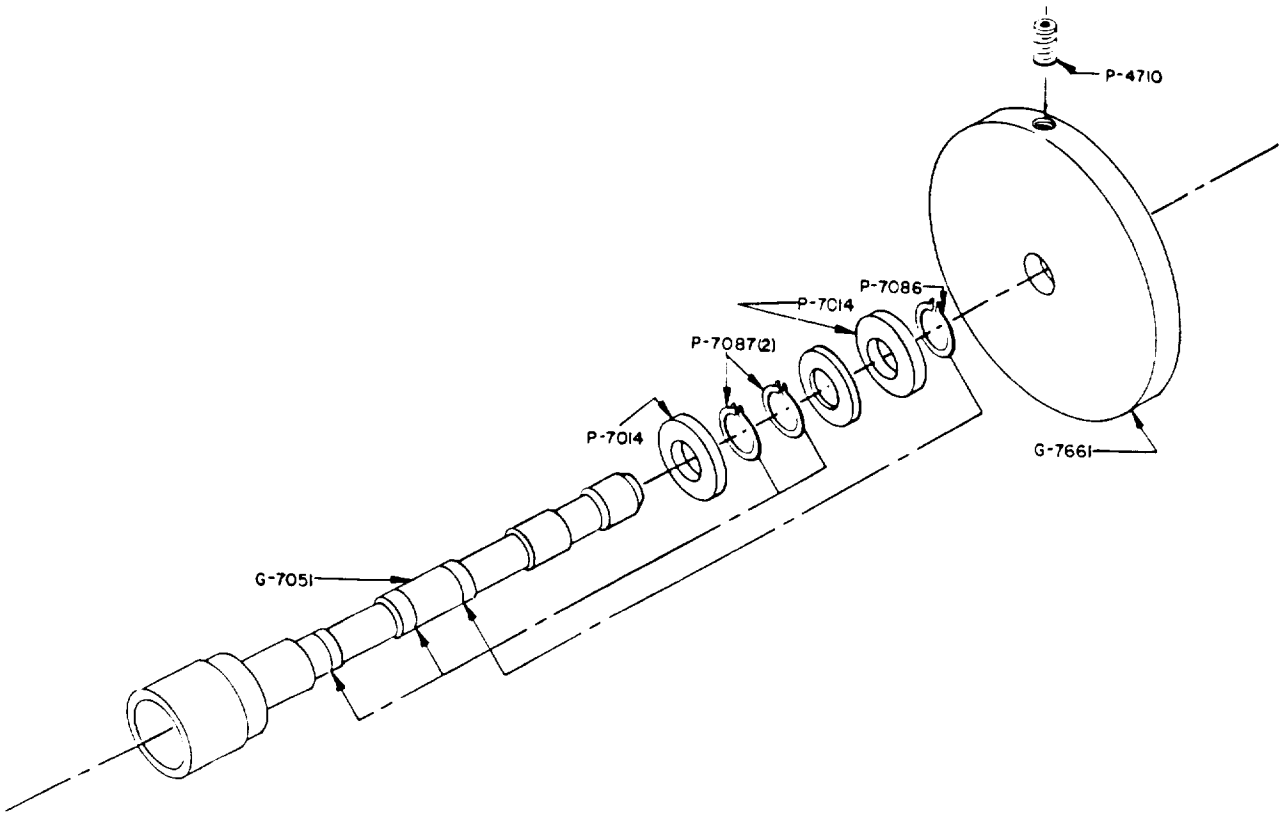
FRAMING SHAFT ASSEMBLY

Part No.	Description
G-1859	Knob
P-1423	Screw
P-1527	Screw
P-1557	Screw
P-1569	Gear
P-1743	Gasket
P-1744	Gear
P-1752	Friction Washer
P-1754	Gasket
P-1755	Spring
P-1756	Shaft
P-4374	Truarc Ring
P-4380	Truarc Ring
P-4383	Gear Shaft

NOTE: Not sold as an assembly
Order components only

PROJECTOR PARTS NOT ILLUSTRATED

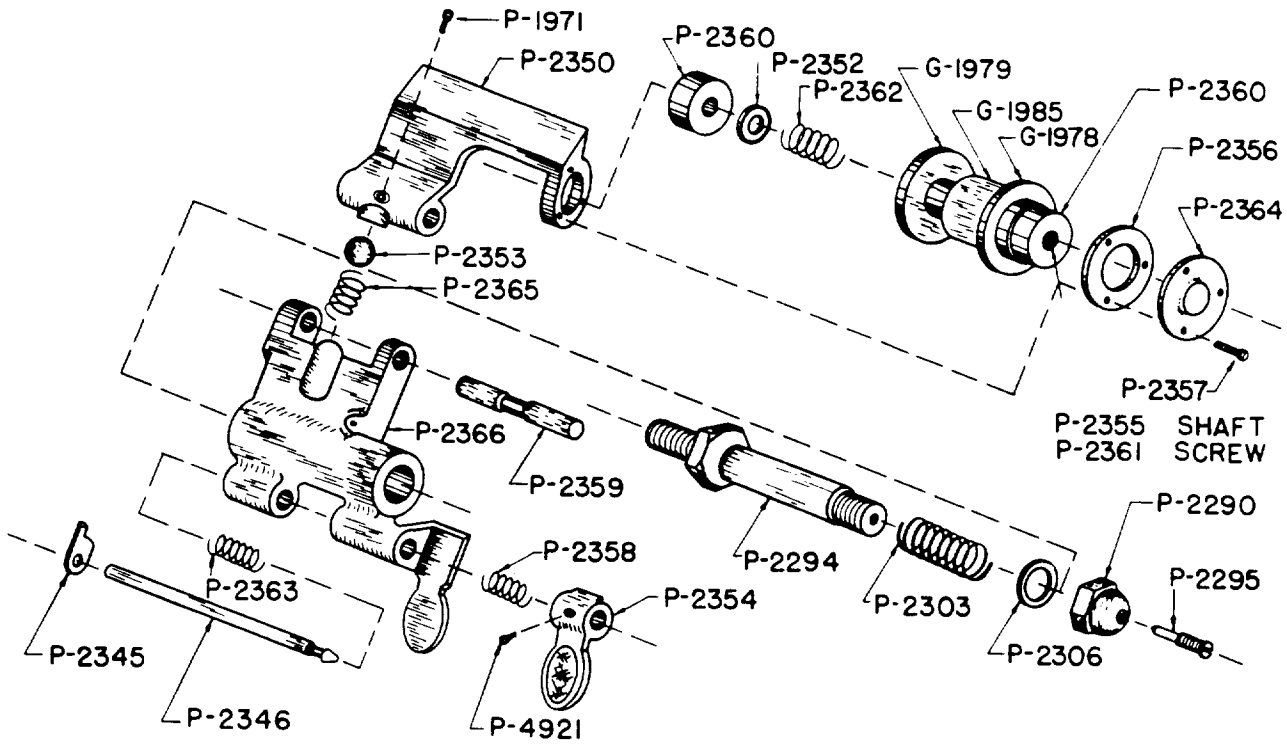
Part No.	Description
G-7640	Spot Sight Box
P-1860	Window Glass
P-2018	Window Frame
P-2017	Window Retaining Spring
P-1150	Screw, Retaining Spring
P-1538	Screw, Window Frame
P-7641	Sight Box Welded Ass'y.
G-7642	Sight Box Lower Rear Cover
P-1266	Door Strike
P-7543	Water Coupling
P-7542	Water Coupling Mount
G-2169	Gear Compartment Cover
P-6603	Cover Casting
P-6626	Window Glass
P-6627	Window Clip
P-1424	Clip Mounting Screw
P-6643	Window Gasket
P-6644	Cover Gasket
P-1758	Knurled Nut
G-2156	Lens Adapter



IMPEDANCE DRUM ASSEMBLY

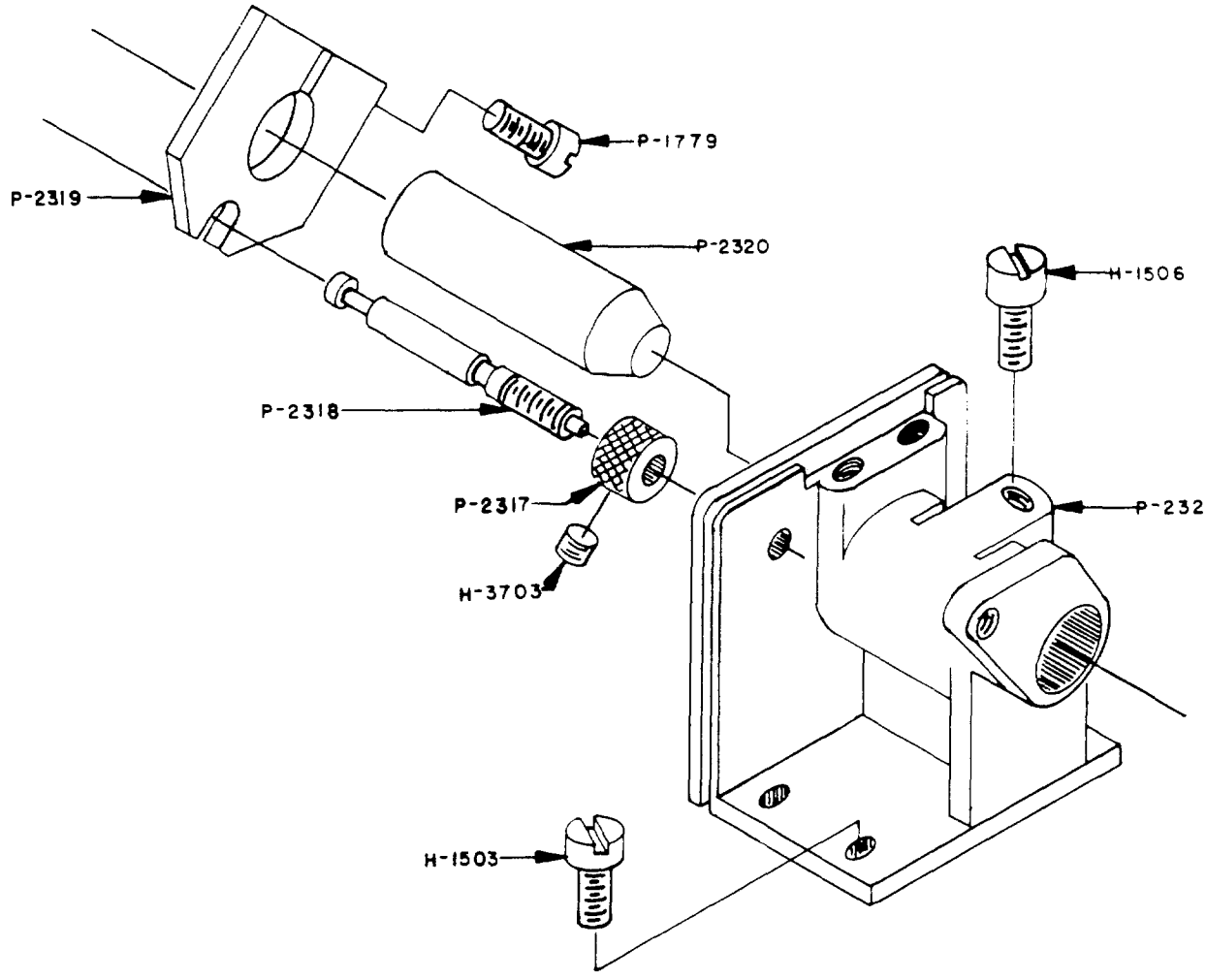
Part No.	Description
G-7051	Impedance Drum & Shaft Ass'y.
G-7661	Flywheel
P-4710	Set Screw
P-7014	Bearing
P-7086	Snap Ring
P-7087	Snap Ring

NOTE: Not sold as an assembly
Order components only



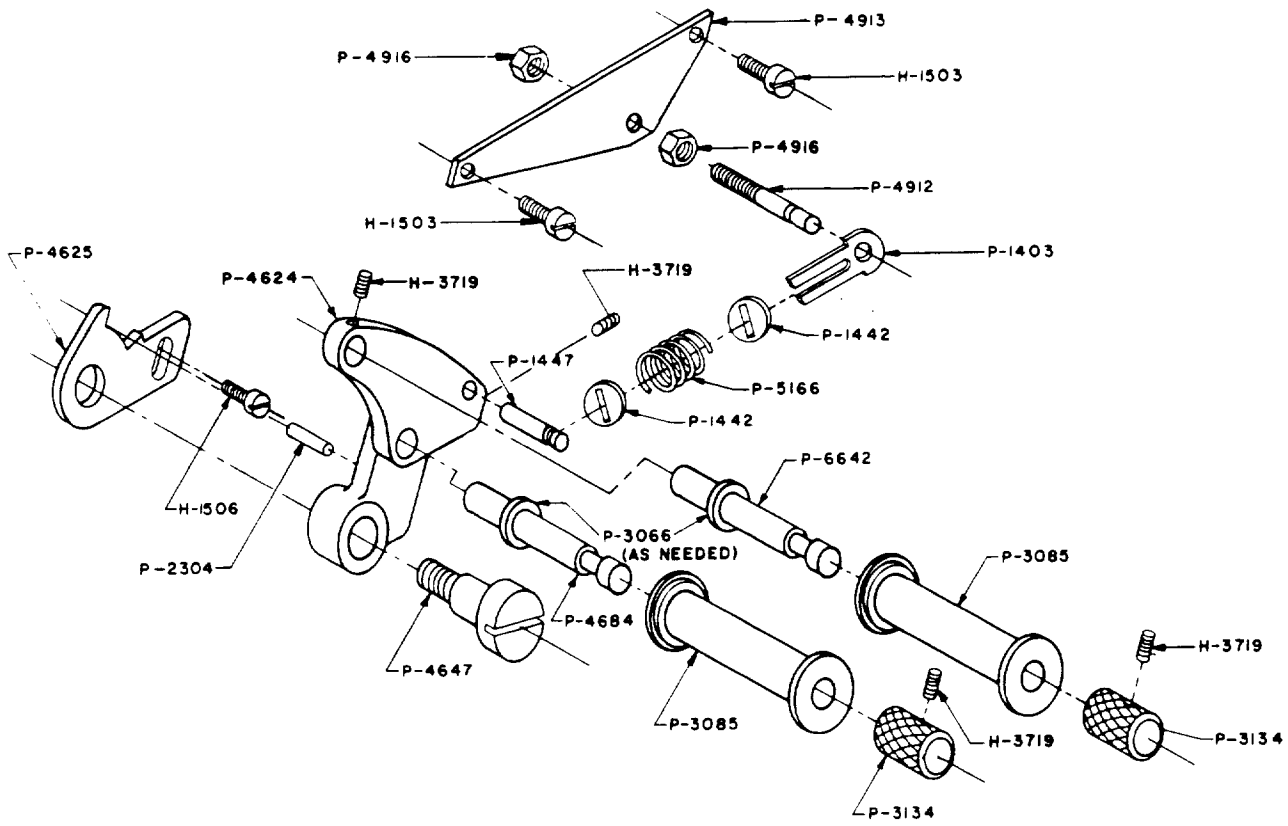
LATERAL GUIDE ROLLER ASS'Y G-1977

Part No	Description	Part No.	Description
G-1978	Fixed Flange Roller	P-2354	Lever
G-1979	Movable Flange Roller	P-2355	Shaft
G-1985	Felt Roller	P-2356	Plate
P-1971	Screw	P-2357	Screw
P-2290	Acorn Nut	P-2358	Spring
P-2294	Shaft	P-2359	Pivot Shaft
P-2295	Dog Point Screw	P-2360	Bearing
P-2303	Spring	P-2361	Screw
P-2306	Washer	P-2362	Spring
P-2345	Catch	P-2363	Spring
P-2346	Shaft	P-2364	Plate
P-2350	Guide Roller Arm	P-2365	Spring
P-2352	Spacer	P-2366	Support Casting
P-2353	Ball	P-4921	Screw



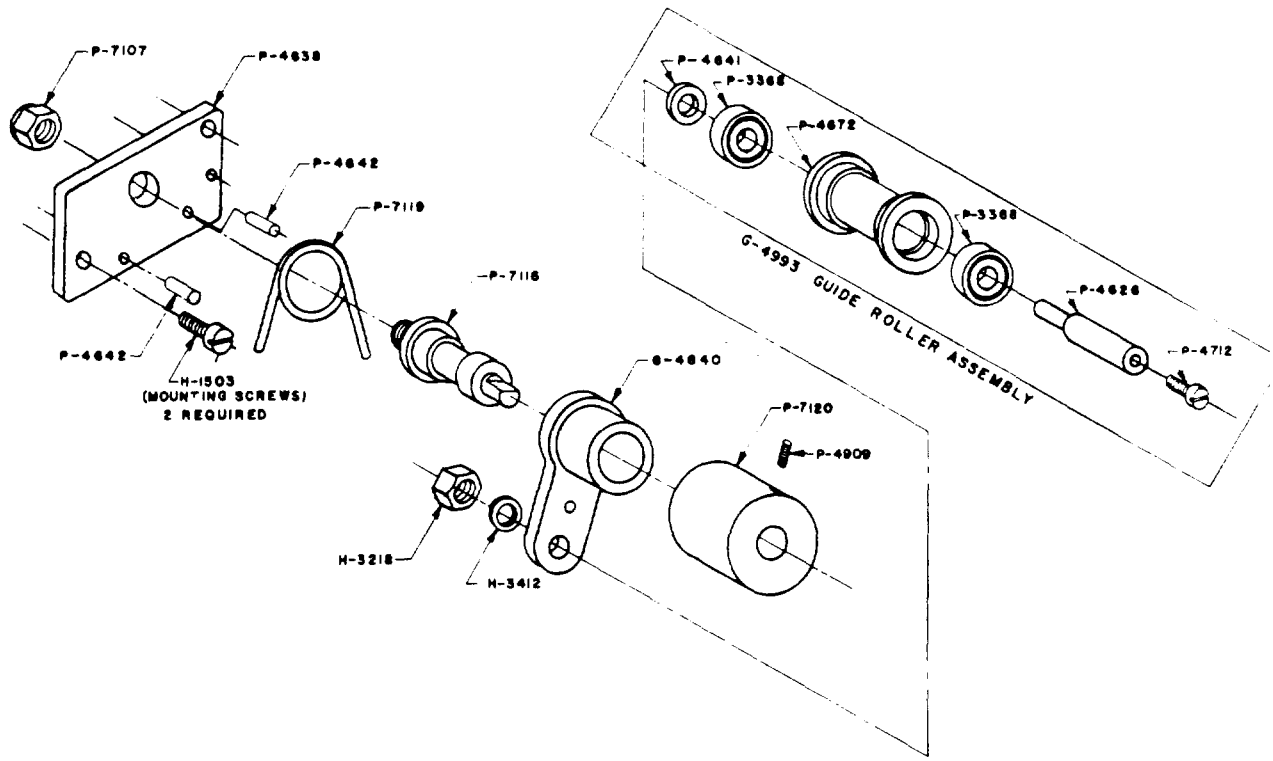
SLIT LENS ASS'Y

Part No.	Description
H-1503	Screw
H-1506	Screw
H-3703	Set Screw
P-1779	Screw
P-2317	Knurled Collar
P-2318	Focus Shaft, Adj. Screw
P-2319	Clamping Plate
P-2320	Slit Lens (Replace with 7-46)
P-2321	Support Casting



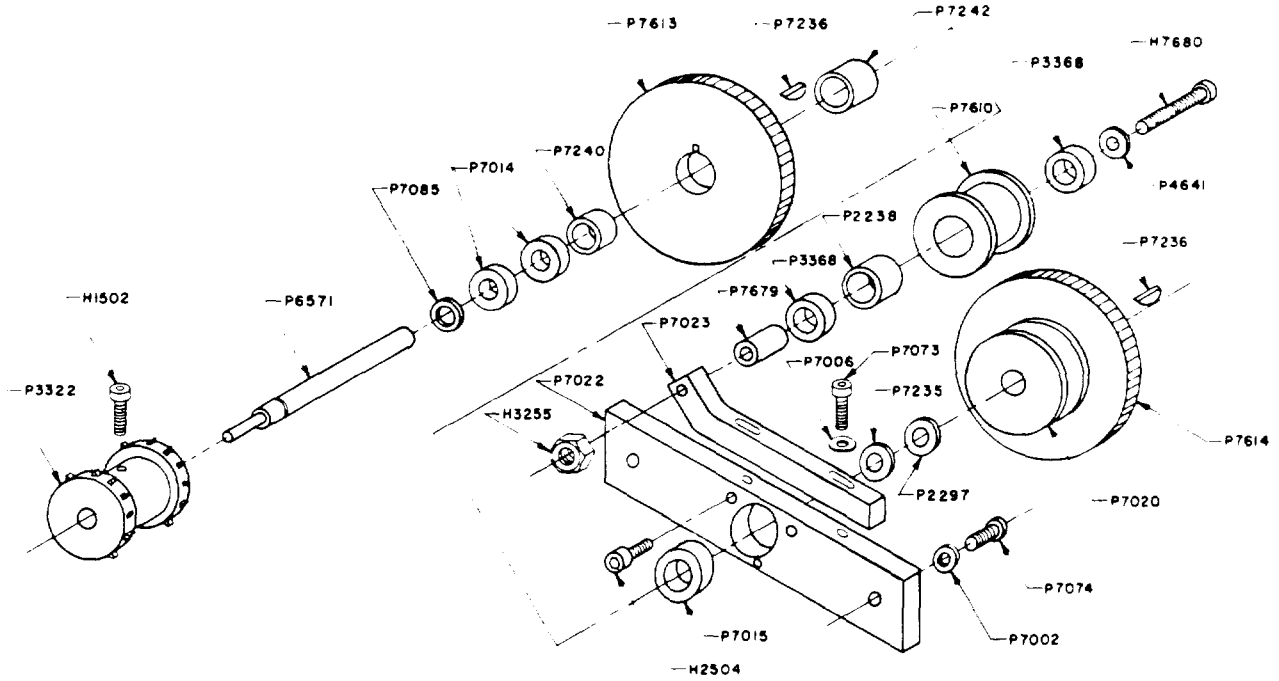
PAD ROLLER & ASSOC. PARTS

Part No.	Description
H-1503	Screw
H-1506	Screw
H-3719	Set Screw
P-1403	Spring Guide
P-1442	Spring Retainer
P-1447	Guide Pin
P-2304	Pin
P-3066	Washer
P-3085	Pad Roller
P-3134	Stud Knob
P-4624	Casting
P-4625	Plate
P-4647	Shoulder Screw
P-4684	Pad Roller Shaft, Straight
P-4912	Stud
P-4913	Plate
P-4916	Hexnut
P-5166	Spring
P-6642	Pad Roller Shaft, Eccentric



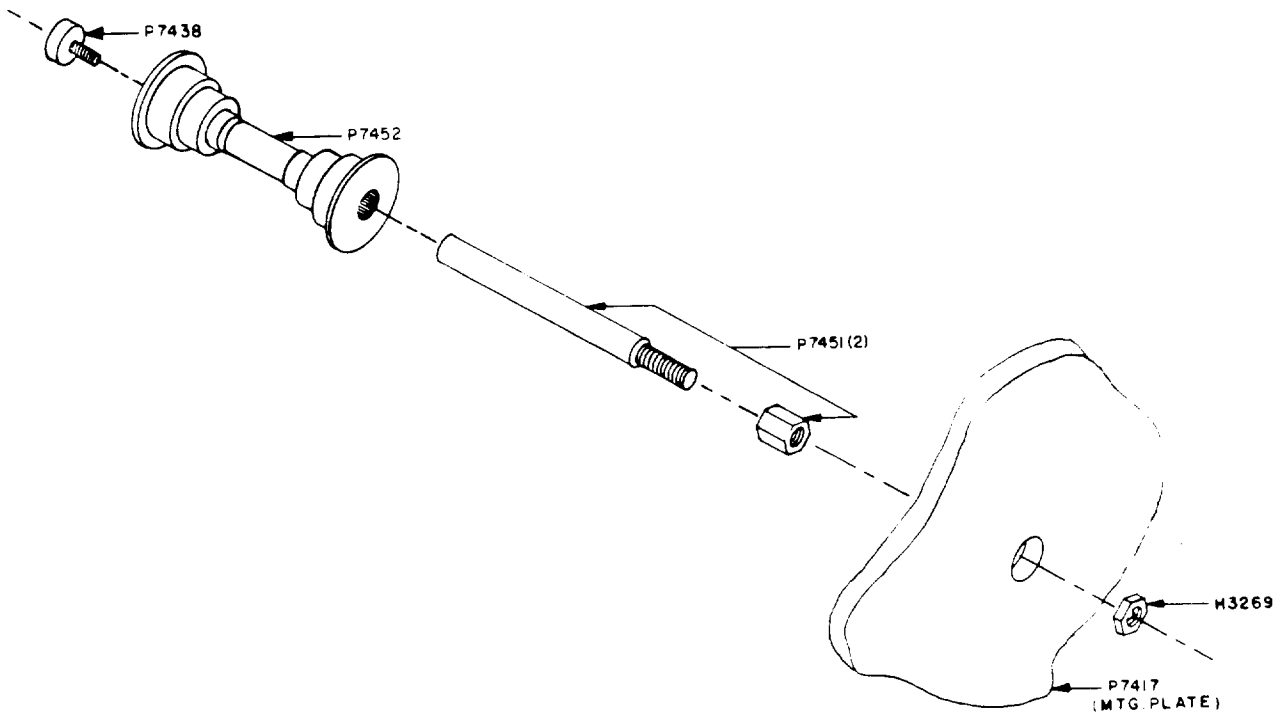
G-4635 DAMPER ASS'Y

Part No.	Description
G-4640	Damper Arm Ass'y
G-4993	Guide Roller Ass'y
Consists of:	
P-3368	Bearing
P-4626	Stud
P-4641	Spacer
P-4672	Roller
P-4712	Screw
H-1503	Screw
H-3218	Hexnut
H-3412	Washer
P-4638	Plate
P-4642	Pin
P-4909	Set Screw
P-7107	Hexnut
P-7116	Stud
P-7119	Spring
P-7120	Damper Cap



SPROCKET SHAFT ASS'Y

Part No.	Description	Part No.	Description
H-1502	Screw	P-7020	Pulley
H-2504	Screw	P-7022	Bearing Plate
H-3255	Hexnut	P-7023	Idler
H-7680	Screw	P-7073	Screw
P-2238	Grommet	P-7074	Screw
P-2297	Spring Washer	P-7085	Ring
P-3322	Sprocket	P-7235	Washer
P-3368	Bearing	P-7236	Woodruff Key
P-4641	Spacer	P-7240	Spacer
P-6571	Shaft	P-7242	Spacer
P-7002	Washer	P-7610	Idler Pulley
P-7006	Washer	P-7613	Pulley
P-7014	Bearing	P-7614	Pulley
P-7015	Bearing	P-7679	Spacer



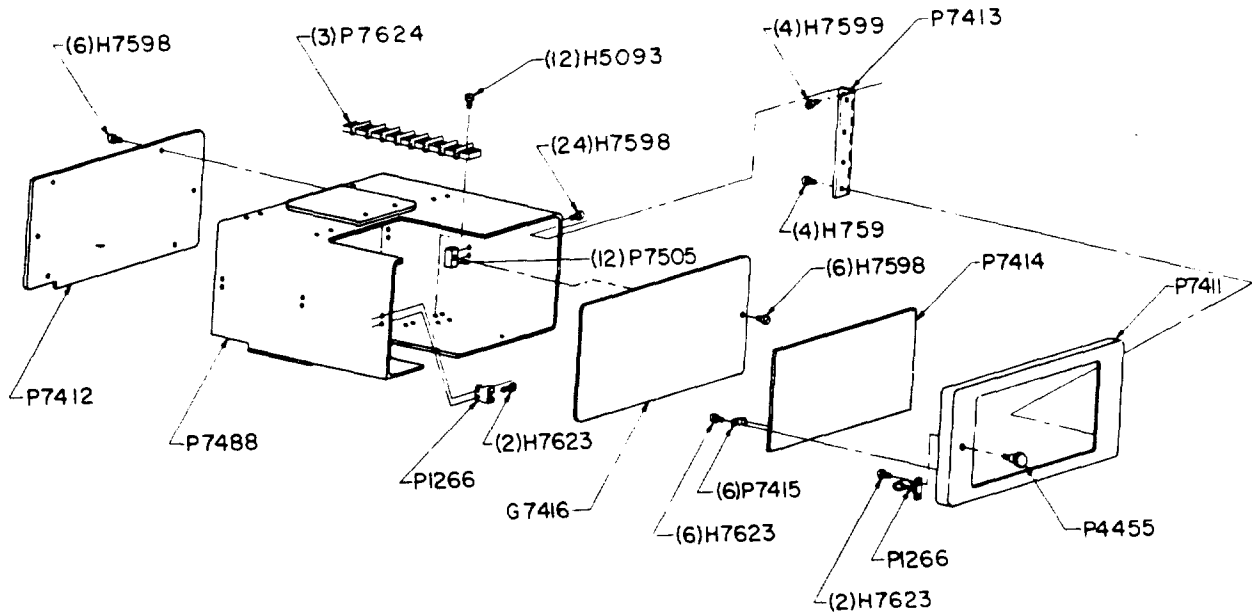
ROLLER ASSEMBLY

Part No.	Description
H-3269	Hexnut
P-7417	Mounting Plate
P-7437	Roller
P-7438	Screw
P-7451	Roller Stud

SOUNDHEAD PARTS NOT ILLUSTRATED

Part No.	Description
G-2078	Exciter Lamp Bracket Ass'y.
G-2077	Lamp Socket
P-2693	Light Shield
P-2688	Knurled Nut, Horizontal
P-2692	Knurled Nut, Vertical
P-2669	Spring
P-4922	Exciter Lamp
G-2080	Exciter Lamp Bracket Base
H-1503	Mounting Screw
G-4696	Lamp Compartment Door
P-4694	Door Casting
P-7154	Door Strike
H-1005	Strike Screw
P-4649	Hinge
H-2504	Hinge Screw
P-7253	Drive Motor, 115 V.AC (with Key)
P-7656	Motor Support Casting
P-2330	Motor Switch
P-2336	Switch Box
G-5813	Flywheel & Bushing
P-7371	Pulley
P-7021	Belt
P-4633	Belt Guard
G-6102	Film Compartment Door
P-5739	Door Casting
P-5795	Window Glass
P-5796	Window Clip
H-5852	Clip Screw
P-7154	Door Strike
H-1005	Strike Screw
P-2983	Door Catch
H-2525	Catch Screw
P-7007	Catch Spacer
P-4455	Knob
P-4916	Mounting Nut, Knob
P-4649	Hinge
H-2504	Hinge Screw
DX1076	Solar Cell Ass'y. (Stereo Variable Area)

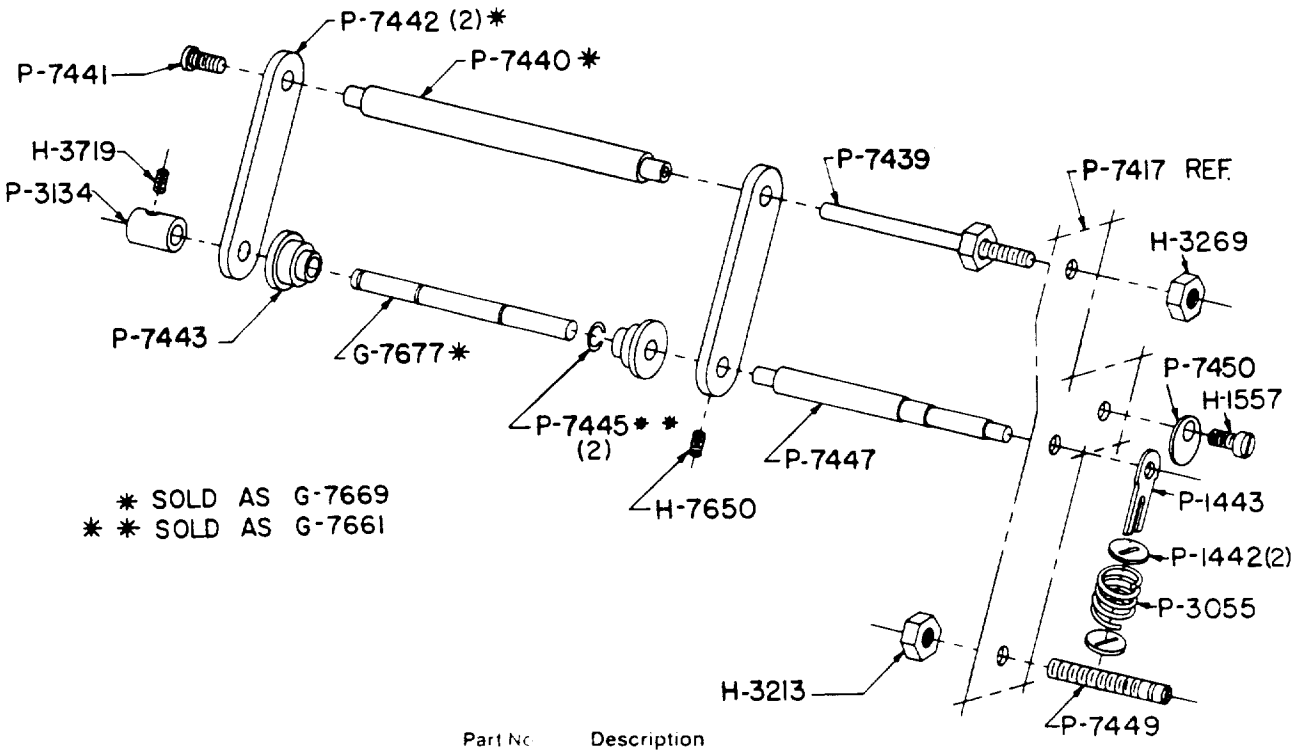
PENTHOUSE MAIN FRAME ASS'Y G-7410



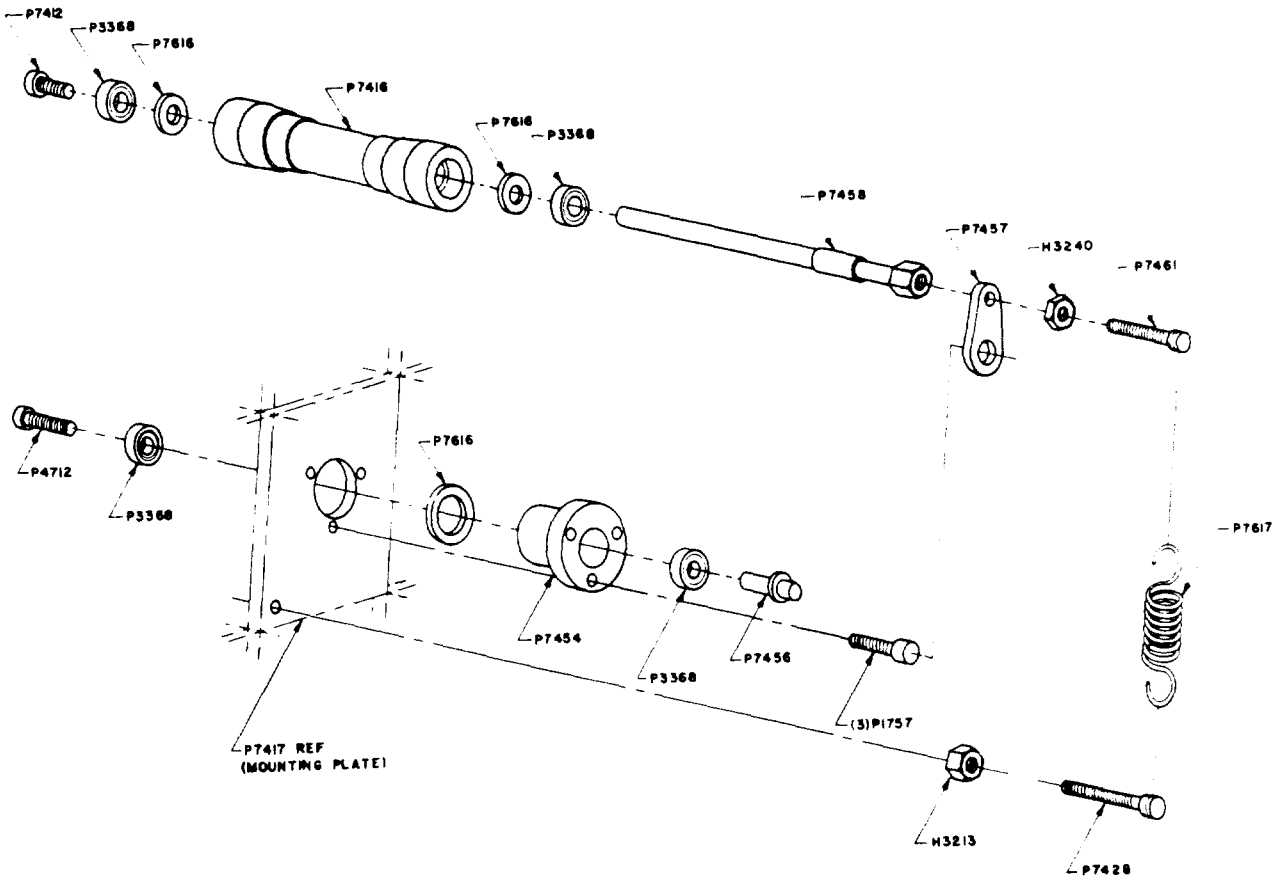
Part No.	Description
H-5093	Screw
H-7598	Screw
H-7599	Screw
H-7623	Screw
P-1266	Door Catch (2 Pcs)
P-4455	Door Pull
P-7411	Door
P-7412	Plate, Rear Cover
P-7413	Hinge
P-7414	Door Glass
P-7415	Retainer
P-7416	Plate
P-7484	Main Frame Cstg.
P-7505	Block
P-7624	Barrier Strip

REPLACEMENT MAGNETIC HEADS: 41300.....Four Channel
35900.....Six Channel

PAD ROLLER PIVOT ARM ASS'Y

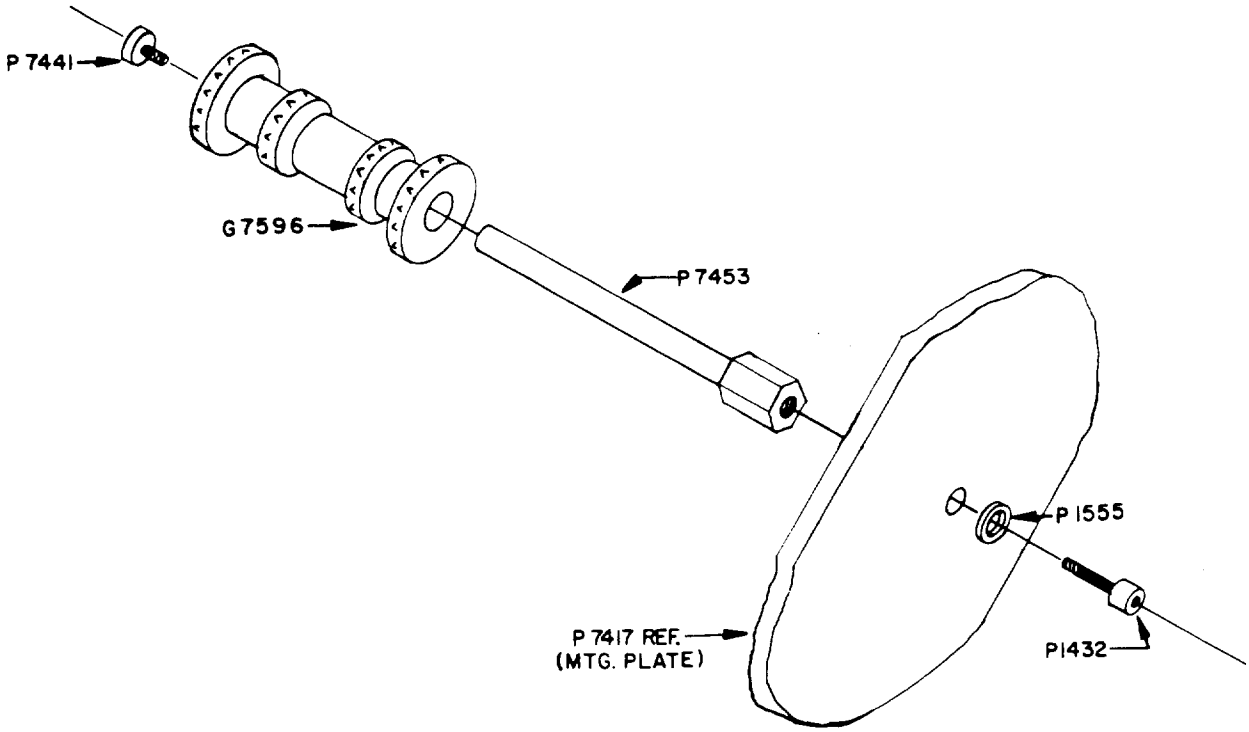


Part No	Description
G-7677	Shaft (Order G-7669)
H-1557	Screw
H-3213	Hexnut
H-3269	Hexnut
H-3719	Set Screw
H-7650	Set Screw
P-1442	Spring Retainer
P-1443	Spring Guide
P-3055	Spring
P-3134	Stud Knob
P-7417	See Main Frame
P-7439	Pivot
P-7440	Shaft (Order G-7669)
P-7441	Screw
P-7442	Plate (Order G-7669)
P-7443	Collar (Order G-7697)
P-7445	Snap Ring (Order G-7697)
P-7447	Shaft
P-7449	Stud
P-7450	Cam



FILM DAMPENER IDLER ASS'Y (SHAFT #5)

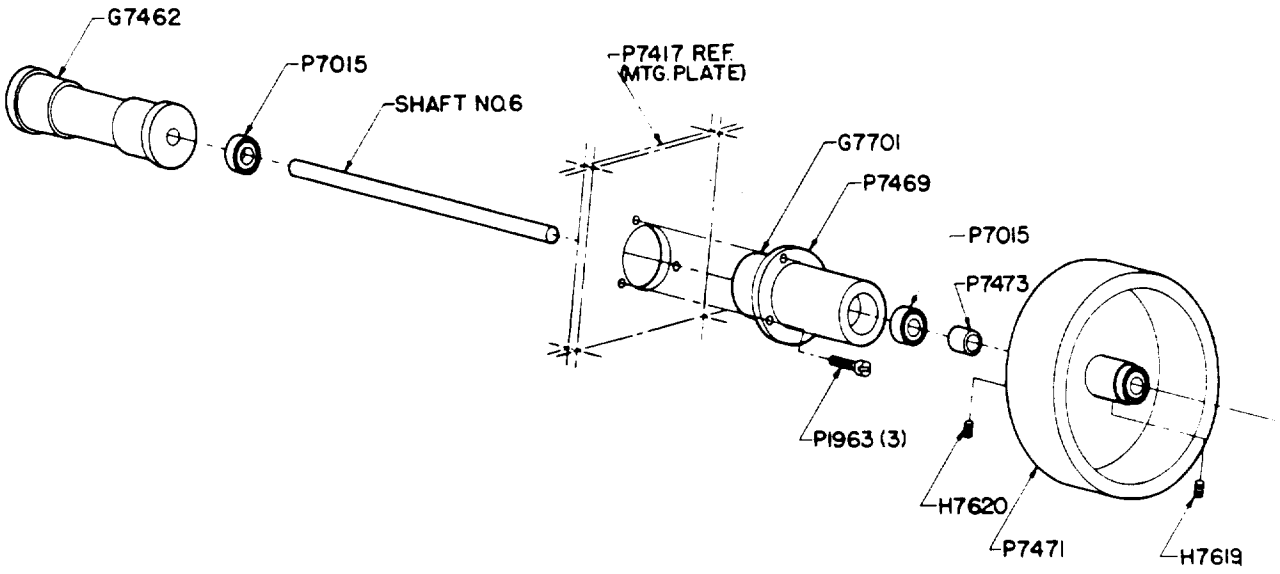
Part No.	Description
H-3213	Hexnut
H-3240	Hexnut
P-1757	Screw
P-3368	Bearing
P-4712	Screw
P-7416	Roller
P-7417	Mounting Plate (See Main Frame)
P-7428	Stud
P-7454	Housing
P-7456	Stud
P-7457	Arm
P-7458	Stud
P-7461	Stud
P-7616	Washer
P-7617	Spring

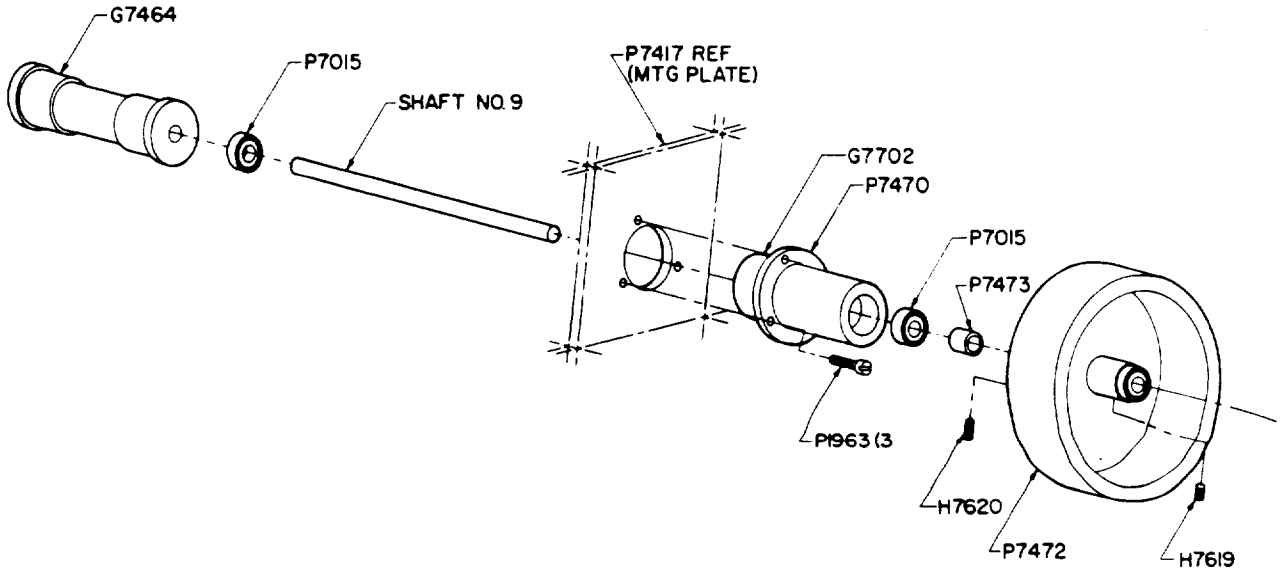


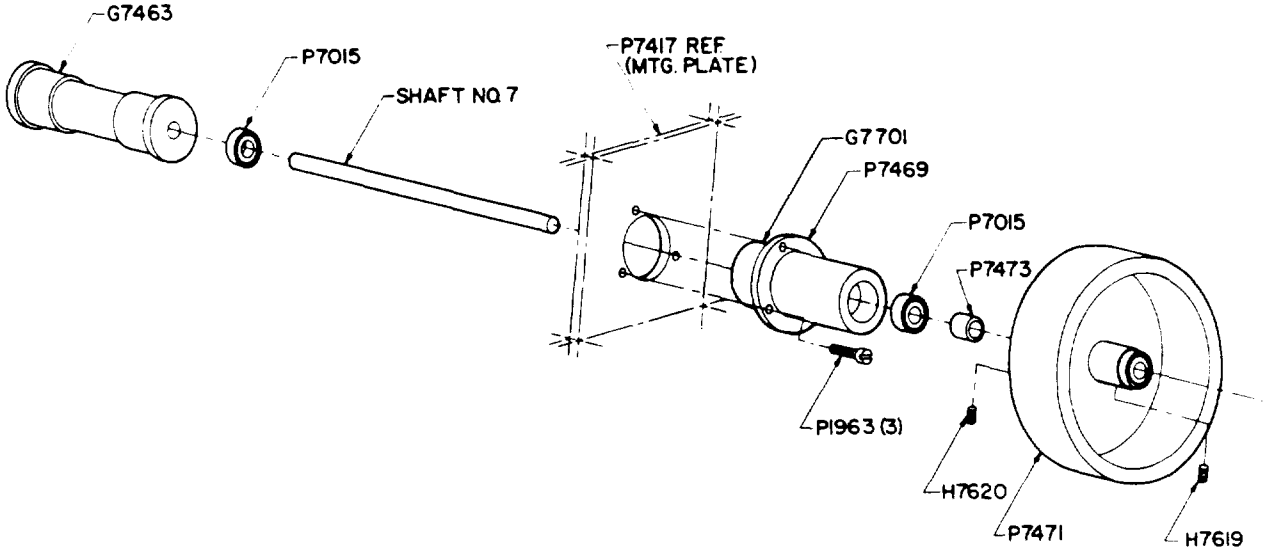
SPROCKET ASSEMBLY

Part No.	Description
G-7596	Sprocket, 35/70mm
P-1432	Screw
P-1555	Lockwasher
P-7417	Mounting Plate
P-7441	Screw
P-7453	Stud

FLYWHEEL ASSEMBLIES, MAGNETIC REPRODUCER







FLYWHEEL ASS'Y

Part No.	Description
G-7462	Shaft and Roller Ass'y
G-7463	Shaft and Roller Ass'y
G-7464	Shaft and Roller Ass'y
G-7701	Flywheel Housing Ass'y
G-7702	Flywheel Housing Ass'y
H-7619	Set Screw
H-7620	Set Screw
P-1963	Screw
P-7015	Bearing
P-7417	Component Plate (See G-7410 Main Frame)
P-7469	Housing
P-7471	Flywheel
P-7472	Flywheel
P-7473	Retainer