TM 11-6730-243-34&P

TECHNICAL MANUAL

DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

(INCLUDING DEPOT MAINTENANCE

REPAIR PARTS AND SPECIAL TOOLS)

FOR

PROJECTION SET, MOTION PICTURE, SOUND AS-25A3

(NSN 6730-00-111-5929)

HEADQUARTERS, DEPARTMENT OF THE ARMY

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No. 1

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DEPARTMENT OF THE ARMY
WASHINGTON, DC, *29 December 1978*

Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools)
For
PROJECTION SET, MOTION PICTURE, SOUND AS-25A3 (NSN 6730-00-111-5929)

TM 11-6730-243-34&P, 9 October 1975 is changed as follows:
1. New or changed material is indicated by a vertical bar.
2. Remove and insert pages as indicated in the page list below.

Remove	*Insert*
i and ii	i and ii
1-1 and 1-2	1-1 and 1-2
B1 through B-62	B-1 through B-68

3. File this change sheet in front of the publication for reference purposes.

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29-207 (2)
29-610 (2)
11-95 (1)
11-96 (1)
11-117 (1)
11-127 (1)
11-500 (AA-AC) (1)
29-134 (1)
11-136 (1)

NG: None
USAR: None
For explanation of abbreviations used see, AR 310-50

TECHNICAL MANUAL

No. 11-6730-243-34&P

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DEPARTMENT OF THE ARMY
WASHINGTON, DC, *9 October 1975*

Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for PROJECTION SET, MOTION PICTURE, SOUND AS-25A3 (NSN 6730-00-111-5929)

LIST OF ILLUSTRATIONS

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LIST OF TABLES

CHAPTER 1
FUNCTIONING

Section I. GENERAL

1-1. Scope

a. This manual covers direct support and genera support maintenance for Projection Set, Motion Picture Sound AS-25A3. It includes instructions appropriate to direct support and general support maintenance for troubleshooting, testing, aligning repairing the equipment, and replacing maintenance parts. It also lists tools, materials, and test equipment authorized for direct and general support.

b. The complete technical manual for this equipment includes TM 11-6730-230-12.

c. Appendix B is current as of 11 September 1978

NOTE

For applicable forms and records, see paragraph 1-3, TM 11-6730-230-12.

1-2. Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are Modification Work Orders (MWO's) pertaining to the equipment.

1-3. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703.

1-3.1. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using SF 368 (Quality Deficiency Report). Instructions for preparing EIR's are provided in TM 38-750, the Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. A re- ply will be furnished direct to you.

Section II. MECHANISMS

1-4. General

The mechanisms comprising the projector used in AS-25A3 are described in paragraphs 1-5 through 1-7. These descriptions include operation of the main drive assembly, film feed clutch assembly, film sprocket and feed sprocket shoe, film gate and feed mechanism, threading control arm, takeup clutch arm, takeup sprocket, takeup shoe, and reel tension arm.

1-5. Main Drive System

The main drive system of the projector contains a drive unit, drive shaft, motor drive belt, and speed change pulleys. The speed change pulleys provide a constant drive shaft speed for either of two different speeds of the drive unit. Speed change is accomplished by a drive belt shift fork (fig. 1-2) which moves the drive belt from one end of the pulley to the other.

a. Drive Unit. The drive unit (fig. 1-1) is powered by a synchronous alternating current (ac) drive motor, which drives a speed change pulley through a fan and hub assembly. The fan and hub assembly is mounted directly en the end of the motor shaft and consists of a cooling fan, hub assembly, and motor pulley drive spring. The motor pulley drive spring provides a drive connection between the hub assembly and the pulley. When the motor is reversed, the hub assembly makes two full revolutions before reengaging the pulley thus protecting the drive system against damage during motor reversal. Since the ac motor is synchronous, its operating speed is controlled by the frequency of the input power, which may be either 50 hertz per second or 60 hertz. When the frequency of the input power is 50 hertz, the motor operates at 1,450 revolutions per minute (RPM). When the frequency of the input power is 60 hertz, the motor operates at 1,775 RPM.

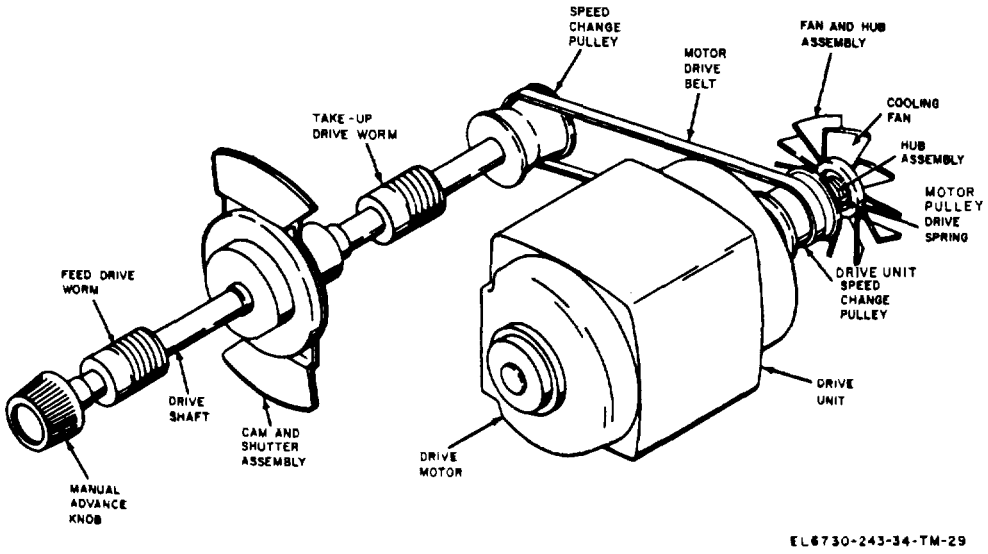


Figure 1-1. Main drive system, schematic diagram.

b. Drive Shaft. Mounted on the drive shaft are two worm gears for driving the film takeup and feed sprocket gears, and the shutter and cam assembly. A manual advance knob on the front of the drive shaft permits turning the shaft by hand. The speed change pulley at the opposite end of the shaft is rotated by the drive belt and provides the operating power for the shaft. The shaft rotates on bearings mounted in the housing assembly.

c. Drive Belt Shift Fork. The drive belt shift fork (fig. 1-2) controls the position of the drive motor belt on the speed change pulleys. The belt shift fork is moved about a pivot by a lever arm. An eccentric, operated by the power selector switch, moves the lever back and forth to move the belt shift fork. A spring attached to the bottom of the lever and to the eccentric pin pulls the eccentric into position once it has passed the midpoint of travel during power selector switch changes.

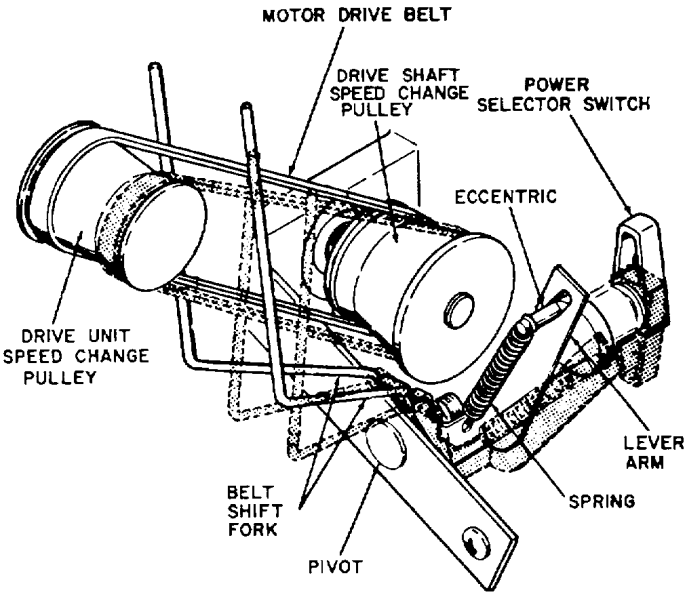


Figure 1-2. Drive belt shift fork, schematic diagram

1-6. Film Feed Clutch Assembly

(fig. 1-3)

The film-feed clutch engages only for reverse operation and during rewind of the film onto the supply reel. The film-feed clutch is disengaged for forward operation. Operation of the clutch during each of the functions is described below.

a. Forward Operation. A cam plate mounted in the pulley drive race contains three ball-and-spring combinations which interface the cam plate and pulley. During forward operation, the three ball- and-spring combinations are driven into the deep portion of the cam plate slots by the rotation of the cam plate, removing any drive surface between cam plate and pulley drive race. The driven clutch pin engages a slot in the cam and interfaces the driven clutch and cam plate.

b. Reverse Operation. When the direction of rotation is reversed, the three ball-and-spring combinations are pushed into the narrow portion of the cam plate, forming an interface between the cam plate and pulley drive race. This permits direct drive between the driven clutch and the feed clutch pulley. The driving clutch plate, which is pinned to the clutch drive shaft, drives the drive clutch through the clutch facing. The amount of drive transferred by the clutch facing before slippage occurs is set by the adjusting nut and tension spring.

c. Rewind Operation. During rewind, a rewind pawl is engaged to bypass the clutch facing and connect the driving clutch to the driven clutch. When the rewind knob is pulled out, the rewind lever is brought into alignment with the pawl forcing the pawl downward and permitting engagement with the driven clutch pawl pin. The feed clutch pulley is then driven in the same manner as reverse operation

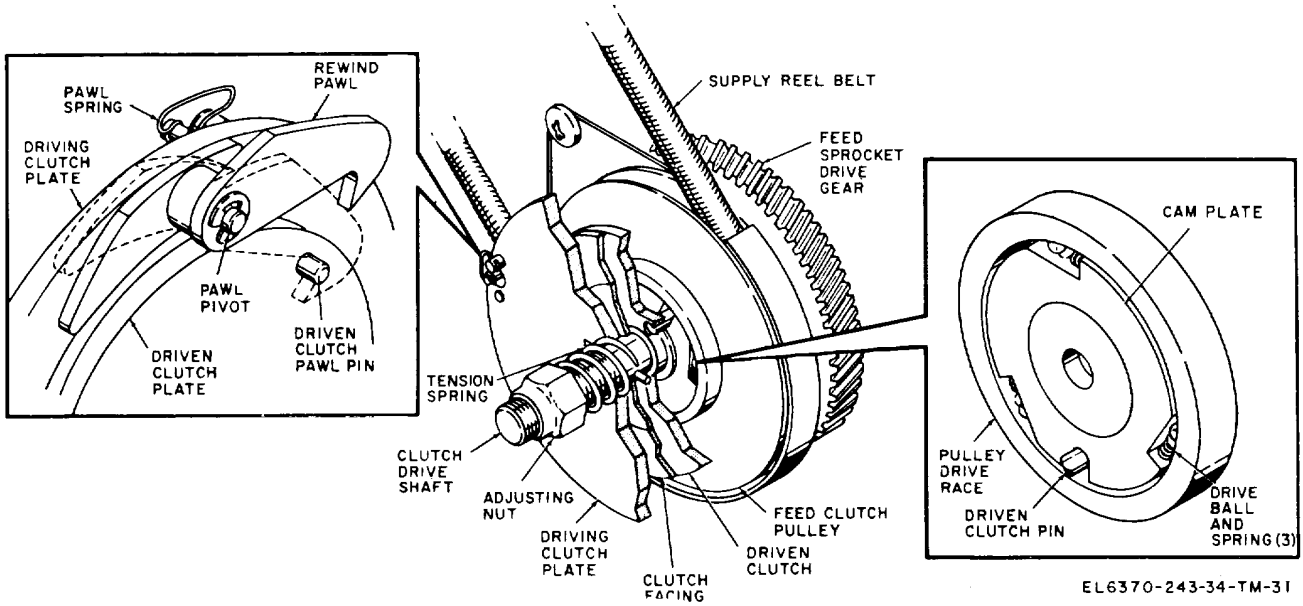


Figure 1-3. Film feed clutch, schematic diagram.

1-7. Shutter and Cam Assembly

(fig. 1-1)

The shutter and cam assembly mounted on the drive shaft consists of a cam for direct drive of the claw arm and a shutter. The cam assembly times the operation of the claw arm to the shutter movement and is lubricated by an oiler pad. The shutter is a fixed 2-blade type. The need for reducing light intensity at the screen (through a 3- blade shutter configuration) is eliminated in this projector by the light absorbing characteristics of the zoom lens furnished with this projector.

Section III. OPTICAL SYSTEMS

1-8. Sound Optical System

(fig. 1-4)

The sound optical system contains a sound exciter lamp, soundhead cartridge, and phototransistor. The sound exciter lamp provides light that is concentrated into a rectangular shaped beam by

the soundhead cartridge. This beam is imposed on the film sound track as the film passes over the soundhead cartridge. The film sound track is composed of light and dark variations that pass the light beam at varying intensities. As the sound track passes through the light beam, variations in the light are imposed on the phototransistor. These variations are changed to corresponding voltage variations by the phototransistor and are supplied to the audio amplifier (para 1-11) for amplification.

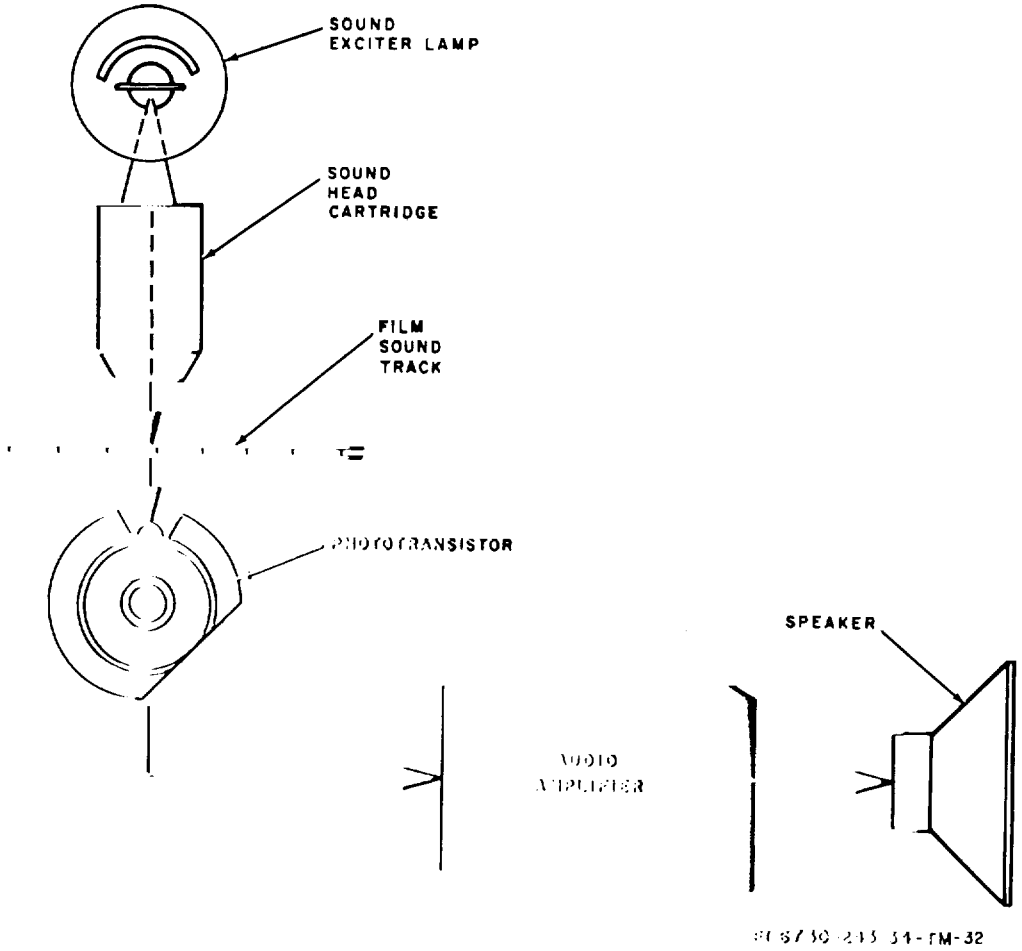


Figure 1-4. Sound optical system, schematic diagram.

1-9. Projection Optical System

(fig. 1-5)

The projection optical system contains a projection lamp, an aperture plate, and a projection let assembly. The projection lamp is the light source for the projection optical system. This light deflected forward and through the aperture plate and the film to produce the image which is passed to the lens assembly where it is inverted an focused for projection.

a. Projection Lamp. The projection lam contains a dichroic reflector that reflects light forward while permitting the backward passage (the heat-producing infrared rays. The projection lamp is air-cooled.

b. Aperture Plate. The aperture plate is cut out to the size of the image area of a single frame (16mm film. The film is held tightly against the aperture plate opening to minimize distortion of the image. Light rays from the projection lamp are formed into the shape of the frame by the aperture opening, projecting a single frame image out of the aperture plate. The image at the aperture plate is upside down. When the projector is operating, the projected beam is interrupted by the shutter (para 1-7) each time a frame is moved and intermittently during the projection of the image.

c. Lens Assembly. The lens assembly inverts the image projected from the aperture and permits focusing of the projected image on the screen by rotating the lens assembly in or out on its own externally threaded barrel. The AQ-9A1 projector uses a 10-element lens having zoom capability. Zoom is accomplished by rotating the front lens barrel on its own internal thread.

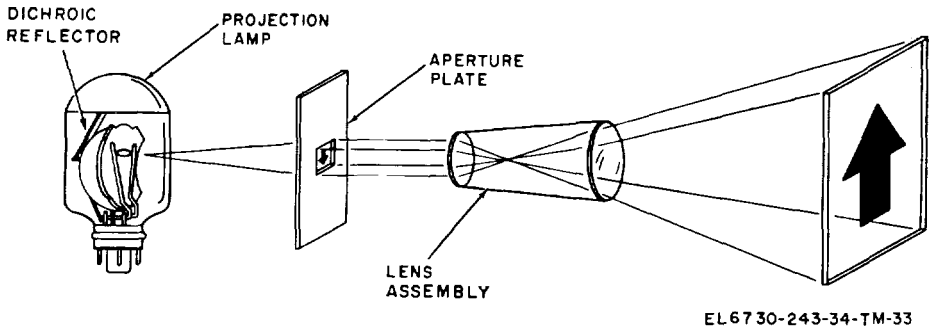


Figure 1-5. Projection optical system, schematic diagram.

Section IV. CONTROL CIRCUITS AND AMPLIFIER

1-10. Control Circuits

(fig. 1-6)

The projector control circuits are shown in the schematic diagram (fig. 1-6). The projector has a basic drive motor control circuit, main power control circuit, and projection lamp control circuit.

a. Drive Motor Control. The drive motor control contains 2-position reversing switch S3 mechanically operated through the master control lever that controls motor operation. Power is not applied to the motor when the master control lever is in the THREAD position (contacts open). OFF- RUN rocker switch S2 is used to control application of power to the motor.

b. Main Power Control Circuits. The main power circuit energizes blower motor B2 when OFF-RUN rocker switch S2 is set at RUN. Power is applied to the transformer and amplifier only when the master control lever is positioned to actuate the drive motor control switch S3.

c. Projection Lamp Control Circuit. The projection lamp control circuit is operated by 3- position rocker switch S1. In the OFF position, the switch is open. In the HI position, the contact is closed to the high voltage tap in the secondary of transformer (T1) to projection lamp (DS1). In the NORM position, the contact is closed to the low voltage tap in the secondary of transformer (T1) to projection lamp (DS1). The high voltage tap of transformer (T1) provides 21.75 volts ac to the projection lamp for brighter lamp intensity. The low voltage tap provides 17.5 volts ac to the projection lamp for normal lamp intensity.

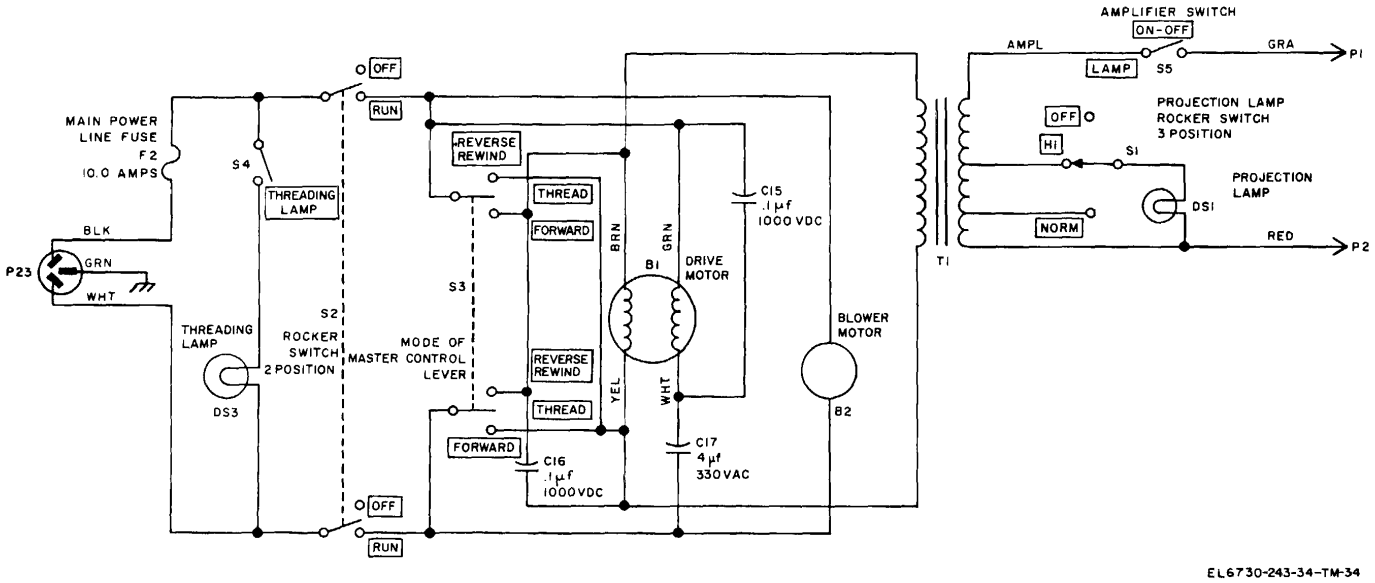


Figure 1-6. Projector, schematic diagram.

1-11. Audio Amplifier

(fig. 1-7) The audio amplifier converts the current output of the photovoltaic cell in the sound optics into audio power to drive the speakers. Circuits comprising the audio amplifier include the power supply and audio amplification circuits.

a. Power Supply. The power supply contains a bridge rectifier and regulator circuits which produce output voltages of 33 volts direct current (dc) and 15 volts dc. The 33 volts dc operates the power output stage of the audio amplifier circuit. The bridge rectifier is protected by a fuse (F1) between the transformer (T1) and the rectifier. Output from the regulator also provides proper dc voltage for the exciter lamp (DS2) through the series-dropping resistor (R30).

(1) Bridge rectifier. The diode bridge (CR1) is a bridge rectifier that converts 27 volts alternating current (ac) to dc. Input is from the transformer (T1) through amplifier power switch (S5) (fig. 1-6). Filtering of the bridge rectifer output is provided by the capacitors (C19 and C20).

(2) Regulator circuit. The regulator circuit (fig. 1-7) consists of the transistor (Q1) and associated parts. Zener diode (VR1) provides a reference level for the base of Q1. Variation in the bridge rectifier output and 15-volt dc load produces corresponding variations in the conduction of the transistor (Q1), thereby providing regulated voltage at the emitter.

b. Amplification Circuit. The audio amplification circuit consists of preamplifiers (Q2 and Q3) and a power amplifier (Q5, Q6, Q7, Q8, and Q9) with compensating diodes (VR2 and VR3). The volume control (R32A) sets the operating level for the intermediate amplifier transistor (Q4) which is a common emitter class a audio amplifier. The tone control (R32B) adjusts the filtering network of capacitors (C4 and C5) which selects the frequency response of the input signals. The output from the intermediate amplifier transistor (Q4) is taken from the collector circuit in the differential amplifier (Q5 and Q6) which, in turn, feeds the driver transistor (Q7). The driver transistor (Q7) drives the power output stage (Q8 and Q9). Output of the power amplifier at Q8 and Q9 is capacitively coupled to the speaker load (8 ohms). The variable resistor control (R6) is factory-adjusted to insure a minimum reserve gain of 15 decibels (db).

Figure 1-7. Audio amplifier, schematic diagram.
(Located in back of manual)

CHAPTER 2

TROUBLESHOOTING

Section I. GENERAL TROUBLESHOOTING INFORMATION

WARNING

When troubleshooting or making repairs in the projector, be extremely careful since 110 volts ac are present internally. Use insulated test probes when making a required voltage measurement. Always disconnect the power cord from the equipment before touching any of the internal parts. If the projector has been in operation, always permit the projection lamp to cool before touching it.

2-1. General Instructions

a. Troubleshooting at direct support and general support maintenance includes all the techniques outlined in TM 11-6730-230-12 for operator's and organizational maintenance and any special or additional techniques required to isolate a defective part. The direct and general support maintenance procedures are not complete in themselves, but supplement the procedures described in organizational maintenance. The systematic troubleshooting procedure, which begins with the operational and sectionalization checks performed at organizational maintenance must be completed by further localizing and isolating techniques. Section II of this capter provides unit troubleshooting procedures which must be per- formed at direct and general support maintenance.

b. Troubleshooting may be performed while the equipment is operating or, if necessary., after the equipment (or parts of it) have been removed from service. When trouble occurs, certain observations and measurements can be made that will help to determine the source of trouble. Paragraphs 2-4 and 2-5 will describe the systematic procedures to be followed which will enable the maintenance personnel to isolate the cause of the trouble and correct the fault.

2-2. Organization of Troubleshooting Procedures

a. General. The first step in servicing a defective projector is to sectionalize the fault, which means tracing the fault to the major section. The second step is to localize the fault, which means tracing the fault to the defective section, stage, or unit. The third step, isolation, means tracing the fault to the defective part. Some faults, such as a broken claw arm pin, defective sprocket teeth, or binding of mechanical components, can often be isolated by sight, touch, or hearing; however, the majority of faults must be isolated by detailed electrical, mechanical, and optical checks.

b. Sectionalization Check. After the trouble has been sectionalized, make a general operational check (para 2-4) of the suspected section.

(1) Visual inspection. The purpose of visual inspection is to locate faults without testing or measuring circuits or components. All visual signs should be analyzed to help localize the fault to a particular subchassis, stage, of unit. Mechanical faults are most often localized through visual inspection.

(2) Pluckout parts. Defective lamps and other pluckout parts will be the cause of many troubles. After checking suspected lamps, remove and test all pluckout parts suspected of being faulty (TM 11-6730-230-12). Replace each defective part with an identical part known to be good.

c. Localization. The tests listed below will aid in localizing the trouble. First, localize the trouble to a section or a unit. Then, isolate the trouble within that section or unit by electrical, mechanical, or optical checks as required. Use the following methods for trouble localization:

(1) Troubleshooting charts. The trouble symptoms listed in the troubleshooting charts (para 2-5) will aid in localizing trouble to a component part.

(2) Signal substitution. Signal substitution procedures (para 2-6) quickly' enable localization of a trouble in the amplifier. A signal generator and

an audio oscillator are units of test equipment that may be used in signal substitution procedures.

(3) Stage gain measurements. Stage gain measurements (para 2-6) help to locate hard-to-find troubles in an individual stage or circuit of the amplifier.

(4) Optical tests. Optical testing procedures (para 2-7 and 2-8) will aid in localizing troubles within the optical systems.

d. Isolation.

(1) Voltage and resistance measurements. This equipment is transistorized. Observe all cautions given to prevent transistor damage. Make voltage and resistance measurements in this equipment only as specified. When measuring voltages, use tape or sleeving to insulate the entire test probe, except for the extreme tip. A momentary short circuit can ruin a transistor. (For example, if the bias is shorted out, excessive current between the emitter and the base would ruin the transistor.') Use resistor and capacitor color codes to find the value of components. Use the voltage and resistance measurements given on the schematic diagrams to find normal readings, and compare them with the readings taken.

(2) Intermittent troubles. In all tests, the possibility of intermittent troubles should not be overlooked. If present, this type of trouble often may be made evident by tapping or jarring the equipment. Check the wiring and connections to the units of the set.

(3) Optical troubles. Troubles in optical systems usually can be located by following step by step testing procedures. Perform these tests (para 2-7 and 2-8) to find the normal results, and compare them with the results obtained.

2-3. Tools and Test Equipment Required

a. Tools. Tool Kit, Photographic Repairman TK-77/GF, Tool Kit, Photographic Repair TK- 109/GF, and the special tools and test equipment listed in section III Appendix B are required for repair. Refer to the illustration listed in FIG. NO. column for identification of special tools. A reel of film is also required.

b. Test Equipment.

(1) Multimeter TS-352B/U.
(2) Generator, Signal AN/URM-127.
(3) Voltmeter, Electronic ME-30E/U.

Section II. TROUBLESHOOTING

2-4. General Operational Check for Projector The operational checks that follow are divided into sections so that various functional groups of the projector may be checked individually. For a complete operational check of the projector, all procedures should be performed as specified.

a. Projector Control System.

(1) Operate rocker switch controls and check for positive action. All positions of the rocker switches should be positive. A loose switch could result in a bad contact.

(2) Operate the master control lever to each of its three positions and check for positive action.

(3) Inspect the wiring harness for broken or damaged wires and insulation.

(4) Apply power to the projector and check each of the rocker switch functions.

(5) Set the THREADING Lamp switch to ON and be sure that the threading lamp lights.

b. Main Drive System.

(1) Check that the drive belt is tight and in position on the speed change pulleys.

(2) Check that the fan and hub assembly is securely mounted to the motor drive shaft.

(3) Check that the 2-blade shutter is tightly mounted to the drive shaft.

(4) Operate the projector and listen for excessive motor noise or vibration.

(5) Observe the way the worm gears engage the takeup and feed sprocket drive gears.

(6) Listen for noise in the drive shaft bearings.

(7) See that the shutter and cam assembly properly engages the claw arm assembly to provide smooth drive action.

(8) Reverse the motor direction and be sure the drive shaft comes to a complete stop before its direction is reversed.

c. Film Handling Mechanism.

(1) Thread a film into the projector and check the operation of the film handling mechanism in forward operation.

(2) Observe that the film is not torn at the film feed sprocket, takeup sprocket, and claw arm, and that there is no film slap at the supply reel or takeup reel.

(3) Set the projector for reverse operation and again check for film slap and tearing as specified in (2) above.

(4) Load a reel of film on the takeup arm and set the projector for rewinding. See that film is wound smoothly onto the supply wheel.

d. Projector Optical Systems.

(1) Thread a film into the projector and set the projection lamp to low intensity.

(2) Check for synchronization between sound and picture. Restore the loop with the sound loop synchronizer, if necessary.

2-5. Localizing Troubles

a. General. If the proper results are not obtained during the operational tests (para 2-4), the troubles should be localized to the individual section or major component. Depending on the nature of the operational symptom, one or more of the localizing procedures will be necessary. When trouble is localized to a particular section, refer to the appropriate troubleshooting chart for assistance in isolation.

b. Use of Charts. The troubleshooting charts are designed to supplement the troubleshooting chart of TM 11-6730-2.30-12, and are based on the operational checks of paragraph 2-4.

Table 2-1. Projector Troubleshooting Chart

Malfunction	Probable cause	Corrective action
	PROJECTOR	
1 All projector functions inoperative.	*a.* Broken power cord	*a.* Replace power cord assembly
	b. Fuse F2	*b.* Replace Fuse F2
2 Blower does not operate when lamp rocker switch is in HIGH or NORM.	*a.* Defective rocker switch	*a.* Replace rocker switch (para 3-20).
	b. Defective blower motor	*b.* Replace blower motor (para 3-3g).
	c. Defective motor wiring	*c.* Check motor wiring (fig. 3-2) and repair as needed.
3 Projector does not operate when OFF-RUN rocker switch is in RUN position	*a.* Defective rocker switch	*a.* Replace rocker switch (para 3-3*u*).
	b. Defective motor capacitor	*b.* Replace motor capacitor (para 3-3*g)*
	c. Defective drive unit	*c.* Refer to main drive system troubleshooting procedure (2) below.
	d. Defective wiring	*d.* Check wiring (fig. 1-7 and B-5) and repair as needed
4 Projection lamp does not light when threading lamp switch is in HI or NORM position.	*a.* Defective projection lamp	*a.* Replace projection lamp (TM 11-6730-230-12).
	b. Defective rocker switch	*b.* Replace rocker switch (para 3-3*u*).
	c. Defective transformer T1	*c.* Check transformer assembly. If defective, replace (para 3-3*w*).
	d. Defective projection lamp socket	*d.* Replace lamp socket (para 3-3*e*).
	e. Broken or disconnected wire to projector lamp	*e.* Check wiring (fig. 3-2) and repair as needed.
5 Threading lamp does not light when threading lamp switch is operated	*a.* Defective threading lamp	*a.* Replace threading lamp (TM 11-6730-230-12).
	b. Defective threading lamp switch	*b.* Replace threading lamp switch (para 3-20)
	c. Defective threading lamp socket	*c.* Replace threading lamp socket assembly (para 3-3*v*).
	d. Broken wire to threading lamp socket	*d.* Check wiring (fig. 3-2) and repair as needed.
	MAIN DRIVE SYSTEM	
1 Motor operates, but shaft does not rotate.	*a.* Worn or damaged drive motor belt	*a.* Replace drive motor belt TM 11-6730-230-12).
	b. Speed change pulley is dirty	*b.* Clean speed change pulleys (para 3-30).
	c. Speed change pulley is out of alignment	*c.* Align speed change pulleys (TM 11-6730-230-12).
	d. Broken motor pulley spring in drive unit assembly	*d.* Replace motor pulley spring (para 3-12).
	e. Broken drive pin on hub assembly	*e.* Replace hub assembly (para 3-12).
	f. Broken drive pin on motor speed change pulley	*f.* Replace pulley assembly (para 3-12).
	g. Drive shaft bearing seized or gear binding.	*g.* Check the drive shaft (para 3-10).
2 Excessive vibration	*a.* Drive unit adjusting screw out of adjustment	*a.* Adjust drive unit adjusting screw (TM 11-6730-230-12).
	b. Motor drive bearings defective	*b.* Check bearings and replace drive motor assembly if defective.
	c. Motor mounting plate loose	*c.* Tighten motor mounting nuts (10, fig. B-7).

Table 2-1. Projector Troubleshooting Chart--Continued

Malfunction	Probable cause	Corrective action
3 Loss of power and/or speed	*a* Lubrication pad dry	*a* Apply oil to lubrication pad (para 3-41*b*)
	b Drive unit adjusting screw out of adjustment	*b* Adjust drive unit adjusting screw (TM 11-6730-230-12)
	c Dirty worm takeup or feed sprocket bearing	*c* Check bearing and clean (para 3-41) or replace if necessary (para 3-40)
	d Drive shaft bearing defective or gears binding	*d* Check drive shaft (para 3-10)
4 Projector drive shaft does not change speed when setting of power selector switch is changed	a Stretched or worn drive motor belt	a Replace drive motor belt (TM 11-6730-230-12)
	b Belt shift fork assembly out of adjustment	*b* Adjust belt shift fork assembly(TM 11-6730-230-12)
	FILM HANDLING TROUBLES	
1 Upper loop at film gate lost	Feed sprocket loose on shaft	Tighten setscrew (4, fig B-22)
2 Film snaps as it is fed through film gate	*a* Claw protrusion or stroke out of adjustment	*a* Adjust claw protrusion and stroke(para 4-6)
	b Film pressure shoe out of adjustment or - defective	*b* Adjust or repair film pressure shoe (TM 11-6730-230-12)
	c Film gate not closing properly	*c* Disassemble and inspect the film gate components Repair or replace as required (para 3-3*b*)
3 Film is scratched as it is fed through pressure shoe	a Film pressure shoe dirty or damaged	a Clean (para 3-22) and inspect film pressure shoe Replace if damaged
	b Aperture plate dirty or damaged	*b* Clean and inspect aperture plate assembly (para 3-25) Replace if damaged
4 Lower loop from film gate lost adjustment	a Claw protrusion or stroke out of	a Adjust claw protrusion and stroke(para 4-6)
	b Film pressure shoe out of adjustment or defective	*b* Adjust or repair film pressure shoe (TM 11-6730-230-12)
5 Clicking noise (film picking) sprocket	Damaged tooth on takeup or feed	Replace defective sprocket (para 3-3b (3)
6 Little or no takeup	*a* Takeup reel belt defective	a Replace takeup reel belt (TM 11-6730-230-12)
	b Clutch bias incorrectly set	*b* Adjust clutch bias (TM 11-6730-230-12)
	c Takeup clutch linkage too short	*c* Adjust takeup linkage (TM 11-6730-230-12)
	d Takeup clutch inoperative	*d* Repair takeup clutch (para 3-15)
7 Takeup belt squeals	Takeup film tension too high	Adjust takeup film tension (para 4-3)
8 Film damaged at takeup sprocket	*a* Takeup film tension too high	a Adjust takeup film tension (para 4-3)
	b Defective roll tension arm	*b* Replace roll tension arm (para 3-3*p*)
	c Defective takeup sprocket	*c* Replace takeup sprocket assembly (para 3-3*o*)
9 Film takeup erratic	*a* Dirty brake surface on takeup reel pulley	a Clean takeup pulley brake surface (para 3-32)
	b Worn clutch liner	*b* Replace clutch liner (para 3-3*o*)
10 Film spills at takeup reel when changing from forward to reverse.	Takeup clutch linkage too long	Adjust takeup clutch linkage (TM 11-6730-230-12)
11 Film damaged at feed sprocket during reverse operation	Film feed clutch torque too high	Adjust reverse drive film tension (para 4-2)
12 Film spills from reel during reverse operation	Film feed clutch torque too low	Adjust reverse drive film tension (para 4-2)
13 Rewind stalls part-way through reel	*a* Rewind lever stop assembly does not throw pawl assembly properly	a Check for worn or defective part and replace as needed (para 3-3*t*)
	b Supply reel belt stretched	*b* Replace supply reel belt (TM 11-6730-230-12)
14 Film rewinds loosely	Bent supply or takeup reel	Replace bent reel
15 No rewind	Film feed clutch assembly defective	Repair film feed clutch assembly para 3-3d and 3-26)

Table 2-1. Projector Troubleshooting Chart--Continued

Malfunction	Probable cause	Corrective action
	OPTICAL AND ILLUMINATION TROUBLES	
1 Light output lower than normal	*a.* Cam and shutter assembly inoperative.	*a.* Repair cam and shutter assembly (para 3-3*s* and 3-18).
	b. Low lamp filament voltage.	*b.* Check transformer (fig. 1-6) and replace if defective.
2 Picture jumps (possible loss of loop).	Claw arm protrusion out of adjustment.	Adjust claw arm protrusion (para 4-6)
3 Picture will not focus	Defective projection lens.	Replace projection lens (TM 11-6730-230-12).
	SOUND TROUBLES	
1 No sound	a. Fuse blown	*a.* Replace fuse. If fuse continues to blow, check for short circuit (fig. 1-6).
	b. Defective OFF switch	*b.* Replace OFF switch.
	c. Defective amplifier component	*c.* Check amplifier (para 3-39). Replace amplifier circuit board if a part is defective.
3 No sound; sound exciter lamp does not light; hiss from speaker	*a.* Defective sound exciter lamp.	*a.* Replace sound exciter lamp (TM11-6730-230-12).
	b. Defective sound exciter lamp socket	*b.* Replace exciter lamp socket (para 3-3*w*)
4 No sound; no hiss from speaker exciter lamp lit.	*a.* Faulty speaker connection	*a.* Repair speaker connection.
	b. Defective speaker	*b.* Replace speaker (TM 11-6730-230-12).
	c. Defective phototransistor in sound drum.	*c.* Replace sound drum (para 3-3*j*).
	d. Defective amplifier component	d. Replace defective amplifier circuit board.
5 Low volume.	*a.* Defective VOLUME control	*a.* Replace VOLUME control.
	b. Defective amplifier component	*b.* Check amplifier (para 3-39). Replace amplifier circuit board if a part is defective.
6 Low volume and/or excessive hum.	Defective amplifier component	Check amplifier (para 3-39). Replace amplifier circuit board if a part is defective.
7 Microphonic noises	Defective sound exciter lamp	Replace sound exciter lamp (TM 11-6730-230-12).
8 Pitch of sound incorrect; no highs insufficient volume.	*a.* Sound optical system dirty or out of adjustment.	*a.* Clean and align sound optical system (para 4-7).
	b. Sound drum misaligned	*b.* Align sound drum (para 4-8).
	c. Drive motor belt	*c.* Replace drive motor belt (TM 11-6730-230-12).
9 Sound distorted	Defective amplifier component	Check amplifier (para 3-39). Replace amplifier circuit board if a part is defective.
10 Pitch of sound	*a.* Sound drum bearing dirty or worn.	a. Clean and wipe sound drum bearing Replace if worn
	b. Roll tension arm assembly inoperative.	*c.* Repair roll tension arm assembly.
11 Motor boating	Dirty sound head drum	Clean sound head drum.

2-6. Audio Amplifier Checks

a. The following procedure outlines the method for isolating audio amplifier troubles and is accomplished with the amplifier disconnected and removed from the projector and placed on a test bench.

CAUTION

Do not apply power to the amplifier unless a 2-ampere circuit breaker is used in the test setup, as serious damage can result to the equipment.

b. Set up the amplifier as shown in figure 2-1. Connect an 8.2k resistor across P19 and P20 to bypass the tone and volume control network.

c. Apply power to the test equipment and allow it to warm up and stabilize.

d. Apply 27 volts ac to the amplifier.

e. Set the audio signal generator for an input of 1,000 cps at 15MV.

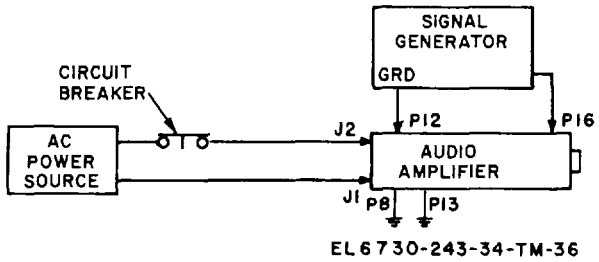


Figure 2-1. Signal substitution procedure, test setup.

f. With the ME-30E/U, measure input and output at each stage (fig. 1-7 and table 2-2). If an incorrect reading is obtained at any given stage, check for a faulty component at that stage.

Table 2-2. Stage Gain Test Values

Test stage	Point of measurement	Indication
Preamplifier	Collector of Q2	10 MV
	Collector of Q3	16 MV
	Base of Q4	9 MV
	Collector of Q4	320 MV
	Base of Q5	300 MV
	Collector of Q5	34 MV
	Base of Q6	305 MV
	Collector of Q6	34 MV
Power amplifier	Base of Q8	6.7 volts
	Base of Q9	6.7 volts

NOTE

If readings, in the sequence given vary more than ± 10'% of the value shown, check for a faulty component at that stage

2-7. Testing Sound Optical System

The procedure that follows outlines a method for testing the sound optical system. Follow the procedure in the order of steps presented, noting indications at each step. If a faulty indication is observed, stop the procedure and isolate the cause of the trouble.

a. Connect an ac voltmeter across the speaker terminals.

b. Thread a 7000-cycle test film (PH22.42) into the projector and set the TONE control for maximum treble output.

c. Operate the projector. A deflection should be observed on the voltmeter.

d. Vary the VOLUME control and note that the voltmeter indication changes accordingly.

2-8. Testing Projection Optical System

Thread a film into the projector and observe the projected image, which should be centered and properly framed with no blur. Change light density and observe picture clarity.

CHAPTER 3

REPAIRS

Section I. DISASSEMBLY

3-1. General Parts Replacement Techniques Most of the parts in the projector can be reached easily and replaced without special procedures. The following precautions and notes apply:

a. The amplifier in the projector is transistorized. Use a pencil-type soldering iron with a 25-watt maximum capacity for all soldering operations. If the soldering iron must be used with ac, use an isolation transformer between the soldering iron and the ac line. Do not use a soldering gun; damaging voltages may be induced in circuit components.

b. When soldering transistor leads, solder quickly; wherever wiring permits, use a heatsink (such as long-nosed pliers) between the soldered joints and the transistor. Use approximately the same length and dress of transistor leads as used originally.

3-2. Considerations Before Disassembly
Sectionalizing trouble in the projector (para 2-2) can simplify repairs by limiting the work to the defective area. After disassembling the basic projector (para 3-3), refer to the paragraphs that contain instructions concerning the defective area. Repair or replace the defective part of parts; then, reassemble the projector (para 3-60).

3-3. Basic Projector Disassembly

a. Disassembly of Projector (fig. B-2).

(1) Remove the front cover assembly (1) by releasing the four latch assemblies.

(2) If removal of a latch assembly is required, drill out the rivet (2) and remove the cover latch (3) and the latch spacer (4).

(3) See that the shipping screw assembly (5) has been removed. If not, remove and discard it.

(4) If the identification plate is damaged or not readable, remove four screws (6) and remove the identification plate (7); dampener (8) will remain attached to plate.

(5) Inspect the threading diagram (9) and remove it if damaged or not readable.

(6) Remove the machine screws (10) and lift off the rear cover (11).

(7) The handle assembly (13) consists of loose parts when disassembled. To disassemble, remove two machine screws (12) and lift off the handle housing (14), the carrying handle (15) and the handle retainer (16).

(8) Remove the four machine screws (10) and remove the frame assembly (17).

(9) Remove the tension from the elevating spring (18) by fully elevating the projector.

(10) Remove the self-tapping screw (19) and take off the foot assembly (20).

b. Removal of Lens Holder Assembly (fig. B-22).

(1) Loosen the thumbscrew on the lens holder assembly (17) and remove the projector lens (1).

(2) Remove the self-tapping screw (2) and remove the film stripper (3).

(3) Remove the setscrew (4) and remove the film sprocket assembly (5) and flat washers (6 and 7) from the shaft of the film feed clutch assembly (24).

(4) Remove the three screws (8) and remove the feed sprocket shoe (9).

(5) Disassemble the feed sprocket shoe as described in paragraph 3-5.

(6) Remove the setscrew (10), lens holder eccentric spring (11), flat washer (12), and ball (13) from the lens holder assembly (17).

(7) Remove the machine screw (14) and the control lever (15).

(8) Remove the lens holder assembly (17) by sliding it forward off the mounting rods. Remove the gate eccentric (16) from the lens holder assembly (17).

(9) Remove the tension spring (18) and lens spring (19).

(10) Remove the film gate lever assembly (20) from the slot in the projector housing.

(11) Disassemble the lens holder as described in paragraph 3-6.

c. Removal of Aperture plate Assembly (fig. B-22).

(1) Remove four machine screws (26) and remove the aperture plate assembly (27).

(2) Disassemble the aperture plate assembly as described in paragraph 3-7.

d. Removal of Film Feed Clutch Assembly (fig. B-22).

(1) Remove the supply reel belt (21) by

disconnecting two links and pulling the belt from the guide.

(2) Remove the self-tapping screw (22) and the flat washer (23); remove the film feed clutch assembly (24) and flat washer (25).

(3) Disassemble the film feed clutch assembly as described in paragraph 3-8.

e. Removal of Lamphouse Cover Assembly and Disassembly of Lamphouse Components (Fig. B-23).

(1) Depress the release button and remove the lamphouse cover assembly (1); disassemble the lamphouse cover assembly as described in paragraph 3-9.

(2) Lift the lamp chimney (2) from the lamp socket (8), tipping it outward to clear the guide as it is raised.

(3) Remove the projection lamp (3) from the lamp socket (8).

(4) Remove the exciter lamp (4). (Refer to TM 11-6730-230-12.)

(5) Remove the pad assembly retainer (5); remove the lubricator pad assembly (6).

(6) Remove the capscrew (7) and tip the lamp socket (8) to expose the wiring below.

(7) Detach the two wires from the lamp socket and remove the lamp socket (8).

(8) Remove the setscrew (9) and plug (10) and lift out the sound optics cartridge (11).

f. Removal of Supply Arm Assembly and Belt Guides (fig. B-23).

(1) Remove the machine screw (12) and spring washer (13); remove the belt guide post (14), supply reel belt guide (15), and flat washer (16).

(2) Extract the roll pin (17) and remove the flat washer (18) and spring washer (19). Remove the supply reel arm (20), arm locking plunger (21), and reel arm lock spring (22).

NOTE

The arm locking plunger (21) is spring-loaded and should be held in position as the supply arm is being removed; then carefully release pressure on the plunger to prevent the loss of the reel arm lock spring (22).

(3) Remove the washer (23) from the supply reel arm (20).

(4) Disassemble the supply reel arm assemble as described in paragraph 3-10.

g. Removal of Blower Motor and Motor Mounting Plate Assembly (fig. B-7).

(1) Disconnect all leads from motor capacitor (1).

(2) Remove the motor capacitor (1) by pushing it toward the housing to clear the lip of the venturi plate (6) and, while lifting upward, remove the capacitor cushion (2).

(3) Remove the four screws (3), one clamp (4), and washers (5) and remove the venturi plate (6).

(4) Remove three screws (7) and the blower motor and mounting plate assembly (8).

(5) Disassemble blower motor and mounting plate assembly as described in paragraph 3-11.

h. Removal of Drive Unit Assembly and Drive Motor Mounting Plate Assembly (fig. B-7).

(1) Remove the drive motor belt (9). (Refer to TM 11-6730-230-12.)

(2) Unwrap the cable ties retaining the drive motor leads in the wire harness and lift off the leads from the harness.

(3) Remove the two nuts (10), flat washers (11), spacers (12), and flat washers (13) securing the drive unit assembly (14). Remove the drive unit assembly (14), motor spring (15) and eyelet (16).

(4) From the left motor mounting stud on the drive motor mounting plate assembly (22), remove one tubular spacer (17), one flat washer (13), one spacer (12), one flat washer (18), and one flat washer (19). From the right stud, remove one spacer (17), one flat washer (13), one spacer (12), and two flat washers (18).

(5) Remove three machine screws (20) and flat washers (21) and remove the motor mounting plate assembly (22).

(6) Disassemble drive unit assembly as described in paragraph 3-12.

i. Removal of Drive Belt Shift Fork Assembly and Belt Shift Eccentric (fig. B-7).

(1) Remove the belt shift fork spring (23).

(2) Remove two thread forming screws (24) and lift off the belt shift fork (25).

(3) Remove the machine screw (26) and the control lever (27).

(4) Lift out the belt eccentric (28).

(5) Disassemble the drive belt shift fork assembly as described in paragraph 3-13.

j. Removal of Sound Drum and Flywheel (fig. B-7).

(1) Before beginning disassembly, refer to figure 3-2 for location of wires. Disconnect J-15 black wire and J-12 shield wire from the amplifier printed circuit board. Detach the sound head cable from the wire harness by opening all retaining straps and ties and removing the cable from the harness.

(2) When the sound head cable is free (as specified in (1) above), remove the retaining screw (29) and withdraw the flywheel (30).

(3) Remove the retaining screw (31) and carefully remove the sound drum (32).

k. Removal of Reversing Switch Assembly (fig. B-7).

(1) Eight leads are connected to the reversing switch assembly (34). Disconnect all leads.

(2) Remove the two self-tapping screws (33) and remove the reversing switch assembly (34).

l. Removal of Takeup Reel Arm (fig. B-8).

(1) Remove the takeup reel belt (1) by disconnecting two links on the belt and pulling it from the guide.

(2) Extract the roll pin (2) and remove flat washer (4) and the takeup reel arm (3), washer (5), reel arm lock plunger (6), and arm locking spring (7).

NOTE

The reel arm lock plunger (6) is spring-loaded and should be held in position as the takeup reel arm is being removed; then carefully release pressure on the reel arm lock plunger to prevent the loss of the reel arm lock spring (7).

(3) Disassemble the takeup reel arm assembly as described in paragraph 3-14.

m. Removal of Takeup Clutch Arm (fig. B-8).

(1) Remove the retaining ring (8); use retaining ring pliers. Remove the takeup clutch arm (9).

(2) Disassemble the takeup clutch arm assembly as described in paragraph 3-15.

n. Removal of Reversing Switch Cam (fig. B-8).

(1) Remove the two retaining rings (10); use retaining ring pliers.

(2) Remove the reversing switch cam (11) and spacer (12).

o. Removal of Takeup Sprocket Assembly and Gear Assembly (fig. B-8).

(1) Remove the setscrew (13) and remove the takeup sprocket assembly (14) and two flat washers (15 and 16) from the gear assembly shaft.

(2) Pull the gear assembly (17) from the housing. Remove the flat washer (18). from the shaft of the gear assembly and remove the clutch liner (19) from the inside of the gear assembly.

p. Removal of Roll Tension Arm and Takeup Shoe (fig. B-9).

(1) To remove the roll tension (4), remove the screw (1) and release tension on the roll arm tension spring (2) by removing the spring tab from the tension pivot slot. Remove tension spring (2).

(2) Remove the retaining ring (3); use retaining ring pliers. Draw the roll tension arm (4) from the projector housing.

(3) To remove the takeup arm sprocket shoe (5), remove screw (1) and release tension on the takeup shoe tension spring (2) by removing the spring tab from the takeup shoe pivot slot. Remove the spring (2).

(4) Remove the retaining ring (3); use retaining ring pliers. Draw the takeup shoe (5) from the projector housing.

(5) Remove the shoe lever assembly (6) and the flat washer (7) from the projector housing.

(6) Disassemble the takeup shoe as described in paragraph 3-16.

q. Removal of Threading Control Arm and Pressure Roller Arm Assembly (fig. B-9).

(1) Remove the two self-tapping screws (8) and remove the sound head cover (9). Remove the nut (10).

(2) Remove the machine screw (11), the threading guard (12), and lock washer (13) from the threading control arm (14).

(3) Withdraw the threading control arm (14) and remove the spacer (15) from the shaft of the threading control arm.

(4) Disassemble the threading control arm as described in paragraph 3-17.

(5) Remove two retaining rings (20); use retaining ring pliers. Withdraw the pressure roller arm assembly (21) from the projector housing and remove spring washer (22) from the shaft of the pressure roller arm assembly.

(6) Unthread the nut (16) and remove the film guide roller assembly (17), flat washer (18) and pressure roller aligning spring (191 from the film guide roller assembly (21).

(7) Remove the machine screw (23), lock washer (24), and flat washer (25) and remove the threading control spring assembly. (26).

r. Removal of Loop Set Lever (fig. B-9).

(1) Remove the retaining ring (27); use retaining ring pliers. Lift off the loop set spring (28).

(2) Remove the loop set lever (29) from the projector housing.

*s. Removal of Drive Shaft Components (*fig. B-10).

(1) The inching knob (1) is friction fit onto the drive shaft (13). Pull the inching knob from the drive shaft.

(2) Remove two setscrews (2) and slide the drive shaft pulley (3) from the other end of the drive shaft (13). Remove retaining rings (4); use retaining ring pliers.

(3) Remove setscrews (7 and 11) and remove the spirol pins (9); use roll pin extracting tool T-38000-P.

(4) Carefully pull the drive shaft (13) out through the front of the projector, removing the drive shaft bearing (5), spring washer (6), shaft collar (8), drive gear (10), and the shutter and cam assembly (12) as the drive shaft is removed.

(5) Disassemble the shutter and cam assembly as described in paragraph 3-18.

t. Removal of Claw Arm and Rewind Lever Assembly (fig. B-10).

(1) Remove two self-tapping screws (14) an nut (15) and remove the rewind lever stop (16) an limit plate (17).

(2) Remove the framing arm pivot (18) an spring washer (19).

(3) Remove the rewind lever spring (21) an lever assembly (22) from the shaft of the knob assembly (24).

(4) Remove the retaining ring (23); us retaining ring pliers. Remove the knob assemble (24).

(5) Remove the machine screws (25) an stabilizer (26).

(6) Disassemble; the claw arm assembly (20) a described in paragraph 3-19.

u. Removal of Amplifier Cover Assembly (Fig B-3).

(1) The volume and tone control knobs are press fit on the amplifier control shaft. Remove the volume control knob (1) and tone control knob (2 by pulling them straight off the amplifier control shaft.

(2) Tag and disconnect all accessible leads at the back of the amplifier cover assembly (17).

(3) Disconnect the two power cord leads black wire from the main switch and white wire from the reversing switch.

(4) Remove the power cord assembly (4) and strain relief cable bushing (5) from the baseplate of the amplifier cover assembly (17). Remove two screws and washers (6 and 7) to free the amplifier board assembly (8) from the amplifier cover assembly (17).

NOTE

The amplifier board assembly (8) is a plug-in board, and when freed from the amplifier cover assembly, the amplifier board assembly can be removed by drawing it straight up from the connector.

(5) Remove screws (13, 14 and 15) and carefully lift off the amplifier cover assembly to the extent permitted by the wiring harness. Disconnect any remaining single leads.

(6) Remove the nut (16) from the projector chassis.

(7) Remove the nut (9), washer (10), insulated (11) and bushing (12); this action loosens the jack (18).

(8) Disassemble the amplifier cover assembly as described in paragraph 3-20.

v. Removal of Threading Lamp Component (fig. B-3).

(1) Remove the threading lamp (19) from the threading lamp socket (21).

(2) Disconnect the wire terminals connected to the threading lamp socket assembly (21).

(3) Remove the retaining screw (14) and threading lamp socket (21); remove the nut (20) from the threading lamp socket.

w. Removal of Transformer, Exciter Lamp socket and Wire Harness (fig. B-24).

(1) Disconnect all leads to the transformer (17).

(2) Remove two screws (14) and two washers (15) and lift out transformer (17).

(3) Remove three nuts (16) from the transformer: these are pick off parts.

(4) Remove two screws (10) and nuts (11) to free the capacitors (13), leaving the terminal strips (12) attached to the capacitors.

(5) Remove three screws (1), exciter plate (2), three spacers (3), three springs (4), and three spacers (5). Lift out the harness assembly (9) with exciter lamp socket (6) and capacitor and terminal strip attached to the harness assembly.

x. Removal and Disassembly of Elevation Rod Assembly (fig. B-24).

(1) Remove elevation rod assembly (18) by lifting upward, freeing two flat washers (19) and upper and lower bearings (20).

(2) Remove screw (21) and elevation control lever (22) from the end of clamp stud (23).

(3) Unthread clamp stud (23) and remove washer (25) and elevating clamp (24).

3-4. Disassembly of Base.

(fig. B-24)

a. Remove three screws (14) and three washers (26) and lift off housing assembly (33) from base assembly (27).

b. Punch out four rivets (28) and remove four rubber bumpers and four washers (29) located inside of base (27).

c. Remove screw (10) and washer (31), and lift out stand-off (32).

3-5. Disassembly of Feed Sprocket Shoe

(fig. B-11)

a. Remove two machine screws (1) and lift off the cover (2).

b. Remove two rollers (6) from the bearing post of the shoe assembly (10).

c. Slide the follower assembly (8) off the bearing post of the shoe assembly (10) and remove the follower spring (7) from the follower assembly.

d. Remove the dampener assembly (5) from the bearing post of the shoe assembly (10), and remove the dampener spring (4) from the dampener assembly.

e. Remove the pad (9) from the shoe assembly.

3-6. Disassembly of Lens Holder Assembly

(fig. B-25)

a. Remove two screws (3) and two washers (4), and remove the film pressure shoe assembly (5).

b. Remove screw (1) and separate spring assembly (2) from the holder assembly (6).

NOTE

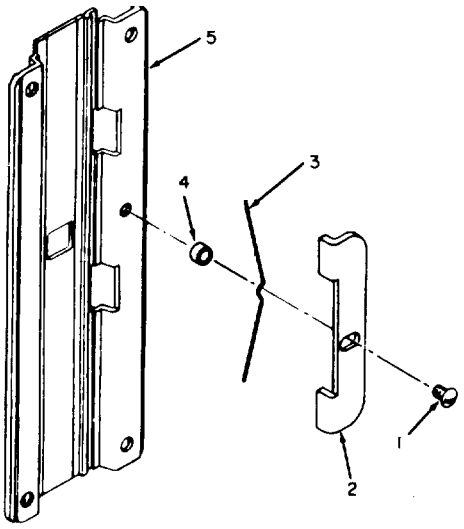
The lens locking thumbscrew is permanently installed in the lens holder body. Do not attempt to remove.

3-7. Disassembly of Aperture Plate Assembly

(fig. 3-1)

a. Remove the aperture plate assembly as *described in paragraph 3-3c.*

b. Remove the machine screw (1) and disassemble the guide (2), spring (3), and spacer



1 Machine Screw 3 Spring 4 Spacer
2 Guide 5 Aperture plate

Figure 3-1. Aperture plate assembly, exploded view.

3-8. Disassembly of Film Feed Clutch Assembly

(fig. B-12)

a. Remove the self-locking nut (1) and clutch spring (2).

b. Remove the toggle spring (3) from the driving clutch plate assembly (7).

c. Remove retaining ring (4); use retaining ring pliers. Remove the pawl assembly (5) and flat washer (6) from the driving clutch plate assembly (7).

d. Remove the pin (9) from the shaft of the feed sprocket gear assembly (22) and remove parts and 10 through 21 inclusive) from the shaft in the order illustrated. These are pluck-off parts.

3-9. Disassembly of Lamphouse Cover Assembly

(fig. B-26)

a. Remove two self-tapping screws (1) a remove the latch assembly (2) from the lamp cover (7).

b. Remove retaining ring (3); use retaining ring pliers.

c. Remove cover spring (4) and flat washer (5) and withdraw the framing knob assembly (6) from the lamp cover (7).

3-10. Disassembly of Supply Reel Arm Assembly

(fig. B-13)

a. Remove the roll pin (1) and remove the spindle assembly (2), reel retainer spring (4), steel ball (3) and washer (5) from the shaft of the pulley assembly (6).

b. Remove the pulley assembly (6), brake (7) and brake spring (8) from the supply reel arm assembly (9).

3-11. Disassembly of Blower Motor and Mounting Plate Assembly

(fig. B-14)

a. The blower wheel (1) is a friction fit on the motor shaft and is removed by pulling it off the shaft.

b. Remove two machine screws (2) and lock-washers (3) and remove the motor mounting plate (4) from the blower wheel motor assembly (5).

3-12. Disassembly of Drive Unit Assembly

(fig. B-15)

a. Remove the spirol pin (1) and remove the fan and hub assembly (2) from the motor shaft.

b. Disassemble fan and hub assembly as follows:

(1) Remove the self-tapping screw (3) and flat washer (4).

(2) Remove the grommet (5) and centrifugal fan impeller (6) from the hub assembly (8); remove the motor pulley spring (7) from the rear of the hub assembly.

c. Remove the two bearings (9) and pulley assembly (10) from the motor shaft.

d. Remove two setscrews (11) and remove pulley collar (12) from the motor shaft.

e. Remove the grommet (5), nut (13), nut (14) and adjusting screw assembly (15) from the motor mounting plate assembly (18).

f. Remove four machine screws (16) and lock-washers (17) and remove the motor mounting plate assembly (18) from the drive motor assembly (19).

3-13. Disassembly of Drive Belt Shift Fork Assembly

(fig. B-16)

a. Remove self-locking nut (3) and washer (4) from the shaft of the support assembly (6).

b. The fork (2) is positioned in grooves on the shift lever (1). Remove the shift lever from the shaft of the support assembly (6) and pry the fork off the lever if necessary. Remove spacer (5).

3-14. Disassembly of Takeup Reel Arm Assembly
(fig. B-17)

a. Remove roll pin (1) and disassemble the spindle assembly (2), reel retainer spring (4), steel ball (3), collar (5), and washer (6) from the shaft of the pulley assembly (7).

b. Remove the pulley assembly (7), two brakes (8), and two brake springs (9) from the takeup arm assembly (10).

3-15. Disassembly of Takeup Clutch Arm
(fig. B-18)

a. Unthread nut (1) and remove the clutch bracket (2) and lock washer (3) from the clutch rod (7).

b. Unthread nuts (1 and 4) and disassemble the flat washer (5), spring (6), and flat washer (5) from the clutch rod (7). Remove the clutch rod from the arm assembly (11).

c. Remove retaining ring (8); use retaining ring pliers. Remove flat washer (9) and pulley assembly (10) from the arm assembly (11).

3-16. Disassembly of Takeup Sprocket Shoe
(fig. B-19)

a. Remove the machine screw (1) and lift off the cover (2) and two sprocket rollers (3) from the shafts on the takeup sprocket shoe arm assembly (5).

b. Remove pad (4) from the takeup sprocket shoe arm assembly (5) only if necessary. The pad is cemented in place.

3-17. Disassembly of Threading Control Arm
(fig. B-20)

a. Remove retaining ring (1); use retaining ring pliers. Remove the film roller (2) from the film tension arm assembly (6). Repeat for retaining ring and roller on the threading control arm assembly (9).

b. Remove the self-tapping screw (3) and spring washer (4) and remove dampener hub cap (5) and film tension arm assembly (6) from the threading control arm assembly (9).

c. Remove retaining ring (7); use retaining ring pliers. Lift off dampener return spring (8).

d. Remove two self-tapping screws (3) and left off arm handle (10) from the threading control assembly.

e. If necessary to disassemble further, drive out the grooved pin (12) and remove the film dampener spring (11).

3-18. Disassembly of Shutter and Cam Assembly
(fig. B-27)

NOTE

Do not disassemble the cam and hub. If either part has been damaged, replace with a new, matched cam and hub assembly.

a. Remove retaining ring (1) from the hub of the cam and hub assembly (4); use retaining ring pliers.

b. Slip the shutter blade (3) off the hub of the cam and hub assembly. The bumper (2) is pressed into the shutter blade; remove bumper.

c. If cam and hub assembly is not to be replaced, do not remove setscrews.

3-19. Disassembly of Claw Arm Assembly
(fig. B-21)

a. Remove two retaining rings (1) from either side of the guide plate (2); use retaining ring pliers. Remove guideplate (2) from the control rod (3).

b. Unthread the control rod from the framing arm (16) and remove pivot rod (4).

c. Remove spring retaining pin (5) and pick out springs (6 and 7).

d. Unthread two nuts (8) and remove flat washers (9 and 10) from the claw arm pivot assembly (15).

e. Lift the claw arm assembly (13) and flat washer (14) from the claw arm pivot assembly (15). Remove setscrew (11) and withdraw the pivot bushing (12) from the claw arm assembly (13).

f. Remove setscrew (11) and withdraw the claw arm pivot assembly (15) from the framing arm (16).

3-20. Disassembly of Amplifier Cover Assembly
(fig. B-6)

NOTE

Before proceeding, remove fuse (7) from the fuseholder (11).

a. Remove self-tapping screw (12) and lift off the amplifier cover (26) from the control switch cover (14). Pick off the nut (13) from the amplifier cover (26).

b. Draw out two rivets (24) and remove threading lamp switch (25).

c. Disassemble the control switch cover components as follows:

(1) Remove machine screw (1), bumper (2), and spacer (3).

(2) Pry out the two switch brackets (4); push rocker switches (5 and 6) from the switch brackets (4).

(3) Remove nut (8), washers (9 and 10) and remove fuseholder (11).

d. Disassemble the network assembly (18) from the cover assembly (26) as follows:

(1) Remove nut (15) and flat washer (16) and withdraw network assembly (18) from the rear of the cover assembly. Remove lockwasher (17) and nut (15) from the shaft of the volume/tone control (23).

(2) Using a pencil-type soldering iron,

carefully heat terminals on the volume/tone control (23) and disconnect lead wires on cable assembly (19), resistor (20), and capacitors (21 and 22).

3-21. Disassembly of Rear Cover

(fig. B-4)

Any defective parts in this assembly should not be repaired but should be replaced. Disassemble only for replacement. Dampeners (1 and 2) are cemented in place. Detach wire assembly (3) from loud-speakers (5). If necessary, unsolder resistor (4). Remove nuts (6) and remove loudspeakers (5) from the lugs of the bezel (7). Lift out grille (8) and push bezel (7) out from the cover (10). Eyelets (9) are riveted into the cover and must be punched out.

Section II. CLEANING AND LUBRICATION

WARNING

The fumes of trichloroethane (cleaning compound) are toxic. Provide thorough ventilation whenever used. DO NOT use near an open flame. Trichloroethane is not flammable, but exposure of fumes to an open flame converts fumes to highly toxic, dangerous gases.

3-22. Cleaning and Repair of Film Pressure Shoe

(fig. B-25)

a. Clean the film pressure shoe assembly (5) with cleaning compound to remove any emulsion deposits or other foreign matter. Wipe all parts with a clean cloth.

b. Inspect the shoe assembly for burrs or rough spots in the film path area that can cause scratches to the film. Be sure the shoe assembly is not bent. If defective, replace the shoe assembly.

3-23. Cleaning and Repair of Feed Sprocket Shoe Assembly

(fig. B-11)

a. Wash all parts of the feed sprocket shoe in methyl alcohol.

b. Inspect the rollers (6) and the rollers on the follower assembly (8) for wear. Replace if worn.

c. Inspect roller on the dampener assembly (5) for wear. Replace the dampener assembly if the roller is defective.

d. Check dampener spring (4) and follower (7) for loss of resiliency or other defects that might prohibit their reuse. Replace if defective.

e. Inspect feed shoe cover (2) for cracks or breaks and replace if defective.

3-24. Cleaning and Repair of Lens Holder Assembly

(fig. B-25)

a. Wash all parts of the lens holder assembly in methyl alcohol and wipe dry.

b. Inspect the lens holder assembly (6) for cracks or other external damage. Inspect all threaded holes for stripped threads. Insure that the lens locking thumbscrew is operable and will hold the lens securely when inserted in the lens body.

c. Touch up any scratches on the body with touchup paint. Select a color to match.

d. Be sure the spring assembly (2) is not bent; replace the spring assembly if bent.

e. Refer to paragraph 3-22 for details of the film pressure shoe (5).

3-25. Cleaning and Repair of Aperture Plate Assembly

(fig. 3-1)

a. Clean the guide and aperture plate with a cloth dampened with cleaning compound. Use a toothpick or a brush to remove dirt or emulsion deposits.

b. Inspect all parts for wear or damage. If defective, replace the aperture plate assembly.

3-26. Cleaning and Repair of Film Feed Clutch Assembly

(fig. B-12)

a. Clean the inner face of the gear assembly with a clean, dry cloth. The guide bearing (18) and the clutch facing (8) are permanently lubricated and should not be cleaned in a solvent. All other metal parts of this assembly can be cleaned with cleaning compound.

b. Inspect the clutch facing (8), and the inner and outer driving clutch plate assembly (7) and clutch plate (11) for wear. Replace any parts that are worn.

c. Inspect the feed gear assembly (22) for broken or worn gear teeth, bent shaft, or wear on the shaft bearing surface. The complete assembly should be replaced if any defects are found.

d. Inspect the condition of the guide bearings (18) and replace them if worn or faulty.

e. Check the pawl assembly (5) for wear and replace if worn.

f. Check the cam plate (12) for wear and replace if worn.

g. Check the belt guide (21) for any nicks or bends which would interfere with belt travel. Straighten any minor bends.

h. Check the condition of the clutch spring (2) and replace it if necessary.

3-27. Cleaning and Repair of Lamphouse Cover Assembly

(fig. B-26)

a. Wash the metal parts of the lamphouse cover assembly in cleaning compound. Remove dust from the lamphouse cover and clean any stubborn dirt or stains with mild detergent.

b. Inspect the lamphouse cover (7) for cracks, breaks, or other external damage. Inspect the nameplate for legibility and replace if necessary. Touch up any scratches or nicks with touchup paint. Select color to match.

c. Inspect the latch assembly (2) and replace it if bent or broken.

d. Inspect the framing knob assembly (6) and replace it if broken or damaged.

3-28. Cleaning and Repair of Supply Reel Arm

(fig. B-13)

a. Clean all parts, except the supply reel arm assembly (9), with cleaning compound. Wipe the supply reel arm assembly with a clean cloth and remove any stubborn dirt or stains with detergent.

b. Inspect all parts and replace any that are worn or bad. Touch up any nicks or scratches on the supply reel arm with touchup paint. Select color to match.

3-29. Cleaning and Repair of Blower Wheel Motor Assembly and Mounting Plate Assembly

(fig. B-14)

a. Clean the exterior of the blower wheel motor assembly (5) by wiping with a cloth moistened in cleaning compound. Do not saturate the cloth.

b. Inspect the condition of the motor wiring, bearing, and exterior in general. Frayed insulation on wires should be taped with insulation tape. Replace the complete motor assembly if other repairs are required.

c. Check fins on blower wheel (1). If fins are damaged or warped, replace the wheel.

3-30. Cleaning and Repair of Drive Unit Assembly

(fig. B-15)

a. Wash all metal parts in cleaning compound. Clean the motor assembly (19) and pulley assembly (10) with methyl alcohol.

b. Inspect the condition of the motor and wiring. Repair any frayed wire with insulation tape. If wires are broken or the motor is otherwise damaged, replace the motor assembly.

c. Check the condition of the impeller fan (6). If blades are damaged or warped, replace.

d. Inspect all other parts and replace any that are worn or damaged.

3-31. Cleaning and Repair of Drive Belt Shift Fork Assembly

(fig. B-16)

a. Wash all metal parts of the drive belt shift fork assembly in cleaning compound and dry with a clean cloth.

b. Inspect all parts and replace any that are worn or damaged.

3-32. Cleaning and Repair of Takeup Arm Assembly

(fig. B-17)

a. Clean all parts except the takeup arm assembly (10) with cleaning compound. Wipe the takeup arm assembly with a clean cloth and remove stubborn dirt or stains with detergent.

b. Inspect all parts and replace any that are worn or defective. Touch up any nicks or scratches on the takeup arm assembly with touchup paint. Select color to match.

3-33. Cleaning and Repair of Takeup Arm Assembly Clutch

(fig. B-18)

a. Clean all metal parts except the pulley assembly (10) with cleaning compound and dry with a clean cloth.

b. Inspect the pulley assembly for wear on the pulley surfaces and on the shaft bearing surface. Replace if worn.

c. Inspect the arm assembly (11) and replace if damaged or bent.

d. Inspect all other parts and replace any that are worn or damaged.

3-34. Cleaning and Repair of Takeup Shoe Assembly

(fig. B-19)

a. Wash all parts of the takeup shoe assembly in methyl alcohol and dry with a clean cloth.

b. Inspect the roller sprocket (3) and replace if worn or damaged.

c. Inspect the roller studs on the takeup sprocket shoe arm assembly (5) for wear or damage. Replace the assembly if the studs are defective.

d. Inspect the cover (2) for cracks or other damage and replace if defective.

3-35. Cleaning and Repair of Threading Control Arm

(fig. B-20)

a. Clean all metal parts except the film roller (2) with cleaning compound and dry with a clean cloth. Use methyl alcohol to clean the film rollers and dry with a clean cloth.

b. Inspect the rollers and replace them if worn or damaged.

c. Inspect the condition of the threading control arm assembly (9). Replace complete arm assembly if defective.

d. Inspect all other parts of the assembly and replace if worn or damaged.

3-36. Cleaning and Repair of Shutter and Cam Assembly

(fig. B-27)

a. Clean the parts of the shutter and cam assembly with cleaning compound and dry with a clean cloth.

b. Inspect the cam and hub assembly (2). If either cam or hub is damaged, replace entire cam and hub assembly as parts are matched in manufacturing.

c. Inspect the shutter blade (5) for nicks or bent blades. Replace if defective.

3-37. Cleaning and Repair of Claw Arm

(fig. B-21)

a. Clean all parts except the pivot bushing (12) and claw arm pivot assembly (15) with cleaning compound and dry with a clean cloth. The bushing and pivot are oil impregnated and should be cleaned by wiping with a clean cloth.

b. Inspect the pins in the follower portion of the claw arm assembly (13) for wear or damage. Replace the complete claw arm assembly if any parts are worn or damaged.

c. Inspect the condition of the claw arm pivot assembly and pivot bushing. Replace either of these parts if worn.

d. Check the framing arm (16) for damage and replace if necessary.

3-38. Cleaning and Repair of Amplifier Cover Assembly

(fig. B-6)

a. 'Wipe all parts with a dry cloth to remove surface dirt. Stubborn grease or oil stains may be removed with a cloth moistened in cleaning compound.

b. Inspect the two rocker switches (5 and 6) and the threading lamp switch (25) for positive action. If the switch action appears "sloppy" or the switch does not operate, replace defective switch.

c. Check the condition of all other parts and replace any that are defective.

d. Examine nameplates and markings for legibility and replace if necessary. Touch up scratches and nicks with touchup paint. Select color to match.

3-39. Cleaning and Repair of Amplifier

(fig. B-5)

a. Cleaning. Remove dust from the amplifier with a vacuum cleaner or a soft-bristled brush. Do not use cleaning compound on the circuit board.

b. Inspection. Examine the printed circuit board for cracks or breaks. Check wiring for damaged insulation or burns. Check for proper mounting of components on the circuit board.

c. Check for Shorted Transistors. Transistors cannot be checked in the circuit with an in-circuit tester, but as a preliminary test, the front to back resistance ratio can be checked by using a 20,000 ohm-per-volt ohmmeter. Use scales R x 10 or R x 100 on the ohmmeter for all checks except power transistors. Use scale R x 1 for testing the power transistors. Measure resistance from emitter to collector (fig. 1-7). Reverse polarity of test probes. The same test is performed from emitter to base and base to collector. A significant difference in the readings should be noted. If a very low reading is obtained and little or no difference is observed when polarity is reversed, the transistor is defective. If an extremely high reading is obtained in both directions, the transistor is defective. Replace defective circuit board.

d. Checking for Shorted Diodes. Diodes are checked in the same manner as the transistors (c above), except test probes should be connected to anodes and cathodes and reversed.

e. Checking Continuity of Signal Through Amplifier (fig. 1-7).

(1) Connect. an audio oscillator to a 40-db attenuator with the VTVM connected across the output of the attenuator. Also connect output of attenuator to points P16 and P12 of the preamplifier, point P12 being the ground connection. Connect an 8-ohm resistive load to the output of the power amplifier at the speaker jack.

NOTE

No film should be in the projector.

(2) Apply power to the amplifier. Apply a 15- ms signal, as measured on the vtvm, to the preamplifier. Set volume and tone controls at midposition. Make checks at the collectors of Q2, Q3, and Q4 in that order with an oscilloscope. An undistorted sine wave should be noted at all collectors of the preamplifier circuit. If a distorted signal or no signal is noted at any point, the point at which this occurs indicates the defective area in the circuit board. Identify the defective area on the board for future repair or salvage, and replace the defective board.

(3) Connect the oscilloscope across the 8-ohm

dummy load. An undistorted sine wave should be noted. Any distortion indicates a defective power amplifier section of the circuit board. Identify the defective area on the board for future repair or salvage, and replace the defective board.

(4) If the total system performs as specified above, a normal output of 8 volts should be obtained across the resistive load with a standard 400-cycle test film in the projector. Thread test film into projector, set tone control at midposition and volume control at three-quarter position for the test across the resistive load. If the 8-volt. reading is not obtained, check for dc voltage loss using a 20,000 ohm-per-volt meter.

f. Amplifier Printed Circuit Board parts. The location of components on the amplifier printed circuit board is shown in figure B-5. The related amplifier schematic is shown in figure 1-7.

3-40. Replacement of Takeup and Feed Sprocket Shaft Bearings

These two bearings are press-fitted into the housing. To replace, push out the old bearings and press new bearings into place. Lubricate the new bearings as described in paragraph 3-41.

3-41. Lubrication

CAUTION

Do not vary the lubrication requirements outlined in table 3-1 below. Excessive, incorrect, or inadequate lubrication of certain parts can cause a projector malfunction.

a. Lubrication points for the projector are outlined in table 3-1. Lubricate the projector during reassembly procedures as indicated. The lubricants used are Lubricating Oil, Instrument (OAI) (NSN 9150-00-664-6518) and Grease, Silicon (NSN 9150-00-753-4588).

b. Be careful to avoid getting lubricant on optical parts of the projector. If lubricant is accidentally spilled on these parts, clean the parts

Table 3-1. Lubrication Points

Fig. No.	Item	Remarks	Lubricant
28, fig. B-7	Belt eccentric	Coat pivot and bearing in-surfaces.	Grease
34, fig. B-7	Reversing switch assembly	Bearing surface	Grease
3, fig. B-8	Takeup reel arm assembly	Coat pivot completely.	Grease
5, fig. B-8	Flat washer	Coat area that interfaces with projector housing.	Grease
6, fig. B-8	Takeup reel arm lock plunger	Bearing surface	Grease
15 and 16, fig. B-8	Flat washers	Coat both sides	Grease
17, fig. B-8	Takeup sprocket gear assembly	Coat teeth of gear and bearing interface.	Grease
18, fig. B-8	Flat washer	Coat both sides	Grease
fig. B-9	Takeup sprocket gear bearing on projector housing.	Apply 3 drops to bearing surface.	Oil (OAI)
4, fig. B-9	Roll tension arm	Coat pivot and area that interfaces with projector housing.	Grease
6, fig. B-9	Shoe lever	Shaft	Grease
5, fig. B-9	Arm takeup sprocket shoe	Coat pivot and area that interfaces with projector housing.	Grease
7, fig. B-9	Flat washer	Coat both sides	Grease
15, fig. B-9	Spacer	Coat both sides	Grease
14, fig. B-9	Threading control arm	Coat pivot and edges in contact with spring.	Grease
21, fig. B-9	Pressure roller arm assembly	Coat pivot and area that interfaces with projector housing.	Grease
29, fig. B-9	Loop set lever	Coat pivot and area that interfaces projector housing.	Grease
5, fig. B-10	Drive shaft bearings	Pack all moving surfaces	Grease
6, fig. B-10	Spring washer	Apply to interface surfaces	Grease
10, fig. B-10	Drive gear	Apply to worm surface.	Grease
18, fig. B-10	Framing arm pivot	Apply to interface surfaces	Grease
24, fig. B-10	Rewind knob assembly	Apply to light coating on; bearing surfaces.	Oil (OAI)
8, fig. B-11	Follower assembly	2 drops between rollers after assembly.	Oil (OAI)

Table 3-1. Lubrication Points--Continued

Fig. No.	Item	Remarks	Lubricant
10, fig. B-11	Feed shoe assembly	Apply a light coating to roller shafts.	Grease
3, fig. B-12	Toggle spring	Apply 2 drops after assembly	Oil (OAI)
8, fig. B-12	Clutch facing	Apply a light coating to plate contact surfaces.	Grease
7, fig. B-15	Motor pulley spring	Apply a light coating to in-terface surfaces.	Grease
9, fig. B-15	Bearings	Apply to inside diameter and outside face.	Grease
4, fig. B-16	Washer	Coat both sides	Grease
1, fig. B-16	Shift lever	Apply to eccentric slot	Grease
5, fig. B-16	Spacer	Coat interface areas	Grease
5, fig. B-19	Takeup sprocket shoe arm assembly.	Apply a light coating to roller shafts.	Grease
5, fig. B-20	Dampener hub cap	Apply a light coating to inside diameter.	Oil (OAI)
6, fig. B-20	Tension arm assembly	Apply a light coating to roller shafts.	Grease
9, fig. B-20	Arm assembly	Apply a light coating to roller shafts.	Grease
3, fig. B-21	Control rod	Apply to pivot periphery, threads and bearing surfaces.	Grease
13, fig. B-21	Claw arm assembly	Apply to interface between arm and washer.	Grease
14, fig. B-21	Washer	Apply to both faces	Grease
6, fig. B-22	Flat washer	Coat both sides	Grease
7, fig B-22	Flat washer	Coat both sides	Grease
16, fig. B-22	Film gate eccentric	Apply to side that interfaces with lens holder assembly	Grease
19, fig. B-22	Lower lens spring	Apply to side that interfaces with projector housing.	Grease
20, fig. B-22	Film lever gate	Apply to side that interfaces with projector housing.	Grease
fig. B-22	Lens holder guide rod on projector housing.	Coat completely	Grease
24, fig. B-22 gear teeth.	Film feed clutch assembly	Apply to bearing interface and	Grease
25, fig. B-22	Flat washer	Coat both sides.	Grease
fig. B-22 projector assembly.	Film feed clutch bearing in	Coat bearing surface lightly	Grease
6, fig. B-23	Lubrication pad assembly	16 drops on pad every 500 hours and during reassembly.	Oil (OAI)
14. fig. B-23	Belt guidepost	Coat lightly.	Grease
15. fig. B-23	Supply reel guide	Coat interface areas. Do not get grease on belt contact areas.	Grease
20, fig. B-23	Supply reel arm assembly	Coat pivot area	Grease
21. fig. B-23	Reel lock supply plunger	Coat lightly	Grease
23, fig. B-23	Flat washer	Lightly coat area that contacts housing.	Grease
23, fig. B-24	Elevation clamp stud	Apply to bearing and interface surfaces.	Grease

3-42. Sealing

a. Points of the projector requiring sealant are listed in table 3-2 Apply sealant during the assembly or after adjustment as indicated. Sealant used is Glyptal, or equivalent.

b. Avoid sealing parts other than those specified. Be especially careful to keep sealants from optical surfaces.

Table 3-2. Sealant Points

Figure No.	Item	Remarks
13, fig. B-3	Machine screw	Apply to threads during assembly.
10, fig. B-7	NUT	Apply to threads during assembly.
11, fig. B-9	Machine screw	Apply to threads during assembly.
26, fig. B-9	Threading control spring assembly	Apply coating to interface during assembly.
16, fig. B-10	Rewind lever stop	Apply coating to mounting side during adjustment.
17, fig. B-10	Limit plate	Apply coating to mounting side during adjustment.
9, fig. B-11	Pad	Use to cement pad in place.
4, fig. B-19	Pad	Use to cement pad in place.
8, fig. B-21	Nut	Apply during adjustment.
9, fig. B-21	Flat washer	Apply during adjustment.
10, fig. B-21	Flat washer	Apply during adjustment.
10, fig. B-22	Setscrew	Apply to threads during assembly.
7, fig. B-23	Lamp base cap screw	Apply to threads during adjustment.
8, fig. B-23	Lamp socket plate	Apply to bottom of mounting surface during adjustment.
14, fig. B-24	Machine screw	Apply to threads during assembly.
1, fig. B-25	Machine screw	Apply to threads during assembly.
3, fig. B-25	Machine screw	Apply to threads during assembly.

Section III. ASSEMBLY

3-43. Assembly or Amplifier Cover

(fig. B-6)

a. When reassembling components of the net work assembly (18), make sure that there are no cold solder joints or shorts at capacitors (21 and 22), resistor (20), lead wires on the cable assembly (19), and terminals on the volume/tone control se (23).

b. Place hexagon nut (15) and lock washer (17 on shaft of volume/tone control set and insert it from the rear into the opening in the cove assembly (26). Secure the network assembly to the cover assembly with the flat washer (16) an hexagon nut tl5).

c. Insert fuseholder (11) into the control switch cover (14) and secure with washers (9 and 10) and hexagon nut (8).

d. Snap rocker switches (5 and 6) into switch brackets (4) and snap switch brackets into their respective openings in the control switch cove (14). Check that each switch is properly identified and properly positioned ii, accordance with the markings on the control switch cover. Replace bumper (2), spacer (3), and machine screw (1).

e. Replace nut (13) on the amplifier cover (26] Position control switch cover (14) on the amplifier cover (26) and secure with self-tapping screw (12).

f. Replace fuse (7) in fuseholder (11).

3-44. Assembly of Claw Arm

(fig. B-21)

a. Insert the claw arm pivot assembly (15) into the framing arm (16) and install setscrew (11).

b. Apply a light coat of grease to the claw arm assembly (13) arm and insert bushing (12) into the claw arm assembly and insert setscrew (11).

c. Apply a coat of grease to both faces of flat washer (14) and install flat washer and the claw arm assembly (15) and secure with flat washers (9 and 10) and two nuts (8).

d. Insert dampener (7) into the spring (6).

e. Slide one end of spring (6) through the cut- out in the claw arm assembly (13) and insert pin (5) through the loop of the spring to secure it in position. Attach other end of spring (6) into the hold in the framing arm (16).

f. Insert rod pivot (4) into the framing arm (16) and thread control rod (3) into the pivot. Apply a coat or grease to the control rod. Install guide plate (2) and secure m position with retainer rings (1); use retaining ring pliers.

3-45. Shutter and Cam Assembly

(fig. B-27)

NOTE

The cam and hub are matched in manufacturing and should not have been

disassembled. Damage to either part requires replacement of a matched cam and hub assembly.

a. Press the small diameter of bumper (2) into the locating hole in shutter blade (3), making sure the bumper extends from the concave side of the shutter blade.

b. Slip the shutter blade over the hub end of the cam and hub assembly (4) and orient to allow the larger diameter end of the bumper to nest in the slot on the face of the cam and hub assembly.

c. Secure the shutter blade to cam and hub assembly, with retainer ring (1), making sure that concave surface of retainer ring is toward shutter blade. Use retaining ring pliers.

3-46. Assembly of Threading Control Arm

(fig. B-20)

a. Secure handle (10) to the threading control arm assembly (9) with two self-threading screws (3).

b. Place spring (8) on the small shaft of the threading control arm assembly and secure with retaining ring (7); use retaining ring pliers.

c. Apply a light coat of oil to the inside diameter of the dampener hub cap (5) and a light coat of grease to the roller shafts of the tension arm assembly (6). Assemble the film tension arm assembly (6) and dampener hub cap (5) to the threading control arm assembly and secure with spring washer (4) and self-threading screw (3).

d. Place roller (2) on the film tension arm assembly (6) and secure with retaining ring (1); use retaining ring pliers. Repeat for roller on the threading control arm assembly.

e. Apply a light coat of grease to the roller shafts of control arm assembly (9). Insert the film dampener spring (11) into the shaft of the threading control arm assembly (9) and secure in place with grooved pin (12).

3-47. Assembly of Takeup Sprocket Shoe Arm

(fig. B-19)

a. Cement pad (4) to the takeup sprocket shoe arm assembly (5) with Glyptal, or equivalent.

b. Apply a coating of grease to the studs on the takeup shoe assembly. Place a sprocket roller (3) on each stud and check to be sure that both rollers rotate freely. Wipe off any excess grease.

c. Attach cover (2) to the takeup sprocket shoe arm assembly (5) with machine screw (1).

3-48. Assembly of Takeup Clutch Arm

(fig. B-18)

a. Assemble the pulley assembly (10) and flat washer (9) to the arm assembly (11) and secure with retainer ring (8); use retaining ring pliers.

b. Insert clutch rod (7) into the slot in the arm assembly (11). Assemble flat washer (5), clutch spring (6), and flat washer (5) on to the clutch rod.

c. Assemble self-locking nut (4) approximately 25 revolutions onto the clutch rod (7) and assemble nut (1) to approximately 3/4-inch from nut (4). d. Complete the assembly by installing spring washer (3) and bracket (2) and secure with nut (1).

3-49. Assembly of Takeup Reel Arm

(fig. B-17)

a. Assemble the brake spring (9) and brake (8) into each brake hole in the takeup arm assembly (10); install pulley assembly (7) and hold in position to temporarily retain the brakes and springs.

b. Assemble flat washer (6) and collar (5) on the shaft of the pulley assembly (7).

c. Install the steel ball (3) and rear retainer spring (4) into the spindle assembly (2) and slide the complete assembly onto the shaft of the pulley assembly. Secure the spindle to the shaft with roll pin (1).

3-50. Assembly of Drive Belt Shift Fork

(fig. B-16)

a. Apply grease to the interface areas of spacer (5).

b. Assemble spacer (5) onto the stud of the support assembly (6).

c. Apply grease to the eccentric slot of shift lever (1). Position the belt shift fork (2) on the shift lever (1), making sure that the times of the fork are aligned to the grooves in the shift lever. Assemble the shift lever and fork onto the stud of the support assembly (6).

d. Coat both sides of washer (4) with grease and secure the assembly with the washer and stop nut (3), tightening the stop nut so that the fork will pivot on the support assembly with a slight drag.

3-51. Assembly of Drive Unit Assembly

(fig. B-15)

a. Assemble the motor mounting plate assembly (18) to the drive motor assembly (19) with four machine screws (16) and lock washers (17).

b. Install a rubber grommet (5) in each of the two top corner holes of the motor mounting plate assembly (18).

c. Install nut (13), adjusting screw assembly (15), and nut (14) on the motor mounting plate assembly (18).
d. Install pulley collar (12) on the shaft of the drive motor assembly (19) and secure the collar loosely with two setscrews (11).

e. Apply a coating of grease to the inner face of the two bearings (9) and assemble bearings with the pulley assembly (10) on the shaft of the drive motor assembly (19).

f. Assemble the fan and hub assembly (2) as follows:

(1) Install the rubber grommet (5) in the mounting hole of the fan (6).

(2) Slide the fan (6) on the hub assembly (8) and secure with self-tapping screw (3) and flat washer (4).

(3) Lubricate the inside of the spring (8) with grease and slide it onto the back of the hub assembly (7).

g. Install the assembled fan and hub assembly (2) on the shaft of the drive motor assembly (19) and secure in position with spirol pin (1).

h. Position the pulley collar (12) on the shaft to allow free rotation of the pulley assembly (10) and tighten setscrews (11).

3-52. Assembly of Blower Motor and Mounting Plate Assembly

(fig. B-14)

a. Install the motor mounting plate (4) on the blower wheel motor assembly (5) with two lock washers (3) and two machine screws (2).

b. Install the blower wheel (1) on the shaft of the blower wheel motor assembly (5), allowing 1/8-inch clearance between the blower wheel and motor mounting plate. The blower wheel is a friction fit on the motor shaft and must be force fit.

3-53. Assembly of Supply Reel Arm

(fig. B-13)

a. Assemble one brake spring (8) and brake (7) into the outer brake hole in the supply brake arm assembly (9) and install pulley assembly (6) into the supply reel arm assembly. Hold pulley in position to temporarily retain the brake and spring.

b. Assemble washer (5) on the shaft of the pulley assembly (6).

c. Install steel ball (3), and rear retainer spring (4) into the spindle assembly (2) and slide the complete assembly onto the shaft of the pulley assembly (6). Secure the spindle to the shaft with roll pin (1).

3-54. Assembly of Lamp House Cover Assembly

(fig. B-26)

a. Assemble the framing knob assembly (6), flat washer (5), and cover spring (4) to the lamp cover (7) and secure with retainer ring (3); use retaining ring pliers.

b. Position the latch assembly (2) in the lamp cover (7) and secure with two self-tapping screws (1).

3-55. Assembly of Film Feed Clutch assembly

(fig. B-12)

a. Assemble two flat washers (16) on the shaft of the feed gear assembly (22).

b. Assemble the belt guide bearing (20) to the belt guide (21) and slide it over the shaft of the feed gear assembly.

c. Assemble the guide bearing (18), tolerance ring (17), flat washer (16), feed clutch pulley (19), bearing (18), tolerance ring (17), and washers (15 and 16), and cam plate (12) on the shaft of the feed gear assembly.

d. Install three sets of steel balls (13) and the cam springs (14) in the slots of the cam plate (12).

e. Apply a light coat of grease to contact surfaces of clutch facing (8).

f. Assemble the inner clutch plate (11), flat washer (10), and clutch facing (8) and install pin (9) in the hole of the feed gear assembly.

g. Assemble flat washer (6) and pawl assembly (5) to the driving clutch plate assembly (7) and secure with retainer ring (4); use retaining ring pliers. Apply one drop of oil (OAI) to the pawl assembly.

h. Install the toggle spring (3) and apply one drop of oil (OAI) to the spring.

i. Apply a light coat of grease to the plate contact surfaces of the clutch plate assembly (3 through 7) and install the assembly on the shaft of the feed gear assembly.

j. Install the clutch spring (2) and self-locking nut (1) on the shaft of the feed gear assembly to secure the assembly.

3-56. Assembly of Aperture Plate Assembly

(fig. 3-1)

NOTE

The aperture plate assembly is not normally repaired. This assembly procedure is provided for informational purposes only. If the aperture plate assembly is malfunctioning, it should be replaced.

Assemble spacer (4), spring (3) and guide (2) and secure to the aperture plate assembly (5) with machine screw (1).

3-57. Assembly of Lens Holder Assembly

(fig. B-25)

a. Attach film pressure shoe assembly (5) to the lens holder body (6) with two washers (4) and two screws (3). Apply a light coating of sealant to the threads of the screws (3).

b. Attach lower spring assembly (2) to lens holder body (6) with screw (1). Apply a light coating of sealant to the threads of screw (1).

3-58. Assembly of Feed Sprocket Shoe

(fig. B-11)

a. Cement pad (9) to the feed shoe assembly (10).

b. Apply a coating of grease to each of the three roller shafts on the feed shoe assembly.

c. Preload the dampener spring (4) with one complete turn and assemble the dampener spring and the dampener assembly (5) on the feed shoe assembly.

d. Preload the follower spring (7) with one complete turn and assemble the follower spring and the follower assembly (8) on the feed shoe assembly.

e. Assemble two guide rollers (6) on the feed shoe assembly.

f. Place washer (3) over the cover mounting hole in the feed shoe assembly. Locate the feed shoe cover (2) on the feed shoe assembly and secure with two screws (1). Apply two drops of oil (OAI) between rollers on the follower assembly (8) upon completion of the assembly.

3-59. Assembly of Projector Base

(fig. B-24)

a. Position standoff (32) and secure to base with washer (31) and screw (10).

b. Locate rubber bumper (3) on base assembly (27); place washer (29) inside base and rivet rubber bumper (30) in place using rivet (28). Four rubber bumpers are required.

c. Attach housing assembly (33) to base assembly (27) with three screws (14) and three washers (26). Apply sealant to the threads of the three screws.

3-60. Assembly of Basic Projector

NOTE

Before making any wiring connections in the stages of reassembly, refer to the wiring diagram (fig. 3-2).

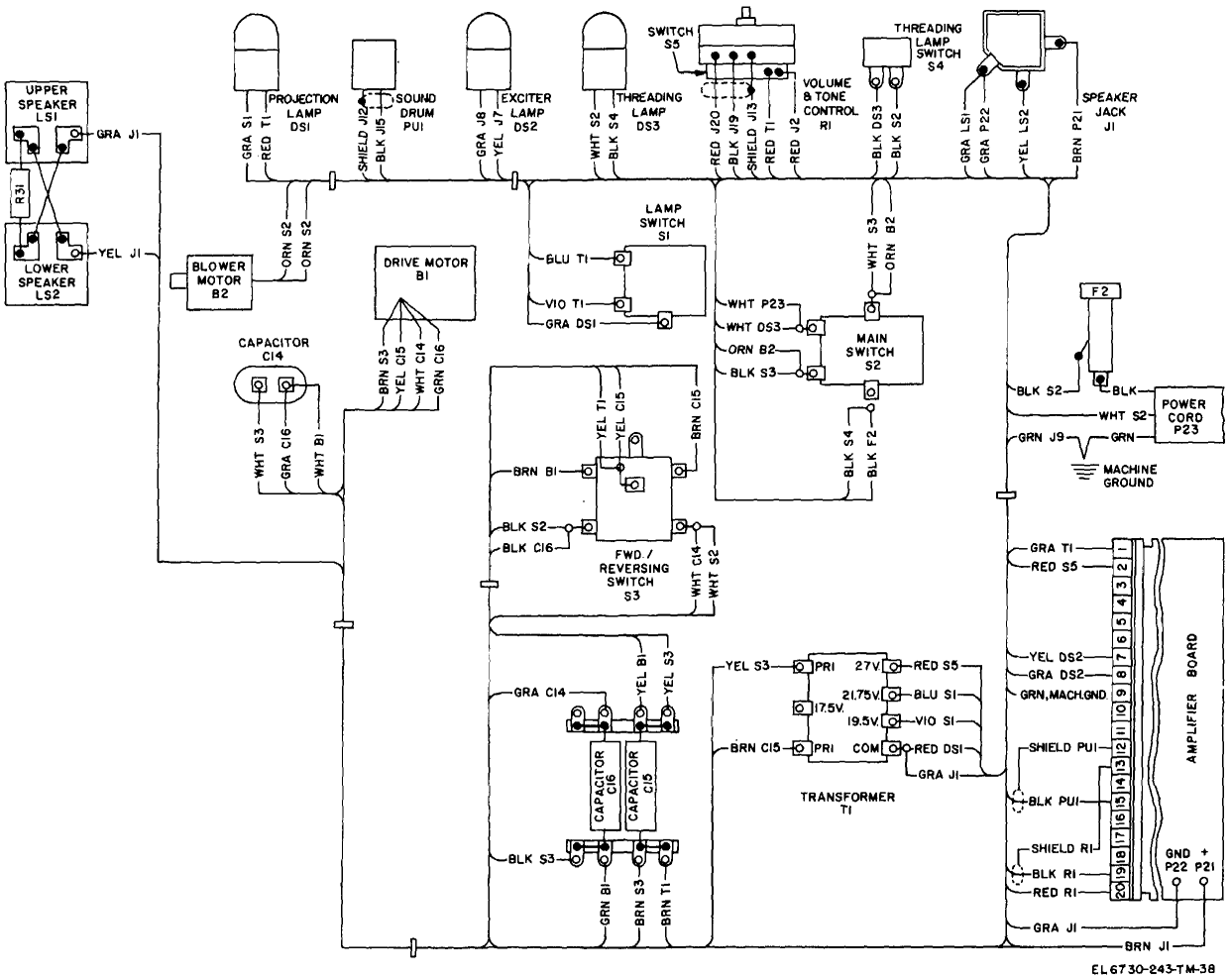


Figure 3-2. Projector, wiring diagram.

a. Assembly of Elevation Rod (Fig. B-24).

(1) Place single washer (25) between elevation clamp (24) and housing assembly (33) and secure in place by threading elevation clamp stud (23) into elevation clamp (24). Apply grease to bearing and interface surfaces of elevation clamp stud (23).

(2) Attach elevation control lever (22) to end of elevation clamp stud (23) with screw (21).

(3) Locate lower bearing (20), upper bearing (20), and flat washers (19) on housing assembly (33). Carefully insert elevation rod assembly (18) through washers, bearings and housing lugs.

b. Installation of Transformer, Exciter Lamp Socket, and Wire Harness (fig. B-24).

(1) Position three spacers (5), three -exciter springs (4), and three spacers (3) on exciter lamp socket assembly (6); position exciter plate (2) over stacked parts and secure to housing assembly (33) with three screws (1).

(2) Carefully dress wire harness assembly (9) along housing wall and bring capacitors (13), with terminal strips (12) attached, into position on the base assembly (27). Secure with two screws (10) and nuts (11).

(3) Slip three nuts (16) over the mounting holes on the transformer bracket. Attach transformer (17) into base using three washers (15) and three screws (14).

(4) Reconnect all leads to the transformer.

c. Installation of Threading Lamp Components (fig. B-3).

(1) Place nut (20) on the base of the threading lamp socket assembly (21) and secure threading lamp socket assembly to projector with self- tapping screw (14).

(2) Install threading lamp (19).

(3) Reconnect wire terminals to base of threading lamp socket assembly (21).

d. Installation of Amplifier Cover Assembly (fig. B-3).

(1) Install nut (16) over the hole in the lip in the housing assembly.

(2) Install telephone jack (18) and sleeve bushing (12) from the rear of the amplifier cover assembly (17) and secure in place using washer (11), washer (10), and nut (9).

(3) Place amplifier cover assembly (17) in the relative mounting position and connect wiring harness leads to the rocker switch controls (fig. 3- 2).

(4) Slide the cable strain relief bushing (5, fig. B-3) over the open end of the power cord assembly (4); slide the cable strain bushing approximately 12 inches up the power cord. Press the cable strain relief bushing into the base plate hole to lock the cord in position.

(5) Secure the amplifier cover assembly (17) to the projector chassis using machine screw (13) and self-tapping screws (14 and 15). Apply sealant to the threads of machine screw (13).

(6) Reconnect the power cord leads; black wire to the main switch and white wire to the reversing switch; secure terminal eye of the ground wire to the chassis using machine screw (3).

(7) Carefully orient the amplifier board assembly (8) and, by pushing straight into connector, mount the amplifier board assembly. Secure the amplifier board assembly to the amplifier cover assembly (17) using washers (7) and self-tapping screws (6).

(8) Reconnect all remaining leads at the back of the amplifier cover assembly (17).

(9) Install the tone knob (2) and volume knob (1) on the shaft of the tone and volume control.

e. Installation of Claw Arm, Rewind Lever and Limit Plate (fig. B-10).

(1) Apply a light coating of oil (OAI) to the rewind knob assembly (24) and slide the shafts of the knob into the mounting holes in the projector housing. Install retainer ring (23), use retaining ring pliers.

(2) Assemble rewind lever spring (21) to the rewind lever assembly (22) and slide the assembly on the shaft of the rewind lever knob. Secure the rewind lever assembly to the shaft of the rewind lever knob by inserting the end of the spring into the hole of the shaft.

(3) Assemble the rewind lever stop (16), limit plate (17) and speed nut (15) in the mounting position and secure with two self-tapping screws (14).

(4) Place the stabilizer (26) on the self-tapping screw (25) and thread the screw into the projector housing.

(5) Apply grease to the interfaces of framing arm pivot (18).

(6) Place the claw arm assembly (20) in the mounting position on the projector housing and secure with framing arm pivot (18) and spring washer (19).

f. Installation of Drive Shaft Components (fig. B-10).

(1) Apply grease to worm surface of feed drive gear (10) and to the moving surfaces of drive shaft bearing (5). Assemble the feed drive gear (10), shaft collar (8), and drive shaft bearing (5) on the drive shaft (13). Insert setscrews (7) into the collar and tighten screws. Install retainer ring (4); use retaining ring pliers.

(2) Align the pinhole in the feed drive gear (10) with the pinhole in the drive shaft and secure in place with spirol pin (9); use roll pin inserting tool T-38000-N.

(3) Slide the end of the drive shaft through

the forward bearing mounting hole and assemble the shutter and cam assembly (12), drive gear (10), and shaft collar (8) on the end of the shaft.

(4) Continue sliding the shaft rearward in through the rear bearing mounting hole. Assemble spring washer (6) and bearing (5) on the end of the shaft.

(5) Install retainer ring (4); use retaining ring pliers.

(6) Slide the shutter and cam assembly (12) forward so that the claw arm is riding on the cam. Secure in place with setscrews (11).

(7) Align the pinhole in the drive gear (10) with the pin hole in the shaft and secure in place with spirol pin (9); use roll pin inserting tool T- 38000-N.

(8) Slide the drive shaft pulley (3) onto the shaft and secure to shaft with two setscrews (2).

(9) The inching knob (1) is press fit on the shaft; align flat on shaft with the flat on the inching knob and press knob into position.

g. Installation of Loop Set Lever (fig. B-9).

(1) Apply a light coat of grease to the shaft of the loop set lever (29) and insert the shaft of the lever into the mounting hole.

(2) Assemble the loop set spring (28) on the shaft of the loop set lever, wind one revolution, and secure with retainer ring (27); use retaining ring pliers.

h. Installation of Threading Control Arm and Pressure Roller Assembly (fig. B-9).

(1) Coat the interfaces of the threading control spring assembly (26) with sealant and secure in position with two washers (24) and machine screw (23). Apply a light coating of sealant to the screw and washers.

(2) Assemble the pressure roller aligning spring (19), flat washer (18), and film guide roller assembly (17) on the shaft of the pressure roller arm assembly (21) and secure with self-locking nut (16).

(3) Apply a light coat of grease to the pivot shaft of the pressure roller arm assembly (21), place spring washer (22) on the shaft and insert the shaft into the mounting hole.

(4) Secure the pressure roller arm assembly (21) with two retainer rings (20); use retaining ring pliers.

(5) Apply a light coat of grease to spacer (15) and the shaft of the threading control arm (14).

(6) Assemble spacer (15) onto the shaft of the threading control arm (14) and assemble the arm onto the projector.

(7) Apply a thin coat of sealant to the threads of the machine screw (11), position lockwasher (13) and threading guard (12) for ,mounting and secure them to the threading control arm with machine screw (11).

(8) Position two nuts (10) and sound head cover (9) for mounting and secure with two self- tapping screws (8).

*i. Installation of Takeup Shoe and Reel Tension A*rm (fig. B-9).

(1) Apply grease to both sides of washer (7) and position the washer over the lever mounting hole in the projector.

(2) Apply a light coat of grease to the pivot of the shoe lever (6) and install the lever.

(3) Apply a light coat of grease to the pivot of the takeup sprocket shoe (5) and install in the projector.

(4) Secure with retainer ring (3); use retaining ring pliers.

(5) Apply a coating of sealant to the threads of machine screw (1), slide takeup tension spring (2) over the shaft of the takeup shoe, and insert screw through the eyeloop of the spring; thread the screw into the mounting hole.

(6) Position shoe lever assembly (6) to the *open* position and rotate the takeup tension spring (2) clockwise until the short tail of the spring engages the slot on the arm pivot. Tighten machine screw (1).

(7) Apply a light coat of grease to the pivot of the roll tension arm (4) and insert it in its mounting hole in the projector.

(8) Secure in position with retainer ring (3); use retaining ring pliers.

(9) Install takeup tension spring (2) on the shaft of the reel tension arm.

(10) Apply a light coat of sealant to the threads of machine screw (1) and insert the screw through the eyeloop of the tension spring (2); thread screw into its mounting hole.

(11) Engage the short tail of the spring (2) and, using spring-loading tool T-38000-M, preload the spring by rotating it 2200 clockwise. Adjust the pivot slot to the spring and insert the short tail of the spring into the pivot slot.

j. Installation of Takeup Sprocket Assembly and Drive Gear Assembly (fig. B-8).

(1) Install clutch liner (19) inside of the takeup sprocket gear assembly (17).

(2) Apply a light coat of grease to both sides of flat washer (18) and to the gear teeth and bearing interface of the takeup sprocket gear assembly.

(3) Install the washer onto the takeup sprocket gear assembly shaft; insert the takeup sprocket gear assembly into its mounting hole in the projector.

(4) Apply grease to both sides of flat washers (15 and 16).

(5) Assemble flat washers (15 and 16) and the takeup sprocket assembly (14) onto the takeup

sprocket gear assembly shaft. Establish end-play of the shaft by pushing the gear assembly and the sprocket together with feeler gage T-38000-Y sandwiched between the flat washer (15) and the takeup sprocket assembly (14). Lock the assembly in place with setscrew (13); remove feeler gage.

k. Installation of Reversing Cam Switch (fig. B-*8).*

(1) Apply a light coat of grease to the L-shaped slot in the reversing switch cam (11).

(2) Assemble spacer (12) and reversing switch cam (11) on the pivot shaft of the threading control arm (14, fig. B-9) and secure with two retainer rings (10, fig. B-10); use retaining ring pliers.

l. Installation of Takeup Clutch Arm (fig. B-8).

(1) Insert the clutch facing of the takeup clutch arm (9) into the cup of the takeup sprocket gear assembly (17), being careful to seat the clutch facing on the clutch liner (19).

(2) Position the lower portion of the takeup clutch arm on the end of the threading control arm and secure with retainer ring (8); use retaining ring pliers.

m. Installation of Takeup Reel Arm (fig. B-8).

(1) Apply a light coat of grease to the pivot of the takeup reel arm assembly (3), washer (5), and takeup reel arm lock plunger (6).

(2) Assemble the washer (5) on the takeup reel arm assembly (3); assemble the arm lock spring (7) and takeup reel arm lock plunger (6) into the housing. Insert the shaft of the takeup reel arm assembly (3) in the bearing in the projector housing.

NOTE

The takeup reel arm assembly will be under tension from compression of the arm lock spring and takeup reel arm lock plunger and must be held in place while completing the installation of the takeup reel arm assembly.

(3) Plate flat washer (4) on the shaft of the takeup reel arm assembly (3); slide the upper end of the takeup clutch arm (9) over the takeup reel arm assembly shaft and secure with roll pin (2). Make sure the end of the roll pin (2) is flush with the bottom of the takeup reel arm and assembly shaft.

(4) Feed the end of the takeup reel belt (1) through the guard of the takeup clutch arm (9) and up over the pulley wheel. Close belt by linking open ends together.

n. Installation of Reversing Switch (fig. B-7).

(1) Apply a light coat of grease to the end of the shaft on the reversing switch assembly (34) and position the switch on the projector.

(2) Secure the switch with two self-tapping screws (33).

(3) Connect eight leads in the wire harness to the switch assembly (fig. 3-2).

o. Installation of Sound Drum and Flywheel (fig. B-7).

(1) Insert the sound drum (32) in the housing and install two machine screws (31); do not tighten screws.

(2) Insert sound drum locating plug T-38001- G in the mounting hole for the sound optics cartridge (fig. 3-3).

(3) Seat the locating plug so that the phenolic rod just clears the phototransistor under the rod, and push the sound drum toward the casting from the rear until the edge of the sound drum just touches the rod.

(4) Tighten machine screws (31) to secure the sound drum support in position and remove the sound drum locating plug.

(5) Slip flywheel (30) on the shaft of the sound drum (32) and secure with machine screw (29).

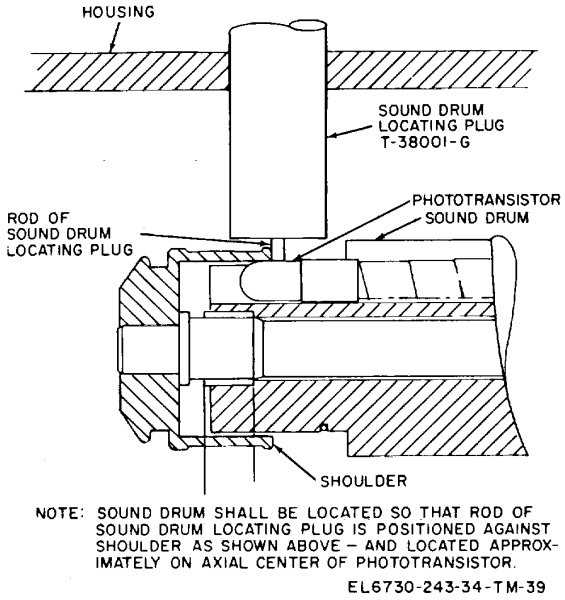


Figure 3-3. Sound drum locating plug T-38001-G, installed for use.

p. Installation of Drive Belt Shift Fork and Belt Shift Eccentric (fig. B-7).

(1) Apply a light coat of grease to the shaft and interfaces of the belt eccentric (28) and install in the mounting hole in the projector.

(2) Position the drive belt shift fork assembly (25) for mounting by placing the slot in the lever over the eccentric pin and aligning the two mounting holes to the mounting holes in the

projector. Secure in position with self-tapping screws (24).

(3) Attach the belt shift spring (23) between the lever and the eccentric.

(4) Place control lever (27) on eccentric and rotate the eccentric fully clockwise as viewed from the operator's side. Install the control lever on the shaft of the belt eccentric (28) with the pointer straight up and secure with machine screw (26).

q. Installation of Drive Unit Assembly and Drive Motor Mounting Assembly (fig. B-7).

(1) Position the drive motor mount assembly (22) on the projector housing and secure with three machine screws (20) and three lockwashers (21).

(2) On the left stud of the drive motor mount assembly place in this order: one washer (19), one washer (18), one spacer (12), one washer (13), and tubular spacer (17). On the right stud of the motor mount assembly place in this order: two washers (18), one spacer (12), one washer (13) and tubular spacer (17).

(3) Insert motor helical spring (15) into the eyelet (16) and while positioning the drive unit assembly (14) for mounting, insert the assembled eyelet and motor spring between the motor mounting plate assembly and the plate on the drive unit assembly. Secure the drive unit assembly to the motor mounting plate assembly using two flat washers (13), spacers (12), flat washers (11) and nuts (10).

(4) Install the drive motor belt (9) and align the pulley. (Refer to TM 11-6730-230-12).

r. Assembly of Blower Motor and Plate Assembly (fig. B-7).

(1) Dress the leads from the blower motor and plate assembly (8) through the hole in the vent cavity on the housing. Position the blower motor and plate assembly (8) and fasten securely to the housing with three self-tapping screws (7).

(2) Locate venturi plate (6) over the mounting holes on the projector housing and secure in place with three washers (5) and three self-tapping screws (3).

(3) Slip cushion (2) into position on the housing and insert capacitor (1). Note that the shoulder of the capacitor must be located behind the lip of the venturi plate. Both cushion and capacitor are held in place by spring tension only.

(4) Through the wire clamp (4), which will be located in the fourth hole in the venturi plate, dress four leads from drive motor and white and grey leads from the harness assembly through the wire clamp making sure, when the wires are in position, they do not interfere with the claw arm. Secure wire clamp in position on the venturi plate using washer (5) and self-tapping screw (3).

s. Installation of Supply Reel Arm and Reel Belt Guides (fig. B-23).

(1) Apply a thin coat of grease to the friction surfaces of the washer (23). Supply reel arm lock plunger (21), and the shaft of the supply reel arm assembly (20).

(2) Assemble reel arm lock spring (22) and supply reel arm locking plunger (21) into the housing.

NOTE

The supply arm will be under tension from compression of the reel arm lock spring and supply reel arm lock plunger and must be held in place while completing the installation of the supply arm.

(3) Place washer (23) on the shaft of the supply reel arm assembly (2) and insert the shaft of the supply reel arm assembly into the bearing in the projector.

(4) Place washers (18 and 19) on te shaft of the supply reel arm assembly and secure the supply reel arm assembly with roll pin (17).

(5) Apply grease to belt guidepost (14) and interface areas of supply reel guide (15). Be sure that grease does not get into belt contact areas.

(6) Assemble washer (16), supply reel guide (15), and belt guidepost (14) and secure with lock- washer (13) and machine screw (12).

t. Assembly of Lamphouse Components and Installation of Lamphouse Cover Assembly (fig. B- 23).

(1) Assemble sound' cartridge (11), plug (10) and secure in place with setscrew (9). Adjust the sound cartridge after final assembly (para 4-8).

(2) Connect two wires to the projection lamp socket plate (8) and position the base of the lamp socket plate for mounting. Install capscrew (7). Align the base of the lamp socket plate after final assembly (para 4-7).

(3) Position lubrication page assembly (6) and secure with pad retainer (5). Apply two drops of oil (OAI) to the pad.

NOTE

If the lubricator pad is new, apply sixteen drops of oil (OAI). (4) Install exciter lamp (4) (TM 11-6730-230-12).

(5) Install the projector lamp (3) and lamp chimney (2) on the lamp socket plate (8).

(6) Install the lamp house cover (1).

u. Installation of the Film Feed Clutch Assembly (fig. B-22).

(1) Apply a light coat of grease to the drive shaft of the film feed clutch assembly (24) and to flat washer (25).

(2) Assemble flat washer (25) onto the shaft of the film feed clutch assembly.

(3) Secure the film feed clutch assembly with self-tapping screw (22) and washer (23).

(4) Install the supply reel belt (21) (TM 11- 6730-230-12).

v. Installation of Aperture Plate Assembly (fig. B-22).

(1) Position aperture plate assembly (27) for mounting and install with four machine screws (26).

(2) Align the aperture plate after final assembly (para 4-7).

w. Installation of Lens Holder Assembly (Fig. B-22).

(1) Apply a light coat of grease and assemble film gate (20) tension spring (18) and lens spring (19) to the lens holder (17).

NOTE

The tension spring, when new, is supplied as a straight piece. To install, fold spring into three thicknesses.

(2) Apply a light coat of grease to the lens holder guide rods on the projector housing and to the interface area of the lens holder, and install the lens holder on the guide rods.

(3) Apply a light coat of grease to the gate eccentric (16) and install the gate eccentric into the lens holder body.

(4) Apply a light coat of sealant to the threads of setscrew (10). Assemble steel ball (13), flat washer (12), and lens holder eccentric spring (11) and secure with setscrew (10).

(5) Assemble the control lever (15) to the lens holder with machine screw (14). Adjust the film pressure (para 4-1).

(6) Position feed shoe assembly (9) on the projector housing and secure with three machine screws (8).

(7) Apply a light coat of grease to flat washers (6 and 7) and assemble onto the shaft of the film feed clutch assembly (24).

(8) Establish the position of the film sprocket by using feeler gage T-38000-U between the flat washer (7) and the projector housing. Slide the film sprocket assembly (5) onto the shaft and position it snugly against washer (7). Lock into position with setscrew (4); remove feeler gage.

9) Install film stripper (3) and secure with self-tapping screw (2).

(10) Install the projection lens (1) into the lens holder (17).

x. Basic Projector Assembly (fig. B-2).

(1) Position projector foot assembly (20) and secure to projector with self-tapping (19). Attach helical spring (18) by hooking one end of the spring to the stud on the housing and the other end of the spring around the elevation rod.

(2) Attach frame assembly (17) to the housing with four screws (10).

(3) Position bracket (16), carrying handle (15) and cap (14) on the frame assembly and secure with two screws (12).

(4) Align rear cover (11) on the projector assembly and attach with screws (10).

(5) If previously removed, attach the threading diagram plate as follows:

(a) Activate the adhesive backing on the instruction plate by applying a thin coat of trichlorethylene.

(b) Check activation; adhesive should pull away in string-like fashion. If only slightly tacky, use more solvent. If gummy, excessive solvent had been used and the instruction plate should be allowed longer drying time.

(c) When the adhesive has been properly activated, apply the instruction plate to the projector and smooth it with a dry cloth or roller to eliminate wrinkles or air bubbles. Use moderate pressure only.

(6) Attach the gum-backed dampener (8) to the identification data plate (7) and secure to the projector assembly with screws (6).

(7) If latches have been removed, position spacers (4) and clamping catch (3) and attach to front cover assembly (1) with tubular rivets (2).

CHAPTER 4
ADJUSTMENT AND ALIGNMENT

Section I. ADJUSTMENT

4-1. Film Pressure Adjustment

a. Open the film gate and remove the projection lens (1, fig. B-22).

b. Insert the film pressure gage G8-38000 (fig. B-29) in place of the removed projection lens and set the FILM PRESS ADJUST to LO.

c. Set the contact button of the gage against the pressure shoe until the gage needle is slightly deflected. Lock the gage in place with the lens locking screw.

d. Set the dial of the gage to 0.

e. Thread a piece of black and white film into the film channel and close the film gate. Record the gage deflection.

f. Set FILM PRESS ADJUST to HI and record the gage deflection.

g. Gage deflection must be between 0.000 and 0.004 with FILM PRESS ADJUST at LO and between 0.025 and 0.035 at HI.

h. If indications are not correct, remove machine screw (14, fig. B-22) and control lever (15) and rotate the gate eccentric (16) until a deflection of 0.030 is observed on the gage with the gage set to HI. Replace the control lever so that the film lever touches the stop pin when FILM PRESS ADJUST is at HI. Secure with screw (14).

4-2. Adjustment of Reverse Drive Film Tension

a. Start the projector and set it for reverse opera 'ion (TM '1-6730-230-12).

b. With the projector operating in reverse, the front spindle reverse drive torque must be 14 inch- ounces + 2 inch-ounces measured with supply reel torque gage G17-38000 (fig. B-29). Turn the handle of the gage counterclockwise to obtain the proper reading.

c. If the film feed clutch assembly torque is too high, reduce it by loosening the self-locking nut (1, fig. B-12). If it is too low, tighten the self-locking nut.

4-3. Adjustment of Takeup Clutch Film Tension

NOTE

Check the adjustment of takeup lift-off (TM11-6730-230-12) before proceeding.

a. Thread the projector and run approximately 300 feet of film onto a 400-foot takeup reel.

b. Stop the projector and pull a 12-inch loop of film up between the takeup sprocket and the roller of the reel tension arm.

c. Insert the roller of film tension gage T-38000- S (fig. B-29) in the loop of the film.

d. Start the projector. The gage should indicate 8 ounces (+4 ounces -2 ounces). This is a double true value equivalent to 4 ounces of film tension. If the indication does not meet the specified tension measurement, tighten the lower nut (1, fig. B-18) to increase the tension or loosen the nut to decrease the tension.

4-4. Adjustment of Rewind Engagement and Framing Limits

a. Loosen the self-tapping screws (14, fig. B-10) and adjust the limit plate (17) for lateral placement of the rewind lever assembly (22) and equal picture framing at the top and bottom of the picture.

b. The ramp of the rewind lever assembly (22) should throw the pawl assembly of the film feed clutch to its limits with the REWIND control positioned *in* or *out.* The ramp should clear the pawl assembly by 0.020 inches minimum in both *in and out* positions. Adjust the tap on the limit plate (17) by bending if necessary.

c. Tighten the self-tapping screws (14) and check operation by rotating the inching knob (1).

4-5. Adjustment of Drive Motor Belt Tracking and Drive Motor Belt Shift Fork

a. Check the position of the drive motor belt (9, fig. B-7). The correct position for the belt should be 1/16 inch from the flanged edge (nearest the motor) of the motor pulley assembly when the projector is operated in FORWARD drive.

b. Align the main drive pulley in accordance with TM 11-6730-230-12.

4-6. Adjusting Claw Arm

a. Pin Protrusion. The claw arm pin protrusion should be set at 0.040 inches using claw arm pin protrusion gage G14-38000 (fig. B-29) as follows:

(1) Place the gage flush against the aperture plate as shown in figure 4-1. The claw arm pin should just clear step 1 of the gage and touch step 2 as shown.

(2) To change the claw arm pin protrusion, remove the setscrew (2, fig. 4-2). Loosen the

setscrews (1 and 3) in the hub of the assembly and move the assembly forward or backward on the shaft until the correct claw arm pin protrusion has been reached. Relock the hub of the assembly on the shaft by tightening the screws 1, 2, and 3 in that order.

(3) Note the orientation of the flat on the drive shaft. Adjust screws to the torques specified in figure 4-2.

CAUTION

Do not bend the claw arm to obtain the required pin protrusion.

(4) If the required claw arm pin protrusion cannot be obtained, replace the entire claw arm assembly.

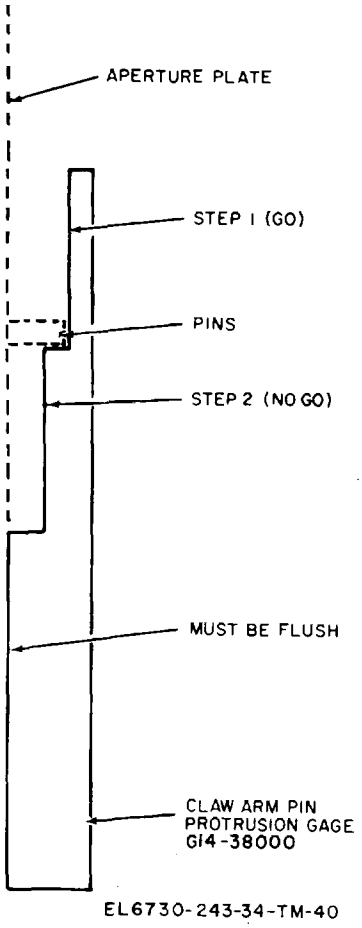


Figure 4-1. Measuring claw arm pin protrusion with claw arm pin protrusion gage GL4-38000.

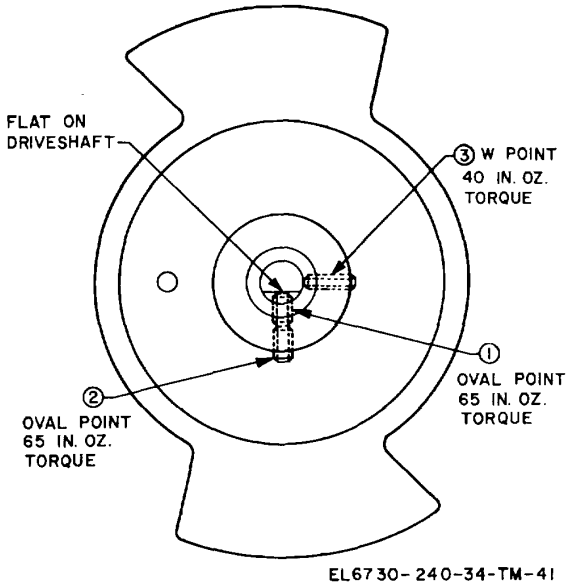


Figure 4-2. Shutter and cam assembly securing points.

b. Side Clearance. Side clearance is measured by inserting a short length of 0.042-inch rod between the claw arm pins and the edge of the aperture plate. The claw arm pins should just touch the rod but should not bind against it when the claw arm assembly is rotated through one complete cycle. Do not force the claw arm during adjustment as this may result in breakage of claw arm pins. To adjust side clearance, turn the framing arm pivot (18, fig. B-10) with shuttle cam adjusting tool ST- 5884 (fig. B-29). After adjustment, always tighten the setscrews (11, fig. B-21) before rotating the inching knob (1).

NOTE

When making side clearance adjustments, pull down adjustments (c below) must be checked also. If side clearance adjustment is necessary, make the pull down and side clearance simultaneously.

c. Claw Arm Pull Down Stroke. Claw pull down is measured with stroke setting gage ST-5880 (fig. B-29). Use of the gage is shown in figure 4-3. Adjustment is made with shuttle cam adjusting tool ST-5884 (fig. B-29) as follows:

(1) Set master control lever in the THREAD position; set ON-OFF switch to ON; set lamp switch to NORM position.

(2) Insert the stroke setting gage into the film aperture and close the gate. Rotate the inching knob to bring the step wedge of the gage into the projection aperture.

(3) Focus the image of the gage for a minimum height of 8" on the screen. To make the image larger, increase the distance from projector to screen. Continue turning the inching knob until the claw arm has reached the bottom of its stroke, has withdrawn from the gage, and is returned to the top of the stroke. Stop turning the inching knob when the claw arm pins have just entered the gage, but have not started the next downward stroke.

(4) Draw a straight reference extension at the lowest gage step on the surface used as a screen.

(5) Push up on the gage until it seats lightly against the claw arm pins. The image on the screen will move downward. The distance of the downward movement of the image is the distance used to determine the pull down stroke and should be as shown in B, figure 4-3.

CAUTION

If stroke adjustment is necessary, side clearance must be rechecked after the stroke adjustment is completed and *before* the main shaft is rotated.

(6) To adjust pull down stroke, loosen two setscrews (11, fig. 21) and, while holding pivot assembly with the shuttle cam adjusting tool, rotate the pivot bushing and the pivot assembly simultaneously, by hand. When facing the projector front, a good starting point is seen when the pivot of the pivot assembly is in the seven o'clock position. The pivot is never rotated out of six to nine o'clock position. Rotating the pivot toward the main shaft lengthens the stroke, and rotating the pivot away from the main shaft shortens the stroke. Tighten the setscrews before rotating the inching knob.

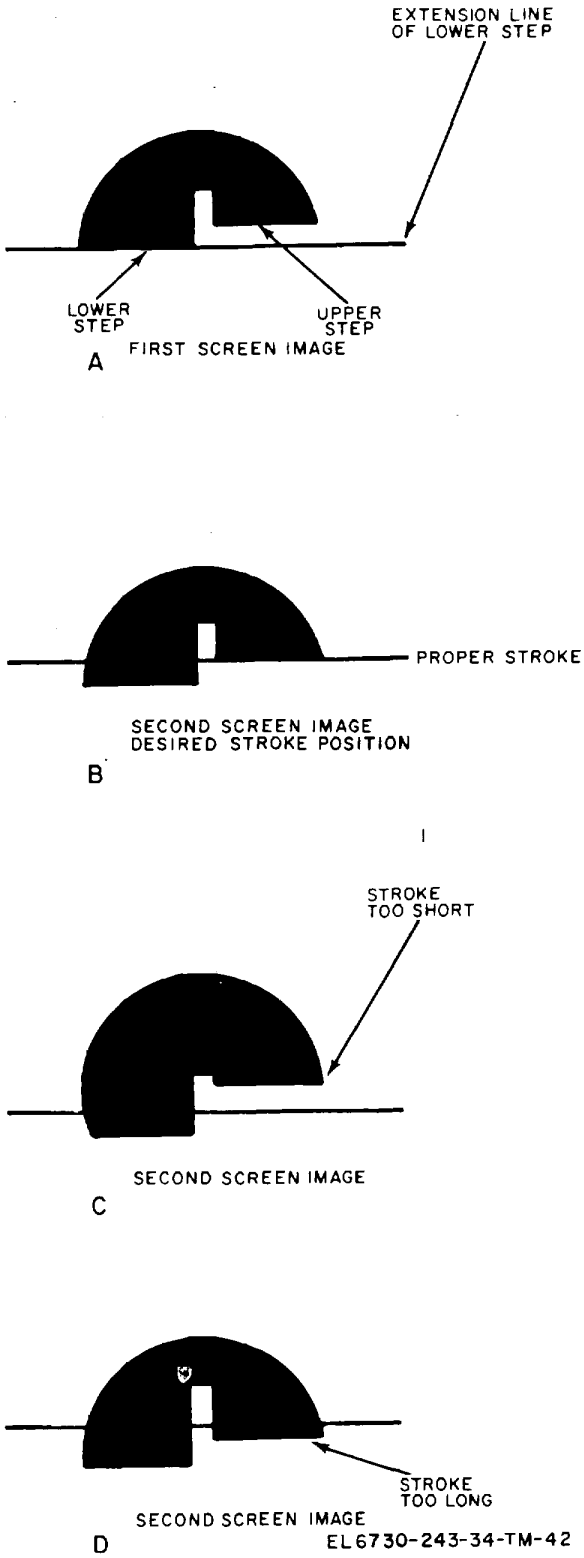


Figure 4-3. Measuring claw arm pulldown stroke.

d. Claw Arm Pivot End Play. Adjust the gap between the washer (14, fig. B-21) and framing arm (16) at the pivot joint for maximum clearance of 0.002 inch by tightening the nuts (8). This is equivalent to 0.001-inch end play when the claw arm has complete freedom.

Section II. ALIGNMENT

4-7. Optical System Alignment

(fig. 4-4)

WARNING

Disconnect the power cord from the power source before inserting the aligning plug in the projection lamp socket.

a. Remove the projection lens (1, fig. B-22) and the lens holder (17) from the projector. Loosen four machine screws (26) slightly so that the aperture plate assembly (27) can be moved. Replace the lens holder assembly, but *do not* secure it in position. Remove the projection lamp.

b. Use lamp and optical path alignment tool G3-38000 (fig. B-29) to align the aperture plate assembly as follows:

1) With the projection lens removed, insert the lamp and optical path alignment tool into the lens holder assembly. Be sure the film gate is closed.

(2) Engage the lens holder guide rod with the alignment' tool and carefully slide the tool rearward so that the aperture locating tip engages the aperture plate. The locating tip is tapered to facilitate insertion of the tool.

(3) Press the tool firmly against the sides of the aperture in the aperture plate; but sure top and bottom edges are in positive contact and tighten machine screws (26) securely.

(4) Secure the lens holder assembly to the projector.

(5) If necessary, adjust the claw arm pin side clearance (para *4-6b*) and check the framing limits (para 4-4).

c. Use lamp and optical path alignment tool G3-38000 and align the projection lamp socket as follows:

(1) Loosen the projection lamp socket attaching screw (7, fig, B-23).

(2) With the projection lamp socket aligning plug in position, as shown in figure 4-4, slide the aligning rod through the optical path alignment tool and into the projection lamp socket aligning plug as a basis for vertical and lateral alignment.

(3) To establish the lateral alignment, rotate plug until the aligning rod can be inserted into the alignment hole of the aligning plug.

(4) To establish vertical alignment, bend the projection lamp socket bracket upward or downward slightly.

(5) When aligned, apply sealant to the threads of the lamp socket screw (7) and tighten the screw. Also apply sealant to the tab of the lamp socket (8) which engages the projector casting.

(6) Replace the projection lamp and check screen illumination. If the illumination at the screen is uneven, replace the projection lamp.

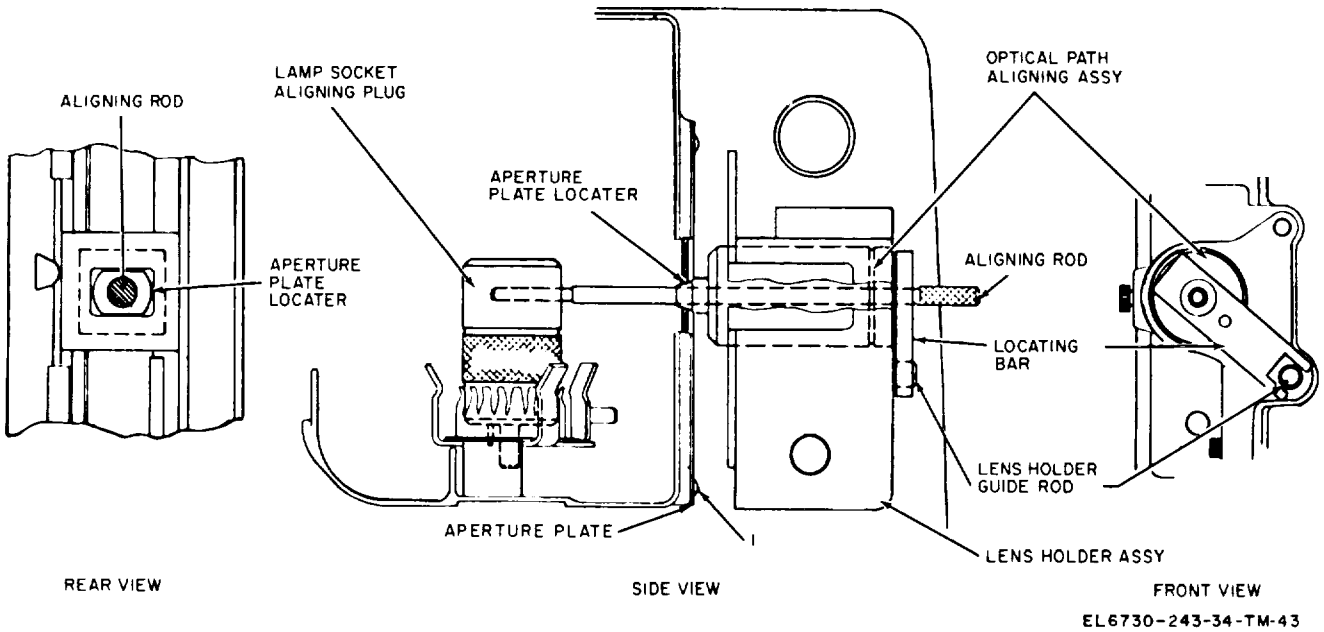


Figure 4-4. Optical system alignment, color code markings.

4-8. Sound Optical System Alignment

a. Adjusting Sound Drum (Phototransistor).

(1) Remove screw (9, fig. B-23), plug (10) and sound optics cartridge (11).

(2) Insert sound drum locating plug T-38000- G (fig. 29) in the sound optics cartridge position.

(3) Seat the plug so that the phenolic rod just clears the phototransistor.

(4) Center the clear area of the phototransistor under the rod and push the support and sound drum (32, fig. B-7) toward the projector housing until the edge of the sound drum just touches the rod.

(5) Tighten the support and sound drum retaining screws (31).

(6) Remove the sound drum locating tool and replace the sound optics cartridge. Insert plug (10, fig. B-23) and screw (9) but do not tighten until completion of b below.

b. Focusing Sound Optics Cartridge.

(1) Connect the ac voltmeter across the speaker terminals.

(2) Thread a loop of 7,000-cycle test film (PH22.42) into the projector and set the tone control for maximum treble output.

(3) Set the voltmeter on the lowest scale.

(4) Focus the sound optics cartridge by moving it up or down and rotating it until maximum output is indicated on the voltmeter. If the voltmeter goes off-scale, reduce the volume. Check the buz track and reset if necessary.

(5) When adjustment has been completed, lock sound optics into position by tightening the setscrew (9, fig. B-23).

4-9. Performance After Repair

When those repairs, adjustments, and alignments have been completed, as indicated by the diagnostic tests performed prior to repair, set up and operate the projector under actual run conditions. Check for the following:

a. General.

(1) All switches and lamps are working.

(2) The blower motor operates when lamp switch is in HI or NORM.

(3) All switches and levers work positively but do not require excessive pressure to operate.

b. Drive System.

(1) When operating, the projector does not vibrate excessively.

(2) There is no evidence of power loss.

(3) Speed change is accomplished easily.

(4) Drive in FORWARD or REWIND is positive.

c. Film Handling.

(1) Upper and lower film loops are maintained.

(2) Film does not *snap* through the film gate.

(3) There is no evidence of film damage at the sprocket holes or to film surface scratching.

(4) Takeup is positive.

(5) There is no excessive noise; *picking* and belt squeal.

(6) There is no film spill when changing from forward to reverse, or from reverse to forward.

(7) Rewind does not stall part way through reel.

(8) Film winds firmly on reel.

d. Optical and Illumination.

(1) Light output is normal.

(2) Picture at screen is steady and remains in focus.

e. Sound.

(1) From low to high volume range there is an acceptable increase in sound output.

(2) From treble to base there is noticeable change in tone.

(3) There is no objectionable hiss or hum.

(4) There is no microphonic noise.

(5) Pitch is normal.

(6) Sound is not distorted.

(7) There is no evidence of motorboating.

f. Test Failure. If the projector fails to pass the subjective run test for the check points listed in a through e above, refer to the projector troubleshooting chart (table 2-1) and review for cause of failure. After review and possible reoperation, if the projector cannot be returned for service, identify the faulty characteristics and send the projector to Depot for overhaul.

Figure 4-5. Color code for MIL-STD resistors, inductors, and capacitors.
(Located in back of manual)

APPENDIX A

REFERENCES

The following is a list of applicable references available to the repairman of Projection Set, Motion Picture, Sound AS-25A3.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U.S. Army Equipment Index of Modification Work Orders.
TB SIG 355-1	Depot Inspection Standard for Repaired Signal Equipment.
TB SIG 355-2	Depot Inspection Standard for Refinishing Repaired Signal Equipment.
TB SIG 355-3	Depot Inspection Standard for Moisture and Fungus Resistant Treatment.
TM 11-6730-230-12	Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tool Lists: Projection Set, Motion Picture Sound AS-25A; Projector, Motion Picture Sound AS-25A1; (Sound Motion Picture Projection Set Graflex Model 920EX); and Projection Set, Motion Picture, Sound AS-25A3. (Sound Motion Picture Projection Set Graflex Model 1015AR).

APPENDIX B
DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST (INCLUDING DEPOT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS)

Section I. INTRODUCTION

B-1. Scope

This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of direct sup- port and general support maintenance of the AS- 25A3. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintaining codes.

B-2. General

This Repair Parts and Special Tools List is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence.

b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized for the performance of maintenance.

c. Section IV. National Stock Number and Part Number Index. A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list, in alphameric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

B-3. Explanation of Columns

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. Source, Maintenance, and Recoverability (SMR) Codes.

(1) *Source code.* Source codes indicate the manner of acquiring support items for maintenance, re- pair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	*Definition*
PA	Item procured and stocked for anticipated or known usage.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the sup- port item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/Explanation*
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	*Application/Explanation*
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.
H	The lowest maintenance level capable of complete repair of the support item is the general support level.
Z	Nonreparable. No repair is authorized.

(3) Recoverability code. Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability codes *Definition*

Z--Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.

F--Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.

H--Reparable item. When uneconomically reparable, condemn and dispose at the general support level.

c. National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

d. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When a stock number item is requisitioned, the repair part received may have a different part number than the part being replaced.

e. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. Description. Indicates the Federal item name and, if required, a minimum description to identify the item. In the Special Tools List, the initial basis of issue (BOI) appears as the last line in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is in- creased accordingly. *g. Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr, etc). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

B-4. Special Information.

Not applicable.

B-5. How to Locate Repair Parts

a. When National stock number or part number is unknown.

(1) First. Using the table of contents, deter- mine the functional group within which the item belongs. This is necessary since illustrations are prepared for functional groups and listings are divided into the same groups.

(*2) Second.* Find the illustration covering the functional group to which the item belongs.

(3) Third. Identify the item on the illustration and note the illustration figure and item number of the item.

(*4) Fourth.* Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National stock number or part number is known.

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in NIIN sequence followed by a list of part numbers in alphameric sequence, cross-referenced to the illustration figure number and item number.

(*2) Second.* After finding the figure and item number, locate the figure and item number in the repair parts list.

B-6. Abbreviations

Not applicable.

(Next printed page is B-4.)

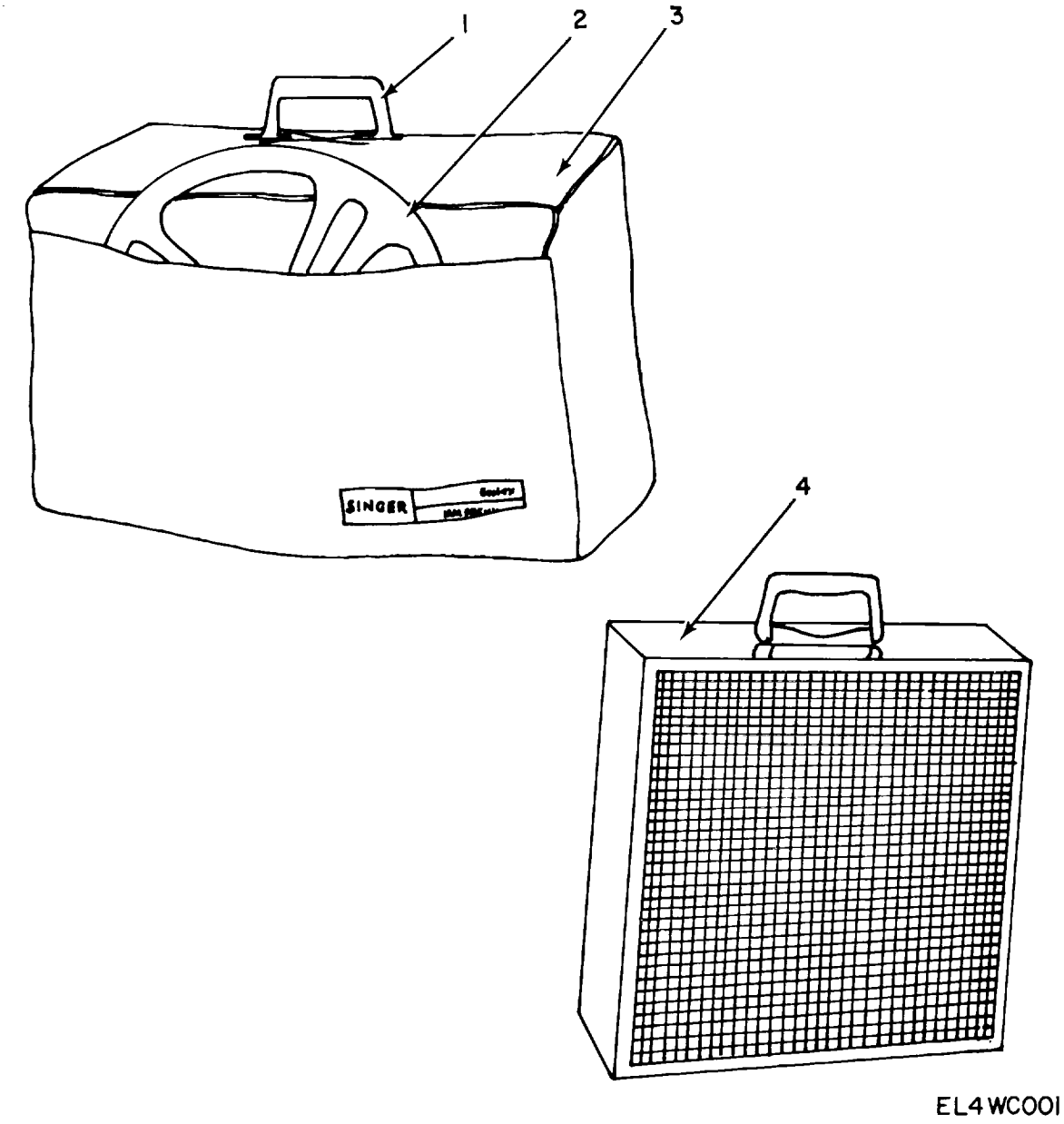


Figure B-1. Projection Set, Motion Picture, Sound AS-25A3.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 00 PROJECTION SET,MOTION PICTURE, SOUND AS-25A3		
B-1	1	PAOHH	6730-00-111-5904	43150G7	25734	PROJECTOR.MTN PIX.....	EA	1
B-1	2	PAOZZ	6730-00-282-7988	PH312	80063	REEL.PHOTO.FIL	EA	1
B-1	3	PAOZZ	6730-00-150-1779	39226P1	25734	COVER.DUST	EA	1
B-1	4	PAOFF	5965-00-089-7873	42552G1	25734	LOUDSPEAKER,PERN.....	EA	1

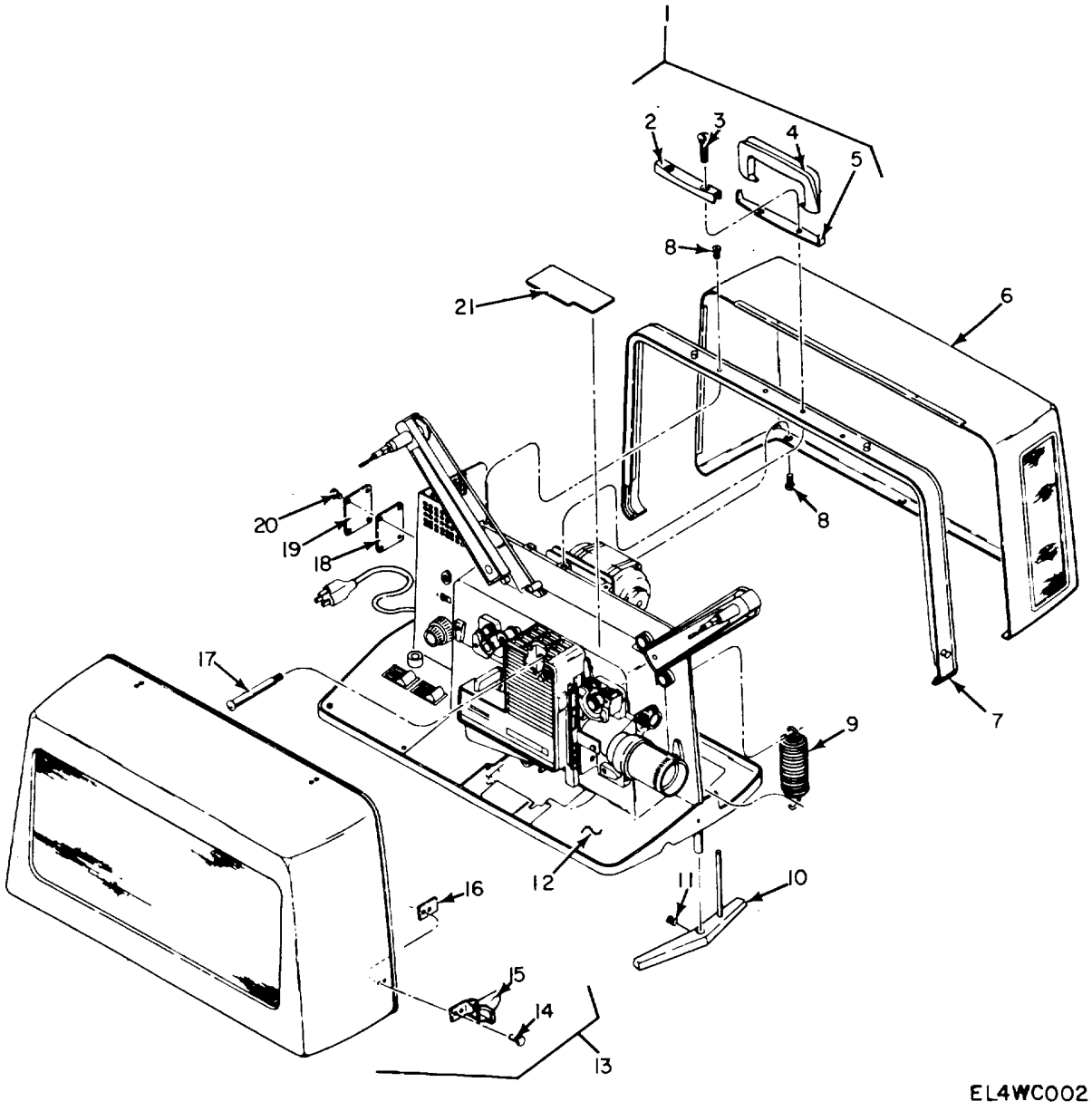


Figure B-2. Projector AQ-9A1.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01 PROJECTOR AQ-9A1		
B-2	1	PAFFF	5340-00-166-8586	3150-305-304	12136	HANDLE SET ASSY	EA	1
B-2	2	XDFZZ		43051P4	25734	CAP	EA	1
B-2	3	PAFZZ	5305-00-355-7860	116-8R12H	25734	SCREW.MACHINE	EA	2
B-2	4	XDFZZ		43051P2	25734	HANDLE	EA	1
B-2	5	XDFZZ		43051P3	25734	BRACKET	EA	1
B-2	6	XDFZZ		3929G6	25734	COVER, REAR, COMPLETE	EA	1
B-2	7	XDFZZ		39058G1	25734	FRAME, ASSEMBLY	EA	1
B-2	8	PAFZZ	5305-00-357-0591	116-6R12H	25734	SCREW, MACHINE	EA	1
B-2	9	XDFZZ		38213P1	25734	SPRING, HELICAL	EA	1
B-2	10	PAFZZ		38234G2	25734	FOOT ASSEMBLY, PROJE	EA	1
B-2	11	XDFZZ		136-6R8H	25734	SCREW, TAPPING, THREA	EA	1
B-2	12	XDFZZ		44228G1	25734	PROJECTOR MECH ASSY	EA	1
B-2	13	XDFZZ		43068G5	25734	COVER ASSEMBLY	EA	1
B-2	14	PAFZZ	5320-00-031-3218	175-6-17H	25734	RIVET, TUBULAR	EA	1
B-2	15	PAFZZ	5340-00-118-8779	39041P2	21192	CLAMPING CLUTCH	EA	1
B-2	16	XDFZZ		39042	25734	SPACER	EA	1
B-2	17	PAFZZ	5305-00-153-7906	39085G1	25734	SCREW, SPECIAL SHIPP	EA	1
B-2	18	XDFZZ		39474P1	25734	DAMPENER	EA	1
B-2	19	XDFZZ		39488P29	25734	DATA PLATE	EA	1
B-2	20	XDFZZ		38215	25734	DRIVE SCREW	EA	1
B-2	21	XDFZZ		39212P1	25734	THREADING PLATE	EA	1

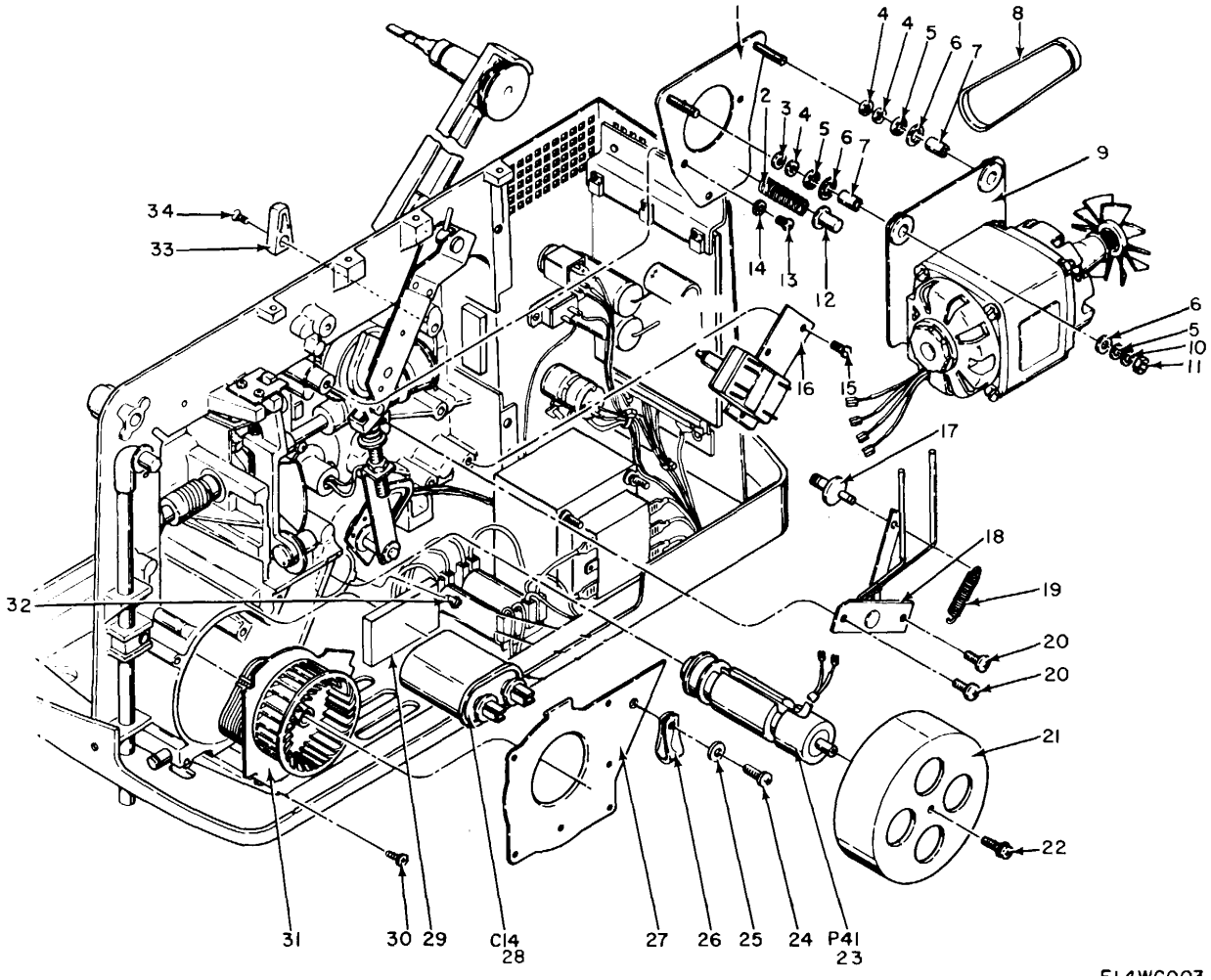


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Figure B-3. Projector AQ-9A1 Main Drive, Sound Drum and Cooling System Components.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-3	1	XDFZZ		39073G1	25734	MOTOR MOUNT ASSY	EA	1
B-3	2	XDFZZ		39080P1	25734	SPRING, HELICAL	EA	1
B-3	3	XDFZZ		35473P62L	25734	WASHER, FLAT	EA	1
B-3	4	XDFZZ		35473P36H	25734	WASHER, FLAT	EA	3
B-3	5	XDFZZ		39081	25734	SPACER	EA	4
B-3	6	XDFZZ		30473P73H	25734	WASHER, FLAT	EA	4
B-3	7	XDFZZ		32090P48	25734	SPACER, TUBULAR	EA	2
B-3	8	PAFZZ	303-00-089-7870	39086P1	25734	BELT, FLAT	EA	1
B-3	9	XDFZZ		44231G7	25734	DRIVE UNIT ASSEMBLY	EA	1
B-3	10	XDFZZ		35473P46H	25734	WASHER, FLAT	EA	2
B-3	11	XDFZZ		200-10HA	25734	NUT, PLAIN, HEXAGON	EA	2
B-3	12	XDFZZ		260-7H	25734	EYELET	EA	1
B-3	13	XDFZZ		116-10R7H	25734	SCREW, MACHINGE	EA	3
B-3	14	XDFZZ		1216-00	25734	WASHER, LOCK	EA	3
B-3	15	PAFZZ	5305-00-614-9473	121-6R5H	25734	SCREW, TAPPING, THREA	EA	1
B-3	16	PAFZZ	5930-00-117-9382	38271G2	25734	SWITCH ASSEMBLY	EA	1
B-3	17	XDFZZ		39093P1	25734	ECCENTRIC, BELT	EA	1
B-3	18	XDFZZ		39112G1	25734	FORK, ASSY, SHIFT	EA	1
B-3	19	XDFZZ		39095P1	25734	SPRING, BELT SHIFT	EA	1
B-3	20	XDFZZ		140-10R6H	25734	SCREW, SELF-TAPPING	EA	2
B-3	21	XDFZZ		38159P1	25734	FLYWHEEL	EA	1
B-3	22	XDFZZ		42829	25734	SCREW, SPECIAL	EA	1
B-3	23	PAFZZ	6730-00-337-1781	42773G7	25734	SUPPORT, SOUND DRUM	EA	2
B-3	24	XDFZZ		121-8R8H	25734	SCREW, SELF-TAPPING	EA	4
B-3	25	XDFZZ		35473P51H	25734	WASHER, FLAT	EA	1
B-3	26	XDFZZ		267-3	25734	CLAMP, WIRE	EA	1
B-3	27	XDFZZ		38172P1	25734	PLATE, VENTURI	EA	1
B-3	28	PAFZZ	5910-00-117-9399	38177P7	25734	CAPACITOR	EA	1
B-3	29	XDFZZ		43187	25734	CUSHION	EA	1
B-3	30	XDFZZ		140-8R4H	25734	SCREW, SELF-TAPPING	EA	3
B-3	31	XDFZZ		38167G1	25734	PLATE, MOTOR ASSY	EA	1
B-3	32	XDFZZ		3283P1	25734	SCREW, SPECIAL	EA	1
B-3	33	PAFZZ	6730-00-116-5379	38212	25734	LEVER, CONTROL	EA	1
B-3	34	XDFZZ		104-6R6H	25734	SCREW, MACHINE	EA	1

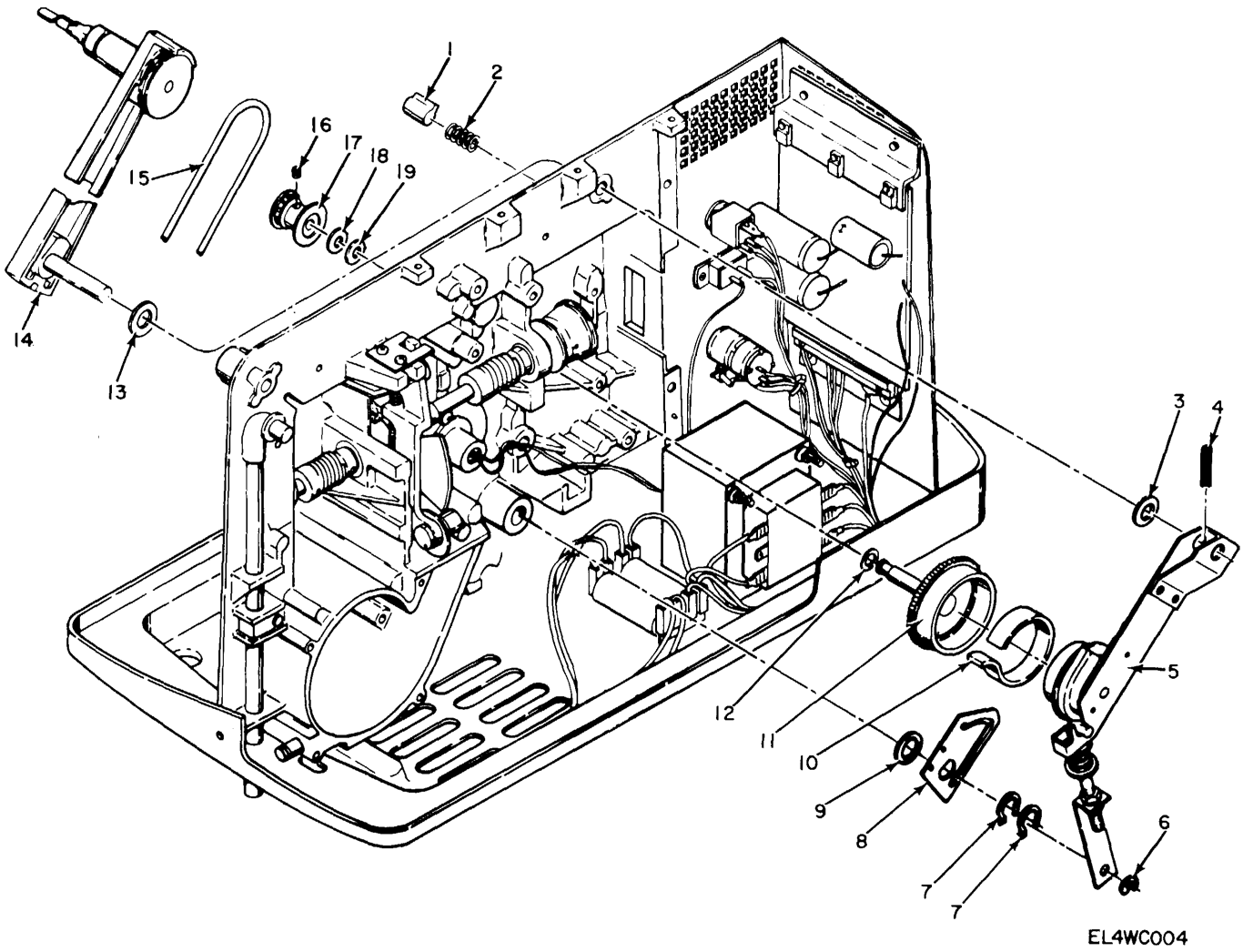

Figure B-4. Projector AQ-9A1 Takeup Mechanism and Reel Arm.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-4	1	PAFZZ	6730-00-360-9567	42897P2	25734	PLUNGER,REEL ARM LO	EA	1
B-4	2	XDFZZ		38088P1	25734	SPING, ARM, LOCK	EA	1
B-4	3	XDFZZ		35473P35H	25734	WASHER, FLAT	EA	1
B-4	4	PAFZZ	6730-00-337-2299	192-8-10	25734	PIN, SPIROL	EA	1
B-4	5	XDFFF		39155G1	25734	ARM COMPLETE	EA	1
B-4	6	PAFZZ	5365-00-801-3006	5133-43	79136	RING,RETAINING ..	EA	1
B-4	7	PAFZZ	5365-00-993-4334	5555-50	79136	RING,RETAINING	EA	2
B-4	8	XDFZZ		39167P1	25734	CAM,SWITCH	EA	1
B-4	9	XDFZZ		38278P2	25734	SPACER	EA	1
B-4	10	PAFZZ	6730-00-116-5382	39203	2573	LINER, TAKE UP CLUTC	EA	1
B-4	11	PAFZZ	6730-00-116-5393	39169G1	25734	GEAR ASSEBLY, TAKE	EA	1
B-4	12	XDFZZ		35473P48	25734	WASHER.FLAT	EA	1
B-4	13	XDFZZ		41846P17H	25734	WASHERFLAT	EA	1
B-4	14	PAFFF	6730-01-006-4230	43157G4	25734	ARM ASSEMRLY.REEL,P	EA	1
B-4	15	PAOZZ	3030-00-089-7871	39211P1	25734	BELT,.ROUND	EA	1
B-4	16	PAFZZ	5305-00-724-6794	MS51964-48	96906	SETSCREW	EA	1
B-4	17	PAFZZ	6730-00-116-5395	38261G2	25734	SPROCKET ASSEMILY, F	EA	1
B-4	18	XDFZZ		35473P30H	25734	WASHER, FLAT	EA	1
B-4	19	XDFZZ		35473P65	25734	WASHER.FLAT	EA	1

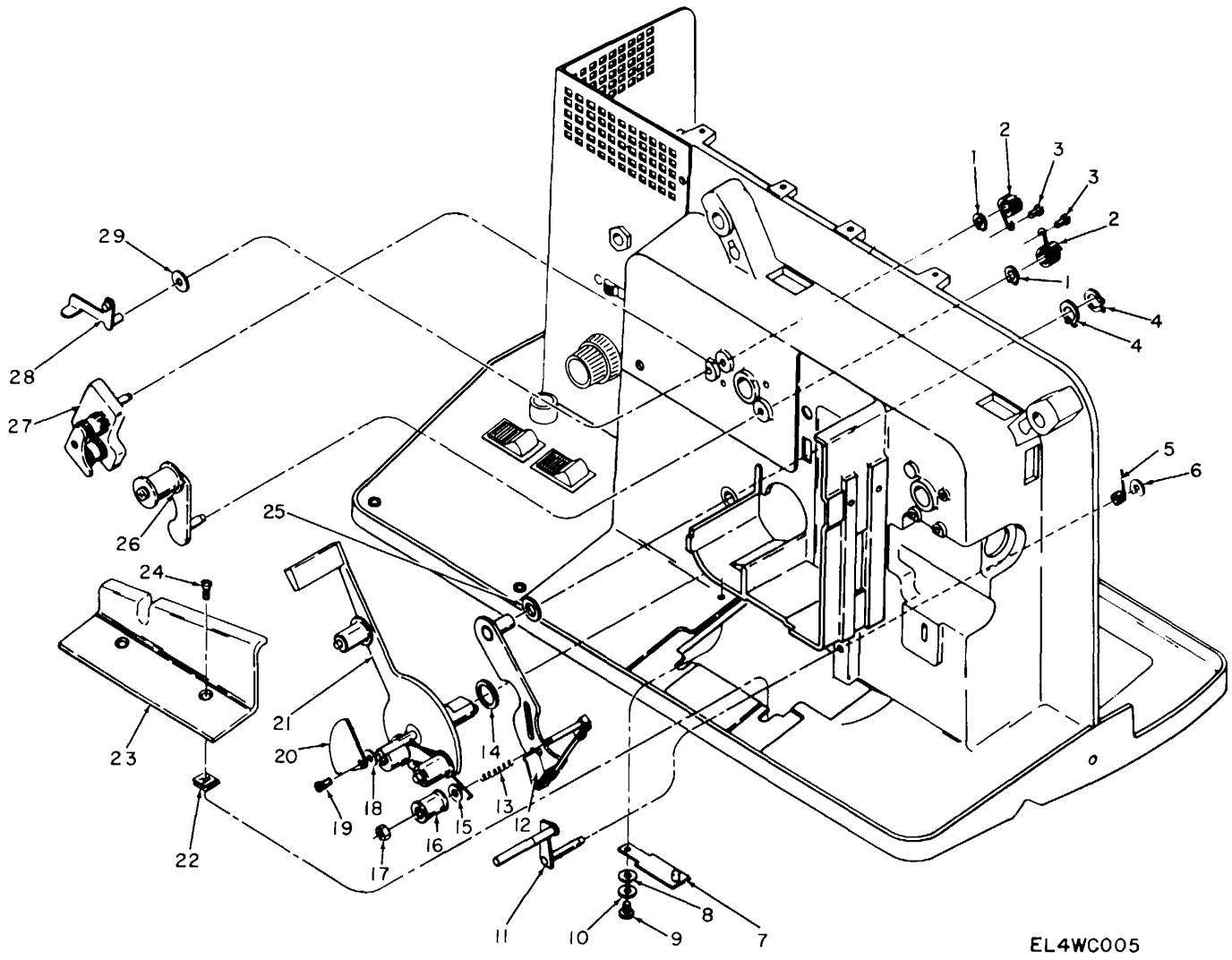

Figure B-5. Projector AQ-9A1 Threading Control Arm, Pressure Roller Arm and Takeup Shoe.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-5	1	PAFZAZ	5365-00-810-7494	5555-15	79136	RING.RETAINING	EA	2
B-5	2	PAFZZ	6730-00-797-7825	38224	25734	SPRING,REEL, TENSION	EA	2
B-5	3	PAFZZ	5305-00-355-7864	116-6R2H	25734	SCREW,.MACHINE	EA	2
B-5	4	PAPZZ	5365-00-809-0015	5555-37	79136	RING,RETAINNG	EA	2
B-5	5	PAFZZ	6730-00-117-2826	38494	25734	SPRING, LOOP SET	EA	1
B-5	6	PAFLZZ	5310-00-596-8173	5105-18	79136	PUSH ON NUT	EA	1
B-5	7	PAFLZ	6730-00-116-7081	38317G1	25734	SPRING ASSEMBLY,THR	EA	1
B-5	8	XDFZZ		33500P674	25734	WASHER, FLAT	EA	1
B-5	9	XDFZZ		116-6R44	25734	SCREW, MACHINE	EA	1
B-5	10	PAFZZ	5310-00-056-2735	MS35337-37	96906	WASHER, LOCK	EA	1
B-5	11	PAFLZZ	6730-00-116-5380	38198G2	25734	LEVER, LOOP SET	EA	1
B-5	12	PAFZZ	6730-00-337-1437	38142G2	25734	ARM ASSMBLY, PRESSU	EA	1
B-5	13	PAFZZ	6730-00-116-7084	38221P1	25734	SPRING, PRESSURE ROL	EA	1
B-5	14	XDFZZ		38278P1	25734	SPACER	EA	1
B-5	15	XDFZZ		30-473P79	25734	WASHER, FLAT	EA	1
B-5	16	PAFZZ	6730-00-116-7049	38147G1	25734	ROLLER ASSEMBLY FIL	EAI	1
B-5	17	XDFZZ		22NTM4	72962	NUT,SLFLKG CLINCH	EA	1
B-5	18	XDFZZ		220-4	25734	WASHER, LOCK	EA	1
B-5	19	XDFZL		100-4R5H	25734	SCREW, MACHINE.	EA	1
B-5	20	XDFZZ		39205	25734	GUARD, THREADING	EA	1
B-5	21	PAFFF	6730-00-337-1433	38129G4	25734	ARM ASSEBLY, CONTRO	EA	1
B-5	22	PAFZZ	5310-00-413-3033	C9031-6Z4	78553	NUT, STAMPED	EA	2
B-5	23	XOFZZ		38164P5	25734	COVER, SOUND	EA	1
B-5	24	XDFZZ		125-6R8H	25734	SCREW,SELF-TAPPING	EA	2
B-5	25	XDFZZ		3502-05-09	78189	WASHER, SPR TENSION	EA	1
B-5	26	PAFLZ	6730-00-116-7074	38225G1	25734	ARM ASSELY, REEL T	EA	1
B-5	27	PAFFF	6730-00-116-7075	38217G1	25734	ARM ASSEMBLY.TAKE-U	EA	1
B-5	28	XDFZZ		38061G2	25734	LEVER, SHOE	EA	1
B-5	29	XDFZZ		35473P32H	25734	WASER, FLAT	EA	1

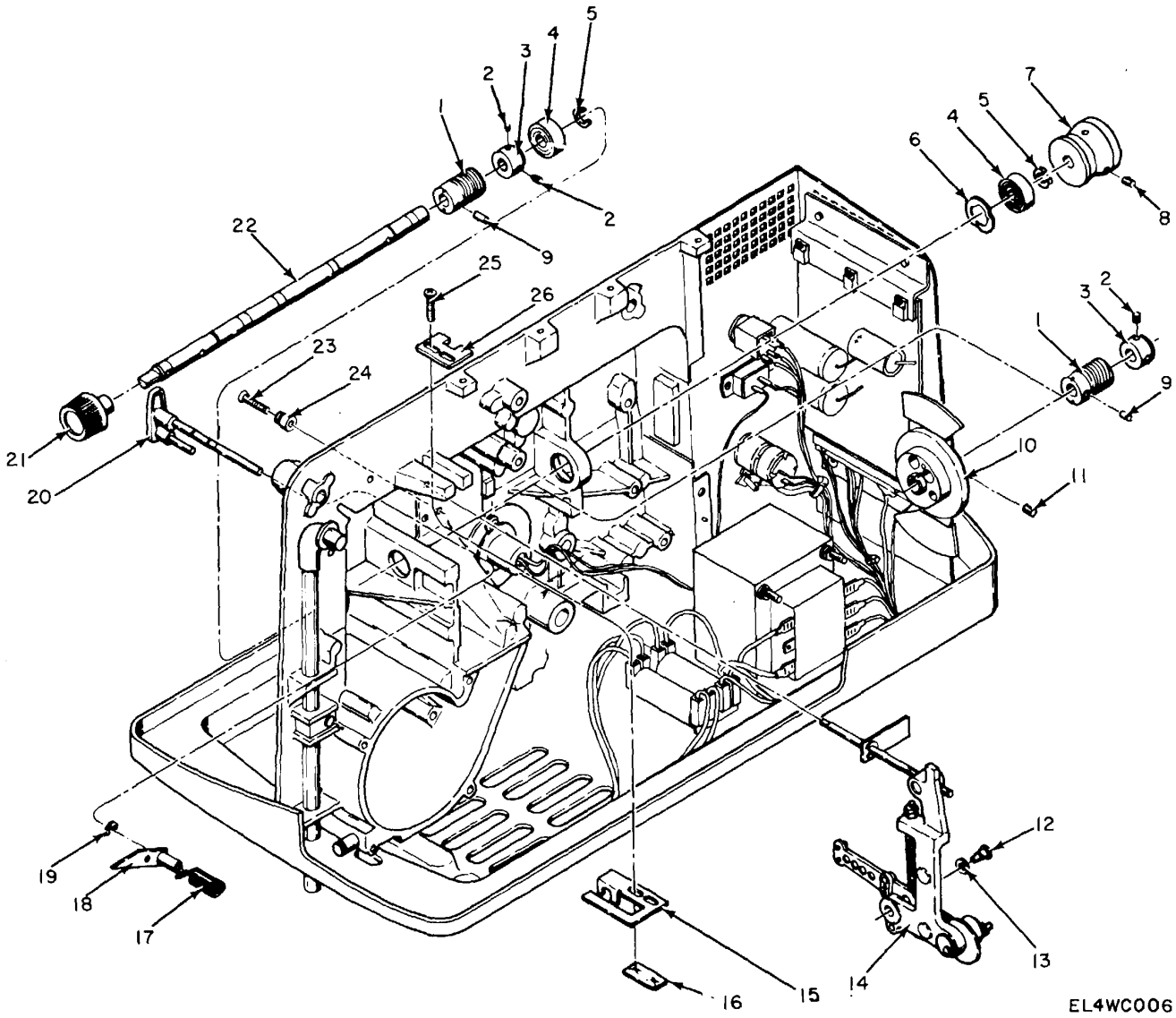

Figure B-6. Projector AQ-9A1 Drive Shaft and Claw Arm Components

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-6	1	PAFZZ	6730-00-116-5394	38806P1	25734	GEAR, DRIVE	EA	2
B-6	2	XDFZZ		171F6-3L	?5734	SETSCREW	EA	5
B-6	3	XDFZZ		38471	25734	COLLAR, SHAFT	EA	2
B-6	4	PAFZZ		R82ZJ	52676	BEARING, DRIVE SHAFT	EA	2
B-6	5	PAFZZ	5365-00-663-1245	5103-1	79136	RING, RETAINING	EA	2
B-6	6	PAFZZ	5310-00-411-6497	38492	25734	WASHER, SPRING	EA	1
B-6	7	XDFZZ		39236P3	25734	PULLEY	EA	1
B-6	8	XDFZZ		171A6-2L	25734	SETSCREW	EA	2
B-6	9	PAFZZ	5315-00-348-8510	19156-10	25734	PEN, SPIRAL	EA	2
B-6	10	PAFFF	6730-00-337-1922	142274G3	25734	SHUTTER, CAM ASSEMBL	EA	1
B-6	11	XDFZZ		171A6-3L	25734	SETSCREW	EA	1
B-6	12	PAFZZ	6730-00-116-1045	38063	25734	PIVOT FRAMING ARM	EA	1
B-6	13	XDFZZ		3540-08-00-0511	78189	WASHER, SPRING	EA	1
B-6	14	XDFZZ		38040G4	25734	ARM ASSY, CLAW	EA	1
B-6	15	PAFZZ	6730-00-116-7060	39152P1	25734	STOP, REWIND LEVER	EA	1
B-6	16	XDFZZ		C7419-62-4	68813	NUT, STAMPED	EA	1
B-6	17	PAFZZ	673-00-0116-7076	39149P1	25734	SPRING, REWIND LEVER	EA	1
B-6	18	PAFZZ	6730-00-116-5381	39145G1	25734	LEVER ASSEMBLY, REWI	EA	1
B-6	19	PAFZZ	5365-00-285-6688	5133-15	79136	RING, RETAINING	EA	1
B-6	20	XDFZZ		39142G1	25734	KNOB ASSEMBLY	EA	1
B-6	21	PAOZZ		38184P1	25734	KNOB	EA	1
B-6	22	PAFZZ	6730-00-116-7057	38010P2	25734	SHAFT, STRAIGHT	EA	1
B-6	23	XDFZZ		23-00-54200	83486	SCREW, SELF-TAPPNG	EA	1
B-6	24	XDFZZ		139246P1	25734	STABILIER	EA	1
B-6	25	XDFZZ		121-6R12H	25734	SCREW, SELF--APPING	EA	2
B-6	26	XDFZZ		38233	25734	PLATE, LIMIT	EA	1

TM 11-6730-243-34&P

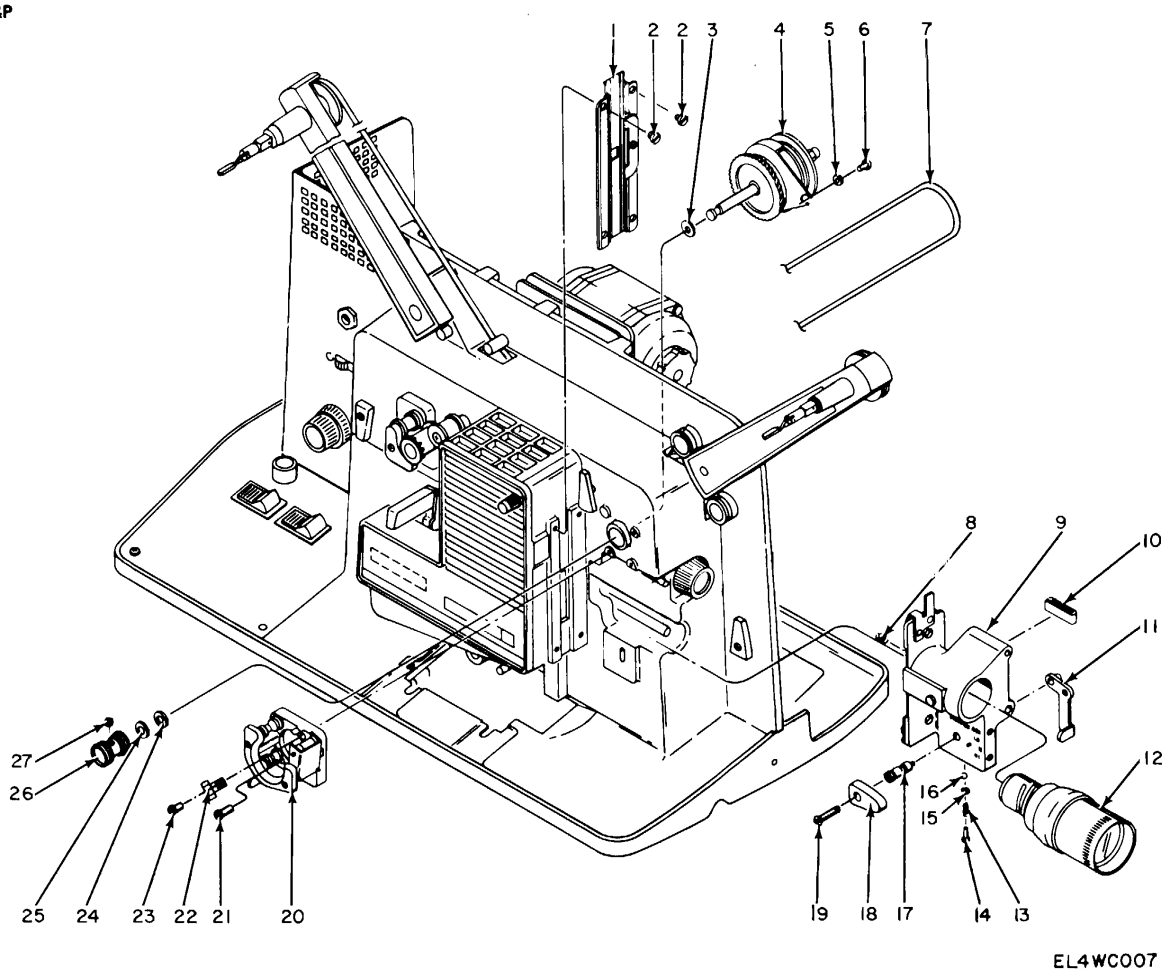

Figure B-7. Projector AQ-9A1 Film Feed and Film Gate Mechanism.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-7	1	PAFFF	6730-00-150-1778	38820G2	25734	PLATE ASSEMBLY, APER-E	EA	1
B-7	2	XDFZZ		112-4R3H	25734	SCREW, MACHINE	EA	4
B-7	3	XDFZZ		35473P48	25734	WASHER, FLAT	EA	1
B-7	4	PAFFF	6730-00-116-5397	39151G1	25734	CLUTCH ASSEMBLY, FIL	EA	1
B-7	5	XOFZZ		38473-16H	25734	WASHER, FLAT	EA	1
B-7	6	PAFZZ	5305-00-614-9473	121-6R5H	25734	SCREW, SLFTPG	EA	1
B-7	7	PAOZZ	3030-00-089-7872	9211P2	25734	BELT, SUPPLY REEL	EA	1
B-7	8	XDFZZ		39238P1	25734	SPRNG, LENS	EA	1
B-7	9	XDFZZ		44233G1	25734	HOLDER, COMPLETE	EA	1
B-7	10	PAFZZ	5360-00-150-1899	38075	25734	SPRIN, , FLAT	EA	1
B-7	11	XDFZZ		38067G1	25734	LEVER, GATE	EA	1
B-7	12	PAOZZ	6760-00-116-2454	44243P1	25734	LENS, PROJECTION	EA	1
B-7	13	PAFZZ	6730-00-116-7082	39222P1	25734	SPRING, LENS, HOLDER	EA	1
B-7	14	XDFZZ		171-416-4L	25734	SETS SCREW	EA	1
B-7	15	PAFZZ	5310-00-411-6490	3847325	25734	WASHER, FLAT	EA	1
B-7	16	PAFZZ	3110-00-100-6147	MS19059-44	96906	BALL, STEEL	EA	1
B-7	17	PAFZZ	6730-00-116-5371	39220P1	25734	ECCENTRICE	EA	1
B-7	18	PAFZZ	6730-00-116-5379	38212	25734	LEVER, CONTIOLE	EA	1
B-7	19	XDFZZ		104-6R6H	2573	SCEW MACHINE	EA	3
B-7	20	PAFFF	6730-00-116-7054	38350G2	25734	SHOE, FEED	EA	1
B-7	21	PAFZZ	5305-00-363-8546	106-4R8H	25734	SCREW, MACHINE	EA	3
B-7	22	XDFZZ		38373	25734	STRIPPER, FILM	EA	1
B-7	23	XDFZZ		123-4R4H	25734	SCREWSLFTPGI	EA	1
B-7	24	XOFZZ		35473P65	25734	WASHER, FLAT	EA	1
B-7	25	XDFZZ		35473P30H	25734	WASHER, FLAT	EA	1
B-7	26	PAFZZ	6730-00-116-5396	38261G1	25734	SPROCKET, ASSEMBLY, F	EA	1
B-7	27	PAFZZ	5305-00-724-6794	MS51964-48	96906	SETSCREW	EA	1

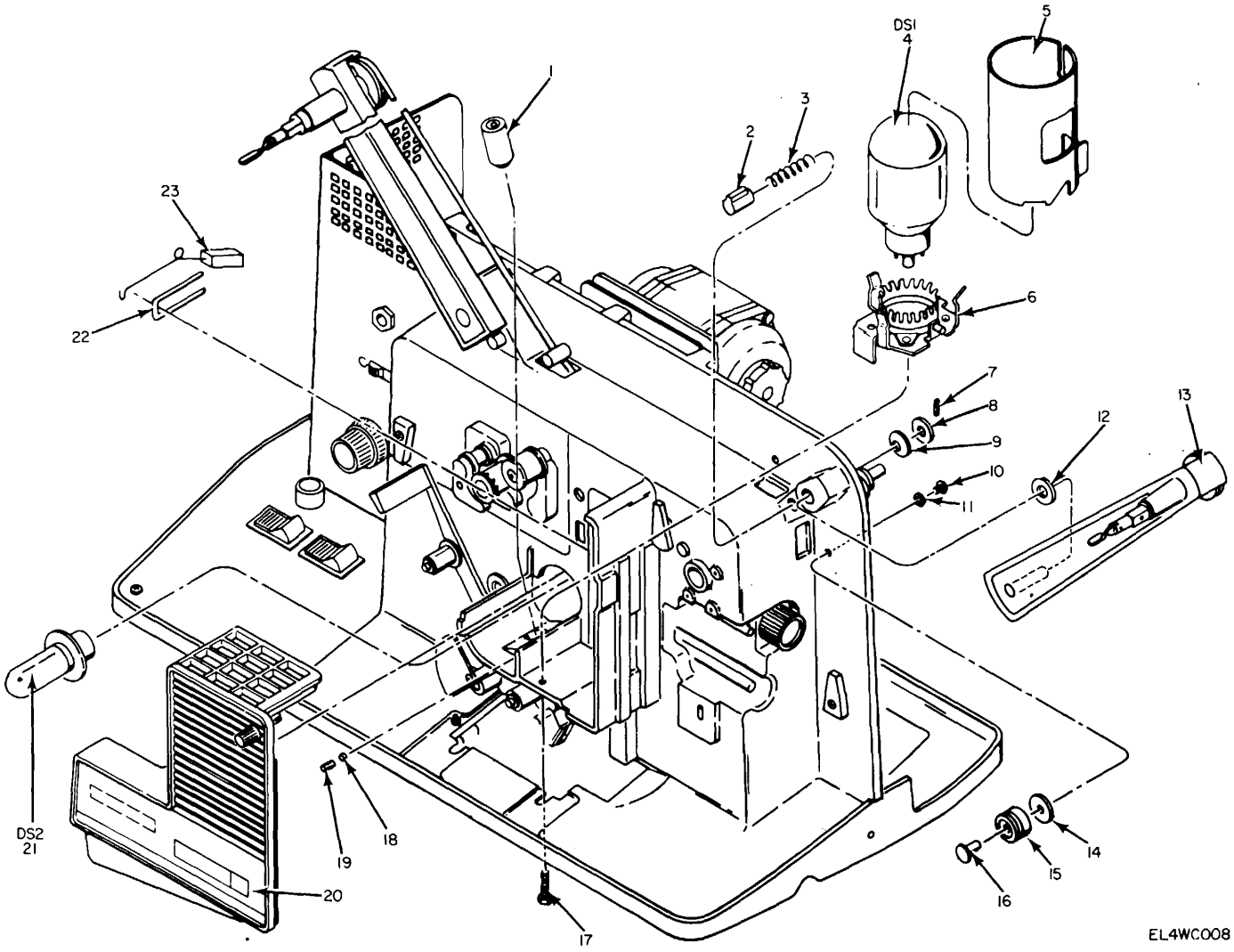

Figure B-8. Projector AQ-9A1 Lamphouse and Supply Reel Arm Components.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-8	1	PAFZZ	6730-00-116-5373	38431P1	25734	CARTRIDGE SOUND	EA	1
B-8	2	PAFZZ	6730-00-116-5384	42897P1	25734	PLUNGER, ARM	EA	1
B-8	3	XDFZZ		3888P1	25734	SPRING, ARM LOCK	EA	1
B-8	4	PAOZZ	6240-00-069-3505	DKM	58854	LAMP, INCANDESCENT	EA	1
B-8	5	XDOZZ		38182P2	257341	CHIMNEY	EA	1
B-8	6	PAFZZ	6730-00-116-7069	38230G2	25734	PLATE, LAMP SOCKET	EA	1
B-8	7	PAFZZ	5315-00-058-6081	59-028-125-0625	72962	PIN, SPRING	EA	1
B-8	8	XDFZZ		38473-19L	25734	WASHER, FLAT	EA	1
B-8	9	PAFZZ	5310-00-595-5498	3502-20-04	78189	WASHER, SPRING TENSI	EA	1
B-8	10	XDFZZ	5305-0-355-7862	116-6R6H	25734	SCREW, MACHINE	EA	1
B-8	11	PAFZZ	5310-00-056-2735	MS35337-37	96906	WASHER, LOCK	EA	2
B-8	12	XDFZZ		41846P17H	25734	WASHER, FLAT	EA	1
B-8	13	PAFFF	6730-00-337-1328	43157G3	25734	ARM ASSEMBLY, SUPPLY	EA	1
B-8	14	PAFZZ	6730-00-360-9994	38473-23	25734	WASHER, FLAT	EA	1
B-8	15	PAFZZ	6730-00-116-5377	39153P1	25734	GUIDE, SUPPLY	EA	2
B-8	16	XDFZZ		39154	25734	POST, BELT GUIDE	EA	2
B-8	17	XDFZZ		39225	25734	SCREW, CAP	EA	1
B-8	18	PAFZZ	6730-00-11l6-7050	38162	25734	PLUG, PROJECTOR ASSE	EA	1
B-8	19	XDFZZ		171-6-4L	25734	SETSCREW	EA	1
B-8	20	XDOFF		39148G7	25734	COVER, LAMPHCUSE	EA	1
B-8	21	PAOZZ	6240-00-155-7777	BSW	80204	LAMP, EXCITER	EA	1
B-8	22	XDFZZ		39001	25734	RETAINER, PAD	EA	1
B-8	23	PAFZZ	6730-00-116-7063	39002G1	25734	PAD ASSEBLY, LUBIC	EA	1

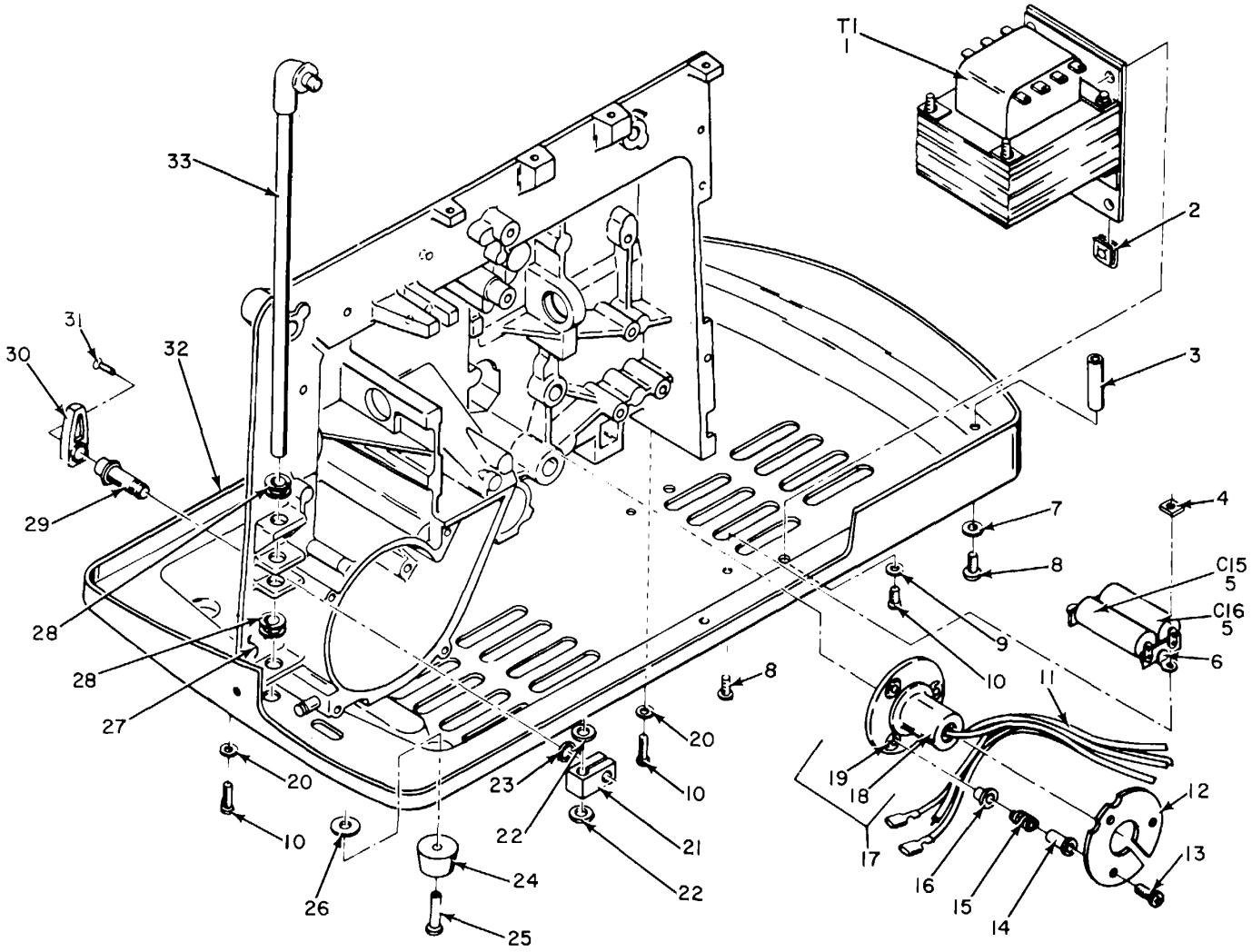

Figure B-9. Projector AQ-9A1 Exciter Lamp Socket, Transformer and Base Details

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-9	1	PAFZZ	5950-00357-0733	44225P1	25734	TRANSFORMER, POWER, S.....	EA	1
B-9	2	XDFZZ		C575-1024-4	88813	NUT, SPRING	EA	2
B-9	3	XDFZZ		39108	25734	STANDOFF	EA	1
B-9	4	PAFZZ	5310-00-353-5375	C915-632-4	78553	NUT, STAMPED.....	EA	2
B-9	5	PAFZZ	5910-00-951-2638	PKM10P1	14655	CAPACITOR, FIXED, PLA.....	EA	2
B-9	6	XDFZZ		1088	83330	TERMINAL BOARD.....	EA	2
B-9	7	XDFZZ		38473P16A	25734	WASHER, FLAT.....	EA	1
B-9	8	XDFZZ	5305-00-355-7862	116-6R6H	25734	SCREW, MACHINE	EA	3
B-9	9	XDFZZ		35473P46	25734	WASHER, FLAT.....	EA	2
B-9	10	XDFZZ		116-10R8H	25734	SCREW, MACHINE.....	EA	7
B-9	11	XDFZZ		44229G3	25734	HARNESS ASSY.....	EA	1
B-9	12	XDFZZ		42722P1	25734	PLATE, EXCITER.....	EA	1
B-9	13	XDFZZ		121-4R12H	25734	SCREW, SLFTPC.....	EA	3
B-9	14	XDFZZ		42890	25734	SPACER.....	EA	3
B-9	15	XDFZZ		42861	25734	SPRING, EXCITER.....	EA	3
B-9	16	XDFZZ		42656	23734	SPACER.....	EA	3
B-9	17	XDFZZ	6250-00-138-7297	4282G7	25374	LAMPHOLDER.....	EA	1
B-9	18	XDFZZ		39485P3	25374	SOCKET.....	EA	1
B-9	19	XDFZZ	5325-00-754-2165	1411	70485	GROMMET, RUBBER.....	EA	3
B-9	20	XDFZZ		38473-17H	25374	WASHER, FLAT.....	EA	3
B-9	21	XDFZZ		38840	25374	CLAMP, ELEVATING.....	EA	1
B-9	22	XDFZZ		30473P34	25374	WASHER, FLAT.....	EA	2
B-9	23	XDFZZ		33500P56H	25374	WASHER, FLAT.....	EA	1
B-9	24	XDFZZ	5340-00-995-8329	747-RW	25374	BUMPER, RUBBER.....	EA	4
B-9	25	XDFZZ	5320-00-132-4414	176-7-28	25374	RIVET, TUBULAR.....	EA	4
B-9	26	XDFZZ		35473-29	25374	WASHER, FLAT.....	EA	4
B-9	27	XDFZZ		43163G13	25374	HOUSING ASSEMBLY.....	EA	1
B-9	28	XDFZZ	3120-00-818-4688	5L2FF	96881	BEARING, SLEEVE.....	EA	2
B-9	29	XDFZZ		42564	25374	STUD, CLAMP.....	EA	1
B-9	30	XDFZZ	6730-00-116-5379	38212	25374	LEVER, CONTROL.....	EA	1
B-9	31	XDFZZ		104-6R6H	25374	SCREW, MACHINE.....	EA	1
B-9	32	XDFZZ		43152G2	25374	BASE ASSEMBLY.....	EA	1
B-9	33	XDFZZ	6730-00-116-7052	38207G1	25374	ROD ASSEMBLY ELEVAT.....	EA	1

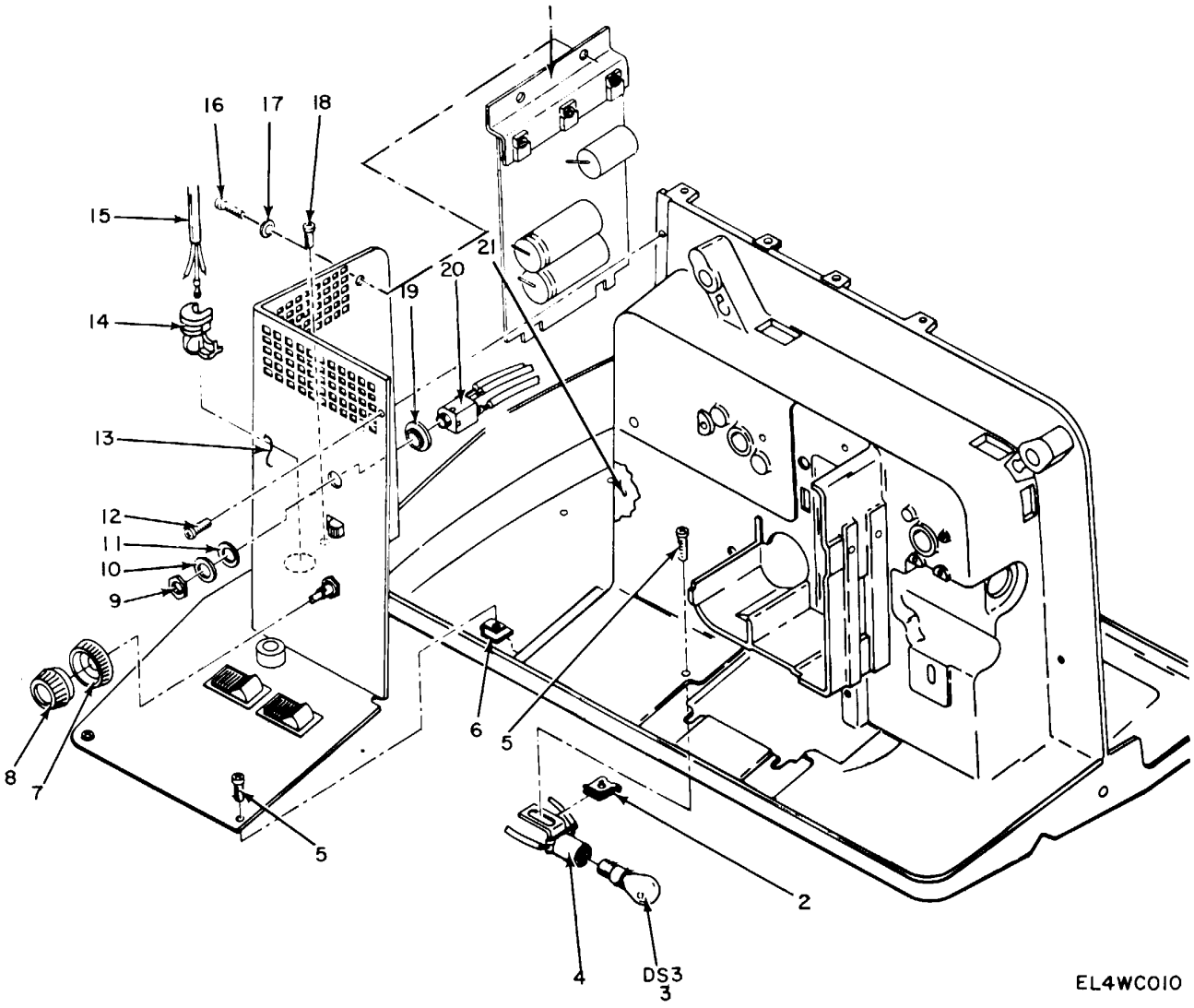

Figure B-10. Projector AQ-9A1 Amplifier Cover and Threading Lamp Components

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-10	1	PAHHH	6730-00-360-9578	43477GL	25734	CIRCUIT BOARD ASSEM.....	EA	1
B-10	2	PAFZZ	5310-00-353-5376	C8097-6-24	78553	NUT, SPRING	EA	1
B-10	3	PAOZZ	6240-00-655-2431	6S6	24455	LAMP, INCANDESCENT	EA	1
B-10	4	PAFZZ	6250-00-116-5358	39302G1	25734	LAMPHOLDER.....	EA	1
B-10	5	XDFZZ		121-6R8H	25734	SCREW, SELF-TAPPING.....	EA	3
B-10	6	PAFZZ	5310-00-353-5366	C8028-6-4	78553	NUT, STAMP.....	EA	1
B-10	7	PAOZZ	5355-00-411-4480	19400-3	81875	KNOB.....	EA	1
B-10	8	PAOZZ	5355-00-411-4481	19300-10A	81875	KNOB.....	EA	1
B-10	5	XDHZZ		P1000-1	82389	NUT, PLAIN, HEXAGON.....	EA	1
B-10	10	PAHZZ	5310-00-198-9333	S1022-1	82389	WASHER, FLAT.....	EA	1
B-10	11	XDHZZ		41846P4	25734	WASHER, FLAT.....	EA	1
B-10	12	XDFZZ	5305-00-614-9473	121-6R5H	25734	SCREW, TAPPING THREA.....	EA	1
B-10	13	XDFFF		44226G5	25734	COVER ASSY, AMPL.....	EA	1
B-10	14	PAFZZ	5975-00-068-6767	SR6P3-4	28520	BUSHING, STRAIN RELI.....	EA	1
B-10	15	PAFZZ	6150-00-337-1955	39224G8	25734	CABLE ASSEMBLY, POWE	EA	1
B-10	16	XDFZZ		43-6R4H	25734	SCREW, SELF-TAPPING.....	EA	2
B-10	17	XDFZZ		38473-7A	25734	WASHER, FLAT.....	EA	2
B-10	18	XDFZZ		116-6R44	25734	SCREW, MACHINE.....	EA	1
B-10	19	PAFZZ	5330-00-481-9104	2157	83330	RETAINER, PACKING.....	EA	1
B-10	20	PAFZZ	5935-00-481-7326	112A	82389	JACK, ELECTRICAL.....	EA	1
B-10	21	XDFZZ		140-8R4H	25734	SCREW, SELF-TAPPING.....	EA	1

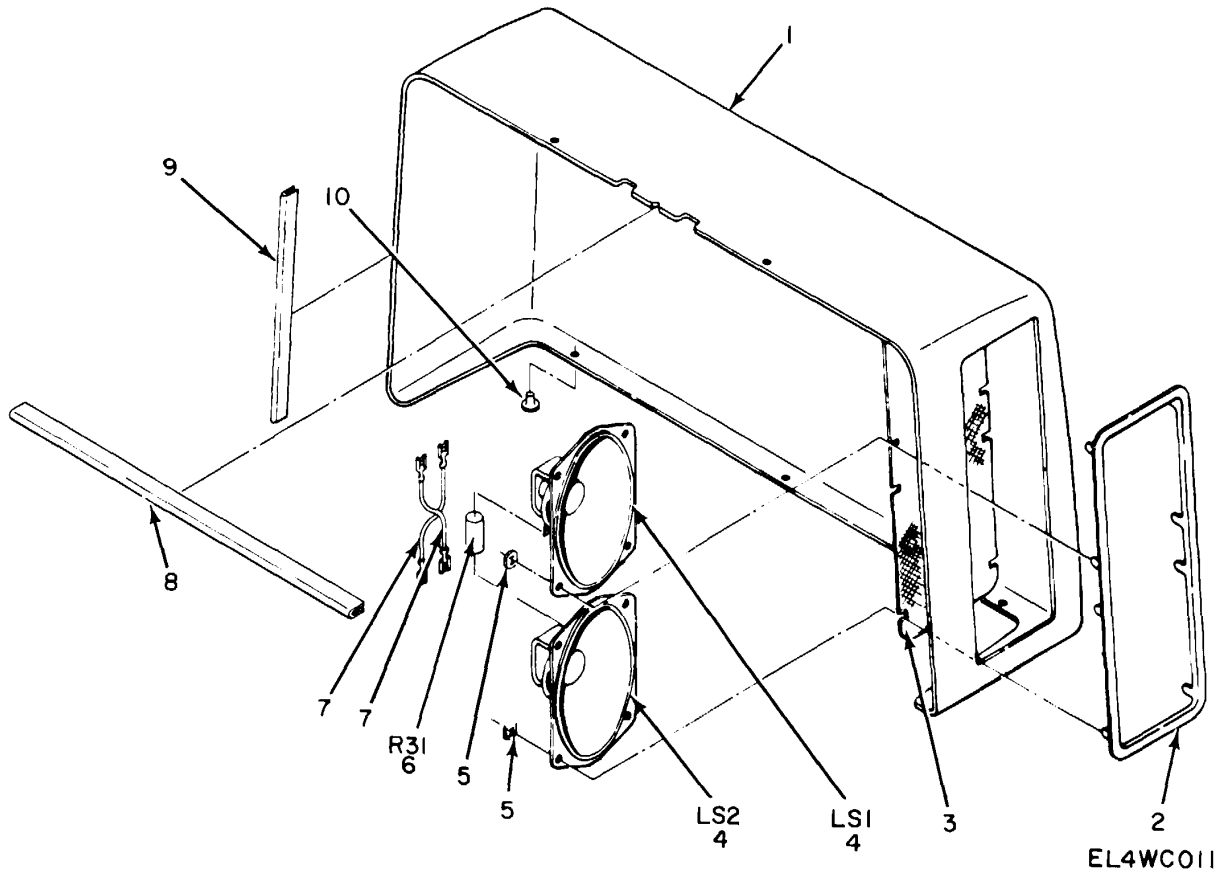

Figure B-11. Projector AQ-9A1 Rear Cover

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-11	1	XDFZZ		39026P11	25734	COVER	EA	1
B-11	2	XDFZZ		39296P2	25734	BEZEL	EA	1
B-11	3	XDFZZ		39297P3	25734	GRILLE	EA	1
B-11	4	PAFZZ	5965-00-360-9534	35-0010	34263	LOUDSPEAKER, PERMANE	EA	2
B-11	5	PAFZZ	5310-00-465-5233	C17042-012-4	78553	NUT, STAMPED	EA	8
B-11	6	XDFZZ		236E7R5000J	56289	RESISTOR, FIBXED	EA	1
B-11	7	XDFZZ		39344G1	25734	WIRE ASSEMBLY	EA	2
B-11	8	XDFZZ		39474P2	25734	DAMPENER, TOP	EA	1
B-11	9	XDFZZ		39474P3	25734	DAMPENER, SIDE	EA	1
B-11	10	XDFZZ		260-8	25734	EYELET	EA	5

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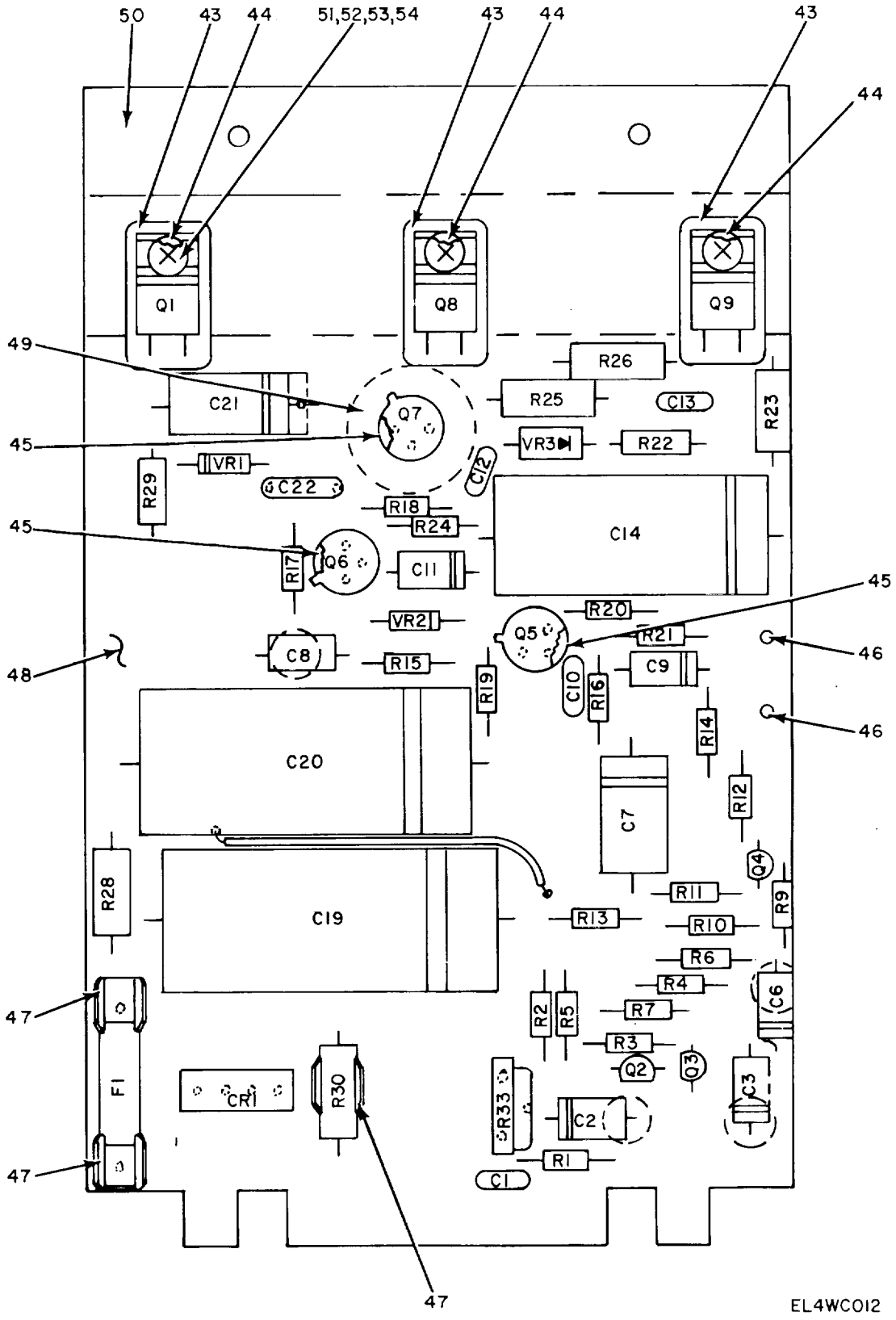


Figure B-12. Projector AQ-9A1 Amplifier Board Assembly (Sheet 1 of 2)

REF. DES.	ITEM NO.	REF. DES.	ITEM NO.	REF. DES.	ITEM NO.
C1	1	Q3	13	R15	27
C2	2	Q4	14	R16	18
C3	2	Q5	15	R17	28
C6	2	Q6	15	R18	29
C7	3	Q7	16	R19	30
C8	2	Q8	12	R20	31
C9	2	Q9	17	R21	32
C10	4	R1	18	R22	33
C11	2	R2	19	R23	34
C12	5	R3	20	R24	35
C13	6	R4	18	R25	36
C14	7	R5	21	R26	36
C19	8	R6	22	R28	36
C20	8	R7	23	R29	37
C21	3	R9	24	R30	38
C22	9	R10	25	R33	39
CR1	10	R11	22	VR1	40
F1	11	R12	26	VR2	41
Q1	12	R13	24	VR3	42
Q2	13	R14	21		

Figure B-12. Projector AQ-9A1 Amplifier Board Assembly (Sheet 2 of 2)

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-12	1	PAHZZ	5910-00-932-6884	GP210	90201	CAPACITOR, FIXED, CER	EA	1
B-12	2	XDHZZ		C426ARG8	88813	CAPACITOR, ELCTLT	EA	6
B-12	3	XDHZZ		JISC6451W16T100	81340	CAPACITOR, ELCTLT	EA	2
B-12	4	XDHZZ		GP315	90201	CAPACITOR, FXD CRI	EA	1
B-12	5	XDHZZ		GP475	90201	CAPACITOR, FXD, CER	EA	1
B-12	6	XDHZZ		GP347	90201	CAPACITOR, ELCTLT	EA	1
B-12	7	XDHZZ		JISC6451W25T100	23783	CAP ACITOR, ELCTLT	EA	1
B-12	8	XDHZZ		977EEA2491	54753	CAPACITOR, ELCTLT	EA	2
B-12	9	PAHZL	5910-00-860-7806	C280AE/P10K	73445	CAPACITOR, ELCTLT	EA	1
B-12	10	XDHZZ		1FWLA100	54753	DIODE, BRIDGE	EA	1
B-12	11	PAOZZ	5920-00-138-1655	M313-002	75915	FUSE, CARTRIDGE	EA	1
B-12	12	XDHZZ		2N5497	81349	TRANSISTOR	EA	2
B-12	13	PAHZZ	5961-00-435-3686	MPS2923	04713	TRANSISTOR	EA	2
B-12	14	PAHZZ	5961-00-192-7552	MPS6514	04713	TRANSISTOR	EA	1
B-12	15	XDHZZ		RCA40814	86684	TRANSISTOR	EA	2
B-12	16	XDHZZ		2N4037	81349	TRANSISTOR	EA	1
B-12	17	XDHZZ		2N6110	81349	TRANSISTOR	EA	1
B-12	18	PAHZZ	5905-00-141-0717	RC07GF473K	81349	RESISTOR, FIXED, COMP	EA	3
B-12	19	PAHZZ	5905-00-135-6046	RC07GF681K	81349	RESISTOR, FIXED, COMP	EA	1
B-12	20	PAHZ	5905-00-110-0388	RC07GF104JS	81349	RESISOR, FIXE, C	EA	1
B-12	21	PAHZZ	5905-00-110-7622	RCR07G682JS	81349	RSISTOR, FIXED, COMP	EA	2
B-12	22	PAHZZ	5905-00-811-0673	RC07GF682K	81349	RESISTOR, FIXED, COMP	EA	2
B-12	23	PAHZZ	5905-00-106-1356	RC07GF152K	81349	RESISTOR, FIXEOCOMP	EA	1
B-12	24	PAHZZ	5905-00-105-7764	RC07GF222K	81349	RESISTOR, FIXED, COMP	EA	2
B-12	25	XDHZZ	5905-00-721-0055	RC07GF105K	81349	RESISTOR, FIXED, COMP	EA	1
B-12	26	XDHZZ	5905-00-982-5503	RC07GF121K	81349	RESISTOR, FIXED, COMP	EA	1
B-12	27	PAHZZ	5905-00-115-8055	RCR07G393JS	81349	RESISTOR, FIXED, COMP	EA	1
B-12	28	PAHZZ	5905-00-816-8554	RC07GF103K	81349	RESISTOR, FIXED, COMP	EA	1
B-12	29	PAHZZ	5905-00-114-0710	RCR07G331JS	81349	RAESISTOR, FIXED, COMP	EA	1
B-12	30	PAHZ,	5905-00-111-4727	RCR07G272JS	81349	RESISTOR, FIXED, COMP	EA	1
B-12	31	PAHZZ	5905-00-104-8368	RCR07G470JS	81349	RESISTOR, FIXED, COMP	EA	1
B-12	32	XDHZZ		RC07GF102K	81349	RESISTOR, FIXED, CORP	EA	1
B-12	33	PANHZZ	5905-00-121-9945	RCR07G7R5JS	81349	RESISTOR, FIXED, COMP	EA	1
B-12	34	XDHZZ		4405	44655	RESISTOR, FXD, WWW	EA	1
B-12	35	PAHZZ	5905-00-115-3560	RCR07G183KR	81349	RESISTOR, FIXED, COMP	EA	1
B-12	36	XDHZZ		53-77-R47-05-TYPEBWH	25734	RESISTOR, FXD, CMPSN	EA	3
B-12	37	PAHZZ	5905-00-141-0592	RCR20G122JS	81349	RESISTOR, FIXED, COMP	EA	1
B-12	38	XDHZZ		77-30J01-000-047	25042	RESISTOR, FXED, CPW	EA	1
B-12	39	PAHZZ	5905-00-990-0217	MTC-1-3KPORM30-PCT	760551	RESISTOR, VARIABLE	EA	1

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-12	40	XDHZZ		IN9668	81349	DIODIDE, ZENER	EA	1
B-12	41	XDHZZ		IN34A	81349	SEMICONDUCTOR DEVIC	EA	1
B-12	42	XDHZZ		LN3193	81349	DIODE	EA	1
B-12	43	XDHZZ		DF103B	49671	INSULATOR, MICA	EA	3
B-12	44	XOHZZ	5310-00-056-9592	495334-7	02735	WASHER, SHOULDERED	EA	3
B-12	45	XOHZZ		3013	24227	PAD, TRANSISTOR	EA	3
B-12	46	XDHZZ		61180-1	84134	TERMINAL, STUD	EA	2
B-12	47	XDHZZ		3600-2	84613	CLIP, ELECTRICAL	EA	3
B-12	48	XDHZZ		43478P1	25734	BOARD, CIRCUIT	EA	1
B-12	49	XOHZZ	5999-00-871-9538	207CB	05820	HEAT SINK, ELECTRICA	EA	1
B-12	50	XOHZZ		43419P1	25734	DISSIPATOR, HEAT	EA	1
B-12	51	XDHZZ		116-6R8H	25734	SCREW, MACHINE	EA	3
B-12	52	XDHZZ	5310-00-209-0788	N535335-30	96906	WASHER, LOCK	EA	3
B-12	53	XDHZZ		NR231A	02735	WASHER	EA	3
B-12	54	XDHZZ		200-6HH	25734	NUTPLAIN, HEXAGON	EA	3

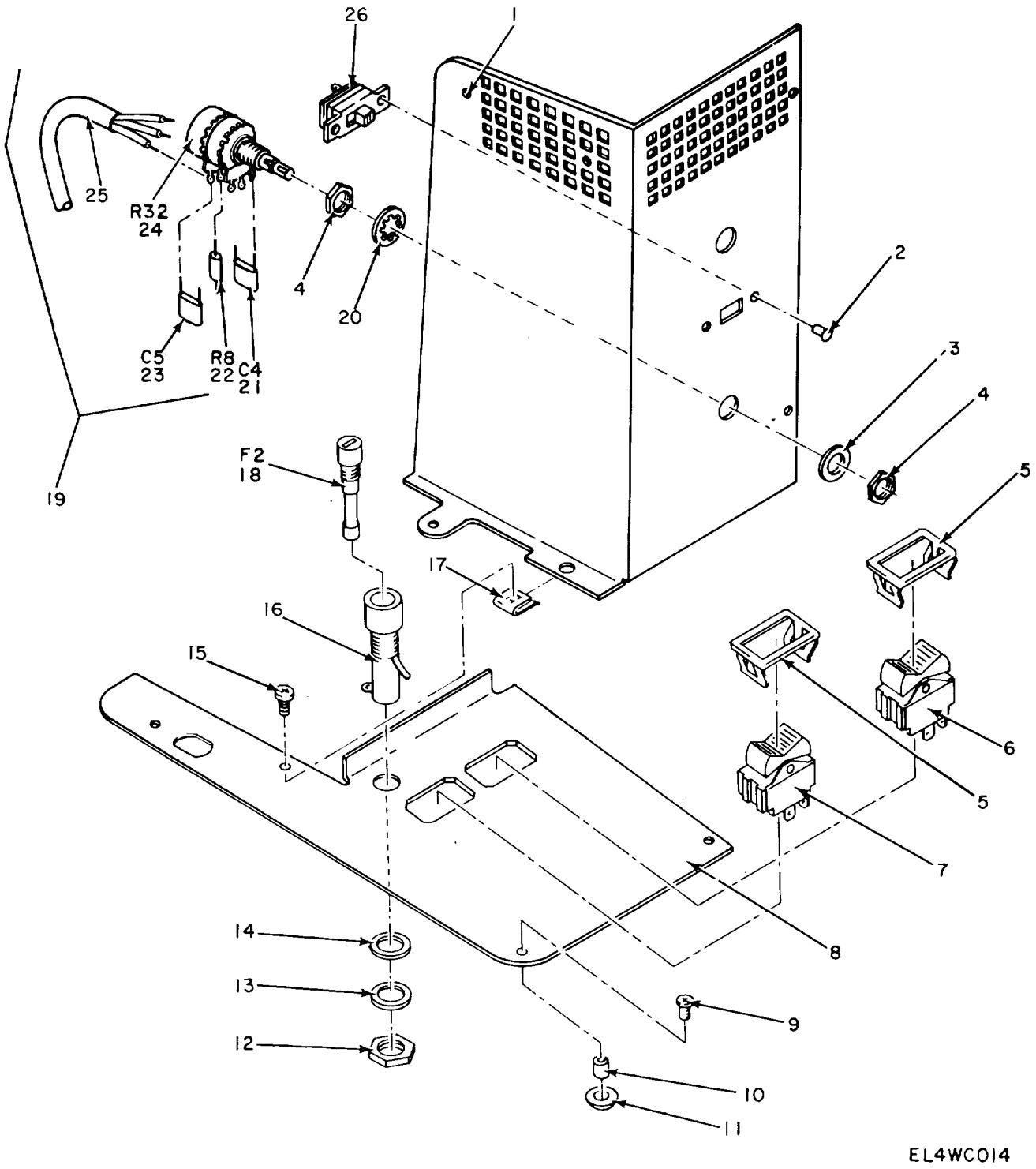


Figure B-13. Projector AQ-9A1 Amplifier Cover Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-13	1	XDFZZ		43173G7	25734	COVER ASSEMBLY	EA	1
B-13	2	PAFZZ	5320-00-175-7659	175-6-9K	25734	RIVETE	EA	2
B-13	3	XDFZZ		42954P5	25734	WASHER, FLAT	EA	1
B-13	4	XDFZZ		42954P4	25734	NUTPLAIN, HEXAGON	EA	2
B-13	5	XDFZZ		TIG	73559	BRACKET, SWITCH	EA	2
B-13	6	XDFZZ		E51-J-IC-SHXT11	73559	SWITCH, ELECTRICAL	EA	1
B-13	7	PAFZZ	5930-00-372-4338	43178P3	73559	SWITCH, ELECTICA	EA	1
B-13	8	XDFZZ		43156P5	25734	COVER, SWITCH	EA	1
B-13	9	XDFZZ		116-8R6H	25734	SCREW, MACHINE	EA	1
B-13	10	XDFZZ		41086P7	25734	SPACER	EA	1
B-13	11	PAFZZ	5340-00-598-6284	868-2	70485	BUMPER, RUBBER	EA	1
B-13	12	XDFZZ		43956P4	25734	NUT, PLAIN, HEXAN	EA	1
B-13	13	XDFZZ		43956P5	25734	WASHER, LOCK	EA	1
B-13	14	XOFZZ		43956P3	25734	WASHER, NEOPREN	EA	1
B-13	15	XOFZZ	5305-00-614-9473	121-6R5H	25734	SCREW, TAPPING, THREA	EA	1
B-13	16	PAFZZ	5920-00-892-9311	341001L	75915	FUSEHOLDER	EA	1
B-13	17	PAFZZ	5310-00-353-5376	C8097-6-24	78553	NUT, STAMPED	EA	1
B-13	18	PAOZZ	5920-00-539-6752	314-005	75915	FUSE, CARTRIDGE	EA	1
B-13	19	XDFFF		42766G6	25734	NETWORK ASSEMBLY	EA	1
B-13	20	XDFZZ		221-616	25734	WASHER, LOCK	EA	1
B-13	21	PAFZZ	5910-00-860-7806	C280AE/P10K	73445	CAPACITOR, ELCTLT	EA	1
B-13	22	PAFZZ	5905-00-171-1985	RC20GF882K	81349	RESISTOR, FXD, CMPSN	EA	1
B-13	23	PAFZZ	5910-00-860-7807	C280AE/P47K	73445	CAPACITOR, ELCTLT	EA	1
B-13	24	PAFZZ	5905-00-360-5058	42954G2	25734	RESISTOR, ELECTRICAL	EA	1
B-13	25	XDFZZ		44232G1	25734	CABLE ASSEMBLY	EA	1
B-13	26	PAFZZ	5930-00-128-6225	38397P1	25734	SWITCH, ELECTRICAL	EA	1

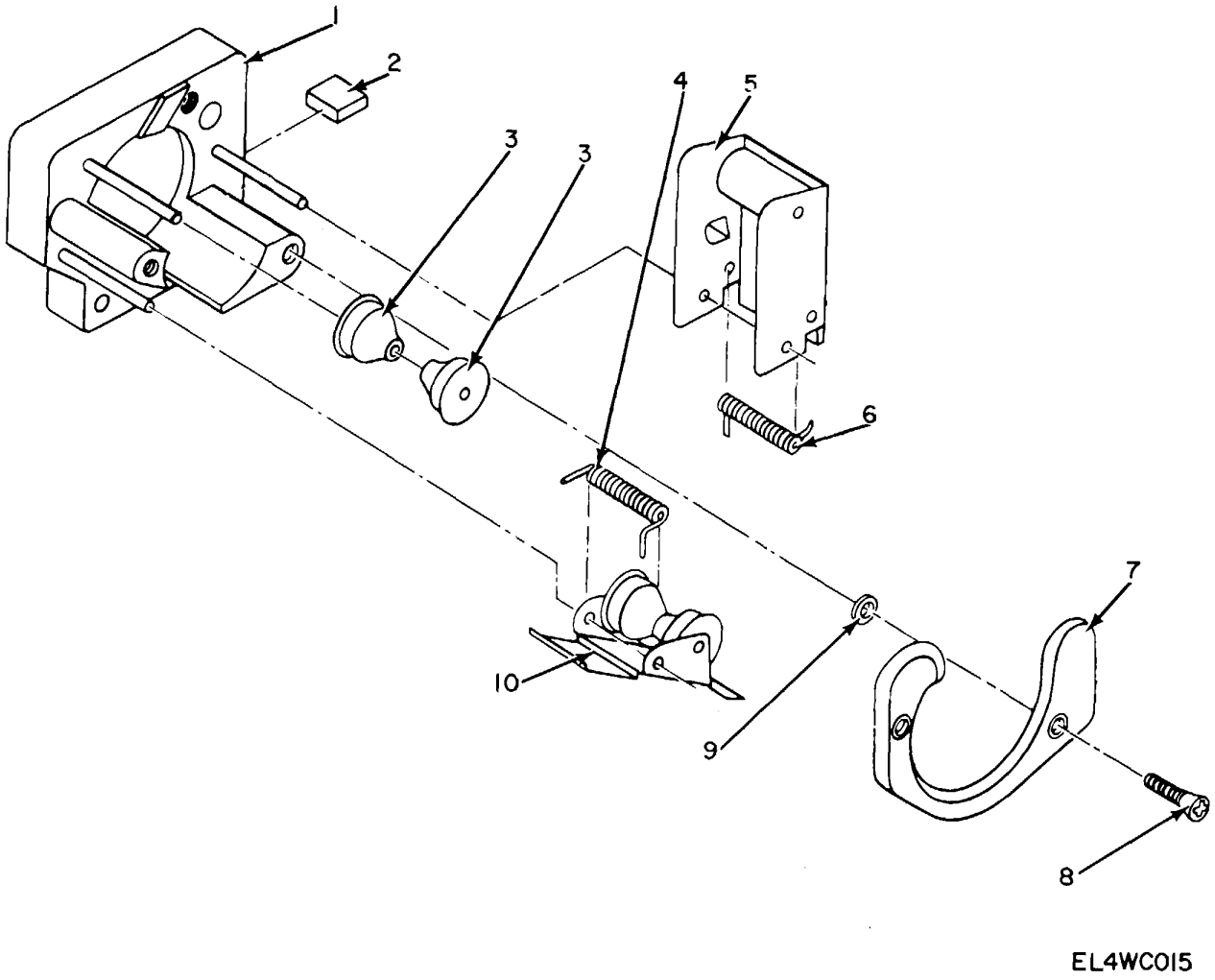


Figure B-14. Projector AQ-9A1 Feed Sprocket Shoe.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-14	1	XDFZZ		38351G	25734	SHOE ASSEMBLY	EA	1
B-14	2	XDFZZ		39219	25734	PAD	EA	1
B-14	3	XDFZZ		38360	25734	ROLLER	EA	2
B-14	4	XDFZZ		36358	25734	SPRING, FOLLOWER	EA	1
B-14	5	XDFZZ		38830G2	25734	DAMPENER ASSEMBLY	EA	1
B-14	6	XDFZZ		39171P1	25734	SPRING, DAMPENER	EA	1
B-14	7	XDFZZ		38359P1	25734	COVER	EA	1
B-14	8	XDFZZ		38387	25734	SCREW, MACHINE	EA	2
B-14	9	PAFZZ		30473P72	25734	WASHER, FLAT	EA	1
B-14	10	XDFZZ		38353G1	25734	FOLLOWER ASSEMBLY	EA	1

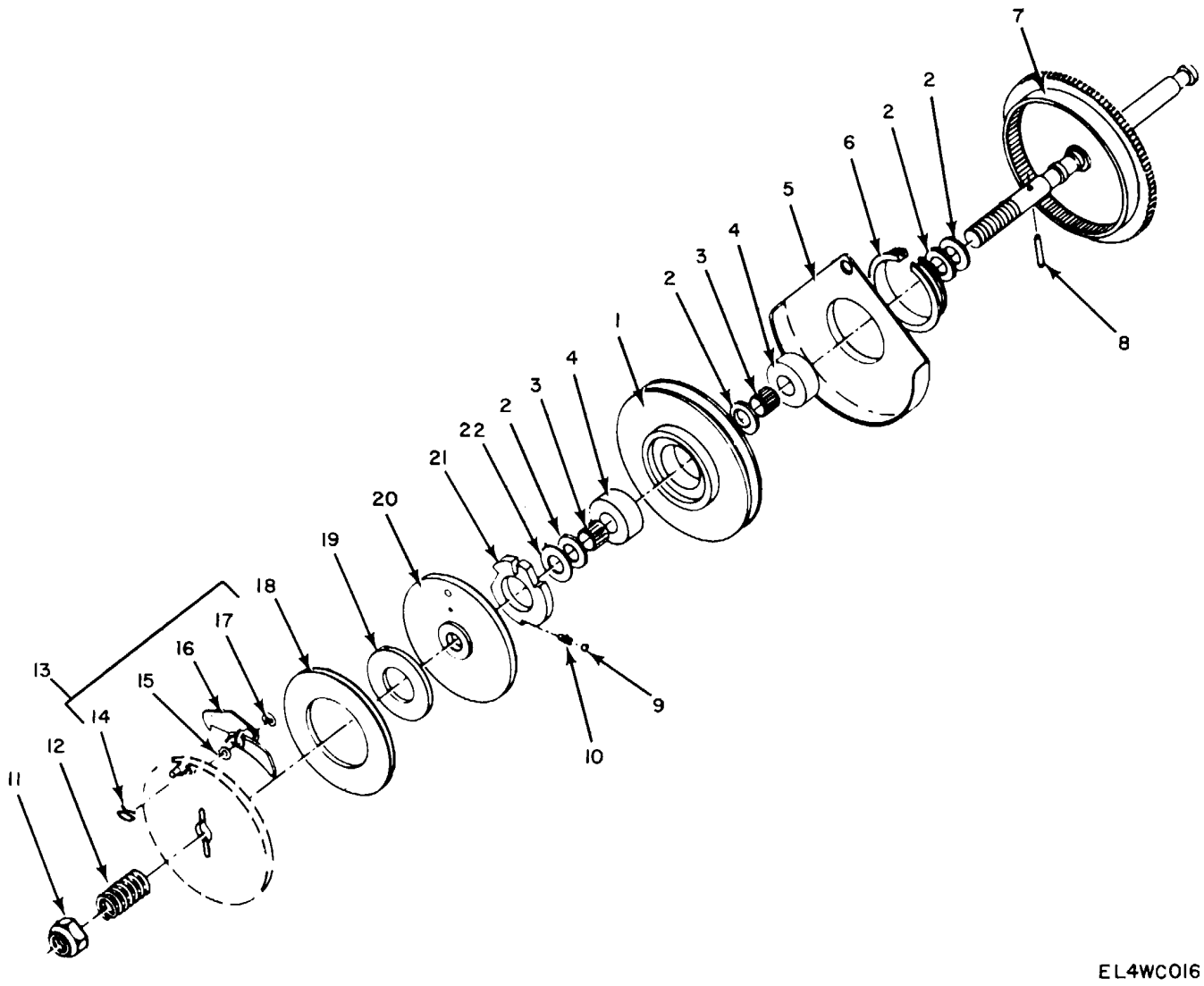


Figure B-15. Projector AQ-9A1 Film Feed Clutch Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-15	1	XDFZZ		39135P1	25734	PULLEY, CLUTCH	EA	1
B-15	2	XDFZZ		33500P56H	25734	WASHER, FLAT	EA	4
B-15	3	XDFZZ		BN025025C	51588	RING	EA	2
B-15	4	XDFZZ		39134	25734	BEARING, GUIDE	EA	2
B-15	5	XDFZZ		39199P1	25734	GUIDE, BELT	EA	1
B-15	6	XDFZZ		39198	25734	BEARING, GUIDE	EA	1
B-15	7	XDFZZ	6730-00-116-7066	39115G1	25734	GEAR ASSEMBLY, FEED	EA	1
B-15	8	XDFZZ	5315-00-410-3092	39140	25734	PIN	EA	1
B-15	9	XDFZZ	3110-00-061-7869	MS19061-2	96906	BALL, BEARING	EA	3
B-15	10	XDFZZ	4140-00-421-1726	39138P1	25734	SPRING CAMPLATE	EA	3
B-15	11	XDFZZ		22TU-040	76962	NUT, SELF-LOCKING	EA	1
B-15	12	XDFZZ		39141P1	25734	SPRING, CLUTCH	EA	1
B-15	13	XDFZZ	6730-00-116-5352	39122G2	25734	PLATE ASSEMBLY	EA	1
B-15	14	XDFZZ	6730-00-116-7061	39232P1	25734	SPRING, TOGGLE	EA	1
B-15	15	XDFZZ		33500P52	25734	WASHER, FLAT	EA	1
B-15	16	XDFZZ		39126G1	25734	PAWL ASSEMBLY	EA	1
B-15	17	XDFZZ	5365-00-205-4208	5133-9	79136	RING, RETAINING	EA	1
B-15	18	XDFZZ		39139	25734	PACING, CLUTCH	EA	1
B-15	19	XDFZZ		38473P15	25734	WASHER, FLAT	EA	1
B-15	20	XDFZZ		39117G1	25734	PLATE, CLUTCH	EA	1
B-15	21	XDFZZ		39137P1	25734	PLATE, CAM	EA	1
B-15	22	XDFZZ		35473P48	25734	WSHER, FLAT	EA	1

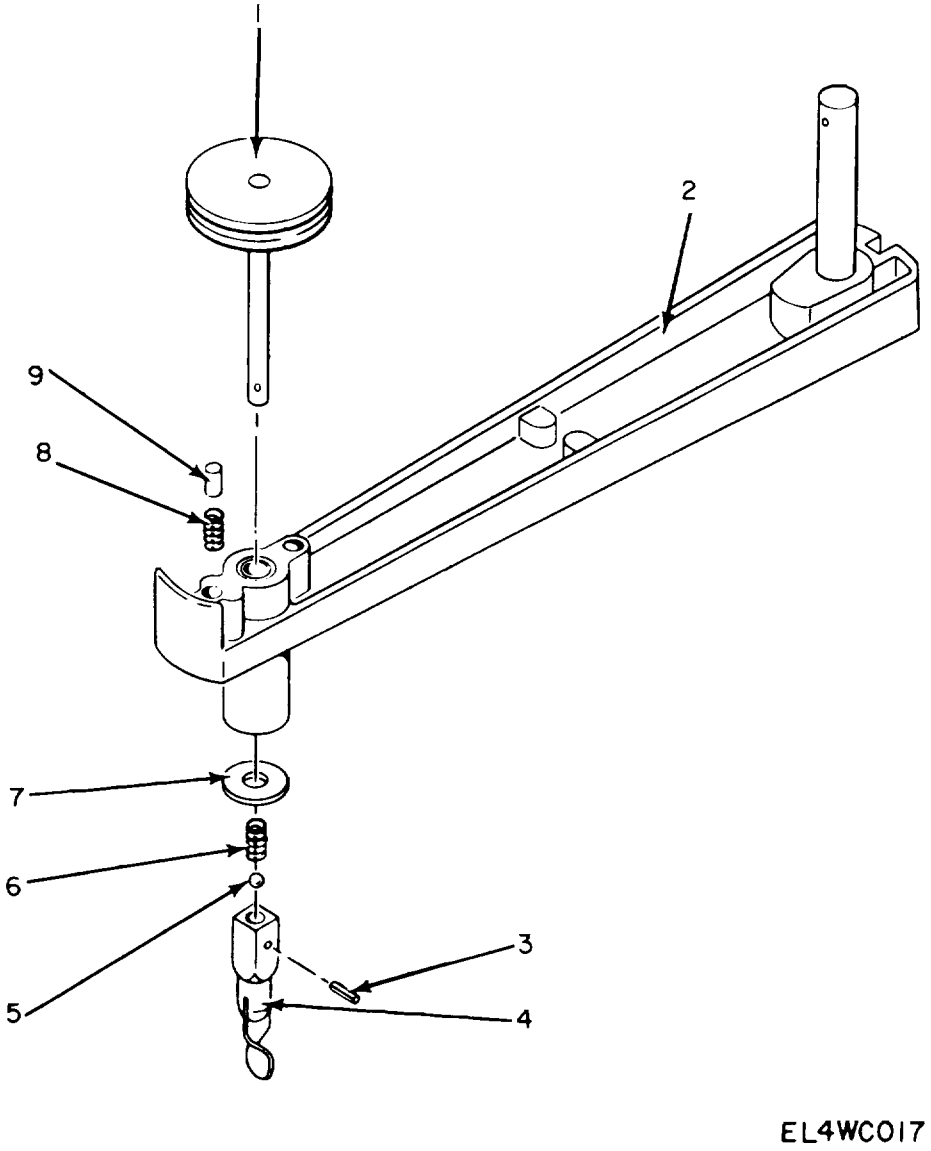


Figure B-16. Projector AQ-9A1 Supply Arm Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-16	1	XDFZZ		39180G4	25734	PULLEY ASSEMBLY	EA	1
B-16	2	XDFZZ		39177G4	25734	ARM ASSEMBLY	EA	1
B-16	3	XDFZZ		38990	25734	ROLL PIN	EA	1
B-16	4	XDFZZ		43466G1	25734	SPINDLE ASSEMBLY	EA	1
B-16	5	XDFZZ		MS19061-4	96906	BALL, BEARINGA	EA	1
B-16	6	XDFZZ		38255P1	25734	SPRING, RETAINER	EA	1
B-16	7	XDFZZ		39197	25734	WASHER, FLAT	EA	1
B-16	8	XDFZZ		42849	25734	SPRING, BRAKE	EA	1
B-16	9	XDFZZ		42848	25734	BRAKE	EA	1

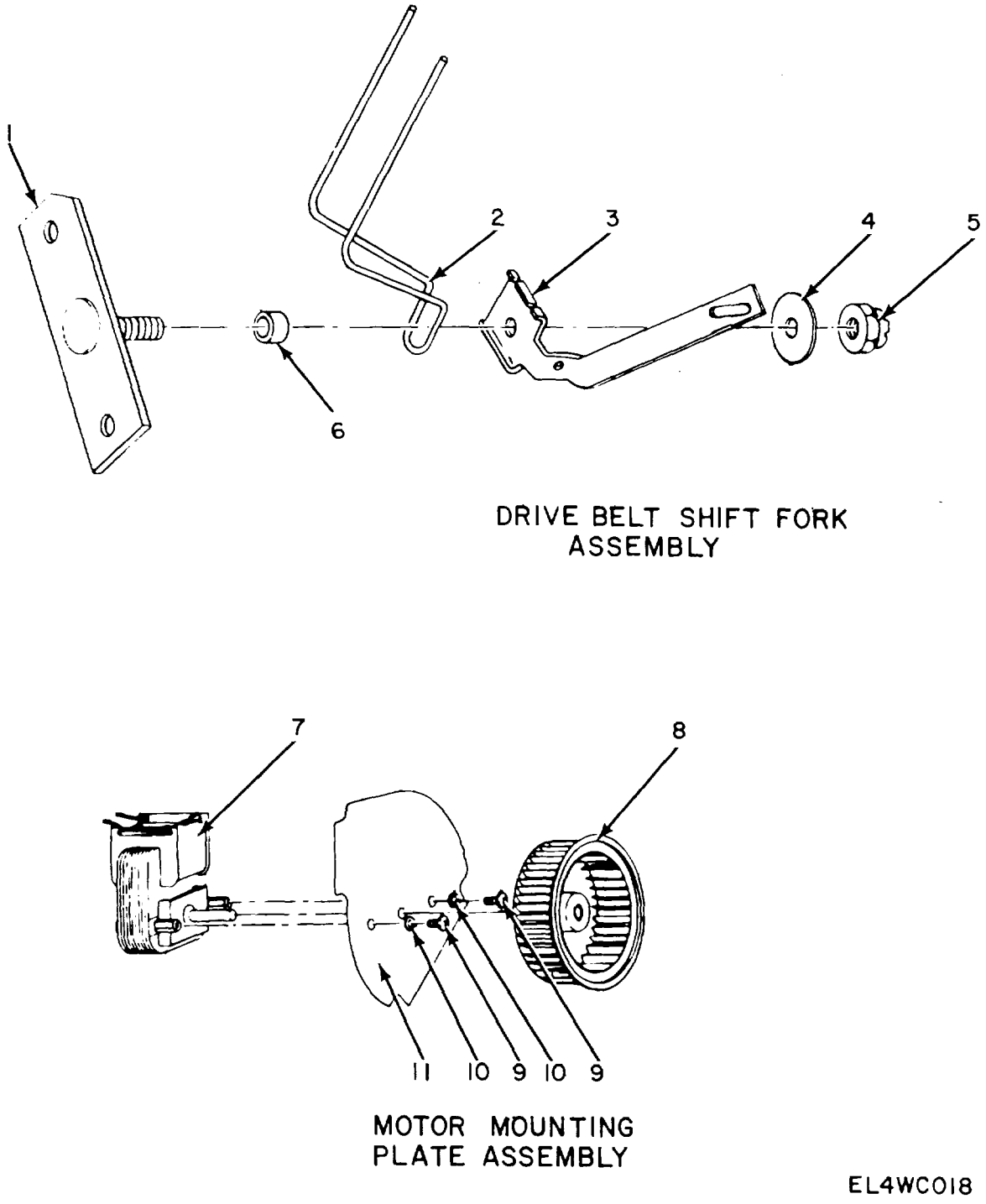


Figure B-17. Projector AQ-9A1 Drive Belt Shift Fork and Motor Mounting Plate Assemblies.

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-17	1	XDFZZ		39087G1	25734	SUPPORT ASSEMBLY	EA	1
B-17	2	XDFZZ		39090P1	25734	FORK, SHIFT	EA	1
B-17	3	XDFZZ		39089P1	25734	LEVER, SHIFT	EA	1
B-17	4	XDFZZ		33500-25A	25734	WASHER, FLAT	EA	1
B-17	5	XDFZZ		22NH02	72962	NUT, SELF-LOCKING	EA	1
B-17	6	XDFZZ		41086-4	25734	SPACER	EA	1
B-17	7	PAFZZ	6730-00-116-7058	38414G4	25734	MOTOR ASSEMBLY BLOW	EA	1
B-17	8	PAFZZ	6730-00-116-7051	38195P1	25734	WHEEL, BLOWER	EA	1
B-17	9	XDFZZ		116-6R4H	25734	SCREW, MACHINE	EA	2
B-17	10	XDFZZ		221-6H	25734	WASHER, LOCK	EA	2
B-17	11	XDFZZ		43073P1	25734	PLATE	EA	1

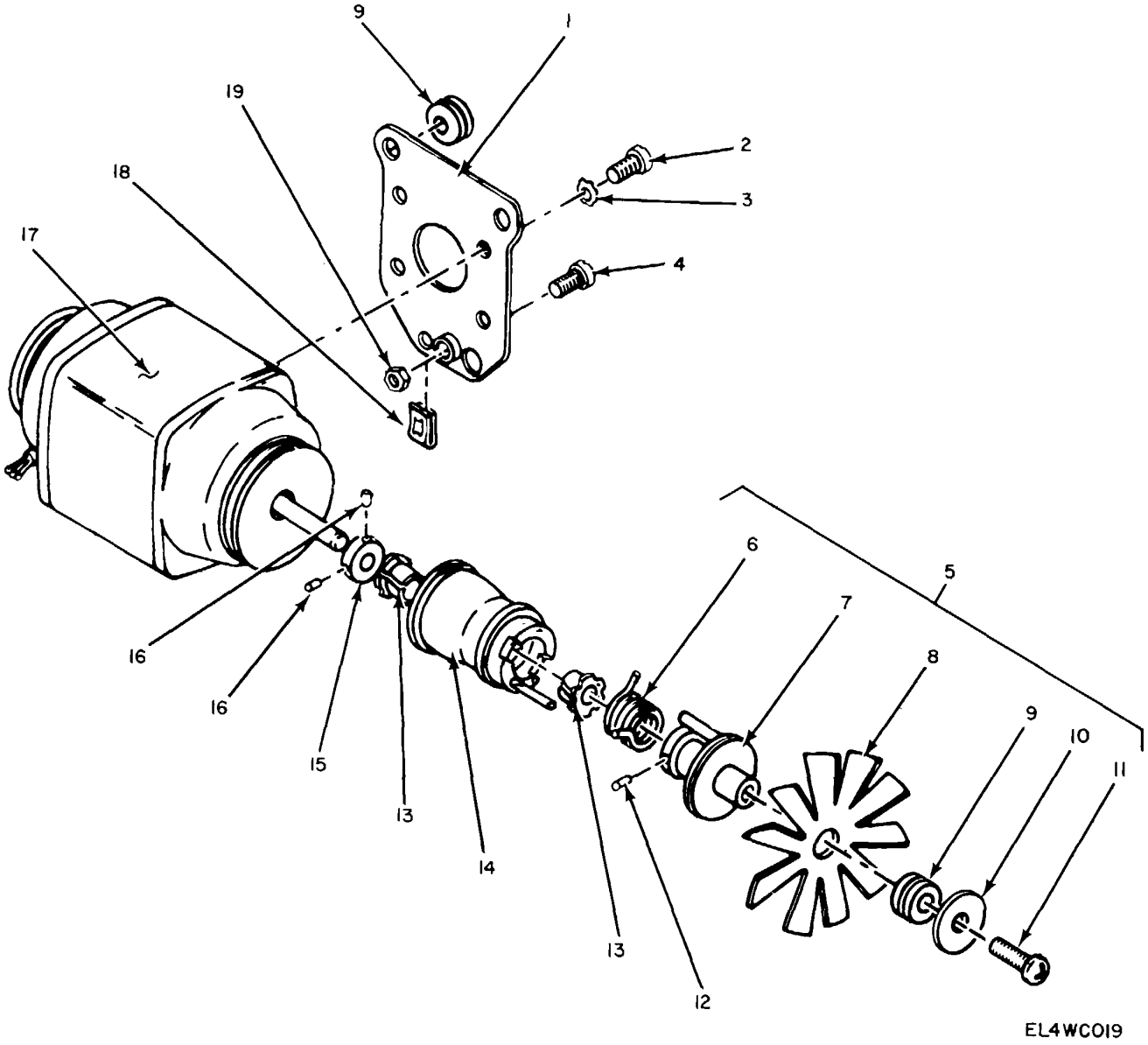
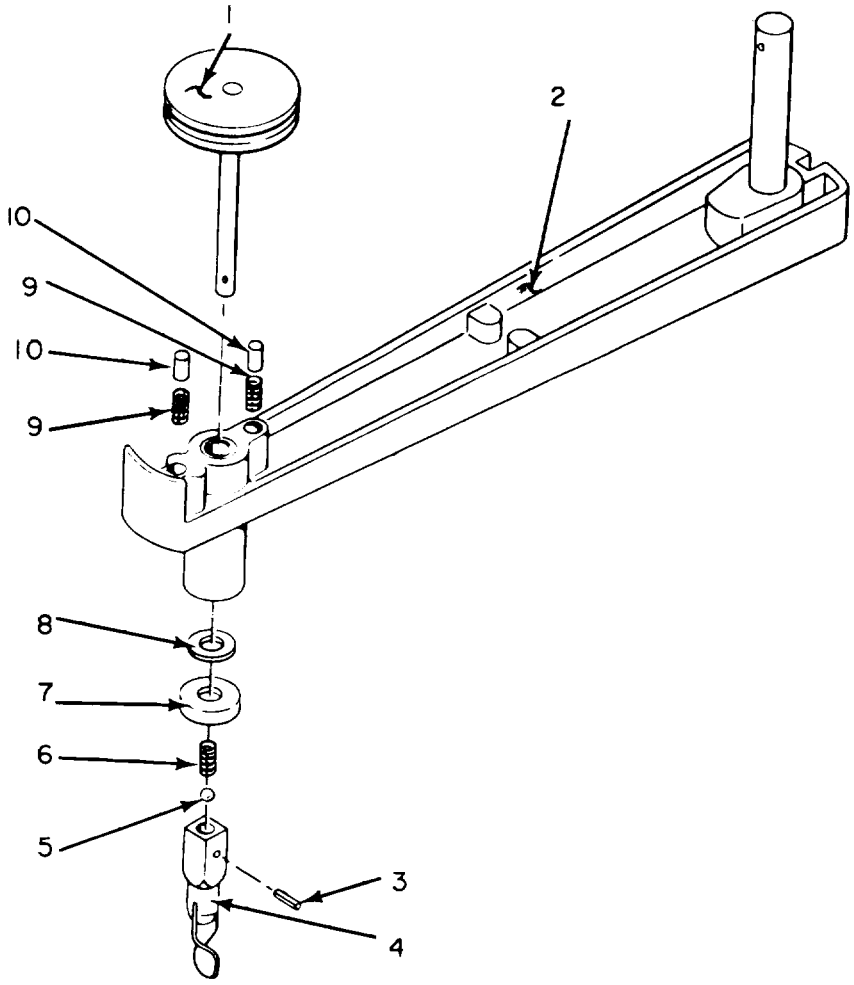


Figure B-18. Projector AQ-9A1 Drive Unit Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-18	1	XDFZZ		39076G2	25734	PLATE ASSEMBLY	EA	1
B-18	2	XDFZZ		116-8R5H	25734	SCREW, MACHINE	EA	4
B-18	3	PAFZZ	5310-00-209-4935	1108-00	78189	WASHER, LOCK	EA	4
B-18	4	PAFZZ	6730-00-116-5374	39082G1	25734	DRIVE UNIT ADJUSTIN	EA	1
B-18	5	XDFFF		39105G1	25734	FAN AND HUB ASS.	EA	1
B-18	6	PAFZZ	6730-00-116-7083	39098P1	25734	SPRING, MOTOR PULLEY	EA	1
B-18	7	PAFZZ	6730-00-116-5378	39105G2	25734	HUB ASSEMBLY	EA	1
B-18	8	PAFZZ	4140-00-116-5354	39128P1	25734	IMPELLER, PUMP, CENTR	EA	1
B-18	9	XDFZZ		Z2157	70485	GROMMET, RUBBER	EA	2
B-18	10	XDFZZ		3573P42	25734	WASHER, FLAT	EA	1
B-18	11	XDFZZ		140-10R6A	25734	SCREW, SELF-TAPPING	EA	1
B-18	12	PAFZZ	5315-00-411-6448	192-4-8	25734	PIN, SPIROL	EA	1
B-18	13	XDFZZ		38206P3	25734	BEARING	EA	2
B-18	14	PAFZZ	6730-00-116-5386	3909G3	25734	PULLEY ASSEMLY	EA	1
B-18	15	XDFZZ		39099	25734	COLLAR, PULLEY	EA	1
B-18	16	XDFZZ		171-4-2L	25734	SETSCREW	EA	2
B-18	17	PAFZZ	6105-00-119-0951	44234G2	25734	MOTOR, ALTERNATING C	EA	1
B-19	18	XDFZZ		C950-1024-4	78553	NUT, STAMPED	EA	1
B-18	19	XDFZZ		200-10HA	25734	NUT, PLAIN, HEXAGON	EA	1



EL4WC020

Figure B-19. Projector AQ-9A1 Takeup Reel Arm Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-19	1	XDFZZ		39180G5	25734	PULLEY ASSEMBLY	EA	1
B-19	2	XDFZZ		39177G4	25734	ARM ASSEMBLY	EA	1
B-19	3	XDFZZ		38990	25734	ROLL PIN	EA	1
B-19	4	XDFZZ		43466G1	25734	SPINDLE ASSEMBLY	EA	1
B-19	5	XDFZZ		MS19061-4	96906	BALL, BEARING	EA	1
B-19	6	XDFZZ		38255P1	25734	SPRING, RETAINER	EA	1
B-19	7	XDFZZ		38097P2	25734	COLLAR	EA	1
B-19	8	XDFZZ		35473P72	25734	WASHER, FLAT	EA	1
B-19	9	XDF2Z		42849	25734	SPRING, BRAKE	EA	2
B-19	10	XDFZZ		42848	25734	BRAKE	EA	2

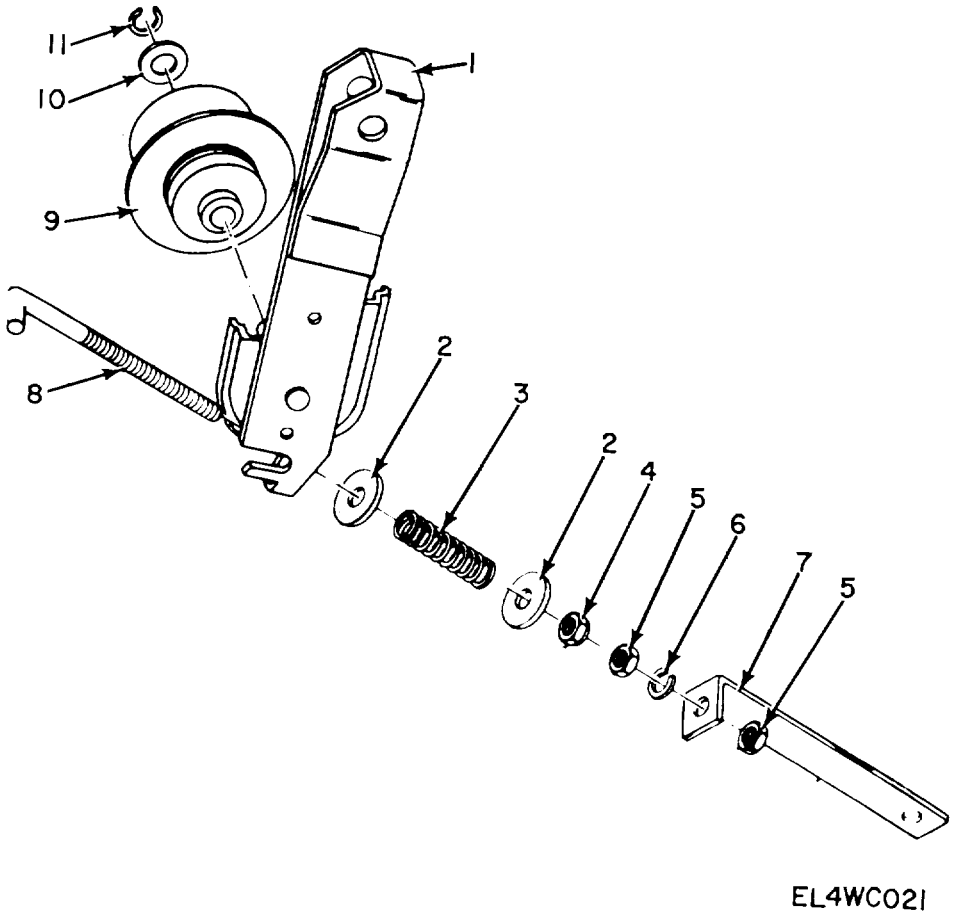
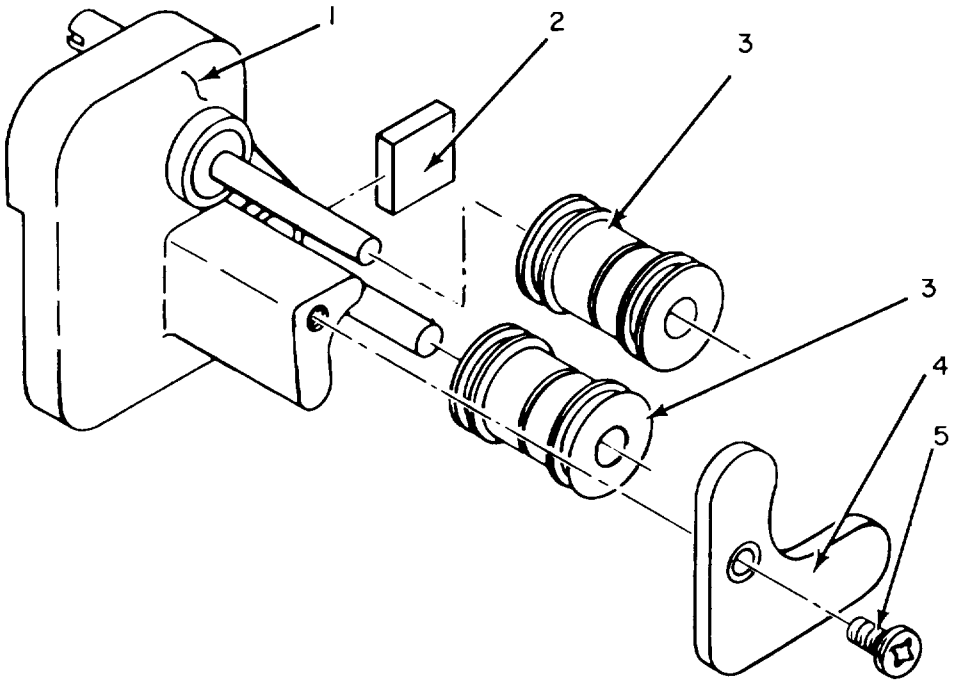


Figure B-20. Projector AQ-9A1 Takeup Clutch Arm

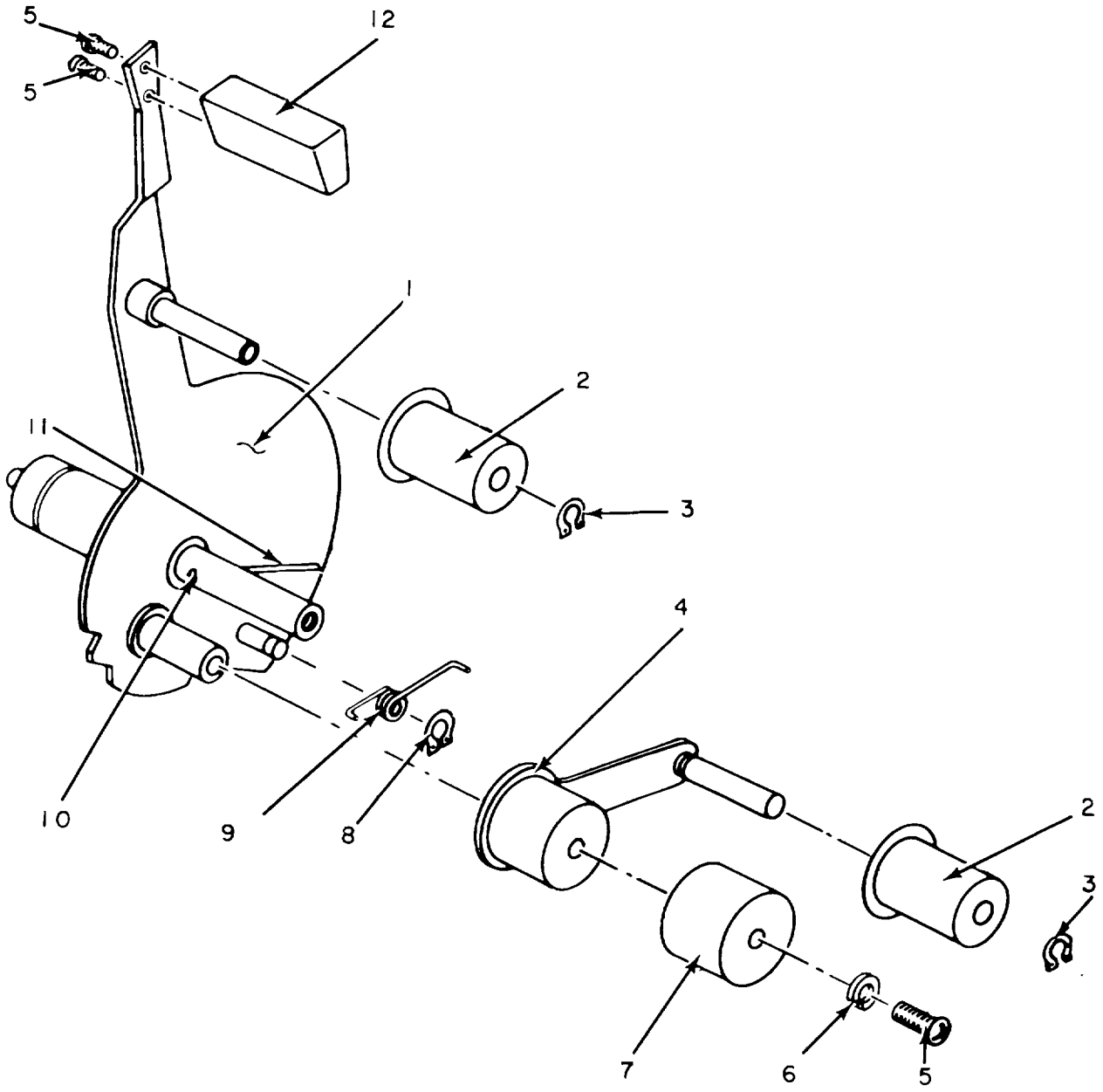
(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-20	1	XDFZZ		39156G1	25734	ARM ASSEMBLY	EA	1
B-20	2	XDFZZ		35473P59A	25734	WASHER, FLAT	EA	2
B-20	3	XDFZZ		39164P1	25734	SPRING, CLUTCH	EA	1
B-20	4	XDFZZ		22MM02	72962	NUT, SLFLKG CLINCH	EA	2
B-20	5	XDFZZ		201-10HA	25734	NUT, PLAIN, HEXAGON	EA	2
B-20	6	XDFZZ		230-9	25734	WASHER, LOCK	EA	1
B-20	7	XDFZZ		39165P1	25734	BRACKET, CLUTH	EA	1
B-20	8	XDFZZ		39166P1	25734	ROD, CLUCH	EA	1
B-20	9	XDFZZ		39159G1	25734	PULLEY ASSEMBLY	EA	1
B-20	10	XDFZZ		35473P65	25734	WASHER, FLAT	EA	1
B-20	11	PAFZZ	5365-00-625-6865	5103-25	78446	RING, RETAINER	EA	1



EL4WC02 2

Figure B-21. Projector AQ-9A1 Takeup Shoe Assembly

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-21	1	XDFZZ		38218G1	25734	ARM ASSY, SPRKT SHOE.....	EA	1
B-21	2	XDFZZ		39219	25734	PAD.....	EA	1
B-21	3	XDFZZ		38223P2	25734	ROLLER, SPROCKET.....	EA	2
B-21	4	XDFZZ		38222	25734	COVER	EA	1
B-21	5	XDFZZ		116-4R4H	25734	SCREW, MACHINE.....	EA	1



EL4WC023

Figure B-22. Projector AQ-9A1 Threading Control Arm

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-22	1	XDFZZ		39208G3	25734	ARM ASSEMBLY	EA	1
B-22	2	XDFZZ		38136P1	25734	ROLLER, FILM	EA	2
B-22	3	PAFZZ	5365-00-810-7494	5555-15	79136	RING, RETAINING	EA	2
B-22	4	XDFZZ		38137G1	25734	ARM ASSEMBLY, TNSN	EA	1
B-22	5	XDFZZ		140-4R6L	25734	SCREW, SELF-TAPP1NG	EA	3
B-22	6	XDFZZ		230-4	25734	WASHER, SPRING	EA	1
B-22	7	XDFZZ		38141P1	25734	CAP, DAMPENER HUB	EA	1
B-22	8	PAFZZ	5365-00-598-8635	5555-12	79136	RING, RETAINING	EA	1
B-22	9	PAFZZ	6730-00-117-2856	38016P1	25734	SPRING, DAMPENER RTN	EA	1
B-22	10	PAFZZ	5315-00-410-3091	108B1-4	25734	GROOVED P1N	EA	1
B-22	11	PAFZZ	6730-00-117-2857	38135	25734	SPRING, FILM DAMPER	EA	1
B-22	12	XDFZZ		39206	25734	HANDLE, ARM	EA	1

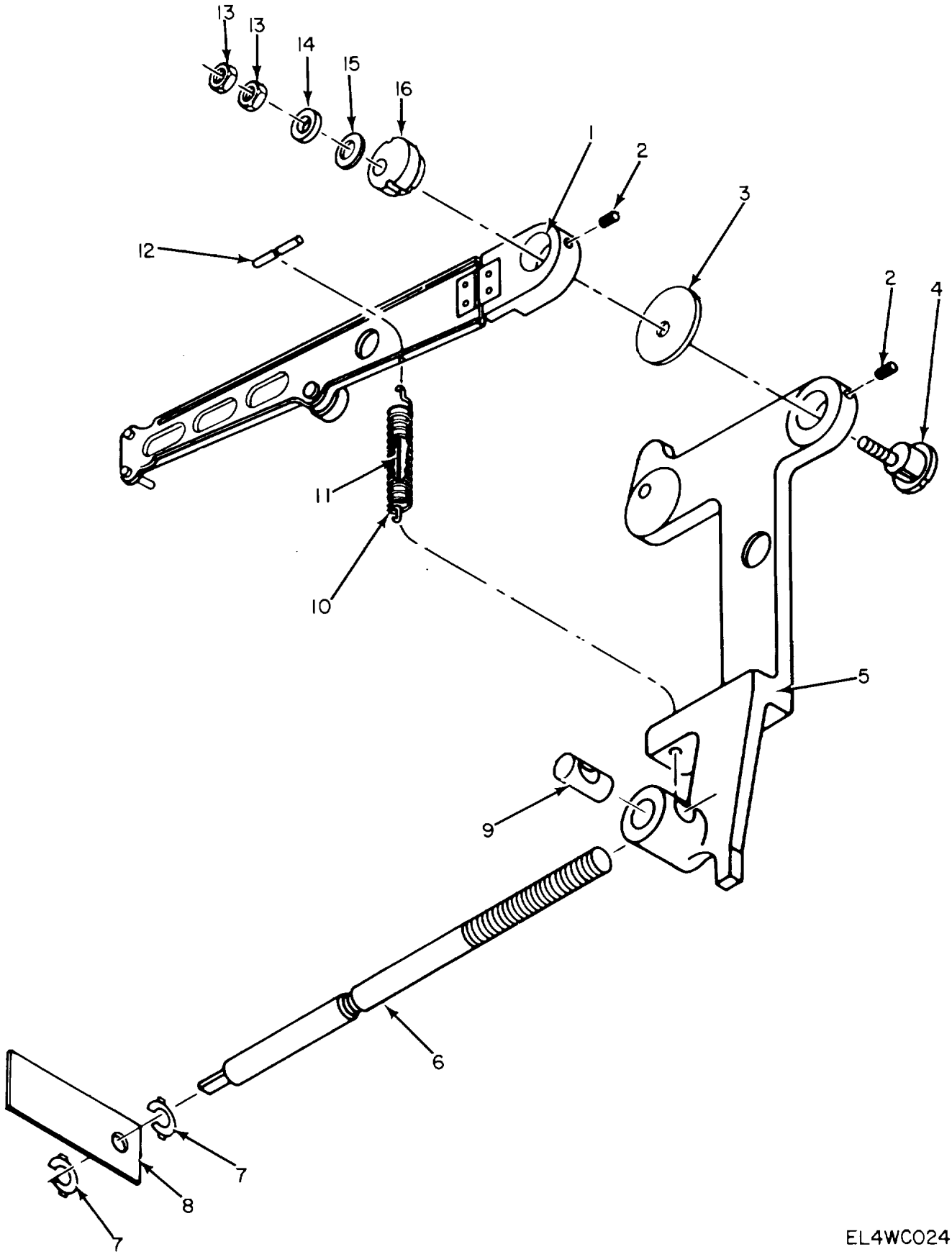
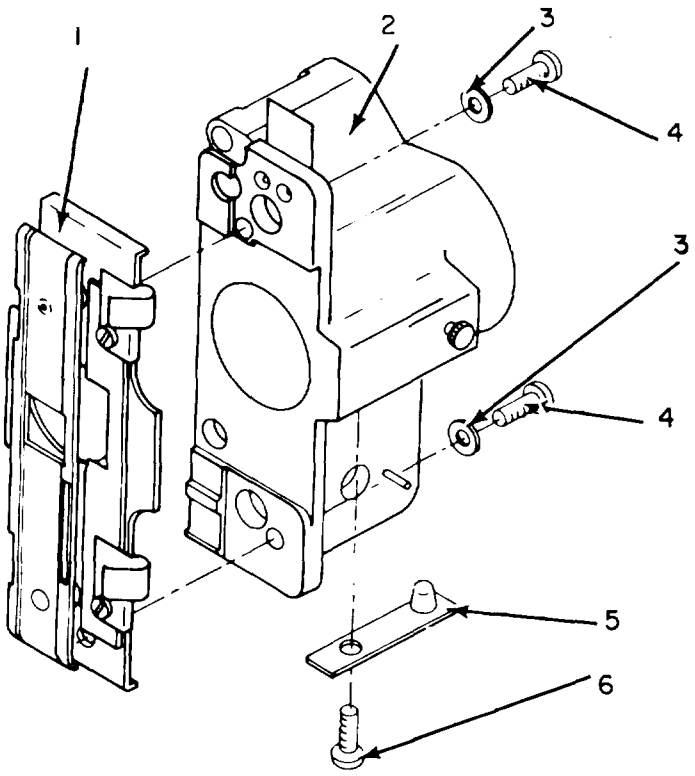


Figure B-23. Projector AQ-9A1 Claw Arm.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-23	1	PAFZZ	6730-00-116-7079	384104G1	25734	ASSEMBLY, CLAW	EA	1
B-23	2	XDFZZ		171-4-2L	25734	SETSCREW	EA	2
B-23	3	PAFZZ	5340-00-056-9900	3847322	25734	WASHER, FLAT	EA	1
B-23	4	PAFZZ	6730-00-116-5391	38458G2	25734	PIVOT ASSEMBLY, CLAW	EA	1
B-23	5	XDFZZ		38055P3	25734	ARM, FARAMING	EA	1
B-23	6	XDFZZ		3805P1	25734	ROD, CONTROL	EA	1
B-23	7	PAFZZ	5365-00-563-3413	5139-18	79136	RING.,RETAINING	EA	2
B-23	8	XDFZZ		38062	25734	PLATE,GUIDE	EA	1
B-23	9	XDFZZ		38057	25734	PIVOT.ROD	EA	1
B-23	10	XDFZZ		42961P1	25734	SPRING	EA	1
B-23	11	XDFZZ		38061	25734	DAMPENER	EA	1
B-23	12	XDFZZ		38450	25734	PIN	EA	1
B-23	13	XDFZZ		200-3HA	25734	NUT, MACHINE	EA	2
B-23	14	PAFZZ	5310-00-054-5177	38473-24L	25734	WASHER, FLAT	EA	1
B-23	15	XDFZZ	6730-00-360-9994	38473-P23	25734	WASHER, FLAT	EA	1
B-23	16	PAFZZ	6730-00-116-5389	38052P2	25734	BUSHING, PIVOT	EA	1



EL4WC025

Figure B-24. Projector AQ-9A1 Lens Holder Assembly.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-24	1	XDFZZ	6730-00-629-5848	43077G5	25734	SHOE ASSEMBLY, FILM.....	EA	1
B-24	2	XDFZZ		44233G2	25734	HOLDER ASSY.....	EA	1
B-24	3	XDFZZ		40627P16	25734	WASHER, FLAT.....	EA	2
B-24	4	PAFZZ	5305-00-355-7861	116-2R3H	25734	SCREW, MACHINE.....	EA	2
B-24	5	PAFZZ	6730-00-145-6765	38239G1	25734	SPRING ASSEMBLY.....	EA	1
B-24	6	XDFZZ		116-4R2H	25734	SCREW, MACHINE.....	EA	1

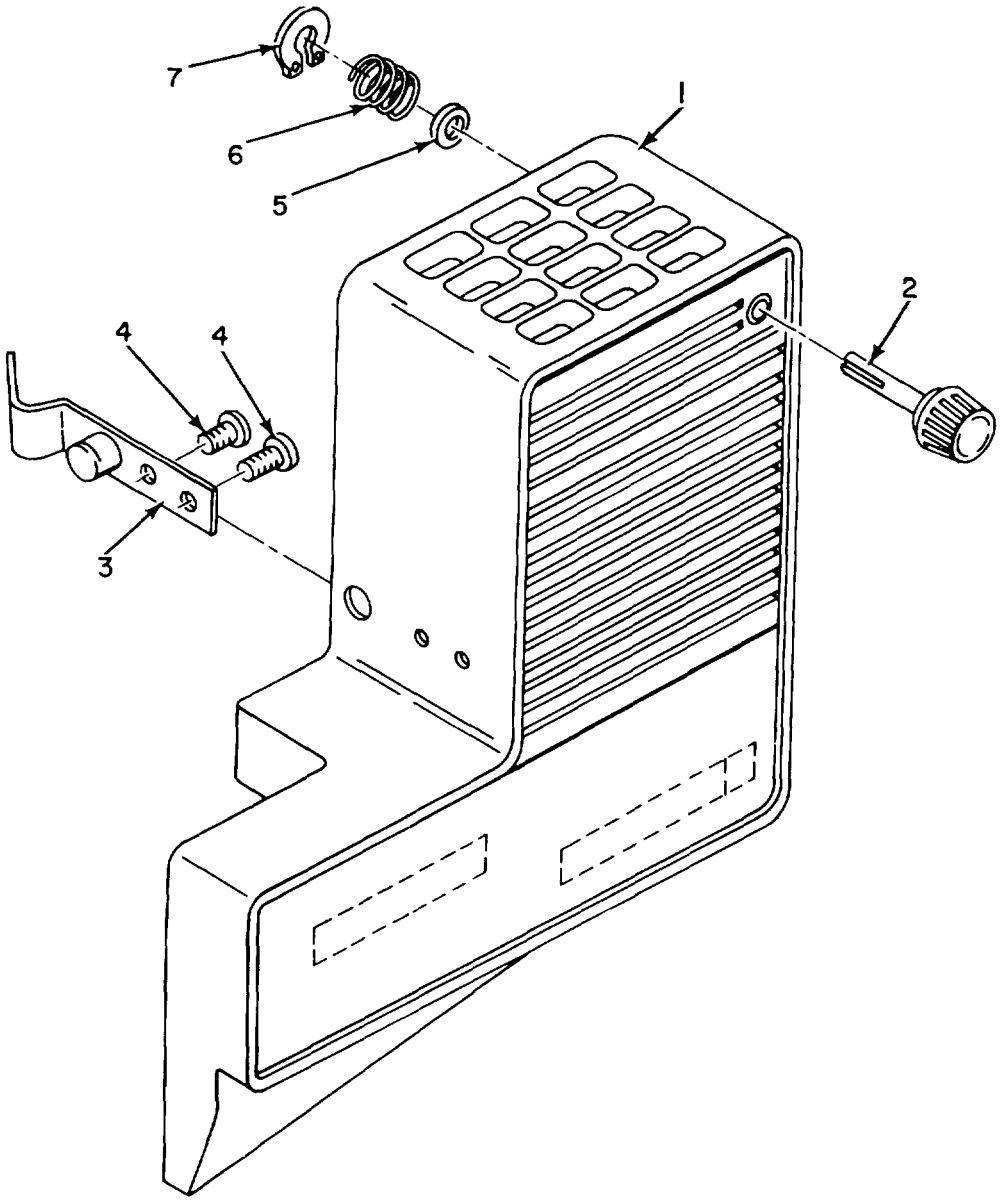


Figure B-25. Projector AQ-9A1 Lamphouse Cover Assembly.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-25	1	XDFZZ		38181P4	25734	COVER, LAMP	EA	1
B-25	2	PAOZZ	5355-00-159-8370	38246G1	25734	KNOB	EA	1
B 25	3	PAFZZ	5340-00-182-4732	38254G1	25734	LATCH	EA	1
B-25	4	XDFZZ		140-4R3A	25734	SCREW, SELF-TAPPING	EA	2
B-25	5	XDFZZ		30473P52A	25734	WASHER, FLAT	EA	1
B-25	6	XDFZZ		38486P1	25734	SPRING, COVER	EA	1
B-25	7	PAFZZ	5365-00-598-1362	5555-18	79136	RING, RETAIING	EA	1

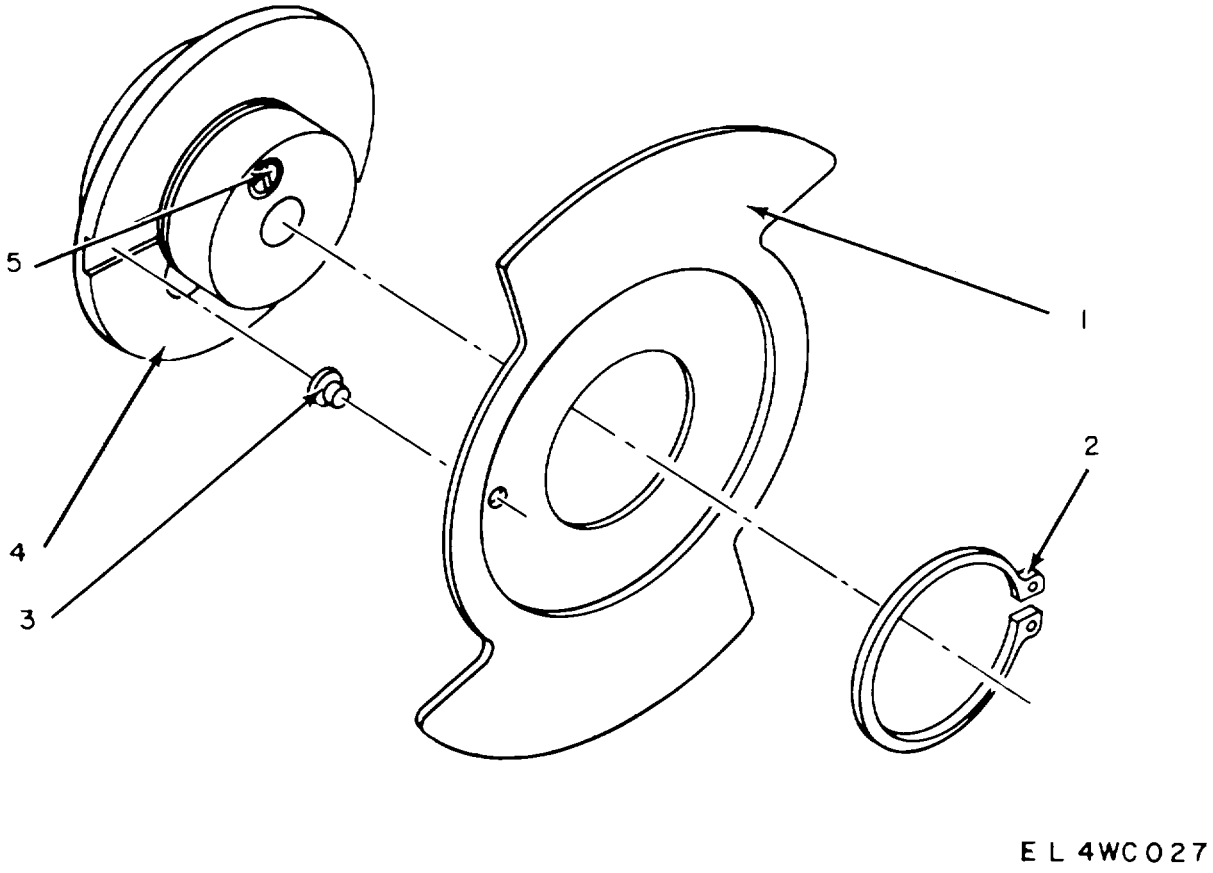


Figure B-26. Projector AQ-1 Shutter an Cam Assembly.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
B-26	1	XDFZZ		41449P2	25734	BLADE	EA	1
B-26	2	PAFZZ	5365-00-544-2412	5101-112	79136	RING, RETAINING	EA	1
B-26	3	XDFZZ		38844G4	25734	CAM AND HUB ASSY	EA	1
B-26	4	XDFZZ		38823	25734	BUMPER	EA	1
B-26	5	XDFZZ		171A6-3L	25734	SETSCREW	EA	2

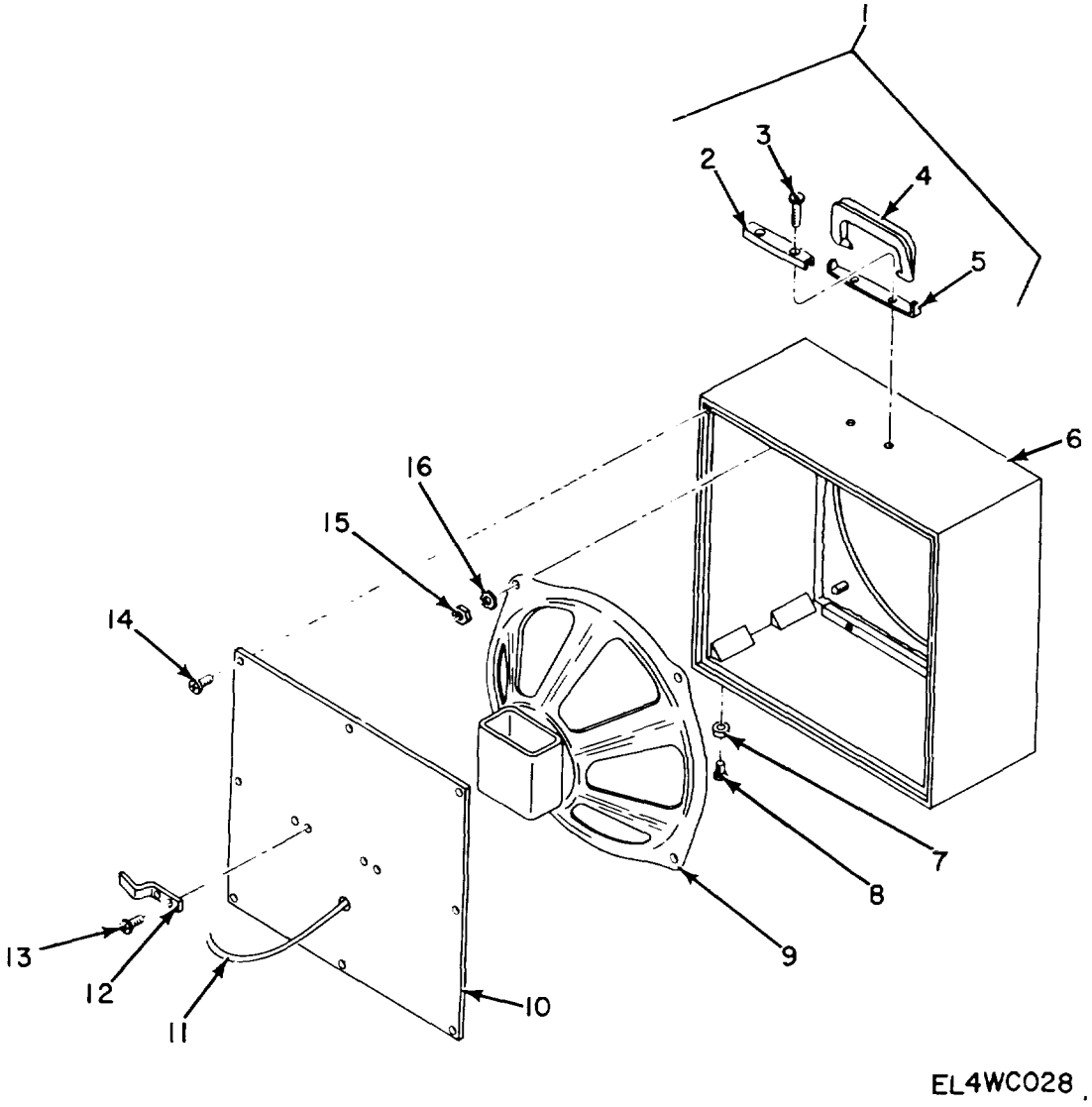


Figure B-27. Loudspeaker, Permanent Magnet BQ-7A1.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 02 LOUDSPEAKER,PERMANENT MAGNET BQ-7A1		
B-27	1	PAFFF	5340-00-166-8586	3150-305-304	12136	HANDLE SET ASSY	EA	1
B27	2	XDFZZ		143051P4	25734	CAP	EA	1
B-27	3	XDFZZ	5305-00-355-7860	116-8R12H	25734	SCREW, MACHINE	EA	2
B-27	4	XDFZZ		43051P2	25734	HANDLE	EA	1
B-27	5	XDFZZ		43051P3	25734	BRACKET	EA	1
B-27	6	XDFZZ		44220P9	25734	CABINET	EA	1
B-27	7	PAFZZ	5340-00-995-8329	747-RW	75543	BUMPER, RUBBER	EA	4
B-27	8	XDFZZ		151-8-16	25734	SCREW, WOOD	EA	1
B-27	9	PAFZZ	5965-01-005-1469	44244P1	25734	LOUDSPEAKER	EA	1
B-27	10	XDFZZ		44220P10	25734	COVER, REAR	EA	1
B-27	11	PAFZZ	6730-00-116-7056	3421P5	25734	CABLE ASSEMBLY, SPEC	EA	1
B-27	12	XDFZZ		40663	25734	CLEAT	EA	2
B-27	13	PAFZZ	5305-00-355-7862	116-6R6H	25734	SCEW,MACHINE	EA	4
B-27	14	XDFZZ		40921P7H	25734	SCREW, SLFTP	EA	8
B-27	15	XDFZZ		200-8HH	25734	NUT, PAIN, HEXAGON	EA	6
B-27	16	XDFZZ	5310-00-209-4935	1108-00	78189	WASHER, LOCK	EA	6

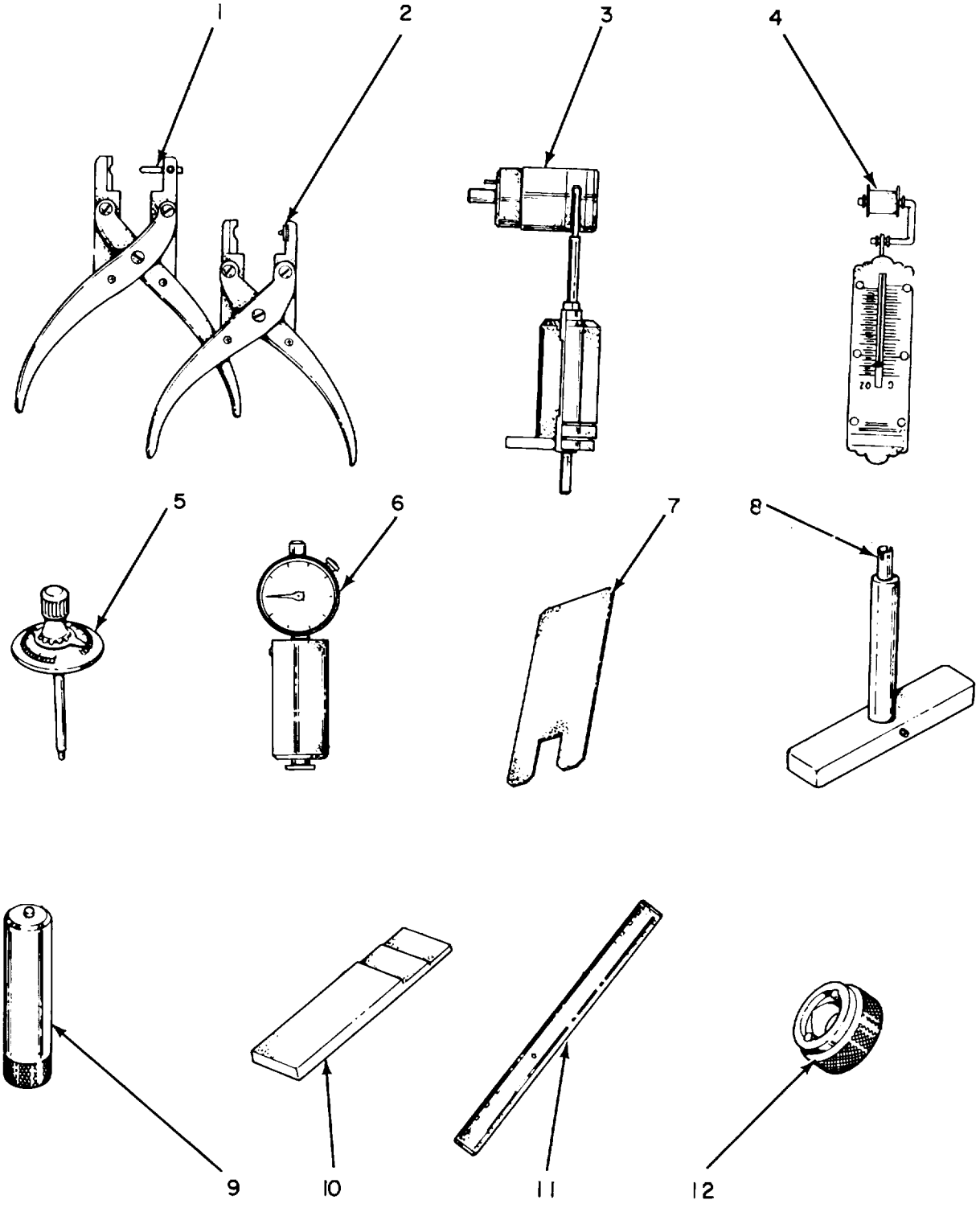


Figure B-28. Special Tools.

(1) ILUUSTRATION (a) FIG NO.	(1) ILUUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 30 SPECIAL TOOLS		
B-28	1	PEFZZ		T-38000-P	25734	EXTRACTING TOOL ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	2	PEFZZ		T-38000-N	25734	INSERTING, TOOL, ROLL ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	3	PEHZZ		G3-38000	25734	ALIGNMENT, TOOL ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	5
B-28	4	PEHZZ		T-38000-S	25734	GAGE,FILM TENSION..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	5	PEHZZ	5220-00-116-5359	-G17-38000	25734	GAGE TORQUE..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	6	PEFZZ		G8-38000	25734	ADJUSTING GAGE, FILM ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	7	PEFZZ		T-38000-Y	25734	GAGE FEELER ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	8	PEFZZ		T-38001-M	25734	SPRING, LOADING TOOL ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	9	PEHZZ	5935-00-119-3999	T-38001-G	25734	CONNECTOR, PLUG, ELEC ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	10	PEHZZ	5220-00-116-5360	G14-38000	25734	CAGE PROTRUSION..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1
B-28	11	PEHZZ	5220-00-116-5356	ST-5880	25734	GAGE STROKE..... BOI: 1 AUTH FOR 1-50 EQUIP	.EA	1
B-28	12	PEFZZ		ST-5884	25734	TOOL ADJUSTING CAM ..... BOI: 1 AUTH FOR 1-50 EQUIP	EA	1

NATIONAL STOCK NUMBER AND PART NUMBER INDEX

NOTE: LATEST NATIONAL STOCK NUMBER AND PART NUMBER ASSIGNEMENTS ARE INCLUDED AT END OF INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.
5320-00-031-3218	B-2	14
5310-00-056-2735	B-5	10
5310-00-056-2735	B-8	11
5310-00-056-9592	B-12	44
5315-00-058-6081	B-8	7
3110-00-061-7869	B-15	9
5975-00-068-6767	B-10	14
6240-00-069-3505	B-8	4
3030-00-089-7870	B-3	8
3030-00-089-7871	B-4	15
3030-00-089-7872	B-7	7
5905-00-106-1356	B-12	23
6760-00-111-6245	B-7	12
5905-00-115-3560	B-12	35
6730-00-116-5352	B-15	13
4140-00-116-5354	B-18	8
5220-00-116-5356	B-28	11
5220-00-116-5359	B-28	5
5220-00-116-5360	B-28	10
6730-00-116-5374	B-18	4
6730-00-116-5375	B-7	17
6730-00-116-5377	B-8	15
6730-00-116-5378	B-18	7
6730-00-116-5379	B-3	33
6730-00-116-5379	B-7	18
6730-00-116-5379	B-9	30
6730-00-116-5380	B-5	11
6730-00-116-5381	B-6	18
6730-00-116-5382	B-4	10
6730-00-116-5384	B-8	2
6730-00-116-5386	B-18	14
6730-00-116-5389	B-23	16
6730-00-116-5390	B-23	4
6730-00-116-5393	B-4	11
6730-00-116-5394	B-6	1
6730-00-116-5395	B-4	17
6730-00-116-5396	B-7	26
6730-00-116-5397	B-7	4
6730-00-116-7045	B-6	12
6730-00-116-7049	B-5	16
6730-00-116-7050	B-8	18
6730-00-116-7051	B-17	8
6730-00-116-7052	B-9	33
6730-00-116-7053	B-2	10
6730-00-116-7054	B-7	20
6730-00-116-7056	B-27	11
6730-00-116-7057	B-6	22
6730-00-116-7058	B-17	7
6730-00-116-7060	B-6	15
6730-00-116-7061	B-15	14
6730-00-116-7063	B-8	23
6730-00-116-7066	B-15	7
6730-00-116-7069	B-8	6
6730-00-116-7074	B-5	26
6730-00-116-7075	B-5	27
6730-00-116-7076	B-6	17
6730-00-116-7079	B-23	1
6730-00-116-7081	B-5	7
6730-00-116-7082	B-7	13
6730-00-116-7083	B-18	6
6730-00-116-7084	B-5	13
6730-00-117-2826	B-5	5
6730-00-117-2857	B-22	11
5930-00-117-9382	B-3	16
6105-00-119-0951	B-18	17
5935-00-119-3999	B-28	9
5320-00-132-4414	B-9	25
5905-00-135-6046	B-12	19
6250-00-138-7297	B-9	11
6730-00-145-6765	B-24	5
6730-C0-150-1778	B-7	1
5360-00-150-1899	B-7	10
5305-00-153-7906	B-2	17
5355-00-159-8370	B-25	2
5340-00-166-8586	B-2	1
5340-00-166-8586	B-27	1
5320-00-175-7659	B-13	2
5340-00-182-4732	B-25	3
5961-00-192-7552	B-12	14
5310-00-198-9333	B-10	10
5365-00-205-4208	B-15	17
5310-00-209-0788	B-12	52
5310-00-209-4935	B-18	3
5310-00-209-4935	B-27	16
5365-00-285-6688	B-6	19
6730-00-337-1328	B-8	13
6730-00-337-1433	B-5	21
6730-00-337-1437	B-5	12
6730-00-337-1781	B-3	23
6730-00-337-1922	B-6	10
6150-00-337-1955	B-10	15
6730-00-337-2299	B-4	4
5315-00-348-8510	B-6	9
5305-00-355-7860	B-2	3
5305-00-355-7860	B-27	3
5305-00-355-7861	B-24	4
5305-00-355-7862	B-8	10
5305-00-355-7862	B-9	8
5305-00-355-7862	B-27	13
5305-00-355-7864	B-5	3
5305-00-357-0591	B-2	8
5950-00-357-0733	B-9	1
5905-00-360-5058	B-13	24
5965-00-360-9534	B-11	4
6730-00-360-9567	B-4	1
6730-00-360-9578	B-10	1
5305-00-363-8544	B-2	11
5315-00-410-3092	B-15	8
5355-00-411-4480	B-10	7
5355-00-411-4481	B-10	8
5315-00-411-6448	B-18	12
5310-00-411-6497	B-6	6
4140-00-421-1726	B-15	10
5961-00-435-3686	B-12	13
5935-00-481-7326	B-10	20
5330-00-481-9104	B-10	19
5920-00-539-6752	B-13	18
5365-00-544-2412	B-26	2
5365-00-563-3413	B-23	7
5310-00-595-5498	B-8	9
5310-00-596-8173	B-5	6
5365-00-598-1362	B-25	7
5365-00-598-8635	B-22	8
5305-00-614-9473	B-3	15
5305-00-614-9473	B-10	12
5305-00-614-9473	B-13	15
6730-00-629-5848	B-24	1
6240-00-655-2431	B-10	3
5365-00-663-1245	B-6	5
5905-00-686-4530	B-12	20
5905-00-721-0552	B-12	25
5305-00-724-6794	B-4	16
5305-00-724-6794	B-7	27
5325-00-754-2165	B-9	19
6730-00-797-7825	B-5	2
5365-00-801-3006	B-4	6
5365-00-809-0015	B-5	4
5365-00-810-7494	B-5	1
5365-00-810-7494	B-22	3
5905-00-811-0673	B-12	22
5905-00-816-8554	B-12	28
3120-00-818-4688	B-9	28
5999-00-871-9538	B-12	49
5920-00-892-9311	B-13	16
5910-00-932-6884	B-12	1
5910-00-951-2638	B-9	5
5905-00-982-5503	B-12	26
5365-00-993-4334	B-4	7
5965-01-005-1469	B-27	9

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STOCK NUMBER	FIGURE NO.	ITEM NO.
6730-01-006-4230	B-4	14

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
BN025025C	51588	B-15	3
BSW	80204	B-8	21
C17042-012-4	78553	B-11	5
C280AE/P10K	73445	B-12	9
C280AE/P10K	73445	B-13	21
C280AE/P471K	73445	B-13	23
C426ARG8	88813	B-12	2
C575-1024-4	88813	B-9	2
C7419-62-4	88813	B-6	16
C8028-6-4	78553	B-10	6
C8097-6-24	78553	B-10	2
C8097-6-24	78553	B-13	17
C950-1024-4	78553	B-18	18
C98L5-632-4	78553	B-9	4
DF103B	49671	B-12	43
DKM	58854	B-8	4
E51-J-IC-SHXT11	73559	B-13	6
GP210	90201	B-12	1
GP315	90201	B-12	4
GP3417	90201	B-12	6
GP415	90201	B-12	5
G14-38G00	25734	B-28	10
G1T-38000	25734	B-28	5
G3-38000	25734	B-28	3
G8-38000	25734	B-28	6
JISC6451W16T100	81340	B-12	3
JISC6451W25T1000	23783	B-12	7
MPS2923	047113	B-12	13
MPS6514	04713	B-12	14
NS19059-44	96906	B-7	16
MS19061-2	96906	B-15	9
MS19061-4	96906	B-16	5
MS19061-4	96906	B-19	5
MS35335-30	96906	B-12	52
MS35337-37	96906	B-5	10
MSS35337-37	96906	B-8	11
MS51964-48	96906	B-4	16
MS51964-4d	96906	B-7	27
MTC-1-3KPORM30PCT	76055	B-12	39
M313-002	75915	B-12	11
NRZ31A	02735	B-12	53
PH312	80063	B-1	2
PKM10P1	14655	B-9	5
P1000-1	82389	B-10	9
RCA4CBl4	86684	B-12	15
RC07GF102K	81349	B-12	32
RC07GF103K	81349	B-12	28
RCO7GF1OSK	81349	B-12	25
RCOTGFI21K	81349	B-12	26
RC07GF152K	81349	B-12	23
RCO7GF222K	81349	B-12	24
RC07GF473K	81349	B-12	18
RC07GF681K	81349	B-12	19
RC01GF682K	81349	B-12	22
RC20GF882K	81349	B-13	22
R82ZJ	52676	B-6	4
SR6P3-4	28520	B-10	14
ST-5880	25734	B-28	11
ST-5884	25734	B-28	12
S1022-1	82389	B-10	10
T-38000-N	25734	B-28	2
T-380O-P	25734	B-28	1
T-33800-S	25734	B-28	4
T-38000-Y	25734	B-28	1
T-38001-G	25734	B-28	9
T-38001-M	25734	B-28	8
TIG	73559	B-13	5
Z2157	70485	B-18	9
LFWLA100	54753	B-12	10
IN3193	81349	B-12	42
IN34A	81349	B-12	41
IN9668	81349	B-12	40
100-4R5H	25734	B-5	19
104-6R6H	25734	B-3	34
104-6R6H	25734	B-7	19
104-6R6H	25734	B-9	31
1088	83330	B-9	6
1108-00	78189	B-18	3
1108-00	78189	B-27	16
112-4R3H	25734	B-7	2
112A	82389	B-10	20
116-10R7H	25734	B-3	13
116-10R8H	25734	B-9	10
116-2R3H	25734	B-24	4
116-4R2H	25734	B-24	6
116-4R4H	25734	B-21	5
116-6R12H	25734	B-2	8
116-6R2H	25734	B-5	3
116-6R4H	25734	B-17	9
116-6R44	25734	B-5	9
116-6R44	25734	B-10	18
116-6R6H	25734	B-8	10
116-6R6H	25734	B-9	8
116-6R6H	25734	B-27	13
116-8AI2H	25734	B-2	3
116-8R12H	25734	B-27	3
116-8R5H	25734	B-18	2
116-8R6H	25734	B-13	9
121-4RIZH	25734	B-9	13
121-6RI2H	25734	B-6	25
I21-6R5H	25734	B-3	15
121-6R5H	25734	B-10	12
121-6RSH	25734	B-13	15
121-6R8H	25734	B-10	5
121-BRBH	25734	B-3	24
1216-00	78189	B-3	14
123-4R4H	25734	B-7	23
125-6R8H	25734	B-5	24
136-6R8H	25734	B-2	11
140-1OR6A	25734	B-18	11
140-1OR6H	25734	B-3	20
140-4R3A	25734	B-25	4
140-4R6L	25734	B-22	5
140-6R4H	25734	B-10	16
140-BR4H	25734	B-3	30
140-8R4H	25734	B-10	21
1411	70485	B-9	19
151-8-16	25734	B-27	8
171-4-2L	25734	B-18	16
171-4-2L	25734	B-23	2
171-416-4L	25734	B-7	14
171-6-4L	25734	B-8	19
171A6-2L	25734	B-6	8
171A6-3L	25734	B-6	11
171A&-3L	25734	B-26	5
171F6-3L	25734	B-6	2
175-6-17H	25734	B-2	14
175-6-9K	25734	B-13	2
176-7-28	25734	B-9	25

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PART NUMBER	FSCM	FIG. NO.	ITEM NO.	PART NUMBER	FSCM	FIG. NO.	ITEM NO.
19156-10	25734	B-6	9	38063	25734	B-6	12
192-4-8	25734	B-18	12	38067G1	25734	B-7	11
192-8-10	25734	B-4	4	38067G2	25734	B-5	28
19300-10A	d1875	B-10	8	38075	25734	B-7	10
19400-3	a1875	B-10	7	38088P1	25734	B-4	2
2N4037	81349	B-12	16	38088P[	25734	B-8	3
2N5497	81349	B-12	12	38091P2	25734	B-19	7
2N6110	81349	B-12	17	38129G4	25734	B-5	21
200-10HA	25734	B-3	1i	38135	25734	B-22	11
200-O10HA	25734	B-18	19	38136P1	25734	B-22	2
200-3HA	25734	B-23	13	38137G1	25734	B-22	4
200-6HH	25734	B-12	54	38141P1	25734	B-22	7
200-8HH	25734	B-27	15	38142G2	25734	B-5	12
201-100HA	25734	B-20	5	38147G1	25734	B-5	16
207C8	05820	B-12	49	38159P1	25734	B-3	21
2157	83330	B-10	19	38162	25734	B-8	18
22NN02	72962	B-17	5	38164P5	25734	B-5	23
22NN02	72962	B-20	4	38167G1	25734	B-3	31
22NTNM4	72962	B-5	17	38112P1	25734	B-3	27
22TU-040	76962	B-15	11	38177P7	25734	B-3	28
220-4	25734	B-5	18	38181P4	25734	B-25	1
221-6H	25734	B-17	10	38182P2	25734	B-8	5
221-616	25734	B-13	20	38184P1	25734	B-6	21
23-00-54200	83486	B-6	23	38195P1	25734	B-17	8
230-4	25734	B-22	6	38198G2	25734	B-5	11
230-9	25734	B-20	6	38206P3	25734	B-18	13
236E7R5000J	56289	B-11	6	38207G1	25734	B-9	33
260-7H	25734	B-3	12	38212	25734	B-3	33
260-8	25734	B-11	10	38212	25734	B-7	18
267-3	25734	B-3	26	38212	25734	B-9	30
3013	24221	B-12	45	38213P[	25734	B-2	9
30473P34	25734	B-9	22	38215	25734	B-2	20
30473P52A	25734	B-25	5	38217G[	25734	B-5	27
30473P72	25734	B-14	9	38218G1	25734	B-21	1
30473P73H	25734	B-3	6	38221P1	25734	B-5	13
30473P79	25734	B-5	15	38222	25734	B-21	4
314-005	75915	B-13	18	38223P2	25734	B-21	3
3150-305-304	12136	B-2	1	38224	25734	B-5	2
3150-305-304	12136	B-27	1	38225G1	25734	B-5	26
32090P48	25734	B-3	7	38230G2	25734	B-8	6
33500-25A	25734	B-17	4	38233	25734	B-6	26
33500P52	25734	B-15	15	38234G2	25734	B-2	10
33500P56H	25734	B-9	23	3823SG1	25734	B-24	5
33500P56H	25734	B-15	2	38246G1	25734	B-25	2
33500P674	25734	B-5	8	38254G1	25734	B-25	3
341001L	75915	B-13	16	38255P1	25734	B-16	6
35-0010	34263	B-11	4	38255P1	25734	B-19	6
3502-05-09	78189	B-5	25	38261G1	25734	B-7	26
3502-20-04	78189	B-8	9	38261G2	25734	B-4	17
3540-C8-CO-0511	78189	B-6	13	38271G2	25734	B-3	16
35473-29	25734	B-9	26	38278P1	25734	B-5	14
				38278P2	25734	B-4	9
35473P30H	25734	B-4	18	38283P1	25734	B-3	32
35473P30H	25734	B-7	25	38317G1	25734	B-5	7
35473P32H	25734	B-5	29	38350G2	25734	B-7	20
35473P35H	25734	B-4	3	38351G1	25734	B-14	1
35473P36H	25734	B-3	4	38353G1	25734	B-14	10
35473P42	25734	B-18	10	38358	25734	B-14	4
35473P46	25734	B-9	9	38359P1	25734	B-14	7
35473P46H	25734	B-3	10	38360	25734	B-14	3
35473P48	25734	B-4	12	38373	25734	B-7	22
35473P48	25734	B-7	3	38387	25734	B-14	8
35473P48	25734	B-15	22	38414G4	25734	B-17	7
35473P51H	25734	B-3	25	38421P5	25734	B-27	11
35473P59A	25734	B-20	2	38450	25734	B-23	12
35473P62L	25734	B-3	3	38458G2	25734	B-23	4
35473P65	25734	B-4	19	38471	25734	B-6	3
35473P65	25734	B-7	24	38473-16H	25734	B-7	5
35473P65	25734	B-20	10	38473-17H	25734	B-9	20
3600-2	84613	B-12	47	38473-19L	25734	B-8	8
38010P2	25734	B-6	22	38473-7A	25734	B-10	17
38016P1	25734	B-22	9	38473P15	25734	B-15	19
38040G4	25734	B-6	14	38473P 6A	25734	B-9	7
38041G1	25734	B-23	1				
38052P2	25734	B-23	16				
38055P3	25734	B-23	5				
38057	25734	B-23	9				
38058P1	25734	B-23	6				
38061	25734	B-23	11	38486P1	25734	B-25	6
38062	25734	B-23	8	38492	25734	B-6	6

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38494	25734	B-5	5	39220P1	25734	B-7	17
38806P1	25734	B-6	1	39222P1	25734	B-7	13
38820G2	25734	B-7	t	39224G8	25734	B-O10	15
38823	25734	B-26	4	39225	25734	B-8	17
38830G2	25734	B-14	5	39232P1	25734	B-15	14
38840	25734	B-9	21	39236P3	25734	B-6	7
388446G4	25734	B-26	3	39238P1	25734	B-7	8
38990	25734	B-16	3	39246P1	25734	B-6	24
38990	25734	B-19	3	39295G6	25734	B-2	6
				39296P2	25734	B-11	2
39001	25734	B-8	22	39297P3	25734	B-11	3
39002G1	25734	B-8	23	39302G1	25734	B-10	4
39026P1l	25734	B-11	1	39344G1	25734	B-11	7
39041P2	21192	B-2	15	39474P1	25734	B-2	18
39042	25734	B-2	16	39474P2	25734	B-11	a
39058G1	25734	B-2	7	39474P3	25734	B-11	9
39073G1	25734	B-3	1	39485P3	25734	B-9	18
39076G2	25734	B-18	1	39488P29	25734	B-2	19
39080P1	25734	B-3	2	40627P16	25734	B-24	3
39081	25734	B-3	5	40663	25736	B-27	12
39082G0	25734	B-18	4	40921P7H	25734	B-27	14
39085G1	25734	B-2	17	41086-4	25734	B-17	6
39086P1	25734	B-3	B	41086P7	25734	B-13	10
39087G1	25734	B-17	1	41449P2	25734	B-26	1
39089P1	25734	B-17	3	41846P14	25734	B-10	11
39090P1	25734	B-17	2	41846P17H	25734	B-4	13
39093P1	25734	B-3	17	41846P17H	25734	B-8	12
39095P1	25736	B-3	19	42274G3	25734	B-6	10
39096G3	25734	B-18	[4	42564	25734	B-9	29
39098P1	25734	B-18	6	42656	23734	B-9	16
39099	25734	B-B18	15	42722P1	25734	B-9	12
39105G1	25734	B-18	5	42766G6	25734	B13	19
39105G2	25734	B-18	7	42773G7	25734	B-3	23
39108	25734	B-9	3	42829	25734	B-3	22
39112G0	25734	B-3	18	42848	25734	B-16	9
39115G1	25734	B-15	7	42848	25734	B-19	10
39117G1	25734	B-15	20	42849	25734	B-16	8
39122G2	25734	B-15	13	42849	25734	B-19	9
3912601	25734	B-15	16	4285207	25734	B-9	17
3912BP1	25734	B-18	8	42861	25734	B-9	15
39134	25734	B-15	4	42890	25734	B-9	14
39135P1	25734	B-15	1	42897P1	25734	B-8	2
39137P1	25734	B-15	21	42897P2	25734	B-4	1
39138P1	25734	B-15	10	42954G2	25734	B-13	24
39139	25734	B-15	18	42954P4	25734	B-13	4
39140	25734	B-15	8	42954P5	25734	B-13	3
39141P1	25734	B-15	12	42961P1	25734	B-23	10
39142G1	25734	B-6	20	63051P2	25734	B-2	4
39145G1	25734	B-6	18	43051P2	25734	B-27	4
3914807	25734	B-8	20	43051P3	25734	B-2	5
39149P1	25734	B-6	17	43051P3	25734	B-27	5
3915101	25734	B-7	4	43051P4	25734	B-2	2
39152P1	25734	B-6	15	43051P4	25734	B-27	2
39153P1	25734	B-8	15	4306805	25734	B-2	13
39154	25734	B-8	16	43073P1	25734	B-17	11
3915501	25734	B-4	5	4307705	25734	B-24	1
39156G1	25734	B-20	1	43152G2	25734	B-9	32
3915901	25734	B-20	9	43154P5	25734	B-13	8
39164P1	25734	B-20	3	43157G3	25734	B-8	13
39165P1	25734	B-20	7	4315704	25734	B-4	14
39166P1	25734	B-20	8	43163013	25734	B-9	27
39167P1	25734	B-4	8	43173G7	25734	B-13	1
39169G1	25734	B-4	11	43187	25734	B-3	29
3917tP1	25734	B-14	6	43419P1	25734	B-12	50
3917704	25736	B-16	2	4346601	25734	B-16	4
3917704	25734	B-19	2	6346601	25734	B-19	4
3918064	25734	B-16	1	4347701	25734	B-10	1
39180G5	25734	B-19	1	43478P1	25734	B-12	48
39197	25734	B-16	7	43956P3	25734	B-13	14
39198	25734	B-15	6	43956P4	25734	B-13	12
39199P1	25734	B-15	5	43956P5	25734	B-13	13
39203	25734	B-4	10	4405	44655	B-12	34
				39205	25734	B-5	20
39206	25734	B-22	12	44220P10	25734	B-27	10
3920803	25734	B-22	1	44225P1	25734	B-9	1
39211P1	25734	B-4	15	4422605	25734	B-10	13
39211P2	25734	B-7	7	4422801	25734	B-2	12
39212P1	25734	B-2	21	44229G3	25734	B-9	II
39219	25734	B-14	2	4423107	25734	B-3	9
39219	25734	B-21	2	4423201	25734	B-13	25

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44233G1	25734	B-7	9	53-77-R47-05-TYPEBWH	25734	B-12	36
44233G2	25734	B-24	2	5555-12	79136	B-22	8
44234G2	25734	B-18	17	5555-15	79136	B-5	I
44243P1	25734	B-7	12	5555-15	79136	B-22	3
44244P1	25734	B-27	9	5555-18	79136	B-25	7
495334-7	32735	B-12	44	5555-37	79136	B-5	4
5L2FF	96881	B-9	28	5555-50	79136	B-4	7
5101-112	79136	B-26	2	59-028-125-0625	72962	B-8	7
5103-25	78446	B-20	11	6S6	24455	B-10	3
5103-31	79136	B-6	5	61180-1	84134	B-12	46
5105-18	79136	B-5	6	747-RW	75543	B-9	24
5133-15	79136	B-6	19	747-RW	75543	B-27	7
5133-43	79136	B-4	6	77-30J01-000-047	25042	B-12	38
5133-9	79136	B-15	17	868-2	70485	B-13	11
5139-18	79136	B-23	7	9771EEA2491	54753	B-12	8

LATEST NATIONAL STOCK NUMBER ASSIGNEMENTS

STOCK NUMBER	FIG. NO.	ITEM NO.	STOCK NUMBER	FIG. NO.	ITEM NO.
5310-00-054-5177	B-23	14	6730-00-282-7988	B-1	2
5340-00-056-9900	B-23	3	5310-00-353-5366	B-10	6
5965-00-089-7873	B-1	4	5310-00-353-5375	B-9	4
3110-00-100-6147	B-7	16	5310-00-353-5376	B-10	2
5905-00-104-8368	B-12	31	5310-00-353-5376	B-13	17
5905-00-105-7764	B-12	24	6730-00-360-9994	B-8	14
5905-00-110-0388	B-12	20	6730-00-360-9994	B-23	15
5905-00-110-7622	B-12	21	5930-00-372-4338	B-13	7
5905-00-111-4727	B-12	30	5315-00-410-3091	B-22	10
6730-00-111-5904	B-1	1	5310-00-411-6490	B-7	15
5905-00-114-0710	B-12	29	5310-00-413-3033	B-5	22
5905-00-115-8055	B-12	27	5310-00-465-5233	B-11	5
6250-00-116-5358	B-10	4	5340-00-598-6284	B-13	11
6730-00-116-5373	B-8	1	5365-00-625-6865	B-20	11
6730-00-117-2856	B-22	9	5910-00-860-7806	B-12	9
5910-00-117-9399	B-3	28	5910-00-860-7806	B-13	21
5340-00-118-8779	B-2	15	5910-00-860-7807	B-13	23
5905-00-121-9945	B-12	33	5905-00-990-0217	B-12	39
5930-00-128-6225	B-13	26	5340-00-995-8329	B-9	24
5920-00-138-1655	B-12	11	5340-00-995-8329	B-27	7
5905-00-141-0592	B-12	37			
5905-00-141-0717	B-12	18			
6730-00-150-1779	B-1	3			
6240-00-155-7777	B-8	21			
5905-00-171-1985	B-13	22			

LATEST PART NUMBER ASSIGNMENTS

PART NUMBER	FSCM	FIG. NO.	ITEM NO.	PART NUMBER	FSCM	FIG. NO.	ITEM NO.
C9031-6Z4	78553	B-5	22	38431P14	25734	B-8	1
RCR07G7R5JS	81349	B-12	33	3847322	25734	B-23	3
RCR07G183KR	81349	B-12	35	38473-23	25734	B-8	14
RCR07G272JS	81349	B-12	30				
RCR07G331JS	81349	B-12	29	38473-24L	25734	B-23	14
RCR07G393J5S	81349	B-12	27	3847325	25734	B-7	15
RCR07G470JS	81349	B-12	31	39226P1	25734	B-1	3
RCR07G682JS	81349	B-12	21	42552G1	25734	B-1	4
RCR20G122JS	81349	B-12	37	43150G7	25734	B-1	1
RC07G104JS	81349	B-12	20	43178P3	73559	B-13	7
38397P1	25734	B-13	26				

ADDITIONAL LATEST NATIONAL STOCK NUMBER ASSIGNMENT

STOCK NUMBER	FIG. NO.	ITEM NO.
5305-00-363-8546	B-7	21

ADDITIONAL LATEST PART NUMBER ASSIGNMENTS

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
106-4R8H	25734	B-7	21
116-6R84	25734	B-12	51
121-6R5H	25734	B-7	6
180B1-4	25734	B-22	10
35473P72	25734	B-19	8
38473-P23	25734	B-23	15
44220P9	25734	B-27	6

*U S GOVERNMENT PRINTING OFFICE: 1979 0-279-191

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LBAD (14)
TOAD (14)
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USA Dep (2)
Sig Sec USA Dep (2)
Sig Dep (2)
ATS (1)
MAAG (1)
WRAMC (1)
USARMIS (1)
USAERDAA (1)
USAERDAW (I)
Sig FLDMS (1)
Units org under fol TOE (1 ea):
11-95
11-117
11-127
11-500 (AA-AC)
29-134
29-136

ARNG & USAR: None.

For explanation of abbreviations used, see AR 310-50.

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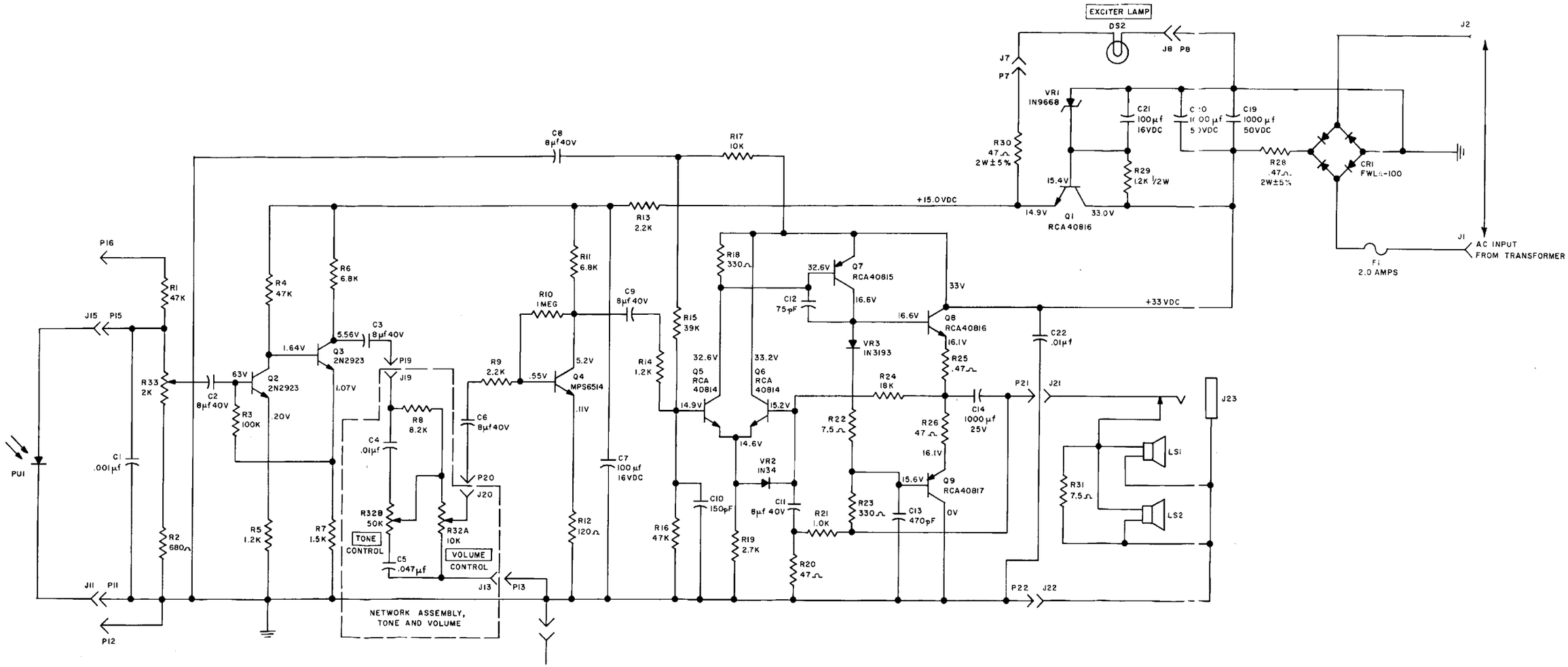
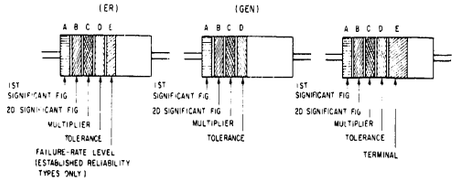


EL6730-243-34-TM-33

Figure 1-7. Audio amplifier, schematic diagram



COLOR CODE MARKING FOR COMPOSITION TYPE RESISTORS

COLOR-CODE MARKING FOR FILM-TYPE RESISTORS.

TABLE I
COLOR CODE FOR COMPOSITION TYPE AND FILM TYPE RESISTORS.

BAND A		BAND B		BAND C		BAND D		BAND E		
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)	COLOR	FAILURE RATE LEVEL	TERM
BLACK	0	BLACK	0	BLACK	1			BROWN	M=1.0	
BROWN	1	BROWN	1	BROWN	10			RED	P=0.1	
RED	2	RED	2	RED	100			ORANGE	R=0.01	
ORANGE	3	ORANGE	3	ORANGE	1,000			YELLOW..	S=0.001	
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	±10 (COMP. TYPE ONLY)	WHITE		SOLDERABLE
GREEN	5	GREEN	5	GREEN	100,000	GOLD	±5			
BLUE	6	BLUE	6	BLUE	1,000,000	RED	±2 (NOT APPLICABLE TO ESTABLISHED RELIABILITY)			
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7							
GRAY	8	GRAY	8	SILVER	0.01					
WHITE	9	WHITE	9	GOLD	0.1					

BAND A — THE FIRST SIGNIFICANT FIGURE OF THE RESISTANCE VALUE (BANDS A THRU D SHALL BE OF EQUAL WIDTH.)

BAND B — THE SECOND SIGNIFICANT FIGURE OF THE RESISTANCE VALUE

BAND C — THE MULTIPLIER (THE MULTIPLIER IS THE FACTOR BY WHICH THE TWO SIGNIFICANT FIGURES ARE MULTIPLIED TO YIELD THE NOMINAL RESISTANCE VALUE.)

BAND D — THE RESISTANCE TOLERANCE.

BAND E — WHEN USED ON COMPOSITION RESISTORS, BAND E INDICATES ESTABLISHED RELIABILITY FAILURE-RATE LEVEL (PERCENT FAILURE PER 1,000 HOURS) ON FILM RESISTORS, THIS BAND SHALL BE APPROXIMATELY 1-1/2 TIMES THE WIDTH OF OTHER BANDS, AND INDICATES TYPE OF TERMINAL

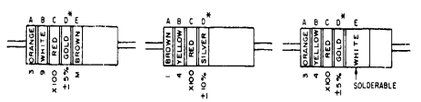
RESISTANCES IDENTIFIED BY NUMBERS AND LETTERS (THESE ARE NOT COLOR CODED.)

SOME RESISTORS ARE IDENTIFIED BY THREE OR FOUR DIGIT ALPHA NUMERIC DESIGNATORS. THE LETTER R IS USED IN PLACE OF A DECIMAL POINT WHEN FRACTIONAL VALUES OF AN OHM ARE EXPRESSED. FOR EXAMPLE:

2R7 = 2.7 OHMS 10R0 = 10.0 OHMS

FOR WIRE-WOUND-TYPE RESISTORS COLOR CODING IS NOT USED. IDENTIFICATION MARKING IS SPECIFIED IN EACH OF THE APPLICABLE SPECIFICATIONS

EXAMPLES OF COLOR CODING



NOMINAL RESISTANCE 3,900 OHMS
RESISTANCE TOLERANCE ±5%
FAILURE RATE LEVEL M

NOMINAL RESISTANCE 1,400 OHMS
RESISTANCE TOLERANCE ±10%

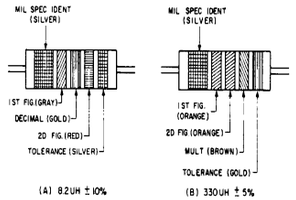
NOMINAL RESISTANCE 3,400 OHMS
RESISTANCE TOLERANCE ±5%
TERMINAL SOLDERABLE

COMPOSITION-TYPE RESISTORS

FILM-TYPE RESISTORS

* IF BAND D IS OMITTED, THE RESISTOR TOLERANCE IS ±20% AND THE RESISTOR IS NOT MIL-STD.

A. COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS.



COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES. AT A, AN EXAMPLE OF THE CODING FOR AN 8.2UH CHOKE IS GIVEN. AT B, THE COLOR BANDS FOR A 330UH INDUCTOR ARE ILLUSTRATED

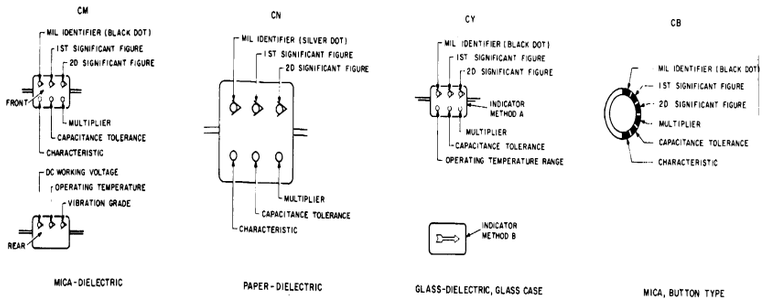
TABLE 2
COLOR CODING FOR TUBULAR ENCAPSULATED R.F. CHOKES.

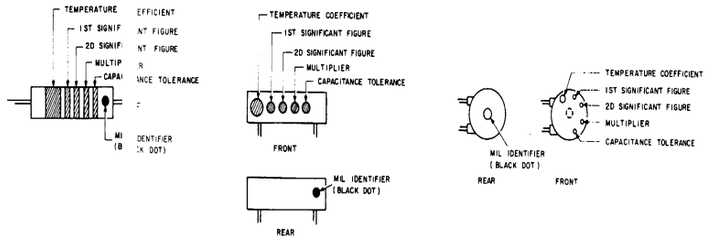
COLOR	SIGNIFICANT FIGURE	MULTIPLIER	INDUCTANCE TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	1
RED	2	100	2
ORANGE	3	1,000	3
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE			20
SILVER			10
GOLD	DECIMAL POINT		5

MULTIPLIER IS THE FACTOR BY WHICH THE TWO COLOR FIGURES ARE MULTIPLIED TO OBTAIN THE INDUCTANCE VALUE OF THE CHOKE COIL.

B. COLOR CODE MARKING FOR MILITARY STANDARD INDUCTORS.

CAPACITORS, FIXED, VARIOUS-DIEL CTRICS, STYLES CM, CN, CY, AND CB.





C. COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS

TABLE 3 — FOR USE WITH STYLES CM, CN, CY AND CB.

COLOR	MIL ID	1ST SIG FIG	2D SIG FIG	MULTIPLIER	CAPACITANCE TOLERANCE				CHARACTERISTIC			2 DC WORKING VOLTAGE	OPERATING TEMP RANGE	VIBRATION GRADE
					CM	CN	CY	CB	CM	CN	CB	CM	CY, CM	CM
BLACK	CM, CY, CB	0	0	1			±20%	±20%		A			-55°TO+70°C	10-55 Hz
BROWN		1	1	10					B	E	B			
RED		2	2	100	±2%		±2%	±2%	C				-55°TO+85°C	
ORANGE		3	3	1,000		±30%				D	D	300 *		
YELLOW		4	4	10,000					E				-55°TO+125°C	10-2,000Hz
GREEN		5	5		±5%				F			500		
BLUE		6	6										-55°TO+150°C	
PURPLE (VIOLET)		7	7											
GRAY		8	8											
WHITE		9	9											
GOLD				0.1			±5%	±5%						
SILVER	CN			0.01	±10%	±10%	±10%	±10%						

TABLE 4 — TEMPERATURE COMPENSATING, STYLE CC.

COLOR	TEMPERATURE COEFFICIENT 4	1ST SIG FIG	2D SIG FIG	MULTIPLIER 1	CAPACITANCE TOLERANCE		MIL ID
					CAPACITANCES OVER 10 UUF	CAPACITANCES 10 UUF OR LESS	
BLACK	0	0	0	1		±2.0 UUF	CC
BROWN	-30	1	1	10	±1%		
RED	-80	2	2	100	±2%	±0.25 UUF	
ORANGE	-150	3	3	1,000			
YELLOW	-220	4	4				
GREEN	-330	5	5		±5%	±0.5 UUF	
BLUE	-470	6	6				
PURPLE (VIOLET)	-750	7	7				
GRAY		8	8	0.01*			
WHITE		9	9	0.1*	±10%		
GOLD	+100			0.1		±1.0 UUF	
SILVER				0.01			

1. THE MULTIPLIER IS THE NUMBER BY WHICH THE TWO SIGNIFICANT (SIG) FIGURES ARE MULTIPLIED TO OBTAIN THE CAPACITANCE IN UUF.
2. LETTERS INDICATE THE CHARACTERISTICS DESIGNATED IN APPLICABLE SPECIFICATIONS: MIL-C-5, MIL-C-25D, MIL-C-11272B, AND MIL-C-10950C RESPECTIVELY.
3. LETTERS INDICATE THE TEMPERATURE RANGE AND VOLTAGE-TEMPERATURE LIMITS DESIGNATED IN MIL-C-11015D.
4. TEMPERATURE COEFFICIENT IN PARTS PER MILLION PER DEGREE CENTIGRADE.

* OPTIONAL CODING WHERE METALLIC PIGMENTS ARE UNDESIRABLE.

ESC-FM 913-73

Figure 4-5. Color-code markings for MIL-STD resistors, inductors, and capacitors.

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