

# FILM-TECH

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**THESE MANUALS ARE DESIGNED TO FACILITATE THE EXCHANGE OF INFORMATION RELATED TO CINEMA PROJECTION AND FILM HANDLING, WITH NO WARRANTIES NOR OBLIGATIONS FROM THE AUTHORS, FOR QUALIFIED FIELD SERVICE ENGINEERS.**

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PLAINVILLE, CONNECTICUT 06062

# SERVICE BULLETIN

INDEX      CHANGES IN SERVICE & PARTS MANUAL  
MODEL 70-15, 70-25    FORM 2515F

Several changes or modifications, have been made since the printing of this manual. These changes are noted below and refer to the particular page and item which is affected. May we suggest that you check these off against the specific pages referred to.

<u>PAGE</u>	<u>ITEM</u>	<u>ALTERATION</u>
16	4	Change S202-6 to S202-5
16	18	Change S355-250 to S356-250
20	48	Change (2) S251-832-6 to (2) S274N-832-6
20	49	Delete (2) S201-8
22	1	Change S251-356-14 3-56 x 7/8 to S251-356-12 3-56 x 3/4
22	3	Change S195-12 (2) to S195-14 (2)
22	5	Change 19481 to S195-4 (2) or S195-14
26	1	Change S301-5/16-24 to S321-5/16-24
26	3	Change S251-256-2 to S211B-256-2
26	4	Change S199-2 to S198-2
28	1	Change 48022 to 48022-P
30	4	Change 20761 to S253-172-5
37-A	10	Change 48193-1 to 48193
40	10	Change 11026 to 11026-1
40	7	Change S254-540-2 to M.S. 267 5-40 x 1/4 self tapping screw
40	16	Change 38001 to S360-9
40	20	Change S324-5-40 Hex Nut to S320-540, 5-40 "Keps" Nut
42	23	Change 47801 to 47916
42	23	Change 47762 to 47915
44	4	Change 23371 to 47936

**AUDIO VISUAL · EDUCATIONAL TELEVISION PRODUCTS · FILM EDITING EQUIPMENT**

KALART VICTOR® 16MM SOUND MOTION PICTURE PROJECTORS · CRAIG® SUPER 8MM, 16MM FILM EDITORS  
TELE-BEAM® LARGE SCREEN TV PROJECTORS · 16MM TV FILM CHAIN PROJECTOR

3/20/70

137

<u>PAGE</u>	<u>ITEM</u>	<u>ALTERATION</u>
44	11	Change 47803-A to 47935-A
46	4	Change 11120 to S195-7
46	14	Change M.S. 19 to M.S. 133
48	5	Change 36201 to S705-1-95, 1 Watt
48	51	Change 11026 to 11026-1
48A	9	Same as change on page 48
48A	5	" " " " " "
48A	51	" " " " " "
49	5	" " " " " "
49	9	" " " " " "
49	51	" " " " " "
49A	5	" " " " " "
49A	9	" " " " " "
49A	51	" " " " " "
49B	5	" " " " " "
49B	9	" " " " " "
49B	51	" " " " " "
50		Change 510K to 560K, 1 Watt
53		Under projection lens 70-25, transfer 2" F:1.6 field flattner to line below zoom lens. (Optional)
54	19A	Change 46230 to 20120 2" standard lens

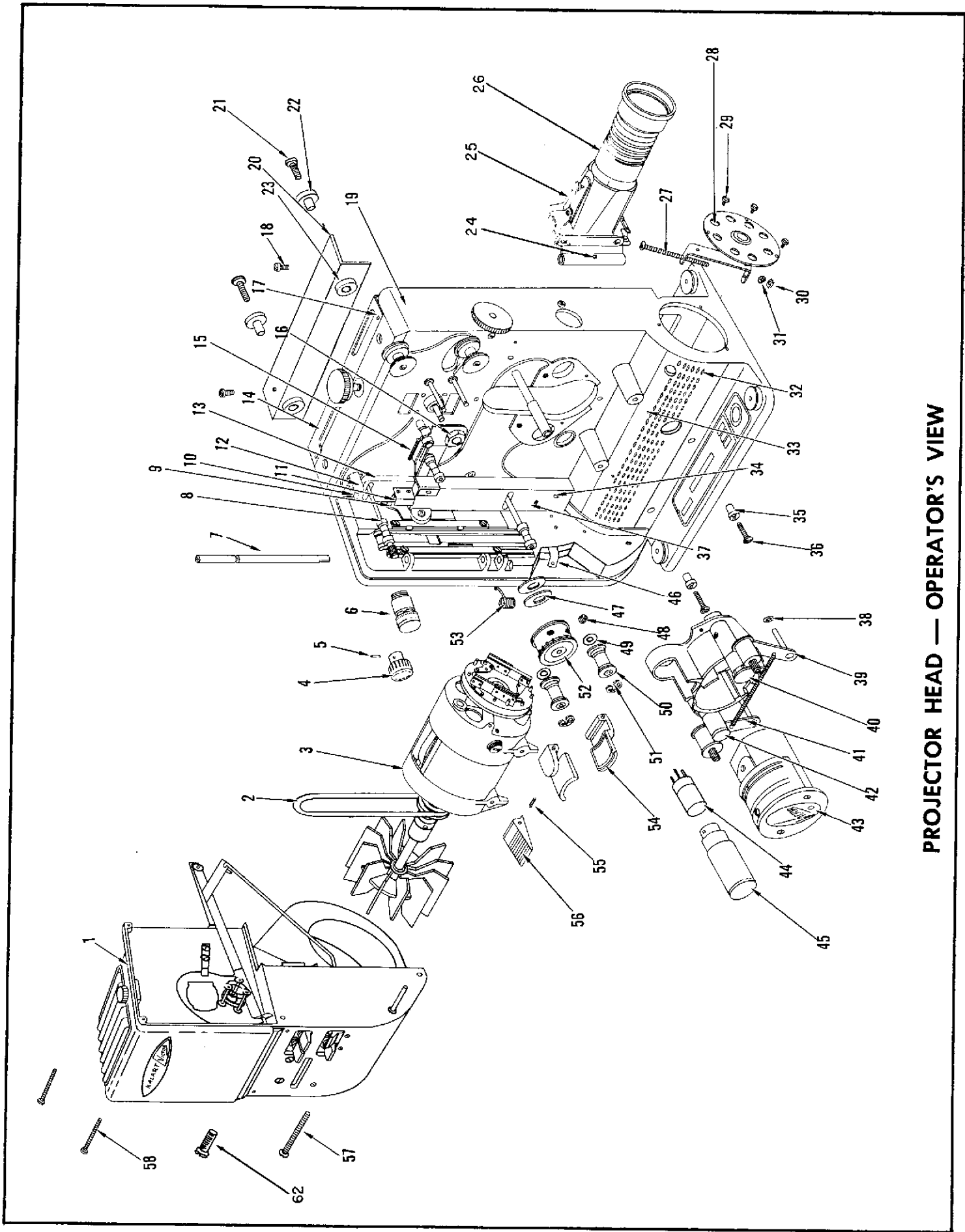
# PROJECTOR HEAD — OPERATOR'S VIEW

No.	Part No.	Part Name	Page	Qty.	No.	Part No.	Part Name	Page	Qty.
1	47689A	Projector mech. assem. complete		1	33	S290-0-3	#0 x 3/16 Drive screw		2
2	47544-A	Lamp house casting assembly	33	1	34	S251-540-16	5-40 x 1" Round head screw		1
3	47609	O ring drive belt		1	35A	19015	Motor support sleeve		* 1
4	47629	Motor assembly	37	1	35	30520	Motor support sleeve		3
		Framing knob		1					
5	S277-540-2	5-40 x 1/8 Socket set screw		1	36A	S252-832-6	8-32 x 3/8 Flat head screw		1
6	46212	Pilot light cap		1	36	S250-832-8	8-32 x 1/2 Truss head screw		3
#7	47657	Lens mount pivot		1	37	S277-540-3	5-40 x 3/16 Socket set screw		1
8	46145AR	Automatic trip lever assembly	29	1	38	19482	Thrust washer		As req'd
9	19303	Lens mount lock plate spacer		2	39	26726AR	Sound sprocket tension arm assem	31	1
10	S254-540-2	5-40 x 1/8 Binder head screw		1	40	30368-A	Sound sprocket assembly		1
11	46160	Lens mount lock plate		1	41	26725AR	Reverse loop tension arm assem	31	1
12	28130	Pilot lamp		1	42	30369-A	Shaft assembly loop roll		1
13	46150-A	Trip cover assembly		1	43	30428-A	Sound core assembly	31	1
14	46376	Belt separator		1	44	19210	Photo electric cell		1
15	S253-540-12	5-40 x 3/4 Fillister head screw		2	45	46163-A	Photo cell cover		1
16	S321-5/16-24	5/16-24 Hex cap nut		1	46	47635	Starting lever	23	1
17	S251-440-3	4-40 x 3/16 Rd. head screw		2	47	19494	Thrust washer		As req'd
18	S254-832-6	8-32 x 3/8 Binder head screw		2	48	S277-832-2	8-32 x 1/8 Socket set screw		1
19	47505-A	Body casting assembly	17	1	49	19369	Shim washers		As req'd
20	47586	Casting mounting bracket		1	50	36159A	Film roll assembly		2
21	S254-832-8	8-32 x 1/2 Binder head screw		2	51	S235-3	#3 "E" ring		2
22	S196-2	Eyelet washer		2	52	36154	Feed sprocket (solid)		1
23	S589-2	Rubber grommet		2	53	47685	Lens mount spring		1
24	20046	Lens mount plate screw		1	54	47515-A	Film shoe assembly	31	2
*25	48033-AR	Lens mount assembly	29	1	54A	48034-A	Film shoe assembly - stainless steel		1
26	46230	Lens projection field flattener		1	55	S277-540-3	5-40 x 3/16 Socket set screw		1
		2" F1.6		1	56	47863	Starting lever tab		1
26A	20120	Lens projection standard 2" F1.6		1	57	S251-832-20	8-32 x 1 1/4 Round head screw		1
27	S2511-632-36	6-32 x 2 1/4 Brass round head screw		1	58	S253-540-12	5-40 x 3/4 Fillister head screw		2
28	19019-2R	Body plate assembly		1	62	S254-540-5	5-40 x 5/16 Binder head screw		1
29	S254-540-3	5-40 x 3/16 Binder head screw		3					
30	S324-632	6-32 Hex nut		1					
31	S200-6	#6 Internal tooth lockwasher		1					
32	47841	Silent-sound nameplate		1					

\*See page 29 for additional information.

#48031 Pivot - lens mount assem. new style 28-29

\* Note motor support sleeve 19015 must be used to effect proper ground between projector head and motor.

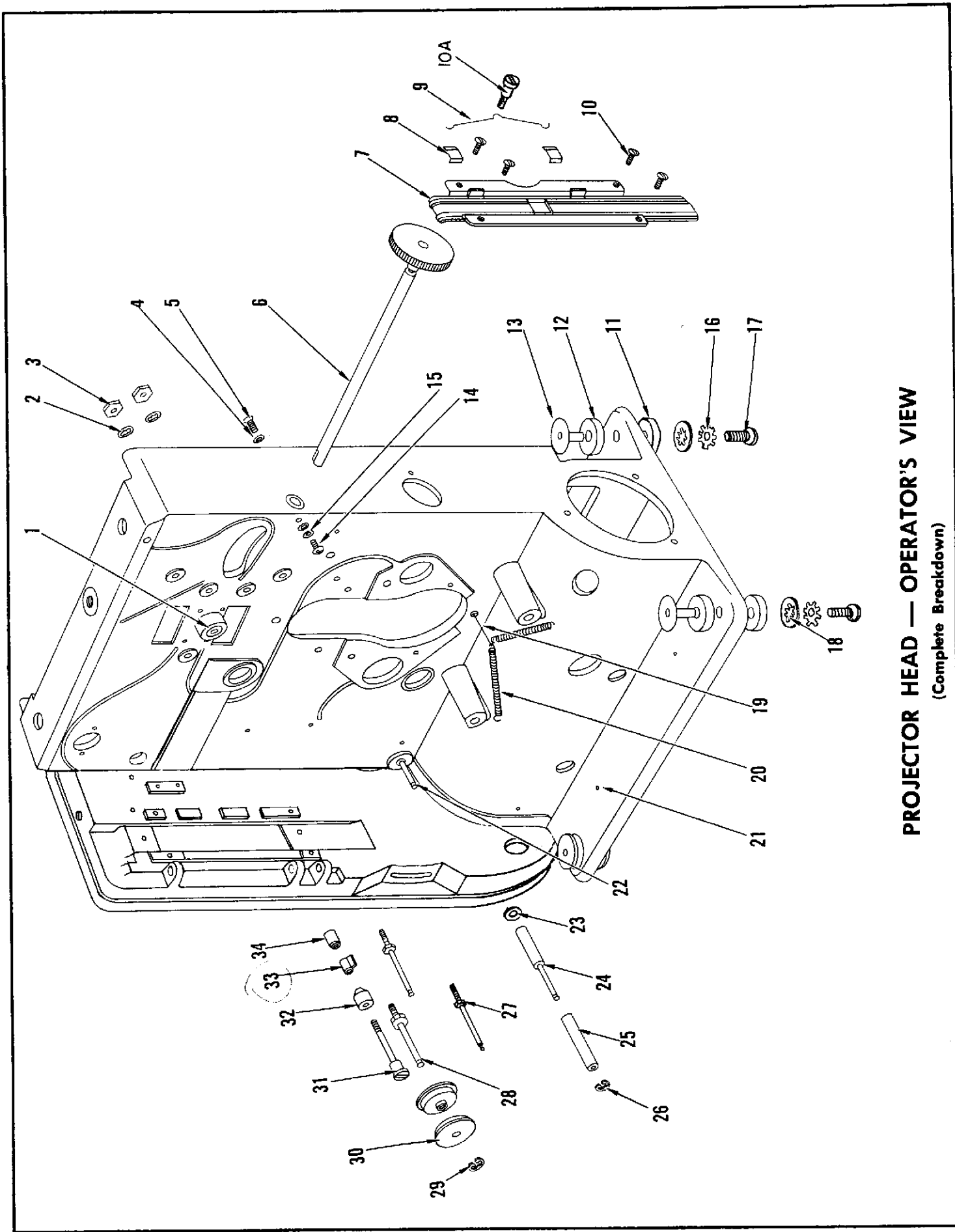


PROJECTOR HEAD — OPERATOR'S VIEW

# PROJECTOR HEAD — OPERATOR'S VIEW

(Complete Breakdown)

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	19480	Feed sprocket bearing	2	20	19104	Tension roll spring	1
2	S200-10	#10 Lockwasher	2	21	47505-A	Body casting assembly	1
3	S324-1032	10-32 Hex nut	2	22	46216	Automatic trip pivot	1
4	S202-6	#6 External tooth C'sunk lockwasher	1	23	S199-6	#6 Plain washer	1
5	S252-632-6	6-32 x 3/8 Flat head screw	1	24	26734	Film support roll shaft	1
6	48003-A	Hand operating shaft assembly	1	25	19086	Film support roll	1
7	47519	Film channel	1	26	S235-1	#1 "E" ring	1
8	19316	Film channel tension clip	2	27	36158	Film roller shaft	2
9	47998	Film channel tension clip spring	1	28	26749	Film trap roll shaft	1
10	S254-540-3	5-40 x 3/16" Binder head screw	4	29	S235-3	#3 "E" ring	1
10A	47999	Screw, shoulder	1	30	26208	Take off feed roll	4
11	47860	Bushing rubber	4	31	20047	Film guard screw	1
12	22091	Base support washer	4	32	19875	Film guard screw roller	1
13	47815-A	Base support sleeve assembly	4	33	36302	Film guard	1
14	20044	Hand shaft retaining screw	1	34	19089	Film guard spacer	1
15	S199-5	#5 Plain washer	As req'd				
16	S201-8	#8 Shakeproof external tooth lockwasher	4				
17	S254-832-10	8-32 x 5/8 Binder head screw	4				
18	S355-250	Fastex spring grip	4				
19	19105	Tension roll spring hook	1				

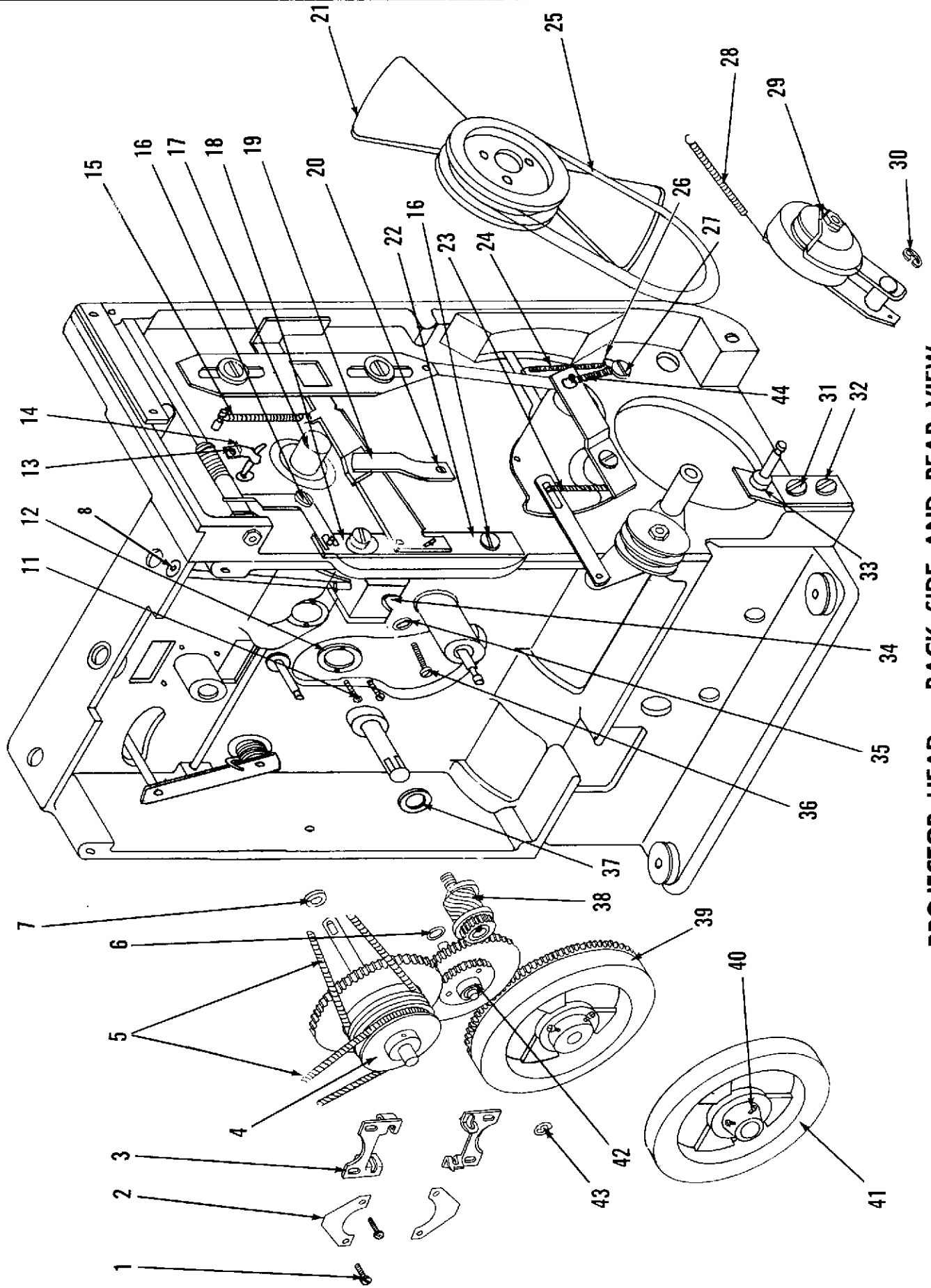


**PROJECTOR HEAD — OPERATOR'S VIEW**  
 (Complete Breakdown)

## PROJECTOR HEAD — BACK SIDE AND REAR VIEW

No.	Part No.	Part Name	Page	Qty.	No.	Part No.	Part Name	Page	Qty.
1	S254-832-4	8-32 x 1/4 Binder head screw		4	28	47952	Rewind spring		1
2	36155	Film shoe spring	31	2	29	46138A	Rewind disc bar & pulley assembly	35	1
3	36156	Film shoe bracket	31	2	30	S235-3	#3 "E" ring		1
4	26836-A	Takeup clutch assembly	27	1	31	S254-540-5	5-40 x 5/16 Binder head screw		1
5	23217	Takeup belt		2	32	S251-832-28	8-32 x 1 3/4 Round head screw		1
6	19482	Thrust washer		As req'd	33	47697A	Rewind pulley bracket assembly		1
7	19494	Thrust washer		As req'd	34	47603A	Oil reservoir	29	1
8	47895-A	Oiler assembly		1	35	S199-5	#5 Plain washer		1
11	S252-172-3	1-72 x 3/16 Flat head screw		2	36	S251-540-22	5-40 x 1 3/8 Round head screw		1
12	36153	Felt retaining washer		1	37	11120	Fibre shim		1
13	S254-540-2	5-40 x 1/8 Binder head screw		1	38	47535-A	Spiral intermediate gear & shaft assembly	27	1
14	47608	Oil tube support		1	39	47223-A	Filter flywheel assembly	27	1
15	47639	Shuttle spring		1	40	S253-540-5	5-40 x 5/16 Fillister head screw		2
16	47630	Shoulder screw		2	41	47222-A	Loop roll flywheel (includes 40)		1
17	47520A	Osc. sleeve & Cam hub assembly	23	1	42	19180-A	Sound sprocket drive gear assem	27	1
18	47631	Bowed spring		2	43	S235-3	#3 "E" ring		1
19	47638	Shuttle oscillator spring		1	44	19469	Safety shutter trip spring		1
20	S254-540-2	5-40 x 1/8 Binder head screw		1					
21	47527A	Shutter & cam (matched pair)	23	1					
22	48017A	Shuttle and mounting arm assembly	25	1					
23	47637	Spring starting lever plate		1					
24	23381	Spring, start lever		1					
25	47610	Flat drive belt		1					
26	47177	Lug, start lever spring		1					
27	S254-540-2	5-40 x 1/8 Binder head screw		1					



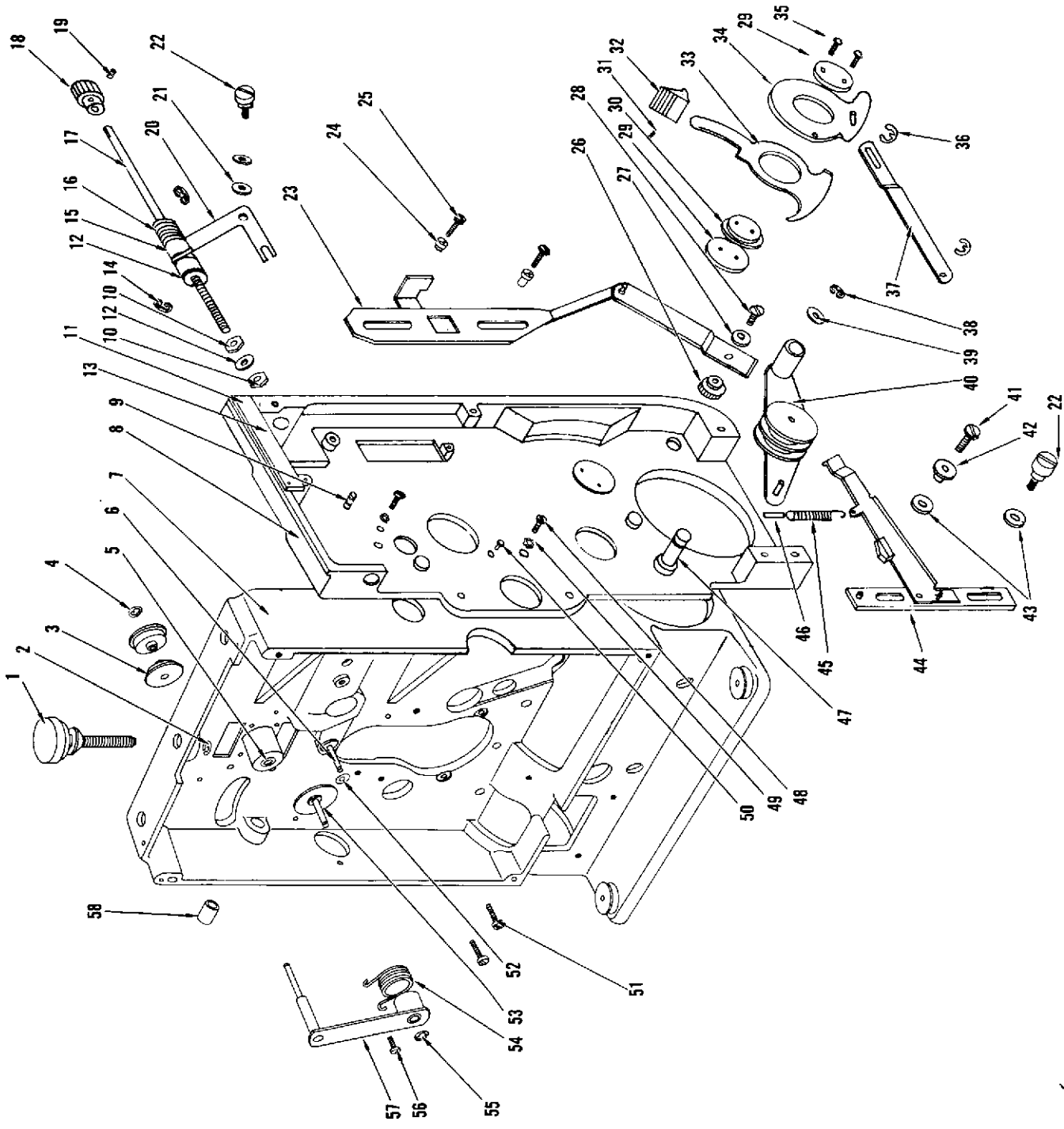


PROJECTOR HEAD — BACK SIDE AND REAR VIEW

# PROJECTOR HEAD — BACK SIDE AND REAR VIEW

(Complete Breakdown)

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	30254A	Reel arm locking screw assembly	1	33	47635	Starting lever	1
2	S235-3	#3 "E" ring	1	34	47634-A	Start lever plate sub assembly	1
3	26208	Take off feed roll	2	35	S254-540-4	5-40 x 1/4 Binder head screw	2
4	S235-3	#3 "E" ring	1	36	S235-1	#1 "E" ring	2
5	19480	Feed sprocket bearing	2	37	47619	Drive mech link	1
6	30463-A	Shaft and sleeve assembly	1	38	S235-3	#3 "E" ring	1
7	47532	Body casting	1	39	19369	Plain washer	As req'd
8	47504	Shutter housing casting	1	40	47555-A	Start lever idler assembly	1
9	47640	Shuttle spring pin	1	41	S254-540-6	5-40 x 3/8 Binder head screw	1
10	S318-1032	10-32 Elastic stop nut	2	42	47632	Framing eccentric	1
11	S290-0-2	#0 x 1/8 Drive screw	2	43	47631	Bowed spring	2
12	W-5	.010 Thick x 3/16 I.D. x 5/16 O.D. plain washer	4	44	48017-A	Shuttle and mounting arm assembly	1
13	47643	Shutter housing cover	1	45	47639	Shuttle spring	1
14	S235-2	#2 "E" ring	2	46	S555-5-8	#5 x 1" Vinyl sleeving	1
15	47627	Framing spacer	2	47	47615	Belt idler mounting stud	1
16	47628	Framing spring	1	48	S251-832-6	8-32 x 3/8 Round head screw	2
17	47620	Framing shaft	1	49	S201-8	#8 External tooth lockwasher	2
18	47629	Framing knob	1	50	26716	Shutter housing pivot pin	1
19	S277-540-2	5-40 x 1/8 Socket set screw	1	51	S253-540-7	5-40 x 7/16 Fillister head screw	2
20	47621	Framing bell crank	1	52	19482	Thrust washer	As req'd
21	S195-29	Plain washer 1/32 thick x 3/16 I.D. x 5/16 O.D.	4	53	26728	Operating lever pivot	1
22	47630	Shoulder screw	2	54	19506	Takeup spring	1
23	47695A	Fire shutter assembly	1	55	S235-3	#3 "E" ring	1
24	19471	Safety shutter guide	2	56	S254-540-3	5-40 x 3/16 Binder head screw	1
25	S278-540-5	5-40 x 5/16 "Sems" flat head screw with lockwasher	2	57	26722-A	Takeup lever assembly	1
26	20084	Safety shutter eccentric	1	58	19500	Hand operating shaft bearing	1
27	S195-5	#5 Steel flat washer	1				
28	S254-540-6	5-40 x 3/8 Binder head screw	1				
29	19172	Starting lever pivot washer	2				
30	19171	Starting lever pivot	1				
31	S254-540-3	5-40 x 3/16 Binder head screw	1				
32	47863	Starting lever tab	1				



**PROJECTOR HEAD — BACK SIDE AND REAR VIEW**  
 (Complete Breakdown)

### OSCILLATING SLEEVE & CAM HUB ASSEMBLY

No.	Part No.	Part Name	Qty.
	47520A	Oscillating sleeve & cam hub assembly	1
1	47521-A	Oscillating hub and shaft assembly	1
2	S220-1	1/16 x 9/32 Drive lock pin	1
3	S195-12	Shim washer	2
4	19479-2	Oscillating sleeve & bushing assembly	1
5	19481	Shim washer	(As req'd)(2 min)
6	S220-4	1/16 x 3/8 Drive lock pin	1
7	47533	Spiral drive pinion	1

### STARTING LEVER ASSEMBLY

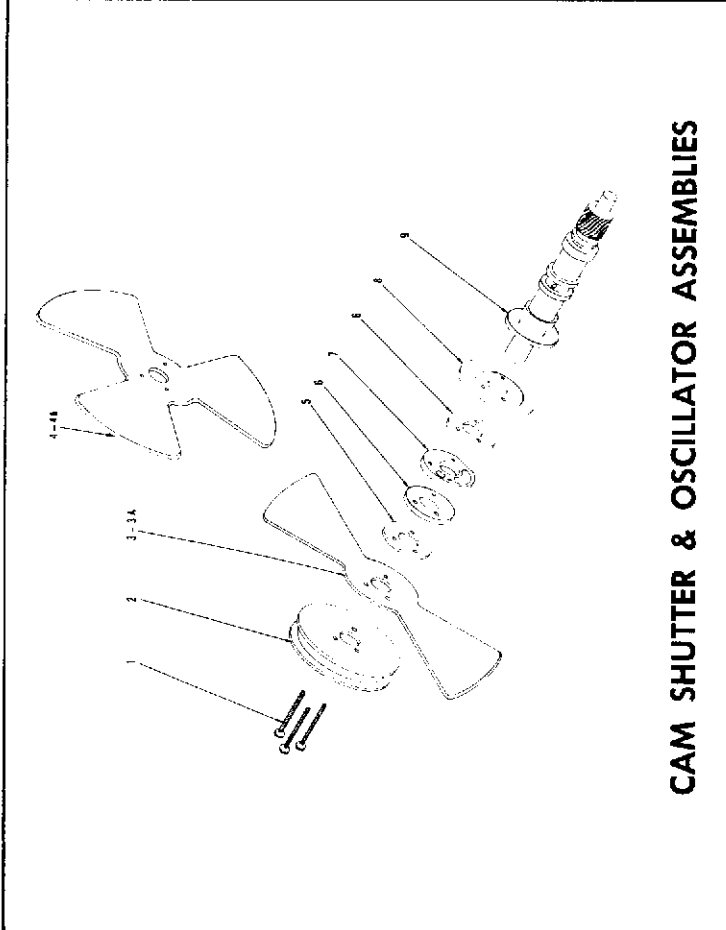
No.	Part No.	Part Name	Qty.
1	19172	Starting lever pivot washer	2
2	19171	Starting lever pivot	1
3	47635	Starting lever	1
4	S277-540-3	5-40 x 3/16 Socket set screw	1
5	47863	Tab, starting lever	1
6	47637	Spring, start lever plate	1
7	47634-A	Start lever plate sub assembly	1
8	S254-540-4	5-40 x 1/4 Binder head screw	2

### CAM SHUTTER & OSCILLATOR ASSEMBLIES

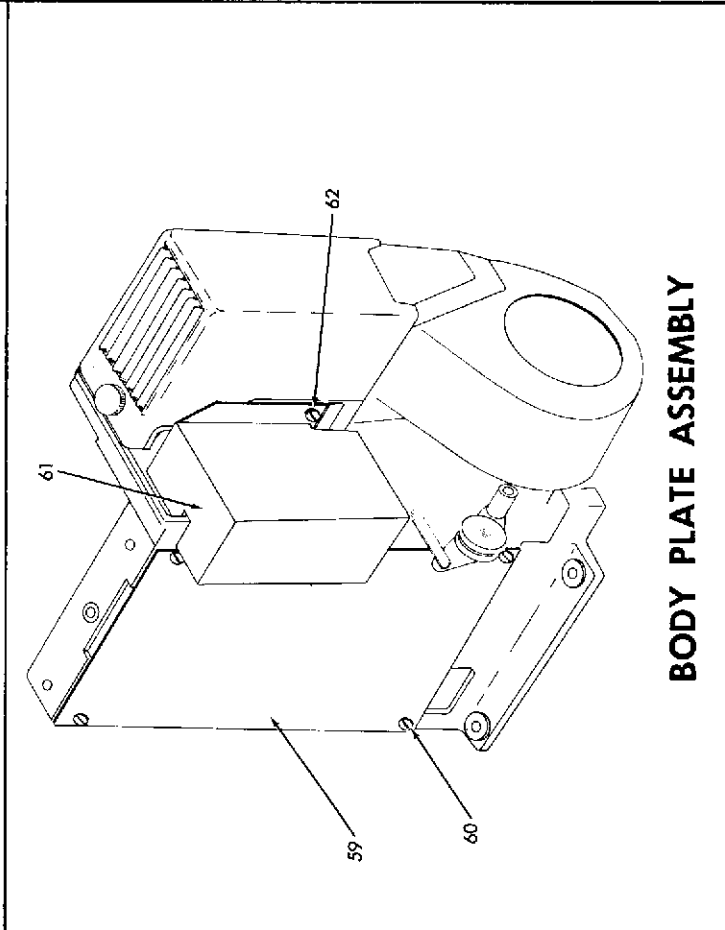
No.	Part No.	Part Name	Qty.
1	S251-356-14	3-56 x 7/8 Round head screw	3
2	47611	Pulley	1
3	47527A	Main cam & shutter 2 interr (matched pair) includes 3A and 7	1
3A	47527	Shutter, two interr	1
4	47526A	Main cam & shutter 3 interr (matched pair) includes 4A and 7	1
4A	47526	Shutter - three interr	1
5	47822	Spacer, washer (thin)	As req'd
6	47525	Spacer, washer (thick)	3

### BODY PLATE ASSEMBLY

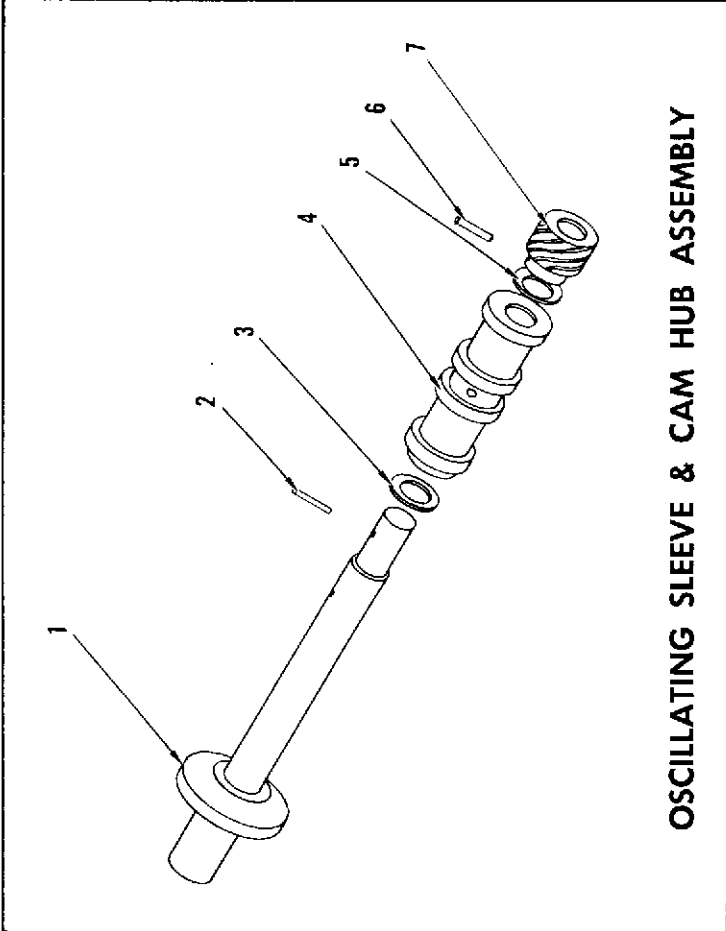
No.	Part No.	Part Name	Qty.
7	47523	Main cam	1
8	47524	Oscillating cam	1
9	47520A	Oscillating sleeve & cam hub assem	1
59	47924-A	Body plate assembly	1
60	S254-540-2	5-40 x 1/8 Binder head screw	2
61	48004	Shutter guard	1
62	S276-4-3	#4 Truss head sheet metal screw	1



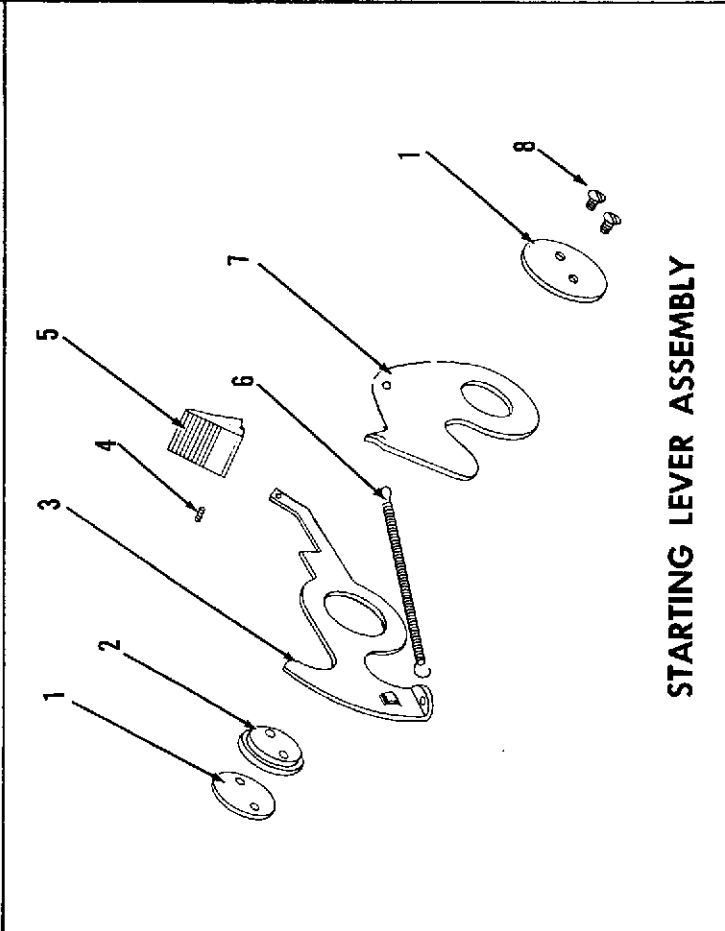
**CAM SHUTTER & OSCILLATOR ASSEMBLIES**



**BODY PLATE ASSEMBLY**



**OSCILLATING SLEEVE & CAM HUB ASSEMBLY**



**STARTING LEVER ASSEMBLY**

### STARTING LEVER IDLING ASSEMBLY

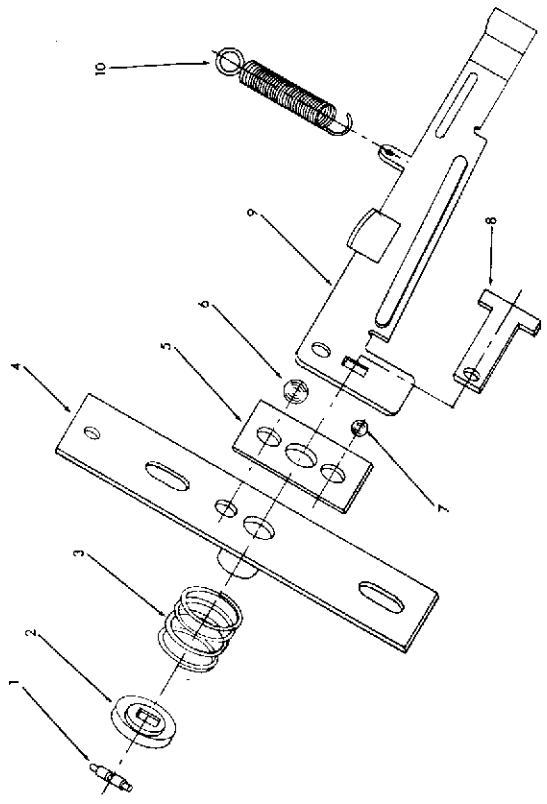
No.	Part No.	Part Name	Qty.
1	47555A	Starting lever idler assembly	1
2	S235-3	#3 "E" ring	1
3	19482	Shim washer	2
4	47598	Idler bearing	1
5	47596A	Starting lever idler plate assembly (includes 3, 4A, 5)	1
6A	47596-2	Start lever idler plate sub assembly	1
7	S354-1M	Retainer	1
8	47618	Felt, oiling	1
9	47600A	Idler pulley assembly	1
10	47602	Stud	1

### SHUTTLE AND MOUNTING ARM ASSEMBLY

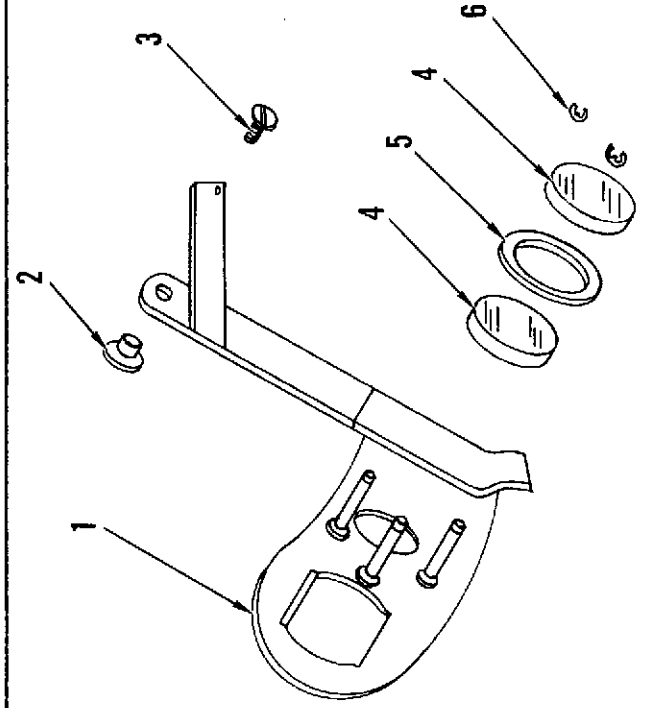
No.	Part No.	Part Name	Qty.
1	48017-A	Shuttle and mounting arm assembly	1
2	47591	Spring pin	1
3	48002	Spring retainer	1
4	48000	Spring, shuttle	1
5	47593-A	Mounting arm assembly	1
6	47633	Shuttle ball felt	1
7	47589	3/16 Dia Steel ball	1
8	47590	1/8 Dia Steel ball	1
9	48001	Link, spring	1
10	48016-A	Shuttle assembly	1
11	47639	Shuttle spring	1

### STILL PICTURE SHUTTER ASSEMBLY

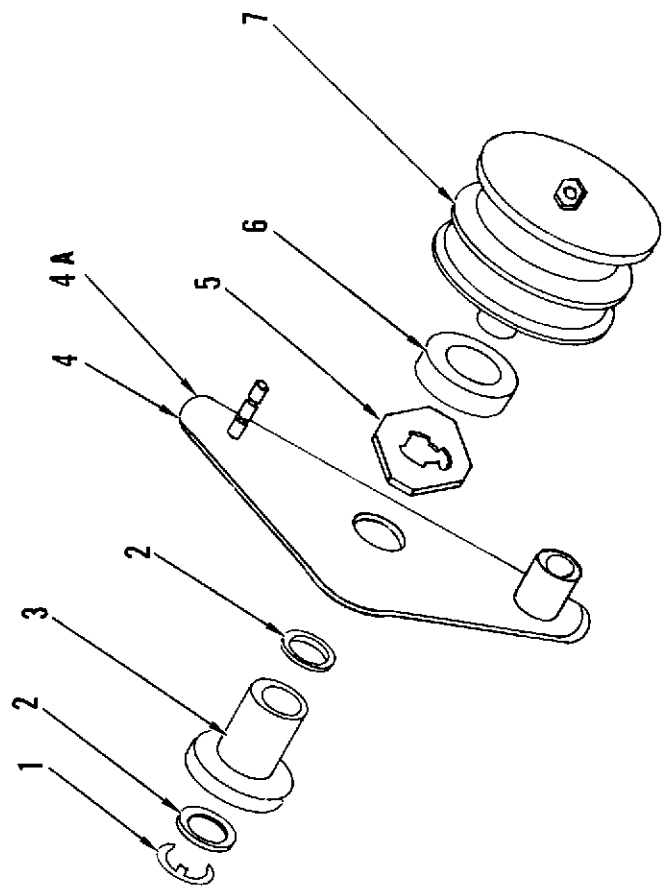
No.	Part No.	Part Name	Qty.
1	47549-A	Still picture shutter assembly	1
2	47549-2	Still picture shutter sub assembly	1
3	19345	Still picture shutter pivot	1
4	S254-540-4	5-40 x 1/4 Binder head screw	1
5	47271	Filter glass	2
6	47556	Glass separating spring	1
7	S235-2	#2 "E" ring	3



SHUTTER AND MOUNTING ARM ASSEMBLY



STILL PICTURE SHUTTER ASSEMBLY



STARTING LEVER IDLING ASSEMBLY

### TAKE-UP CLUTCH ASSEMBLY

No.	Part No.	Part Name	Qty.
	26836A	Take up clutch assembly complete	1
1	26836-2	Gear and hub assembly	1
2	26826	Clutch ball	6
3	26825	Clutch ball retainer	2
4	26859-A	Take up pulley assembly	2
5	23063	Thrust washer	1
6	S277-832-2	8-32 x 1/8 Socket set screw	2
7	26860-A	Cam and hub assembly	1
8	46430	Clutch actuating spring	2

See page 8 for Service and Care.

### SPIRAL INTERMEDIATE GEAR & SHAFT ASSEMBLY

No.	Part No.	Part Name	Qty.
	47535-A	Spiral intermediate gear and shaft assembly	1
1	S301-5/16 24	5/16-24 Hex cap nut	1 *
2	30190-2	Spiral intermediate gear shaft & hub assembly	1
3	S195-16	3/16 x 3/8 x .004 Flat washer	As req'd
4	47536-A	Spiral intermediate pinion assembly	1
5	S195-9	3/16 x 3/8 x 1/64 Flat washer	1
6	S235-3	#3 "E" ring	1

\* Not furnished as part of assembly.

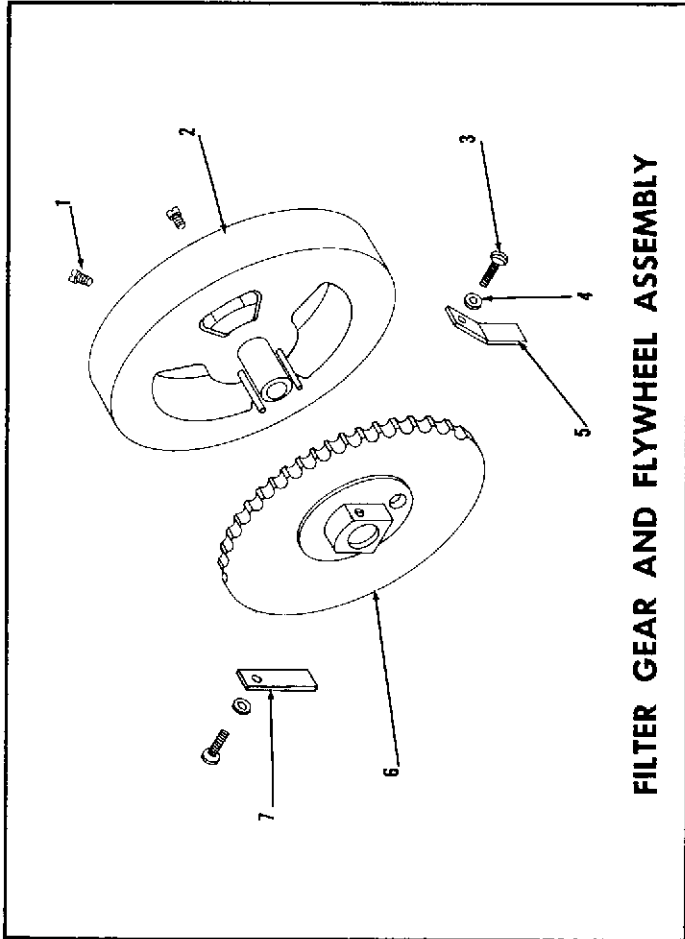
### FILTER GEAR AND FLYWHEEL ASSEMBLY

No.	Part No.	Part Name	Qty.
	47223A	Filter flywheel & gear assembly	1
1	S253-540-5	5-40 x 5/16 Fillister head screw	2
2	47223-2	Sound sprocket flywheel & hub assembly	1
3	S251-256-2	2-56 x 1/8 Round head screw	2
4	S199-2	#2 Plain washer	2
5	19248-50	Sound filter spring	1
6	19270-2	Sound sprocket gear assembly	1
7	19248	Sound filter spring	1
	19270-A	Hub assembly sound sprocket gear (assembly of 3, 4, 5, 6, 7)	

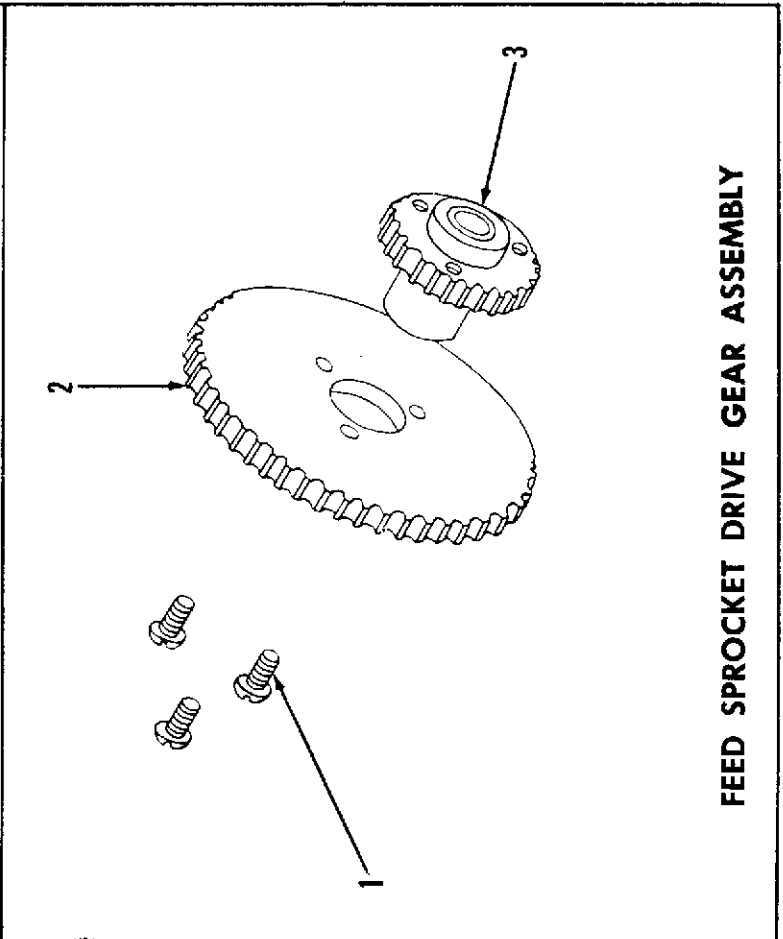
### FEED SPROCKET DRIVE GEAR ASSEMBLY

No.	Part No.	Part Name	Qty.
	19180-A	Feed sprocket drive gear assembly	1
1	S254-540-5	5-40 x 5/16 Binder head screw	3
2	19180	Sound sprocket drive gear	1
3	19496-A	Feed sprocket drive pinion assembly	1

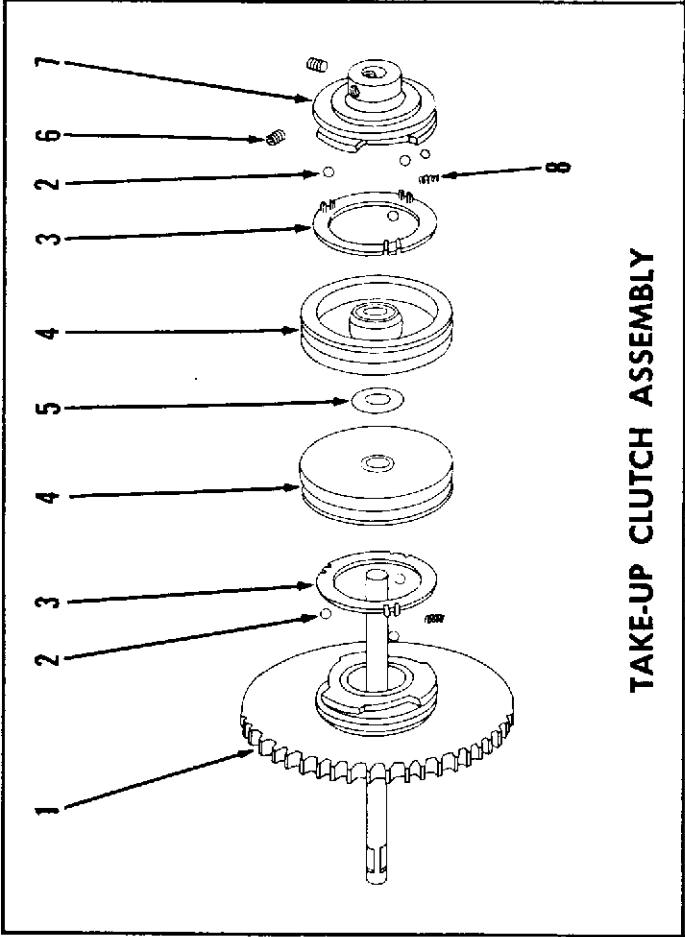




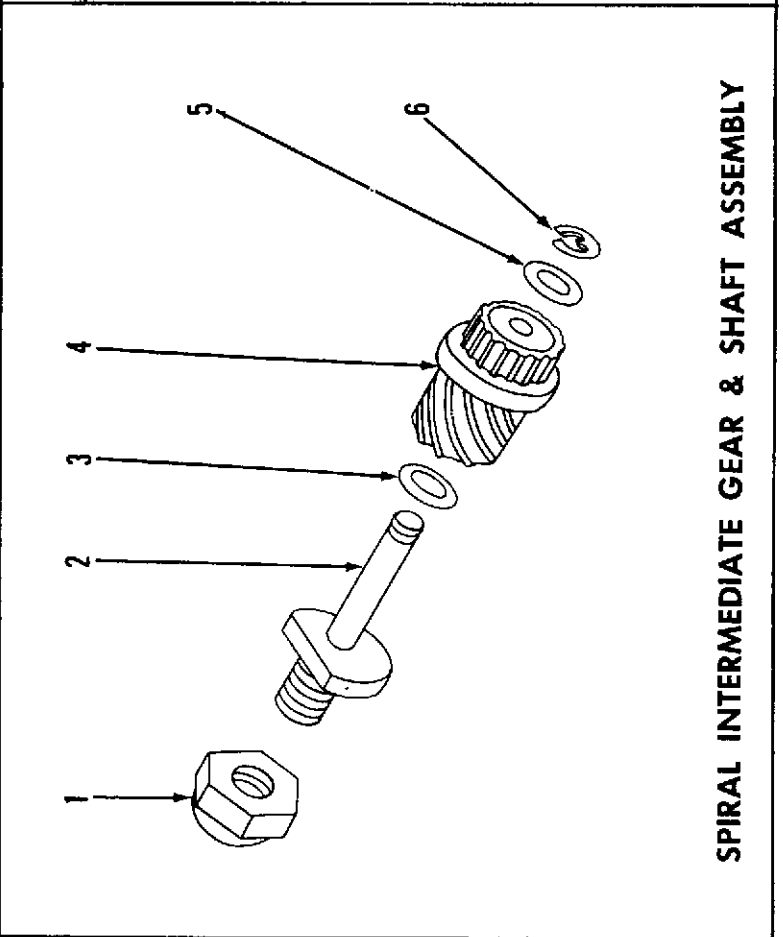
**FILTER GEAR AND FLYWHEEL ASSEMBLY**



**FEED SPROCKET DRIVE GEAR ASSEMBLY**



**TAKE-UP CLUTCH ASSEMBLY**



**SPIRAL INTERMEDIATE GEAR & SHAFT ASSEMBLY**

## AUTOMATIC TRIP LEVER ASSEMBLY

(Safety Film Trips)

No.	Part No.	Part Name	Qty.
1	46145-AR	Automatic trip lever assembly	1
2	46145-3R	Automatic trip lever sub assembly	1
3	T-149	Inside automatic trip roll	3
4	T-148	Outside automatic trip roll	3
5	26739	Hand trip knob	1
6	S235-1	#1 "E" ring	3
7	47303	Eccentric pivot	1
8	S254-440-5	4-40 x 5/16 Binder head screw	1
9	S235-2	#2 "E" ring	1
10	S199-6	#6 Plain steel washer	1
11	46223	Automatic trip lever tension spring	1
12	19369	Shim washer	As req'd
13	20215	Automatic trip plunger	1

## LENS MOUNT ASSEMBLY (New Style)

No.	Part No.	Part Name	Qty.
1	48033-A	Lens mount assembly	1
2	48022	Pressure plate	1
3	48023	Guide, pressure plate	2
4	48030	Spring, pressure plate	2
5	48026	Lens spring	1
6	48028	Lens lock screw	1
7	48038	Lens lock spring	1
8	48024	Lens block screw	2
9	30165	Lens mount lock plunger	1
10	19301	Lens mount stop screw	1
11	48025	Lens mount	1
12	30163	Lens mount spring release	1
13	48029	Hinge spring	1
14	S251-436-3	4-36 x 3/16 Round head screw	1
15	S251-436-2	4-36 x 1/8 Round head screw	1
16	48135	Lens retaining tip	1

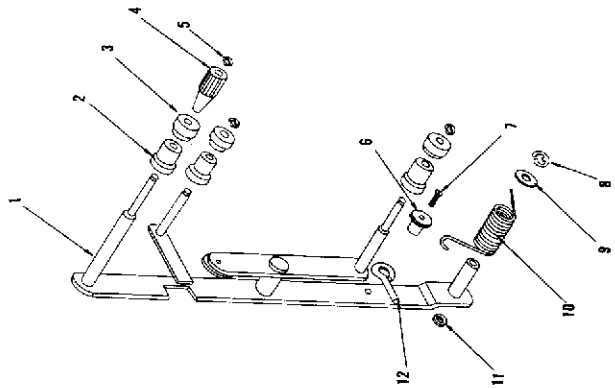
\* See page 14 - 48031

## LENS MOUNT ASSEMBLY

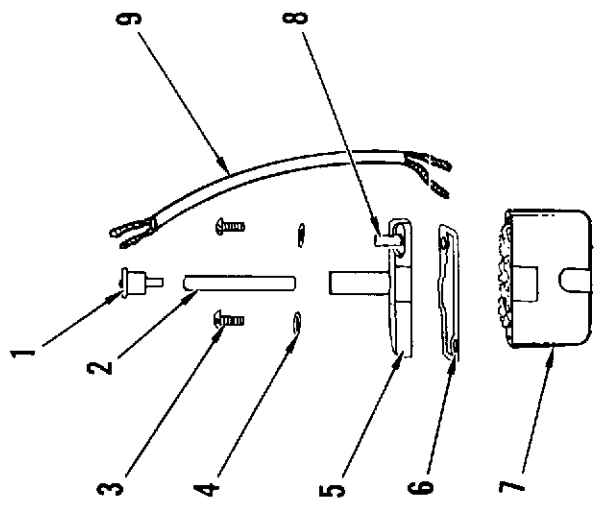
No.	Part No.	Part Name	Qty.
1	47501-AR	Lens mount assembly	1
2	47502-A	Aperture plate assem (includes 2 & 3)	1
3	19289	Aperture plate rivet	1
4	30153A	Aperture retaining plate assembly	1
5	S254-632-3	6-32 x 3/16 Binder head screw	2
6	19859	Lens mount pivot plate	1
7	19209	Aperture plate guide	1
8	20045	Lens spring tension screw	1
9	13327	Lens lock screw	1
10	30100-A	Lens tension spring	1
11	30165	Lens mount lock plunger	1
12	23240	Lens mount stop retainer	1
13	19301	Lens mount stop screw	1
14	19254-2R	Lens mount sub assembly (includes 4, 5)	1
15	S251-436-3	4-36 x 3/16 Round head screw	1
16	30163	Lens mount spring release	1
17	20046	Lens mount plate screw	1
18	S254-632-2	6-32 x 1/8 Binder head screw	2

## OIL RESERVOIR ASSEMBLY (Lubrimatic)

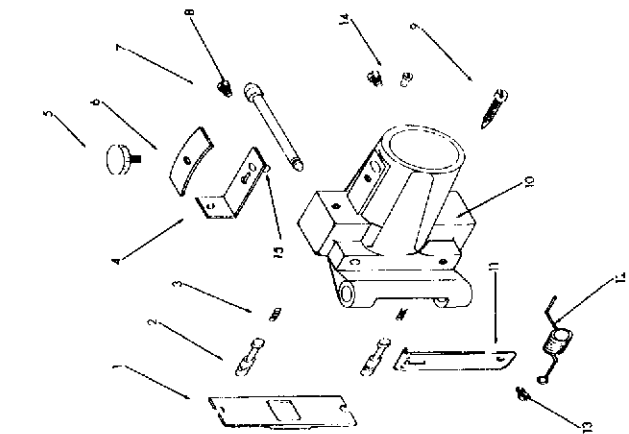
No.	Part No.	Part Name	Qty.
1	47603A	Oil reservoir assembly	1
2	47895-A	Oiler assembly	1
3	47896-A	Oil tube	1
4	S251-540-4	5-40 x 1/4 Round head screw	2
5	W-74	#5 Fibre washer	2
6	47605-A	Cover assembly (includes 8 and 9)	1
7	47605	Cover, oil reservoir	1
8	36270	Gasket	1
9	47604	Oil reservoir body	1
10	46220	Tube, oil	1
11	47890A	Oil reservoir tube & wick assembly	1



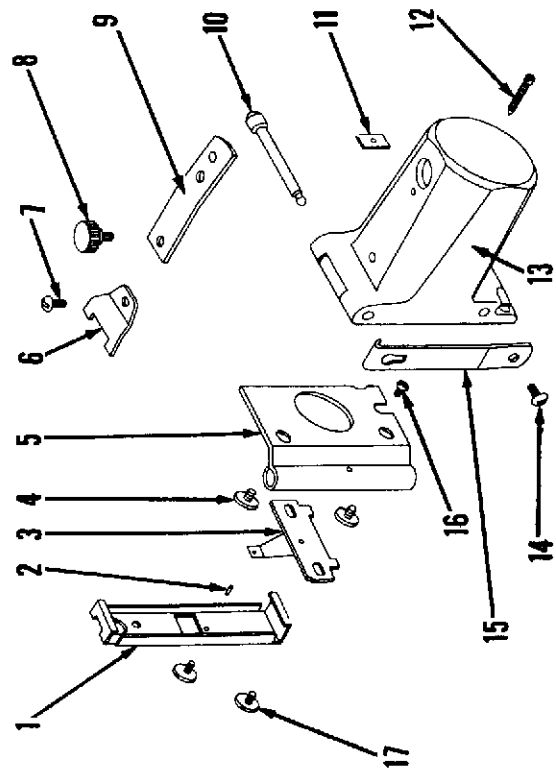
**AUTOMATIC TRIP LEVER ASSEMBLY**  
(Safety Film Trips)



**OIL RESERVOIR ASSEMBLY**  
(Lubrimatic)



**LENS MOUNT ASSEMBLY (New Style)**



**LENS MOUNT ASSEMBLY**

### SOUND CORE ASSEMBLY

No.	Part No.	Part Name	Qty.
1	30428-A	Sound core assembly	1
2	S254-540-3	5-40 x 3/16 Binder head screw	1
2A	30428-3	Sound channel assembly	1
3	26546-2	Sound channel sub assembly	1
4	20593	Sound lens holder	1
5	20761	Sound lens holder screw	2
6	30428-2	Sound lens assembly	1
7	26545-2	Sound core sub assembly	1
8	36161	Escutcheon cap nameplate	1
9	S257-348-4	3-48 x 1/4 Oval head machine screw	2
10	S277-540-2	5-40 x 1/8 Socket set screw	1
11	19221	Plug	1
12	S253-540-3	5-40 x 3/16 Fillister head screw	1

### SOUND UNIT CASTING ASSEMBLY

No.	Part No.	Part Name	Qty.
1	46153-AR	Sound unit casting assembly	1
2	787	Sound core lock screw	1 *
3	46154	Insulating pad	1
4	S253-832-6	8-32 x 3/8 Fillister head screw	2 *
5	19179	Bushing 1/4" I.D.	2
6	19063	Bushing 3/16" I.D.	2

\* Order separately. Not included in 46153AR assembly.

### LOOP TENSION ARM ASSEMBLY

No.	Part No.	Part Name	Qty.
1	26725-AR	Loop tension arm assembly	1
2	26725-2R	Loop tension arm sub-assembly	1
3	18058-A	Loop tension roll	1
4	26727	Tension roll grip	1
5	S235-2	#2 "E" ring	1

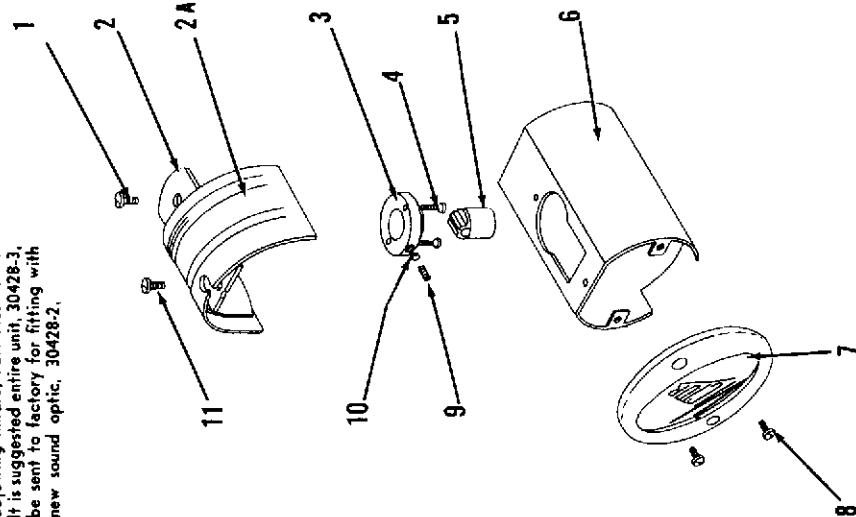
### SOUND SPROCKET TENSION ARM ASSEMBLY

No.	Part No.	Part Name	Qty.
1	26726-AR	Sound sprocket tension arm assembly	1
2	26726-2R	Sound sprocket tension arm sub-assem.	1
3	19233-A	Sound sprocket tension roll	1
4	26727	Tension roll grip	1
5	S235-2	#2 "E" ring	1
6	S235-3	#3 "E" ring	1
7	19579	Reverse sprocket tension roll	1

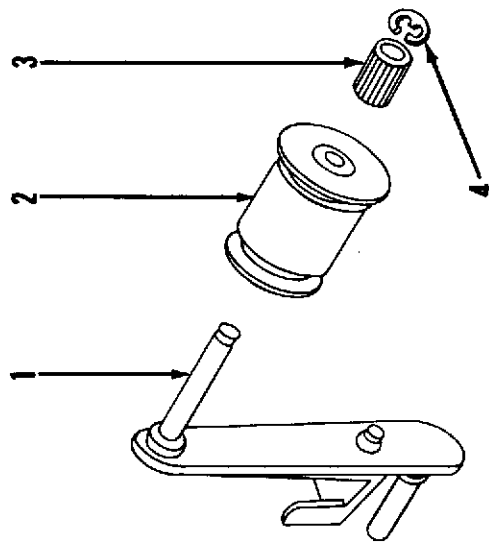
### FILM SHOES

No.	Part No.	Part Name	Qty.
1	47515A	Film shoe assembly	2
1A	48034A	Film shoe assembly (stainless steel)	2
2	36156	Film shoe bracket	2
3	36155	Film shoe spring	2
4	S254-832-4	8-32 x 1/4 Binder head screw	4

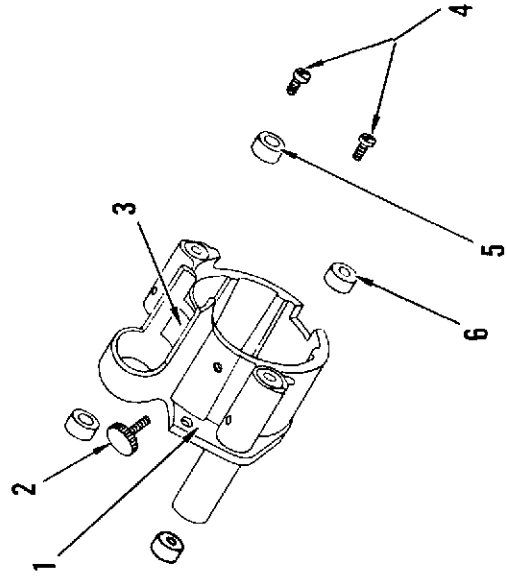
**WARNING:** Do not tamper with lock screw No. 9. Resetting this screw requires use of sound lens adjusting fixture, Part No. 1B793. It is suggested entire unit 30428-3, be sent to factory for fitting with new sound optic, 30428-2.



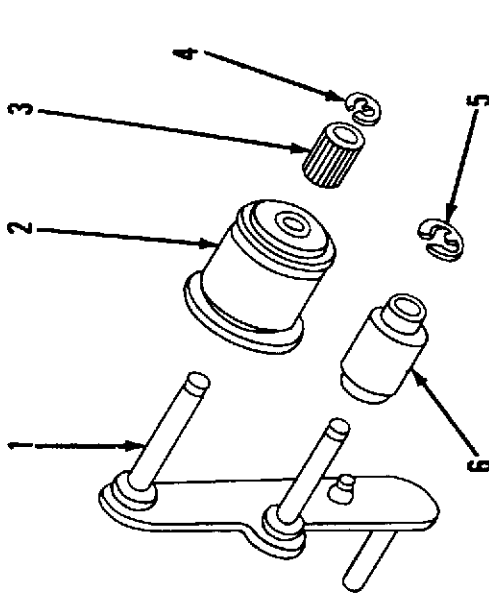
**SOUND CORE ASSEMBLY**



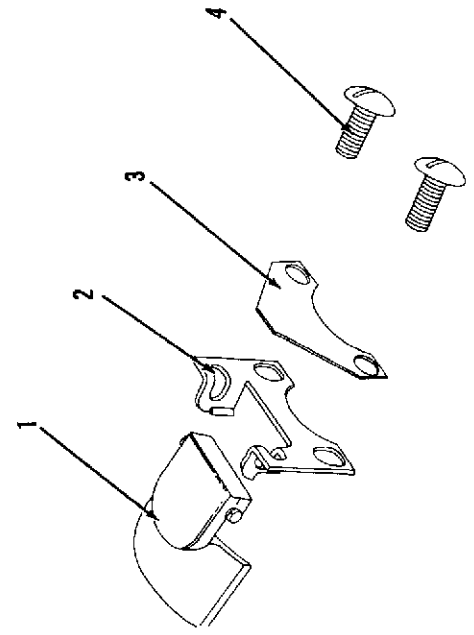
**LOOP TENSION ARM ASSEMBLY**



**SOUND UNIT CASTING ASSEMBLY**



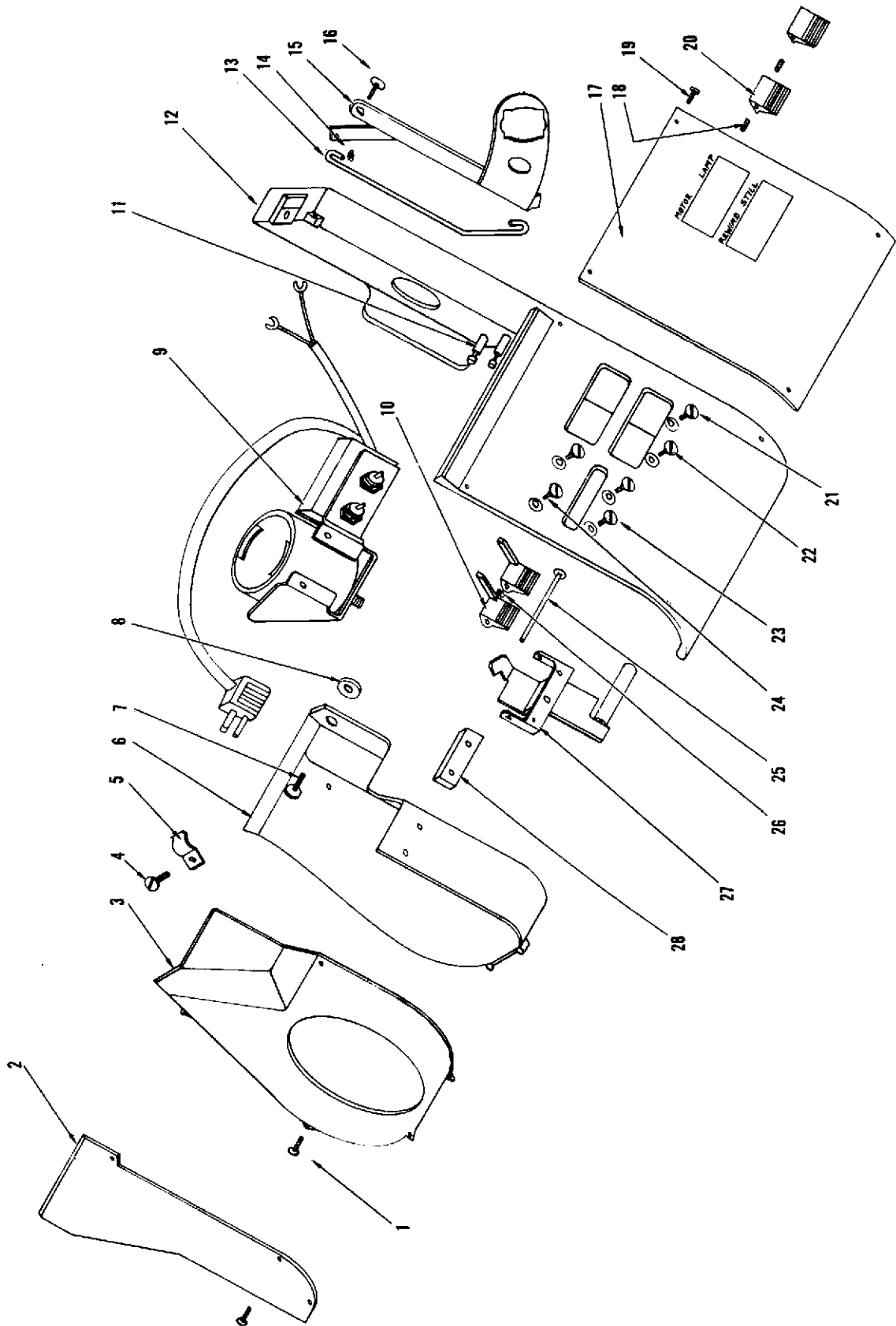
**SOUND SPROCKET  
TENSION ARM ASSEMBLY**



**FILM SHOES**

## LAMPHOUSE ASSEMBLY

No.	Part No.	Part Name	Page	Qty.	No.	Part No.	Part Name	Page	Qty.
1	47544A	Lamp house assembly		1	19	S254-440-2	4-40 x 1/8 Binder head screw		4
2	S279-256-2	2-56 x 1/8 Round head thread cutting screw		8	20	46128	Switch lever		2
3	47578	Cover plate		1	21	S252-540-6	5-40 x 3/8 Flat head screw		1
4	47691	Scroll cover		1	22	S252-540-8	5-40 x 1/2 Flat head screw		1
5	S254-540-2	5-40 x 1/8 Binder head screw		1	23	S252-540-5	5-40 x 5/16 Flat head screw		2
6	S360-1	Wire clamp		1	24	S252-832-6	8-32 x 3/8 Flat head screw		2
7	47690	Diecast scroll		1	25	46135	Lever pivot		1
8	S254-540-4	5-40 x 1/4 Binder head screw		1	26	S199-5	#5 Plain washer		1
9	S195-4	Fibre washer		1	27	47568A	Rewind lock bracket assembly		1
10	47553-A	Power lead wire assembly	35	1	28	47563	Scroll cushion		1
11	46127A	Still and rewind lever tab		2	47545A	Lamp baffle assembly		35	1
12	47559	Stud, lamp baffle		2	47817A	Lamp house cover assembly		35	1
13	47551A	Lamp house sub assembly		1					
14	47558	Still shutter connecting wire		1					
15	19345	Still picture shutter pivot		1					
16	47549-A	Still picture shutter assembly		1					
17	S254-540-7	5-40 x 7/16 Binder head screw		1					
18	47824	Nameplate		1					
19	S277-540-3	5-40 x 3/16 Socket set screw		2					



**LAMPHOUSE ASSEMBLY**

### LAMPHOUSE COVER ASSEMBLY

No.	Part No.	Part Name	Qty.
1	47817A	Lamphouse cover assembly	1
2	47819-R	Lamphouse cover	1
3	47818-A	Grill assembly	1
3	46103	Retaining screw	1
4	S301-121-12	1/8 x 3/16 Rivets	4
5	S235-3	#3 "E" ring	1
6	47840	Emblem	1

### REWIND DISC BAR AND PULLEY ASSEMBLY

No.	Part No.	Part Name	Qty.
1	46138-A	Rewind disc bar and pulley assembly	1
2	46138-2	Rewind pivot assembly	1
3	26883-2	Rewind pulley assembly	1
3	26909	Rewind pulley spacer	1
4	26916	Rewind belt guard	1
5	S200-10	#10 Internal tooth lockwasher	1
6	S324-1032	10-32 Hex nut	1

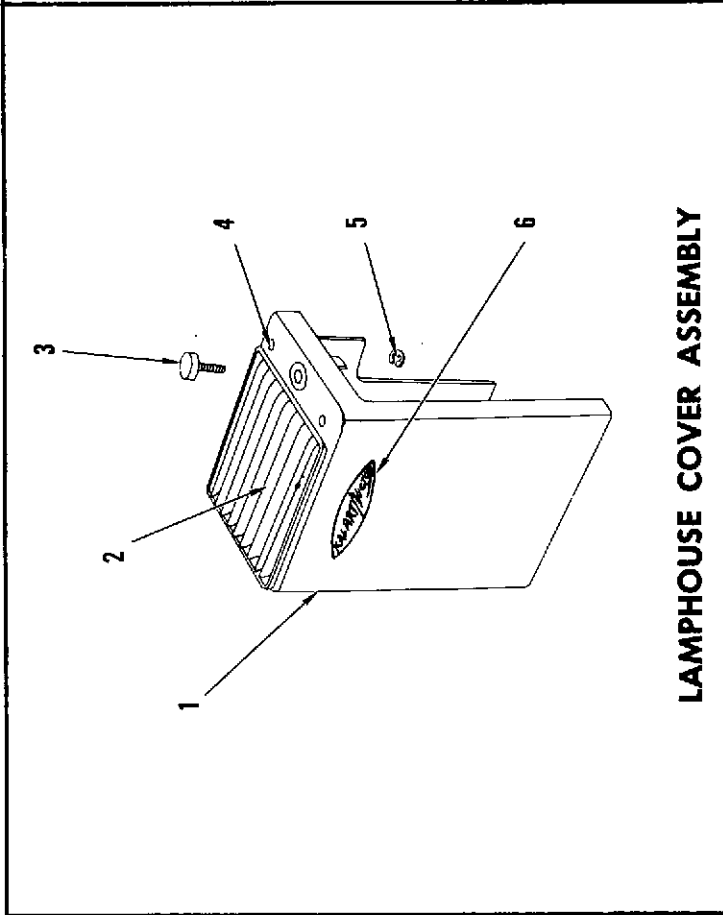
### LAMP BAFFLE ASSEMBLY

No.	Part No.	Part Name	Qty.
1	47545-A	Lamp baffle assembly	1
2	46111	Spring, reflector	1
2	46110	Reflector	1
3	47545-2	Lamp baffle sub assembly	1
4	20510	Condenser lens	1
5	46109	Lens spring	1

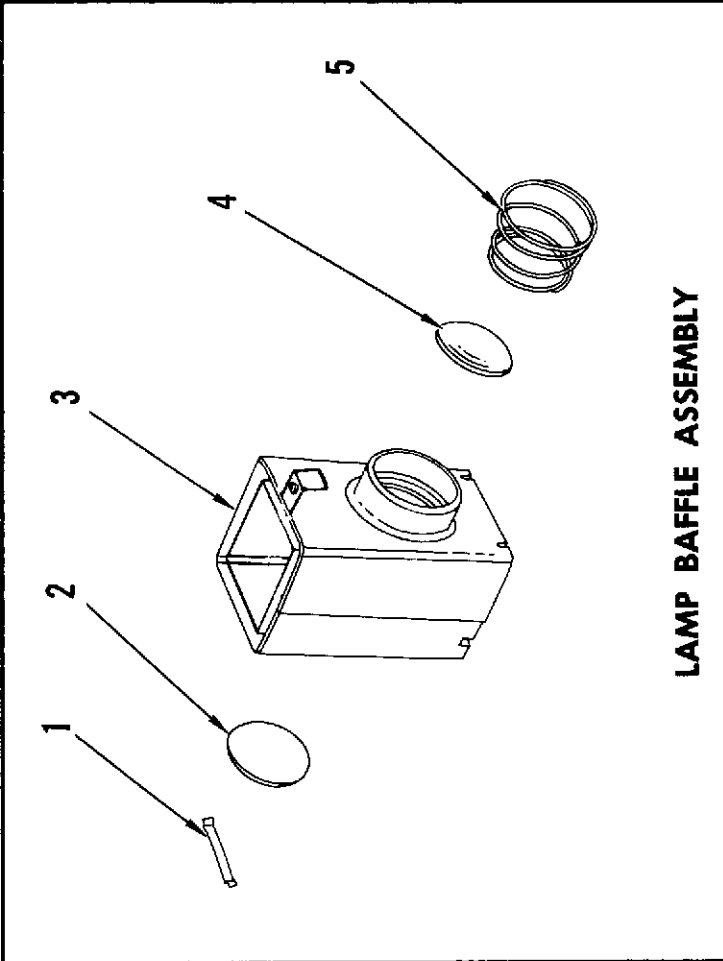
### POWER LEAD WIRE ASSEMBLY

No.	Part No.	Part Name	Qty.
1	47553A	Power lead wire assembly	1
2	20490	Lamp socket	1
2	S555-3-32	#3 x 4" Vinyl tubing	1
3	47566-A	Lamp adjusting plate assembly	1
4	47151	Motor and lamp switch	2
5		Switch nut	4
6	47573	Lamphouse terminal insulator	1
7		Switch washer	2
8	S324-1024	10-24 Hex nut	1
9	S199-10	#10 Plain washer	2
10	47625	Bowed washer	1
11	47565A	Lamp and switch bracket assembly	1
12	47576	Lamp adjusting spacer	As req'd
13	S252-436-7	4-36 x 7/16 Flat head screw	2
14	47652	Mechanism power cord	1

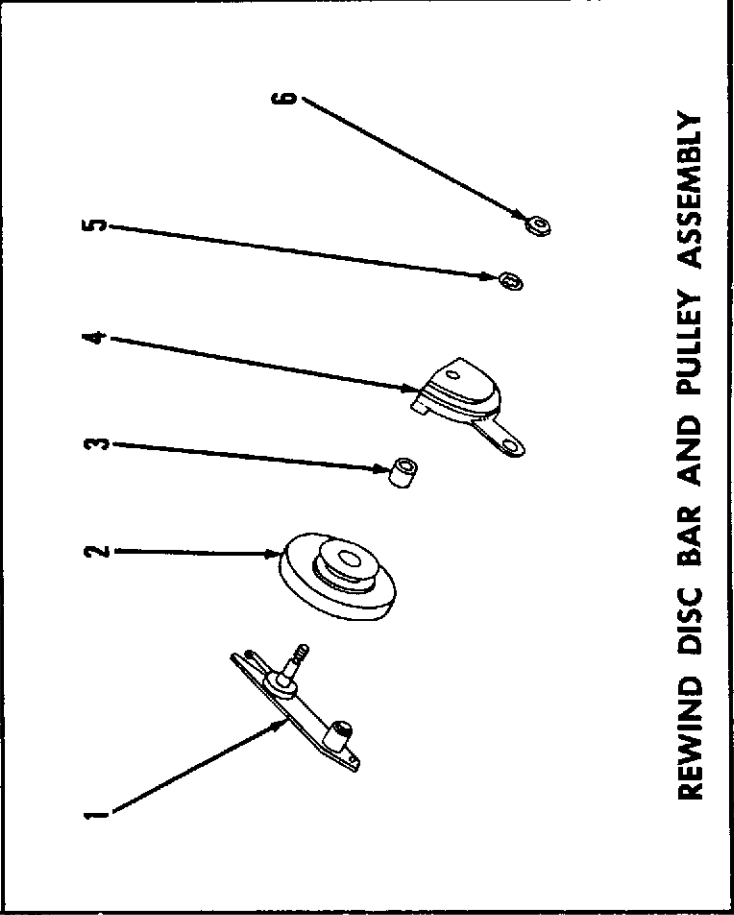




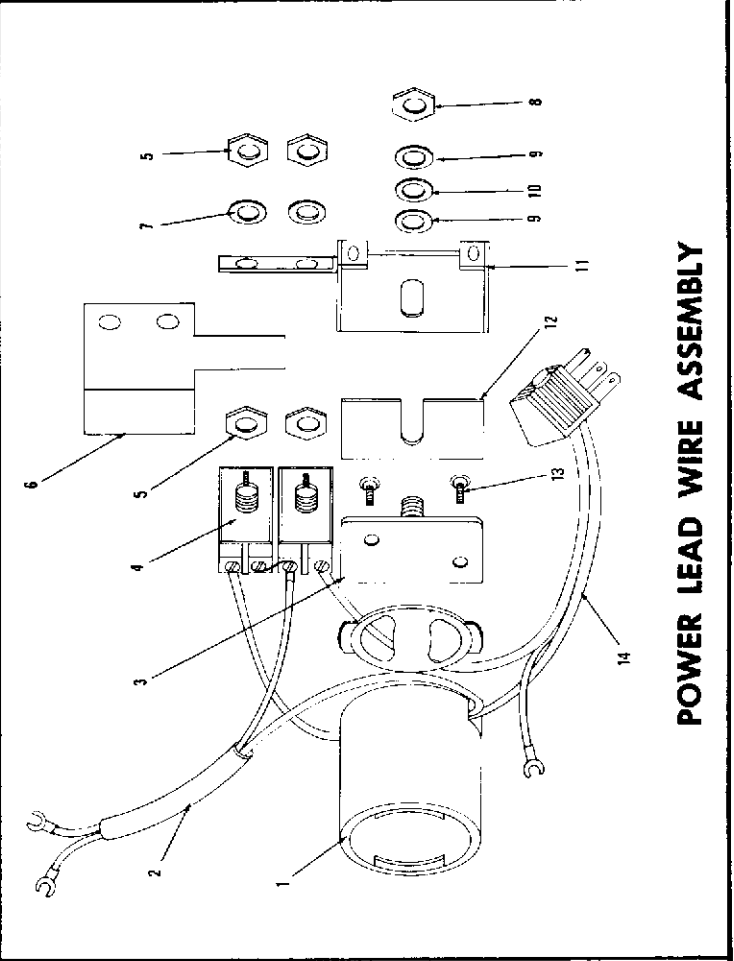
**LAMPHOUSE COVER ASSEMBLY**



**LAMP BAFFLE ASSEMBLY**



**REWIND DISC BAR AND PULLEY ASSEMBLY**

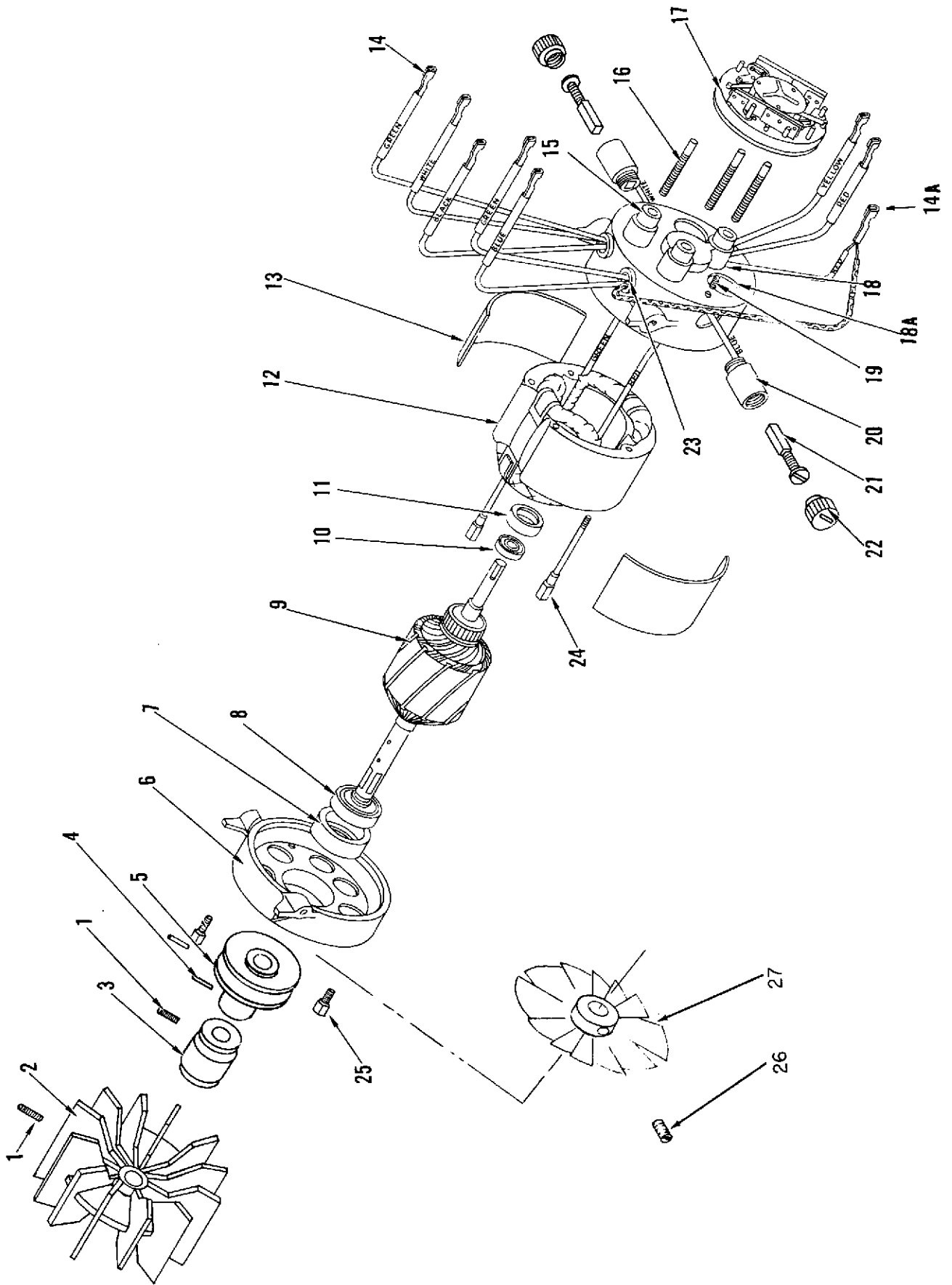


**POWER LEAD WIRE ASSEMBLY**

## MOTOR ASSEMBLY

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	47660-A	Motor assembly	1	14A	S622-2	Knife connector	1
2	S277-832-3	8-32 x 3/16 Socket set screw	2*	15	26839	Governor brush insulator	3
3	47530	Fan, paddle	1*	16	19534	Governor brush	3*
4	47658	Rewind sheave molded assembly	1*	17	47745	Governor, two speed	1*
5	S223-062-500	1/16 x 1/2 Roll pin	2	18	47660	Brush end motor cap casting	1
6	47539	Pulley, motor	1	18A	47660-2	Motor brush end cap assembly	1
7	26840	Cap, pulley end, motor	1	19	20774	Brush holder set screw	2
8	47291	5/16 Ball bearing rubber mounting	1	20	47542	Motor brush holder	2
9	26864	5/16 Ball bearing	1	21	47624	Motor brush	2
10	47661	Armature, motor	1	22	47623	Motor brush cap	2
11	26862	1/4 Ball bearing	1	23	19788	Insulator, motor cap	3
12	47292	1/4 Ball bearing rubber mounting	1	24	19080	Motor field clamp stud	2
13	30519	Field, motor	1	25	26872	Motor cap screw	2
14	19010	Motor field sleeve	2	26	S277-832-2	8-32 x 1/8 Socket set screw	1
15	S622-1	Knife connector	7	27	47923	Fan auxiliary, motor	1

\* Order separately, not furnished as part of 47660-A.

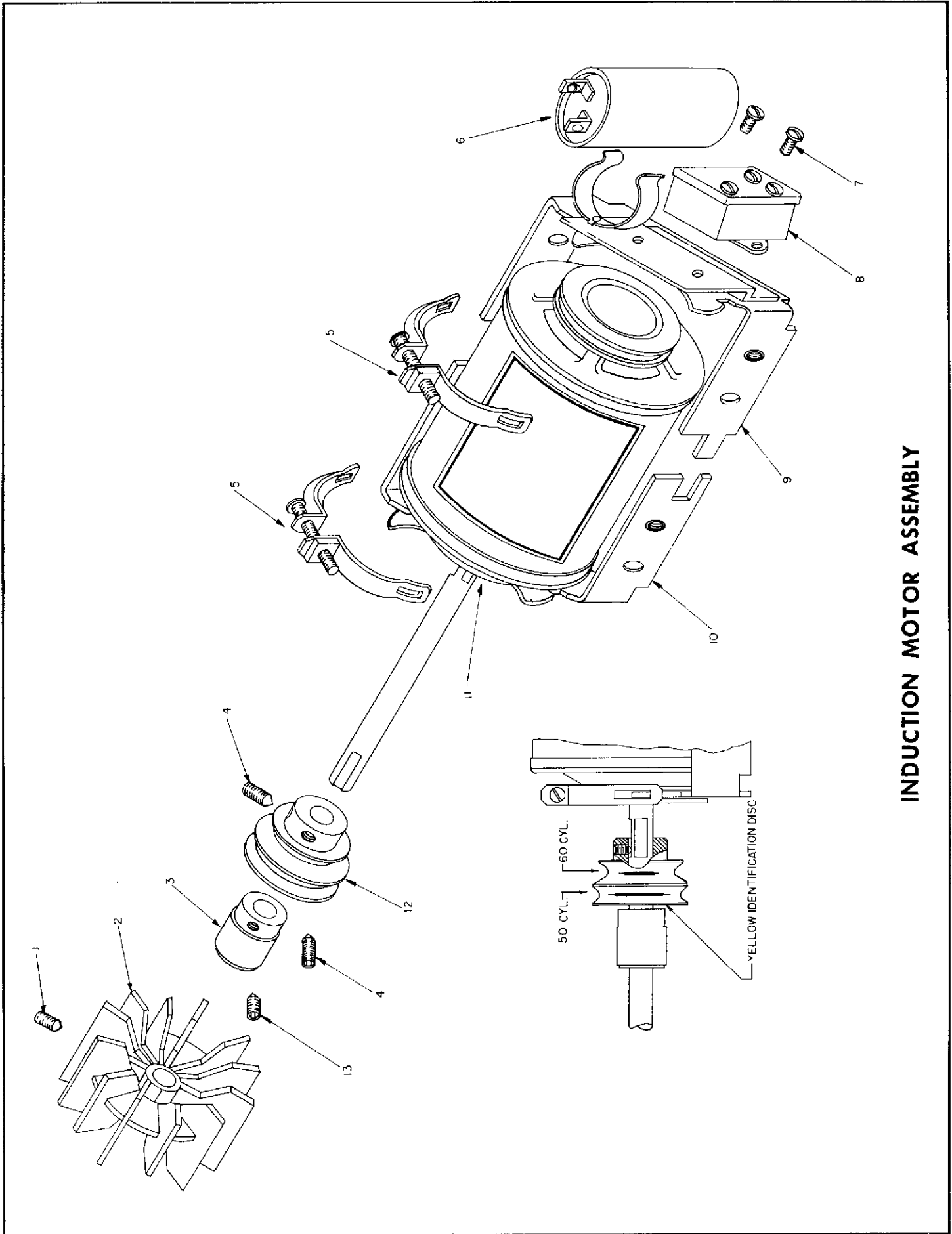


MOTOR ASSEMBLY

## INDUCTION MOTOR ASSEMBLY

No.	Part No.	Part Name	Qty
	48195-SP	Induction motor assembly	1
1	S277-832-3	8-32 x 3/16 Socket set screw	2*
2	47530	Fan, paddle	1*
3	47658	Rewind sheave molded assembly	1
4	S277-832-3	8-32 x 3/16 Socket set screw	2
<hr/>			
5	48192-1	Clamp	2
6	48198	Condenser, motor starting	1
7	S254-540-3	5-40 x 3/16 Binding head screw	2
8	48199	Relay, motor starting	1
9	48193-A	Bracket assembly	1
<hr/>			
10	48193-1	Bracket	1
11	48192-SP	Induction motor	1
12	48196	Pulley, 50/60 cycle	1
13	S277-832-3	8-32 x 3/16 Socket set screw	1

\* Order separately, not furnished as part of 48195-SP.

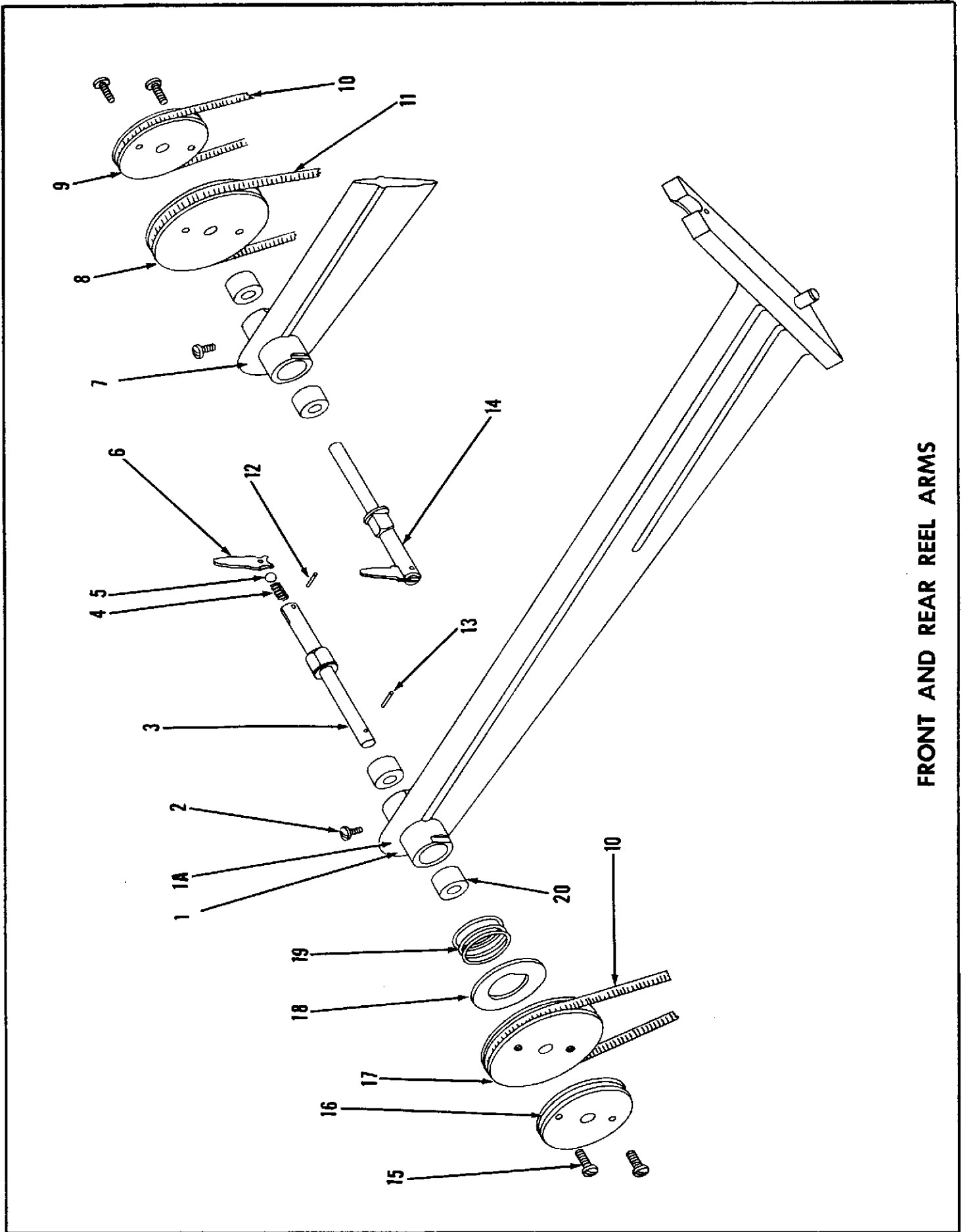


**INDUCTION MOTOR ASSEMBLY**

## FRONT AND REAR REEL ARMS

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	30380-A	Front reel arm assembly, complete	1	10	23217	Take-up belt	1*
1A	30379-2	Reel arm sub-assembly (front or rear)	1	11	23216	Rewind belt	1*
2	S253-632-2	6-32 x 1/8 Fillister head screw	1	12	S223-062-0305	Reel lock pin	1
3	22143	Reel shaft	1	13	S223-062-500	1/16 x 1/2 Roll pin	1
4	20358	Reel lock spring	1	14	22143-A	Reel shaft assembly	1
5	20359	Reel lock ball	1	15	S254-632-6	6-32 x 3/8 Binder head screw	2
6	2307	Reel lock	1	16	22042-50-R	Reel arm auxiliary pulley	1
7	30379-AR	Rear reel arm assembly, complete	1	17	30382-R	Take-up reel pulley	1
8	30383-R	Rewind reel pulley	1	18	27307	Reel arm friction washer	1
9	22042-50-R	Reel arm auxiliary pulley	1	19	19595	Reel arm friction spring	1
				20	26937	Reel arm bushing	2

\*Order separately. Not furnished as part of reel arm assembly.



FRONT AND REAR REEL ARMS

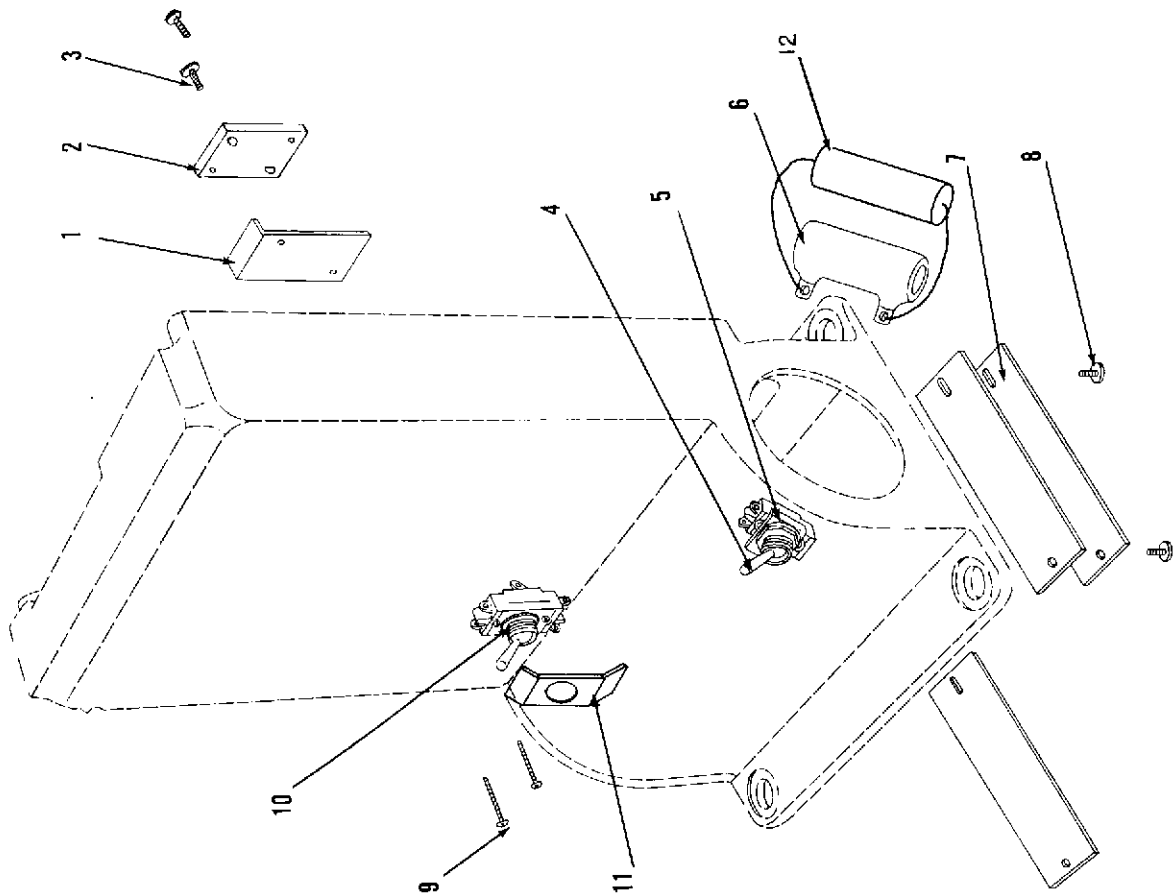
## ELECTRICAL COMPONENTS

No.	Part No.	Part Name	Qty.
1	47554-A	Motor wiring harness	1
2	26950	Insulator	1
3	47642	Block, connector	1
4	S254-540-4	5-40 x 1/4 Binder head screw	2
5	23340	Switch S. P. S. T.	1
6	30531	Lock, switch	1
7	19685	Resistor 70-ohm 30 watt	1
8	19862	Motor terminal insulator	3
9	S254-540-5	5-40 x 5/16 Binder head screw	2
10	M. S. 253	2-56 x 3/8 Self tapping type F screw	2
11	11026	Switch D. P. D. T.	1
12	19223	Insulator	2
13	36228	Motor, condenser .22 MFD, 400 V.	1

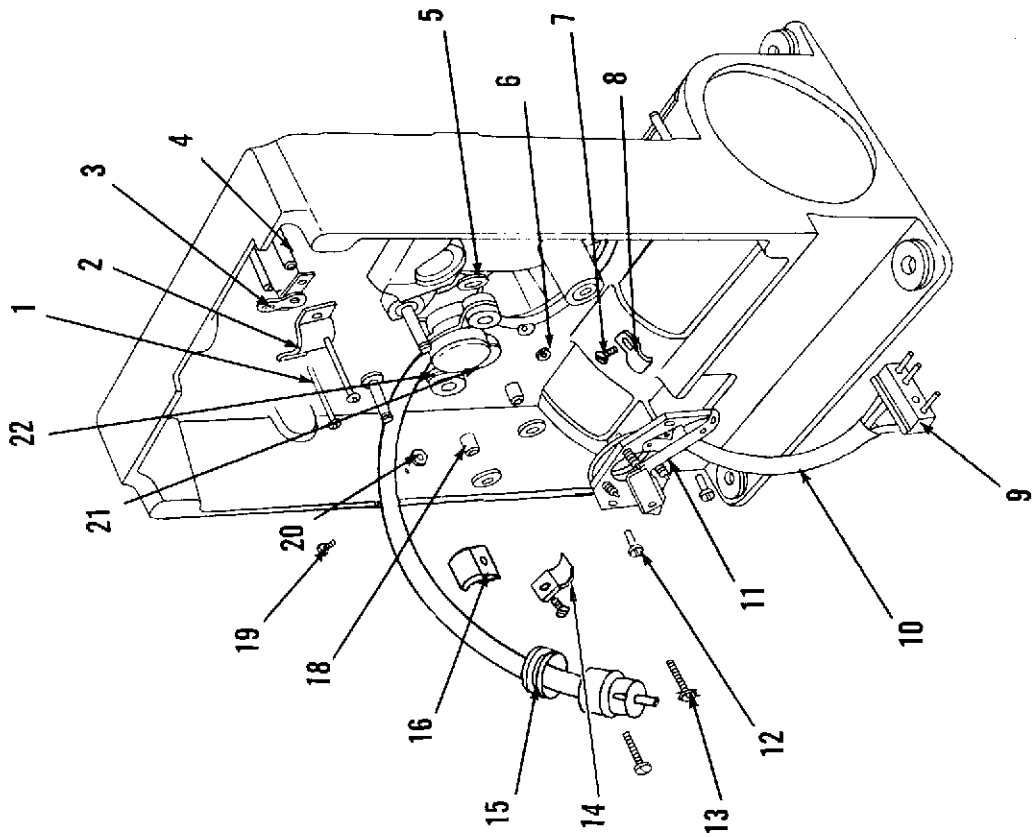
## P. E. C. LEAD & EXCITER LAMP COMPONENTS

No.	Part No.	Part Name	Qty.
1	S251-540-18	5-40 x 1 1/8 Round head screw	2
2	19389	Pilot lamp socket insulator	1
3	19296	Pilot lamp socket	1
4	47101	Pilot lamp sleeve	2
5	23144	Washer	2
6	S198-6	#6 Small brass flat washer	As req'd
7	S254-540-3	5-40 x 3/16 Binder head screw	1
8	20063	Cable clamp	1
9	20628	Exciter lamp socket plug, male	1
10	26904-A	Exciter lamp base plate assembly	1
11	19547-51-2	Exciter lamp socket assembly	1
12	S253-540-5	5-40 x 5/16 Fillister head screw	2
13	S254-540-8	5-40 x 1/2 Binder head screw	2
14	S360-1	Cable clamp	1
15	20078	Rubber grommet	1
16	38001	Clamp	1
18	23076	P. E. C. screw sleeve	2
19	S254-540-5	5-40 x 5/16 Binder head screw	1
20	S324-540	5-40 Hex nut	1
21	47766-A	P. E. C. lead & socket assembly	1
22	19143	Rubber grommet	2





**ELECTRICAL COMPONENTS**



**P.E.C. LEAD & EXCITER LAMP COMPONENTS**

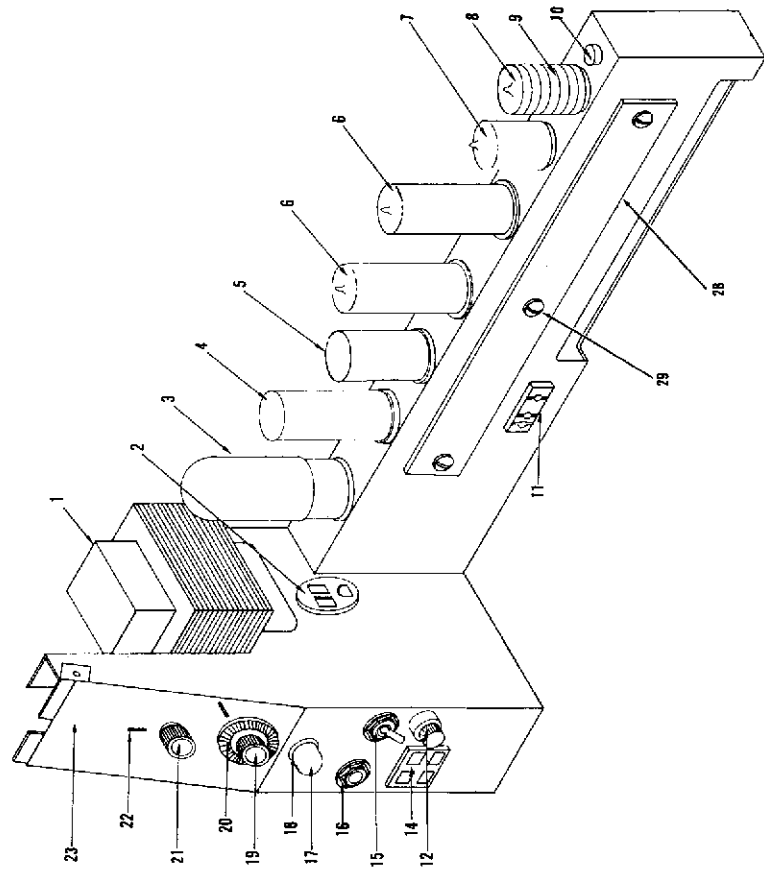
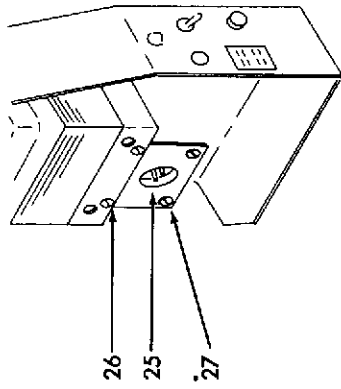
### 70-15 AMPLIFIER

No.	Part No.	Part Name	Qty.
1	47770-A	Amplifier complete	1
2	47767	Power transformer	1
3	47700	Female power plug	1
4	5Y3GT	Tube	1
5	36261	Condenser 30/350V, 20/350V, 20/25V, Can	1
6	36294	Condenser electrolytic 30/450V, Can	1
6	6973	Tube	2
7	12AX7	Tube	1
8	7025	Tube	1
9	30562-9A	Tube shield assembly with lead	1
10	47753	Photocell input	1
11	20629	Exciter lamp socket (female)	1
12	23128	Fuse holder	1
14	26787-1	Speaker socket	1
15	18641	Switch, S.P.S.T.	1
16	18643	Phono jack	1
17	47760	Pilot light lens	1
17A	S701-1-1	Pilot light GE #47	1
18	47759	Pilot light socket	1
19	47780	Center tone control knob	1
20	47781	Outer tone control knob	1
21	47825	Knob, volume control	1
22	S277-832-2	8-32 x 1/8 Socket set screw	2
23	47801	Nameplate	1
47855A		Tone control assembly (includes 47776 & 47779)	1
S254-832-6		8-32 x 3/8 Binder head screw for mounting to case	6
47304A		Cable assembly coax.	1
47853		Cable tone control 3 conductor	1
47854		Cable volume control 2 conductor	1
48094		Cover	1
S254-540-4		5-40 x 1/4 Binding head screw	3
S199-5		Washer	3

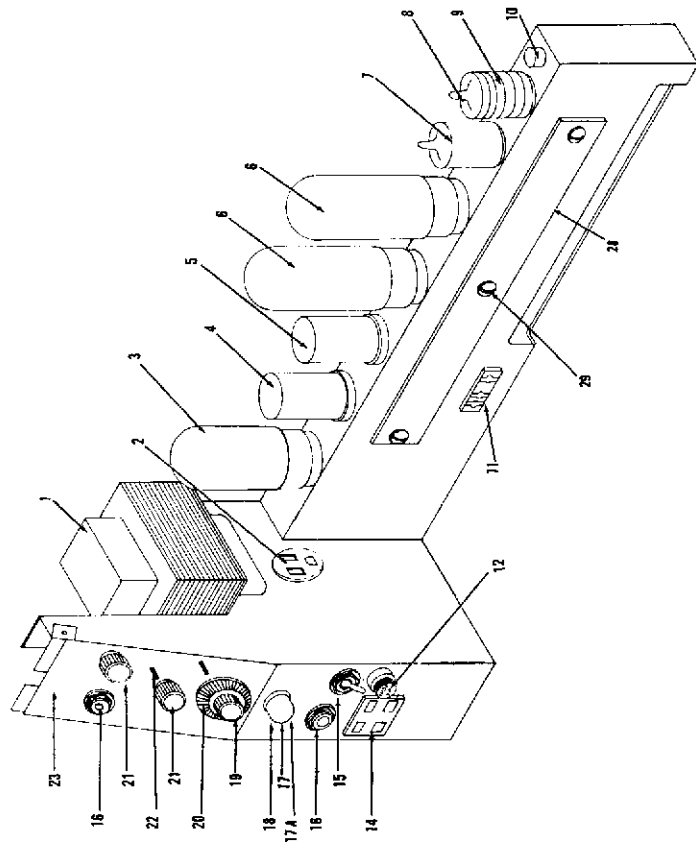
### 70-25 AMPLIFIER

No.	Part No.	Part Name	Qty.
1	47901-A	Amplifier complete	1
2	26925	Power transformer	1
3	47700	Female power plug	1
4	5U4	Tube	1
5	36210	Condenser electrolytic 10/450V, 16/450V, Can	1
5	36294	Condenser electrolytic 30/450V, Can	1
6	6L6	Tube	2
7	12AX7	Tube	1
8	7025	Tube	1
9	30562-9A	Tube shield assembly w/lead	1
10	47753	Photocell input	1
11	20629	Exciter lamp socket (female)	1
12	23128	Fuse holder	1
14	26787-1	Speaker socket	1
15	18641	Switch S.P.S.T.	1
16	18643	Phono jack	2
17	47760	Pilot light lens	1
17A	S701-1-1	Pilot light GE #47	1
18	47759	Pilot light socket	1
19	47780	Center tone control knob	1
20	47781	Outer tone control knob	1
21	47825	Knob, volume control	2
22	S277-832-2	8-32 x 1/8 Headless set screw	3
23	47762	Nameplate	1
S254-832-6		8-32 x 3/8 Binder head screw for mounting to case	6
47855-A		Tone control assembly (includes 47776 & 47779)	1
25	47908-A	Flush mount receptacle - 2 wire	1
25A	47927A	Flush mount receptacle - 3 wire	1
26	S252-632-6	6-32 x 3/8 Flat head screw	2
27	S254-632-6	6-32 x 3/8 Binder head screw	2
28	48094	Cover	1
29	S254-540-4	5-40 x 1/4 Binder head screw	3
S199-5		Washer	3

70-15, 70-25 Amplifier  
with Rear Mounted  
Power Plug



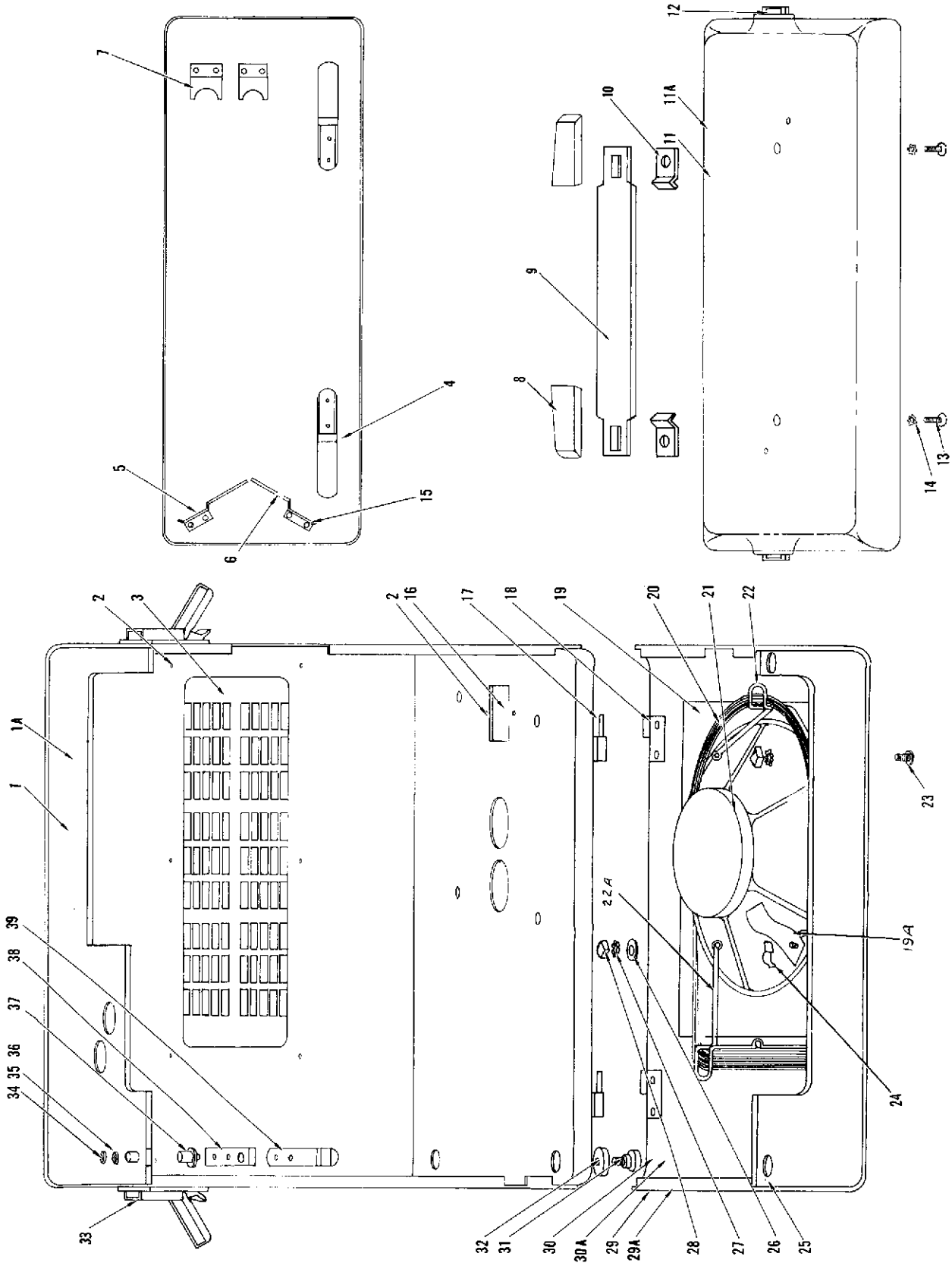
70-15 AMPLIFIER



70-25 AMPLIFIER

## 70-15 PROJECTOR CASE

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	47886-A	Proj case complete w/5 x 7 in door spkr. w/lifftop w/components as noted	1	22	47836	Cord rack	2
	47887-A	Proj case complete w/lifftop w/o spkr.	1	22A	47906	Cord rack	1
	47500A	Projector case body assembly includes 16, 17, 31 thru 39	1	23	S250-832-12	8-32 x 3/4 Truss head screw	4
2	S276-4-3	#4 x 3/16 Sheet metal screw	6	24	38001	Cord clamp	1
3	47758	Case grille	1	25	47864	Rubber bumper	3
4	23371	Cord rack	2	26	S199-8	#8 Plain washer	3
5	30419-A	Reel arm bracket & clip assembly	1	27	S200-8	#8 Internal tooth lockwasher	4
6	30357-A	Reel arm bracket & clip assembly	1	28	S321-832	8-32 Cap nut	4
7	30256	Reel arm holder	2	29	48048A	Case door assembly w/spkr. includes items 18 thru 30A, 34 thru 39	1
8	47798	Retainer, handle	2	29A		Door riveted assembly, plain. Refer 30	
9	48125-A	Handle insert & filler assembly	1	29B		Door riveted assembly (w/speaker openings) refer 30A	1
10	48123	Handle lift	2	30	47865-A	Case door assembly w/o speaker includes 18, 25, 29A, 34 thru 39	1
11	47803-A	Lift top assembly includes 4, 5, 6, 7, 8, 9, 10, 11A, 12, 13, 14, 15	1	30A	47809-3	Case door sub assembly (for speaker) includes 18, 25, 29B, 34 thru 39	1
12	23198	Case catch, hook	2	31	23111	Rubber foot screw	2
13	S254-832-5	8-32 x 5/16 Binder head screw	2	32	22259	Rubber foot	2
14	S200-8	#8 Internal tooth lockwasher	2	33	23197	Catch case, body	2
15	S301-141-14	9/64 dia x 7/32 long Tubular rivet	12	34	S254-540-4	5-40 x 1/4 Binder head screw	4
16	30513	Governor opening cover	1	35	S199-5	#5 Lockwasher	4
17	48019	Pin end hinge	2	36	S324-540	5-40 Hex nut	4
18	48018	Hinge catch	2	37	23196	Door catch release button	2
19	48046	Speaker baffle	1	38	23118	Door catch spring	2
19A	48049	Cover speaker terminals	1	39	23200	Case door catch	2
20	47988	Speaker cable assembly	1	47839	47839	Kalart Victor escutcheon (not shown)	1
21	48044	Speaker, 5 x 7 P.M.	1	23120	23120	Victor escutcheon (not shown)	1
				47842	47842	Nameplate 70-fifteen (not shown)	1
				47872	47872	Nameplate 70-twenty five (not shown)	1



70-15 PROJECTOR CASE

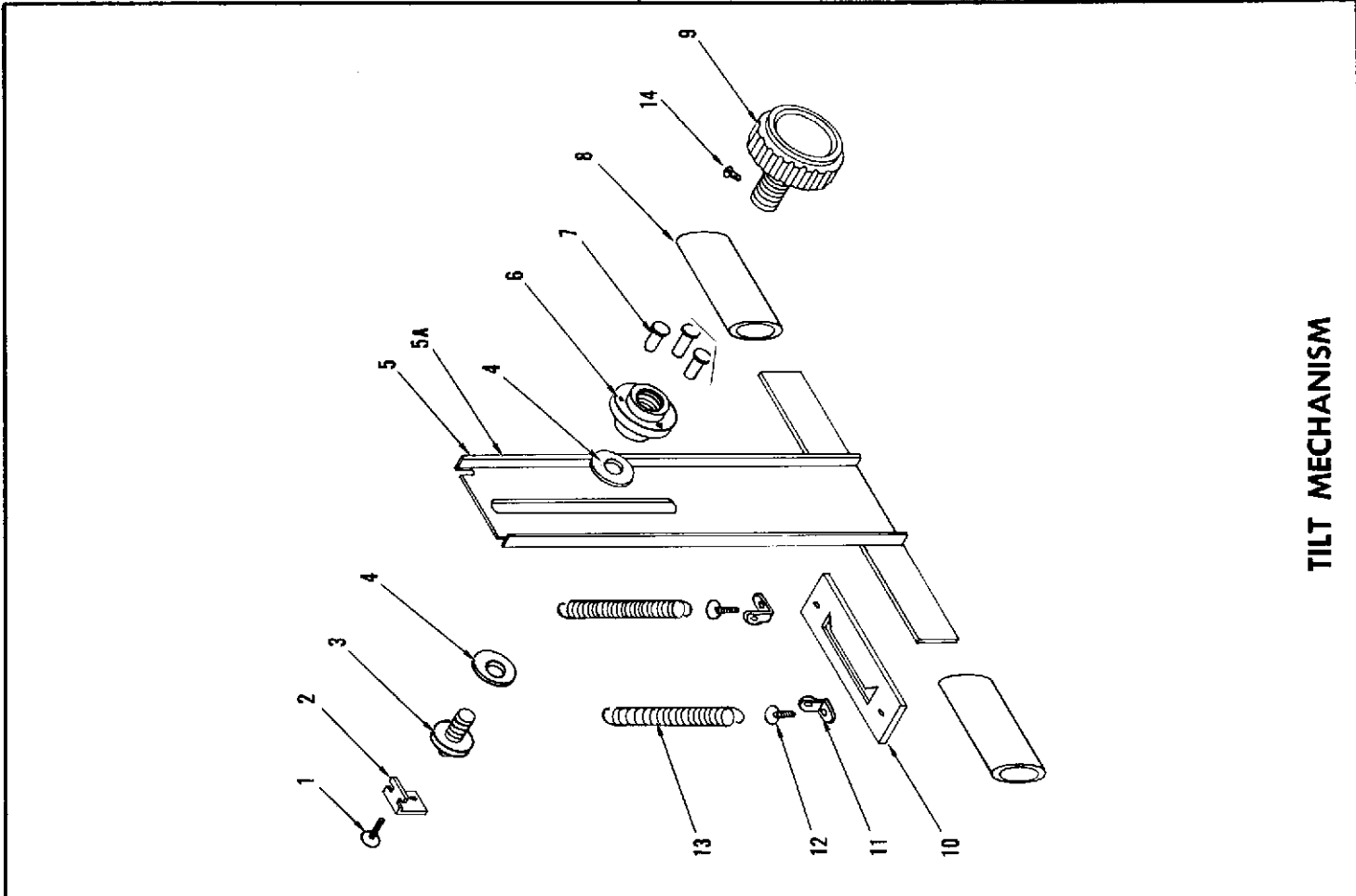
### J3B METAL SPEAKER

No.	Part No.	Part Name	Qty.
1	47846-A	Speaker assembly complete J3B	1
1A	47839	Case emblem (Kalart Victor)	1
2	23120	Case emblem (Victor)	1
3	47847A	Speaker case front assembly	1
4	47840	Escutcheon	1
4	47798	Handle retainer	2
5	48125-A	Handle insert & filler assembly	1
5A	48123	Handle lift	2
6	47848-3	Speaker body case	1
7	46450	12" P.M. speaker	1
8	23179A	Reel holder assembly	1
9	23172A	Rear speaker case cover assembly	1
10	23175	Case catch body	4
11	47864	Rubber bumper	11
12	23174	Case catch, hook	4
13	26649-R	Speaker grille	1
14	S250-832-12	8-32 x 3/4 Truss head screw	4
14A	S206-1	Lockwasher internal & external #8 I.D. *	4
14B	S324-832	8-32 Hex nut *	4
	47251	Speaker cord 75' (2 plug) (not shown)	1
	46353	Speaker cord rack (not shown)	2

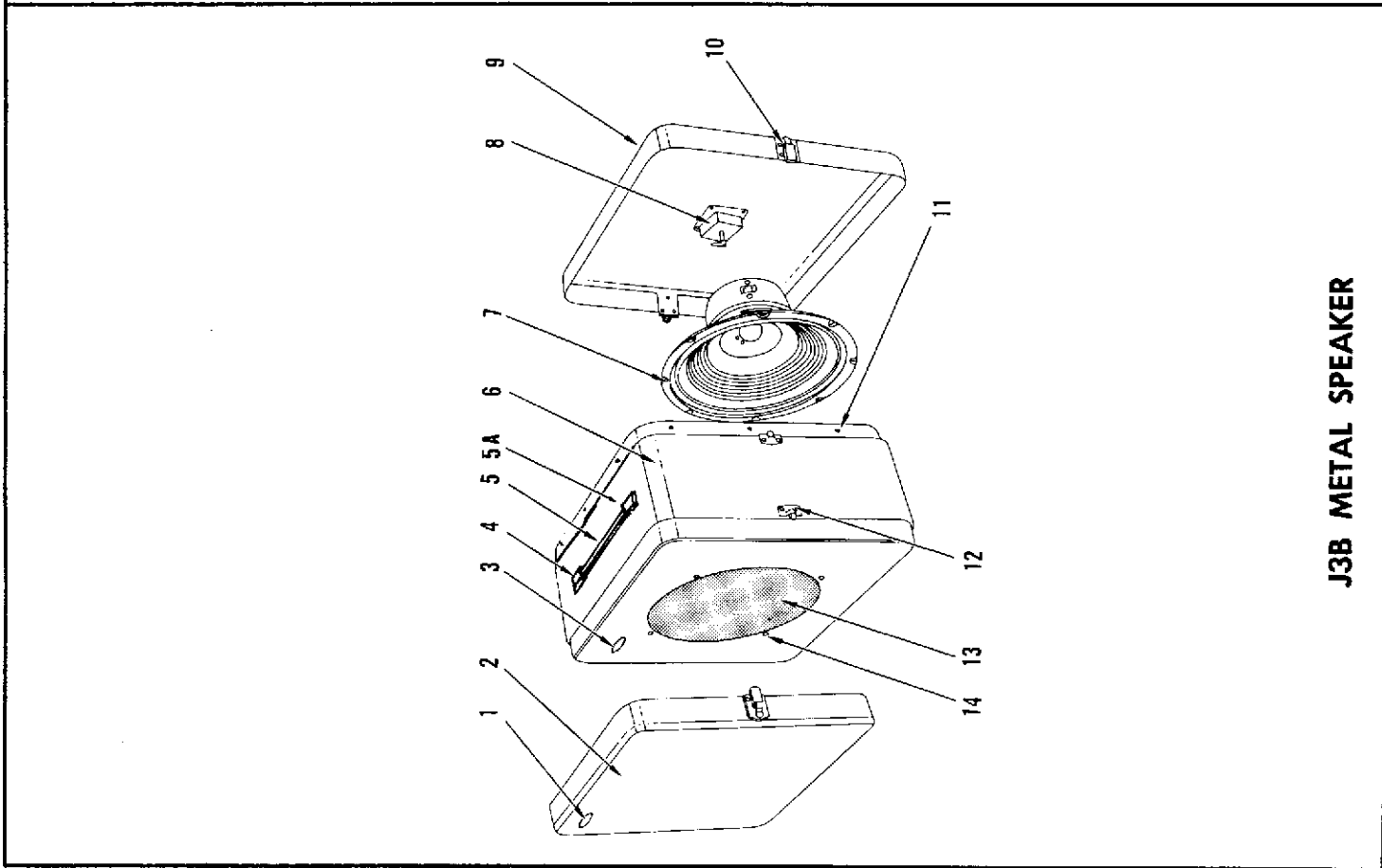
\* Not shown on drawing.

### TILT MECHANISM

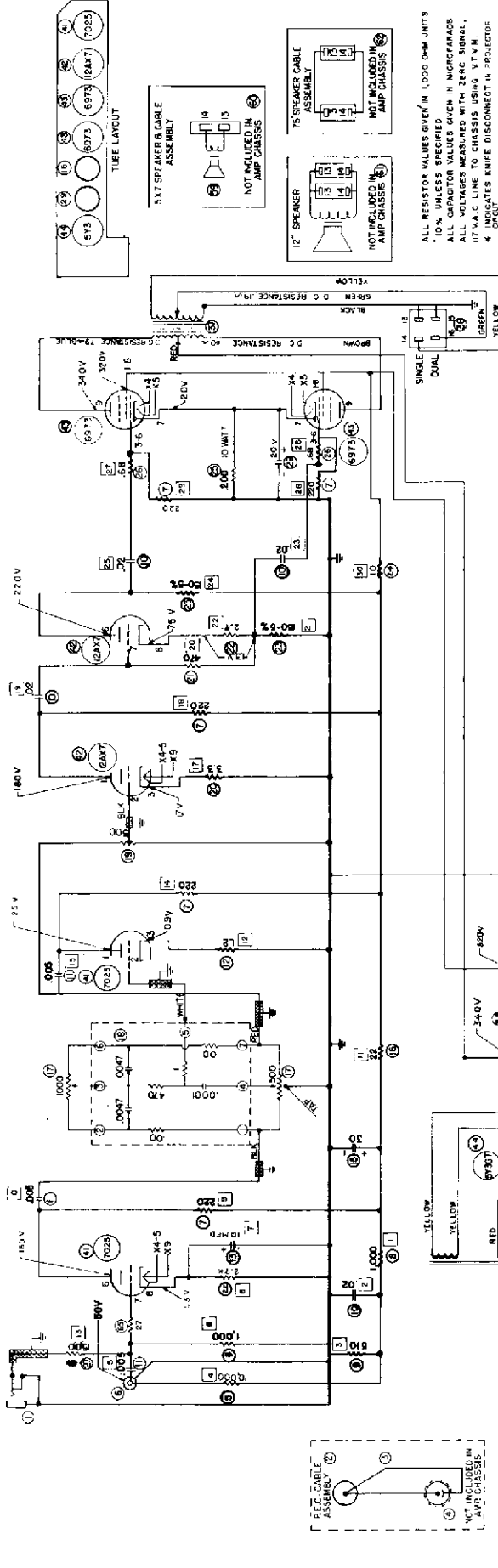
No.	Part No.	Part Name	Qty.
1	S254-540-2	5-40 x 1/8 Binder head screw	1
2	47744	Safe lock	1
3	47743	Screw slide lock	1
4	11120	Fibre shim	2
5	47733-A	Tilt foot assembly (includes 5A, 8)	1
5A	47734A	Tilt foot sub assembly	1
6	47742	Screw guide	1
7	S301-121-14	Rivet	3
8	47737	Rubber foot	2
9	47740-A	Tilt knob	1
10	47739	Slide guide plate	1
11	18823	Soldering lug	2
12	S254-540-4	5-40 x 1/4 Binder head screw	2
13	47738	Tilt spring	2
14	M.S.19	1-72 N.F. x 3/32 Round head screw	1



TILT MECHANISM



J3B METAL SPEAKER



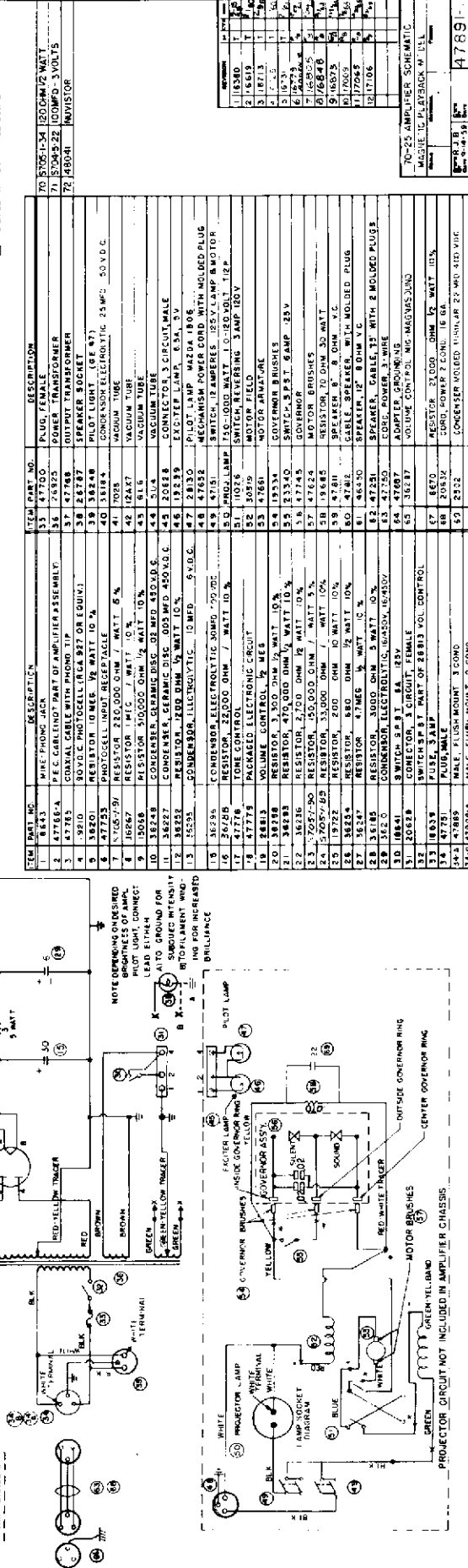
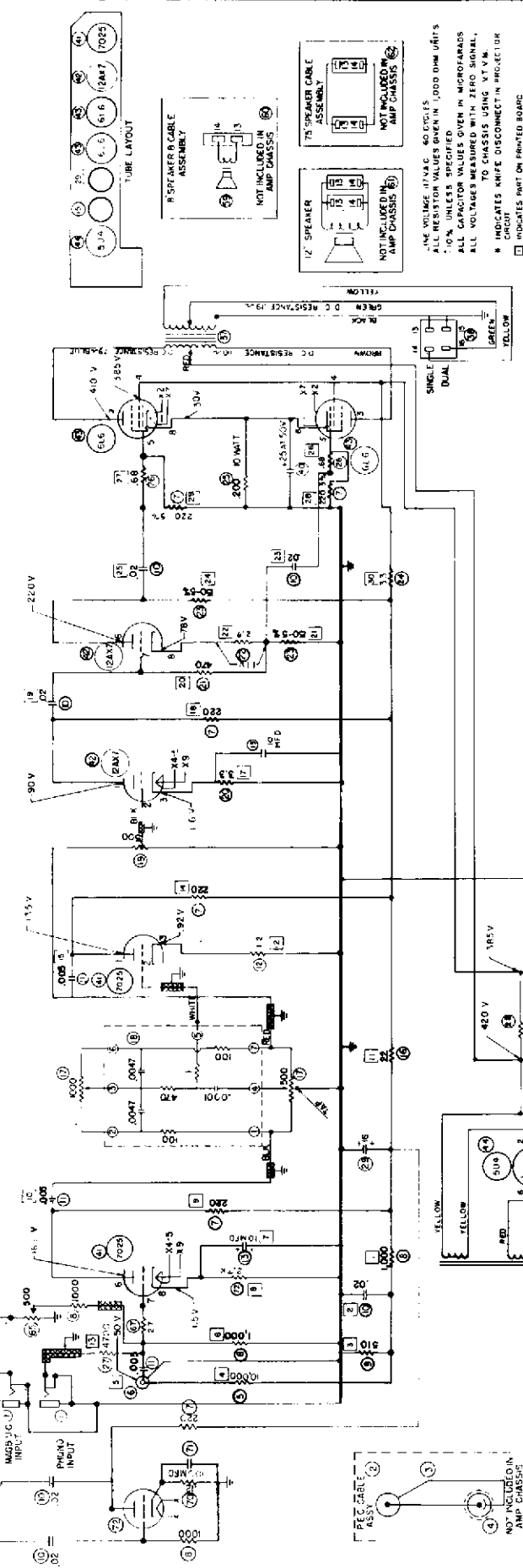
ITEM NO.	PART NO.	DESCRIPTION	ITEM PART NO.	DESCRIPTION	
1	18543	WIRE PHONO JACK	35	47750	PLUG, FEMALE
2	47785-A	REC. CABLE (NOT PART OF AMPLIFIER ASSEMBLY)	36	47787	POWER TRANSFORMER
3	47785-B	GOBEL CABLE WITH PHONO TIP (NOT PART OF EQUIP.)	37	47788	OUTPUT TRANSFORMER
4	47785-C	REC. CABLE WITH PHONO TIP (NOT PART OF EQUIP.)	38	47789	PILOT LIGHT TUBE 471
5	47785-D	REC. CABLE WITH PHONO TIP (NOT PART OF EQUIP.)	39	36846	CONDENSER, 300 P.F. 50 V.D.C.
6	47785-E	PHOTOCELL UNIT (REPLACEABLE)	40	20681	VACUUM TUBE
7	5708-11-9	RESISTOR 220,000 OHM 1/2 WATT 5%	41	7025	VACUUM TUBE
8	36267	RESISTOR 1 MEG. 1 WATT 10%	42	12487	VACUUM TUBE
9	10068	RESISTOR 510,000 OHM 1/2 WATT 10%	43	6973	VACUUM TUBE
10	36648	CONDENSER, CERAMIC, DISC. 02 MFD. 450 V.D.C.	44	57357	VACUUM TUBE
11	36627	CONDENSER, CERAMIC, DISC. 005 MFD. 450 V.D.C.	45	20629	CONNECTOR 3 CIRCUIT, MALE
12	36635	RESISTOR 150,000 OHM 1/2 WATT 10%	46	19299	EXCITER LAMP, E53, 5V
13	36635	CONDENSER, ELECTROLYTIC, 10 MFD. 6 V.D.C.	47	38130	PILOT LAMP, MAZDA 1808
14	36294	CONDENSER, ELECTROLYTIC, 5000 U.F. 20V	48	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
15	36128	TONE CONTROL	49	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
16	47778	PACKAGED ELECTRONIC CIRCUIT	50	11066	SWITCH, REVERSING 3 AMP. 120V
17	47779	VOLUME CONTROL, 4 MEG.	51	305-9	MOTOR FIELD
18	68013	RESISTOR, 3,300 OHM 1/2 WATT 10%	52	47661	MOTOR ARMATURE
19	36839	RESISTOR, 470,000 OHM 1/2 WATT 10%	53	19534	GOVERNOR BRUSHES
20	36839	RESISTOR, 270,000 OHM 1/2 WATT 10%	54	47745	GOVERNOR
21	36839	RESISTOR, 150,000 OHM 1/2 WATT 10%	55	47824	MOTOR BRUSHES
22	36839	RESISTOR, 50,000 OHM 1/2 WATT 10%	56	19285	RESISTOR 70 OHM 30 WATT
23	36839	RESISTOR, 10,000 OHM 1/2 WATT 10%	57	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
24	36839	RESISTOR, 1,500 OHM 1/2 WATT 10%	58	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
25	36839	RESISTOR, 150 OHM 1/2 WATT 10%	59	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
26	36839	RESISTOR, 15 MEG. 1/2 WATT 10%	60	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
27	36839	RESISTOR, 300,000 OHM 1/2 WATT 10%	61	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
28	36839	CONDENSER, ELECTROLYTIC, 30,000 U.F. 20V	62	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
29	10684	CONNECTOR, 3 CIRCUIT, FEMALE	63	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
30	10684	CONNECTOR, 3 CIRCUIT, MALE	64	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
31	10684	CONNECTOR, 3 CIRCUIT, FEMALE	65	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
32	10684	CONNECTOR, 3 CIRCUIT, MALE	66	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
33	10684	CONNECTOR, 3 CIRCUIT, FEMALE	67	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
34	10684	CONNECTOR, 3 CIRCUIT, MALE	68	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
35	10684	CONNECTOR, 3 CIRCUIT, FEMALE	69	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
36	10684	CONNECTOR, 3 CIRCUIT, MALE	70	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
37	10684	CONNECTOR, 3 CIRCUIT, FEMALE	71	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
38	10684	CONNECTOR, 3 CIRCUIT, MALE	72	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
39	10684	CONNECTOR, 3 CIRCUIT, FEMALE	73	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
40	10684	CONNECTOR, 3 CIRCUIT, MALE	74	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
41	10684	CONNECTOR, 3 CIRCUIT, FEMALE	75	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
42	10684	CONNECTOR, 3 CIRCUIT, MALE	76	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
43	10684	CONNECTOR, 3 CIRCUIT, FEMALE	77	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
44	10684	CONNECTOR, 3 CIRCUIT, MALE	78	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
45	10684	CONNECTOR, 3 CIRCUIT, FEMALE	79	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
46	10684	CONNECTOR, 3 CIRCUIT, MALE	80	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
47	10684	CONNECTOR, 3 CIRCUIT, FEMALE	81	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
48	10684	CONNECTOR, 3 CIRCUIT, MALE	82	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
49	10684	CONNECTOR, 3 CIRCUIT, FEMALE	83	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
50	10684	CONNECTOR, 3 CIRCUIT, MALE	84	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
51	10684	CONNECTOR, 3 CIRCUIT, FEMALE	85	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
52	10684	CONNECTOR, 3 CIRCUIT, MALE	86	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
53	10684	CONNECTOR, 3 CIRCUIT, FEMALE	87	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
54	10684	CONNECTOR, 3 CIRCUIT, MALE	88	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
55	10684	CONNECTOR, 3 CIRCUIT, FEMALE	89	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
56	10684	CONNECTOR, 3 CIRCUIT, MALE	90	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
57	10684	CONNECTOR, 3 CIRCUIT, FEMALE	91	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
58	10684	CONNECTOR, 3 CIRCUIT, MALE	92	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
59	10684	CONNECTOR, 3 CIRCUIT, FEMALE	93	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
60	10684	CONNECTOR, 3 CIRCUIT, MALE	94	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
61	10684	CONNECTOR, 3 CIRCUIT, FEMALE	95	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
62	10684	CONNECTOR, 3 CIRCUIT, MALE	96	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
63	10684	CONNECTOR, 3 CIRCUIT, FEMALE	97	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
64	10684	CONNECTOR, 3 CIRCUIT, MALE	98	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
65	10684	CONNECTOR, 3 CIRCUIT, FEMALE	99	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR
66	10684	CONNECTOR, 3 CIRCUIT, MALE	100	47852	SYSTEM 10 AMPERES, 12V LAMP MOTOR





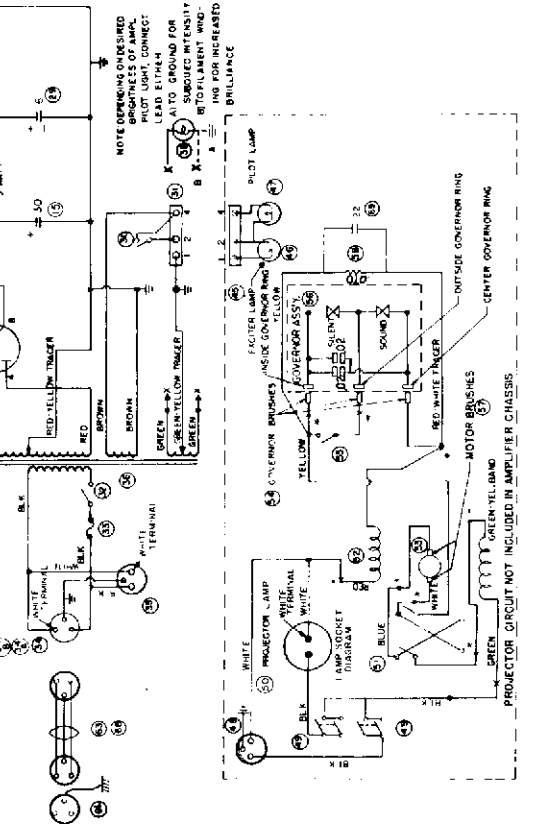




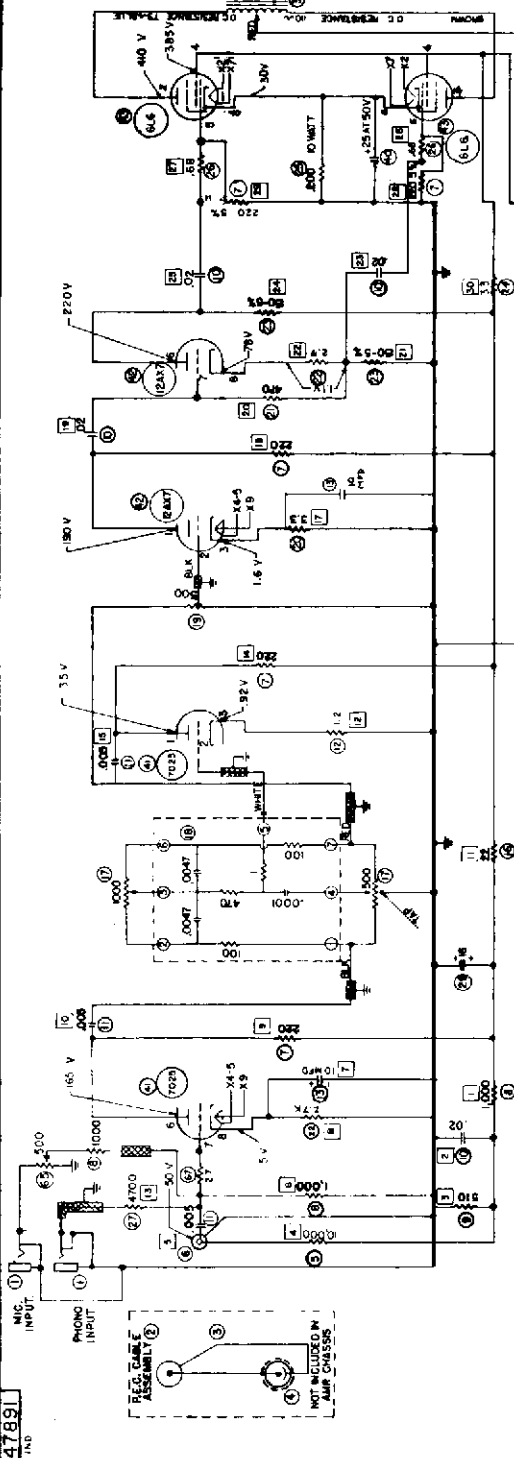


\* 1/2 VOLUME 17VAD. 40 CYCLES  
ALL RESISTOR VALUES GIVEN IN 1,000 OHM UNITS  
10% UNLESS SPECIFIED  
ALL CAPACITOR VALUES GIVEN IN MICROFARADS  
ALL VOLTAGES MEASURED WITH ZERO SIGNAL,  
TO CHASSIS USING XT-V.M.  
\* INDICATES KNIFE DISCONNECT IN PROJECTOR  
□ INDICATES PART ON PRINTED BOARD

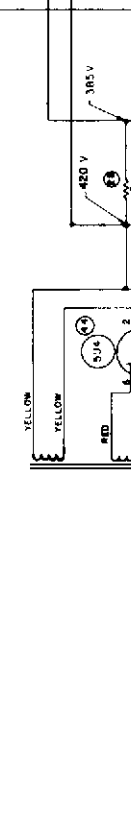
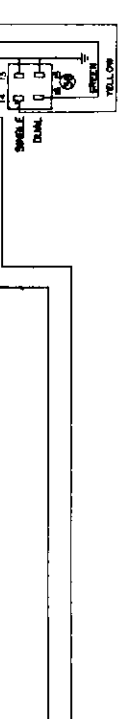
ITEM	PART NO.	DESCRIPTION
1	8833	WIRE PHONO JACK
2	47700	PLUG, FEMALE
3	47700	POWER TRANSFORMER
4	47748	100 WATT MOTOR
5	8910	50 VOLT PHOTOCELL (RCA 927 OR EQUIV.)
6	24528	SPEAKER SOCKET
7	38220	RESISTOR, 10 MEG. 1/2 WATT 10%
8	47753	PHOTOCELL INPUT RECEP.TABLE
9	47753	RESISTOR 220,000 OHM 1/2 WATT 5%
10	10267	RESISTOR 1 MEG. 1/2 WATT 10%
11	10267	RESISTOR 500,000 OHM 1/2 WATT 10%
12	38249	CONSUMER, CERAMIC DISC. OR MFD. 450 P.P.C.
13	38257	CONSUMER, 200 OHM 1/2 WATT 10%
14	38257	CONSUMER, ELECTROLYTIC. 10 MFD. 50 V.D.C.
15	38259	CONSUMER ELECTROLYTIC 10 MFD. 50 V.D.C.
16	24726	RESISTOR, 22,000 OHM 1/2 WATT 10%
17	47776	TONE CONTROL
18	47775	PACKAGED ELECTRONIC CIRCUIT
19	48813	VOLUME CONTROL, 1/2 MEG
20	38288	RESISTOR, 3,500 OHM 1/2 WATT 10%
21	38288	RESISTOR, 470,000 OHM 1/2 WATT 10%
22	38288	RESISTOR, 2,700 OHM 1/2 WATT 10%
23	38288	RESISTOR, 50,000 OHM 1/2 WATT 10%
24	38288	RESISTOR, 200 OHM 1/2 WATT 10%
25	19222	RESISTOR, 200 OHM 1/2 WATT 10%
26	38254	RESISTOR, 47 MEG. 1/2 WATT 10%
27	38254	RESISTOR, 47 MEG. 1/2 WATT 10%
28	38254	RESISTOR, 47 MEG. 1/2 WATT 10%
29	38254	RESISTOR, 47 MEG. 1/2 WATT 10%
30	38254	RESISTOR, 47 MEG. 1/2 WATT 10%
31	47776	PACKAGED ELECTRONIC CIRCUIT
32	38288	RESISTOR, 3,500 OHM 1/2 WATT 10%
33	38288	RESISTOR, 470,000 OHM 1/2 WATT 10%
34	38288	RESISTOR, 2,700 OHM 1/2 WATT 10%
35	38288	RESISTOR, 50,000 OHM 1/2 WATT 10%
36	38288	RESISTOR, 200 OHM 1/2 WATT 10%
37	38288	RESISTOR, 200 OHM 1/2 WATT 10%
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96	38288	RESISTOR, 200 OHM 1/2 WATT 10%
97	38288	RESISTOR, 200 OHM 1/2 WATT 10%
98	38288	RESISTOR, 200 OHM 1/2 WATT 10%
99	38288	RESISTOR, 200 OHM 1/2 WATT 10%
100	38288	RESISTOR, 200 OHM 1/2 WATT 10%



ITEM	PART NO.	DESCRIPTION
1	18380	70-25 AMPLIFIER SCHEMATIC
2	18380	MAGNETIC PROJECTOR W. LULL
3	18380	70-25 AMPLIFIER SCHEMATIC
4	18380	MAGNETIC PROJECTOR W. LULL
5	18380	70-25 AMPLIFIER SCHEMATIC
6	18380	MAGNETIC PROJECTOR W. LULL
7	18380	70-25 AMPLIFIER SCHEMATIC
8	18380	MAGNETIC PROJECTOR W. LULL
9	18380	70-25 AMPLIFIER SCHEMATIC
10	18380	MAGNETIC PROJECTOR W. LULL
11	18380	70-25 AMPLIFIER SCHEMATIC
12	18380	MAGNETIC PROJECTOR W. LULL
13	18380	70-25 AMPLIFIER SCHEMATIC
14	18380	MAGNETIC PROJECTOR W. LULL
15	18380	70-25 AMPLIFIER SCHEMATIC
16	18380	MAGNETIC PROJECTOR W. LULL
17	18380	70-25 AMPLIFIER SCHEMATIC
18	18380	MAGNETIC PROJECTOR W. LULL
19	18380	70-25 AMPLIFIER SCHEMATIC
20	18380	MAGNETIC PROJECTOR W. LULL
21	18380	70-25 AMPLIFIER SCHEMATIC
22	18380	MAGNETIC PROJECTOR W. LULL
23	18380	70-25 AMPLIFIER SCHEMATIC
24	18380	MAGNETIC PROJECTOR W. LULL
25	18380	70-25 AMPLIFIER SCHEMATIC
26	18380	MAGNETIC PROJECTOR W. LULL
27	18380	70-25 AMPLIFIER SCHEMATIC
28	18380	MAGNETIC PROJECTOR W. LULL
29	18380	70-25 AMPLIFIER SCHEMATIC
30	18380	MAGNETIC PROJECTOR W. LULL
31	18380	70-25 AMPLIFIER SCHEMATIC
32	18380	MAGNETIC PROJECTOR W. LULL
33	18380	70-25 AMPLIFIER SCHEMATIC
34	18380	MAGNETIC PROJECTOR W. LULL
35	18380	70-25 AMPLIFIER SCHEMATIC
36	18380	MAGNETIC PROJECTOR W. LULL
37	18380	70-25 AMPLIFIER SCHEMATIC
38	18380	MAGNETIC PROJECTOR W. LULL
39	18380	70-25 AMPLIFIER SCHEMATIC
40	18380	MAGNETIC PROJECTOR W. LULL
41	18380	70-25 AMPLIFIER SCHEMATIC
42	18380	MAGNETIC PROJECTOR W. LULL
43	18380	70-25 AMPLIFIER SCHEMATIC
44	18380	MAGNETIC PROJECTOR W. LULL
45	18380	70-25 AMPLIFIER SCHEMATIC
46	18380	MAGNETIC PROJECTOR W. LULL
47	18380	70-25 AMPLIFIER SCHEMATIC
48	18380	MAGNETIC PROJECTOR W. LULL
49	18380	70-25 AMPLIFIER SCHEMATIC
50	18380	MAGNETIC PROJECTOR W. LULL



LINE VOLTAGE 117 VAC 60 CYCLES  
 ALL RESISTOR VALUES GIVEN IN 1,000 OHM UNITS  
 ALL CAPACITOR VALUES GIVEN IN MICROFARADS  
 ALL VOLTAGE VALUES GIVEN IN VOLTS  
 ALL VOLTAGE VALUES GIVEN IN MICROFARADS  
 ALL VOLTAGE VALUES GIVEN IN VOLTS  
 \* INDICATES KNIFE DISCONNECT IN PRODUCTION CIRCUIT  
 □ INDICATES PART ON PRINTED BOARD

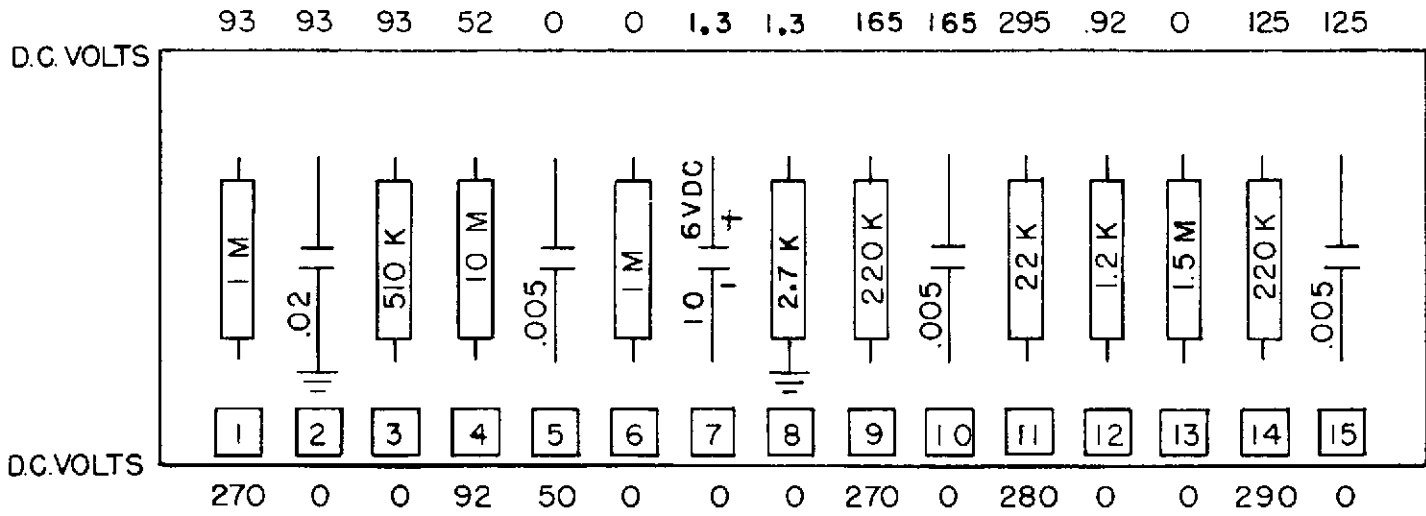


ITEM	QTY	DESCRIPTION
1	18443	WIRE PHONO JACK
2	47760	P.C. CABLE (NOT PART OF AMPLIFIER ASSEMBLY)
3	47765-A	CRYSTAL CABLE WITH PHONO TIP
4	19200	50 V.D.C. PHOTOCELL (1/4" X 3/4" OR EQUIV)
5	34801	RESISTOR 10 MEG. 1/4 WATT 10%
6	34801	PHOTOCELL (W/OUT PERIPHERALS)
7	34801	RESISTOR 100,000 OHM 1/4 WATT 5%
8	34801	RESISTOR 100,000 OHM 1/4 WATT 10%
9	34801	RESISTOR 500,000 OHM 1/4 WATT 10%
10	34801	CONDENSER CERAMIC DISC. OR MFD. 450 V.D.C.
11	34827	CONDENSER CERAMIC DISC. 0.005 MFD. 450 V.D.C.
12	34828	RESISTOR 1,000 OHM 1/4 WATT 10%
13	34828	CONDENSER ELECTROLYTIC 10 MFD. 5 V.D.C.
14	34828	CONDENSER ELECTROLYTIC 500 MFD. 50 V.D.C.
15	34828	RESISTOR 2,000 OHM 1/4 WATT 10%
16	34828	PACKAGED ELECTRONIC CIRCUIT
17	34828	VOLUME CONTROL 1/2 MEG.
18	34828	RESISTOR 5,000 OHM 1/4 WATT 10%
19	34828	RESISTOR 10,000 OHM 1/4 WATT 10%
20	34828	RESISTOR 15,000 OHM 1/4 WATT 10%
21	34828	RESISTOR 20,000 OHM 1/4 WATT 10%
22	34828	RESISTOR 25,000 OHM 1/4 WATT 10%
23	34828	RESISTOR 30,000 OHM 1/4 WATT 10%
24	34828	RESISTOR 35,000 OHM 1/4 WATT 10%
25	34828	RESISTOR 40,000 OHM 1/4 WATT 10%
26	34828	RESISTOR 45,000 OHM 1/4 WATT 10%
27	34828	RESISTOR 50,000 OHM 1/4 WATT 10%
28	34828	RESISTOR 55,000 OHM 1/4 WATT 10%
29	34828	RESISTOR 60,000 OHM 1/4 WATT 10%
30	34828	RESISTOR 65,000 OHM 1/4 WATT 10%
31	34828	RESISTOR 70,000 OHM 1/4 WATT 10%
32	34828	RESISTOR 75,000 OHM 1/4 WATT 10%
33	34828	RESISTOR 80,000 OHM 1/4 WATT 10%
34	34828	RESISTOR 85,000 OHM 1/4 WATT 10%
35	34828	RESISTOR 90,000 OHM 1/4 WATT 10%
36	34828	RESISTOR 95,000 OHM 1/4 WATT 10%
37	34828	RESISTOR 100,000 OHM 1/4 WATT 10%
38	34828	RESISTOR 105,000 OHM 1/4 WATT 10%
39	34828	RESISTOR 110,000 OHM 1/4 WATT 10%
40	34828	RESISTOR 115,000 OHM 1/4 WATT 10%
41	34828	RESISTOR 120,000 OHM 1/4 WATT 10%
42	34828	RESISTOR 125,000 OHM 1/4 WATT 10%
43	34828	RESISTOR 130,000 OHM 1/4 WATT 10%
44	34828	RESISTOR 135,000 OHM 1/4 WATT 10%
45	34828	RESISTOR 140,000 OHM 1/4 WATT 10%
46	34828	RESISTOR 145,000 OHM 1/4 WATT 10%
47	34828	RESISTOR 150,000 OHM 1/4 WATT 10%
48	34828	RESISTOR 155,000 OHM 1/4 WATT 10%
49	34828	RESISTOR 160,000 OHM 1/4 WATT 10%
50	34828	RESISTOR 165,000 OHM 1/4 WATT 10%
51	34828	RESISTOR 170,000 OHM 1/4 WATT 10%
52	34828	RESISTOR 175,000 OHM 1/4 WATT 10%
53	34828	RESISTOR 180,000 OHM 1/4 WATT 10%
54	34828	RESISTOR 185,000 OHM 1/4 WATT 10%
55	34828	RESISTOR 190,000 OHM 1/4 WATT 10%
56	34828	RESISTOR 195,000 OHM 1/4 WATT 10%
57	34828	RESISTOR 200,000 OHM 1/4 WATT 10%
58	34828	RESISTOR 205,000 OHM 1/4 WATT 10%
59	34828	RESISTOR 210,000 OHM 1/4 WATT 10%
60	34828	RESISTOR 215,000 OHM 1/4 WATT 10%
61	34828	RESISTOR 220,000 OHM 1/4 WATT 10%
62	34828	RESISTOR 225,000 OHM 1/4 WATT 10%
63	34828	RESISTOR 230,000 OHM 1/4 WATT 10%
64	34828	RESISTOR 235,000 OHM 1/4 WATT 10%
65	34828	RESISTOR 240,000 OHM 1/4 WATT 10%
66	34828	RESISTOR 245,000 OHM 1/4 WATT 10%
67	34828	RESISTOR 250,000 OHM 1/4 WATT 10%
68	34828	RESISTOR 255,000 OHM 1/4 WATT 10%
69	34828	RESISTOR 260,000 OHM 1/4 WATT 10%
70	34828	RESISTOR 265,000 OHM 1/4 WATT 10%
71	34828	RESISTOR 270,000 OHM 1/4 WATT 10%
72	34828	RESISTOR 275,000 OHM 1/4 WATT 10%
73	34828	RESISTOR 280,000 OHM 1/4 WATT 10%
74	34828	RESISTOR 285,000 OHM 1/4 WATT 10%
75	34828	RESISTOR 290,000 OHM 1/4 WATT 10%
76	34828	RESISTOR 295,000 OHM 1/4 WATT 10%
77	34828	RESISTOR 300,000 OHM 1/4 WATT 10%
78	34828	RESISTOR 305,000 OHM 1/4 WATT 10%
79	34828	RESISTOR 310,000 OHM 1/4 WATT 10%
80	34828	RESISTOR 315,000 OHM 1/4 WATT 10%
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82	34828	RESISTOR 325,000 OHM 1/4 WATT 10%
83	34828	RESISTOR 330,000 OHM 1/4 WATT 10%
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85	34828	RESISTOR 340,000 OHM 1/4 WATT 10%
86	34828	RESISTOR 345,000 OHM 1/4 WATT 10%
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123	34828	RESISTOR 530,000 OHM 1/4 WATT 10%
124	34828	RESISTOR 535,000 OHM 1/4 WATT 10%
125	34828	RESISTOR 540,000 OHM 1/4 WATT 10%
126	34828	RESISTOR 545,000 OHM 1/4 WATT 10%
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128	34828	RESISTOR 555,000 OHM 1/4 WATT 10%
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149	34828	RESISTOR 660,000 OHM 1/4 WATT 10%
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151	34828	RESISTOR 670,000 OHM 1/4 WATT 10%
152	34828	RESISTOR 675,000 OHM 1/4 WATT 10%
153	34828	RESISTOR 680,000 OHM 1/4 WATT 10%
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155	34828	RESISTOR 690,000 OHM 1/4 WATT 10%
156	34828	RESISTOR 695,000 OHM 1/4 WATT 10%
157	34828	RESISTOR 700,000 OHM 1/4 WATT 10%
158	34828	RESISTOR 705,000 OHM 1/4 WATT 10%
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160	34828	RESISTOR 715,000 OHM 1/4 WATT 10%
161	34828	RESISTOR 720,000 OHM 1/4 WATT 10%
162	34828	RESISTOR 725,000 OHM 1/4 WATT 10%
163	34828	RESISTOR 730,000 OHM 1/4 WATT 10%
164	34828	RESISTOR 735,000 OHM 1/4 WATT 10%
165	34828	RESISTOR 740,000 OHM 1/4 WATT 10%
166	34828	RESISTOR 745,000 OHM 1/4 WATT 10%
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169	34828	RESISTOR 760,000 OHM 1/4 WATT 10%
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174	34828	RESISTOR 785,000 OHM 1/4 WATT 10%
175	34828	RESISTOR 790,000 OHM 1/4 WATT 10%
176	34828	RESISTOR 795,000 OHM 1/4 WATT 10%
177	34828	RESISTOR 800,000 OHM 1/4 WATT 10%
178	34828	RESISTOR 805,000 OHM 1/4 WATT 10%
179	34828	RESISTOR 810,000 OHM 1/4 WATT 10%
180	34828	RESISTOR 815,000 OHM 1/4 WATT 10%
181	34828	RESISTOR 820,000 OHM 1/4 WATT 10%
182	34828	RESISTOR 825,000 OHM 1/4 WATT 10%
183	34828	RESISTOR 830,000 OHM 1/4 WATT 10%
184	34828	RESISTOR 835,000 OHM 1/4 WATT 10%
185	34828	RESISTOR 840,000 OHM 1/4 WATT 10%
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205	34828	RESISTOR 940,000 OHM 1/4 WATT 10%
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207	34828	RESISTOR 950,000 OHM 1/4 WATT 10%
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213	34828	RESISTOR 980,000 OHM 1/4 WATT 10%
214	34828	RESISTOR 985,000 OHM 1/4 WATT 10%
215	34828	RESISTOR 990,000 OHM 1/4 WATT 10%
216	34828	RESISTOR 995,000 OHM 1/4 WATT 10%
217	34828	RESISTOR 1,000,000 OHM 1/4 WATT 10%
218	34828	RESISTOR 1,005,000 OHM 1/4 WATT 10%
219	34828	RESISTOR 1,010,000 OHM 1/4 WATT 10%
220	34828	RESISTOR 1,015,000 OHM 1/4 WATT 10%
221	34828	RESISTOR 1,020,000 OHM 1/4 WATT 10%
222	34828	RESISTOR 1,025,000 OHM 1/4 WATT 10%
223	34828	RESISTOR 1,030,000 OHM 1/4 WATT 10%
224	34828	RESISTOR 1,035,000 OHM 1/4 WATT 10%
225	34828	RESISTOR 1,040,000 OHM 1/4 WATT 10%
226	34828	RESISTOR 1,045,000 OHM 1/4 WATT 10%
227	34828	RESISTOR 1,050,000 OHM 1/4 WATT 10%
228	34828	RESISTOR 1,055,000 OHM 1/4 WATT 10%
229	34828	RESISTOR 1,060,000 OHM 1/4 WATT 10%
230	34828	RESISTOR 1,065,000 OHM 1/4 WATT 10%
231	34828	RESISTOR 1,070,000 OHM 1/4 WATT 10%
232	34828	RESISTOR 1,075,000 OHM 1/4 WATT 10%
233	34828	RESISTOR 1,080,000 OHM 1/4 WATT 10%
234	34828	

# SERVICING DATA ETCHED CIRCUIT MOUNTING BOARDS

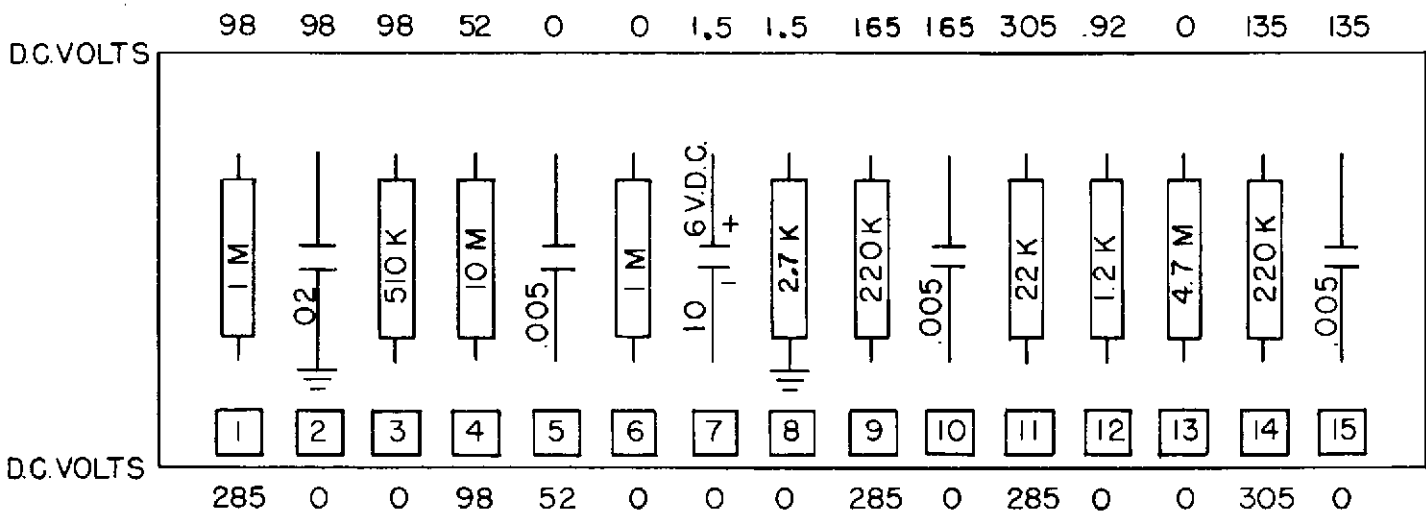
DETAILS DESIGNATED IN  REFER TO SIMILARLY MARKED COMPONENTS  
IN SCHEMATIC DRAWINGS

## 70 - 15



47876-A PRE AMPLIFIER

## 70 - 25



47904-A PRE AMPLIFIER

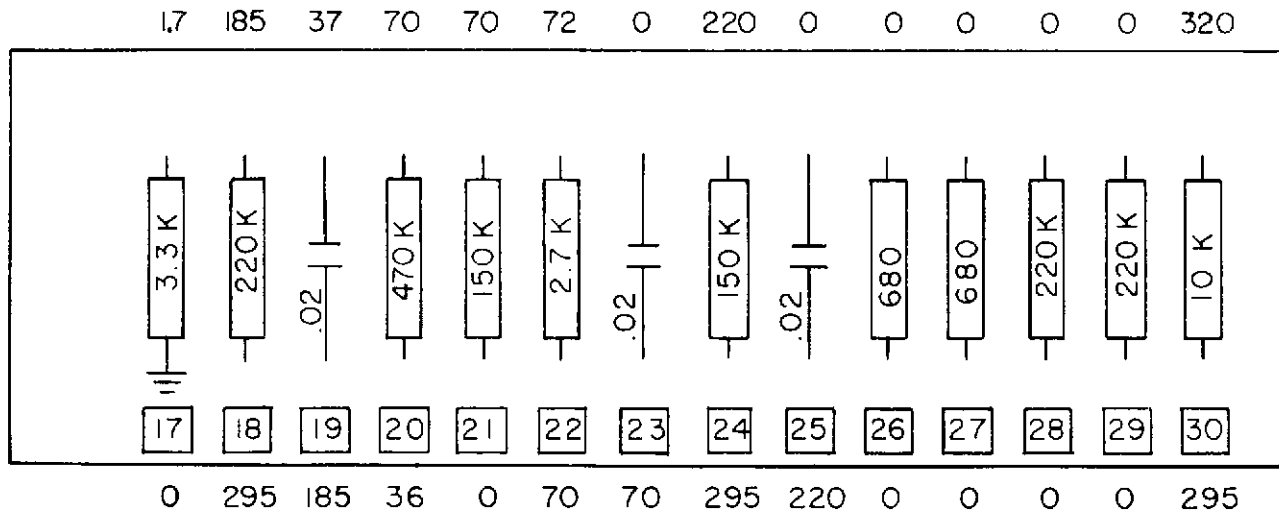
ALL RESISTOR VALUES GIVEN IN OHMS

ALL CAPACITOR VALUES GIVEN IN MICROFARADS

ALL VOLTAGES D.C. NO SIGNAL INPUT — MEASURED WITH V.T.V.M. TO GROUND

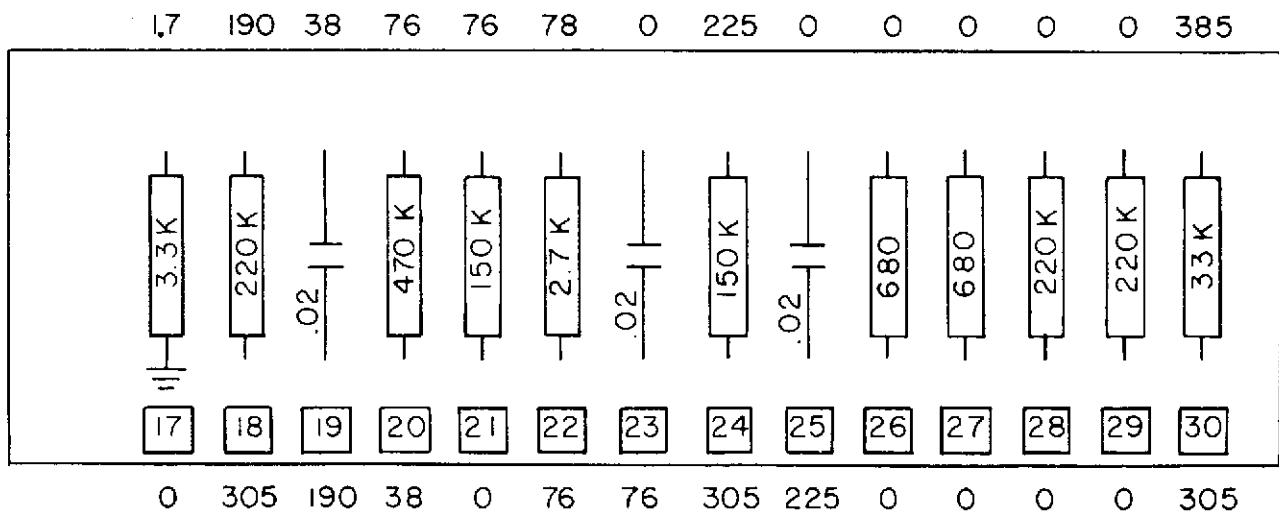
K= 1,000 ; M= 1,000,000

## 70 - 15



### 47874-A PHASE INVERTER

## 70 - 25



### 47903-A PHASE INVERTER

# NOTES

## TECHNICAL DATA

### PROJECTOR

105/130 Volts 50/60 Cycles A.C.

Power Cord: 2 Conductor 12 ft., 16 ga.  
3 Conductor 12 ft., 16 ga.  
Grounding Adapter

VAC #20632  
VAC #47750  
VAC #47687

### FILM SPEED

24 frames per second Sound  
16.7 frames per second Silent

### FILM CAPACITY

2000 ft. reels maximum

### PHOTO CELL

RCA 927 or equiv.

VAC #19210

### PROJECTION LAMP

750 Watt Standard DDB (25 hour)  
1000 Watt (Optional) DFD (10 hour)  
1200 Watt (Optional) DHT (10 hour)

VAC #47125  
VAC #47130  
VAC #47316

### EXCITER LAMP

6.5A/T8/ISCP (BVK)

VAC #19299

### AMPLIFIER

Power required

105 to 130 Volts 50/60 cycles

### TUBE COMPLEMENT

	70-15	70-25
Voltage Amplifier	7025	7025
Amplifier Phase Inverter	12AX7	12AX7
Output (2 tubes)	6973	6L6
Rectifier	5Y3	5U4

Fuse: 3 Ampere Buss 3AG or equiv.

Amplifier Load Impedance: 4 and 8 Ohms.



## TECHNICAL DATA

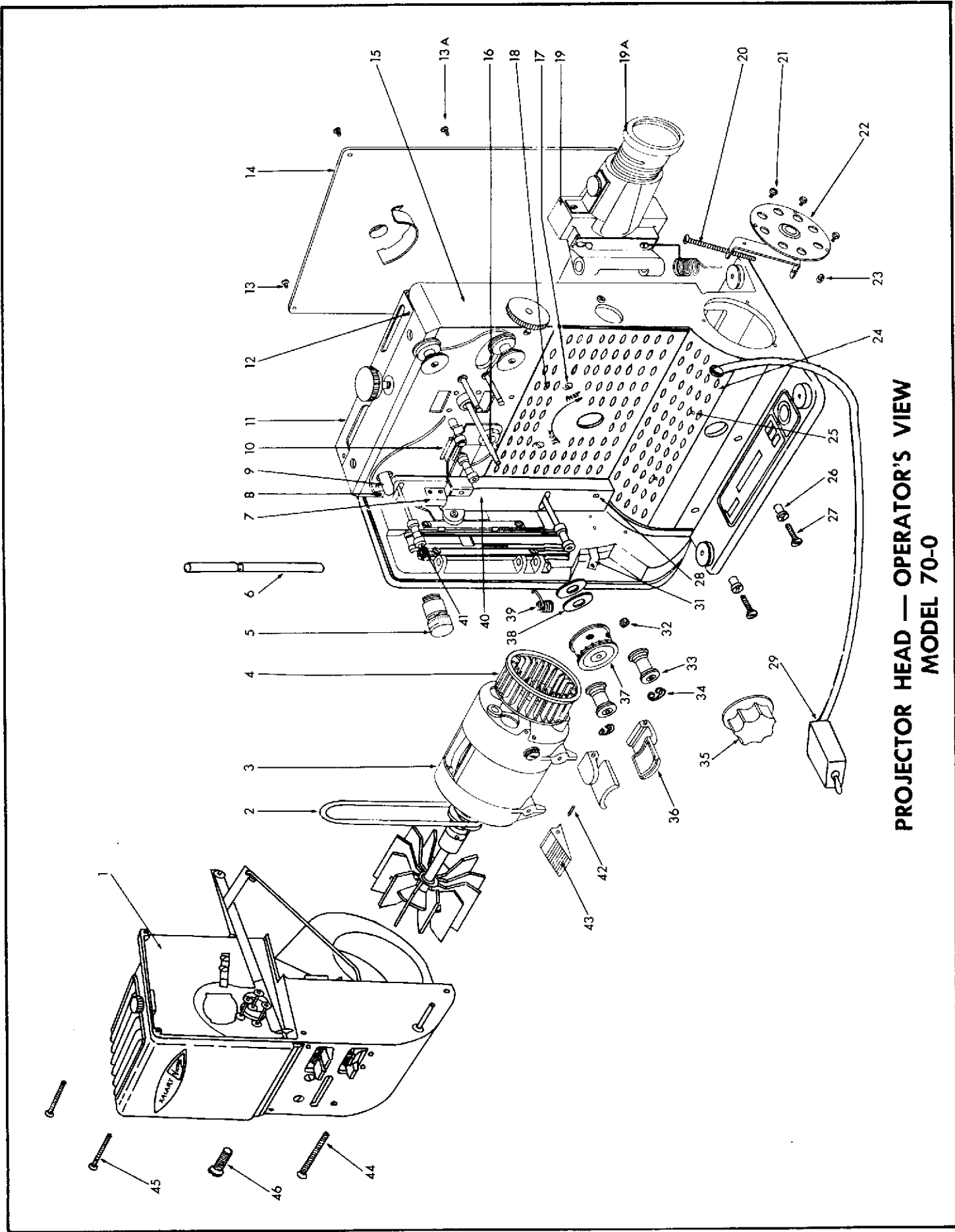
<u>Projection Lens:</u>	70-15	70-25
Standard	2" F:1.6 petzval	2" F:1.6 field flattener
Optional	5/8", 1", 1 1/2", 2 1/2", 3", 3 1/2", 4", Zoom Lens (35 mm - 60mm)	
<u>Speaker:</u>		
Permanent Magnet	8 Ohm Impedance	

## WEIGHTS AND DIMENSIONS

	70-15 w/5x7 speaker	70-15 w/o Spkr.	70-25	J3B	U6
Length Overall	15 1/2"	15 1/2"	15 1/2"	19"	18 1/8"
Height Overall	14 1/2"	14 1/2"	14 1/2"	18"	18"
Width Overall	9 1/2"	9 1/2"	9 1/2"	10 1/4"	10"
Equipment Weight	40 lbs.	36 1/2 lbs.	39 lbs.	21 1/2 lbs.	22 lbs.
Shipping Weight	47 lbs.	43 1/2 lbs.	46 lbs.	28 1/2 lbs.	28 lbs.

## PROJECTOR HEAD — OPERATOR'S VIEW MODEL 70-0

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	37319-A	Lamp house casting assembly	1	24	37327	Silent nameplate	1
2	47609	O Ring drive belt	1	25	S290-0-2	#0 x 3/16 Drive screw	2
3	37317-A	Motor assembly	1	26	30520	Motor support sleeve	4
4	36310	Blower wheel	1	27	S250-832-8	8-32 x 1/2 Truss head screw	4
5	46212	Pilot lamp cap	1	28	S251-540-16	5-40 x 1 Round head screw	1
6	48031	Lens mount pivot	1	29	47114-A	Remote control assembly	1
7	46160-R	Lens mount lock plate	1	31	47635	Starting lever	1
8	S254-540-2	5-40 x 1/8 Binder head screw	1	32	S277-832-2	8-32 x 1/8 Socket set screw	2
9	28130	Pilot lamp	1	33	36159-A	Film roll assembly	2
10	S253-540-12	5-40 x 3/4 Fillister head screw	2	34	S235-3	#3 "E" ring	2
11	46376	Belt separator	1	35	36331	Rheostat knob	1
12	S251-440-3	4-40 x 3/16 Round head screw	2	36	47515-A	Film shoe	2
13	S254-832-5	8-32 x 5/16 Binder head screw	2	37	36154	Feed sprocket	1
13A	S254-540-2	5-40 x 1/8 Binder head screw	2	38	19494	Thrust washer	2
14	47924-A	Back cover plate	1	39	48029	Lens mount spring	1
15	36316-A	Body casting assembly	1	40	46150-AR	Trip cover assembly	1
16	S321-5/16-24	5/16-24 Hex cap nut	1	41	46145-AR	Automatic trip lever assembly	1
17	S254-832-4	8-32 x 1/4 Binder head screw	2	42	S277-540-3	5-40 x 3/16 Socket set screw	1
18	37328	Nameplate slow-fast	1	43	47863	Starting lever tab	1
19	48033-A	Lens mount assembly	1	44	S251-832-20	8-32 x 1 1/4 Round head screw	1
19A	46230	Lens projection field flattener 2" F1.6	1	45	S253-540-14	5-40 x 7/8 Fillister head screw	2
20	S2511-632-36	6-32 x 2 1/4 Brass round head screw	1	46	S254-540-5	5-40 x 5/16 Binder head screw	1
21	S254-540-3	5-40 x 3/16 Binder head screw	3		19303-R	Lens mount lock plate spacer (not shown)	2
22	19019-2R	Body plate assembly	1		48043	Motor pulley (not shown)	1
23	S324-632	6-32 Hex nut	1				

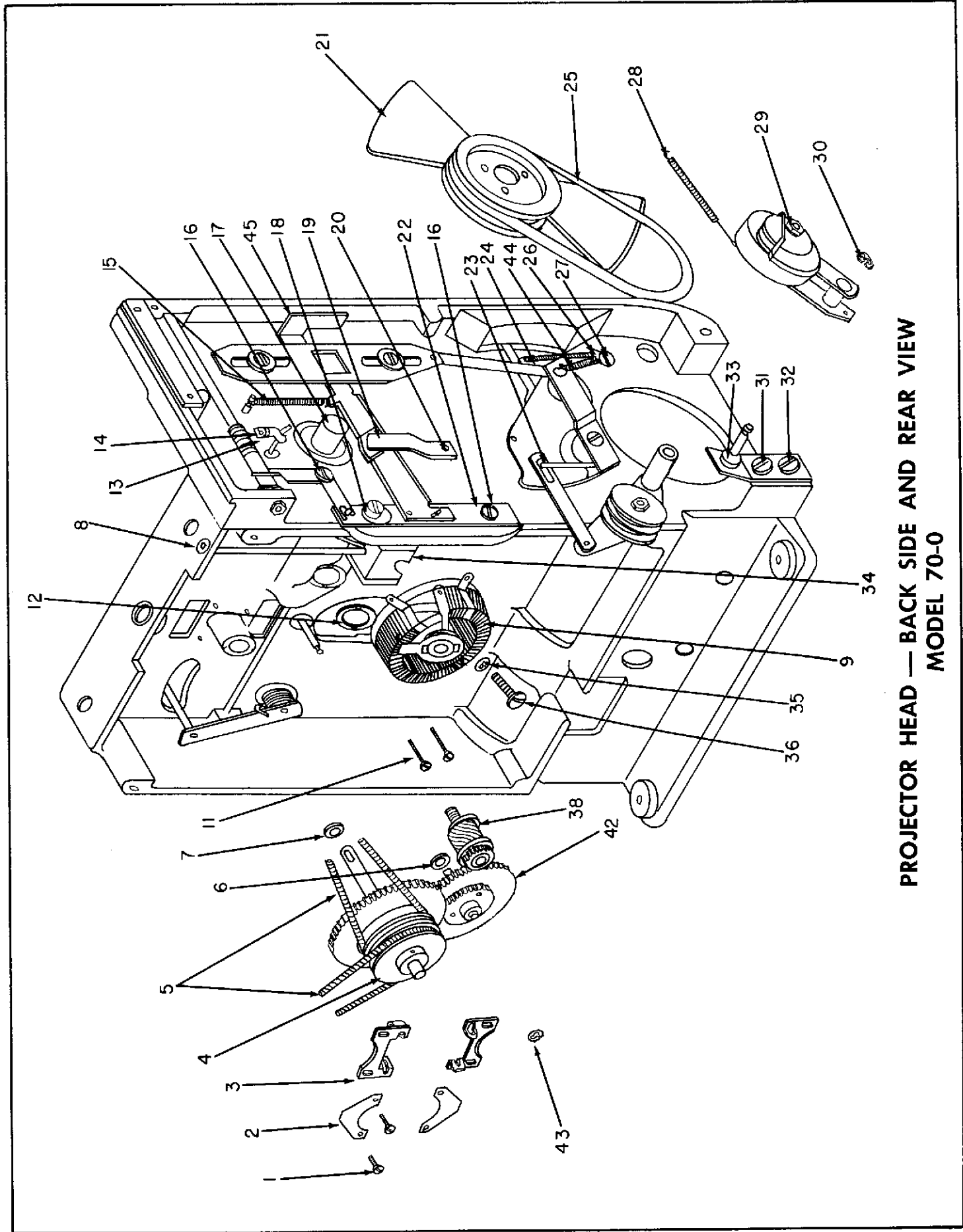


PROJECTOR HEAD — OPERATOR'S VIEW  
MODEL 70-0

**PROJECTOR HEAD — BACK SIDE AND REAR VIEW  
MODEL 70-0**

No.	Part No.	Part Name	Page	Qty.	No.	Part No.	Part Name	Page	Qty.
1	S254-832-4	8-32 x 1/4 Binder head screw		4	27	S254-540-2	5-40 x 1/8 Binder head screw		1
2	36155	Film shoe spring	31	2	28	47952	Rewind spring		1
3	36156	Film shoe bracket	31	2	29	46138-A	Rewind disc bar & pulley assembly	35	1
4	26836-A	Takeup clutch assembly	27	1	30	S235-3	#3 "E" ring		1
5	23217	Takeup belt		2	31	S254-540-5	5-40 x 5/16 Binder head screw		1
6	19482	Thrust washer		As req'd	32	S251-832-28	8-32 x 1 3/4 Round head screw		1
7	19494	Thrust washer		As req'd	33	47697-A	Rewind pulley bracket assembly		1
8	47895-A	Oiler assembly		1	34	47603-A	Oil reservoir	29	1
9	36309	Variable speed rheostat		1	35	S199-5	#5 Plain washer		1
11	S252-172-3	1-72 x 3/16 Flat head screw		2	36	S251-540-22	5-40 x 1 3/8 Round head screw		1
12	36153	Felt retaining washer		1	38	47535-A	Spiral intermediate gear & shaft assembly	27	1
13	S254-540-2	5-40 x 1/8 Binder head screw		1	42	19180-A	Sound sprocket drive gear assembly	27	1
14	47608	Oil tube support		1	43	S235-3	#3 "E" ring		1
15	47639	Shuttle spring		1	44	19469	Safety shutter trip spring		1
16	47630	Shoulder screw		2	45	47993-A	Fire shutter assembly with heat filter		1
17	47520-A	Osc. sleeve & cam hub assembly	23	1					
18	47631	Bowed spring		2					
19	47638	Shuttle oscillator spring		1					
20	S254-540-2	5-40 x 1/8 Binder head screw		1					
*21	47527-A	Main cam & shutter 2 interruption (matched pair)	23	1					
22	48017-A	Shuttle & mounting arm assembly	25	1					
23	47637	Spring starting lever plate		1					
24	23381	Spring, start lever		1					
25	47610	Flat drive belt		1					
26	47177	Lug, start lever spring		1					

\* 47526-A is 3 interruption shutter (matched pair)

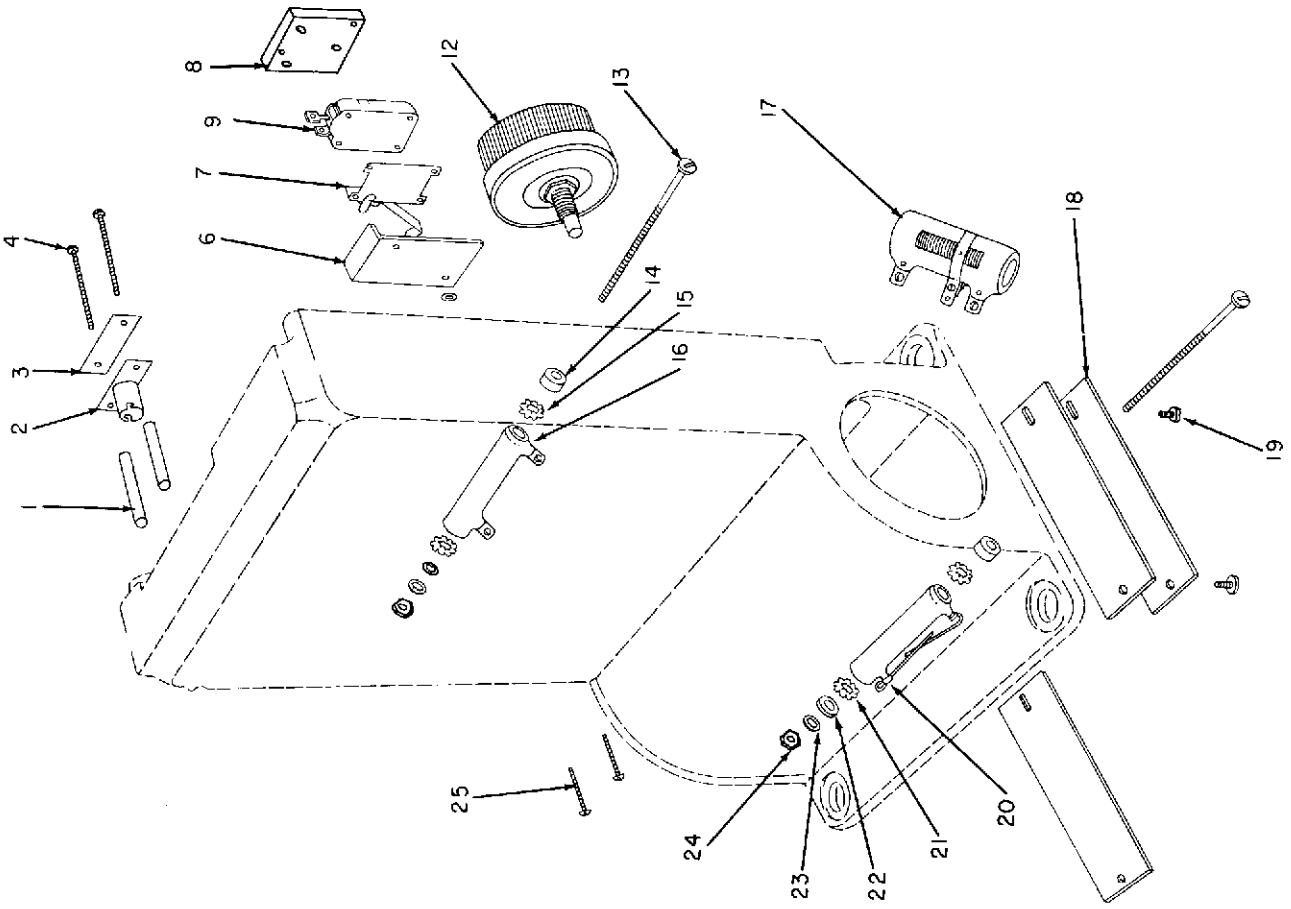


PROJECTOR HEAD — BACK SIDE AND REAR VIEW  
MODEL 70-0

## ELECTRICAL COMPONENTS MODEL 70-0

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	47101	Pilot lamp sleeve	2	16	36306	Resistor, 750 ohm, 20 watt	1
2	19296	Pilot lamp socket	1	17	36308	Resistor, 150 ohm, 30 watt w/tap	1
3	19389	Pilot lamp socket insulator	1	18	19862	Motor terminal insulator	3
4	S251-540-18	5-40 x 1 1/8 Round head screw	2	19	S254-540-5	5-40 x 5/16 Binder head screw	2
6	26950	Snap switch insulator	1	20	36307	Resistor, 25 ohm, 20 watt	1
7	26944	Switch leaf bracket	1	21	S206-1	1/2 O.D. x 1/8 I.D. Inter. & exter. lockwasher	2
8	37335	Connector block	1	22	26954	Resistor washer	2
9	26949	Acro snap switch	1	23	S200-6	#6 Internal tooth lockwasher	2
12	36309	Variable resistor, 50 watt 150 ohm w/stop	1	24	S324-632	6-32 Hex nut	2
13	S251-632-44	6-32 x 2 3/4 Round head screw	2	25	S251-256-10	2-56 x 5/8 Round head screw	2
14	26953	Resistor spacer	2	26587	Remote control switch (not shown)	1	
15	S206-1	1/2 O.D. x 1/8 I.D. Inter. & exter. lockwasher	2				

**ELECTRICAL COMPONENTS  
MODEL 70-0**

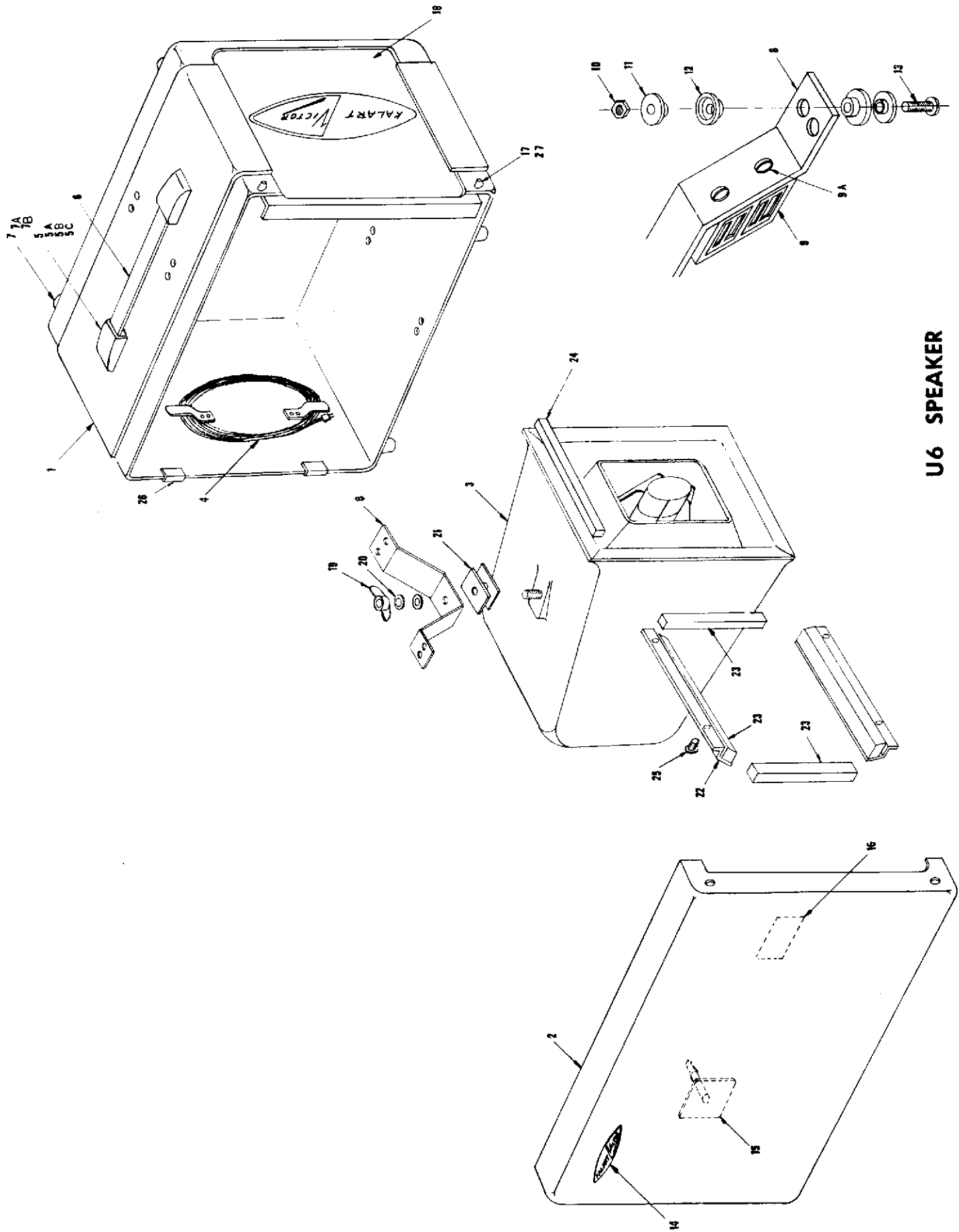


## U6 SPEAKER

No.	Part No.	Part Name	Qty.	No.	Part No.	Part Name	Qty.
1	48101-A	Speaker assembly complete U6	1	13	S250-632-16	6-32 x 1" Truss head screw	8
	48112-A	Speaker case assembly includes 2, 5, 5A, 5B, 5C, 6, 7, 7A, 7B, 17, 18	1	14	47840	Escutcheon	1
2	48104-A	Speaker door assembly includes 14, 15, 16	1	15	48115-A	Reel holder assembly	1
3	48100	Speaker	1	16	48110	Speaker position instruction plate	1
4	47251	Speaker cord	1	17	48114	Pilot pin	2
5	47798	Handle retainer	2	18	48105A	Grill Assembly	1
5A	48123	Handle lift*	2	19	1/4-20	Wing nut	2
5B	S254-832-5	8-32 x 5/16 Binding head screw*	2	20	S199-1/4L	1/4" Washer	4
5C	S200-8	#8 Internal tooth lock washer*	2	21	47576	Spacer	4
6	48125-A	Handle assembly	1	22	48107	Speaker support	2
7	S582-1-2	Rubber foot	8	23	48111-1	Speaker cushion	4
7A	S251-632-9	6-32 x 9/16 Round head screw*	8	24	48111	Speaker cushion	1
7B	S320-632	6-32 Hex nut*	8	25	S254-540-3	5-40 x 3/16 Binding head screw	4
8	48108	Speaker bracket	2	26	48139	1" Rubber moulding	2
9	48109-A	Speaker plug assembly	1	27	W-143	Neoprene washer	2
9A	S254-540-4	5-40 x 1/4 Binding head screw	2				
10	S320-632	6-32 Hex nut	8				
11	48116	Shockmount backup	16				
12	47860	Rubber bushing	16				

\*Not shown





**U6 SPEAKER**