Film-Tech

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SIMPLEX 35 SOUND MECHANISM

DESCRIPTION

The sound head mechanism is contained in an assembly of aluminum castings approximately 12 inches long by 11 3/4 inches deep by 9 1/2 inches high. A 1/4 HP #48 frame electric motor is mounted outside these dimensions. Weight including motor 70 pounds.

The operating side of the sound head is covered by 2 doors. An 8 3/4 x 8 1/2 inch door provides access to the film compartment and a 3 1/4 x 8 1/2 inch door provides access to the exciter lamp and preamplifier compartments. The drive mechanism gear belts and pulley are accessible by removing a rear cover held to the main housing by three captive thumb screws.

The principal functioning elements of the sound head are, motor, drive mechanism, pressure roller, sound drum, exciter lamp assembly, optics, solar cell, preamplifier, and sound damping mechanism.

The 1/4 horsepower motor drives through an 18 tooth pulley and a .2 pitch 1/2 inch wide gear belt to the film sprocket which has an 89 tooth gear belt pulley. This gives a ratio of 18/89 which reduces the 1780 RPM speed of the motor to 360 RPM which is the film sprocket speed. The 16 tooth sprocket drives film at 24 frames per second. Carried on the film sprocket shaft is a second gear belt pulley with 66 teeth. This pulley drives through a gear belt and an 18 tooth gear belt pulley on the projector to drive the projector at 24 frames per second synchronized with the sound head film sprocket speed. A pulley is also provided on the sprocket shaft for power take off to drive the take up magazine.

The film is delivered continuously to the sound head by the lower sprocket of the projector. The film passes slack from the projector sprocket to the sound drum. It is held against the sound drum by a retractable felt pressure roller which has flanges controlling the lateral position of the film. Through friction the film rotates the pressure roller and the sound drum with its flywheel. After leaving the sound drum the film passes over an idler roller, then to a damper roller, then to the film sprocket of the sound head. From this sprocket the film passes through a fire valve into the film take up magazine. Between the sound drum and the film sprocket, the film is under about 1 1/2 ounces of tension. This tension is maintained by a silicone fluid (Dow 200 Fluid - 200,000 centistoke) damped and spring actuated damper roller. The damper roller working with the sound drum flywheel damps the hunting tendency of the mechanism at start up and absorbs variations in film drive, minimizing the wow content of the sound system. Flutter is kept low by the sound drum flywheel and the spring characteristics of the film as it passes over the idler and damper rollers. Two pad rollers are provided to remove any chance that the film sprocket will jump film perforations. The distance along the film from the projector aperture to the sound take off point is 20 frames.

An exciter lamp illuminates a slit in a lens tube. This lens tube focuses the illuminated slit at the film plane in a pattern .084 inches long by a .0012 inches wide. Approximately 9/16 inch beyond the film plane is a silicon solar cell. The photographic sound track of the film breaks up the light pattern on the solar cell as the film passes over the sound drum. The resulting signal is fed through a signal attenuating potentiometer (balance adjustment) mounted on the main frame to the right of the sound drum to the preamplifier. The preamplifier supplies an amplified signal to the theatre sound system.

The preamplifier is a modular unit assembled as a printed circuit board. The copper of the circuit board forms the contacts which mate with the jack receiving the circuit board. A plastic pin slips into a rubber grommet when the preamplifier is installed and secures it in position. The output of the preamplifier is controlled by a potentiometer located on the smaller door of the sound head. The preamplifier is approximately 3 x 3 1/2 x 1/2 inches in size.

The procedure for threading film through the sound head is as follows: Bring the film down from a properly threaded projector. With the pressure roller retracted pass the film between the pressure roller and the sound drum. Allow the pressure roller to come against the sound drum with the film between its flanges. Pass the film to the right over the idler roller, approximately one half way around the idler roller and to the left over the damper roller, half around the damper roller and between the opened pad rollers and the film sprocket. The film should be pulled snug through the system to the film sprocket with the damper arm pulled against its stop on the pad roller arm. Back the film tension off to engage the 1st available film perforation with the sprocket. Close the pad rollers. Closing the pad rollers allows the damper arm additional rotation and allows the damper arm spring to control the film tension. From the film sprocket the film passes directly through the fire valve into the takeup magazine.

The motor is controlled by means of a toggle switch mounted at the front of the sound head on the film side.

The change over switch is mounted on the rear door of the sound head, on the film side.

INSTALLATION

ELECTRICAL SUPPLY REQUIREMENTS

Motor - 117 VAC 60 Hz 15 Amperes
Preamplifier - 22 VDC 20 ma (1 MV ripple max.)
Exciter Lamp - 10 Volts 5 Amperes

The sound mechanism preassembled components include =

(1) Main frame with rear guard
Drive belt
Exciter lamp holder
Preamplifier

(2) Motor mounting plate, with assembly screws and washers.

Motor
Flywheel and pulley
Motor switch

Loose parts are supplied as follows =

1 - Projector drive pulley with elastic stop nut and washer
4 - Sound mechanism to pedestal mounting screws with washers
1 - Projector drive belt
1 - Motor belt guard

1. Sound Mechanism Support.

a. Remove all existing equipment from the projector pedestals. or in new installations position the pedestals properly with respect to the projection ports. Allow not less than six inches clearance between the front of the sound mechanism and the front wall.

b. Mount the sound mechanism supports on the pedestals.

2. Main Frame

a. Insert two sound mechanism fastening screws with washers in the upper holes of the main frame.

b. Position the main frame on the sound mechanism support, with the two screws, in the slotted holes in the support.

c. Insert two similar screws, with washers in the two lower holes of the sound mechanism support and tighten all screws securely.

3. Motor Assembly

a. Assemble the mounting plate including motor, flywheel, pulley and switch in front of and under the sound mechanism by means of the four screws and washers provided.

b. Loosen the motor mounting bolts and slip the drive belt over the motor pulley.

c. Position the motor to provide reasonable tension of the belt and to line up the motor pulley with the larger pulley on the film sprocket shaft. Tighten the motor mounting bolts and install the belt guard.

4. Projector

a. Mount the projector on top of the sound mechanism and after lining up the film path fasten by means of screws provided.

b. Mount the drive pulley on the projector drive shaft securing it by means of the elastic stop nut and washer.

c. Slip the drive belt over the projector drive pulley and the large sound mechanism pulley. Tension belt by means of the adjustable idler assembly.

d. Assemble sound drum flywheel on the drum shaft tightening the set screw on the groove in the shaft.

5. Lower Magazine

a. Mount the lower magazine under the sound mechanism securing it with screws supplied with the magazine.

b. Cut the takeup belt to length, thread over the drive and magazine pulleys and secure with the belt hook.

ADJUSTMENTS

1. The proper lateral film position is attained by rotation of the pressure roller shaft. This shaft is locked by means of a small set screw with nylon pad inserts. The adjustment is performed with the use of buzz track test film per ASA PH22.68-1962.

2. The alignment of the optics is accomplished by azimuth and axial adjustment of the lens tube while using 9000 cycle sound focusing film ASA 22.62-1960. After positioning the lens tube for maximum solar cell output the tube is secured in place by 2 clamping screws.

3. The position of the exciter lamp is to be adjusted for maximum solar cell output. The exciter lamp mounting provides lateral and vertical adjustments with locking devices.

4. The closed position of the pad rollers must be adjusted to properly handle film with a minimum of clearance (2 film thicknesses) between the pad rollers and the film sprocket. This is accomplished by rotating the whole damper arm and pad roller assembly about a locating dowel and securing the main plate of the assembly in place by its attaching screws.

LUBRICATION

Monthly:
1. A drop of Simplex Projector oil at each oilite bearing on each of the 2 film guide rollers.
2. A drop of Simplex Projector oil at the cylindrical fit between the 2 flanges of the film guide roller.
3. A drop of SAE 30 oil between the races of the projector drive belt idler bearing.

Semi-Annually:
1. Apply a light coating of Dow FS-1290 Silicone Grease (or equivalent) to the guide pins of the guide roller carrier.
2. A drop or two of Simplex Projector oil at the inside diameter of the shields of the 2 sound drum bearings.
3. Grease the pivot points of the pad roller liner spring with Dow FS-1290 Silicone Grease (or equivalent.

Annually:
1. Two drops of SAE-10 oil at each motor bearing.

Associated Drawings and Parts Lists

H-41900	Sheet 1 & 2 Sound Head Complete
D-41901	Preamplifier Assembly
D-41906	Preamplifier Schematic
G-41908	Wiring Diagram & Schematic
G-41941	Film Damper & Pad Roller Assembly
G-41950	Film Guide & Lens Tube Assembly
B-41964	Solar Cell & Bracket Assembly
D-42000	Exciter Lamp Bracket Assembly
D-41912	Wire Harness
D-42019	Door Assemblies

ITEM 13 BEFORE ASSEMBLY.

18. APPLY LOCTITE SEALANT, GRADE #V, GAS X 648 TO THREADS OF SCREWS, ITEM 68 THRU 82 AND #4 THRU 87

13. FIRMLY ASSEMBLY MACHINED FACE 'A' ON TOP WALL OF HOUSING.

12. ADJUST & SECURE SUPPORT BRACKET, ITEM 16, SO THE SOUND DRUM DOES NOT RUB ON ANYTHING.

8. POSITION & SECURE MOTOR, ITEM 33, & PULLEY, DRIVE, ITEM 35, TO PROPERLY ALIGN BELT WITH SUFFICIENT BELT TENSION FOR POSITIVE DRIVE.

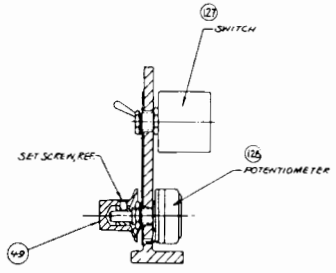
14. ROTATE SHAFT TO ADJUST LATERAL FILM POSITION USING BURN TRACK TEST FILM (MATE PH 22.68 A87), SECURE WITH SET SCREW.

6. ADJUST AND SECURE LENS TUBE ORIENTATION & POSITION TO OBTAIN MAX. SIGNAL OUTPUT USING 35MM SOUND FOCUSING FILM 3000 CYCLE TYPE "A" SMPTE PH 22.62 A94 C.

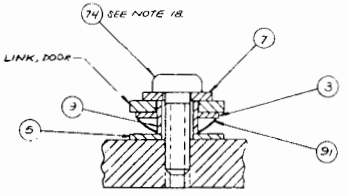
16. ADJUST & SECURE BRACKET ASSEMBLY, ITEM 63, VERTICALLY & HORIZONTALLY SO FILAMENT OF LAMP, ITEM 48, IS CENTERED ON LENS TUBE.

9. REMOVE SHAFT END PLAY BY COMPRESSING WASHER, SPRING, ITEM 92, APPROX. 50% OF TOTAL ALLOWABLE DEFLECTION WHEN ASSEMBLING PULLEY, ITEM 22, TO SHAFT, ITEM 21.

10. ADJUST & SECURE PAD ROLLER, ITEM 87, TO ALLOW .008 TO .015 CLEARANCE BETWEEN ROLLERS & SPROCKET WHEN ASSEMBLY IS IN RUNNING POSITION.



SECTION A

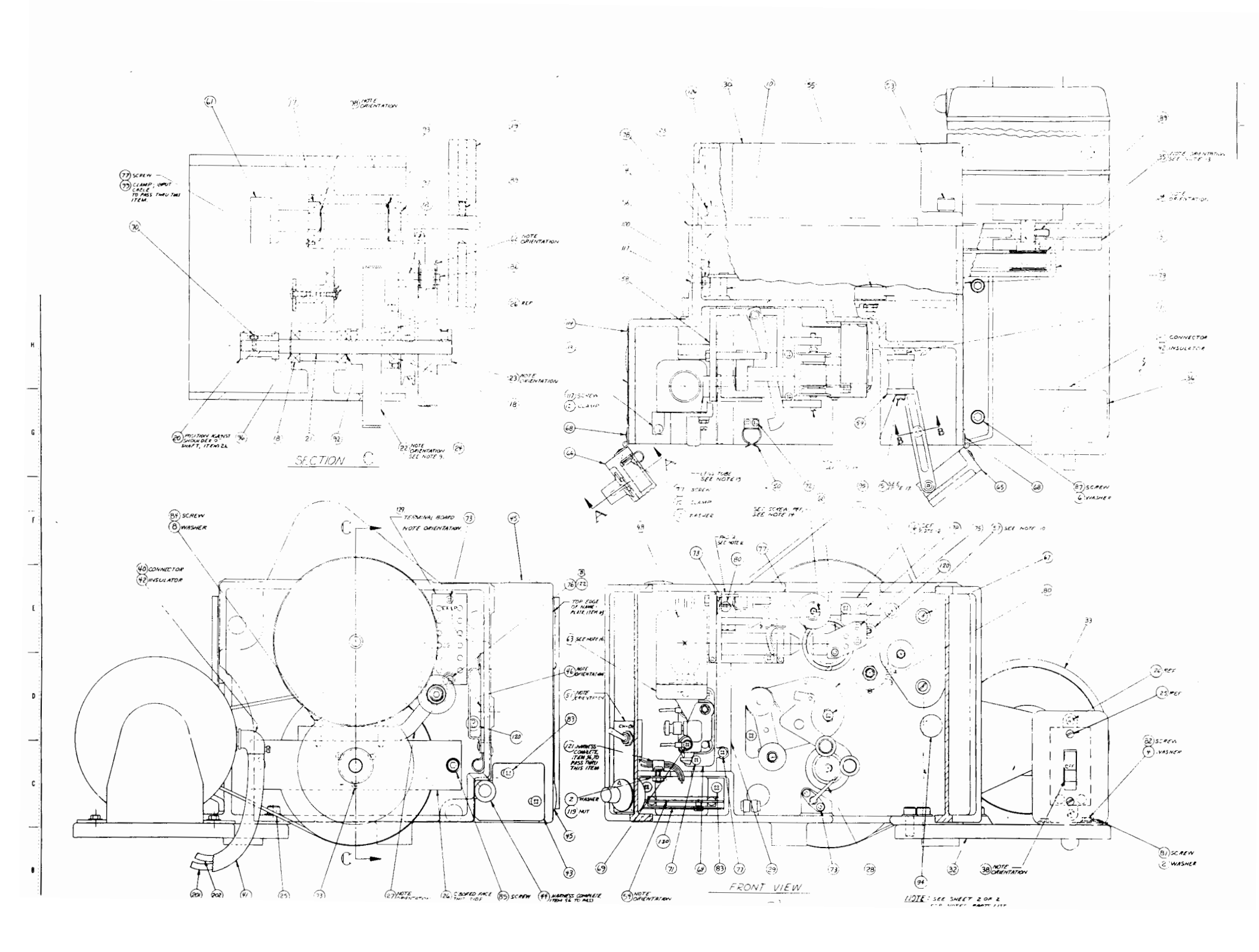


SECTION B

E-8	122	WASHER, LOCK	220-6	P-7091	1											
G-8	121	CLAMP, CABLE	A42053	P-7096	2											
G-9 E-5	120	BEARING	38204-3	P-7095	2			F-5	60	SCAN CABLE BRACKET ASSY.	B41944G5	G-7050	1	
C-8	119	NUT	200-8HN	P-7094	1			G-5	59	SPOOL ASSY.	B41958G1	G-7049	1	
A-7	118	WASHER, FLAT	38500-25L	P-7093	4			J-8	58	FILM SHOE & ARM SUB ASSY	G41950G2	G-7048	1	
G-8 J-8	117	SCREW	116-8RHN	P-7092	2			F-3	57	PRESSURE ROLLER & SHAFT ASSY.	G41941G1	G-7047	1	
A-7	116	WASHER, FLAT	38500-25N		2			K-8	56	HARNESS COMPLETE	D41942G1	G-7046	1	
A-7	115	BOLT	#4-40BH		2			A-8	55	POTENTIOMETER SET	B41903G1	P-7045	1	CLU-5011
H-8	114	SCREW, JOINT	120-2-3A	P-7091	4			B-8	54	BOARD ASSY CIRCUIT SCREEN	D41901G1	G-7044	1	PRE-AMPL
H-8	113	NAMEPLATE	B42050P1	P-7090	1			L-5	53	COVER, REAR	A42049	P-7043	3	
								D-8	51	PLATE, SWITCH	D42047P1	P-7042	1	
								K-6	50	CATCH	A42046	P-7041	2	
								SHT 2	49	KNOB	A42045	P-7040	1	
								F-7	48	LAMP	B42042P1	P-7039	1	T8SCP-10V-5A
								A-7	47	PULLEY, PROJECTOR	B42041P1	P-7038	1	
								D-8	46	PLATE CONNECTOR	A42040	P-7037	1	
								B-8 F-8	45	VENT	A42039	P-7036	2	
								B-9	44	GROMMET, COVER	A42038	P-7035	1	
								B-8	43	PLATE, COVER	A42037	P-7034	1	
								K-3 K-2	42	BUSHING	A42036	P-7033	2	
								B-12	41	CONDUIT, ELBOW	A42035	P-7032	1	
E-8 J-8	100	CLAMP, CABLE	A42051	P-7089	1											
K-3	99	CLAMP, CABLE	247-1	P-7088	1											
L-11	98		259-1-2	P-7087	2											
K-10	97		250-10	P-7086	1											
G-12	96		250-6	P-7085	1			H-1	36	BOX	D42054P1	P-2336	1	
F-5	95	RING, RETAINING	250-5	P-7084	1			K-2	35	PULLEY, MOTOR	B42029P1	P-7030	1	
B-4	94	PLUG, BUTTON	245-8	P-7083	3			K-2	34	FLYWHEEL MOTOR	B42028P1	P-7029	1	
K-10	93	WASHER, SPRING	227-2	P-7082	1			E-2	33	MOTOR	D42027P1	P-7028	1	
G-11	92	WASHER, SPRING	227-1	P-7081	1			B-4	32	PLATE MOTOR MACHINED	G42026P2	P-7027	1	
E-9 SHT 2	91	WASHER, SPRING	224-9	P-7080	1			J-2	31	COVER, BOX MACHINED	B42018P2	P-7026	1	
A-7	90	NUT, STOP	203-11	P-7079	1			L-6	30	COVER, MOTOR MACHINED	D42017P2	P-7025	1	
K-9 L-2	89	SCREW, SET	171-4A-8L	P-7078	2			B-6	29	SHIELD	D42016P1	P-7024	1	
A-7	88		140-64-24L	P-7077	4			B-5	28	PLATE, STRIPPER, MACHINED	B41991P2	P-2211	1	
F-3	87		145-54-12L	P-7076	4			B-10	27	ARM	B41990P1	P-7023	1	
J-9	86		145-44-28L	P-7075	1			B-10	26	SUPPORT, BEARING	D41989P1	P-7022	1	
B-9	85		145-416-16L	P-7074	2			A-7 A-7	25	BELT	A41988	P-7021	2	
F-13	84		145-10-12L	P-7073	2			G-10	24	PULLEY	A41987	P-7020	1	
A-7 D-8	83		140-10R6A	P-7072	4			H-9	23	PULLEY, SMALL	B41986P1	P-7019	1	
C-2	82		118-416-10L	P-7071	4			G-10	22	PULLEY, LARGE	B41985P1	P-7018	1	
B-2	81		118-8-6H	P-7070	2			G-11	21	SHAFT, SPROCKET	B41984P1	P-7017	1	
B-3 E-7	80		116-10R8N	P-7069	4			G-13	20	SPROCKET	D41983P1	P-3322	1	
J-2	79		116-10R7H	P-7068	5			K-9	19	FLYWHEEL SOUNDROM	B41982P1	P-7016	1	
K-2 K-8	78		116-10R6L	P-7067	4			G-12	18	BEARING	A41981	P-7015	3	
B-5 B-6 A-7	77		116-8R6H	P-7066	7			L-11	17	BEARING	A41980	P-7014	2	
C-8	76		116-6R6H	P-7064	1			F-4	16	SUPPORT, PX, PC CELL	B41978P1	P-7013	1	
F-4	75		116-6R12H	P-7063	2			F-5	15	SHAFT, ROLLER	A47946	P-7012	1	
B-7 SHT 2	74		116-6R7L	P-7062	1			K-8	14	HOUSING, MACHINED	B41910P1	P-7011	1	
A-7 B-8 F-8	73		116-6R6H	P-7061	7									
F-6	72		116-4R4H	P-7060	4			J-10	12		A42056	P-7010	1	
B-7	71		106-8R8L	P-7059	8			H-2	11		41666-15	P-7009	1	
J-13	70		106-8-8L	P-7058	1			L-6	10		41666-11	P-7008	1	
B-7	69		106-8R6L	P-7057	2			B-11 SHT 2	9	SPACER	41666-12	P-7007	1	
B-8 G-8	68		104-6R4H	P-7056	8			F-13	8		38473-47H	P-7006	2	
F-3	67	SCREW	103-10-18A	P-7055	3			A-12 SHT 2	7		38473-7A	P-7005	1	
B-8	66	DOOR ASSY. AND CONSIST OF	D42019G2	G-7054	1			F-3	6		38473-17C	P-7004	6	
F-3	65	DOOR ASSY. MACHINED	D42018P1	G-7053	1			B-11 SHT 2	5		33500-63H	P-7003	1	
B-7	64	CASE ASSY	D42010G1	G-2080	1			B-8 SHT 2	4		33500-23H	P-7002	7	
E-8	63	BRACKET ASSEMBLY	D42000G1	G-2078	1			A-12 SHT 2	3		33500-2A	P-7001	1	
J-9	62	PULLEY	B41977G1	G-7052	1			B-8	2	WASHER, FLAT	33500-20C	P-7000	4	

G7	130	TRAY ASSY	B-41914	G-7105	1
E-10	129	TERMINAL BD	A-41919	G-7104	1
H12 SHT 2	128	POTENTIOMETER	B-41911	P-7103	1
H-12 SHT 2	127	SWITCH SET	B-41913	P-7102	1
D-3	126	SCREW	119-6-9H	P-7101	2
D-3	125	SCREW	104-6-5H	P-7100	2
J-7	124	CLAMP, CABLE	A42055	P-7099	1

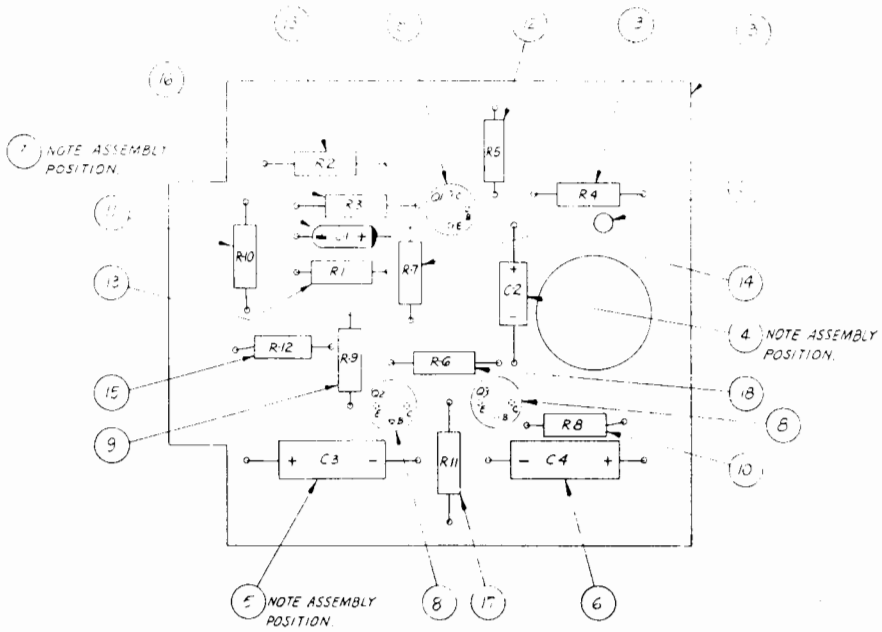
JAIN-100P-102DA						
ST-52N						


SECTION C
FRONT VIEW
NOTE: SEE SHEET 2 OF 2

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS APPLY TO FINISHED PART IN INCHES
2. DO NOT SCALE DRAWING
3. REMOVE BURRS
4. ALL MACHINED SURFACES TO BE [illegible]
5. FINISH OF PLANAR AND PERFORATED EDGES TO BE AS PRODUCED BY D.P.
6. DIMENSIONING PER MIL-STD-8

* ALL ELECTRICAL COMPONENTS TO BE SELECTED SOLDERED TO P.C. BOARD. NO COMPONENT LEAD OR ITS SOLDER CONNECTION MAY EXTEND MORE THAN 1/16 ABOVE BOARD FACE ON SOLDER SIDE.



SYMBOL	ITEM NO.	NAME OF PART OR ASSEMBLY	DRAWING NO.	PART NO.	GROUPS & QUANTITY 1 2 3 4 5 6 7 8
R-6	[illegible]		4 [illegible] 3-3-2	P-71E5-16	1
R-11	17		402-68-1-2	" -17	1
R-3	16		402-56-2-2	" -16	1
R-12	15		402-56-1-2	" -15	1
R-7	14		402-47-3-2	" -14	1
R-1, R-2, R-4	13		402-22-3-2	" -13	3
R-5	12		402-22-1-2	" -12	1
R-10	11		402-15-2-2	" -11	1
R-8	10		402-1-4-2	" -10	1
R-9	9	RESISTOR	402-1-2-2	" -9	1
Q1, Q2, Q-3	8	TRANSISTOR	[illegible] P1	P-71E4	3
C-1	7		P4	P-71E3-4	1
C-4	6		P3	" -3	1
C-3	5		P2	" -2	1
C-2	4	CAPACITOR	D41904 P1	" -1	1
——	3	BOARD	G41903 P1	P-71E2	1
——	2	BUTTON	A41902	P-71E1	1
——	—	ASSEMBLY		G-7044	X

SYM	REVISION	ZONE	ORDER NOTICE NO.	DATE	BY

FINISH SPEC.

MATERIAL

SCALE

DRN BY

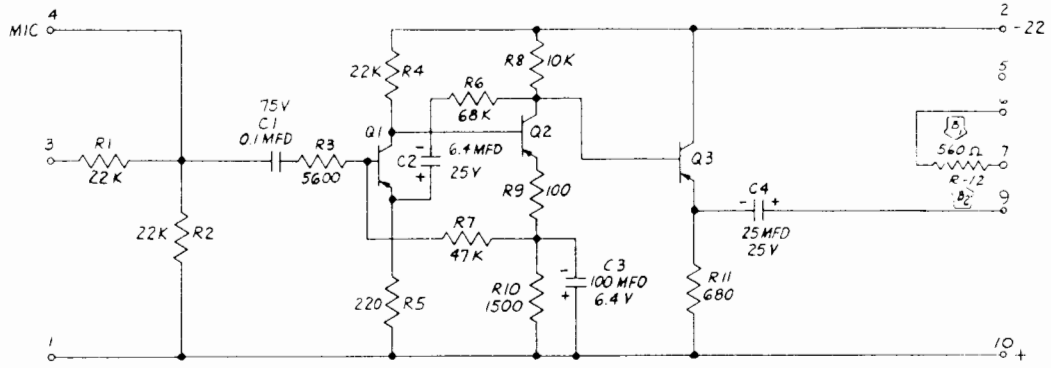
NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

NAME: ASSEMBLY, PREAMPLIFIER
FIRST: SIMPLEX 35 SOUND HEAD
SIZE D PART NO. 41901

SIZE D PART NO. 41901

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS APPLY TO FINISHED PART IN INCHES
2. DO NOT SCALE DRAWING
3. REMOVE BURRS
4. OUT OF ROUNDNESS, ERRORS IN PARALLELISM, FLATNESS, WAVINESS, TAPER ETC. ARE INCLUDED IN THE TOLERANCE FOR SIZE
5. CORNERS SHOWN SHARP MAY HAVE ——— MAXIMUM RADIUS OR BREAK
6. ALL MACHINED SURFACES TO BE √ ———
7. FINISH OF BLANKED AND PERFORATED EDGES TO BE AS PRODUCED BY DIE
8. DIMENSIONING PER MIL-STD-8
9. NUMBERED TERMINATIONS ARE CONTACT POINTS ON CIRCUIT BOARD.



TYPICAL RESPONSE FROM FILM (REF.)

1KC	40	70	130	300	500	2KC	3KC	5KC	7KC	8KC
0	-1.5	-1.0	0	0	0	0	-0.5	-3.0	-6.0	-7.0

TO REDUCE LF -- LOWER CAPACITY OF C1.
TO RAISE HF -- SHUNT R-1 WITH CAP.-EX. 0.001 MFD RAISES 5KC 2DB,
TO REDUCE HF -- SHUNT R-2 WITH CAP.-EX. 0.002 MFD LOWER 5KC 2DB.

TYPICAL GAIN (REF.)

WITH 30MV INPUT AND SOURCE IMPEDANCE OF 500 OHMS AMPLIFIER SHOULD HAVE +6 DBM OUTPUT WHEN LOADED WITH 500 OHMS.

SYMBOL	DESCRIPTION	PART NO. REF.
Q-3		
Q-2	TRANSISTOR 2N3638A	B41905P1
Q-1		
B3		
R-12	560 Ω	402-56-1-2
R-11	680 Ω	402-68-1-2
R-10	1.5 K	402-15-2-2
R-9	100 Ω	402-1-2-2
R-8	10 K	402-1-4-2
R-7	47 K	402-47-3-2
R-6	68 K	402-68-3-2
R-5	220 Ω	402-22-1-2
R-4	22 K	402-22-3-2
R-3	5.6 K	402-56-2-2
R-2	RESISTOR 22 K ½W 10%	402-22-3-2
R-1		
C-4	25 MFD +50 -10 % 25 VDC	D41904P3
C-3	100 MFD +50 -10 % 6.4 VDC	D41904P2
C-2	6.4 MFD +50 -10 % 25 VDC	D41904P1
C-1	CAPACITOR .1 MFD ± 10% 50 VDC	D41904P4

ITEM NO.	NAME OF PART OR ASSEMBLY	PART OR ASSEMBLY NO.	OTHER SPECIFICATIONS	1 2 3 4 5 6 7 8 GROUPS & QUANTITY

SYM	REVISION	ZONE	CHANGE NOTICE NO.	DATE	BY

FINISH SPEC. ———

MATERIAL

SCALE = DRN BY DATE CHK'D BY DATE 1st APPR DATE 2nd APPR DATE

SUPERSEDES

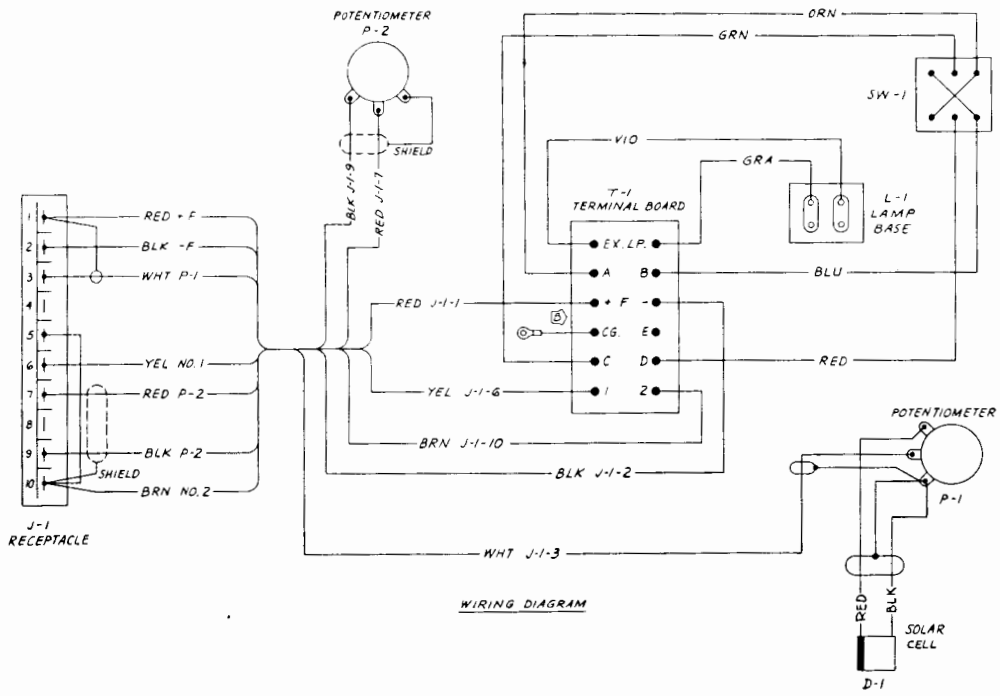
NATIONAL THEATRE SUPPLY CO. PARAMUS, N.J.

NAME DIAGRAM, SCHEMATIC G-7044 PREAMPLIFIER

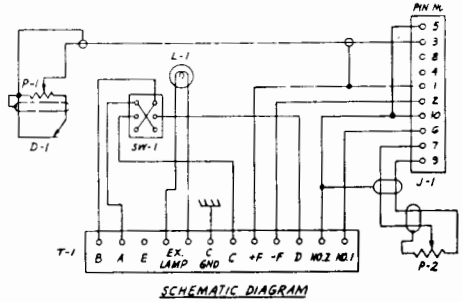
SIMPLEX 35 SOUND HEAD

SIZE D PART NO. 41906

D 41906



WIRING DIAGRAM



SCHEMATIC DIAGRAM

SYMBOL	DESCRIPTION	PART NO. REF.
T-1	BOARD ASSEMBLY, TERMINAL	G-7104
SW-1	SWITCH, DPDT	P-7102
P-2	POTENTIOMETER, 1000 OHMS, DB TAPER	P-7103
P-1	POTENTIOMETER, 500 OHMS, LIN. TAPER	P-7045
L-1	LAMP, EXCITER	P-7039
J-1	CONNECTOR (TRAY ASSEMBLY)	G-7105
D-1	SOLAR CELL	AP-3434

NOTES: UNLESS OTHERWISE SPECIFIED

SYM.	REVISION	ENGINEER ORDER NO.	BY	DATE	BY

NAME	DIAGRAM, ELECTRICAL
NEXT HIGHER ASSY	SIMPLEX 35 SOUND HEAD
USED ON NEXT ORDER ON	SIZE G PART NO. 41908

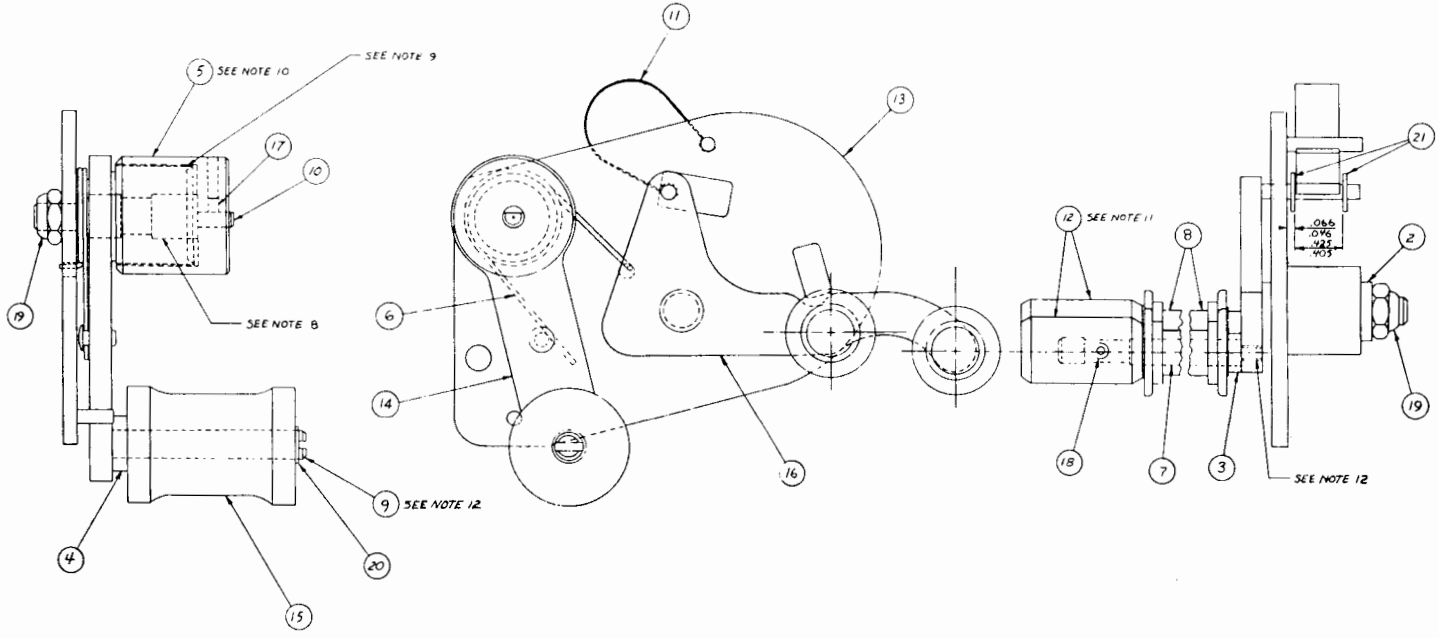
NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

SIZE G PART NO. 41908

REV	PART NO
	G 41941

NOTES: UNLESS OTHERWISE SPECIFIED

8. LUBRICATE BEARING SURFACES BETWEEN ITEMS 10 AND 14 WITH GREASE No FS1290 AVAILABLE FROM DOW CORNING CORP, MIDLAND, MICH.
9. FILL CYLINDRICAL INTERFACE BETWEEN ITEMS 5 AND 14 WITH 200,000 CENTISTOKE, 200 FLUID AVAILABLE FROM DOW CORNING MIDLAND, MICH.
10. SEAT ITEM 5 SECURELY ON ITEM 10 BEFORE SECURING ITEM 17
11. POSITION ITEM 12 TO PROVIDE .005 TO .010 END PLAY OF ITEMS 8.
12. APPLY LOCTITE SEALANT, GRADE AA, GRS 7.6 MS, TO THREADS OF SHAFTS ITEMS 7 AND 9 BEFORE ASSEMBLY.



21	RING, RETAINING	252-10	P-7106	2	
20	RING, RETAINING	250-5	P-7084	1	
19	NUT, STOP	203-12	P-7107	2	
18	SCREW, SET	171-6-2	P-7108	2	
17	SCREW, SET	171-4-5	P-7109	1	
16	ARM ASSY, PAD ROLLER	B419616I	G-7110	1	
15	SPOOL ASSY	B419586I	G-[illegible]	1	7049
14	ARM ASSY, DAMPER	B419546I	G-7112	1	
13	PLATE ASSY	B419316I	G-7113	1	
12	KNOB	B41997P1	P-7114	2	
11	SPRING, PAD ROLLER	A41949	P-7115	1	
10	SHAFT, DAMPER	A41948	P-7116	1	
9	SHAFT, ROLLER	A41946	P-7042	1	
8	ROLLER, PAD	B41945P1	P-7117	4	
7	SHAFT, PAD ROLLER	A41944	P-7118	2	
6	SPRING, DAMPER	A41943	P-7119	1	
5	CAP	A41942	P-7120	1	
4	SPACER	41666-13	P-7009	1	
3	SPACER	41666-8	P-7121	2	
2	WASHER, FLAT	38500-24K	P-7122	1	
—	ASSEMBLY		G-7047	X	
SPEC NO.	NAME OF PART OR ASSEMBLY	DRAWING NO	PART NO	GROUPS & QUANTITY	

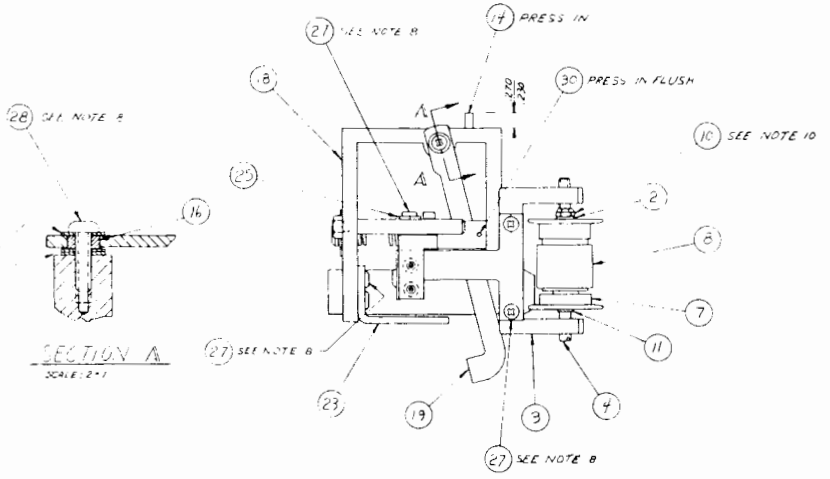
REVISIONS				
LTR	REVISION	CHANGE DRAWING NO.	BY	DATE

NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

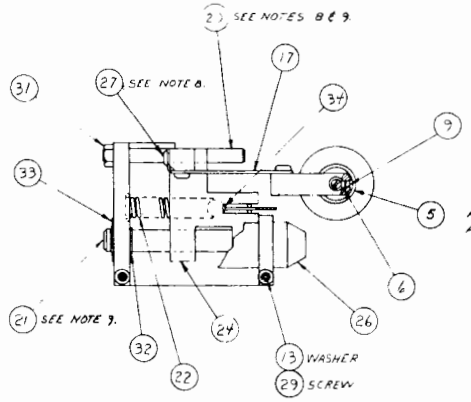
NAME: FILM DAMPER & PAD ROLLER ASSEMBLY

USED WITH: SIMPLEX 35 SOUND HEAD

SIZE: G | PART OR DWG. NO.: 41941



SECTION A
SCALE: 2-1



ASSEMBLE ONE INTO ITEM 7 AND ONE INTO ITEM 8.

LATCH OMITTED FOR CLARITY

8. APPLY LOCTITE SEALANT, GRADE EV, GES 7615 TO THREADS OF PIN, ITEM 20 AND SCREWS ITEMS 27 AND 28 BEFORE ASSEMBLY.

9. LUBRICATE BEARING SURFACES OF PINS, ITEMS 20 & 21 AND INTERFACES OF FLANGE, ITEM 7, AND ROLLER ASSEMBLY, ITEM 8, WITH GREASE NO. FS 1290 AVAILABLE FROM DOW CORNING CORP., MIDLAND, MICH.

10. ADJUST NUT, ITEM 10, TO ELIMINATE END PLAY OF FLANGE, ITEM 7, AND ROLLER ASSEMBLY, ITEM 8, WHICH MUST BE FREE TO ROTATE.

ITEM NO.	NAME OF PART OR ASSEMBLY	DRAWING NO.	PART NO.	GROUPS & QUANTITY							
				1	2	3	4	5	6	7	8
34	BALL	300-13	P-7151							1	
33	RING, RETAINING	256-3	P-7150							1	
32	RING, RETAINING	250-9	P-7149							1	
31	NUT	200-10HA	P-7148							1	
30	ROLL PIN	189-2-8	P-7147							1	
29	SCREW	145-6-4L	P-7146							2	
28	SCREW	116-6RBH	P-7145							1	
27	SCREW	116-6R6H	P-7061							8	
26	LENS TUBE	D41940P1	P-2320							1	
25	CLAMP	A41939	P-7144							1	
24	CARRIER, MACHINED	D41938P1	P-7143							1	
23	LATCH	B41936P1	P-7142							1	
22	SPRING, CARRIER	B41935P1	P-7141							1	
21	PIN, BEARING	A41934	P-7140							1	
20	PIN, GUIDE	A41933	P-7139							1	
19	LEVER	B41932P1	P-7138							1	
18	FRAME	D41931P1	P-7137							1	
17	SPRING, ROLLER	B41930P1	P-7136							1	
16	SPACER	41666-7	P-7135							1	
15	WASHER, FLAT	38473-7A	P-7005							3	
14	PIN, DOWEL	30685-16	P-7134							1	
13	WASHER, FLAT	30473-78K	P-7133							2	
—										X	
11	RING, RETAINING	253-6	P-7132	1							
10	NUT, STOP	203-9	P-7131	1							
9	SCREW, SET	1710W-2L	P-7130	1							
8	ROLLER ASSEMBLY	B41926G1	P-7129	1							
7	FLANGE	B41929P1	P-7128	1							
6	PAD	A41925	P-7127	1							
5	BEARING	A41924	P-7126	2							
4	SHAFT	A41923	P-7125	1							
3	YOKE	D41922P1	P-7124	1							
2	SPACER	41666-9	P-7123	1							
—	GUIDE ASSY, FILM		G-7048	X	1						

NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

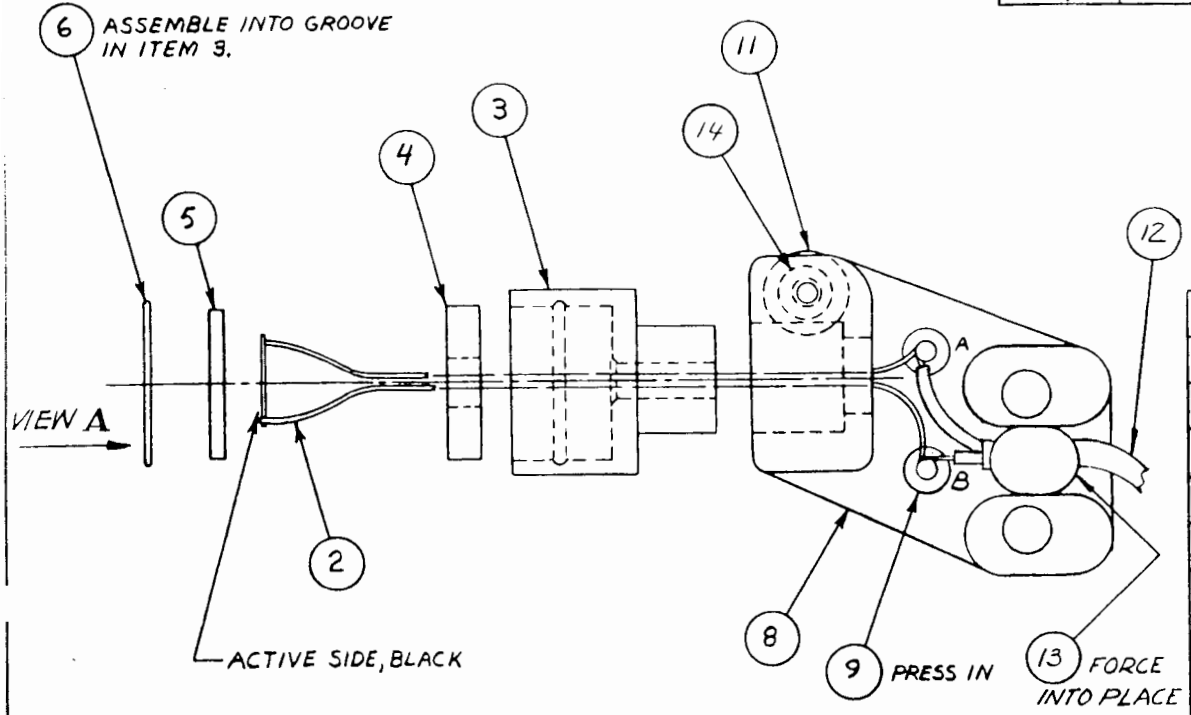
NAME: FILM GUIDE & LENS TUBE ASSEMBLY
NEXT HIGHER ASSY: SIMPLEX 35 SOUND HEAD
SIZE: G
PLAN NO.: 41950

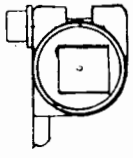
SYM.	REVISION	ZONE	DATE	BY

REV.	SIZE	PART NO.
	B	41964

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS APPLY TO FINISHED PART IN INCHES.
2. REMOVE BURRS.
3. OUT OF ROUNDNESS, ERRORS IN PARALLELISM, FLATNESS, WAVINESS, TAPER, ETC., ARE INCLUDED IN THE TOLERANCE FOR SIZE.
4. DECIMAL DIMENSION TOLERANCE ± ———
   FRACTIONAL DIMENSION TOLERANCE ± ———
   ANGULAR DIMENSION TOLERANCE ± ———
5. CORNERS SHOWN SHARP MAY HAVE ——— MAXIMUM RADIUS OR BREAK.
6. ALL MACHINED SURFACES TO BE √ ———
7. FINISH OF BLANKED AND PERFORATED EDGES TO BE AS PRODUCED BY DIE.
8. DIMENSIONING PER MIL-STD-8





NOTE POSITION & ORIENTATION OF SOLAR CELL.

VIEW A

ITEM NO.	NAME OF PART OR ASSEMBLY	DRAWING NO.	PART NO.	1	2	3	4	5	6	7	8
				GROUPS & QUANTITY							
14	SCREW	145-6-12L				1					
13	RETAINER, WIRE	A42044				1					
12	CABLE	A41972				1					
11	WASHER, FLAT	38473-7A				1					
—	ASSEMBLY					X					
9	TERMINAL	A41971			2				G-7050		
8	BRACKET, MACHINED	D41970P2			1						
—	BRACKET ASSEMBLY				X	1					
6	RING, RETAINING	A41969		1							
5	WINDOW	A41968		1							
4	PAD	A41967	AP-3434	1							
3	HOLDER	A41966		1							
2	CELL, SOLAR	A41965		1							
—	SOLAR CELL ASSEMBLY			X		1					

SYM.	REVISION	CHANGE NOTICE NO.	DATE	BY

FINISH SPEC. ———

MATERIAL

SCALE	DRN BY	CHKD BY	1st APPR.	2ND APPR.	3rd APPR.
—					

EXP. PART NO. ———

SUPERSEDES ———

NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

NAME SOLARCELL & BRACKET ASSEMBLY

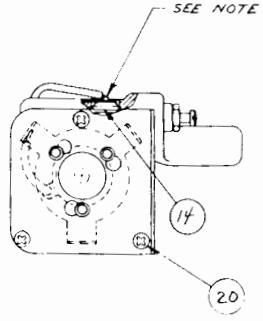
FIRST USED ON SIMPLEX 35 SOUND HEAD

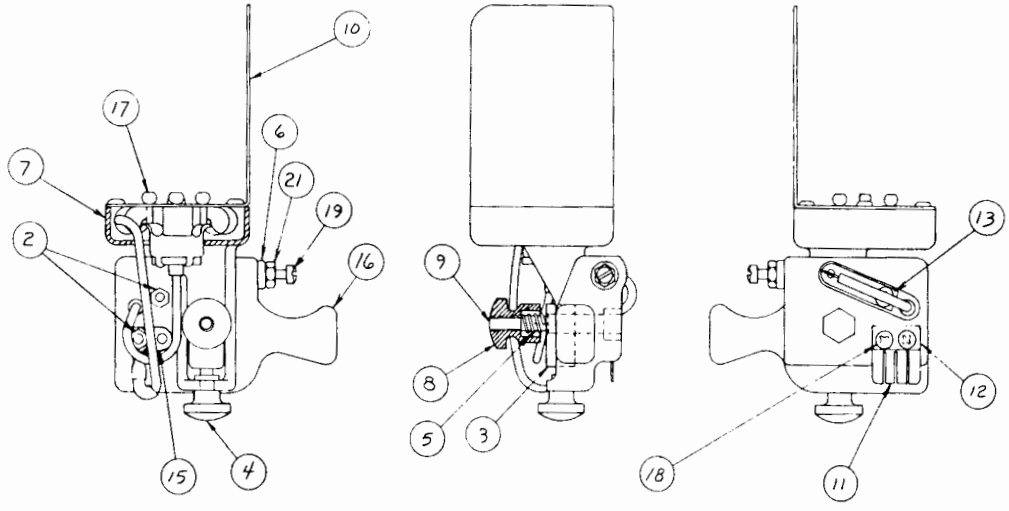
ASSY FIRST USED ON

SIZE	PART NO.
B	41964

NOTES UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS APPLY TO FINISHED PART IN INCHES
2. DO NOT SCALE DRAWING
3. REMOVE BURRS
4. OUT OF ROUNDNESS, ERRORS IN PARALLELISM, FLATNESS, WAVINESS, TAPER ETC. ARE INCLUDED IN THE TOLERANCE FOR SIZE
5. CORNERS SHOWN SHARP MAY HAVE —— MAXIMUM RADIUS OR BREAK
6. ALL MACHINED SURFACES TO BE √ ——
7. FINISH OF BLANKED AND PERFORATED EDGES TO BE AS PRODUCED BY DIE
8. DIMENSIONING PER MIL-STD-8





ITEM NO.	NAME OF PART OR ASSEMBLY	DRAWING NO	PART NO	GROUPS & QUANTITY 1 2 3 4 5 6 7 8
21	NUT	200B6HH	P-1817	1
20	SCREW	116-6R4H	H-1005	3
19	SCREW	10686-10H	P-1814	1
18	SCREW	102B6R10H	H-1009	3
17	SOCKET ASSEMBLY	B42009G1	G-2077	1
16	BRACKET ASSEMBLY	D42006G1	G-2076	1
15	NUT, STRIP	A42005	P-2702	1
14	CONTACT	A42004	P-2697	1
13	SPRING	A42003	P-2696	1
12	PLATE RETAINER	A42002	P-2695	1
11	PLATE, SPRING	A42001	P-2694	1
10	SHIELD	B41999P1	P-2693	1
9	SCREW, LOCKING	A41998	P-2690	1
8	NUT LOCKING	A41996	P-2688	1
7	BRACKET, MACHINED	B41995P2	P-2687	1
6	PLUG	A41994	P-2686	1
5	SPRING, LOCKING BLOCK	B41993P1	P-2669	1
4	SCREW, ADJUSTING	B41992P1	P-2692	1
3	BLOCK, MACHINED	B41947P2	P-2689	1
2	NUT	30553-7H	H-3229	2
—	ASSEMBLY		G-2078	

REVISION	ZONE	DRAWING REVISION NO.	DATE	BY

FINISH SPEC.

MATERIAL

SCALE 1 = 1

1ST APPD. DATE

DRWN BY DATE

CHKD BY DATE

EXP. PART NO.

SUPERSEDES

NATIONAL THEATRE SUPPLY CO.
PARAMUS, N.J.

NAME BRACKET ASSEMBLY, EXCITER LAMP

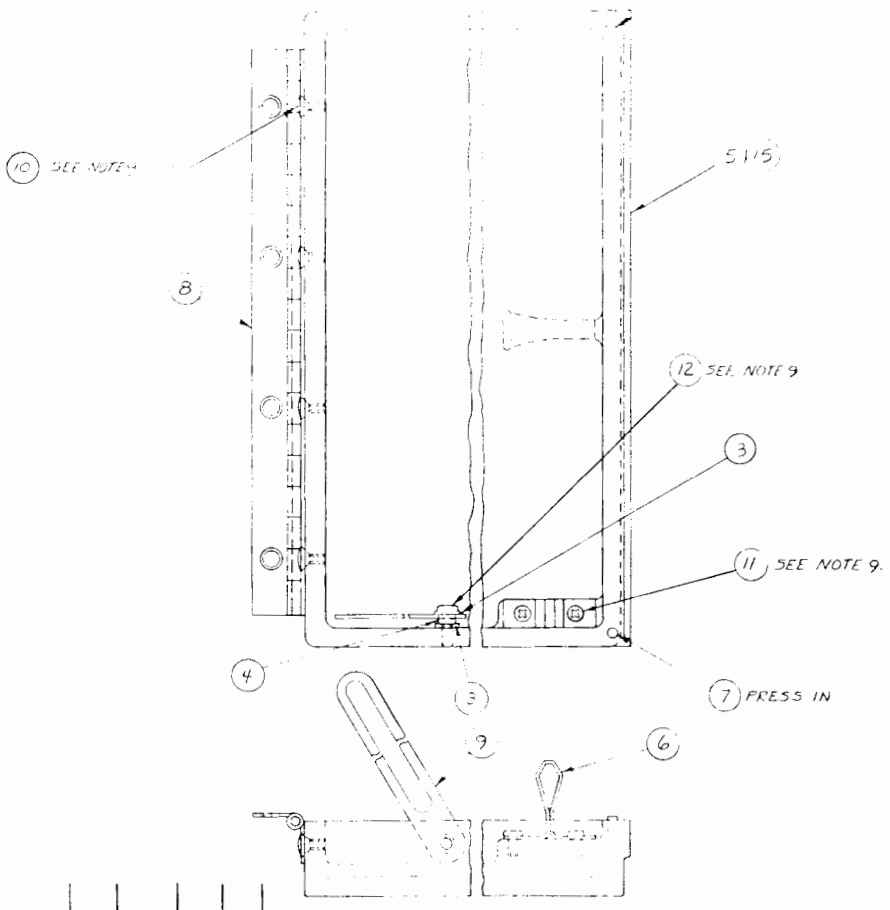
FIRST USED ON SIMPLEX 35 SOUND HEAD

ASSY FIRST USED ON

SIZE D PART NO. 42000

D 42000

NOTES: UNLESS OTHERWISE SPECIFIED



ITEM NO.	NAME OF PART OR ASSEMBLY	DRAWING NO.	PART NO.	GROUPS & QUANTITY 1 2 3 4 5 6 7 8
17	NAMEPLATE	A48052		1
15	DOOR, MACHINED	D42021P2	P-7158	1
	ASSEMBLY LAMP COMPT.		G-7054	X
12	SCREW	1166R/H	P-7157	1
11	SCREW	116-6R4H	H-1005	2 2
10	SCREW	164-6MAH	P-7056	4 4
9	LINK	A-2329	P-2383	1
8	HINGE	A42044P1	P-7156	1 1
7	CUSHION	A42038	P-7155	2 2
6	STRIKE	A42042	P-7154	1 1
5	DOOR, MACHINED	D42022P2	P-7153	1
4	SPACER	41666-12	P-7007	1
3	WASHER, FLAT	38473-7A	P-7005	2
2	UNIT SPACER	A38743	P-7152	2
—	ASSEMBLY, FILM CONFT.		G-7053	X

FINISH SPEC.	MATERIAL	EXP. PART NO.	SUPERSEDES	NAME DOOR ASSEMBLY
	SCALE 1 = 1	1ST APPR. DATE	NATIONAL THEATRE SUPPLY CO. PARAMUS, N.J.	FIRST USED ON SIMPLEX 35 SOUND HEAD
	DRN BY DATE	2ND APP.		
	CHKD BY DATE	B DATE		SIZE D PART NO. 42019

D 42019