

Service Manual

**4-CHANNEL STEREO
TAPE DECK**

QT-6100/F

CONTENTS

NOTE:

As for the 5 sections in this service manual, including *CIRCUIT DESCRIPTION*, *TROUBLESHOOTING CHART*, *MECHANICAL ADJUSTMENTS*, *HEADS ADJUSTMENTS*, and *SELECTION OF LINE FREQUENCY*, please refer to the same sections in the service manual for the QT-6600.

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1. SPECIFICATIONS

Drive and control	1 motor, all belt driven center capstan with automatic reverse playback
	4-channel playback (Forward only)
	2-channel playback (Manual or automatic reverse)
	2-channel recording (Forward only)
Track	4-track 4-channel/2-channel stereo
Head	4-track 2-channel recording/playback & x 1
	4-track 4-channel playback head x 1
	4-track 2-channel playback head x 1
	4-track 2-channel erase head x 1
Motor	Hysteresis synchronous motor
Tape speed	7-1/2 ips (19cm/s)
	3-3/4 ips (9.5cm/s)
Fast winding time	Approx. 110 sec. (1200ft/370m tape)
Wow and flutter	Less than 0.12% at 7-1/2 ips (19cm/s)
	Less than 0.20% at 3-3/4 ips (9.5cm/s)
Reel	Up to 7 inches
Semiconductor	Transistors 26
	Diodes 7
REC/PLAY compensation	NAB standard
Erasing	AC system
Frequency response	30 to 20,000Hz (50 to 15,000Hz, ± 2 dB) at 7-1/2 ips (19cm/s)
	30 to 15,000Hz at 3-3/4 ips (9.5cm/s)
SN ratio	More than 55dB
Input level/impedance	Microphone 0.3mV/50k Ω
	Line input 30mV/330k Ω
Output level/load impedance	Line output 0.775V/50k Ω
	(Level meter "0" position)
	Headphone output 0.2mW/8 Ω
	(Level meter "0" position)
Recording/Playback	DIN-type (Usable only for 2-channel stereo)
Subfunction	1. Pause control
	2. Easy opening head housing
	3. Two headphone jacks for front & rear sound
	4. 4-digit tape counter

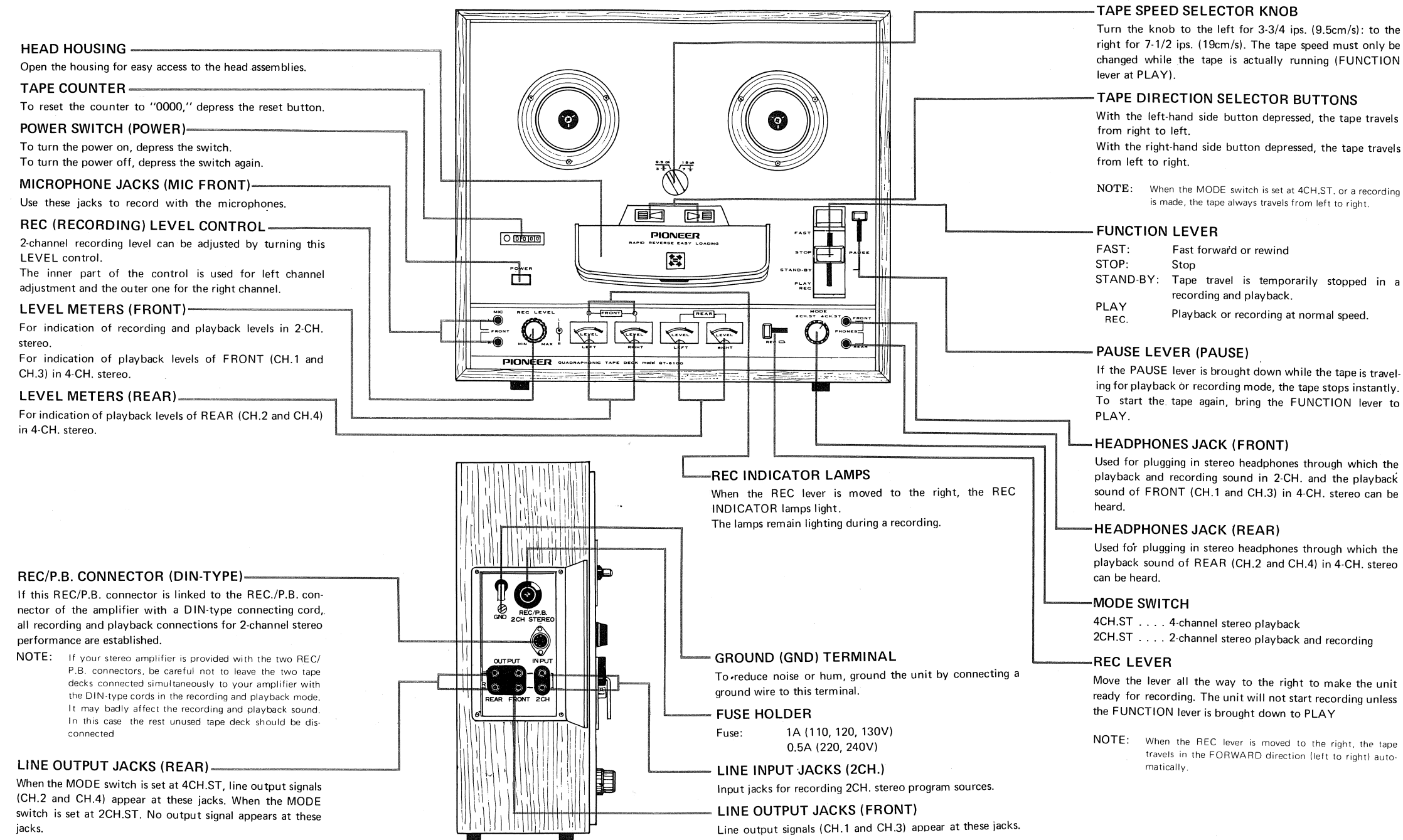
QT-6100

Power requirements	AC 110V, 120V, 130V, 220V and 240V (50Hz or 60Hz)		
Maximum power consumption	75W		
Overall dimensions	16-19/32(W) x 6-27/32(D) x 14-7/8(H) in.		
	421(W) x 174(D) x 378(H) mm (including body-height feet)		
Weight	With package	36 lb 4 oz (16.5kg)	
	Without package	28 lb 9 oz (14kg)	
Furnished parts	Empty reel	.....	1
	Reel cap	.....	2
	Connection cord	.....	3
	Motor pulley (50Hz or 60Hz)	.....	1
	Hexagon wrench	.....	1
	Splicing tape	.....	1
	Sensing foil	.....	1
	Cleaning kit	.....	1
	Cleaning ribbon	.....	1
	Vinyl dust cover	.....	1
	Operating instructions	.....	1

NOTE: Specifications and the design subject to possible modification without notice due to improvements.



2. PARTS IDENTIFICATIONS



3. DISASSEMBLY

3-1 DECK PANEL

For mechanism checks;

1. Remove the three knobs (FUNCTION lever, TAPE SPEED SELECTOR knob, PAUSE lever).
2. Open the head housing.
3. Remove screws 1, 2, 3, 4 in Fig. 1.

3-2 AMPLIFIER PANEL

For checking lamps and LEVEL meters;

1. Remove all knobs in Fig. 2.
2. Remove the lock nuts from the two control shafts.

3-3 WOODEN CABINET

For checks and alignments of electric circuits; remove the four screws (5 ~ 8) and the claw washer shown in Fig. 3, then lift the unit from the wooden cabinet.

Pull off the metal shield cover as shown in Fig. 4.

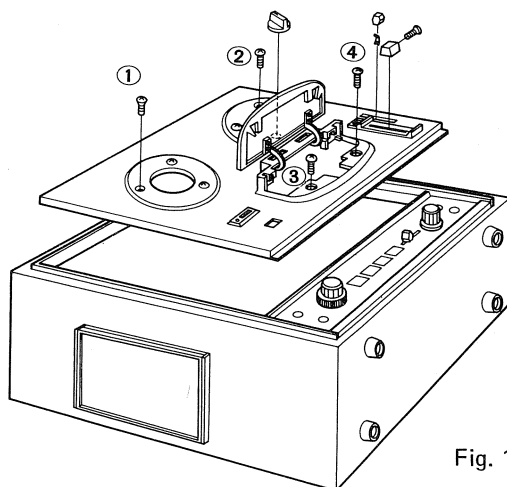


Fig. 1

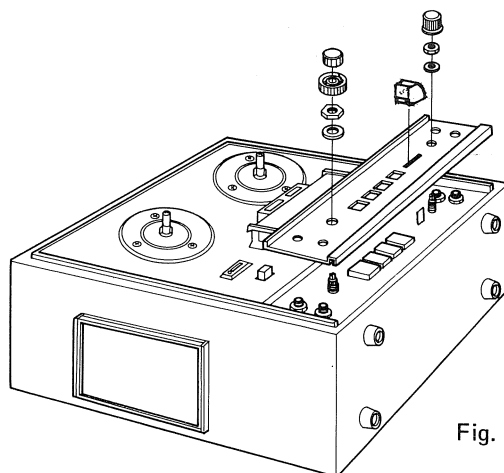


Fig. 2

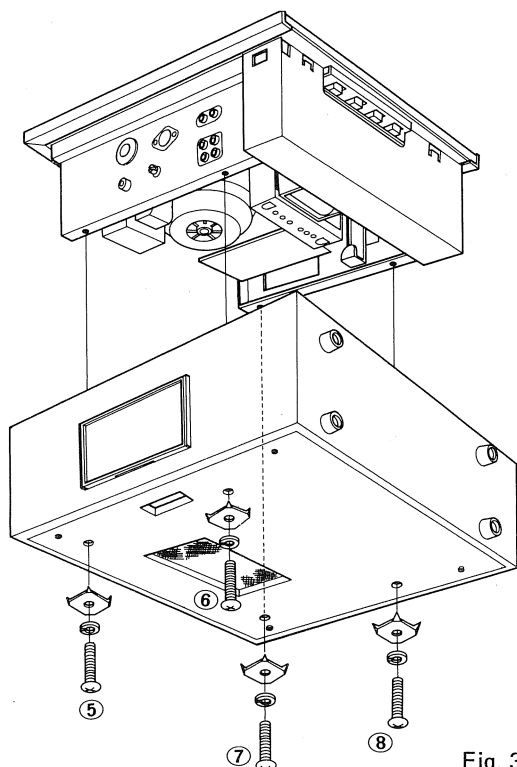


Fig. 3

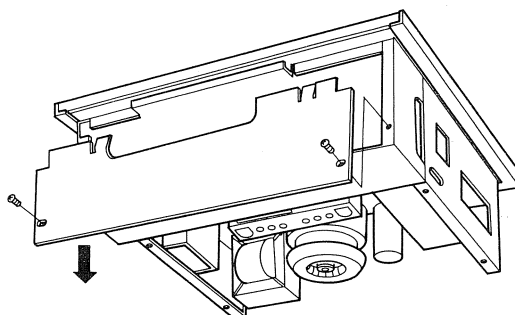


Fig. 4

4. BIAS CIRCUIT ALIGNMENT

4-1 OSCILLATOR OUTPUT LEVEL CHECK AND ADJUSTMENT

- 1. Connect voltmeter (VTVM) between terminal 7 on oscillator unit and ground. Reading should be approximately 60 V.
- 2. To readjust, turn VR10 on oscillator unit. After re-adjustment, bias current must also be adjusted (see below).

4-2 BIAS CURRENT ADJUSTMENT

- 1. Connect measuring instruments as shown in Fig. 5.
- 2. Set controls as follows:
MODE switch at 2-CH. STEREO.
REC level control at minimum.
RECORDING lever in REC position.
FUNCTION lever at PLAY. Then stop mechanism by PAUSE lever.
- 3. Amplitude at TP1 (Fig. 5) should be 3 V or less. Adjust by L3 on left and right channels.
Note that there are a total of two check points designated TP1.
- 4. Voltage level at TP2 (total of two TP2 check points) should be 9 mV.
Adjust variable resistors on oscillator unit according to table below.

Test point	Channel	VR on oscillator unit
TP2	FRONT L	VR8
TP2	FRONT R	VR9

- 5. Repeat all above adjustments (items 3 and 4) several times.

4-3 BIAS TRAP COIL ALIGNMENT

- 1. Connect two voltmeters (VTVMs) to the LINE OUTPUT of the FRONT L and R channels. Set VTVMs in 10 mV full scale range.
- 2. Set unit in recording mode, MODE switch in 2-CH. STEREO Position. Turn REC level controls for each channel to maximum.
- 3. Adjust L3 (left and right channels) to obtain minimum meter readings.

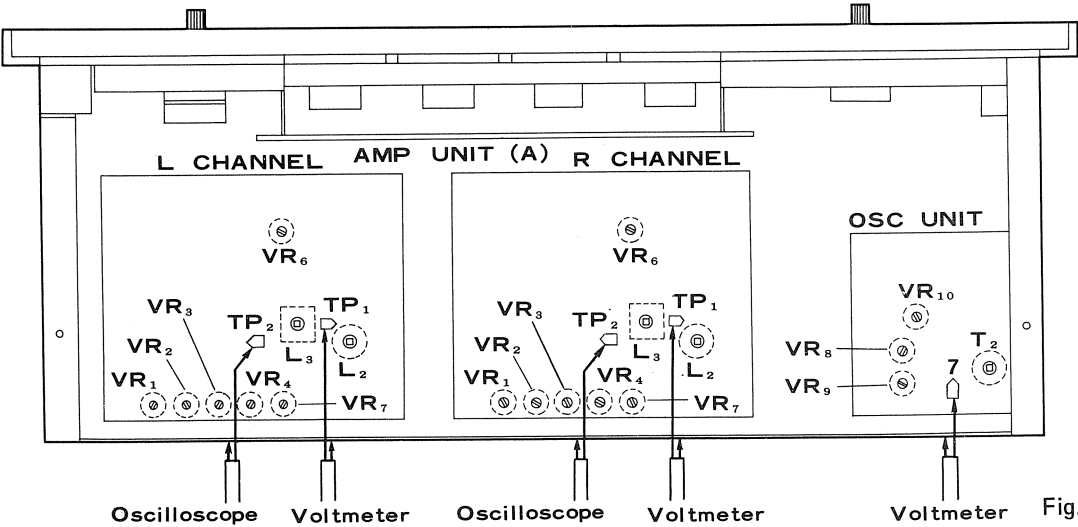


Fig. 5

5. PLAYBACK AMPLIFIER ALIGNMENT

5-1 PLAYBACK EQUALIZATION CHECK

For these checks, portions 5 through 11 of the TT-500A test tape are used.

1. Connect two voltmeters (VTVMs) to the front left and front right LINE OUTPUT. Make notes of each output level obtained at the different test frequencies on the test tape, both at $7\frac{1}{2}$ ips (19 cm/sec) and $3\frac{3}{4}$ ips (9.5 cm/sec) tape speeds.
2. Response deviation should be within the range shown in Fig. 6.
3. If readings outside this range are obtained, proceed to the equalizer adjustment (below) and slit angle adjustment.
4. Also, take the same readings for the rear channels.

5-2 EQUALIZER ADJUSTMENT

Equalizer adjustments are made in the sequence of the following table and may have to be repeated several times. Required instruments: Two voltmeters (VTVMs) of high sensitivity. VTVM range 1.5 V full scale.

Pioneer TT-500A test tape, portions 3 and 4.

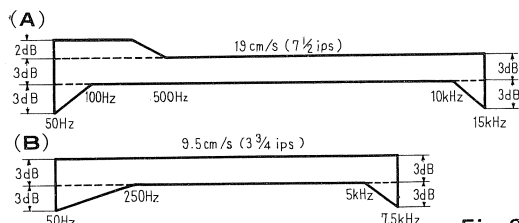


Fig. 6

For confirmation, test according to the following table. If different readings are obtained at forward and reverse tape travel, repeating adjustment is required.

5-3 LEVEL METER CALIBRATION

The four LEVEL meters can be re-calibrated according to the following procedure.

Required instruments: VTVM, Pioneer TT-500A test tape.

1. Set MODE switch at 4-CH. STEREO position.
2. Play portion 3 (700 Hz 0 dB full track) at $7\frac{1}{2}$ ips (19 cm/sec).
3. LEVEL meter for channel being measured with VTVM should indicate "0" when VTVM reads 0.775 V.
4. If not, adjust VR6 (front left channel)
VR6 (front right channel)
VR106 (rear left channel)
VR106 (rear right channel)

These are located in the AMP unit A and AMP unit B.

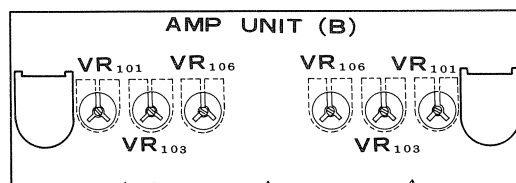


Fig. 7

Connect VTVM to		MODE switch	Tape direction	Test tape frequency	Adjust	Meter reading
LINE OUTPUT FRONT	L	4-CH.STEREO	Forward	5,000Hz	VR1	0.775V
	R	4-CH.STEREO	Forward	5,000Hz	VR1	0.775V
LINE OUTPUT REAR	L	4-CH.STEREO	Forward	5,000Hz	VR101	0.775V
	R	4-CH.STEREO	Forward	5,000Hz	VR101	0.775V
LINE OUTPUT FRONT	L	2-CH.STEREO	Reverse	5,000Hz	VR2	0.775V
	R	2-CH.STEREO	Reverse	5,000Hz	VR2	0.775V
LINE OUTPUT FRONT	L	4-CH.STEREO	Forward	700Hz	VR3	0.775V
	R	4-CH.STEREO	Forward	700Hz	VR3	0.775V
LINE OUTPUT REAR	L	4-CH.STEREO	Forward	700Hz	VR103	0.775V
	R	4-CH.STEREO	Forward	700Hz	VR103	0.775V
LINE OUTPUT FRONT	L	2-CH.STEREO	Reverse	700Hz	VR4	0.775V
	R	2-CH.STEREO	Reverse	700Hz	VR4	0.775V

6. RECORDING AMPLIFIER ALIGNMENT

6-1 RECORDING SENSITIVITY

As this tape deck is a two-head type with combined recording and playback heads, over-tape measurements for the purpose of recording amp alignment are extremely difficult and time consuming.

The units is factory-adjusted for standard recording tape SCOTCH 111 and should produce 0 dB output level if recording is done with the LEVEL meter(s) indicating "0."

If adjustments must be made, observe the following channel relationships.

Tape direction	MODE switch	Channel	VR and its location
Forward	2-CH. STEREO	Front left	VR 7 on amp unit A
Forward	2-CH. STEREO	Front right	VR 7 on amp unit A

6-2 RECORDING EQUALIZATION CHECK

For these checks, an audio generator, two voltmeters (VTVMs) and blank recording tape (SCOTCH 111) are required.

1. Connect VTVMs to LINE OUTPUT FRONT L and R.
2. Set MODE switch to 2-CH. STEREO position and turn REC level controls to maximum.
3. Connect audio generator in parallel to LINE INPUT FRONT L and R.
4. Adjust audio generator for 10 mV output. Record frequencies from 50 Hz to 15 kHz on standard tape at 7½ ips (19 cm/sec). Then play this tape.
5. This meter readings on VTVMs. They should be within the specified response range shown in Fig. 8.
6. Repeat this procedure at 3¾ ips (9.5 cm/sec), with the highest recorded frequency at about 7.5 kHz.
7. If only the high end of the frequency shows insufficient response, this can usually be corrected by slightly reducing the bias current (see item 4-2, on page 6).
8. If correct readings cannot be obtained, next proceed to equalizer adjustment.

6-3 RECORDING EQUALIZATION ALIGNMENT

Required instruments: audio generator, VTVM.

1. Connect voltmeter (VTVM) to TP2
2. Set controls as follows:
Tape speed 7½ ips (19 cm/sec).
MODE switch at 2-CH. STEREO.
RECORDING lever in position.
REC level controls at maximum.
FUNCTION lever at STOP.
3. Connect audio generator to LINE INPUT of FRONT L channel.
4. Adjust audio generator at 20 kHz, 7.8 mV.
5. Adjust L2 on amp unit A to obtain maximum VTVM reading.
6. Repeat this procedure for the other channel by re-connecting VTVM and audio generator.

Test point	LINE INPUT	Adjust coil
TP2	FRONT L	L2
TP2	FRONT R	L2

7. At 3¾ ips (9.5 cm/sec) tape speed, maximum VTVM reading will be obtained at a frequency of approximately 11 kHz.
No adjustment is possible.

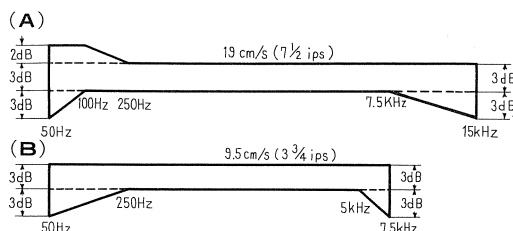
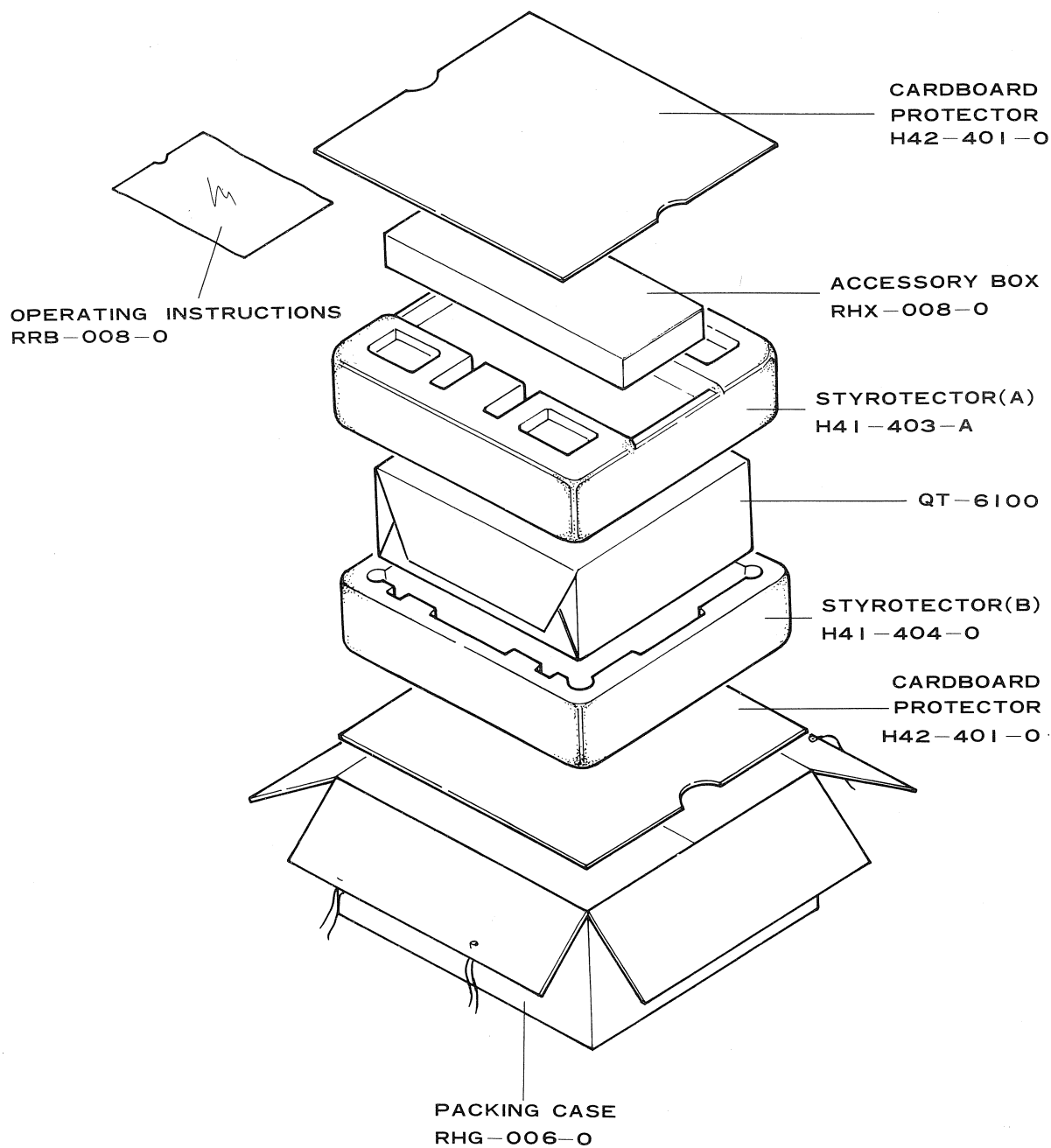


Fig. 8

7. PACKING METHOD AND PART NUMBERS



8-1 EXPLODED VIEW 1

Key No.	Description	Part No.	
1	Head housing ass'y	RXX-004-O	
2	Knob, REC level (L)	RAA-005-O	
3	Knob, REC level (R)	RAA-006-O	
4	Amplifier panel	RAP-004-C	
5	Counter escutcheon	A66-402-B	*
6	M3 x 8 Oval countersunk screw		
7	Reel mount frame	RAH-063-O	*
8	Knob, tape speed selector	A12-406-A	
9	Knob, fuction lever	RAA-010-O	
10	M2.6 x 14 Oval countersunk screw		
11	Reel mount frame	RAH-063-O	*
12	M3 x 8 Oval countersunk screw		
13	Knob, MODE selector	A12-232-A	
14	Knob, REC lever	A18-401-O	
15	Lock spring	RBK-055-O	
16	Knob, PAUSE lever	A18-606-O	
17	Lock spring	RBK-055-O	
18	Deck panel	RAH-071-O	*
19	M2 x 4 Tapping screw		
20	Finger rest	A66-852-A	*
21	Wooden cabinet ass'y	RMM-015-O	
22	Special nut	M52-010-O	
23	Foot ass'y	E17-414-O	

NOTE:

Use of asterisked* parts can compose Deck panel assembly (E17-412-0).

The following symbols stand for nuts and washers, as shown in EXPLODED VIEWS 1 to 4 on pages 11 ~ 20.

Symbol	Description
E	Retaining washer E-type
FW	Flat washer
N	Nut
SW	Spring washer

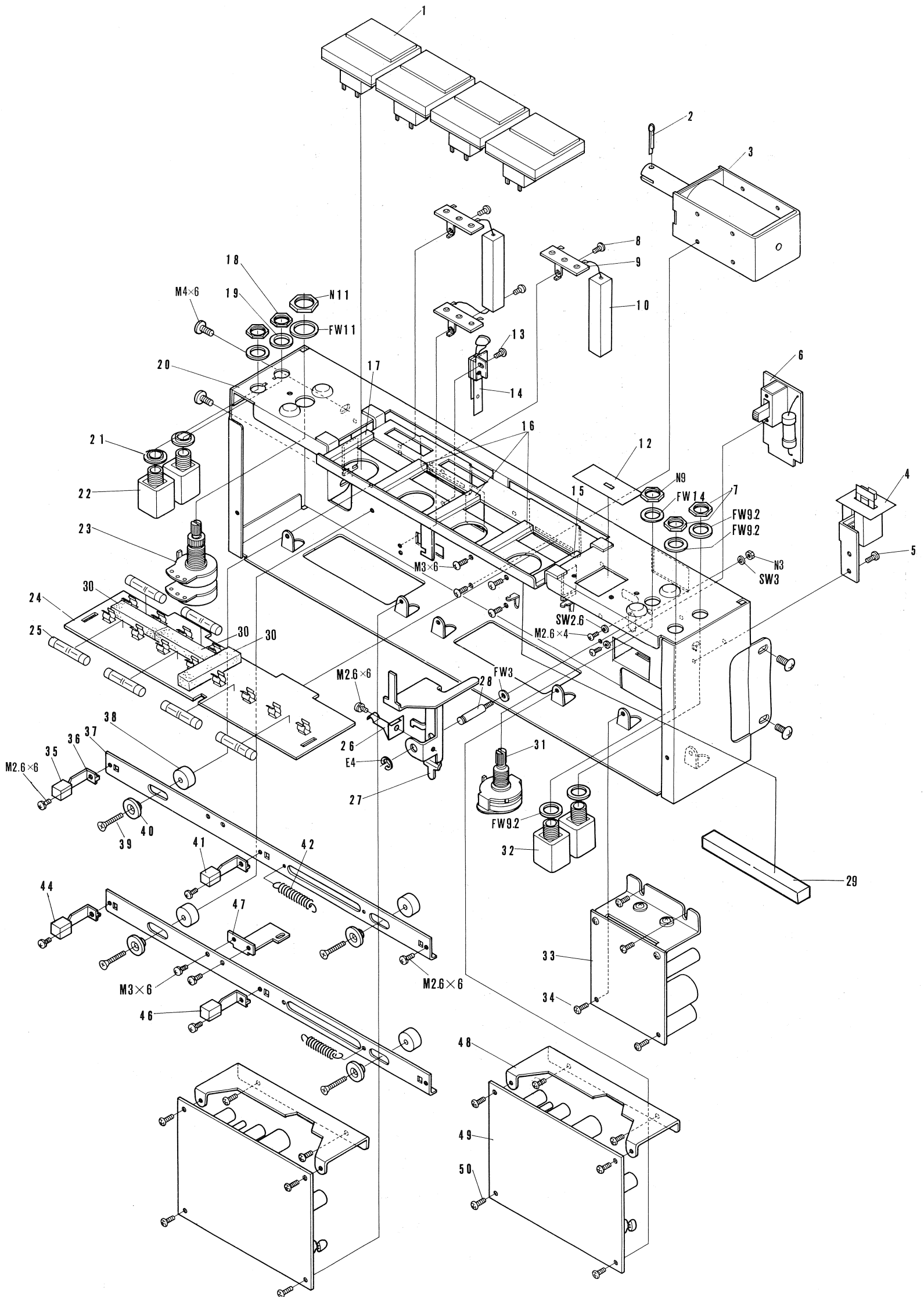
8. EXPLODED VIEWS AND MECHANISM PARTS

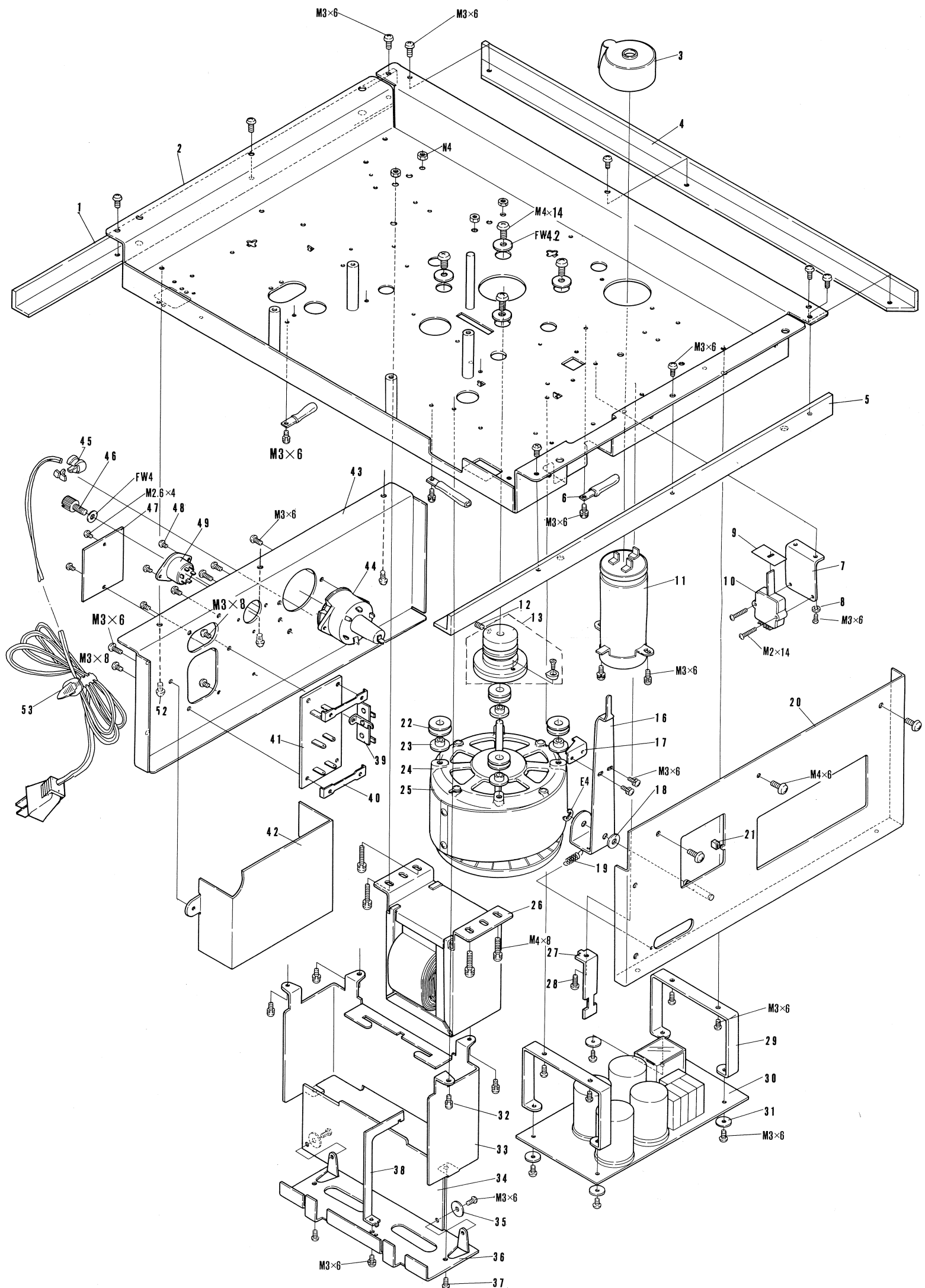
Key No.	Description	Part No.	
1	Push switch button ass'y	RAA-008-O	
2	Push switch ass'y	RXE-010-O	
3	Pilot lamp tube	REB-022-O	
4	Pilot lamp	E22-851-B	
5	Lamp grommet	REB-039-O	
6	Lamp socket	RKK-005-O	
7	M2 x 3 Countersunk screw		
8	M2.6 x 4 Countersunk screw		
9	E head mounting metal (left side)	RNE-241-O	
10	E head	RPB-005-A	
11	Tape guide 8M	RLA-036-O	
12	Tape guide 6M	RLA-037-O	
13	M2.6 x 8 Countersunk screw		
14	Contact lever mounting base	N93-857-O	
15	M2.6 x 12 Countersunk screw		
16	REC/P.B. head (4 channel) ass'y	RXX-001-O	
17	Head spring	RBH-076-O	
18	M4 x 12 Countersunk screw		
19	M2.6 x 8 Countersunk screw		
20	Rotary switch holder (A)	RNE-131-O	
21	M2.6 x 10 Countersunk screw		
22	REC/P.B. head (2 channel) ass'y	RXX-002-O	
23	Head spring	RBH-076-O	
24	Tape guide 6M	RLA-037-O	
25	Tape guide 8M	RLA-036-O	
26	Mounting plate ass'y	RXA-077-A	
27	2.6 x 12 x 1 Fiber washer		
28	Solder lug		
29	Contact lever spring	B31-854-O	
30	Contact lever arm (B)	W72-851-O	

Key No.	Description	Part No.	
31	6.5 x 4.2 x 0.3 Teflonwasher		
32	Contact lever shaft	N54-856-A	
33	Pinch arm raising metal (B)	E17-409-O	
34	Pinch arm raising metal (A)	N62-528-O	
35	Nylon shaft (A)	N54-494-O	
36	Nylon collar	N92-851-O	
37	Contact lever pole ass'y	W73-409-B	
38	Pinch roller ass'y	E17-511-O	
39	Pinch roller holder	RNE-069-O	
40			
41	Oil shielding washer (A)	E31-854-B	
42	Capstan bearing	W71-852-A	
43	8.2 x 12 x 0.3 Nylon washer		
44	Flywheel ass'y	E17-452-O	
45	Nylon ball	N23-608-A	
46	Contact lever arm (A)	W72-855-O	
47	Pinch arm bearing	RNE-209-O	
48	Pinch arm	N54-493-C	
49	Pinch roller return spring	B31-858-A	
50	Pinch roller stopper ass'y	W72-862-O	
51	Pinch cover ass'y	W72-864-A	
52	Drive belt	N28-851-O	

Key No.	Description	Part No.	
1	Level meter	RAW-003-O	
2	Slot pin	B28-851-O	
3	Plunger	N15-852-O	
4	Muting switch unit	RWX-010-O	
5	M3 x 6 Tapping screw		
6	REC switch unit	W18-442-O	
7	M9 Nut		
8	M3 x 6 Tapping screw		
9	2P terminal strip	RKC-004-O	
10	Wire wound resistor 75 Ω 10W	RCN-001-O	
11			
12	Light-shielding plate	E34-402-A	
13	M3 x 6 Tapping screw		
14	Spring switch No. 5	S48-855-O	
15	Meter cushion B	REC-038-O	
16	Meter cushion A	REC-037-O	
17	Meter cushion B	REC-038-O	
18	M9 Nut	B71-004-O	
19	Insulator washer	E34-004-O	
20	Amplifier chassis	RNB-015-B	
21	Insulator washer	E32-045-O	
22	Microphone jack	K72-024-O	
23	REC level control	RCV-004-O	
24	Lamp unit	RWX-009-O	
25	Pilot lamp	REL-002-O	
26	Spring lever	RNE-074-O	
27	Recording lever	RNE-148-A	
28	Recording lever shaft	RLA-070-O	
29	Rubber cushion	REC-051-O	
30	Rubber cushion	REC-034-O	

Key No.	Description	Part No.	
31	MODE switch	RSB-003-O	
32	Headphones jack	K72-026-O	
33	OSC unit	RWA-004-O	
34	M3 x 6 Tapping screw		
35	Insulator tip (B)	REB-069-O	
36	Slide metal lever (A)	RNE-356-O	
37	Slide metal	N62-532-A	
38	Slide spacer	N54-866-A	
39	M3 x 14 Tapping countersunk screw		
40	Stepped washer (D)	N51-873-O	
41	Insulator tip (B)	REB-069-O	
42	Slide metal spring	B31-864-O	
43			
44	Insulator tip	REB-068-O	
45			
46	Insulator tip	REB-021-O	
47	Slide metal	N64-853-O	
48	P.C.B. holder	REN-157-O	
49	Amp unit (A)	RWF-005-A	
50	M3 x 6 Tapping screw		





Key No.	Description	Part No.	
1	Aluminum frame (B)	RAP-017-O	
2	Chassis ass'y	RXA-132-A	
3	Capacitor cap	N93-438-O	
4	Aluminum frame (A)	A61-406-B	
5	Aluminum frame (B)	RAP-017-O	
6	Cord fixer	M46-025-B	
7	Switch mounting plate	RNE-065-O	
8	M3 Spring washer		
9	Switch cover	E34-404-O	
10	Switch	S42-403-A	
11	MP capacitor	C22-403-A	
12	M4 x 5 Set screw		
13	Motor pulley 50Hz 60Hz	RXA-235-O RXA-238-O	
14			
15			
16	Pause lever	N62-524-A	
17	Metal for pause lever	N62-525-O	
18	5.2 x 10 x 0.5 Nylon washer		
19	Pause lever spring	B31-443-A	
20	Side chassis (B) ass'y	RXA-232-O	
21	Rubber cushion	REB-004-O	
22	Grommet	E31-851-O	
23	Motor spacer	N51-857-O	
24	Motor	RXM-003-A	
25	Motor shield cover ass'y	W72-888-B	
26	Power transformer	RTT-007-O	
27	P.C.B. stay	RNE-064-O	
28	M3 x 6 sems screw		
29	Power supply unit stay	M45-408-O	
30	Power supply unit	RWR-008-A	

Key No.	Description	Part No.	
31	3.2 x 12 x 1 Fiber washer		
32	M3 x 6 Sems screw		
33	Amp stay	RNE-226-O	
34	Amp unit (B)	RWF-006-O	
35	3.2 x 12 x 1 Fiber washer		
36	Amp holder	RNC-038-O	
37	M3 x 6 Sems screw		
38	P.C.B. stay	RNE-223-O	
39	2P terminal strip	RKC-008-O	
40	Mounting plate	M49-128-A	
41	6P input terminal board	RKB-003-A	
42	Jack shield plate	RNE-230-O	
43	Side chassis (E) ass'y	RNC-025-B	
44	Line voltage selector	AKR-001-O	
45	AC cord stopper	E32-056-O	
46	Screw for grounding	B11-012-A	
47	Model name plate	RAL-039-O	
48	M3 x 6 Binding screw		
49	DIN-type socket	K93-003-B	
50			
51	M3 x 6 Sems screw		
52	M4 x 6 Binding screw		
53	AC power cord	D11-003-E	

23 8-5 EXPLODED VIEW 5

Key No.	Description	Part No.	
1	Auxiliary brake (B) assembly	W72-887-A	
2	Brake roller spring	B31-860-O	
3	Brake arm (A) assembly	RXA-001-O	
4	Teflon washer	B23-865-O	
5	Teflon washer	B23-866-O	
6	Counter belt	N28-853-O	
7	Reel mount base assembly	E17-403-O	
8	Oil shielding washer (B)	E31-857-O	
9	Reel mount pulley assembly	E17-408-O	
10	10 x 5.2 x 0.5 Nylon washer		
11	Take-up pulley (B) assembly	E17-402-O	
12	Take-up belt	REB-051-O	
13	Take-up pulley spacer	RLA-197-O	
14	Tension adjusting assembly	W72-871-B	
15	Tension adjusting spring	B31-865-O	
16	Tension adjusting plate holder assembly	W72-883-O	
17	Teflon wahser	B23-865-O	
18	Teflon washer	B23-866-O	
19	Reel mount base assembly	E17-403-O	
20	Oil shielding washer (B)	E31-857-O	
21	Reel mount pulley assembly	E17-408-O	
22	10 x 5.2 x 0.5 Nylon washer		
23	Take-up pulley (A) assembly	E17-401-O	
24	Take-up belt	REB-051-O	
25	Take-up pulley spacer	RLA-197-O	
26	Tension adjusting assembly	W72-871-B	
27	Tension adjusting plate holer assembly	W72-883-O	
28	Tension adjusting spring	B31-865-O	
29	Auxiliary brake (A) assembly	W72-886-A	
30	Brake roller spring	B31-860-O	

Key No.	Description	Part No.	
31	Brake arm (B) assembly	RXA-002-O	
32	Stepped washer (C)	N51-855-A	
33	Fast-forward cam	W72-477-B	
34	Slide spacer	N54-866-A	
35	Speed selector stopper	RNE-167-O	
36			
37			
38	Stepped washer (C)	N51-855-A	
39	Slide spacer	N54-866-A	
40	Stepped washer (C)	N51-855-A	
41	Stepper arm assembly	W72-869-A	
42	Stepper arm spacer	N54-867-O	
43	Slide stepper spring	B32-853-O	
44	Slide lever assembly	RXA-130-B	
45	Pause cam lever	N81-404-A	
46	Pause cam spring	B31-444-O	
47	Microswitch	S21-418-O	
48	Insulator	M98-855-O	
49	Speed selector cam (B) assembly	W72-479-A	*
50	Speed selector arm (A)	N83-401-A	*
51	Speed selector arm (B)	N83-402-A	*
52	Speed selector cam spring	RBH-050-O	
53	Spark killer	W53-045-O	
54	Shut-off switch	S21-851-O	
55	Insulator	M98-855-O	
56	Special nut	B71-403-A	
57	Panel holder	M48-401-A	
58	Counter pulley	N93-855-O	
59			
60			

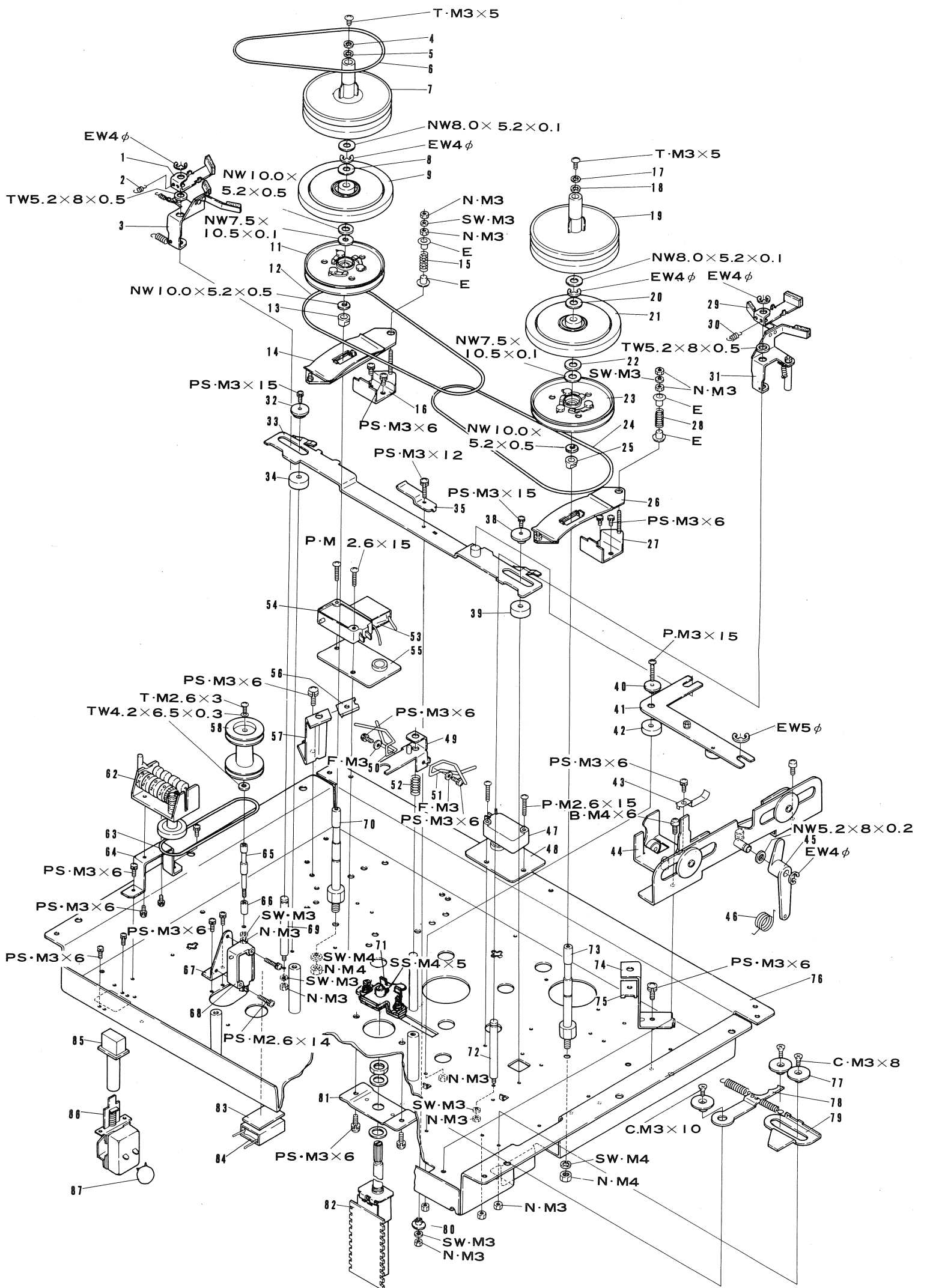
24

Key No.	Description	Part No.	
61			
62	Counter	RAW-001-O	
63	Counter belt	N28-853-O	
64	Counter mounting plate	RNE-034-O	
65	Counter pulley shaft	N54-863-A	
66	Counter pulley spacer	N54-864-O	
67	Shut-off switch mounting plate	M44-851-O	
68	Shut-off switch	S21-851-O	
69	Arm shaft	N54-862-O	
70	Reel mount shaft	RLA-102-O	
71	Speed selector ass'y	RXX-053-O	
72	Arm shaft	N54-862-O	
73	Reel mount shaft	RLA-102-O	
74	Panel holder	M48-401-A	
75	Special nut	B71-403-A	
76	Chassis	RXA-132-A	
77	Stepped washer (B)	N51-854-O	
78	Stepper cam assembly	W72-474-O	
79	Slide stopper	N61-863-O	
80	Fast-forward cam collar	RLA-032-O	
81	Rotary switch holder	RNE-083-O	
82	Equalizer switch unit	RWX-008-O	
83	Double face tape		
84	Spark killer	W53-045-O	
85	Knob for power switch	RAA-003-A	
86	Power switch	S31-851-O	
87	Ceramic capacitor 0.01μF DC 1.4kV	C43-003-O	

The following symbols stand for screws, nuts, washers, etc., as shown in EXPLODED VIEW 5 on pages 25 and 26.

Symbol	Description
B	Binding head screw
C	Countersunk head screw
E	Eyelet
EW	Retaining washer E-type
F	Fiber washer
N	Hex nut
NW	Nylon washer
P	Pan head screw
PS	Pan head sems screw
SS	Set screw
SW	Spring washer
T	Truss head screw
TW	Teflon washer

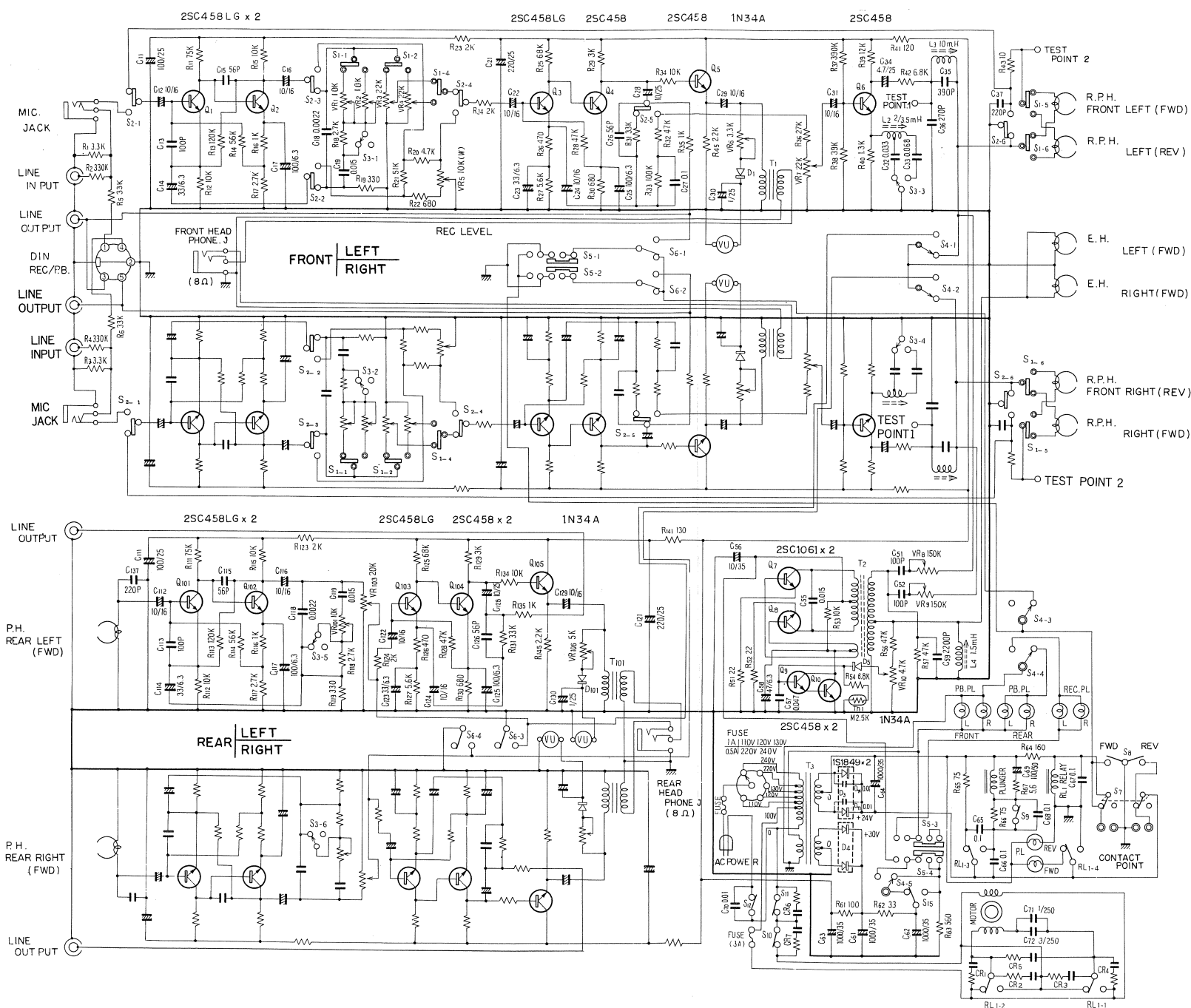
NOTE:
Use of asterisked* parts can compose Speed selector cam assembly (E17-512-0).



9. SCHEMATIC DIAGRAMS, PCB PATTERNS AND ELECTROLYTIC PARTS

9-1 SCHEMATIC DIAGRAM AND MISCELLANEOUS PARTS

QT-6100



- S1 FWD-REV SELECTOR SW (FWD POSITION)
- S2,5 REC-PB. SELECTOR SW (PB. POSITION)
- S3 EQUALIZER SELECTOR SW (7 1/2 IPS POSITION)
- S4 MODE SW (4 CHANNEL POSITION)
- S6 MUTING SW (PLAY POSITION)
- S7 CONTACT OFF SW (PLAY / STOP POSITION)
- S8 PRE SET SW
- S9 PLUNGER SW (FWD POSITION)
- S10 MOTOR SW
- S11 SHUT OFF SW
- S12 POWER SW
- S15 OSC. SW

RL1 FWD-REV SELECTOR SW (FWD POSITION)

- VR1,101 PB. EQUALIZER ADJ (FWD POSITION)
- VR2 PB. EQUALIZER ADJ (REV POSITION)
- VR3,103 PB. LEVEL ADJ (FWD POSITION)
- VR4 PB. LEVEL ADJ (REV POSITION)
- VR5 REC. LEVEL
- VR6,106 LEVEL METER ADJ
- VR7 REC. LEVEL ADJ
- VR8 LEFT BIAS ADJ
- VR9 RIGHT BIAS ADJ
- VR10 OSC INTENSITY ADJ

MISCELLANEOUS PARTS

NOTE:

CAPACITORS: IN μ F UNLESS OTHERWISE NOTED. p: pF.

RESISTORS: IN OHM, $\frac{1}{4}$ W UNLESS OTHERWISE NOTED. k: k Ω , M: M Ω .

CAPACITORS

Symbol	Description	Part No.	
C1			
C2			
C68	Mylar 0.1 50V	CQMA 104K 50	
C69	Electrolytic 100 50V	CEB 101P 50	
C70	Ceramic 0.01 DC 1.4kV	C43-003-O	
C71	MP capacitor	C22-403-A	
C72	MP capacitor	C22-403-A	

RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 3.3k	RD $\frac{1}{4}$ PS 332J	
R2	Carbon film 330k	RD $\frac{1}{4}$ PS 334J	
R3	Carbon film 3.3k	RD $\frac{1}{4}$ PS 332J	
R4	Carbon film 330k	RD $\frac{1}{4}$ PS 334J	
R5	Carbon film 33k	RD $\frac{1}{4}$ PS 333J	
R6	Carbon film 33k	RD $\frac{1}{4}$ PS 333J	
R7			
R8			
R65	Wire wound 75 10W	RCN-001-O	
R66	Wire wound 75 10W	RCN-001-O	
R67	Carbon film 5.6 $\frac{1}{4}$ W	RD $\frac{1}{4}$ PS 5R6J	
VR5	REC level	RCV-004-O	

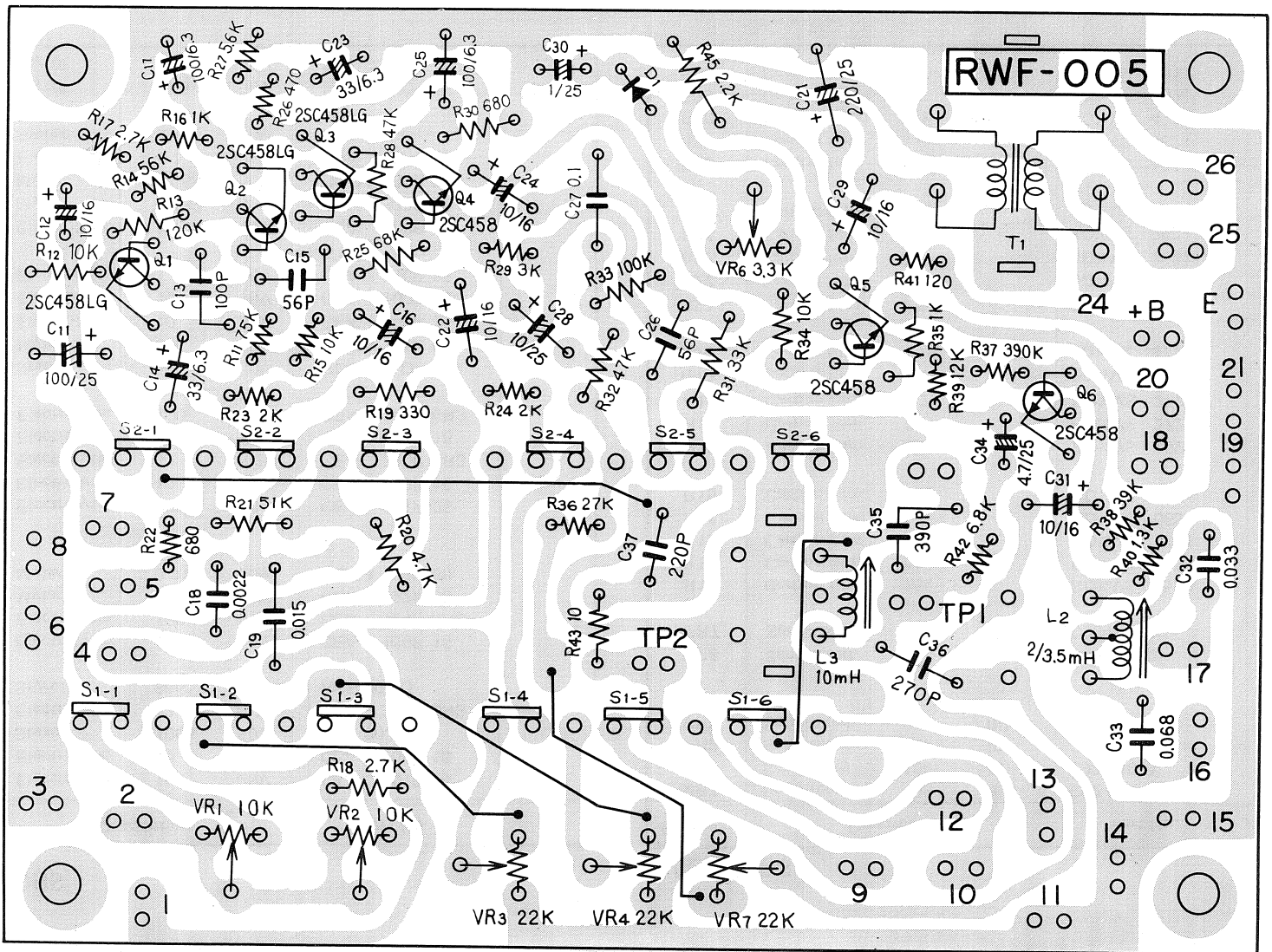
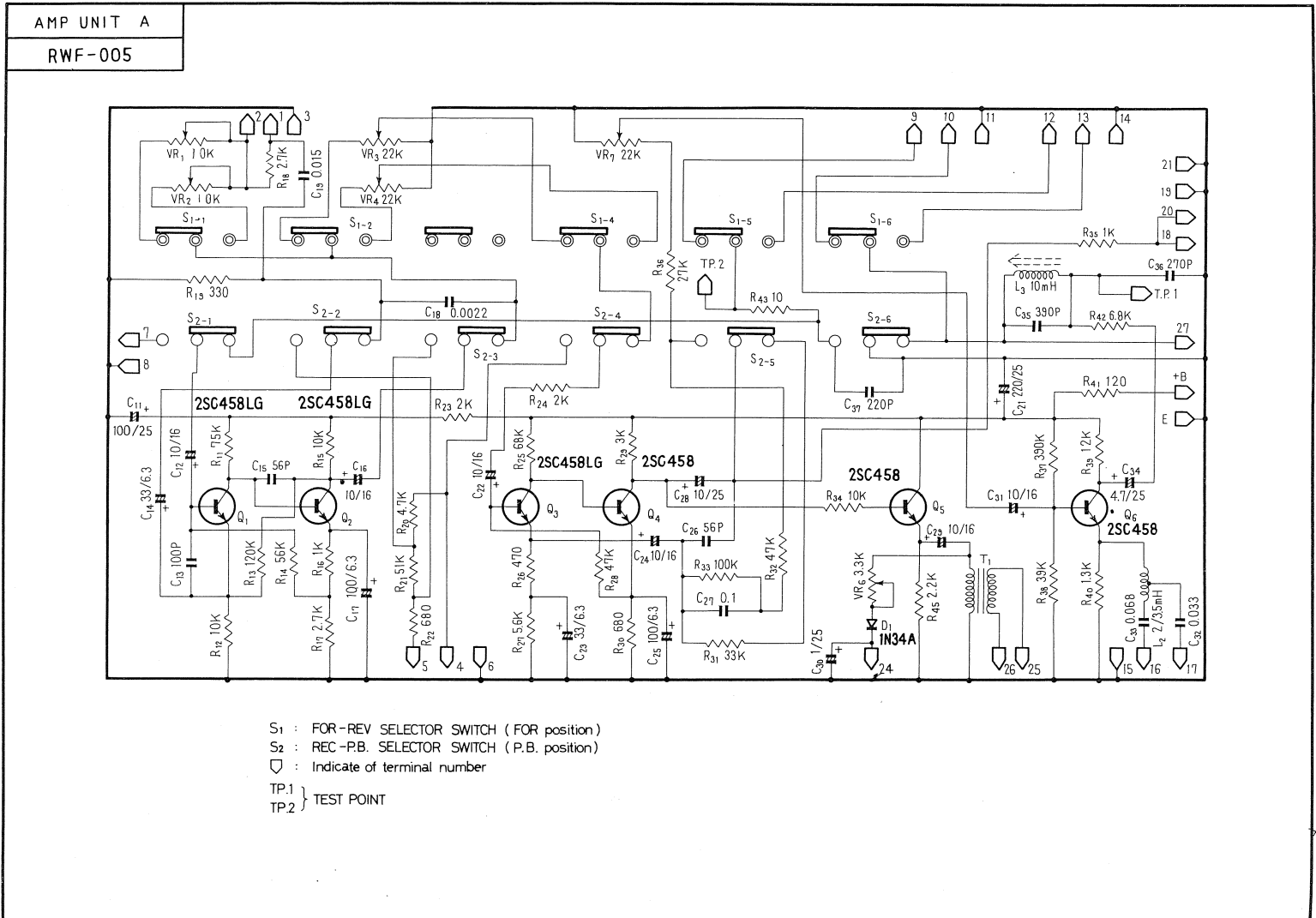
SWITCHES

Symbol	Description	Part No.	
S4	Mode switch	RSB-003-O	
S7	Contact OFF switch	S42-403-A	
S9	Spring switch No. 5	S48-855-O	
S10	Motor switch	S21-851-O	
S11	Shut-off switch	S21-851-O	
S12	Power switch	S31-851-O	
S13	OSC switch	S21-418-O	

OTHERS

Symbol	Description	Part No.	
T3	Power transformer REC/P.B head (4-channel) REC/P.B. head (2 channel)	RTT-007-O RPB-003-O	
CR6	E head Spark killer	RPB-004-O RPB-005-A W53-045-O	
CR7	Spark killer DIN-type socket Line voltage selector Fuse 0.5A AC power cord	W53-045-O K93-003-B AKR-001-O E21-005-O D11-003-E	
	Pilot lamp socket Pilot lamp Amp unit (A) OSC unit Muting switch unit	RKK-005-O E22-851-B RWF-005-A RWA-004-O RWX-010-O	

Symbol	Description	Part No.	
	Lamp unit	RWX-009-O	
	Plunger	N15-852-O	
	Level meter	RAW-003-O	
	Microphone jack	K72-024-O	
	Headphones jack	K72-026-O	
	Pilot lamp	REL-002-O	
	Lens for REC indicator	RAX-004-O	
	Operating instructions	RRB-008-O	
	Amp unit (B)	RWF-006-O	
	Power supply unit	RWR-008-A	
	Equalizer switch unit	RWX-008-O	
	Accessory box	RHX-008-O	
	Vinyl cover	H46-402-O	
	Connection cord	D53-851-O	
	Splicing tape	P45-851-O	
	Sensing foil	P46-851-O	
	Empty reel	RP-75	
	Reel cap	REB-014-O	
	Cleaning kit	E13-852-O	
	Cleaning ribbon	E33-856-O	



CAPACITORS

Symbol	Description			Part No.	
C11	Electrolytic	100	25V	CEA 101P 25	
C12	Electrolytic	10	16V	CEA 100P 16	
C13	Styrol	100p	50V	RCE-003-O	
C14	Electrolytic	33	6.3V	CEA 330P 6R3	
C15	Styrol	56p	50V	RCE-004-O	
C16	Electrolytic	10	16V	CEA 100P 16	
C17	Electrolytic	100	6.3V	CEA 101P 6R3	
C18	Mylar	0.0022	50V	CQMA 222K 50	
C19	Mylar	0.015	50V	CQMA 153K 50	
C20					
C21	Electrolytic	220	25V	CEA 221P 25	
C22	Electrolytic	10	16V	CEA 100P 16	
C23	Electrolytic	33	6.3V	CEA 330P 6R3	
C24	Electrolytic	10	16V	CEA 100P 16	
C25	Electrolytic	100	6.3V	CEA 101P 6R3	
C26	Styrol	56p	50V	RCE-004-O	
C27	Mylar	0.1	50V	CQMA 104K 50	
C28	Electrolytic	10	25V	CEA 100P 25	
C29	Electrolytic	10	16V	CEA 100P 16	
C30	Electrolytic	1	25V	CEA 010P 25	
C31	Electrolytic	10	16V	CEA 100P 16	
C32	Mylar	0.033	50V	CQMA 333K 50	
C33	Mylar	0.068	50V	CQMA 683K 50	
C34	Electrolytic	4.7	25V	CEA 4R7P 25	
C35	Styrol	390p	50V	RCE-001-O	
C36	Styrol	270p	50V	RCE-002-O	
C37	Styrol	220p	50V	RCE-006-O	

RESISTORS

Symbol	Description			Part No.	
VR1	Semi-fixed	10k	(B)	C92-049-O	
VR2	Semi-fixed	10k	(B)	C92-049-O	
VR3	Semi-fixed	22k	(B)	C92-857-O	
VR4	Semi-fixed	22k	(B)	C92-857-O	
VR5					
VR6	Semi-fixed	3.3k	(B)	C92-402-O	
VR7	Semi-fixed	22k	(B)	C92-857-O	
R11	Carbon film	75k		RD¼VS 753J	
R12	Carbon film	10k		RD¼VS 103J	
R13	Carbon film	120k		RD¼VS 124J	
R14	Carbon film	56k		RD¼VS 563J	
R15	Carbon film	10k		RD¼VS 103J	
R16	Carbon film	1k		RD¼VS 102J	
R17	Carbon film	2.7k		RD¼VS 272J	
R18	Carbon film	2.7k		RD¼VS 272J	
R19	Carbon film	330		RD¼VS 331J	
R20	Carbon film	4.7k		RD¼VS 472J	
R21	Carbon film	51k		RD¼VS 513J	
R22	Carbon film	680		RD¼VS 681J	
R23	Carbon film	2k		RD¼VS 202J	
R24	Carbon film	2k		RD¼VS 202J	
R25	Carbon film	68k		RD¼VS 683J	
R26	Carbon film	470		RD¼VS 471J	
R27	Carbon film	5.6k		RD¼VS 562J	
R28	Carbon film	47k		RD¼VS 473J	
R29	Carbon film	3k		RD¼VS 302J	
R30	Carbon film	680		RD¼VS 681J	

Symbol	Description			Part No.	
R31	Carbon film	33k		RD¼VS 333J	
R32	Carbon film	47k		RD¼VS 473J	
R33	Carbon film	100k		RD¼VS 104J	
R34	Carbon film	10k		RD¼VS 103J	
R35	Carbon film	1k		RD¼VS 102J	
R36	Carbon film	27k		RD¼VS 273J	
R37	Carbon film	390k		RD¼VS 394J	
R38	Carbon film	39k		RD¼VS 393J	
R39	Carbon film	12k		RD¼VS 123J	
R40	Carbon film	1.3k		RD¼VS 132J	
R41	Carbon film	120		RD¼VS 121J	
R42	Carbon film	6.8k		RD¼VS 682J	
R43	Carbon film	10		RD¼VS 100J	
R44					
R45	Carbon film	2.2k		RD¼VS 222J	

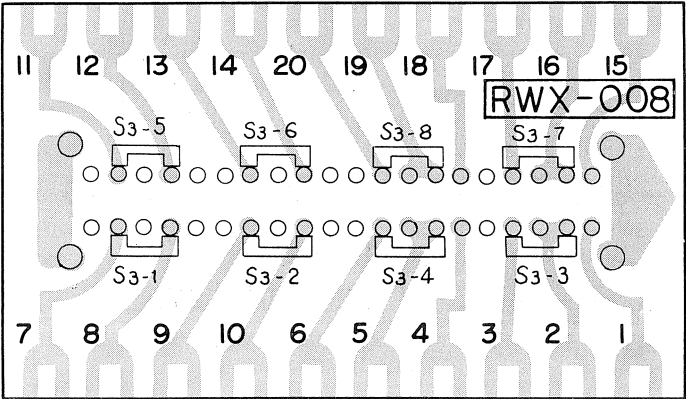
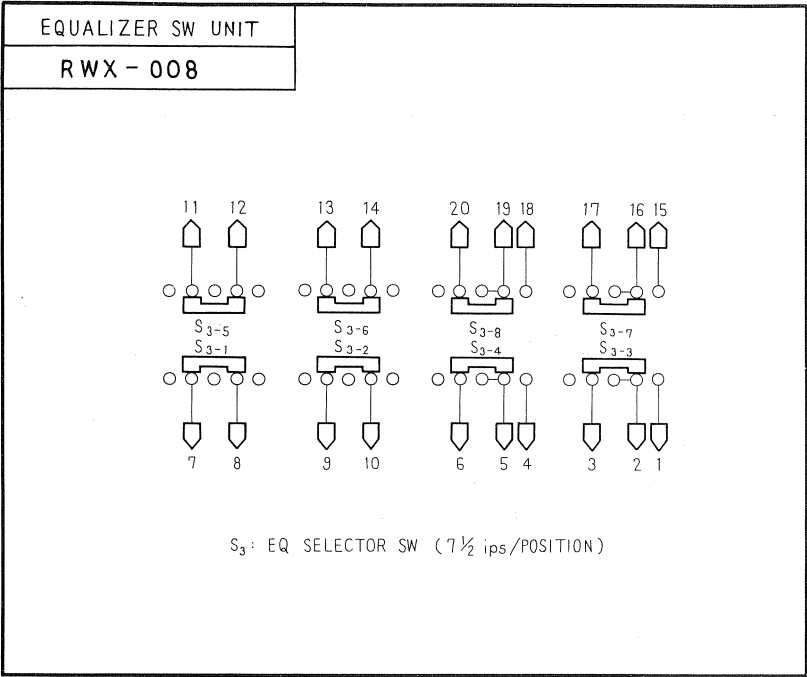
SEMICONDUCTORS

Symbol	Description			Part No.	
Q1	2SC458LG B or C	Transistor			
Q2	2SC458LG B or C	Transistor			
Q3	2SC458LG B or C	Transistor			
Q4	2SC458 C or D	Transistor			
Q5	2SC458 C or D	Transistor			
Q6	2SC458 C or D	Transistor			
D1	1N34A	Diode			

OTHERS

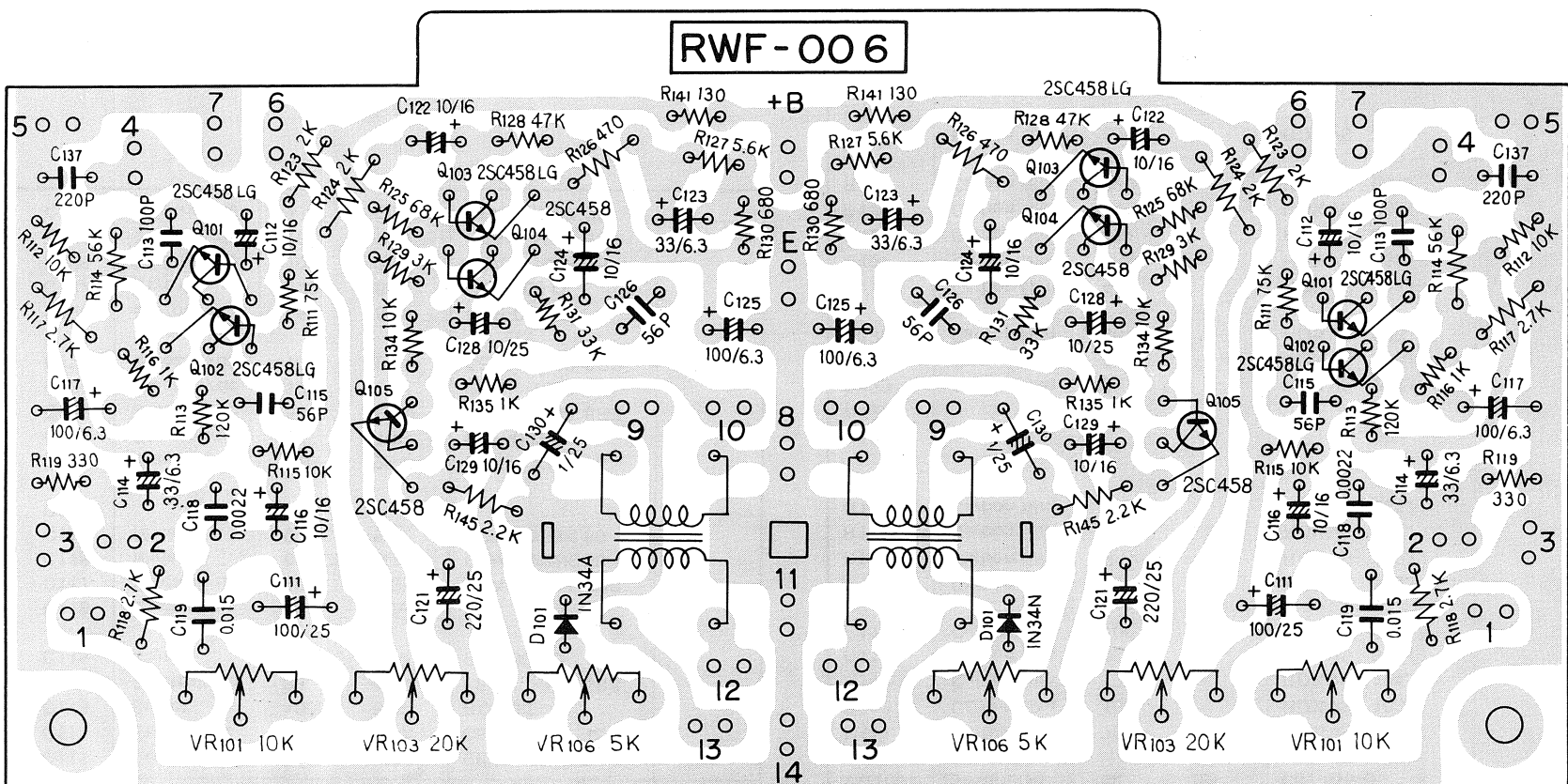
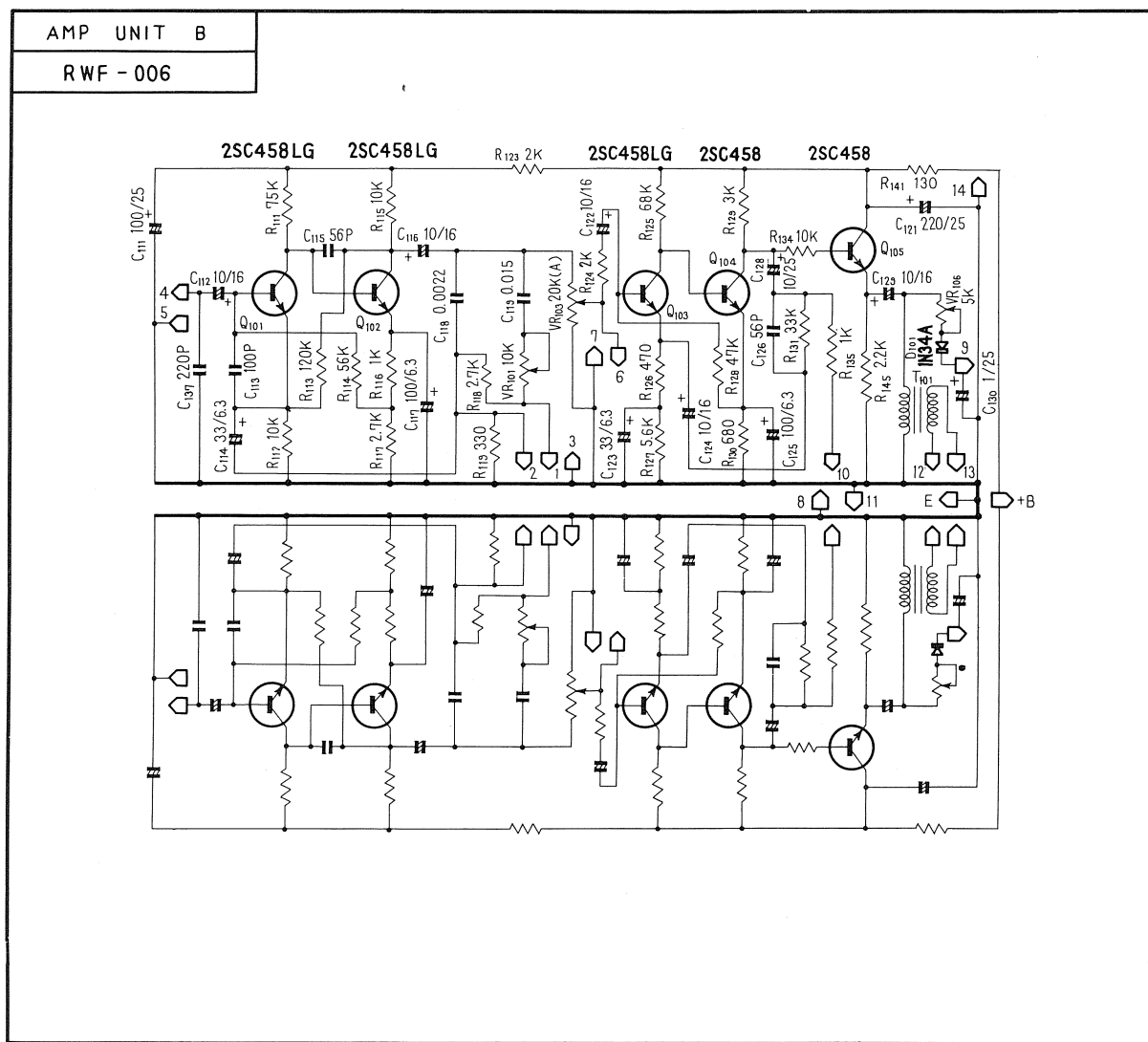
Symbol	Description	Part No.	
T1	Matching transformer	T61-408-A	
L2	Peaking coil	T84-402-A	
L3	Trap coil	T84-401-A	
S1	Slide switch	S41-852-A	
S2	Slide switch	S41-852-A	

9-3 EQUALIZER SWITCH UNIT (RWX-008)



PART LIST OF EQUALIZER SWITCH UNIT

Symbol	Description	Part No.	
S3	Rotary switch	RSB-004-O	



CAPACITORS

Symbol	Description			Part No.	
C111	Electrolytic	100	25V	CEA 101P 25	
C112	Electrolytic	10	16V	CEA 100P 16	
C113	Styrol	100p	50V	RCE-003-O	
C114	Electrolytic	33	6.3V	CEA 330P 6R3	
C115	Styrol	56p	50V	RCE-004-O	
C116	Electrolytic	10	16V	CEA 100P 16	
C117	Electrolytic	100	6.3V	CEA 101P 6R3	
C118	Mylar	0.0022	50V	CQMA 222K 50	
C119	Mylar	0.015	50V	CQMA 153K 50	
C120					
C121	Electrolytic	220	25V	CEA 221P 25	
C122	Electrolytic	10	16V	RCH-002-O	
C123	Electrolytic	33	6.3V	CEA 330P 6R3	
C124	Electrolytic	10	16V	CEA 100P 16	
C125	Electrolytic	100	6.3V	CEA 101P 6R3	
C126	Styrol	56p	50V	RCE-004-O	
C137	Styrol	220p	50V	RCE-006-O	
C128	Electrolytic	10	25V	CEA 100P 25	
C129	Electrolytic	10	16V	CEA 100P 16	
C130	Electrolytic	1	25V	CEA 010P 25	

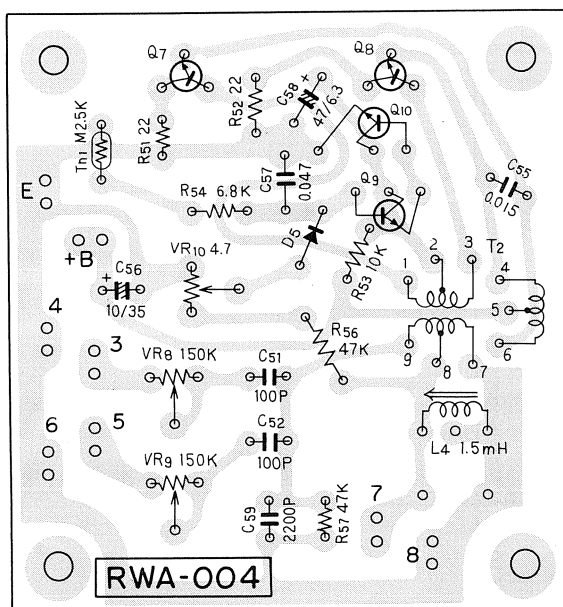
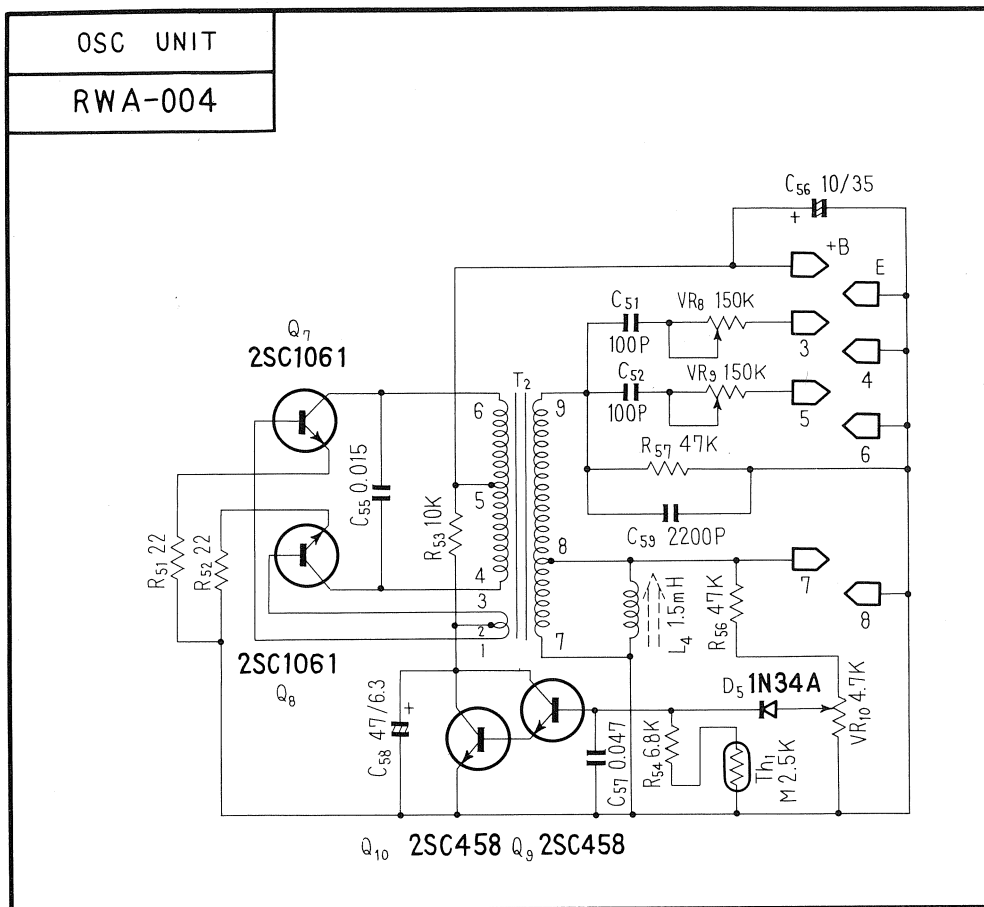
RESISTORS

Symbol	Description			Part No.	
VR101	Semi-fixed	10k	(B)	C81-417-O	
VR103	Semi-fixed	20k	(B)	C81-428-O	
VR106	Semi-fixed	5k	(B)	C81-415-O	
R111	Carbon film	75k		RD¼VS 753J	
R112	Carbon film	10k		RD¼VS 103J	
R113	Carbon film	120k		RD¼VS 124J	
R114	Carbon film	56k		RD¼VS 563J	
R115	Carbon film	10k		RD¼VS 103J	
R116	Carbon film	1k		RD¼VS 102J	
R117	Carbon film	2.7k		RD¼VS 272J	
R118	Carbon film	2.7k		RD¼VS 272J	
R119	Carbon film	330		RD¼VS 331J	
R120					
R121					
R122					
R123	Carbon film	2k		RD¼VS 202J	
R124	Carbon film	2k		RD¼VS 202J	
R125	Carbon film	68k		RD¼VS 683J	
R126	Carbon film	470		RD¼VS 471J	
R127	Carbon film	5.6k		RD¼VS 562J	
R128	Carbon film	47k		RD¼VS 473J	
R129	Carbon film	3k		RD¼VS 302J	
R130	Carbon film	680		RD¼VS 681J	
R131	Carbon film	33k		RD¼VS 333J	
R132					
R133					
R134	Carbon film	10k		RD¼VS 103J	
R135	Carbon film	1k		RD¼VS 102J	
R141	Carbon film	130		RD¼VS 131J	
R145	Carbon film	2.2k		RD¼VS 222J	

SEMICONDUCTORS AND TRANSFORMER

Symbol	Description	Part No.	
Q101	2SC458LG B or C Transistor		
Q102	2SC458LG B or C Transistor		
Q103	2SC458LG B or C Transistor		
Q104	2SC458 C or D Transistor		
Q105	2SC458 C or D Transistor		
D101	1N34A Diode		
T101	Matching transformer	T61-408-A	

9-5 OSC UNIT (RWA-004)



PARTS LIST OF OSC UNIT

CAPACITORS

Symbol	Description			Part No.	
C51	Styrol	100p		RCE-003-O	
C52	Styrol	100p		RCE-003-O	
C53					
C54					
C55	Styrol	0.015	50V	CQSA 153K 50	
C56	Electrolytic	10	35V	CEA 100P 35	
C57	Mylar	0.047	50V	CQMA 473K 50	
C58	Electrolytic	47	6.3V	CEA 470P 6R3	
C59	Styrol	0.0022	50V	RCE-005-O	

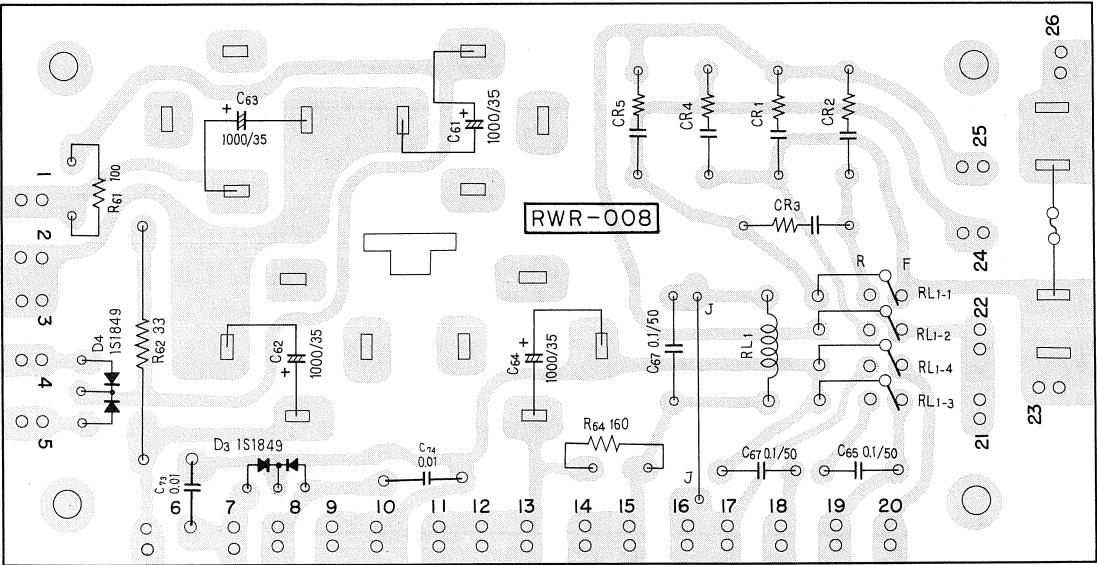
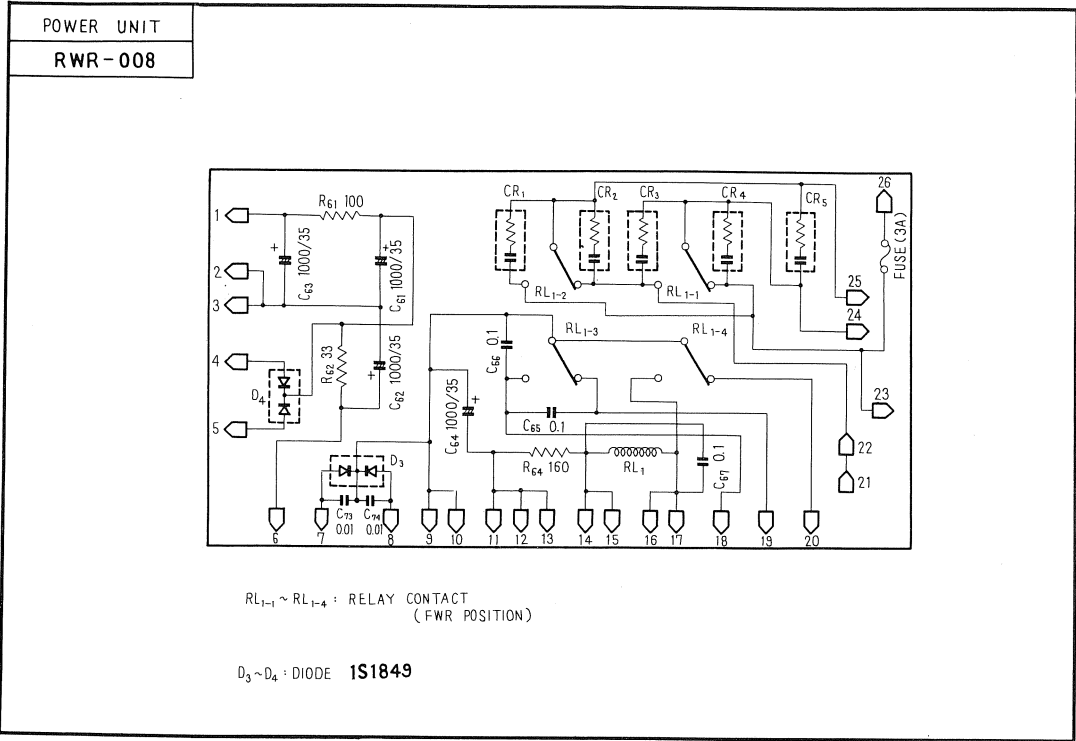
RESISTORS

Symbol	Description			Part No.	
VR8	Semi-fixed	150k	(B)	C92-860-O	
VR9	Semi-fixed	150k	(B)	C92-860-O	
VR10	Semi-fixed	4.7k	(B)	C92-051-O	
R51	Carbon film	22		RD¼VS 220J	
R52	Carbon film	22		RD¼VS 220J	
R53	Carbon film	10k		RD¼VS 103J	
R54	Carbon film	6.8k		RD¼VS 682J	
R55					
R56	Carbon film	47k		RD¼VS 473J	
R57	Carbon film	47k		RD¼VS 473J	

OTHERS

Symbol	Description			Part No.	
Q7	2SC1061 B or C	Transistor			
Q8	2SC1061 B or C	Transistor			
Q9	2SC458 B or C	Transistor			
Q10	2SC458 B or C	Transistor			
D5	1N34A	Diode			
TH1	M2R5K	Thermistor			
T2	OSC transformer			RTD-001-O	
L4	Dummy coil			RTD-002-O	

9-6 POWER SUPPLY UNIT (RWR-008)



PARTS LIST OF POWER SUPPLY UNIT

CAPACITORS

Symbol	Description			Part No.	
C61	Electrolytic	1000	35V	C52-068-O	
C62	Electrolytic	1000	35V	C52-068-O	
C63	Electrolytic	1000	35V	C52-068-O	
C64	Electrolytic	1000	35V	C52-068-O	
C65	Mylar	0.1	50V	CQMA 104K 50	
C66	Mylar	0.1	50V	CQMA 104K 50	
C67	Mylar	0.1	50V	CQMA 104K 50	
C73	Ceramic	0.01	DC 1.4kV	C43-003-O	
C74	Ceramic	0.01	DC 1.4kV	C43-003-O	

RESISTORS

Symbol	Description			Part No.	
R61	Crabon film	100	½W	RD½PS 101J	
R62	Carbon film	33	1W	RD1PS 330J	
R64	Metal oxide	160	3W	RS3P 161K	

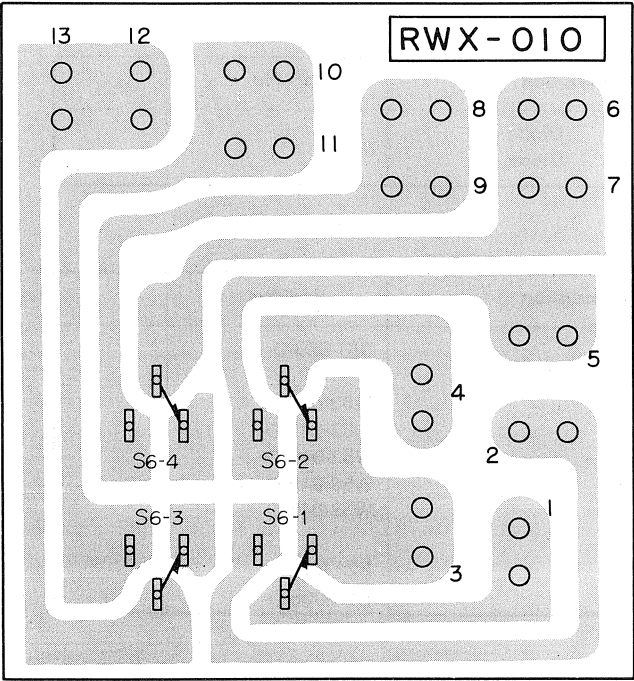
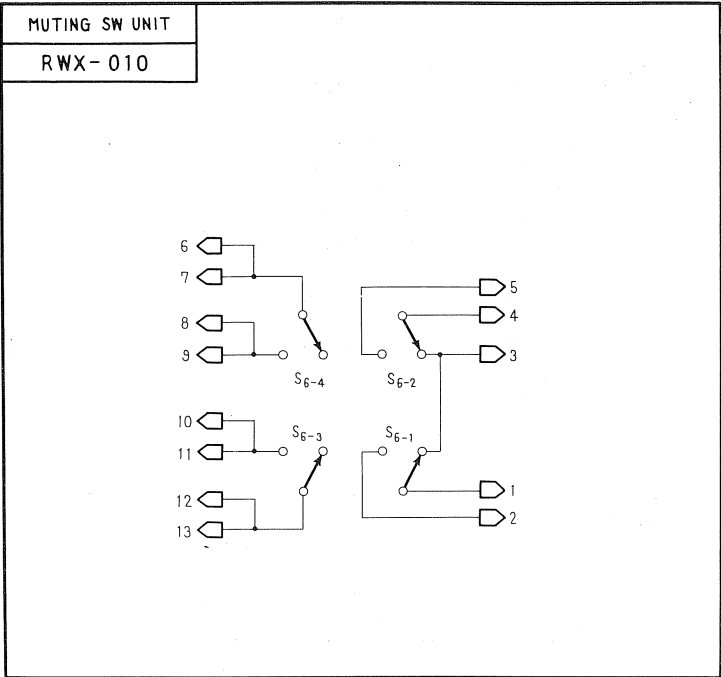
SEMICONDUCTORS

Symbol	Description		Part No.	
D3	1S1849	Diode		
D4	1S1849	Diode		

OTHERS

Symbol	Description		Part No.	
RL1	Relay (12V)		S61-853-O	
CR1	Spark killer		W53-045-O	
CR2	Spark killer		W53-045-O	
CR3	Spark killer		W53-045-O	
CR4	Spark killer		W53-045-O	
CR5	Spark killer		W53-045-O	
	Fuse 3A		E21-006-O	
	Fuse holder		K91-006-O	

9-7 MUTING SWITCH UNIT (RWX-010)



PART LIST OF MUTING SWITCH UNIT

Symbol	Description	Part No.	
	Muting switch ass'y	RSK-011-O	

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