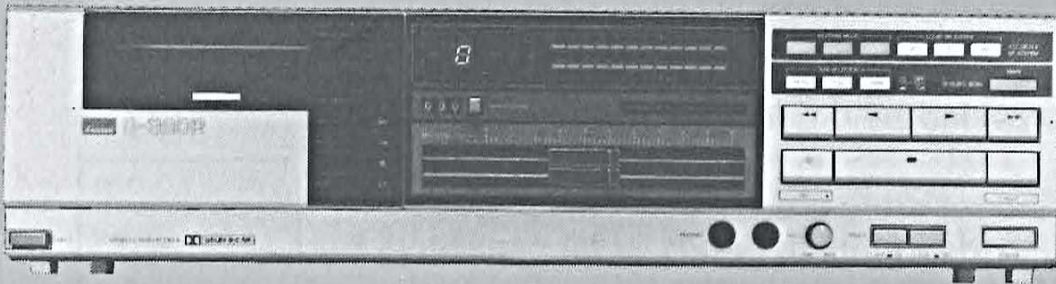


SERVICE MANUAL

STEREO CASSETTE DECK

SANSUI D-390R

(Silver & Black Model)



CAUTION

1. Parts identified by the \triangle symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Track format	4-track/2-channel system
Tape speed	4.8 cm/sec.
Heads (2-head configuration)	
Rec/pb head	HIGH-Bs hard permalloy
Erase head	Double-gap HIGH-Bs ferrite
Motor	Capstan: Electronically Controlled DC Motor
	Reels: DC Motor
Wow/flutter	0.05% max (WRMS)
Fast forwarding (rewinding) time	
.....	Approx. 85 sec. (for C-60 tape)
Frequency response (—20 VU recording/playback)	
Normal tape (LH)	20 to 15,000 Hz (30 to 14,000 Hz \pm 3 dB)
Chrome tape	20 to 17,000 Hz (30 to 16,000 Hz \pm 3 dB)
Metal tape	20 to 18,000 Hz (30 to 17,000 Hz \pm 3 dB)
Signal-to-noise ratio (recording/playback with metal tape)	
DOLBY NR OFF	Better than 58 dB
DOLBY-B NR ON	Better than 68 dB (above 5 kHz)
DOLBY-C NR ON	Better than 78 dB (above 1 kHz)
Erase rate (metal tape)	
.....	70 dB min (1 kHz)
Recording bias frequency	
.....	85 kHz
Input sensitivity/Impedance	
LINE IN (REC)	70 mV/100 kohms
MIC	0.5 mV/200~5,000 ohms
Power requirements	120/220/240V 50/60 Hz
	For U.S.A. and Canada
.....	120V (60 Hz)
Power consumption	16W
Dimensions	430 mm (16-15/16") W 111 mm (4-3/8") H 226 mm (8-15/16") D
Weight	3.9 kg (8.6 lbs) net 4.9 kg (10.8 lbs) packed

- * Design and specifications subject to changes without notice for improvements.
- * Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double D symbol are trade marks of Dolby Laboratories Licensing Corporation.

Sansui

SANSUI ELECTRIC CO., LTD.

CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX on the parts list and the schematic diagram mean followings respectively.
 - UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)
 - CSA..... Manufactured for Canadian market.
 - SA..... Manufactured for South African market.
 - BS, UK Manufactured for United Kingdom market.
 - EU Manufactured for European market.
 - AS..... Manufactured for Australian market.
 - XX..... Standard Version.
 - NON MARK Common Parts.

2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.

3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.

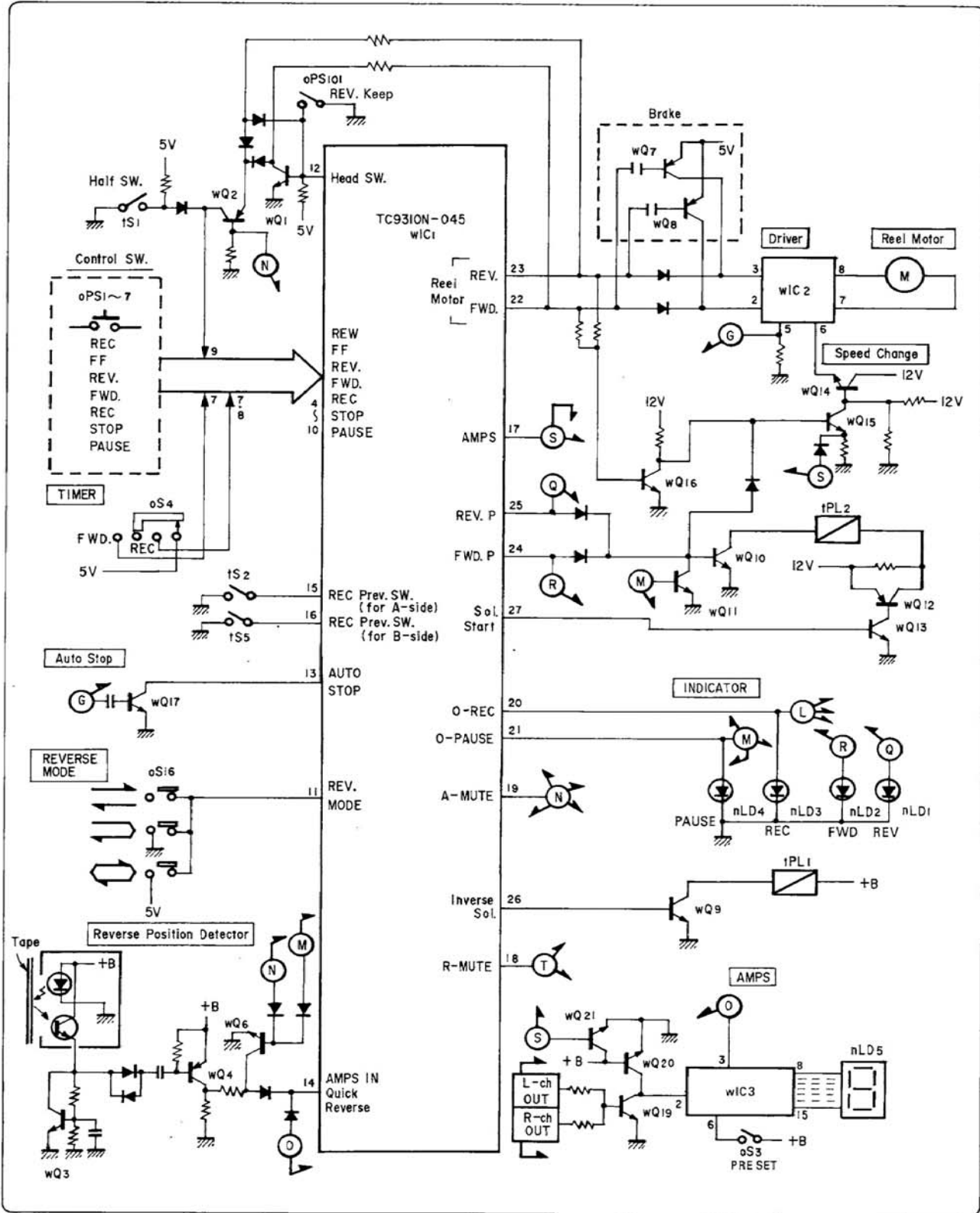
4. Abbreviations in this service manual are as follows.

•Abbreviations List

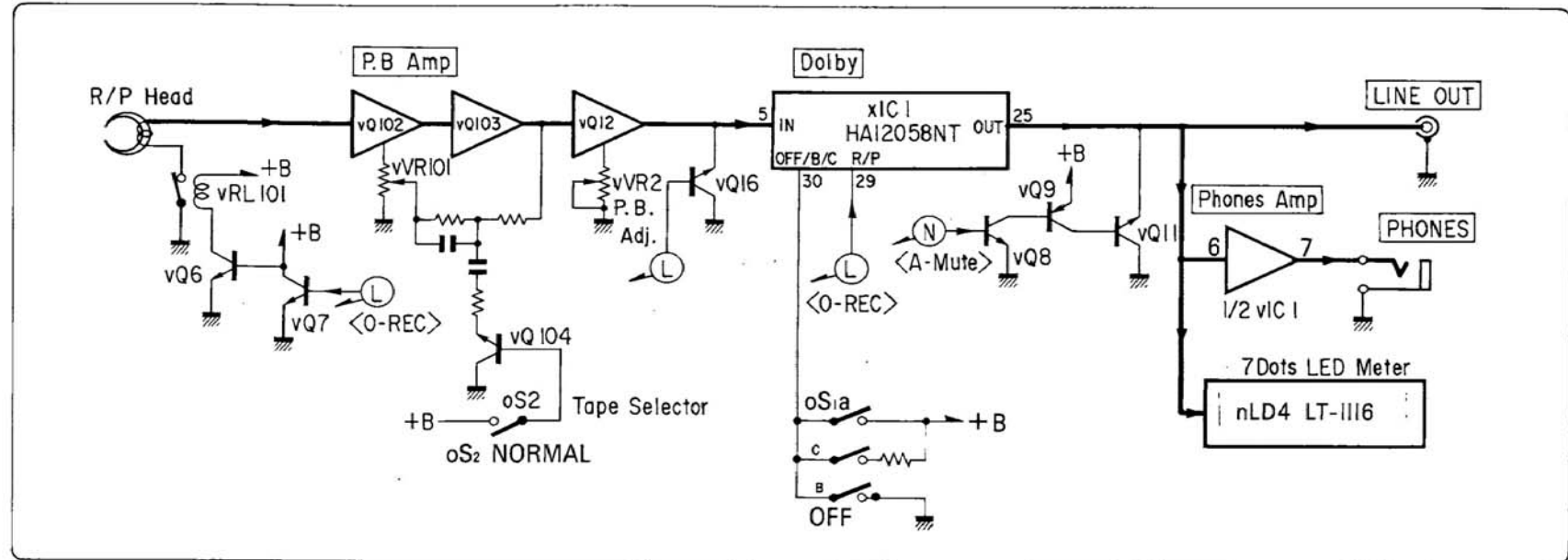
C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	Ta.C.	: Tantalum Capacitor
Ce.R.	: Cement Resistor	F.C.	: Film Capacitor
M.R.	: Metal Film Resistor	M.P.	: Metalized Paper Capacitor
F.R.	: Fusing Resistor	P.C.	: Polystyrene Capacitor
N.I.R.	: Non-Inflammable Resistor	G.C.	: Gimmic Capacitor
A.R.	: Array Resistor	A.C.	: Array Capacitor
C.C.	: Ceramic Capacitor	V.R.	: Variable Resistor
C.T.	: Ceramic Capacitor, Temoerature Compensation	S.V.R.	: Semi Variable Resistor
E.C.	: Electrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic Capacitor	Chip R.	: Chip Resistor
E.B.	: Bi-Polar Electrolytic Capacitor	Chip C.	: Chip Capacitor

1. BLOCK DIAGRAM

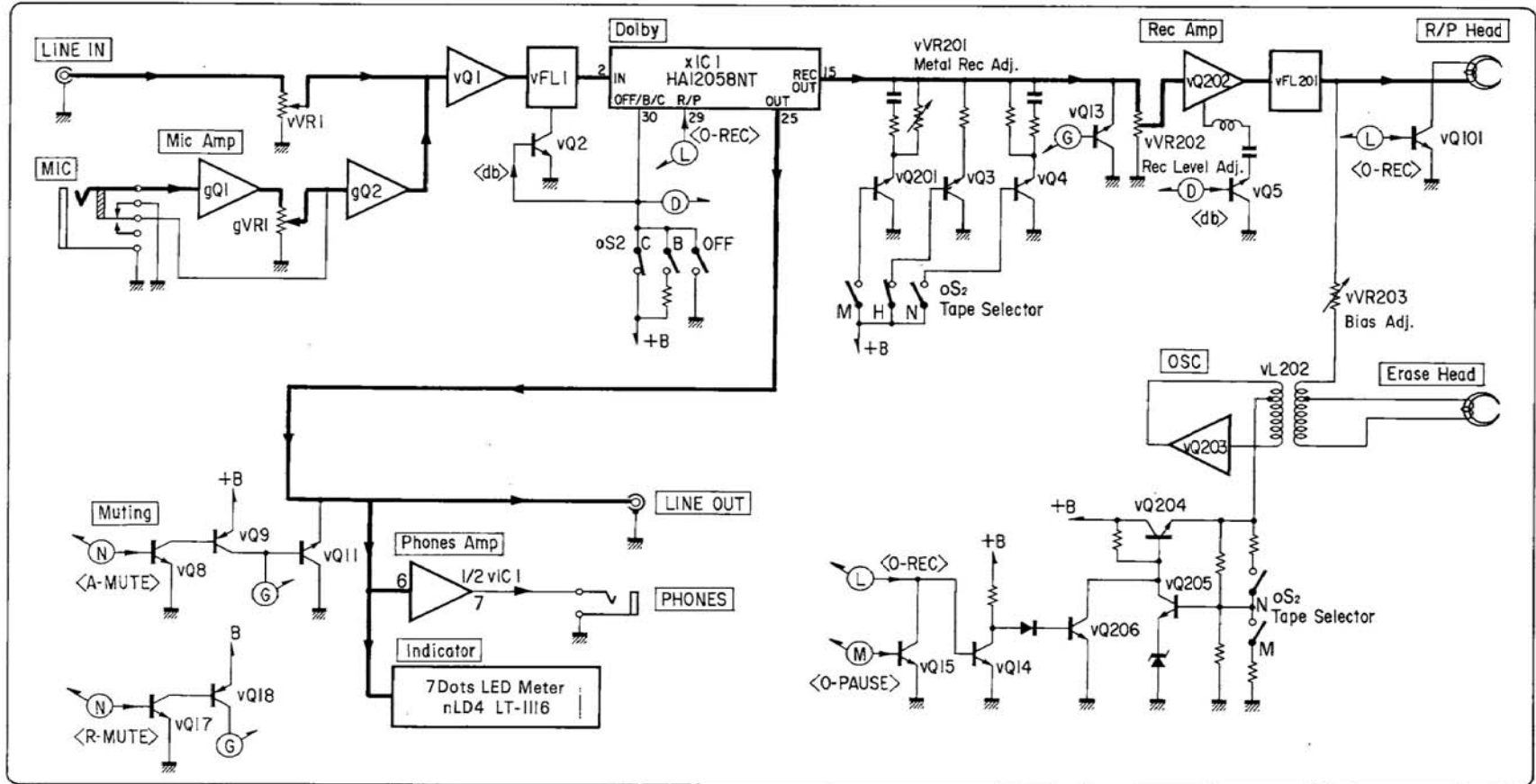
1-1. Logic Control Section



1-2. Playback Section <L-ch>



1-3. Recording Section <L-ch>



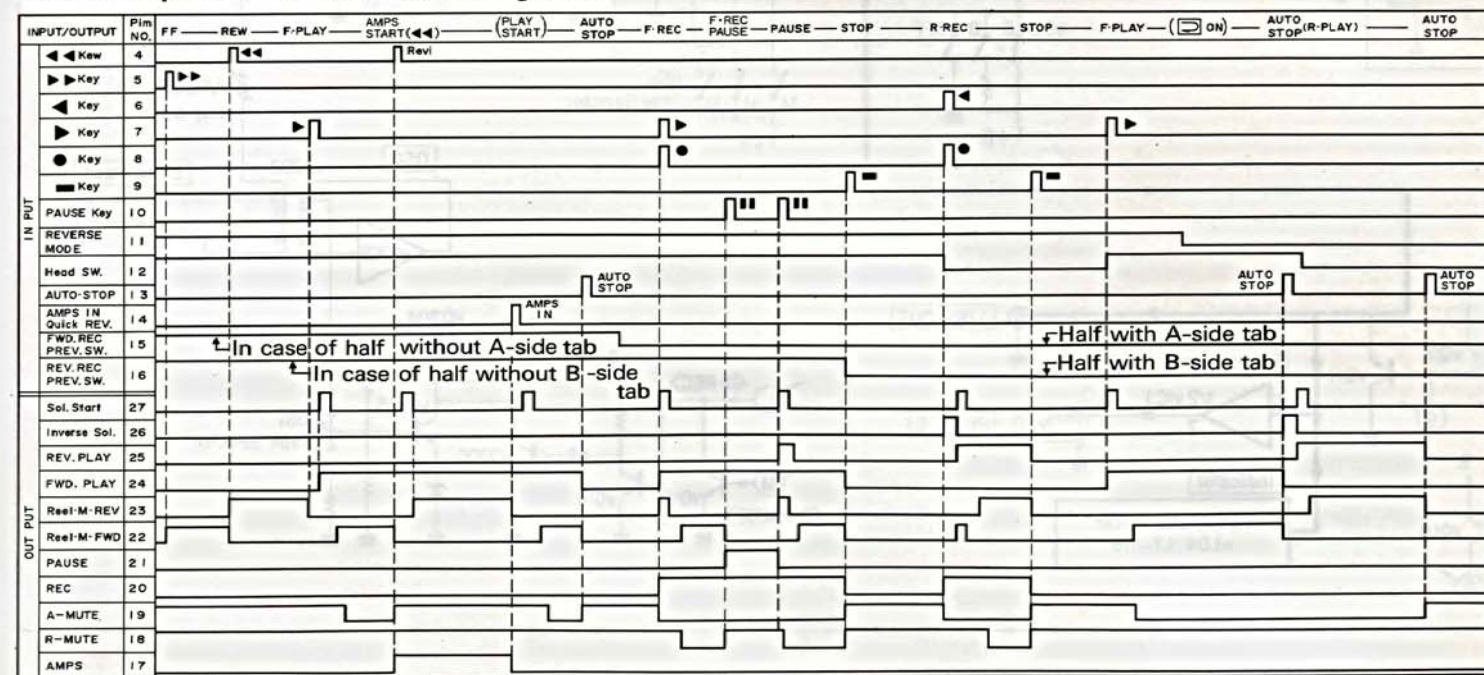
2. MODE CHANGE TABLE & TIMING CHART OF IC TC9310N-045

•Mode Change Table of IC TC9310N-045

PRE. MODE	Input Key	STOP (■)	F.F (▶▶)	REW (◀◀)	FWD (▶)	REV (◀)	FWD.REC (▶●)	REV.REC (◀●)	PAUSE ()	AMPS.IN	AUTO STOP			QUICK REV. IN		
											▶	◀	◀▶	▶	◀	◀▶
STOP		—	▶▶	◀◀	▶	◀	▶●	◀●		/	/	/	/	/	/	/
F.F		■	—	◀◀	▶	◀	—	—	—	/	/	/	/	/	/	/
REW		■	▶▶	—	▶	◀	—	—	—	/	/	/	/	/	/	/
FWD.▶		■	▶QUE	▶REVI.	—	◀	—	—	▶	/	/	/	/	/	/	/
REV.▶		■	◀QUE	◀REVI.	▶	—	—	—	◀	/	/	/	/	/	/	/
▶QUE		■	—	◀◀	▶	◀	—	—	—	/	/	/	/	/	/	/
◀QUE		■	—	▶▶	▶	◀	—	—	—	/	/	/	/	/	/	/
▶REVI.		■	▶▶	—	▶	◀	—	—	—	/	/	/	/	/	/	/
◀REVI.		■	▶▶	—	▶	◀	—	—	—	/	/	/	/	/	/	/
FWD.REC		■	▶▶	◀◀	—	—	—	◀●	▶●	/	/	/	/	/	/	/
REV.REC		■	▶▶	◀◀	—	—	▶●	—	◀●	/	/	/	/	/	/	/
REC		■	▶▶	◀◀	—	—	▶●	◀●	●	/	/	/	/	/	/	/
PAUSE		■	▶▶	◀◀	▶	◀	▶●	◀●	■	/	/	/	/	/	/	/
▶PAU.		■	▶▶	◀◀	—	◀	▶●	◀●	▶	/	/	/	/	/	/	/
◀PAU.		■	▶▶	◀◀	▶	—	▶●	◀●	◀	/	/	/	/	/	/	/
REC.PAU.		■	▶▶	◀◀	▶●	◀●	▶●	◀●	●	/	/	/	/	/	/	/
FWD.REC.PAU.		■	▶▶	◀◀	—	◀●	—	◀●	▶●	/	/	/	/	/	/	/
REV.REC.PAU.		■	▶▶	◀◀	▶●	—	▶●	—	◀●	/	/	/	/	/	/	/

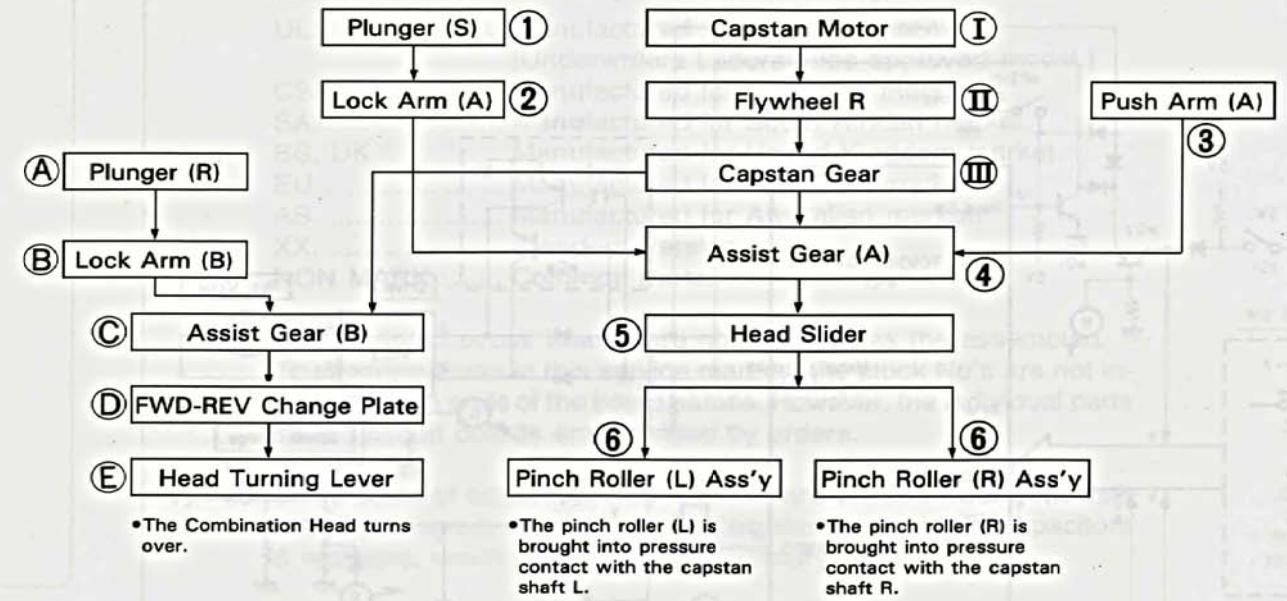
•Note: 1. This table shows operation when one input key is depressed on present mode.
2. Que is in the state of PLAY mode under FF operation.
Review is in the state of PLAY mode under REW operation.
— mark means continuing present mode.
/ mark means non relation with other input ports.

•Microcomputer (TC9310N-045) Timing chart

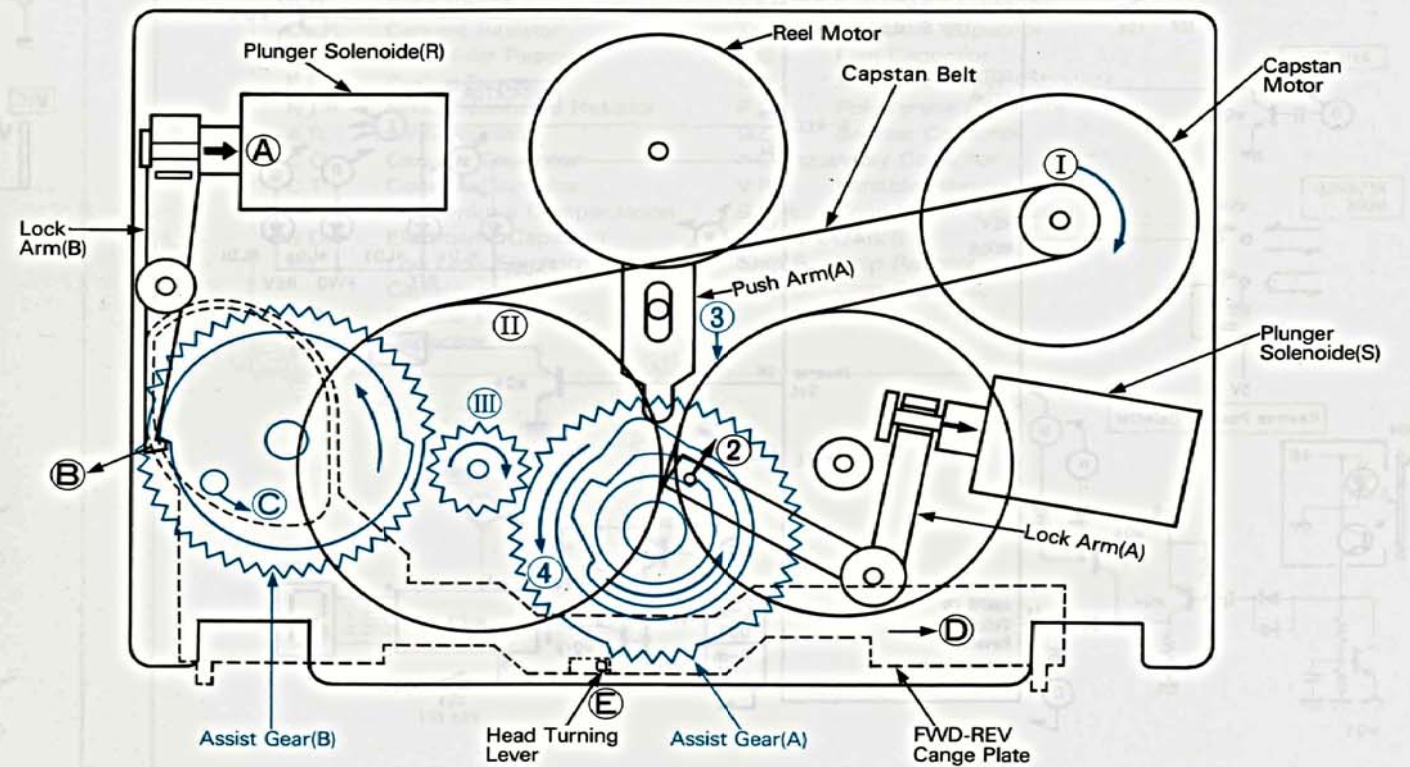


3. OPERATIONS OF PINCH ROLLER & COMBINATION HEAD

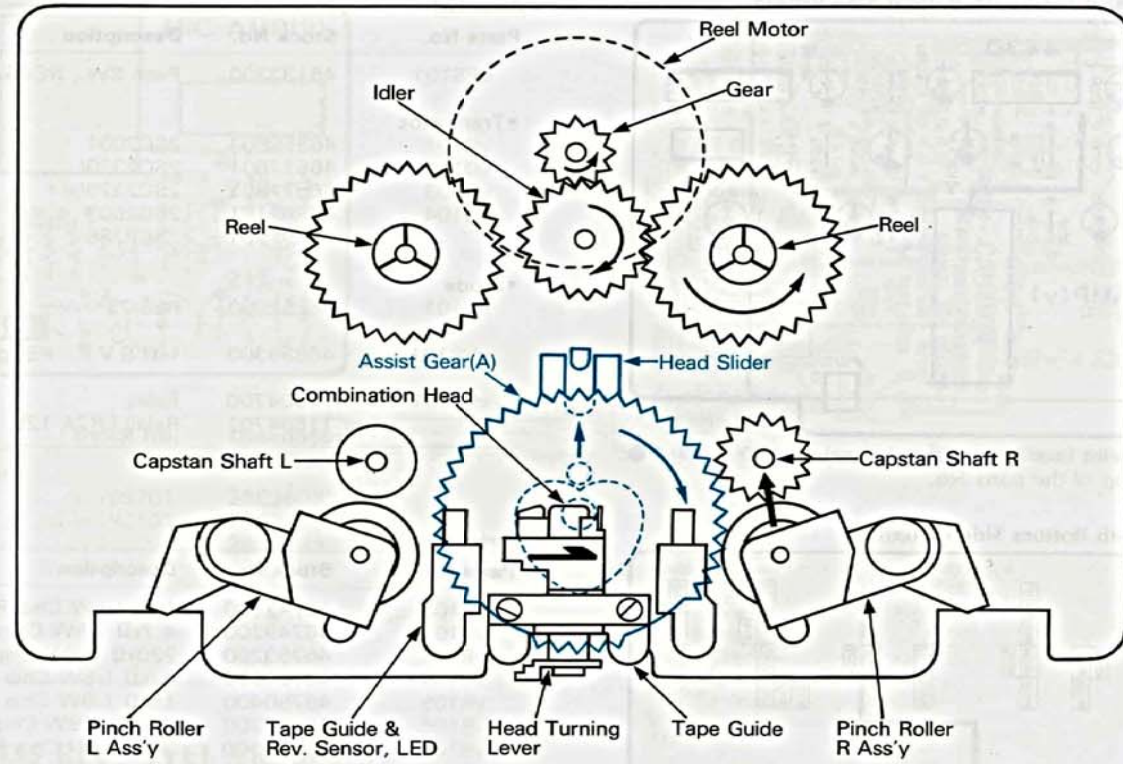
3-1. Torque Transportation Flowchart



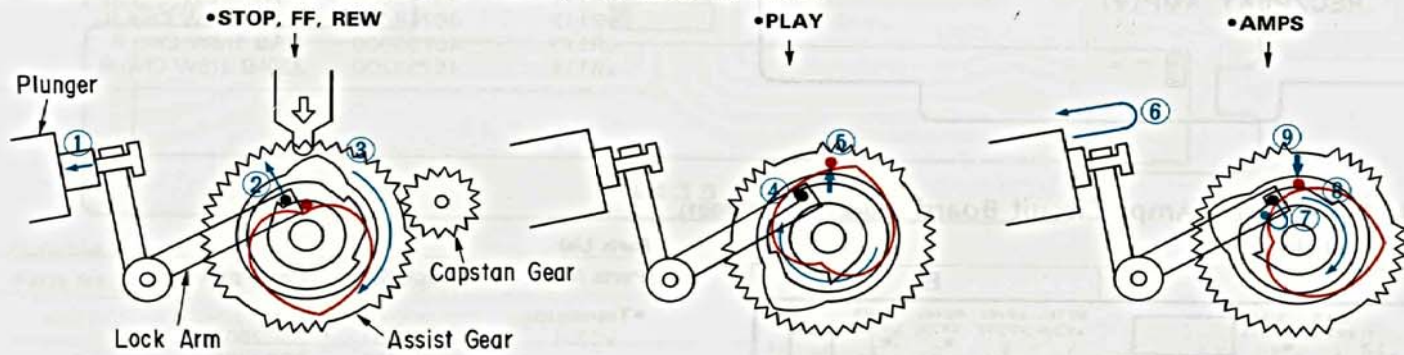
3-2. Rear View of Mechanism Chassis



3-3. Front View of Mechanism Chassis



3-4. Cam Positions in the Modes of PLAY, FF, REW & STOP



4. ADJUSTMENTS

4-1. Playback

- Note: 1. Before this adjustment, clean REC/P.B. head surface.
 2. For this adjustment, use Sansui Test Tape, SCT-F10K & SCT-L400N.
 3. Set the Dolby NR switch to be OFF.
 4. Connections are shown in Fig. 4-1.

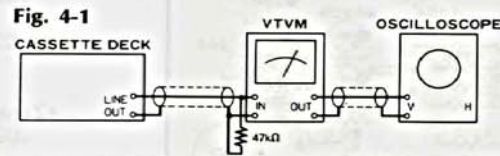
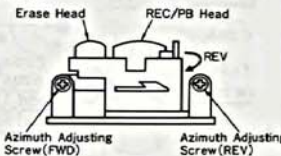


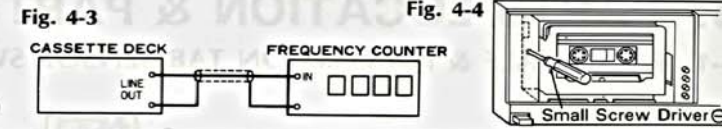
Fig. 4-2



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT VTVM and Scope	Playback the TEST TAPE SCT-F10K	Turn the azimuth adjusting screw in Fig. 4-2.	Maximum output from L and R-ch on both FWD and REV PLAY.	Refer to "K. Lid Ass'y" on page 15. After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	Same as above	Playback the TEST TAPE SCT-L400N	Turn each vVR2 of L-CH and R-CH on both FWD and REV PLAY.	420mV ± 1dB	vVR2 are shown in Top View on page 10.

4-2. Tape Speed

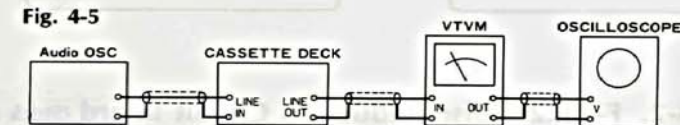
- Note: 1. Use Sansui Test Tape, SCT-S3K (3 kHz signal is recorded on the tape).
 2. Connections are shown in Fig. 4-3.
 3. Remove lid ass'y. (Refer to "K. Lid Ass'y" on page 15.)



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Tape Speed Adj.	LINE OUT Frequency counter	Playback (FWD) the Test Tape SCT-S3K.	Turn semi-variable resistor as Fig. 4-4.	3000Hz ± 45Hz	Use small screw driver

4-3. REC Level & Frequency Response

- Note: 1. Connections are shown in Fig. 4-5.
 2. DOLBY NR Switch..... C



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1kHz, 80mV (-20dB) from S.G. into LINE IN.	LINE OUT, VTVM and Scope	1. Set TAPE SELECTOR to HIGH position. 2. Load the Test Tape SCT-SA. 3. Push on PAUSE, REC and FWD PLAY button. 4. Adjust the Rec Level Volume for obtaining 200mV on VTVM. 5. Push the PAUSE button, then record the 1kHz signal. 6. Playback the 1kHz signal. 7. Confirm that the output levels on both channels are 200mV ± 2dB on VTVM.	1. If not, turn vVR202 (L-CH, F-4431) and vVR202 (R-CH, F-4431) until output level 200mV ± 2dB on both channels are obtained.	vVR202 are shown in Top View on page 10.
2.	Frequency Response Adj.	Feed 1kHz, 7mV (-20dB) and 10kHz, 7mV (-20dB) from S.G. into LINE IN.	Same as above	1. Set TAPE SELECTOR to HIGH position. 2. Load the Test Tape SCT-SA. 3. Record (FWD) the 1kHz and 10kHz signals from S.G. 4. Playback (FWD) the 1kHz and 10kHz signals, then confirm that both output levels equal.	1. If not, turn vVR203 (L-CH, F-4431) and vVR203 (R-CH, F-4431) slightly, until the output levels will be equal.	vVR203 are shown in Top View on page 10.
3.	Metal REC Level Adj.	Feed 1kHz, 80mV from S.G. into LINE IN.	LINE OUT, VTVM and Scope	1. Set TAPE SELECTOR to METAL position. 2. Load the Test Tape SCT-MA. 3. Push on PAUSE, REC and FWD PLAY button. 4. Adjust the Rec Level Volume for obtaining 200mV on VTVM. 5. Push the PAUSE button, then record the 1kHz signal. 6. Playback the 1kHz signal. 7. Confirm that the output levels on both channels are 200mV ± 2dB on VTVM.	1. If not, turn vVR201 (L-CH, F-4431) and vVR201 (R-CH, F-4431) until output level 200mV ± 2dB on both channels are obtained.	vVR201 are shown in Top View on page 10.

◆ List of Sansui Test Tape

Name of TEST TAPE	Recorded Frequency	Description	Equivalent To
SCT-F40	40 Hz	Playback Frequency Response Check	-
SCT-F1K	1 kHz	High Frequency Equalization Check	-
SCT-F10K	10 kHz	REC/PB Head Adjustment	-
SCT-L400N	400 Hz	Playback Level and Indicator Level Adjustment	-
SCT-S3K	3 kHz	Speed Check and Wow & Flutter Check	-
*SCT-AD NORMAL	-	Recording Bias Adjustment	TDK AD
*SCT-SA HIGH	-	REC/PB Level Adjustment	TDK SA
*SCT-MA (METAL)	-	Frequency Response Check	TDK MA

*Note: Some reference tapes marked * are not supplied. As these are equivalent to ones indicated above, please obtain these blank tapes on your side as possible.

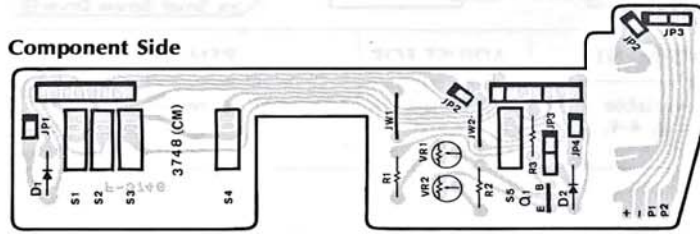
◆ TAPE SELECTOR SW. Position

NORMAL position		HIGH position	
FUJI	FL, FX I	FUJI	FX II
MAXELL	UL, UD, XL I, XL I-S	MAXELL	XL II, XL II-S
TDK	D, AD, OD	TDK	SA, SA-X
SCOTCH	TARTAN CRYSTAL MASTER 120	SCOTCH	MASTER 70
SONY	AHF, BHF, CHF Low-Noise	SONY	JHF
AGFA	SUPER SUPER COLOR SUPER FERRO DYNAMIC	AGFA	STEREO CHROM
BASF	LN Super LH I	BASF	SCR
		METAL position	
		MAXELL	MX
		TDK	MA-R, MA
		SCOTCH	Metafine
		SONY	METALLIC

5. PARTS LOCATION & PARTS LIST

5-1. F-3748 HALF & PREVENTION TAB SENSOR SW. Board

Component Side

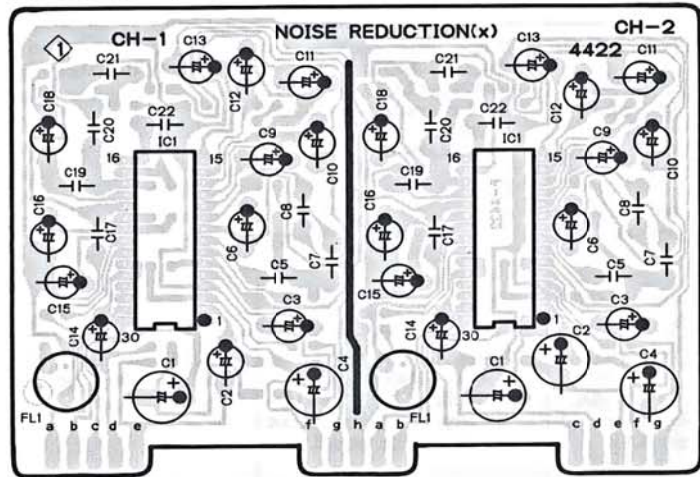


Parts List

Parts No.	Stock No.	Description
•Diode		
td1	03111600	1S2473D
td2	03111600	1S2473D
tS1	47292700	Leaf SW., half sensor
tS2	47292700	Leaf SW., prevention tab sensor (for A-side)
tS5	47292700	Leaf SW., prevention tab sensor (for B-side)

5-2. F-4422 Noise Reduction Circuit Board (Stock No. 00775301)

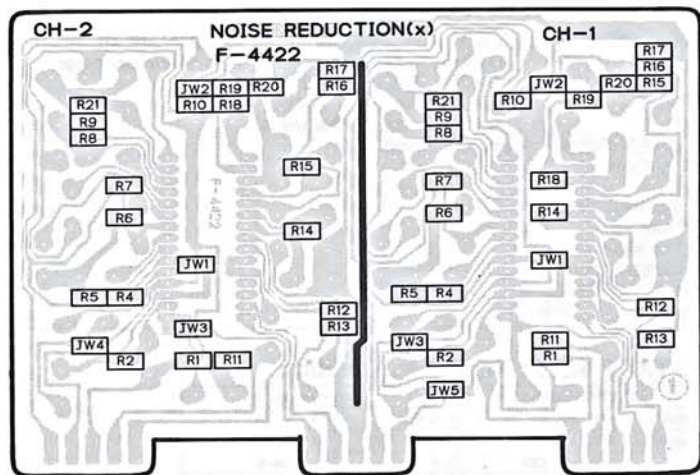
Top View (Component Side) with Bottom Side Pattern



Parts List

Parts No.	Stock No.	Description
•IC		
xIC1	46671900	HA12058NT
xFL1	46177600	Trap Filter (19.8 kHz)

Chip Parts View with Bottom Side Pattern

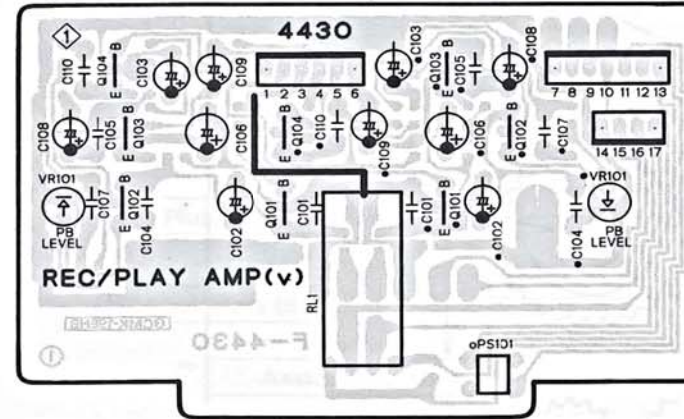


Parts List

Parts No.	Stock No.	Description
xJW1	46741100	Cross Conductor (Chip)
xJW2	46741100	Cross Conductor (Chip)
xJW3	46741100	Cross Conductor (Chip)
xJW4	46741100	Cross Conductor (Chip)
xJW5	46741100	Cross Conductor (Chip)
xR1	46754000	470kΩ 1/8W Chip R.
xR2	46749400	5.6kΩ 1/8W Chip R.
xR4	46749800	8.2kΩ 1/8W Chip R.
xR5	46748800	3.3kΩ 1/8W Chip R.
xR6	46750900	24kΩ 1/8W Chip R.
xR7	46749500	6.2kΩ 1/8W Chip R.
xR8	46752200	82kΩ 1/8W Chip R.
xR9	46754800	1MΩ 1/8W Chip R.
xR10	46752200	82kΩ 1/8W Chip R.
xR11	46752200	82kΩ 1/8W Chip R.
xR12	46748800	3.3kΩ 1/8W Chip R.
xR13	46747600	1kΩ 1/8W Chip R.
xR14	46752200	82kΩ 1/8W Chip R.
xR15	46749500	6.2kΩ 1/8W Chip R.
xR16	46752200	82kΩ 1/8W Chip R.
xR17	46746800	470Ω 1/8W Chip R.
xR18	46749200	4.7kΩ 1/8W Chip R.
xR19	46750000	10kΩ 1/8W Chip R.
xR20	46752000	68kΩ 1/8W Chip R.
xR21	46754800	1MΩ 1/8W Chip R.

5-3. F-4430 Playback Amp. Circuit Board (Stock No. 00777901)

Top View (Component Side) with Bottom Side Pattern

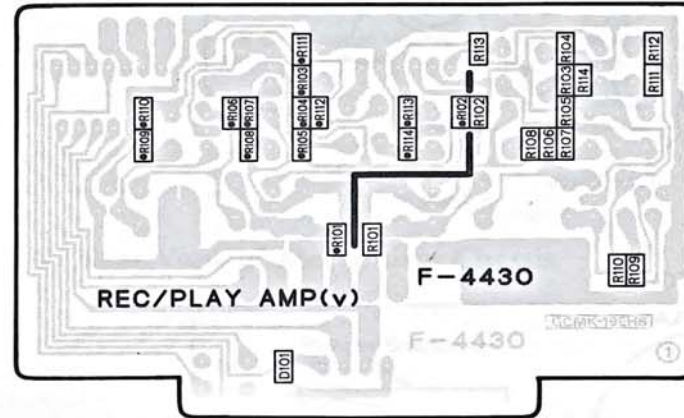


Parts List

Parts No.	Stock No.	Description
oPS101	46133300	Push SW., REV keep
•Transistor		
vQ101	46359801	2SC2001
vQ102	46577801	2SC2320L
vQ103	46577801	2SC2320L
vQ104	46367101	2SC2603
	or 46391901	2SC2785
•Diode		
vD101	46852000	RLS-73
vVR101	46839300	1kΩ S.V.R., PB. gain adj.
vRL101	11504700	Relay
	or 11504701	Relay LR2A-12B

•Note: On this circuit board, the right channel is specified by "●" mark on top of the parts No.

Chip Parts View with Bottom Side Pattern

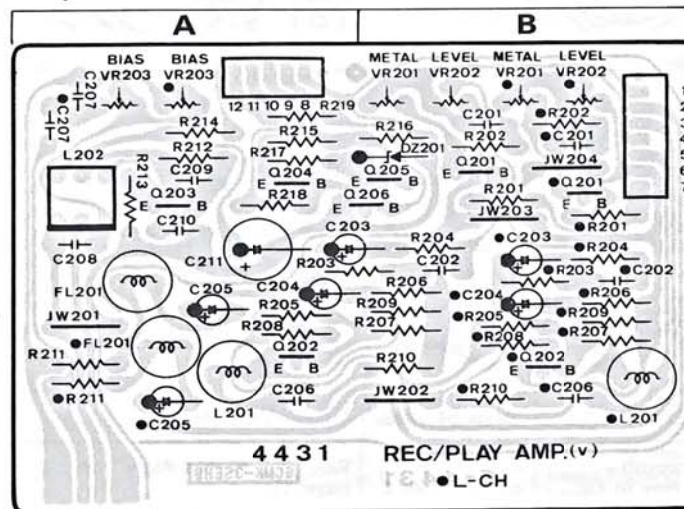


Parts List

Parts No.	Stock No.	Description
vR101	46742800	10Ω 1/8W Chip R
vR102	46749200	4.7kΩ 1/8W Chip R
vR103	46753200	220kΩ 1/8W Chip R
vR104	46751600	47kΩ 1/8W Chip R
vR105	46750400	15kΩ 1/8W Chip R
vR106	46753200	220kΩ 1/8W Chip R
vR107	46744000	33Ω 1/8W Chip R
vR108	46747800	1.2kΩ 1/8W Chip R
vR109	46746800	470Ω 1/8W Chip R
vR110	46752800	150kΩ 1/8W Chip R
vR111	46748600	2.7kΩ 1/8W Chip R
vR112	46748400	2.2kΩ 1/8W Chip R
vR113	46750000	10kΩ 1/8W Chip R
vR114	46753200	220kΩ 1/8W Chip R

5-4. F-4431 REC Amp. Circuit Board (Stock No. 00778001)

Component Side

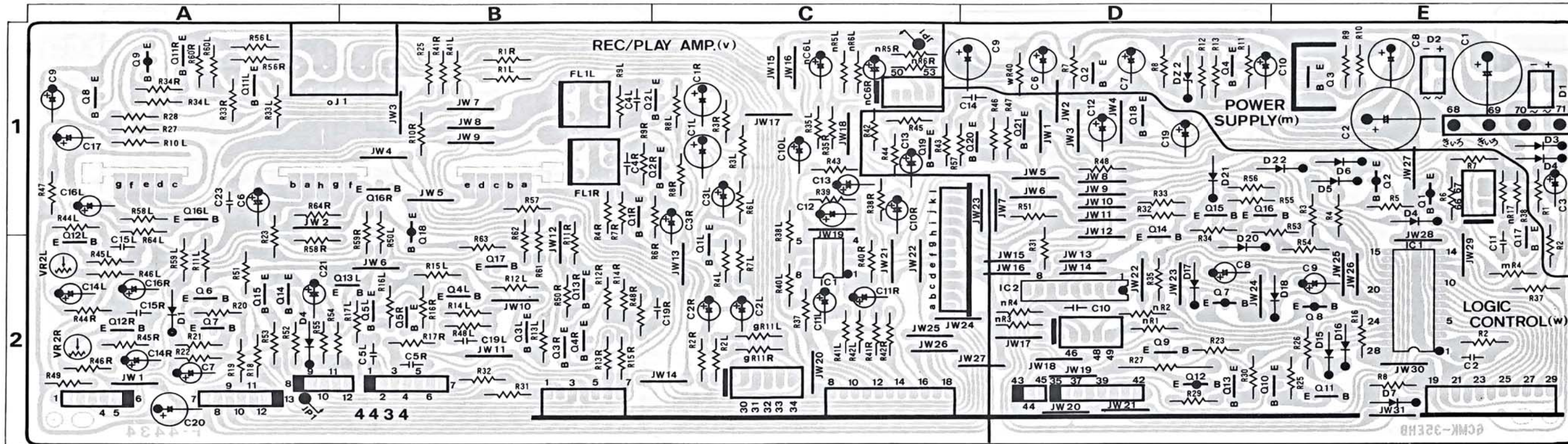


Parts List

Parts No.	Stock No.	Description
•Transistor		
vQ201	46367101	2SC2603
	or 46391901	2SC2785
vQ202	46367101	2SC2603
	or 46391901	2SC2785
vQ203	46725801	2SC1627A
vQ204	03086101	2SD357
vQ205	46367101	2SC2603
	or 46391901	2SC2785
vQ206	46367101	2SC2603
	or 46391901	2SC2785
•Zener Diode		
vDZ201	46109400	05Z 3.0-Y
vC208	46657000	3900pF 100V F.C.
vFL201	42904400	Peaking Coil
vL201	46313900	Inductor 2.7mH
vL202	46362200	Bias OSC Coil
vVR201	07262100	50KΩ(B) S.V.R., metal rec level adj.
vVR202	07262000	20KΩ(B) S.V.R., rec level adj.
vVR203	07262200	100KΩ(B) S.V.R., bias adj.

•Note: On this circuit board, the left channel is specified by "●" mark on top of the parts No.

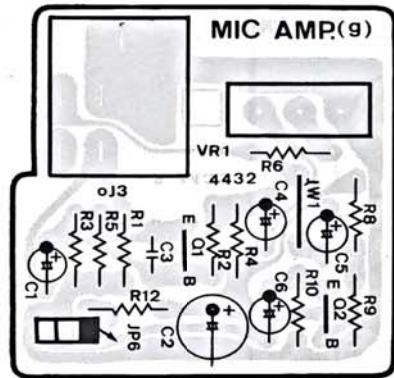
5-5. F-4434 Main Circuit Board (Stock No. 00778301)
Component Side



Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	
•Transistor			vQ9	46367001	2SA1115	wQ7	46719800	DTA124	wD16	03117600	1S2473T77	
△mQ2	03085201	2SD438	or 46392001	2SA1175		wQ8	46719800	DTA124	or 46086000	1S1588TP-3		
△mQ3	03083901	2SD313AL	vQ11	46367101	2SC2603	wQ9	46359801	2SC2001	wD17	03117600	1S2473T77	
mQ4	46367101	2SC2603	or 46391901	2SC2785		wQ10	46359801	2SC2001	or 46086000	1S1588TP-3		
or 46391901	2SC2785		vQ12	46367101	2SC2603	wQ11	46367101	2SC2603	wD18	03117600	1S2473T77	
			or 46391901	2SC2785		or 46391901	2SC2785		or 46086000	1S1588TP-3		
•Diode			46367101	2SC2603		wQ12	46359701	2SA952	wD20	03117600	1S2473T77	
△mD1	46273600	DBB10-B	or 46391901	2SC2785		wQ13	46367101	2SC2603	or 46086000	1S1588TP-3		
△mD2	46273600	DBB10-B	vQ14	46367101	2SC2603	or 46391901	2SC2785		wD21	03117600	1S2473T77	
△mD3	03117600	1S2473T77	or 46391901	2SC2785		△wQ14	03085201	2SD438	or 46086000	1S1588TP-3		
or 46086000	1S1588TP-3		vQ15	46367101	2SC2603	wQ15	46367101	2SC2603	wD22	03117600	1S2473T77	
△mD4	03117600	1S2473T77	or 46391901	2SC2785		or 46391901	2SC2785		or 46086000	1S1588TP-3		
or 46086000	1S1588TP-3		vQ16	46367101	2SC2603	wQ16	46367101	2SC2603				
			or 46391901	2SC2785		or 46391901	2SC2785		△wR27	00191900	82Ω 2W N.I.R.	
•Zener Diode			vQ17	46367101	2SC2603	wQ17	46367101	2SC2603	△wR58	08922200	27Ω 1/2W N.I.R.	
mDZ2	46111500	05Z 5.6-Y	or 46391901	2SC2785		or 46391901	2SC2785		wC2	46695600	0.015μF 50v F.C.	
△mR7	08922500	47Ω 1/2W N.I.R.	vQ18	46367001	2SA1115	△wQ18	03085201	2SD438				
oJ1	46371500	4P Terminal Board, REC/PLAY	or 46392001	2SA1175		wQ19	46367101	2SC2603				
•Transistor						wQ20	46367101	2SC2603				
vQ1	46367101	2SC2603	•IC	vIC1	46580100	M5218P	or 46391901	2SC2785				
or 46391901	2SC2785		•Diode	vD1	03117600	1S2473T77	wQ21	46367101	2SC2603			
vQ2	46367101	2SC2603	or 46086000	1S1588TP-3		or 46391901	2SC2785		•IC	wIC1	46916700	TC9310N-045
or 46391901	2SC2785		vD4	03117600	1S2473T77	or 46391901	2SC2603		wIC2	46149600	BA6208	
vQ3	46367101	2SC2603	or 46086000	1S1588TP-3					•Diode	wD4	03117600	1S2473T77
or 46391901	2SC2785		vR18	46681300	10Ω 1/4W F.R.				or 46086000	1S1588TP-3		
vQ4	46367101	2SC2603	vFL1	46177500	DOLBY Filter				or 03117600	1S2473T77		
or 46391901	2SC2785		vVR2	46839200	470Ω S.V.R., PB level adj.				or 46086000	1S1588TP-3		
vQ5	46367101	2SC2603	•Transistor	wQ1	46367101	2SC2603			wD5	03117600	1S2473T77	
or 46391901	2SC2785		wQ2	46367001	2SA1115				or 46086000	1S1588TP-3		
vQ6	46367101	2SC2603	or 46392001	2SA1175					wD6	03117600	1S2473T77	
or 46391901	2SC2785								or 46086000	1S1588TP-3		
vQ7	46367101	2SC2603							wD7	03117600	1S2473T77	
or 46391901	2SC2785								or 46086000	1S1588TP-3		
vQ8	46367101	2SC2603							wD15	03117600	1S2473T77	
or 46391901	2SC2785								or 46086000	1S1588TP-3		

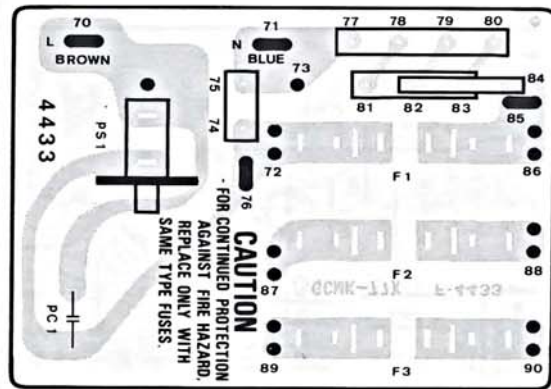
5-6. F-4432 Mic Amp. Circuit Board
Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
gQ1	07299701 or 46392101	2SC2603 2SC2785
gQ2	07299701 or 46392101	2SC2603 2SC2785
gVR1	07106700	20kΩ(A) V.R., MIC LEVEL
oJ3	46502200	Jack, MIC

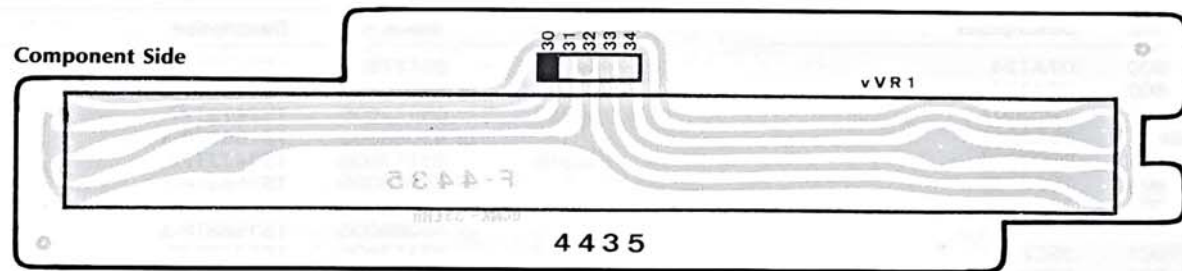
5-7. F-4433 POWER SW. Board
Component Side



Parts List

Parts No.	Stock No.	Description
△ pC1	46425800	0.01μF 400V C.C.
△ pS1	46360300	Push SW., POWER

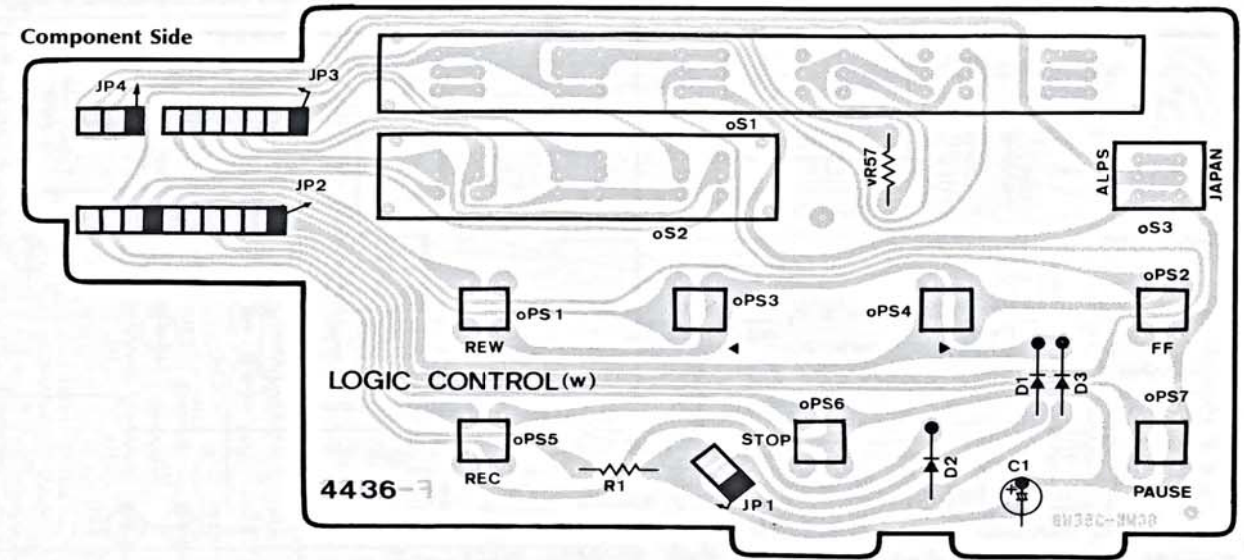
5-8. F-4435 REC LEVEL VR. Board



Parts List

Parts No.	Stock No.	Description
vVR1	46917300	50kΩ(A) V.R., REC LEVEL

5-9. F-4436 Control SW. Board

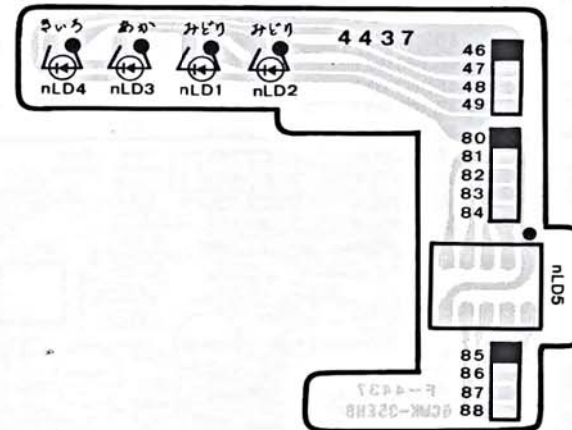


Parts List

Parts No.	Stock No.	Description
oPS1	46133300	Push SW., REW
oPS2	46133300	Push SW., FF
oPS3	46133300	Push SW., REV
oPS4	46133300	Push SW., FWD
oPS5	46133300	Push SW., REC
oPS6	46133300	Push SW., STOP
oPS7	46133300	Push SW., PAUSE
oS1	46917100	Push SW., REVERSE MODE, DOLBY NR

Parts No.	Stock No.	Description
oS2	46917200	Push SW., TAPE SELECTOR
oS3	46917000	Push SW., AMPS
•Diode		
wD1	07176400	1S2473HS
wD2	07176400	1S2473HS
wD3	07176400	1S2473HS

5-10. F-4437 Mode Indicator Board
Component Side



Parts List

Parts No.	Stock No.	Description
•LED		
nLD1	07250900	TLG-123A, REV
nLD2	07250900	TLG-123A, FWD
nLD3	46176900	TLS-123, REC
nLD4	07251000	TLY-123, PAUSE
nLD5	46917700	GL-8P03D, AMPS

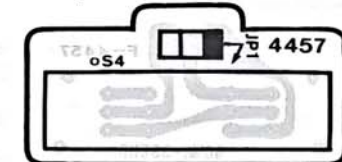
5-11. F-4441 PHONES Jack Board
Component Side



Parts List

Parts No.	Stock No.	Description
oJ2	46265700	Jack, PHONES

5-12. F-4457 TIMER SW. Board
Component Side

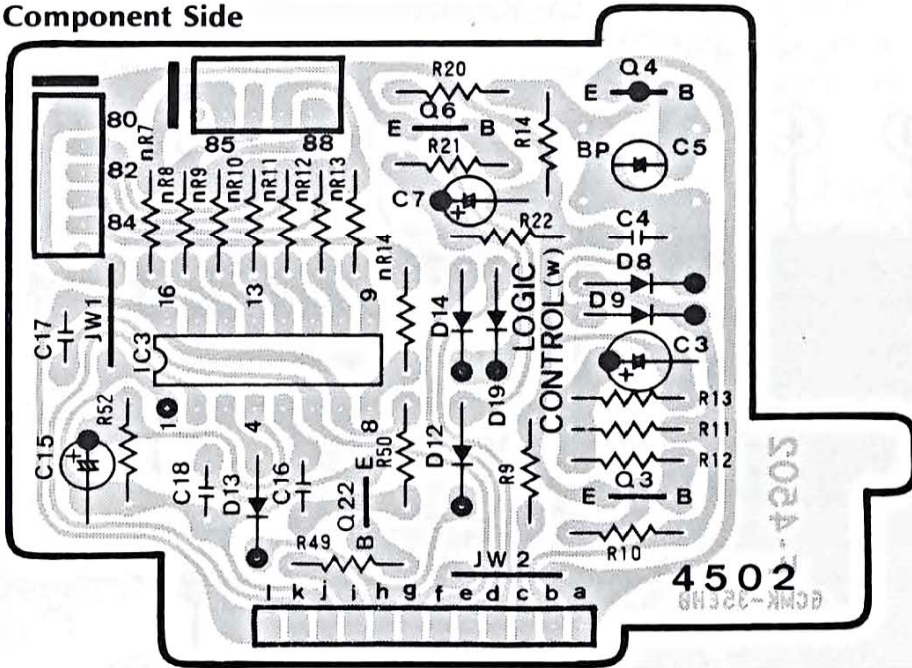


Parts List

Parts No.	Stock No.	Description
oS4	46916900	Push SW., TIMER

5-13. F-4502 AMPS Circuit Board (Stock No. 00792901)

Component Side

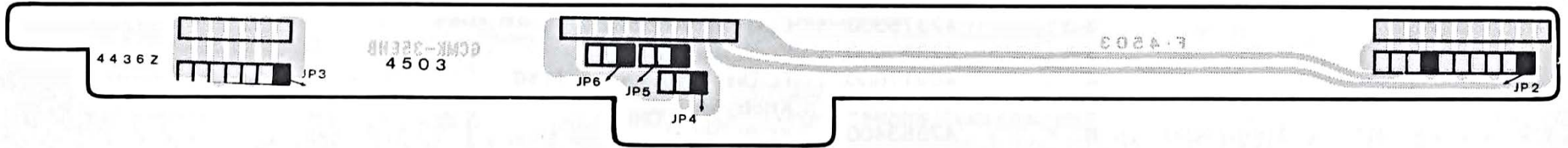


Parts List

Parts No.	Stock No.	Description
• Transistor		
wQ3	46367101	2SC2603
	or 46391901	2SC2785
wQ4	46719800	DTA124
wQ6	46367101	2SC2603
	or 46391901	2SC2785
wQ22	46367101	2SC2603
	or 46391901	2SC2785
• IC		
wIC3	46369800	TC9138AP
• Diode		
wD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD9	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD12	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD13	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD14	03117600	1S2473T77
	or 46086000	1S1588TP-3
wD19	03117600	1S2473T77
	or 46086000	1S1588TP-3
wC5	08450800	3.3 μ F 16V E.B.
wC16	46284100	0.1 μ F 50V F.C.

5-14. F-4503 CONNECTION Board

Component Side



5-15. F-4504 HALF Indicator Board

Component Side

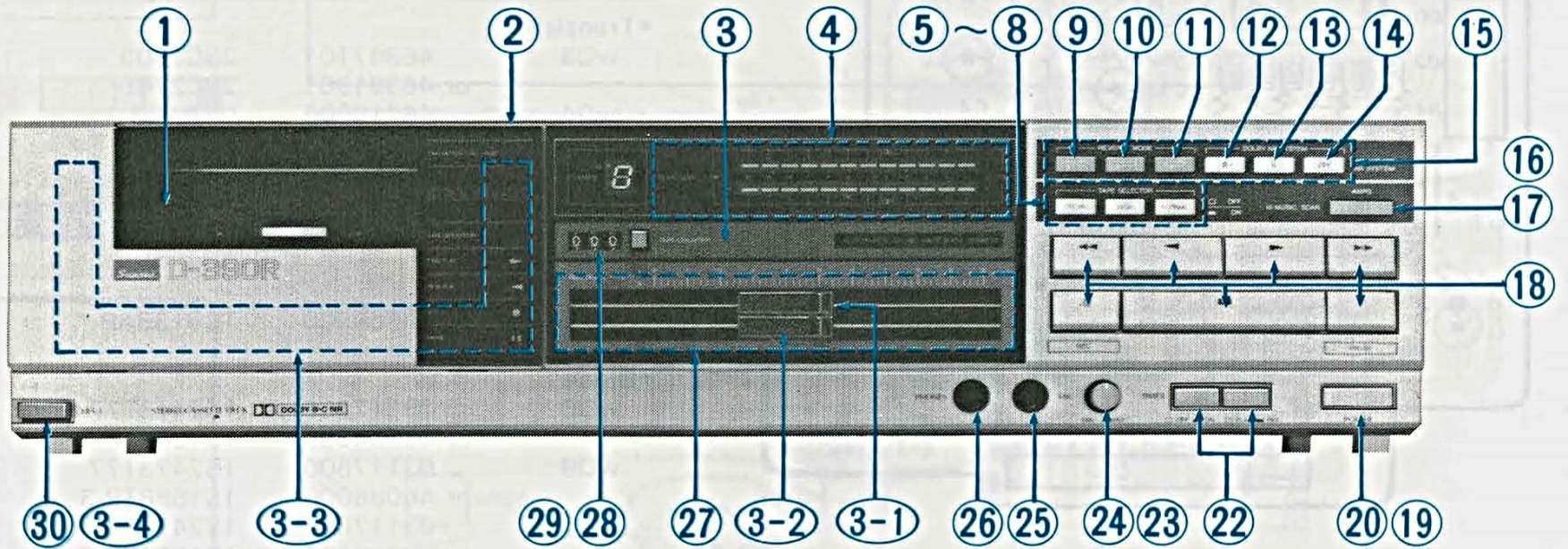


Parts List

Parts No.	Stock No.	Description
• LED		
nLD7	46921900	LD-702GG, half

6. OTHER PARTS

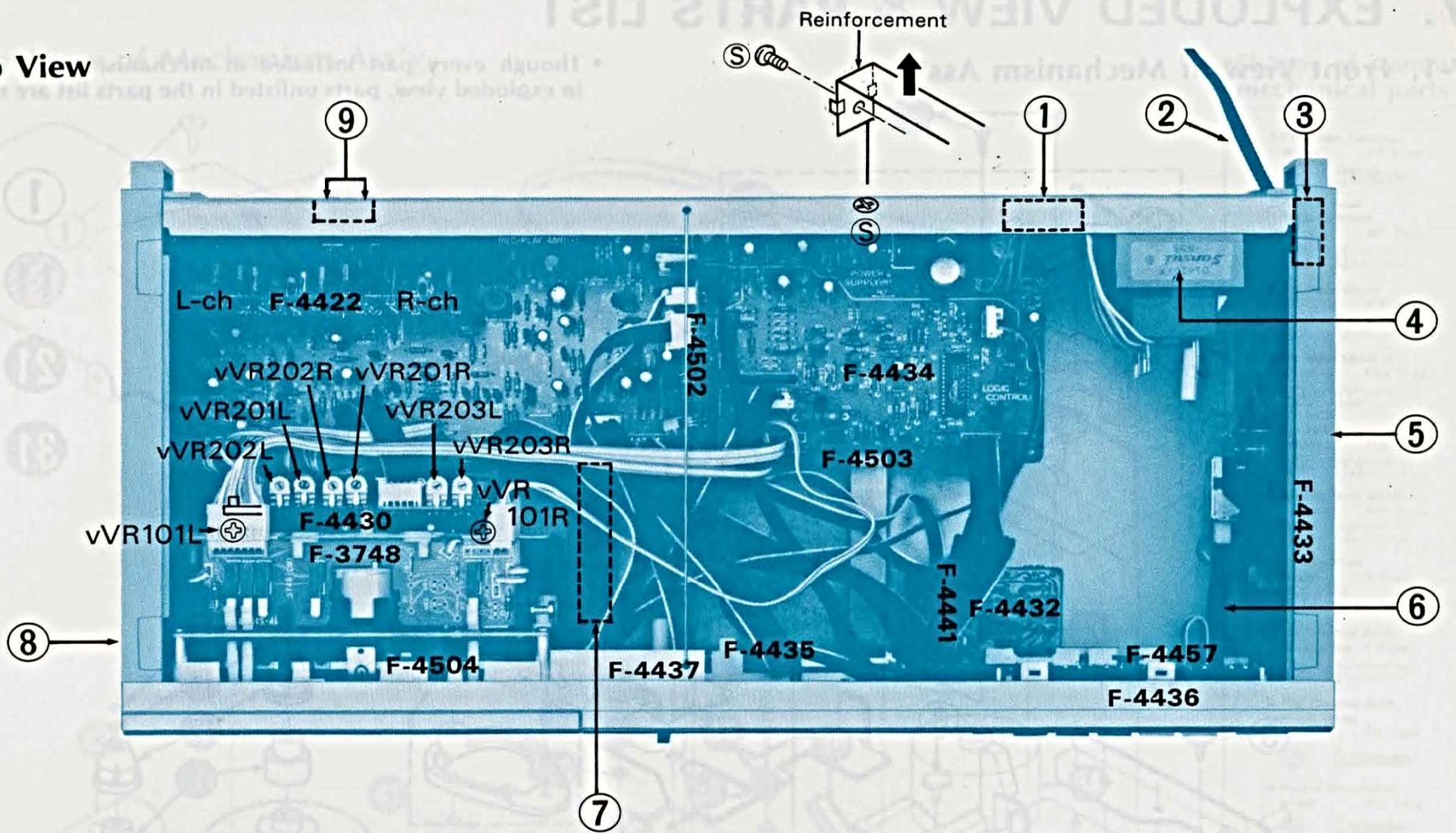
6-1. Front View



Parts List < Front View >

Parts No.	Stock No.	Description
1	47379200	Lid Ass'y (Silver Model)
	47379300	Lid Ass'y (Black Model)
2	47338600	Bonnet (Silver Model)
	47352300	Bonnet (Black Model)
3	47427800	Front Panel Ass'y (Silver Model)
	47427900	Front Panel Ass'y (Black Model)
3-1	47257300	Knob, REC LEVEL (L)
3-2	47257800	Knob, REC LEVEL (R)
3-3	47378300	Cassette Well Ass'y
3-4	47350900	Knob, EJECT
4	46917600	FL Display Tube, LT-1116
5	47353300	Knob, METAL
6	47353400	Knob, HIGH
7	47353500	Knob, NORMAL
8	46917200	Push SW. TAPE SELECTOR
9	47353900	Knob, ⇌
10	47354000	Knob, ⤵
11	47354100	Knob, ⤴
12	47353600	Knob, DOLBY NR B
13	47353700	Knob, DOLBY NR C
14	47353800	Knob, DOLBY NR OFF
15	46917100	Push SW., REVERSE MODE; DOLBY NR
16	47352800	Knob, AMPS
17	46917000	Push SW., AMPS
18	46133300	Push SW., Control SW.
19	47257100	Knob, POWER
△ 20	46360300	Push SW., POWER
21	47352900	Knob, TIMER
22	46916900	Push SW., TIMER
23	47496000	Knob, MIC (Silver Model)
	07680600	Knob, MIC (Black Model)
24	07106700	20kΩ(A) V.R., MIC
25	46502200	Jack, MIC
26	46265700	Jack, PHONES
27	46917300	50kΩ(A) Slide V.R., REC LEVEL
28	46899300	Tape Counter
29	47378200	Counter Belt
30	47504300	Spring EJECT

6-2. Top View



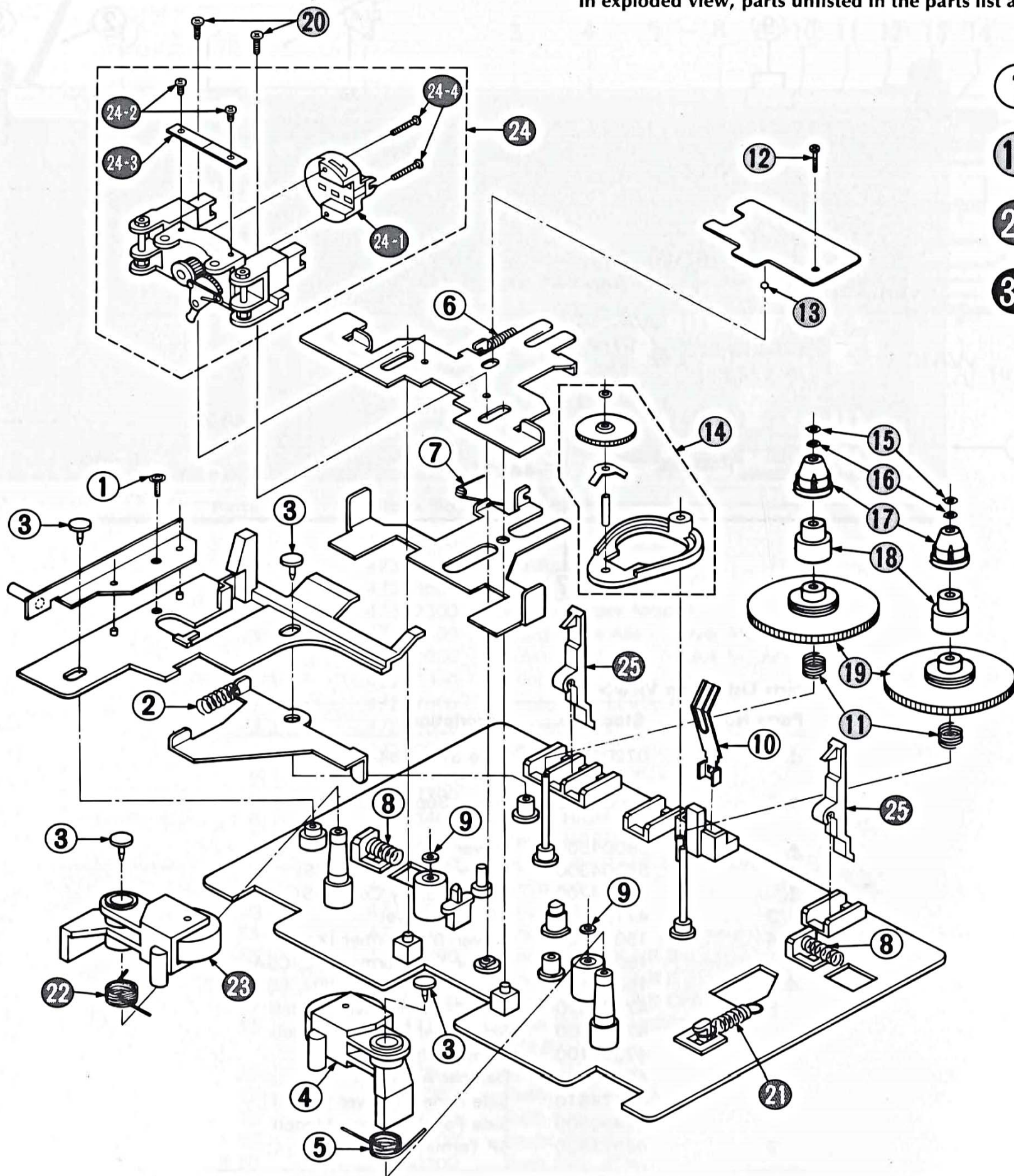
Parts List <Top View>

Parts No.	Stock No.	Description
△ 1	07204700	Slide SW., voltage selector (EU, BS)
△ 2	38004700	Power Supply Cord (XX, UL, CSA)
△	38004500	Power Supply Cord (EU)
△	38004300	Power Supply Cord (BS)
△	07204200	Power Supply Cord (AS)
3	47157300	AC Cord Cover
△ 4	15015101	Power Transformer (XX)
△	15015102	Power Transformer (UL, CSA)
△	15015105	Power Transformer (EU, BS, AS)
5	47174920	Side Panel R (Silver Model)
	47491000	Side Panel R (Black Model)
6	47351100	Joint Shaft, power SW.
7	46370300	Damper Ass'y
8	47174810	Side Panel L (Silver Model)
	47490900	Side Panel L (Black Model)
9	46371500	4P Terminal Board

7. EXPLODED VIEW & PARTS LIST

7-1. Front View of Mechanism Ass'y

• Though every part included in mechanism ass'y is numbered in exploded view, parts unlisted in the parts list are not supplied.



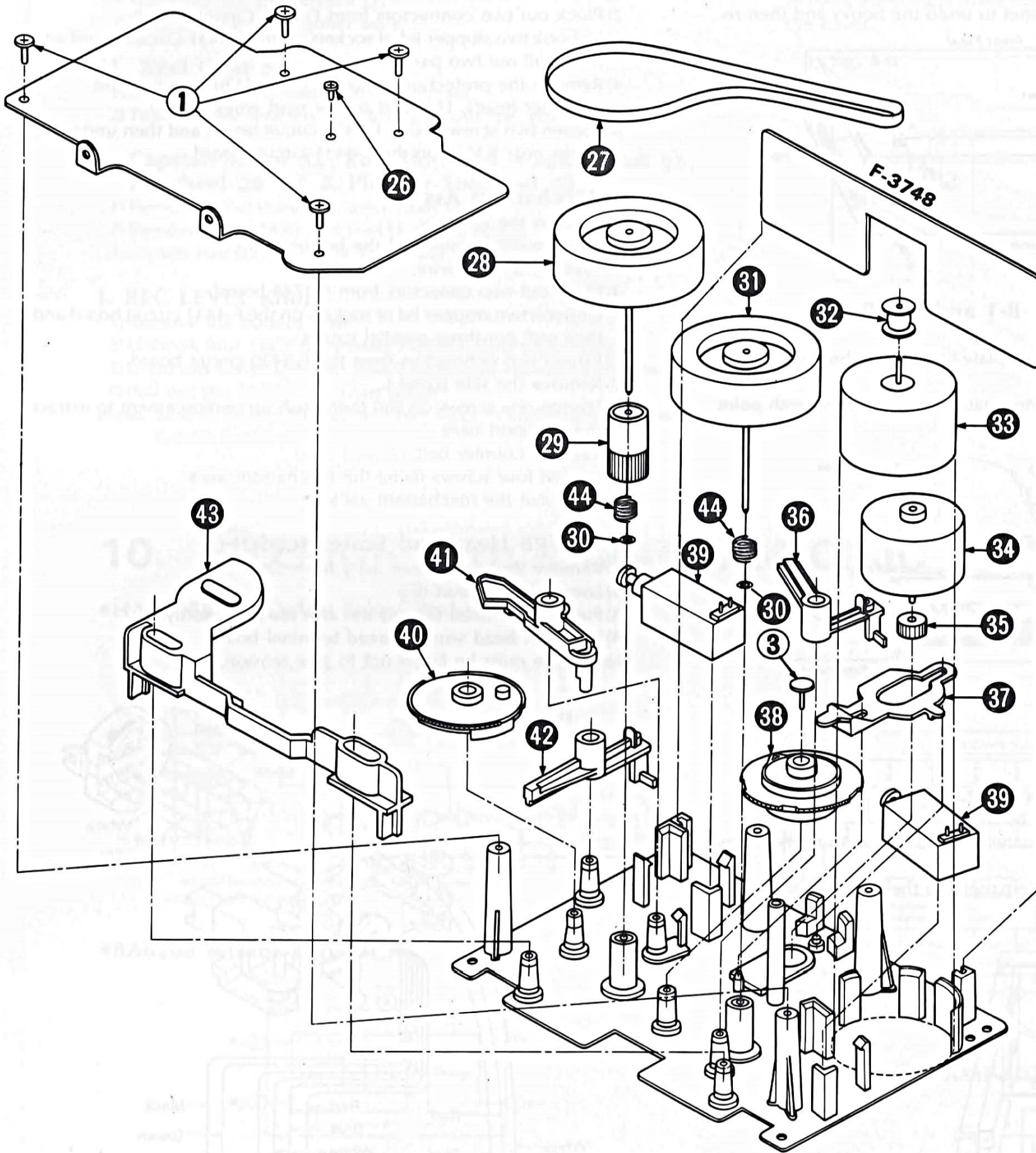
- ① ~ ⑩
- ⑪ ~ ⑳
- ㉑ ~ ㉓
- ㉔ ~ ㉖

Parts List

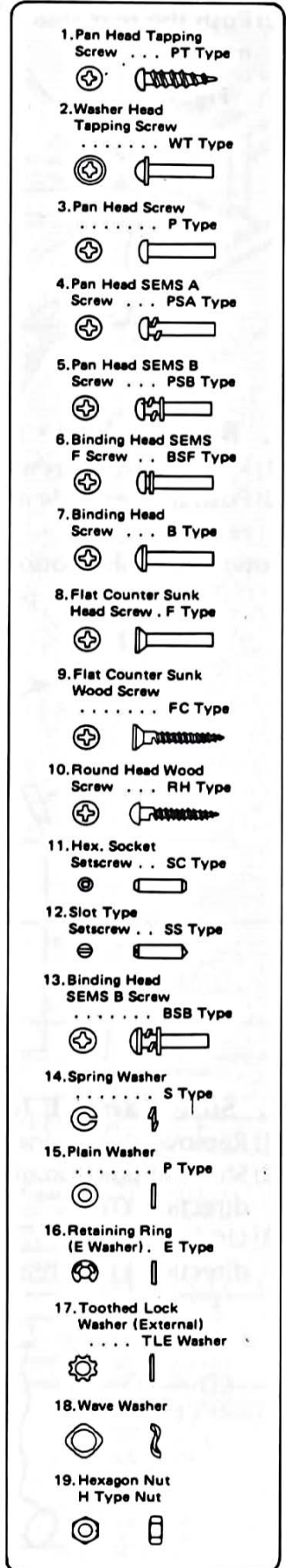
Parts No.	Stock No.	Description
1	46731200	Tapping Screw, M2.6×8
2	47406000	Spring, eject
3	47420900	Plastic Tack
4	47281800	Pinch Roller (R) Ass'y
5	47405500	Spring, pinch roller (R) ass'y
6	47406200	Spring, head base
7	47405600	Spring, Slide base
8	47405900	Spring, plunger solenoid
9	47404700	Nylon Washer, d = 2.5
10	47293500	Spring, half
11	47405700	Spring, reel
12	00420900	Binding Head Screw, M2×12
13	47404900	Steel Ball, ø = 2.0

Parts No.	Stock No.	Description
14	47405000	Arm Ass'y
15	47404800	Washer, d = 1.6
16	47497100	Washer, d = 2.0
17	47281000	Sprocket
18	47281100	Damper, reel
19	47283300	Reel Gear
20	46398800	Screw, M2×6
21	47406300	Spring, push arm
22	47405400	Spring, pinch roller (L) ass'y
23	47281900	Pinch Roller (L) Ass'y
24	16610301	REC/PB & Erase Head Ass'y (with sensor)
24-1	46858000	REC/PB & Erase Head

7-2. Rear View of Mechanism Ass'y



•Shapes of standard mechanical parts



Parts List

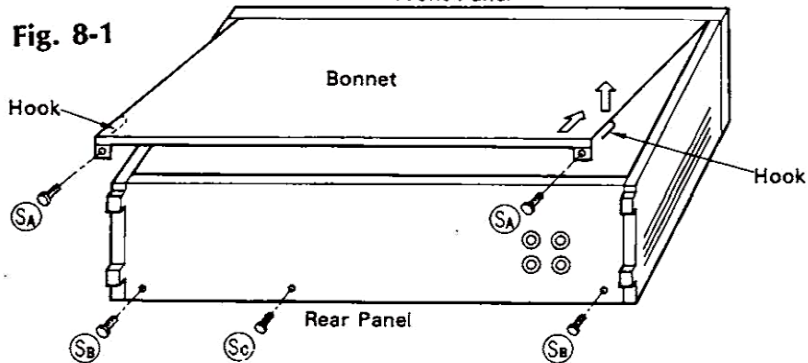
Parts No.	Stock No.	Description
24-2	47289100	Screw, M2.0×5
24-3	47289200	Spring Plate, azimuth
24-4	46731300	Screw, M1.4×6
25	47292400	Sensor Arm
26	46268900	Tapp • tite Screw, M2.6×6
27	47405100	Capstan Belt
28	47282900	Flywheel (R) Ass'y
29	47281200	Gear, flywheel ass'y
30	47404600	Washer, d = 2.5
31	47283000	Flywheel (L) Ass'y
32	47283200	Pulley
33	46737400	Capstan Motor
34	46737500	Reel Motor

Parts No.	Stock No.	Description
35	47293100	Gear, reel motor
36	47281600	Lock Arm (A)
37	47293800	Arm (B)
38	47283800	Asist Gear (A)
39	47292600	Plunger Solenoid
40	47283900	Assist Gear (B)
41	47283700	Push Arm
42	47281700	Lock Arm (B)
43	47284200	FWD-REV Change Plate
44	47530000	Spring A, Flywheel

8. MAIN PARTS REPLACEMENT (See Exploded View on page 11 & 12)

A. Bonnet (See Fig. 8-1)

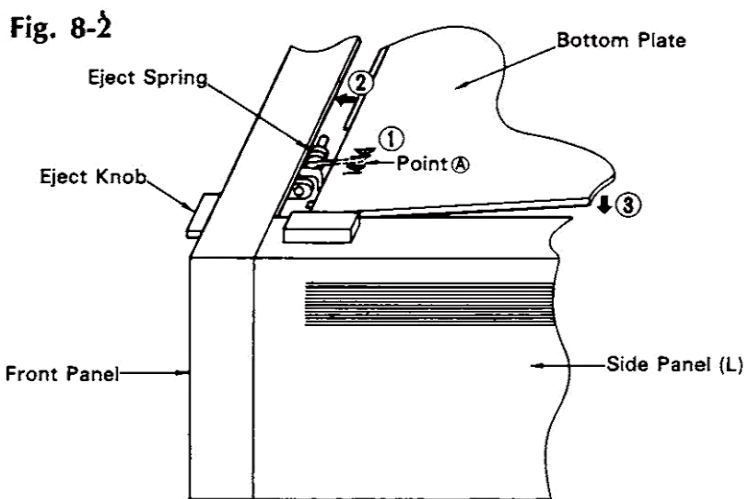
- 1) Remove two screws (S_A).
- 2) Push the rear side of the bonnet to undo the hooks and then remove it.



B. Bottom Plate (See Fig. 8-1 and Fig. 8-2)

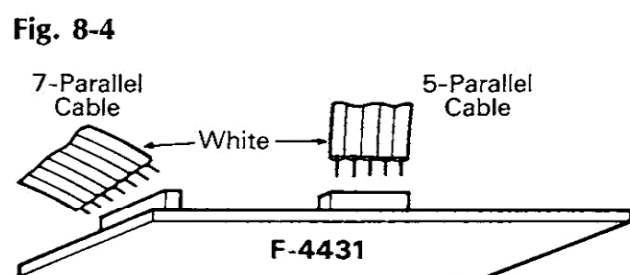
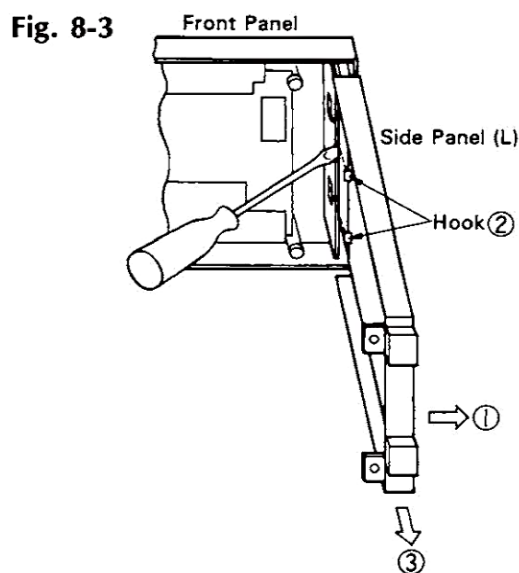
- 1) Remove two screws (S_B).
- 2) Push the rear side of the bottom plate to undo the hooks and then remove it.

Note: Install the bottom plate after matching eject spring with point (A) of bottom plate.



C. Side Panel L (or R) (See Fig. 8-3).

- 1) Remove the bonnet and the bottom plate.
- 2) Shift the position of the side panel L (or R) 2.0 cm in to the arrow direction (1).
- 3) Undo the hooks (2) of the side panel and then pull it to the arrow direction (3) to remove it.



D. F-4430 and F-4431 Circuit Board

- 1) Remove the bonnet and the bottom plate.
- 2) Pluck out two connectors from F-4430 Circuit board.
- 3) Unhook two stopper lid of sockets on the F-4431 Circuit board and then pull out two parallel cables.
- 4) Remove the protection cover on the F-4430 circuit board.
- 5) Unsolder heads, LED and sensor read wires.
- 6) Loosen two screws fixing F-4430 circuit board and then undo two hooks near S.V.R. on the F-4431 circuit board.

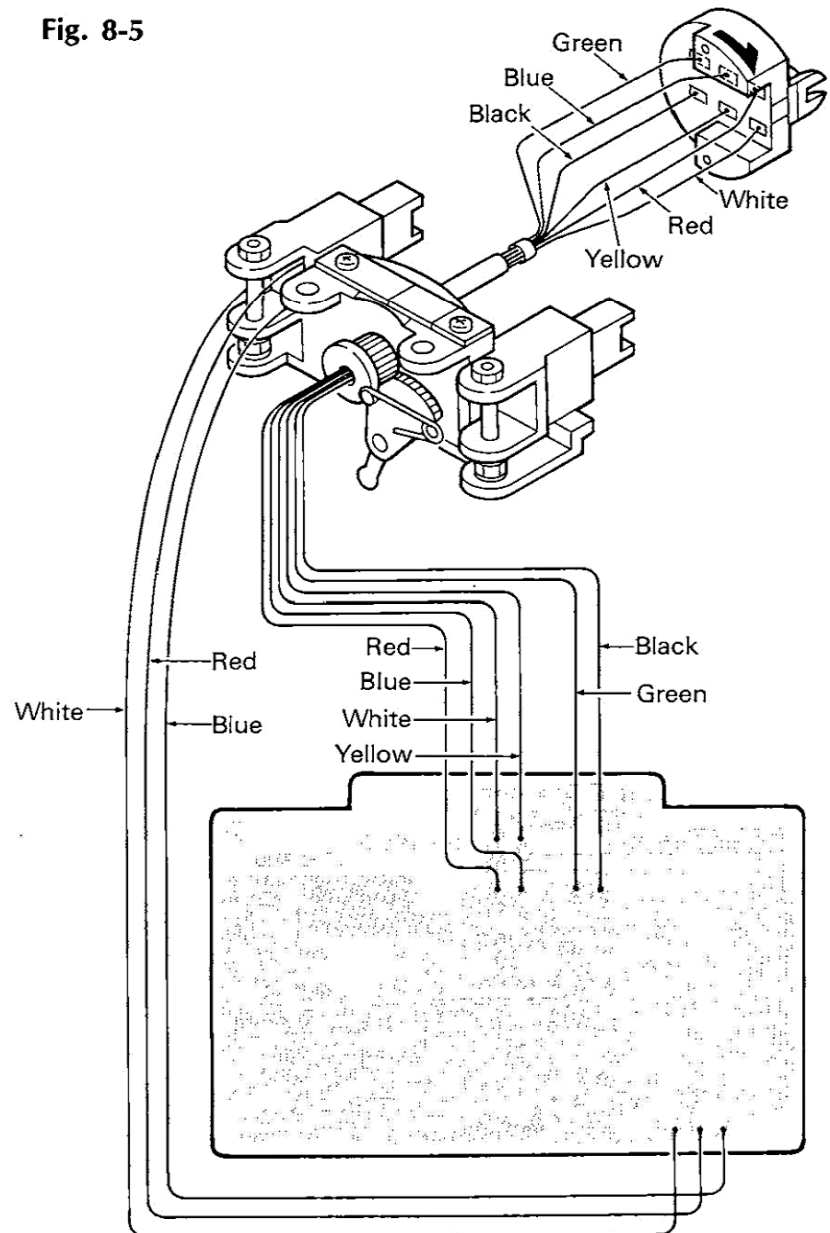
E. Mechanism Ass'y

- 1) Take off the lid ass'y.
- 2) Remove the bonnet and the bottom plate.
- 3) Take off tension wire.
- 4) Pluck out two connectors from F-3748 board.
- 5) Unhook two stopper lid of sockets on the F-4431 circuit board and then pull out three parallel cables.
- 6) Extract two connectors from the F-4430 circuit board.
- 7) Remove the side panel L.
- 8) Loosen one screws (S) and then push up reinforcement to extract from support nails.
- 9) Take off counter belt.
- 10) Loosen four screws fixing the mechanism ass'y.
- 11) Draw out the mechanism ass'y.

F. REC/PB Head and Erase Head (24-1)

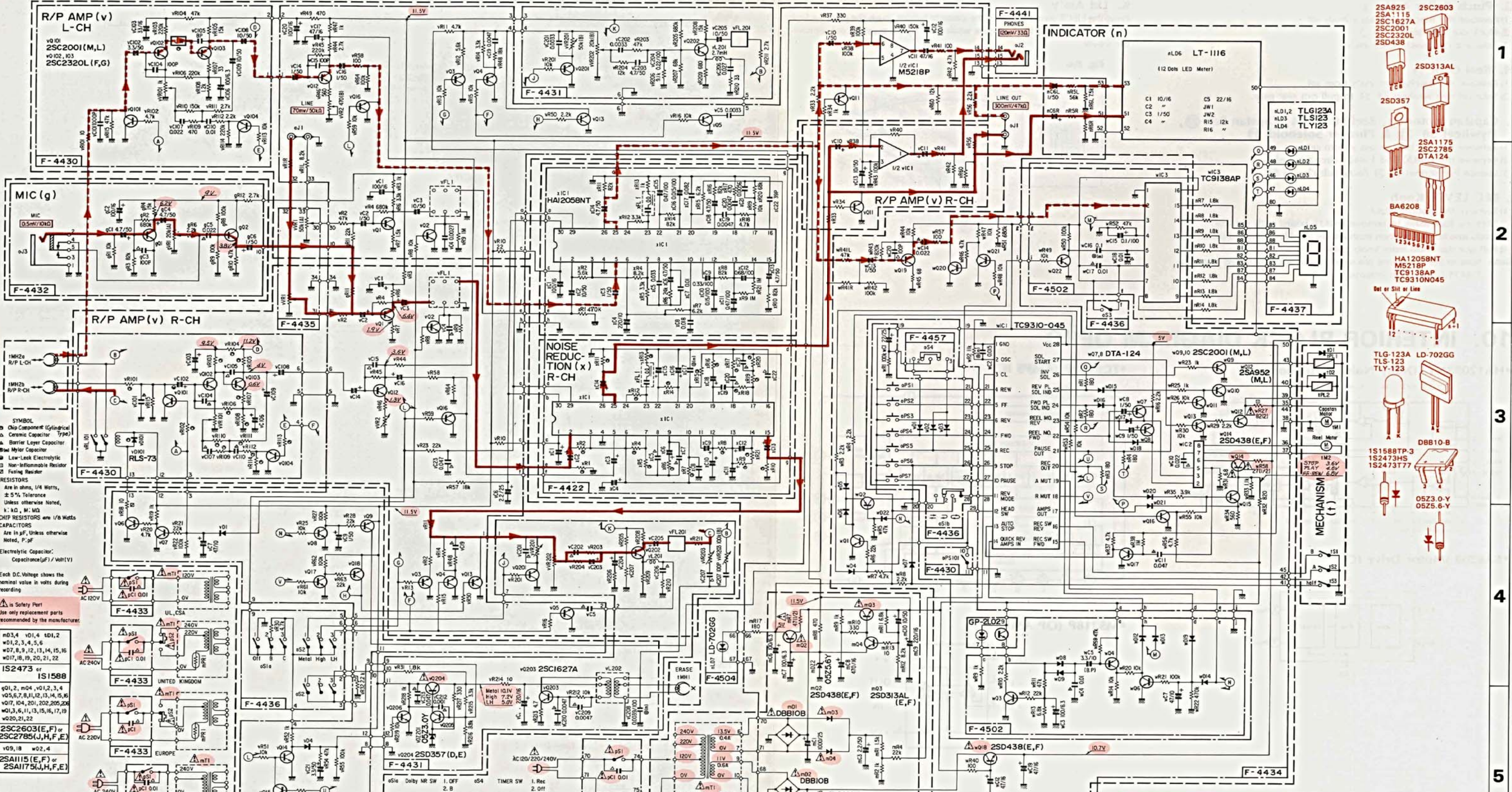
- 1) Remove the mechanism ass'y from Set.
- 2) Loosen two screws. (24-4)
- 3) Pull out the head toward the arm ass'y (14), softly.
- 4) Unsolder head wires at head terminal board.

Note Care must be taken not to give tension.



9. SCHEMATIC DIAGRAM

*Design and specifications subject to change without notice for improvement.
 *La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 *Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOL
 ○ Chip Component (Cylindrical)
 Δ Ceramic Capacitor Type
 ▽ Barrier Layer Capacitor
 ▽ Mylar Capacitor
 ⊖ Low-Leak Electrolytic
 □ Non-Infammable Resistor
 ⊕ Fusing Resistor

RESISTORS
 Are in ohms, 1/4 Watts, ± 5% Tolerance Unless otherwise Noted, k: K, M: MΩ
 CHIP RESISTORS are 1/8 Watts

CAPACITORS
 Are in μF, Unless otherwise Noted, P: pF

Electrolytic Capacitor:
 Capacitance (μF) / Volt (V)

Each DC Voltage shows the nominal value in volts during recording

is Safety Part
 Use only replacement parts recommended by the manufacturer.

m03,4 v01,4 t01,2
 w01,2,3,4,5,6
 w07,8,9,12,13,14,15,16
 w017,18,19,20,21,22
 IS2473 or IS1588
 v01,2, m04, v01,2,3,4
 v05,6,7,8,11,12,13,14,15,16
 v017,104,201,202,205,206
 w01,3,6,11,13,15,16,17,19
 w020,21,22
 2SC2603(E,F) or 2SC2785(J,H,F,E)
 v09,18 w02,4
 2SA1115(E,F) or 2SA1175(J,H,F,E)

- 2SA925
- 2SA1115
- 2SC1627A
- 2SC2001
- 2SC2320L
- 2SD438
- 2SC2603
- 2SD313AL
- 2SD357
- 2SA1175
- 2SC2785
- DTA124
- BA6208
- HA12058NT
- MS218P
- TC9138AP
- TC9310N045
- Set at Shift or Line
- TLG-123A
- LD-702GG
- TLG-123
- TLY-123
- DBB10-B
- IS1588TP-3
- IS2473HS
- IS2473T77
- 05Z3 0-Y
- 05Z5 6-Y

— REC Signal Line
 - - - PLAY Signal Line

<Main Parts Replacement>

G. Pinch Roller Ass'y ④

- 1) Remove the mechanism ass'y from set.
- 2) Pluck out the plastic tack ③.
- 3) Take out the pinch roller ass'y.

H. Reel Gear ⑬

- 1) Remove the mechanism ass'y from set.
- 2) Take off two washers ⑮ ⑯ to pull out reel gear.

I. Capstan Motor ⑳, Reel Motor ㉑, Capstan Belt ㉒, Flywheel ㉓ ㉔ & Plunger Solenoid ㉕

- 1) Remove the mechanism ass'y from set.
- 2) Remove the F-4430 and F-4431 circuit board.
- 3) Loosen five screws ① ㉖ fixing sub chassis ㉗.

J. REC LEVEL Knob

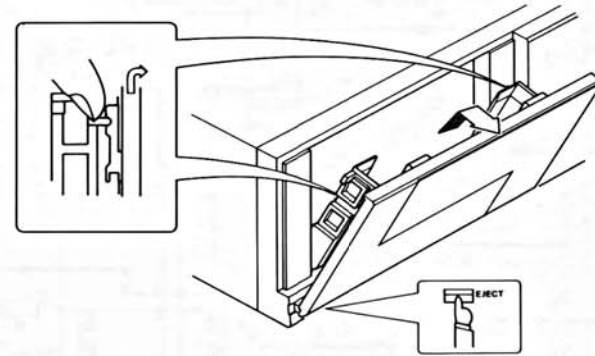
- 1) Remove the bottom plate.
- 2) Unhook four mails to remove F-4435 board with volume.
- 3) Undo tow hooks and then push the rec level knob toward the inside.
- 4) Pull out the knob from knob guide.

Note: Sure to insert volume pin into hollow of knobs when installing F-4435 board with volume.

K. Lid Ass'y

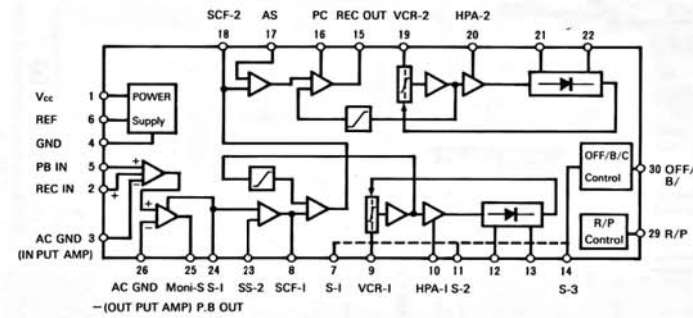
Press the EJECT switch to open the cassette holder, push the parts locked at the left and right in the figure while pulling it upward, and remove the cover.

Fig. 8-6

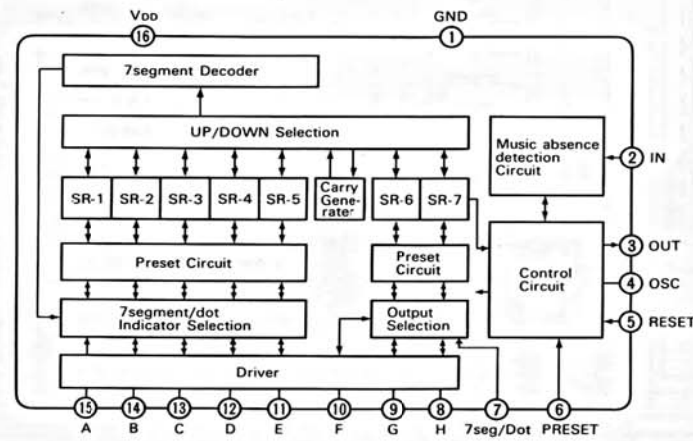


10. INTERIOR BLOCK DIAGRAM OF IC

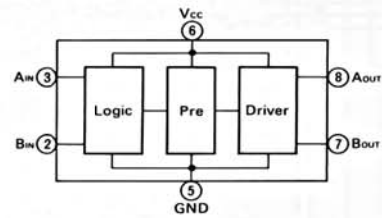
•HA12058NT (Dolby Noise Reduction IC)



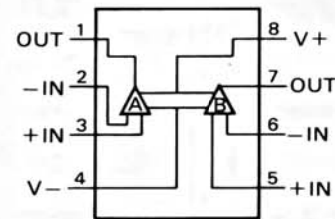
•TC9138P (AMPS IC)



•BA6208 (Motor Drive IC)

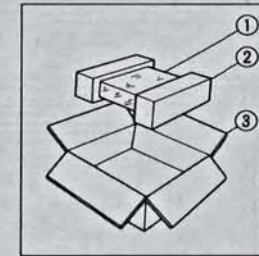


•M5218P (OP AMP. IC)



11. PACKING LIST

Parts No.	Stock No.	Description
1	91263810	Polyethylene Bag
2	47379700	Styrofoam Packing
3	47436800	Carton Case (Silver Model)
	47436900	Carton Case (Black Model)



12. ACCESSORY LIST

Stock No.	Description
38103300	Pin Plug Cord
94300500	Head Cleaner
46797800	Operating Instruction

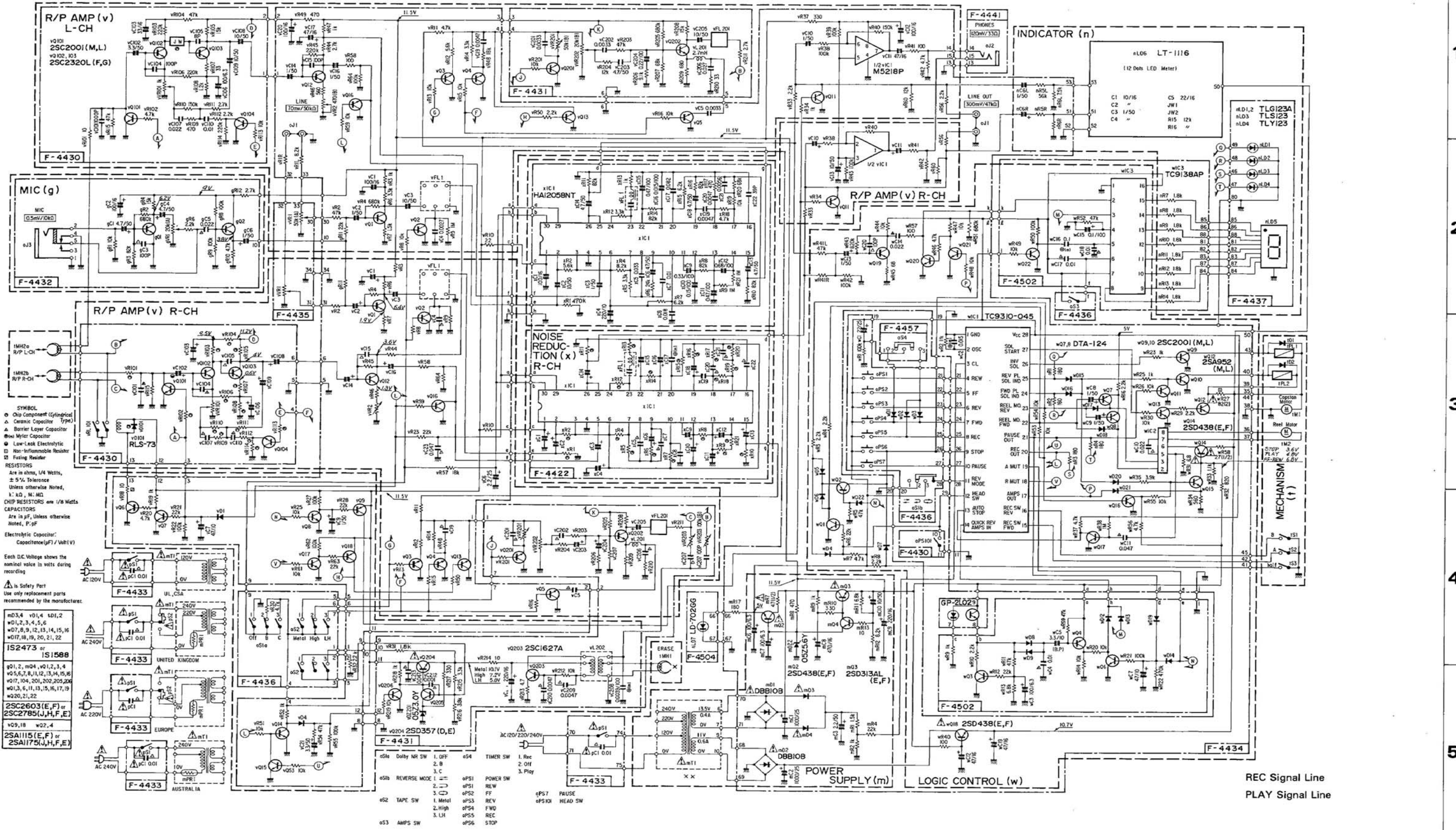


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9. SCHEMATIC DIAGRAM

*Design and specifications subject to change without notice for improvement.
 *La presentation et les specifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 *Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOLS
 ○ Chip Component (Cylindrical)
 △ Ceramic Capacitor Type
 ▽ Barrier Layer Capacitor
 ⊕ Mylar Capacitor
 ⊖ Low-Leak Electrolytic
 ⊕ Non-Inflammable Resistor
 ⊖ Fusing Resistor

RESISTORS
 Are in ohms, 1/4 Watts, ± 5% Tolerance Unless otherwise Noted, K: kΩ, M: MΩ
 CHIP RESISTORS are 1/8 Watts CAPACITORS
 Are in pF, Unless otherwise Noted, P: pF

Electrolytic Capacitor:
 Capacitance(μF) / Volt(V)

Each D.C. Voltage shows the nominal value in volts during recording

⚠ is Safety Part
 Use only replacement parts recommended by the manufacturer.

mD3,4 v01,4 sD1,2
 wD1,2,3,4,5,6
 wD7,8,9,12,13,14,15,16
 wD17,18,19,20,21,22

IS2473 or IS1588

gD1,2, mD4, vD1,2,3,4
 wD5,6,7,8,11,12,13,14,15,16
 wD17,104,201,202,205,206
 wD13,6,11,13,15,16,17,19
 wD20,21,22

2SC2603(E,F) or 2SC2785(J,H,F,E)

vD9,18 wD7,4
 2SA1115(E,F) or 2SA1175(J,H,F,E)

AC 240V
 AC 220V
 AC 220V
 AUSTRALIA

o51a DUBBY NR SW 1. OFF
 2. ON
 3. C

o51b REVERSE MODE 1. H
 2. U
 3. L

o52 TAPE SW 1. Metal
 2. High
 3. LH

o53 AMPS SW

o54
 1. Rec
 2. Off
 3. Play

o55 POWER SW
 o56 FF
 o57 REV
 o58 FWD
 o59 REC
 o60 STOP

o57 PAUSE
 o58 HEAD SW

REC Signal Line
 PLAY Signal Line

1
 2
 3
 4
 5