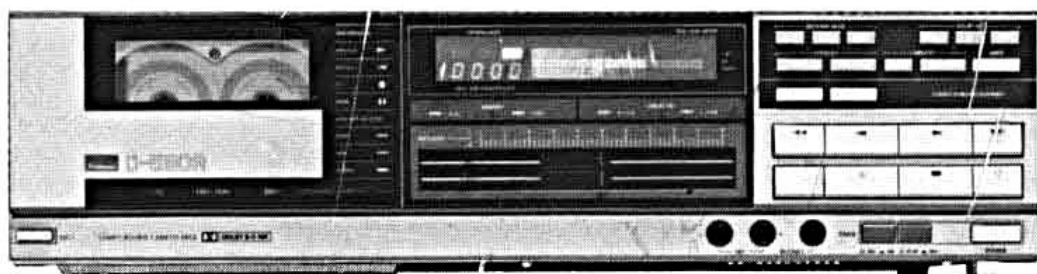


SERVICE MANUAL

COMPU REVERSE CASSETTE DECK

SANSUI D-590R (Silver & Black Model)



CAUTION

1. Parts identified by the ! 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.

Sansui

SANSUI ELECTRIC CO., LTD.

•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
	Mechanism: DC Motor
Wow/flutter	0.04% max (WRMS)
Fast forwarding (rewinding) time	Approx. 85 sec. (for C-60 tape)
Frequency response (-20 VU recording/playback)	
Normal tape (LH)	20 to 17,000 Hz (20 to 16,000 Hz \pm 3 dB)
Chrome tape	20 to 18,000 Hz (20 to 17,000 Hz \pm 3 dB)
Metal tape	20 to 19,000 Hz (20 to 18,000 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	20W
Dimensions	430 mm (16-15/16") W 111 mm (4-7/16") H 312 mm (12-5/16") D
Weight	5.7 kg (12.6 lbs) net 6.9 kg (15.2 lbs) packed

- * Design and specifications subject to change 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.

CAUTION

1. The symbols, UL, CSA, 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.
- 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.

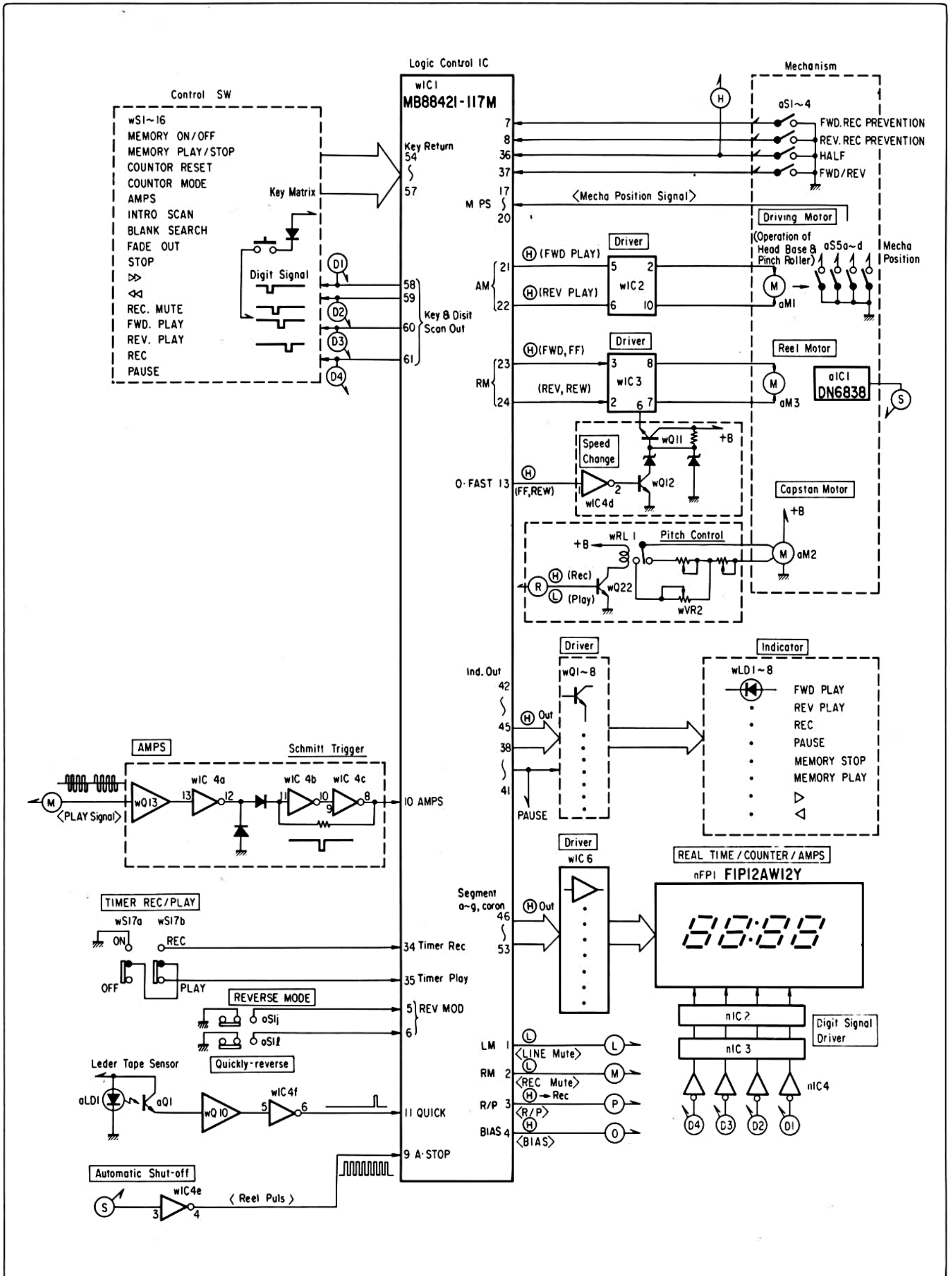
4. Abbreviations in this service manual are as follows.

•Abbreviations List

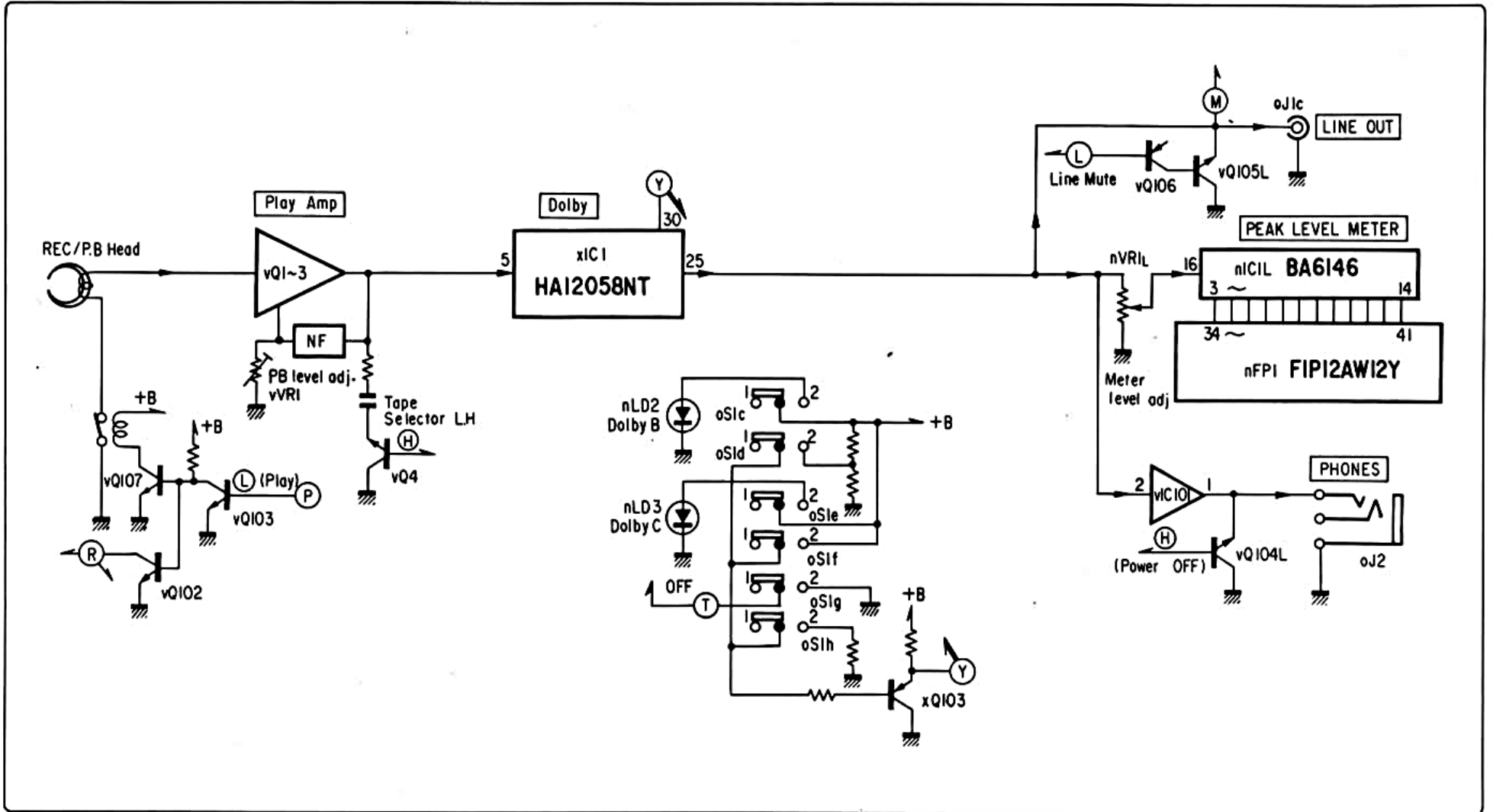
C.R.	: Carbon Resistor	E.B.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ce.R.	: Cement Resistor	Ta.C.	: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C.	: Film Capacitor
F.R.	: Fusing Resistor	M.P.	: Metalized Paper Capacitor
N.I.R.	: Non-Inflammable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

1. BLOCK DIAGRAM

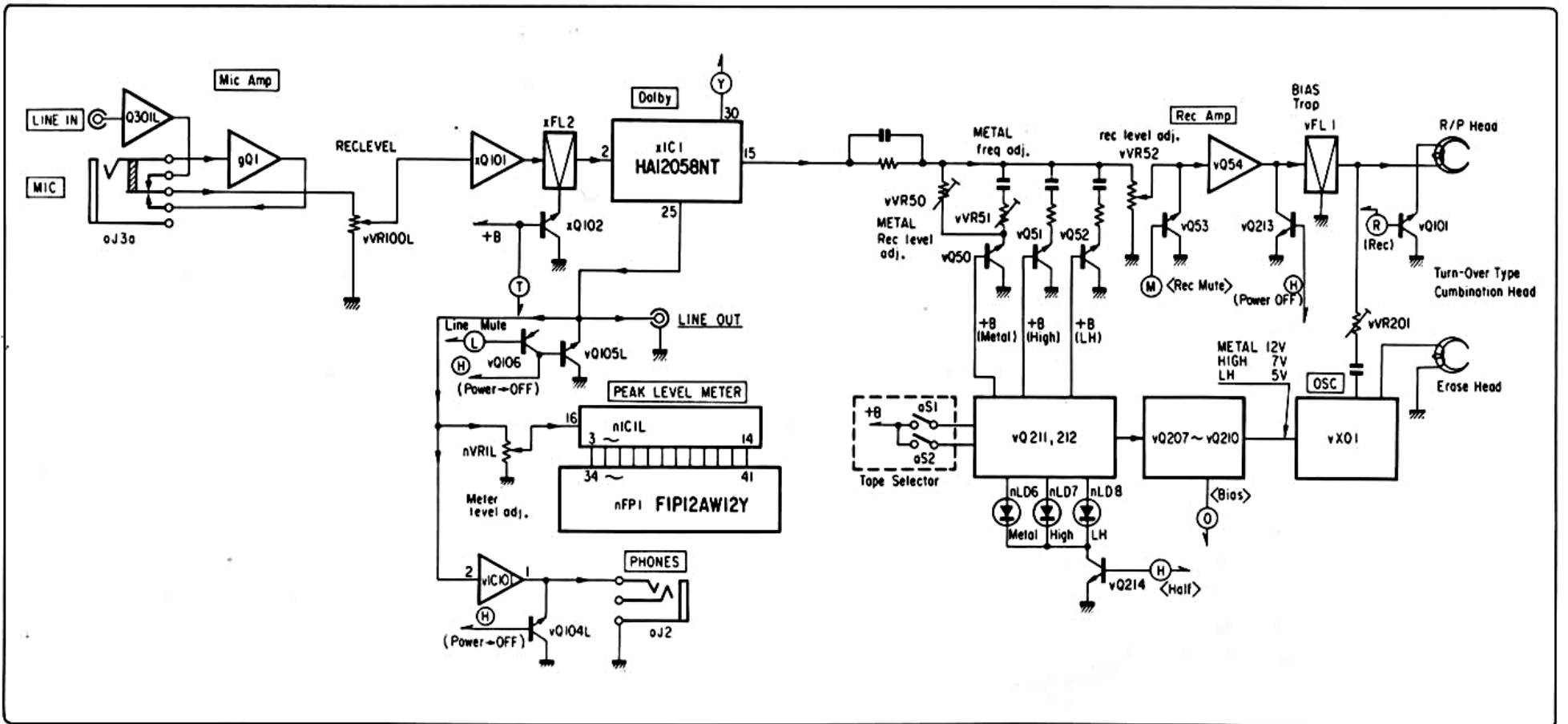
1-1. Logic Control Section



1-2. Playback Section <L-ch>

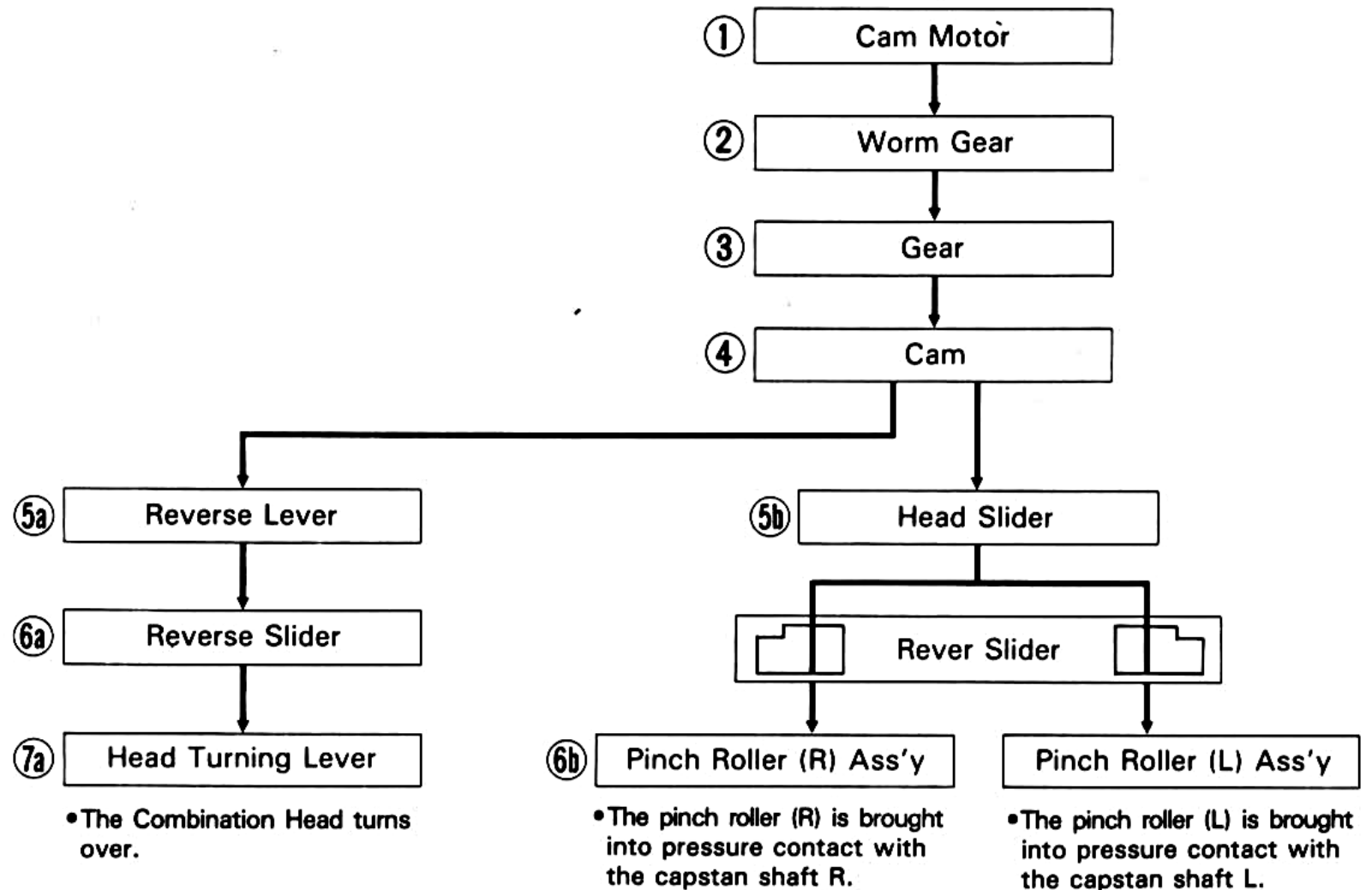


1-3. Recording Section <L-ch>

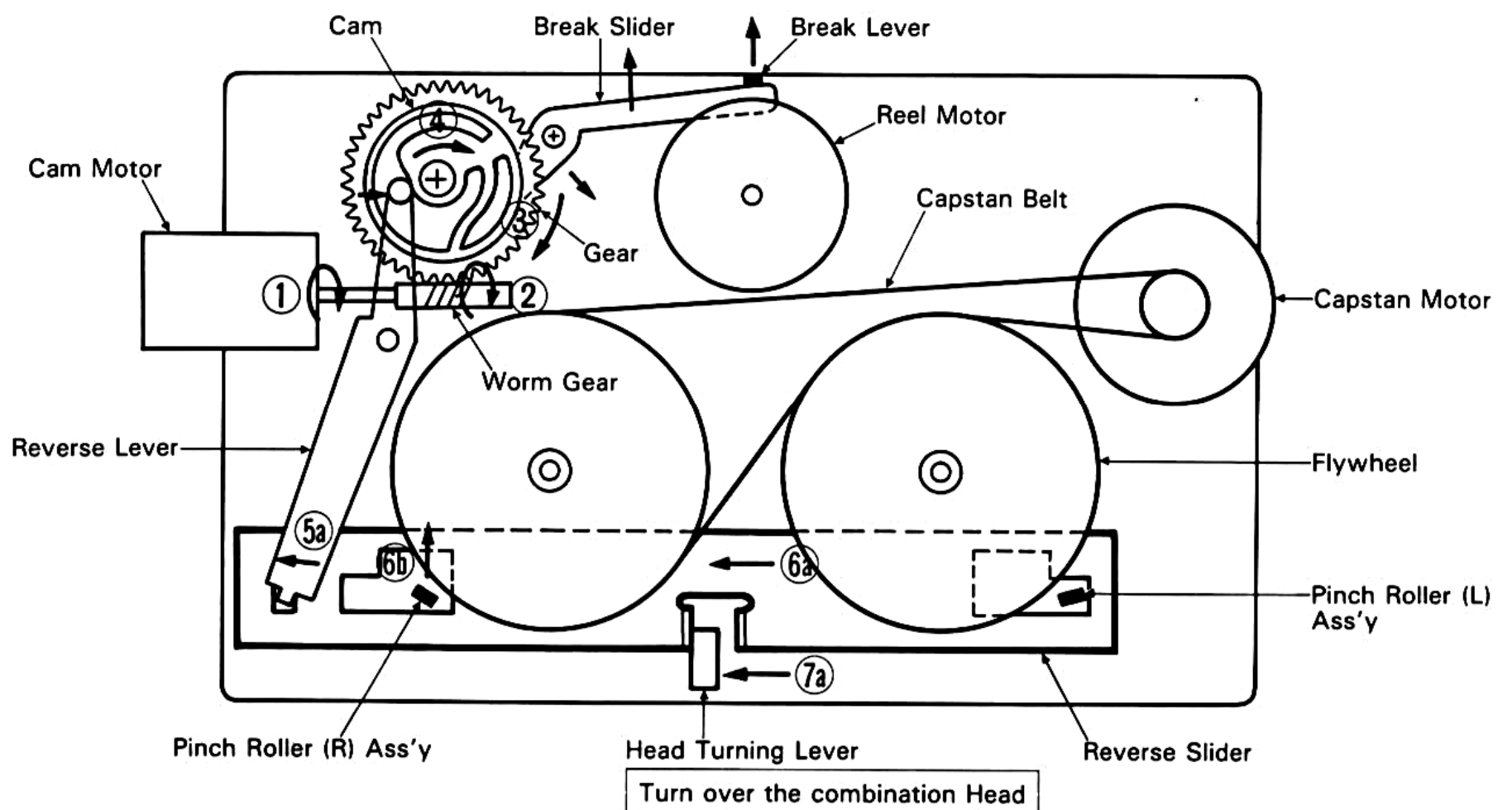


2. OPERATIONS OF PINCH ROLLER & COMBINATION HEAD

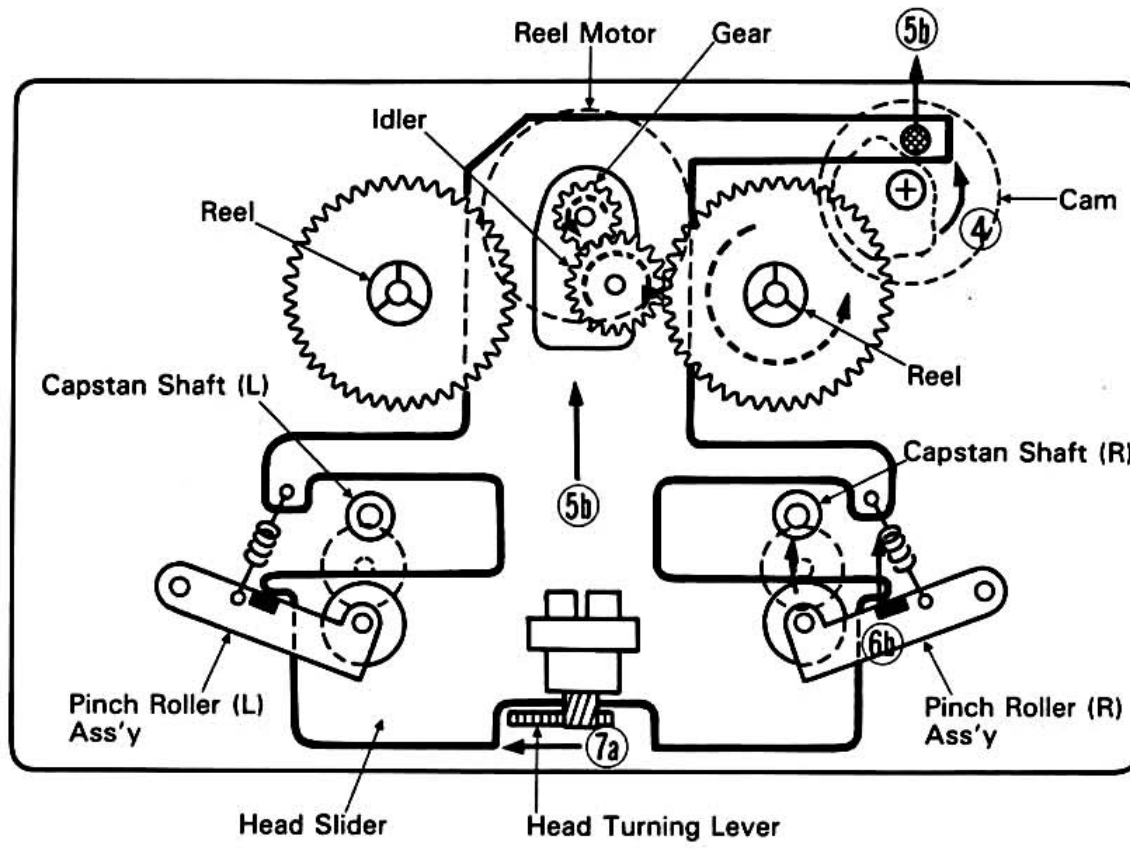
2-1. Torque Transportation Flowchart



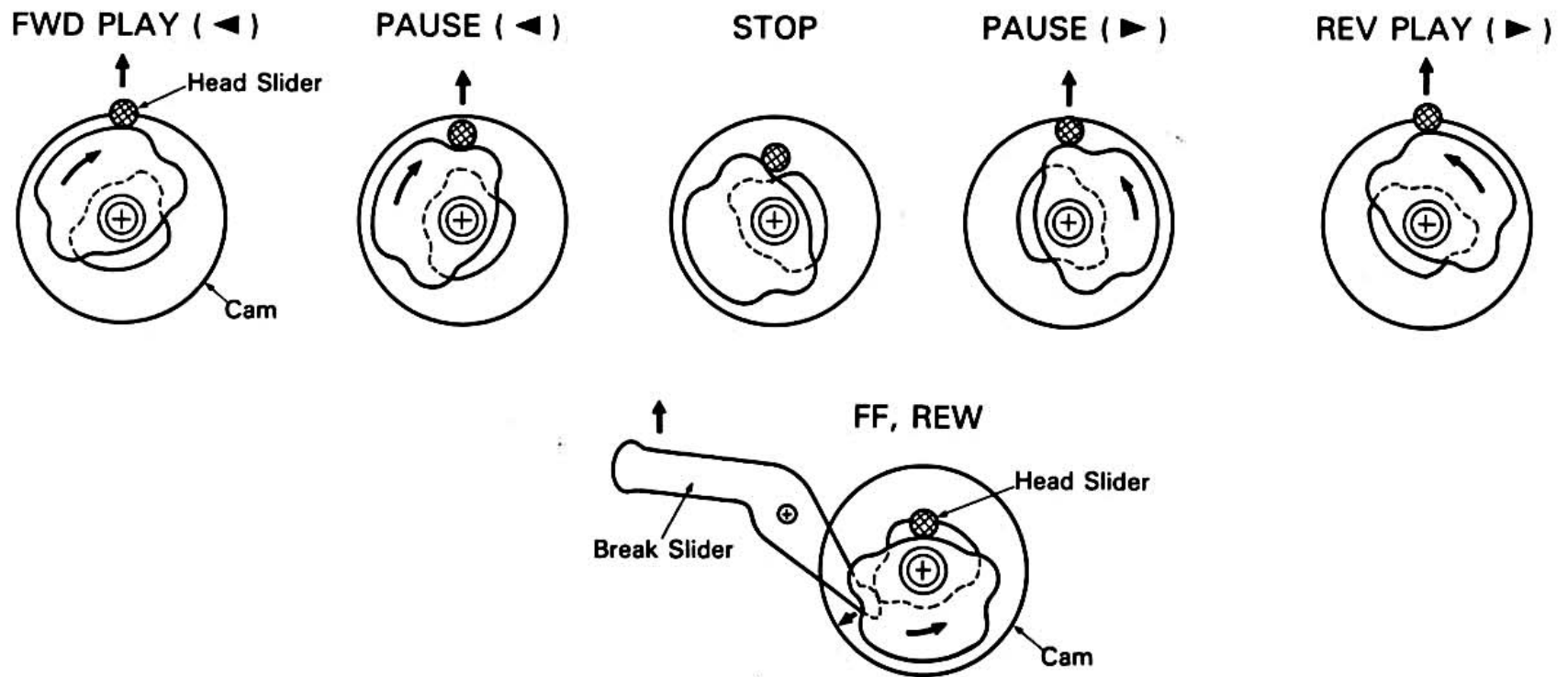
2-2. Rear View of Mechanism Chasis



2-3. Front View of Mechanism Chasis



2-4. Cam Positions in the Modes of PLAY, FF, REW & STOP



3. ADJUSTMENTS

3-1. Tape Speed Adjustment

- Note:** 1. Use Sansui Test Tape, SCT-S3K (3 kHz signal is recorded on the tape).
2. Connections are shown in Fig. 3-1.

Fig. 3-1

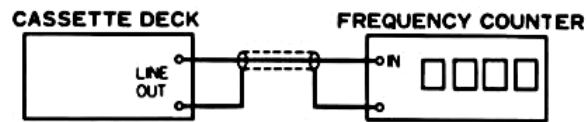
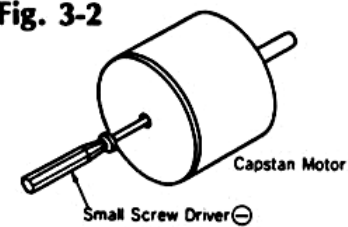


Fig. 3-2



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. 3-2.	3000Hz ± 45Hz	Use small screw driver.

3-2. Playback Adjustment

- 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. 3-3.

Fig. 3-3

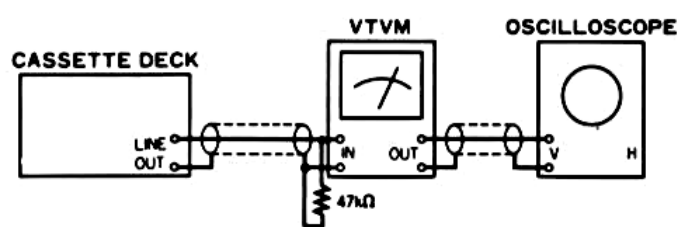
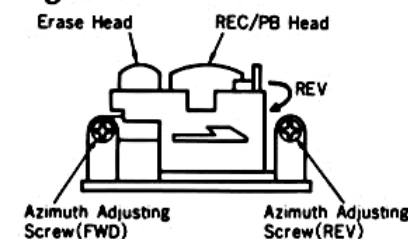


Fig. 3-4



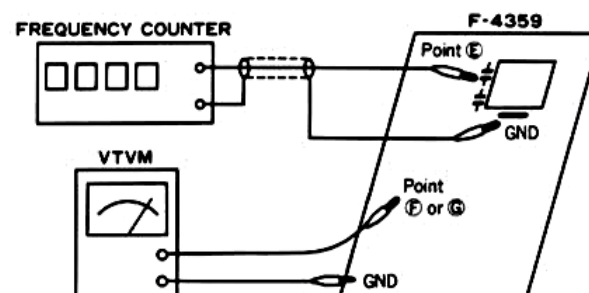
STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT VTVM and Scope	Playback the TEST TAPE SCT-F10K	Turn the azimuth adjusting screw in Fig. 3-4.	Maximum output from L and R-ch on both FWD and REV PLAY.	Refer to "G. Lid Ass'y" on page 12. After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	Same as above	Playback the TEST TAPE SCT-L400N	Turn each vVR1 of L-CH and R-CH on both FWD and REV PLAY.	500mV ± 1dB	vVR1 are shown in Top View on page 12.

3-3. Recording Adjustment

1) Bias Frequency & Bias Trap Adjustment

- * Perform this adjustment when bias pot or REC/P.B. head replaced.
Note: 1. For this adjustment, use Sansui Test Tape, SCT-MA.
2. Connections are shown in Fig. 3-5.
3. DOLBY NR Switch..... OFF

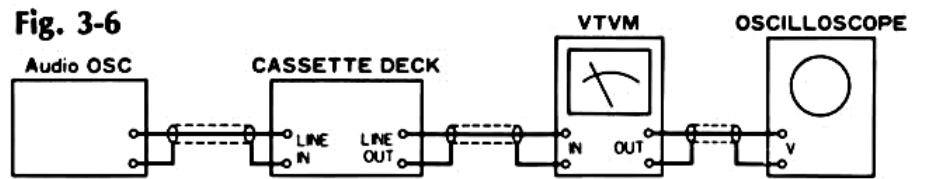
Fig. 3-5



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Bias Frequency Adj.	Between Point (E) (vC204) & GND Frequency counter	Load Test Tape SCT-MA Push on REC & PLAY buttons.	Turn core of OSC block (vXO1)	85kHz ± 5kHz	vXO1 and vFL1 are shown in Top View on page 12.
2.	Bias Trap Adj.	L-CH Between Point (E) (vQ213L) & GND R-CH Between Point (G) (vQ213R) & GND VTVM and Scope	Same as above	Turn core of vFL1 (F-4359)	Minimum Output	

2) REC Level & Frequency Response Adjustment

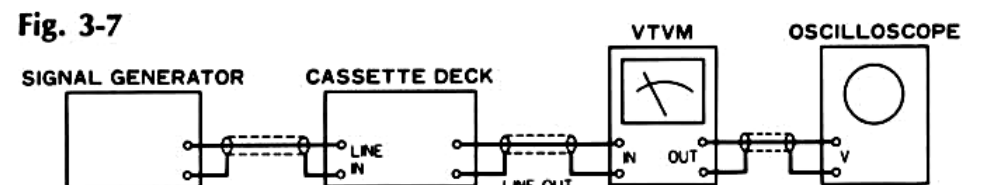
Note: 1. Connections are shown in Fig. 3-6.
2. DOLBY NR Switch..... C



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	HIGH REC Level Adj.	Feed 1kHz, 15mV from S.G. into LINE IN.	LINE OUT, VTVM and Scope	Load the Test Tape SCT-SA. 1. Push on PAUSE, REC and FWD PLAY button. 2. Adjust the Rec Level Volume for obtaining 40mV on VTVM. 3. Push off the PAUSE button. then record the 1kHz signal. 4. Play back the 1kHz signal. 5. Confirm that the output levels on both channels are 40mV \pm 2dB on VTVM.	1. If not, turn vVR52 (REC, L-CH, F-4350) and vVR52 (REC, R-CH, F-4350) until output level 40mV \pm 2dB on both channels are obtained.	vVR52 are shown in Top View on page 12.
2.	Frequency Response Adj.	Feed 1kHz 7mV (-20dB) and 10kHz 7mV (-20dB) from S.G. into LINE IN.	Same as above	Load the Test Tape SCT-SA. 1. Record (FWD) the 1kHz and 10kHz signals from S.G. 2. Play back (FWD) the 1kHz and 10kHz signals, then confirm that both output levels equal.	1. If not, turn vVR201 (F-4359) for L-CH and vVR201 (F-4359) for R-CH slightly until the output levels will be equal.	vVR201 are shown in Top View on page 12.
3.	Metal REC Level Adj.	Feed 1kHz, 15mV from S.G. into LINE IN	LINE OUT, VTVM and Scope	Load the Test Tape SCT-MA. 1. Push on PAUSE, REC and FWD PLAY button. 2. Adjust the Rec Level Volume for obtaining 40mV on VTVM. 3. Push off the PAUSE button, then record the 1kHz signal. 4. Play back the 1kHz signal. 5. Confirm that the output levels on both channels are 40mV \pm 2dB on VTVM.	1. If not, turn vVR50 (F-4350) (REC, L-CH, F-3818) and vVR50 (F-4350) (REC, R-CH, F-3818) until output level 230mV \pm 2dB on both channels are obtained.	vVR50 are shown in Top View on page 12.
4.	Metal Frequency Response Adj.	Feed 1kHz 7mV (-20dB) and 10kHz 7mV (-20dB) from S.G. into LINE IN.	Same as above	Load the Test Tape SCT-MA. 1. Record (FWD) the 1kHz and 10kHz signals from S.G. 2. Play back (FWD) the 1kHz and 10kHz signals, then confirm that both output levels equal.	1. If not, turn vVR51 (F-4350) for L-CH and vVR51 (F-4350) for R-CH slightly until the output levels will be equal.	vVR51 are shown in Top View on page 12.

3-4. Peak Level Indicator Adjustment

Note: 1. Connections are shown in Fig. 3-7.



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	Peak Level Indicator Adjustment	Feed 1kHz, 100mV from S.G. into LINE IN.	LINE OUT, VTVM Scope	Load the Test Tape SCT-SA. 1. Push on PAUSE, REC and FWD PLAY button. 2. Adjust the REC Level Volume for obtaining 470mV on VTVM.	1. Light the 0dB point on level indicator to adjust nVR1 (F-4359). 2. Adjust the REC LEVEL Volume for obtaining 460mV on VTVM, then confirm the 0dB point on level indicator go out. 3. If not, adjust nVR1, until SETTING 1 ~ ADJUSTMENT 2 will be obtain:	nVR1 are shown in Top View on page 12.

◆ 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	—

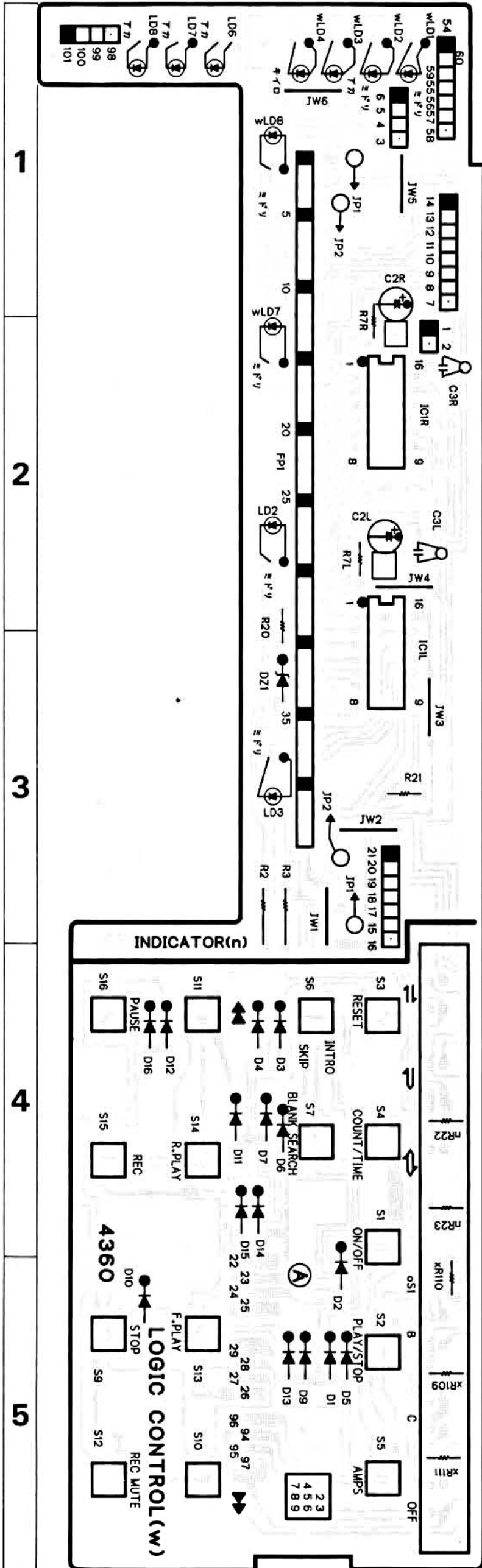
*SCT-AD NORMAL	—	Recording Bias Adjustment	TDK AD
*SCT-SA HIGH	—	REC/PB Level Adjustment	TDK SA
*SCT-MA (METAL)	—	Frequency Response Check	TDK MA

*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.

4. PARTS LOCATION & PARTS LIST

4-1. F-4360 Control SW. & Display Circuit Board (Stock NO. 00758501)

Component Side

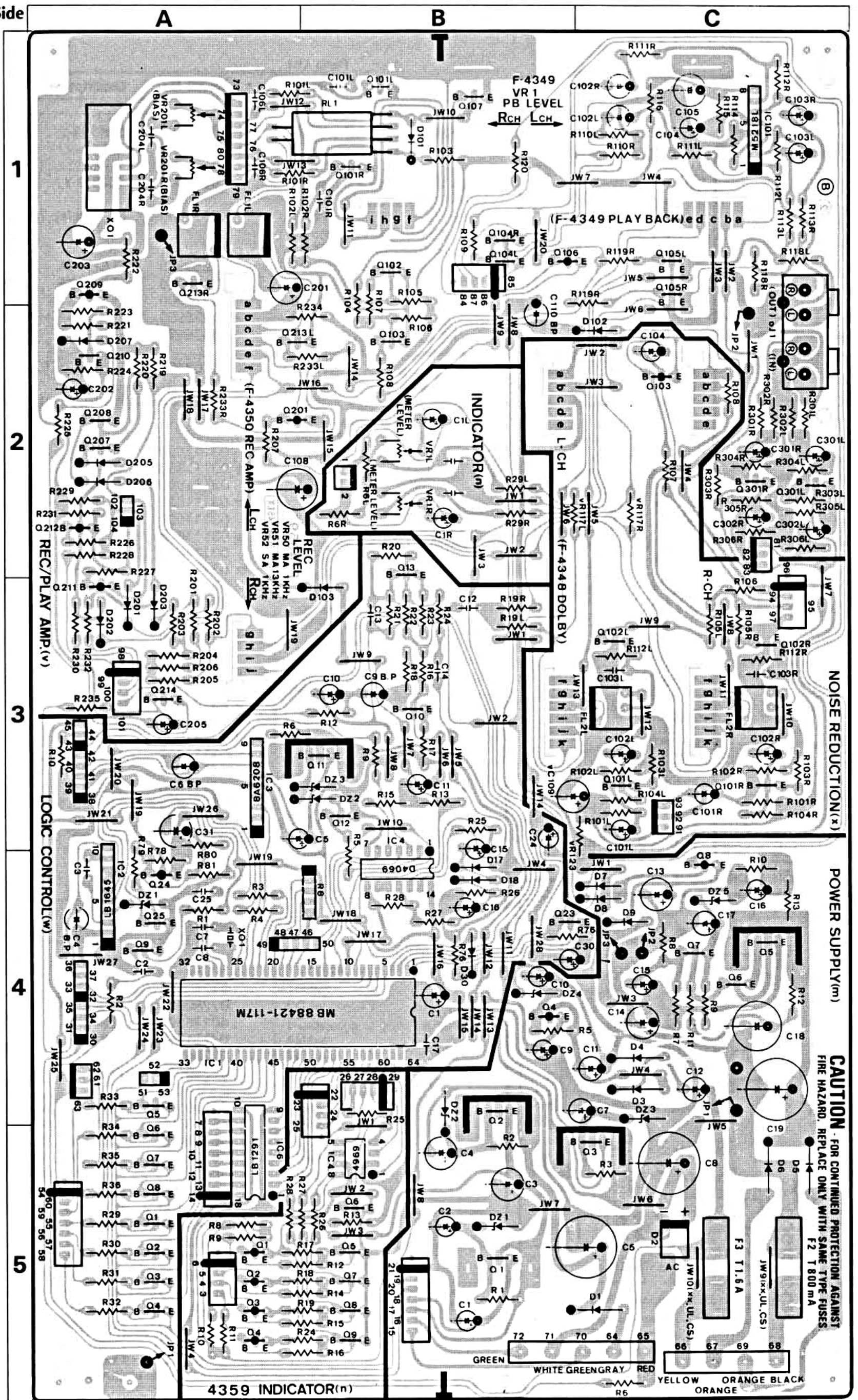


Parts List

Parts No.	Stock No.	Description
•IC		
nIC1	46671100	BA6146
•Zener Diode		
nDZ1	46102500	05Z8.2-Y
nFP1	46638900	FL. Display Tube FIP12AW12Y
•LED		
nLD2	07250900	TLG-123A
nLD3	07250900	TLG-123A
nLD6	46176900	TLS-123
nLD7	46176900	TLS-123
nLD8	46176900	TLS-123
nC2	46709400	22μF 6.3V E.L.
oS1	46726900	Push SW., DOLBY NR
•Diode		
wD1	03111600	1S2473
	or 03111800	1S1588
wD2	03111600	1S2473
	or 03111800	1S1588
wD3	03111600	1S2473
	or 03111800	1S1588
wD4	03111600	1S2473
	or 03111800	1S1588
wD5	03111600	1S2473
	or 03111800	1S1588
wD6	03111600	1S2473
	or 03111800	1S1588
wD7	03111600	1S2473
	or 03111800	1S1588
wD9	03111600	1S2473
	or 03111800	1S1588
wD10	03111600	1S2473
	or 03111800	1S1588
wD11	03111600	1S2473
	or 03111800	1S1588
wD12	03111600	1S2473
	or 03111800	1S1588
wD13	03111600	1S2473
	or 03111800	1S1588
wD14	03111600	1S2473
	or 03111800	1S1588
wD15	03111600	1S2473
	or 03111800	1S1588
wD16	03111600	1S2473
	or 03111800	1S1588
•LED		
wLD1	07250900	TLG-123A
wLD2	07250900	TLG-123A
wLD3	46176900	TLS-123
wLD4	07251000	TLY-123
wLD7	07250900	TLG-123A
wLD8	07250900	TLG-123A
wS1	46708100	Push SW., MEMORY ON/OFF
wS2	46708100	Push SW., MEMORY PLAY/STOP
wS3	46708100	Push SW., RESET
wS4	46708100	Push SW., MODE
wS5	46708100	Push SW., AMPS
wS6	46708100	Push SW., INTRO SCAN
wS7	46708100	Push SW., BLANK SEARCH
wS9	46549500	Push SW., STOP
wS10	46549500	Push SW., ▷ ▷
wS11	46549500	Push SW., ◁ ◁
wS12	46549500	Push SW., REC MUTE
wS13	46549500	Push SW., FWD PLAY
wS14	46549500	Push SW., REV PLAY
wS15	46549500	Push SW., REC
wS16	46549500	Push SW., PAUSE
wS17	46159500	Push SW., TIMER

4-2. F-4359 Control, BIAS OSC & Phone Amp. Circuit Board (Stock No. 00758401)

Component Side

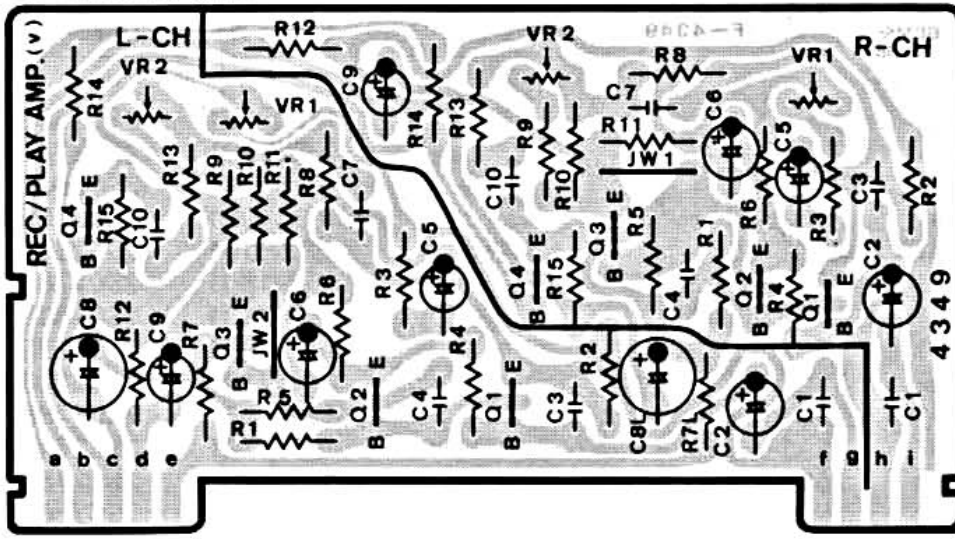


Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
•Transistor			•Transistor			•Transistor		
△ mQ1	03085201	2SD438	vQ101	46359801	2SC2001	wQ1	46367101	2SC2603
△ mQ2	03086101	2SD357	vQ102	46367101	2SC2603	or 46391901	2SC2785	2SC2785
△ mQ3	03086101	2SD357	or 46391901	2SC2785	2SC2785	wQ2	46367101	2SC2603
△ mQ4	46367001	2SA1115	vQ103	46367101	2SC2603	or 46391901	2SC2785	2SC2785
△	or 46392001	2SA1175	or 46391901	2SC2785	2SC2785	wQ3	46367101	2SC2603
△ mQ5	03086101	2SD357	vQ104	46367101	2SC2603	or 46391901	2SC2785	2SC2785
mQ6	46367101	2SC2603	or 46391901	2SC2785	2SC2785	wQ4	46367101	2SC2603
or 46391901	2SC2785	2SC2785	vQ105	46367101	2SC2603	or 46391901	2SC2785	2SC2785
mQ7	46367101	2SC2603	or 46391901	2SC2785	2SC2785	wQ5	46367101	2SC2603
or 46391901	2SC2785	2SC2785	vQ106	46367001	2SA1115	or 46391901	2SC2785	2SC2785
mQ8	46367001	2SA1115	or 46392001	2SA1175	2SA1175	wQ6	46367101	2SC2603
or 46392001	2SA1175	2SA1175	vQ107	46367101	2SC2603	or 46391901	2SC2785	2SC2785
			or 46391901	2SC2785	2SC2785	wQ7	46367101	2SC2603
			vQ201	46367001	2SA1115	or 46391901	2SC2785	2SC2785
			or 46392001	2SA1175	2SA1175	wQ8	46367101	2SC2603
			vQ207	46367101	2SC2603	or 46391901	2SC2785	2SC2785
			or 46391901	2SC2785	2SC2785	wQ9	46367101	2SC2603
			vQ208	46367101	2SC2603	or 46391901	2SC2785	2SC2785
			or 46391901	2SC2785	2SC2785	wQ10	46367101	2SC2603
			vQ209	46367001	2SA1115	or 46391901	2SC2785	2SC2785
			or 46392001	2SA1175	2SA1175	wQ11	03086101	2SD357
			vQ210	46367101	2SC2603	wQ12	46367101	2SC2603
			or 46391901	2SC2785	2SC2785	or 46391901	2SC2785	2SC2785
			vQ211	46367001	2SA1115	wQ13	46367101	2SC2603
			or 46392001	2SA1175	2SA1175	or 46391901	2SC2785	2SC2785
			vQ212	46367001	2SA1115	wQ23	46367101	2SC2603
			or 46392001	2SA1175	2SA1175	or 46391901	2SC2785	2SC2785
			vQ213	46367101	2SC2603			
			or 46391901	2SC2785	2SC2785			
			vQ214	46367101	2SC2603			
			or 46391901	2SC2785	2SC2785			
			vQ301	46577801	2SC2320L			
			•IC			•IC		
			vIC101	46147700	M5218L	wIC1	46684600	MB88421-117M
						wIC2	46671200	LB1645
						wIC3	46149600	BA6208
						wIC4	46427000	μPD4069UBC
						wIC6	46671500	LB1291
						wXO1	46505500	Ceramic Element KBR-3.58M
			•Diode			•Diode		
			vD101	03117600	1S2473	wD17	03117600	1S2473T77
			or 46086000	1S1588	1S1588	or 46086000	1S1588TP-3	1S1588TP-3
			vD102	03117600	1S2473	wD18	03117600	1S2473T77
			or 46086000	1S1588	1S1588	or 46086000	1S1588TP-3	1S1588TP-3
			vD103	03117600	1S2473	wD30	03111600	1S2473
			or 46086000	1S1588	1S1588	or 03111800	1S1588	1S1588
			vD201	03117600	1S2473			
			or 46086000	1S1588	1S1588			
			vD202	03117600	1S2473			
			or 46086000	1S1588	1S1588			
			vD203	03117600	1S2473	•Zener Diode		
			or 46086000	1S1588	1S1588	wDZ1	46113300	05Z10-Y
			vD205	03117600	1S2473	wDZ2	46111400	05Z5.6-X
			or 46086000	1S1588	1S1588	wDZ3	46112100	05Z6.8-Y
			vD206	03117600	1S2473			
			or 46086000	1S1588	1S1588	wR8	46038100	4.7kΩ × 4 1/8W A.R.
			vD207	03117600	1S2473			
			or 46086000	1S1588	1S1588	wC4	08450800	3.3μF 16V E.B.
						wC6	08451000	10μF 16V E.B.
						wC9	08451000	10μF 16V E.B.
			vC110	08451000	10μF 16V E.B.			
			vXO1	46671000	OSC Block	•Transistor		
			vFL1	07237900	FILTER	xQ101	46577801	2SC2320L
						xQ102	46367101	2SC2603
						or 46391901	2SC2785	2SC2785
			vVR201	10371000	100KΩ(B) S.V.R., bias adj.	xQ103	46367001	2SA1115
						or 46392001	2SA1175	2SA1175
			vRL1	11504701	Relay (LR2A-12B)	xFL2	46177500	DOLBY Filter
						or 46177501	DOLBY Filter	DOLBY Filter

4-3. F-4349 EQ. Amp. Circuit Board (Stock No. 00758101)

Component Side

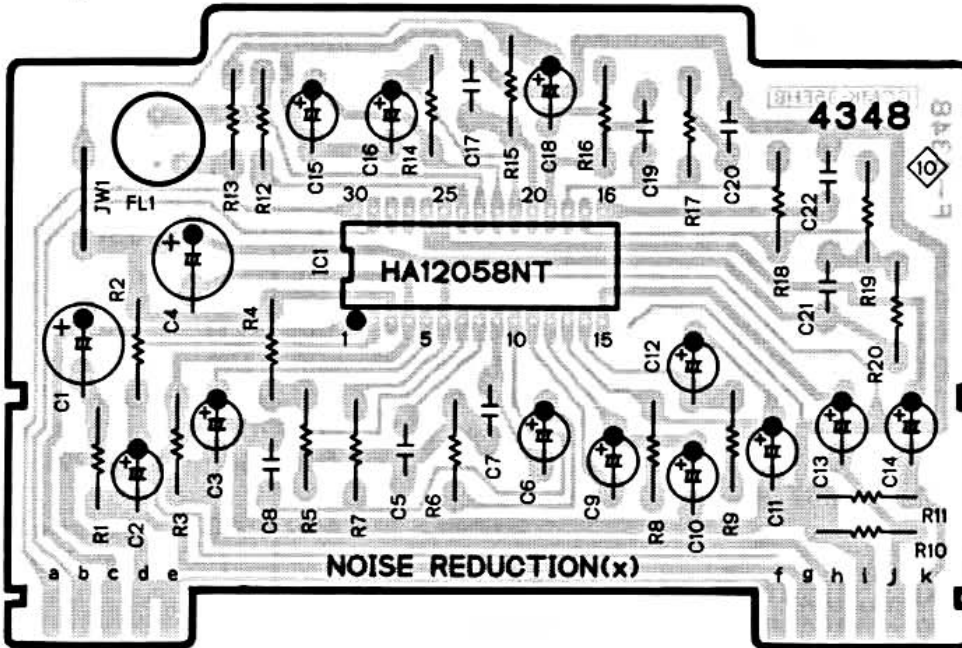


Parts List

Parts No.	Stock No.	Description
• Transistor		
vQ1	46577801	2SC2320L
vQ2	46577801	2SC2320L
vQ3	46577801	2SC2320L
vQ4	46367101 or 46391901	2SC2603 2SC2785
vVR1	46336900	2.2kΩ S.V.R., P.B. level adj.

4-4. F-4348 DOLBY NR Circuit Board (Stock NO. 00756801)

Component Side

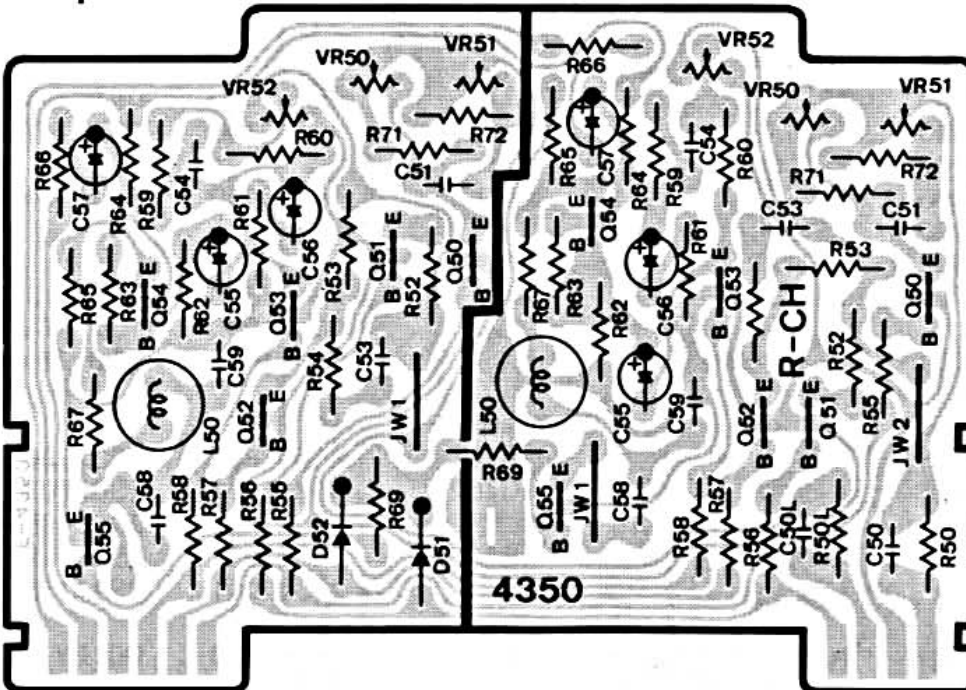


Parts List

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

4-5. F-4350 Rec Amp. Circuit Board (Stock NO. 00758201)

Component Side

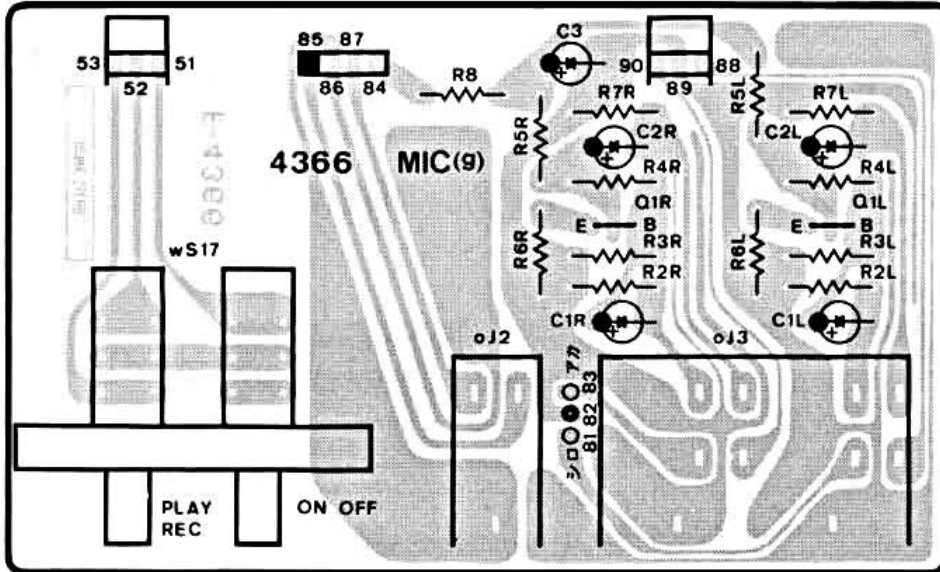


Parts List

Parts No.	Stock No.	Description
• Transistor		
vQ50	46367101 or 46391901	2SC2603 2SC2785
vQ51	46367101 or 46391901	2SC2603 2SC2785
vQ52	46367101 or 46391901	2SC2603 2SC2785
vQ53	46367101 or 46391901	2SC2603 2SC2785
vQ54	46367101 or 46391901	2SC2603 2SC2785
vQ55	46367101 or 46391901	2SC2603 2SC2785
vL50	46313900	Inductor 2.7MH
vVR50	07262100	50kΩ(B) S.V.R., rec level adj. (MA)
vVR51	07262200	100kΩ(B) S.V.R., rec frequency adj. (MA)
vVR52	07262000	20kΩ S.V.R., rec level adj. (HIGH)

4-6. F-4366 Mic Amp. Circuit Board

Component Side

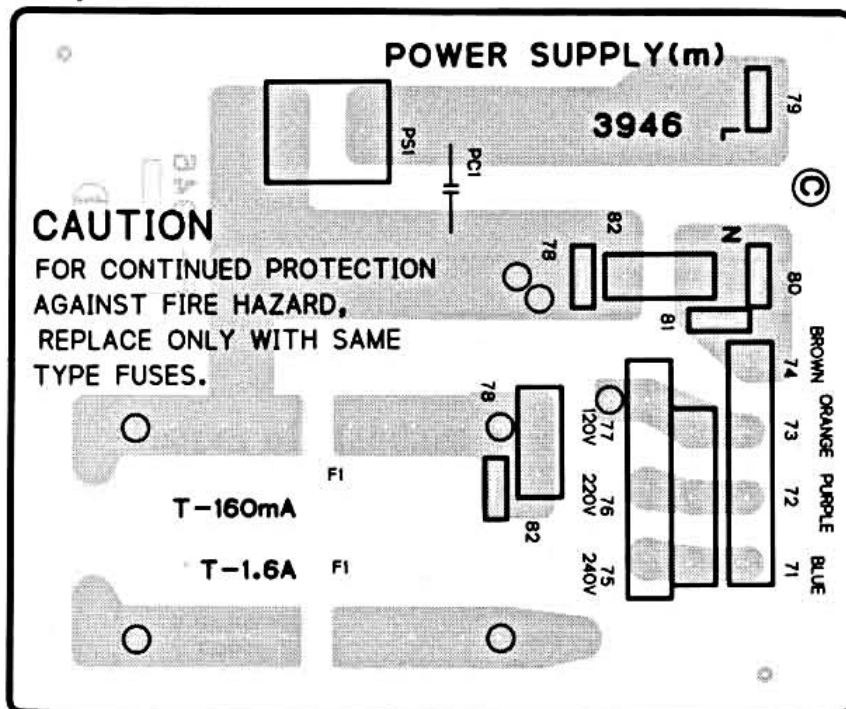


Parts List

Parts No.	Stock No.	Description
• Transistor gQ1	46577801	2SC2320L
oJ2	46265700	Jack, PHONES
oJ3	46212000	Jack, MIC

4-7. F-3946 Power SW. Circuit Board

Component Side

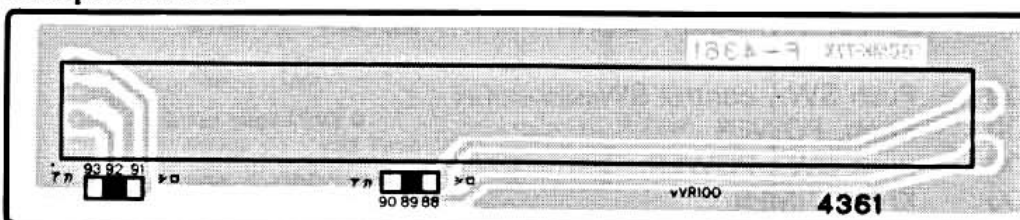


Parts List

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

4-8. F-4361 Rec V.R. Circuit Board

Component Side



Parts List

Parts No.	Stock No.	Description
vVR100	46672000	50KΩ(B) V.R., REC LEVEL

4-9. F-4353 FWD/REV Indicator Circuit Board

Component Side



Parts List

Parts No.	Stock No.	Description
• LED wLD5	46672100	LD-602PG
wLD6	46672100	LD-602PG

5. OTHER PARTS

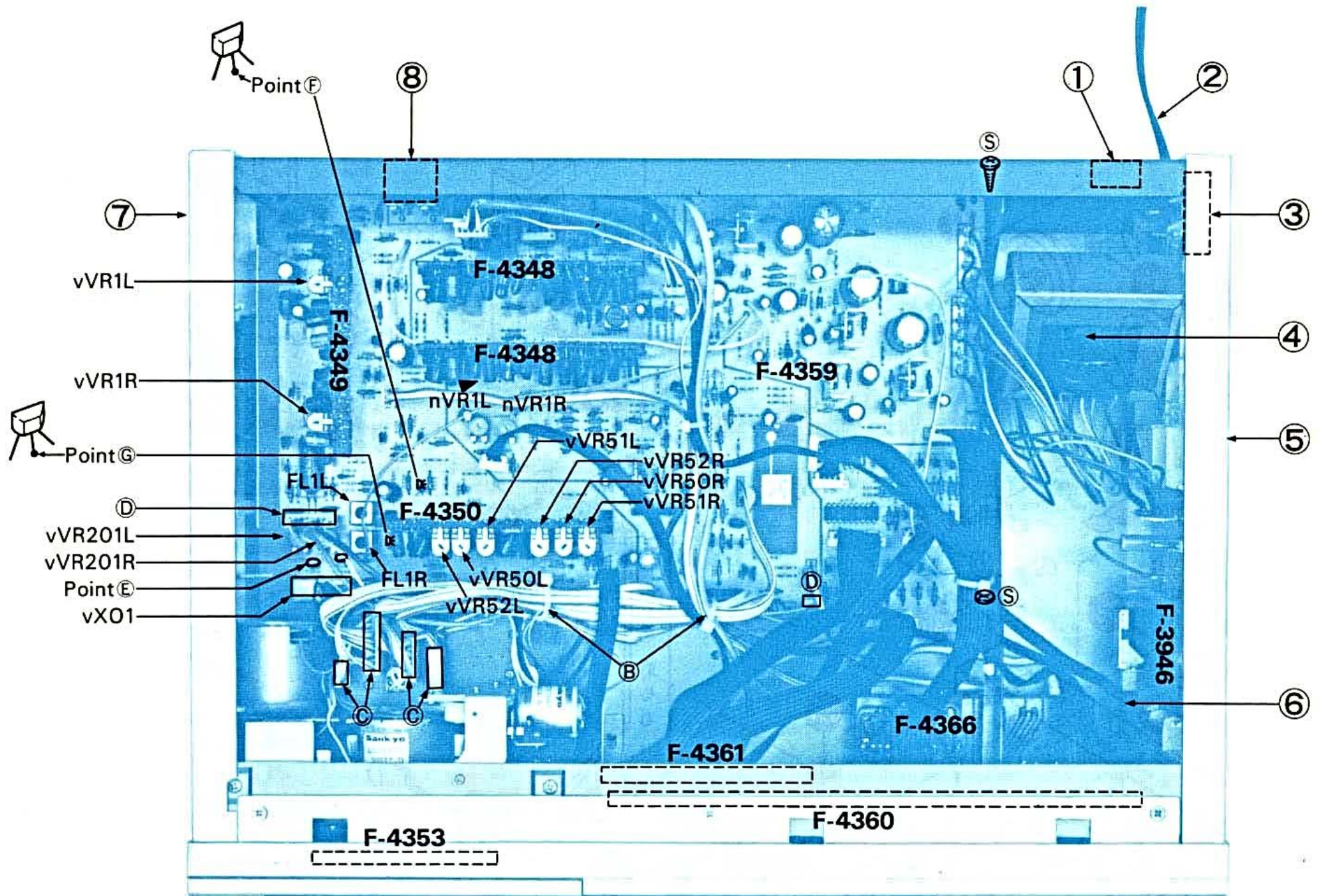
5-1. Front View



Parts List < Front View >

Parts No.	Stock No.	Description
1	47279800	Lid Ass'y (Silver Model)
	47279700	Lid Ass'y (Black Model)
2	47261900	Bonnet (Silver Model)
	47262000	Bonnet (Black Model)
3	47280800	Front Panel Ass'y (Silver Model)
	47280900	Front Panel Ass'y (Black Model)
4	46638900	FL Display Tube
5	47262900	Knob, ⇌
6	47262800	Knob, ⇐
7	47262700	Knob, ⇨
8	47263100	Knob, DOLBY NR B
9	47263200	Knob, DOLBY NR C
10	47263300	Knob, DOLBY NR OFF
11	46726900	Push SW., REVERSE MODE, DOLBY NR
12	46708100	Push SW., COUNTER, MEMORY, ARMS, INTROSKIP, BLANK SEARCH
13	46549500	Push SW., control SW.
14	47257100	Knob, POWER
△15	46360300	Push SW., POWER
16	47257500	Knob, TIMER
17	47159500	Push SW., TIMER
18	46265700	Jack, PHONES
19	46212000	Jack, MIC
20	46672000	50kΩ(B) Slide V.R., REC LEVEL
21	47255300	Knob, EJECT
22	47122800	Spring, EJECT

5-2. Top View



Parts List < Top View >

Parts No.	Stock No.	Description
△ 1	47204700	Slide SW., voltage selector (EU, BS)
△ 2	38005700	Power Supply Cord (XX, UL, CSA)
△	38004500	Power Supply Cord (EU)
△	38004300	Power Supply Cord (BS)
△	07204200	Power Supply Cord (AS)
3	07917700	AC Cord Cover
△ 4	15013601	Power Transformer (XX)
△	15013602	Power Transformer (UL, CSA)
△	15013605	Power Transformer (EU, BS, AS)
5	47128220	Side Panel R (Silver Model)
	47128320	Side Panel R (Black Model)
6	47113100	Joint Shaft, power SW.
7	47128410	Side Panel L (Silver Model)
	47128510	Side Panel L (Black Model)
8	46363800	4P Terminal Board

6. MAIN PARTS REPLACEMENT

(See Exploded View on page 13 & Top View left)

A. Mechanism Ass'y

- 1) Take off the lid Ass'y.
- 2) Remove the bonnet and bottom plate.
- 3) Cut two wirebands ⑧.
- 4) Extract four connectors ③ from circuit boards at mechanism Ass'y.
- 5) Un fasten two connectors from F-4354 circuit board.
- 6) Remove the frontpanel ass'y.
- 7) Pull out the eject knob with spring after arranging length-wise it.
- 8) Remove the side pane L.
- 9) Loosen two screws ⑤ fixing reinforcement plate and F-4354 circuit board to remove the mechanism ass'y.

B. Flywheel ⑤⑨, Capstan Belt ⑥⑩ & Capstan motor Ass'y ⑥③

- 1) Remove the mechanism ass'y from set.
- 2) Cut the wireband near capstan motor ⑥③.
- 3) Loosen three screws ②③ fasting capstan motor fixing plate.
- 4) Take off capstan belt ⑥⑩.
- 5) On the occasion of flywheel, pull out the washer ⑤③ to remove it.
- 6) On the occasion of capstan motor ass'y, loosen three screws ⑥⑥ to remove it.

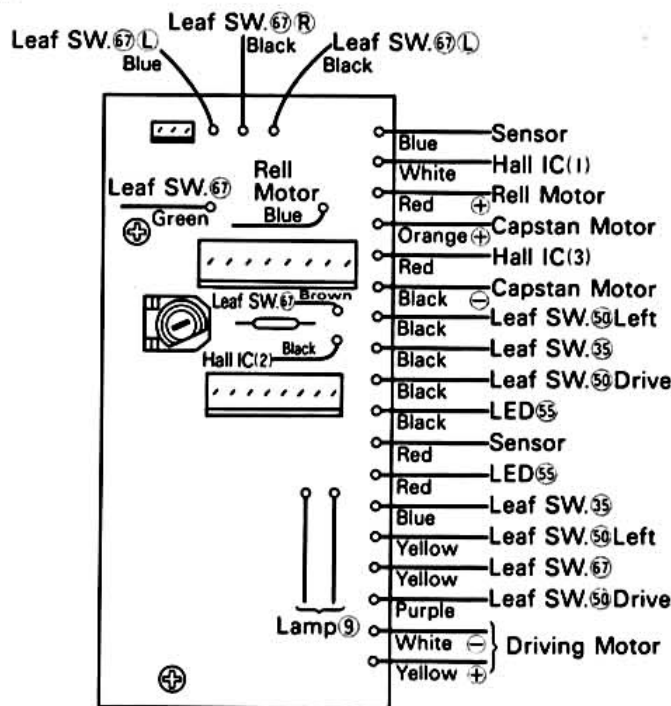
C. Reel Ass'y (Left) ④②, (Right) ④④, Hall IC ④⑧ & Reel Motor Ass'y ④⑦

- 1) Remove the mechanism ass'y from set.
- 2) Remove the mechanism dress panel.
- 3) Take off two washer ④③ to pull out reel ass'y (left) ④② and reel ass'y (right) ④④.

Note: Pay attention to loose backtension spring ④⑥ and washer ④⑤.

- 4) Loosen three screws ②③②⑨ fasting driving motor fixing plate.
- 5) Cut the wire band near capstan motor ⑥③.
- 6) Loosen three screws ②③ fasting capstan motor fixing plate.
- 7) Loosen one screw ②⑦ to remove holl IC circuit board.
- 8) Take out the reel motor ass'y with plate.
- 9) Loosen two screws ②⑦ to remove reel motor ass'y ④⑦.

Fig. 6-1



D. Driving Motor Ass'y ⑤① & Rotary Gear ⑤②

- 1) Remove the mechanism ass'y from set.
- 2) Loosen three screws ②③④⑨ fasting driving motor fixing plate.
- 3) Take out rotary gear ⑤②.

Note: Sure to fit rotary gear on the cam shaft when installing driving motor ass'y and rotary gear.

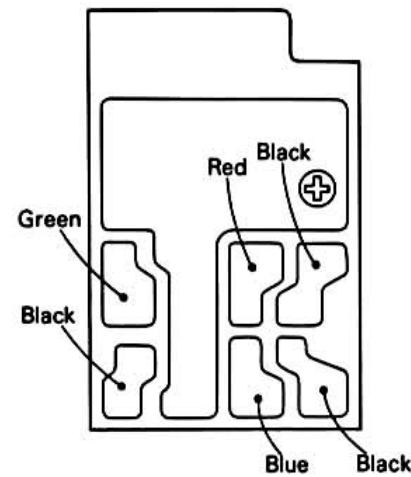
E. Rec/PB Head Ass'y (with Erase Head) ⑦

- 1) Remove the mechanism ass'y from set.
- 2) Unsolder head read wires.
- 3) Loosen two screws ⑦-②.

F. Tape Guide Ass'y (with sensor) ④

- 1) Remove the mechanism ass'y from set.
- 2) Unsolder sensor read wires.
- 3) Loosen one nut ①.

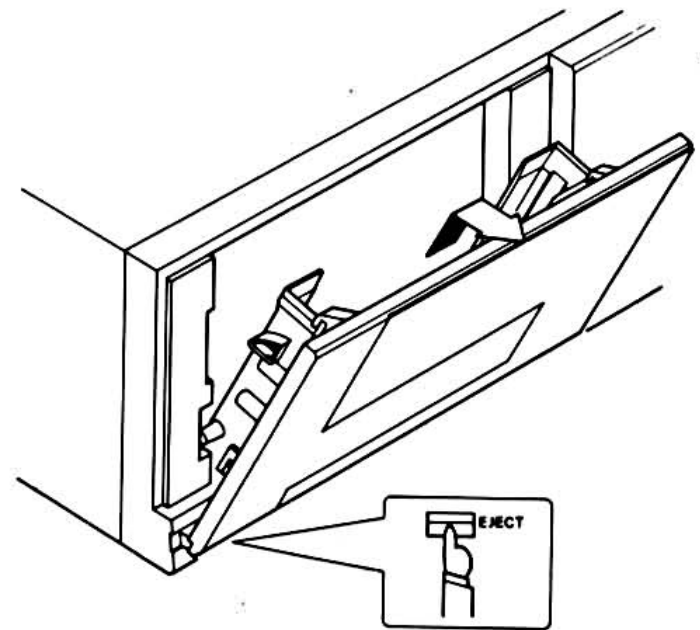
Fig. 6-2



G. Lid Ass'y

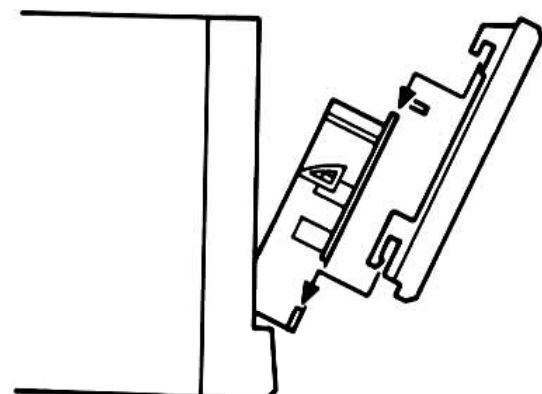
Depress the EJECT switch to open the cassette holder, and pull the cover up and then toward you to remove it as shown in the figure.

Fig. 6-3

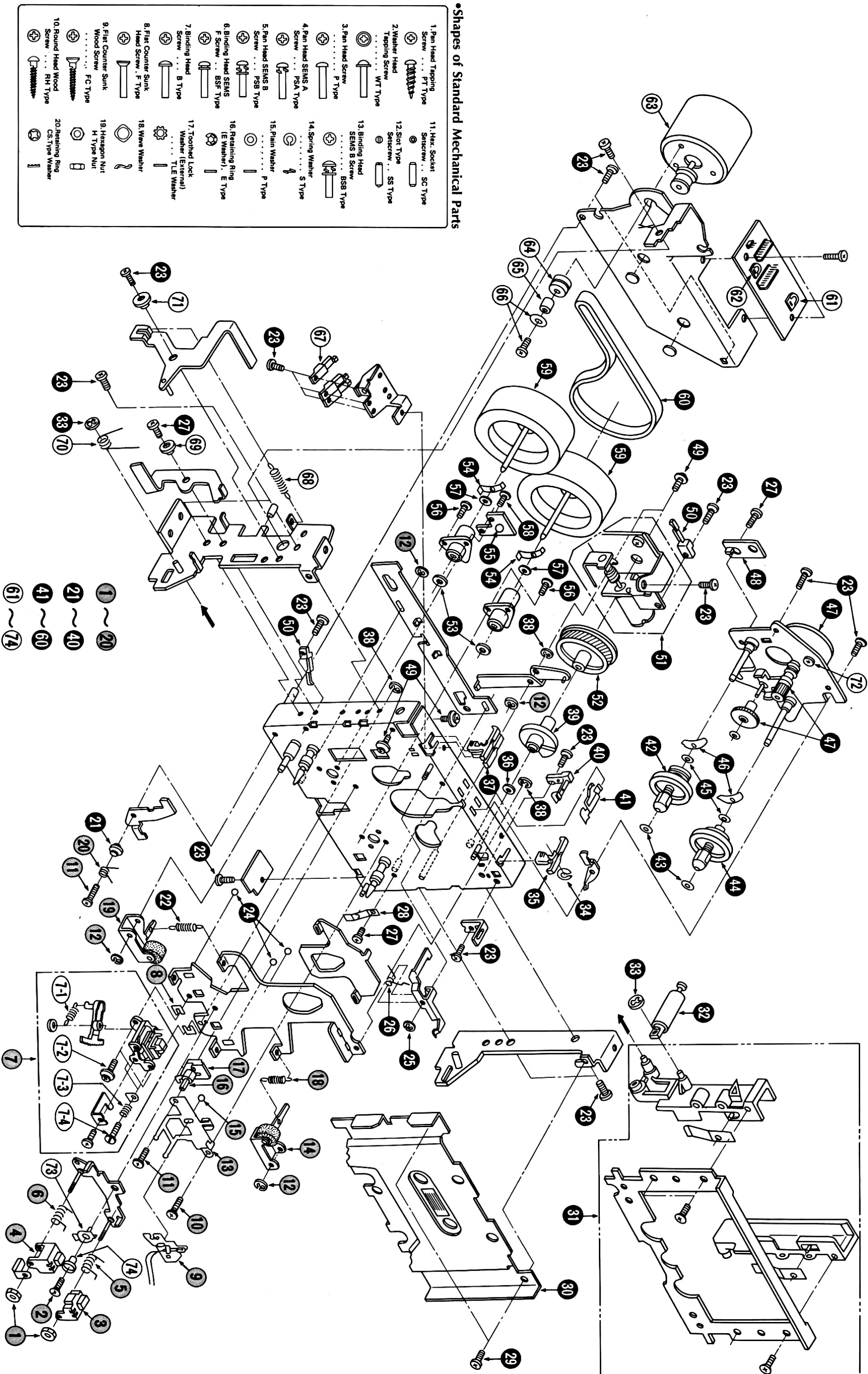


Re-attach the cover to the cassette holder by following the procedure for its removal in reverse.

Fig. 6-4



7. EXPLODED VIEW OF MECHANISM ASS'y & PARTS LIST

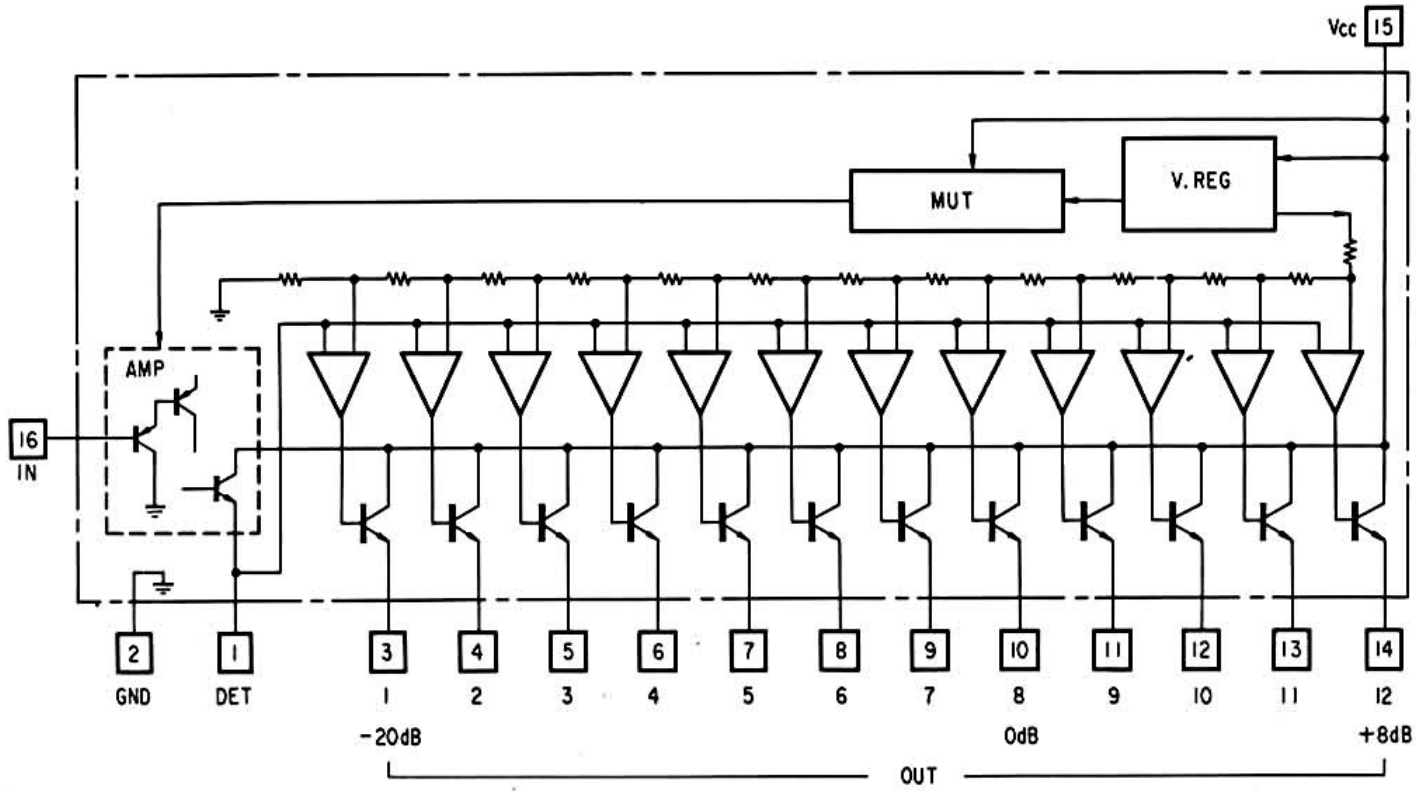


Parts List

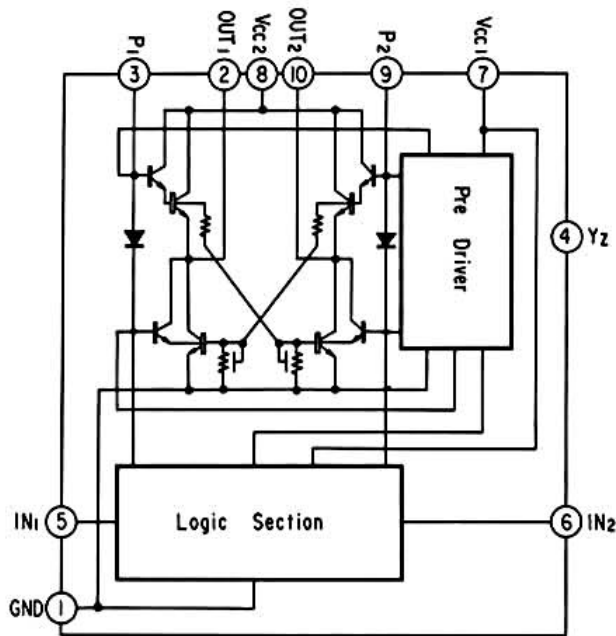
Parts No.	Stock No.	Description
1	00463100	Hexagon Nut, M2
2	00433600	Pan Head Screw, M2 x 6
3	37002400	Tape Guide
4	37002300	Tape Guide Ass'y (with sensor)
5	37004900	Spring, tape guide
6	37004800	Spring, tape guide ass'y
7	37002100	REC/PB Head Ass'y (with Erase Head)
7-1	37004700	Spring
7-2	37006000	Pan Head Screw with Washer, M2 x 4
7-3	37005500	Spring, azimuth
7-4	37006600	Screw, azimuth
8	09461600	Head Spacer
9	37004100	Lamp, 12V 40mA
10	37006300	Pan Head Screw, M3 x 4
11	37006200	Pan Head Screw, M2.5 x 8
12	00489000	E-type Washer, E2
13	37004000	Spring Plate
14	37003400	Pinch Roller Ass'y (FWD)
15	09462700	Steel Ball, ϕ 3
16	37003900	Half Guide
17	37003800	Guide Base
18	37004600	Spring, pinch roller ass'y (FWD)
19	37003300	Pinch Roller Ass'y (REV)
20	37005200	Spring
21	37005700	Collar, lock Plate
22	37004500	Spring, pinch roller ass'y (REV)
23	46396800	Pan Head, M2.5 x 5
24	65400300	Steel Ball, ϕ 2
25	08322600	E-type Washer, E2.5
26	37005100	Spring
27	09463700	Truss Head Deltite Screw, M2 x 3.2
28	09465600	Spring
29	37006100	Pan Head Screw, M2.5 x 3.5
30	37004400	Dress Panel Ass'y
31	37004200	Cassette Holder Ass'y
32	37004300	Damper Ass'y
33	51830000	CS-type Washer
34	37006700	Washer with cut, d = 3.1
35	37002800	Rec Prevention Nail (REV)
36	37006800	Washer, d = 4.1
37	09446800	Rec Prevention Nail (FWD)
38	00489200	E-type Washer, E3
39	37003000	Cam
40	09462400	Leaf SW.
41	47156100	Spring
42	37002700	Reel Ass'y (Left side)
43	07732600	Washer, d = 1.8
44	37002600	Reel Ass'y (Right side)
45	51821600	Washer, d = 3.1
46	47040600	Spring, back tension
47	37002500	Reel Motor Ass'y
48	03614000	DN6838, holl element
49	08321500	Pan Head Screw, M2 x 5
50	47021500	Leaf SW.
51	37003200	Driving Motor Ass'y
52	37003100	Rotary Gear
53	47041900	Washer, d = 2.5
54	47156200	Spring, flywheel
55	46150400	LED, TLR121
56	37006400	Pan Head Deltite Screw, M2.6 x 5
57	09464000	Washer, d = 2.6
58	46399200	Pan Head Deltite Screw, M2.6 x 6
59	47041300	Flywheel
60	37003500	Capstan Belt
62	07241200	5k Ω (B) S.V.R., Sensor level adj.
63	37003600	Capstan Motor Ass'y (with pulley)
64	07734100	Cushion
65	47041700	Spacer
66	37006500	Pan Head Screw with Washer, M2.6 x 9
67	09463400	Leaf SW.
68	37005400	Spring
69	37005800	Collar, eject lever (under)
70	37005300	Spring
71	47156500	Collar, eject lever (upper)
72	00736400	Pan Head Screw, M2.6 x 3
73	37005000	Spring, guide plate
74	37005600	Collar, guide plate

8. INTERIOR BLOCK DIAGRAM OF IC

•BA6146 (Peak Level Meter IC)



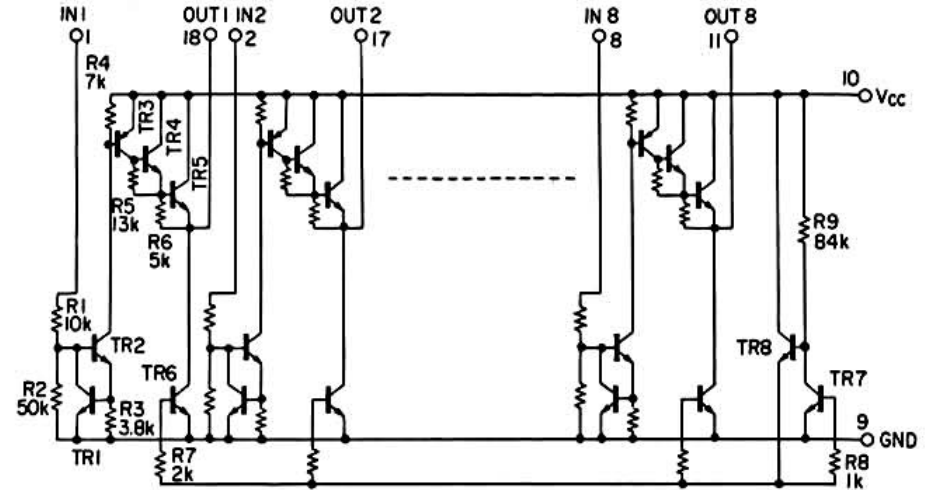
•LB1645 (Motor Drive IC)



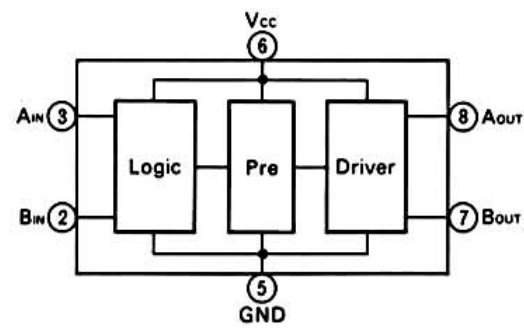
•Output Table

IN1	IN2	OUT1	OUT2
L	L	L	L
H	L	H	L
L	H	L	H
H	H	L	L

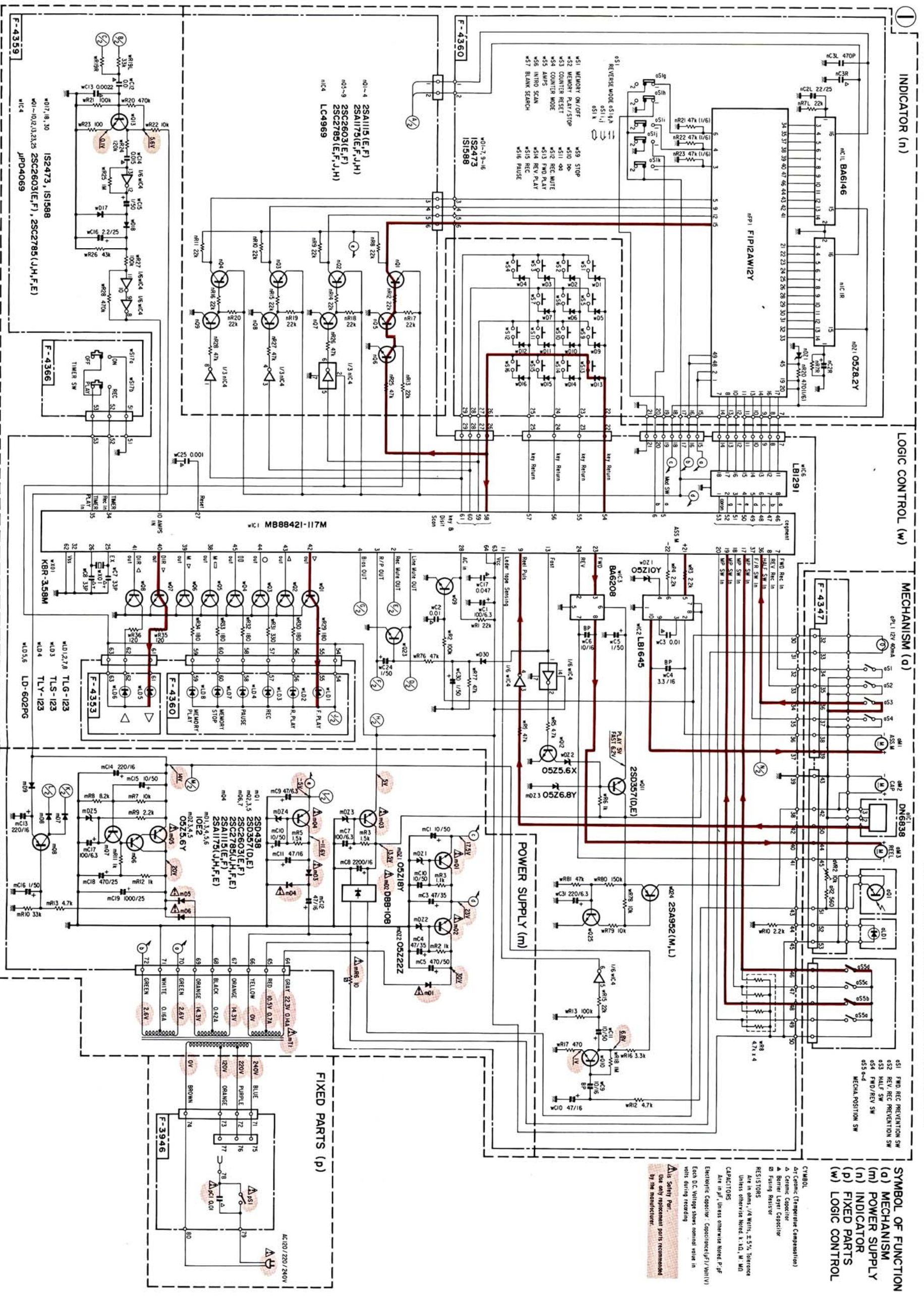
•LB1291 (FL. Display Drive IC)



•BA6208 (Motor Drive IC)



9. SCHEMATIC DIAGRAM 9-1. Control Section

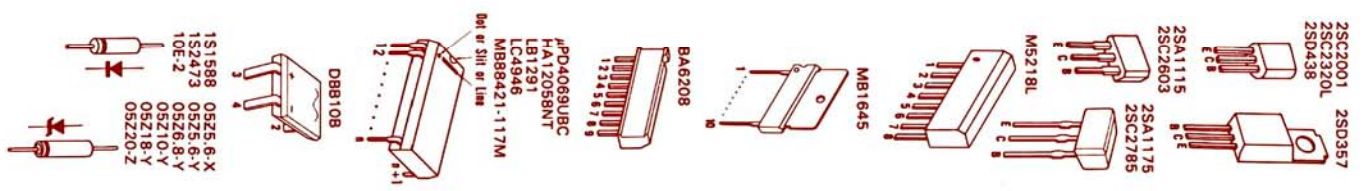


*Design and specifications subject to change without notice for improvement.
 *La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 *Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

- SYMBOL OF FUNCTION**
- (o) MECHANISM
 - (m) POWER SUPPLY
 - (n) INDICATOR
 - (p) FIXED PARTS
 - (w) LOGIC CONTROL

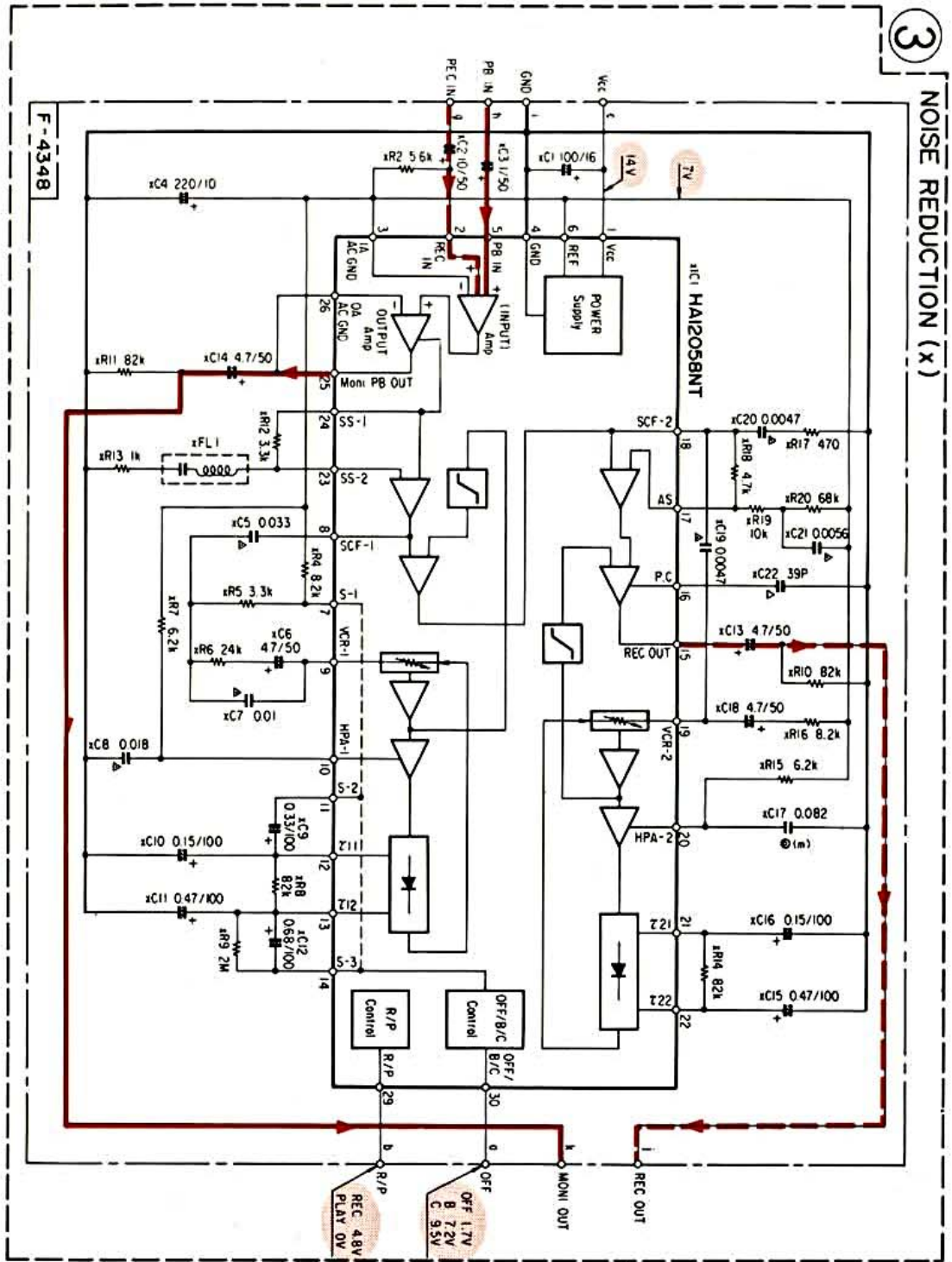
- CHWBL**
- Δ Ceramic (Temperature Compensation)
 - △ Ceramic Capacitor
 - Strain Layer Capacitor
 - ▢ Trimming Resistor
 - RESISTORS
 - Are in ohm, /K means 10³, /M means 10⁶, unless otherwise noted.
 - CAPACITORS
 - Are in pF, unless otherwise noted.
 - Electric Capacitor: Capacitance (F) / Voltage
 - Each DC Voltage shows nominal value in with during recording.

Also See: Part numbers of replacement parts recommended by the manufacturer.

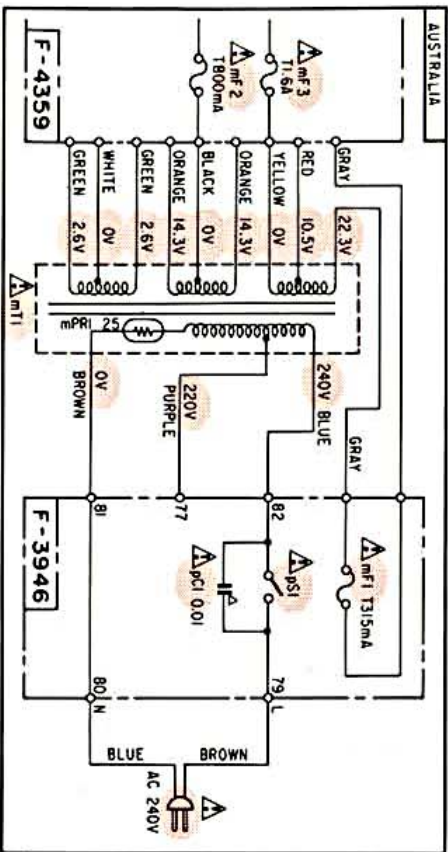


9-3. Noise Reduction Section

*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.

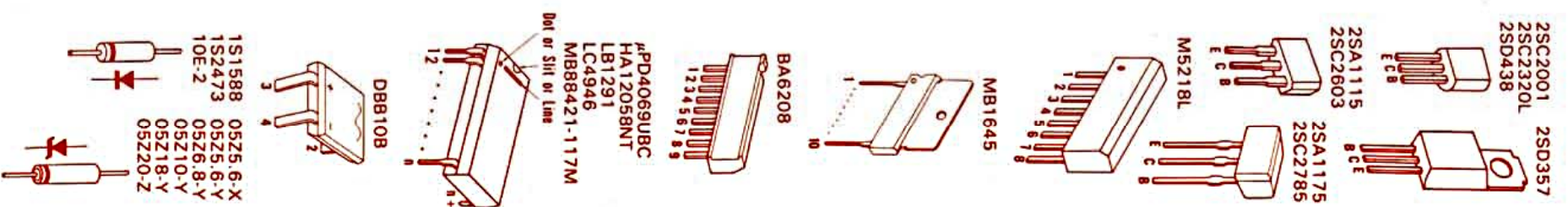
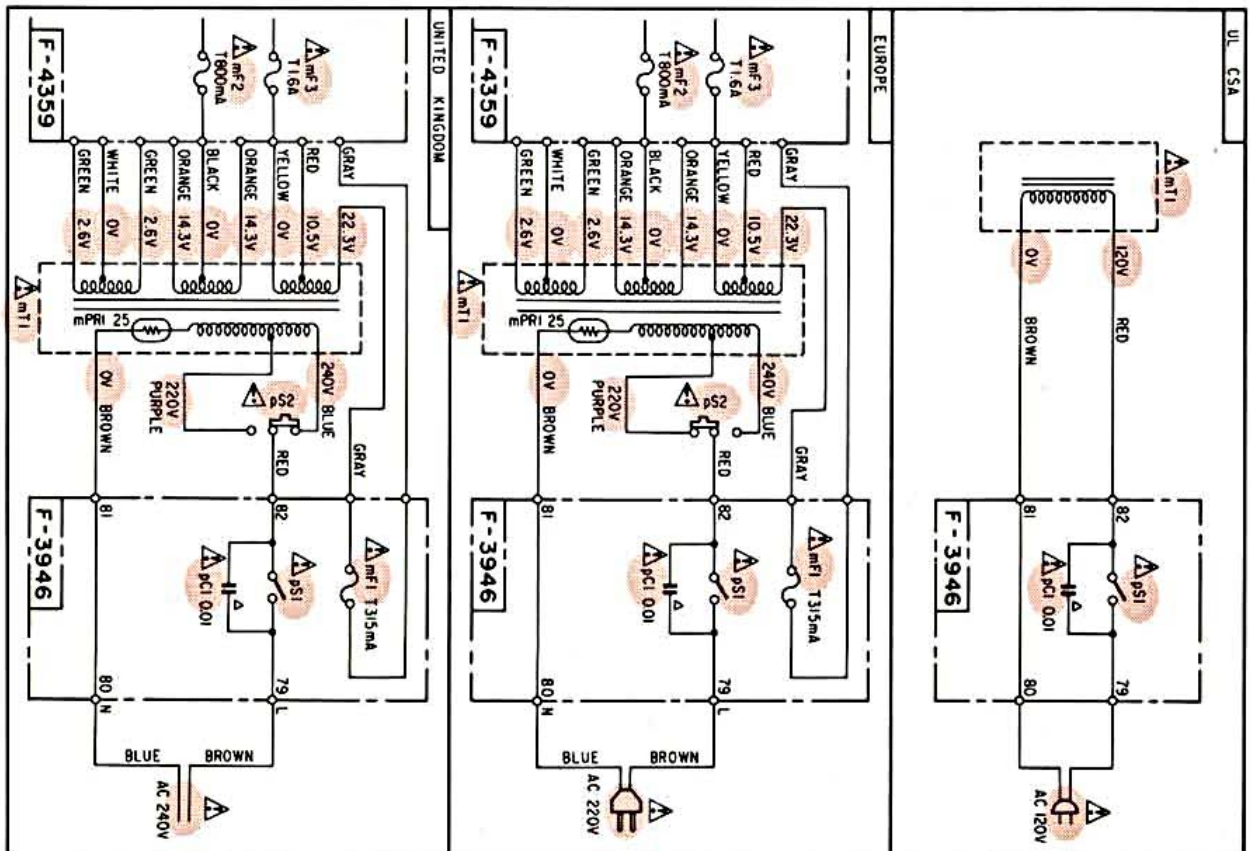


SYMBOL
 Δ Ceramic Capacitor
 Δ Barrier Layer Capacitor
 @ Mylar Capacitor
RESISTORS
 Are in ohms, 1/4 Watts, ±5% Tolerance
 Unless otherwise noted k, M, M.M.
CAPACITORS
 Are in μF, Unless otherwise noted P, μF
 Electrolytic Capacitor: Capacitance (μF) / Volt (V)
 Each DC Voltage shows the nominal value in volts during recording.
 Δ is Safety Part.
 Use only replacement parts recommended by the manufacturer.



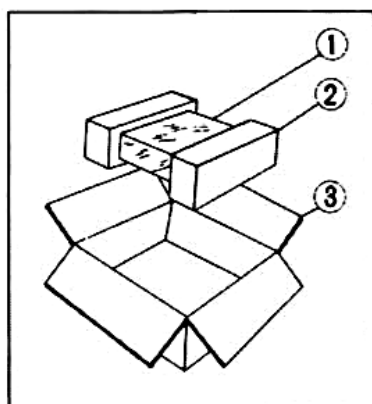
PLAY Signal Line
 REC Signal Line

SYMBOL OF FUNCTION
 (m) POWER SUPPLY
 (p) FIXED PARTS
 (x) NOISE REDUCTION



10. PACKING LIST

Parts No.	Stock No.	Description
1	91167620	Vinyl Bag
2	47127610	Styrofoam Packing
3	47254900	Carton Case (Silver Model)
	47255000	Carton Case (Black Model)



11. ACCESSORY LIST

Stock No.	Description
38103300	Pin Plug Cord
46704800	Operating Instruction



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