

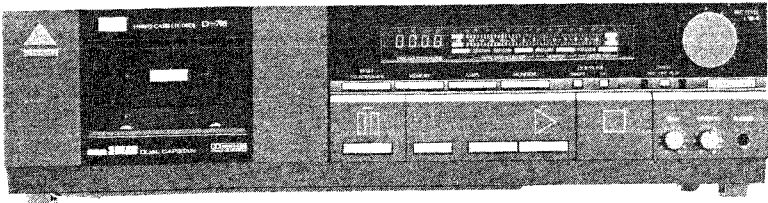
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D-705

411

SERVICE MANUAL

STEREO CASSETTE DECK SANSUI D-705



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 (3-head configuration)
 - Play head HIGH-Bs hard permalloy
 - Recording head HIGH-Bs hard permalloy
 - Erase head..... Double-gap HIGH-Bs ferrite
- Motor Capstan: Electronically Controlled DC Motor
Reels: DC Motor
- Wow/flutter 0.035% max (WRMS)
- Fast forwarding (rewinding) time
 - Approx. 85 sec.
(for C-60 tape)
- Frequency response (—20 VU recording/playback)
 - Normal tape (LH) 20 to 18,000 Hz
(30 to 17,000 Hz \pm 3 dB)
 - Chrome tape 20 to 20,000 Hz
(30 to 18,000 Hz \pm 3 dB)
 - Metal tape 20 to 21,000 Hz
(30 to 20,000 Hz \pm 3 dB)
- Signal-to-noise ratio (recording/playback with metal tape)
 - DOLBY NR OFF Better than 60 dB
 - DOLBY-B NR ON Better than 68 dB
 - DOLBY-C NR ON Better than 74 dB
- Erasure rate (metal tape)
 - More than 70 dB at 1 kHz
- Recording bias frequency
 - 105 kHz
- Input sensitivity/Impedance
 - LINE IN (REC) 70 mV/47 kohms
- Power requirements 120/220/240V
50/60 Hz
 - For U.S.A. 120V (60 Hz)
- Power consumption 30 watts
- Dimensions 430 mm (16-15/16") W
111 mm (4-3/8") H
310 mm (12-1/4") D
- Weight 5.9 kg (13.0 lbs) net
7.2 kg (15.9 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 ELECTRIC CO., LTD.

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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

2. MODE OPERATION & TIMING CHART OF MICROCOMPUTER, TC9310N-050

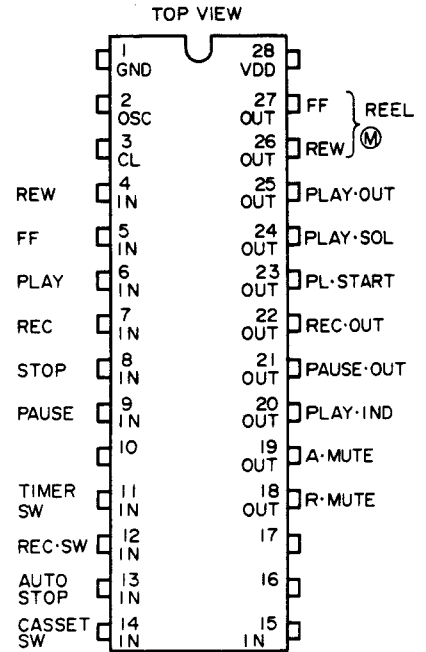
•Mode Operation of IC TC9310N-050

PRESENT MODE \ INPUT KEY	STOP	PLAY	F.F	REW	REC	PAUSE	AUTO STOP
STOP	—	PLAY	F.F	REW	REC (-)	PAUSE	/
PLAY	STOP	—	CUE	REVIEW	—	PLAY.PAUSE	STOP
F.F	STOP	PLAY	—	REW	—	—	STOP
REW	STOP	PLAY	F.F	—	—	—	STOP
CUE	STOP	PLAY	—	REW	—	—	STOP
REVIEW	STOP	PLAY	F.F	—	—	—	STOP
REC	STOP	—	F.F	REW	—	REC.PAUSE	STOP
PAUSE	STOP	PLAY.PAUSE	F.F	REW	REC.PAUSE (-)	STOP	/
PLAY.PAUSE	STOP	—	F.F	REW	REC.PAUSE (-)	PLAY	/
REC.PAUSE	STOP	—	F.F	REW	—	REC	/

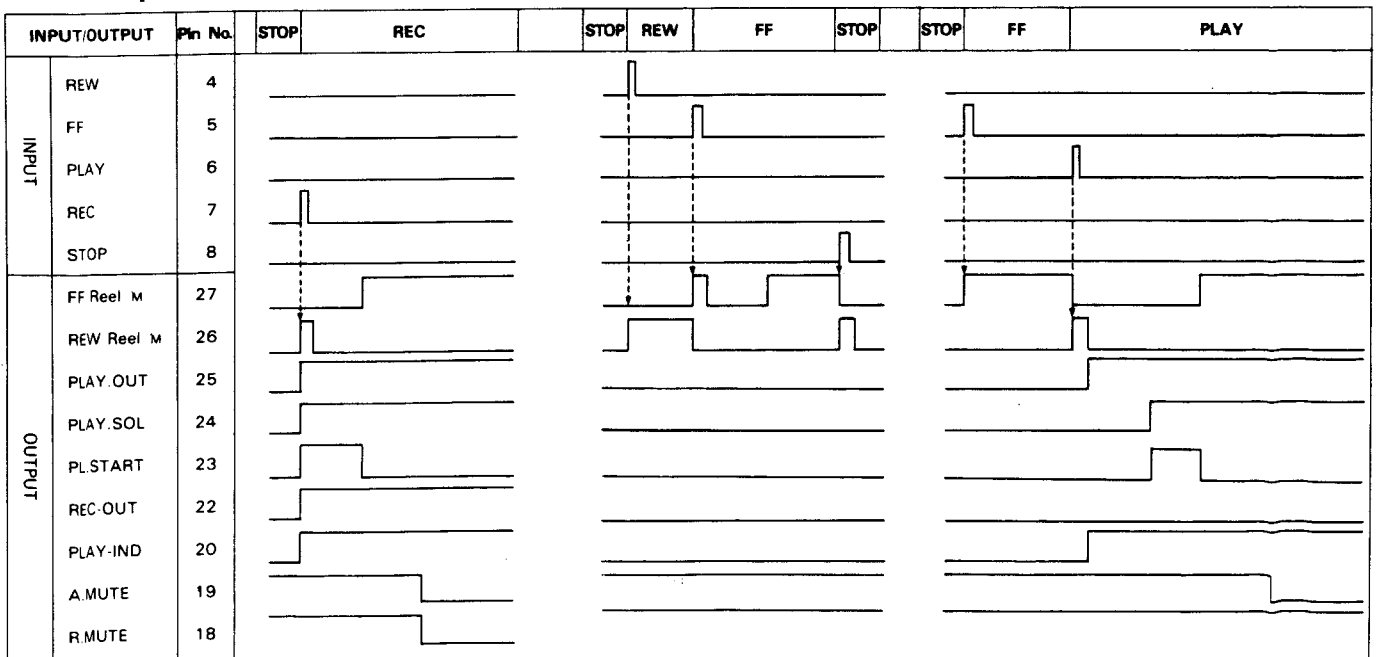
- Note: 1. This table shows operation when one input key is depressed on present mode.
 2. Que is in the state of PLAY mode under FF operation.
 Review is in the state of PLAY mode under REW operation.

— mark means continuing present mode.
 mark means non relation with other input ports.

•Pin-Arrangement



•Microcomputer Timing Chart (REC, REW→FF→STOP, FF→PLAY)



3. DESCRIPTION & OPERATION OF COUNTER MICROCOMPUTER, M50763-412SP

A. Description of Tape Counter Microcomputer Functions

1. 4-digit tape counter functions

- * This counter counts a pulse signal inputted to the counter pulse input port (PI2) and displays a counted numerical value on an FL display tube (7 segments x 4 digits, dynamic lighting).
- * This counter counts up or down according to modes of UP/DOWN input port (PI4).

2. AMPS functions

- a) 1 to 15 music AMPS
If FF or REW key is depressed when an AMPS music number is indicated in AMPS mode, the AMPS operation jumps to the head of the set AMPS music and starts to play the music.
- b) Single music AMPS
Even when no AMPS music number is set (tape counter values are being indicated), if FF or REW key is depressed in PLAY mode, single music AMPS operation starts, the display being changed to the single music AMPS as "P-01".

3. MEMORY (STOP) function

When a numerical value of tape counter is "0002" in REW operation (during DOWN count), a STOP pulse (Poc) is outputted.

4. Display function

- a) Tape counter display
When tape counter mode is the normal mode, tape counter numerical values are displayed.
- b) AMPS music number display (in AMPS mode)
When AMPS key is depressed in TAPE COUNTER mode or when FF or REW key is depressed in PLAY mode, AMPS mode is displayed.

B. Key Depression and Operations

1. RESET key

- a) When depressed in TAPE COUNTER mode, a tape counter data is reset to display "0000".
- b) When depressed in AMPS mode, an AMPS music number data is reset, returning to TAPE COUNTER mode.
For example: AMPS data changes to "00" or display "P-03" (AMPS mode) changes to "1234" (TAPE COUNTER mode).

2. AMPS key

- a) When depressed in TAPE COUNTER mode, TAPE COUNTER mode changes to AMPS mode.
For example: "1234" changes to "P-01".
- b) When depressed in AMPS mode, AMPS music number data is incremented.
For example: "P-03" changes to "P-04".
Data is returned to 1st after 15th.
- c) **Note:** Key entry is enabled when PI5 port is at "L", but disabled when at "H".

3. FF (REW) key

- a) When depressed in AMPS mode, FF (REW) pulse is outputted in PLAY (PI1 port is at "H" and PI5 port is at "L") to execute AMPS operation.
- b) When depressed in TAPE COUNTER mode, display changes to single music AMPS display "P-01" and FF (REW) pulse is outputted in PLAY (PI1 port is at "H" and PI5 port is at "L") to execute AMPS operation.

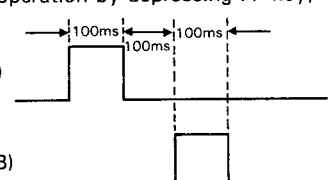
C. Operation

1. AMPS operation

- * In AMPS mode, the tape counter counts AMPS signals (PI3). Whenever this signal is inputted, the AMPS music number data is incremented and displayed. If the data is displayed as "00" (FL display "P-00"), pulses as Table 1 below are outputted. However, when "P-00" is displayed beyond 0.5 sec, the operation returns to TAPE COUNT mode.

- * When STOP state occurs (PI1 changes from "H" to "L") during AMPS operation, AMPS music number data is reset, and the operation returns to TAPE COUNT mode.
- * When FF (REW) key is depressed during AMPS operation, AMPS operation is completed (the AMPS music number data is reset to display tape counter data) to output the FF (REW) pulse.

Table 1

When set to AMPS operation by depressing FF key;	
REW pulse (POE)	
PLAY pulse (POB)	
When set to AMPS operation by depressing REW key; Only PLAY pulse (POB) is outputted.	

2. Initialization when power is turned on

- a) TAPE COUNT data is reset.
- b) Counter displays "00000".
- c) AMPS data is reset.
- d) Output ports PO ϕ to POE are all set to "L".

3. TAPE COUNTER

- a) Counter pulse (PI2) is always counted.
- b) When UP/DOWN port is in UP mode (PI4 is at "H"), the pulse is counted up.
- c) When UP/DOWN port is in DOWN mode (PI4 is at "L"), the pulse is counted down.
- d) The counted data range is "9999 to 0".
When the data is out of this range, the display changes from "9999" to "0" in UP mode and from "0" to "9999" in DOWN mode. Even if the higher place digits are zero, all the four digits are displayed as "0012" when the counter data is 0012.
- e) In UP count, counted by a leading edge.
In DOWN count, counted by a trailing edge.



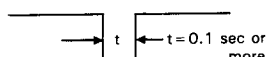
4. MEMORY (STOP)


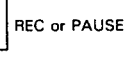
When tape counter data is "0002" during REW operation (data is being decremented; PI4 port is at "L" and PI1 port is at "H"), STOP pulse (POC port) is outputted.

5. Others

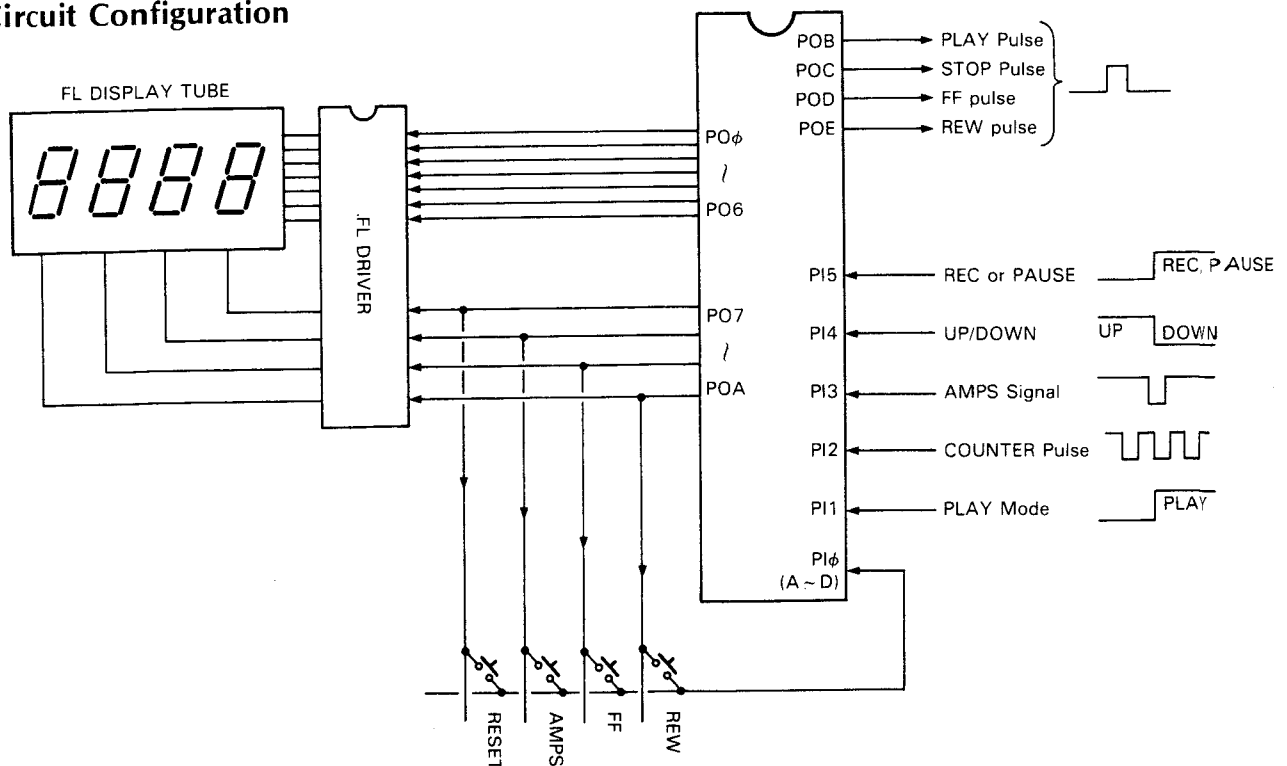
- a) Chattering absorption time is 8 msec in key depression.
- b) In case keys are depressed twice, a lastly depressed key is enabled.
- c) Key entry and input port are enabled about 1 sec after power supply has been turned on.

D. Input/Output Port List

Pin No.	Pin Name	I/O	Function	ACTIVE	
				H	L
3	PI ϕ (A ~ D)	I	RESET: Tape counter data is reset and AMPS data is also reset to display a tape counter value. (Tact switch)	○	
			AMPS: When AMPS key is depressed once, tape counter display changes to AMPS display as "P-01". Whenever depressed, a music is incremented, returning to the first music after 15th. (Tact switch)	○	
			FF: AMPS operation starts when AMPS data is present or when the key is depressed in PLAY. (Tact switch)	○	
			REW: AMPS operation starts when AMPS data is present or when the key is depressed in PLAY. (Tact switch)	○	
25	PI1	I	PLAY mode 	○	
22	PI2	I	COUNTER pulse 		
24	PI3	I	AMPS signal 		○

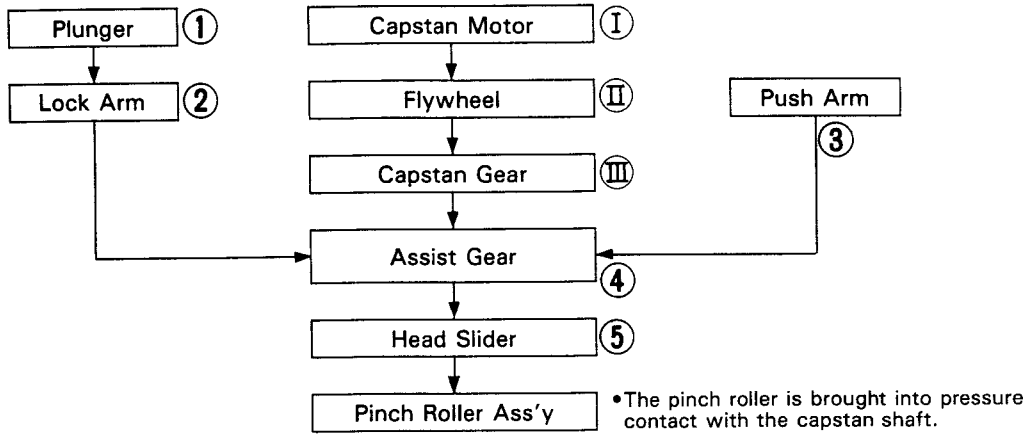
Pin No.	Pin Name	I/O	Function	ACTIVE	
				H	L
23	PI4	I	UP/DOWN: Counter data is incremented by each counter pulse in UP mode but decremented in DOWN mode. 	UP	DOWN
21	PI5	I	REC or PAUSE 	○	
28, 29, 1, 2, 13 ~ 15	PO ϕ PO6	O	7 SEG. DISPLAY CONTROL: Control signals are outputted to display a tape counter value or an AMPS music number (Dynamic)	○	
8 } 11 }	PO7 POA	O	4 DIGIT DISPLAY CONTROL: ditto PI ϕ (A to D) KEY SCAN signals are outputted (Dynamic).	○	
4	POB	O	PLAY pulse: PLAY pulse is outputted in AMPS operation (10 msec pulse)	○	
5	POC	O	STOP pulse: STOP pulse is outputted in MEMORY (STOP) operation (10 msec pulse).	○	
6	POD	O	FF pulse: FF pulse is outputted when FF key is depressed (inclusive of in AMPS mode) (10 msec pulse).	○	
7	POE	O	REW pulse: REW pulse is outputted when REW key is depressed (inclusive of in AMPS mode) (10 msec pulse).	○	

E. Circuit Configuration

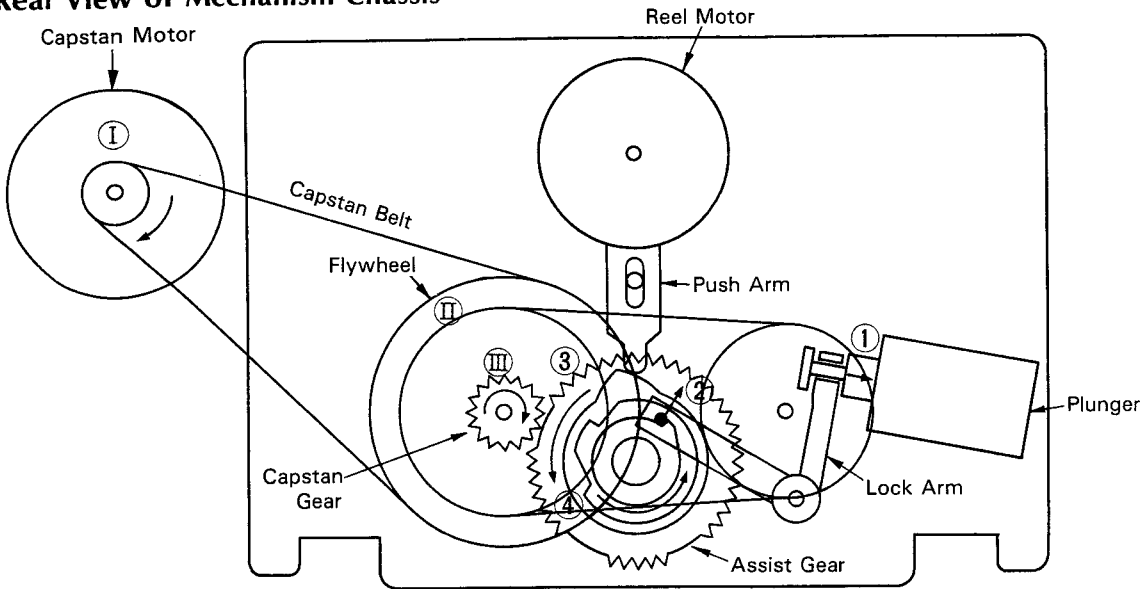


4. OPERATIONS OF PINCH ROLLER

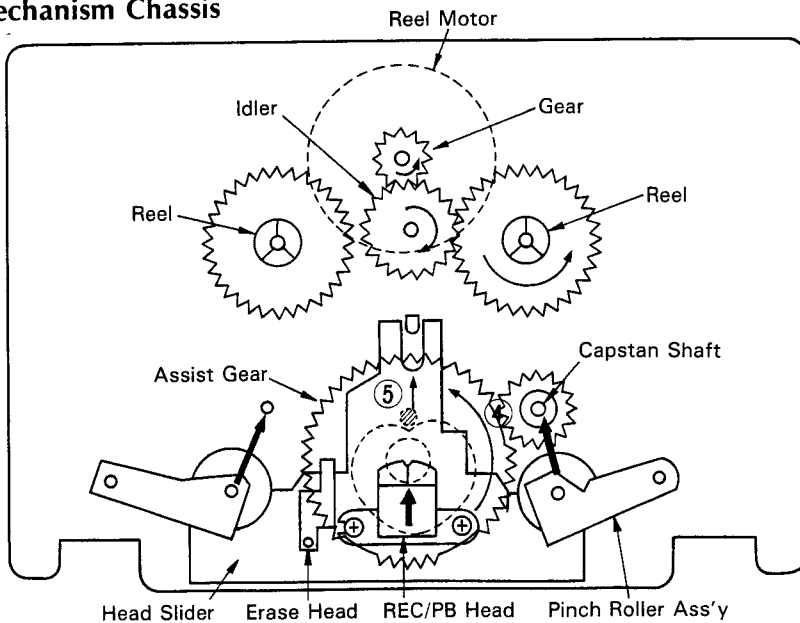
4-1. Torque Transportion Flowchart



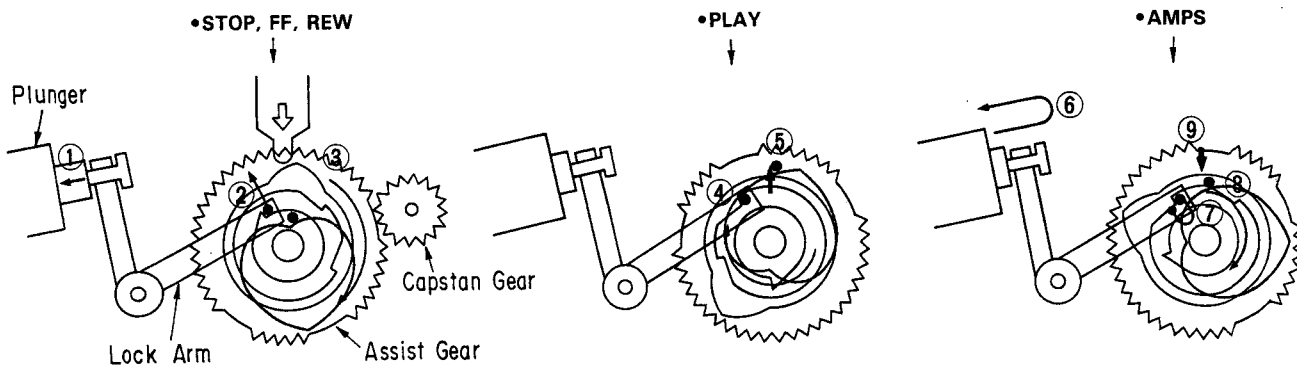
4-2. Rear View of Mechanism Chassis



4-3. Front View of Mechanism Chassis



4-4. Cam Position in Modes of PLAY, FF, REW & STOP



5. ADJUSTMENTS

5-1. 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. 5-1.
 3. Remove the cassette lid.
 (Refer to removal of Lid Ass'y on Page 14)
 4. Set the MONITOR Switch to be TAPE.
 5. Set the OUTPUT volume to be MAX position.

Fig. 5-1

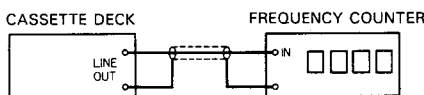
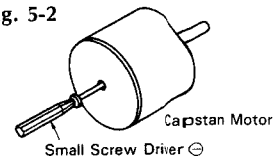


Fig. 5-2



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Tape Speed Adj.	LINE OUT Frequency counter	Playback the TEST TAPE SCT-S3K	Turn semi-variable resistor as Fig. 5-2	3000Hz ± 45Hz	Use small screw driver

5-2. Playback Adjustment

- Note: 1. Before this adjustment, clean REC/P.B. head surface.
 2. For this adjustment, use Sansui Test Tape, SCT-F10K, and SCT-L400.
 3. Set the Dolby NR switch to be OFF.

4. Set the MONITOR switch to be TAPE.
 5. Set the OUTPUT volume to be MAX position.
 6. Connections are shown in Fig. 5-3.

Fig. 5-3

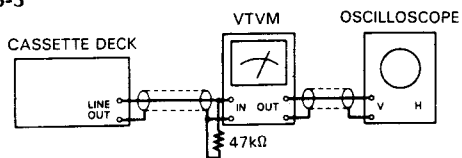
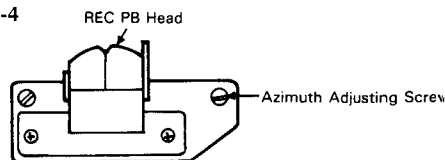


Fig. 5-4

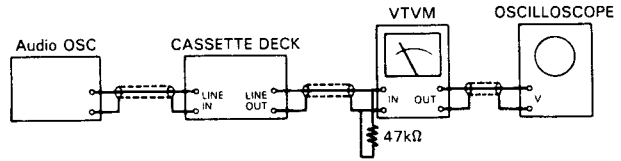


STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	LINE OUT VTVM and Scope	Playback the TEST TAPE SCT-F10K	Adjust the azimuth adjusting screw in Fig. 5-4.	MAX. Output both channels	Refer to removal of Lid Ass'y on Page 14. After this adjustment, lock the screw with paint.
2.	Playback Level Pre Adj.	Between Point ① (L-CH)/Point ② (R-CH) and GND, VTVM and Scope	Playback the TEST TAPE SCT-L400	Adjust each vVR4 (L-CH and R-CH, F-5328)	10mV ± 2dB	See Wiring Diagram on Page 14 for Adjustment, MEASURE OUTPUT points. Adjust this step, when replacing vVR4 (1kΩ S.V.R.) or F-5328 board.
3.	Playback Level Adj.	LINE OUT VTVM and Scope	Playback the TEST TAPE SCT-L400	Adjust each xVR1 (L-CH and R-ch, F-4960)	500mV ± 2dB	xVR1 (L-CH and R-ch, F-4960) are shown in Wiring Diagram on Page 14.

5-3. REC Level & Frequency Response Adjustment

- Note:** 1. Set the MONITOR switch to be TAPE.
 2. Set the BIAS volume to the mechanical center position.
 3. Set the Dolby NR switch to be OFF.
 4. Set the OUTPUT volume to be MAX position.
 5. Set the REC LEVEL volume to be MAX position.
 6. Connections are shown in Fig. 5-5.

Fig. 5-5

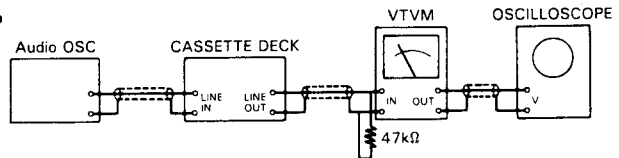


STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1kHz from Audio S.G. into LINE IN.	LINE OUT, VTVM and Scope	Load the TEST TAPE SCT-SA. 1. Push the PAUSE, and REC knob. 2. Adjust the output level of Audio SG. for obtaining 200mV on VTVM. 3. Push the PAUSE knob, then record the 1kHz signal.	1. Adjust vVR6 (L-CH and R-CH, F-5328) until output level 200mV \pm 2dB on both channels are obtained.	vVR6 (L-CH and R-CH, F-5328) are shown in Wiring Diagram on Page 14.
2.	Frequency Response Adj.	Feed 1kHz 10mV and 10kHz 10mV, from Audio S.G. into LINE IN.	Same as above	Load the TEST TAPE SCT-SA. 1. Record the 1kHz and 10kHz signals.	1. Adjust vVR7 (L-CH and R-CH, F-5328) until 1kHz and 10kHz output levels will be equal.	vVR7 (L-CH and R-CH, F-5328) are shown in Wiring Diagram on Page 14.
3.	METAL REC Level Adj.	Feed 1kHz from Audio S.G. into LINE IN.	LINE OUT, VTVM and Scope	Load the TEST TAPE SCT-MA. 1. Push the PAUSE, and REC knob. 2. Adjust the output level of Audio SG. for obtaining 200mV on VTVM. 3. Push the PAUSE knob, then record the 1kHz signal.	1. Adjust vVR5 (L-CH and R-CH, F-5328) until output level 200mV \pm 2dB on both channels are obtained.	vVR5 (L-CH and R-CH, F-5328) are shown in Wiring Diagram on Page 14.

5-4. Peak Level Indicator Adjustment

- Note:** 1. Set the OUTPUT volume to be MAX position.
 2. Connections are shown in Fig. 5-6.
 3. Remove the F-5338 board (Refer to removal of F-5338 board)

Fig. 5-6



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 and Scope	Load the TEST TAPE SCT-SA. 1. Push on PAUSE, and REC knob. 2. Adjust the REC LEVEL knob for obtaining 500mV on VTVM.	1. Light the 0dB point on level indicator to adjust nVR1 (F-5338). 2. Adjust the REC LEVEL knob for obtaining 490mV 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 Wiring Diagram Page 14.

◆ 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

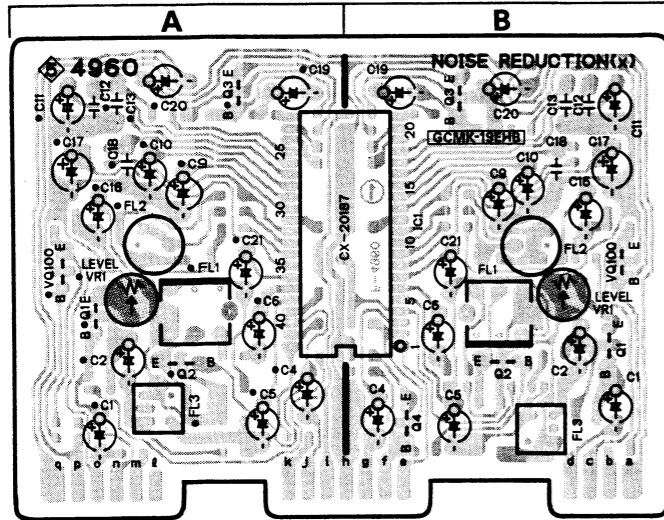
- **Note:** Some reference tapes marked *, are not supplied.
 As these are equivalent to ones indicated above, please obtain these blank tapes on your side as possible.

6. PARTS LOCATION & PARTS LIST

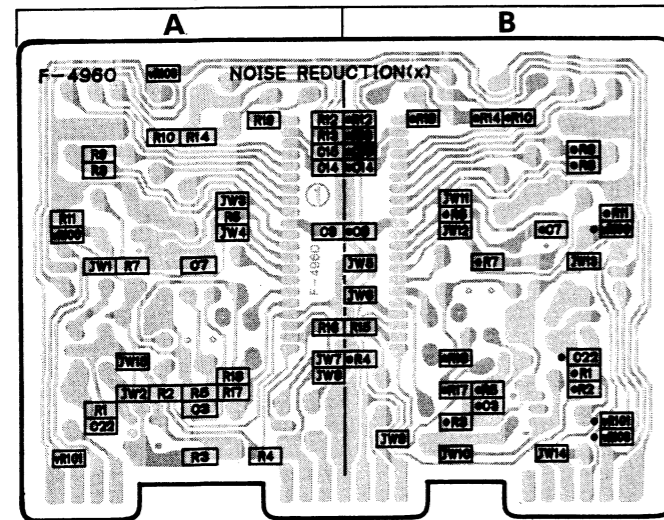
6-1. F-4960 Noise Reduction Playback Board (Stock No. 00973001)

6-2. F-4960 Noise Reduction Rec Board (Stock No. 00972901)

Component Side



Pattern Side <Chip Parts>



Note1:
On this circuit board, the right channel is specified by "●" mark on top of the parts No.

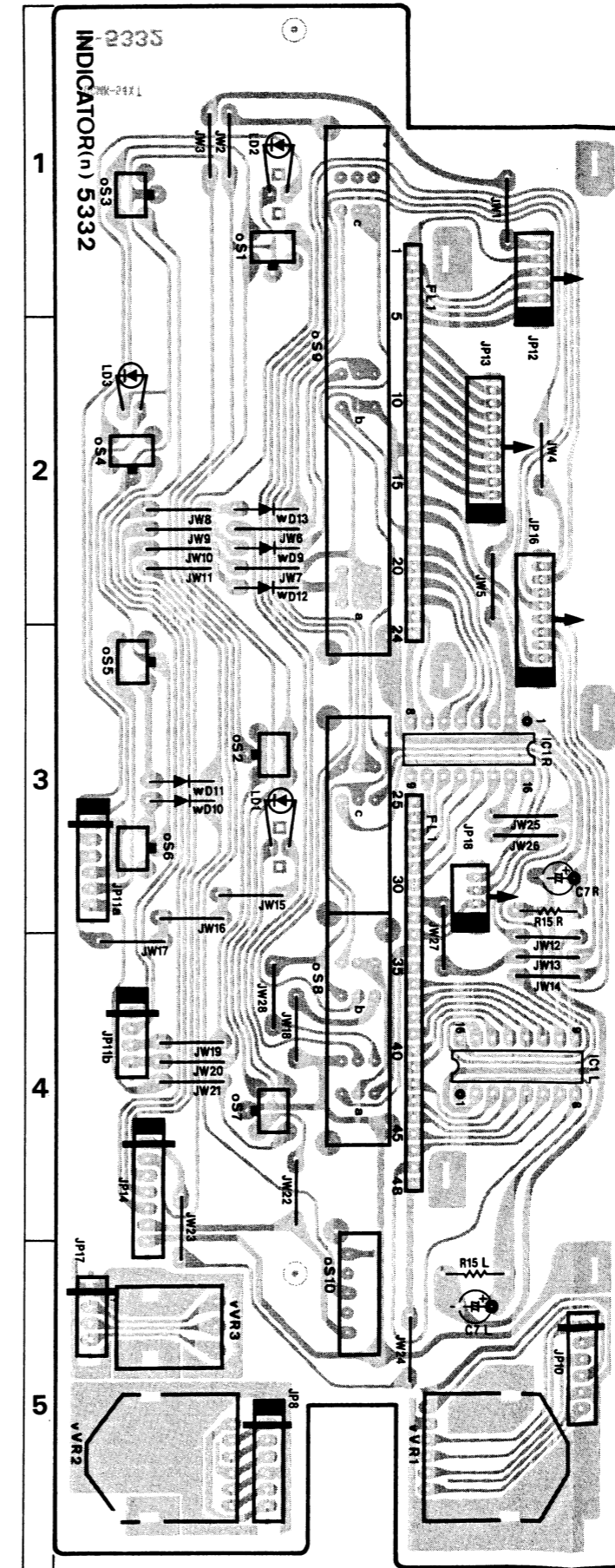
Note2:
There are two types of F-4960 Noise Reduction Boards in D-705.
① F-4960 Noise Reduction Playback Board (Stock No. 00973001)
..... The board with the 1 kΩ (B) S.V.R. (xVR1)
② F-4960 Noise Reduction Rec Board (Stock No. 00972901)
..... The board without the 1 kΩ (B) S.V.R. (xVR1)

Parts List

Parts No.	Stock No.	Description
•Transistor		
xQ1	46367101 or 46367301 or 48058801	2SC2603 (Playback) 2SC2458 (Playback) 2SC1740S (Playback)
xQ2	46367101 or 46367301 or 48058801	2SC2603 2SC2458 2SC1740S
xQ3	46367101 or 46367301 or 48058801	2SC2603 (Rec) 2SC2458 (Rec) 2SC1740S (Rec)
xQ4	46719900	DTC124ES
•IC		
xIC1	48179900	CX-20187
xJW1	46741100	Cross Conductor (Chip)
xJW3	46741100	Cross Conductor (Chip)
xJW4	46741100	Cross Conductor (Chip)
xJW5	46741100	Cross Conductor (Chip)
xJW6	46741100	Cross Conductor (Chip)
xJW7	46741100	Cross Conductor (Chip)
xJW8	46741100	Cross Conductor (Chip)
xJW9	46741100	Cross Conductor (Chip)
xJW11	46741100	Cross Conductor (Chip)
xJW12	46741100	Cross Conductor (Chip)
xJW13	46741100	Cross Conductor (Chip)
xJW14	46741100	Cross Conductor (Chip)
xJW15	46741100	Cross Conductor (Chip)
xR1	46753200	220kΩ 1/8W Chip R. (Playback)
xR2	46748200	1.8kΩ 1/8W Chip R. (Playback)
xR3	46749400	5.6kΩ 1/8W Chip R. (Playback)
xR4	46749200	4.7kΩ 1/8W Chip R.
xR5	46754800	1MΩ 1/8W Chip R.
xR6	46746700	430Ω 1/8W Chip R.
xR7	46748500	2.4kΩ 1/8W Chip R.
xR8	46749300	5.1kΩ 1/8W Chip R.
xR9	46749600	6.8kΩ 1/8W Chip R.
xR10	46747200	680Ω 1/8W Chip R.
xR11	46751600	47kΩ 1/8W Chip R.
xR12	46748600	2.7kΩ 1/8W Chip R. (Rec)
xR13	46747700	1.1kΩ 1/8W Chip R. (Rec)
xR14	46753200	220kΩ 1/8W Chip R. (Rec)
xR15	46752400	100kΩ 1/8W Chip R.
xR16	46750800	22kΩ 1/8W Chip R.
xR17	46749400	5.6kΩ 1/8W Chip R.
xR18	46748600	2.7kΩ 1/8W Chip R.
xR19	46745200	100Ω 1/8W Chip R. (Rec)
xR100	46748600	2.7kΩ 1/8W Chip R.
xR101	46748400	2.2kΩ 1/8W Chip R.
xC3	46794800	2700pF 50V Chip C.
xC7	46779900	560pF 50V Chip C.
xC8	46795100	4700pF 50V Chip C.
xC14	46795300	6800pF 50V Chip C.
xC15	46795500	10000pF 50V Chip C.
xC22	46778100	100pF 50V Chip C. (Playback)
xFL1	48363600	DOLBY Filter
xFL2	48193300	DOLBY Filter (SQ)
xFL3	48366300	Trap Filter
xVR1	46633700 or 48199300	1kΩ (B) S.V.R., Playback level adj. (Playback) 1kΩ (B) S.V.R., Playback level adj. (Playback)

6-3. F-5332 TAPE COUNTER DISPLAY & Control SW. Board (Stock No. 00972601)

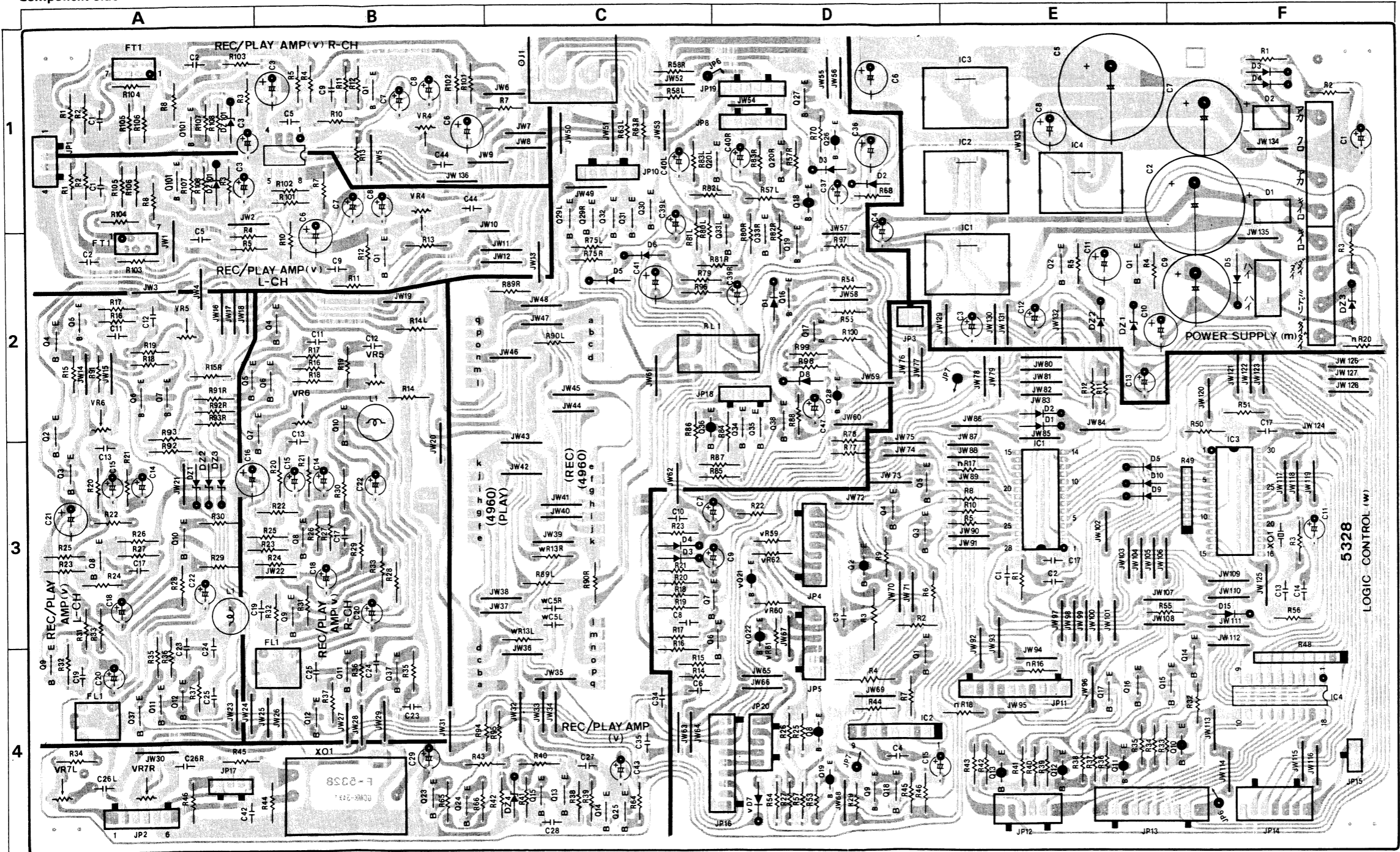
Component Side



Parts List

Parts No.	Stock No.	Description
•IC		
nIC1	46671100	BA6146
nFL1	48345600	FL. Display Tube CP5262GR
•LED		
nLD1	07250900	TLG-123A, PLAY
nLD2	07251000	TLY-123, PAUSE
nLD3	46176900	TLS-123, REC
nC7	46711800	22μF 25V E.C.
oS1	48306900	Push SW., PAUSE
oS2	48306900	Push SW., PLAY
oS3	48306900	Push SW., REC MUTE
oS4	48306900	Push SW., REC
oS5	48306900	Push SW., REW
oS6	48306900	Push SW., FF
oS7	48306900	Push SW., STOP
oS8	48370000	Push SW., DOLBY NR, MONITOR
oS9	48369900	Push SW., AMPS, MEMORY, RESET
oS10	46178400	Slide SW., TIMER REC/PLAY
vVR1	48493100	10kΩ V.R., REC LEVEL
vVR2	48370200	10kΩ V.R., OUTPUT Level
vVR3	48399800	100kΩ (B) V.R., BIAS
•Diode		
wD9	03117600 or 46086000	1S2473T77 1S1588TP-3
wD10	03117600 or 46086000	1S2473T77 1S1588TP-3
wD11	03117600 or 46086000	1S2473T77 1S1588TP-3
wD12	03117600 or 46086000	1S2473T77 1S1588TP-3
wD13	03117600 or 46086000	1S2473T77 1S1588TP-3

6-4. F-5328 Main Board (Stock No. 00972501)
Component Side

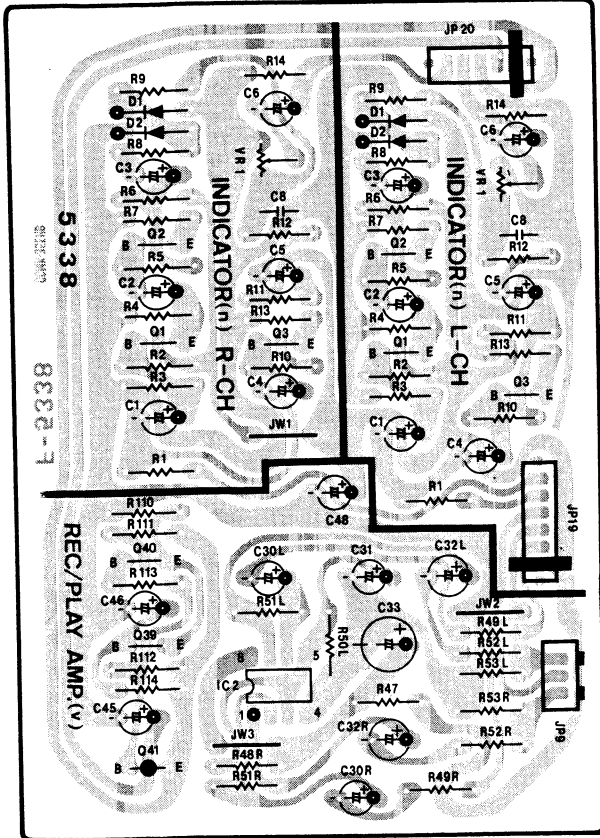


Parts No.	Stock No.	Description
• Transistor		
mQ1	03085201	2SD438
mQ2	03085201	2SD438
• IC		
mIC1	07183500	μPC78M05H
	or 48053500	NJM7805A
mIC2	48341300	NJM7812A
	or 48355500	L7812
	or 48470500	μPC7812H
mIC3	48470100	μPC78M12H
mIC4	48471000	μPC7912H
• Diode		
Δ mD1	46273600	DBB10B
	or 46273700	DBB10C
	or 48192000	DBB10E
	or 48192100	DBB10G
Δ mD2	46273600	DBB10B
	or 46273700	DBB10C
	or 48192000	DBB10E
	or 48192100	DBB10G
mD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
mD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
Δ mD5	03117700	10E-2
• Zener Diode		
mDZ1	46116000	05Z24-Y
mDZ2	46115100	05Z18-Y
mDZ3	46111800	05Z6-2-Y
Δ mR6	46247500	3.3Ω 1W N.I.R.
mC5	48508000	5600μF 35V E.C.
mC12	08402500	100μF 25V E.C.
oJ1	46371500	4P Terminal, LINE IN, OUT
• Transistor		
vQ1	46367101	2SC2603
	or 48058801	2SC1740S
vQ2	48183400	DTA114Y S
vQ3	48171600	DTC114Y S
vQ4	46367101	2SC2603
	or 48058801	2SC1740S
vQ5	46367101	2SC2603
	or 48058801	2SC1740S
vQ6	46367101	2SC2603
	or 48058801	2SC1740S
vQ7	46367101	2SC2603
	or 48058801	2SC1740S
vQ8	46367101	2SC2603
	or 48058801	2SC1740S
vQ9	46367101	2SC2603
	or 48058801	2SC1740S
vQ10	46367101	2SC2603
	or 48058801	2SC1740S
vQ11	48223100	DTC114T S
vQ12	48223100	DTC114T S
vQ13	46614101	2SC3243
vQ14	46367101	2SC2603
	or 48058801	2SC1740S
vQ15	46367101	2SC2603
	or 48058801	2SC1740S
vQ16	46367101	2SC2603
	or 48058801	2SC1740S
vQ17	46367101	2SC2603
	or 48058801	2SC1740S
vQ18	48183400	DTA114Y S
vQ19	48171600	DTC114Y S
vQ20	46367101	2SC2603
	or 48058801	2SC1740S
vQ21	46367001	2SA1115
	or 46392001	2SA1175
vQ22	46367001	2SA1115
	or 46392001	2SA1175

Parts List < F-5328 >

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
vQ23	46367101	2SC2603	vC42	46658000	0.01 μ F 100V F.C.
	or 48058801	2SC1740S	vC44	46694000	3300pF 50V F.C.
vQ24	46367101	2SC2603	vXO1	48373600	OSC Block BO-1
	or 48058801	2SC1740S	vFL1	46179000	Filter Trap
vQ25	46367101	2SC2603	vL1	48121100	Inductor 1.2mH
	or 48058801	2SC1740S	vVR4	48199300	1K Ω (B) S.V.R., P.B Pre level adj.
vQ26	46367001	2SA1115	vVR5	48199800	50K Ω (B) S.V.R., METAL Rec level adj.
	or 46392001	2SA1175	vVR6	48199700	20K Ω (B) S.V.R., Rec level adj.
vQ27	46367101	2SC2603	vVR7	48199900	100k Ω (B) S.V.R., Freq. response adj.
	or 48058801	2SC1740S	vRL1	11505100	Relay 221D012-P
vQ28	46367001	2SA1115			
	or 46392001	2SA1175	•Transistor		
vQ29	46367101	2SC2603	wQ1	46614101	2SC3243
	or 48058801	2SC1740S	wQ2	46359701	2SA952
vQ30	48183400	DTA114YS	wQ3	46367101	2SC2603
vQ31	46367101	2SC2603		or 48058801	2SC1740S
	or 48058801	2SC1740S	wQ4	46367101	2SC2603
vQ32	46367101	2SC2603		or 48058801	2SC1740S
	or 48058801	2SC1740S	wQ5	46359801	2SC2001
vQ33	46367101	2SC2603	wQ6	46367101	2SC2603
vQ34	46367101	2SC2603		or 48058801	2SC1740S
	or 48058801	2SC1740S	wQ7	46367101	2SC2603
vQ35	46367101	2SC2603		or 48058801	2SC1740S
	or 48058801	2SC1740S	wQ8	46367001	2SA1115
vQ36	46367001	2SA1115	wQ9	46367101	2SC2603
	or 46392001	2SA1175		or 48058801	2SC1740S
vQ37	48223100	DTC114TS	wQ10	46367001	2SA1115
vQ38	46367101	2SC2603		or 46392001	2SA1175
	or 48058801	2SC1740S	wQ11	46367001	2SA1115
vQ101	46577801	2SC2320L		or 46392001	2SA1175
			wQ12	46367001	2SA1115
•FET				or 46392001	2SA1175
vFT1	46723601	2SK389-BL	wQ13	46367001	2SA1115
	or 46723602	2SK389-V		or 46392001	2SA1175
•IC			wQ14	46719900	DTC124ES
vIC1	46673800	M5218P	wQ15	46719900	DTC124ES
•Diode			wQ16	46719900	DTC124ES
vD1	03117600	1S2473T77	wQ17	46719900	DTC124ES
	or 46086000	1S1588TP-3	wQ18	46367101	2SC2603
vD2	03117600	1S2473T77		or 48058801	2SC1740S
	or 46086000	1S1588TP-3	wQ19	46367001	2SA1115
vD3	03117600	1S2473T77	•IC		
	or 46086000	1S1588TP-3	wIC1	46948000	TC9310N-050
vD5	03117600	1S2473T77	wIC2	46149600	BA6208
	or 46086000	1S1588TP-3	wIC3	48370300	M50763-412SP
vD6	03117600	1S2473T77	wIC4	46671500	LB1291
	or 46086000	1S1588TP-3	wXO1	46396200	Ceramic Element CSB400P
vD7	03117600	1S2473T77	•Diode		
	or 46086000	1S1588TP-3	wD1	03117600	1S2473T77
vD8	03117600	1S2473T77		or 46086000	1S1588TP-3
	or 46086000	1S1588TP-3	wD2	03117600	1S2473T77
•Zener Diode				or 46086000	1S1588TP-3
vDZ1	46113500	05Z11-X	wD3	03117600	1S2473T77
	or 46113600	05Z11-Y		or 46086000	1S1588TP-3
	or 46113700	05Z11-Z	wD4	03117600	1S2473T77
vDZ2	46113500	05Z11-X		or 46086000	1S1588TP-3
	or 46113600	05Z11-Y	wD5	03117600	1S2473T77
	or 46113700	05Z11-Z		or 46086000	1S1588TP-3
vDZ3	46113500	05Z11-X	wD7	03117600	1S2473T77
	or 46113600	05Z11-Y		or 46086000	1S1588TP-3
	or 46113700	05Z11-Z	wD8	03117600	1S2473T77
vDZ4	46108800	05Z2.4-X		or 46086000	1S1588TP-3
vDZ101	46111800	05Z6.2-Y	wR48	46348900	4.7k Ω X8 1/8W A.R.
vC2	46692800	1000pF 50V F.C.	wR49	48339900	4.7k Ω X8 1/8W A.R.
vC5	46696000	0.022 μ F 50V F.C.	wC1	46695400	0.012 μ F 50V F.C.
vC9	46695600	0.015 μ F 50V F.C.			
vC11	46694800	6800pF 50V F.C.			
vC12	46693600	2200pF 50V F.C.			
vC13	46694000	3300pF 50V F.C.			
vC17	46694200	3900pF 50V F.C.			
vC23	46697000	0.056 μ F 50V F.C.			
vC24	46696900	0.051 μ F 50V F.C.			
vC25	46695200	0.01 μ F 50V F.C.			

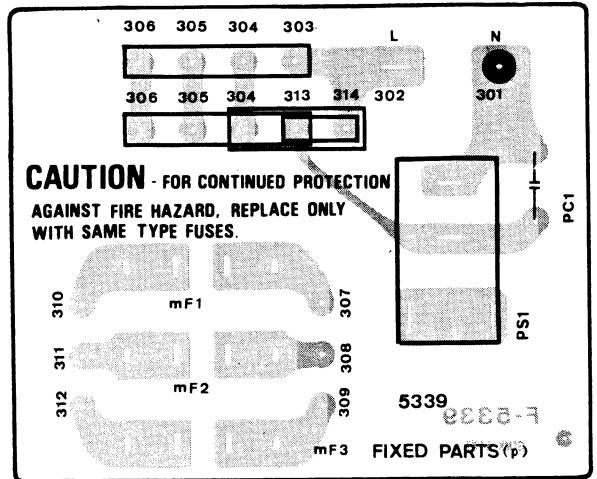
6-5. F-5338 PHONES Amp. & Level Indicator
Component Side Drive Board (Stock No. 00972801)



Parts List

Parts No.	Stock No.	Description
• Transistor		
nQ1	46367101	2SC2603
	or 48058801	2SC1740S
nQ2	46367101	2SC2603
	or 48058801	2SC1740S
nQ3	46367101	2SC2603
	or 48058801	2SC1740S
• Diode		
nD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
nVR1	48199900	100kΩ (B) S.V.R., Level indicator
• Transistor		
vQ39	46367101	2SC2603
	or 48058801	2SC1740S
vQ40	46367101	2SC2603
	or 48058801	2SC1740S
vQ41	46367001	2SA1115
	or 46392001	2SA1175
• IC		
vIC2	46673800	M5218P

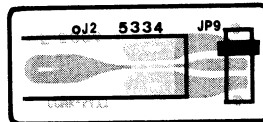
6-6. F-5339 Power SW. Board
Component Side



Parts List

Parts No.	Stock No.	Description
ΔpC1	46943200	0.01μF 400V C.C.
ΔpS1	46413900	Push SW., POWER

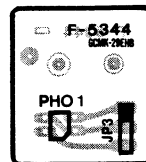
6-7. F-5334 PHONES Jack Board
Component Side



Parts List

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

6-8. F-5344 Photo Coupler Board
Component Side

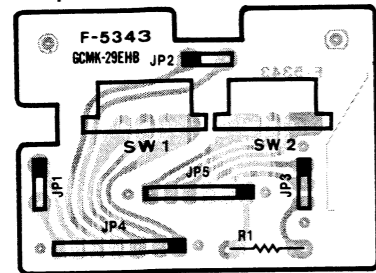


Parts List

Parts No.	Stock No.	Description
tPH1	48372500	Photo Coupler GP2L04-B

6-9. F-5343 Tape Selector SW. Board

Component Side

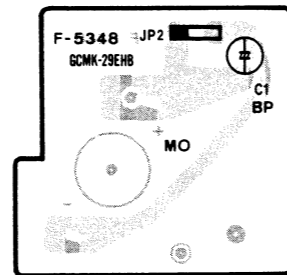


Parts List

Parts No.	Stock No.	Description
tSW1	48368200	Push SW., half, REC Prevention
tSW2	48368200	Push SW., tape sel. HIGH, METAL

6-10. F-5348 Reel Motor Board

Component Side

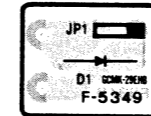


Parts List

Parts No.	Stock No.	Description
	46737500	Reel Motor

6-11. F-5349 Plunger Solenoid Board

Component Side

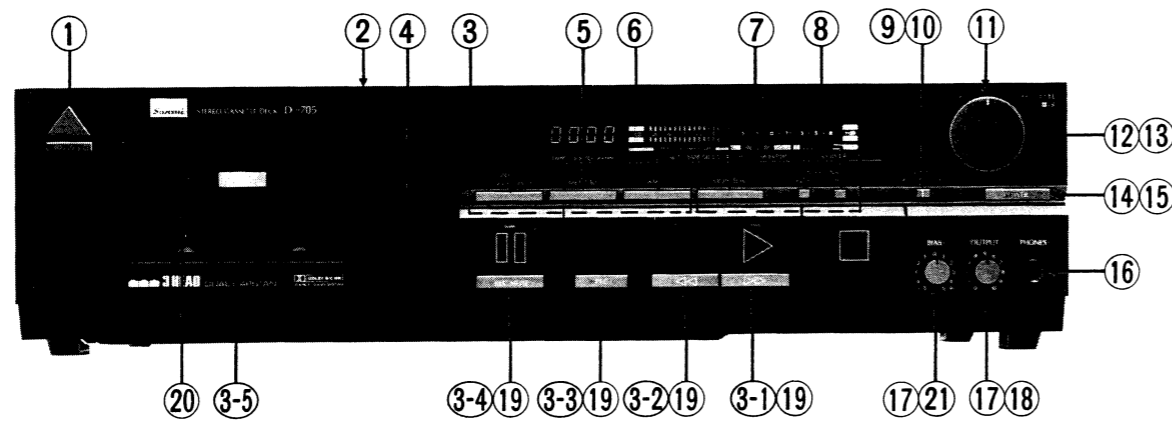


Parts List

Parts No.	Stock No.	Description
tPS1	47292610	Plunger Solenoid
•Diode tD1	03111600	1S2473

7. OTHER PARTS

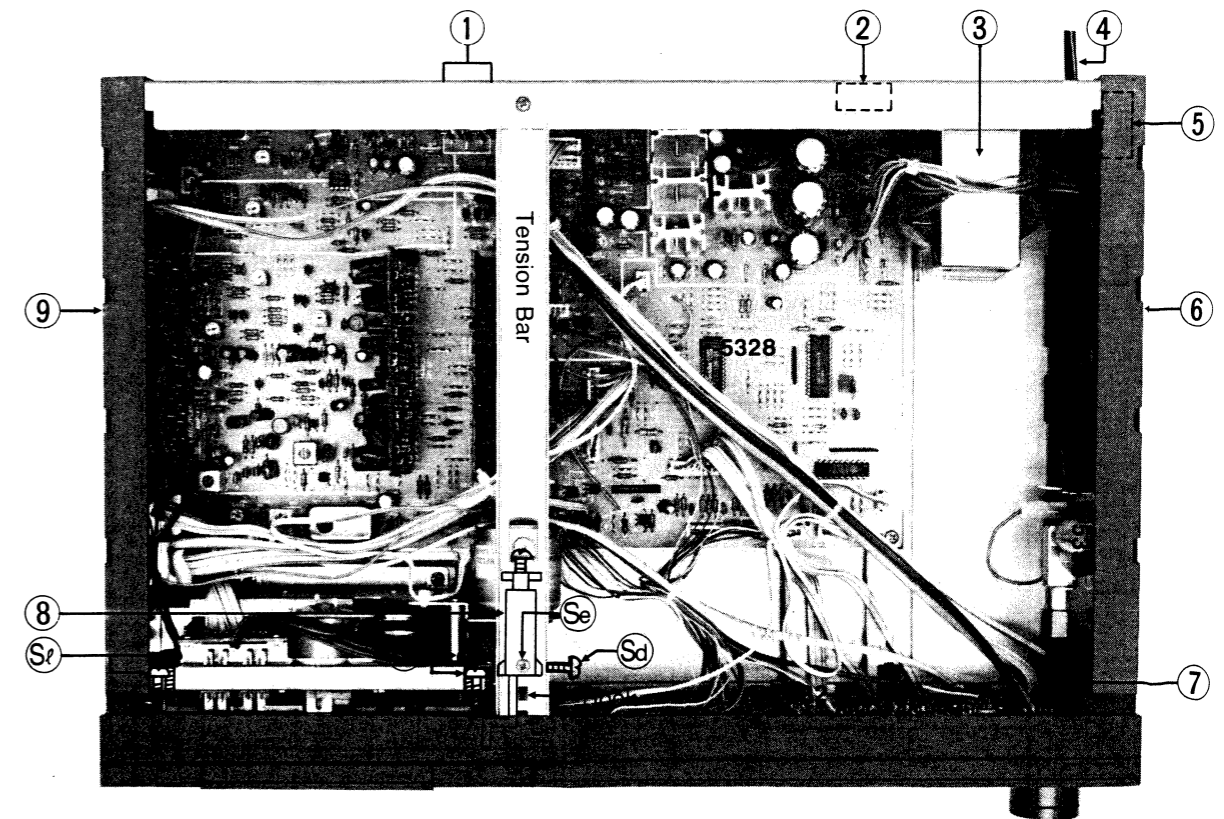
7-1. Front View



Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	27129310	Lid Ass'y	9	46178400	Slide SW., TIMER REC/PLAY
2	27129800	Bonnet	10	27127700	Slide Knob, TIMER REC/PLAY
3	27130300	Front Panel Ass'y	11	27127800	Knob, REC LEVEL (L)
3-1	27133300	Push Knob, FF	12	27127900	Knob, REC LEVEL (R)
3-2	27133400	Push Knob, REW	13	48493100	10kΩ V.R., REC LEVEL
3-3	27159200	Push Knob, REC	△14	46413900	Push SW., POWER (XX,UL,EU,UK)
3-4	27133500	Push Knob, REC MUTE	15	27127600	Push Knob, POWER
3-5	27128700	Cassette Holder Ass'y	16	46265700	Jack, PHONES
4	48369900	Push SW., AMPS, MEMORY, RESET	17	27128000	Knob, OUTPUT
5	27150500	Push Knob, AMPS, MEMORY, RESET	18	48370200	10kΩ V.R., OUTPUT
6	48345600	FL. Display Tube	19	48306900	Push SW., PAUSE, PLAY, REC, REC MUTE, REW, FF, STOP
7	48370000	Push SW., DOLBY NR, MONITOR	20 (nLD4)	48389900	LED Ass'y (SLF-401C)
8	27150400	Push Knob, DOLBY NR	21	48399800	100kΩ (B) V.R., BIAS

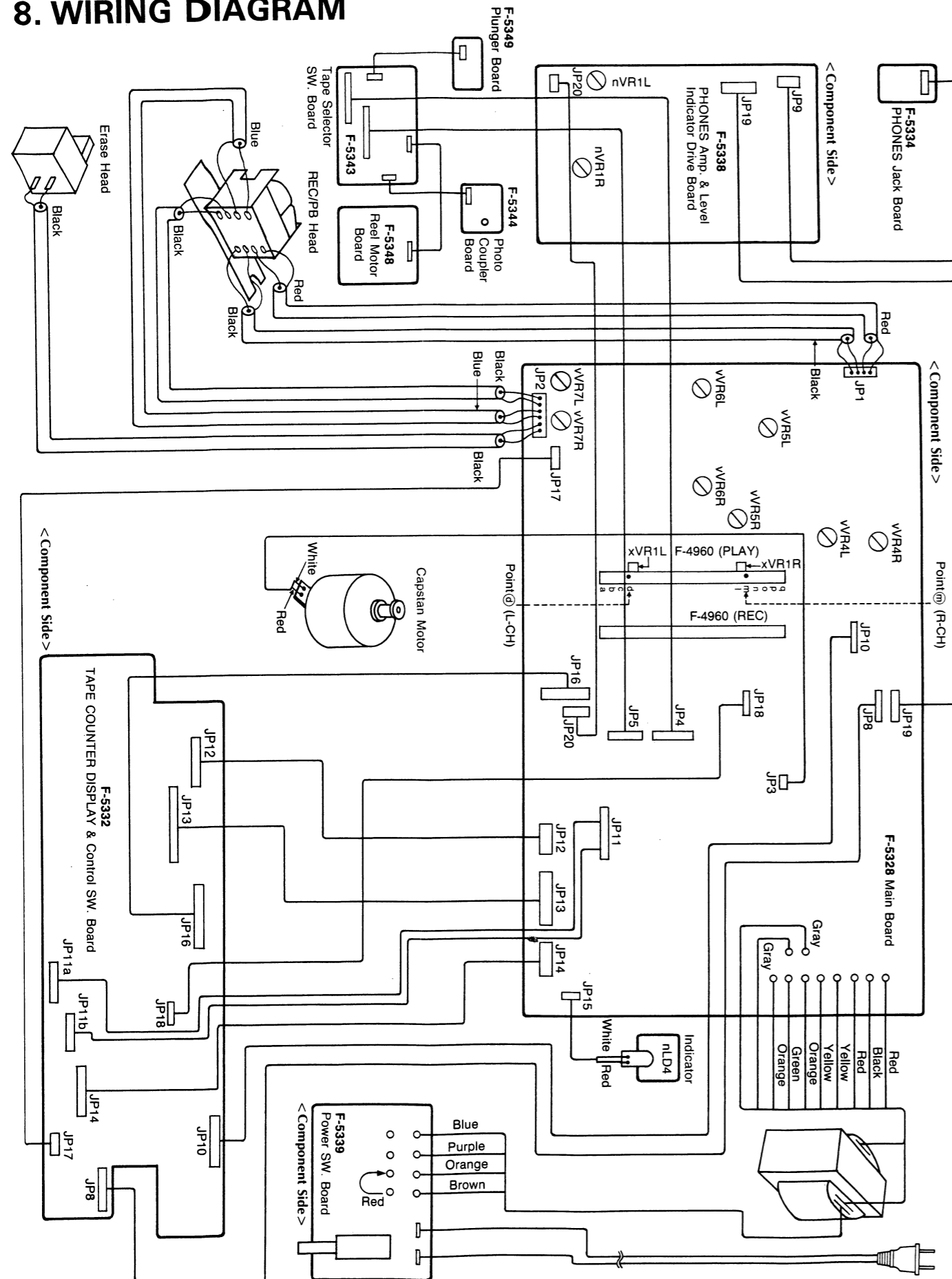
7-2. Top View



Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	46371500	4P Terminal, LINE IN/OUT	△	38004500	Power Supply Cord (EU)
△2	07204700	Slide SW., VOLTAGE SELECTOR (EU,UK)	△	38004300	Power Supply Cord (UK)
△3	15024201	Power Transformer (XX)	5	47157300	AC Cord Cover
△	15024202	Power Transformer (UL)	6	27246500	Side Panel Ass'y (R)
△	15024205	Power Transformer (EU,UK)	7	47113110	Joint Shaft
△4	38004700	Power Supply Cord (XX,UL)	8	48367900	Damper Ass'y
			9	27246600	Side Panel Ass'y (L)

8. WIRING DIAGRAM



9. MAIN PARTS REPLACEMENT (See Exploded View on page 15)

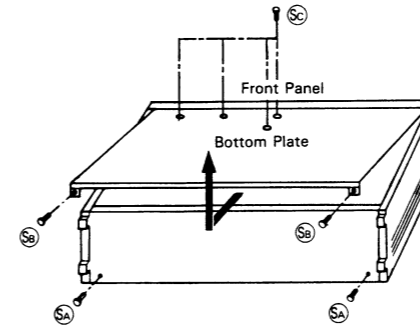
A. Bonnet (See Fig. 9-1)

- 1) Remove two screws (5).
- 2) Pull the rear side of the bonnet and then remove it.

B. Bottom Plate (See Fig. 9-1)

- 1) Remove six screws (5), (5).
- 2) Pull the rear side of the bottom plate and then remove it.

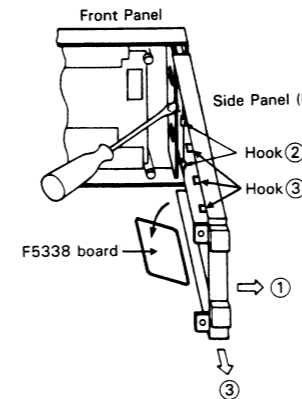
Fig. 9-1



C. Side Panel L (or R) (See Fig. 9-2)

- 1) Remove the bonnet and bottom plate.
- 2) Shift the position of the side panel L (or R) 2.0cm into 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.

Fig. 9-2



D. Damper Ass'y (See Top View on page 13)

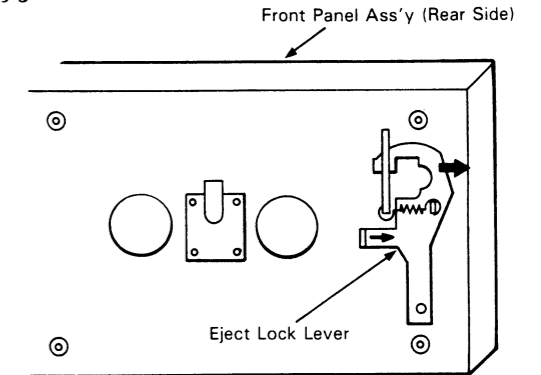
- 1) Remove the bonnet and bottom plate.
- 2) Remove three screws (5), (5).
- 3) Take out the fixing board with damper ass'y.
- 4) Remove screw (5).

E. Mechanism Ass'y

- 1) Remove the bonnet, the bottom plate and the side panel L.
- 2) Disconnect five connectors (JP1 ~ 5) from the F-5328 circuit board.
- 3) Remove three screws (5), (5). (See Top View on page 13)
- 4) Take out the fixing board with damper ass'y.
- 5) Loosen two screws (5) to remove mechanism ass'y.
- 6) Take out the mechanism ass'y.

Note: To attach the mechanism ass'y, push the eject lock lever to the arrow direction as Fig. 9-3.

Fig. 9-3



F. Rec/PB Head (1)

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

G. Pinch Roller Ass'y (29), (32)

- 1) Remove the mechanism ass'y from set.
- 2) Remove the washer (3).
- 3) Take out the pinchroller ass'y.

H. Reel Gear (14), (15)

- 1) Remove the mechanism ass'y from set.
- 2) Remove the washer (11) fastening the reel gear..

I. Capstan Motor (35), Reel Motor (40), Capstan Belt (43), Flywheels (44), (47) and Plunger (50)

- 1) Remove the mechanism ass'y from set.
- 2) Remove four screws (36).
- 3) Remove the sub-chassis.

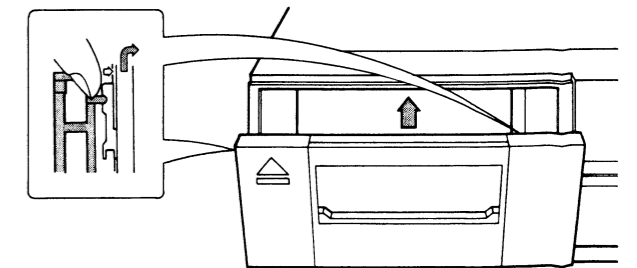
* When reassembling these removed parts, take the following precaution: Assemble the push arm (A) so that these parts are mutually positioned as shown in 4-2 on page 6 and 7.

Unless positioned correctly, the mechanism ass'y may be operated erroneously. Remember that if the push arm (A) is positioned on the assist gear (A), the eject arm may be locked.

J. Lid Ass'y

Press the "▲" mark to open the cassette holder, push the parts locked at the left and right in Fig. 9-4 while pulling it upward, and remove the lid ass'y.

Fig. 9-4

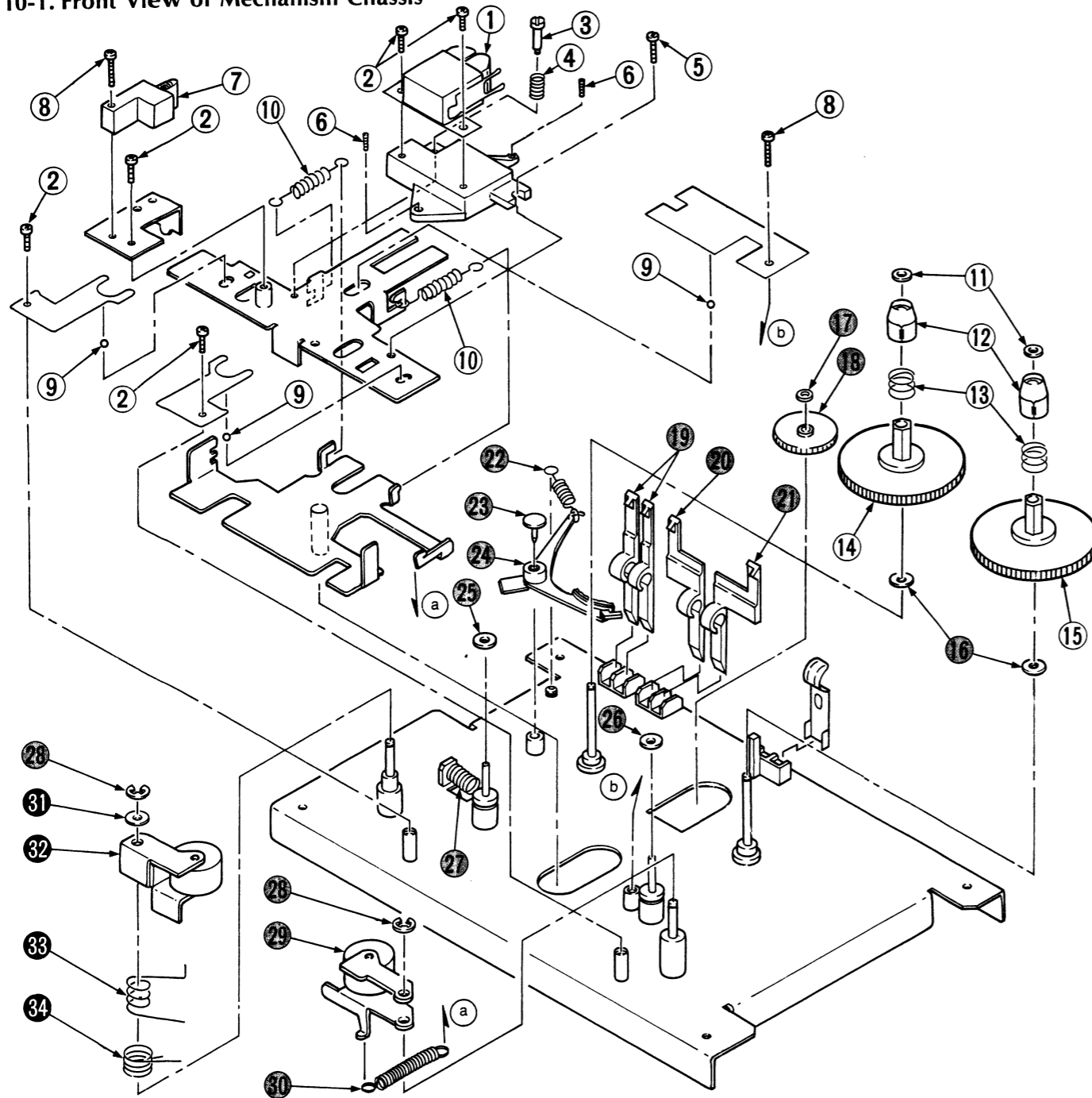


K. F-5338 Board (See Fig. 9-2)

- 1) Remove the bonnet
- 2) Undo the hooks (3) of the side panel (L) and then remove the F-5338 board.

10. EXPLODED VIEW OF MECHANISM ASS'Y & PARTS LIST

10-1. Front View of Mechanism Chassis

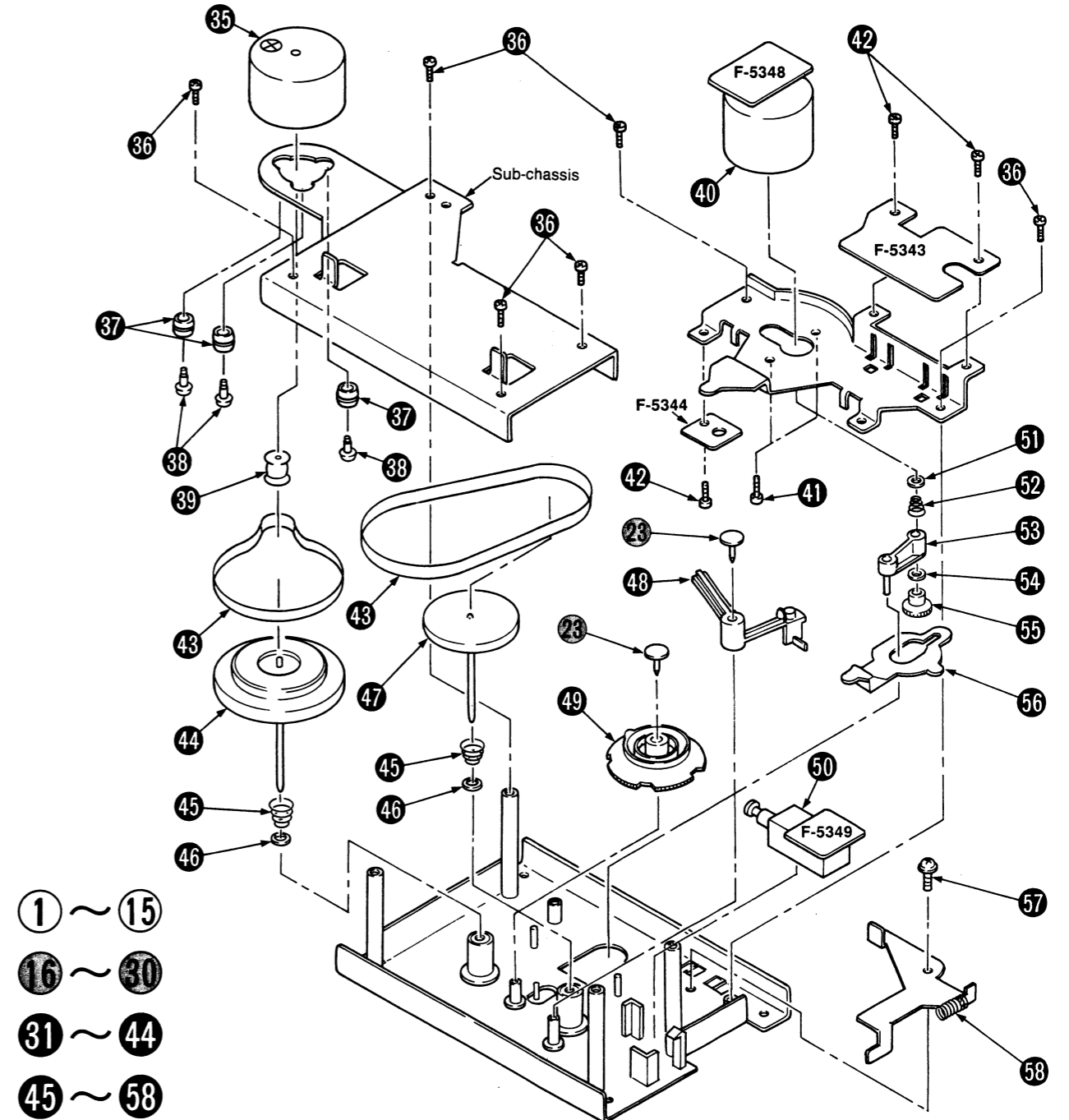


Parts List

Parts No.	Stock No.	Description
1	48366100	Rec and Playback Head
2	00423900	Bind Head Screw, M2x4
3	27127210	Azimuth Spring Pin
4	27119310	Spring, azimuth
5	27127300	Azimuth Screw, 2x8
6	27127400	Screw, M2x5
7	48366000	Erase Head
8	00420900	Bind Head Screw, M2x12
9	47404900	Steel Ball
10	27183600	Spring, head base
11	27083100	Washer, 1.6
12	27122700	Sprocket
13	27122600	Spring, reel gear
14	27123000	Reel Gear
15	27184600	Reel Gear (TU)

Parts No.	Stock No.	Description
16	27182900	Washer
17	47404800	Slit Washer, 1.6x3.5
18	27124410	Idler Gear
19	27120300	Switch Arm (A)
20	27120400	Switch Arm (B)
21	27120500	Switch Arm (C)
22	27119110	Spring, brake
23	47420900	Plastic Tack
24	27119800	Brake Arm
25	27135000	Nylon Washer, M2.2
26	47404700	Nylon Washer, D2.5
27	47668600	Spring, plunger solenoid
28	00489000	E Type Washer, D=2
29	27126700	Pinch Roller Ass'y (TU)
30	27119200	Spring, pinch roller (TU)

10-2. Rear View of Mechanism Chassis



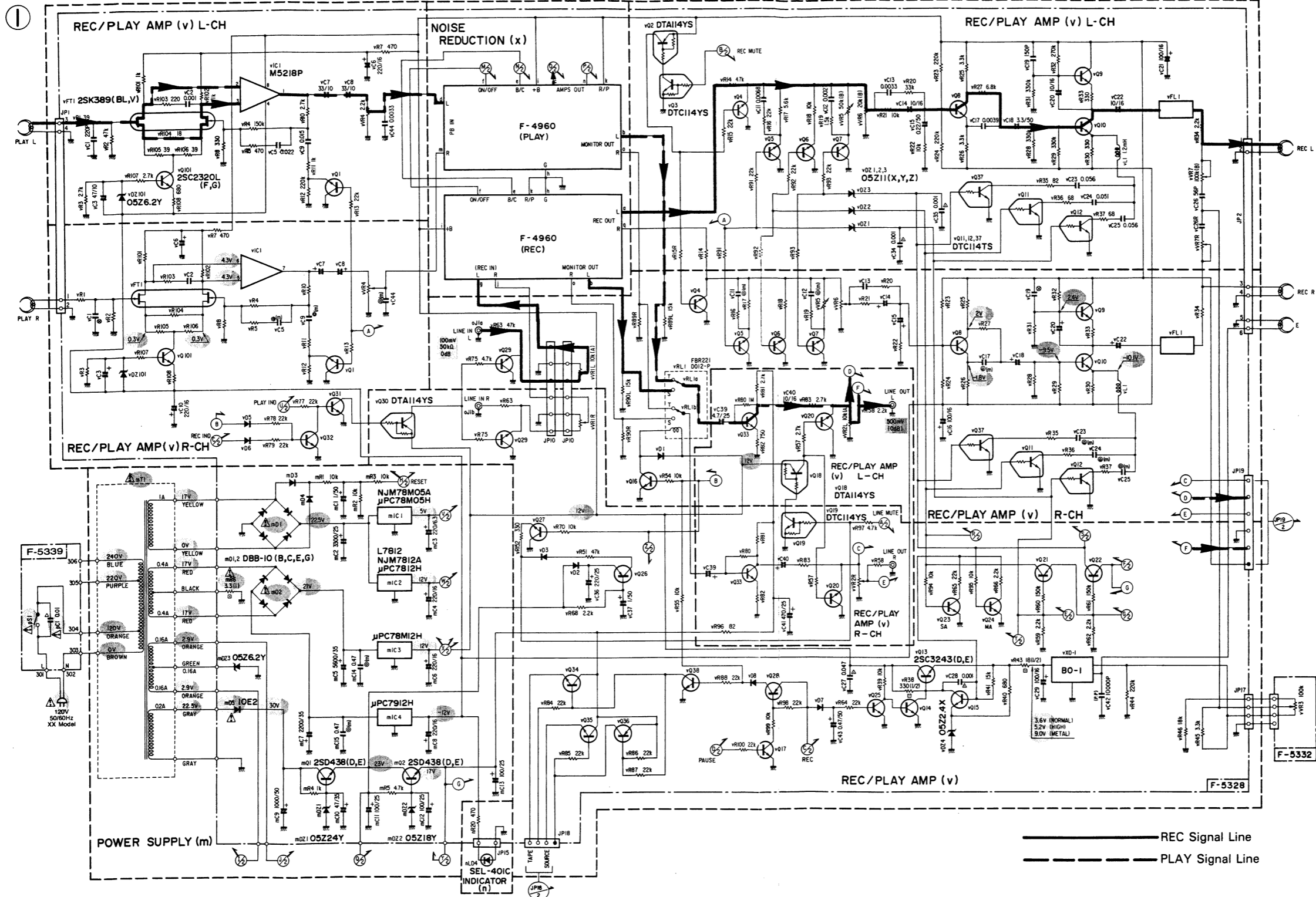
- 1 ~ 15
- 16 ~ 30
- 31 ~ 44
- 45 ~ 58

Parts No.	Stock No.	Description
31	27162700	Washer
32	27126600	Pinch Roller Ass'y (S)
33	27119000	Spring, pinch roller
34	27127100	Spring, head slide
35	48366600	Capstan Motor
36	00449100	Pan Head Screw, M3x6
37	27120800	Bushing
38	27078300	Screw
39	27120600	Pulley
40	46737500	Reel Motor
41	48371600	Bind Head Screw, M2.6x3
42	00421200	Bind Head Screw, M2.6x4
43	27119900	Belt
44	27118800	Flywheel (TU) Ass'y

Parts No.	Stock No.	Description
45	47530000	Spring, flywheel
46	47404600	Washer, 2.5x4
47	27118700	Flywheel (S) Ass'y
48	47281610	Lock Arm (A)
49	47283840	Assist Gear (A)
50	47292610	Plunger Solenoid
51	47497100	Washer
52	47530000	Spring
53	27124310	Arm (A)
54	27126500	Washer
55	27124510	Reel Motor Gear
56	47293810	Arm (B)
57	46731200	Flanged Tapping Screw, M2.6x8
58	47644500	Spring, eject

11. SCHEMATIC DIAGRAM 11-1. Audio Amp. 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.

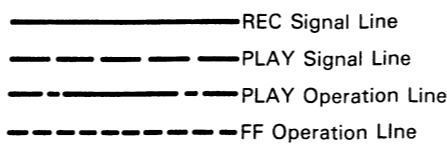
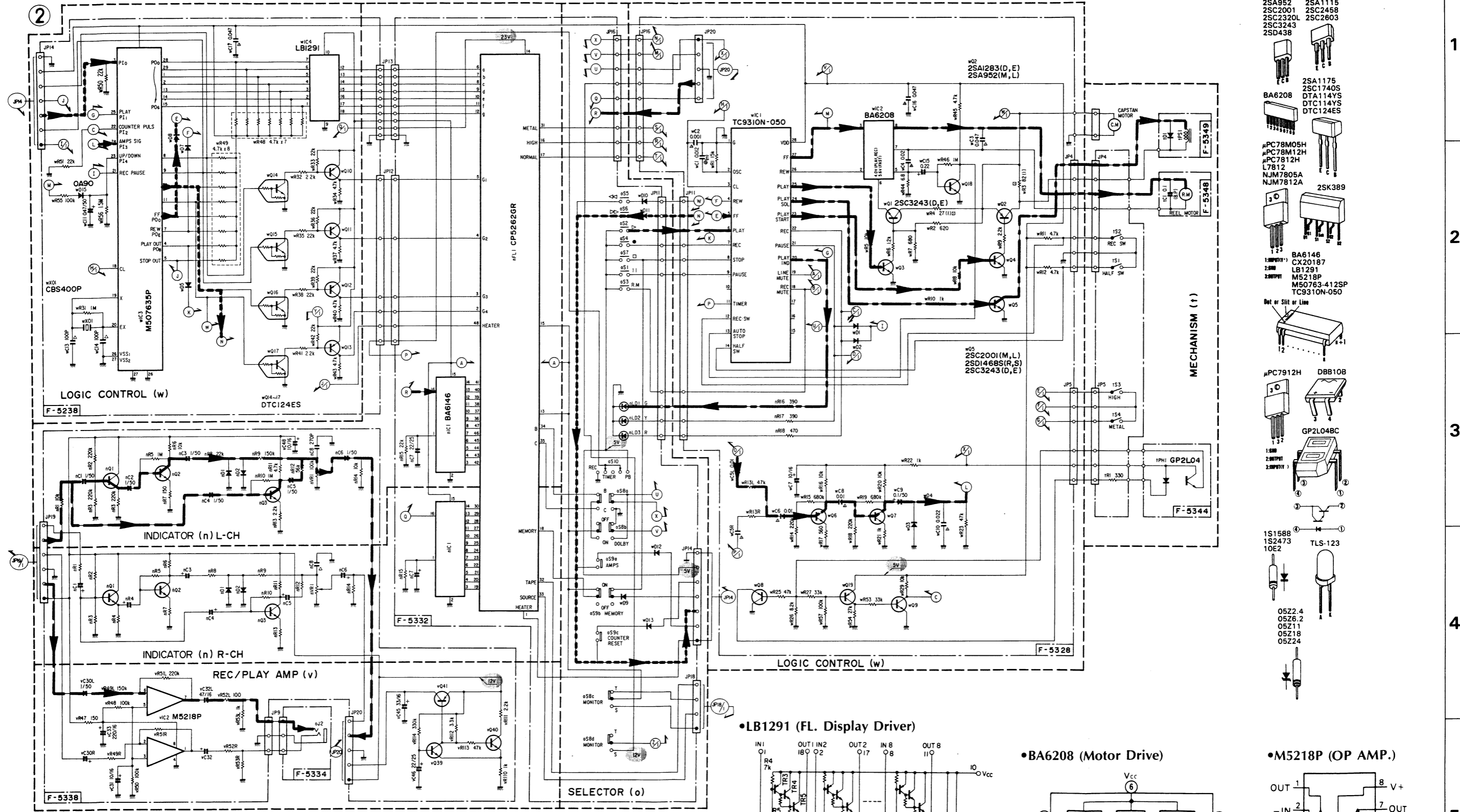


- 2SA952
- 2SC2001
- 2SC2320L
- 2SC3243
- 2SD438
- 2SA1115
- 2SC2458
- 2SC2603
- BA6208
- 2SA1175
- 2SC1740S
- DTA114YS
- DTC114YS
- DTC124ES
- μPC78M05H
- μPC78M12H
- μPC7812H
- L7812
- NJM7805A
- NJM7812A
- 2SK389
- BA6146
- CX20187
- LB1291
- M5218P
- M50763-412SP
- TC9310N-050
- Def. of Silt or Line
- μPC7912H
- DBB10B
- GP2L04BC
- 1S1588
- 1S2473
- 10E2
- TLS-123
- 05Z2.4
- 05Z6.2
- 05Z11
- 05Z18
- 05Z24

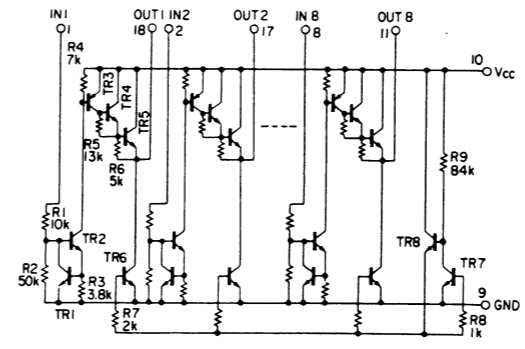
1
2
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4
5

11-2. Logic Control Section

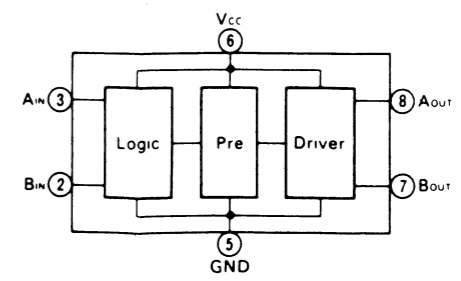
• Design and specifications subject to change without notice for improvement.
 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



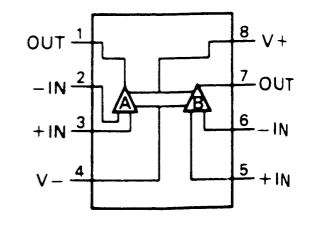
•LB1291 (FL. Display Driver)



•BA6208 (Motor Drive)



•M5218P (OP AMP.)

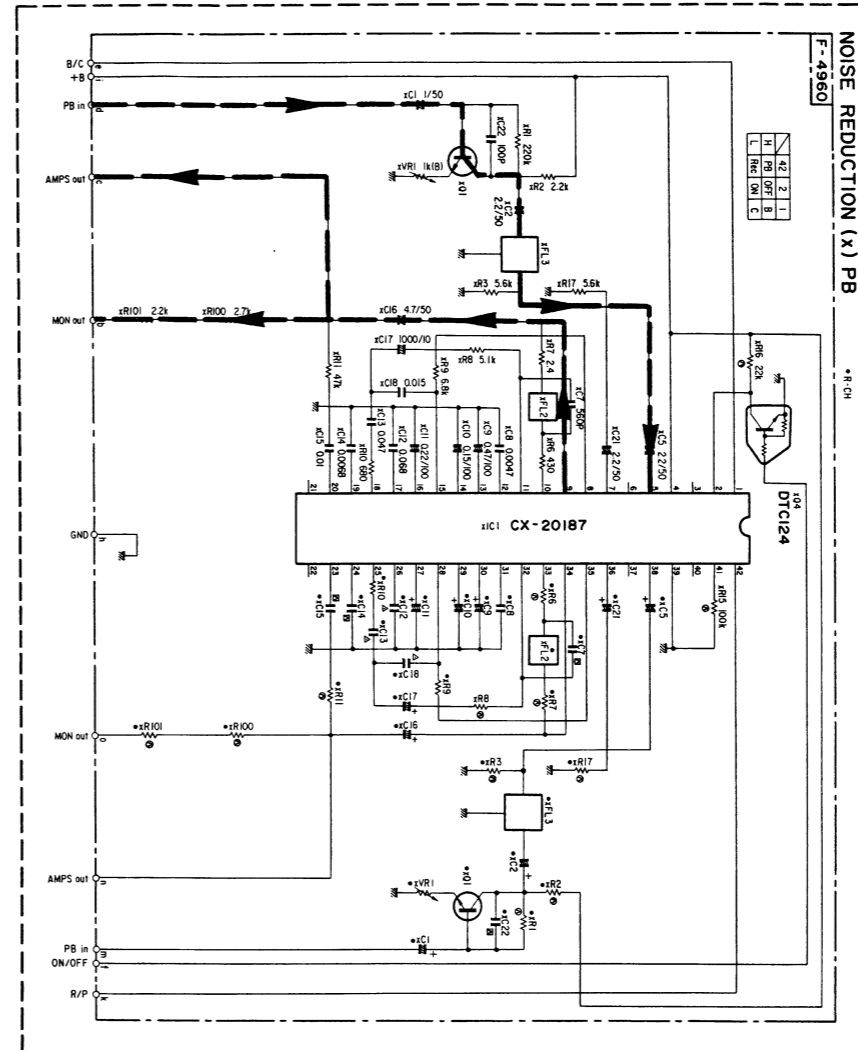
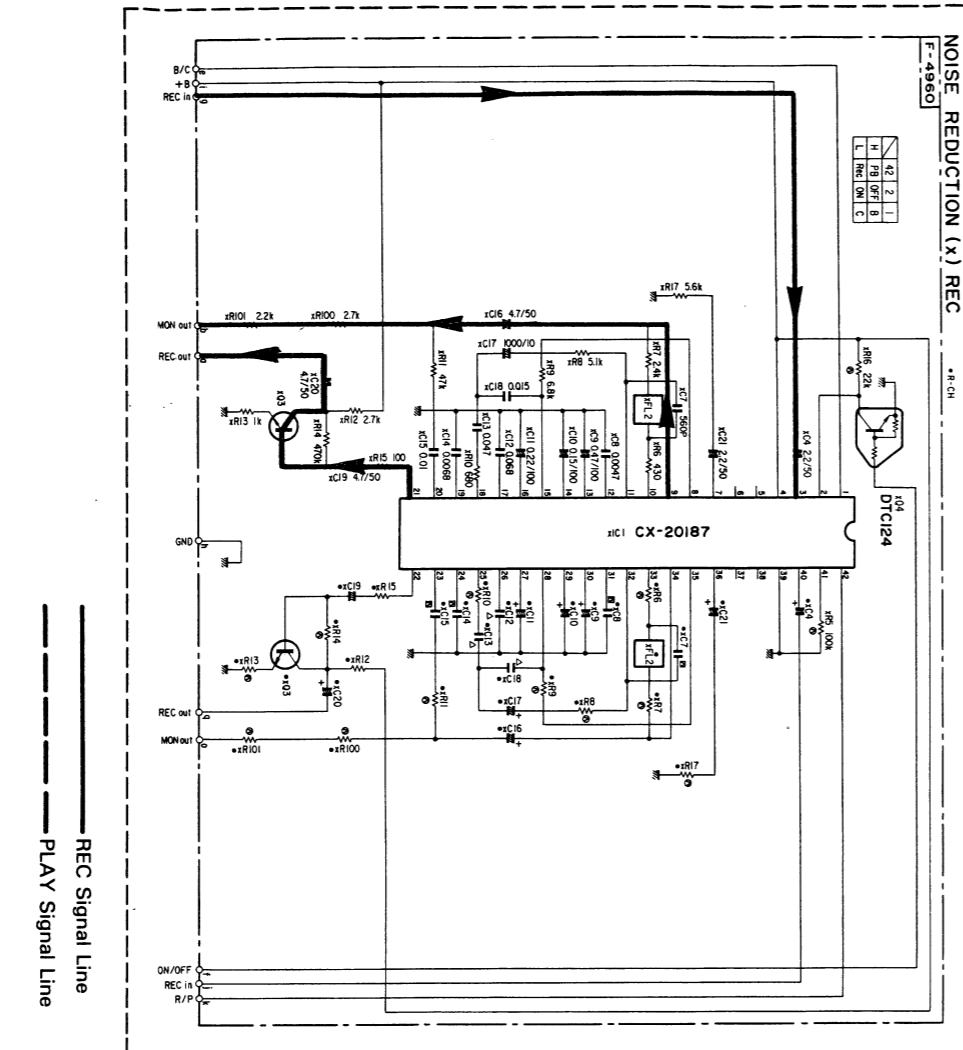


- 2SA952
- 2SC2001
- 2SC2320L
- 2SC3243
- 2SD438
- 2SA1115
- 2SC2458
- 2SC2603
- BA6208
- PC78M05H
- PC78M12H
- PC7812H
- L7812
- NJM7805A
- NJM7812A
- 2SK389
- BA6146
- CX20187
- LB1291
- M5218P
- M50763-412SP
- TC9310N-050
- DBB10B
- GP2L04BC
- GP2L04
- 1S1588
- 1S2473
- 10E2
- TLS-123
- 05Z2.4
- 05Z6.2
- 05Z11
- 05Z18
- 05Z24

1
2
3
4
5

11-3. 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.



③

- 2SA952
- 2SC2001
- 2SC2320L
- 2SC3243
- 2SD438
- 2SA1175
- 2SC1740S
- DTA114YS
- DTC114YS
- DTC124ES
- BA6208
- PC78M05H
- PC78M12H
- PC7812H
- L7812
- NUM7805A
- NJM7812A
- 2SK389
- BA6146
- CX20187
- LB1291
- M5218P
- M50763-412SP
- TC9310N-050
- Det or Silt or Line
- PC7912H
- DBB10B
- GP2L04BC
- IS1588
- IS2473
- 10E2
- TLS-123
- 0522.4
- 0526.2
- 05211
- 05218
- 05224

OPTIONAL USE OF SEMICONDUCTOR

003.4 001.2 00	IS2473D
001.3 001.2 00	IS1598
001.3 001.2 00	2SC2603(E,F,G)
001.3 001.2 00	2SC1740S (R,S,E)
001.3 001.2 00	2SC2498(Y,G,H,E)
001.3 001.2 00	2SC2783(U,H,F,E)
001.3 001.2 00	2SA1115 (E,F)
001.3 001.2 00	2SA1175 (U,H,F,E)
001.3 001.2 00	TLG-123A
001.3 001.2 00	GL-3597
001.3 001.2 00	SEL-2410E
001.3 001.2 00	TLY-123A
001.3 001.2 00	SEL-3410E
001.3 001.2 00	TLG-123
001.3 001.2 00	TLG-123
001.3 001.2 00	SEL-2210S

CHIP RESISTORS: Are 1/8 Watt.
 Each DC Voltage shows the nominal value
 in volts during recording.

SYMBOLS:

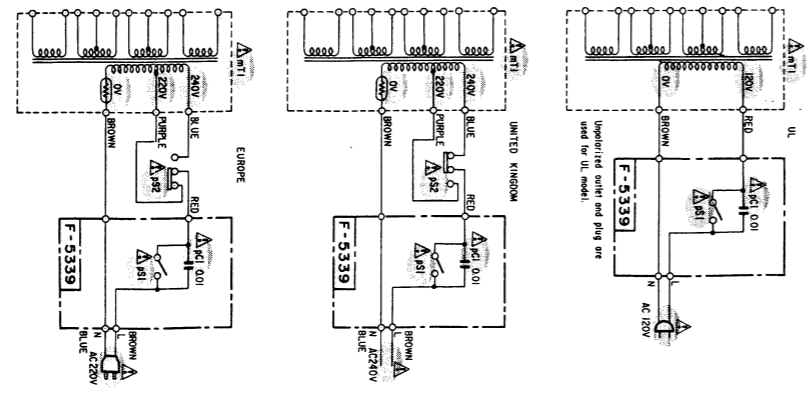
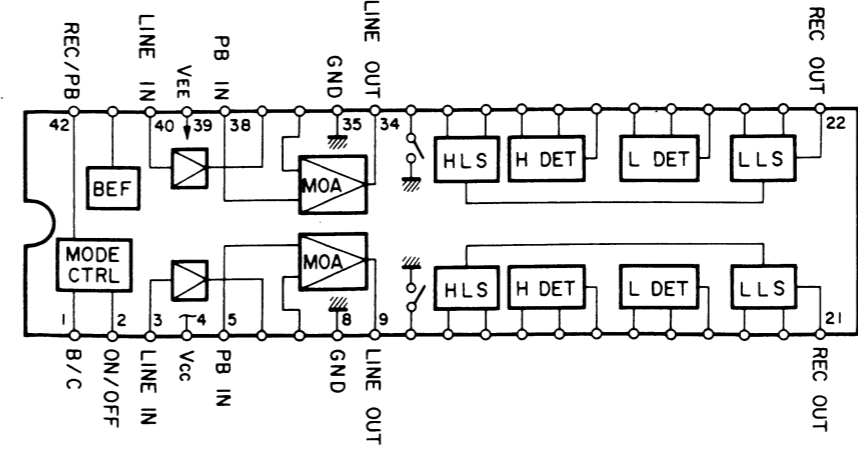
- Δ: Ceramic Capacitor
- : Burner Layer Capacitor
- : Lead Alloy Capacitor
- : Non-inductance Resistor
- : Non-inductance Resistor
- : Chip Component (Circled Type)
- : Chip Component
- : Fusing Resistor
- : Epoxy Resistor

RESISTORS:
 Are in ohm, 1/4 Watt, ± 5%, tolerance
 unless otherwise noted. X, Ω, M, K, Ω

CAPACITORS:
 Are in pF, unless otherwise noted. P, μF
 Electrolytic Capacitor: Capacitance (μF)/Voltage (V)

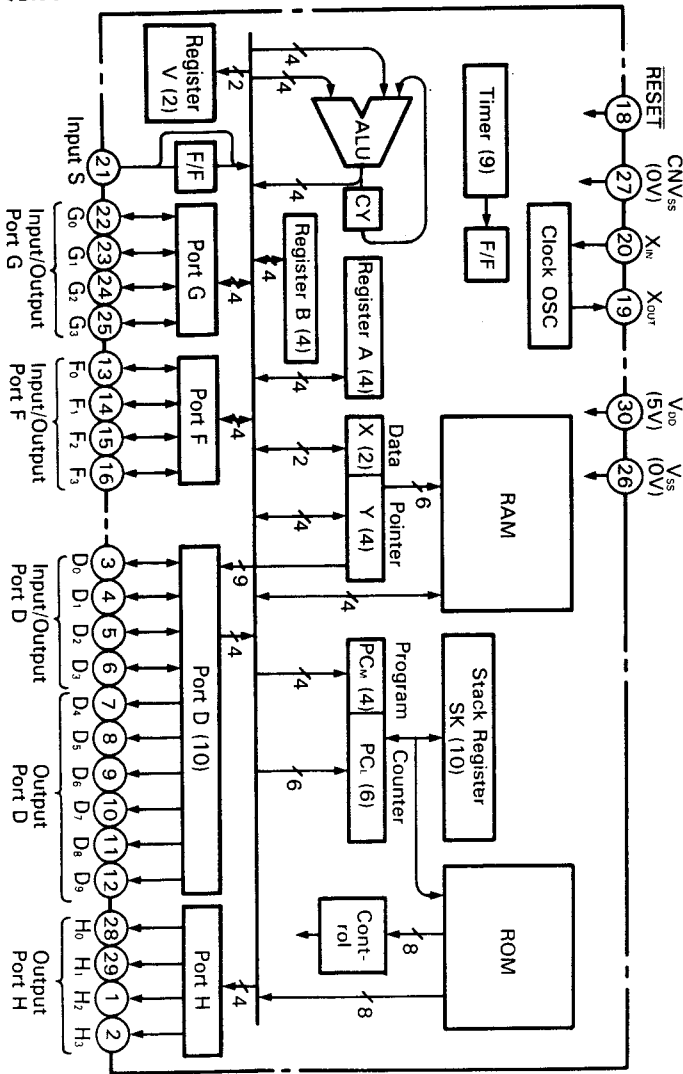
Δ is safety part.
 Use only replacement part recommended
 by the manufacturer.

•CX-20187 (Dolby Noise Reduction)

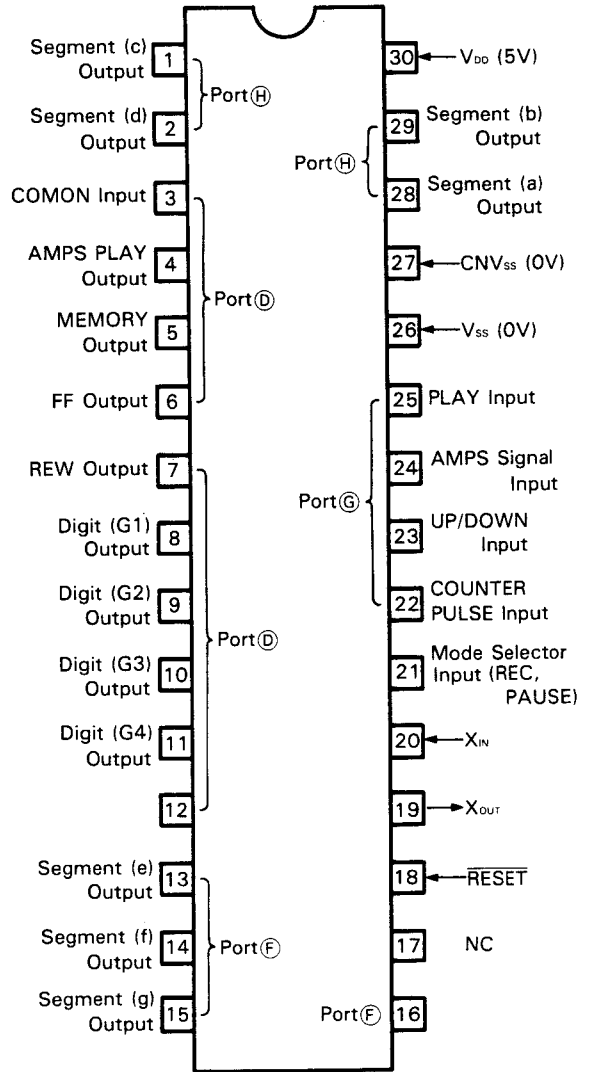


•M50763-412SP (Microcomputer for TAPE COUNTER DISPLAY & AMPS)

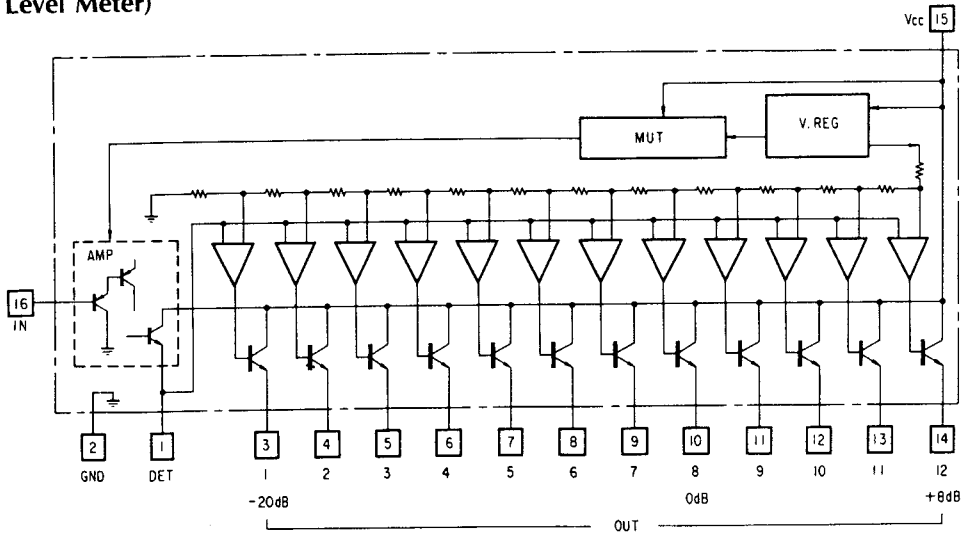
< Block >



< Description of Terminals >

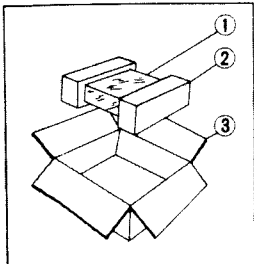


•BA6146 (Peak Level Meter)



12. PACKING LIST

Parts No.	Stock No.	Description
1	47859100	Vinyl Bag
2	27130100	Styrofoam Packing
3	27141400	Carton Case



13. ACCESSORY LIST

Stock No.	Description
07193400	PJP Cord
or 38103300	PJP Cord
46998900	Operating Instruction (*E·F·S)
46999000	Operating Instruction (*G·I·Sw)

***Note:**

E·F·S: English·French and Spanish Version

G·I·Sw: German·Italian and Swedish Version



SANSUI ELECTRIC CO., LTD.
SANSUI ELECTRONICS CORPORATION

SANSUI ELECTRONICS (U.K.) LTD.
SANSUI ELECTRONICS G.M.B.H.

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: (03) 324-8891/TELEX: 232 2076 (International Division)
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street, Honolulu, Hawaii 96819 U.S.A.
Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6 0AA, England
Pau Ehrich Strasse 8, 6074 Rodermark 2, West Germany