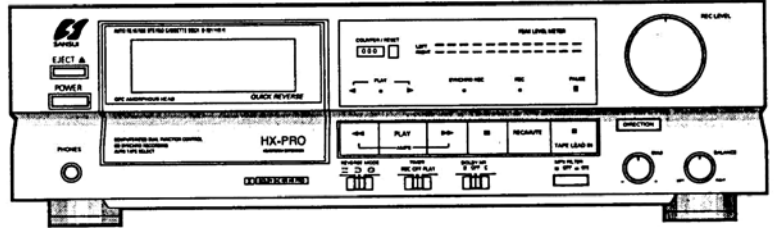




# SERVICE MANUAL

## D-X111HX D-X211HX·R STEREO CASSETTE DECK



### CAUTION

- Parts identified by the  $\Delta$  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.
- 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.

### NOTICE

- The symbols UL, CSA, UK, EU, SEV, SS and XX <EXPORT> 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.
  - UK..... Manufactured for United Kingdom market.
  - EU..... Manufactured for European market.  
(Except United Kingdom and Swiss market.)
  - SEV..... Manufactured for Swiss market.
  - SS..... Manufactured for Saudi Arabian market.
  - XX..... Standard Version.
  - <EXPORT>  
NON MARK..... Common Parts.
- Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
- Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.
- Abbreviations in this service manual are as follows.

#### Abbreviations List

M.R. : Metal Film Resistor	E.C. : Electrolytic Capacitor
N.I.R. : Non-Inflammable Resistor	V.R. : Variable Resistor
C.C. : Ceramic Capacitor	S.V.R. : Semi Variable Resistor
	SW. : Switch

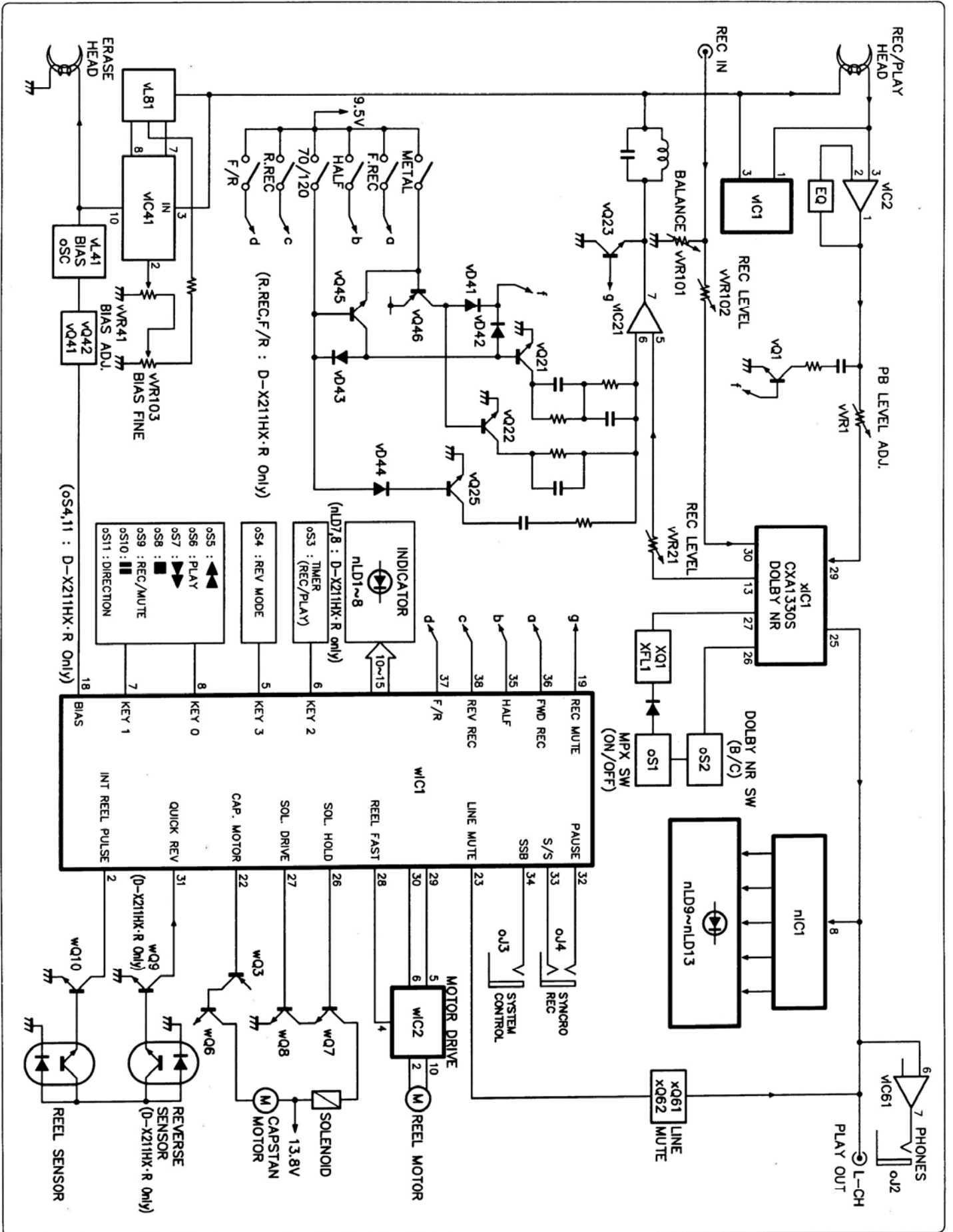
## Specifications

Track format.....	4-track/2-channel system
Tape speed.....	4.8 cm/sec
<b>Heads</b>	
Rec/play head.....	Hard permalloy (D-X111HX) Amorphous (D-X211HX·R)
Erase head.....	Double-gap ferrite
<b>Motor</b>	
	Capstan: Electronically controlled DC motor Reels: DC motor
Wow/flutter.....	0.06 % max (WRMS)
Fast forwarding (rewinding) time.....	Approx. 100 sec. (for C-60 tape)
<b>Frequency response (-20 VU recording/playback)</b>	
Normal tape (LH).....	20 to 18,000 Hz (20 to 17,000 Hz $\pm$ 3 dB)
Chrome tape.....	20 to 19,000 Hz (20 to 18,000 Hz $\pm$ 3 dB)
Metal tape.....	20 to 21,000 Hz (20 to 20,000 Hz $\pm$ 3 dB)
<b>Signal-to-noise ratio (recording/playback with metal tape)</b>	
DOLBY NR OFF.....	Better than 58 dB
DOLBY-B NR ON.....	Better than 65 dB
DOLBY-C NR ON.....	Better than 75 dB

Erase rate (metal tape).....	More than 70 dB at 1 kHz
Recording bias frequency.....	105 kHz
<b>Input sensitivity/Impedance</b>	
LINE IN (REC).....	70 mV/40 kohms
Power requirements.....	AC 120, 220, 240 V (50/60 Hz)
Power consumption.....	16 watts
<b>Dimensions</b>	
	430 mm (16-15/16") W 125 mm (4-15/16") H 275 mm (10-7/8") D
<b>Weight</b>	
	3.8 kg (8.4 lbs) net 4.8 kg (10.6 lbs) packed

- Design and specifications subject to changes without notice for improvements.
- Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.
- Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen. "DOLBY", the double-D symbol (DD) and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

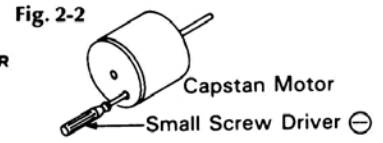
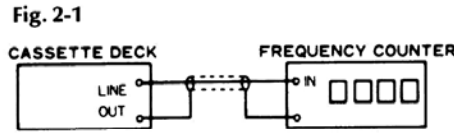
# 1. BLOCK DIAGRAM



## 2. ADJUSTMENTS (See Fig. 2-7 Parts Location on Page 4)

### 2-1. Tape Speed Adjustment

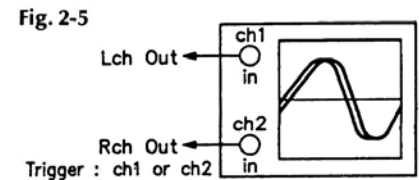
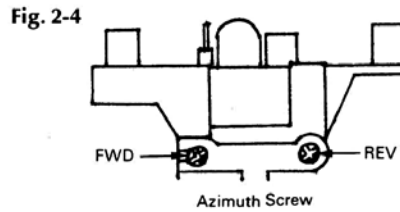
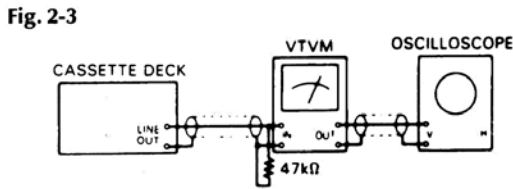
- Note:** 1. Use Sansui Test Tape, SCT-S3K.  
(3kHz signals are recorded on the tape).  
2. Connections are shown in Fig. 2-1.



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. 2-2.	3000Hz ± 10Hz	

### 2-2. 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. Remove the Lid Ass'y.  
5. Connections are shown in Fig. 2-3.



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	P.B. Head Adj.	LINE OUT, AC Volt Meter and Scope. (Dual Trase)	Playback the TEST TAPE SCT-F10K FWD & REV. (REV Adjust D-X211HX·R only)	Adjust the azimuth adjusting screw in Fig. 2-4.	<ul style="list-style-type: none"> <li>●Max. Output both channels.</li> <li>●Adjust the left output in phase with right output. (See Fig. 2-5)</li> </ul>	Change the tape from side A to B and follow the process again to get right adjustment. After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	LINE OUT, AC Volt Meter and Scope.	Playback the TEST TAPE SCT-L400.	Adjust each vVR1 (L-CH and R-CH)(F-6385).	500mV ± 1dB	See Fig. 2-7.

### 2-3. Bias Adjustment

- Note:** 1. BIAS control volume..... Center click position.  
2. BALANCE control volume..... Center click position.  
3. REC LEVEL volume..... Max.  
4. DOLBY NR switch..... OFF  
5. MPX FILTER switch..... OFF

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Bias Frequency Adj.	Between Point (A) of qZ12 and GND AC Volt Meter and Frequency counter.	1. Load the TEST TAPE SCT-MA 2. Push the REC and PLAY button.	Turn the core of vL41 (F-6385)	105kHz ± 2kHz	See Fig. 2-7.
2.	Step UP Coil Adj.	Between TEST Point (TP +, TP -) vR90 AC Volt Meter	Same as above	Turn the core of vL81 (L-CH, R-CH)	Min. output	See Fig. 2-7.

## ◆ List of Sansui Test Tape

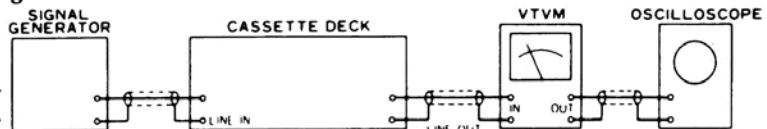
Name of TEST TAPE	Recorded Frequency	Description	Equivalent To
SCT-F40	40 Hz	Playback Frequency Response Check	—
SCT-F1K	1 kHz	High Frequency Equalization Check	—
SCT-F10K	10 kHz	REC/PB Head Adjustment	—
SCT-L400N	400 Hz	Playback Level and Indicator Level Adjustment	—
SCT-S3K	3 kHz	Speed Check and Wow & 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.

## 2-4. REC Level & Frequency Response Adjustment

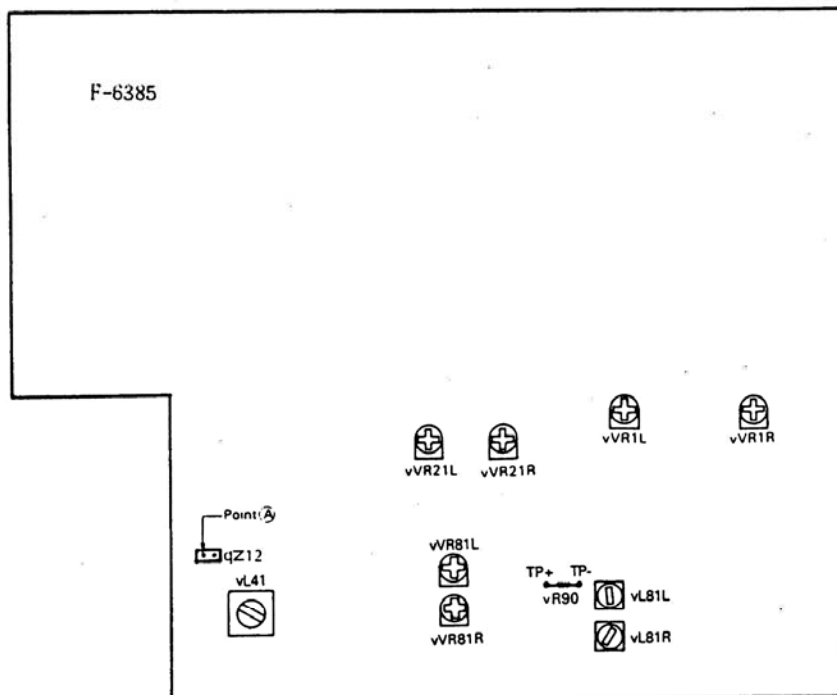
- Note: 1. Connections are shown in Fig. 2-6.  
2. Set the Dolby NR switch to be ON (C position).  
3. REC Level volume .....Max.  
4. BIAS control volume.....Center click position.  
5. BALANCE control volume.....Center click position.

Fig. 2-6



STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUSTMENT	REMARKS
1.	REC Level Adj.	Feed 1kHz, 50mV from S.G. into LINE IN.	LINE OUT, AC Volt Meter and Scope.	Load the TEST TAPE SCT-SA. 1. Record the 1kHz signal. 2. Confirm that output terminal level. 3. Playback the 1kHz signal.	Adjust vVR21 (L-CH and R-CH, F-6385) until playback level and output signal level on recording operation will be equal.	See Fig. 2-7.
2.	Frequency Response Adj.	Feed 1kHz 7mV and 12kHz 7mV from S.G. into LINE IN.	LINE OUT, AC Volt Meter and Scope.	Load the TEST TAPE SCT-SA. 1. Record the 1kHz and 12kHz signals from S.G. 2. Playback the 1kHz and 12kHz signals, then confirm 12kHz signal level in less than 1kHz signal level $\pm 2$ dB on AC Volt Meter.	1. If not, adjust vVR81 (L-CH and R-CH, F-6385) slightly until the 12kHz signal level in less than 1kHz signal level $\pm 2$ dB on AC Volt Meter.	See Fig. 2-7.

Fig. 2-7

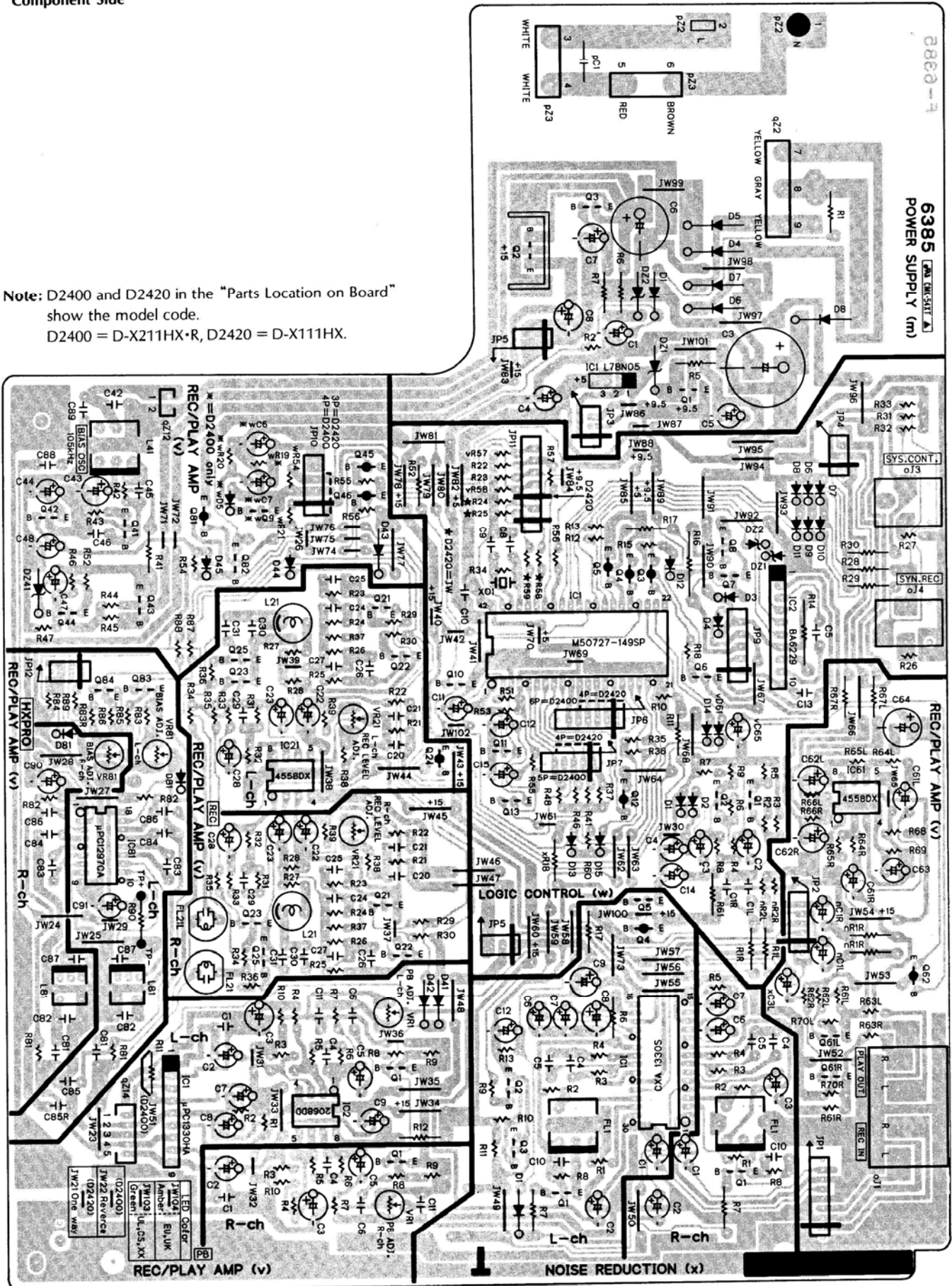


# 3. PARTS LOCATION ON BOARD

## 3-1. F-6385 Main Board

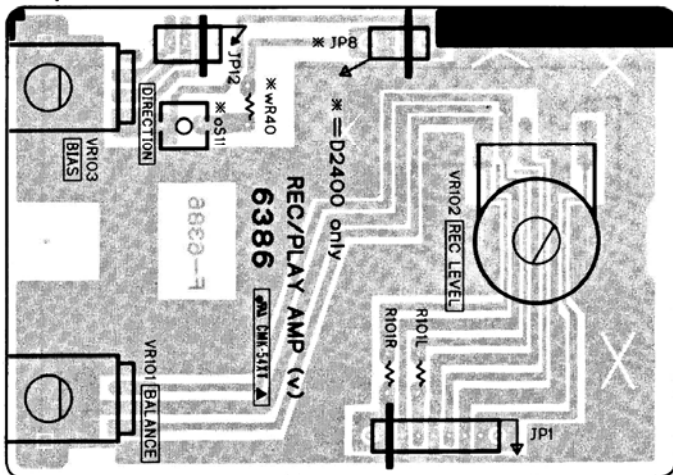
Component Side

**Note:** D2400 and D2420 in the "Parts Location on Board" show the model code.  
D2400 = D-X211HX·R, D2420 = D-X111HX.



## 3-2. F-6386 Bias & Balance Volume Board

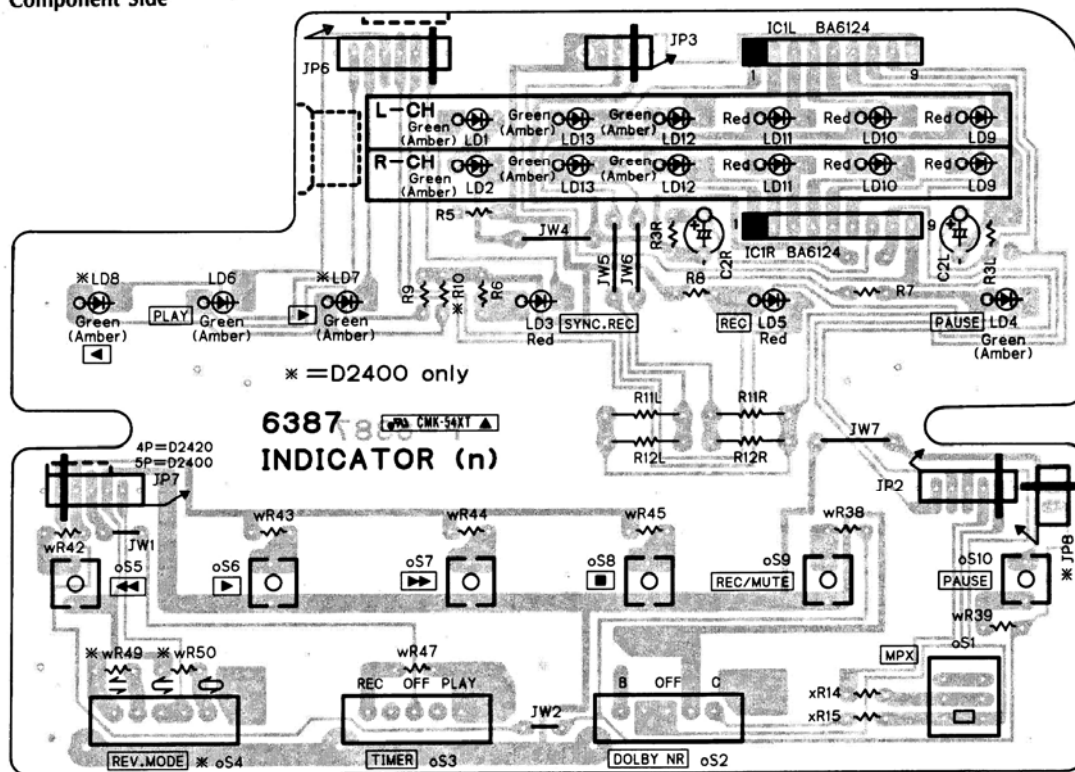
Component Side



**Note:** D2400 and D2420 in the "Parts Location on Board" show the model code.  
D2400 = D-X211HX·R, D2420 = D-X111HX.

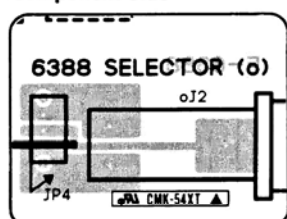
## 3-3. F-6387 Control Key & Display Board

Component Side



## 3-4. F-6388 Head Phone Jack Board

Component Side



## 4. PARTS LIST OF BOARD

## 4-1. F-6385 Main Board (Stock No. 01224601 = D-X211HX·R/01225101 = D-X111HX)

## Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
*Transistor			*Diode		
△ mQ1	03083901	2SD313HP	vD41	03117600	1S2473T77
△	or 46546701	2SD880		or 46086000	1S1588TP-3
△ mQ2	03083901	2SD313HP	vD42	03117600	1S2473T77
△	or 46546701	2SD880		or 46086000	1S1588TP-3
mQ3	46367301	2SC2458	vD43	03117600	1S2473T77
	or 48058801	2SC1740S		or 46086000	1S1588TP-3
*IC			vD44	46464100	1SS133
△ mIC1	46359400	L78N05	vD45	46464100	1SS133
*Diode			vD61	46464100	1SS133
mD1	03117600	1S2473T77	vD81	46464100	1SS133 (D-X111HX only)
	or 46086000	1S1588TP-3	*Zener Diode		
△ mD4	03117700	10E-2	vDZ41	49302700	05AZ5.1-Y
△ mD5	03117700	10E-2	vFL21	48363500	Trap Coil
△ mD6	03117700	10E-2	vL21	46091010	Inductor 6.8mH
△ mD7	03117700	10E-2	vL41	49473300	Bias OSC Coil
△ mD8	03117700	10E-2	vL81	49323600	Step Up Coil
*Zener Diode			vVR1	49367200	22kΩ S. V. R., PB Level
mDZ1	49305000	05AZ10-R	vVR21	49367100	10kΩ S. V. R., REC Level
	or 49305100	05AZ11-X	vVR81	49367100	10kΩ S. V. R., Bias
mDZ2	49306400	05AZ16-Y	△ vR41 46228700 56Ω 1/2W N. I. R.		
	or 49306500	05AZ16-Z	△ vR90 46227800 10Ω 1/2W N. I. R.		
oJ1	48528500	4P Terminal Board, REC/PLAY	*Transistor		
oJ3	48985400	Mini Jack, SYSTEM CONTROL	wQ1	46367301	2SC2458
oJ4	49436400	Jack, SYNCHRO REC		or 48058801	2SC1740S
△ pC1 46425800 0.01μF 400V C. C.			wQ2	46367301	2SC2458
△ or 46943200 0.01μF 400V C. C.				or 48058801	2SC1740S
*Transistor			wQ3	48183400	DTA114YS
vQ1	48223100	DTC114TS		or 49390800	RN2207
	or 49389000	RN1211	wQ4	48183400	DTA114YS
vQ21	46367301	2SC2458		or 49390800	RN2207
	or 48058801	2SC1740S	wQ5	48183400	DTA114YS
vQ22	46367301	2SC2458		or 49390800	RN2207
	or 48058801	2SC1740S	wQ6	46359801	2SC2001
vQ23	46604301	2SC3327		or 48000901	2SC2060
vQ24	48229200	DTA214XS	wQ7	46359801	2SC2001
	or 49390900	RN2208		or 48000901	2SC2060
vQ25	46367301	2SC2458	wQ8	46359801	2SC2001
	or 48058801	2SC1740S		or 48000901	2SC2060
vQ41	46614101	2SC3243	wQ9	48223100	DTC114TS (D-X211HX·R only)
vQ42	46359801	2SC2001		or 49389000	RN1211 (D-X211HX·R only)
	or 48000901	2SC2060	wQ10	46367301	2SC2458
△ vQ43	46614101	2SC3243		or 48058801	2SC1740S
vQ44	46367301	2SC2458	wQ11	48171600	DTC114YS
	or 48058801	2SC1740S		or 49388600	RN1207
vQ45	46367201	2SA1048	wQ12	48183400	DTA114YS
	or 48058601	2SA933S		or 49390800	RN2207
vQ46	46367201	2SA1048	wQ13	48171600	DTC114YS
	or 48058601	2SA933S		or 49388600	RN1207
vQ61	46604301	2SC3327	*IC		
vQ62	48229200	DAT124XS	wIC1	49473700	M50727-149SP
	or 49390900	RN2208	△ wIC2	49473800	BA6229
vQ81	49353300	DTB123ES	wX01	49473400	Quartz Element
vQ82	48223100	DTC114TS	*Diode		
	or 49389000	RN1211	wD1	46464100	1SS133
vQ83	46367301	2SC2458	wD2	46464100	1SS133
	or 48058801	2SC1740S	wD3	46464100	1SS133
vQ84	46367301	2SC2458	wD4	46464100	1SS133
	or 48058801	2SC1740S	wD5	46464100	1SS133 (D-X211HX·R only)
*IC			wD6	46464100	1SS133
vIC1	49323500	UPC1330HA	wD7	46464100	1SS133
vIC2	49264000	NJM2068D-D	wD8	46464100	1SS133
vIC21	07208900	NJM4558D-X	wD9	46464100	1SS133
vIC61	07208900	NJM4558D-X	wD10	46464100	1SS133
vIC81	49323400	μ PC1297CA			

to be continued

# D-X111HX/X211HX-R

## <F-6385>

Parts No.	Stock No.	Description
wD11	46464100	1SS133
wD12	46464100	1SS133
wD13	46464100	1SS133
wD14	46464100	1SS133
wD15	46464100	1SS133
•Zener Diode		
wDZ1	48553400	MTZ7.5C
	or 48632500	RD7.5B3 ES
wDZ2	48552200	MTZ5.1C
	or 48630900	RD5.1B3
△ wR14	46241700	27Ω 1W N. I. R.
△ wR16	46241700	27Ω 1W N. I. R.
wR37	48437200	1kΩ 1/5W M. R.
wR41	48437200	1kΩ 1/5W M. R.
wR48	48438800	4.7kΩ 1/5W M. R. (D-X211HX-R only)
•Transistor		
xQ1	46367301	2SC2458
	or 48058801	2SC1740S
xQ2	46367301	2SC2458
	or 48058801	2SC1740S
xQ3	46367301	2SC2458
	or 48058801	2SC1740S
xQ4	48183400	DTA114YS
	or 49390800	RN2207
xQ5	46367301	2SC2458
	or 48058801	2SC1740S
•IC		
xIC1	49522700	CXA1330S
•Diode		
xD1	03117600	1SS2473T77
	or 46086000	1SS1588TP-3
xC6	49522600	0.56μF 50V E. C.
xFL1	49370600	Dolby Filter

## <F-6387>

Parts No.	Stock No.	Description
nLD4	49493300	SEL3413E, PAUSE <XX, SS, UL, CSA>
	49493100	SEL3913K, PAUSE <EU, UK, SEV>
nLD5	49493200	SEL3213C, REC
nLD6	49493300	SEL3413E, PLAY <XX, SS, UL, CSA>
	49493100	SEL3913K, PLAY <EU, UK, SEV>
nLD7	49493300	SEL3413E, FWD <XX, SS> (D-X211HX-R only)
	49493100	SEL3913K, FWD <EU, UK, SEV> (D-X211HX-R only)
nLD8	49493300	SEL3413E, REV <XX, SS, UL, CSA> (D-X211HX-R only)
	49493100	SEL3913K, REV <EU, UK, SEV> (D-X211HX-R only)
nLD9	49493200	SEL3213C, +6
nLD10	49493200	SEL3213C, +3
nLD11	49493200	SEL3213C, 0
nLD12	49493300	SEL3413E, -5 <XX, SS, UL, CSA>
	49493100	SEL3913K, -5 <EU, UK, SEV>
nLD13	49493300	SEL3413E, -10 <XX, SS, UL, CSA>
	49493100	SEL3913K, -10 <EU, UK, SEV>
oS1	46563500	Push SW., MPX
oS2	46178400	Slide SW., DOLBY NR
oS3	46178400	Slide SW., TIMER
oS4	46178400	Slide SW., REV MODE (D-X211HX-R only)
oS5	49326300	Push SW., ◀
oS6	49326300	Push SW., PLAY
oS7	49326300	Push SW., ▶
oS8	49326300	Push SW., ■
oS9	49326300	Push SW., REC/MUTE (D-X211HX-R only)
oS10	49326300	Push SW., ■■
wR38	48438700	4.3kΩ 1/5W M. R.
wR39	48438400	3.3kΩ 1/5W M. R.
wR42	48439000	5.6kΩ 1/5W M. R.
wR43	48438700	4.3kΩ 1/5W M. R.
wR44	48438400	3.3kΩ 1/5W M. R.
wR49	48439200	6.8kΩ 1/5W M. R. (D-X211HX-R only)

## 4-2. F-6386 Bias & Balance Volume Board

Parts No.	Stock No.	Description
oS11	49326300	Push SW., DIRECTION (D-X211HX-R only)
vVR101	49485100	100kΩ B V. R., BALANCE
vVR102	49326400	50kΩ B V. R., REC LEVEL
vVR103	49536800	10kΩ Bx2 V. R., BIAS

## 4-3. F-6387 Control Key & Display Board

(Stock No. D-X211HX-R 01224801 = XX, SS, UL, CSA  
01224805 = EU, UK, SEV  
D-X111HX 01225301 = XX, SS  
01225305 = EU, UK, SEV)

Parts No.	Stock No.	Description
•IC		
nIC1	46129100	BA6124
•LED		
nLD1	49493300	SEL3413E, - <XX, SS, UL, CSA>
	49493100	SEL3913K, - <EU, UK, SEV>
nLD2	49493300	SEL3413E, ∞ <XX, SS, UL, CSA>
	49493100	SEL3913K, ∞ <EU, UK, SEV>
nLD3	49493200	SEL3213C, SYNCHRO

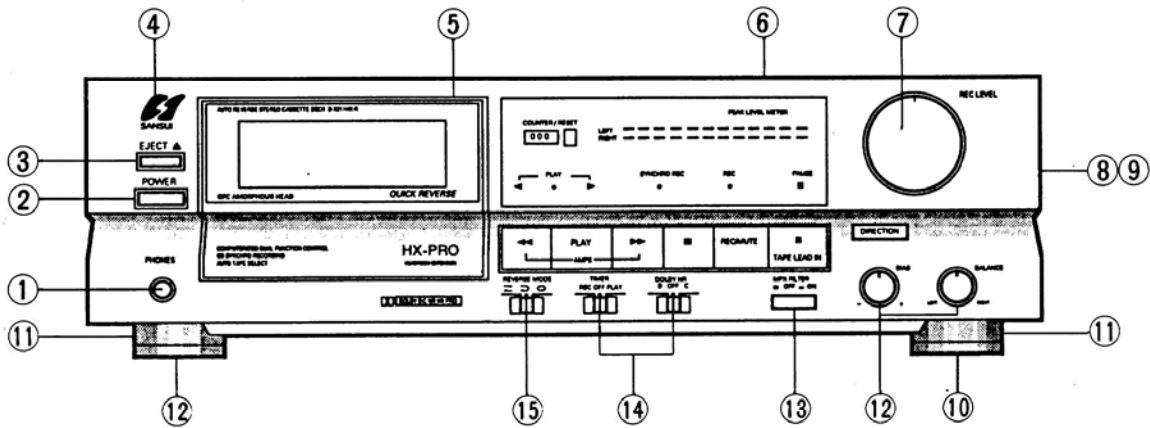
## 4-4. F-6388 Head Phone Jack Board

Parts No.	Stock No.	Description
oJ2	49495100	Jack

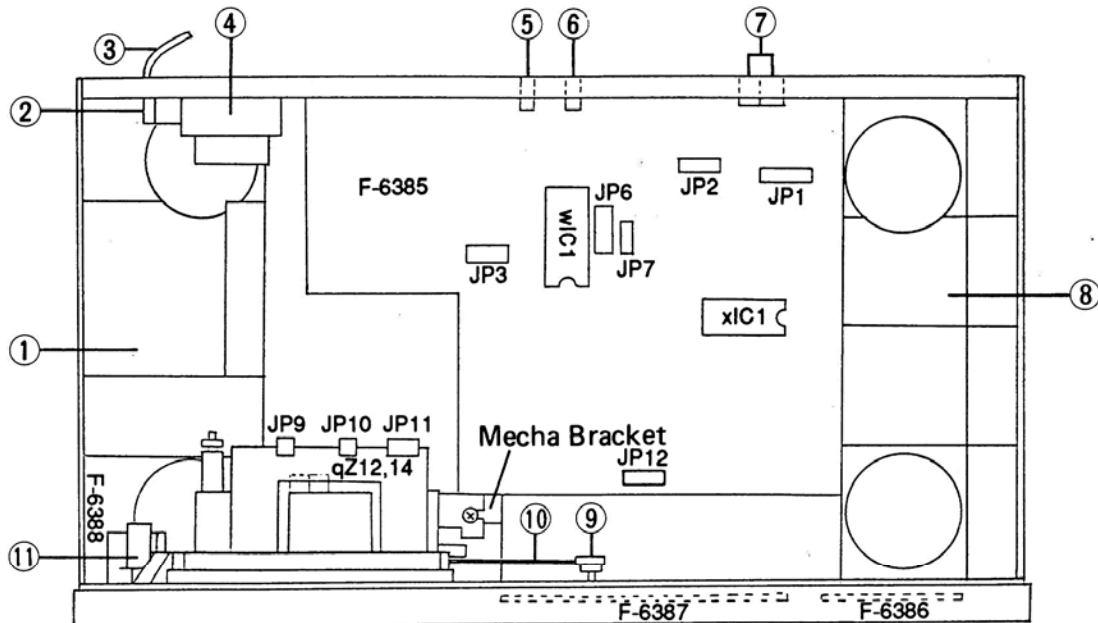


# 5. OTHER PARTS

<Front View>



<Top View>



Parts List <Front View>

Parts No.	Stock No.	Description
1	49495100	Headphone Jack
2	27626500	Power SW., Knob
3	27818910	Eject Knob
4	27833300	Logo Badge
5	27887100	Lid Cover Ass'y <D-X111HX>
	27887000	Lid Cover Ass'y <D-X211HX·R>
6	27835400	Bonnet
7	27821210	Knob, VOLUME
8	27886500	Front Panel Ass'y A <D-X111HX>
	27886400	Front Panel Ass'y A <D-X211HX·R>
9	27840800	Front Panel Ass'y B <D-X111HX>
	27840700	Front Panel Ass'y B <D-X211HX·R>
10	27842000	Leg Sheet
11	27857010	Ring for Leg
12	27821300	Knob, BIAS/BALANCE VR.
13	27819400	Knob, MPX FILTER
14	27819500	Knob, Slide SW.
15	27819500	Knob, Slide SW. <D-X211HX·R>

Parts List <Top View>

Parts No.	Stock No.	Description
1	27820710	Channel, Left
2	47157300	AC Cord Cover
△ 3	38004700	Power Supply Cord <XX, UL, CSA>
△	48837700	Power Supply Cord <SS>
△	49299300	Power Supply Cord <EU, SEV>
△	49252900	Power Supply Cord <UK>
△ 4	15036705	Power Transformer <EU, SEV>
△	15037802	Power Transformer <UL, CSA>
△	15036701	Power Transformer <XX, SS>
△	15036706	Power Transformer <UK>
5	48985400	Jack, System Control
6	49436400	Jack Synchro REC
7	48528500	4P Terminal Board REC/PLAY
8	27820810	Channel, Right
9	49493600	Tape Counter
10	27838000	Counter Belt
△ 11	46364300	Push SW., POWER

## 6. MAIN PARTS REPLACEMENT (See Top View on Page 8)

### A. Mechanism Ass'y

- 1) Remove the bonnet.
- 2) Remove the bottom plate.
- 3) Press the eject knob to open the cassette pocket and remove the lid ass'y.
- 4) Disconnect JP-9, JP-10, JP-11, qZ12 and qZ14.
- 5) Remove the mecha bracket.
- 6) Remove two screws (B) and two screws (C). (See Fig. 6-2)
- 7) Remove the tape counter belt.
- 8) Remove the mechanism ass'y to the back side passing through the bottom of the front panel ass'y with the cassette pocket (66) kept open. (See Fig. 6-1)

### B. Front Panel Ass'y A or B

- 1) Remove the mechanism ass'y.
- 2) Pull out the REC LEVEL, BIAS, BALANCE knob.
- 3) Remove two screws to remove the power switch and power knob.
- 4) Disconnect JP-12.
- 5) Disconnect the parallel cord (JP-1, JP-2, JP-3, JP-6 and JP-7).
- 6) Unhook two stoppers to remove the F-6388 phones board.
- 7) Remove two bottom screws (D), two stoppers (C) and three stoppers (E) to remove the front panel ass'y A and B. (See Fig. 6-2)
- 8) Remove one screw, three stoppers and three nuts to remove the F-6386.
- 9) Remove five screws and unhook two black stoppers to remove the F-6387 operation switch board.
- 10) To separate the front panel ass'y A and B, unhook three stoppers (F) in all while pushing a front panel ass'y B to the arrow direction.

### C. Head Base Ass'y (3)

(See Exploded View of Cassette Mechanism Ass'y on Page 11)

- 1) Remove the mechanism ass'y from the set.
- 2) Remove the cassette pocket (66).
- 3) Remove the pinch roller F (31) and R (32) (D-X211HX·R) ass'y.
- 4) Remove the special screw (37) fixing the eject stopper (7).
- 5) Remove the head base spring (3-8).
- 6) Disconnect the soldered QS lead wire (3-21) (D-X211HX·R).
- 7) Unhook the lead holder (10) from the mechanism chassis.
- 8) Remove the head base ass'y (3) from the mechanism chassis.

### D. Cam Gear (14), Belt (18), Flywheel Ass'y (29), (30)

(See Exploded View of Cassette Mechanism Ass'y on Page 11)

- 1) Remove the three screws (36) fixing the capstan motor ass'y (4).
- 2) Disconnect two soldered lead wire connected to the P.C.B. (control) (5) and the capstan motor ass'y (4).
- 3) Remove the belt (18).
- 4) Remove the flywheel F ass'y (29) and R ass'y (30) (D-X211HX·R).
- 5) Remove the play arm (12).
- 6) Remove the P.C.B. (Direction SW.) (5-18).
- 7) Move the slide plate (9) to the right until it stops and remove it together with the cam gear (14).

Fig. 6-1

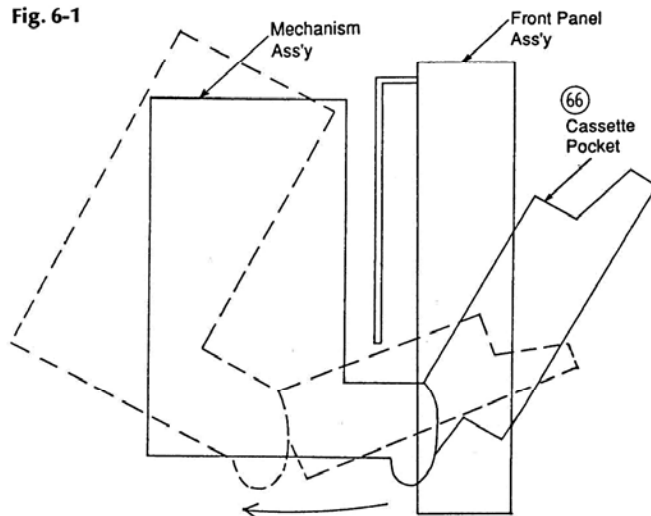
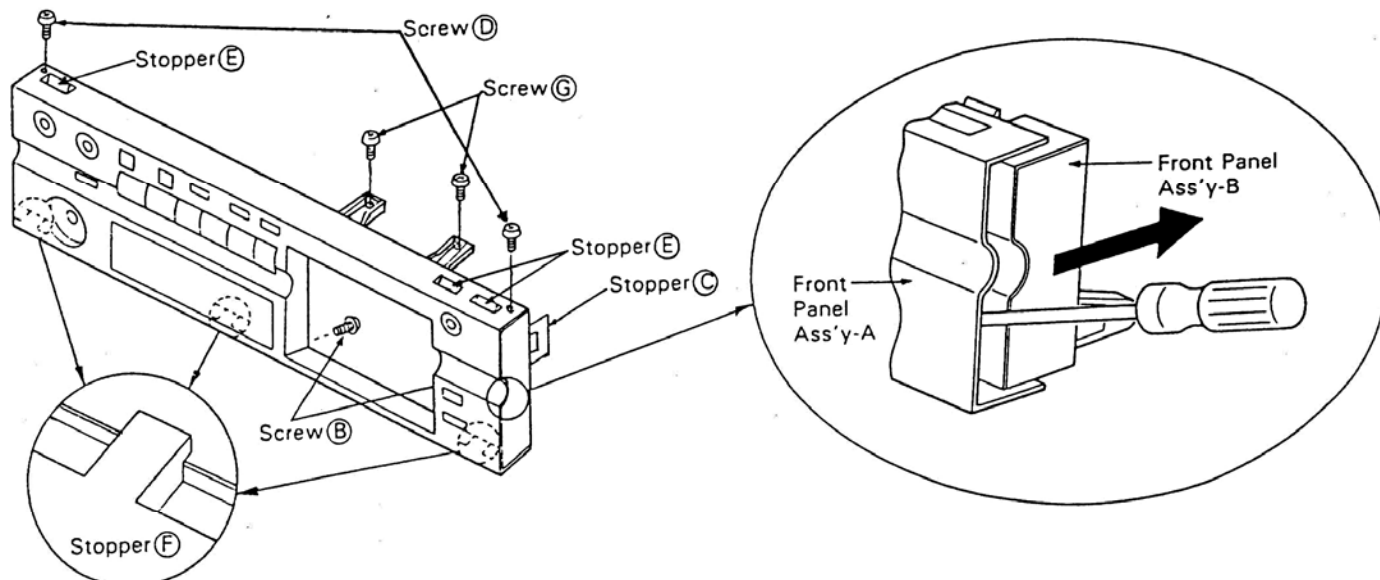


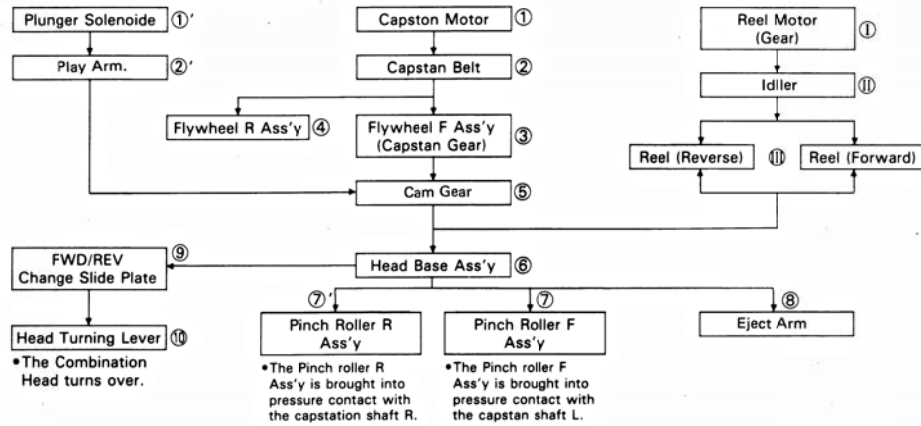
Fig. 6-2



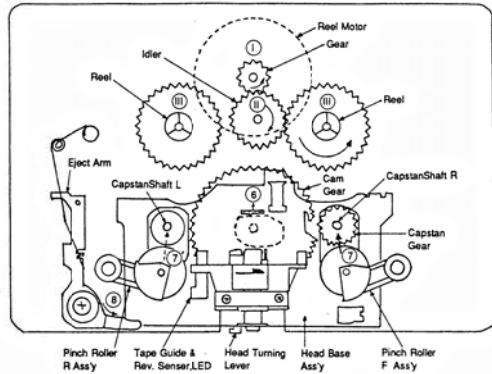
# 7. OPERATION OF CASSETTE MECHANISM

## 7-1. D-X211HX-R

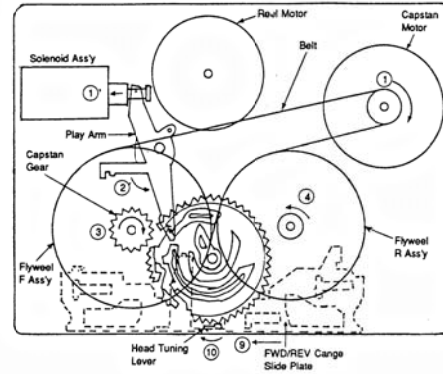
### A. Torque Transportion Flowchart



### B. Front View of Mechanism Chassis

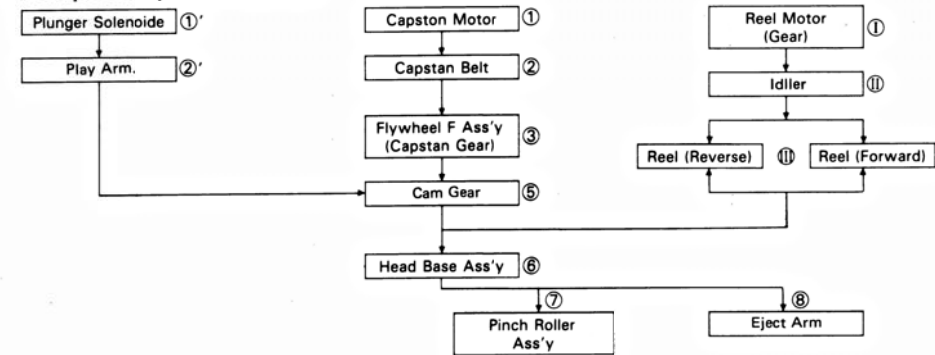


### C. Rear View of Mechanism Chassis

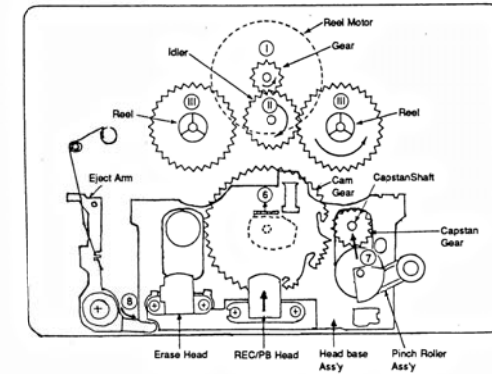


## 7-2. D-X111HX

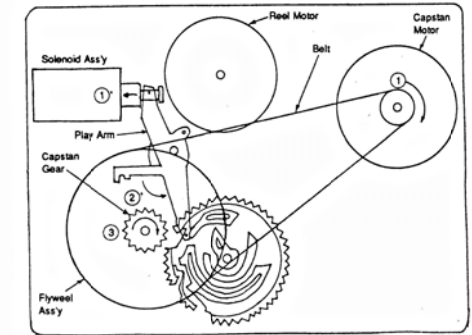
### A. Torque Transportion Flowchart



### B. Front View of Mechanism Chassis



### C. Rear View of Mechanism Chassis

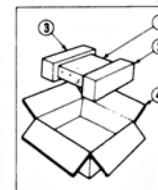


## 8. PACKING LIST

Parts No.	Stock No.	Description
1	47859100	Vinyl Bag
2	27831600	Styrofoam Packing, R-CH
3	27831500	Styrofoam Packing, L-CH
4	27890900	Carton Case <D-X111HX>
	27890800	Carton Case <D-X211HX-R>

## 9. ACCESSORY LIST

Parts No.	Stock No.	Description
	48802100	PJP Cord, 1m
	46267300	Mini Pin Plug Cord
	19065500	Operating Instruction <D-X111HX>
	19065400	Operating Instruction <D-X211HX-R>

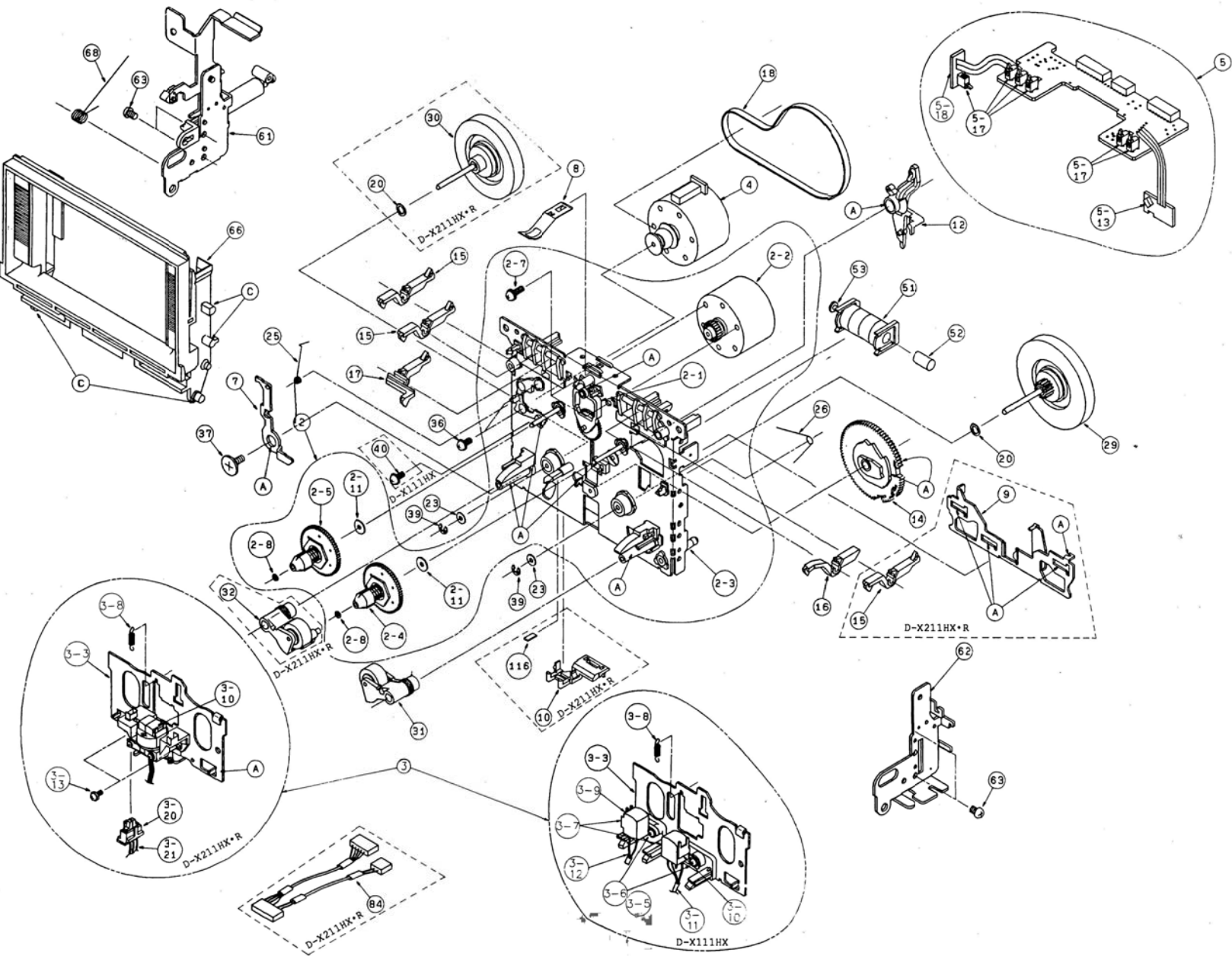


# 10. EXPLODED VIEW OF MECHANIZM AND PARTS LIST

• Though every Part included in mechanism ass'y is numbered in exploded View, Parts Unlisted in parts list are not supplied.

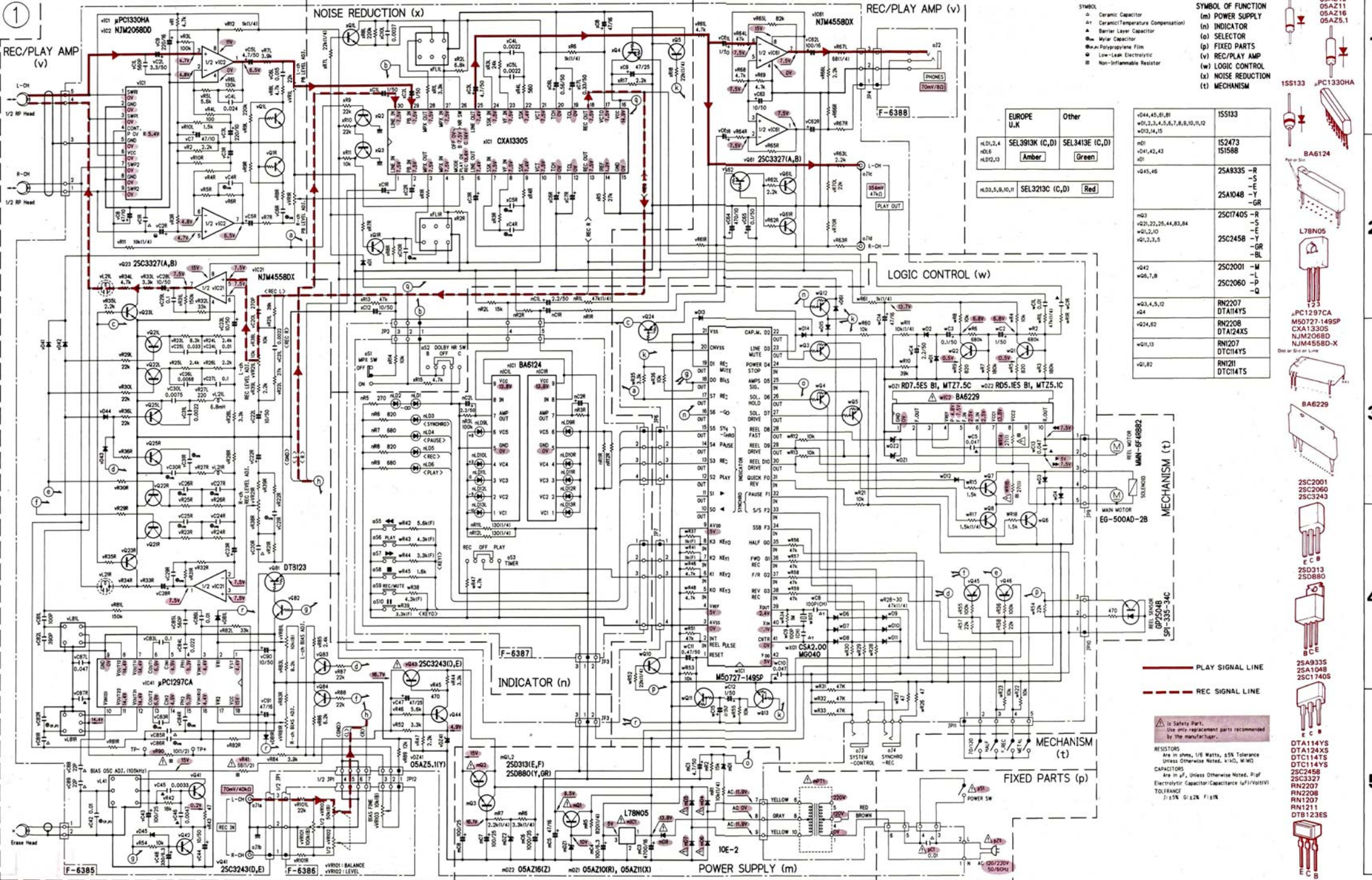
**Parts List**

Parts No.	Stock No.	Description
2		Main Chassis Ass'y
2-1	58731700	Idler Ass'y
2-2	58731800	Reel Motor Ass'y
2-3		Chassis Base Ass'y
2-4	58732000	Reel Base Ass'y R
2-5	58732100	Reel Base Ass'y F
2-7	58732200	M2. 6X6. 4 Pan. Head Screw
2-8	58732300	Slit Washer (1. 7x0. 25)
2-11	58732400	Thrust Washer (2. 1x0. 25)
3	58890700	Head Base Ass'y <D-X111HX·R>
3-5	58732500	Head Base Ass'y <D-X111HX>
3-5	58732800	M2. 0x9 Pan. Head Screw <D-X111HX>
3-6	58732900	Nylon Washer (2. 1x0. 25) <D-X111HX>
3-7	58733000	Spring, Azimuth <D-X111HX>
3-8	58733100	Spring, Head Base
3-9	58733300	Erase Head <D-X111HX>
3-10	58890900	Rec./Play/Erase, Head Ass'y <D-X211HX·R>
	58733200	Rec./Playback Head <D-X111HX>
3-11	58733400	Wire Conector (R/P) <D-X111HX>
3-12	58733500	Wire Conector (E) <D-X111HX>
3-13	58737200	M2x5 Pan. Tapping Screw <D-X211HX·R>
3-20	58891000	Photo Sensor SPI320BC <D-X211HX·R>
3-21	58737400	QS Lead Wire <D-X211HX·R>
4	58891100	Motor Ass'y, Capstan
5	58737500	P. C. B. (Control) <D-X211HX·R>
	58733700	P. C. B. (Control) <D-X111HX>
5-13	58737700	Photo Sensor GP2S04B <D-X211HX·R>
	58733900	Photo Sensor SPI-335-34 <D-X111HX>
5-17	58734000	Push Switch
8	58734200	Cassette Hold Spring
10	58738000	Lead Holder <D-X211HX·R>
12	58734300	Play Arm
14	58734400	Cam Gear
15	58734500	Switch Arm A
16	58734600	Switch Arm B
17	58734700	Switch Arm C
18	58738100	Belt <D-X211HX·R>
	58734800	Belt <D-X111HX>
20	58734900	Thrust Washer (2. 6x0. 25)
23	58735000	Nylon Washer (D=2. 6x0. 5)
25	58735100	Spring
26	58735200	Slide Spring
29	58735300	Flywheel Ass'y F
30	58891500	Flywheel Ass'y R <D-X211HX·R>
31	58735400	Pinch Roller Ass'y F
32	58891400	Pinch Roller Ass'y R <D-X211HX·R>
36	58735500	M2. 6x5 Pan. Head Screw
37	58735600	Special Screw
39	58735700	E-type Ring
40	58735800	M3x8 Screw, <D-X111HX>
51	58735900	Solenoid Ass'y
52	58736000	Fix Core
53	58736100	Plunger
61	58736200	Plate Hold Ass'y
63	58736400	M2. 6x4 Pan. Head Screw
66	58736500	Cassette Pocket
68	58736600	Door Spring



11. SCHEMATIC DIAGRAM 11-1. D-X111HX

• 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.

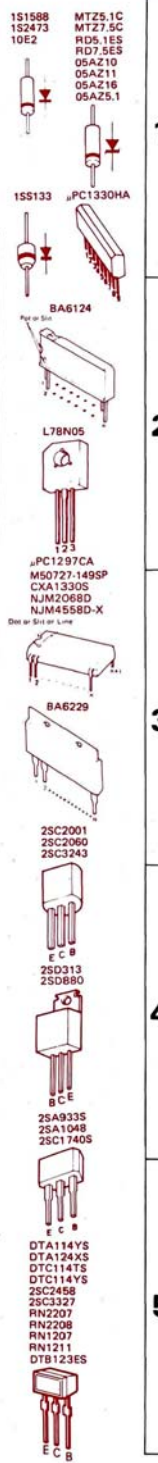


SYMBOL  
 △ Ceramic Capacitor  
 ▲ Ceramic Temperature Compensation  
 ● Barrier Layer Capacitor  
 ○ Mylar Capacitor  
 □ Polystyrene Film  
 ⊕ Low-Leak Electrolytic  
 ⊖ Non-Inflammable Resistor

SYMBOL OF FUNCTION  
 (m) POWER SUPPLY  
 (i) INDICATOR  
 (p) SELECTOR  
 (f) FIXED PARTS  
 (v) REC/PLAY AMP  
 (w) LOGIC CONTROL  
 (x) NOISE REDUCTION  
 (t) MECHANISM

EUROPE U.K.	Other
hD1,2,4 hD6 hD12,13	SEL3913K (C,D) SEL3413E (C,D)
	Amber Green
hD3,5,8,10,11	SEL3213C (C,D)
	Red

vD4,45,61,B1 wD1,2,3,4,5,6,7,8,9,10,11,2 wD3,14,15	1S5133
hD1 vD1,42,43 hD1	1S2473 1S1588
vD45,46	2S4933S -R 2S4104B -GR
hD3 vD21,22,25,44,83,84 wD1,2,10 vD1,2,3,5	2S0740S -R 2S0245B -GR 2S0245B -BL
vD2 wD6,7,8	2S02001 -M 2S02060 -P
vD3,4,5,12 vD4	RN2207 DTA114YS
vD24,62	RN2208 DTA124XS
wD11,13	RN1207 DTC114YS
vD1,62	RN1211 DTC114TS



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

RESISTORS  
 Are in ohms, 1/8 Watts, ±5% Tolerance  
 Unless Otherwise Noted,  $\frac{1}{4}$ W,  $\frac{1}{2}$ W,  $\frac{1}{2}$ W

CAPACITORS  
 Are in  $\mu$ F, Unless Otherwise Noted,  $\mu$ F  
 Electrolytic Capacitor (Capacitance  $\mu$ F/Volts)

TOLERANCE  
 $\pm$  5%  $\pm$  2%  $\pm$  1%

— PLAY SIGNAL LINE  
 - - - REC SIGNAL LINE

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

RESISTORS  
 Are in ohms, 1/8 Watts, ±5% Tolerance  
 Unless Otherwise Noted,  $\frac{1}{4}$ W,  $\frac{1}{2}$ W,  $\frac{1}{2}$ W

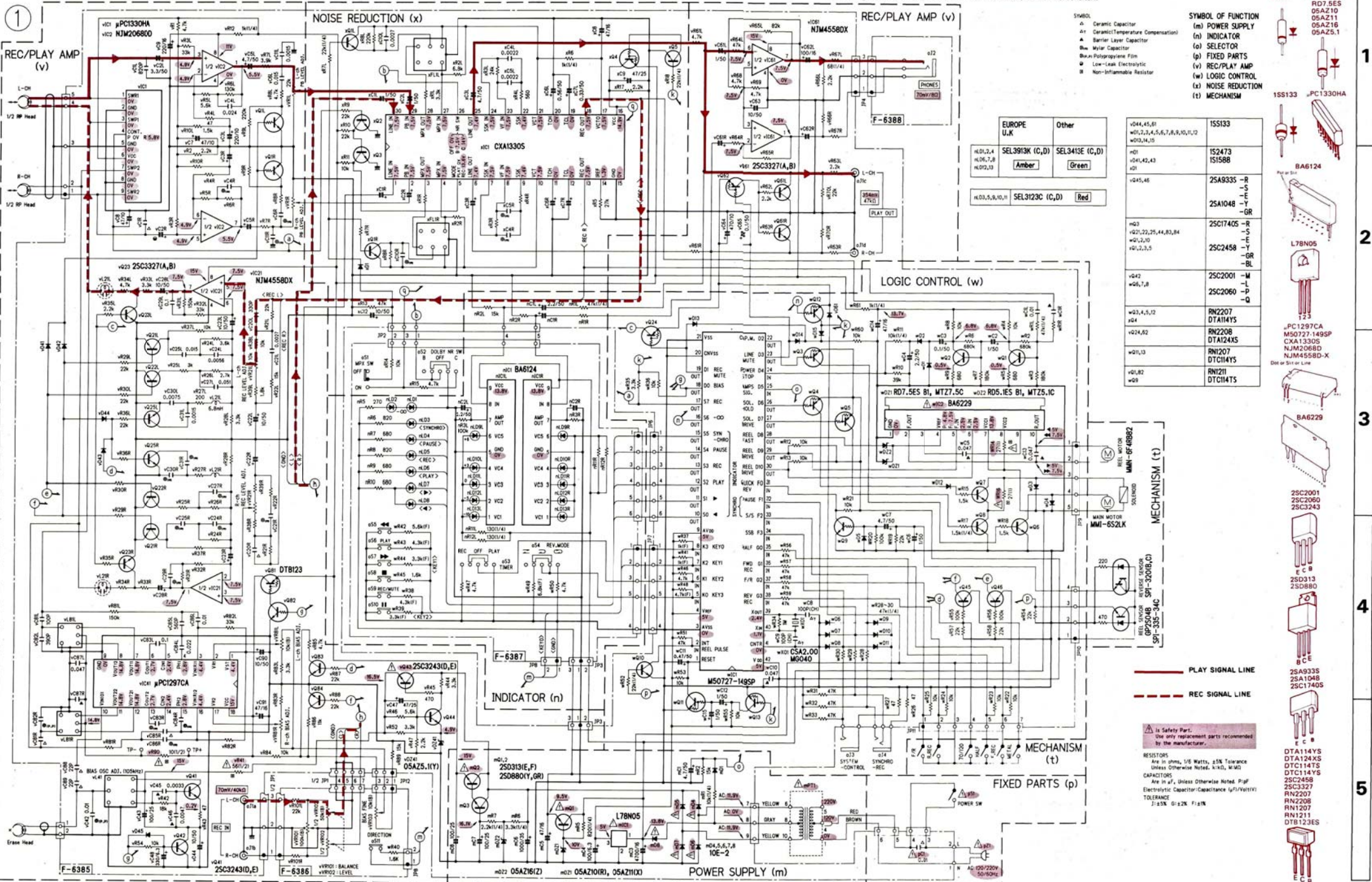
CAPACITORS  
 Are in  $\mu$ F, Unless Otherwise Noted,  $\mu$ F  
 Electrolytic Capacitor (Capacitance  $\mu$ F/Volts)

TOLERANCE  
 $\pm$  5%  $\pm$  2%  $\pm$  1%



11-2. D-X211HX·R

- 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.

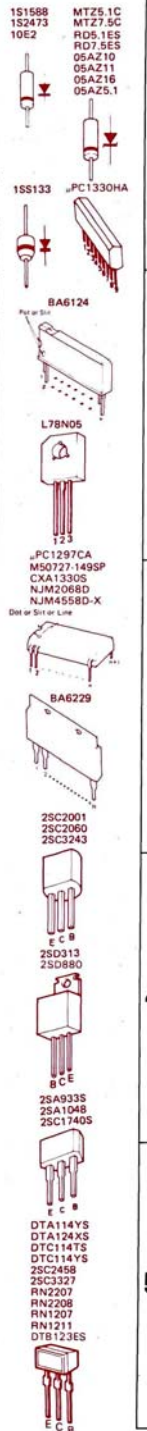


SYMBOL  
 A Ceramic Capacitor  
 Ar Ceramic (Temperature Compensation)  
 Δ Barrier Layer Capacitor  
 Bw Mylar Capacitor  
 Bw-Polypropylene Film  
 ● Low-Leak Electrolytic  
 ■ Non-Flammable Resistor

SYMBOL OF FUNCTION  
 (m) POWER SUPPLY  
 (n) INDICATOR  
 (o) SELECTOR  
 (p) FIXED PARTS  
 (v) REC/PLAY AMP  
 (w) LOGIC CONTROL  
 (x) NOISE REDUCTION  
 (t) MECHANISM

EUROPE U.K	Other
R101,2,4 R106,7,8 R102,13	SEL3913K (C,D) SEL3413E (C,D)
	Amber Green
R103,5,6,9,10	SEL3123C (C,D)
	Red

W044,45,61 W012,3,4,5,6,7,8,9,10,11,12 W03,14,15	ISS133
W101 W041,42,43 W101	1S2473 1S1588
W045,46	2SA933S -R -S -E -Y 2SA104B -Y -GR
W03 W021,22,25,44,63,64 W01,2,10 W01,2,3,5	2SC1740S -R -S -E -Y 2SC2458 -GR -BL
W043 W06,7,8	2SC2001 -M -L -P -Q
W034,5,12 W04	RN2207 DTA114YS
W013 W01,82 W09	RN2208 DTA124XS RN1207 DTC114YS RN1211 DTC114YS



— PLAY SIGNAL LINE  
 - - - REC SIGNAL LINE

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

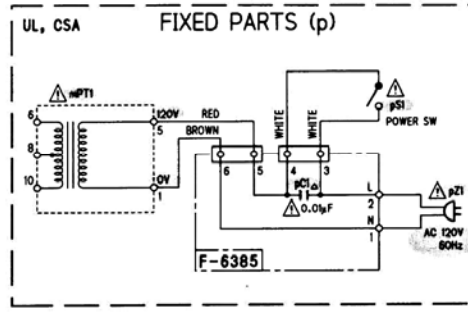
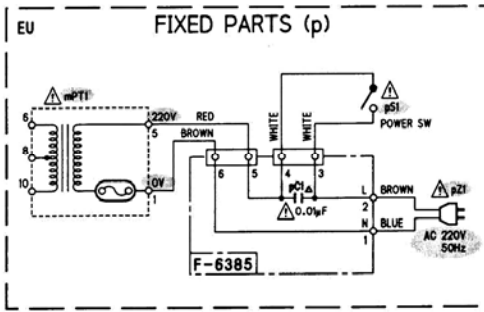
RESISTORS  
 Are in ohms, 1/8 Watts, ±5% Tolerance  
 Unless Otherwise Noted. k=10<sup>3</sup>, M=10<sup>6</sup>

CAPACITORS  
 Are in pF, unless Otherwise Noted. p=pf  
 Electrolytic Capacitor Capacitance μF/(Voltage)

TOLERANCE  
 1/2% 1% 2% 5% 10%

### 11-3. Power Supply Section

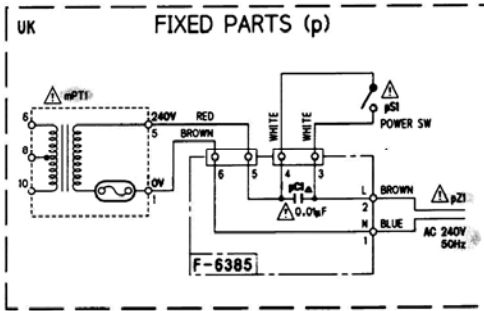
②



SYMBOL OF FUNCTION  
(m) POWER SUPPLY  
(p) FIXED PARTS

SYMBOL  
△ Ceramic Capacitor

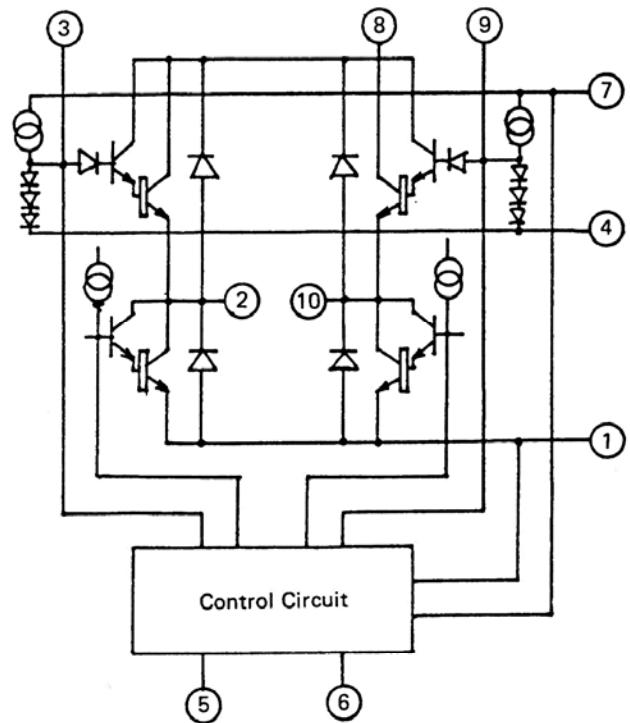
⚠ Is Safety Part.  
Use only replacement parts  
recommended by the manufacturer.



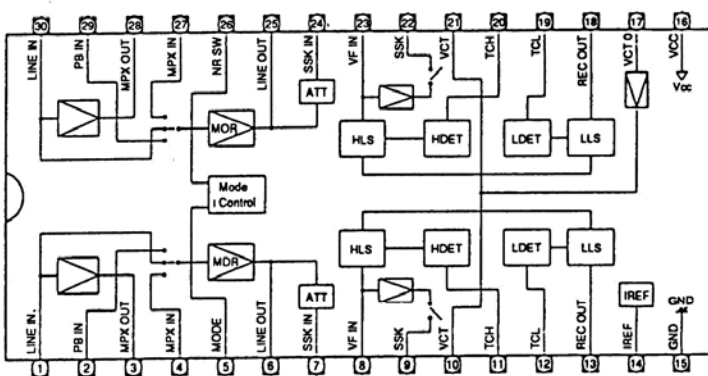
## 12. TERMINAL FUNCTION & INTERIOR BLOCK DIAGRAM OF ICs

#### •BA6229 < Motor Control >

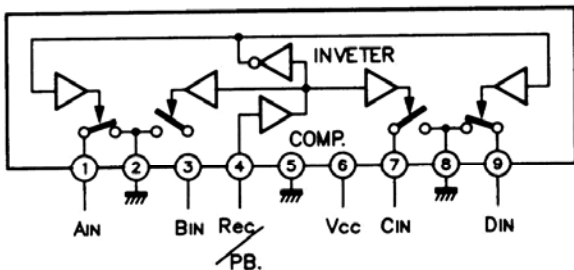
INPUT		OUTPUT		Description
IN1 (5)	IN2 (6)	OUT1 (2)	OUT2 (10)	
L	L	OPEN	OPEN	Stop
H	L	H	L	Normal
L	H	L	H	Reverse
H	H	L	L	Brake



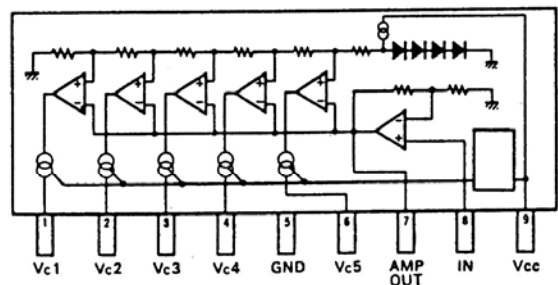
#### •CXA1330S < Dolby Noise Reduction >



#### •μPC1330HA < Selector >



#### •BA6124 < LED Drive >

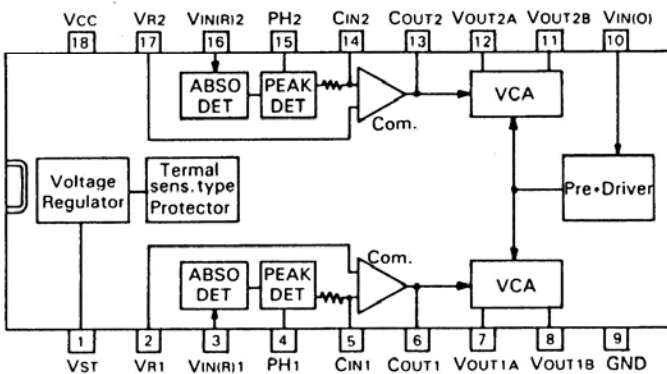


## •Terminal Function of M50727-149SP (Mecha Control)

Pin No.	Part	I/O	Function	Active
1	RESET	I	Reset Input	L
2	INT	I	Reel Pulse Input	H
3	AVss	-	Ground Input of A/D Converter	-
4	VREF	I	Reference Power Supply A/D Converter	-
5	K0	I	Key Input 3	-
6	K1	I	Key Input 2	-
7	K2	I	Key Input 1	-
8	K3	I	Key Input 0	-
10	S0	O	LED Display(REV)	L
11	S1	O	LED Display (FWD)	L
12	S2	O	LED Display (PLAY)	L
13	S3	O	LED Display (REC)	L
14	S4	O	LED Display (PAUSE)	L
15	S5	O	LED Display (SYNCHRO)	L
16	S6	O	LED Display (∞)	L
17	S7	O	REC Signal Output	H
18	D0	O	Bias Signal Output	H
19	D1	O	REC Mute Signal Output	H
20	CNVss	-	Connect Vss	-
21	Vss	-	0V Power Supply	-
22	D2	O	Capstan Motor Control Signal Output	L
23	D3	O	Line Mute Signal	H

Pin No.	Part	I/O	Function	Active
24	D4	I	AMPS Signal Input	L
25	D5	I	Power Stop Signal	L
26	D6	O	Solenoid Start Signal Output	L
27	D7	O	Solenoid Signal Output	L
28	D8	O	Reel Out Signal Output	H
29	D9	O	- Signal Output for Reel Motor	H
30	D10	O	+ Signal Output for Reel Motor	H
31	F0	I	Leader Tape Signal Input	L
32	F1	I	Synchro Signal Input (1) (Pause ON : H→L, Pause OFF : L→H)	H/L
33	F2	I	Synchro Signal Input (2) (Start : H→L, Stop : L→H)	H/L
34	F3	I	SSB Signal Input	I
35	G0	I	Cassette tape IN/OUT Detection Input Signal	H : ON
36	G1	I	Forward Recording OK Signal Input	H : OK
37	G2	I	Forward Recording OK Signal Input	L : FWD H : REV
38	G3	I	Reverse Recording OK Signal Input	H : OK
39	X out	O	Clock Output Terminal	-
40	X in	I	Clock Output Terminal	-

## •μPC1297CA (Dolby HX PRO)



## ◆ Terminal Function <μPC1297CA>

Pin No.	Pin Name	Terminal Function
1	VST	Input terminal for standard supply voltage.
2	VR1	Input terminal for standard voltage of comparator.
3	VINIR1	Input terminal for rec signal.
4	PH1	Terminal to connect a capacitor for peak hold.
5	CIN1	Input terminal for comparator.
6	COUT1	Output terminal of comparator.
7	VOUT1A	Output terminal of VCA1A.
8	VOUT1B	Output terminal of VCA1B.
9	GND	Ground terminal.
10	VIN IO	Input terminal for bias signal.
11	VOUT2B	Output terminal of VCA2b.
12	VOUT2A	Output terminal of VCA2a.
13	COUT2	Output terminal of comparator.
14	CIN2	Input terminal for comparator.
15	PH2	Terminal to connect a capacitor for peak hold.
16	VINIR2	Input terminal for rec signal.
17	VR2	Input terminal for standard voltage of comparator.
18	VCC	Power supply voltage terminal.



SANSUI ELECTRIC CO., LTD.:  
SANSUI ELECTRONICS CORPORATION:  
SANSUI ELECTRONICS G.M.B.H.:

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17150 South Margay Ave. Carson, California 90746 U.S.A.  
Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany

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