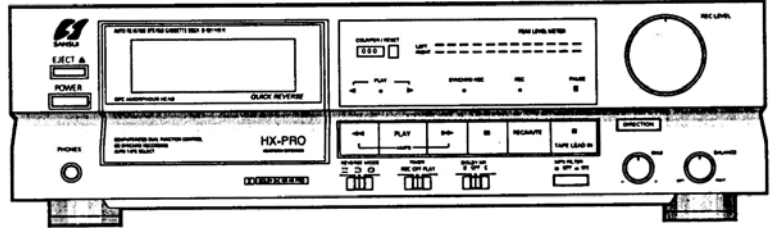




SERVICE MANUAL

D-X111HX D-X211HX·R STEREO CASSETTE DECK



CAUTION

- 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.
- 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 |

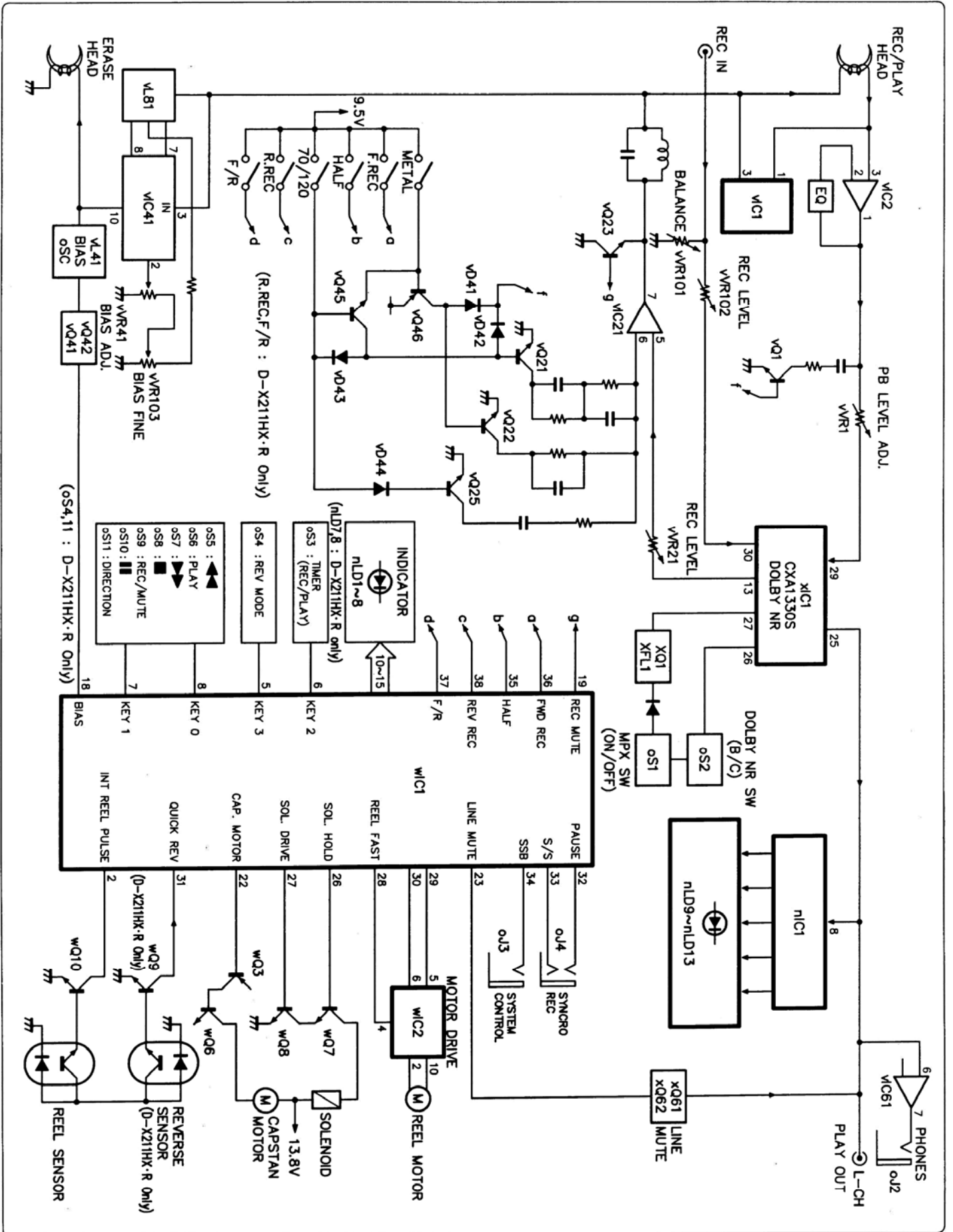
Specifications

| | |
|---|---|
| Track format..... | 4-track/2-channel system |
| Tape speed..... | 4.8 cm/sec |
| Heads | |
| Rec/play head..... | Hard permalloy (D-X111HX) Amorphous (D-X211HX·R) |
| Erase head..... | Double-gap ferrite |
| Motor | |
| | 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) |
| Frequency response (-20 VU recording/playback) | |
| 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) |
| Signal-to-noise ratio (recording/playback with metal tape) | |
| 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 |
| Input sensitivity/Impedance | |
| LINE IN (REC)..... | 70 mV/40 kohms |
| Power requirements..... | AC 120, 220, 240 V (50/60 Hz) |
| Power consumption..... | 16 watts |
| Dimensions | |
| | 430 mm (16-15/16") W 125 mm (4-15/16") H 275 mm (10-7/8") D |
| Weight | |
| | 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.

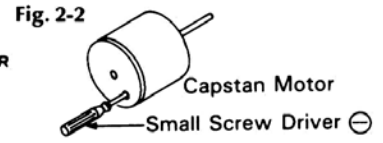
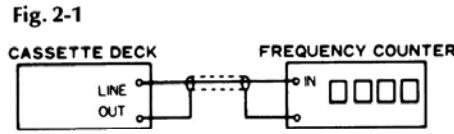
1. BLOCK DIAGRAM



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

2-1. Tape Speed Adjustment

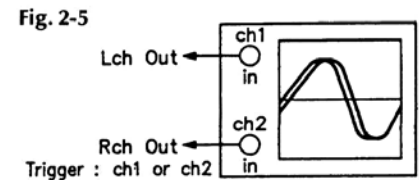
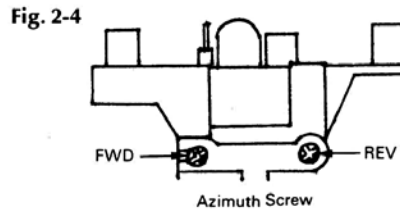
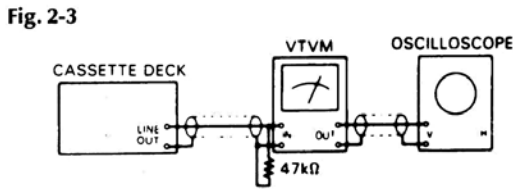
- Note:** 1. Use Sansui Test Tape, SCT-S3K.
(3kHz signals are recorded on the tape).
2. Connections are shown in Fig. 2-1.



| 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"> ● Max. Output both channels. ● Adjust the left output in phase with right output. (See Fig. 2-5) | 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

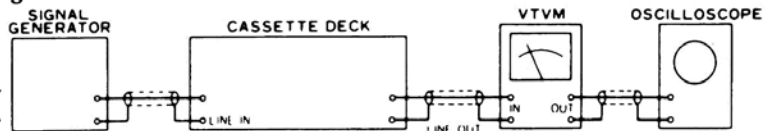
| Name of TEST TAPE | Recorded Frequency | Description | Equivalent To |
|-------------------|--------------------|---|---------------|
| SCT-F40 | 40 Hz | Playback Frequency Response Check | — |
| SCT-F1K | 1 kHz | High Frequency Equalization Check | — |
| SCT-F10K | 10 kHz | REC/PB Head Adjustment | — |
| 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

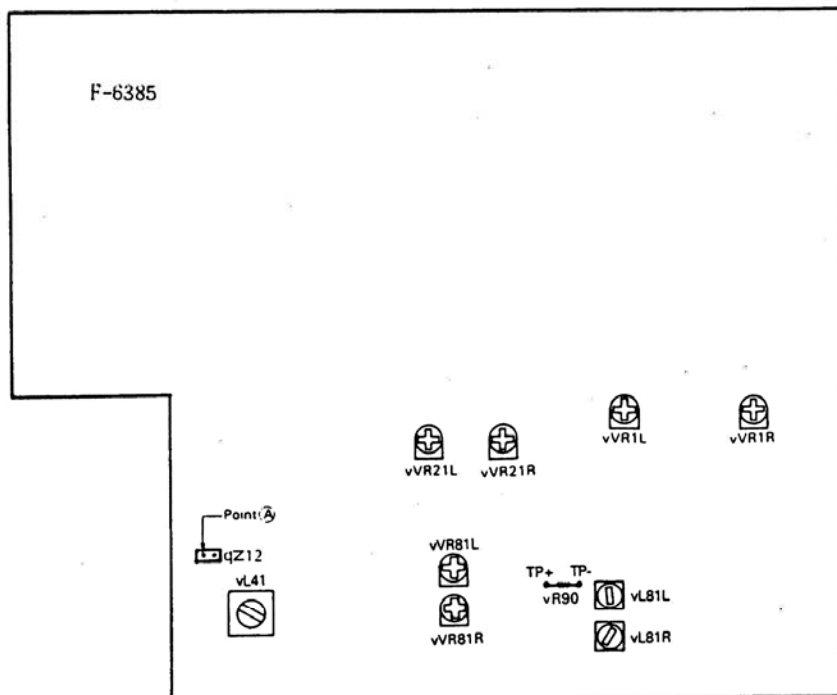
- Note: 1. Connections are shown in Fig. 2-6.
2. Set the Dolby NR switch to be ON (C position).
3. REC Level volumeMax.
4. BIAS control volume.....Center click position.
5. BALANCE control volume.....Center click position.

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 ± 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 ± 2 dB on AC Volt Meter. | See Fig. 2-7. |

Fig. 2-7

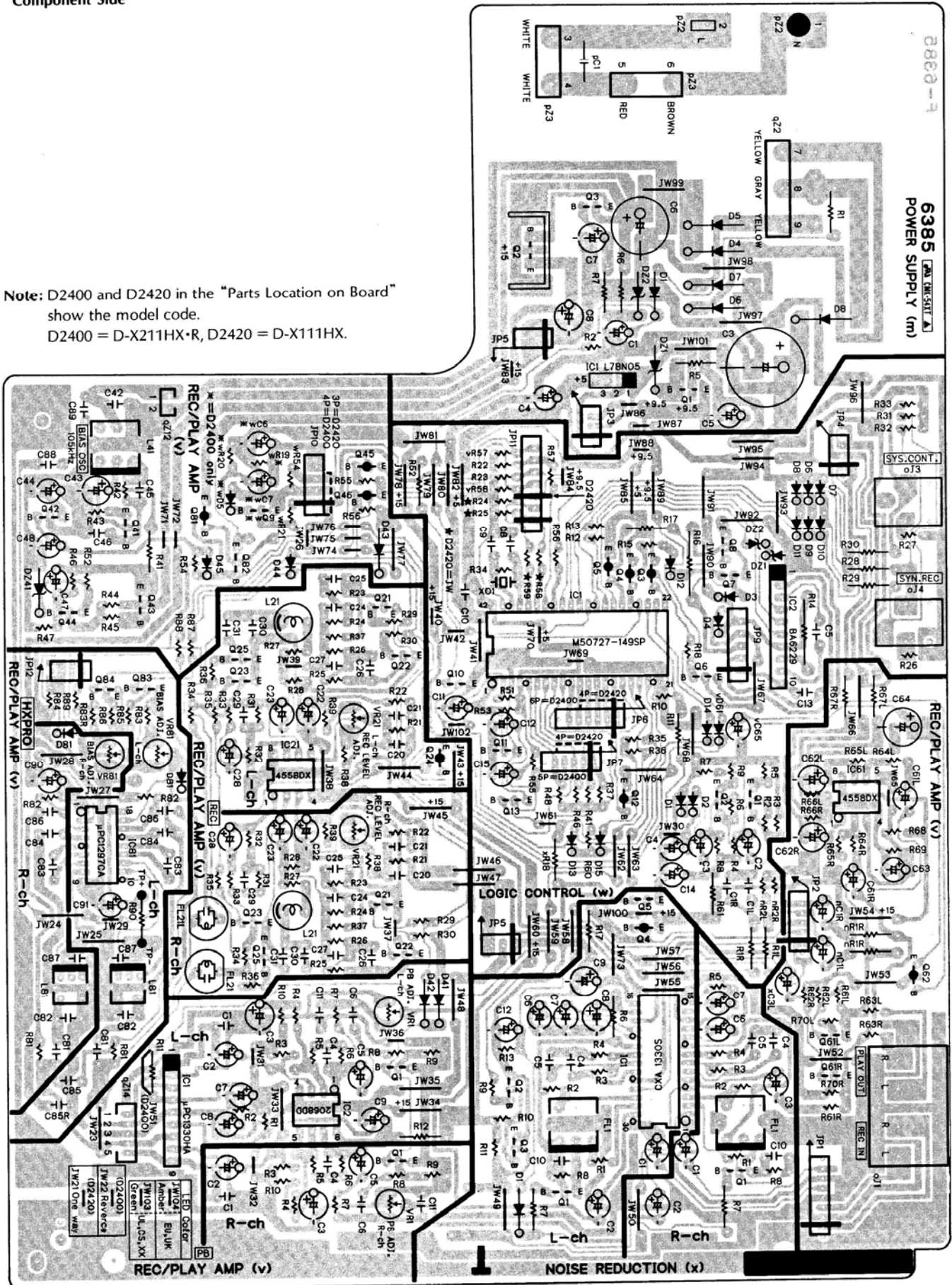


3. PARTS LOCATION ON BOARD

3-1. F-6385 Main Board

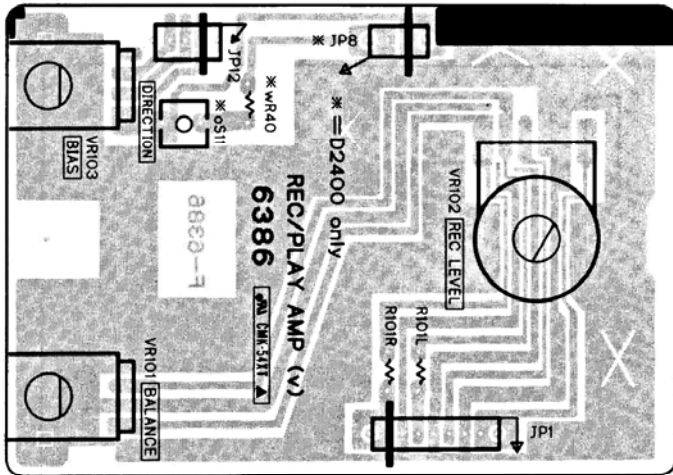
Component Side

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

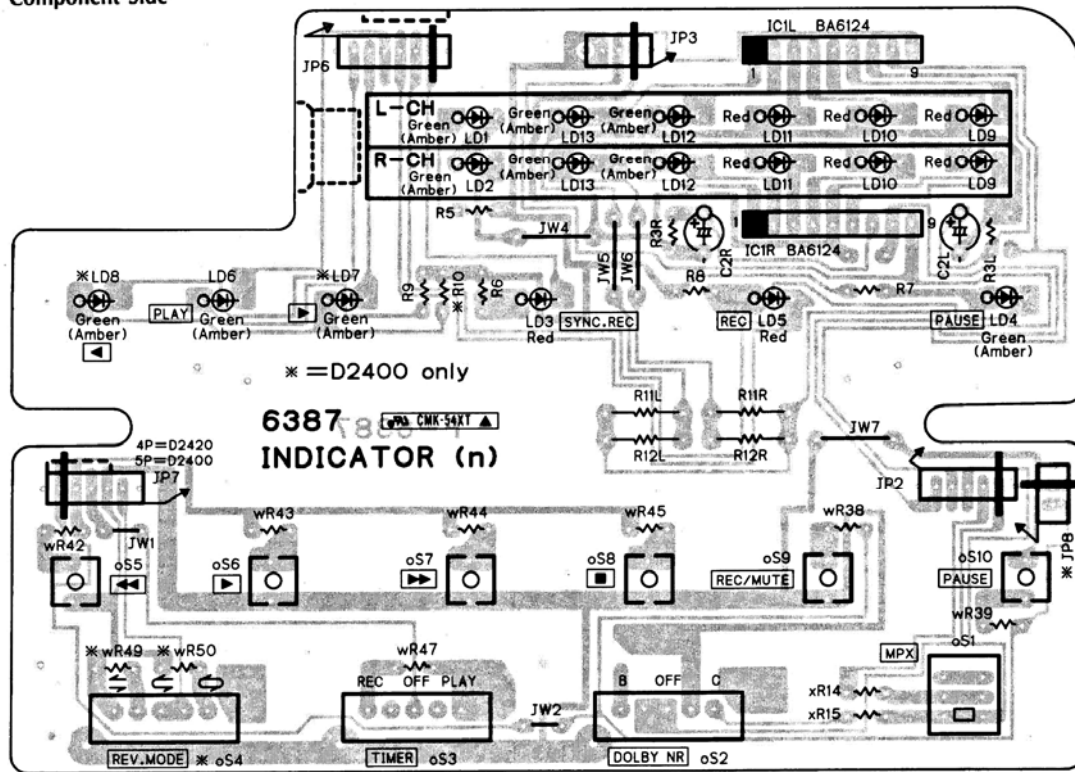
Component Side



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

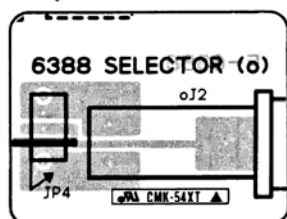
3-3. F-6387 Control Key & Display Board

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 vD42 | 46086000 | 1S1588TP-3 |
| △ mQ2 | 03083901 | 2SD313HP | vD42 | 03117600 | 1S2473T77 |
| △ | or 46546701 | 2SD880 | or vD43 | 46086000 | 1S1588TP-3 |
| mQ3 | 46367301 | 2SC2458 | vD43 | 03117600 | 1S2473T77 |
| or | 48058801 | 2SC1740S | or vD44 | 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 | | |
| or | 49306500 | 05AZ16-Z | △ vR90 | | |
| 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 | | | wQ2 | 46367301 | 2SC2458 |
| △ | | | or | 48058801 | 2SC1740S |
| 0.01μF 400V C.C. | | | wQ3 | 48183400 | DTA114YS |
| or 46943200 | | | or | 49390800 | RN2207 |
| *Transistor | | | wQ4 | 48183400 | DTA114YS |
| vQ1 | 48223100 | DTC114TS | or | 49390800 | RN2207 |
| or | 49389000 | RN1211 | wQ5 | 48183400 | DTA114YS |
| vQ21 | 46367301 | 2SC2458 | or | 49390800 | RN2207 |
| or | 48058801 | 2SC1740S | wQ6 | 46359801 | 2SC2001 |
| vQ22 | 46367301 | 2SC2458 | or | 48000901 | 2SC2060 |
| or | 48058801 | 2SC1740S | wQ7 | 46359801 | 2SC2001 |
| vQ23 | 46604301 | 2SC3327 | or | 48000901 | 2SC2060 |
| vQ24 | 48229200 | DTA214XS | wQ8 | 46359801 | 2SC2001 |
| or | 49390900 | RN2208 | or | 48000901 | 2SC2060 |
| vQ25 | 46367301 | 2SC2458 | wQ9 | 48223100 | DTC114TS (D-X211HX·R only) |
| or | 48058801 | 2SC1740S | or | 49389000 | RN1211 (D-X211HX·R only) |
| vQ41 | 46614101 | 2SC3243 | wQ10 | 46367301 | 2SC2458 |
| vQ42 | 46359801 | 2SC2001 | or | 48058801 | 2SC1740S |
| or | 48000901 | 2SC2060 | wQ11 | 48171600 | DTC114YS |
| △ vQ43 | 46614101 | 2SC3243 | or | 49388600 | RN1207 |
| vQ44 | 46367301 | 2SC2458 | wQ12 | 48183400 | DTA114YS |
| or | 48058801 | 2SC1740S | or | 49390800 | RN2207 |
| vQ45 | 46367201 | 2SA1048 | wQ13 | 48171600 | DTC114YS |
| or | 48058601 | 2SA933S | or | 49388600 | RN1207 |
| vQ46 | 46367201 | 2SA1048 | *IC | | |
| or | 48058601 | 2SA933S | wIC1 | 49473700 | M50727-149SP |
| vQ61 | 46604301 | 2SC3327 | △ wIC2 | 49473800 | BA6229 |
| vQ62 | 48229200 | DAT124XS | wX01 | 49473400 | Quartz Element |
| or | 49390900 | RN2208 | *Diode | | |
| vQ81 | 49353300 | DTB123ES | wD1 | 46464100 | 1SS133 |
| vQ82 | 48223100 | DTC114TS | wD2 | 46464100 | 1SS133 |
| or | 49389000 | RN1211 | wD3 | 46464100 | 1SS133 |
| vQ83 | 46367301 | 2SC2458 | wD4 | 46464100 | 1SS133 |
| or | 48058801 | 2SC1740S | wD5 | 46464100 | 1SS133 (D-X211HX·R only) |
| vQ84 | 46367301 | 2SC2458 | wD6 | 46464100 | 1SS133 |
| or | 48058801 | 2SC1740S | wD7 | 46464100 | 1SS133 |
| *IC | | | wD8 | 46464100 | 1SS133 |
| vIC1 | 49323500 | UPC1330HA | wD9 | 46464100 | 1SS133 |
| vIC2 | 49264000 | NJM2068D-D | wD10 | 46464100 | 1SS133 |
| vIC21 | 07208900 | NJM4558D-X | | | |
| vIC61 | 07208900 | NJM4558D-X | | | |
| 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 | 84438400 | 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)

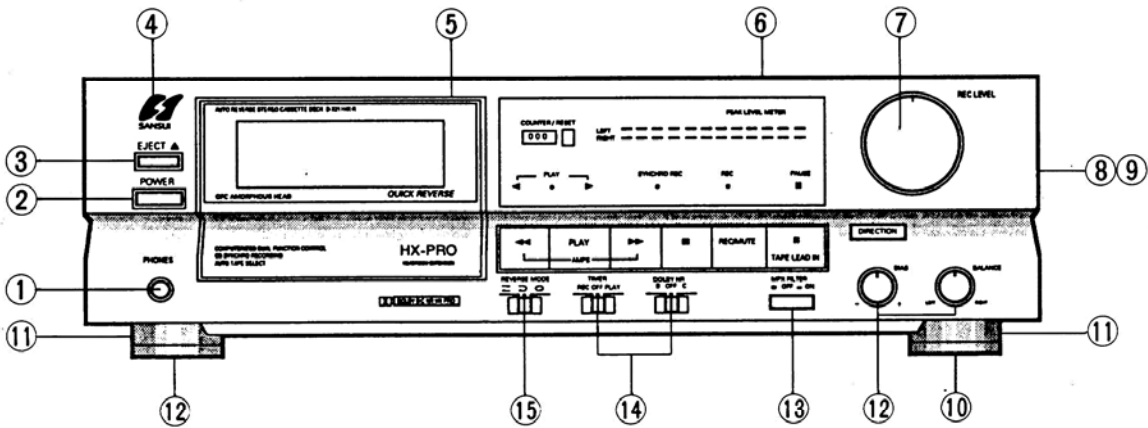
| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------------------|
| •IC | | |
| nIC1 | 46129100 | BA6124 |
| •LED | | |
| nLD1 | 49493300 | SEL3413E, - <XX, SS, UL, CSA> |
| | 49493100 | SEL3913K, - <EU, UK, SEV> |
| nLD2 | 49493300 | SEL3413E, ∞ <XX, SS, UL, CSA> |
|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

4-4. F-6388 Head Phone Jack Board

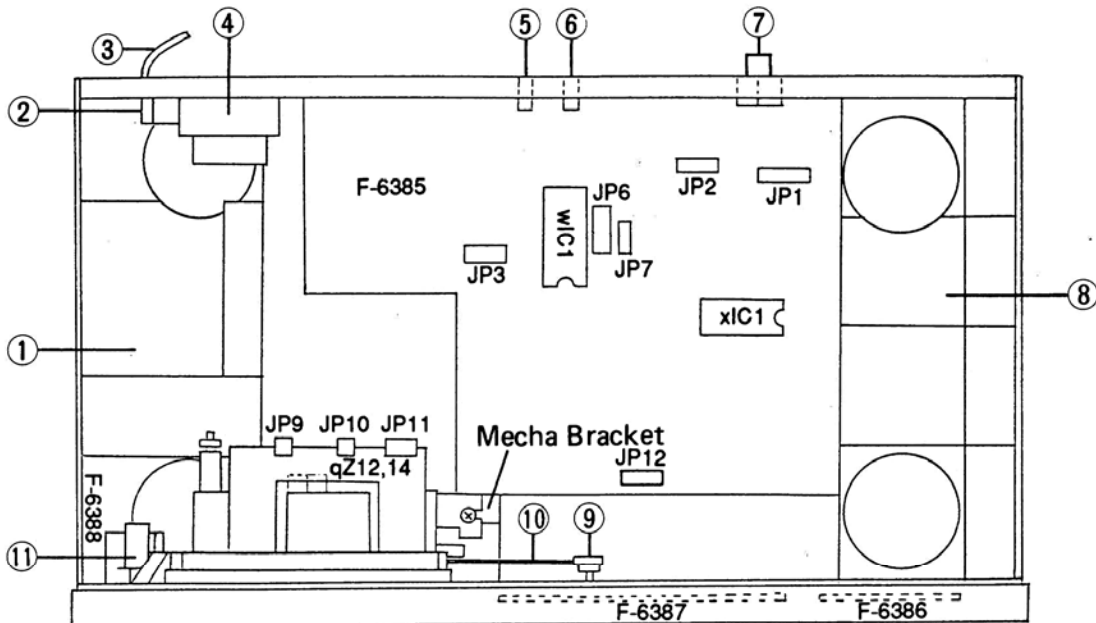
| Parts No. | Stock No. | Description |
|-----------|-----------|-------------|
| oJ2 | 49495100 | Jack |

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

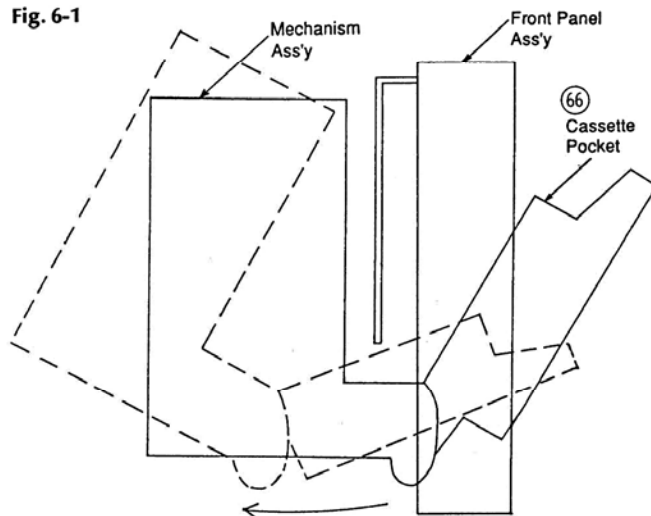
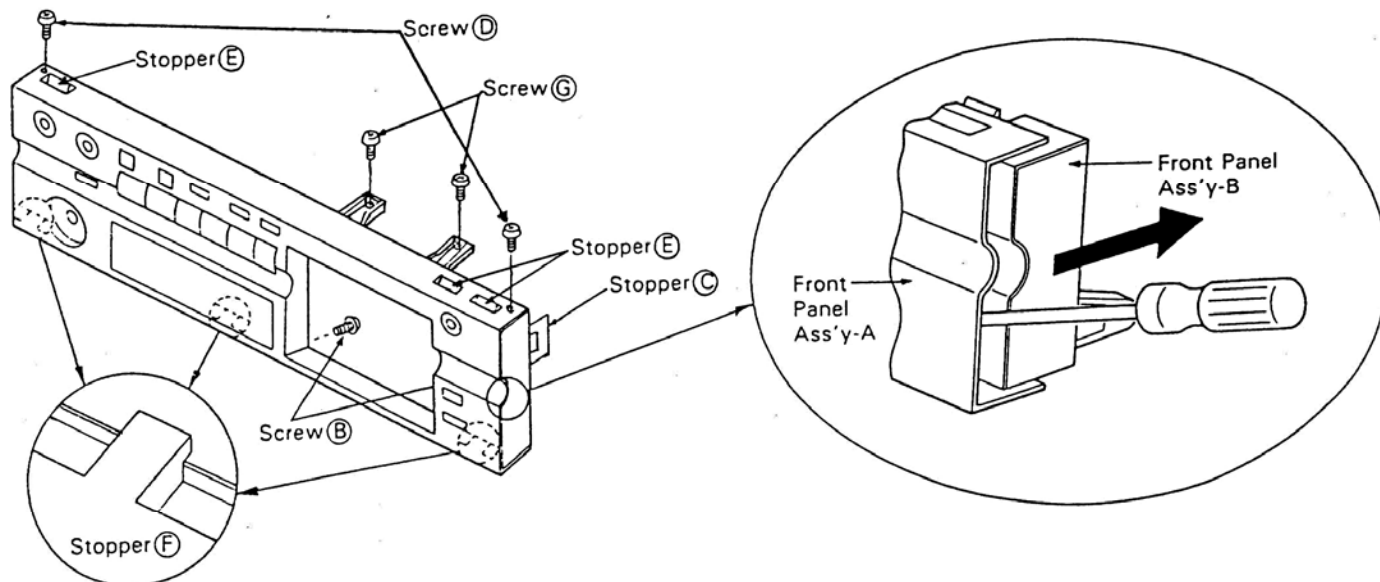


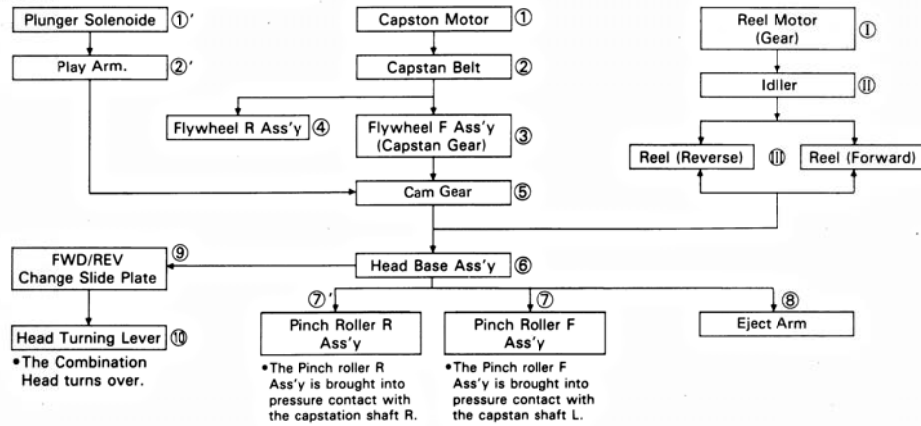
Fig. 6-2



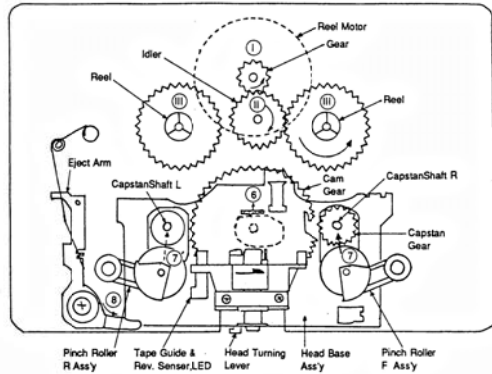
7. OPERATION OF CASSETTE MECHANISM

7-1. D-X211HX-R

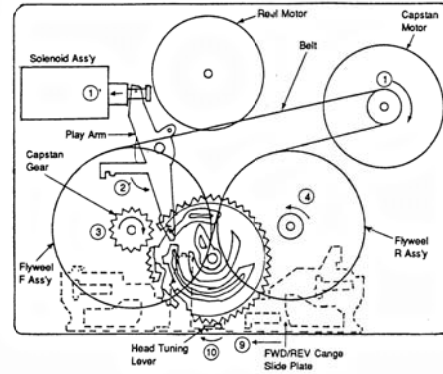
A. Torque Transportion Flowchart



B. Front View of Mechanism Chassis

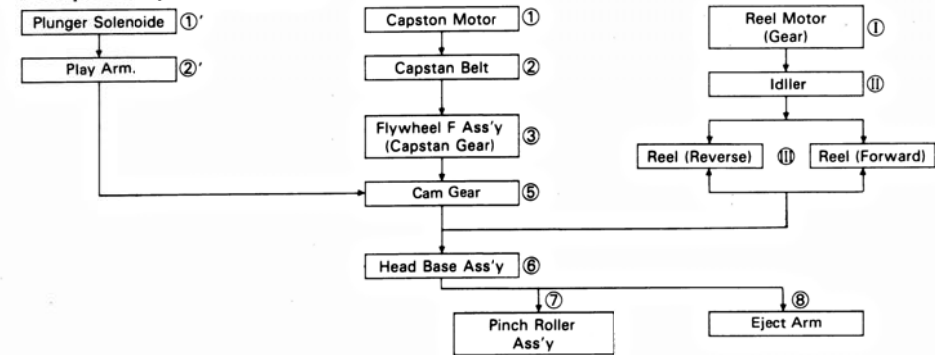


C. Rear View of Mechanism Chassis

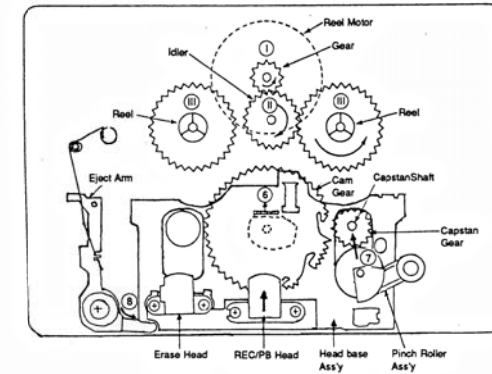


7-2. D-X111HX

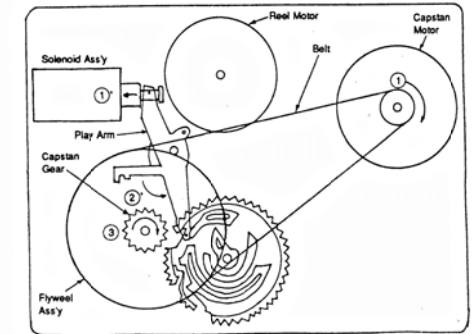
A. Torque Transportion Flowchart



B. Front View of Mechanism Chassis



C. Rear View of Mechanism Chassis

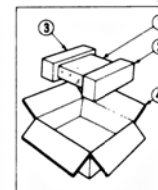


8. PACKING LIST

| 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> |

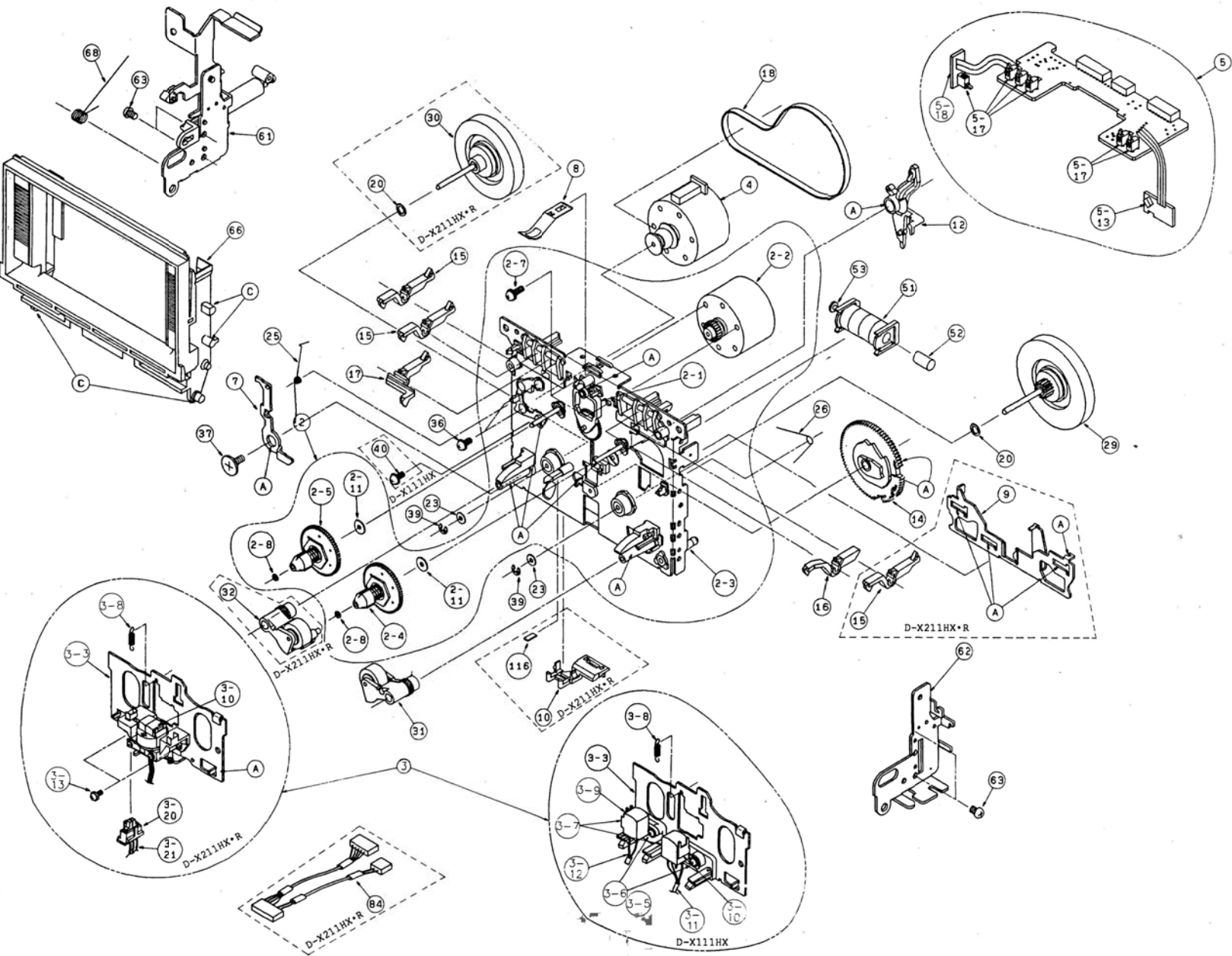


10. EXPLODED VIEW OF MECHANIZM AND PARTS LIST

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

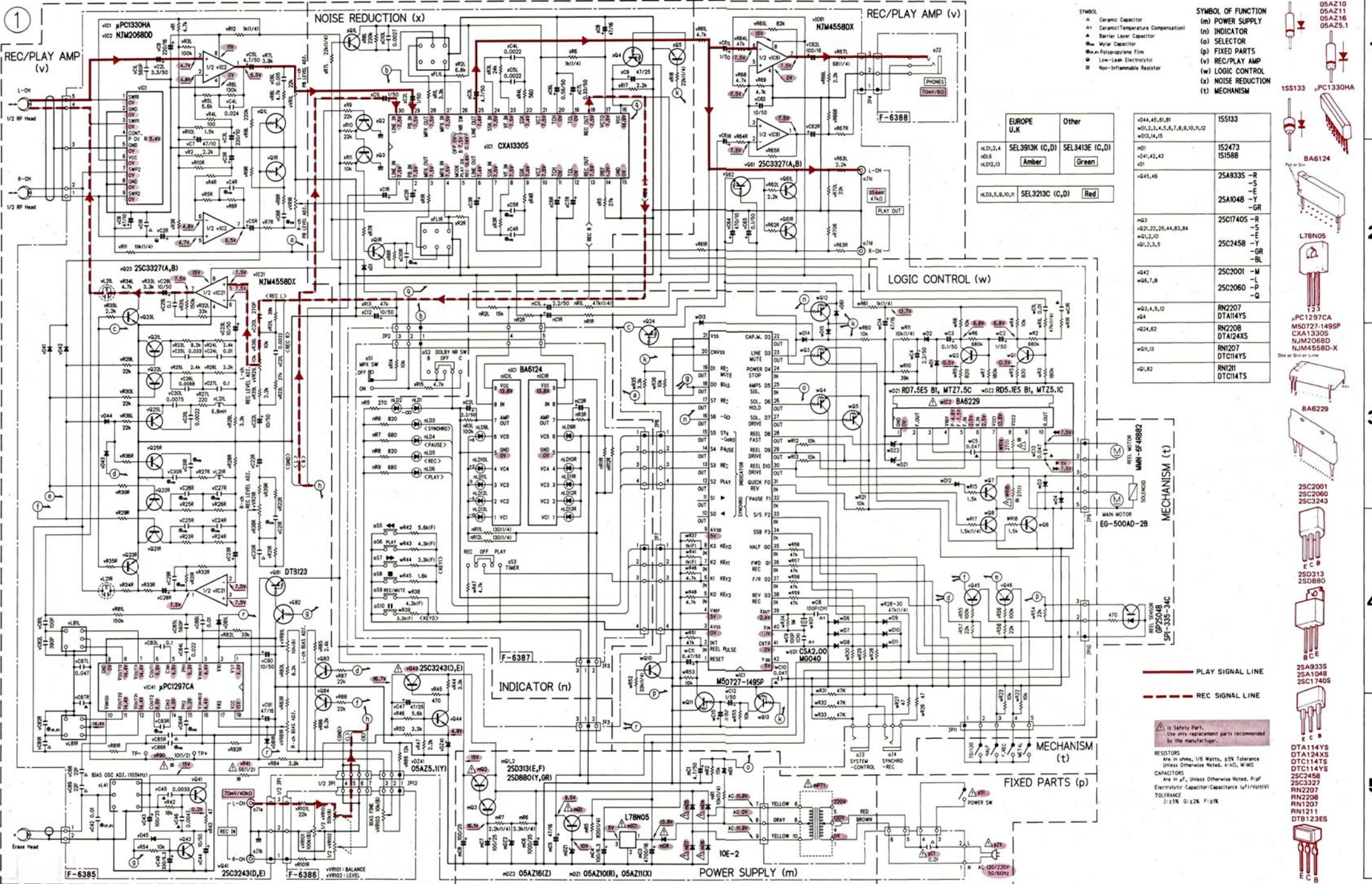
Parts List

| 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

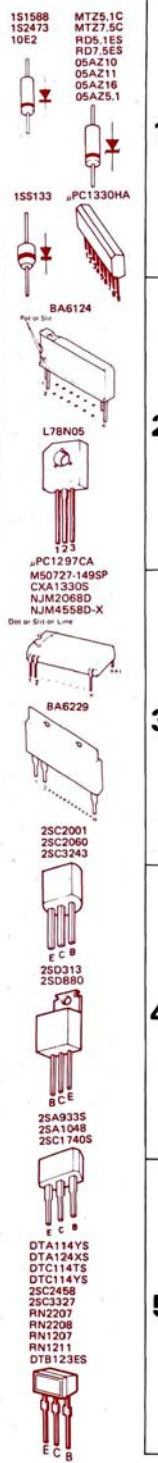
• Design and specifications subject to change without notice for improvement.
 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



- SYMBOL
- △ Ceramic Capacitor
 - ▲ Ceramic Temperature Compensation
 - Barrier Layer Capacitor
 - Mylar Capacitor
 - Polypropylene Film
 - ⊕ Low-Leak Electrolytic
 - ⊖ Non-Inflammable Resistor
- SYMBOL OF FUNCTION
- (m) POWER SUPPLY
 - (i) INDICATOR
 - (g) SELECTOR
 - (f) FIXED PARTS
 - (v) REC/PLAY AMP
 - (w) LOGIC CONTROL
 - (x) NOISE REDUCTION
 - (t) MECHANISM

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

| | |
|-----------------------------|-------------|
| vD4,45,61,B1 | 1S5133 |
| wD1,2,3,4,5,6,7,8,9,10,11,2 | IS2473 |
| wD3,14,15 | 1S1588 |
| vD5,46 | 25A9335 -R |
| | 25A1048 -GR |
| hD3 | 25C1740S -R |
| wD1,2,10,44,83,84 | 25C2458 -Y |
| wD1,2,10 | 25C2458 -GR |
| wD1,2,3,5 | 25C2458 -BL |
| vD2 | 25C2001 -M |
| wD6,7,8 | 25C2060 -P |
| wD3,4,5,10 | RN2207 |
| vD4 | DTA114YS |
| vD24,62 | RN2208 |
| wD1,13 | DTA124XS |
| vD1,82 | RN1207 |
| | DTC114YS |
| | RN1211 |
| | DTC114TS |



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

RESISTORS
Are in ohms, 1/8 Watts, ±5% Tolerance
Unless Otherwise Noted, 1/4W, 1/2W, 1W

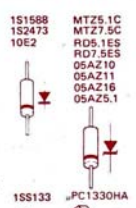
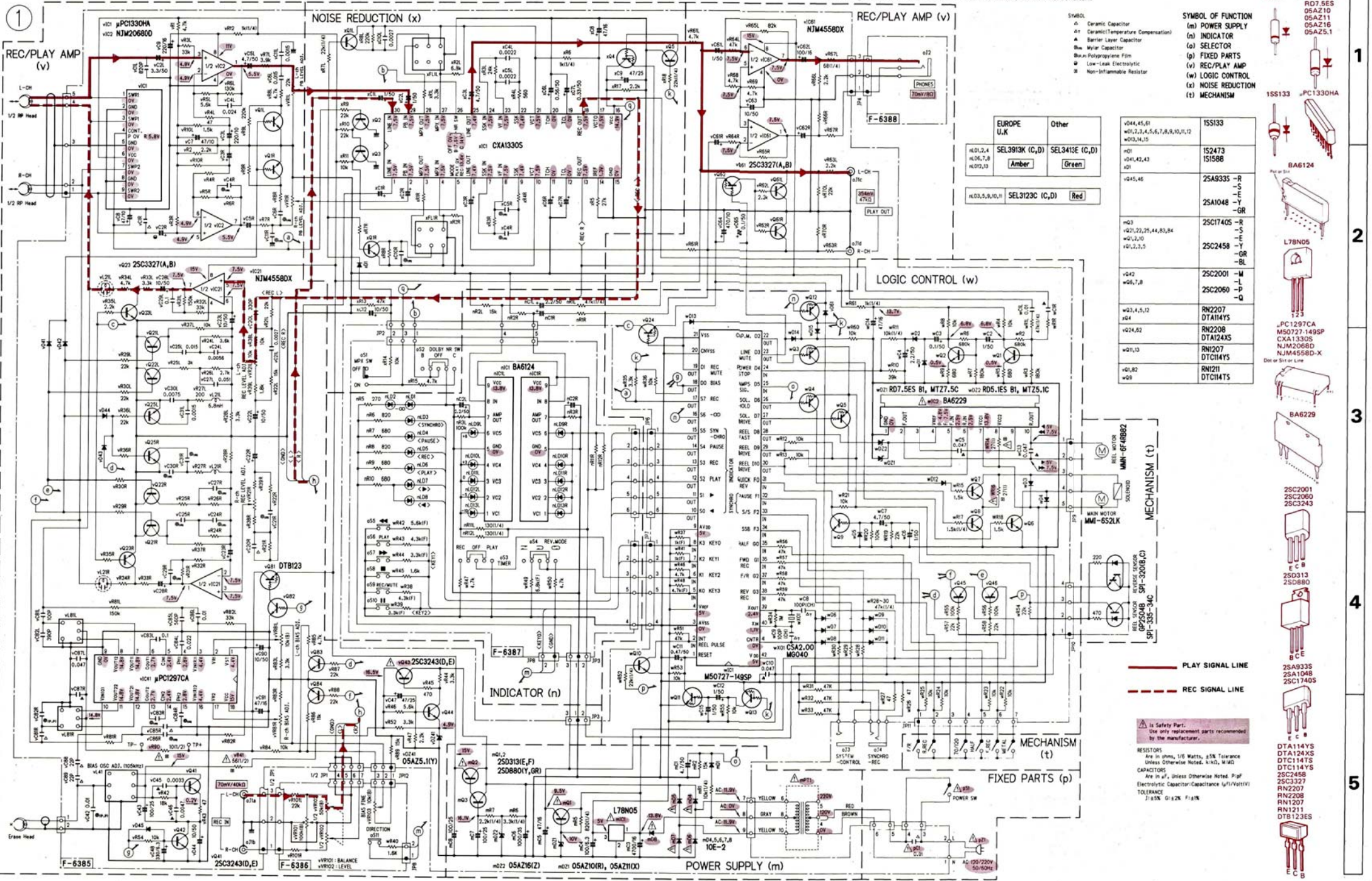
CAPACITORS
Are in pF, Unless Otherwise Noted, 50pF
Electrolytic Capacitor (Capacitance μF/Volts)

TOLERANCE
±1% 5% 10% 20% 50%

1
2
3
4
5

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)
A Barium Layer Capacitor
C Capacitor
Mw Mylar Capacitor
Pw Polystyrene Film
P Low-Leak Electrolytic
R 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

Table with 2 columns: EUROPE U.K. and Other. It lists component values and color codes for different regions.

Table with 2 columns: Component part numbers and their corresponding symbols. Lists various ICs, capacitors, and resistors.

1

2

3

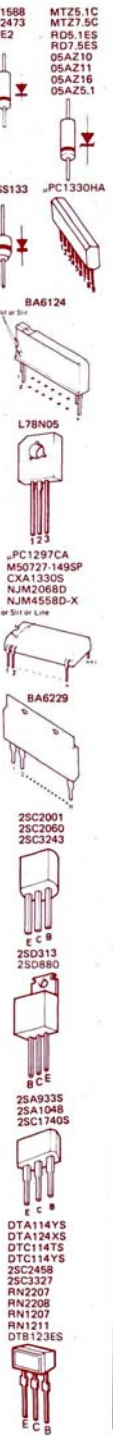
4

5

PLAY SIGNAL LINE
REC SIGNAL LINE

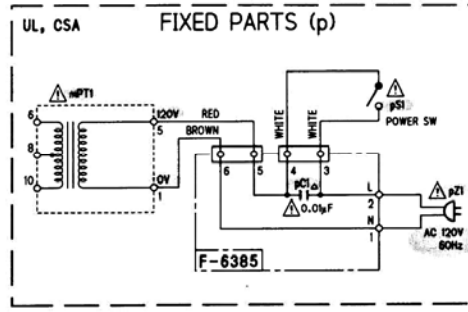
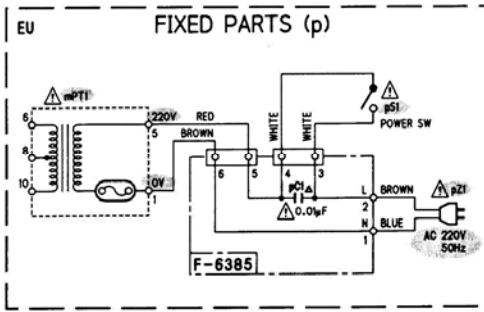
SAFETY PARTS
Use only replacement parts recommended by the manufacturer.

RESISTORS
Are in ohms, 1/8 Watts, ±5% Tolerance
Unless Otherwise Noted, k=10^3, M=10^6
CAPACITORS
Are in pF, Unless Otherwise Noted, p=10^-12
Electrolytic Capacitor Capacitance in µF/(VOLT)
TOLERANCE
±15% ±20% ±10%



11-3. Power Supply Section

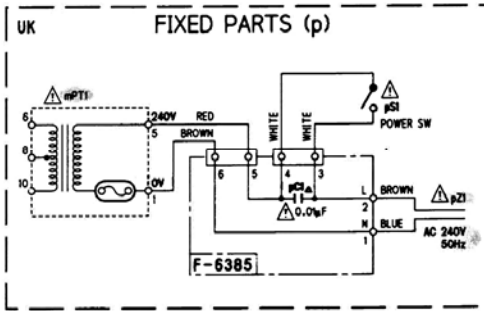
②



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

SYMBOL
△ Ceramic Capacitor

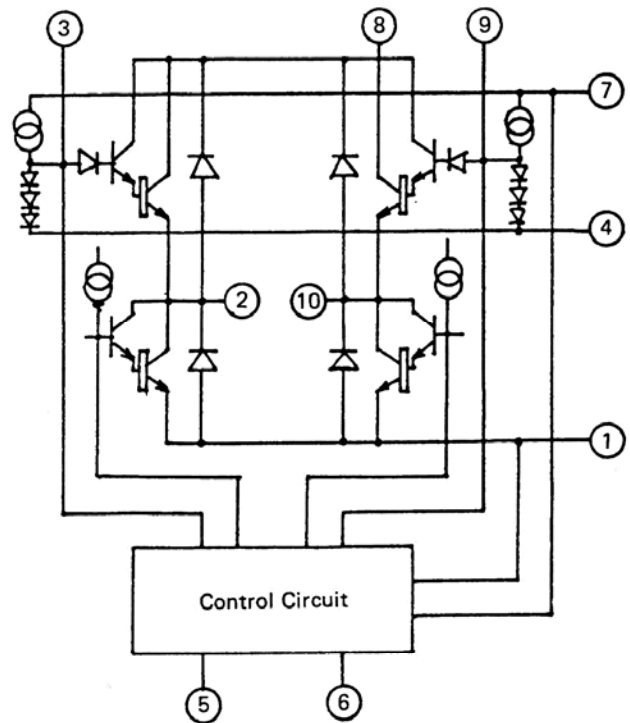
⚠ Is Safety Part.
Use only replacement parts
recommended by the manufacturer.



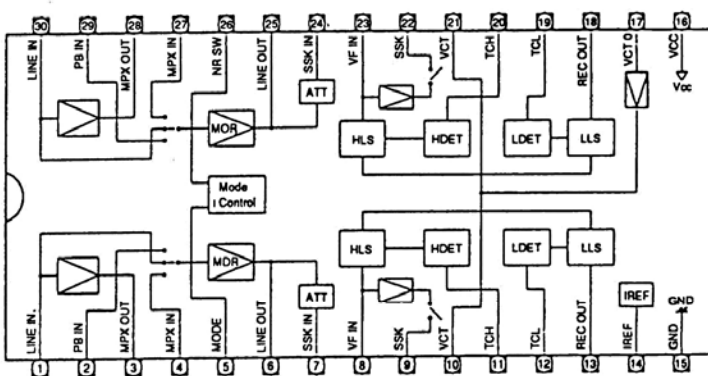
12. TERMINAL FUNCTION & INTERIOR BLOCK DIAGRAM OF ICs

•BA6229 < Motor Control >

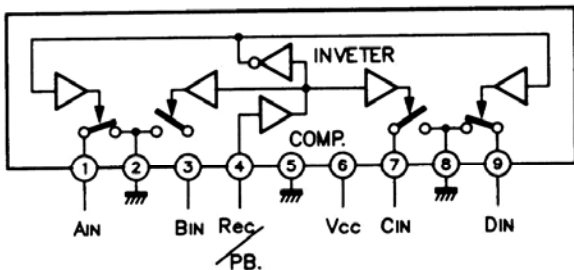
| INPUT | | OUTPUT | | Description |
|---------|---------|----------|-----------|-------------|
| IN1 (5) | IN2 (6) | OUT1 (2) | OUT2 (10) | |
| L | L | OPEN | OPEN | Stop |
| H | L | H | L | Normal |
| L | H | L | H | Reverse |
| H | H | L | L | Brake |



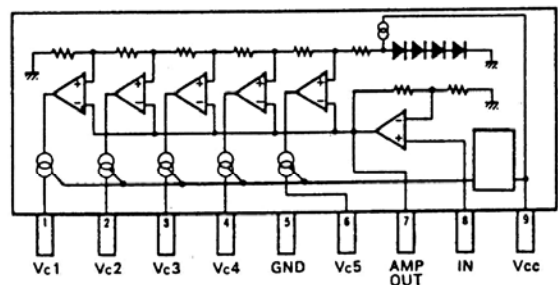
•CXA1330S < Dolby Noise Reduction >



•μPC1330HA < Selector >



•BA6124 < LED Drive >

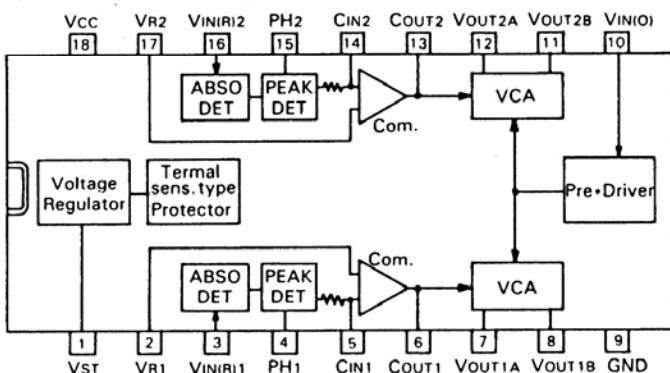


•Terminal Function of M50727-149SP (Mecha Control)

| 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 (0) | 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. |



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SANSUI ELECTRONICS CORPORATION:
SANSUI ELECTRONICS G.M.B.H.:

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