XR-4900

SERVICE MANUAL

E Model

Model Name Using Similar Mechanism	XR-C5100
Tape Transport Mechanism Type	MG-25F-136

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 18,000 Hz
Signal-to-noise ratio	58 dB

Tuner section

FM

Tuning range	FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz
Usable sensitivity	9 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.7 % (stereo), 0.4 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

MW

Tuning range	MW tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step)

SW

Tuning range	SW tuning interval: SW1: 2,940 – 7,735 kHz SW2: 9,500 – 18,135 kHz (except for 10,140 – 11,575 kHz)
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 μV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	40 W × 4 (at 4 ohms)

– Continued on next page –

FM/MW/SW CASSETTE CAR STEREO

MICROFILM

SONY®

General

Outputs	Audio output Power aerial relay control lead Power amplifier control lead Telephone ATT control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative earth)
Dimensions	Approx. 188 × 58 × 181 mm (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 164 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

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Flexible Circuit Board Repairing

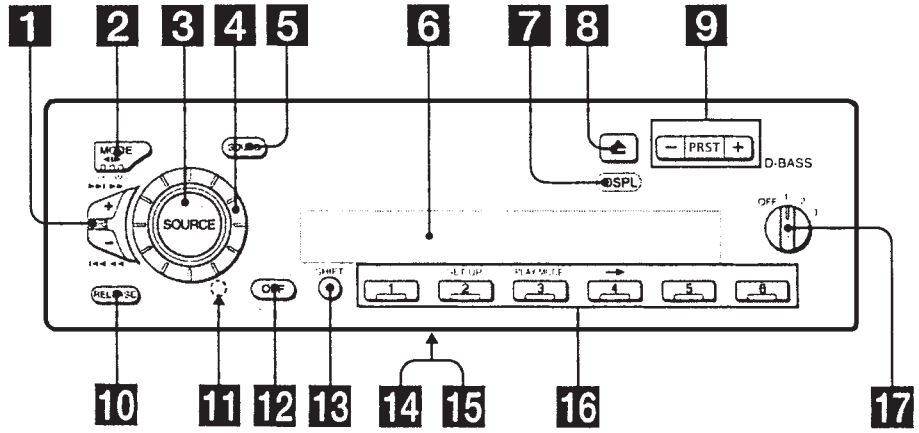
- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

This section is extracted from instruction manual.

Location of controls



Refer to the pages listed for details.

1 SEEK/AMS (seek/Automatic Music Sensor/manual search) control 6, 8, 14

2 MODE (◄I►) button

During tape playback:
Playback direction change 6

During radio reception:
BAND select 7, 8

3 SOURCE (TAPE/TUNER) button 6, 7, 8, 13

4 Dial (volume/bass/treble/left-right/rear-front control) 5, 11

5 SOUND button 11

6 Display window

7 DSPL (display mode change) button 6, 9, 13

8 ⏏ (eject) button 6

9 PRST button

During radio reception:
Preset stations select 8

10 RELEASE (front panel release) button 4, 16

11 Reset button (located on the front side of the unit behind the front panel) 4

12 OFF button 4, 6

13 SHIFT button

PLAY MODE 7, 8, 9, 14
SET UP 5, 12, 13

14 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT switch" in the Installation/Connections manual.

15 Frequency select switch (located on the bottom of the unit)
See "Frequency select switch" in the Installation/Connections manual.

16 Number buttons 8

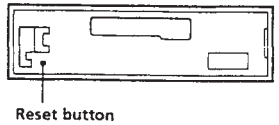
17 D-BASS control 12

3

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Remove the front panel and press the reset button with a pointed object, such as a ballpoint pen.



Reset button

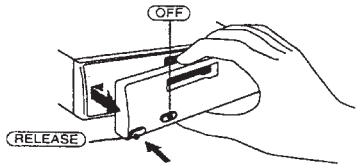
Note
Pressing the reset button will erase the clock setting and some memorized functions.

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

1 **Press (OFF).**

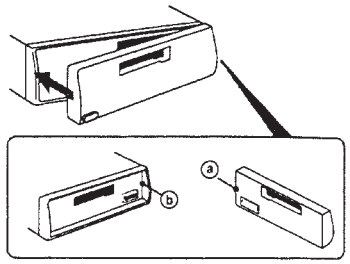
2 **Press (RELEASE), then slide the front panel a little to the left, and pull it off towards you.**



Notes
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.*
- *When carrying the front panel with you, use the supplied front panel case.*

Attaching the front panel

Attach part Ⓐ of the front panel to part Ⓑ of the unit as illustrated and push the left side into position until it clicks.



Notes
- *Be sure not to attach the front panel upside down.*
- *Do not press the front panel too hard against the unit when attaching it.*
- *Do not press too hard or put excessive pressure on the display window of the front panel.*
- *Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.*

Caution alarm

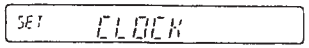
If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds (only when the POWER SELECT switch on the bottom of the unit is set to the Ⓐ position).
If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.

Setting the clock

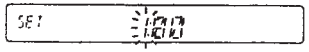
The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 **Press (SHIFT), then press (2) (SET UP) repeatedly until "CLOCK" appears.**

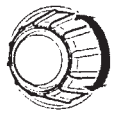


❶ Press (4) (→).



The hour indication flashes.

❷ Set the hour.



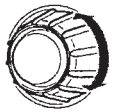
to go backward

to go forward

❸ Press (4) (→).

The minute indication flashes.

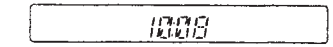
❹ Set the minute.



to go backward

to go forward

2 **Press (SHIFT).**



The clock starts.

3 **Press (SHIFT).**
After the clock setting is complete, the display returns to normal playback mode.

Note
If the POWER SELECT switch on the bottom of the unit is set to the Ⓑ position, turn the power on first, then set the clock.

Installation

Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be done only by service technicians.
- Choose the installation location carefully so that the unit will not interfere with normal driving.
- Avoid installing the unit in areas subject to dust, dirt, excessive vibration, or high temperatures, such as in direct sunlight or near heater ducts.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

How to detach and attach the front panel

Before installing the unit, detach the front panel.

A To detach

Before detaching the front panel, be sure to press (OFF). Press (RELEASE), then slide the front panel a little to the left, and pull it off towards you.

B To attach

Attach part ⓐ of the front panel to part ⓑ of the unit as illustrated and push the left side into position until it clicks.

Instalación

Precauciones

- No toque los cuatro orificios de la superficie superior de la unidad. Estos orificios son para ajustes del sintonizador que solamente deberán realizar técnicos de reparación.
- Elija cuidadosamente el lugar de montaje de forma que la unidad no interfiera las funciones normales de conducción.
- Evite instalar la unidad donde pueda quedar sometida a altas temperaturas, como a la luz solar directa o al aire caliente de calefacción, o a polvo, suciedad, o vibraciones excesivas.
- Para realizar una instalación segura y firme, utilice solamente la ferretería de montaje suministrada.

Ajuste del ángulo de montaje

Ajuste el ángulo de montaje a menos de 20°.

Forma de extraer e instalar el panel frontal

Antes de instalar la unidad, extraiga el panel frontal.

A Para extraerlo

Antes de extraer el panel frontal, asegúrese de pulsar (OFF). Pulse (RELEASE), deslice el panel ligeramente hacia la izquierda y tire de él hacia fuera.

B Para instalarlo

Coloque el orificio ⓐ del panel frontal en el eje ⓑ de la unidad, como se muestra en la ilustración, y después presione la parte izquierda.

安裝

使用前注意事項

- 本機頂部的 4 個小孔請勿擅自觸動，它們僅供維修技術人員調整調諧器之用。
- 本機請放在不妨礙司機駕駛之處。
- 避免將本機放在高溫之處，如陽光直接照射、暖氣機前、或灰塵極多、髒亂，以及極易受震動等地方。
- 為了安全起見，安裝時請使用附送的部件。

安裝角度之調整

請在 20 度以內調整安裝角度。

如何拆卸和裝配前板

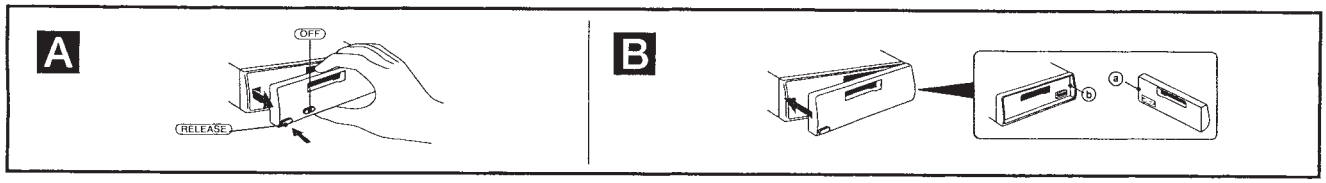
安裝本機之前，請先拆卸前板。

A 拆卸

拆卸面板之前，務必按下 (OFF) 鍵。然後，按下 (RELEASE) 鍵，將面板稍微向左邊滑動，朝您自己的方向拉出。

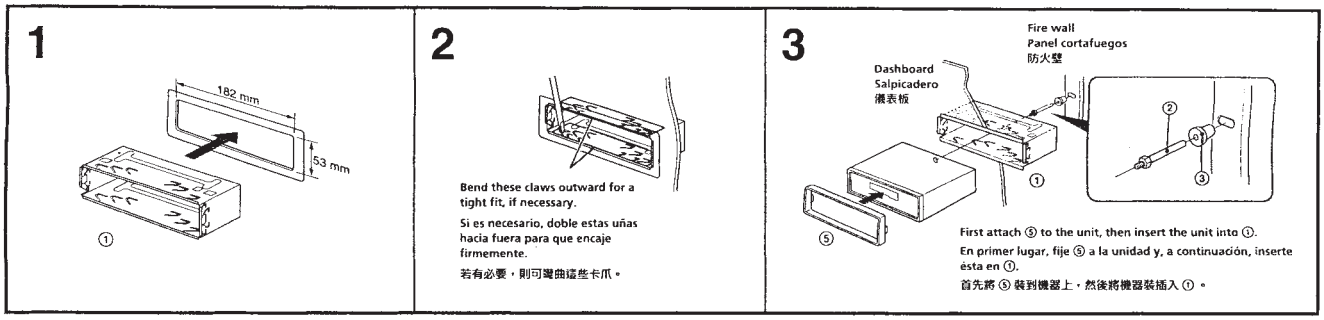
B 裝配

如圖所示，將面板的 ⓐ 孔對準本機的支軸 ⓑ 上，然後將左側推入。



Mounting example

Installation in the dashboard



Ejemplo de montaje

Instalación en el salpicadero

安裝示例

在儀表板中安裝

Mounting the unit in a Japanese car

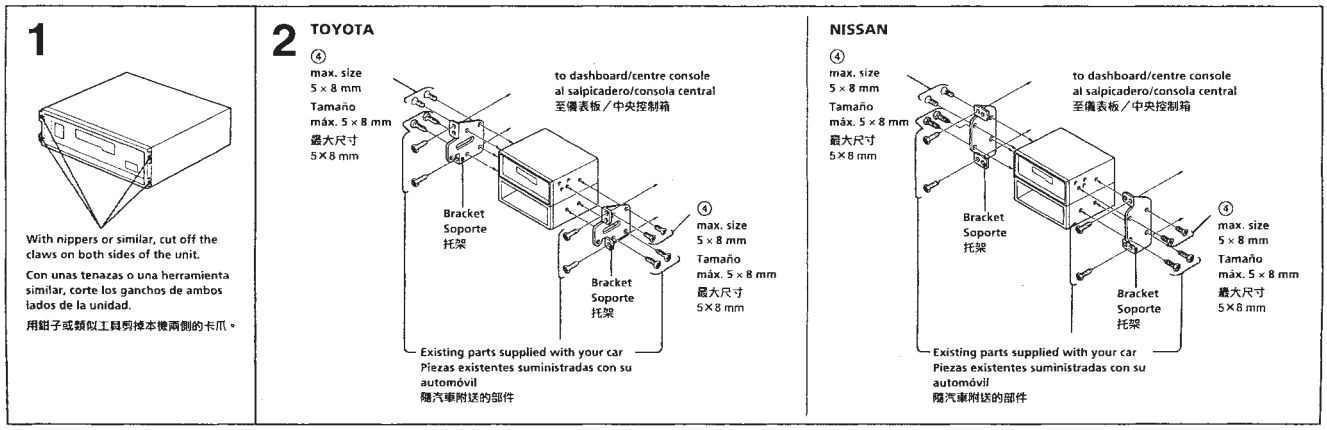
You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.

Montaje de la unidad en un automóvil japonés

Usted no podrá instalar esta unidad en algunos automóviles japoneses. En tal caso, consulte a su proveedor Sony.

將本機安裝於日本產汽車上時

有的日本汽車內不能安裝本機，在這種情形下，請您向當地的 Sony 經銷商諮詢。



Note
To prevent malfunction, install only with the supplied screws ④.

Nota
Para evitar que se produzcan fallos, realice la instalación solamente con los tornillos suministrados ④.

註
為防止發生故障，安裝時只能使用附送的螺絲 ④。

Connections

Cautions

- This unit is designed for negative earth 12 V DC operation only.
- Be careful not to pinch any wires between a screw and the body of the car or this unit or between any moving parts such as the seat railing, etc.
- Before making connections, disconnect the earth terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all earth wires to a common earth point.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.

If your car has no accessory position on the ignition key switch — POWER SELECT switch

The front panel illumination is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery to wear if **your car has no accessory position on the ignition key switch**. To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the B position, then press the reset button**. The illumination is reset to stay off while the unit is not being played.

Notes

- *The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the B position.*
- *Do not use excessive force when changing the POWER SELECT switch.*

Frequency select switch

The MW (FM) tuning interval is factory-set to the 9K (50 K) position. If the frequency allocation system of your country is based on 10 kHz (200 kHz) interval, set the switch on the bottom of the unit to the 10 K (200 K) position before making connections.

Reset button

When the installation and connections are complete, be sure to press the reset button with a ballpoint pen etc.

Conexiones

Precauciones

- Esta unidad ha sido diseñada para alimentarse con 12 V CC, negativo a masa, solamente.
- Tenga cuidado de no atrapar ningún cable entre algún tornillo y la carrocería del automóvil o esta unidad o entre las partes móviles, como por ejemplo los railes del asiento, etc.
- Antes de realizar las conexiones, desconecte el terminal de puesta a masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte los cables de entrada de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- Cerciórese de conectar el cable de entrada de alimentación rojo a un terminal de 12 V positivo que se energice al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los conductores de puesta a masa a un punto común.**
- Conecte el cable amarillo a un circuito libre del automóvil que tenga una capacidad superior a la del fusible de la unidad. Si conecta esta unidad en serie con otros componentes estereofónicos, el circuito del automóvil al que se encuentran conectados debe tener una capacidad superior a la de la suma de las capacidades de los fusibles de cada componente. Si ningún circuito del automóvil tiene una capacidad tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si el automóvil no dispone de ningún circuito para conectar esta unidad, conéctela a un circuito del automóvil con capacidad superior a la del fusible de la unidad, de forma que si se funde el fusible de ésta, no se interrumpa ningún otro circuito.

Si el automóvil no dispone de posición para accesorios en la llave de encendido — Selector POWER SELECT

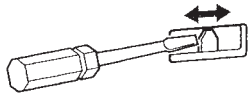
La iluminación del panel frontal ha sido ajustada en fábrica para que esté activada aunque la unidad no se encuentre en reproducción. Sin embargo, este ajuste puede provocar cierta descarga de la batería del automóvil **si éste no dispone de posición para accesorios en la llave de encendido**. Para evitar esto, **ponga el selector POWER SELECT, situado en la base de la unidad, en la posición B y, después, pulse el botón de restauración.** La iluminación estará desactivada cuando la unidad no se encuentre en reproducción.

Notas

- *La alarma de precaución para el panel frontal no se activará si el selector POWER SELECT está ajustado en la posición B.*
- *No emplee excesiva fuerza al cambiar el selector POWER SELECT.*

Selector de frecuencia

El intervalo de sintonía de MW (FM) ha sido ajustado en fábrica a la posición 9 K (50 K). Si el sistema de asignación de frecuencias de su país se basa en el intervalo de 10 kHz (200 kHz), ponga este selector, situado en la base de la unidad, en la posición 10 K (200 K) antes de realizar las conexiones.



Botón de restauración

Cuando finalice la instalación y las conexiones, cerciórese de pulsar el botón de restauración con un bolígrafo, etc.

線路連接

注意

- 本機只能使用負極接地 12 V 直流電源。
- 小心別使任何導線夾緊在螺栓和車身或本機間，也不夾緊在任何活動部件諸如座椅扶手間等。
- 連接前，先拔去汽車電池的接地端子，以免發生短路。
- **黃色**和**紅色**電源輸入導線必須在所有其它導線都連接完畢以後才連接。
- 紅色電源導線務請連接至 + 12 V 電源端子，該電源端子在汽車發動機點火鑰匙處於輔助位置時才通電。
- **將所有地線都連接到同一地點。**
- 將黃色導線連接到大於本機保險絲額定容量的未佔用的汽車電路上。若將本機和其它立體聲裝置相互串聯，所連接的汽車電路容量必須大於各組成機保險絲容量的總和。
  若沒有與本機保險絲額定容量一樣大的汽車電路可資利用，可將本機直接連接到電池上。若無適當的汽車電路可用於連接本機，請將本機連接到大於本機保險絲容量的汽車電路上。這樣，若本機的保險絲燒斷了，也不致於切斷其它電路。

點火鑰匙上沒有輔助位置 — POWER SELECT 開關

前板的照明燈是出廠前設置的，即使本使用本機時也會發亮。**若要在汽車發動機點火鑰匙沒具輔助位置的汽車裡使用本機**，此照明燈將會一直消耗微量的電池電力。因此，為了避免在這種狀態下的電池消耗，**請將本機底部的 POWER SELECT 開關設定在 B 檔處，然後按下前板的復位鍵**。這樣，不使用本機時，照明燈便不發亮。

註

- *POWER SELECT 開關被設定在 B 檔時，前板的操作鍵發聲告功能便失效。*
- *更換 POWER SELECT 開關時，切勿用力過大。*

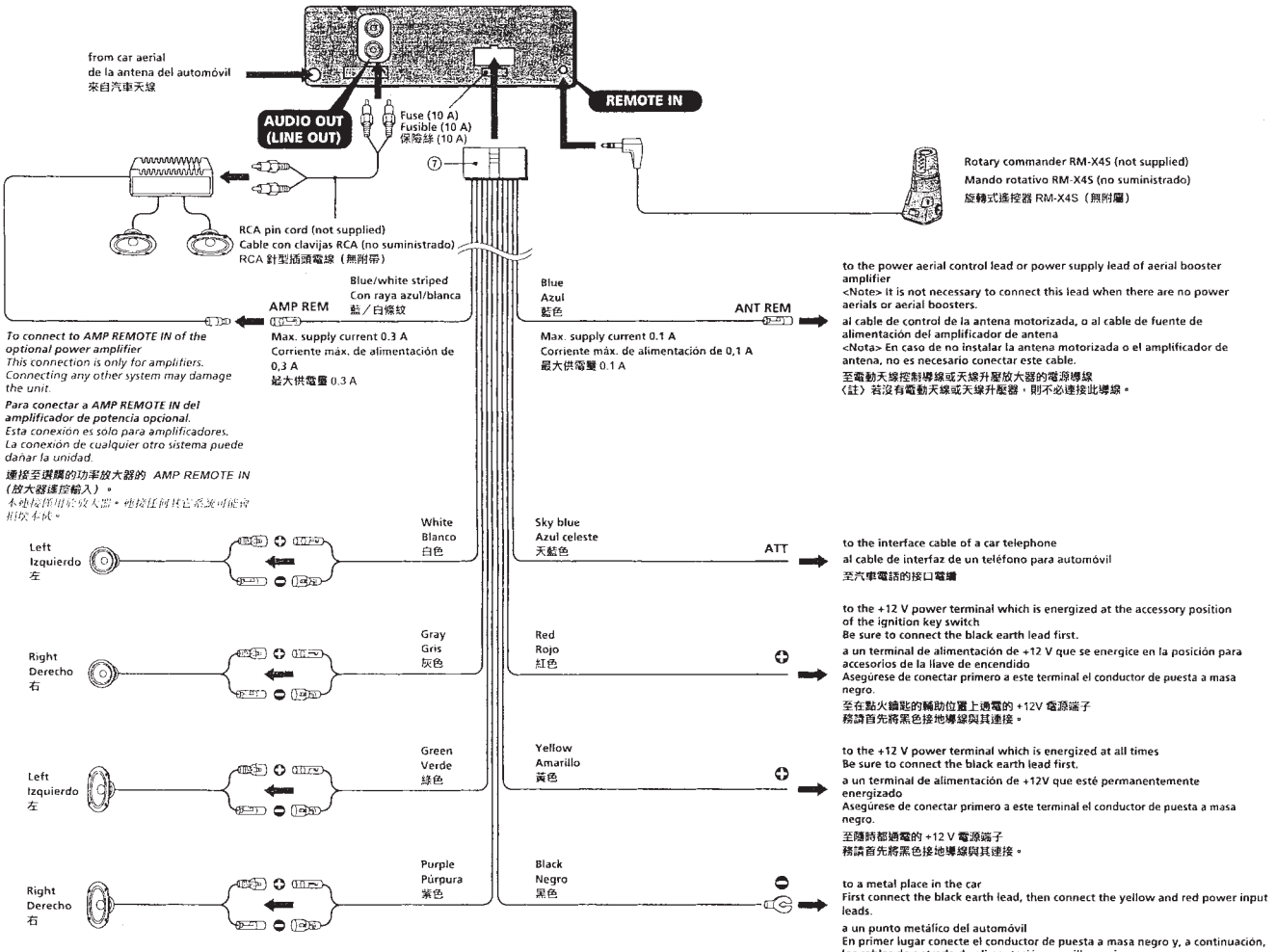
頻率選擇開關

MW (FM) 調諧間隔在出廠前被設定在 9 K (50 K) 位置上。若貴國的頻率分配系統是以 10 kHz (200 kHz) 間隔為基礎的，連接前，請將本機底部上的開關設定在 10 K (200 K) 位置上。

復位鍵

當安裝和連接完成後，務請用圓珠筆等按壓復位鍵。

Connection example
Ejemplo de conexiones
線路連接圖例



Notes on the control leads
- *The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) function.*
- *A power aerial without a relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Be sure to connect passive speakers to these terminals.*

Notas sobre conductores de control
- *El conductor de control (azul) de la antena motorizada suministra + 12 V CC al activar el sintonizador o la función ATA (activación automática del sintonizador).*
- *Con esta unidad no podrá utilizarse una antena motorizada sin caja de relés.*

Conexión para protección de la memoria
Si conecta el cable de entrada de alimentación amarillo, el circuito de la memoria siempre recibirá alimentación, aunque ponga la llave de encendido en la posición de apagado.

Notas sobre la conexión de los altavoces
- *Antes de conectar los altavoces, desconecte la alimentación de la unidad.*
- *Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia admisible adecuada, ya que de lo contrario podría dañarlos.*
- *No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz derecho a los del izquierdo.*
- *No intente conectar los altavoces en paralelo.*
- *No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciese, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.*

關於控制導線的注意事項
- *打開調諧器或啟動 ATA（自動調諧器激活）功能時，電動天線控制導線（藍色）將提供 +12 V 直流電。*
- *本機不能使用不具備整流電箱的電動天線。*

保持記憶功能的連接法
當連接好黃色電源輸入導線時，即使汽車發動機熄火拔出點火鑰匙後，電源仍能持續供給記憶功能用電路，以保持所記憶的數據。

連接揚聲器時的注意事項
- *連接揚聲器線之前，請先切除本機電源。*
- *請使用 4 至 8 Ω 阻抗並且具有足夠功率的揚聲器。否則會損壞揚聲器。*
- *不可將揚聲器的端子連接至汽車底盤，也不可將左揚聲器和右揚聲器相連接。*
- *揚聲器不可平行連接。*
- *不可連接有源揚聲器（內裝有放大器者）至本機的揚聲器端子。否則容易損壞有源揚聲器。因此，您必需予以確連接無源揚聲器。*

Connection diagram
Diagramas de conexión
線路連接圖

Equipment used in illustrations (not supplied)
Equipo utilizado en las ilustraciones (no suministrado)
插圖中的裝置（無附帶）

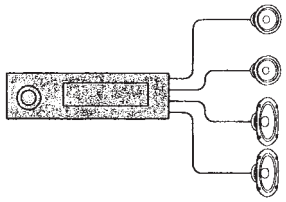
Front speaker
Altavoz delantero
前揚聲器

Power amplifier
Amplificador de potencia
功率放大器

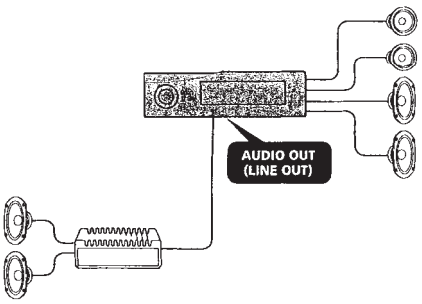
Rear speaker
Altavoz trasero
後揚聲器

For connecting two or more changers, the source selector XA-C30 (optional) is necessary.
Cuando desee conectar dos o más cambiadores, necesitará un selector de fuente XA-C30 (opcional).
若要連接二或二台以上的選擇機時，必須使用音源選擇器 XA-C30（選購件）。

A



B



Notes
- *Be sure to connect the earth cord before connecting the amplifier.*
- *If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.*

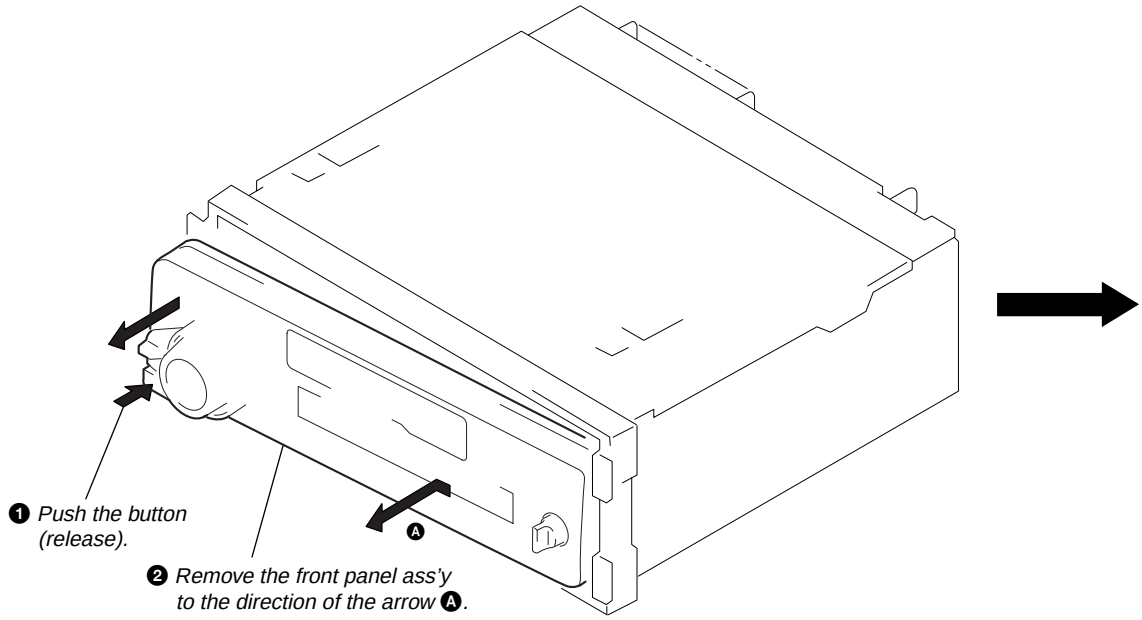
Notas
- *Asegúrese de conectar primero el cable de puesta a masa antes de realizar la conexión al amplificador.*
- *Si conecta un amplificador de potencia opcional y no utiliza el incorporado, los pitidos se desactivarán.*

註
- *務必在接放大器之前先接地線。*
- *如果您連接了選購件的功率放大器而不使用內裝的放大器，將無嘟嚕功能。*

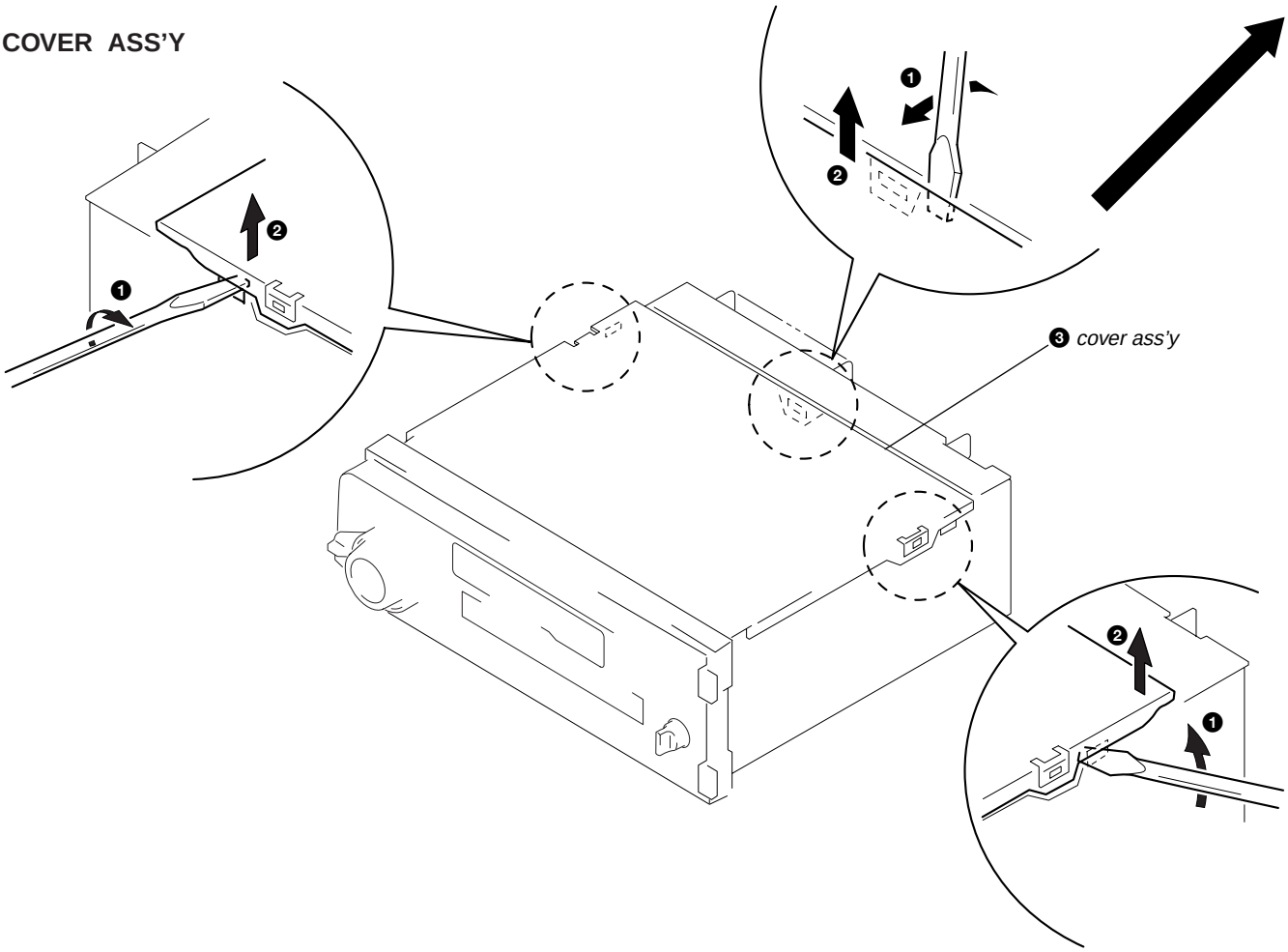
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

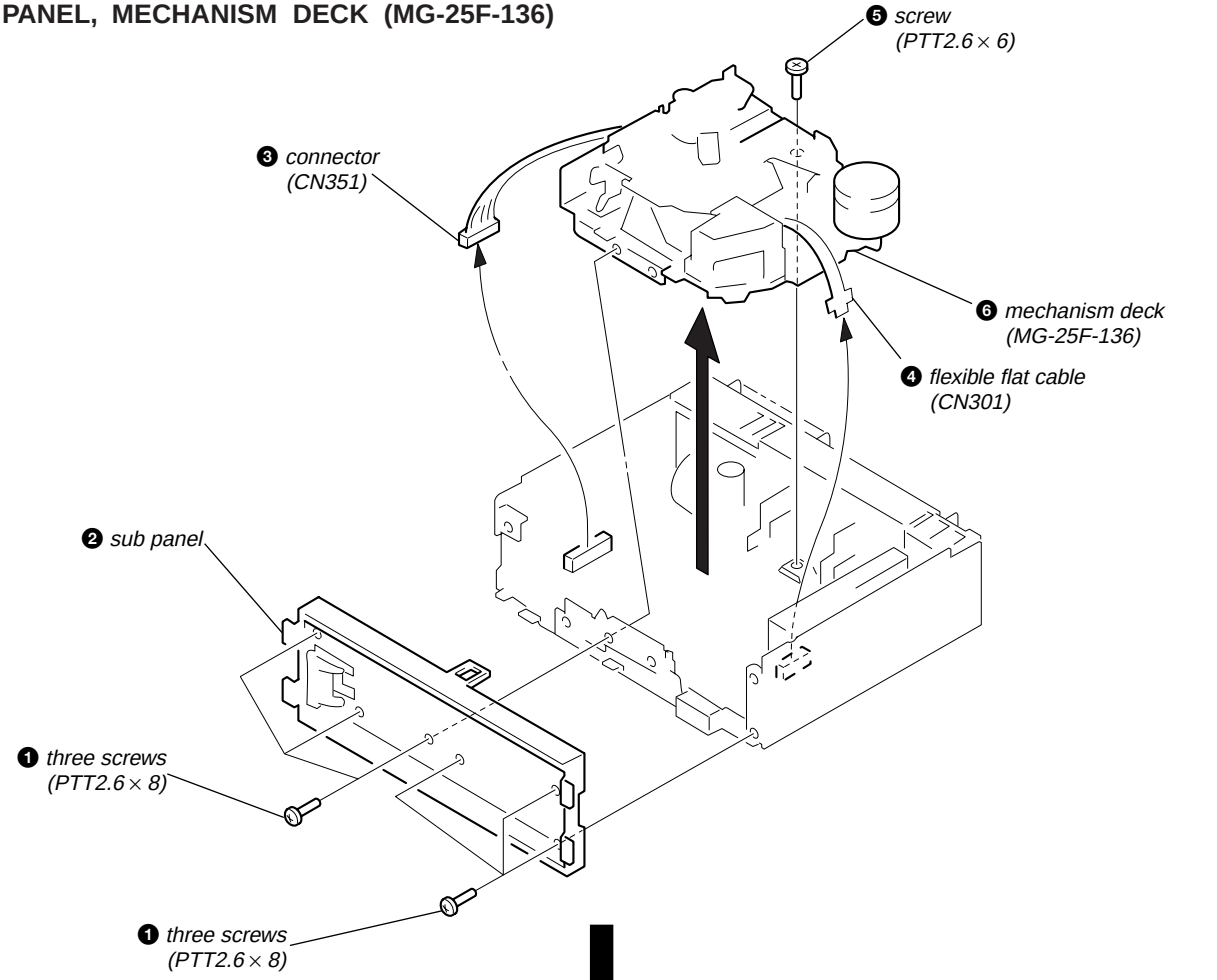
FRONT PANEL ASS'Y



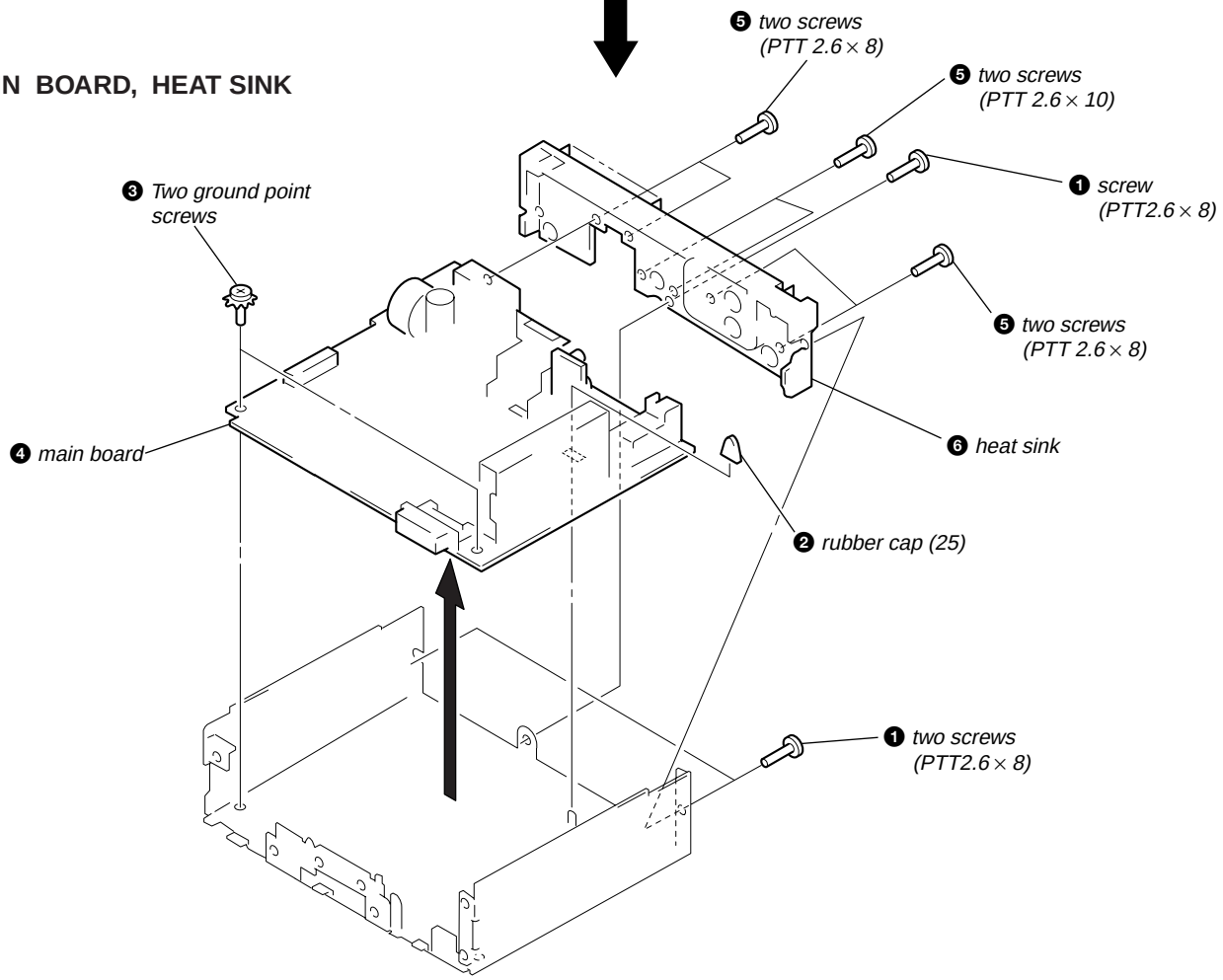
COVER ASS'Y



SUB PANEL, MECHANISM DECK (MG-25F-136)



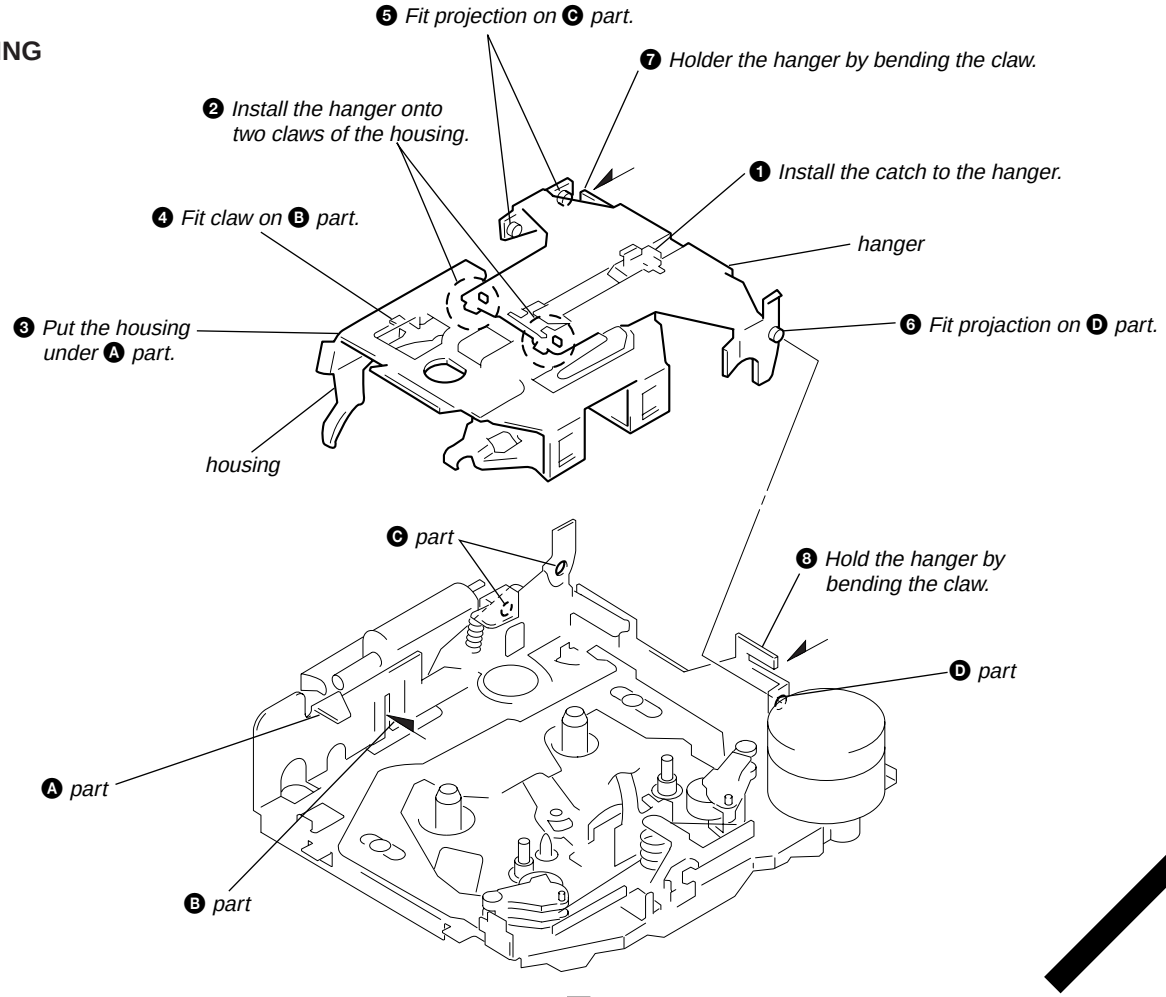
MAIN BOARD, HEAT SINK



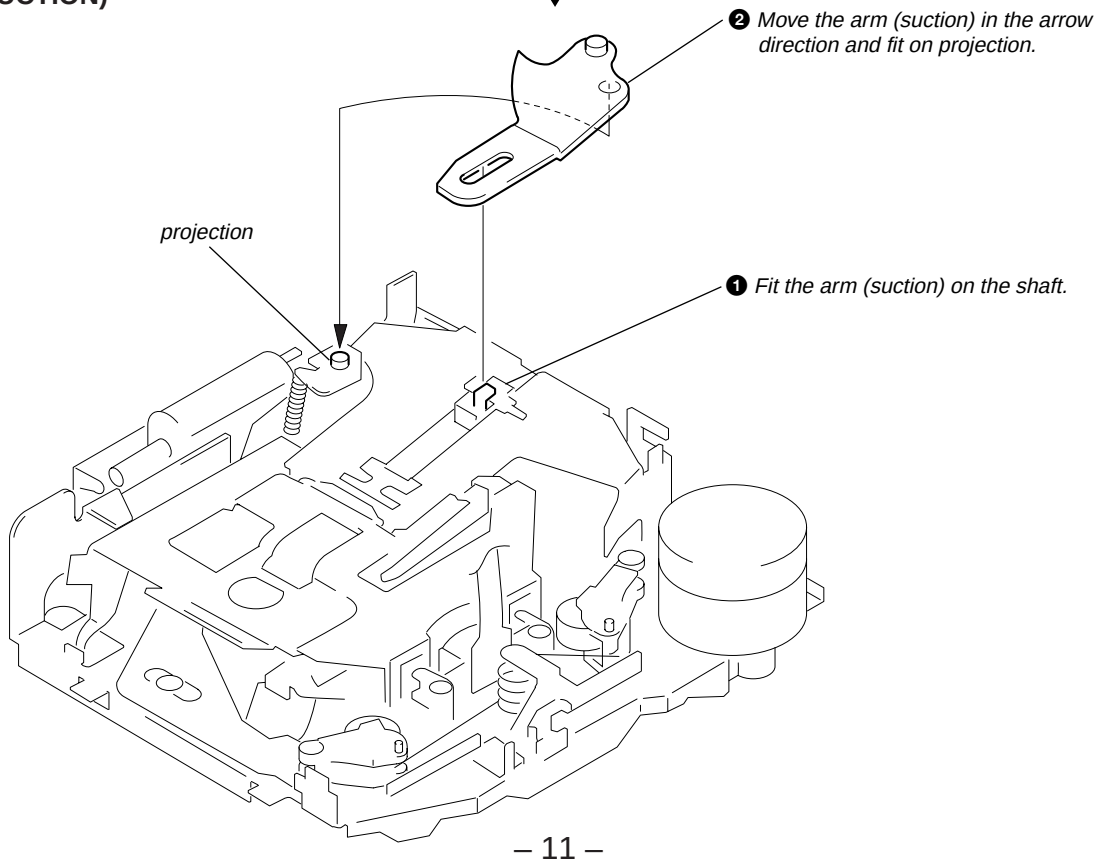
SECTION 3
ASSEMBLY OF MECHANISM DECK

Note: Follow the assembly procedure in the numerical order given.

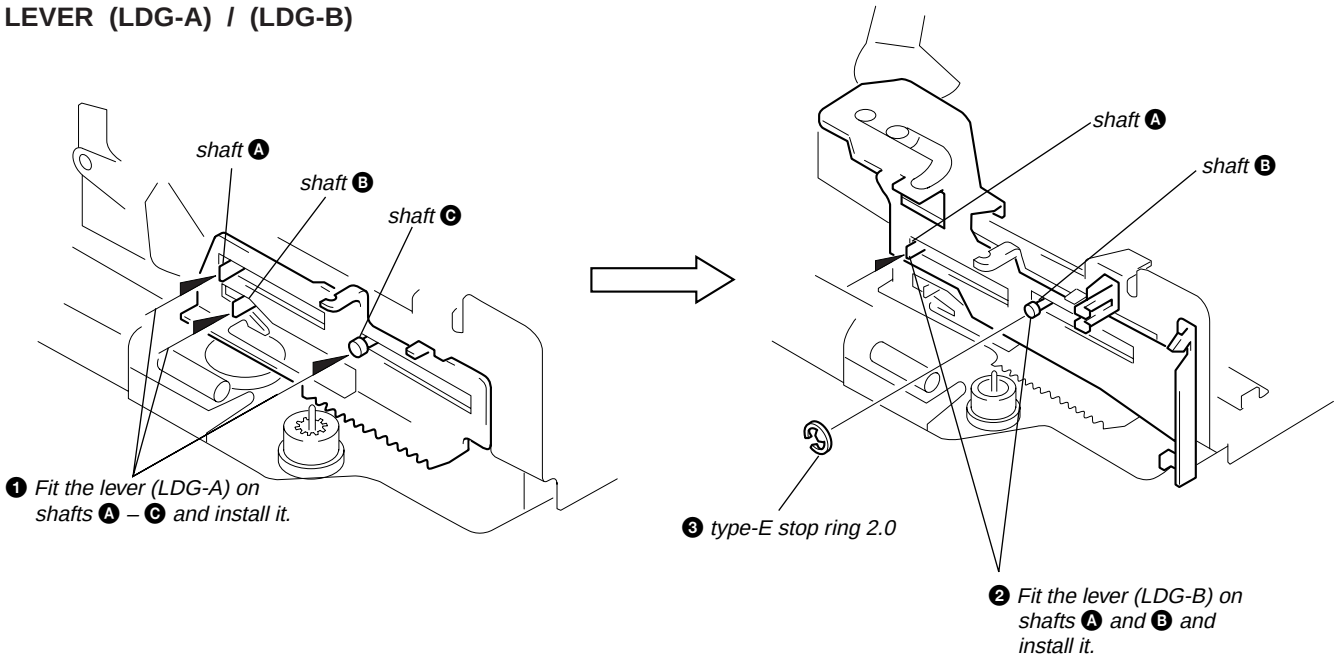
HOUSING



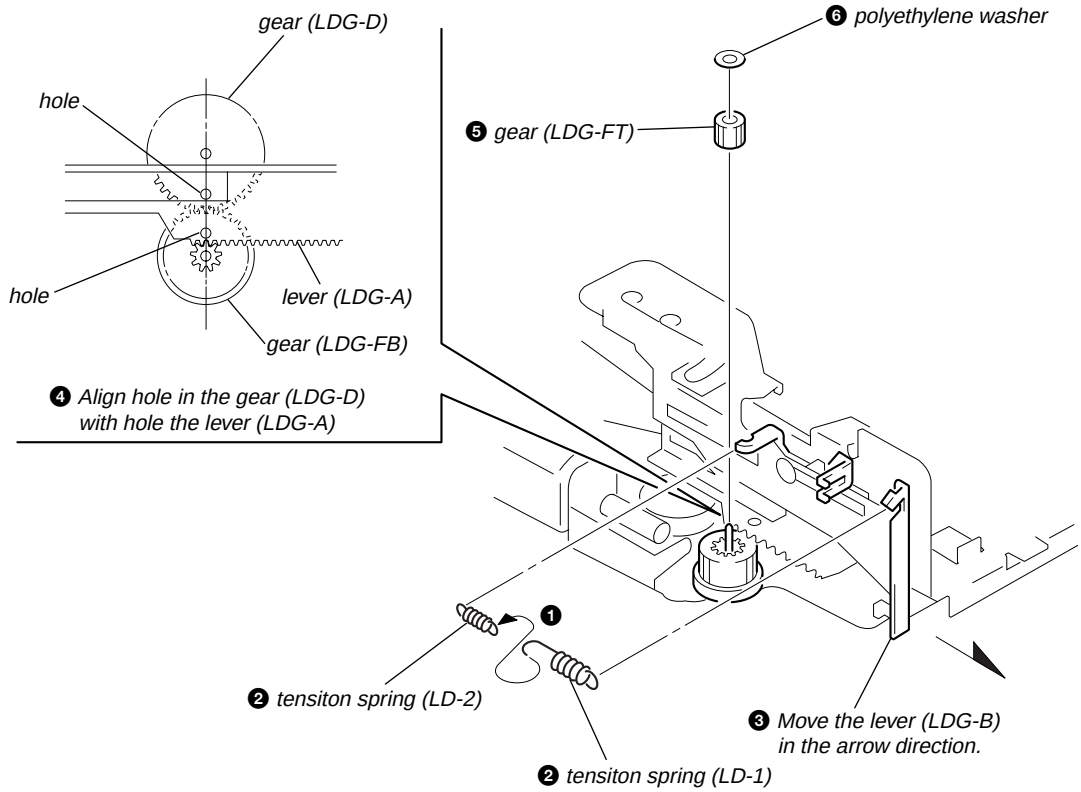
ARM (SUCTION)



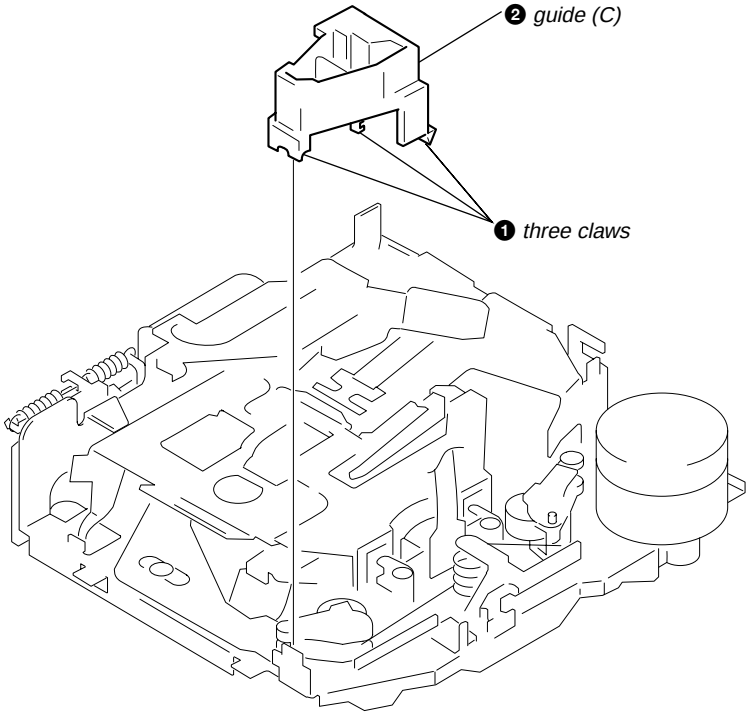
LEVER (LDG-A) / (LDG-B)



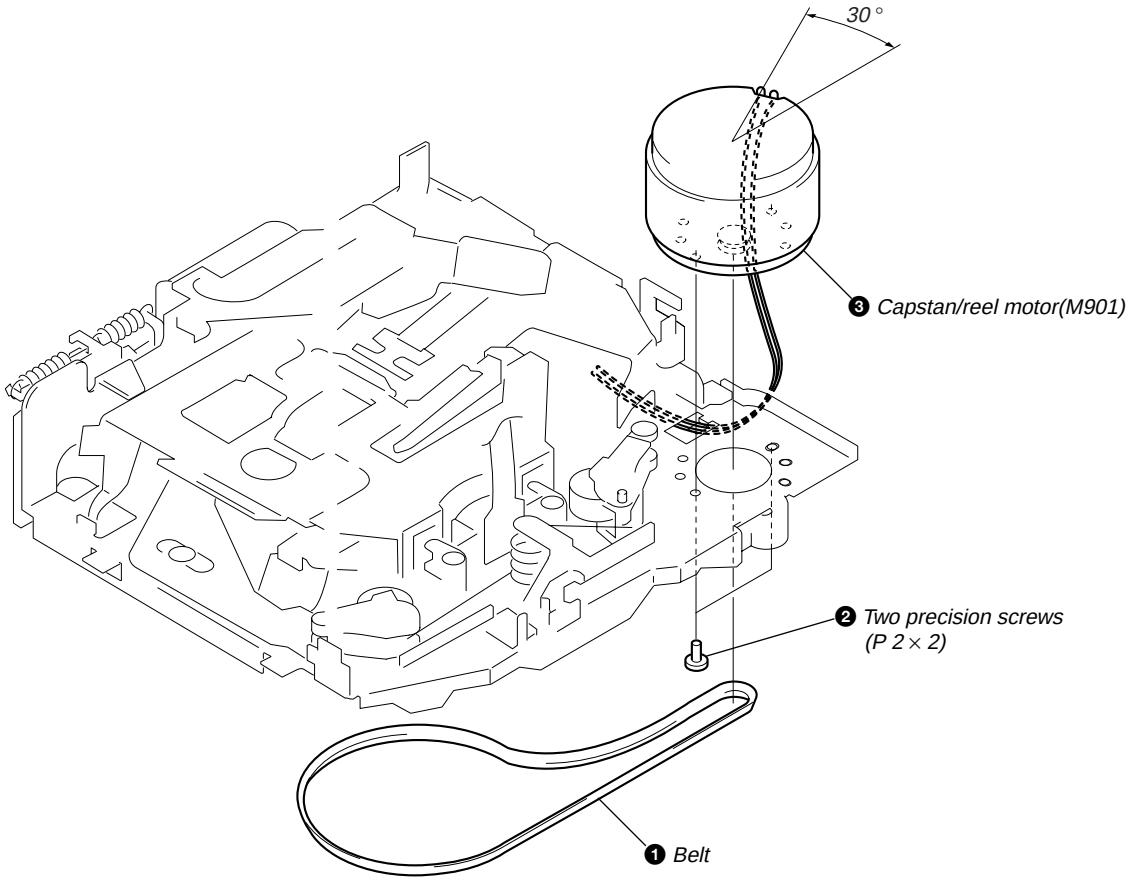
GEAR (LDG-FT)



GUIDE (C)



MOUNTING POSITION OF CAPSTAN/REEL MOTOR (M901)



SECTION 4
MECHANICAL ADJUSTMENTS

1. Clean the following parts with a denatured-alcohol-moistene swab:
   playback head pinch roller
   rubber belt capstan
   idlers
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the power supply voltage unless otherwise noted.

• Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	30 – 65 g•cm (0.42 – 0.90 oz·inch)
Forward Back Tension	CQ-102C	0.5 – 4.5 g•cm (0.01 – 0.06 oz·inch)
Reverse	CQ-102RC	30 – 65 g•cm (0.42 – 0.90 oz·inch)
Reverse Back Tension	CA-102RC	0.5 – 4.5 g•cm (0.01 – 0.06 oz·inch)
FF, REW	CQ-201B	60 – 200 g•cm (0.83 – 2.78 oz·inch)

• Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 90 g (more than 3.18 oz)
Reverse	CQ-403R	more than 90 g (more than 3.18 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and MW Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

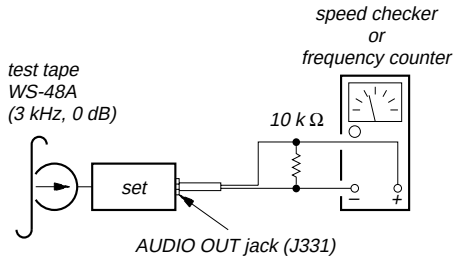
<Set the Test Mode>
1. Set the "power select" switch (S501) is "A" position.
2. Turn ON the regulated power supply. (All LEDs on the set lights up, and the clock is displayed.)
   Note: Press the [OFF] button, if the clock is not displayed.
3. Push the preset [4] button.
4. Push the preset [5] button.
5. Press the preset [1] button for more than two seconds.
6. Then the display indicates all lights, the test mode is set.

<Release the Test mode>
1. Push the [OFF] button.
2. Return the "power select" switch (S501) to initially set position.

See the adjustment location from on page 17 for the adjustment.

TAPE DECK SECTION | 0 dB=0.775 V

Tape Speed Adjustment
Setting:



Procedure:
1. Put the set into the FWD PB mode.
2. Adjust adjustment resistor for inside capstan motor so that the reading on the speed checker or frequency counter becomes in specification.

Specification: Constant speed

Speed checker	Frequency counter
–1.5 to +2.5%	2,955 to 3,075 Hz

Adjustment Location: See page 17.

TUNER SECTION

0 dB=1 µV

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

Note:

Adjust the tuner section in the sequence shown below.

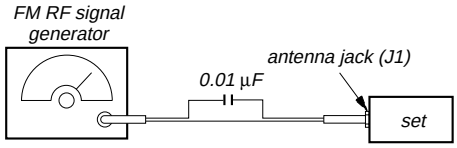
1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment
3. MW Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting:

SOURCE button: FM

FREQUENCY SELECT switch: FM200 k

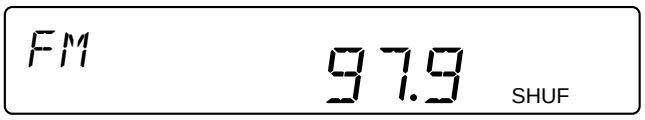


Carrier frequency : 97.9 MHz
Output level : 22 dB (12.6 µV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure:

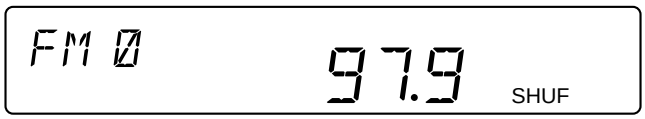
1. Set to the test mode. (See page 14).
2. Push the SOURCE button and set to FM.

Display



3. Adjust with the volume RV2 on TU1 so that the "FM" indication turns to "FM0" indication on the display window.
   But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display



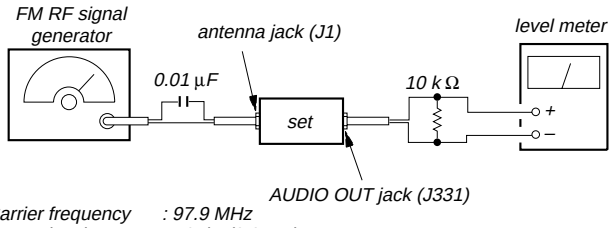
Adjustment Location: See page 17.

FM Stereo Separation Adjustment

Setting:

SOURCE button: FM

FREQUENCY SELECT switch: FM200 k



Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main: 1 kHz, 33.75 kHz deviation (45%)
sub: 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot: 7.5 kHz deviation (10%)

Procedure:

FM Stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation: Ⓐ-Ⓑ
R-CH Stereo separation: Ⓒ-Ⓓ
The separations of both channels should be equal.

Specification: Separation more than 30 dB

Adjustment Location: See page 17.

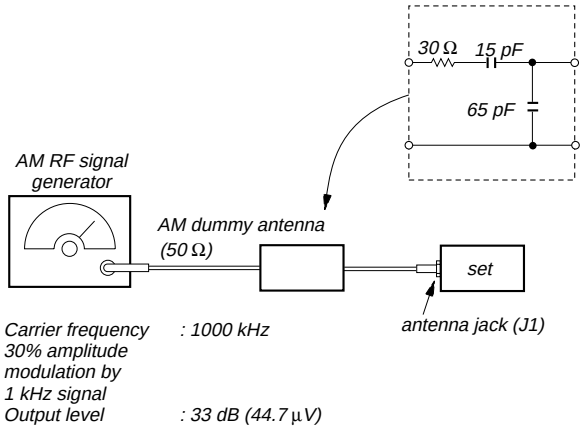
MW Auto Scan/Stop Level Adjustment

Make this adjustment after “FM Auto Scan/Stop Level Adjustment”.

Setting:

SOURCE button: MW

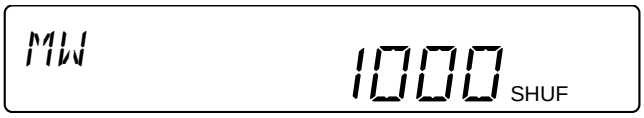
FREQUENCY SELECT switch: MW10 k



Procedure:

1. Set to the test mode. (See page 14.)
2. Push the SOURCE button and set to FM.
3. Push the MODE button and set to MW.

Display

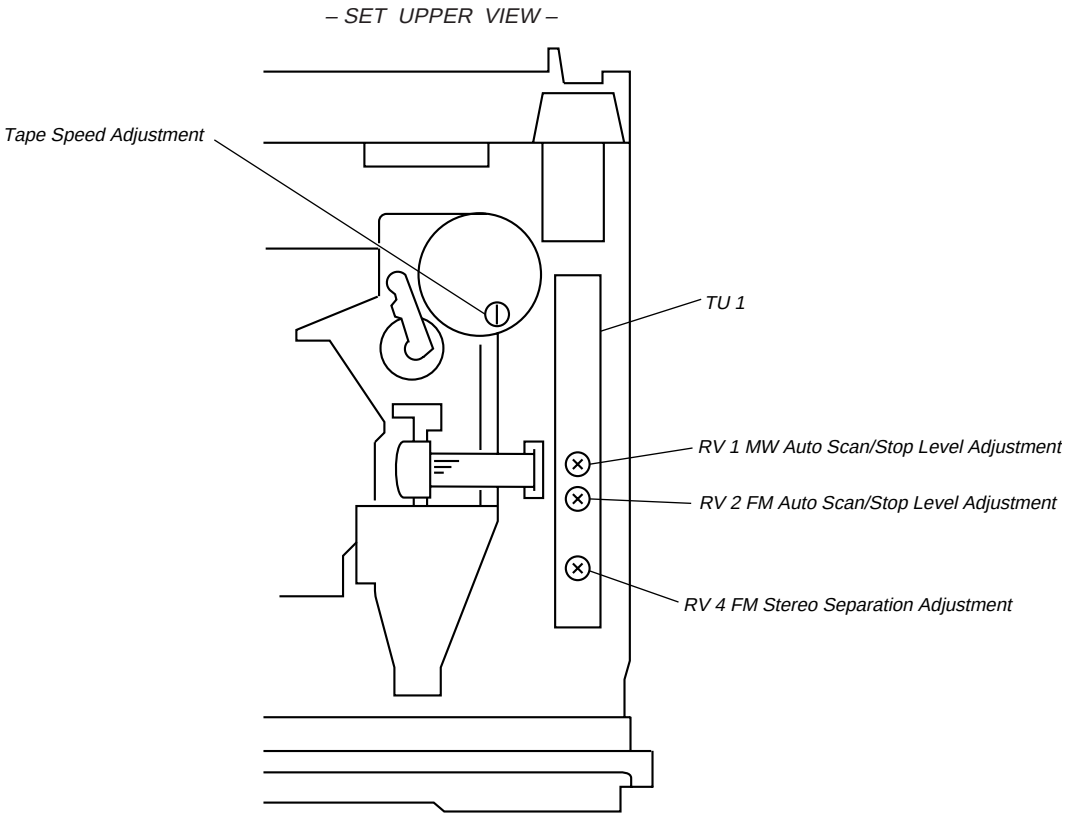


4. Adjust with the volume RV1 on TU1 so that the “MW” indication turns to “MW0” indication on the display window.
   But, in case of already indicated “MW0”, turn the RV1 so that put out light “0” indication and adjustment.

Display

Adjustment Location: See page 17.

Adjustment Location:



SECTION 6
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

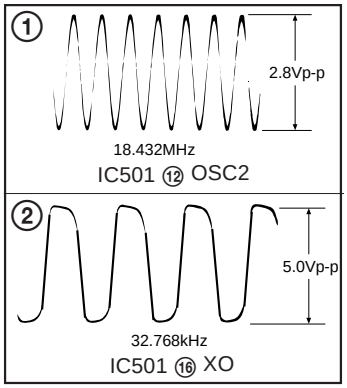
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B + : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
  < > : TAPE PLAYBACK
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM (MW)
  Σ : TAPE PLAYBACK

For printed wiring boards.

Note:

- o—— : parts extracted from the component side.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing.

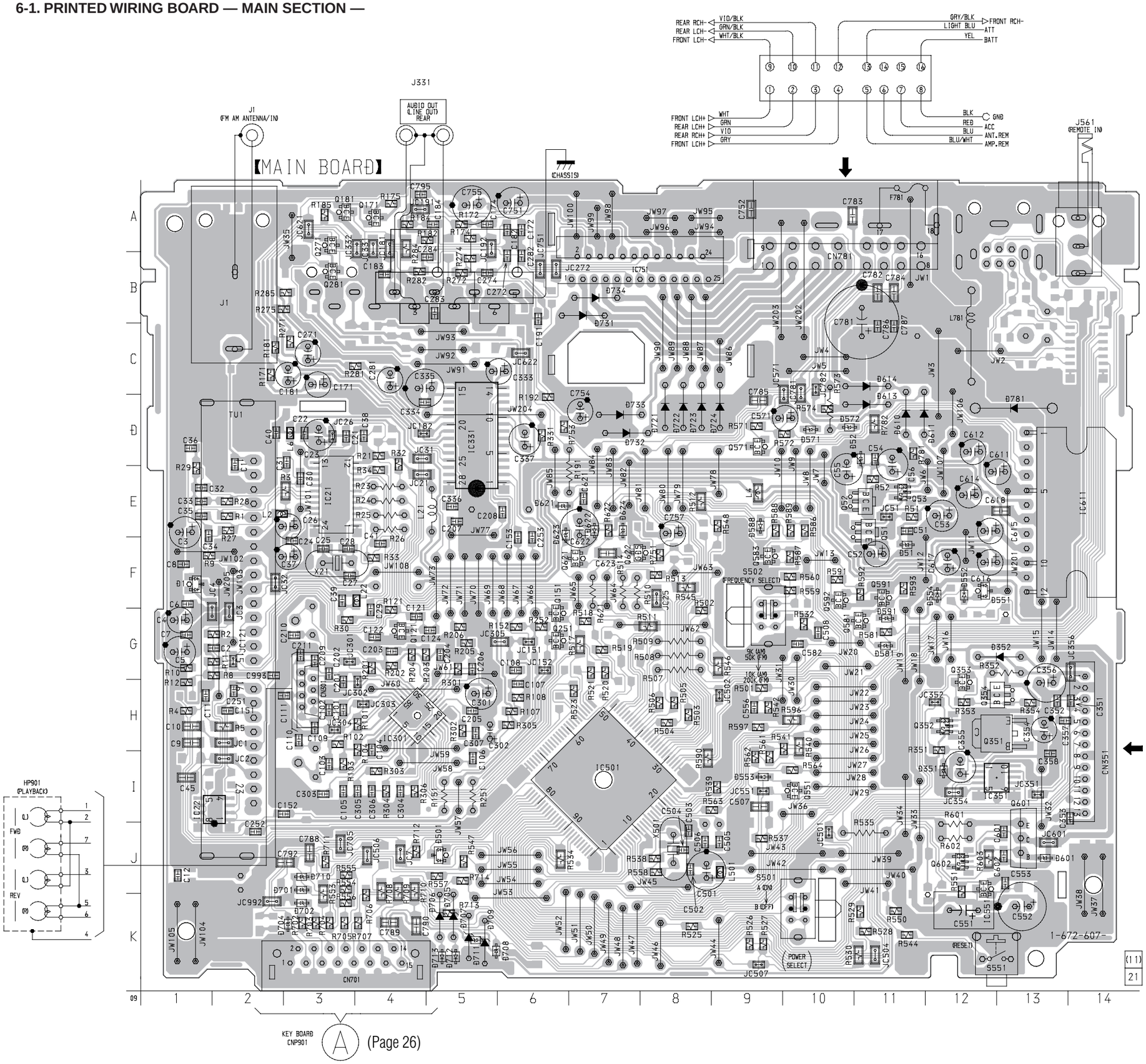
• Waveforms



• **Semiconductor Location**

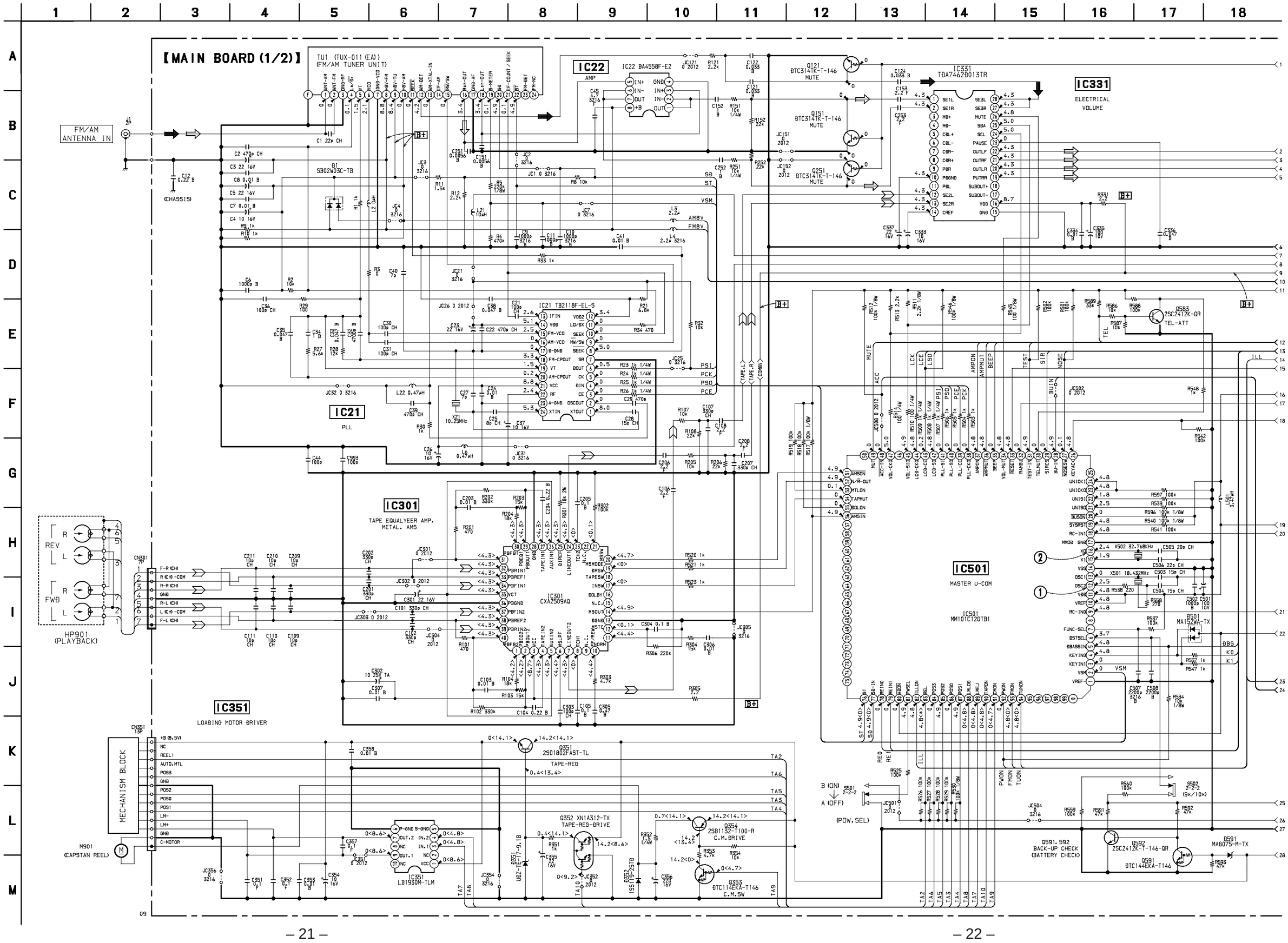
Ref. No.	Location
D1	F-1
D51	F-11
D52	E-11
D351	I-12
D352	G-13
D501	J-5
D551	F-12
D552	F-12
D553	I-9
D554	F-12
D571	D-10
D572	D-10
D581	G-11
D588	E-9
D591	G-11
D601	J-13
D610	D-11
D611	D-11
D613	D-11
D614	C-11
D621	E-6
D622	E-7
D623	E-6
D624	E-7
D701	J-3
D702	K-3
D704	K-3
D705	K-5
D706	K-5
D707	K-5
D708	K-5
D709	K-5
D710	J-3
D711	K-5
D721	D-8
D722	D-8
D723	D-8
D724	D-9
D731	B-7
D732	D-7
D733	D-7
D734	B-7
D781	D-13
IC21	E-3
IC301	H-4
IC331	D-5
IC351	I-12
IC501	I-7
IC551	K-12
IC611	E-14
IC751	B-7
Q51	E-11
Q52	E-11
Q121	G-4
Q151	G-6
Q171	A-4
Q181	A-3
Q252	G-6
Q251	G-6
Q271	A-3
Q281	B-3
Q351	H-13
Q352	H-12
Q353	H-12
Q354	H-12
Q551	I-10
Q571	D-9
Q581	G-11
Q583	F-9
Q591	F-11
Q592	F-10
Q601	J-13
Q602	J-12
Q621	F-7
Q622	F-7

6-1. PRINTED WIRING BOARD — MAIN SECTION —

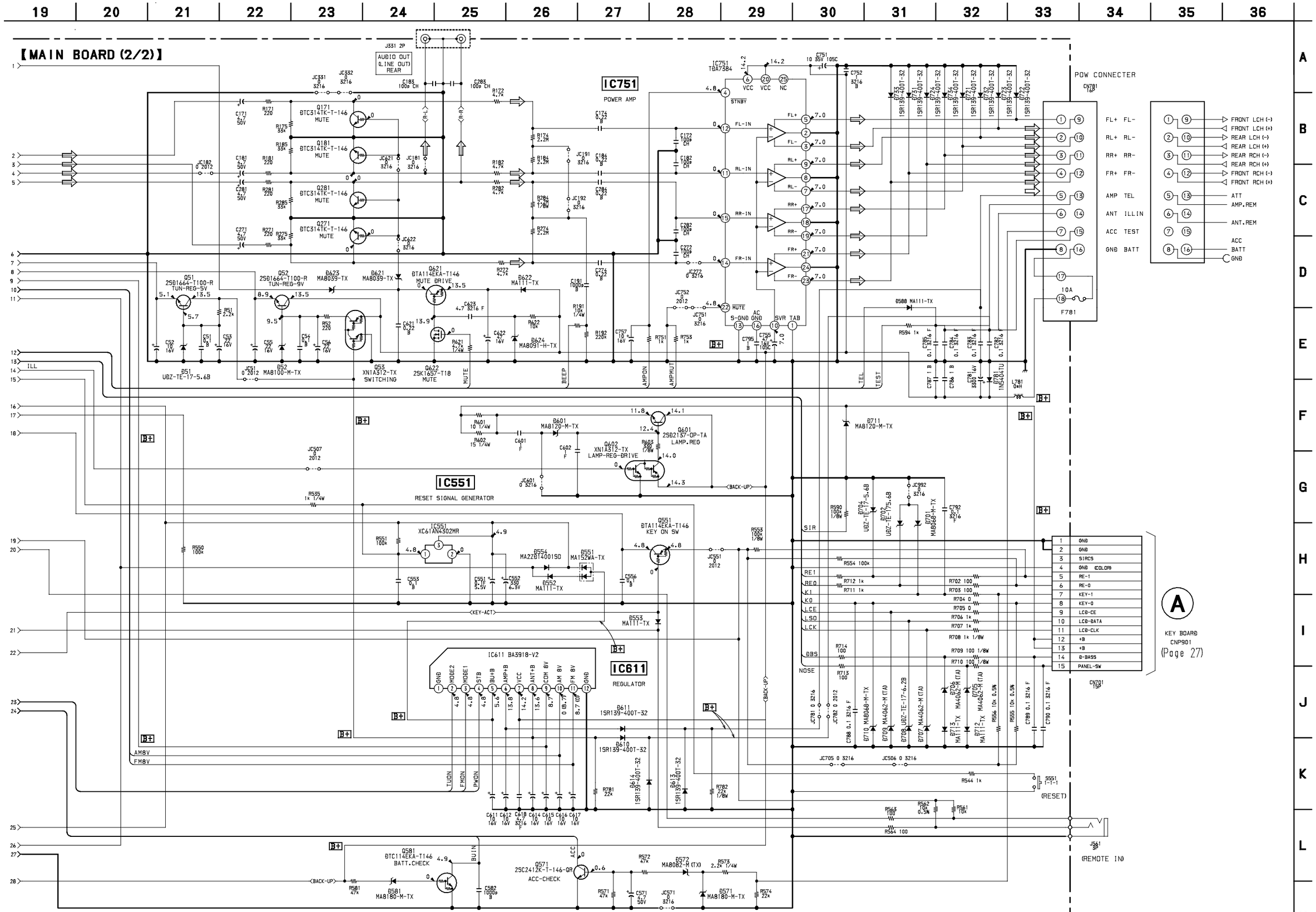


6-2. SCHEMATIC DIAGRAM — MAIN (1/2) SECTION —

• Refer to page 18 for Waveforms. • Refer to page 19 for Printed Wiring Board. • Refer to page 29 for IC Block Diagrams.



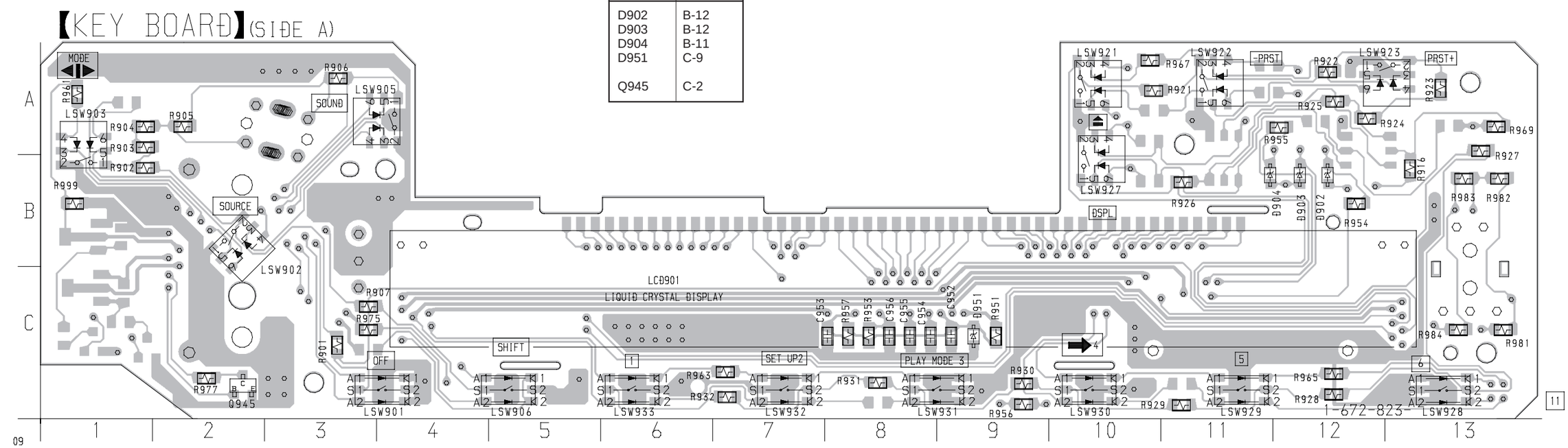
6-3. SCHEMATIC DIAGRAM — MAIN (2/2) SECTION — • Refer to page 18 for Waveforms. • Refer to page 19 for Printed Wiring Board. • Refer to page 29 for IC Block Diagrams.

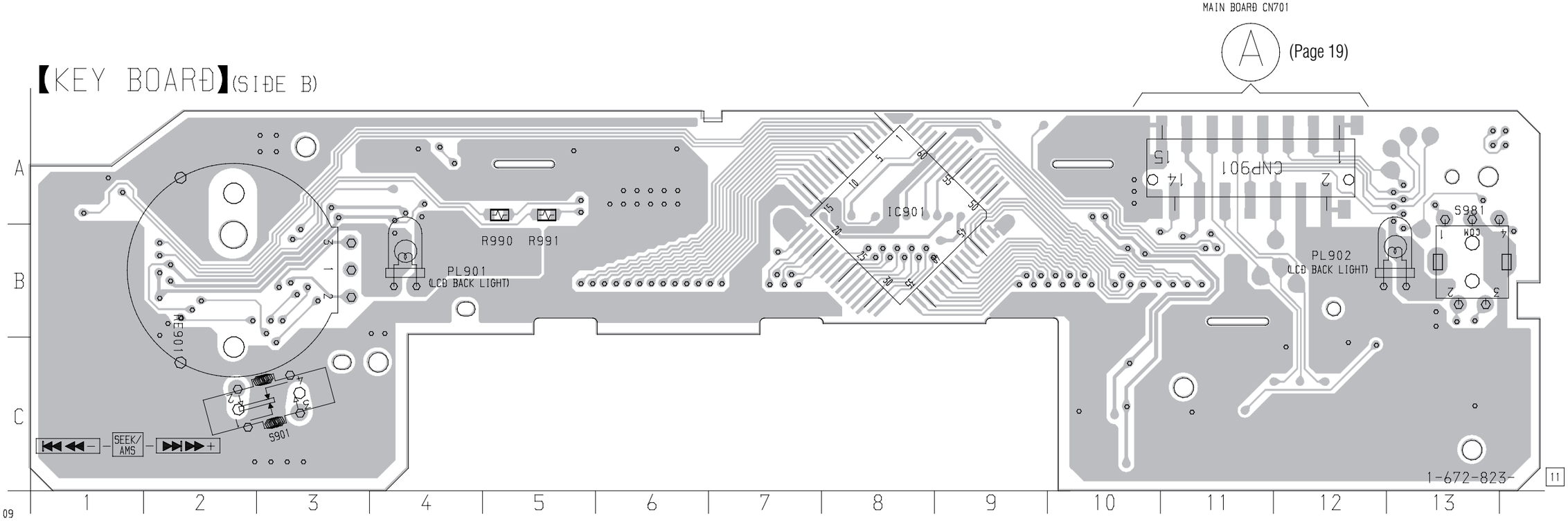


6-4. PRINTED WIRING BOARD — PANEL SECTION —

• **Semiconductor Location**

Ref. No.	Location
D902	B-12
D903	B-12
D904	B-11
D951	C-9
Q945	C-2

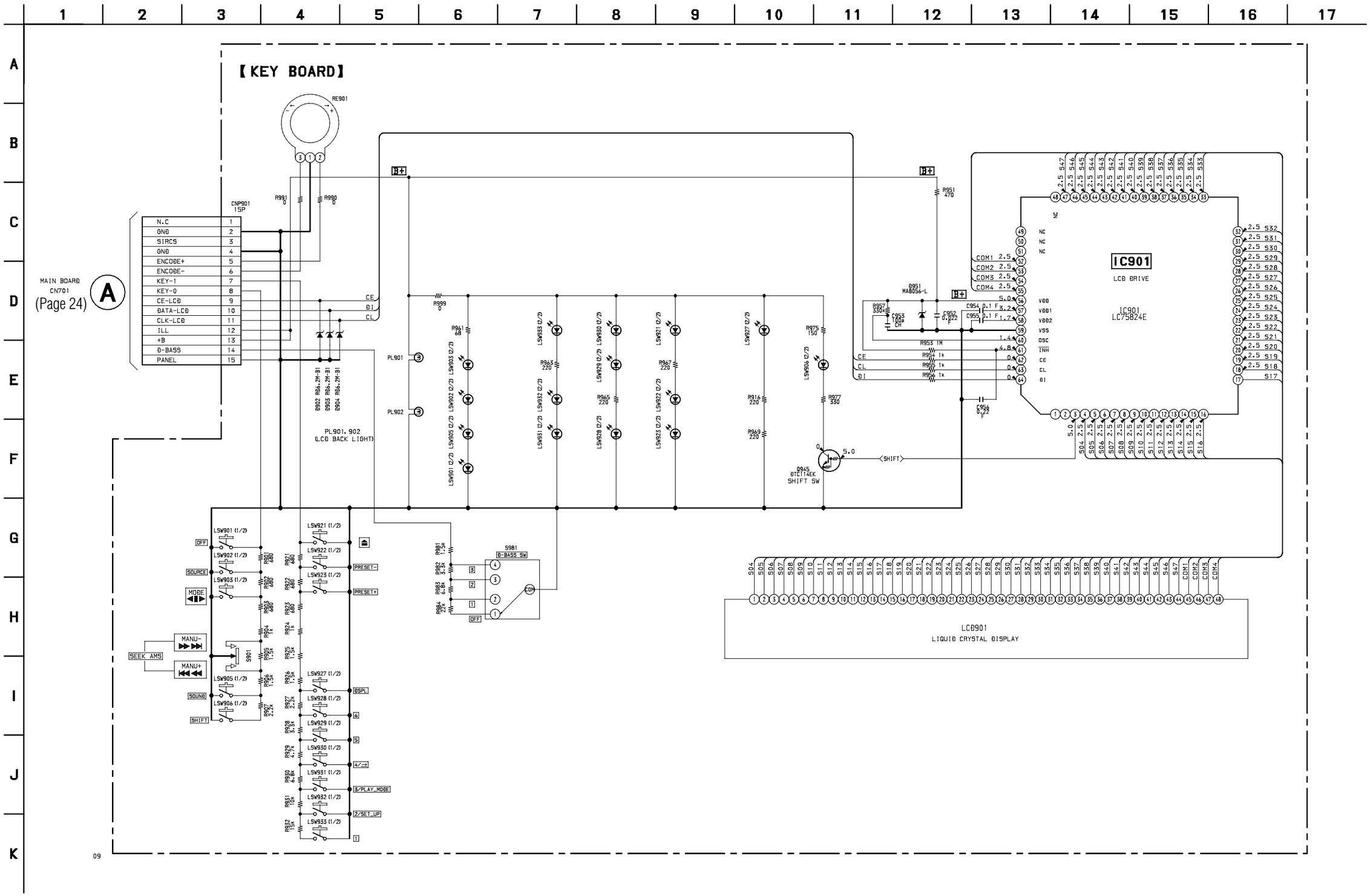




• **Semiconductor Location**

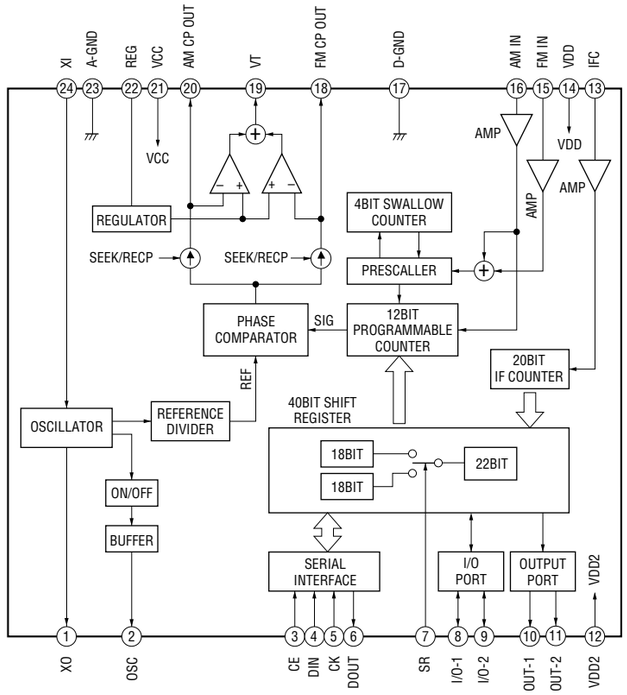
Ref. No.	Location
IC901	A-8

6-5. SCHEMATIC DIAGRAM — PANEL SECTION —

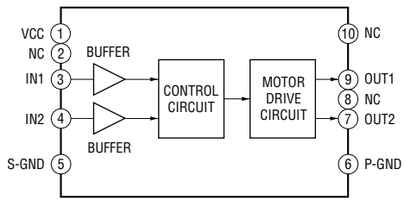


• IC Block Diagrams – MAIN Board –

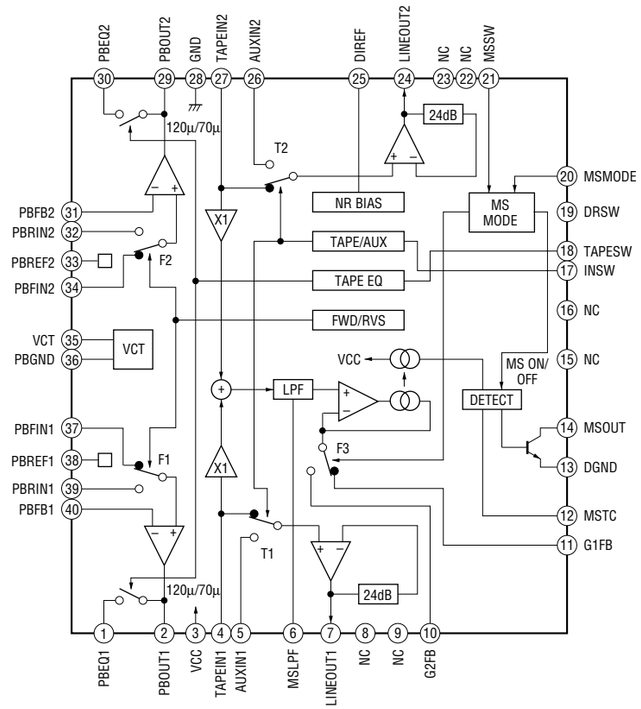
IC21 TB2118F (EL)



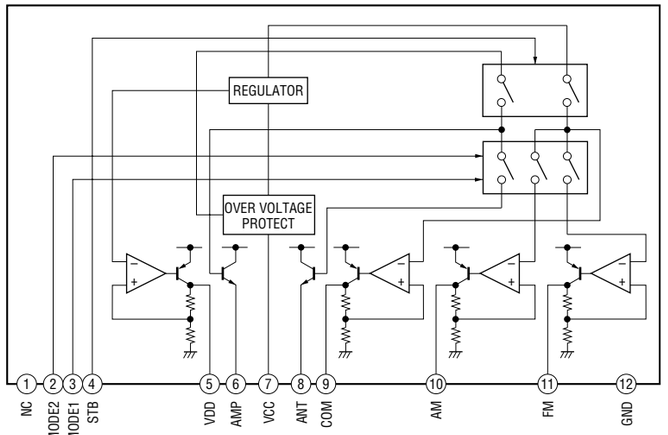
IC351 LB1930M-TLM



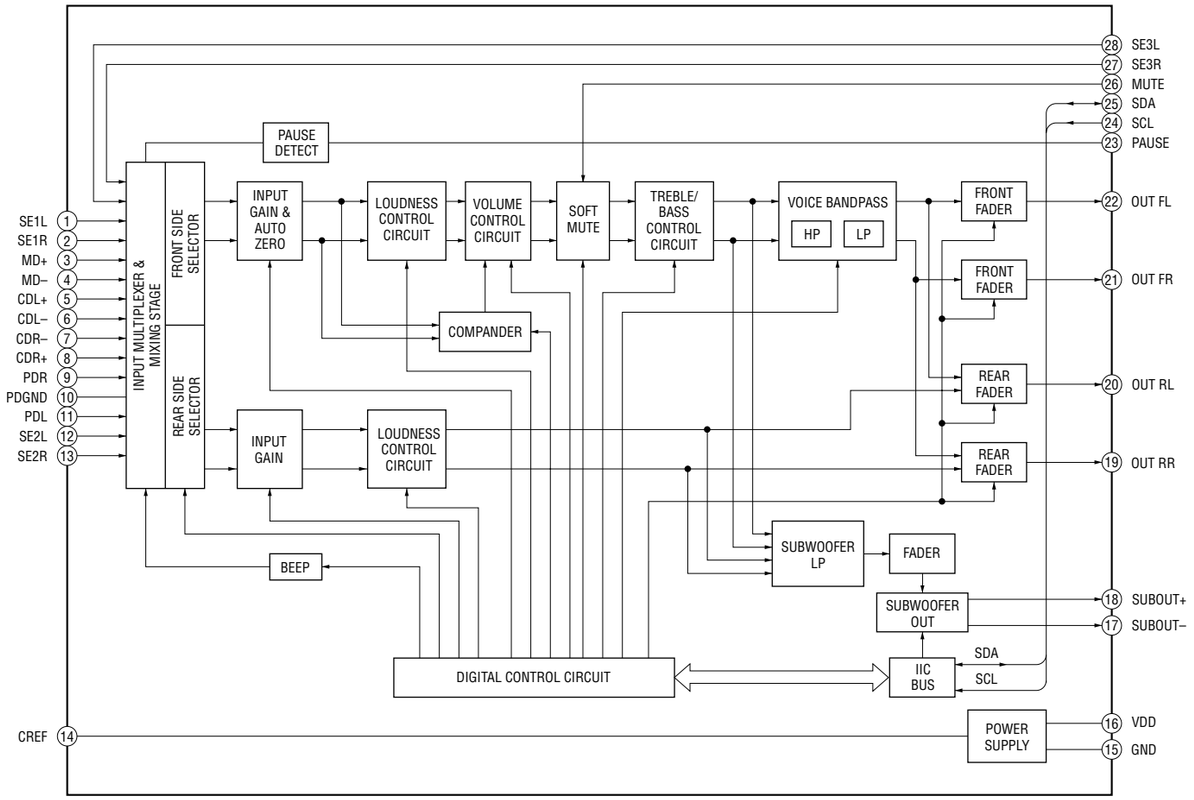
IC301 CXA2509AQ-T4



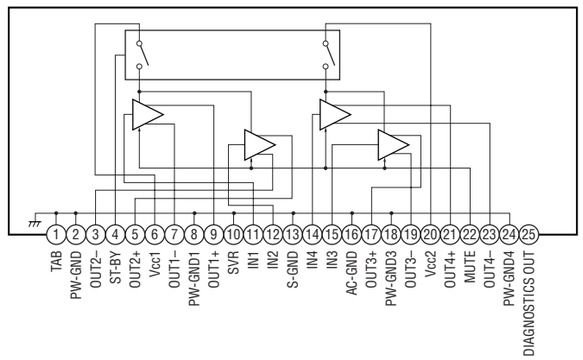
IC661 BA3918-V2



IC331 TDA7462D



IC751 TDA7384



6-6. IC PIN FUNCTION DESCRIPTION

• IC501 MASTER U-COM (MN101C12GTB1)

Pin No.	Pin Name	I/O	Function
1	VREF-	–	Basic voltage (- side) of AD conversion input
2	VSM	I	FM/AM common signal meter A/D conversion input terminal
3	KEYIN1	I	KEY (AD conversion) input
4	KEYIN0	I	
5	DBASS IN	I	Position detecting AD input terminal of D-BASS
6	DSTSEL	I	Terminal for setting to select the value of destination
7	FUNC-SEL	I	Function selecting (AD conversion) input
8	NCO	I	Not used
9	RC-IN0	I	Rotary commander (AD conversion) input
10	VREF+	I	Basic voltage (+side) of AD conversion input
11	VDD	–	Power supply
12	OSC2	–	Radiator (18.432 MHz) connecting terminal
13	OSC1	–	
14	VSS	–	Ground
15	XI	–	Sub clock (for clock) radiator (32.768 kHz) connecting terminal
16	XO	–	
17	MMOD GND	–	Ground
18	RC-IN1	I	Rotary commander shift input
19	$\overline{\text{SYSRST}}$	O	SYSTEM RESET control output
20	$\overline{\text{BUSON}}$	O	BUS ON control output
21	UNISO	O	Serial data output
22	UNISI	I	Serial data input
23	UNICKO	O	Serial clock output
24	UNICKI	I	Serial clock input
25	NCO	O	Not used
26	KEYACK	I	Key input acknowledge
27	$\overline{\text{NOSESW}}$	I	Removing/attaching front panel detection input
28	BU-IN	I	BACK-UP detection input terminal
29	SIRCS	I	Remote control input
30	TELMUT	I	TELEPHONE MUTE detection input
31	$\overline{\text{TEST-IN}}$	I	Test mode setting input terminal
32	$\overline{\text{RAMBU}}$	I	Reset detection input of RAM
33	$\overline{\text{RESET}}$	I	Reset input terminal
34	VOL-MUT	O	Not used
35	BEEP	O	Control output for buzzer
36	$\overline{\text{AMPMUT}}$	O	Power amplifier mute control output terminal
37	AMPON	O	Power amplifier STANDBY control terminal
38	PLL-CKO	O	PLL CLK output terminal
39	PLL-CE	O	PLL CE output terminal
40	PLL-SO	O	PLL DATA output terminal
41	PLL-SI	I	PLL DATA input terminal
42	LCD-SD	O	LCD serial data output
43	LCD-CE	O	LCD chip enable output terminal
44	LCD-CKO	O	LCD serial clock output
45	VOL-SIO	O	Electrical volume serial data output
46	NCO	O	Not used
47	VOL-CKD	O	Electrical volume serial data output
48	$\overline{\text{ACCIN}}$	I	Accessory power supply detection input
49	MUT	O	System MUTE control output

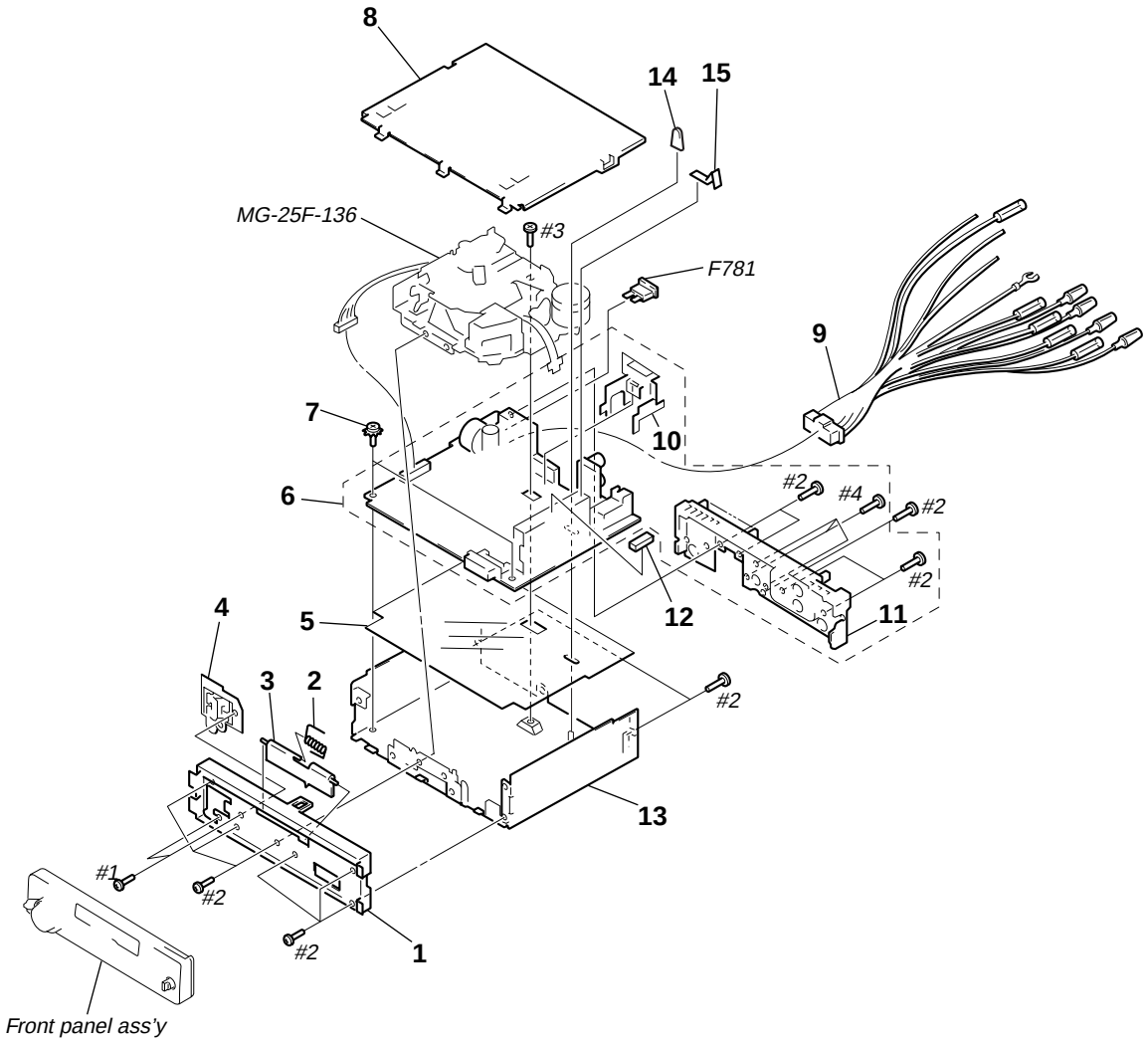
Pin No.	Pin Name	I/O	Function
50	NCO	O	Not used
51	$\overline{\text{AMSON}}$	O	“L” is output in AMS mode
52	$\overline{\text{N}}$/R-OUT	O	FOR/REV control output
53	MTLON	I/O	Metal control input/output
54	TAPMUT	O	Tape mute control output
55	DOLON	I/O	Dolby control input/output
56	$\overline{\text{AMSIN}}$	I	Input to detect existence of song during AMS mode
57 to 75	NCO	O	Not used
76	ST	I/O	Combination stereo input and monaural output
77	SD-IN	I	SIGNAL DETECTOR input terminal
78	REIN 0	I	Rotary encoder input terminal
79	REIN 1	I	
80	$\overline{\text{AD ON}}$	O	Power supply control output of AD conversion
81	PW SEL	I	Power selection initialise
82	ILLON	O	Illumination power supply control output
83	REL	I	Input to detect rotation of reel table
84	POS3	I	Tape position signal detection input
85	POS2	I	
86	POS0	I	
87	POS1	I	
88	LM LOD	O	Loading motor control output (to a direction of loading)
89	LM EJ	O	Loading motor control output (to a direction of ejection)
90	TAPON	O	TAPE power supply control output When ‘on’ is output, “H” is output, otherwise when ‘off’ is output, “L” is output.
91	CM ON	O	Capstan motor control signal output terminal of TAPE
92	PW ON	O	System power supply control output
93	FM ON	O	FM power supply control output terminal
94	$\overline{\text{TUNON}}$	O	TUNER power supply control output terminal
95	NCO	O	Not used
96 to 99	NCO	O	
100	NCO	O	

SECTION 7
EXPLODED VIEWS

NOTE:

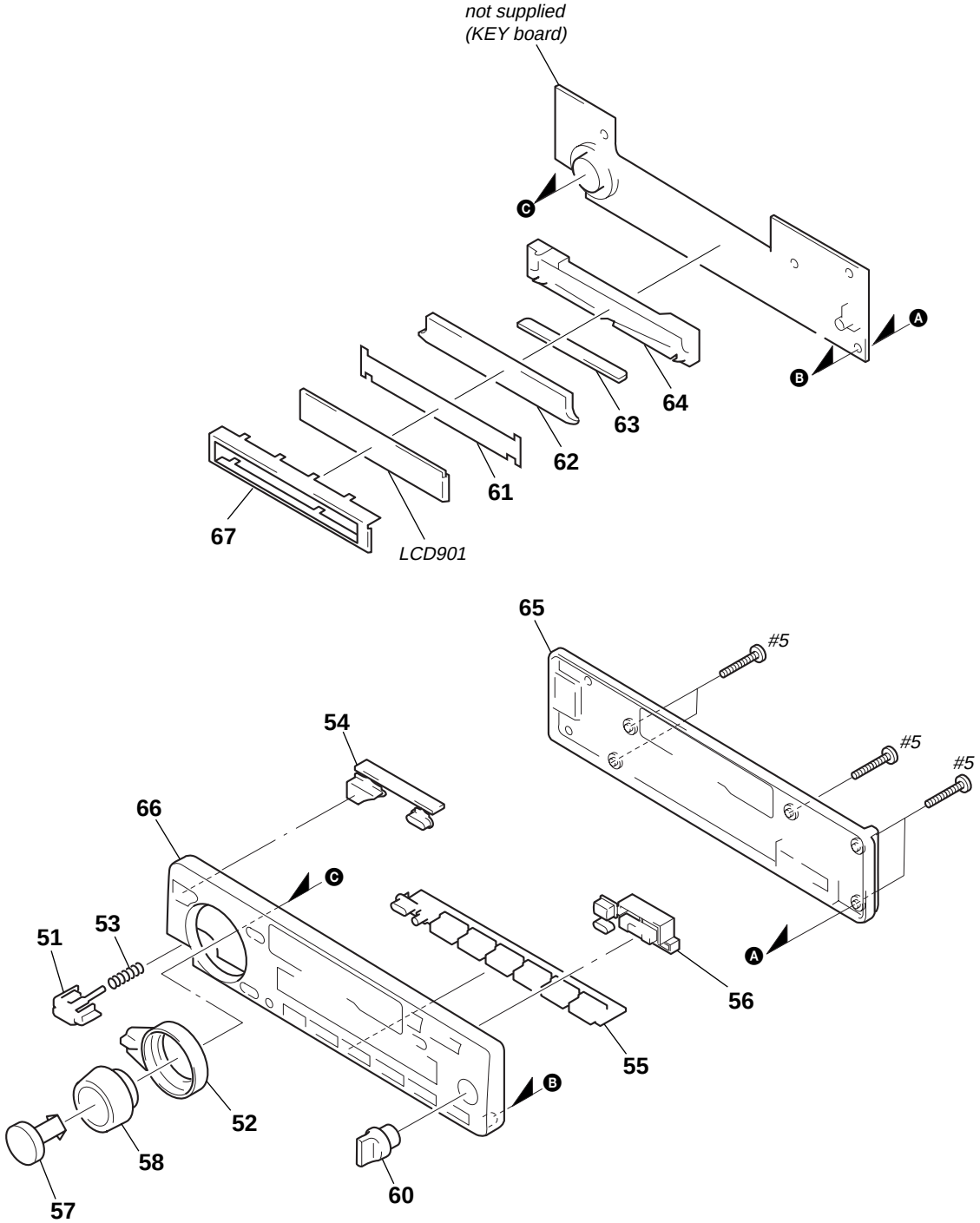
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . . (RED)
  ↑ ↑
  Parts color Cabinets color
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

(1) CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-031-022-01	PANEL, SUB	
2	3-935-003-01	SPRING, TORSION	
3	3-027-437-01	DOOR, CASSETTE	
4	X-3367-437-1	LOCK ASSY	
* 5	3-033-846-01	INSULATED PLATE	
* 6	A-3317-521-A	MAIN BOARD, COMPLETE	
7	3-915-923-01	SCREW, GROUND POINT	
* 8	X-3373-270-1	COVER ASSY	
9	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
* 10	3-018-390-01	BRACKET (IC)	
* 11	3-031-026-01	HEAT SINK	
12	3-935-014-01	CUSHION (U)	
* 13	3-009-813-42	CHASSIS	
14	3-012-859-01	CAP (25), RUBBER	
15	3-937-650-01	PLATE (C), GROUND	
F781	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE)(10A)	

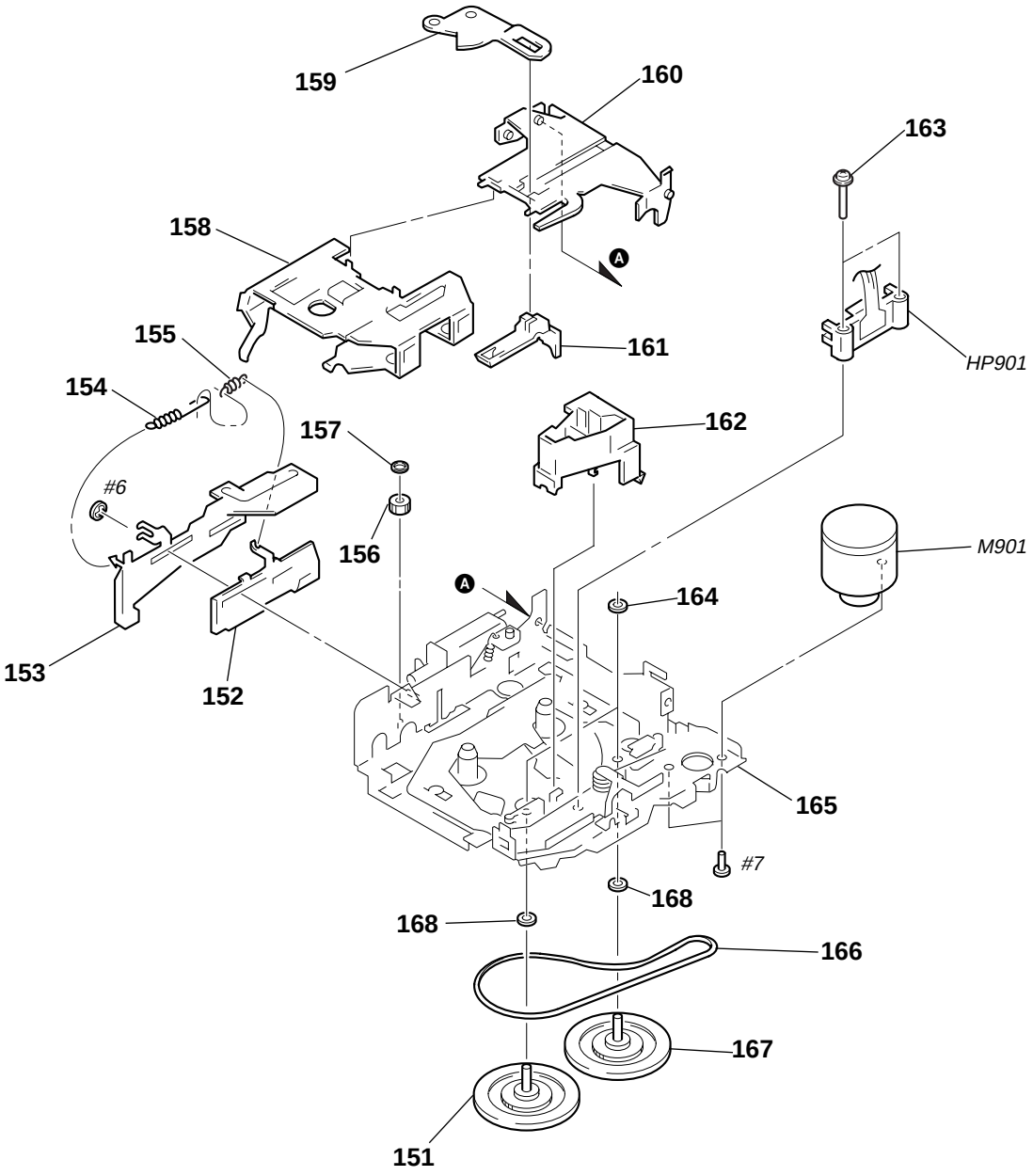
(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-030-838-01	BUTTON (RELEASE)	
52	3-030-832-01	LEVER (S/A)	
53	3-932-475-01	SPRING (RELEASE)	
54	3-030-834-01	BUTTON (M/S)	
55	3-030-835-01	BUTTON (1-6)	
56	3-031-027-11	BUTTON (P/P/A)	
57	3-030-831-01	BUTTON (SOURCE)	
58	3-030-830-11	KNOB (VOL)	
60	3-030-837-01	BUTTON (D-BASS)	

Ref. No.	Part No.	Description	Remark
* 61	3-030-839-01	SHEET (REFLECTOR)	
* 62	3-030-824-01	PLATE, LIGHT GUIDE	
63	1-694-508-11	CONDUCTIVE BOARD, CONNECTION	
* 64	3-030-825-01	HOLDER (LCD)	
65	3-030-827-01	PANEL, FRONT BACK	
66	X-3377-056-1	FRONT PANEL ASSY	
* 67	3-030-840-01	PLATE (B), GROUND	
LCD901	1-803-496-11	DISPLAY PANEL, LIQUID CRYSTAL	

(3) MECHANISM DECK SECTION (MG-25F-136)



Ref. No.	Part No.	Description	Remark
151	A-3291-667-A	CLUTCH (FR) ASSY	
152	3-019-130-01	LEVER (LDG-A)	
153	3-019-131-01	LEVER (LDG-B)	
154	3-020-539-01	SPRING (LD-1), TENSION	
155	3-020-540-01	SPRING (LD-2), TENSION	
156	3-020-542-01	GEAR (LOADING FT)	
157	3-341-753-11	WASHER, POLYETHYLENE	
158	3-020-533-01	HOUSING	
159	3-020-532-01	ARM (SUCTION)	
160	3-020-534-01	HANGER	

Ref. No.	Part No.	Description	Remark
161	3-933-346-01	CATCHER	
162	3-933-344-01	GUIDE (C)	
163	3-014-798-01	SCREW (HEAD), SPECIAL	
164	3-364-151-01	WASHER	
165	A-3301-267-A	CHASSIS ASSY (G)	
166	3-017-302-01	BELT (25)	
167	3-936-853-01	FLYWHEEL (F)	
168	3-701-437-21	WASHER	
HP901	1-500-157-21	HEAD, MAGNETIC (PLAYBACK)	
M901	A-3291-665-A	MOTOR ASSY, MAIN (CAPSTAN/REEL)	

KEY

SECTION 8
ELECTRICAL PARTS LIST

Note:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H

Ref. No.	Part No.	Description			Remark
		KEY BOARD			
		**********			
	1-694-508-11	CONDUCTIVE BOARD, CONNECTION			
*	3-030-824-01	PLATE, LIGHT GUIDE			
*	3-030-825-01	HOLDER (LCD)			
*	3-030-839-01	SHEET (REFLECTOR)			
*	3-030-840-01	PLATE (B), GROUND			
		< CAPACITOR >			
C952	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C953	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C954	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C955	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C956	1-164-222-11	CERAMIC CHIP	0.22uF		25V
		< CONNECTOR >			
CNP901	1-785-775-11	PIN, CONNECTOR 15P			
		< DIODE >			
D902	8-719-105-99	DIODE RD6.2M-B1			
D903	8-719-105-99	DIODE RD6.2M-B1			
D904	8-719-105-99	DIODE RD6.2M-B1			
D951	8-719-422-49	DIODE MA8056-L			
		< IC >			
IC901	8-759-366-34	IC LC75824E			
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-803-496-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< SWITCH >			
LSW901	1-771-609-11	SWITCH, TACTILE (WITH LED)(OFF)			
LSW902	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(SOURCE)			
LSW903	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(MODE ◄II►)			
LSW905	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(SOUND)			
LSW906	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(SHIFT)			
LSW921	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(⏏)			
LSW922	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(PRST -)			
LSW923	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(PRST +)			
LSW927	1-762-619-21	SWITCH, KEY BOARD (WITH LED)(DSPL)			
LSW928	1-771-609-11	SWITCH, TACTILE (WITH LED)(6)			
LSW929	1-771-609-11	SWITCH, TACTILE (WITH LED)(5/ENTER)			
LSW930	1-771-609-11	SWITCH, TACTILE (WITH LED)(4/→)			
LSW931	1-771-609-11	SWITCH, TACTILE (WITH LED)(3/PLAY MODE)			
LSW932	1-771-609-11	SWITCH, TACTILE (WITH LED)(2/SET UP)			
LSW933	1-771-609-11	SWITCH, TACTILE (WITH LED)(1/←)			

Ref. No.	Part No.	Description			Remark
		< PILOT LAMP >			
PL901	1-517-633-21	LAMP, PILOT			
PL902	1-517-633-21	LAMP, PILOT			
		< TRANSISTOR >			
Q945	8-729-900-53	TRANSISTOR DTC114EK			
		< RESISTOR >			
R901	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R902	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R903	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R904	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R905	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R906	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R907	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R916	1-216-033-00	METAL CHIP	220	5%	1/10W
R921	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R922	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R923	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R924	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R925	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R926	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R927	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R928	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R929	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R930	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R931	1-208-806-11	RES,CHIP	10K	2%	1/10W
R932	1-208-810-11	RES,CHIP	15K	2%	1/10W
R951	1-216-041-00	METAL CHIP	470	5%	1/10W
R953	1-216-121-00	RES,CHIP	1M	5%	1/10W
R954	1-216-049-11	RES,CHIP	1K	5%	1/10W
R955	1-216-049-11	RES,CHIP	1K	5%	1/10W
R956	1-216-049-11	RES,CHIP	1K	5%	1/10W
R957	1-216-109-00	METAL CHIP	330K	5%	1/10W
R961	1-216-021-00	METAL CHIP	68	5%	1/10W
R963	1-216-033-00	METAL CHIP	220	5%	1/10W
R965	1-216-033-00	METAL CHIP	220	5%	1/10W
R967	1-216-033-00	METAL CHIP	220	5%	1/10W
R969	1-216-033-00	METAL CHIP	220	5%	1/10W
R975	1-216-029-00	METAL CHIP	150	5%	1/10W
R977	1-216-037-00	METAL CHIP	330	5%	1/10W
R981	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R982	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R983	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R984	1-216-081-00	METAL CHIP	22K	5%	1/10W
R990	1-216-295-00	SHORT	0		

Ref. No.	Part No.	Description			Remark
R991	1-216-295-00	SHORT	0		
R999	1-216-295-00	SHORT	0		
		< ROTARY ENCODER >			
RE901	1-475-014-11	ENCODER, ROTARY			
		< SWITCH >			
S901	1-771-290-11	SWITCH, SLIDE (SEEK/AMS ▶▶I ▶▶ +/I◀◀ ◀◀ -)			
S981	1-762-937-11	SWITCH, ROTARY (D-BASS)			
**********					
*	A-3317-521-A	MAIN BOARD, COMPLETE			
		**********			
*	3-018-390-01	BRACKET (IC)			
*	3-031-026-01	HEAT SINK			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-794-09	SCREW +PTT 2.6X10 (S)			
		< CAPACITOR >			
C1	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C2	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C3	1-124-234-00	ELECT	22uF	20%	16V
C4	1-124-233-11	ELECT	10uF	20%	16V
C5	1-124-234-00	ELECT	22uF	20%	16V
C6	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C7	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C8	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C9	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C10	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C11	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C12	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C21	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C22	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C24	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C25	1-163-091-00	CERAMIC CHIP	8PF		50V
C26	1-124-233-11	ELECT	10uF	20%	16V
C27	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C28	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C29	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C30	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C31	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C32	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C33	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C34	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C35	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C36	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C37	1-124-233-11	ELECT	10uF	20%	16V
C38	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C39	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C40	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C41	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C44	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C45	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C51	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C52	1-124-233-11	ELECT	10uF	20%	16V
C53	1-124-234-00	ELECT	22uF	20%	16V
C54	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C55	1-124-234-00	ELECT	22uF	20%	16V
C56	1-124-234-00	ELECT	22uF	20%	16V
C101	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C102	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C103	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C104	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C105	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C106	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C107	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C108	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C109	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C110	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C111	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C121	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C122	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C124	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C151	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C152	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C153	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C171	1-126-163-11	ELECT	4.7uF	20%	50V
C172	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C174	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C181	1-126-163-11	ELECT	4.7uF	20%	50V
C182	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C183	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C184	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C191	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C202	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C203	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C204	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C205	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C206	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C207	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C208	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C209	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C210	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C211	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C251	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C252	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C253	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C271	1-126-163-11	ELECT	4.7uF	20%	50V
C272	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C274	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C281	1-126-163-11	ELECT	4.7uF	20%	50V
C282	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C283	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C284	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C301	1-124-234-00	ELECT	22uF	20%	16V
C302	1-131-353-00	TANTALUM	10uF	10%	35V
C303	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C304	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C305	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C306	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C307	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C333	1-124-233-11	ELECT	10uF	20%	16V

MAIN

Ref. No.	Part No.	Description			Remark
C334	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C335	1-124-584-00	ELECT	100uF	20%	10V
C336	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C337	1-124-234-00	ELECT	22uF	20%	16V
C351	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C352	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C353	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C354	1-124-233-11	ELECT	10uF	20%	16V
C355	1-124-234-00	ELECT	22uF	20%	16V
C356	1-126-934-11	ELECT	220uF	20%	16V
C357	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C358	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C501	1-124-584-00	ELECT	100uF	20%	10V
C502	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C503	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C504	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C505	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C506	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C507	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C508	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C551	1-125-710-11	DOUBLE LAYER	0.1F	0	5.5V
C552	1-128-057-11	ELECT	330uF	20%	6.3V
C553	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C556	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C571	1-126-163-11	ELECT	4.7uF	20%	50V
C582	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C601	1-164-346-11	CERAMIC CHIP	1uF		16V
C602	1-164-346-11	CERAMIC CHIP	1uF		16V
C611	1-124-233-11	ELECT	10uF	20%	16V
C612	1-124-233-11	ELECT	10uF	20%	16V
C614	1-124-233-11	ELECT	10uF	20%	16V
C615	1-124-233-11	ELECT	10uF	20%	16V
C616	1-124-233-11	ELECT	10uF	20%	16V
C617	1-124-233-11	ELECT	10uF	20%	16V
C618	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C621	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C622	1-124-589-11	ELECT	47uF	20%	16V
C623	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C751	1-126-096-11	ELECT	10uF	20%	35V
C752	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C754	1-124-233-11	ELECT	10uF	20%	16V
C755	1-124-589-11	ELECT	47uF	20%	16V
C757	1-124-233-11	ELECT	10uF	20%	16V
C781	1-126-936-11	ELECT	3300uF	20%	16V
C782	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C783	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C784	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C785	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C786	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C787	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C788	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C789	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C790	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C792	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C795	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C993	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN301	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P	
* CN351	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P	
CN701	1-785-774-11	PLUG, CONNECTOR 15P	
CN781	1-774-701-11	PIN, CONNECTOR 16P	
		< DIODE >	
D1	8-719-991-65	DIODE SB02W03C	
D51	8-719-158-15	DIODE RD5.6S-B	
D52	8-719-423-10	DIODE MA8100-M-TX	
D351	8-719-977-22	DIODE DTZ9.1	
D352	8-719-911-19	DIODE 1SS119	
D501	8-719-400-20	DIODE MA152WA	
D551	8-719-400-20	DIODE MA152WA	
D552	8-719-404-50	DIODE MA111-TX	
D553	8-719-404-50	DIODE MA111-TX	
D554	8-719-072-70	DIODE MA2ZD14001S0	
D571	8-719-057-80	DIODE MA8160-M-TX	
D572	8-719-420-14	DIODE MA8082-M	
D581	8-719-057-80	DIODE MA8160-M-TX	
D588	8-719-404-50	DIODE MA111-TX	
D591	8-719-422-76	DIODE MA8075-M	
D601	8-719-423-32	DIODE MA8120-M	
D610	8-719-970-02	DIODE 1SR139-400	
D611	8-719-970-02	DIODE 1SR139-400	
D613	8-719-970-02	DIODE 1SR139-400	
D614	8-719-970-02	DIODE 1SR139-400	
D621	8-719-422-12	DIODE MA8039	
D622	8-719-404-50	DIODE MA111-TX	
D623	8-719-422-12	DIODE MA8039	
D624	8-719-422-97	DIODE MA8091-M	
D701	8-719-977-12	DIODE DTZ6.8B	
D702	8-719-158-15	DIODE RD5.6S-B	
D704	8-719-158-15	DIODE RD5.6S-B	
D705	8-719-035-74	DIODE MA4062-M(TA)	
D706	8-719-035-74	DIODE MA4062-M(TA)	
D707	8-719-035-74	DIODE MA4062-M(TA)	
D708	8-719-105-99	DIODE RD6.2M-B1	
D709	8-719-035-74	DIODE MA4062-M(TA)	
D710	8-719-977-12	DIODE DTZ6.8B	
D711	8-719-423-32	DIODE MA8120-M	
D712	8-719-404-50	DIODE MA111-TX	
D713	8-719-404-50	DIODE MA111-TX	
D721	8-719-970-02	DIODE 1SR139-400	
D722	8-719-970-02	DIODE 1SR139-400	
D723	8-719-970-02	DIODE 1SR139-400	
D724	8-719-970-02	DIODE 1SR139-400	
D731	8-719-970-02	DIODE 1SR139-400	
D732	8-719-970-02	DIODE 1SR139-400	
D733	8-719-970-02	DIODE 1SR139-400	
D734	8-719-970-02	DIODE 1SR139-400	
D781	8-719-049-38	DIODE 1N5404TU	
		< IC >	
IC21	8-759-586-59	IC TB2118F-EL-S	
IC22	8-759-909-71	IC BA4558F	
IC301	8-752-079-78	IC CXA2509AQ-T4	
IC331	8-759-572-10	IC TDA7462D013TR	

Ref. No.	Part No.	Description	Remark
IC351	8-759-527-33	IC LB1930M-TLM	
IC501	8-759-590-79	IC MN101C12GTB1	
IC551	8-759-574-61	IC XC61AN4302MR	
IC611	8-759-347-49	IC BA3918-V2	
IC751	8-759-490-74	IC TDA7384	
		< JACK >	
J1	1-764-808-21	JACK (FM/AM ANTENNA IN)	
J331	1-774-698-11	JACK, PIN 2P (AUDIO OUT (LINE OUT))	
J561	1-566-822-41	JACK (REMOTE IN)	
		< JUMPER RESISTOR >	
JC1	1-216-296-00	SHORT 0	
JC2	1-216-296-00	SHORT 0	
JC3	1-216-296-00	SHORT 0	
JC4	1-216-296-00	SHORT 0	
JC7	1-216-296-00	SHORT 0	
JC21	1-216-296-00	SHORT 0	
JC25	1-216-296-00	SHORT 0	
JC26	1-216-295-00	SHORT 0	
JC31	1-216-296-00	SHORT 0	
JC32	1-216-296-00	SHORT 0	
JC51	1-216-295-00	SHORT 0	
JC121	1-216-295-00	SHORT 0	
JC151	1-216-295-00	SHORT 0	
JC152	1-216-295-00	SHORT 0	
JC181	1-216-296-00	SHORT 0	
JC182	1-216-295-00	SHORT 0	
JC191	1-216-296-00	SHORT 0	
JC192	1-216-296-00	SHORT 0	
JC272	1-216-296-00	SHORT 0	
JC301	1-216-295-00	SHORT 0	
JC302	1-216-295-00	SHORT 0	
JC303	1-216-295-00	SHORT 0	
JC304	1-216-295-00	SHORT 0	
JC305	1-216-296-00	SHORT 0	
JC331	1-216-296-00	SHORT 0	
JC332	1-216-296-00	SHORT 0	
JC351	1-216-295-00	SHORT 0	
JC352	1-216-295-00	SHORT 0	
JC354	1-216-296-00	SHORT 0	
JC356	1-216-296-00	SHORT 0	
JC501	1-216-295-00	SHORT 0	
JC502	1-216-295-00	SHORT 0	
JC504	1-216-296-00	SHORT 0	
JC506	1-216-296-00	SHORT 0	
JC507	1-216-295-00	SHORT 0	
JC508	1-216-295-00	SHORT 0	
JC551	1-216-295-00	SHORT 0	
JC571	1-216-296-00	SHORT 0	
JC601	1-216-296-00	SHORT 0	
JC621	1-216-296-00	SHORT 0	
JC622	1-216-296-00	SHORT 0	
JC705	1-216-296-00	SHORT 0	
JC751	1-216-296-00	SHORT 0	
JC752	1-216-295-00	SHORT 0	
JC781	1-216-296-00	SHORT 0	
JC782	1-216-295-00	SHORT 0	
JC992	1-216-296-00	SHORT 0	
		< COIL >	
L2	1-469-132-21	FERRITE 0uH	
L3	1-410-501-11	INDUCTOR 2.2uH	
L4	1-410-196-11	INDUCTOR CHIP 2.2uH	
L6	1-410-989-11	INDUCTOR CHIP 0.47uH	
L21	1-410-509-11	INDUCTOR 10uH	
L22	1-410-989-11	INDUCTOR CHIP 0.47uH	
L501	1-410-989-11	INDUCTOR CHIP 0.47uH	
L781	1-411-669-21	INDUCTOR 0uH	
		< TRANSISTOR >	
Q51	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q52	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q53	8-729-020-67	TRANSISTOR XN1A312-TX	
Q121	8-729-920-21	TRANSISTOR DTC314TKH04	
Q151	8-729-920-21	TRANSISTOR DTC314TKH04	
Q171	8-729-920-21	TRANSISTOR DTC314TKH04	
Q181	8-729-920-21	TRANSISTOR DTC314TKH04	
Q251	8-729-920-21	TRANSISTOR DTC314TKH04	
Q271	8-729-920-21	TRANSISTOR DTC314TKH04	
Q281	8-729-920-21	TRANSISTOR DTC314TKH04	
Q351	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	
Q352	8-729-020-67	TRANSISTOR XN1A312-TX	
Q353	8-729-900-53	TRANSISTOR DTC114EK	
Q354	8-729-106-60	TRANSISTOR 2SB1115A	
Q551	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q571	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q581	8-729-900-53	TRANSISTOR DTC114EK	
Q583	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q591	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q592	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-423-99	TRANSISTOR 2SD2137-OP	
Q602	8-729-020-67	TRANSISTOR XN1A312-TX	
Q621	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q622	8-729-021-94	TRANSISTOR 2SK1657-T1B	
		< RESISTOR >	
R1	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R2	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R3	1-216-296-00	SHORT 0	
R4	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R5	1-216-254-00	RES,CHIP 220K 5% 1/8W	
R8	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R9	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R10	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R11	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R12	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R21	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R23	1-249-417-11	CARBON 1K 5% 1/4W F	
R24	1-249-417-11	CARBON 1K 5% 1/4W F	
R25	1-249-417-11	CARBON 1K 5% 1/4W F	
R26	1-249-417-11	CARBON 1K 5% 1/4W F	
R27	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R28	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R29	1-216-025-00	RES,CHIP 100 5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R30	1-216-049-11	RES,CHIP	1K	5%	1/10W
R32	1-216-073-00	METAL CHIP	10K	5%	1/10W
R33	1-216-049-11	RES,CHIP	1K	5%	1/10W
R34	1-216-041-00	METAL CHIP	470	5%	1/10W
R51	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R52	1-216-033-00	METAL CHIP	220	5%	1/10W
R101	1-216-041-00	METAL CHIP	470	5%	1/10W
R102	1-216-109-00	METAL CHIP	330K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-079-00	METAL CHIP	18K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-081-00	METAL CHIP	22K	5%	1/10W
R121	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R151	1-249-429-11	CARBON	10K	5%	1/4W
R152	1-216-081-00	METAL CHIP	22K	5%	1/10W
R171	1-216-033-00	METAL CHIP	220	5%	1/10W
R172	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R174	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R175	1-216-085-00	METAL CHIP	33K	5%	1/10W
R181	1-216-033-00	METAL CHIP	220	5%	1/10W
R182	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R184	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R185	1-216-085-00	METAL CHIP	33K	5%	1/10W
R191	1-249-429-11	CARBON	10K	5%	1/4W
R192	1-216-105-00	RES,CHIP	220K	5%	1/10W
R201	1-216-041-00	METAL CHIP	470	5%	1/10W
R202	1-216-109-00	METAL CHIP	330K	5%	1/10W
R203	1-216-077-00	METAL CHIP	15K	5%	1/10W
R204	1-216-079-00	METAL CHIP	18K	5%	1/10W
R205	1-216-073-00	METAL CHIP	10K	5%	1/10W
R206	1-216-081-00	METAL CHIP	22K	5%	1/10W
R251	1-249-429-11	CARBON	10K	5%	1/4W
R252	1-216-081-00	METAL CHIP	22K	5%	1/10W
R271	1-216-033-00	METAL CHIP	220	5%	1/10W
R272	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R274	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R275	1-216-085-00	METAL CHIP	33K	5%	1/10W
R281	1-216-033-00	METAL CHIP	220	5%	1/10W
R282	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R284	1-216-278-11	RES,CHIP	2.2M	5%	1/8W
R285	1-216-085-00	METAL CHIP	33K	5%	1/10W
R301	1-208-812-11	RES,CHIP	18K	2%	1/10W
R302	1-216-097-91	RES,CHIP	100K	5%	1/10W
R303	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R304	1-216-077-00	METAL CHIP	15K	5%	1/10W
R305	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R306	1-216-105-00	RES,CHIP	220K	5%	1/10W
R331	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R351	1-216-049-11	RES,CHIP	1K	5%	1/10W
R352	1-249-383-11	CARBON	1.5	5%	1/6W F
R353	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W
R501	1-216-097-00	RES,CHIP	100K	5%	1/10W
R502	1-216-097-00	RES,CHIP	100K	5%	1/10W
R503	1-216-049-11	RES,CHIP	1K	5%	1/10W
R504	1-216-049-11	RES,CHIP	1K	5%	1/10W
R505	1-216-049-11	RES,CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R506	1-216-049-11	RES,CHIP	1K	5%	1/10W
R507	1-249-417-11	CARBON	1K	5%	1/4W F
R508	1-249-417-11	CARBON	1K	5%	1/4W F
R509	1-249-417-11	CARBON	1K	5%	1/4W F
R510	1-247-807-31	CARBON	100	5%	1/4W
R511	1-216-206-00	RES,CHIP	2.2K	5%	1/8W
R512	1-216-246-00	RES,CHIP	100K	5%	1/8W
R513	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R514	1-247-807-31	CARBON	100	5%	1/4W
R517	1-216-246-00	RES,CHIP	100K	5%	1/8W
R518	1-216-097-00	RES,CHIP	100K	5%	1/10W
R519	1-216-097-00	RES,CHIP	100K	5%	1/10W
R520	1-216-049-11	RES,CHIP	1K	5%	1/10W
R521	1-216-049-11	RES,CHIP	1K	5%	1/10W
R523	1-216-049-11	RES,CHIP	1K	5%	1/10W
R525	1-216-097-00	RES,CHIP	100K	5%	1/10W
R526	1-216-097-00	RES,CHIP	100K	5%	1/10W
R527	1-216-097-00	RES,CHIP	100K	5%	1/10W
R528	1-216-097-00	RES,CHIP	100K	5%	1/10W
R529	1-216-097-00	RES,CHIP	100K	5%	1/10W
R530	1-216-246-00	RES,CHIP	100K	5%	1/8W
R534	1-216-222-00	RES,CHIP	10K	5%	1/8W
R535	1-249-417-11	CARBON	1K	5%	1/4W F
R537	1-216-097-00	RES,CHIP	100K	5%	1/10W
R538	1-216-033-00	METAL CHIP	220	5%	1/10W
R539	1-216-097-00	RES,CHIP	100K	5%	1/10W
R540	1-216-246-00	RES,CHIP	100K	5%	1/8W
R541	1-216-097-00	RES,CHIP	100K	5%	1/10W
R542	1-216-097-00	RES,CHIP	100K	5%	1/10W
R544	1-216-049-11	RES,CHIP	1K	5%	1/10W
R545	1-216-174-00	RES,CHIP	100	5%	1/8W
R546	1-216-246-00	RES,CHIP	100K	5%	1/8W
R547	1-216-049-11	RES,CHIP	1K	5%	1/10W
R548	1-216-049-11	RES,CHIP	1K	5%	1/10W
R550	1-216-097-00	RES,CHIP	100K	5%	1/10W
R551	1-216-097-00	RES,CHIP	100K	5%	1/10W
R553	1-216-246-00	RES,CHIP	100K	5%	1/8W
R554	1-216-097-00	RES,CHIP	100K	5%	1/10W
R555	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R556	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R557	1-216-049-11	RES,CHIP	1K	5%	1/10W
R558	1-216-035-00	METAL CHIP	270	5%	1/10W
R559	1-216-097-00	RES,CHIP	100K	5%	1/10W
R560	1-216-097-00	RES,CHIP	100K	5%	1/10W
R561	1-216-073-00	METAL CHIP	10K	5%	1/10W
R562	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R563	1-216-025-00	RES,CHIP	100	5%	1/10W
R564	1-216-025-00	RES,CHIP	100	5%	1/10W
R571	1-216-089-00	RES,CHIP	47K	5%	1/10W
R572	1-216-089-00	RES,CHIP	47K	5%	1/10W
R573	1-249-421-11	CARBON	2.2K	5%	1/4W F
R574	1-216-081-00	METAL CHIP	22K	5%	1/10W
R581	1-216-089-00	RES,CHIP	47K	5%	1/10W
R586	1-216-073-00	METAL CHIP	10K	5%	1/10W
R587	1-216-073-00	METAL CHIP	10K	5%	1/10W
R588	1-216-097-00	RES,CHIP	100K	5%	1/10W
R589	1-216-085-00	METAL CHIP	33K	5%	1/10W
R590	1-216-246-00	RES,CHIP	100K	5%	1/8W

Ref. No.	Part No.	Description			Remark
R591	1-216-089-00	RES,CHIP	47K	5%	1/10W
R592	1-216-089-00	RES,CHIP	47K	5%	1/10W
R593	1-216-089-00	RES,CHIP	47K	5%	1/10W
R594	1-216-049-11	RES,CHIP	1K	5%	1/10W
R596	1-216-246-00	RES,CHIP	100K	5%	1/8W
R597	1-216-097-00	RES,CHIP	100K	5%	1/10W
R601	1-249-393-11	CARBON	10	5%	1/4W F
R602	1-249-395-11	CARBON	15	5%	1/4W F
R603	1-216-186-00	RES,CHIP	330	5%	1/8W
R621	1-249-425-11	CARBON	4.7K	5%	1/4W F
R622	1-216-073-00	METAL CHIP	10K	5%	1/10W
R702	1-216-025-00	RES,CHIP	100	5%	1/10W
R703	1-216-025-00	RES,CHIP	100	5%	1/10W
R704	1-216-295-00	SHORT	0		
R705	1-216-295-00	SHORT	0		
R706	1-216-049-11	RES,CHIP	1K	5%	1/10W
R707	1-216-049-11	RES,CHIP	1K	5%	1/10W
R708	1-216-198-00	RES,CHIP	1K	5%	1/8W
R709	1-216-174-00	RES,CHIP	100	5%	1/8W
R710	1-216-174-00	RES,CHIP	100	5%	1/8W
R711	1-216-049-11	RES,CHIP	1K	5%	1/10W
R712	1-216-049-11	RES,CHIP	1K	5%	1/10W
R713	1-216-025-00	RES,CHIP	100	5%	1/10W
R714	1-216-025-00	RES,CHIP	100	5%	1/10W
R751	1-216-049-11	RES,CHIP	1K	5%	1/10W
R753	1-216-049-11	RES,CHIP	1K	5%	1/10W
R781	1-216-081-00	METAL CHIP	22K	5%	1/10W
R782	1-216-230-00	RES,CHIP	22K	5%	1/8W
		< SWITCH >			
S501	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
S502	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT)			
S551	1-692-431-21	SWITCH, TACTILE (RESET)			
		< TUNER >			
TU1	A-3220-695-A	FM/AM TUNER UNIT (TUX-011(EA))			
		< VIBRATOR >			
X21	1-781-246-21	VIBRATOR, CRYSTAL (10.25MHz)			
X501	1-781-294-21	VIBRATOR, CRYSTAL (18.432MHz)			
X502	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			

****

MISCELLANEOUS
****

9	1-776-207-82	CORD (WITH CONNECTOR) (POWER)
63	1-694-508-11	CONDUCTIVE BOARD, CONNECTION
F781	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A)
HP901	1-500-157-21	HEAD, MAGNETIC (PLAYBACK)
LCD901	1-803-496-11	DISPLAY PANEL, LIQUID CRYSTAL
M901	A-3291-665-A	MOTOR ASSY, MAIN (CAPSTAN/REEL)

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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-865-814-41	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE)	
	3-865-815-31	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE)	
	X-3373-412-1	CASE (PANEL) ASSY	

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HARDWARE LIST
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#1	7-621-772-10	SCREW +B 2X4
#2	7-685-793-09	SCREW +PTT 2.6X8 (S)
#3	7-685-792-09	SCREW +PTT 2.6X6 (S)
#4	7-685-794-09	SCREW +PTT 2.6X10 (S)
#5	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#6	7-624-104-04	STOP RING 2.0, TYPE -E
#7	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3

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PARTSFORINS TALLATION AND CONNECTIONS
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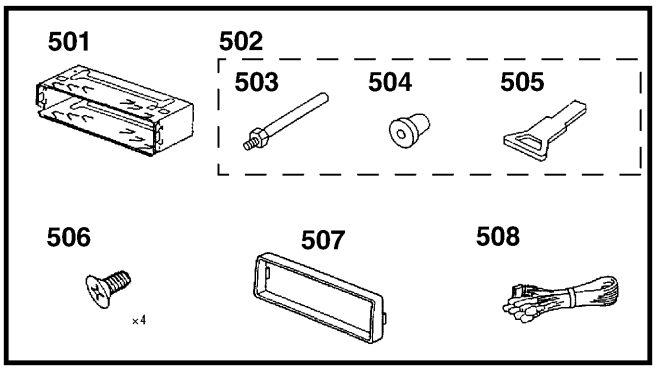
501	3-916-161-31	FRAME ASSY
502	X-3370-077-1	SCREW ASSY (AE.KEY), FITTING
503	3-386-828-01	SCREW, FITTING
504	3-349-410-01	BUSHING
505	3-388-078-01	KEY
506	3-934-325-01	SCREW, +K (5X8) TAPPING
507	3-018-384-01	COLLAR
508	1-776-207-82	CORD (WITH CONNECTOR) (POWER)



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