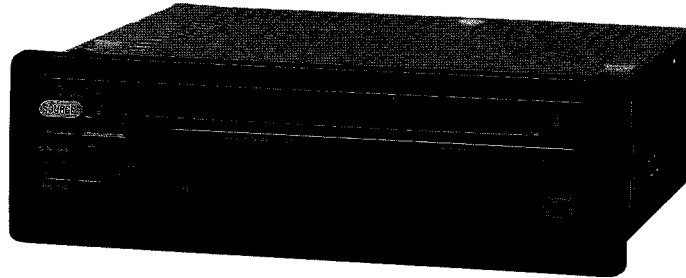


CDX-3160

SERVICE MANUAL

US Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

12 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1 % total harmonic distortion.

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	90 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 μ W*

* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

Tuner section

FM

Tuning range	87.5 - 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	13 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	33 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

Model Name Using Similar Mechanism	CDX-2160/EXCD-206
CD Drive Mechanism Type	MG-333X-121
Optical Pick-up Name	KSS-520A

AM

Tuning range	530 - 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	32 μ V

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	35 W $\times$ 4 (at 4 ohms)

— Continued on next page —

FM/AM COMPACT DISC PLAYER



992553511

SONY®

General

Outputs	Line output (2) Power antenna relay control/ Power amplifier control lead
Tone controls	Bass ± 10 dB at 100 Hz Treble ± 10 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx 188 × 58 × 180 mm (7 1/2 × 2 3/8 × 7 1/8 in) (w/h/d)
Mounting dimension	Approx 183 × 53 × 163 mm (7 1/4 × 2 1/8 × 6 1/2 in) (w/h/d)
Mass	Approx 1.3 kg (2 lb 14 oz)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

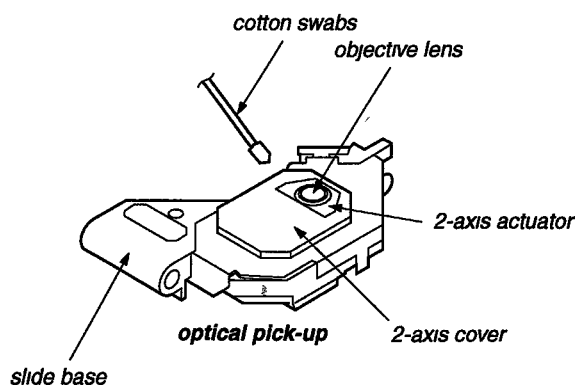
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

NOTES ON PICK-UP FLEXIBLE BOARD

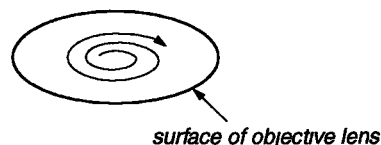
The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.

Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

NOTES ON CLEANING THE OBJECTIVE LENS



Apply CD lens cleaner B-4 (Part No.:J-2501-000-A) to cotton swabs (narrow type) (Part No.:J-2501-023-A) to be lightly wet. Use a force (about 5 g (0.18 oz)) to make the objective lens in contact with the bottom lightly, and clean the lens by spirals as following below. Replace the cotton swab and repeat this cleaning two or three times.



Notes:

Do not force to push the objective lens. Otherwise, the plate spring supporting the objective lens will be bent, causing a deteriorated RF waveform.

Never touch anything other than the objective lens. Otherwise, a significant deterioration occurs in the RF waveform.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

1. GENERAL

Location of Controls	4
Setting the Clock	4
CD Player	4
Radio	5
Other Functions	5
Additional Information ..	6
Connections	7

2. DISASSEMBLY

2-1. Cover Assy	9
2-2. Front Panel Assy	9
2-3. Sub Panel	10
2-4. CD Mechanism Block ..	10
2-5. Main Board	11
2-6. Heat Sink	11
2-7. Chassis (T) Sub Assy	12
2-8. Lever Assy	12
2-9. Servo Board	13
2-10. Roller Assy	13
2-11 Chassis (OP) (O/S) Assy	14
2-12. Optical Pick-up Block	14

3. ELECTRICAL ADJUSTMENTS

Tuner Section	15
CD Section	19

4. DIAGRAMS

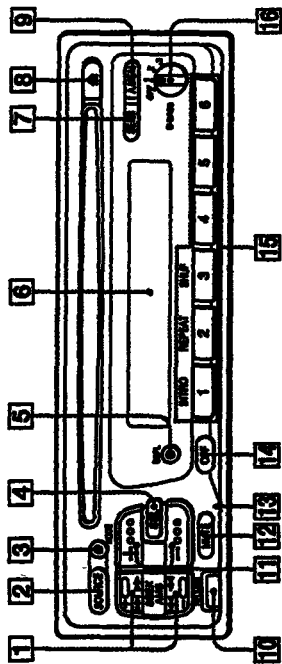
4-1. IC Pin Description	20
4-2. Circuit Boards Location ..	22
4-3. Printed Wiring Boards –CD Mechanism Section–	22
4-4. Schematic Diagram –CD Mechanism Section–	25
4-5. Printed Wiring Boards –Main Section– ..	30
4-6. Schematic Diagram –Main Section–	33

5. EXPLODED VIEWS

5-1. Chassis Section	42
5-2. Front Panel Section ..	43
5-3. CD Mechanism Section (1)	44
5-4. CD Mechanism Section (2) ..	45
5-5. CD Mechanism Section (3)	46

6. ELECTRICAL PARTS LIST

Location of controls



Refer to the pages for details.

- 1 SEEK/AMS (seek/Automatic Music Sensor/manual search) button 5, 6, 7
- 2 SOURCE (source select) button 5, 6
- 3 MODE (band select) button 6
- 4 SEL (control mode select) button 5, 7, 8
- 5 DSPL (display mode change/time set) button 5, 7
- 6 Display window
- 7 SENS (sensitivity adjust) button 7
- 8 (eject) button 5
- 9 A.MEM (Automatic Memory) button 6
- 10 RELEASE (front panel release) button 4,
- 11 (volume/bass/treble/balance/fader control) buttons 5, 7
- 12 MUTE button 8
- 13 Reset button (located on the front side of the unit hidden by the front panel) 4
- 14 OFF button 4, 5, 8
- 15 During radio reception:
Number buttons 6, 7
- 16 During CD playback:
① INTRO button 6
② REPEAT button 6
③ SHUF button 6
- 17 D-BASS dial (CDX-4160 only) 8

The illustration of the front panel in the manual is of the CDX-4160.

SECTION 1 GENERAL

EN

Getting Started/CD Player

Setting the clock

The clock has a 12-hour digital indication.

Example: Set the clock to 10:08

- 1 Press **OFF** or **CEP** during operation.

- 2 Press **CEP** for two seconds.



The hour digit flashes.

- 3 Set the hour digits.



To go forward

To go back

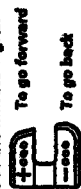


- 4 Press **CEP** momentarily.



The minute digit flashes.

- 5 Set the minute digits.

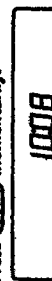


To go forward

To go back



- 3 Press **CEP** momentarily.



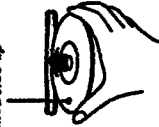
The clock is activated.

Note
If the car has no necessary position on the ignition key switch, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started CD playback.

Listening to a CD

Simply insert the CD.
Playback starts automatically.

Labelled side up



If a CD is already inserted, press **CEP** repeatedly until "CD" appears.



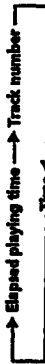
Elapsed playing time

Note
To play back on 2 cm (3 in.) CD, use the optional Sony compact disc single adapter (CSA-4).

To	Press
Stop playback	▲ or ○
Eject the CD	▲

Changing the displayed items

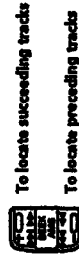
Each time you press **CEP**, the item changes as follows:



Locating a specific track

— Automatic Music Sensor (AMS)

During playback, press either side of **CEP/AMS** momentarily.



To locate succeeding tracks

To locate preceding tracks

This section extracted from instruction manual.

Locating a specific point in a track

— Manual Search

During playback, press and hold either side of **⏮** or **⏭** for two seconds. Release the button when you have found the desired point.



To search forward

To search backward

Note
If "—" or "—" appears in the display, you have reached the beginning or the end of the disc and you cannot go any further.

Playing a CD in various modes

Searching for the desired track

— Intro Scan

Press **⏮** during playback.
"INTRO" appears in the display.

The first 10 seconds of all the tracks are played. When you find the desired track, press again. The unit returns to the normal playback mode.

Playing tracks repeatedly

— Repeat Play

Press **⏮** during playback.
"REPEAT" appears in the display.

When the currently played track is over, it will be played again from the beginning.

To cancel this mode, press again.

Playing tracks in random order

— Shuffle Play

Press **⏮** during playback.
"SHUFFLE" appears in the display.

To cancel this mode, press again.

Memorizing stations automatically

— Automatic Memory

Stations with the clearest reception are automatically searched and memorized on each band (FM I, FM II, FM III and AM). Up to 6 stations on each band can be stored on the number buttons (1 to 6) in the order of band frequency.

1 Press **⏮** repeatedly to select the tuner.
Each time you press **⏮**, the mode change as follows:
CD → TUNER

2 Press **⏮** repeatedly to select the band.
Each time you press **⏮**, the mode changes as follows:
→ FM I → FM II → FM III → AM

3 Press **⏮** for two seconds.
The unit will be starts scanning the selected band and memorizes the tuned stations on the number button 1 through 6 automatically.

Notes

- The unit does not start stations with weak signals. If only a few stations are received, some number buttons remain empty.
- When a number is indicated in the display, the unit starts storing stations from the one currently displayed.
- If a CD is not in the unit, only the tuner band appears even if you press **⏮**.

Memorizing only the desired stations

You can store up to 6 stations on each band (18 for FM I, FM II and FM III, 6 for AM) in the order of your choice.

1 Press **⏮** repeatedly to select the tuner.

2 Press **⏮** repeatedly to select the band.

3 Press either side of **⏮** to tune in the station that you want to store on the number button.

4 Press the desired number button (1 to 6) for two seconds until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 Select the desired band (page 6).
2 Press the number button (1 to 6) momentarily where the desired station is stored.

If you cannot tune in a preset station

Press either side of **⏮** momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Press either side of **⏮** repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press **⏮** momentarily until "LCL" appears in the display (local seek mode). Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to, press and hold either side of **⏮** for two seconds until the desired frequency appears (manual tuning).

If FM stereo reception is poor

— Monaural Mode
Press **⏮** momentarily until "MONO" appears.
The sound improves, but becomes monaural ("ST" disappears).

To go back to the normal mode, press again until "MONO" disappears.

Changing the displayed items

Each time you press **⏮**, the items alternate between the frequency and time.

Adjusting the sound characteristics

You can adjust bass, treble, balance and fader. Each source can store the bass and treble level independently.

1 Select the item you want to adjust by pressing **⏮** repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BALANCE (balance) → FADER (fader)

2 Adjust the selected item by pressing **⏮** or **⏭**.
Adjust within three seconds after selecting the item. (After three seconds, the buttons work as volume control buttons.)

Muting the sound

Press **⏮**.
"MUTE" flashes.

To restore the previous volume level, press **⏮** again.

Changing the sound and beep tone

Enjoying bass and treble even at low volume — Loudness (CDX-3160 only)

Bass and treble will be reinforced.
Press **⏮** while pressing **⏮**.
"LOUD" appears in the display.

To cancel, press these buttons again.

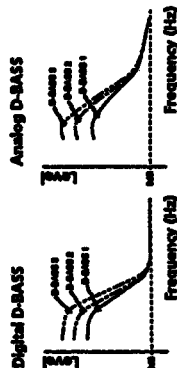
Boosting the bass sound — D-bass (CDX-4160 only)

You can enjoy clear and powerful bass sound. The D-bass function boosts the low frequency signal with a sharper curve than conventional bass boost.

You can hear the bass line more clearly even if the vocal sound is the same volume. You can emphasize and adjust the bass sound easily with the D-bass control. This effect is similar to the one you get when you use an optional subwoofer system.

Moreover, the Digital D-bass[®] function creates even sharper and more powerful bass sound than Analog D-bass.

- Digital D-bass is available during CD playback.



Adjusting the bass curve

Turn the D-BASS dial to adjust the bass level (1, 2 or 3).
"D-BASS" appears in the display.
During CD playback, "DIGITAL D-BASS" appears in the display.

To cancel, turn the dial to the OFF position.

Muting the beep tone

Press **⓪** while pressing **Ⓢ**.

To obtain the beep tone again, press these buttons again.

Note

If you connect an optional power amplifier and do not built-in amplifier, the beep tone will be disabled.

Turning on the clock display — Power Select Function

Only for cars with an accessory position on the ignition key switch

To turn the Power Select Function ON

Press **OFF** while pressing **Ⓢ**.
The Power Select Function ties the clock display power to the accessory position on the ignition key switch.

To avoid battery wear, the clock is not displayed while the unit is initializing.

Note

You cannot operate this function with the optional relay remote (RMA-K23) (CDX-410 only).

Additional Information

Precautions

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a two-speaker system, set the fader control to the center position.
- If your car is equipped with a power antenna, note that it will extend automatically while the unit is operating.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Notes on handling CDs

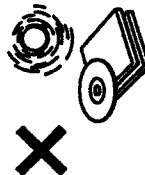
A dirty or defective disc may cause sound dropouts while playing. To enjoy optimum sound, handle the disc as follows.
Handle the disc by its edge. To keep the disc clean, do not touch the surface.



Do not stick paper or tape on the labeled surface.

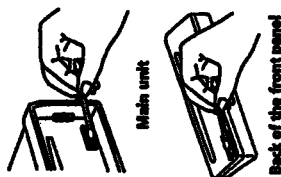


Do not expose the disc to direct sunlight or heat sources such as hot air-ducts, or leave them in a car parked in direct sunlight where there can be a considerable rise in the temperature inside the car.

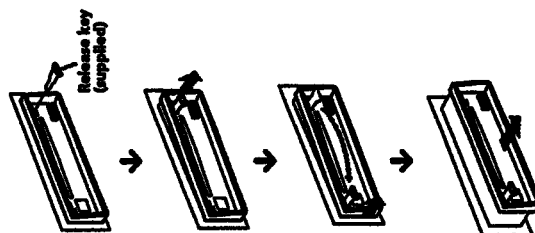


Cleaning the connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. To prevent this, open the front panel by pressing **Ⓢ**, then detach it and clean the connectors with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.



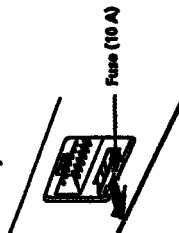
Dismounting the unit



Maintenance

Fuse replacement

When replacing the fuse, be sure to use one that matches the amperage described on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Connections

Connexions

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground 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 ground wires to a common ground 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.
- The use of optical instruments with this product will increase eye hazard.

Précautions

- Cet appareil est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Brancher les fils d'entrée d'alimentation jaune et rouge seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoires.
- Rassembler tous les fils de terre en un point de masse commun.
- Brancher le câble jaune à un circuit libre de la voiture dont la capacité nominale est supérieure à la capacité du fusible de l'appareil. Si vous branchez cet appareil en série avec d'autres composants stéréo, le circuit de la voiture auxquels ils sont raccordés doit afficher une capacité nominale supérieure à la somme des capacités individuelles de chaque composant. S'il n'y a pas de circuits de voiture affichant une capacité égale à la capacité du fusible de l'appareil, brancher l'appareil directement à la batterie. Si aucun circuit de voiture n'est disponible pour connecter cet appareil, brancher l'appareil à un circuit de voiture supérieur à la capacité du fusible de l'appareil de telle sorte que si l'appareil grille son fusible, aucun autre circuit ne soit coupé.
- L'utilisation d'instruments optiques en option avec ce produit augmente le danger les yeux.

If Your Car has an Accessory Position on the Ignition Key Switch — Power Select Function

To turn the Power Select Function on, press **OFF** while pressing **SEL**.
To turn the accessory position ON or OFF, the lock will be displayed or not.
To avoid battery wear, the clock is not displayed when the unit is initialization.

Note
You cannot operate this function with the optional remote RM-X25 (CDX-4160 only).

Si la serrure de contact de votre voiture comporte une position accessoires — Fonction de sélection d'alimentation

Pour activer la fonction de sélection d'alimentation Appuyez sur **OFF** tout en maintenant **SEL** enfoncée.
Si vous mettez la clé en position accessoires, l'horloge s'affichera.
Pour éviter la décharge la batterie, l'horloge ne s'affiche pas lorsque l'appareil est initialisé.

Remarque
Cette fonction n'est pas disponible avec le satellite de commande en option (RM-X25) (CDX-4160 uniquement).

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

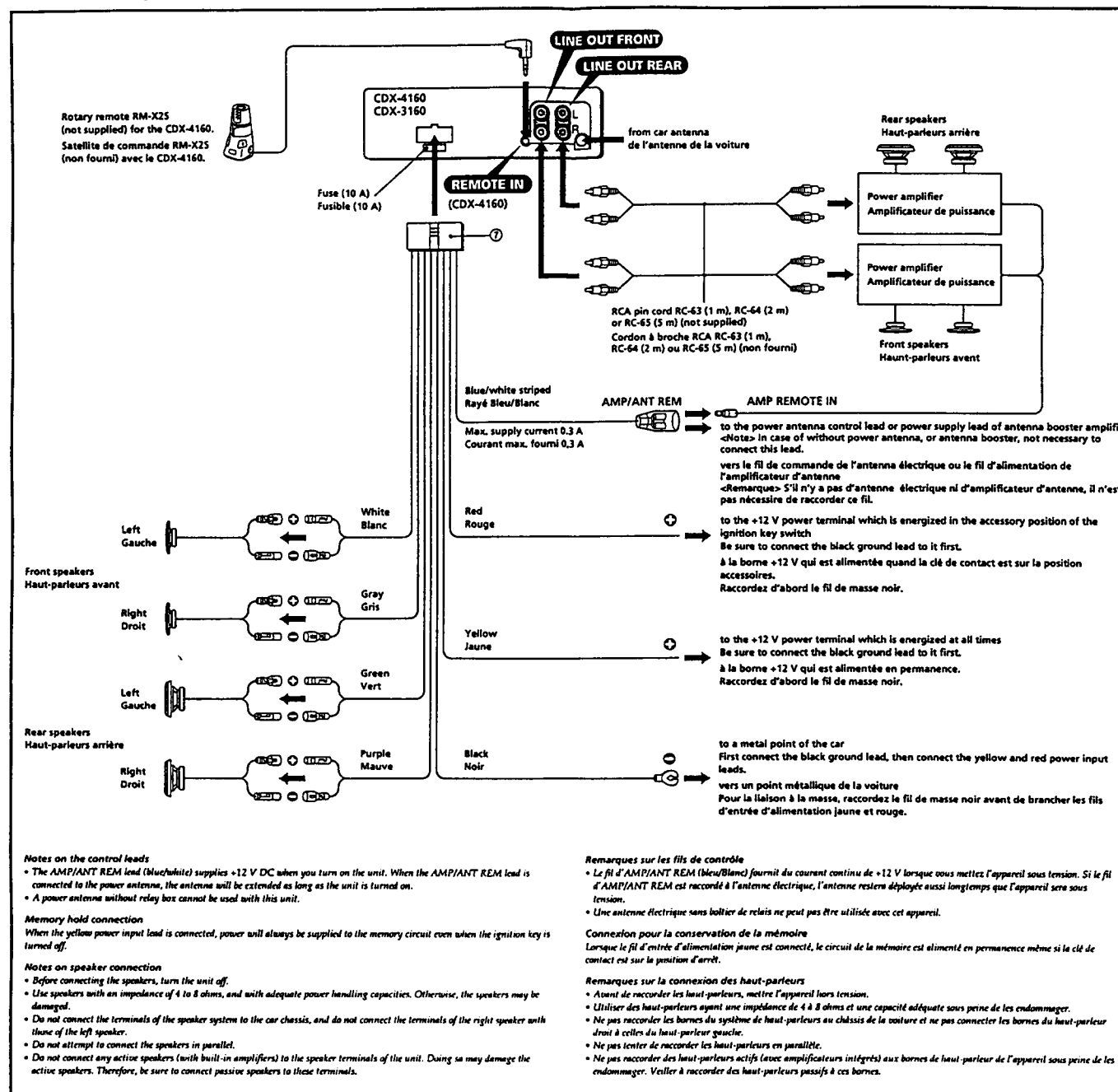


Reset button
Touche de réinitialisation

Touche de réinitialisation

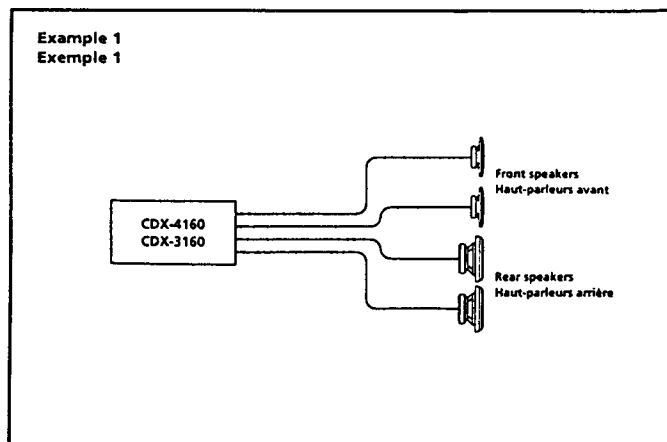
Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.

Connection Example

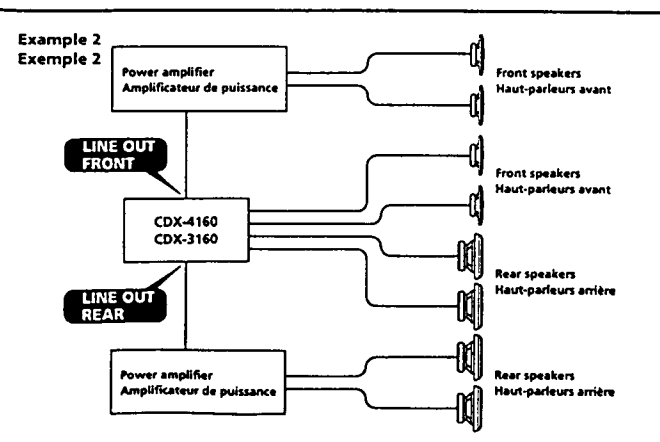


Connexions de l'exemple

Connection Diagram



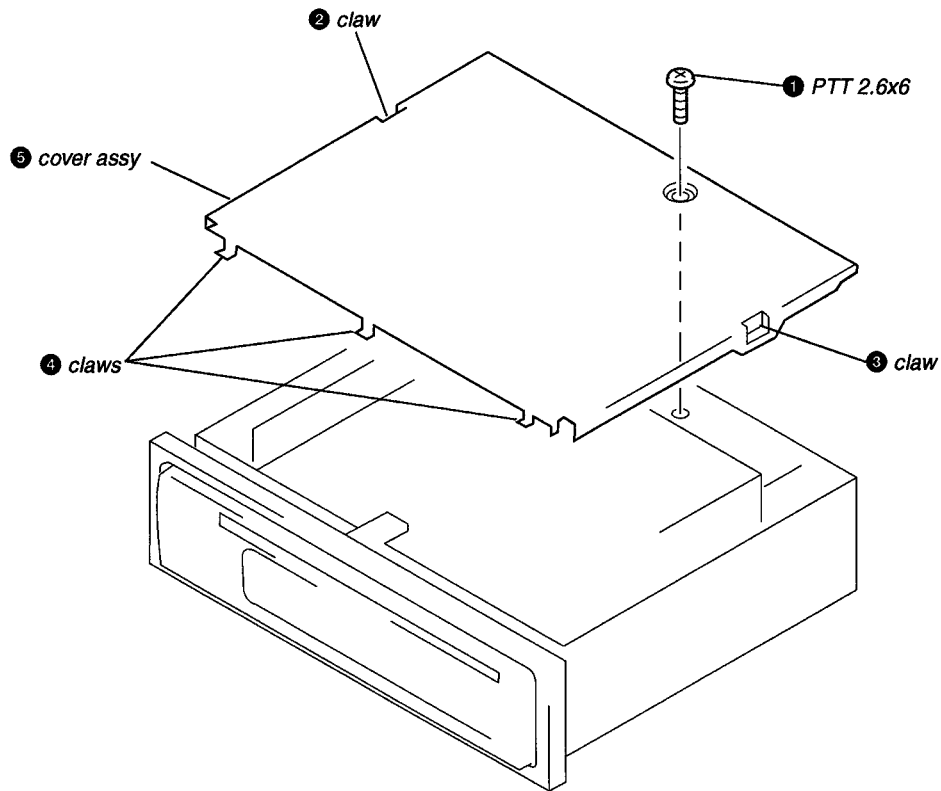
Schémas de connexion



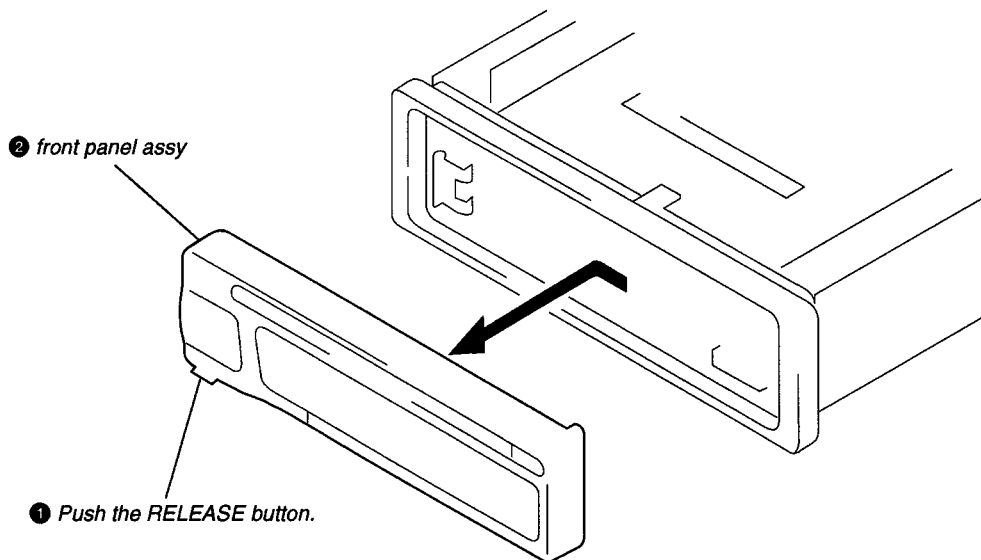
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given

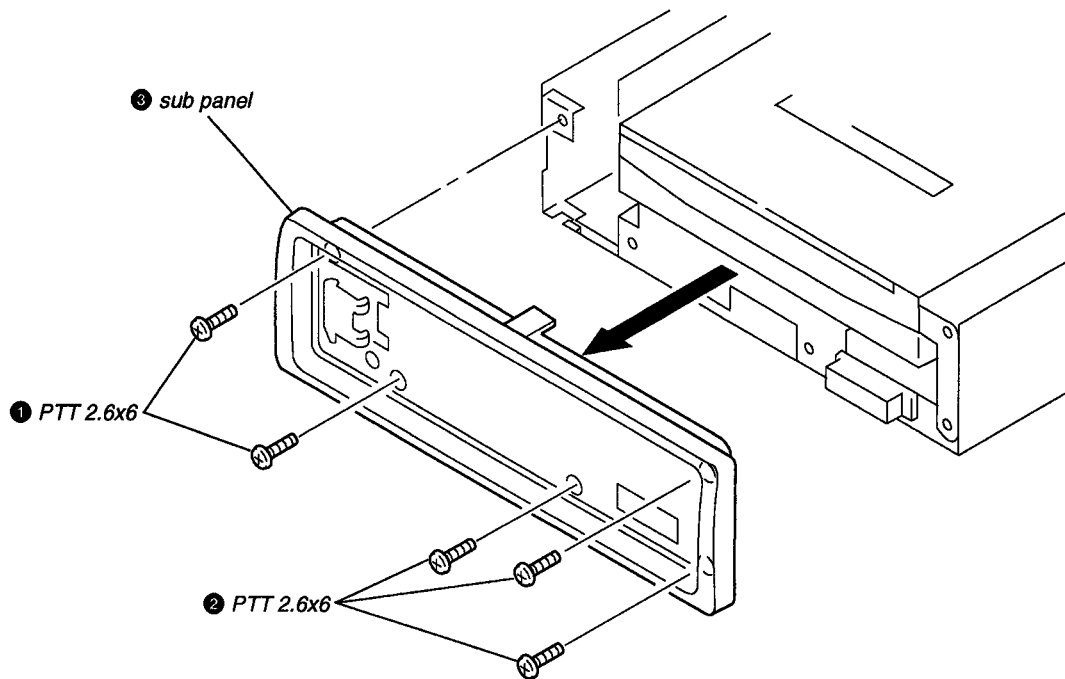
2-1. COVER ASSY



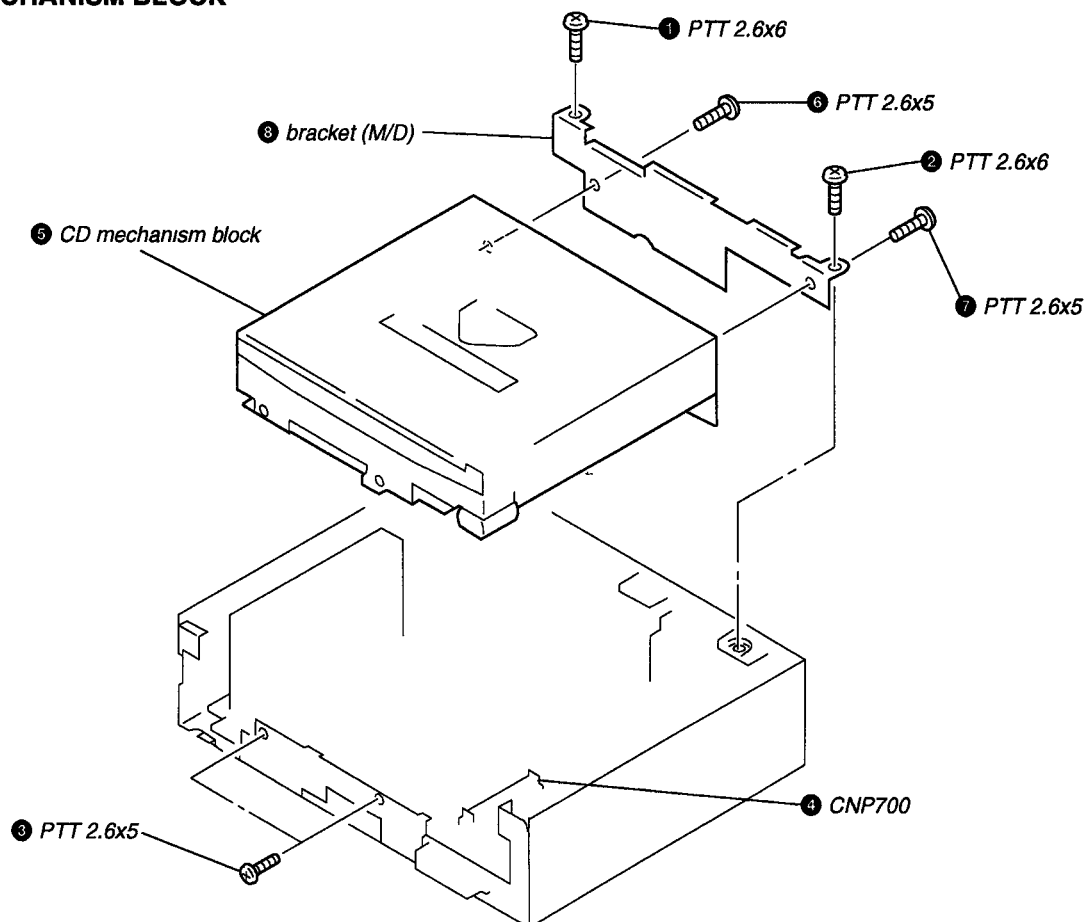
2-2. FRONT PANEL ASSY



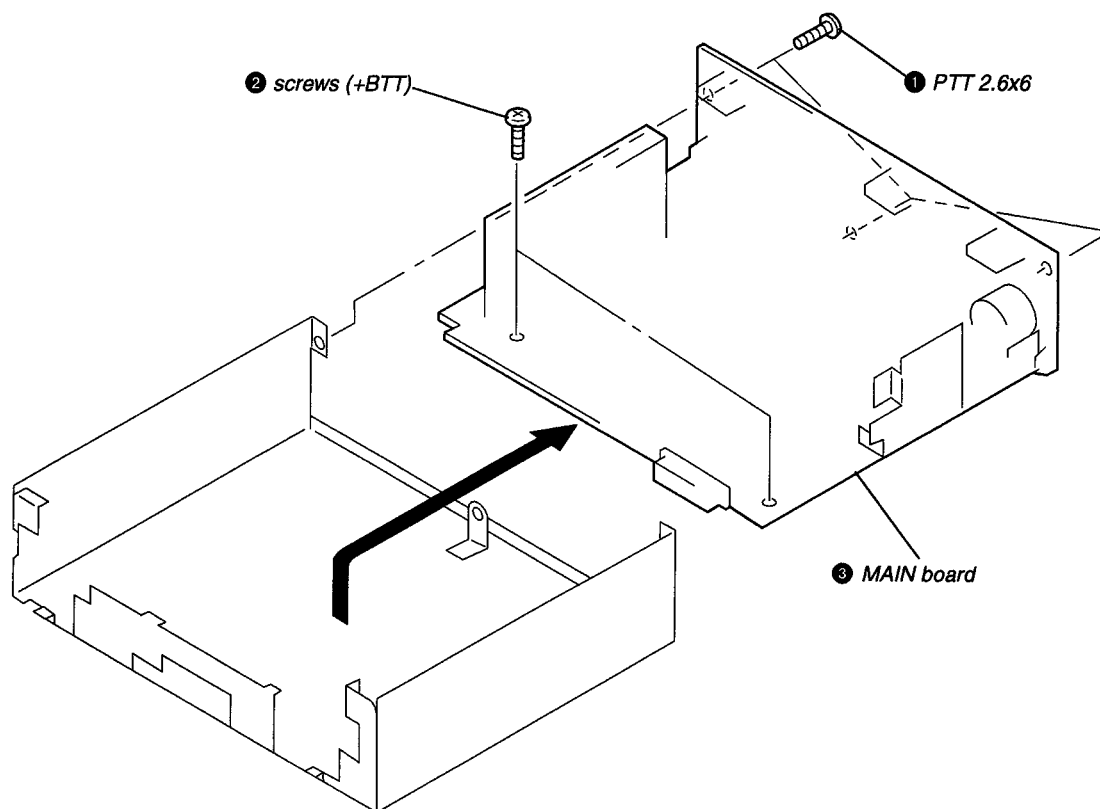
2-3. SUB PANEL



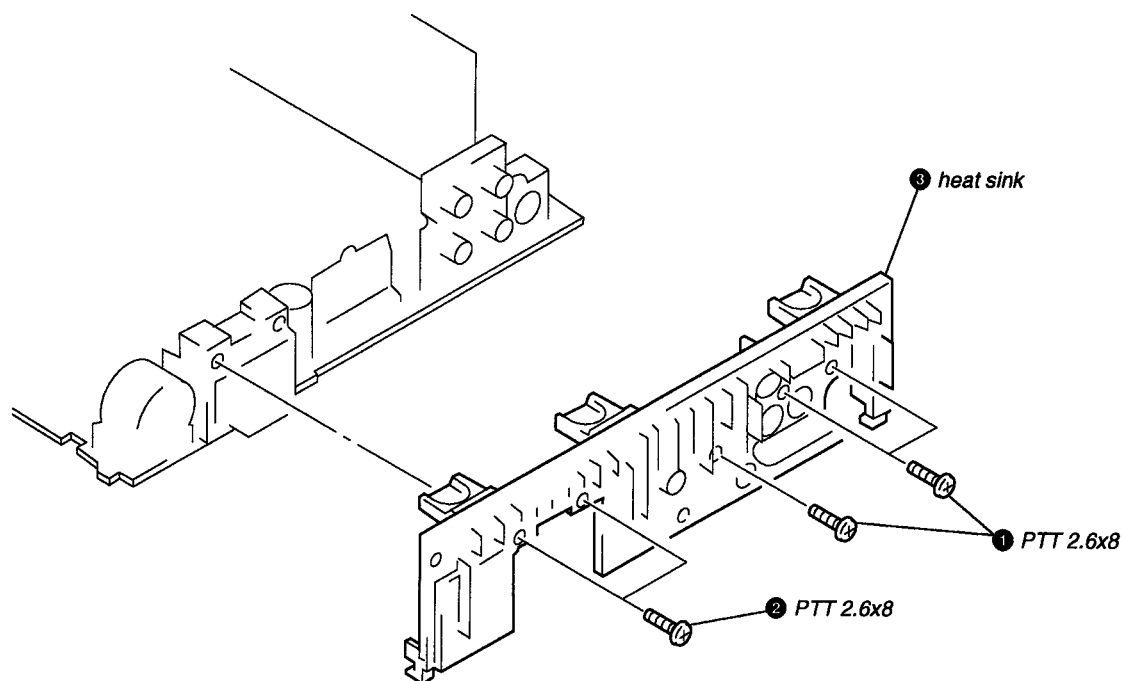
2-4. CD MECHANISM BLOCK



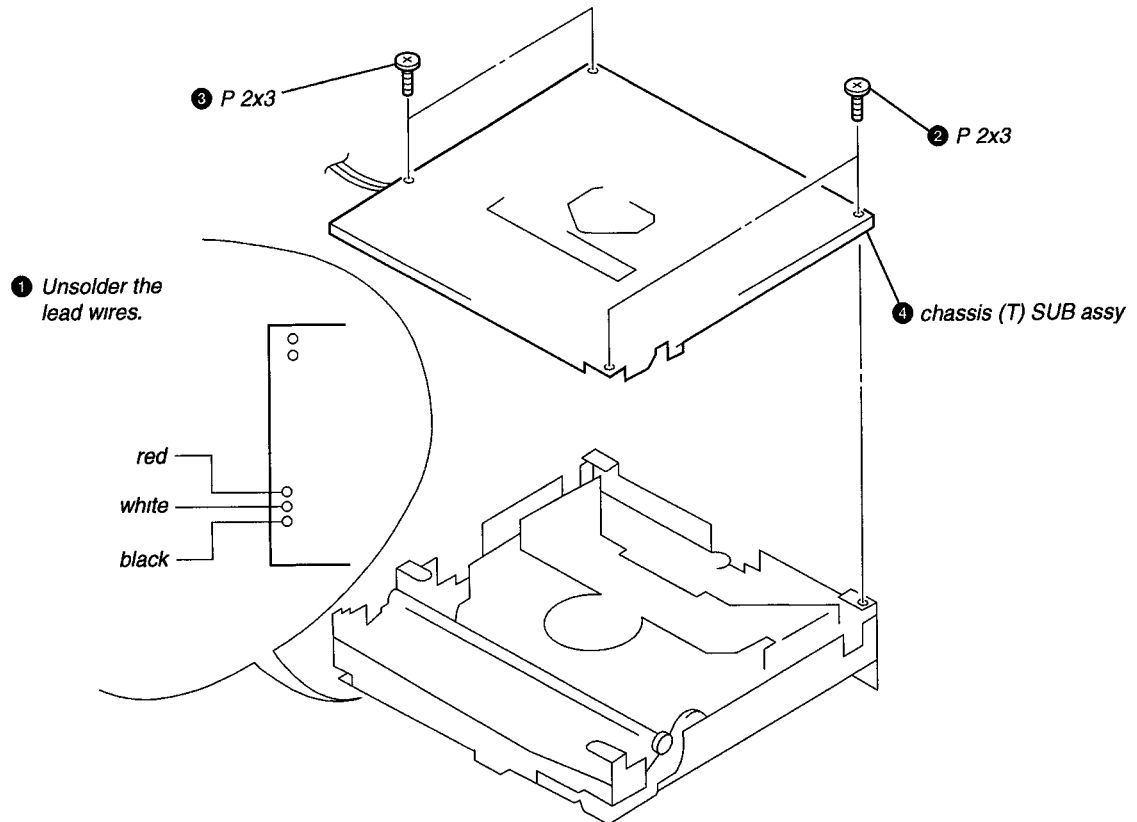
2-5. MAIN BOARD



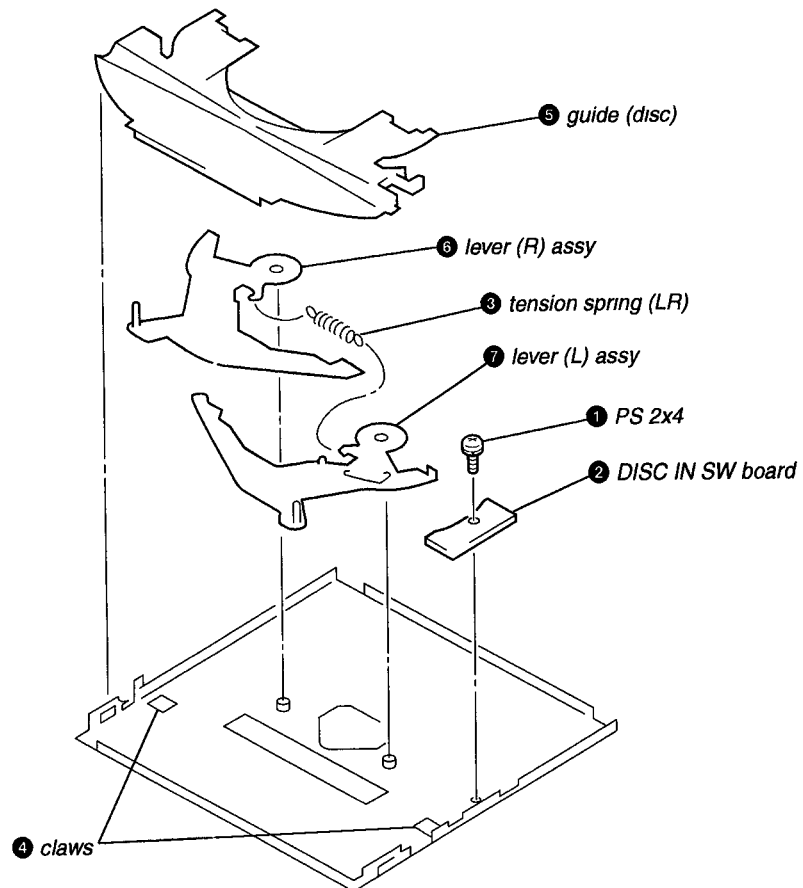
2-6. HEAT SINK



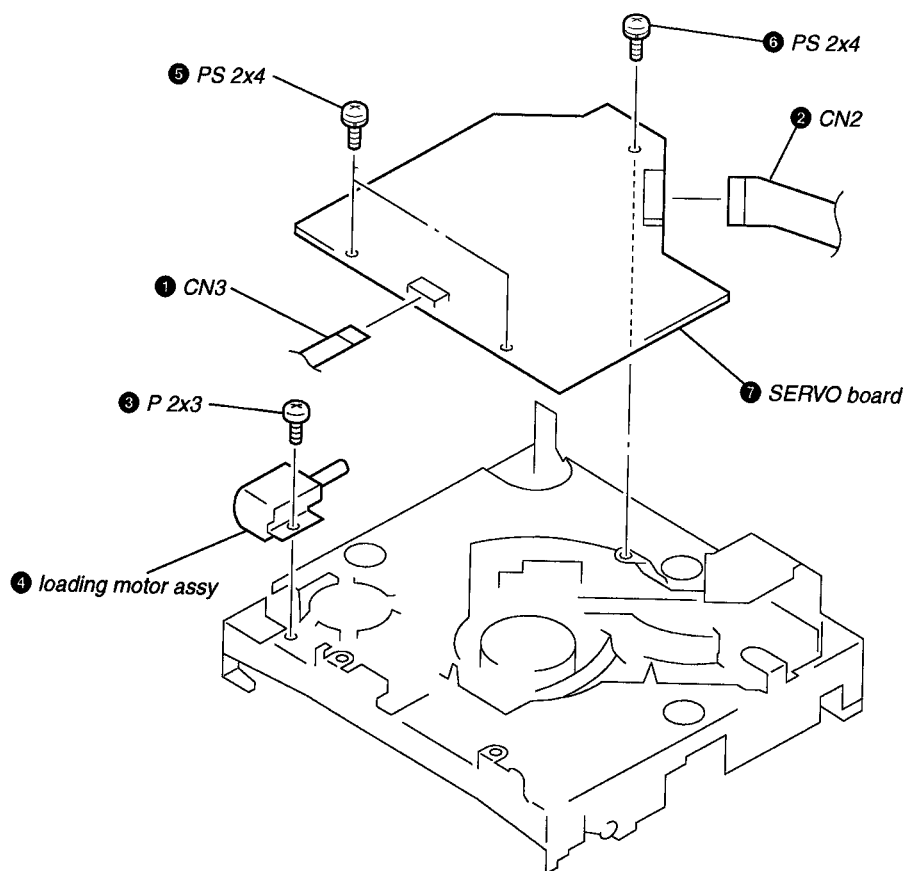
2-7. CHASSIS (T) SUB ASSY



2-8. LEVER ASSY

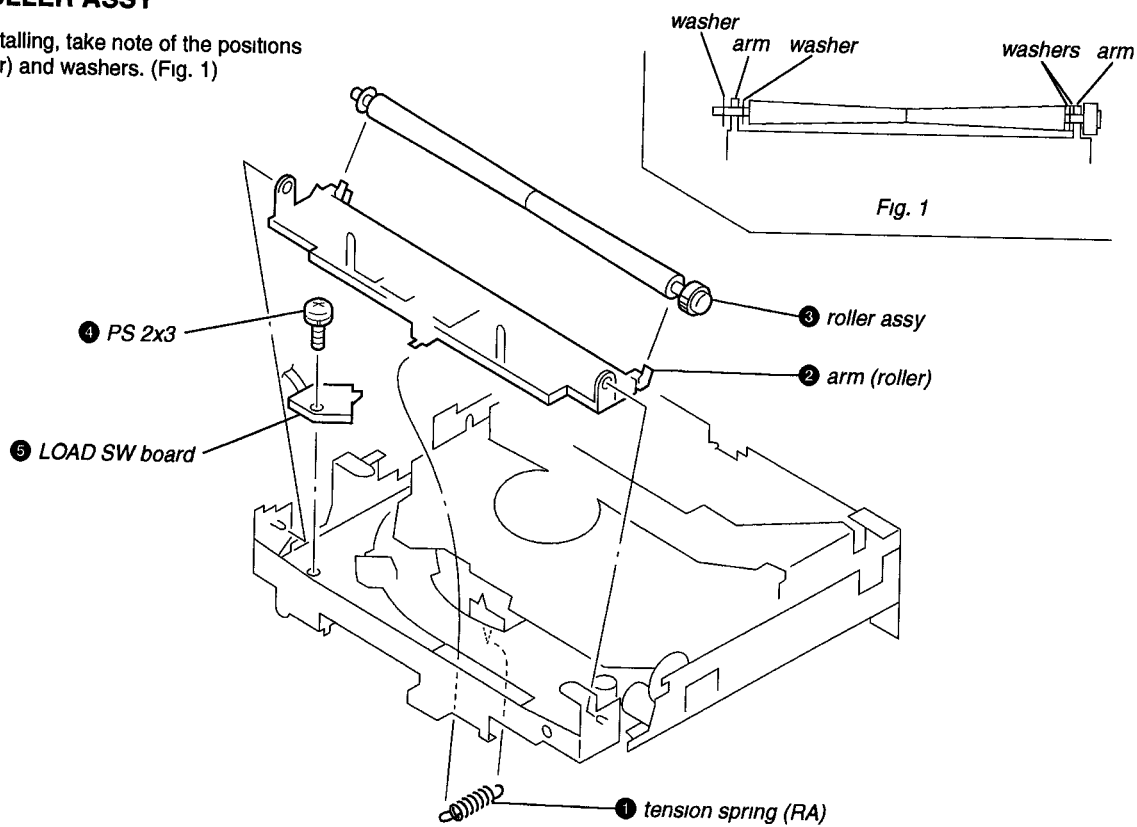


2-9. SERVO BOARD

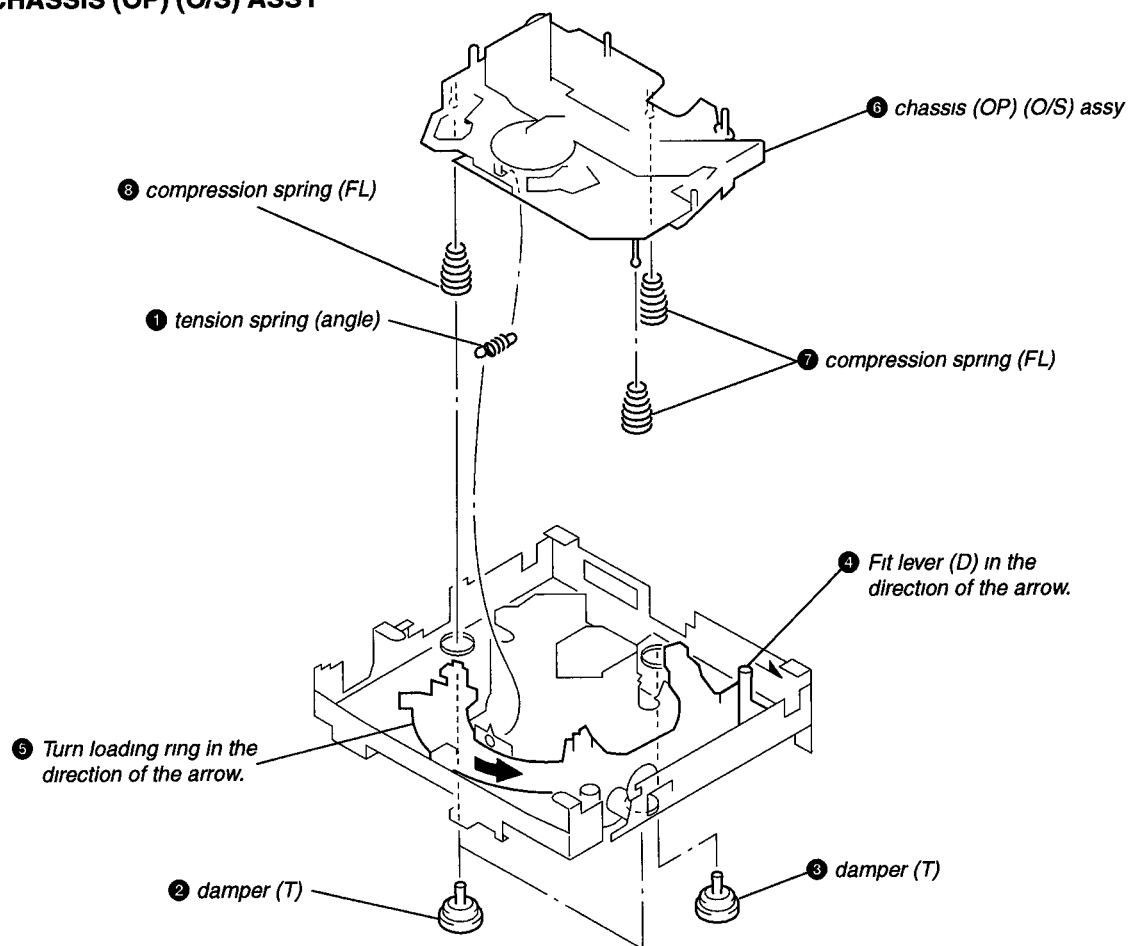


2-10. ROLLER ASSY

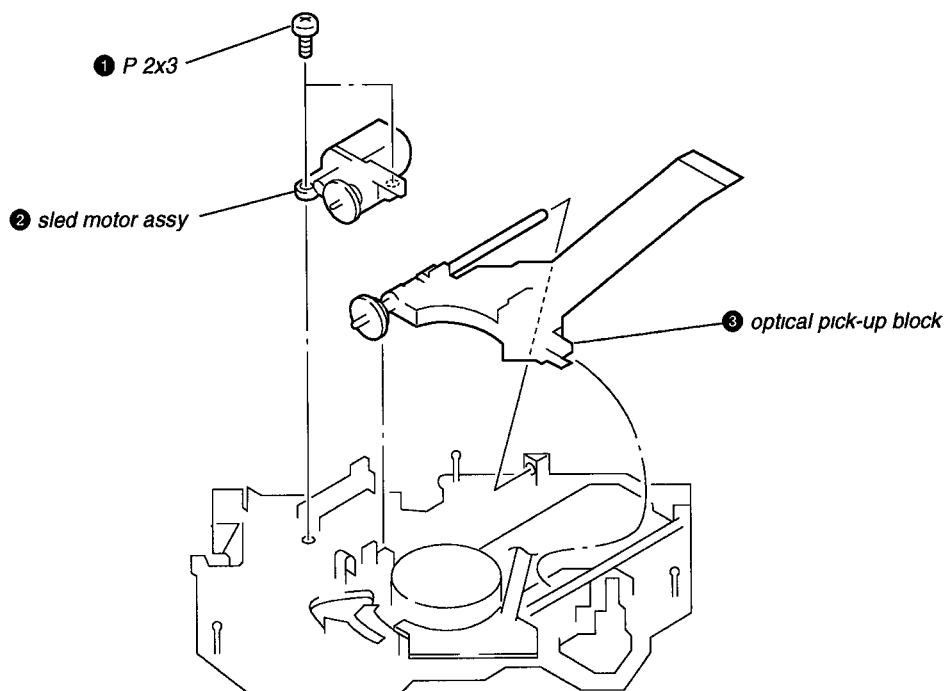
• When installing, take note of the positions arm (roller) and washers. (Fig. 1)



2-11. CHASSIS (OP) (O/S) ASSY



2-12. OPTICAL PICK-UP BLOCK



SECTION 3 ELECTRICAL ADJUSTMENTS

TEST MODE

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

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset **[4]** button
3. Push the preset **[5]** button
4. Press the preset **[1]** button for more than two seconds
5. Then the display indicates all lights, the test mode is set

<Release the Test Mode>

- 1 Push the **[OFF]** button.

TUNER SECTION

0 dB = 1 μ V

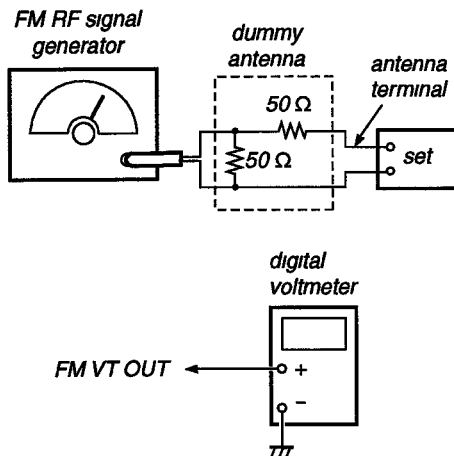
Cautions during repair

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

FM VT Voltage Adjustment

Setting :

SOURCE button : FM



Procedure :

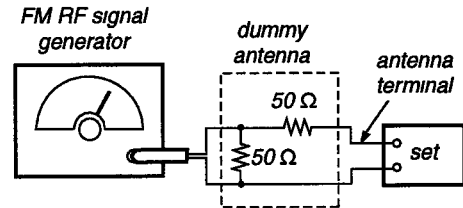
Adjust for following value reading on digital voltmeter.		
Frequency Display	87.5 MHz	107.9 MHz
Reading on Digital voltmeter	1.42 $\pm$ 0.05 V	7.2 $\pm$ 0.5 V
Adjustment Part	T4	(confirmation)

Adjustment Location : See page 18

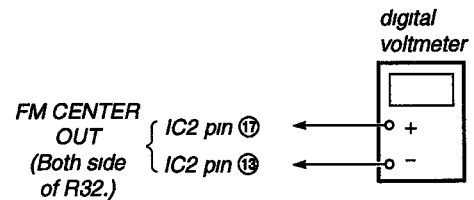
FM Center Adjustment

Setting :

SOURCE button : FM

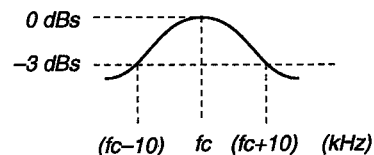


Carrier frequency : 98.1 MHz
Output level : 60 dB (1 mV)
Mode : mono
Modulation : 1 kHz, 75 kHz deviation (100 %)



Procedure :

1. Adjust T5 on TU1 so that the reading on the digital voltmeter becomes in 0 $\pm$ 50 mV.
2. Output an Fcenter 10 dB signal output from FM RF signal generator so that the LINE OUT REAR jack is -20 dBs
3. Change the FM RF signal generator frequency and check the deviation of the frequency on + side and - side when the LINE OUT REAR jack drops 3 dB (Both + side and - side is approx. 50 kHz.)
4. Re-adjust T5 on TU1 when the difference deviation of the frequency does more than 10 kHz

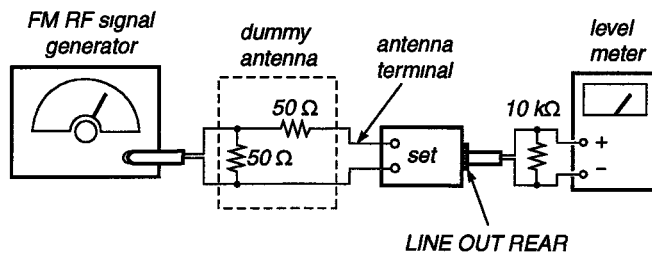


Adjustment Location : See page 18.

FM Stereo Separation Adjustment

Setting :

SOURCE button : FM



Carrier frequency : 98.1 MHz
 Output level : 70 dB (3.2mV)
 Mode : stereo
 modulation : main : 1 kHz, 20 kHz deviation (53%)
 sub : 1 kHz, 20 kHz deviation (53%)
 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 RV2 on TU1 for maximum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV2 on TU1 for maximum reading.

L-CH stereo separation : Ⓐ – Ⓑ

R-CH stereo separation : Ⓒ – Ⓓ

The separations of both channels should be equal.

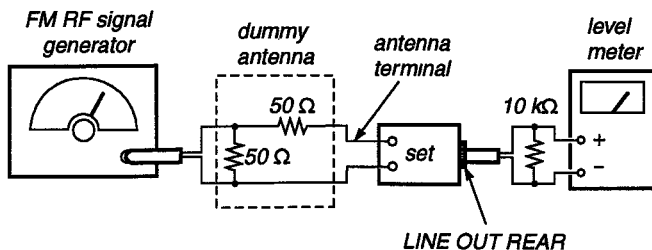
Specification : Separation more than 23 dB

Adjustment Location : See page 18.

FM SENS/IF Adjustment

Setting :

SOURCE button : FM



Procedure :

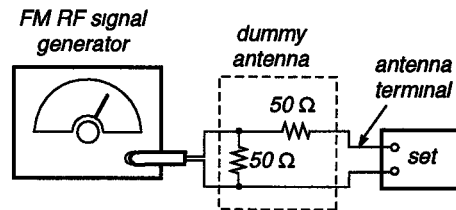
Adjust for a maximum reading on level meter.
T1-T3
87.5 MHz

Adjustment Location : See page 18

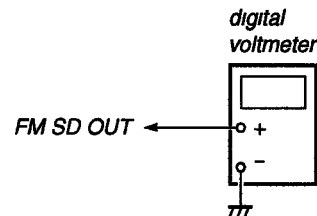
FM Auto Scan/Stop Level Adjustment

Setting :

SOURCE button : FM



Carrier frequency : 98.1 MHz
 Output level : 22 dB (12.6 μV)
 Mode : mono
 Modulation : 1 kHz, 22.5 kHz deviation (30 %)



Procedure :

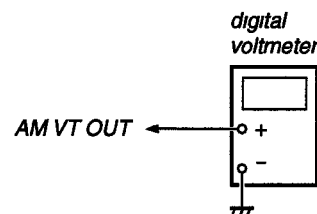
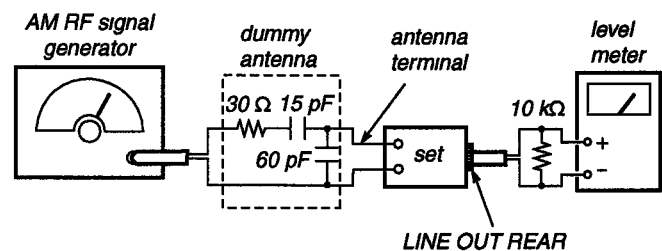
1. Adjust RV3 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx. 0.6 V)
2. Confirm that the set stops auto-scanning with FM RF signal generator output level set at 22 ± 2 dB.

Adjustment Location : See page 18.

AM VT Voltage Adjustment

Setting :

SOURCE→MODE button : AM



Procedure :

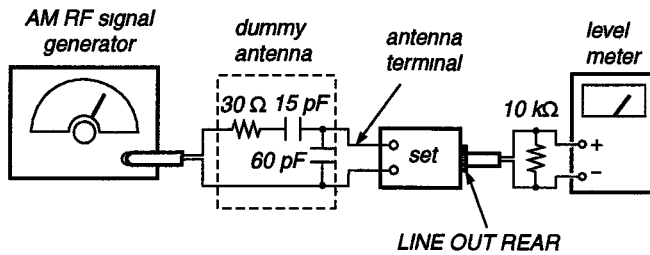
Adjust for following value reading on digital voltmeter		
Frequency Display	530 kHz	1,710 kHz
Reading on Digital voltmeter	1.43 ± 0.05 V	6.8 ± 0.5 V
Adjustment Part	T9	(confirmation)

Adjustment Location : See page 18

AM IF Adjustment

Setting :

SOURCE→MODE button : AM



Procedure :

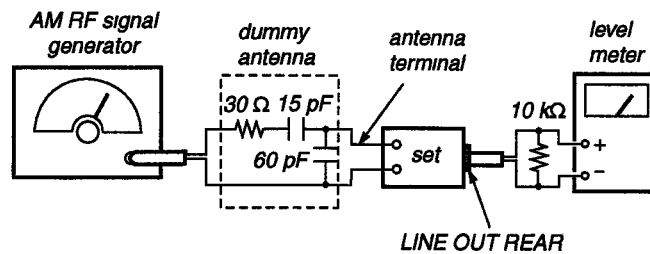
Adjust for a maximum reading on level meter
T8
450 kHz

Adjustment Location : See page 18.

AM SENS Adjustment

Setting :

SOURCE→MODE button : AM



Procedure :

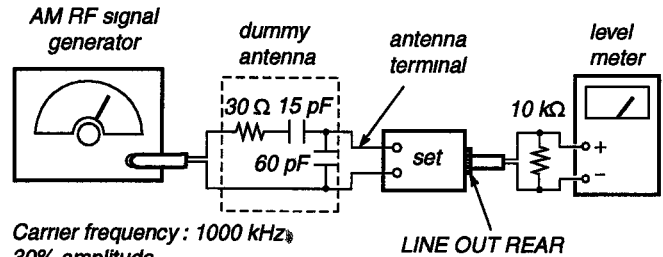
Adjust for a maximum reading on level meter.
T6, T7
530 kHz

Adjustment Location : See page 18.

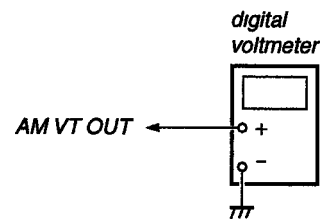
AM Auto Scan/Stop Level Adjustment

Setting :

SOURCE→MODE button : AM



Carrier frequency : 1000 kHz_s
30% amplitude
modulation by
400 Hz signal
output level : 30 dB (31.6 μV)



Procedure :

- 1 Adjust RV4 on TU1 so that the reading on the digital voltmeter changes point from minimum to maximum. (approx 0.6 V)
- 2 Confirm that the set stops auto-scanning with AM RF signal generator output level set at 33 ± 4 dB

Adjustment Location : See page 18.

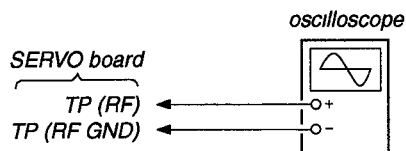
CD SECTION

Note

- 1 CD Block basically constructed to operate without adjustment
Therefore check each item in order given
- 2 Use YEDS 18 disc (3 702 101 01) unless otherwise indicated
- 3 Use the oscilloscope with more than 10 M Ω impedance
- 4 Clean an objective lens by an applicator with neutral detergent
when the signal level is low than specified value with the following checks

Focus Bias Adjustment

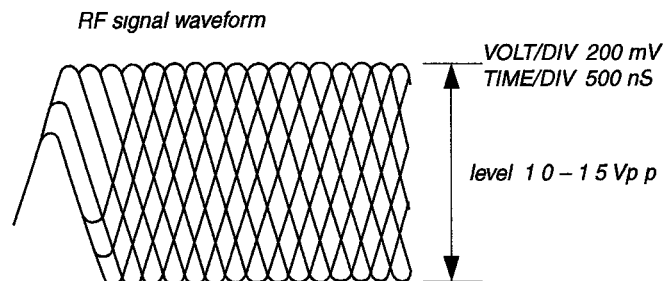
Setting This adjustment is performed with the set placed horizontally



Procedure

- 1 Connect an oscilloscope between TP (RF) and TP (RF GND) on the SERVO board
- 2 Connect the power supply
- 3 Push the **RESET** button (S900) on the main board
- 4 Insert the disc (YEDS 18) and playback
- 5 Adjust RV1 so that the oscilloscope waveform is clear and check RF signal level is correct or not

Note Clear RF signal waveform means that the sharp $\diamond$ can be clearly distinguished at the center of the waveform



- When observing the eye pattern set the oscilloscope to AC range and raise the vertical sensitivity so that it may be easily seen

Adjustment Location servo board

Focus Gain Adjustment (Coarse adjustment)

This adjustment is not required unless the following parts are replaced

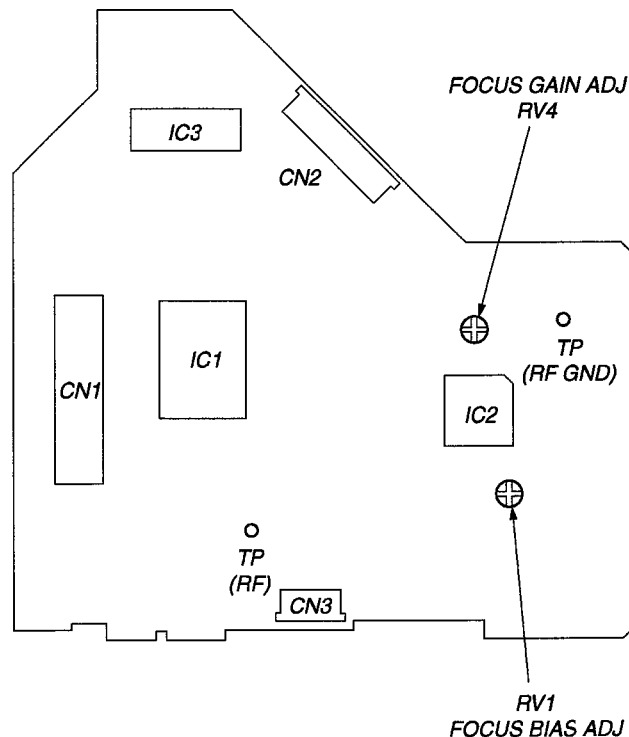
- Optical pick up
- RV4

Procedure

- 1 Set RV4 to the standard position (mechanical center)
- 2 Check whether operation noise (while noise type) caused by the 2 axis device (lens section of the optical pick up) is abnormally loud
If the operation noise is too loud turn RV4 slightly counter clock wise
- If the gain is too low
Focus does not function and no music is selected
- If the gain is too high
Noise caused by scratches and dust is heard and the operation becomes unstable

Adjustment Location servo board

Adjustment Location servo board (component side)



SECTION 4 DIAGRAMS

4-1. IC PIN DESCRIPTION

• IC800 μ PD17017GF-B28-3B9 (SYSTEM CONTROL)

Pin No	Pin Name	I/O	Pin Description
1	CD SO/VOL DATA	O	CD serial data/electric volume serial data output pin
2	VOL CLK	O	Electric volume serial clock output pin
3	SENSE	I	CD sens signal input pin
4	$\overline{\text{ST}}$ /MONO	O	FM/AM select pin
5	$\overline{\text{ACC}}$	I	Accessory power (ACC) voltage detection pin
6	FOK	I	Focus OK signal input pin
7	CD-LAT	O	CD latch signal output pin
8	SQCKO	O	Sub code Q data read clock output pin
9	CD RST	O	CD reset signal output pin
10	SQ SI	I	Sub code Q data input pin
11	NC	—	Not used (Connect to GND)
12	SCOR	I	Sub code sync detection signal input pin
13	BUIN	I	Power for operation (BATT) voltage detection pin
14	CDMON	O	Mechanism deck section power supply control pin
15	ILL ON	O	Illumination power supply control pin
16	LD ON	O	Laser power ON/OFF control pin
17	FM/ $\overline{\text{AM}}$	O	FM/AM select pin
18	SEEKOUT	O	SEEK OUT signal output pin
19	PW-ON	O	System power supply control pin
20	LCL/ $\overline{\text{DX}}$	O	LOCAL/DX select pin
21	BEEP	O	Beep sound output pin
22	VOL CE	O	Electric volume serial chip enable output pin
23	LM EJ	O	Loading motor control pin (Eject direction)
24	LM LOD	O	Loading motor control pin (Loading direction)
25	MUTE	O	Audio mute signal output pin
26	FM IF	I	FM IF counter input pin
27	AM IF	I	AM IF counter input pin
28	$\overline{\text{NOSE SW}}$	I	Front panel with/without detection input pin
29	SD/ST	I	During SEEK operation, station detection input pin
30	VDD1	—	Power supply pin
31	VCOL	I	AM OSC signal input pin
32	VCOH	I	FM OSC signal input pin
33	GND	—	GND
34	XOUT	O	System clock output pin (4.5 MHz)
35	XIN	I	System clock input pin (4.5 MHz)
36	EO0	O	Charge pump output pin
37	EO1	—	Not used
38	NC	—	Not used (Fixed at "H")
39, 40	NC	—	Not used
41	VDD2	—	Power supply pin
42	EMPH O	O	De-emphasis control pin
43, 44	COM1, COM0	O	Not used
45	LCDSO	O	LCD serial data output pin
46	LCDCKO	O	LCD serial clock output pin
47	LCDINH	O	LCD blank display control output pin
48	LCDCE	O	LCD chip enable output pin

Pin No.	Pin Name	I/O	Pin Description
49 – 63	LCD25 – LCD11	O	Not used.
64	LCD10	O	Not used.
65	TEST SW(LCD9)	I/O	Test mode direct setting input
66	BAND SW(LCD8)	I/O	Not used.
67	AREA2 SW(LCD7)	O	Not used.
68	AREA1 SW(LCD6)	I/O	Not used.
69, 70	LCD5, LCD4	O	Not used.
71	SELF SW(LCD3)	I/O	SELF SW input/LCD segment signal output pin
72	IN SW(LCD2)	I/O	DISC IN SW input/LCD segment signal output pin
73	L SW(LCD1)	I/O	LIMIT SW input/LCD segment signal output pin
74	D SW(LCD0)	I/O	DOWN SW input/LCD segment signal output pin
75	KEY-RETURN	I	Key return signal input pin
76 – 78	AD2 – AD0	I	Key input pin (A/D input)
79	AMP MUTE	O	Power amplifier mute signal output pin
80	CD CKO	O	CD serial clock output pin

SECTION 5 EXPLODED VIEWS

NOTE:

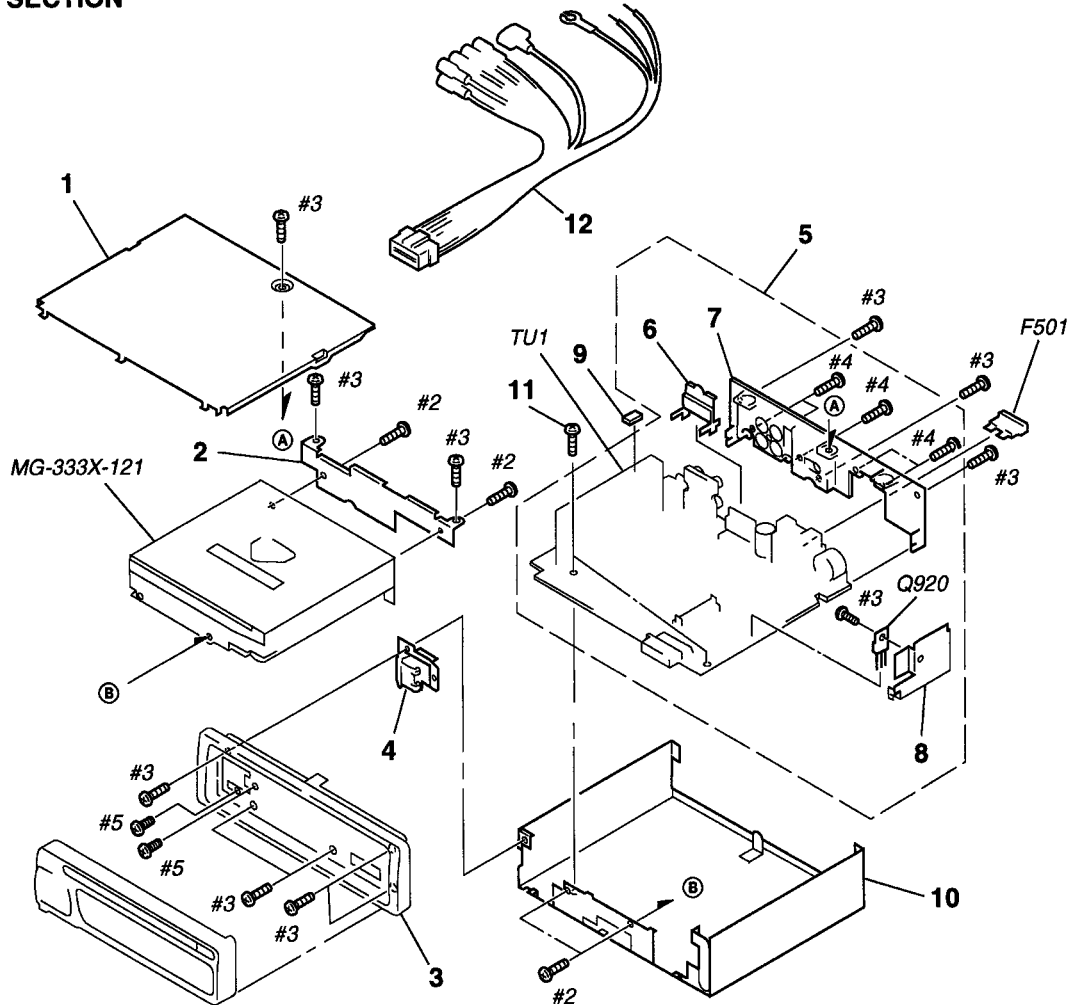
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

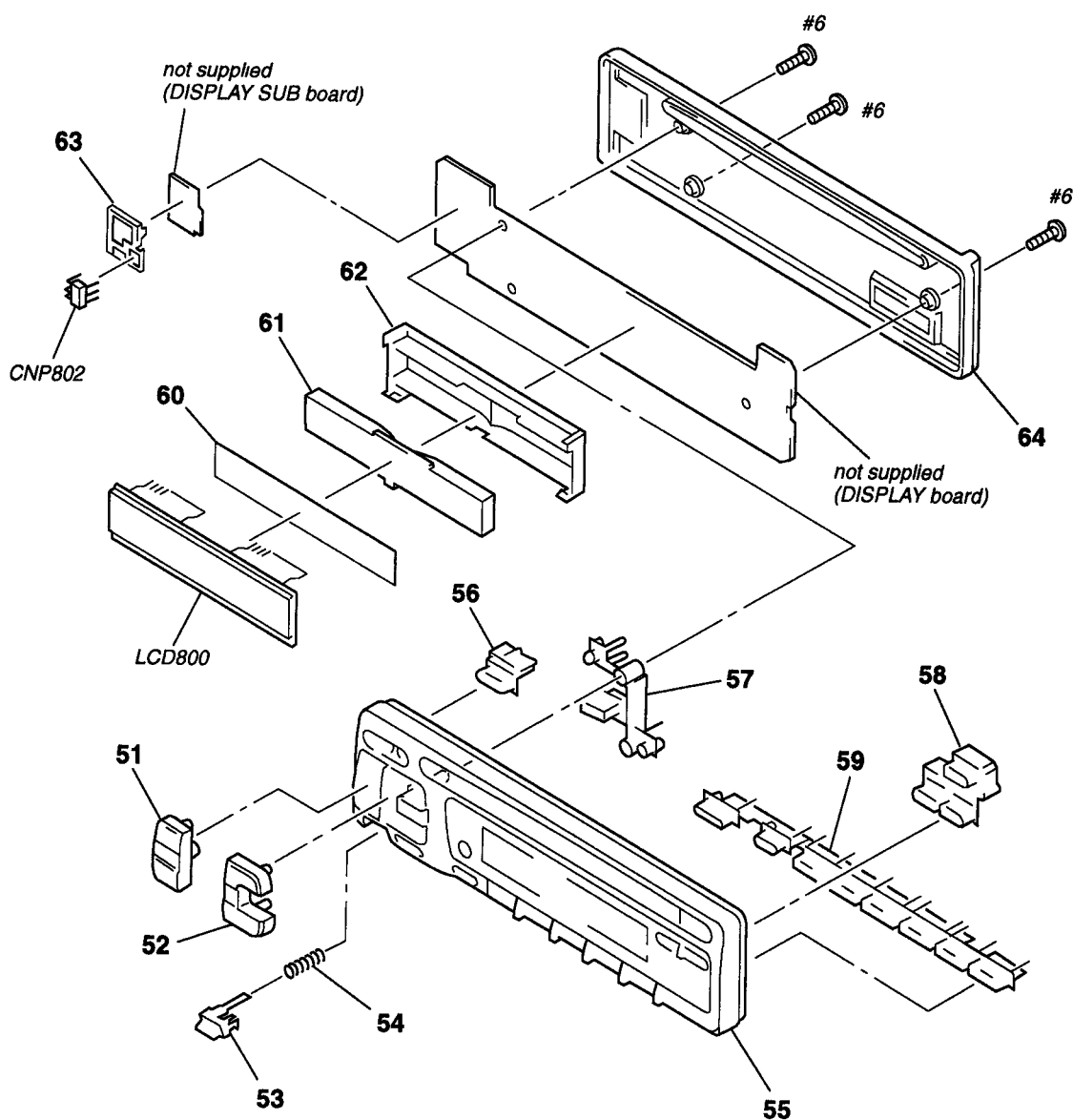
5-1. CHASSIS SECTION



Ref No	Part No	Description	Remark
* 1	X-3371-549-1	COVER ASSY	
* 2	3-009-349-01	BRACKET (M/D)	
3	X-3373-133-1	PANEL (1) ASSY, SUB	
4	X-3367-636-1	LOCK ASSY	
* 5	A-3294-207-A	MAIN BOARD, COMPLETE	
* 6	3-931-260-01	BRACKET (IC)	
* 7	3-009-353-01	HEAT SINK	
* 8	3-920-529-01	BRACKET (REG) (IC)	

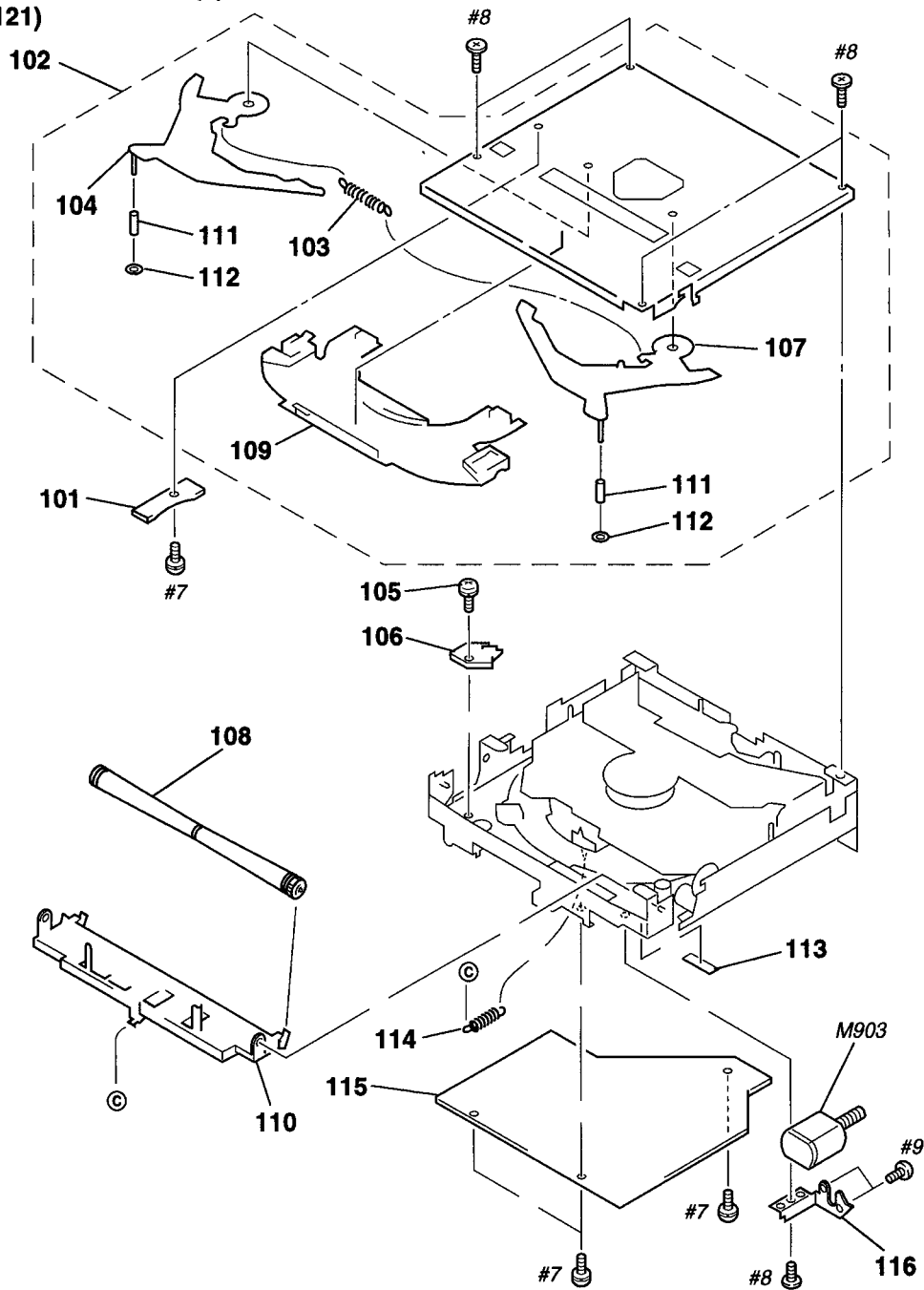
Ref No	Part No	Description	Remark
9	9-911-844-XX	SPACER, MOTOR	
* 10	3-009-348-01	CHASSIS (MAIN)	
11	3-922-535-11	SCREW (+BTT)	
12	1-769-786-71	CORD (WITH CONNECTOR) (POWER)	
F501	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
Q920	8-729-019-00	TRANSISTOR 2SD2394-G	
TU1	A-3309-805-A	TUNER UNIT	

5-2. FRONT PANEL SECTION



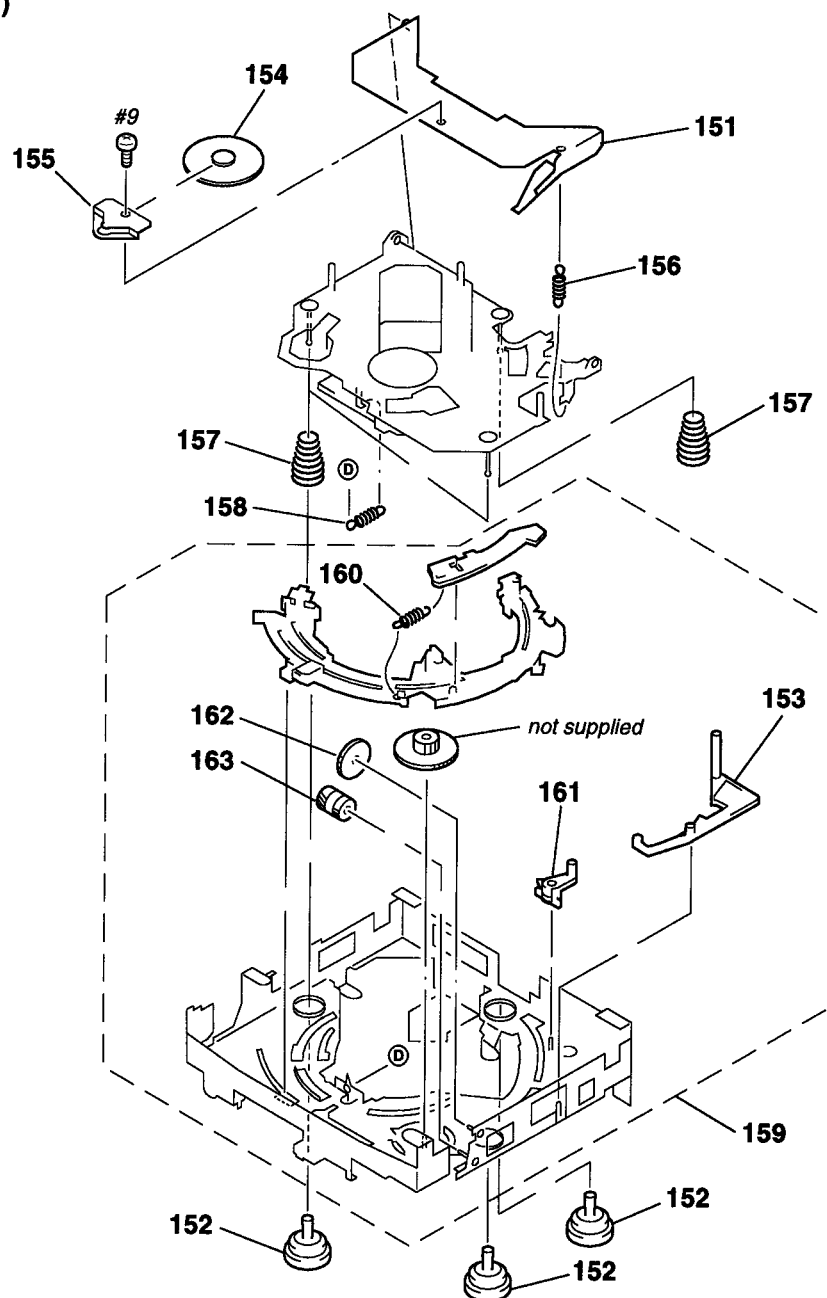
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-009-376-01	BUTTON (SEEK/AMS)		59	3-009-330-01	BUTTON (1-6)	
52	3-009-332-01	BUTTON (+/-)		* 60	3-009-341-01	SHEET (LCD)	
53	3-009-329-01	BUTTON (RELEASE)		* 61	3-009-335-01	PLATE (LCD), LIGHT GUIDE	
54	3-375-373-01	SPRING (RELEASE)		* 62	3-009-337-01	HOLDER (LCD)	
55	X-3373-266-1	PANEL SUB ASSY, FRONT		* 63	3-009-371-01	BRACKET (PCB)	
56	3-009-334-01	BUTTON (SOURCE)		64	3-009-355-01	PANEL, FRONT BACK	
57	3-009-333-01	BUTTON (DSPL)		* CNP802	1-779-129-11	PIN, CONNECTOR 3P	
58	3-009-331-01	BUTTON (EJECT)		LCD800	1-801-674-12	DISPLAY PANEL, LIQUID CRYSTAL	

5-3. CD MECHANISM SECTION (1)
(MG-333X-121)



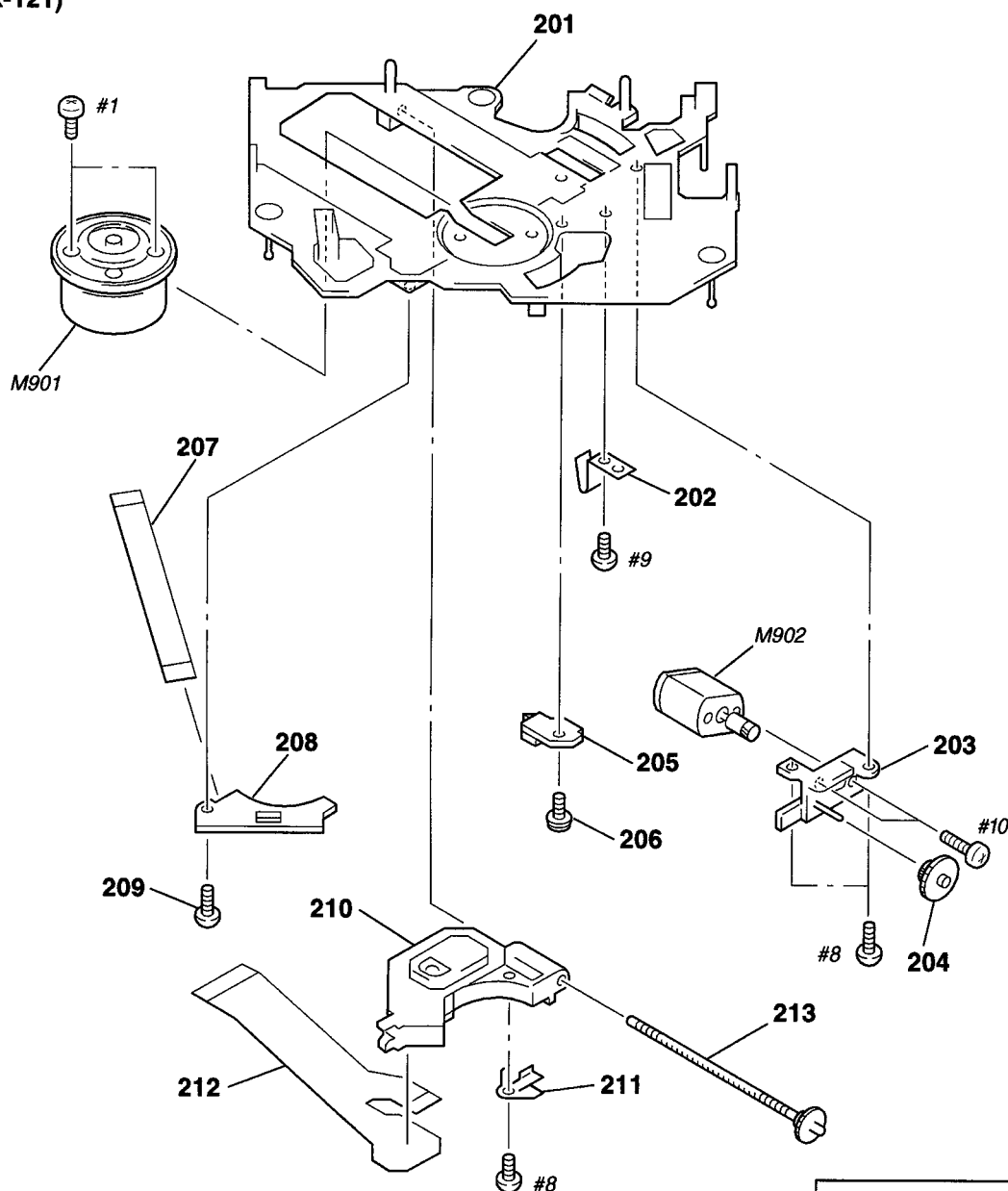
<u>Ref. No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>
* 101	1-659-836-11	DISC IN SW BOARD		110	3-931-902-01	ARM (ROLLER)	
* 102	A-3291-816-A	CHASSIS (T) SUB ASSY		111	3-936-756-01	ROLLER (D)	
103	3-931-909-01	SPRING (LR), TENSION		112	3-321-393-01	WASHER, STOPPER	
104	X-3371-501-1	LEVER (L) ASSY		* 113	3-939-139-01	SPACER	
105	3-338-737-01	SCREW (2X3), + PS		114	3-931-916-01	SPRING (RA), TENSION	
* 106	1-659-837-11	LOAD SW BOARD		* 115	A-3309-227-A	SERVO BOARD, COMPLETE	
107	X-3371-502-1	LEVER (R) ASSY		* 116	3-007-530-01	BRACKET (MOTOR)	
108	A-3291-672-A	ROLLER ASSY		M903	A-3291-676-A	MOTOR SUB ASSY, LOADING	
109	3-931-908-01	GUIDE (DISC)					

5-4. CD MECHANISM SECTION (2)
(MG-333X-121)



<u>Ref. No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
151	3-931-893-01	ARM, CHUCKING		158	3-931-914-01	SPRING (ANGLE), TENSION	
152	3-931-897-01	DAMPER (T)		* 159	A-3291-677-A	CHASSIS (M) ASSY , COMPLETE	
153	3-931-879-02	LEVER (D)		160	3-931-883-01	SPRING (TR), TENSION	
* 154	3-913-404-11	RETAINER (DISC)		161	3-931-881-01	LEVER (LOCK)	
155	3-931-894-01	BRACKET (CP)		162	3-931-882-02	GEAR (MDL)	
156	3-931-895-01	SPRING (CH), TENSION		163	3-007-537-01	WHEEL (U), WORM	
157	3-931-898-01	SPRING (FL), COMPRESSION					

5-5. CD MECHANISM SECTION (3)
(MG-333X-121)



The components identified by mark Δ or dotted line with mark. Δ are critical for safety. Replace only with part number specified.

Ref. No	Part No	Description	Remark	Ref. No	Part No.	Description	Remark
* 201	X-3371-503-1	CHASSIS (OP) (O/S) ASSY		209	3-909-607-01	SCREW	
202	3-931-829-01	SPRING (SL), PLATE		Δ 210	8-848-402-02	PICK-UP, OPTICAL KSS-520A/J2NP	
203	X-3371-504-1	BASE (DRIVING) ASSY		211	3-931-834-01	SPRING (FEED), PLATE	
204	3-931-832-01	GEAR (SL MIDWAY)		212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
* 205	1-659-835-12	LIMIT SW BOARD		213	A-3291-669-A	SHAFT (FEED) ASSY	
206	3-338-737-01	SCREW (2X3), + PS		M901	X-3371-664-1	MOTOR ASSY (SPINDLE)	
207	1-659-880-11	MOTOR FLEXIBLE BOARD		M902	A-3291-674-A	MOTOR ASSY, SLED	
* 208	1-659-834-11	SUB BOARD					

SECTION 6 ELECTRICAL PARTS LIST

DISC IN SW

DISPLAY

NOTE:

- 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 and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL. Metal-film resistor.
METAL OXIDE Metal oxide-film resistor
F. nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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

The components identified by mark Δ or dotted line with mark Δ are critical for safety
Replace only with part number specified

When indicating parts by reference number, please include the board

Ref No	Part No	Description	Remark
*	1-659-836-11	DISC IN SW BOARD *****	
		< SWITCH >	
SW1	1-572-288-11	SWITCH, PUSH (DISC IN)	
SW2	1-572-288-11	SWITCH, PUSH (SELF)	

		DISPLAY BOARD *****	
*	3-009-335-01	PLATE (LCD), LIGHT GUIDE	
*	3-009-337-01	HOLDER (LCD)	
*	3-009-341-01	SHEET (LCD)	
*	3-009-371-01	BRACKET (PCB)	
		< CAPACITOR >	
C851	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C852	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C853	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		< CONNECTOR >	
CNP801	1-764-423-11	PIN, CONNECTOR 12P	
* CNP802	1-779-129-11	PIN, CONNECTOR 3P	
		< DIODE >	
D851	8-719-976-99	DIODE DTZ5 1B	
D852	8-719-052-61	LED SLR-342PGT31 (SENS)	
D853	8-719-052-61	LED SLR-342PGT31 (Δ)	
D854	8-719-052-61	LED SLR-342PGT31 (A MEM)	
D855	8-719-052-61	LED SLR-342PGT31 (6)	
D856	8-719-052-61	LED SLR-342PGT31 (2/REPEAT)	
D857	8-719-052-61	LED SLR-342PGT31 (3/SHUF)	
D858	8-719-052-61	LED SLR-342PGT31 (4)	
D859	8-719-064-19	LED SLR-342PG (5)	
D860	8-719-052-61	LED SLR-342PGT31 (SEL)	
D861	8-719-052-61	LED SLR-342PGT31 (MODE)	
D862	8-719-052-61	LED SLR-342PGT31 (SOURCE)	
D863	8-719-052-61	LED SLR-342PGT31 (+)	
D864	8-719-052-61	LED SLR-342PGT31 (MUTE)	
D865	8-719-052-61	LED SLR-342PGT31 (-)	

Ref No	Part No	Description	Remark
D868	8-719-052-61	LED SLR-342PGT31 (DSPL)	
D869	8-719-052-61	LED SLR-342PGT31 (OFF)	
D870	8-719-052-61	LED SLR-342PGT31 (1/INTRO)	
D872	8-719-105-99	DIODE RD6 2M-B1	
D873	8-719-105-99	DIODE RD6 2M-B1	
D874	8-719-105-99	DIODE RD6 2M-B1	
D875	8-719-105-99	DIODE RD6 2M-B1	
		< IC >	
IC801	8-759-369-90	IC LC75822ED	
		< JUMPER RESISTOR >	
JR801	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR802	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR804	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR805	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR806	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR807	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR808	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR809	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR810	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR811	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR812	1-216-296-00	CONDUCTOR, CHIP (3216)	
JR816	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR817	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR818	1-216-295-00	CONDUCTOR, CHIP (2012)	
		< LIQUID CRYSTAL DISPLAY >	
LCD800	1-801-674-12	DISPLAY PANEL, LIQUID CRYSTAL	
		< PILOT LAMP >	
PL801	1-517-677-11	LAMP, PILOT	
PL802	1-517-677-11	LAMP, PILOT	
		< RESISTOR >	
R841	1-216-193-11	METAL CHIP 620 5% 1/8W	
R842	1-216-193-11	METAL CHIP 620 5% 1/8W	
R851	1-216-090-00	METAL CHIP 51K 5% 1/10W	
R852	1-216-049-11	METAL GLAZE 1K 5% 1/10W	

DISPLAY
DISPLAY SUB
LIMIT SW
LOAD SW
MAIN

Ref No	Part No	Description	Remark		
R854	1-247-806-11	CARBON	91	5%	1/4W
R855	1-247-806-11	CARBON	91	5%	1/4W
R856	1-247-818-11	CARBON	300	5%	1/4W
R857	1-247-818-11	CARBON	300	5%	1/4W
R859	1-247-818-11	CARBON	300	5%	1/4W
R860	1-247-822-11	CARBON	430	5%	1/4W
R861	1-216-053-00	METAL CHIP	1 5K	5%	1/10W
R862	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R863	1-247-843-11	CARBON	3 3K	5%	1/4W
R864	1-216-067-00	METAL CHIP	5 6K	5%	1/10W
R865	1-249-429-11	CARBON	10K	5%	1/4W
R871	1-216-053-00	METAL CHIP	1 5K	5%	1/10W
R872	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R873	1-216-061-00	METAL CHIP	3 3K	5%	1/10W
R874	1-216-067-00	METAL CHIP	5 6K	5%	1/10W
R875	1-216-073-00	METAL CHIP	10K	5%	1/10W
R876	1-216-053-00	METAL CHIP	1 5K	5%	1/10W
R877	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R878	1-247-843-11	CARBON	3 3K	5%	1/4W
R879	1-216-067-00	METAL CHIP	5 6K	5%	1/10W
R880	1-216-073-00	METAL CHIP	10K	5%	1/10W
R881	1-216-083-00	METAL CHIP	27K	5%	1/10W
R882	1-247-806-11	CARBON	91	5%	1/4W

< SWITCH >

S801	1-572-704-31	SWITCH, KEY BOARD (▲)
S802	1-572-704-31	SWITCH, KEY BOARD (A MEM)
S803	1-572-704-31	SWITCH, KEY BOARD (SENS)
S804	1-572-704-31	SWITCH, KEY BOARD (4)
S805	1-572-704-31	SWITCH, KEY BOARD (5)
S806	1-572-704-31	SWITCH, KEY BOARD (6)
S808	1-572-704-31	SWITCH, KEY BOARD (SOURCE)
S809	1-572-704-31	SWITCH, KEY BOARD (MODE)
S811	1-572-704-31	SWITCH, KEY BOARD (- I◀◀ ◀◀ (SEEK/AMS))
S812	1-572-704-31	SWITCH, KEY BOARD (SEL)
S813	1-572-704-31	SWITCH, KEY BOARD (+)
S815	1-572-704-31	SWITCH, KEY BOARD (OFF)
S816	1-572-704-31	SWITCH, KEY BOARD (MUTE)
S817	1-572-704-31	SWITCH, KEY BOARD (-)
S818	1-572-704-31	SWITCH, KEY BOARD (DSPL)
S819	1-572-704-31	SWITCH, KEY BOARD (1/INTRO)
S820	1-572-704-31	SWITCH, KEY BOARD (2/REPEAT)
S821	1-572-704-31	SWITCH, KEY BOARD (3/SHUF)

Ref No	Part No	Description	Remark		
		DISPLAY SUB BOARD	*****		
		< DIODE >			
D866	8-719-052-61	LED SLR-342PGT31 (- I◀◀ ◀◀ (SEEK/AMS))			
D867	8-719-052-61	LED SLR-342PGT31 (+ ▶▶▶ ▶▶▶ (SEEK/AMS))			
		< SWITCH >			
S810	1-572-704-31	SWITCH, KEY BOARD (+ ▶▶▶ ▶▶▶ (SEEK/AMS))	*****		
*	1-659-835-12	LIMIT SW BOARD	*****		
		< SWITCH >			
SW3	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)	*****		
*	1-659-837-11	LOAD SW BOARD	*****		
		< SWITCH >			
SW4	1-572-288-11	SWITCH, PUSH (DOWN)	*****		
*	A-3294-207-A	MAIN BOARD, COMPLETE	*****		
*	3-009-353-01	HEAT SINK			
*	3-920-529-01	BRACKET (REG) (IC)			
*	3-931-260-01	BRACKET (IC)			
	7-685-792-09	SCREW +PTT 2 6X6 (S)			
	7-685-793-09	SCREW +PTT 2 6X8 (S)			
		< CAPACITOR >			
C101	1-164-161-11	CERAMIC CHIP	0 0022uF	10%	100V
C102	1-164-346-11	CERAMIC CHIP	1uF		16V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C104	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C105	1-163-017-00	CERAMIC CHIP	0 0047uF	5%	50V
C106	1-126-157-11	ELECT	10uF	20%	16V
C107	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C108	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-126-157-11	ELECT	10uF	20%	16V
C111	1-126-157-11	ELECT	10uF	20%	16V
C112	1-126-157-11	ELECT	10uF	20%	16V
C113	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C114	1-164-005-11	CERAMIC CHIP	0 47uF		25V
C115	1-164-005-11	CERAMIC CHIP	0 47uF		25V

Ref. No.	Part No.	Description	Remark		
C116	1-136-165-00	FILM	0 1uF	5%	50V
C117	1-136-165-00	FILM	0 1uF	5%	50V
C118	1-136-165-00	FILM	0 1uF	5%	50V
C119	1-136-165-00	FILM	0 1uF	5%	50V
C122	1-163-017-00	CERAMIC CHIP	0 0047uF	5%	50V
C124	1-124-234-00	ELECT	22uF	20%	16V
C125	1-124-234-00	ELECT	22uF	20%	16V
C126	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C127	1-164-161-11	CERAMIC CHIP	0 0022uF	10%	100V
C133	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C201	1-164-161-11	CERAMIC CHIP	0 0022uF	10%	100V
C202	1-164-346-11	CERAMIC CHIP	1uF		16V
C203	1-164-346-11	CERAMIC CHIP	1uF		16V
C204	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C205	1-163-017-00	CERAMIC CHIP	0 0047uF	5%	50V
C206	1-126-157-11	ELECT	10uF	20%	16V
C207	1-164-489-11	CERAMIC CHIP	0 22uF	10%	16V
C208	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C209	1-126-157-11	ELECT	10uF	20%	16V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-126-157-11	ELECT	10uF	20%	16V
C212	1-126-157-11	ELECT	10uF	20%	16V
C213	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C214	1-164-005-11	CERAMIC CHIP	0 47uF		25V
C215	1-164-005-11	CERAMIC CHIP	0 47uF		25V
C216	1-136-165-00	FILM	0 1uF	5%	50V
C217	1-136-165-00	FILM	0 1uF	5%	50V
C218	1-136-165-00	FILM	0 1uF	5%	50V
C219	1-136-165-00	FILM	0 1uF	5%	50V
C222	1-163-017-00	CERAMIC CHIP	0 0047uF	5%	50V
C224	1-124-234-00	ELECT	22uF	20%	16V
C225	1-124-234-00	ELECT	22uF	20%	16V
C226	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C227	1-164-161-11	CERAMIC CHIP	0 0022uF	10%	100V
C233	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C401	1-126-936-11	ELECT	3300uF	20%	16V
C402	1-163-038-00	CERAMIC CHIP	0 1uF		25V
C404	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C405	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C406	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C407	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C408	1-124-242-00	ELECT	33uF	20%	25V
C409	1-126-163-11	ELECT	4 7uF	20%	50V
C416	1-164-232-11	CERAMIC CHIP	0 01uF		50V
C418	1-124-242-00	ELECT	33uF	20%	25V
C419	1-124-584-00	ELECT	100uF	20%	10V
C420	1-163-809-11	CERAMIC CHIP	0 047uF	10%	25V
C434	1-164-346-11	CERAMIC CHIP	1uF		16V
C435	1-126-288-11	ELECT	4 7uF	20%	16V

Ref. No.	Part No.	Description	Remark		
C601	1-163-037-11	CERAMIC CHIP	0 022uF	10%	25V
C616	1-164-232-11	CERAMIC CHIP	0 01uF		50V
C617	1-124-455-00	ELECT	100uF	20%	16V
C619	1-163-037-11	CERAMIC CHIP	0 022uF	10%	25V
C620	1-124-257-00	ELECT	2 2uF	20%	50V
C621	1-164-695-11	CERAMIC CHIP	0 0022uF	5%	50V
C622	1-163-037-11	CERAMIC CHIP	0 022uF	10%	25V
C623	1-216-295-00	CONDUCTOR, CHIP		(2012)	
C624	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C626	1-128-551-11	ELECT	22uF	20%	25V
C627	1-126-967-11	ELECT	47uF	20%	16V
C628	1-164-232-11	CERAMIC CHIP	0 01uF		50V
C629	1-126-967-11	ELECT	47uF	20%	16V
C636	1-163-023-00	CERAMIC CHIP	0 015uF	5%	50V
C637	1-163-023-00	CERAMIC CHIP	0 015uF	5%	50V
C700	1-164-232-11	CERAMIC CHIP	0 01uF		50V
C701	1-124-584-00	ELECT	100uF	20%	10V
C704	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C705	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C706	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C707	1-128-057-11	ELECT	330uF	20%	6 3V
C710	1-164-232-11	CERAMIC CHIP	0 01uF		50V
C711	1-163-141-00	CERAMIC CHIP	0 001uF	5%	50V
C712	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C713	1-162-294-31	CERAMIC	0 001uF	10%	50V
C714	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C715	1-162-294-31	CERAMIC	0 001uF	10%	50V
C716	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C720	1-162-306-11	CERAMIC	0 01uF	20%	16V
C721	1-162-306-11	CERAMIC	0 01uF	20%	16V
C801	1-162-282-31	CERAMIC	100PF	10%	50V
C802	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C803	1-162-282-31	CERAMIC	100PF	10%	50V
C804	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C805	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C806	1-163-038-00	CERAMIC CHIP	0 1uF		25V
C807	1-163-038-00	CERAMIC CHIP	0 1uF		25V
C808	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C809	1-162-282-31	CERAMIC	100PF	10%	50V
C818	1-162-286-21	CERAMIC	220PF	10%	50V
C821	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
C822	1-162-306-11	CERAMIC	0 01uF	20%	16V
C901	1-126-162-11	ELECT	3 3uF	20%	50V
C903	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C907	1-125-701-11	DOUBLE LAYERS	0 047F		5 5V
C912	1-128-551-11	ELECT	22uF	20%	V
C913	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C914	1-164-004-11	CERAMIC CHIP	0 1uF	10%	25V
C916	1-163-038-00	CERAMIC CHIP	0 1uF		25V

MAIN

Ref No	Part No.	Description	Remark
C917	1-124-465-00	ELECT 0.47uF 20% 50V	
C918	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C922	1-126-966-11	ELECT 33uF 20% 16V	
C923	1-124-257-00	ELECT 2.2uF 20% 50V	
< JACK >			
CNJ600	1-779-005-11	JACK (ANTENNA)	
< CONNECTOR >			
CNP501	1-774-701-11	PIN, CONNECTOR 16P	
CNP700	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P	
CNP800	1-764-422-11	PLUG, CONNECTOR 12P	
< DISCHARGE GAP >			
CP601	1-519-504-11	GAP, DISCHARGE	
< DIODE >			
D400	8-719-109-71	DIODE RD3 9ES-B1	
D401	8-719-986-73	DIODE RB441Q	
D411	8-719-991-33	DIODE 1SS133T-77	
D638	8-719-991-33	DIODE 1SS133T-77	
D803	8-719-991-33	DIODE 1SS133T-77	
D804	8-719-991-33	DIODE 1SS133T-77	
D805	8-719-991-33	DIODE 1SS133T-77	
D810	8-719-991-33	DIODE 1SS133T-77	
D811	8-719-109-93	DIODE RD6 2ESB2	
D812	8-719-109-93	DIODE RD6 2ESB2	
D813	8-719-109-93	DIODE RD6 2ESB2	
D814	8-719-109-93	DIODE RD6 2ESB2	
D815	8-719-109-93	DIODE RD6 2ESB2	
D816	8-719-109-93	DIODE RD6 2ESB2	
D817	8-719-109-93	DIODE RD6 2ESB2	
D818	8-719-109-93	DIODE RD6 2ESB2	
D901	8-719-921-80	DIODE MTZJ-11B	
D903	8-719-109-93	DIODE RD6 2ESB2	
D905	8-719-923-93	DIODE MTZJ-T-77-16C	
D908	8-719-991-33	DIODE 1SS133T-77	
D909	8-719-110-13	DIODE RD9 1ESB2	
D911	8-719-109-89	DIODE RD5 6ESB2	
D912	8-719-109-93	DIODE RD6 2ESB2	
D913	8-719-049-38	DIODE 1N5404TU	
D914	8-719-991-33	DIODE 1SS133T-77	
D915	8-719-109-97	DIODE RD6 8ESB2	
D918	8-719-110-13	DIODE RD9 1ESB2	
D919	8-719-200-82	DIODE 11ES2	
< FUSE >			
F501	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	

Ref No	Part No.	Description	Remark
< IC >			
IC200	8-759-369-41	IC HA13155	
IC400	8-752-075-48	IC CXA1946AQ-T6	
IC700	8-759-364-34	IC SM5877AM	
IC800	8-759-454-66	IC uPD17017GF-B28-3B9	
IC900	8-759-095-60	IC S-81250PG	
< JUMPER RESISTOR >			
JR2	1-216-296-00	CONDUCTOR, CHIP	(3216)
JR10	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR11	1-216-296-00	CONDUCTOR, CHIP	(3216)
JR14	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR15	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR17	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR18	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR19	1-216-295-00	CONDUCTOR, CHIP	(2012)
< COIL >			
L400	1-410-513-11	INDUCTOR 22uH	
L600	1-410-513-11	INDUCTOR 22uH	
L601	1-410-521-11	INDUCTOR 100uH	
L603	1-216-296-00	CONDUCTOR, CHIP	(3216)
L700	1-410-521-11	INDUCTOR 100uH	
L800	1-410-513-11	INDUCTOR 22uH	
L801	1-410-513-11	INDUCTOR 22uH	
L901	1-411-823-21	COIL, CHOKE (TROIDAL)	
< JACK >			
PJ400	1-764-697-11	JACK, PIN 4P (LINE OUT FRONT/REAR)	
< TRANSISTOR >			
Q101	8-729-920-21	TRANSISTOR DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR DTC314TKH04	
Q201	8-729-920-21	TRANSISTOR DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR DTC314TKH04	
Q404	8-729-901-05	TRANSISTOR DTA124EK	
Q405	8-729-901-00	TRANSISTOR DTC124EK	
Q604	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q605	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q607	8-729-901-98	TRANSISTOR 2SA1036K-R	
Q608	8-729-900-53	TRANSISTOR DTC114EK	
Q609	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q804	8-729-901-05	TRANSISTOR DTA124EK	
Q901	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q903	8-729-900-53	TRANSISTOR DTC114EK	
Q904	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q905	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q907	8-729-901-05	TRANSISTOR DTA124EK	

Ref No.	Part No.	Description	Remark			Ref No.	Part No.	Description	Remark		
Q911	8-729-920-74	TRANSISTOR	2SC2412K-QR			R216	1-216-134-00	METAL CHIP	2 2	5%	1/8W
Q912	8-729-101-07	TRANSISTOR	2SB798-DL			R217	1-216-134-00	METAL CHIP	2 2	5%	1/8W
Q913	8-729-900-53	TRANSISTOR	DTC114EK			R219	1-216-069-00	METAL CHIP	6 8K	5%	1/10W
Q914	8-729-900-53	TRANSISTOR	DTC114EK			R220	1-216-077-00	METAL CHIP	15K	5%	1/10W
Q915	8-729-015-11	TRANSISTOR	2SD1802FAST-TL			R221	1-216-053-00	METAL CHIP	1 5K	5%	1/10W
Q920	8-729-019-00	TRANSISTOR	2SD2394-G			R222	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q922	8-729-901-00	TRANSISTOR	DTC124EK			R223	1-216-079-00	METAL CHIP	18K	5%	1/10W
Q929	8-729-015-11	TRANSISTOR	2SD1802FAST-TL			R224	1-216-085-00	METAL CHIP	33K	5%	1/10W
< RESISTOR >						R231	1-216-061-00	METAL CHIP	3 3K	5%	1/10W
R101	1-216-049-11	METAL GLAZE	1K	5%	1/10W	R401	1-247-895-00	CARBON	470K	5%	1/4W
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W	R411	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R103	1-249-425-11	CARBON	4 7K	5%	1/4W	R416	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R104	1-216-065-00	METAL CHIP	4 7K	5%	1/10W	R601	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R105	1-216-065-00	METAL CHIP	4 7K	5%	1/10W	R602	1-216-295-00	CONDUCTOR, CHIP	(2012)		
R106	1-216-041-00	METAL CHIP	470	5%	1/10W	R603	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R107	1-216-041-00	METAL CHIP	470	5%	1/10W	R620	1-216-057-00	METAL CHIP	2 2K	5%	1/10W
R108	1-216-075-00	METAL CHIP	12K	5%	1/10W	R627	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R109	1-216-075-00	METAL CHIP	12K	5%	1/10W	R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-129-00	METAL CHIP	2 2M	5%	1/10W	R629	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R111	1-216-129-00	METAL CHIP	2 2M	5%	1/10W	R630	1-216-063-00	METAL GLAZE	3 9K	5%	1/10W
R112	1-247-864-11	CARBON	24K	5%	1/4W	R631	1-216-065-00	METAL CHIP	4 7K	5%	1/10W
R113	1-247-864-11	CARBON	24K	5%	1/4W	R633	1-216-081-00	METAL CHIP	22K	5%	1/10W
R114	1-249-385-11	CARBON	2 2	5%	1/6W	R634	1-216-206-00	METAL GLAZE	2 2K	5%	1/8W
R115	1-249-385-11	CARBON	2 2	5%	1/6W	R640	1-216-069-00	METAL CHIP	6 8K	5%	1/10W
R116	1-249-385-11	CARBON	2 2	5%	1/6W	R642	1-216-295-00	CONDUCTOR, CHIP	(2012)		
R117	1-249-385-11	CARBON	2 2	5%	1/6W	R643	1-216-113-00	METAL CHIP	470K	5%	1/10W
R119	1-216-069-00	METAL CHIP	6 8K	5%	1/10W	R645	1-216-295-00	CONDUCTOR, CHIP	(2012)		
R120	1-216-077-00	METAL CHIP	15K	5%	1/10W	R700	1-216-001-00	METAL CHIP	10	5%	1/10W
R121	1-216-053-00	METAL CHIP	1 5K	5%	1/10W	R704	1-247-807-11	CARBON	100	5%	1/4W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W	R705	1-249-401-11	CARBON	47	5%	1/4W
R123	1-216-079-00	METAL CHIP	18K	5%	1/10W	R706	1-216-037-00	METAL CHIP	330	5%	1/10W
R124	1-216-085-00	METAL CHIP	33K	5%	1/10W	R708	1-216-027-00	METAL CHIP	120	5%	1/10W
R131	1-216-061-00	METAL CHIP	3 3K	5%	1/10W	R711	1-247-807-11	CARBON	100	5%	1/4W
R201	1-216-049-11	METAL GLAZE	1K	5%	1/10W	R712	1-247-807-11	CARBON	100	5%	1/4W
R202	1-216-073-00	METAL CHIP	10K	5%	1/10W	R713	1-247-815-00	CARBON	220	5%	1/4W
R203	1-249-425-11	CARBON	4 7K	5%	1/4W	R724	1-216-295-00	CONDUCTOR, CHIP	(2012)		
R204	1-216-065-00	METAL CHIP	4 7K	5%	1/10W	R802	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R205	1-249-425-11	CARBON	4 7K	5%	1/4W	R804	1-249-429-11	CARBON	10K	5%	1/4W
R206	1-216-041-00	METAL CHIP	470	5%	1/10W	R808	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-041-00	METAL CHIP	470	5%	1/10W	R809	1-216-073-00	METAL CHIP	10K	5%	1/10W
R208	1-216-075-00	METAL CHIP	12K	5%	1/10W	R810	1-216-051-00	METAL CHIP	1 2K	5%	1/10W
R209	1-216-075-00	METAL CHIP	12K	5%	1/10W	R812	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-129-00	METAL CHIP	2 2M	5%	1/10W	R813	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-216-129-00	METAL CHIP	2 2M	5%	1/10W	R814	1-216-073-00	METAL CHIP	10K	5%	1/10W
R212	1-247-864-11	CARBON	24K	5%	1/4W	R818	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R213	1-247-864-11	CARBON	24K	5%	1/4W	R819	1-216-051-00	METAL CHIP	1 2K	5%	1/10W
R214	1-216-134-00	METAL CHIP	2 2	5%	1/8W	R820	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R215	1-216-134-00	METAL CHIP	2 2	5%	1/8W	R821	1-216-053-00	METAL CHIP	1 5K	5%	1/10W
						R822	1-216-053-00	METAL CHIP	1 5K	5%	1/10W

MAIN
SERVO

Ref. No.	Part No.	Description	Remark
R823	1-216-053-00	METAL CHIP	1 5K 5% 1/10W
R824	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R825	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R826	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R827	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R829	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R830	1-216-075-00	METAL CHIP	12K 5% 1/10W
R833	1-216-057-00	METAL CHIP	2 2K 5% 1/10W
R836	1-216-057-00	METAL CHIP	2 2K 5% 1/10W
R837	1-216-057-00	METAL CHIP	2 2K 5% 1/10W
R838	1-216-057-00	METAL CHIP	2 2K 5% 1/10W
R839	1-216-057-00	METAL CHIP	2 2K 5% 1/10W
R902	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R903	1-249-421-11	CARBON	2 2K 5% 1/4W
R905	1-216-689-11	METAL CHIP	39K 0 5% 1/10W
R909	1-216-079-00	METAL CHIP	18K 5% 1/10W
R910	1-216-067-00	METAL CHIP	5 6K 5% 1/10W
R911	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R912	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R921	1-247-887-00	CARBON	220K 5% 1/4W
R922	1-216-049-11	METAL GLAZE	1K 5% 1/10W
R923	1-249-421-11	CARBON	2 2K 5% 1/4W
R924	1-216-073-00	METAL CHIP	10K 5% 1/10W
R925	1-249-413-11	CARBON	470 5% 1/4W
R927	1-249-417-11	CARBON	1K 5% 1/4W
R928	1-249-417-11	CARBON	1K 5% 1/4W
R929	1-216-033-00	METAL CHIP	220 5% 1/10W
R930	1-249-429-11	CARBON	10K 5% 1/4W
R931	1-247-790-11	CARBON	20 5% 1/4W
R932	1-216-085-00	METAL CHIP	33K 5% 1/10W
R933	1-216-017-00	METAL GLAZE	47 5% 1/10W
R938	1-216-073-00	METAL CHIP	10K 5% 1/10W
R950	1-247-820-11	CARBON	360 5% 1/4W
R951	1-247-820-11	CARBON	360 5% 1/4W
< SWITCH >			
S900	1-762-638-11	SWITCH, TACTILE (RESET)	
< THERMISTOR >			
TH900	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510	
< TUNER >			
TU1	A-3309-805-A	TUNER UNIT	
< VIBRATOR >			
X700	1-767-453-21	VIBRATOR, CRYSTAL (16 934MHz)	
X800	1-760-223-11	VIBRATOR, CRYSTAL (4 5MHz)	

Ref. No.	Part No.	Description	Remark
*	A-3309-227-A	SERVO BOARD, COMPLETE	*****
< CAPACITOR >			
C1	1-107-823-11	CERAMIC CHIP	0 47uF 10% 16V
C2	1-164-232-11	CERAMIC CHIP	0 01uF 50V
C3	1-135-145-11	TANTALUM CHIP	0 47uF 10% 35V
C4	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C5	1-164-182-11	CERAMIC CHIP	0 0033uF 10% 50V
C6	1-163-011-11	CERAMIC CHIP	0 0015uF 10% 50V
C7	1-163-809-11	CERAMIC CHIP	0 047uF 10% 25V
C9	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C10	1-126-206-11	ELECT CHIP	100uF 20% 6 3V
C11	1-135-259-11	TANTAL CHIP	10uF 20% 6 3V
C12	1-163-227-11	CERAMIC CHIP	10PF 0 5PF 50V
C13	1-164-232-11	CERAMIC CHIP	0 01uF 50V
C14	1-163-989-11	CERAMIC CHIP	0 033uF 10% 25V
C15	1-164-232-11	CERAMIC CHIP	0 01uF 50V
C16	1-163-989-11	CERAMIC CHIP	0 033uF 10% 25V
C17	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C18	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C19	1-163-037-11	CERAMIC CHIP	0 022uF 10% 25V
C20	1-107-823-11	CERAMIC CHIP	0 47uF 10% 16V
C21	1-163-809-11	CERAMIC CHIP	0 047uF 10% 25V
C22	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C23	1-135-259-11	TANTAL CHIP	10uF 20% 6 3V
C24	1-163-125-00	CERAMIC CHIP	220PF 5% 50V
C25	1-107-823-11	CERAMIC CHIP	0 47uF 10% 16V
C26	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C27	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C28	1-163-023-00	CERAMIC CHIP	0 015uF 5% 50V
C29	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C30	1-126-603-11	ELECT CHIP	4 7uF 20% 35V
C31	1-164-232-11	CERAMIC CHIP	0 01uF 50V
C32	1-163-023-00	CERAMIC CHIP	0 015uF 5% 50V
C33	1-124-779-00	ELECT CHIP	10uF 20% 16V
C34	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C35	1-164-232-11	CERAMIC CHIP	0 01uF 50V
C36	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C37	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C38	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
C39	1-126-204-11	ELECT CHIP	47uF 20% 16V
C40	1-164-004-11	CERAMIC CHIP	0 1uF 10% 25V
< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P	
CN2	1-565-728-11	CONNECTOR, FPC 17P	
CN3	1-770-347-21	CONNECTOR, FPC 6P	

Ref No.	Part No.	Description	Remark	Ref No.	Part No.	Description	Remark
< IC >							
IC1	8-752-372-94	IC CXD2507AQ		JR44	1-216-296-00	CONDUCTOR, CHIP (3216)	
IC2	8-752-069-56	IC CXA1782BQ		JR45	1-216-296-00	CONDUCTOR, CHIP (3216)	
IC3	8-759-354-16	IC BA6796FP-T1		JR46	1-216-296-00	CONDUCTOR, CHIP (3216)	
< JUMPER RESISTOR >				< COIL >			
JR1	1-216-296-00	CONDUCTOR, CHIP (3216)		L1	1-412-058-11	INDUCTOR CHIP 10uH	
JR2	1-216-296-00	CONDUCTOR, CHIP (3216)		L2	1-412-058-11	INDUCTOR CHIP 10uH	
JR3	1-216-296-00	CONDUCTOR, CHIP (3216)		L3	1-412-058-11	INDUCTOR CHIP 10uH	
JR4	1-216-296-00	CONDUCTOR, CHIP (3216)		< TRANSISTOR >			
JR5	1-216-296-00	CONDUCTOR, CHIP (3216)		Q1	8-729-904-60	TRANSISTOR DTB113ZK	
JR6	1-216-296-00	CONDUCTOR, CHIP (3216)		Q2	8-729-904-86	TRANSISTOR 2SB1197K-Q	
JR7	1-216-296-00	CONDUCTOR, CHIP (3216)		< RESISTOR >			
JR8	1-216-296-00	CONDUCTOR, CHIP (3216)		R1	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JR9	1-216-296-00	CONDUCTOR, CHIP (3216)		R2	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
JR10	1-216-296-00	CONDUCTOR, CHIP (3216)		R3	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
JR11	1-216-296-00	CONDUCTOR, CHIP (3216)		R4	1-216-061-00	METAL CHIP 3 3K 5% 1/10W	
JR12	1-216-296-00	CONDUCTOR, CHIP (3216)		R5	1-216-061-00	METAL CHIP 3 3K 5% 1/10W	
JR13	1-216-296-00	CONDUCTOR, CHIP (3216)		R6	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JR14	1-216-296-00	CONDUCTOR, CHIP (3216)		R7	1-216-009-00	METAL CHIP 22 5% 1/10W	
JR15	1-216-296-00	CONDUCTOR, CHIP (3216)		R8	1-216-119-00	METAL CHIP 820K 5% 1/10W	
JR16	1-216-296-00	CONDUCTOR, CHIP (3216)		R9	1-216-119-00	METAL CHIP 820K 5% 1/10W	
JR17	1-216-296-00	CONDUCTOR, CHIP (3216)		R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JR18	1-216-296-00	CONDUCTOR, CHIP (3216)		R11	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JR19	1-216-296-00	CONDUCTOR, CHIP (3216)		R14	1-216-085-00	METAL CHIP 33K 5% 1/10W	
JR20	1-216-296-00	CONDUCTOR, CHIP (3216)		R15	1-216-085-00	METAL CHIP 33K 5% 1/10W	
JR21	1-216-296-00	CONDUCTOR, CHIP (3216)		R16	1-216-077-00	METAL CHIP 15K 5% 1/10W	
JR22	1-216-296-00	CONDUCTOR, CHIP (3216)		R17	1-216-081-00	METAL CHIP 22K 5% 1/10W	
JR23	1-216-296-00	CONDUCTOR, CHIP (3216)		R19	1-216-079-00	METAL CHIP 18K 5% 1/10W	
JR24	1-216-296-00	CONDUCTOR, CHIP (3216)		R20	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
JR25	1-216-296-00	CONDUCTOR, CHIP (3216)		R21	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
JR26	1-216-296-00	CONDUCTOR, CHIP (3216)		R22	1-216-085-00	METAL CHIP 33K 5% 1/10W	
JR27	1-216-296-00	CONDUCTOR, CHIP (3216)		R23	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
JR28	1-216-296-00	CONDUCTOR, CHIP (3216)		R24	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JR29	1-216-296-00	CONDUCTOR, CHIP (3216)		R27	1-216-295-00	CONDUCTOR, CHIP (2012)	
JR30	1-216-296-00	CONDUCTOR, CHIP (3216)		R28	1-216-101-00	METAL CHIP 150K 5% 1/10W	
JR31	1-216-296-00	CONDUCTOR, CHIP (3216)		R29	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
JR32	1-216-296-00	CONDUCTOR, CHIP (3216)		R30	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
JR33	1-216-296-00	CONDUCTOR, CHIP (3216)		R31	1-216-081-00	METAL CHIP 22K 5% 1/10W	
JR34	1-216-296-00	CONDUCTOR, CHIP (3216)		R32	1-216-109-00	METAL CHIP 330K 5% 1/10W	
JR35	1-216-296-00	CONDUCTOR, CHIP (3216)		R33	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
JR36	1-216-296-00	CONDUCTOR, CHIP (3216)		R34	1-216-009-00	METAL CHIP 22 5% 1/10W	
JR37	1-216-296-00	CONDUCTOR, CHIP (3216)		R35	1-216-065-00	METAL CHIP 4 7K 5% 1/10W	
JR38	1-216-296-00	CONDUCTOR, CHIP (3216)		R36	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
JR39	1-216-296-00	CONDUCTOR, CHIP (3216)		R37	1-216-117-00	METAL CHIP 680K 5% 1/10W	
JR40	1-216-296-00	CONDUCTOR, CHIP (3216)		R38	1-216-109-00	METAL CHIP 330K 5% 1/10W	
JR41	1-216-296-00	CONDUCTOR, CHIP (3216)		R39	1-216-101-00	METAL CHIP 150K 5% 1/10W	
JR43	1-216-296-00	CONDUCTOR, CHIP (3216)		R40	1-216-114-00	METAL GLAZE 510K 5% 1/10W	

SERVO**SUB**

Ref No	Part No.	Description	Remark
R41	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R42	1-216-107-00	METAL CHIP 270K 5% 1/10W	
R43	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R44	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R45	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R46	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R47	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R48	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R49	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R50	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

R51 1-216-295-00 CONDUCTOR, CHIP (2012)

< VARIABLE RESISTOR >

RV1 1-238-091-11 RES, ADJ, CERMET 22K

RV4 1-238-091-11 RES, ADJ, CERMET 22K

* 1-659-834-11 SUB BOARD

< CONNECTOR >

CN1 1-770-347-21 CONNECTOR, FPC 6P

MISCELLANEOUS

12 1-769-786-71 CORD (WITH CONNECTOR) (POWER)
 Δ 210 8-848-402-02 PICK-UP, OPTICAL KSS-520A/J2NP
 F501 1-532-877-11 FUSE (BLADE TYPE) (AUTO FUSE) 10A
 M901 X-3371-664-1 MOTOR ASSY (SPINDLE)
 M902 A-3291-674-A MOTOR ASSY, SLED

M903 A-3291-676-A MOTOR SUB ASSY, LOADING

ACCESSORIES & PACKING MATERIALS

3-859-005-31 MANUAL, INSTRUCTION (ENGLISH)

3-859-006-31 MANUAL, INSTRUCTION, INSTALL

(ENGLISH,FRENCH)

X-3373-134-1 CASE ASSY

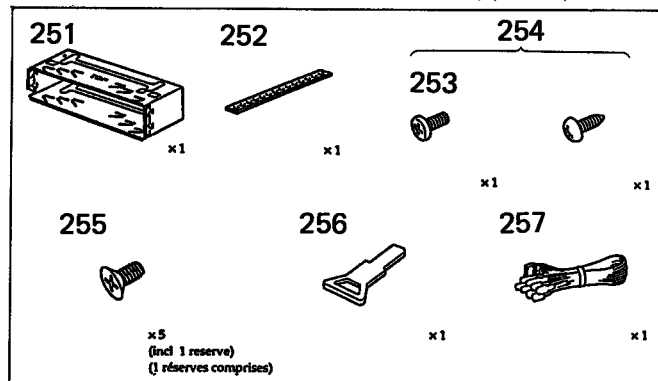
Ref No.	Part No.	Description	Remark

		HARDWARE LIST	

#1	7-627-000-00	SCREW, PRECISION +P 1 7X2 2 TYPE 3	
#2	7-685-791-09	SCREW +PTT 2 6X5 (S)	
#3	7-685-792-09	SCREW +PTT 2 6X6 (S)	
#4	7-685-793-09	SCREW +PTT 2 6X8 (S)	
#5	7-621-772-10	SCREW +B 2X4	
#6	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
#7	7-628-253-00	SCREW +PS 2X4	
#8	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
#9	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
#10	7-627-850-28	SCREW, PRECISION +P 1 4X3	

PARTS FOR INSTALLATION AND CONNECTIONS

251 3-931-986-41 FRAME, FITTING
 252 3-916-012-01 BRACKET (ND), FITTING ASSIST
 253 7-682-560-04 SCREW +P 4X6
 254 X-3368-725-1 SCREW ASSY, FITTING
 255 3-932-020-01 SCREW (+K 5X8 TP)
 256 3-388-078-01 KEY
 257 1-769-786-71 CORD (WITH CONNECTOR) (POWER)



The components identified by mark Δ or dotted line with mark, Δ are critical for safety. Replace only with part number specified.