EXR-18/XR-3200/3201/3202

SERVICE MANUAL

US Model
EXR-18/XR-3200
Canadian Model
XR-3200
AEP Model
XR-3200/3201
UK Model
XR-3201
German Model
XR-3202

Photo : XR-3200

Model Name Using Similar Mechanism	XR-3050/3051/3052
Tape Transport Mechanism Type	MG-707DV-35

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
7 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.

Other Specifications

Power amplifier section

Outputs	Speaker output
Speaker impedance	4 – 8 ohms
Maximum power output	7W ×4 (at 4 ohm)* (*Measured at 14.4V)

Cassette player section

Tape track	4-track 2-channel stereo
Frequency response	30 - 15,000 Hz
Signal-to-noise ratio	55 dB
Wow and flutter	0.13% (WRMS)

Tuner section

FM

Tuning range	87.5—107.9MHz (US, Canadian) 87.5—108.0MHz (AEP, UK, German)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf (75 ohms)
Selectivity	70 dB a 400 kHz
Signal-to-noise ratio	68 dB (mono)
Harmonic distortion at	1 kHz 0.4% (mono)
Separation	28 dB at 1kHz
Frequency response	30 - 15,000 Hz
capture ratio	3 dB (US, Canadian) 5 dB (AEP, UK, German)

—Continued on next page—

使用時は添付資料も参照のこと
Refer to the additional documents.

FM/AM CASSETTE CAR STEREO
EXR-18/XR-3200/3202

FM/MW/LW CASSETTE CAR STEREO
XR-3201

SONY®

This section is extracted from instruction manual.

AM (MW/LW)

Tuning range	530—1,710kHz (US, Canadian) 531—1,602kHz (XR-3200 : AEP/3202) MW : 531—1,602kHz LW : 153—281kHz (XR-3201)
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	35μV (EXCEPT XR-3201) MW : 35μV LW : 70μV (XR-3201)

General

Output lead	Power antenna relay control lead
tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
loudness	+10 dB at 100 Hz +8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 175 mm (w/h/d), not incl. projecting parts and controls
Mounting dimensions	Approx. 182 × 53 × 150 mm (w/h/d), not incl. projecting parts and controls
Mass	Approx. 1.4 kg
Accessories supplied	Mounting hardware (1 set) Front panel case (1)

Design and specifications subject to change without notice.

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.

Features

General

- **Detachable-front panel** enables you to take the front panel away with you when you leave your car (page 9).

Cassette player section

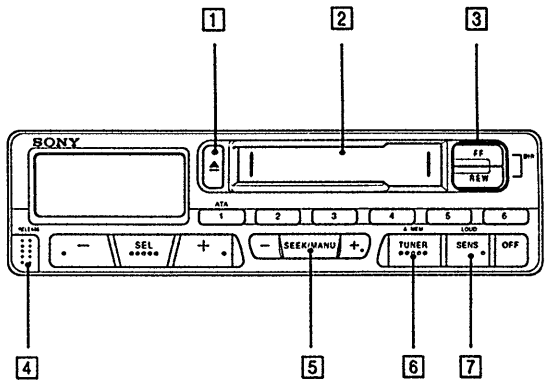
- **ATA (Automatic tuner Activation)** for automatically turning on the tuner during the fast-forwarding or rewinding of a tape (page 8).

Tuner section

- **PLL synthesizer tuner**
- **Up to 18 stations can be preset, 12 stations on** FM, 6 stations on AM (EXCEPT XR-3201) (page 13).
- **Up to 24 stations can be preset, 12 stations on FM, 6 stations each on MW and LW (XR-3201) (page 13).**
- **A.MEM (Auto Memory) function** automatically selects and stores the stations with strong signals on the preset number buttons in order of frequency (page 12).
- **The traffic announcement stand-by function (SDK)** for automatically starting the traffic announcement broadcasts while listening to another radio program (FM band only) or tape playback (XR-3202) (page 15)

TABLE OF CONTENTS

Location and Function of Controls



Refer to the pages in ● for details.

1 **▲(eject button)**
Press to stop tape playback and to eject the cassette.

2 **Cassette insertion door**

3 **FF/REW (fast winding)/DIR (tape transport direction change) buttons ⑩**
During playback, press FF or REW for fast winding or press both FF and REW simultaneously to listen to the other side of the cassette.

4 **RELEASE (front panel release) button ⑨**

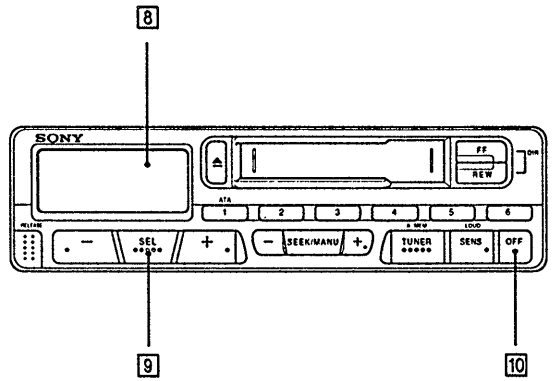
5 **SEEK/MANU (automatic tuning/manual tuning) button ⑪**

6 **TUNER (radio on/band select) button ⑪**
Each time the button is pressed, the band changes in order of:

→ FM1 → FM2 → AM →
(XR-3200)

→ FM1 → FM2 → MW → LW →
(XR-3201)

7 **SENS/LOUD (Sensitivity/loudness) ⑪**
Press for more than two seconds to reinforce the bass and treble especially when listening at a low volume level. To disengage the button, press it again for more than two seconds (loudness function).



8 **Display window**

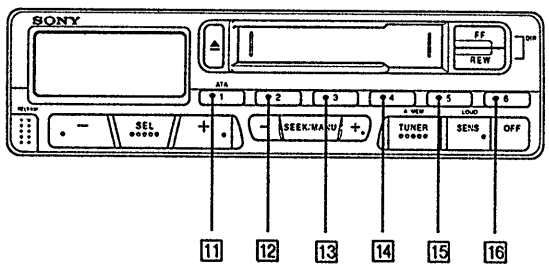
9 **[-] [SEL] [+] button**
Normally, the [-] or [+] buttons are pressed to control the volume. Pressing the SEL button changes the mode as follows:
→ BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume) →
Press the [-] or [+] buttons (to adjust the level) within three seconds, or the volume mode will return.

Display window	[SEL]	[-] [+]	
	Control mode	Press [-]	Press [+]
Flash 0 7 BAS TRE	Bass control	For less bass	For more bass
Flash -7 0 BAS TRE	Treble control	For less treble	For more treble
BALANCE 0 0 L R	Balance control	To decrease the right-speakers' volume	To decrease the left-speakers' volume
FADER 0 0 F R	Fader control	To decrease the rear-speakers' volume	To decrease the front-speakers' volume
40	Volume control	For less volume	For more volume

10 **OFF (power off) button**
Press to turn off the radio.

This section is extracted from XR-3200/3201's instruction manual.

Location and Function of Controls

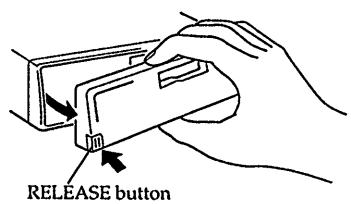


	During tape playback	During radio reception
11	ATA (Automatic Tuner Activation) button Press to make the tuner turn on automatically every time you fast-wind a tape. To cancel, press it once more.	Preset number buttons ⑬ ⑭
12	—	
13	—	
14	—	
15	—	
16	—	

Detaching and Attaching the Front Panel

Detaching the Front Panel

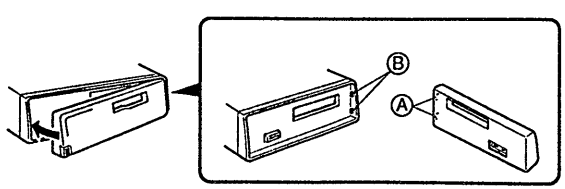
Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel, and detach the panel by pulling it towards you as illustrated.



Do not drop the panel when detaching it from the unit.

Attaching the Front Panel

Apply the right hand side of the front panel to the unit by attaching part Ⓐ of the front panel to part Ⓑ of the unit as illustrated and push until it clicks.

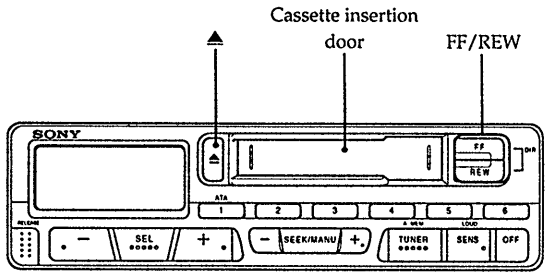


Do not press hard or apply excessive pressure to the display window of the front panel.

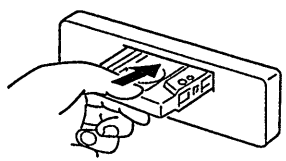
Notes

- Make sure that the front panel is the right way up when attaching it to the unit. It cannot be attached upside down.
- When attaching the front panel, do not press it hard against the unit. It can be easily attached by pressing lightly.
- Never leave the detached front panel in your car if it is parked in direct sunlight. There could be a considerable rise in temperature inside the car.
- When you carry the front panel with you put it in the supplied front panel case.
- The display window may become warm while the unit is operated. This is not a sign of a malfunction.

Listening to the Tape Playback



Insert a cassette to start playback.
Playback starts automatically.



To listen to the reverse side of the cassette.

Press FF/REW simultaneously.

Note
Before turning off the unit; eject the tape to avoid tape damage.

Tape transport direction indication.

The side facing up is being played.

The side facing down is being played.

To Eject the Cassette and Listen to the Radio

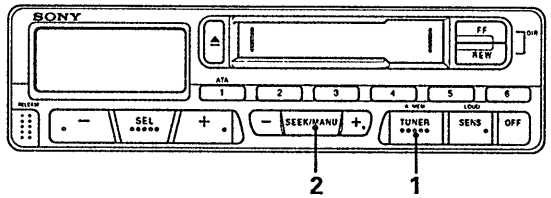
Press the ▲ button.

To Wind the Tape Rapidly

Direction indicator	To advance	To rewind
_ _ 1 ⊃	Press FF.	Press REW.
¯ ¯ 1 ⊃	Press FF.	Press REW.

To resume playback, press FF or REW so as not to depress it.

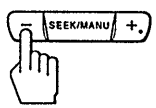
Tuning in a Station



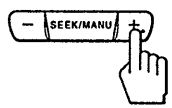
Searching for the Stations Automatically
— Automatic Tuning

1 Select the desired band.

2 Press either side of the SEEK/MANU button lightly.



For lower frequencies

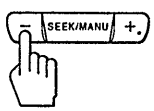


For higher frequencies

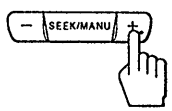
The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

Tuning in by Adjusting the Frequency
— Manual Tuning

Select the desired band, then press and hold either side of the SEEK/MANU button.



For lower frequencies



For higher frequencies

Release the button when the desired station is received.
At least two seconds after releasing the button, the system will return to Automatic Tuning.

PREVENTING ACCIDENTS!

While you are driving' the use of the Automatic Tuning and the Memory Preset Tuning is recommended instead of the Manual Tuning.

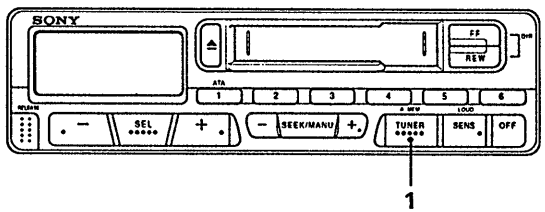
Note
Make sure that you press either side of the SEEK button lightly. If you keep it pressed, the button will function as the manual tuning button.

When an FM stereo program with a sufficient signal strength is tuned in

The "STEREO" indication will appear.

Avoiding the automatic tuning from stopping on stations too frequently (Local Seek Mode)
Press the SENS button lightly to get the "LOCAL" indication. Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the Automatic Tuning is in operation.

Using the Memory Preset Function



Stations with clearest reception are automatically searched and memorized on each band (FM1, FM2, MW and LW) - (XR-3201), (FM1, FM2 and AM) - (XR-3200). Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of frequency.

Memorizing the Stations Automatically

— A.MEM (Auto Memory) Function

1 Select the desired band.

2 Press the A.MEM button for more than two seconds.

The receivable frequencies of FM1and FM2 are the same. Therefore, 12 stations can be memorized on FM.

The A.MEM function

The A.MEM function searches all the receivable stations within the currently selected band and memorizes the ones in good receiving conditions in sequence from the frequency at present.

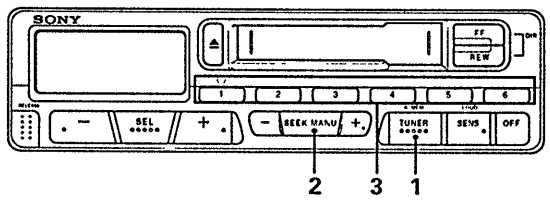
How to memorize the stations on the preset number buttons

— When there is no preset number indicated on the display window, all the preset number buttons set in the currently selected band will be filled with the memories.

— When there is a preset number indicated on the display window, the unit will memorize the stations on the preset number buttons from the one currently being displayed. For example, when you choose FM1 and preset number 3 is being displayed, the operation will start from the preset number 3 on FM1 and stops at the preset number 6 on FM2

Note

There may be cases where there are not enough receivable stations due to the lack of stations in the vicinity or weak broadcasting signals. In such cases, the A.MEM operation may stop without all the buttons being occupied with memories.



Up to 6 stations on each band (FM1, FM2, MW and LW) - (XR-3201), (FM1, FM2 and AM) - (XR-3200) can be stored in the memory in order of your choice.

Memorizing Only the Desired Stations

For example, store a station on the preset number button 1.

1 Select the desired band.

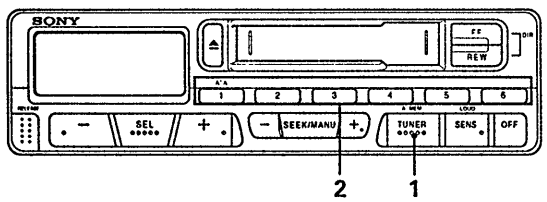
2 Tune in the station which you wish to store on the preset number button (page 11).

3 Keep the preset number button pressed for about two seconds until the frequency flashes in the display window. The sound becomes mute.

Repeat the same procedure to store other stations.

Only one station per band (FM1, FM2, MW and LW) - (XR-3201), (FM1, FM2 and AM) - (XR-3200) can be stored in the memory on each preset number button. If you try to store another station on the same preset number button, the previously stored station will be erased.

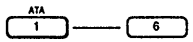
Using the Memory Preset Function



Receiving the Memorized Stations

1 Select the desired band.

2 Press the desired preset number button lightly.



Notes

- There may be cases in which even the stations stored in the memory cannot be received due to weak signals in the vicinity of your car.
- If you keep pressing the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, press the preset number button only lightly.

Maintenance

Fuse Replacement

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.

Warning

Use only a fuse with the specified amperage. Use of a higher amperage fuse may cause serious damage.

Cleaning the Head and the Tape Path

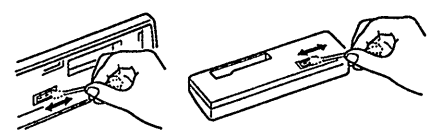
Prolonged use may contaminate the tape head and the tape path. Contamination causes sound drop-outs during playback.

Clean the tape head and the tape path every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel get contaminated. In order to prevent this, open up the front panel by pressing the RELEASE button, detach it and clean the connectors from time to time.

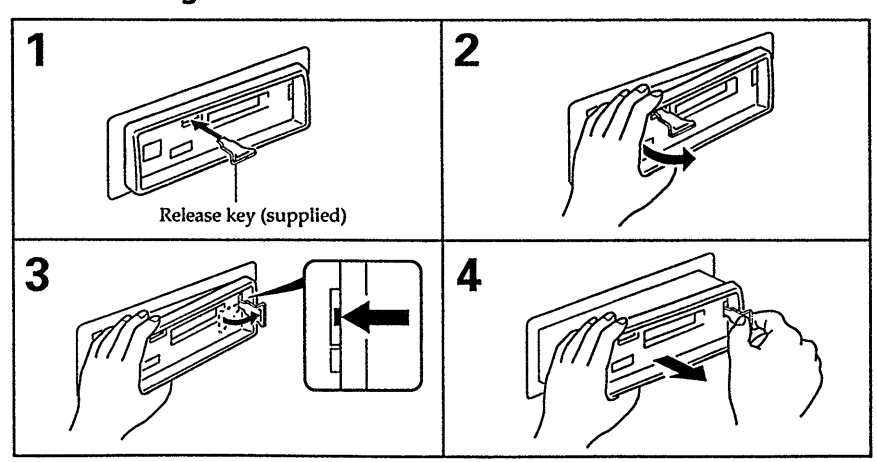
Clean the connectors with a cotton swab as illustrated. Be sure to clean them in the direction of the arrow.



Main unit

Back of the front panel

Dismounting the unit



Installation Installation Inbouwen

Precautions

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt, or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.
- Be sure to detach the front panel before you start installing the unit.

Mounting angle adjustment
Adjust the mounting angle to less than 20°.

Précautions

- Choisir l'emplacement de montage avec soin de manière que l'appareil ne gêne pas les mouvements du conducteur.
- Eviter d'installer l'appareil en plein soleil, près d'une source de chaleur comme un chauffage ou dans un endroit exposé à la poussière, la saleté ou des vibrations excessives.
- Afin de garantir un montage sûr, utiliser uniquement le matériel de montage fourni.
- Veiller à détacher le panneau avant d'installer l'appareil.

Réglage de l'angle de montage
Ajuster l'inclinaison à un angle inférieur à 20°.

Voorzorgsmaatregelen

- Kies met overleg een plaats voor het apparaat. Let er goed op dat de bestuurder bij het rijden geen hinder van het apparaat ondervindt.
- Monteer het apparaat niet op een plaats waar dit blootgesteld staat aan hoge temperaturen (direct zonlicht, in de buurt van een warmeluchtrooster van de verwarming e.d.). Vermijd ook stoffige en vuile plaatsen alsmede plaatsen waar het apparaat blootgesteld staat aan trillingen.
- Gebruik uitsluitend het bijgeleverde montage-materiaal voor het inbouwen van het apparaat.
- Verwijder het voorpaneel alvorens u het apparaat inbouwt.

Toelaatbare inbouwhoek
De inbouwhoek moet minder dan 20° zijn.

How to Detach and Attach the Front Panel

To detach
Press the RELEASE button to open the front panel, then pull it out.
To attach
Align parts Ⓐ and Ⓑ, and push the front panel until it clicks.

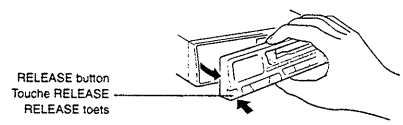
Dépose et pose du panneau avant

Dépose
Appuyer sur la touche RELEASE avant d'ouvrir le panneau avant, puis le tirer vers vous.
Pose
Aligner le pièces Ⓐ et Ⓑ et pousser le panneau avant jusqu'à encienchement.

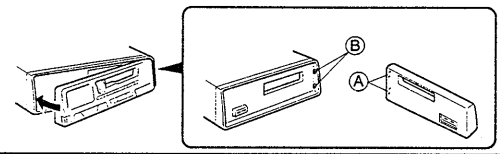
Verwijderen en weer aanbrengen van het voorpaneel

Verwijderen
Druk op de RELEASE toets zodat het voorpaneel ontgrendeld wordt en verwijder dit vervolgens van het apparaat.
Aanbrengen
Zorg dat punt Ⓐ en punt Ⓑ tegenover elkaar liggen en druk het voorpaneel dan aan, totdat dit vastklikt.

To detach
Dépose du panneau avant
Verwijderen van het voorpaneel



To attach
Pose du panneau avant
Aanbrengen van het voorpaneel



Mounting Example

Installation in the dashboard

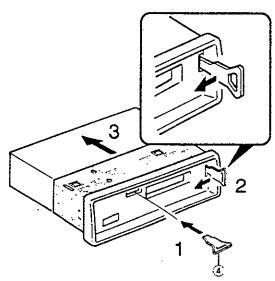
Exemple d'installation

Encastrement dans le tableau de bord

Montage-voorbeeld

Inbouw in het dashboard

1



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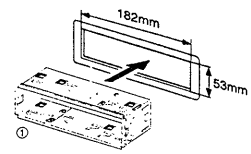
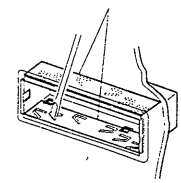


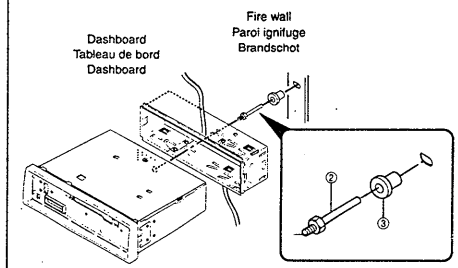
with the TOP marking up
avec l'inscription TOP dirigée vers le haut
met de zijde met het woord "TOP" naar boven gericht

3

Bend these claws if necessary.
Si nécessaire, plier ces griffes.
Indien nodig kunt u deze lipjes ombuigen.



4



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 nearest Sony dealer.

Installation de l'appareil dans une voiture japonaise

Si l'appareil ne peut pas être installé dans une voiture japonaise, consulter le revendeur Sony le plus proche.

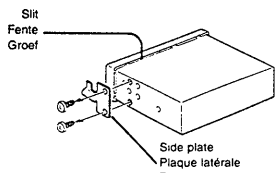
Inbouwen van het apparaat in een Japanese auto

Het is mogelijk dat het apparaat in sommige auto's niet kan worden ingebouwd. Raad pleeg in dat geval uw Sony handelaar.

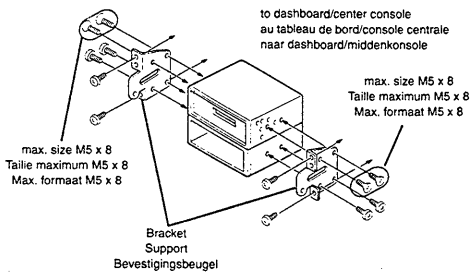
1 Run a blade along the slits on the back of the front trim and cut it off the unit. At the same time, remove the side plate as well.

Passer une lame le long des fentes à l'arrière de la bordure avant et la couper. Au même moment, enlever également la plaque latérale.

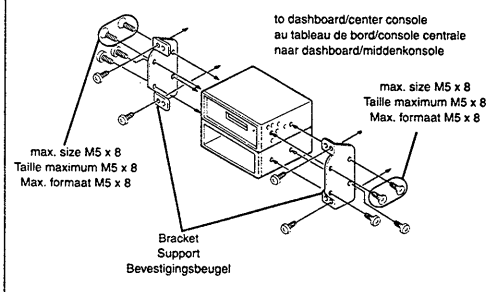
Steek een mes in de gleuven aan de achterzijde van de voorplaat en snijd de voorplaat van het apparaat weg. Verwijder tegelijkertijd de zijdplaat.



2 TOYOTA



NISSAN



Note
Use the existing parts supplied to your car.

Remarque
Utiliser les pièces fournies avec la voiture.

Opmerking
Gebruik het montage-materiaal dat bij uw auto wordt geleverd.

Connections Connexions Aansluitingen

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 **red** power input lead only after all other leads are connected. And be sure to connect it to the positive 12 V power terminal which is energized when the ignition key is set to the accessory position.
- **Run all ground wires to a common ground point.**

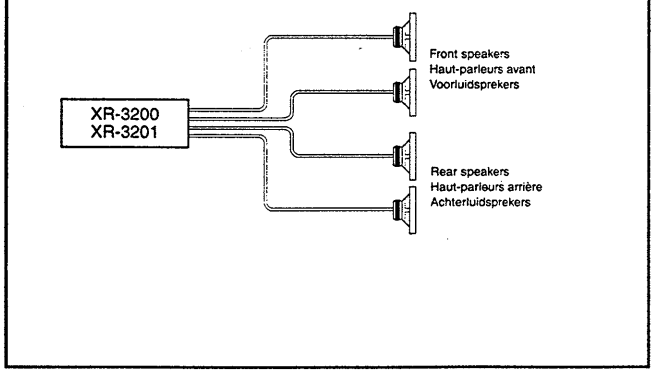
Précautions

- 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.
- Connecter le fil d'entrée d'alimentation **rouge** en dernier. Le raccorder à la borne d'alimentation positive de 12 V qui est énergétisée quand la clé de contact est sur la position accessoire.
- **Raccorder tous les fils de terre à un point de masse commun.**

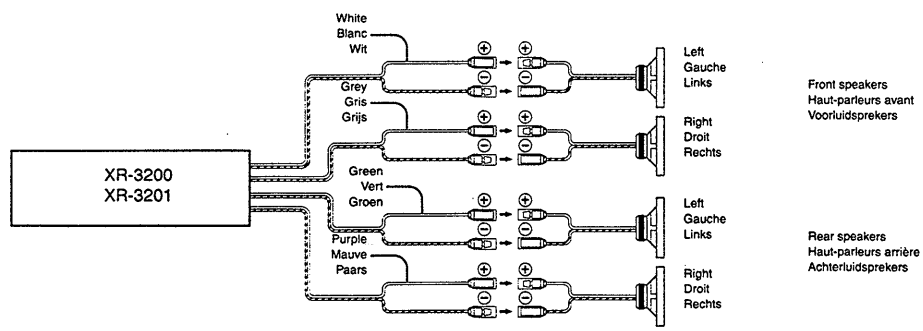
Opgelet

- Dit apparaat mag uitsluitend gebruikt worden op 12 V gelijkstroom.
- Alvorens te beginnen met het maken van aansluitingen, dient u de aardklem van de auto-accu los te maken. Dit om kortsluiting te voorkomen.
- Sluit de **rode** stroomdraad pas aan nadat alle andere aansluitingen zijn gemaakt. Zorg ervoor dat deze stroomdraad op de positieve 12 V accu-aansluiting wordt aangesloten. De draad komt dan onder spanning te staan, wanneer de kontaktsleutel in de accessoire-stand wordt gezet.
- **Sluit alle aarddraden op een gemeenschappelijk aardpunt aan.**

Connection Diagram/Schéma de connexions Aansluitschema



Speaker Connections Connexion des haut-parleurs Luidspreker-aansluiting



Notes on speaker connections

- 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 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. Therefore, be sure to connect passive speakers to these terminals.

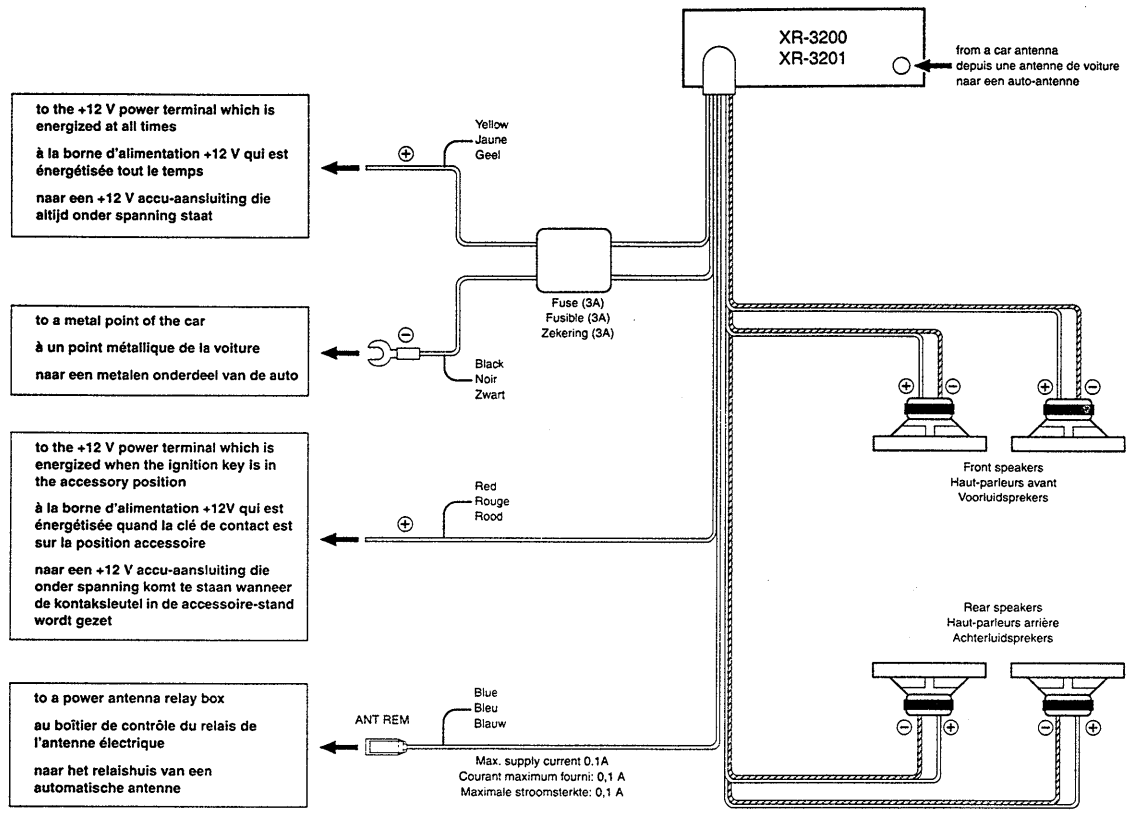
Remarques sur la connexion des haut-parleurs

- Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.
- Ne pas raccorder le bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.
- Ne pas tenter de raccorder les haut-parleurs en parallèle.
- Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.

Opmerkingen betreffende het aansluiten van de luidsprekers

- Gebruik luidsprekers met een impedantie van 4 tot 8 Ohm en let op dat die het vermogen van de versterker kunnen verwerken. Als dit wordt verzuimd, kunnen de luidsprekers ernstig beschadigd raken.
- Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aansluitingen van de rechter en linker luidspreker niet op elkaar aan.
- Probeer niet de luidsprekers parallel aan te sluiten.
- Sluit geen actieve luidsprekers (luidsprekers met ingebouwde versterkers) aan op de luidsprekeraansluitingen van het apparaat. Dit kan resulteren in beschadiging van de aktieve luidsprekers. Op deze aansluitingen mogen uitsluitend passieve luidsprekers worden aangesloten.

Connections of example — Connexions de l'exemple — Aansluitingen van voorbeeld



Notes on the control leads

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

Remarques sur les fils de contrôle

- Le fil de contrôle de l'antenne électrique (bleu) fourni du courant continu de +12 V quand le tuner est mis sous tension ou quand la fonction ATA (Activation automatique du tuner) est activée.
- Une antenne électrique sans boîtier de relais ne peut pas être utilisé avec cet appareil.

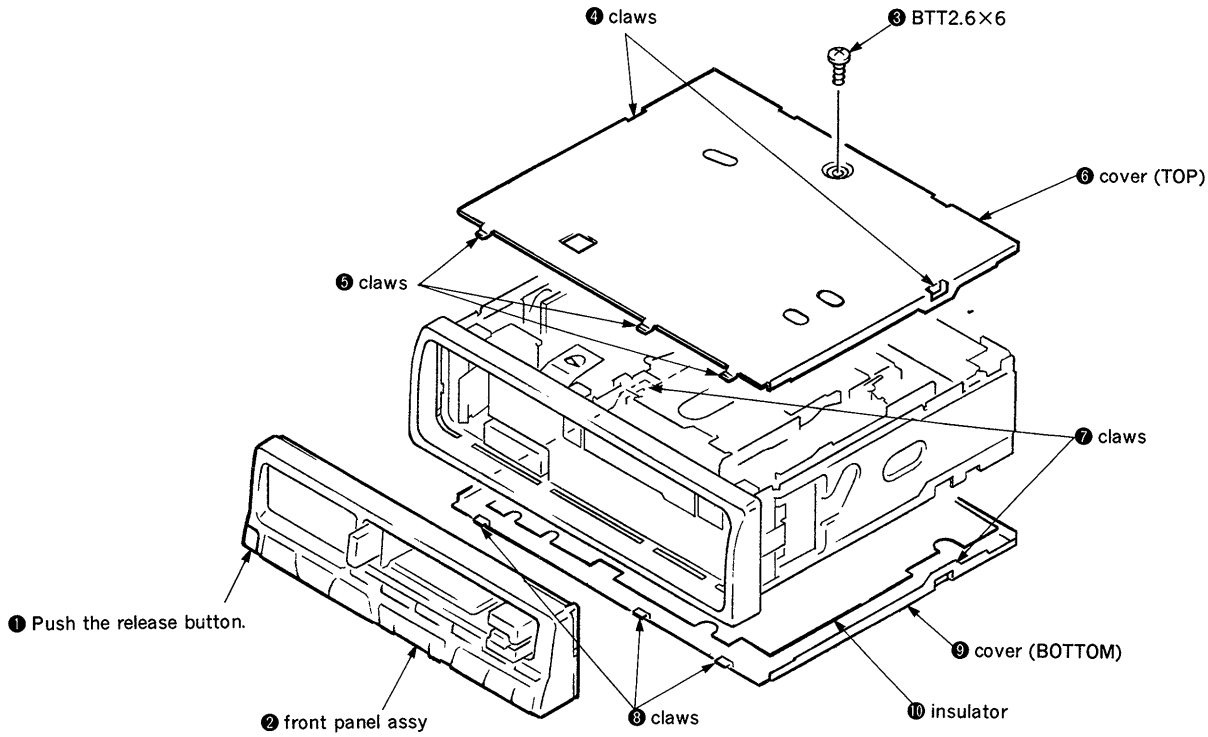
Opmerkingen betreffende de bedieningsaansluitingen

- Het aansluitsnoer voor de automatische antenne (blauw) levert +12 V gelijkstroom als de tuner wordt ingeschakeld of als de ATA automatische tuner-inschakelfunktie in werking treedt.
- Met dit apparaat is het niet mogelijk een automatische antenne zonder relaishuis te gebruiken.

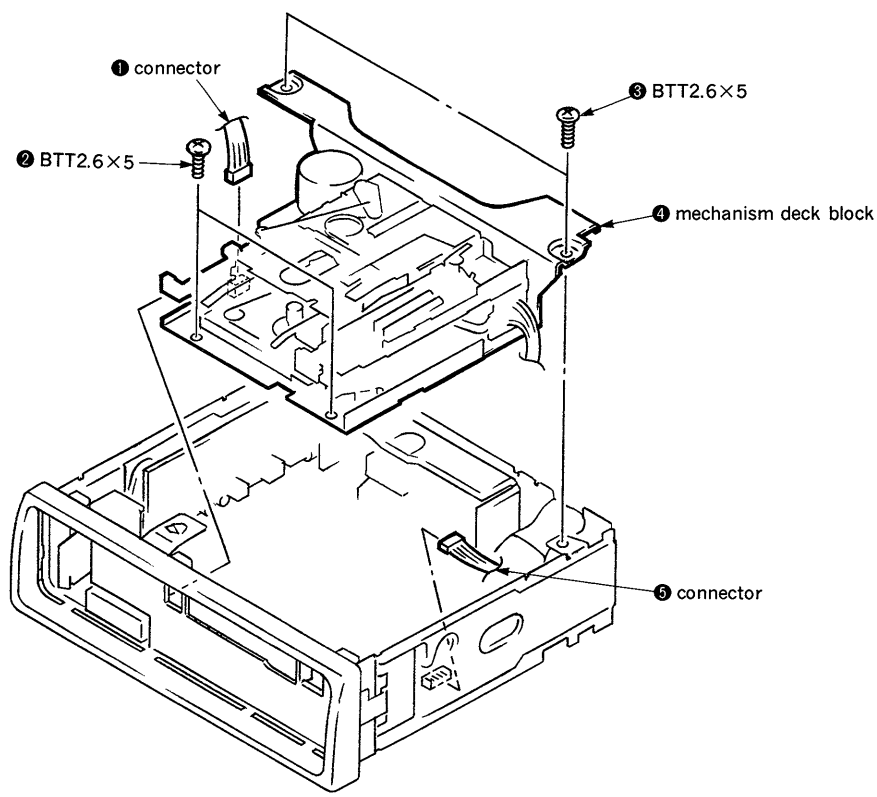
SECTION 2
DISASSEMBLY

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

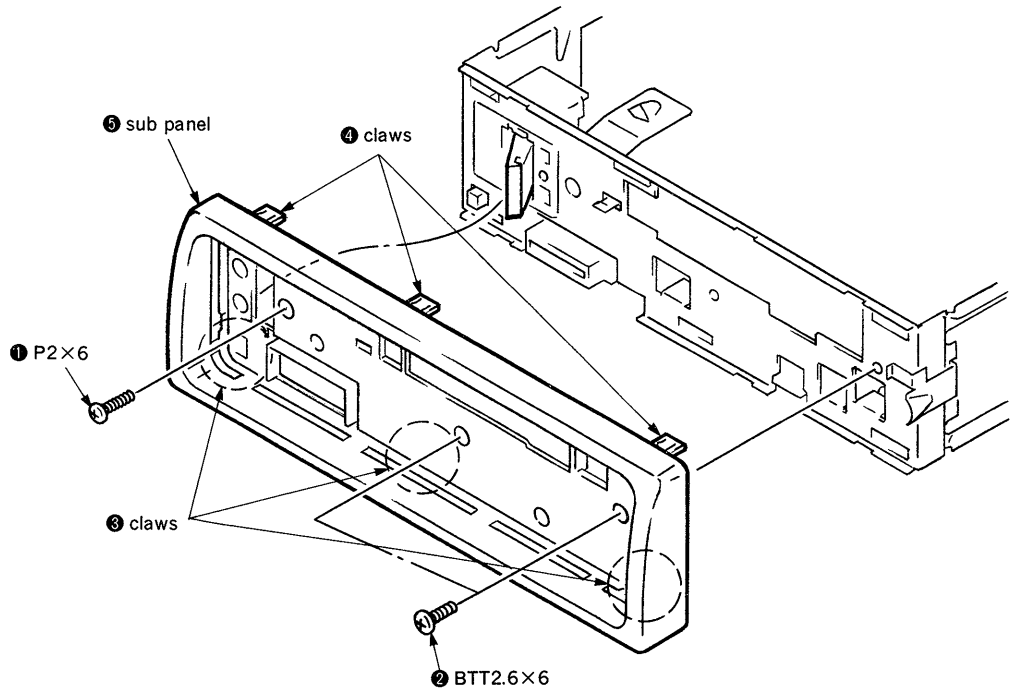
2-1. COVER



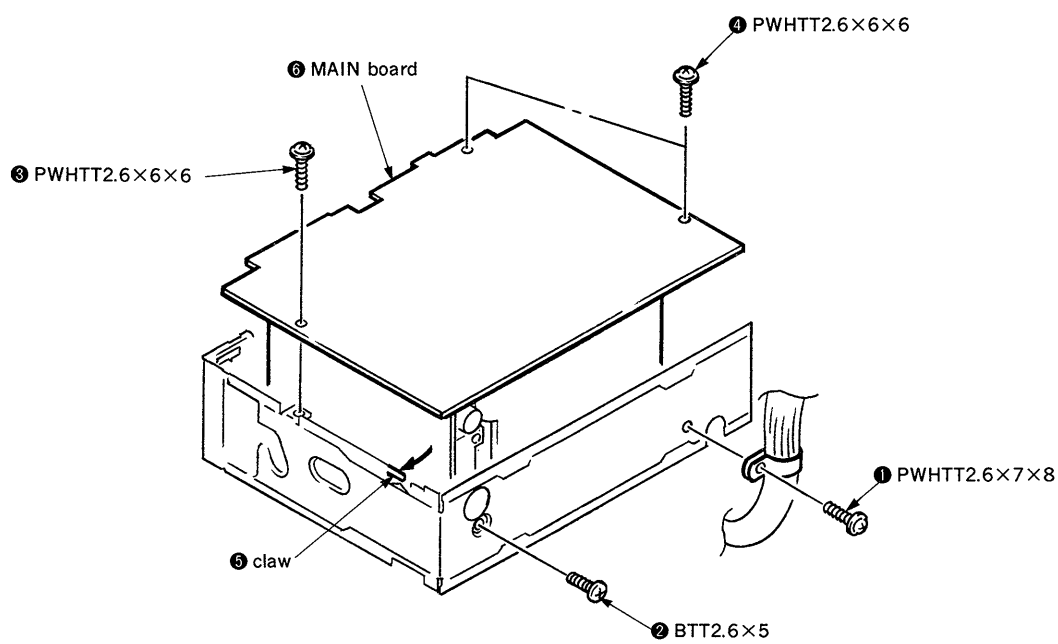
2-2. MECHANISM DECK BLOCK



2-3. SUB PANEL



2-4. MAIN BOARD



SECTION 3
DIAGRAMS

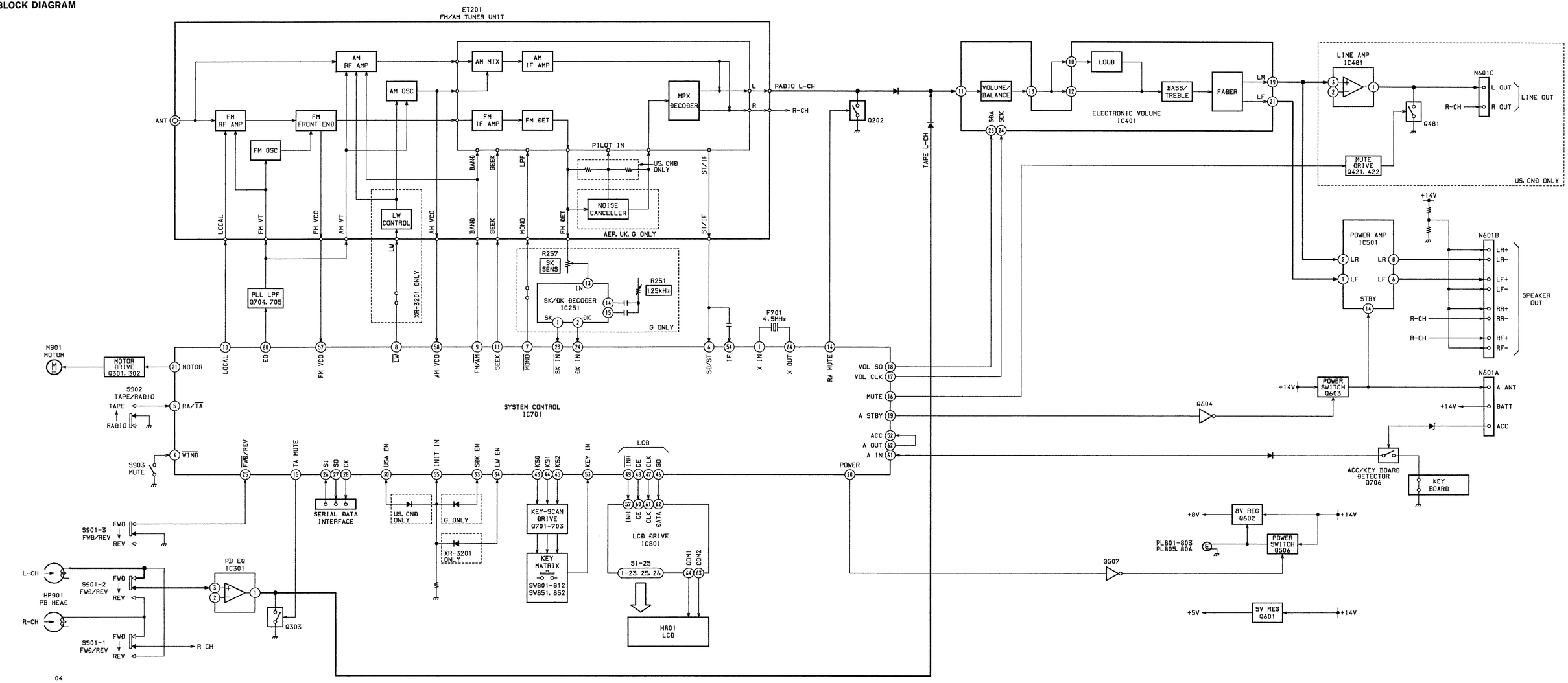
3-1. PIN FUNCTION

• IC701 LC7233N-8861

Pin No.	Pin Name	I/O	Pin Function
1	XIN	I	Crystal oscillator connecting pin (4.5MHz)
2	——	I	Test pin of device. (Connecting to GND.)
3	$\overline{\text{TEST}}$	I	Test (All display) input pin
4	$\overline{\text{WIND}}$	I	FORWARD/REWIND input pin
5	RA/$\overline{\text{TA}}$	I	TAPE mode input pin
6	SD/ST	I	STATION DETECTOR/STEREO input pin
7	$\overline{\text{MONO}}$	O	MONAURAL control pin
8	$\overline{\text{LW}}$	O	LW band control pin
9	FM/$\overline{\text{AM}}$	O	FM band control pin
10	LOCAL	O	LOCAL/DX control pin
11	SEEK	O	IF gate control pin
12	OIRT	O	Not used.
13	——	—	Not used.
14	RA MUTE	O	Radio MUTE pin
15	TA MUTE	O	Tape MUTE pin
16	MUTE	O	Total MUTE pin
17	VOL CK	O	Serial clock output pin of electrical volume.
18	VOL SO	O	Serial data output pin of electrical volume.
19	A. STBY	O	Power amplifier standby control pin
20	POWER	O	POWER control pin
21	MOTOR	O	MOTOR control pin
22	——	—	Not used.
23	$\overline{\text{SK IN}}$	I	SK signal input pin
24	DK IN	I	DK signal input pin
25	$\overline{\text{FWD}}$/REV	I	$\overline{\text{FORWARD}}$ input pin
26	SI	I	Data input pin for TEST.
27	SO	O	Data output pin for TEST.
28	CK	O	Clock output pin for TEST.
29	VOLG	—	Not used.
30	USAEN	O	USAEN initial diode scan output pin (US, Canadian model)
31	MONEN	O	Not used.
32	JPNEN	O	Not used.
33	SDKEN	O	SDKEN initial diode scan output pin (German model)
34	LWEN	O	LWEN initial diode scan output pin (XR-3201)
35	OIREN	O	Not used.
36	$\overline{\text{ATAEN}}$	O	Not used.
37	$\overline{\text{FADEN}}$	O	Not used.
38—42	——	—	Not used.
43—45	KS0—KS2	O	Key-scan output pin
46	LCD SO	O	Serial data output pin for LCD driver.
47	LCD CK	O	Serial clock output pin for LCD driver.
48	LCD CE	O	Serial chip enable output pin for LCD driver.
49	$\overline{\text{LINH}}$	O	Display light off output pin of LCD driver.

Pin No.	Pin Name	I/O	Pin Function
50, 51	——	O	Not used.
52	ACC	O	ACC input pin
53	KEY IN	O	Key input pin
54	IF	I	FM (10.7MHz)/AM (450kHz) IF count input pin
55	INIT IN	I	Diode initial input pin
56	VDD	I	Power supply pin of device (5V±10%)
57	FM VCO	I	Local oscillation frequency input pin of FM.
58	AM VCO	I	Local oscillation frequency input pin of AM.
59	GND	I	GND pin of device.
60	EO	O	PLL error output pin
61	AIN	I	(ACC inverter input)
62	AOUT	O	(ACC inverter output)
63	——	I	Test pin of device. (Connecting to GND.)
64	XOUT	O	Crystal oscillator connecting pin (4.5MHz)

3-2. BLOCK DIAGRAM



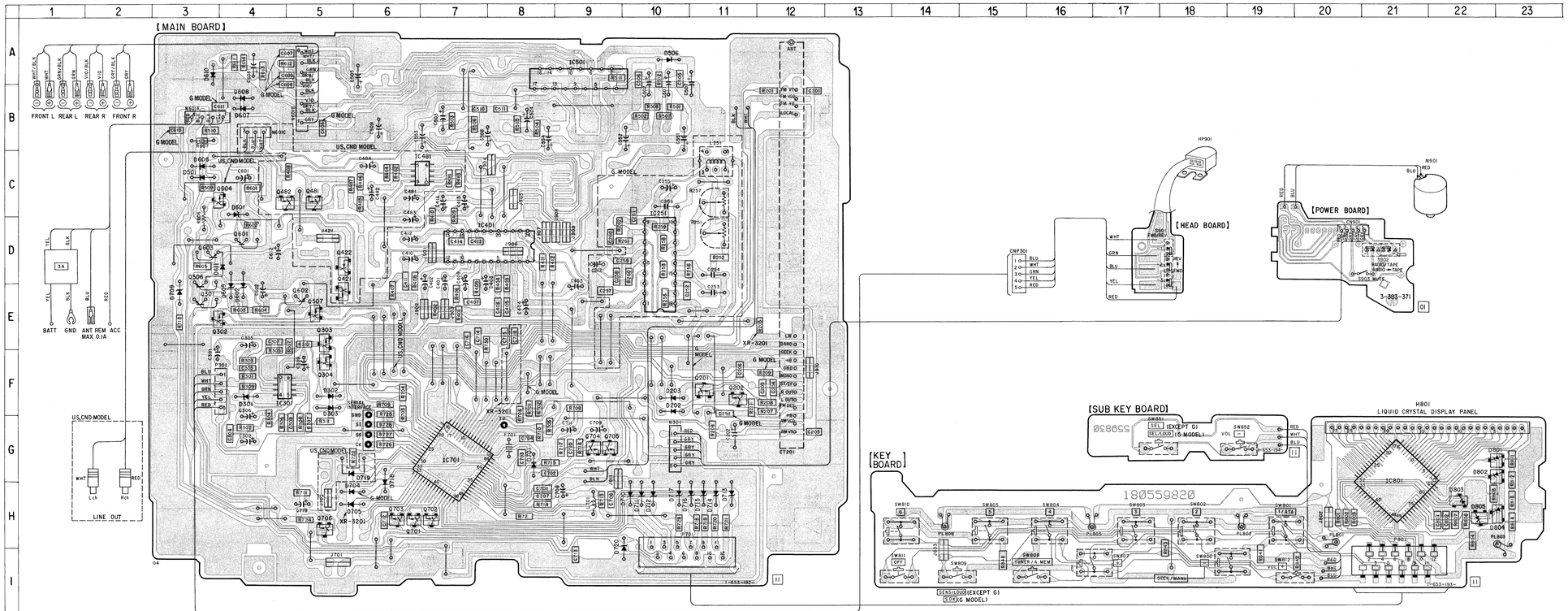
● Semiconductor Location

Ref. No.	Location
D201	F-10
D203	F-10
D301	F-4
D302	F-5
D303	F-5
D501	C-3
D506	A-10
D601	C-4
D602	E-4
D606	C-3
D607	B-4
D608	B-4
D609	E-4
D610	A-3
D611	D-3
D701	G-8
((D704))	H-5
(D705)	H-5
D709	E-3
D710	H-10
D711	H-10
D712	H-10
D713	H-11
D714	H-11
D715	H-11
D716	H-10
D717	H-10
D718	G-6
D719	G-5
D720	H-9
D801	G-22
D802	G-22
D803	H-22
D804	H-22
D805	H-22
((IC251))	D-10
IC301	F-4
IC401	D-7
IC481	C-6
IC501	A-9
IC701	G-7
IC801	G-21
Q201	F-11
Q202	F-11
Q301	E-3
Q302	E-3
Q303	E-5
Q304	F-5
Q421	E-5
Q422	D-5
Q481	C-5
Q482	C-4
Q506	D-3
Q507	E-5
Q601	D-4
Q602	E-5
Q603	D-3
Q604	C-3
Q701	H-6
Q702	H-7
Q703	H-6
Q704	G-9
Q705	G-9
Q706	H-5

Note :
- ● O— : parts extracted from the component side.
- ● —— : parts extracted from the conductor side.
- ● ▨ : Pattern on the side which is seen.
- ● Abbreviations
  CND : Canadian model
  G : German model

( ) : XR-3201 ONLY
(( )) : XR-3202 ONLY

3-3. PRINTED WIRING BOARDS ● Refer to page 28 for Semiconductor Lead Layouts.



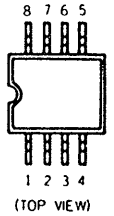
3-4. SCHEMATIC DIAGRAM • Refer to page 28 for IC Block Diagrams.

Note :

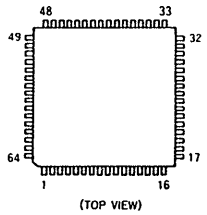
- All capacitors are in µF unless otherwise noted. pF : µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: FM
  ( ): PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⊳ : PB
- Abbreviations
  CND : Canadian model
  G : German model

3-5. SEMICONDUCTOR LEAD LAYOUTS

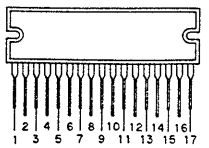
BA4558F
μPC4570G2



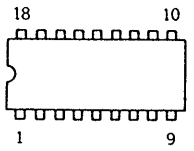
LC7233N-8861
LC7582E



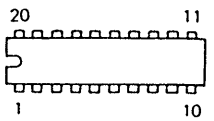
TDA1558Q



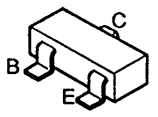
TDA1579



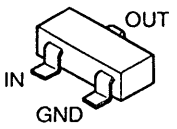
TDA7314S



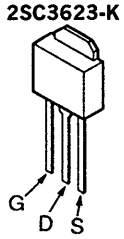
DTA114EK
DTC124EK
DTC143TK
2SC1623-L5L6
2SD601A-S



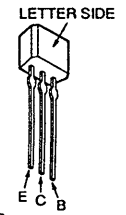
DTB123YS
2SB1326-TV2



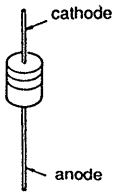
2SC3623-K



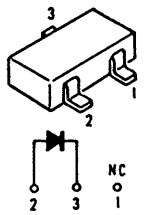
2SD1858-P



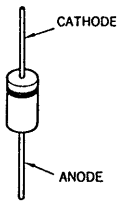
MTZJ-4.3A
MTZJ-6.2A
RD5.6ESB2
RD6.8ESB2
RD9.1ES-B3
1SR139-200
1SS133



02CZ5.6-TE85L
02CZ5.1Y-TE85L

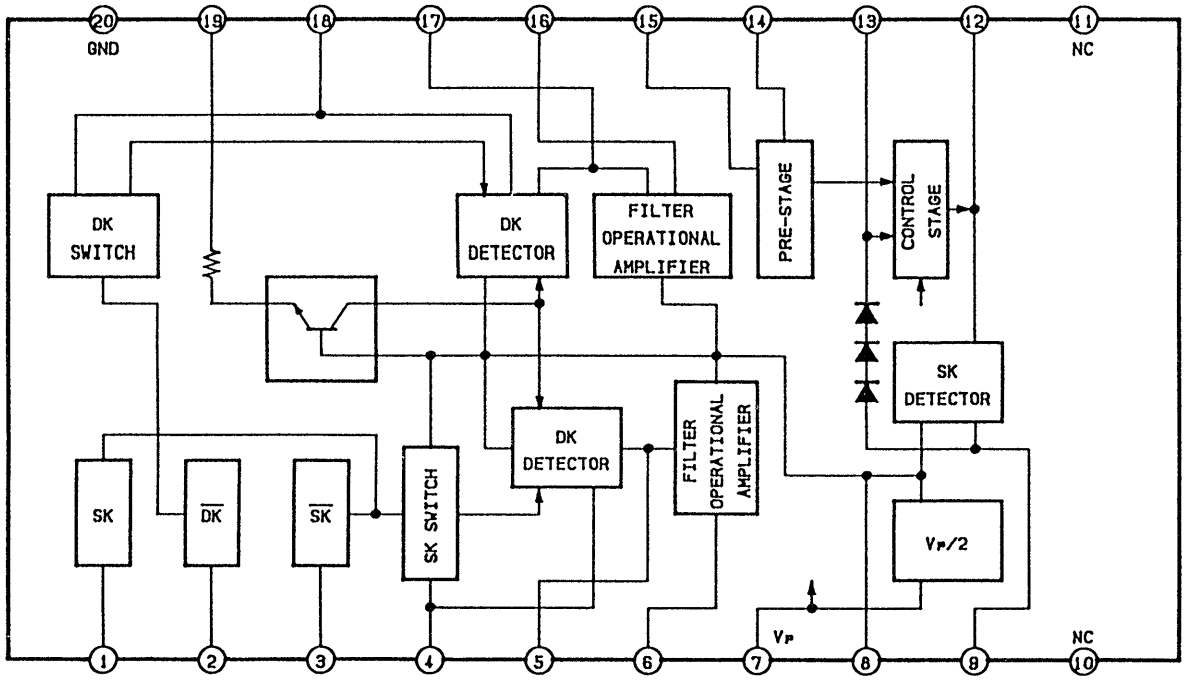


1SS145

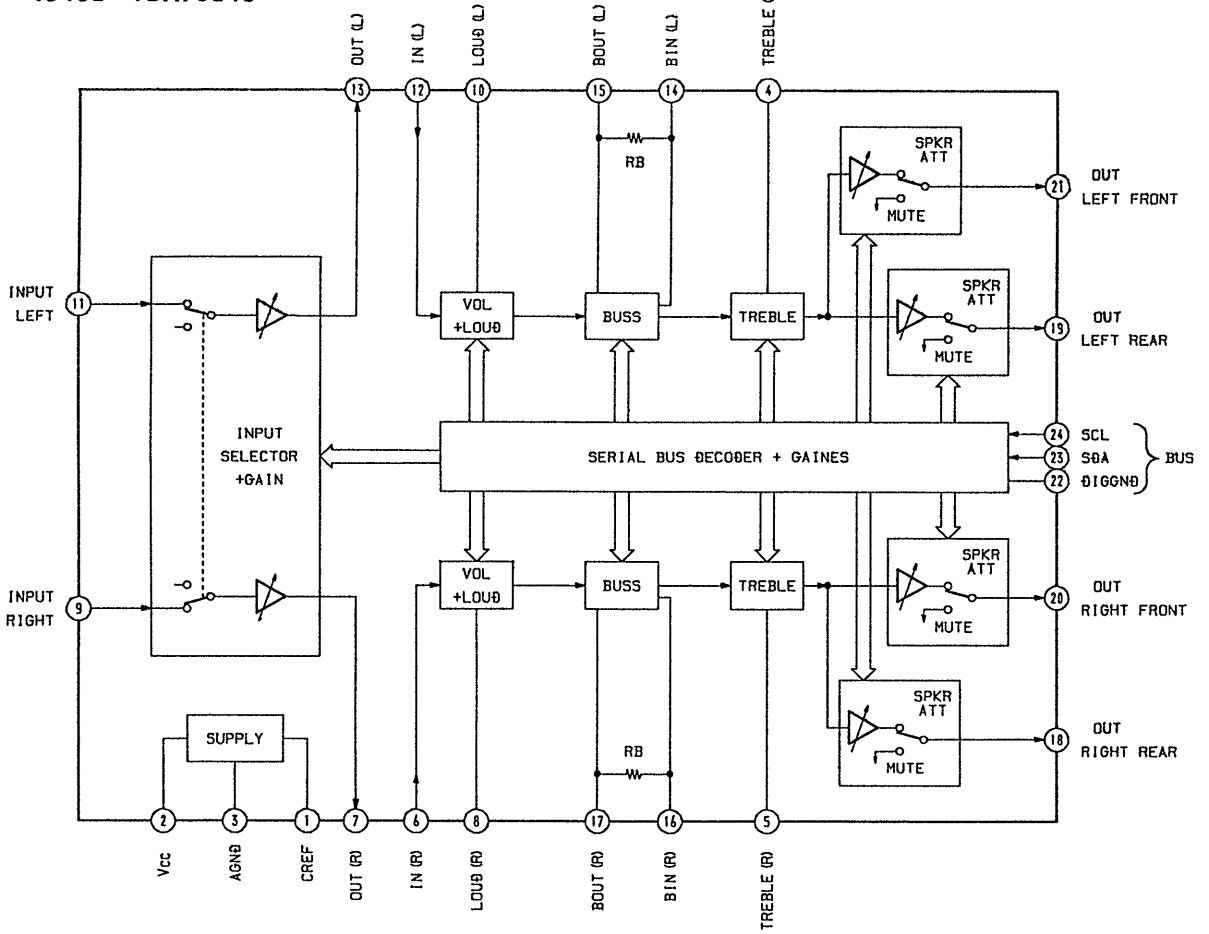


• IC Block Diagrams

IC251 TDA1579



IC401 TDA7314S

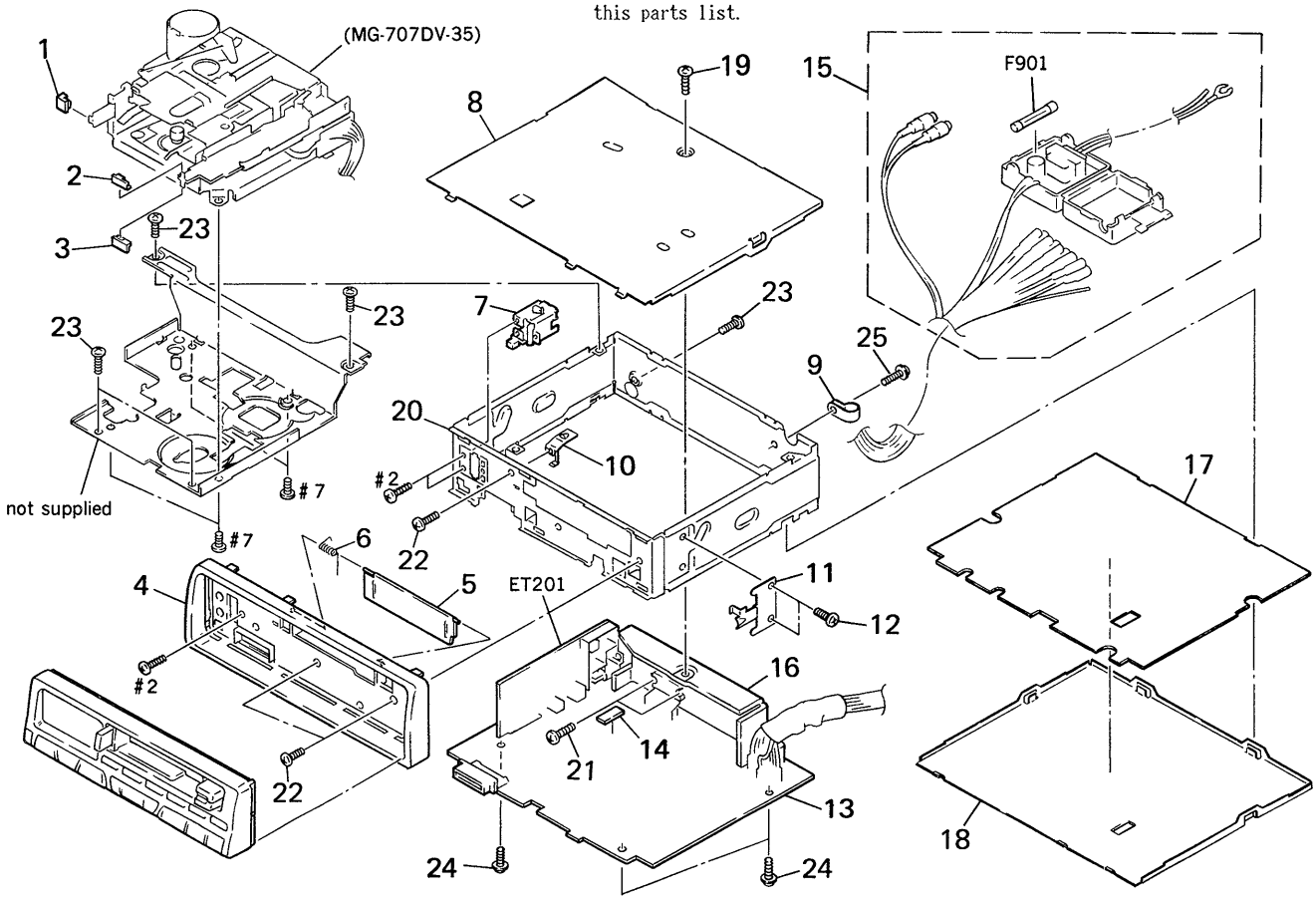


SECTION 4
EXPLODED VIEWS

NOTE:

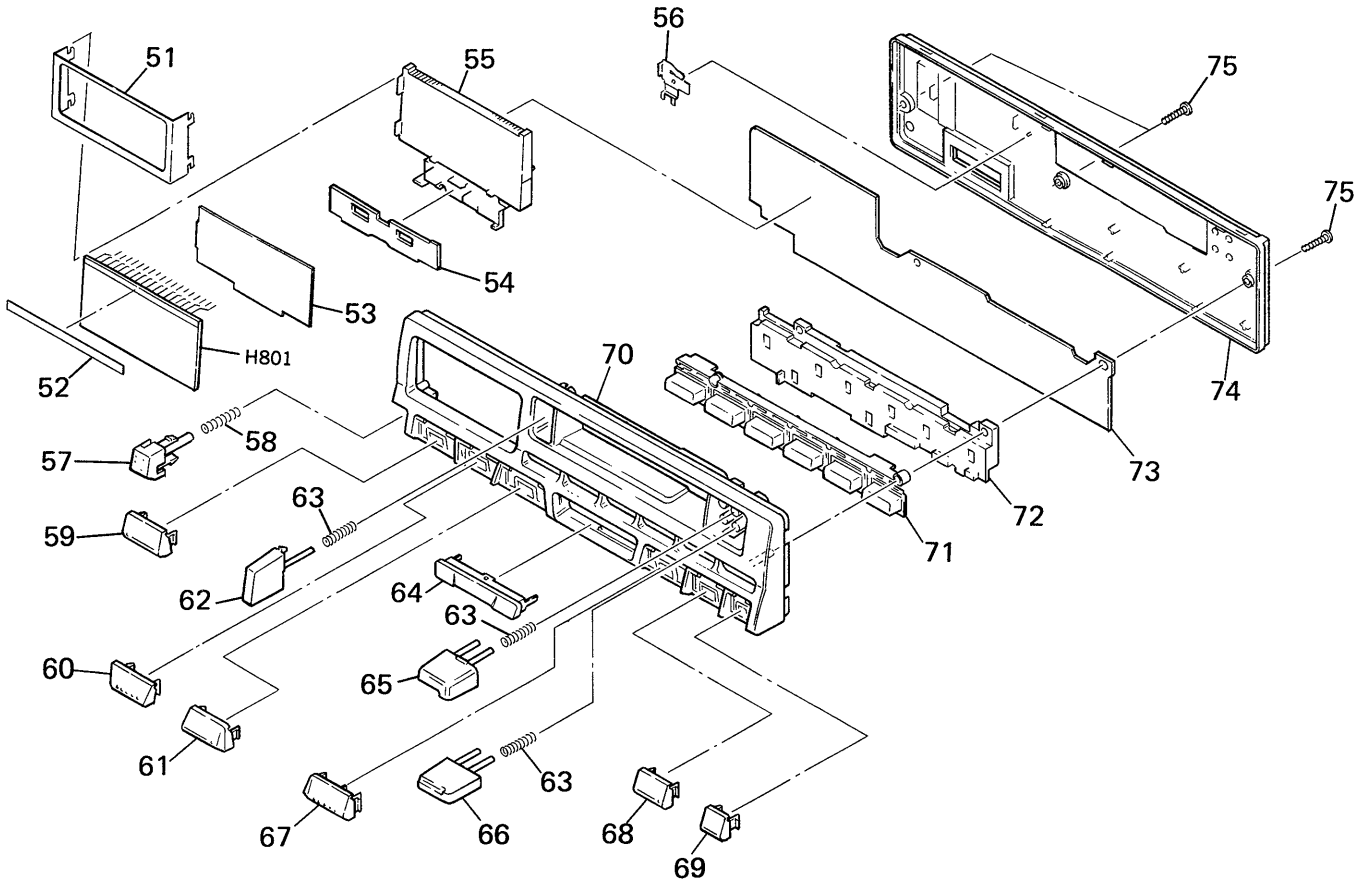
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference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

4-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-915-460-01	COVER (EJ)	
2	3-915-458-01	COVER (FF)	
3	3-915-459-01	COVER (REW)	
4	3-915-185-01	PANEL, SUB	
5	3-915-199-01	DOOR, CASSETTE (XR-3200)	
5	3-915-199-11	DOOR, CASSETTE (XR-3201)	
5	3-915-199-21	DOOR, CASSETTE (XR-3202)	
5	3-915-199-31	DOOR, CASSETTE (EXR-18)	
6	3-915-720-01	SPRING (C DOOR), TORSION	
7	X-3368-695-1	LOCK ASSY	
* 8	3-915-464-01	COVER (TOP)	
9	3-915-683-01	CLAMP	
10	3-916-055-01	PLATE, LOCK	
11	3-916-056-01	PLATE (R), LOCK	
12	3-916-979-01	SCREW	
* 13	A-3222-811-A	MAIN BOARD, COMPLETE (XR-3200:AEP)	
* 13	A-3222-794-A	MAIN BOARD, COMPLETE (XR-3202)	
* 13	A-3222-795-A	MAIN BOARD, COMPLETE (XR-3201)	
* 13	A-3222-797-A	MAIN BOARD, COMPLETE (XR-3200:US, CND)	
* 13	A-3222-799-A	MAIN BOARD, COMPLETE (EXR-18)	
* 14	3-915-466-01	CUSHION	
15	1-765-563-11	CORD (WITH CONNECTOR) (XR-3200:US, CND)	
15	1-765-563-21	CORD (WITH CONNECTOR) (EXCEPT XR-3200:US, CND)	
* 16	3-915-684-01	HEAT SINK (XR-3200)	
* 17	3-915-682-01	INSULATOR	
* 18	3-915-465-01	COVER (BOTTOM)	
19	3-916-973-01	SCREW (+BTT) (2.6X6)	
* 20	X-3368-669-1	CHASSIS ASSY	
21	3-916-974-01	SCREW (+BTT) (3X10)	
22	3-916-975-01	SCREW (+BTT) (2.6X6)	
23	3-916-976-01	SCREW (+BTT) (2.6X5)	
24	3-916-977-01	SCREW (+BTT) (3,6X6X6)	
25	3-916-978-01	SCREW (+BTT) (2.6X7X8)	
ET201	A-3222-812-A	FM/AM TUNER UNIT (RF19-2N) (XR-3200:AEP/3202)	
ET201	A-3222-796-A	FM/AM TUNER UNIT (RF22-3N) (XR-3201)	
ET201	A-3222-798-A	FM/AM TUNER UNIT (RF19-2) (US, CND)	
F901	1-532-419-00	FUSE (3.15A)	

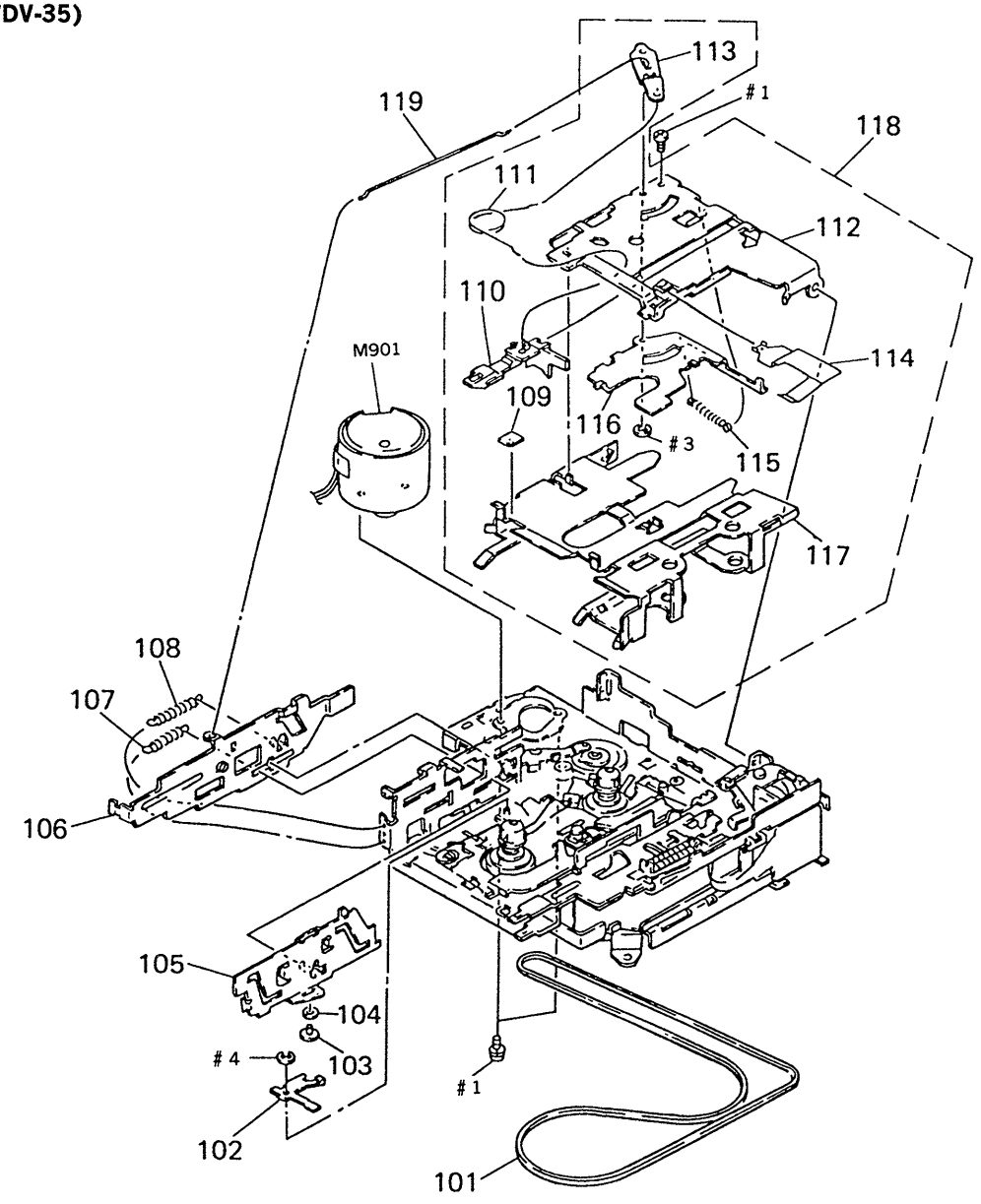
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
* 51	3-915-685-01	PLATE (LCD), GROUND	
* 52	3-915-687-01	INSULATOR (LCD)	
* 53	3-915-686-01	SHEET, COLOR	
* 54	1-653-194-11	SUB KEY BOARD	
* 55	3-915-457-01	PLATE (LCD), LIGHT GUIDE	
56	3-915-681-01	PLATE (F-S), GROUND	
57	3-915-186-01	BUTTON (RELEASE)	
58	3-915-718-01	SPRING (RELEASE)	
59	3-915-187-01	BUTTON (-)	
60	3-915-188-01	BUTTON (SEL)	
61	3-915-189-01	BUTTON (+)	
62	X-3368-694-1	BUTTON (EJECT) ASSY	
63	3-915-719-01	SPRING (EJ.FF.REW)	
64	3-915-190-01	BUTTON (SEEK)	
65	3-915-196-01	BUTTON (FF)	
66	3-915-197-01	BUTTON (REW)	

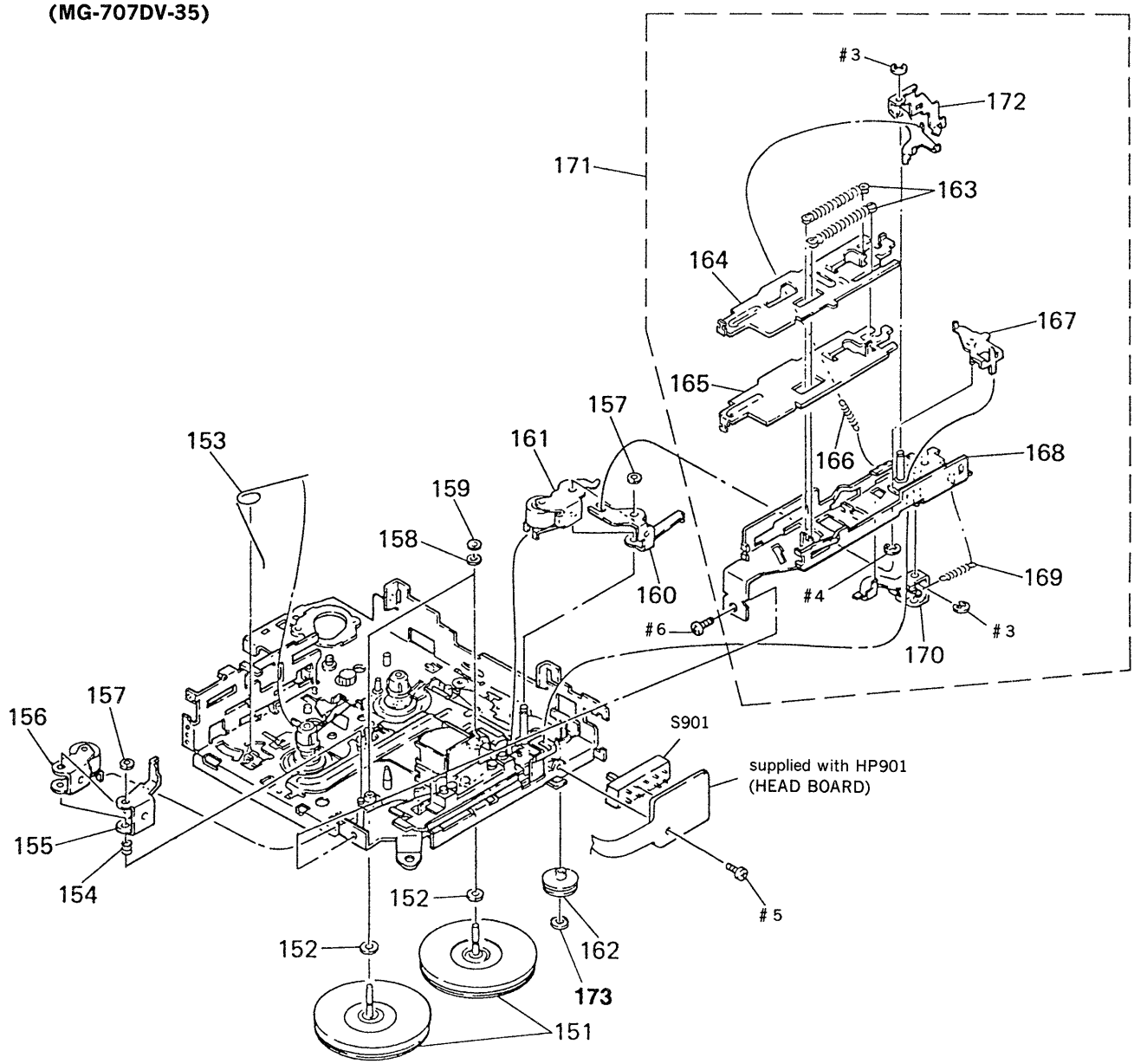
Ref. No.	Part No.	Description	Remark
67	3-915-191-01	BUTTON (TUNER)	
68	3-915-192-01	BUTTON (SENS) (EXCEPT XR-3202)	
68	3-915-193-01	BUTTON (SDK) (XR-3202)	
69	3-915-194-01	BUTTON (OFF)	
70	3-915-184-01	PANEL, FRONT (XR-3200)	
70	3-915-184-11	PANEL, FRONT (XR-3201)	
70	3-915-184-21	PANEL, FRONT (XR-3202)	
70	3-915-184-31	PANEL, FRONT (EXR-18)	
71	3-915-198-01	BUTTON (1-6)	
72	3-915-456-01	PLATE (FP), LIGHT GUIDE	
* 73	A-3298-208-A	KEY BOARD, COMPLETE (GREEN)	
* 73	A-3298-213-A	KEY BOARD, COMPLETE (AMBER)	
74	3-915-454-01	PANEL, FRONT BACK	
75	3-916-981-11	SCREW (+B) (2X8)	
H801	1-810-568-11	DISPLAY PANLE, LIQUID CRYSTAL	

4-3. MECHANISM DECK SECTION 1 (MG-707DV-35)



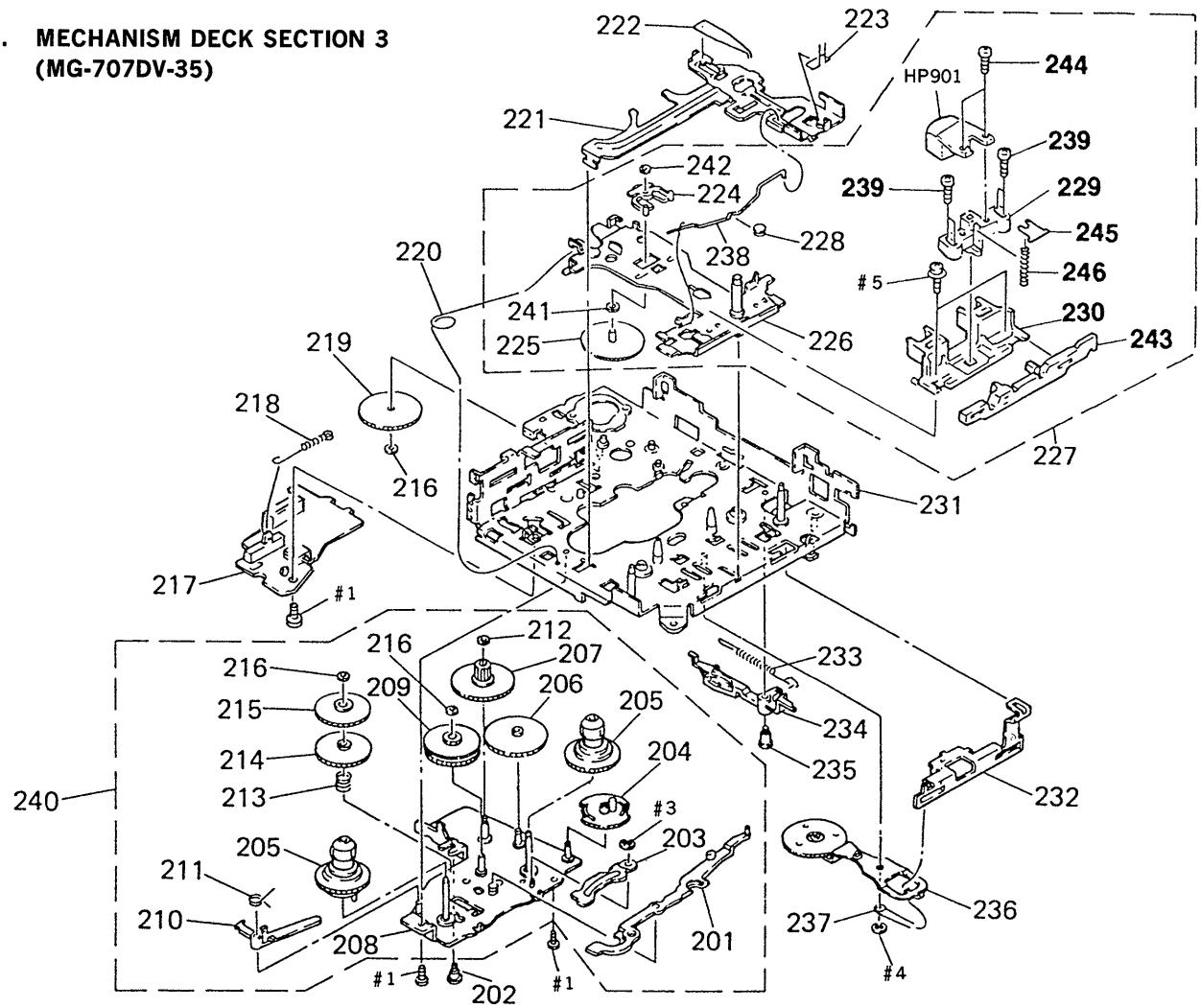
Ref. No.	Part No.	Description	Remark
101	3-367-284-01	BELT, MAIN	
102	3-367-313-01	ARM, H.P PUSH	
103	3-367-264-01	ROLLER (A), H.P	
104	3-367-265-01	ROLLER (B), H.P	
* 105	3-367-311-01	PLATE (M), PUSH, C.H	
* 106	3-915-552-01	LEVER (M), PUSH	
107	3-367-267-01	SPRING, C.H	
108	3-367-268-01	SPRING, PUSH LEVER	
109	3-367-254-01	RUBBER, CUSHION	
110	3-367-258-01	SLIDER (C), PACK	
111	3-367-255-01	SPRING (C), REVERSE	
* 112	3-367-251-01	LIFTER, CASE	
* 113	3-367-252-01	RIVETING ASSY, P.E PLATE	
* 114	3-367-259-01	SPRING, PACK RETAINER	
115	3-367-253-01	SPRING, C.D	
* 116	3-367-257-01	PLATE (B), C.D	
* 117	3-367-256-01	CASE (M), CASSETTE	
118	X-3362-789-2	CASSETTE CASE ASSY	
119	3-367-260-01	SPRING, P.E	
M901	3-367-276-01	MOTOR ASSY	

4-4. MECHANISM DECK SECTION 2 (MG-707DV-35)



Ref. No.	Part No.	Description	Remark
151	3-367-283-01	RIVETING ASSY, F.L CAPSTAN	
152	3-701-437-01	WASHER	
153	3-367-314-01	SPRING (M), HEAD PANEL	
154	3-367-285-01	SPRING, P.P	
* 155	3-367-296-01	ARM, H.P RETURN	
156	3-367-232-01	ARM (R) ASSY, PINCH ROLLER	
157	3-676-387-00	POLY-SLIDER (DIA.1.6)	
158	3-315-495-41	WASHER	
159	3-592-680-00	WASHER (C), POLYETHYLENE	
* 160	3-367-292-01	PLATE, FUNCTION, SEESAW	
161	3-367-231-01	ARM (F) ASSY, PINCH ROLLER	
162	3-367-287-01	PULLEY, MIDWAY	
163	3-367-298-01	SPRING, F.R LEVER	
* 164	3-915-553-01	LEVER (M.H), FF	
* 165	3-915-554-01	LEVER (M.H), REW	
166	3-367-304-01	SPRING (M), LOCK PLATE	
* 167	3-367-234-01	RIVETING ASSY, SEESAW PLATE (M)	
* 168	3-367-233-01	RIVETING ASSY, F.R BRACKET (M)	
169	3-367-302-01	SPRING, P.C	
* 170	3-367-301-01	PLATE, P.C	
171	X-3365-724-1	R.F LEVER ASSY	
* 172	3-367-303-01	LOCK PLATE (M)	
173	3-321-393-11	WASHER, STOPPER	
S901	1-572-712-11	SWITCH, SLIDE (FWD/REV)	

4-5. MECHANISM DECK SECTION 3 (MG-707DV-35)



Ref. No.	Part No.	Description	Remark
201	3-367-241-01	PLATE (B), E.D	
202	3-367-295-01	SCREW (P), COLOR	
* 203	3-367-245-01	PLATE, LIFTUP	
204	3-367-240-01	GEAR (M), REVERSE	
205	3-383-370-01	REEL ASSY, T	
206	3-367-239-01	GEAR, E.D	
207	3-367-238-01	GEAR, P.D	
* 208	3-367-242-01	RIVETING ASSY, M.G PLATE	
209	3-367-244-01	CLUTCH ASSY, P	
210	3-367-246-01	ARM, REVERSE PREVENTION	
211	3-367-247-01	SPRING	
212	3-676-387-00	POLY-SLIDER (DIA.1.6)	
213	3-367-243-01	SPRING, T.N	
214	3-367-237-01	GEAR (R), F	
215	3-367-236-01	GEAR (R), P	
216	3-318-236-01	WASHER, POLY, SLIT	
217	3-383-371-01	SWITCH ASSY, POWER (S902, S903)	
218	3-367-293-01	SPRING, POWER SWITCH	
219	3-370-853-02	GEAR (V), MAIN	
220	3-367-314-01	SPRING (M), HEAD PANEL	
* 221	3-367-272-01	PLATE, MAIN	
222	3-367-273-01	SPRING, M.S	
223	3-367-274-01	SPRING, H.S	
224	3-367-226-01	METAL, P. GEAR	

Ref. No.	Part No.	Description	Remark
225	3-367-227-01	GEAR, P	
* 226	3-383-367-01	RIVETING ASSY, HEAD PANEL	
227	X-3365-722-1	HEAD PANEL ASSY	
228	3-367-224-01	ROLLER, SP	
229	3-383-374-01	HOLDER (B), HEAD	
* 230	3-383-373-01	GUIDE (U), TAPE	
231	3-375-374-01	RIVETING ASSY, CHASSIS	
* 232	3-367-294-01	PLATE (M), F.R SLIDE	
233	3-367-297-01	SPRING (C), T.A	
234	3-367-289-01	ARM (C), TRIGGER	
235	3-367-290-01	SCREW (T), COLOR	
236	X-3362-791-2	F.R WORKING ASSY	
237	3-367-282-01	SPRING (M), F.R	
238	3-367-225-01	SPRING, P.R	
239	3-383-375-01	SCREW, ADJUSTMENT	
240	X-3365-723-1	M.G PLATE ASSY	
241	3-701-447-11	WASHER, 10	
242	3-579-788-01	WASHER, STOPPER	
* 243	3-383-376-01	PLATE (B), SHIFT	
244	3-383-372-01	SCREW, FIX	
245	3-383-369-01	WASHER, FASTEN	
246	3-383-368-01	SPRING, H.G	
HP901	1-543-976-11	HEAD, MAGNETIC (PLAYBACK)	

SECTION 5
ELECTRICAL PARTS LIST

KEY

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..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH
- Abbreviation
  CND : Canadian model

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

Ref. No.	Part No.	Description			Remark
*	A-3298-208-A	KEY BOARD, COMPLETE (GREEN)			
*	A-3298-213-A	KEY BOARD, COMPLETE (AMBER)			
		**********			
*	3-915-457-01	PLATE (LCD), LIGHT GUIDE			
*	3-915-685-01	PLATE (LCD), GROUND			
*	3-915-686-01	SHEET, COLOR			
*	3-915-687-01	INSULATOR (LCD)			
		< CAPACITOR >			
C801	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C802	1-163-137-00	CERAMIC CHIP	680PF	5% 50V	
		< DIODE >			
D801	8-719-025-31	DIODE	02CZ5.6-TE85L		
D802	8-719-025-31	DIODE	02CZ5.6-TE85L		
D803	8-719-025-31	DIODE	02CZ5.6-TE85L		
D804	8-719-025-31	DIODE	02CZ5.6-TE85L		
D805	8-719-043-82	DIODE	02CZ5.1Y-TE85L		
		< LIQUID CRYSTAL DISPLAY >			
H801	1-810-568-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< IC >			
IC801	8-759-171-25	IC	LC7582E		
		< JUMPER RESISTOR >			
J802	1-216-296-00	METAL CHIP	0	5% 1/8W	
J803	1-216-296-00	METAL CHIP	0	5% 1/8W	
		< CONNECTOR >			
P801	1-764-423-11	PIN, CONNECTOR 12P			
		< PILOT LAMP >			
PL801-803	1-517-330-11	LAMP, PILOT (GREEN)			
PL801-803	1-517-331-11	LAMP, PILOT (AMBER)			
PL805	1-517-330-11	LAMP, PILOT (GREEN)			
PL805	1-517-331-11	LAMP, PILOT (AMBER)			
PL806	1-517-330-11	LAMP, PILOT (GREEN)			
PL806	1-517-331-11	LAMP, PILOT (AMBER)			
		< RESISTOR >			
R801-803	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R804	1-216-081-00	METAL CHIP	22K	5% 1/10W	
R805	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R806	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R807	1-216-091-00	METAL CHIP	56K	5% 1/10W	
R811-814	1-216-011-00	METAL CHIP	27	5% 1/10W	
R841	1-216-062-00	METAL CHIP	3.6K	5% 1/10W	
R842	1-216-066-00	METAL CHIP	5.1K	5% 1/10W	
R843	1-216-070-00	METAL CHIP	7.5K	5% 1/10W	
R844	1-216-076-00	METAL CHIP	13K	5% 1/10W	
		< SWITCH >			
SW801	1-554-980-31	SWITCH, KEY BOARD (1/ATA)			
SW802	1-554-980-31	SWITCH, KEY BOARD (2)			
SW803	1-554-980-31	SWITCH, KEY BOARD (3)			
SW804	1-554-980-31	SWITCH, KEY BOARD (4)			
SW805	1-554-980-31	SWITCH, KEY BOARD (5)			
SW806	1-554-980-31	SWITCH, KEY BOARD (SEEK/MANU -)			
SW807	1-554-980-31	SWITCH, KEY BOARD (SEEK/MANU +)			
SW808	1-554-813-41	SWITCH, KEY BOARD (TUNER/A.MEM)			
SW809	1-554-813-41	SWITCH, KEY BOARD (SEEK/LOUD) (EXCEPT XR-3202)			
SW809	1-554-813-41	SWITCH, KEY BOARD (SDK) (XR-3202)			
SW810	1-554-980-31	SWITCH, KEY BOARD (6)			
SW811	1-554-813-41	SWITCH, KEY BOARD (OFF)			
SW812	1-554-813-41	SWITCH, KEY BOARD (VOL +)			
**********					

MAIN

Ref. No.	Part No.	Description			Remark
*	A-3222-811-A	MAIN BOARD, COMPLETE (XR-3200:AEP)			
*	A-3222-794-A	MAIN BOARD, COMPLETE (XR-3202)			
*	A-3222-795-A	MAIN BOARD, COMPLETE (XR-3201)			
*	A-3222-797-A	MAIN BOARD, COMPLETE (XR-3200:US, CND)			
*	A-3222-799-A	MAIN BOARD, COMPLETE (EXR-18)			
		**********			
*	3-915-466-01	CUSHION			
*	3-915-684-01	HEAT SINK			
		< CAPACITOR >			
C201	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C202	1-124-584-00	ELECT	100uF	20%	10V
C203	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C204	1-163-037-11	CERAMIC CHIP (EXCEPT US, CND)	0.022uF	10%	25V
C204	1-163-989-11	CERAMIC CHIP (US, CND)	0.033uF	10%	25V
C205	1-163-037-11	CERAMIC CHIP (EXCEPT US, CND)	0.022uF	10%	25V
C205	1-163-989-11	CERAMIC CHIP (US, CND)	0.033uF	10%	25V
C206	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C251	1-163-239-11	CERAMIC CHIP (XR-3202)	33PF	5%	50V
C252	1-164-004-11	CERAMIC CHIP (XR-3202)	0.1uF	10%	25V
C253	1-136-163-00	FILM (XR-3202)	0.068uF	5%	50V
C254	1-136-163-00	FILM (XR-3202)	0.068uF	5%	50V
C255	1-126-163-11	ELECT (XR-3202)	4.7uF	20%	50V
C256	1-104-683-11	MYLAR (XR-3202)	0.0047uF	5%	50V
C257	1-164-004-11	CERAMIC CHIP (XR-3202)	0.1uF	10%	25V
C258	1-163-986-00	CERAMIC CHIP (XR-3202)	0.027uF	10%	25V
C259	1-163-809-11	CERAMIC CHIP (XR-3202)	0.047uF	10%	25V
C260	1-164-004-11	CERAMIC CHIP (XR-3202)	0.1uF	10%	25V
C261	1-164-004-11	CERAMIC CHIP (XR-3202)	0.1uF	10%	25V
C262	1-126-157-11	ELECT (XR-3202)	10uF	20%	16V
C301	1-126-163-11	ELECT	4.7uF	20%	50V
C302	1-126-163-11	ELECT	4.7uF	20%	50V
C303	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C304	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C305	1-124-589-11	ELECT	47uF	20%	16V
C306	1-124-589-11	ELECT	47uF	20%	16V
C307	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C308	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C309	1-126-157-11	ELECT	10uF	20%	16V
C401	1-124-257-00	ELECT	2.2uF	20%	50V
C402	1-124-257-00	ELECT	2.2uF	20%	50V
C403	1-126-157-11	ELECT	10uF	20%	16V
C404	1-124-234-00	ELECT	22uF	20%	16V
C405	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C406	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C407	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C408	1-124-257-00	ELECT	2.2uF	20%	50V
C409	1-124-464-11	ELECT	0.22uF	20%	50V
C410	1-124-464-11	ELECT	0.22uF	20%	50V
C411	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C412	1-124-257-00	ELECT	2.2uF	20%	50V
C413	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C414	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C415	1-126-163-11	ELECT	4.7uF	20%	50V
C416	1-126-163-11	ELECT	4.7uF	20%	50V
C481	1-126-157-11	ELECT (US, CND)	10uF	20%	16V
C482	1-126-157-11	ELECT (US, CND)	10uF	20%	16V
C483	1-126-163-11	ELECT (US, CND)	4.7uF	20%	50V
C484	1-126-163-11	ELECT (US, CND)	4.7uF	20%	50V
C501-504	1-124-257-00	ELECT	2.2uF	20%	50V
C505	1-163-133-11	CERAMIC CHIP	470PF	5%	50V
C506	1-163-133-11	CERAMIC CHIP	470PF	5%	50V
C507	1-124-584-00	ELECT	100uF	20%	10V
C508	1-124-589-11	ELECT	47uF	20%	16V
C509	1-126-952-11	ELECT	1000uF	20%	16V
C510	1-163-133-11	CERAMIC CHIP	470PF	5%	50V
C511	1-163-133-11	CERAMIC CHIP	470PF	5%	50V
C551-554	1-124-257-00	ELECT	2.2uF	20%	50V
C601	1-126-949-11	ELECT	220uF	20%	10V
C602	1-124-589-11	ELECT	47uF	20%	16V
C604	1-126-952-11	ELECT	1000uF	20%	16V
C605	1-126-952-11	ELECT	1000uF	20%	16V
C606-609	1-163-251-11	CERAMIC CHIP (XR-3202)	100PF	5%	50V
C610	1-164-162-11	CERAMIC CHIP (XR-3202)	100PF	5%	100V
C611	1-164-162-11	CERAMIC CHIP (XR-3202)	100PF	5%	100V

Ref. No.	Part No.	Description			Remark
C612	1-104-665-11	ELECT	100uF	20%	16V
C701	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C702	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C703	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C704	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C706	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C707	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C708	1-126-949-11	ELECT	220uF	20%	10V
C709	1-126-163-11	ELECT	4.7uF	20%	50V
C710	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C711	1-126-157-11	ELECT	10uF	20%	16V
C712	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C713	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C714-716					
	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C718	1-164-232-11	CERAMIC CHIP (XR-3201)	0.01uF		50V
C719	1-126-157-11	ELECT	10uF	20%	16V
		< DIODE >			
D202	8-719-901-33	DIODE	1SS133		
D203	8-719-901-33	DIODE	1SS133		
D301	8-719-982-10	DIODE	MTZJ-4.3A		
D302	8-719-901-33	DIODE	1SS133		
D303	8-719-901-33	DIODE	1SS133		
D501	8-719-901-33	DIODE	1SS133		
D506	8-719-901-33	DIODE	1SS133		
D601	8-719-109-89	DIODE	RD5.6ESB2		
D602	8-719-110-14	DIODE	RD9.1ESB3		
D606	8-719-032-29	DIODE	1SS145		
D607	8-719-984-80	DIODE	1SR139-200		
D608	8-719-984-80	DIODE	1SR139-200		
D609	8-719-032-29	DIODE	1SS145		
D610	8-719-901-33	DIODE	1SS133		
D611	8-719-032-29	DIODE	1SS145		
D701	8-719-901-33	DIODE	1SS133		
D704	8-719-901-33	DIODE	1SS133 (XR-3202)		
D705	8-719-901-33	DIODE	1SS133 (XR-3201)		
D709	8-719-109-97	DIODE	RD6.8ESB2		
D710	8-719-921-50	DIODE	MTZJ-6.2A		
D711	8-719-921-50	DIODE	MTZJ-6.2A		
D712	8-719-921-50	DIODE	MTZJ-6.2A		
D713	8-719-921-50	DIODE	MTZJ-6.2A		
D714	8-719-921-50	DIODE	MTZJ-6.2A		
D715	8-719-921-50	DIODE	MTZJ-6.2A		
D716	8-719-921-50	DIODE	MTZJ-6.2A		
D717	8-719-921-50	DIODE	MTZJ-6.2A		
D718	8-719-901-33	DIODE	1SS133		
D719	8-719-901-33	DIODE	1SS133 (US, CND)		
D720	8-719-110-14	DIODE	RD9.1ESB3		
		< TUNER UNIT >			
ET201	A-3222-812-A	FM/AM TUNER UNIT (RF19-2N) (XR-3200:AEP/3202)			
ET201	A-3222-796-A	FM/AM TUNER UNIT (RF-22-3N) (XR-3201)			
ET201	A-3222-798-A	FM/AM TUNER UNIT (RF19-2) (US, CND)			
		< VIBRATOR >			
F701	1-567-713-31	VIBRATOR, CRYSTAL (4.5MHz)			
		< IC >			
IC251	8-759-971-69	IC	TDA1579 (XR-3202)		
IC301	8-759-106-02	IC	uPC4570G2		
IC401	8-759-161-19	IC	TDA7314S		
IC481	8-759-909-71	IC	BA4558F (US, CND)		
IC501	8-759-248-34	IC	TDA1558Q		
IC701	8-759-279-57	IC	LC7233N-8861		
		< JUMPER RESISTOR >			
J421	1-216-296-00	METAL CHIP (US, CND)	0	5%	1/8W
J701	1-216-296-00	METAL CHIP	0	5%	1/8W
J702	1-216-296-00	METAL CHIP (US, CND)	0	5%	1/8W
J901	1-216-296-00	METAL CHIP	0	5%	1/8W
J902	1-216-296-00	METAL CHIP	0	5%	1/8W
J903	1-216-296-00	METAL CHIP	0	5%	1/8W
J904	1-216-296-00	METAL CHIP	0	5%	1/8W
J905	1-216-296-00	METAL CHIP	0	5%	1/8W
J906	1-216-296-00	METAL CHIP	0	5%	1/8W
J907	1-216-296-00	METAL CHIP	0	5%	1/8W
J908	1-216-296-00	METAL CHIP	0	5%	1/8W
J909	1-216-296-00	METAL CHIP	0	5%	1/8W
J910	1-216-296-00	METAL CHIP	0	5%	1/8W
J911	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L251	1-409-768-11	COIL (FILTER) (XR-3202)			
L701	1-410-513-11	INDUCTOR	22uH		
		< CONNECTOR >			
* P301	1-695-107-11	PIN, CONNECTOR (PC BOARD) 5P			
P701	1-764-422-11	PLUG, CONNECTOR 12P			

MAIN

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q201	8-729-901-00	TRANSISTOR DTC124EK	
Q202	8-729-901-00	TRANSISTOR DTC124EK	
Q301	8-729-925-67	TRANSISTOR DTB123YS	
Q302	8-729-901-00	TRANSISTOR DTC124EK	
Q303	8-729-901-00	TRANSISTOR DTC124EK	
Q304	8-729-901-00	TRANSISTOR DTC124EK	
Q421	8-729-901-00	TRANSISTOR DTC124EK (US, CND)	
Q422	8-729-901-04	TRANSISTOR DTA114EK (US, CND)	
Q481	8-729-900-98	TRANSISTOR DTC143TK (US, CND)	
Q482	8-729-900-98	TRANSISTOR DTC143TK (US, CND)	
Q506	8-729-925-67	TRANSISTOR DTB123YS	
Q507	8-729-901-00	TRANSISTOR DTC124EK	
Q601	8-729-107-78	TRANSISTOR 2SC3623-K	
Q602	8-729-931-10	TRANSISTOR 2SD1858-P	
Q603	8-729-207-63	TRANSISTOR 2SB1326-TV2	
Q604	8-729-901-00	TRANSISTOR DTC124EK	
Q701	8-729-901-00	TRANSISTOR DTC124EK	
Q702	8-729-901-00	TRANSISTOR DTC124EK	
Q703	8-729-901-00	TRANSISTOR DTC124EK	
Q704	8-729-422-29	TRANSISTOR 2SD601A-S	
Q705	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q706	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R204	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R205	1-216-073-00	METAL CHIP 10K 5% 1/10W (XR-3201)	
R207	1-216-061-00	METAL CHIP 3.3K 5% 1/10W (XR-3201)	
R207	1-216-079-00	METAL CHIP 18K 5% 1/10W (EXCEPT XR-3201)	
R208	1-216-061-00	METAL CHIP 3.3K 5% 1/10W (XR-3201)	
R208	1-216-079-00	METAL CHIP 18K 5% 1/10W (EXCEPT XR-3201)	
R209	1-216-097-00	METAL CHIP 100K 5% 1/10W (XR-3202)	
R211	1-216-079-00	METAL CHIP 18K 5% 1/10W (XR-3202)	
R211	1-216-085-00	METAL CHIP 33K 5% 1/10W (XR-3200:AEP/3201)	
R211	1-216-091-00	METAL CHIP 56K 5% 1/10W (US, CND)	
R251	1-228-989-00	RES, ADJ, METAL 470 (XR-3202)	
R252	1-216-035-00	METAL CHIP 270 5% 1/10W (XR-3202)	
R253	1-216-089-00	METAL CHIP 47K 5% 1/10W (XR-3202)	
R255	1-216-105-00	METAL CHIP 220K 5% 1/10W (XR-3202)	
R256	1-216-117-00	METAL CHIP 680K 5% 1/10W (XR-3202)	
R257	1-228-997-00	RES, ADJ, METAL 100K (XR-3202)	
R258	1-216-049-00	METAL CHIP 1K 5% 1/10W (XR-3202)	
R259	1-216-093-00	METAL CHIP 68K 5% 1/10W (XR-3202)	
R260	1-216-117-00	METAL CHIP 680K 5% 1/10W (XR-3202)	
R261	1-216-097-00	METAL CHIP 100K 5% 1/10W (XR-3202)	
R262	1-216-085-00	METAL CHIP 33K 5% 1/10W (XR-3202)	
R301	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R302	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R303	1-216-025-00	METAL CHIP 100 5% 1/10W	
R304	1-216-025-00	METAL CHIP 100 5% 1/10W	
R305	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R306	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R307	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R308	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R309	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R310	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R311	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R401	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R402	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R403	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R404	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R405	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R406	1-216-037-00	METAL CHIP 330 5% 1/10W	
R407	1-216-037-00	METAL CHIP 330 5% 1/10W	
R408	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R409	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R410	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R411	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R412	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R481	1-216-073-00	METAL CHIP 10K 5% 1/10W (US, CND)	
R482	1-216-073-00	METAL CHIP 10K 5% 1/10W (US, CND)	
R483	1-216-079-00	METAL CHIP 18K 5% 1/10W (US, CND)	
R484	1-216-079-00	METAL CHIP 18K 5% 1/10W (US, CND)	
R485	1-216-081-00	METAL CHIP 22K 5% 1/10W (US, CND)	
R486	1-216-081-00	METAL CHIP 22K 5% 1/10W (US, CND)	

Ref. No.	Part No.	Description			Remark
R487	1-216-049-00	METAL CHIP (US, CND)	1K	5%	1/10W
R488	1-216-049-00	METAL CHIP (US, CND)	1K	5%	1/10W
R501-504					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R505-508					
	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R509	1-216-081-00	METAL CHIP	22K	5%	1/10W
R510	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R511	1-216-105-00	METAL CHIP	220K	5%	1/10W
R512	1-216-097-00	METAL CHIP	100K	5%	1/10W
R601	1-216-025-00	METAL CHIP	100	5%	1/10W
R602	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R603	1-216-041-00	METAL CHIP	470	5%	1/10W
R604	1-216-043-00	METAL CHIP	560	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
R606	1-247-747-11	CARBON	470	5%	1/2W
R607	1-809-148-11	THERMISTOR, POSITIVE	2.2		
R611	1-216-089-00	METAL CHIP	47K	5%	1/10W
R612	1-216-049-00	METAL CHIP	1K	5%	1/10W
R613	1-216-049-00	METAL CHIP	1K	5%	1/10W
R614	1-216-033-00	METAL CHIP	220	5%	1/10W
R701	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R702	1-216-073-00	METAL CHIP	10K	5%	1/10W
R703	1-216-085-00	METAL CHIP	33K	5%	1/10W
R704	1-216-085-00	METAL CHIP	33K	5%	1/10W
R705	1-216-089-00	METAL CHIP	47K	5%	1/10W
R706	1-216-097-00	METAL CHIP	100K	5%	1/10W
R707	1-216-077-00	METAL CHIP	15K	5%	1/10W
R708	1-216-077-00	METAL CHIP	15K	5%	1/10W
R709	1-216-081-00	METAL CHIP	22K	5%	1/10W
R710	1-216-081-00	METAL CHIP	22K	5%	1/10W
R711	1-216-089-00	METAL CHIP	47K	5%	1/10W
R712	1-216-089-00	METAL CHIP	47K	5%	1/10W
R713	1-216-081-00	METAL CHIP	22K	5%	1/10W
R714	1-216-089-00	METAL CHIP	47K	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R717-721					
	1-216-049-00	METAL CHIP	1K	5%	1/10W
R722	1-216-089-00	METAL CHIP	47K	5%	1/10W
R723	1-216-097-00	METAL CHIP	100K	5%	1/10W
R724	1-216-081-00	METAL CHIP	22K	5%	1/10W
R725	1-216-089-00	METAL CHIP	47K	5%	1/10W
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W
R727	1-216-073-00	METAL CHIP	10K	5%	1/10W
R728	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R729	1-216-013-00	METAL CHIP	33	5%	1/10W
R730	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark
*	1-653-194-11	SUB KEY BOARD	
		**********	
		< SWITCH >	
SW851	1-554-813-41	SWITCH, KEY BOARD (SEL) (EXCEPT XR-3202)	
SW851	1-554-813-41	SWITCH, KEY BOARD (SEL/LOUD) (XR-3202)	
SW852	1-554-813-41	SWITCH, KEY BOARD (VOL -)	
		MISCELLANEOUS	
		**********	
15	1-765-563-11	CORD (WITH CONNECTOR) (XR-3200:US, CND)	
15	1-765-563-21	CORD (WITH CONNECTOR) (EXCEPT XR-3200:US, CND)	
F901	1-532-419-00	FUSE (3.15A)	
HP901	1-543-976-11	HEAD, MAGNETIC (PLAYBACK)	
M901	3-367-276-01	MOTOR ASSY	
S901	1-572-712-11	SWITCH, SLIDE (FWD/REV)	

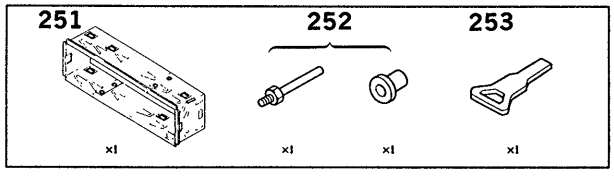
****

****
HARDWARE LIST
****

#1	7-621-255-10	SCREW +P 2X3
#2	7-621-255-40	SCREW +P 2X6
#3	7-624-102-04	STOP RING 1.5, TYPE -E
#4	7-624-104-04	STOP RING 2.0, TYPE -E
#5	7-628-253-05	SCREW +PS 2X4
#6	7-628-253-95	SCREW +PS 2.6X4
#7	7-682-145-01	SCREW +P 3X4

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-758-689-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, DUTCH) (XR-3200:AEP/3201)	
	3-758-689-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, CND)	
	3-758-689-41	MANUAL, INSTRUCTION (ITALIAN, SWEDISH, SPANISH, PORTUGUESE) (XR-3200:AEP)	
	3-758-689-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN) (XR-3202)	
	3-758-690-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, DUTCH) (XR-3200:AEP/3201)	
	3-758-690-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (US, CND)	
	3-758-690-41	MANUAL, INSTRUCTION, INSTALL (ITALIAN, SWEDISH, SPANISH, PORTUGUESE) (XR-3200:AEP)	
	3-758-690-51	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN) (XR-3202)	
	3-758-693-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (EXR-18)	
	3-758-694-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (EXR-18)	
*	3-913-549-01	INDIVIDUAL CARTON (US, CND)	
*	3-913-550-01	INDIVIDUAL CARTON (XR-3200:AEP)	
*	3-913-551-01	INDIVIDUAL CARTON (XR-3201)	
*	3-913-552-01	INDIVIDUAL CARTON (XR-3202)	
*	3-913-554-01	INDIVIDUAL CARTON (EXR-18)	
*	3-915-466-01	CUSHION	
	X-3368-696-1	CASE ASSY	
		**********	
		MOUNTING HARDWARE	
		**********	
* 251	X-3368-734-1	FRAME ASSY, FITTING	
252	X-3366-405-1	SCREW ASSY (EXP), FITTING	
* 253	3-379-363-01	KEY (EXCEPT US, CND)	
253	3-388-078-01	KEY (US, CND)	



9-959-476-11

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EXR-18/XR-3200/3201/3202

SONY®
SERVICE MANUAL

US Model
EXR-18/XR-3200
Canadian Model
XR-3200
AEP Model
XR-3200/3201
UK Model
XR-3201
German Model
XR-3202

SUPPLEMENT-1

File this supplement with the service manual.

1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	35—60g•cm (0.49—0.83oz•inch)
FWD back tension		1—5g•cm (0.014—0.069oz•inch)
REV	CQ-102RC	35—60g•cm (0.49—0.83oz•inch)
REV back tension		1—5g•cm (0.014—0.069oz•inch)
FF, REW	CQ-201B	70—110g•cm (0.97—1.53oz•inch)

2. ELECTRICAL ADJUSTMENTS

DECK SECTION | **0dB=0.775V**

1. The adjustments should be performed in the order given in this service manual.
2. The adjustments should be performed for both L-CH and R-CH.

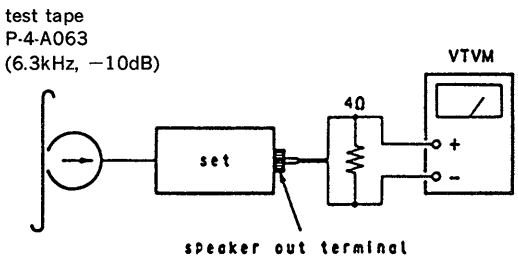
Test Tape

Type	Signal	Used for
P-4-A063	6.3kHz, −10dB	head azimuth adjustment
WS-48A	3kHz, 0dB	tape speed adjustment

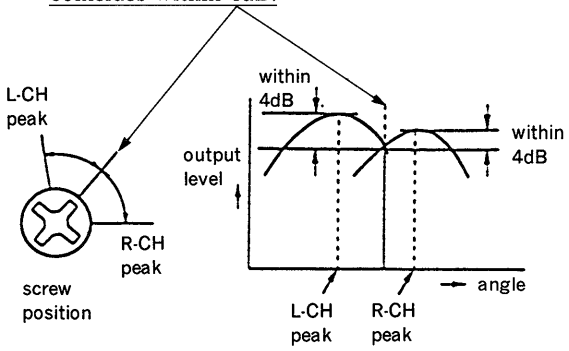
PB Head Azimuth Adjustment

Procedure:

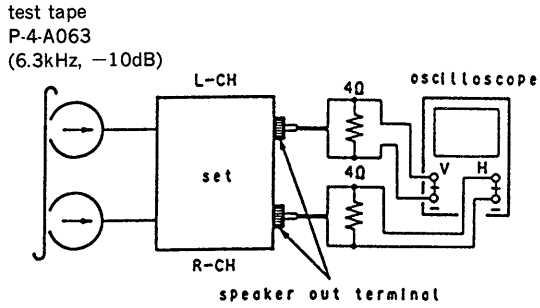
1. Mode: FWD playback

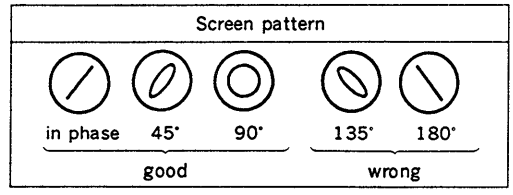


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 4dB.



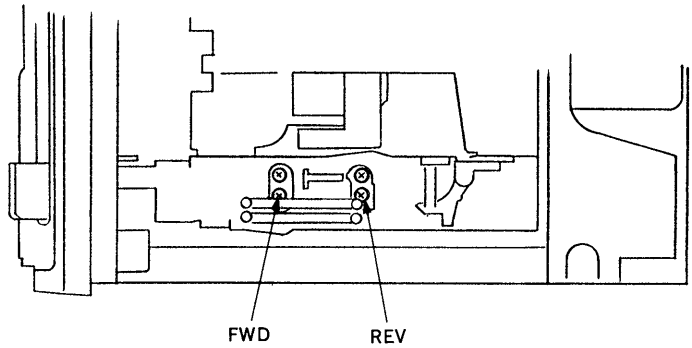
3. Check the phase in the PB mode.





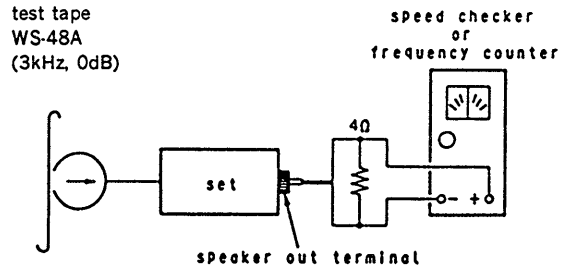
4. Repeat the above adjustment for the REV PB mode.
5. After adjustment, locking the screw with locking compound.

Adjustment Location:



Tape Speed Adjustment

Setting :



Procedure :

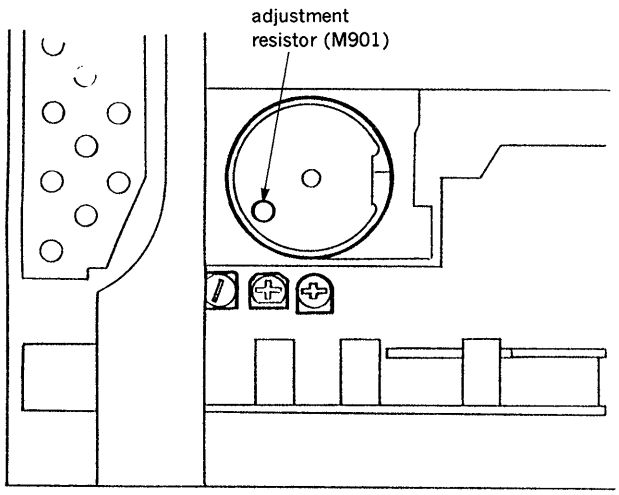
1. Put the set into the PB mode.
2. Adjust adjustment resistor for inside capstan motor (M901) so that the reading on the speed checker or frequency counter becomes in specification.

Specification : Constant speed

Speed checker	Frequency counter
−2 to +3%	2,940 to 3,090Hz

Adjust so that the frequency difference between the FWD and REV modes is within 1.5%.

Adjustment Location : capstan/reel motor



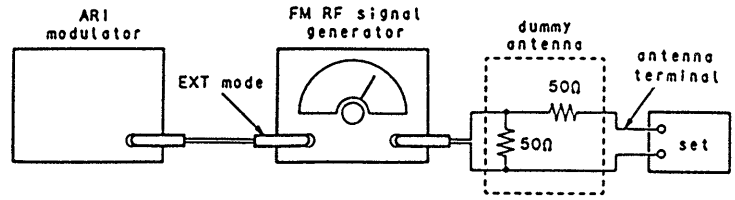
TUNER SECTION | 0dB=1μV

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

SDK Adjustment (XR-3202 only)

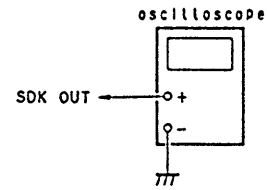
Setting :

SDK (Traffic Announcement) button : ON



ARI modulation
SK : 1.3%
DK : 30%
BK : 60%

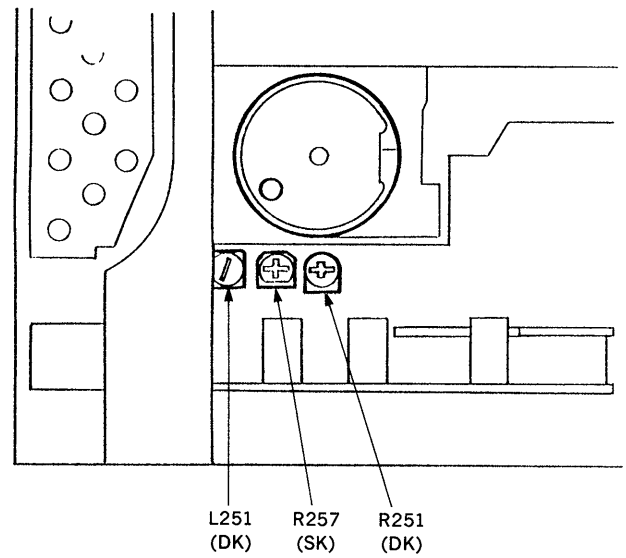
Carrier frequency : 98MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 7.5kHz deviation



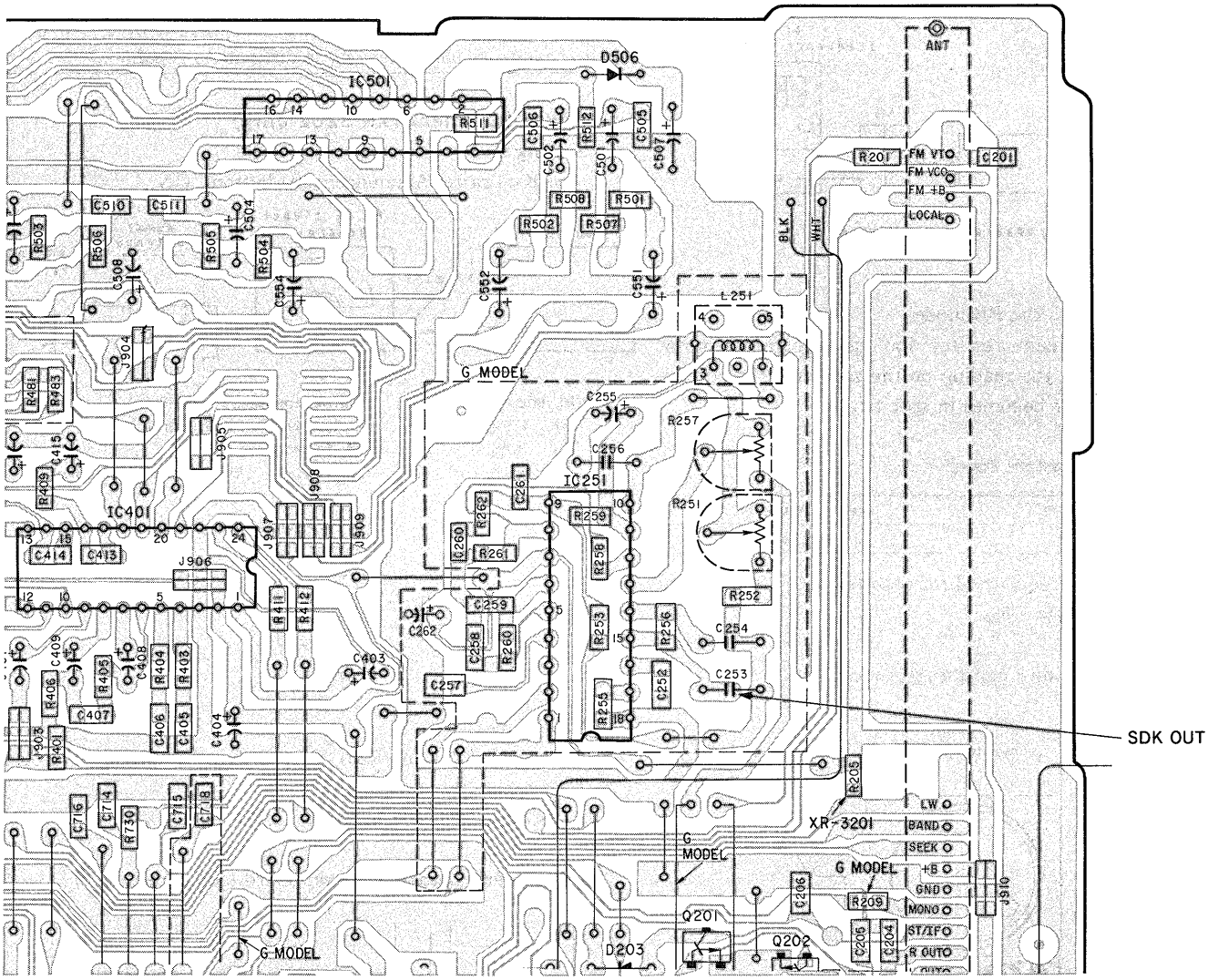
Procedure :

1. Adjust L251 and R251 (DK) so that the output waveform become the maximum.
2. Adjust R257 SK Indicator ON. (SK : 0.8%)

Adjustment Location : main board (component side)



Adjustment Location : main board (conductor side)



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