

# XR-C420RDS

## SERVICE MANUAL

AEP Model  
UK Model



Model Name Using Similar Mechanism	XR-C510RDS
Tape Transport Mechanism Type	MG-50EX-39

### Cassette player section

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

Cassette type	Dolby B NR	Dolby NR off
TYPE II, IV	67 dB	61 dB
TYPE I	64 dB	58 dB

### Tuner section

#### FM

Tuning range 87.5 - 108.0 MHz  
Antenna terminal External antenna connector  
Intermediate frequency 10.7 MHz  
Usable sensitivity 8 dBf  
Selectivity 75 dB at 400 kHz  
Signal-to-noise ratio 65 dB (stereo), 70 dB (mono)

Harmonic distortion at 1 kHz  
0.5% (stereo), 0.3% (mono)

Separation 35 dB at 1 kHz  
Frequency response 30 - 15,000 Hz  
Capture ratio 2 dB

#### MW/LW

Tuning range MW: 531 - 1,602 kHz  
LW: 153 - 281 kHz  
Antenna terminal External antenna connector  
Intermediate frequency 10.71 MHz/450 kHz  
Sensitivity MW: 30  $\mu$ V  
LW: 50  $\mu$ V

### Power amplifier section

Outputs Speaker outputs  
(sure seal connectors)  
Speaker impedance 4 - 8 ohms  
Maximum power output 22 W x 4 (at 4 ohms)

### SPECIFICATIONS

#### General


Output lead Power antenna relay control lead  
Power amplifier control lead  
Tone controls Bass  $\pm$ 8 dB at 100 Hz  
Treble  $\pm$ 8 dB at 10 kHz  
Power requirements 12 V DC car battery (negative ground)  
Dimensions Approx. 186 x 57 x 170 mm (w/h/d) not incl. projecting parts and controls  
Mounting dimension Approx. 182 x 53 x 153 mm (w/h/d) not incl. projecting parts and controls  
Mass Approx. 1.3 kg  
Supplied accessories Power connecting cord (1)  
Mounting hardware (1 set)  
Front panel case (1)

*Design and specifications are subject to change without notice.*

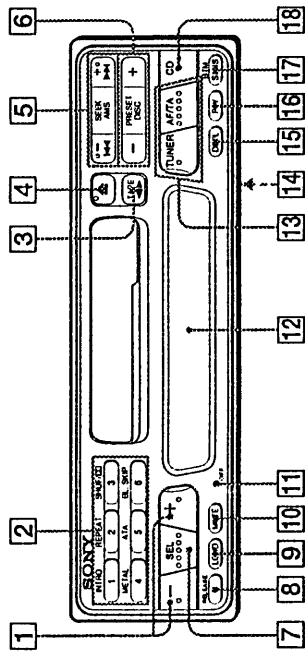
FM/MW/LW CASSETTE CAR STEREO  
**SONY**<sup>®</sup>

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1. GENERAL</b>			<b>4. MECHANICAL ADJUSTMENTS</b>		17
	Button Locations	3	<b>5. ELECTRICAL ADJUSTMENTS</b>		
	Setting the Clock	3		Deck Section	17
	Cassette Player Operation	4		Tuner Section	18
	Radio Reception	4	<b>6. DIAGRAMS</b>		
	RDS Functions	5		6-1. IC Pin Descriptions	22
	Other Functions	7		6-2. Semiconductor Lead Layouts	26
	CD Changer Operation	7		6-3. Block Diagram	27
	Connections	9		6-4. Printed Wiring Boards—Main Section—	30
<b>2. DISASSEMBLY</b>				6-5. Schematic Diagram—Main Section—	33
2-1.	Sub Panel	11		6-6. Printed Wiring Board—Panel Section—	38
2-2.	Heat Sink	11		6-7. Schematic Diagram—Panel Section—	40
2-3.	Mechanism Deck Block	12	<b>7. EXPLODED VIEWS</b>		
2-4.	Main Board	12		7-1. Chassis Section	46
2-5.	Front Back Panel	12		7-2. Front Panel Section	47
<b>3. ASSEMBLY OF MECHANISM DECK</b>				7-3. Mechanism Deck Section	48
3-1.	Installing the Loading Gears	13	<b>8. ELECTRICAL PARTS LIST</b>		49
3-2.	Installing the Reel Bracket	13			
3-3.	Installing the Mode Lever and Pinch Levers	14			
3-4.	Installing the Cassette Housing	15			
3-5.	Installing the Loading Lever	15			
3-6.	Positioning the Loading Levers	16			
3-7.	Installing the Gear (Loading F)	16			

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## Button Locations



Refer to the pages in ● for details.

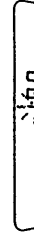
- 1 (volume/bass/treble/balance/fader control) button 5 12
- 2 During radio reception:  
Preset number buttons 6  
During tape/CD playback:  
INTRO button 7 8 12 15 18  
REPEAT button 7 8 12 15  
SHUF/DQ (Dolby B NR) button 8 12 15  
METAL button 6  
ATA (Automatic Tuner Activation) button 7  
B.SKIP button 7 8 12  
TAPE/◀▶ (playback/transport direction change) button 6  
▶ (eject) button 6 12
- 3 SEEK/AMS button 6 7 11 12
- 4 PRESET/DISC button 6 7 8 9 12 15
- 5 SEL (control mode select) button 5 11 12
- 6 RELEASE (front panel release) button 8 12
- 7 LOUD (loudness) button 12
- 8 MUTE button 12
- 9 OFF button 4 5 6 12
- 10 Display window
- 11 TUNER (radio on/band select) button 6 7 8
- 12 AF/TA (alternative frequency/traffic announcement) button 10
- 13 POWER SELECT switch (located on the bottom of the unit)  
See "POWER SELECT Switch" in the installation/Connections manual.
- 14 DSP/L (display mode change/time set) button 6 8
- 15 PTY (Program type) button 11
- 16 SENS/BTM (Sensitivity adjust/Best Tuning Memory Function) button 7 8 10
- 17 CD (disc play/CD changer select) button 6 12 15

## Setting the Clock

The clock has a 24-hour digital indication.

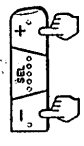
For example, setting it to 10:08

- 1 Display the time.  
(Press the OFF or the button during the unit operation.)
- 2 Press the button for more than two seconds.



The hour digit blinks.

Set the hour digits.



(to go back) (to go forward)

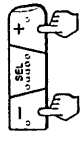


- 3 Press the button momentarily.



The minute digit blinks.

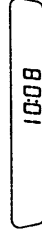
Set the minute digits.



(to go back) (to go forward)



- 4 Press the button momentarily.



The clock activates.

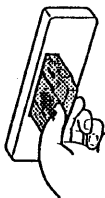
## SECTION 1 GENERAL

This section is extracted from instruction manual.

## Cassette Player Operation

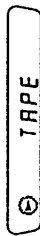
### Listening to Tape Playback

After inserting the cassette, playback will start automatically.

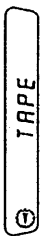


If a cassette is already inserted, press the button to start playback. If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction



The side facing up is being played.



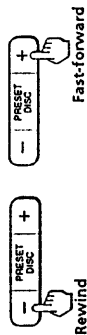
The side facing down is being played.

To stop playback, eject the cassette by pressing the button or press the OFF button. Playback stops also when you select another source (radio, CD) by pressing the or button.

### Ejecting the Cassette

Press the button.

### To Fast-wind the Tape



To start playback during rewinding or fast-forwarding, press the button.

### Playing a Tape Recorded in the Dolby B NR System

Press the button when you want to listen to a tape recorded in the Dolby B NR system. → "DB" appears in the display. To cancel, press again.

### Playing a CrO<sub>2</sub> or Metal Tape

Press the button when you want to listen to a CrO<sub>2</sub> (TYPE II) or metal (TYPE IV) tape. → "MTL" will appear on the display. To cancel, press again.

### Locating the Beginnings of the Tracks

AMS (Automatic Music Sensor) Function  
During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.



To locate the previous tracks

To locate the succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

### Searching the Desired Track

— Intro Scan Function

Press the button during playback. → "INTRO" appears on the display. The first 10 seconds of all the tracks are played. When you find the desired track, press the button once more. The unit returns to the normal playback mode.

### Playing Tracks Repeatedly

— Repeat Play Function

Press the button during playback. → "REP" appears on the display. When the currently played track is over, it will be played again from the beginning. To cancel this mode, press the button again.

### Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the button during playback. → "ATA" appears on the display. When fast-forwarding or rewinding with the button, the tuner will turn on automatically.

### Skipping Blanks Automatically during Tape Playback

— Blank Skip Function

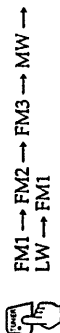
Press the button during playback. → "BLSKIP" appears on the display. Blanks longer than eight seconds will be automatically skipped during tape playback.

## Radio Reception

### Searching for the Stations Automatically

— Automatic Tuning

1 Select the desired band.



2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).



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.

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



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the button momentarily to get the "LCL" 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.

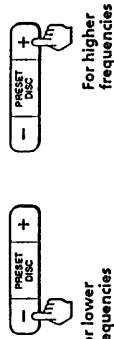
### If FM Stereo Reception is

POOR — Monaural Mode

Press the button momentarily. → "MONO" appears on the display. The sound will improve, but it will become monaural.

## Tuning in by Adjusting the Frequency — Manual Tuning

- 1 Select the desired band.  

- 2 Press and hold either side of the PRESET/DISC button.  
Release the button when the desired station is received.





### PREVENTING ACCIDENTS!

When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.




## Memorizing Stations Automatically

### — BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.




- 1 Select the desired band.  

- 2 Press the  button for more than two seconds.
  - When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
  - When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed, the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

- 3 FM1 and FM2 only:  
Press preset number button  momentarily, then press again for about two seconds until you hear a beep tone. → The station will be stored.  
Repeat this operation with preset number buttons  through .

**Note**  
When storing only RDS stations (page 10), step 3 is not necessary.

## Memorizing Only the Desired Stations


- 1 Select the desired band.  

- 2 Tune in the station which you wish to store on the preset number button.
- 3 Keep the desired preset number button ( to ) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW) can be stored on the preset number buttons in order of your choice. Therefore, 18 stations can be memorized on FM.

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

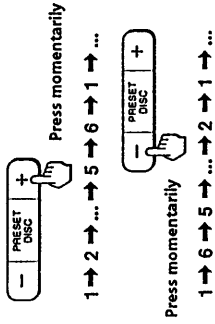
## Receiving the Memorized Stations

- 1 Select the desired band.  


- 2 Press momentarily the preset number button on which the desired station is stored.

**Note**  
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET/DISC button momentarily to receive in order the stations stored in the memory (Preset Search Function).



## RDS Functions

### What is RDS?

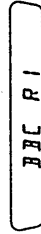
RDS (Radio Data System) is a system which uses FM radio waves to receive digital signals. Receiving these RDS data with your car stereo unit allows it to use a variety of services. There are several ways to use these services. As a useful function for car stereo units, there is a function which automatically tunes to that frequency in a certain area which offers the best reception of a selected station. So even if you travel a long distance, it is still possible to listen to the same program without having to retune manually again and again. Another function allows it to receive traffic announcements during tape or CD playback. RDS offers various functions, but depending on the country or region, not all of these are available. Following information explains the RDS functions of this unit.

**Note**  
If the FM station currently received does not transmit RDS data, the functions described below will not work.

## Displaying the Station Name

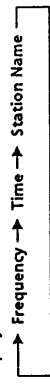
By using RDS data, the name of the station currently received can be displayed.

Select an FM station. → If it is a station transmitting RDS data, the station name will appear on the display.



When "\*" appears in addition to the usual frequency indication, an RDS station is being received.

By pressing the  button, you can change the displayed items as follows:



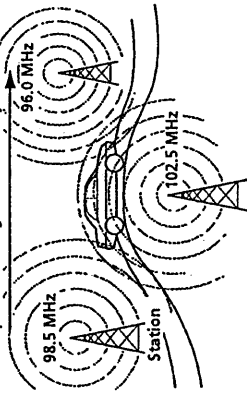
When "....." is displayed instead of the station name, the currently received station does not transmit RDS data.

## Listening to the same Program without Manual Retuning even if the Location has changed

— AF Function

Using "AF" (List of Alternative Frequencies) this function automatically tunes to the frequency among the frequencies of the currently received station, which carries the strongest signal in the respective region. Therefore, the same program can be received continuously during a long-distance drive without repeated manual retuning.

Frequencies change automatically.



1 Select an FM station.

2 Press the **AF** button to get "AF" displayed.

### Notes

- When the currently received frequency is weak and there are no other stronger frequencies, "NO AF" will be indicated.
- When automatic tuning (page 7) is activated while "AF" is displayed, only FM stations which transmit RDS data will be received.
- When you press the AF/TA button while an MW or LW station is received, FM1 will be automatically selected.

### Regional Program

Some stations broadcast regional programs at certain times. When you want to listen to such a regional program, press the AF/TA button for more than two seconds until "REC" lights up. To cancel, press again for at least two seconds. This function cannot be activated in the United Kingdom and some other areas.

**Local Link Function (United Kingdom only)**  
When local stations which were previously stored on the preset number buttons are poorly received, or when you want to change to another local station, activating this function will cause the unit to automatically search for other local stations and to tune to them one by one. Within five seconds after its reception started, press the preset number button of the local station you want to change, and keep it pressed. Repeat this procedure several times until the desired local station is received.

**Storing only RDS Stations**  
The BTM function (page 8) allows it to store only RDS stations on the preset number buttons; activate the AF function, then press the **BTM** button for two seconds.

## Listening to Traffic Announcements

By using TA (Traffic Announcement) and TP (Traffic Program) data, a station broadcasting traffic announcements can be automatically received. Even during tape or CD playback you can hear traffic announcements, as the unit continues searching for such a station, and will automatically change to FM reception when a traffic announcement starts.

Press the **TA** button to get "TA" displayed. → The unit will start to search for traffic announcements.

When a station transmitting a traffic announcement is found, "TP" will be displayed. During reception of the announcement, the "TA" indication will blink. The blinking will stop when the traffic announcement is over.

The TA function works also during tape or CD playback. After pressing the **TA** button while listening to a tape or CD, "TA" will be displayed, and the unit will start to search for traffic announcements. When an announcement is received, tape or CD playback will stop, and the traffic announcement can be heard. When the announcement has finished, tape or CD playback will resume from where it stopped.

In case you press the **TA** button while an MW or LW station is received, the unit will automatically change to FM reception.

**Returning to an Ordinary Program during Traffic Announcement Reception**  
Press the AF/TA button until "AF/TA OFF" appears on the display.

**Note**  
If no traffic announcements can be received, "NO TP" will blink for about four seconds, and then the search for other stations transmitting traffic announcements will start.

### The "EON" Indication

When both "TA" and "EON" are displayed, this means that in addition to the currently received station, another station too is broadcasting a traffic announcement.

## Presetting the Volume of Traffic Announcements

It is possible to hear the traffic announcements at a previously set volume level. For example, even if volume is turned to zero, it will automatically change to the preset level when a traffic announcement starts ("TA" is displayed). (In case the current volume level is higher than the preset level, the current level will not change.)

1 Select an FM station and the desired volume level.

2 Press button **TRF** while pressing the **TA** button.

When you hear a beep tone, the setting is completed.

### Receiving Emergency Announcements

In case of danger through an emergency or a natural disaster, RDS stations transmit emergency announcements to warn the drivers in that area. Such announcements can be received only when the AF or TA functions are activated. When an emergency announcement is received, tape or CD playback will stop, the unit will automatically change to FM, and the information can be heard.

## Selecting the Program Type

Some stations use RDS to distinguish the types of their programs during broadcasting.

There are following program types:

Speech-centered program types	Display
News	NEWS
Current Affairs information	AFFAIRS INFO
Sport	SPORT
Education	EDUCATE
Drama	DRAMA
Culture	CULTURE
Science	SCIENCE
Varied	VARIED

## Music-centered program types

Music-centered program types	Display
Pop	POP M
Rock	ROCK M
Middle of the Road	M.O.R. M
Light Classical	LIGHT M
Serious Classics	CLASSICS
Other Music Types	OTHER M

To display the program type, press the **PTY** button during FM reception; "PTY" will appear on the display. If the currently received station is transmitting PTY (Program Type Selection) data, one of above-shown program type names will be displayed. If it is a station which does not transmit PTY data, "NONE" will be displayed. The "PTY" indication and the program type name disappear within five seconds.

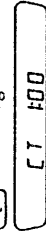
It is also possible to select stations with the program type names displayed when you press the **PTY** button after pressing the **PTY** button. Not all of the above 15 program types however, may be received at a certain time.

## Using RDS Data for Setting the Clock Automatically

By receiving CT (Clock Time) data, the clock of this unit can be set automatically.

**During FM reception, press the **CT** button while pressing the **TA** button. → "CT" will be displayed, and the clock will be set.**

To cancel the CT function, press the **CT** and **TA** buttons again.



### Notes

- The CT function may not work even though an RDS station is being received.
- The time set by the CT function may not be exact.

## Other Functions

### Adjusting the Sound Characteristics

- 1 Select the item you want to adjust by pressing the button repeatedly.  
VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)
- 2 Adjust the selected item by pressing either the or button.  
Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

### Enjoying Bass and Treble even at Low Volume

- Loudness Function

Press the button. → "LOUD" will appear on the display. Bass and treble will be reinforced. To cancel, press again.

### Muting the Sound Quickly

- Mute Function

Press the button. → The "MUTE" indication flashes. The sound is muted at once. To restore the previous volume level, press again.

*This function will be also canceled when:*  
— the or OFF button is pressed.  
— ejecting a cassette by pressing the button during tape playback.

### Muting the Beep Tone

Press the button while pressing the button.  
To recobtain the beep tone, press these buttons again.

### Changing the Illumination Color

Press the button while pressing the button.  
You can choose the color between amber and green.

## CD Changer Operation

With the optional CD changer(s) connected

### Playing a CD

Press the button. CD playback starts.

### Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function  
During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.



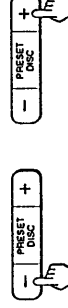
To locate the previous tracks

To locate the succeeding tracks

### Locating the Desired Part of a Track

- Manual Search

During playback, press and hold either side of the PRESET/DISC button. Release the button when you have found the desired part.

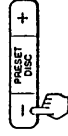


To reverse

To forward

### Changing CDs

During playback, press either side of the PRESET/DISC button momentarily.



To return to the previous CD

To advance to the next CD

### Selecting CD Changers (with several CD changers connected)

Press the button during CD playback.  
Each time you press, another CD changer will be selected.

### Searching for the Desired Track — Intro Scan Function

Press the button during playback. → "INTRO" appears on the display. The first 10 seconds of all the tracks on the currently selected disc are played in order. After the first disc is over, the next CD is played. When two or more CD changers are connected, after the last disc is played, CD play moves on to the next CD changer.

When you find the desired track, press again. The unit returns to the normal CD playback mode.

### Playing Repeatedly

- Repeat Play Functions

Playing the currently selected track repeatedly

- Track repeat

Press the button during CD playback to get the "REP 1" indication.

Playing the currently selected disc repeatedly

- Disc repeat

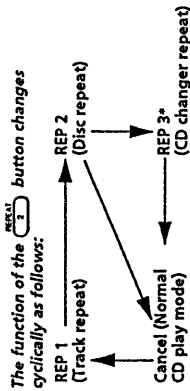
Press the button during CD playback to get the "REP 2" indication.

When the last track on the currently selected disc is over, CD playback is repeated from the beginning of that disc.

### Playing the discs in the currently selected CD changer repeatedly

— CD changer repeat (when two or more CD changers are connected)  
Press the **REP 1** button during CD playback to get the "REP 3" indication.

When the last disc in the currently selected CD changer has been played, CD playback will be repeated from the first CD in this changer.



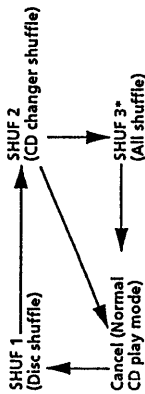
\* CD changer repeat (REP 3) mode functions only when two or more CD changers are connected to the unit. When only one CD changer is connected, the "REP 3" indication will not be displayed. In case you press the **REP 1** button again while the "REP 2" indication is being displayed, the repeat mode will be canceled.

### Playing each track on each CD in all connected CD changers randomly

— All shuffle play (when two or more CD changers are connected)  
Press the **SHUF 1** button during CD playback to get the "SHUF 3" indication.

All tracks on each CD in each CD changer connected are played in random order.

The function of the **SHUF 1** button changes cyclically as follows:



\* The all-shuffle (SHUF 3) mode functions only when two or more changers are connected to the unit. When only one changer is connected, "SHUF 3" indication will not be displayed. In case you press the **SHUF 1** button again while "SHUF 2" is displayed, the shuffle play will be canceled.

If you press the **SHUF 1** button during shuffle play, the first 10 seconds of all tracks will be played randomly.

### Error displays (with the optional CD changer(s) connected)

The following indications will flash for about five seconds and an alarm sound will be heard.

Display	Cause	Solution
<b>NO MAG</b>	The disc magazine is not inserted in the CD changer.	Insert the disc magazine with discs into the CD changer.
<b>NO DISC</b>	No disc is inserted in the disc magazine.	Take out the magazine and insert the discs.
<b>ERROR</b>	The disc is dirty.	Clean the disc.
	The disc is inserted upside down.	Insert the disc correctly.
<b>RESET</b>	The CD changer cannot be operated because of some problem.	Press the reset button of the unit.

If the above-mentioned solutions do not help to improve the situation, consult your nearest Sony dealer.

## Playing Tracks Randomly

— Shuffle Play Functions

### Playing the tracks on the currently selected disc randomly

— Disc shuffle play  
Press the **SHUF 1** button during CD playback to get the "SHUF 1" indication.

All tracks on the currently selected CD are played in random order. After each track has been played once, shuffle play will continue with the next CD.

### Playing each track on each CD in the currently selected CD changer randomly

— CD changer shuffle play  
Press the **SHUF 1** button during CD playback to get the "SHUF 2" indication.

All tracks on each CD in the currently selected CD changer are played in random order.



# Connections

## 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.

## When the Unit is Used in a Car with No Accessory Position on the Ignition Key — POWER SELECT Switch

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

**Note**  
The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position.

# Connexions

## 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 accessoire.
- Rassembler tous les fils de terre en un point de masse commun.

## Si l'appareil est utilisé dans une voiture dont la clé de contact n'a pas de position accessoire — Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de manière à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie si l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoire. Pour éviter d'épuiser la batterie, régler l'interrupteur POWER sur la socle de l'appareil sur OFF, puis appuyer sur la touche de réinitialisation. L'éclairage est réglé pour rester éteint quand l'appareil n'est pas utilisé.

**Remarque**  
Quand l'interrupteur POWER SELECT est réglé sur OFF, l'avertisseur du panneau avant ne fonctionne pas.

# Anschluß

## Vorsicht

- Dieses Gerät ist ausschließlich für eine negativ geerdete 12-V-Autobatterie bestimmt.
- Trennen Sie vor dem Anschließen des Geräts die Erdungsklemme der Batterie ab, um einen Kurzschluß zu vermeiden.
- Schließen Sie das gelbe und rote Stromversorgungskabel erst an, wenn alle anderen Kabel bereits angeschlossen sind.
- Leiten Sie das rote Stromversorgungskabel an einen positiven 12-V-Kontakt, an dem Spannung anliegt, wenn sich das Zündschloß in der Position I bzw. ACC (Position vor der Zündposition) befindet.
- Schließen Sie alle Erdungskabel an einen gemeinsamen Massepunkt an.

## Wenn das Zündschloß Ihres Wagens keine Position I bzw. ACC besitzt — POWER SELECT-Schalter

Das Gerät ist werkseitig so voreingestellt, daß das Bedienungspult auch dann beleuchtet ist, wenn das Gerät nicht betrieben wird. Besitzt das Zündschloß Ihres Fahrzeugs keine Position I bzw. ACC, so ist die Beleuchtung ständig eingeschaltet und entzieht der Batterie Strom. Stellen Sie in einem solchen Fall den POWER SELECT-Schalter an der Unterseite des Geräts auf OFF, und drücken Sie dann die Rücksetztaste. Bei ausgeschaltetem Gerät ist das Bedienungspult dann nicht mehr beleuchtet.

**Hinweis**  
Der Warnton für die Frontplatte ertönt nicht, wenn der POWER SELECT-Schalter auf OFF gestellt ist.

# Collegamenti

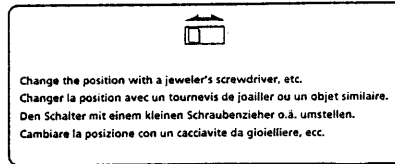
## Attenzione

- Questo apparecchio è stato progettato per l'uso solo a 12 V CC con massa negativa.
- Prima di eseguire i collegamenti, scollegare il terminale di massa della batteria dell'auto per evitare cortocircuiti.
- Collegare i cavi di collegamento alimentazione rosso e giallo solo dopo aver collegato tutti gli altri cavi.
- Assicurarsi di collegare il cavo rosso di collegamento alimentazione al terminale di alimentazione 12 V positivo che è sotto tensione quando la chiave di accensione è in posizione accessoria.
- Portare tutti i cavi di massa a un punto di massa comune.

## Quando si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione — Interruttore POWER SELECT

L'illuminazione del pannello anteriore è stata predisposta in fabbrica per l'attivazione anche quando non si usa l'apparecchio. Tuttavia questa regolazione può causare scaricamento della batteria dell'auto se si usa l'apparecchio in un'auto priva di posizione accessoria per la chiavetta di accensione. Per evitare lo scaricamento della batteria quando si usa l'apparecchio in questo tipo di auto, regolare su OFF l'interruttore POWER SELECT situato sul fondo e quindi premere il pulsante di azzeramento. L'illuminazione viene così regolata per lo spegnimento quando non si usa l'apparecchio.

**Nota**  
La suoneria di avvertimento per il pannello anteriore non si attiva quando l'interruttore POWER SELECT è regolato sulla posizione OFF.



## Reset Button

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

## Touche de réinitialisation

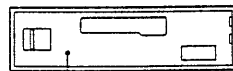
Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.

## Rücksetztaste

Nach der Installation und dem Anschluß muß die Rücksetztaste mit einem Kugelschreiber o.ä. gedrückt werden.

## Pulsante di azzeramento

Dopo avere terminato l'installazione e i collegamenti, assicurarsi di premere il pulsante di azzeramento con la punta di una penna a sfera ecc.



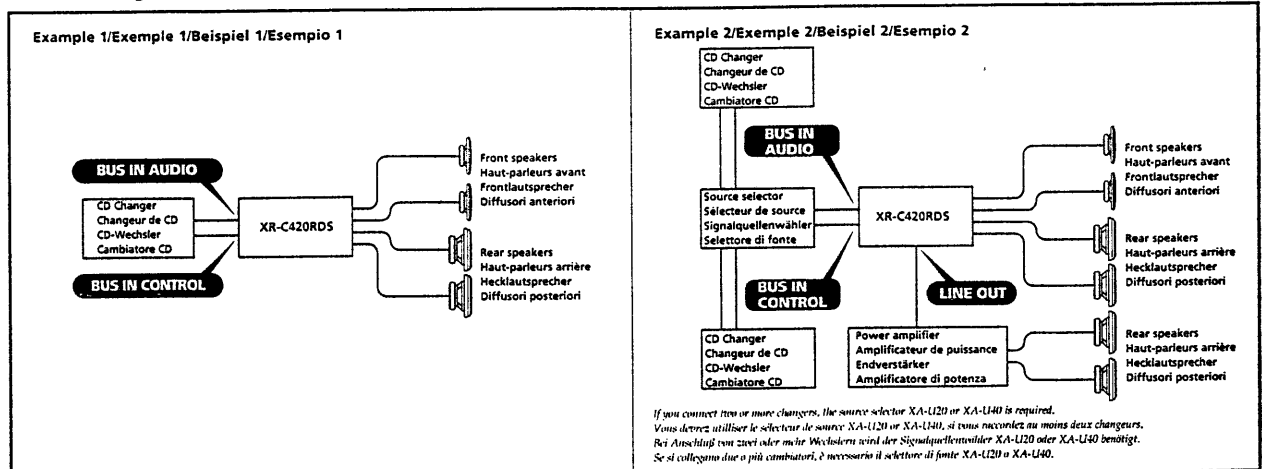
Reset button  
Touche de réinitialisation  
Rücksetztaste  
Pulsante di azzeramento

## Connection Diagram

## Schémas de connexion

## Anschlußdiagramm

## Schema di collegamento

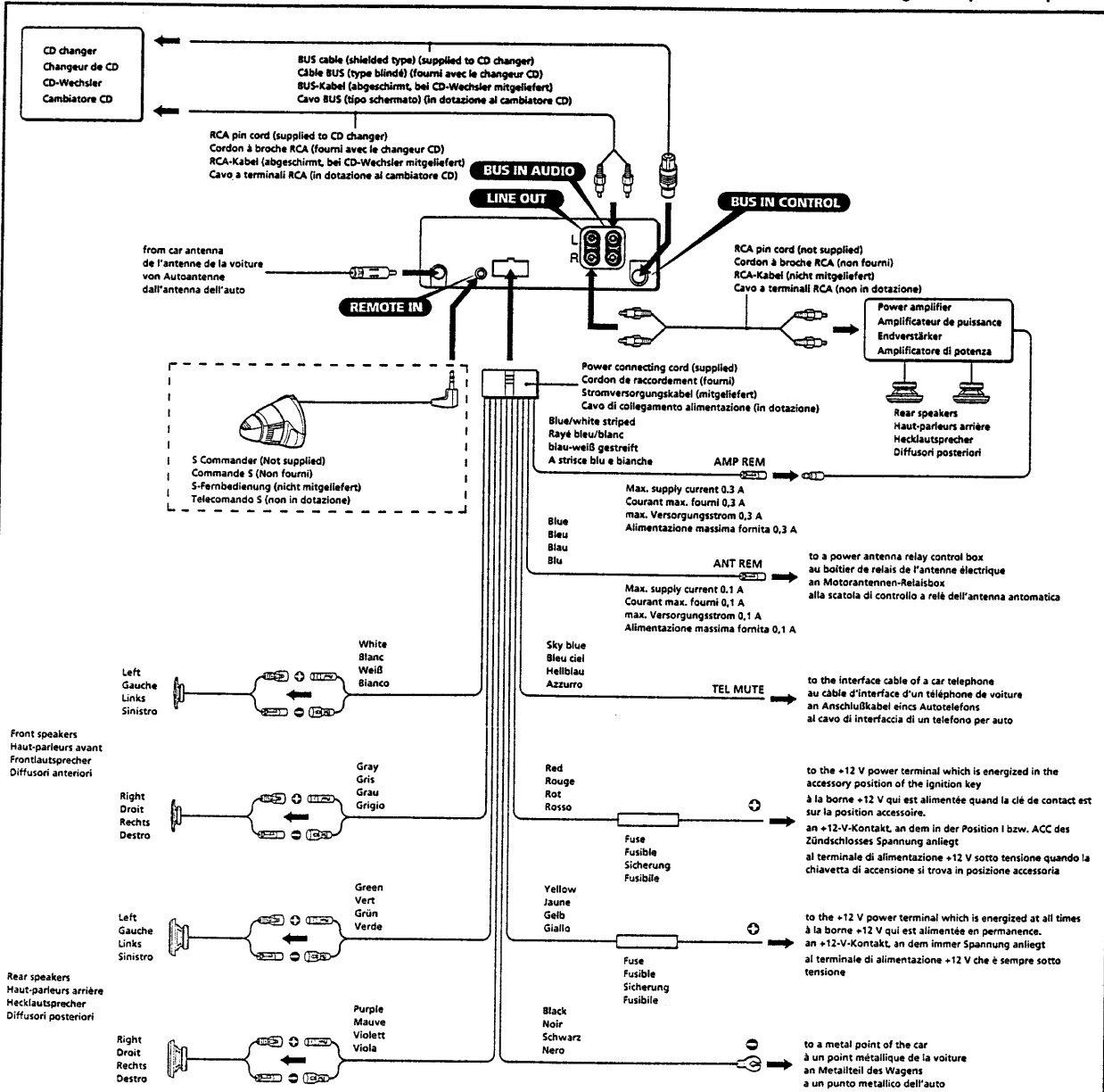


Connections of Example

Connexions de l'exemple

Anschlußbeispiel

Collegamenti per l'esempio



Notes on the control leads

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

Memory hold connection

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

Notes on speaker connection

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

Remarques sur les fils de contrôle

- Le fil de contrôle de l'antenne électrique (bleu) fournit du courant continu de +12 V quand le tuner est allumé ou quand la fonction ATA (Automatic Tuner Activation), AF (Fréquences alternatives) ou TA (Informations routières) est mise en service.
- Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.

Connexion pour la conservation de la mémoire

Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs

- Avant de raccorder les haut-parleurs, mettez l'appareil hors tension.
- Utilisez des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.
- Ne pas raccorder les 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. Veillez à raccorder des haut-parleurs passifs à ces bornes.

Hinweise zu den Steuerleitungen

- Die (blaue) Motorantennen-Steuerverleitung liefert eine Gleichspannung von +12 V, wenn der Tuner eingeschaltet, die ATA-Funktion (Automatic Tuner Activation), die AF-Funktion (Alternative Frequency) oder die TA-Funktion (Traffic Announcement) aktiviert ist.
- Eine Motorantenne ohne Relaisbox kann nicht angeschlossen werden.

Zur Stromversorgung des Speichers

Wenn das gelbe Stromversorgungskabel angeschlossen ist, wird der Speicher stets (auch bei ausgeschaltetem Zündschlüssel) mit Strom versorgt.

Hinweise zum Lautsprecheranschluß

- Schalten Sie das Gerät aus, bevor Sie die Lautsprecher anschließen.
- Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Ansonsten können die Lautsprecher beschädigt werden.
- Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis, und verbinden Sie auch nicht die Anschlüsse des rechten mit denen des linken Lautsprechers.
- Vermeiden Sie nicht, Lautsprecher parallel anzuschließen.
- An die Lautsprecheranschlüsse dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie keine Aktivlautsprecher (Lautsprecher mit eingebauten Verstärkern) an, da diese sonst beschädigt werden können.

Nota sui cavi di collegamento

- Il cavo di controllo dell'antenna automatica (blu) fornisce +12 V CC quando si accende il sintonizzatore o quando si attiva la funzione ATA (Automatic Tuner Activation), la funzione AF (frequenze alternative) o la funzione TA (notiziari sui traffici).
- Non è possibile usare un'antenna automatica senza la scatola a relè con questo apparecchio.

Collegamento per la conservazione della memoria

Quando il cavo di ingresso alimentazione giallo è collegato, viene sempre fornita alimentazione al circuito di memoria anche quando la chiavetta di accensione è spenta.

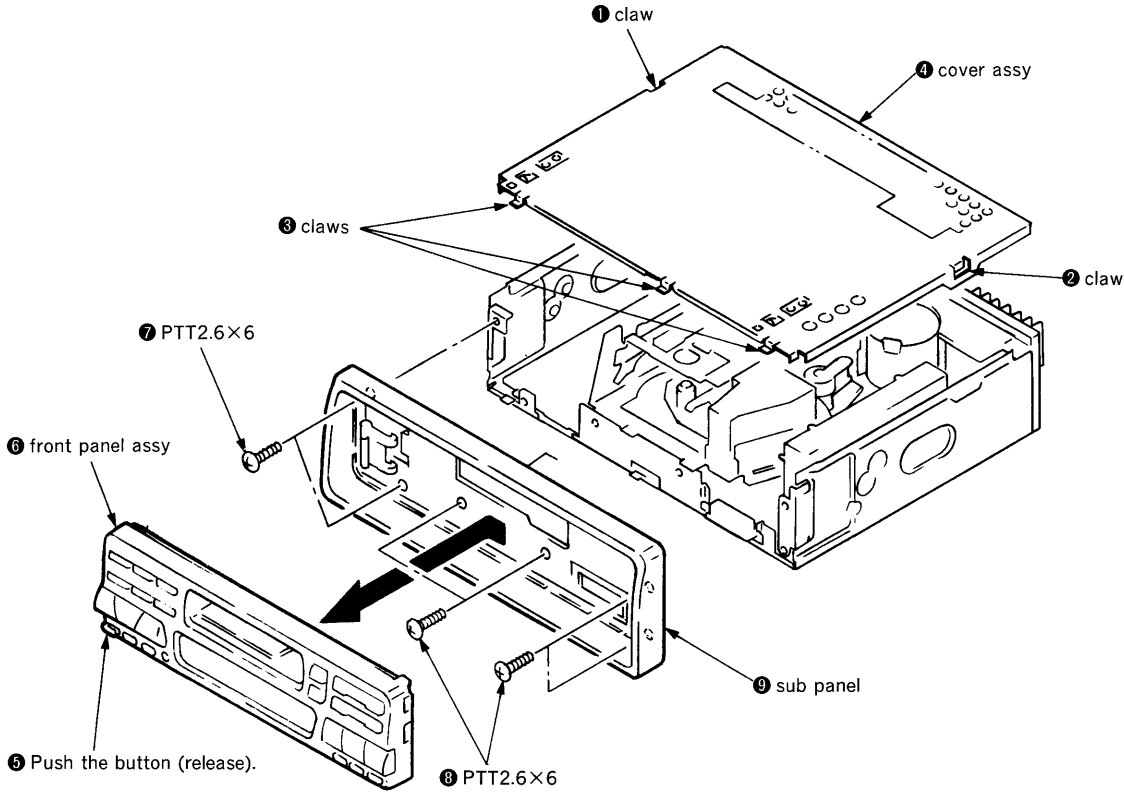
Nota sul collegamento dei diffusori

- Prima di collegare i diffusori spegnere l'apparecchio.
- Usare diffusori di impedenza compresa tra 4 e 8 ohm e con capacità di potenza adeguata, altrimenti i diffusori possono essere danneggiati.
- Non collegare i terminali del sistema diffusori al telaio dell'auto e non collegare i terminali del diffusore destro a quelli del diffusore sinistro.
- Non collegare i diffusori in parallelo.
- Non collegare alcun diffusore attivo (con amplificatore incorporato) ai terminali di diffusori dell'apparecchio perché questo può danneggiare i diffusori attivi. Assicurarsi di collegare diffusori passivi a questi terminali.

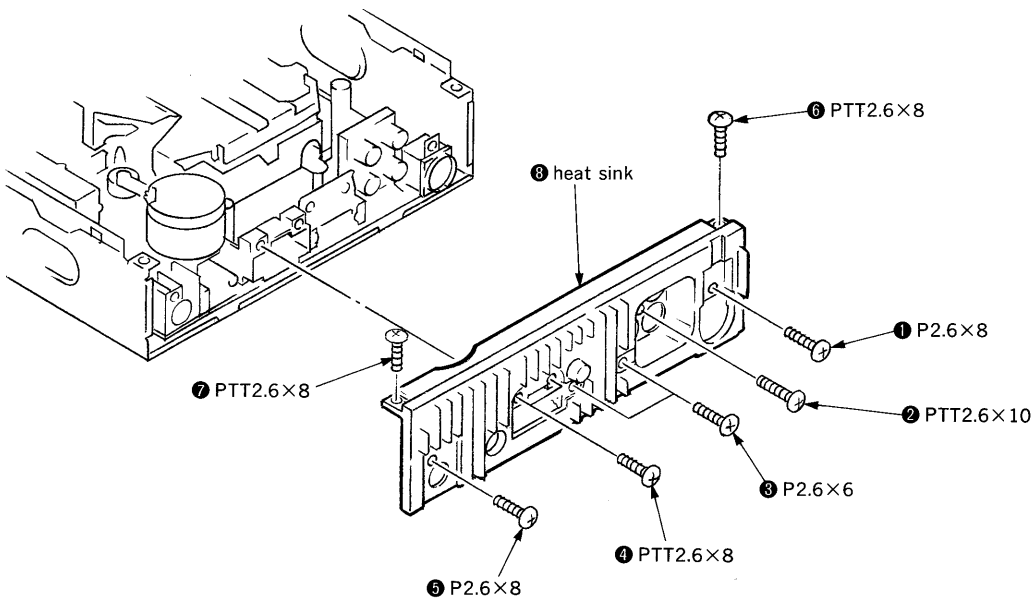
# SECTION 2 DISASSEMBLY

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

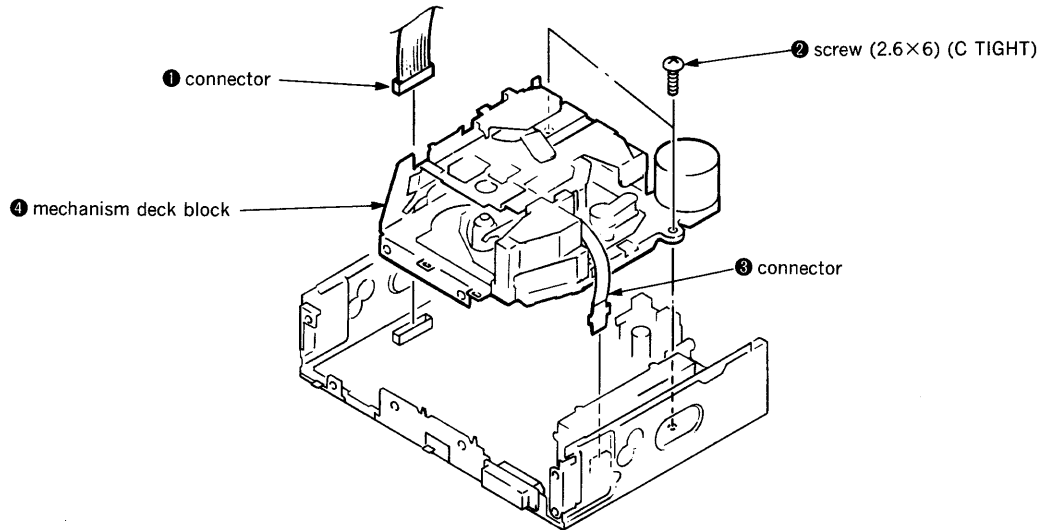
## 2-1. SUB PANEL



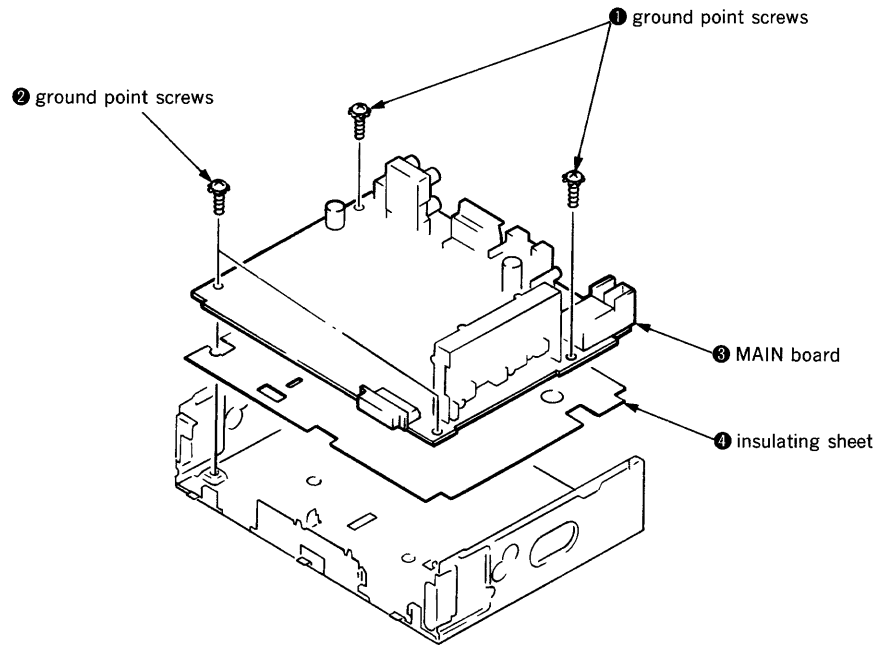
## 2-2. HEAT SINK



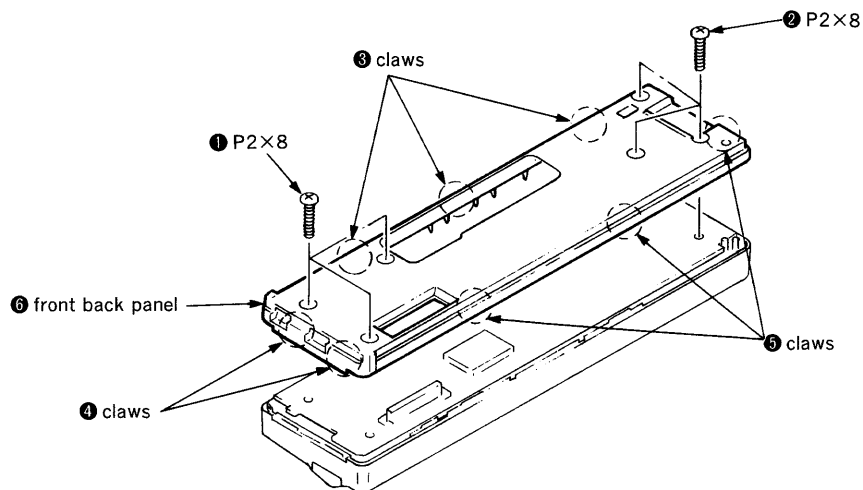
### 2-3. MECHANICAL DECK BLOCK



### 2-4. MAIN BOARD



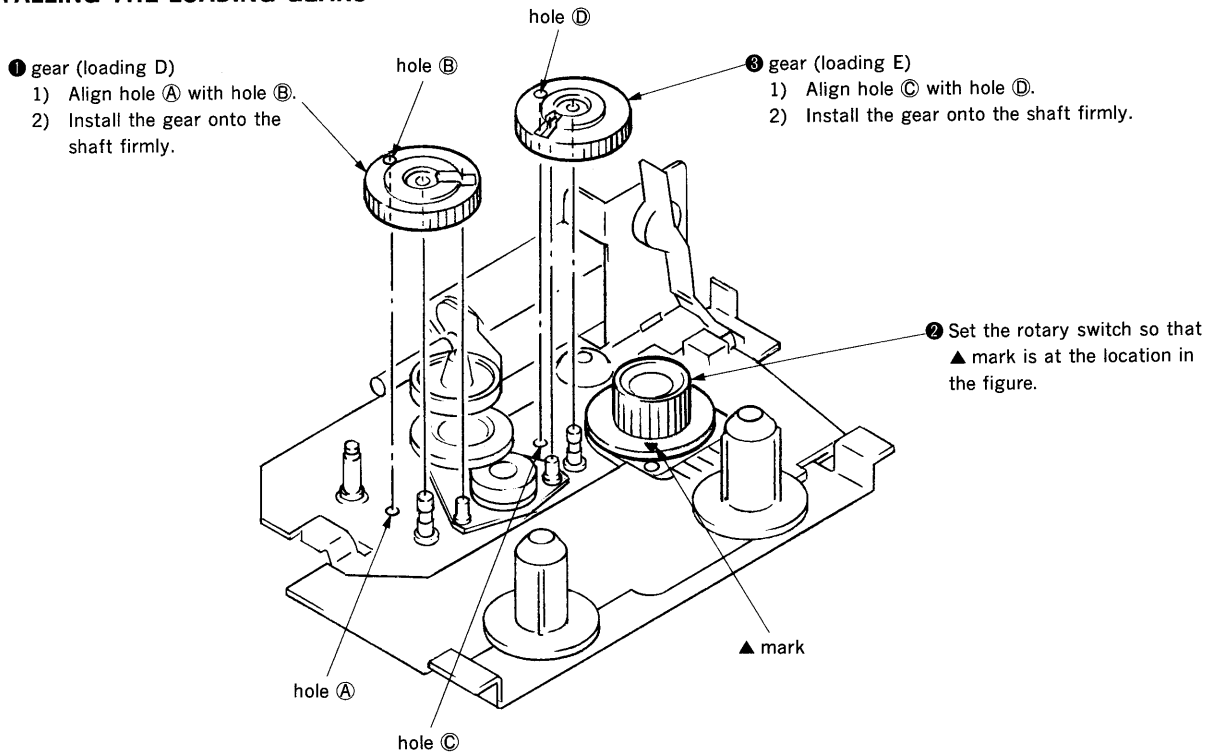
### 2-5. FRONT BACK PANEL



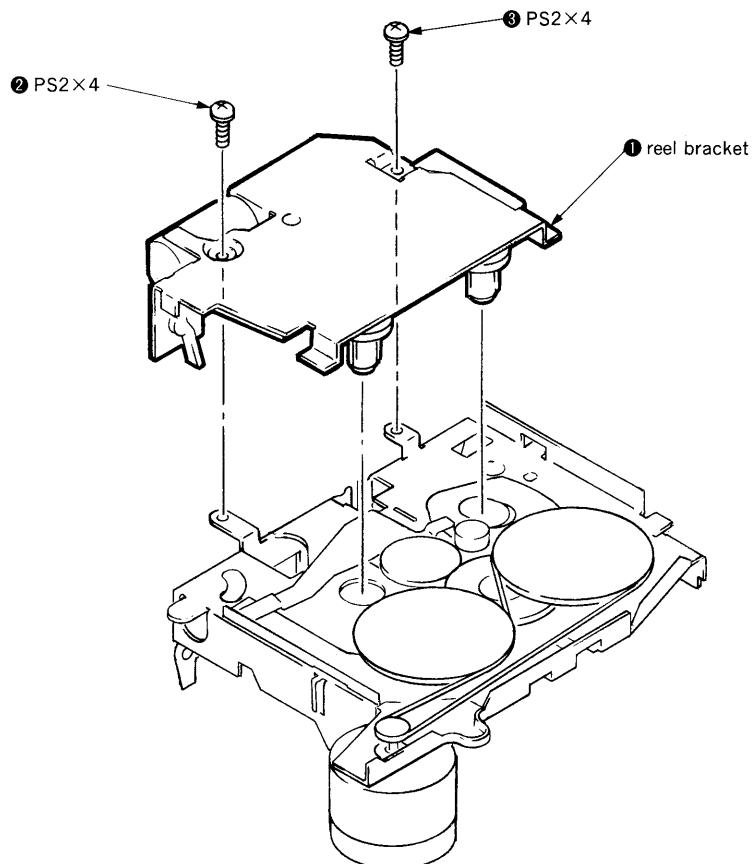
## SECTION 3 ASSEMBLY OF MECHANISM DECK

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

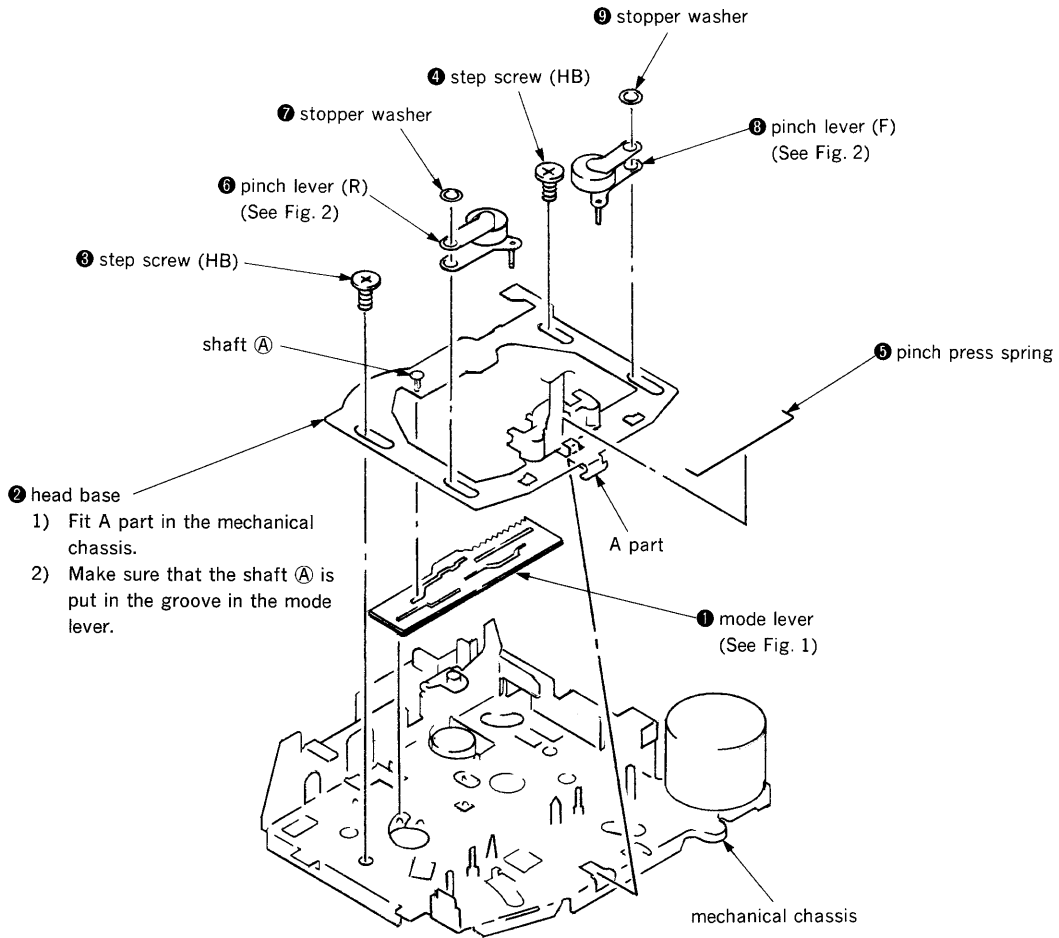
### 3-1. INSTALLING THE LOADING GEARS



### 3-2. INSTALLING THE REEL BRACKET



### 3-3. INSTALLING THE MODE LEVER AND PINCH LEVERS



- 1) Align ● mark on the rotary switch with hole on the mode lever.
- 2) Make sure that the two shafts and three projections are located as shown below.

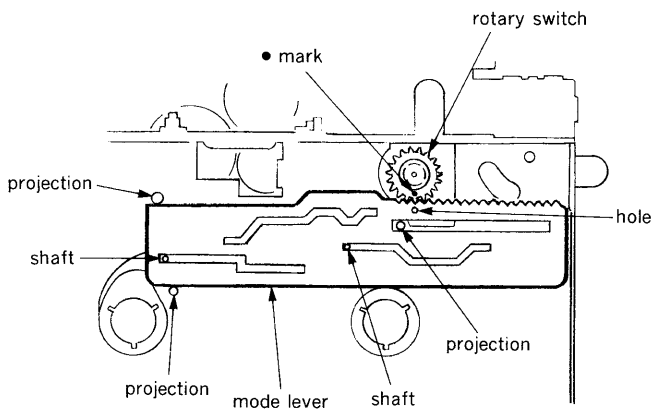


Fig. 1

- 1) Put the shafts of the pinch levers in the pinch press spring on its head side.

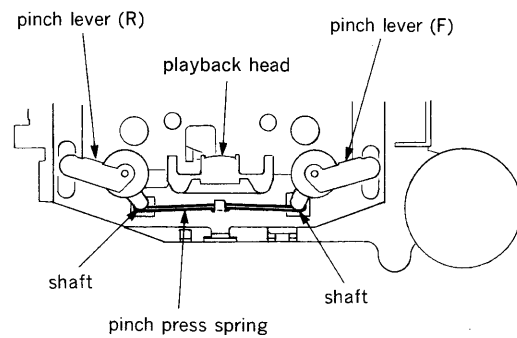
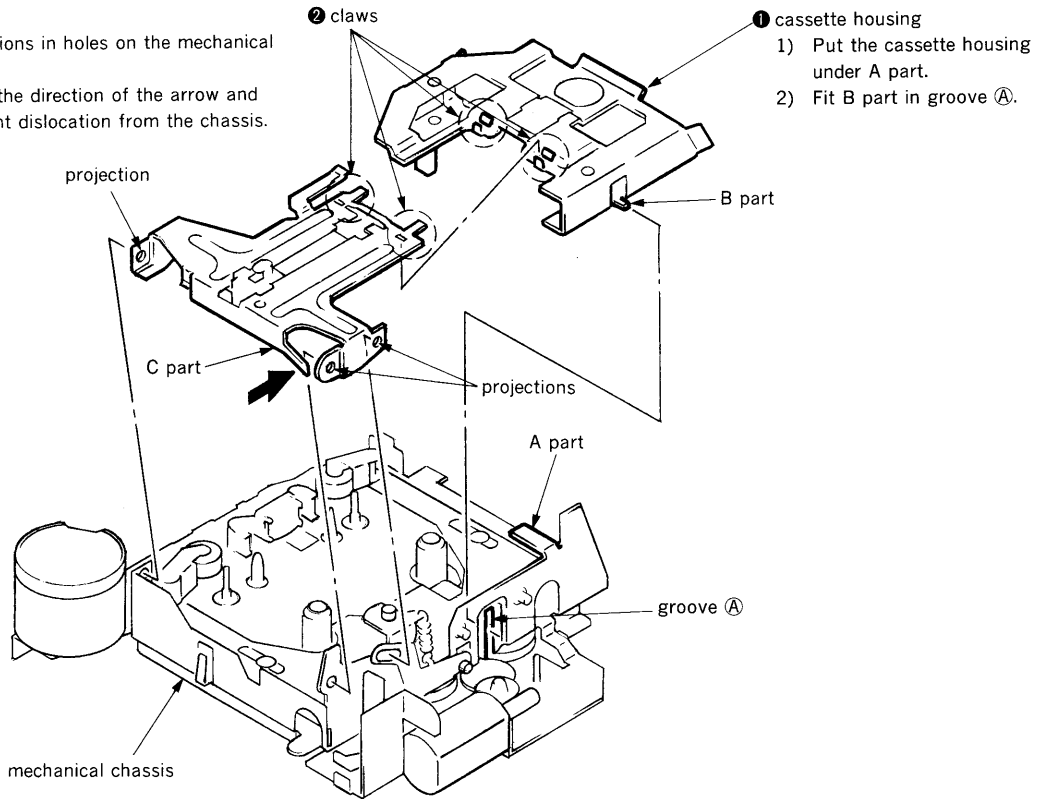


Fig. 2

### 3-4. INSTALLING THE CASSETTE HOUSING

**③ housing hanger**

- 1) Fit three projections in holes on the mechanical chassis.
- 2) Bend C part in the direction of the arrow and fasten to prevent dislocation from the chassis.



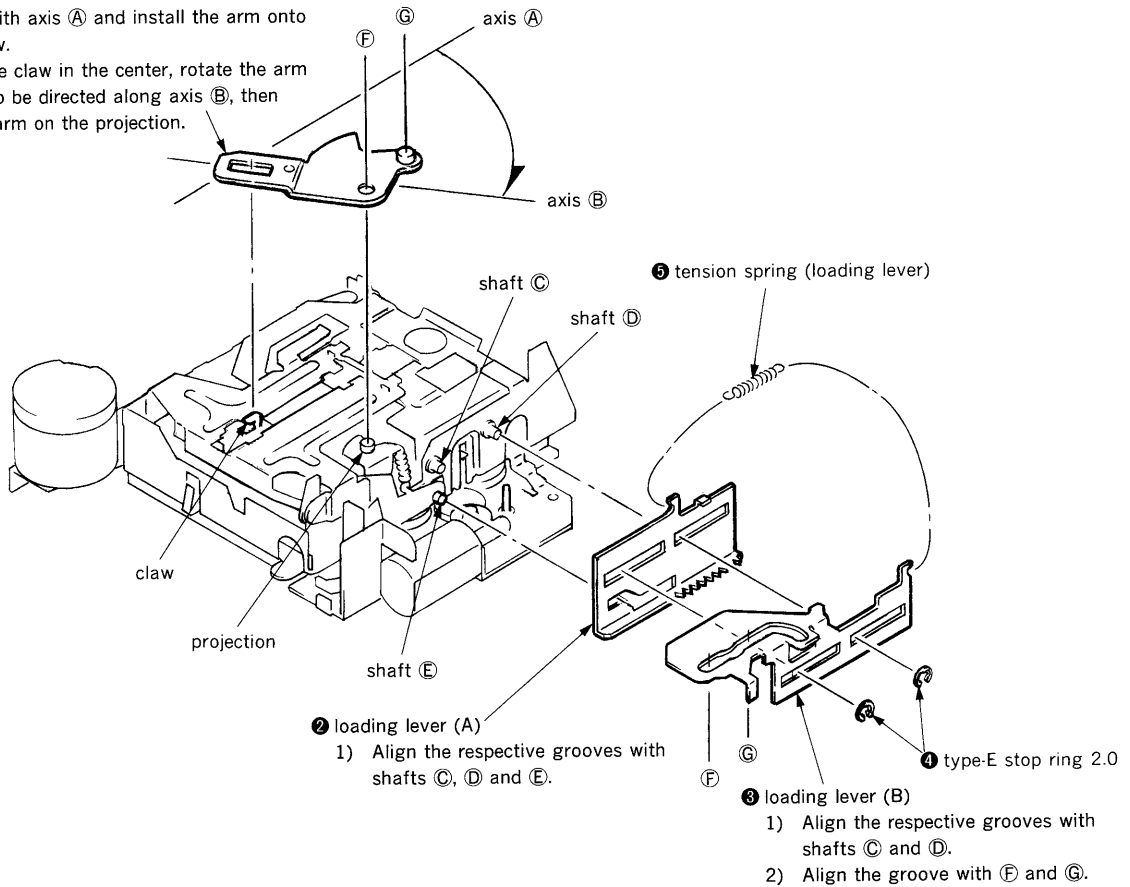
**① cassette housing**

- 1) Put the cassette housing under A part.
- 2) Fit B part in groove (A).

### 3-5. INSTALLING THE LOADING LEVER

**① suction arm**

- 1) Align with axis (A) and install the arm onto the claw.
- 2) With the claw in the center, rotate the arm so as to be directed along axis (B), then fit the arm on the projection.



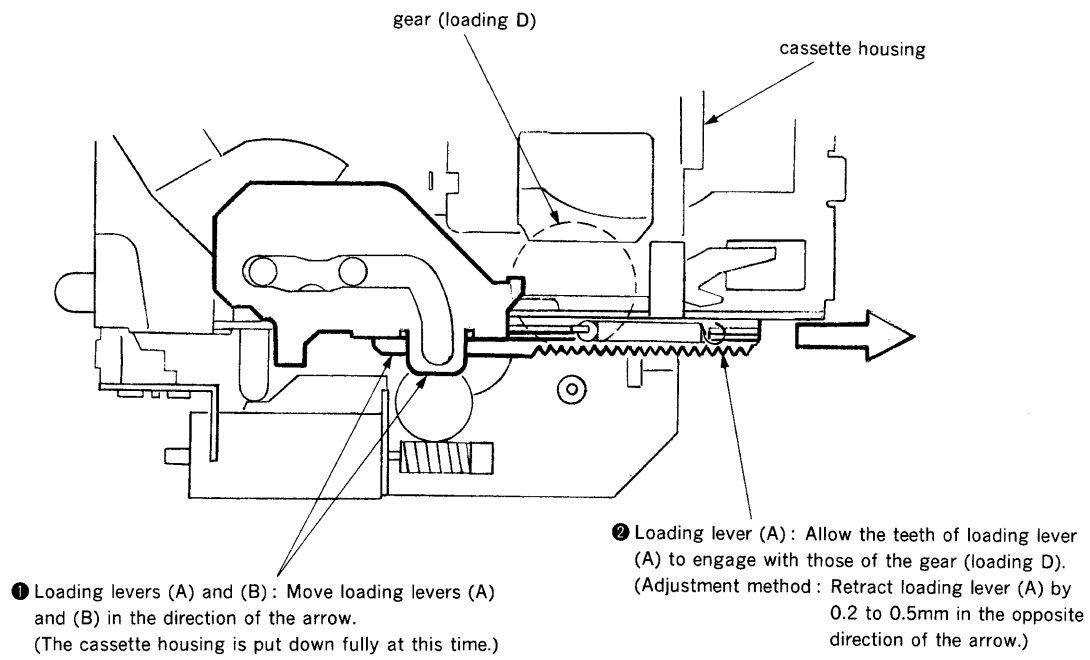
**② loading lever (A)**

- 1) Align the respective grooves with shafts (C), (D) and (E).

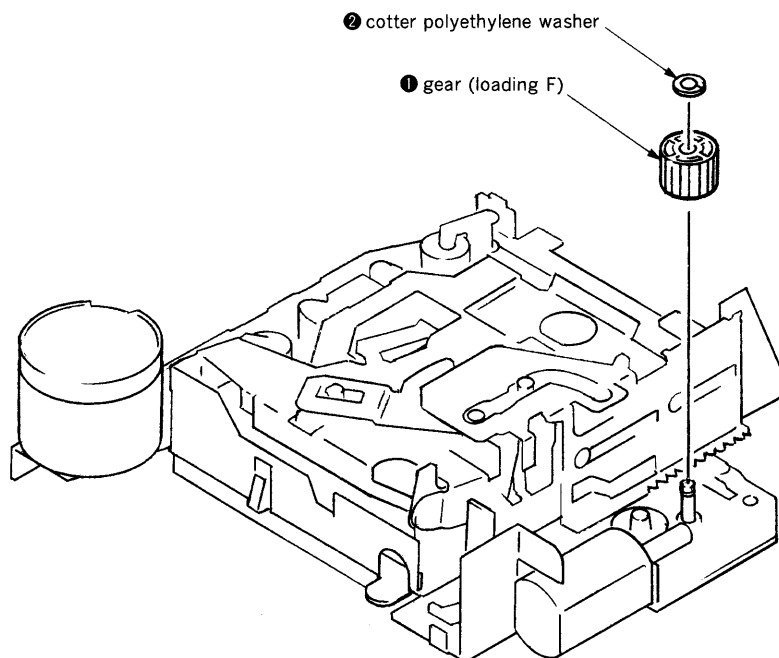
**③ loading lever (B)**

- 1) Align the respective grooves with shafts (C) and (D).
- 2) Align the groove with (F) and (G).

### 3-6. POSITIONING THE LOADING LEVERS



### 3-7. INSTALLING THE GEAR (LOADING F)





## SECTION 4 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	30 – 65g·cm (0.42 – 0.90 oz·inch)
FWD Back Tension		0.5 – 4.5g·cm (0.01 – 0.06 oz·inch)
REV	CQ-102RC	30 – 65g·cm (0.42 – 0.90 oz·inch)
REV Back Tension		0.5 – 4.5g·cm (0.01 – 0.06 oz·inch)
FF, REW	CQ-201B	60 – 200g·cm (0.83 – 2.78 oz·inch)

### Tape Tension Measurement

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

## SECTION 5 ELECTRICAL ADJUSTMENTS

### TEST MODE

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

<Set the Test Mode>

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

<Release the Test mode>

1. Push the "OFF" button.

See the adjustment location from on page 21 for the adjustment.

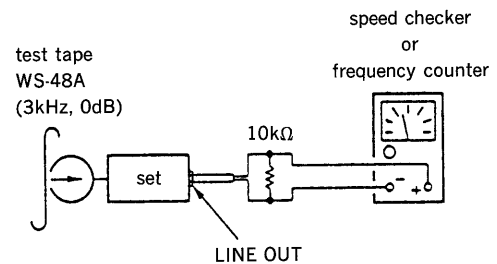
**DECK SECTION**

**0dB=0.775V**

### Tape Speed Adjustment

#### Procedure :

1. Put the set into the FWD PB mode.



**Specification :** Constant speed

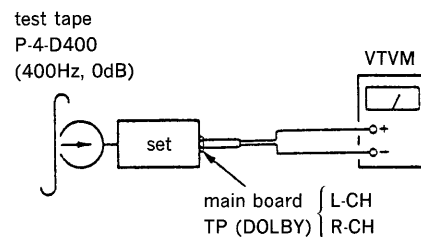
Speed checker	Frequency counter
-1.5 to +2.5%	2,955 to 3,075Hz

**Adjustment Location :** See page 21.

### DOLBY Level Adjustment

#### Setting :

- Preset [3] (DOLBY) button : OFF
- SEL (BAS) button : Center
- SEL (TRE) button : Center
- SEL (BAL) button : Center
- SEL (FAD) button : Center
- SEL (VOL) button : Maximum



#### Procedure :

1. Put the set into the FWD PB mode.
2. Adjust RV151 (L-CH) and RV251 (R-CH) so that VTVM reading is  $-6 \pm 0.5$  dB (0.37 to 0.41V).

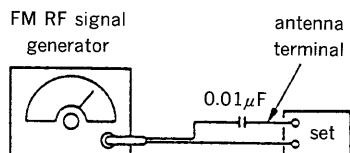
**Adjustment Location :** See page 21.

**TUNER SECTION**OdB=1 $\mu$ V**Cautions during repair**

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

**FM Auto Scan/Stop Level Adjustment****Setting :**

TUNER button : FM

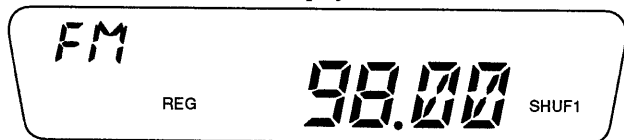


Carrier frequency : 98.00MHz  
 Output level : 22dB (12.6 $\mu$ V)  
 Mode : mono  
 Modulation : 1kHz, 22.5kHz deviation

**Procedure :**

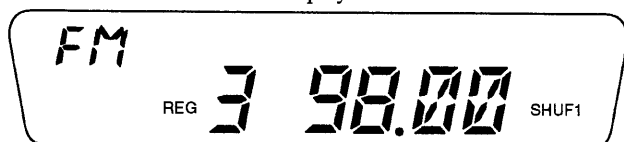
1. Set to the test mode. (See page 17.)
2. Push the **TUNER** button and set to FM.

Display



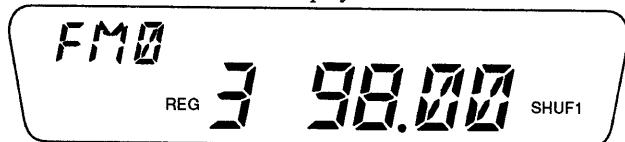
3. Push the preset **[3]** button.

Display



4. Adjust with the volume RV3 on TU10 so that the "FM" indication turns to "FM0" indication on the display window.  
 But, in case of already indicated "FM0", turn the RV3 so that put out light "0" indication and adjustment.

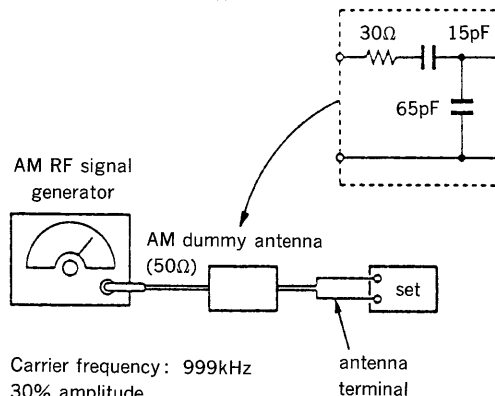
Display



Adjustment Location : See page 21.

**MW Auto Scan/Stop Level Adjustment****Setting :**

TUNER button : MW

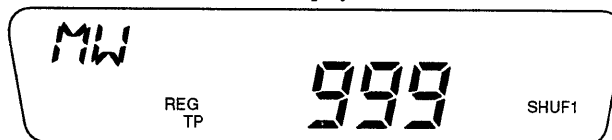


Carrier frequency : 999kHz  
 30% amplitude  
 modulation by  
 400Hz signal  
 Output level : 33dB (44.7 $\mu$ V)

**Procedure :**

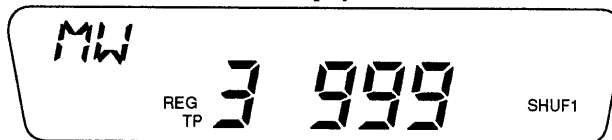
1. Set to the test mode. (See page 17.)
2. Push the **TUNER** button and set to MW.

Display



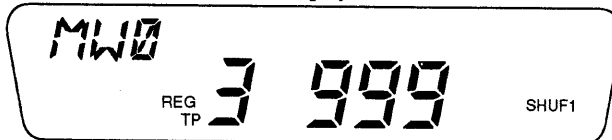
3. Push the preset **[3]** button.

Display



4. Adjust with the volume RV1 on TU10 so that the "MW" indication turns to "MW0" indication on the display window.  
 But, in case of already indicated "MW0", turn the RV1 so that put out light "0" indication and adjustment.

Display

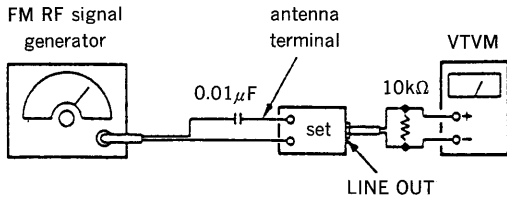


Adjustment Location : See page 21.

### High Cut Control Effect Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz  
 Output level : 60dB (1mV)  
 Mode : mono  
 Modulation : 10kHz, 40kHz deviation

Procedure :

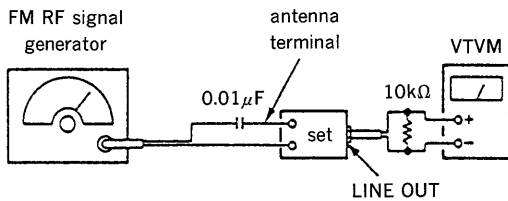
1. Tune the 98.00MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU10 so that the output level is (A)–5dB then signal generator input set to 20dB.

Adjustment Location : See page 21.

### FM Noise Focus Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz  
 Output level : 60dB (1mV)  
 Mode : mono  
 Modulation : 1kHz, 75kHz deviation

Procedure :

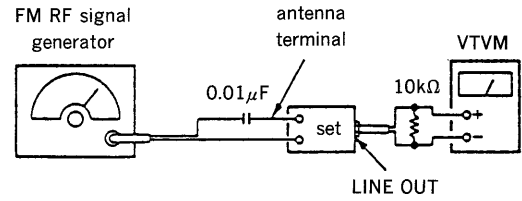
1. Tune the 98.00MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU10 so that the output level is (B)–30dB then signal generator input set to –20dB.

Adjustment Location : See page 21.

### FM Stereo Separation Adjustment

Setting :

TUNER button : FM



Carrier frequency : 98.00MHz  
 Output level : 70dB (3.2mV)  
 Mode : stereo  
 Modulation : main : 1kHz, 20kHz deviation (26%)  
 sub : 1kHz, 20kHz deviation (26%)  
 19kHz pilot : 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ <sup>Ⓓ</sup> Adjust RV4 on TU10 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ <sup>Ⓔ</sup> Adjust RV4 on TU10 for minimum reading.

L-CH Stereo separation : Ⓐ–Ⓑ

R-CH Stereo separation : Ⓒ–Ⓓ

The separations of both channels should be equal.

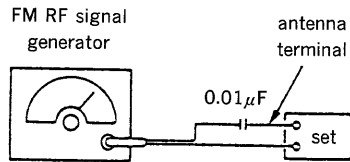
Specification : Separation more than 30dB

Adjustment Location : See page 21.

## RDS S-Meter Adjustment

### Setting :

TUNER button : FM



Carrier frequency : 98.00MHz  
Output level : 35dB (56.2μV)  
Mode : mono  
Modulation : no modulation

### Procedure :

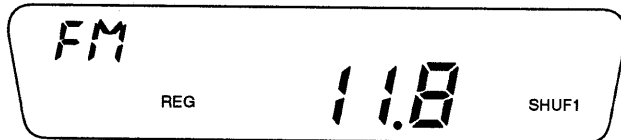
1. Set to the test mode. (See page 17.)
2. Push the **TUNER** button and set to FM.

Display



3. Push the preset **6** button.
4. Adjust RV331 so that the display indication is "11.8".

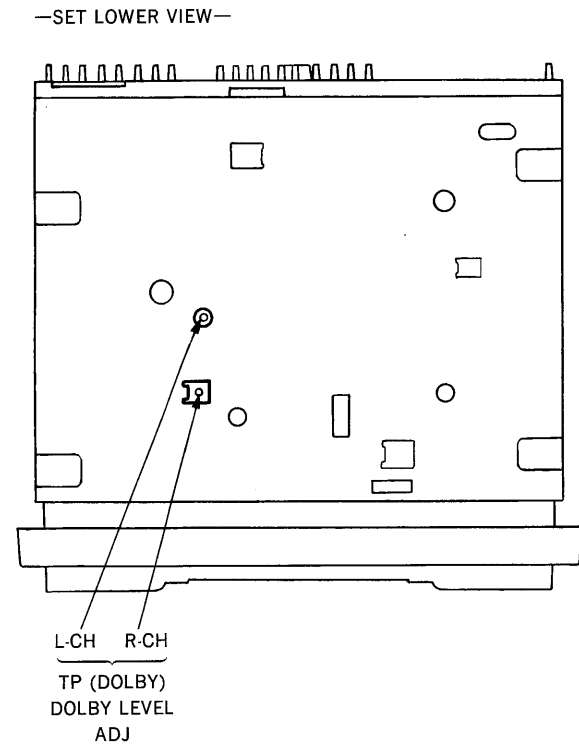
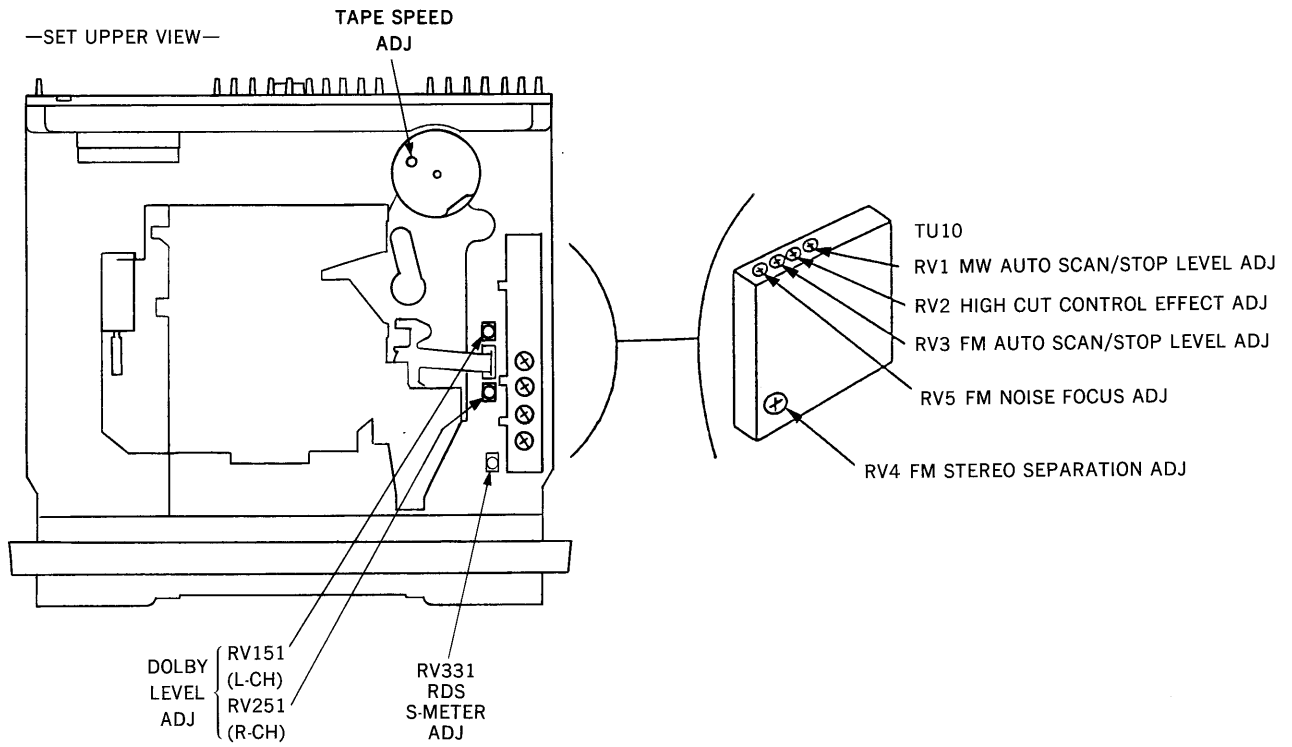
Display



**Specification :** Display indication : 11.6 to 12.0

**Adjustment Location :** See page 21.

**Adjustment Location :**



## SECTION 6 DIAGRAMS

### 6-1. IC PIN DESCRIPTIONS

#### • IC301 $\mu$ PD75518GF-280-3B9 (System Control)

Pin No.	Pin Name	I/O	Pin Description
1	KI0	I	KEY input
2	VREF	I	A/D reference voltage input
3, 4	VDD	—	Power supply terminal
5	—	—	No connection
6	P-ON	O	At P-ON : High output
7	ILL-ON	O	At ACC-ON : High output (P-SEL : ON) At P-ON : High output (P-SEL : OFF)
8	COLOR	O	At AMBER : Low output, at GREEN : High output
9	MUTE	O	At MUTE : High output
10	AUX-MUTE	—	No used.
11	DOLBY-ON/OFF	O	At DOLBY-NR ON : Low output
12	—	—	No connection
13	TAPE-MUTE	O	Except for TAPE PLAYBACK : Low output (At movement on FF, REW and AMS : High output)
14	AMP-ON	O	Inner power amplifier control terminal. At AMP-ON : High output
15	C-MOTOR	O	Capstan motor control terminal. At MOTOR-ON : High output
16	LCD-INH	O	INHIBIT signal to LCD driver IC. At Low output : Light off
17	TEST-MODE	I	At Low input : TEST MODE 1. Input available at timing only of RESET L to H and BU CHECK L to H.
18	LCD-DATA	O	DATA output terminal to LCD driver IC.
19	LCD-CLK	O	CLOCK output terminal to LCD driver IC.
20	LCD-CE	O	LATCH output terminal to LCD driver IC.
21	VOL-CE	O	LATCH output terminal to VOL IC.
22	—	—	No connection
23	VOL-CLK	O	CLOCK output terminal to VOL.
24	VOL-DATA	O	DATA output terminal to VOL.
25	—	—	No connection
26	NOR/MTL	I/O	At AUTO METAL : METAL input terminal. At METAL : Low input, at NORMAL : High input. At no AUTO METAL : METAL output terminal. At METAL : Low input, at NORMAL : High input.
27	EJECT	O	LOADING MOTOR control terminal. At moving in the direction of EJECT : High output.
28	LOAD	O	LOADING MOTOR control terminal. At moving in the direction of LOAD and PLAY : High output
29—32	POS4—POS1	I	MD position detection terminal
33	VSS	—	GND
34	REEL2	I	MD reel table rotation detection terminal. FWD supply side
35	REEL1	I	MD reel table rotation detection terminal. FWD take-up side
36	AUTO-METAL	—	Connect to GND.
37	AMS-IN	I	TAPE music with/without detection terminal. Low input : With music, High input : Without music
38	EEPROM-DATA	—	Connect to GND.
39	EEPROM-CLK	—	Not used.
40	N/R	O	NORMAL/REVERSE output terminal
41	TAPE-ON	O	OR output of LM•EJECT and LM•LOAD. At one side ACTIVE : High output, at REEL detection : High output
42	SYSTEM RESET	O	UNILINK SYSTEM RESET terminal. Low output : SYSTEM RESET

Pin No.	Pin Name	I/O	Pin Description
43	BUS-ON	O	For UNILINK terminal
44	CLK-OUT	O	For UNILINK terminal
45	BEEP	O	For piezoelectric buzzer output terminal
46	ACC-CHECK	I	Accessory detection terminal, Low input : ACC ON
47	KEY-ACK	I	KEY ACKNOWLEDGE input terminal. For KEY insert input
48	C-ALARM	I	Caution alarm with/without initial setting terminal. Low input : With caution alarm (This set is connect to GND.)
49	SIRCS-IN	I	SIRCS (REM DET) input terminal
50	DATA-IN	I	For UNILINK terminal
51	DATA-OUT	O	For UNILINK terminal
52	CLK-IN	I	For UNILINK terminal
53	BU-CHECK	I	Back Up voltage detection terminal
54	VSS	—	GND
55	XT1	—	Connect to GND.
56	XT2	—	Not used.
57	IO	—	Connect to GND.
58	X1	—	Connect to crystal. (4.19MHz)
59	X2	—	Connect to crystal. (4.19MHz)
60	RESET	I	RESET input
61	COLOR (ON/ $\overline{\text{OFF}}$ )	I	Illumination color select with/without initial setting terminal. Low input : Without select
62	COLOR-SEL	—	Connect to GND.
63—65	—	—	Connect to GND.
66	TEL-MUTE	I	Low input : 20dB audio mute
67	—	—	Connect to GND.
68	N-SW	I	Low input : With front panel
69, 70	—	—	No connection
71	KEY-ACT	O	Reverse pin ⑤ and Active output terminal
72	AMP-MUTE	O	MUTE output terminal to inner power amplifier control terminal at AMP-OFF : Low output
73	AUDIO-GND	—	Connect to GND.
74	DOLBY-SEL	I	DOLBY NR function with/without initial setting terminal. Low input : With DOLBY
75	P-SEL	I	POWER SELECT switch input. High input : ON, Low input : OFF. (Low input : Setting without ACC position)
76—79	—	—	No connection
80	KI1	I	KEY input terminal

• IC331 MN1883220SZF (Tuner Control)

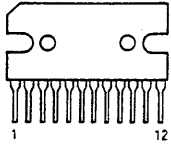
Pin No.	Pin Name	I/O	Pin Description
1—6	—	—	Not used. (open)
7	VDD	—	Power supply terminal (+5V)
8	X1	I	Clock input (8MHz)
9	X2	O	Clock output (8MHz)
10	VSS	—	GND
11	XI	I	Not used. (open)
12	XO	O	Not used. (open)
13	EX2	O	Not used. (Connect to GND.)
14	RESET	I	Reset signal input
15	RDS-CLK	I	RDS CLK signal input from the RDS decoder (IC332).
16	BU-CHECK	I	Backup power supply detection input. "H" : Backup ON
17	BUS-ON-IN	I	BUS interface ON/OFF selection input from the system control (IC301).
18—29	—	—	Not used. (open)
30	RDS-DATA	I	RDS DATA signal input from the RDS decoder (IC332).
31	—	—	Not used. (Connect to GND.)
32—35	—	—	Not used. (open)
36, 37	—	—	Not used. (Connect to GND.)
38	PLL-DI	I	Data input from the PLL (IC12).
39	PLL-DO	O	Data output to the PLL (IC12).
40	PLL-CLK	O	Clock output to the PLL (IC12).
41	PLL-CE	O	Chip enable output to the PLL (IC12).
42	RQ	O	BUS interface request output. Terminal for requesting communication Requests at "H".
43	LINK-OFF	O	BUS interface link ON/OFF selection output. "H" : LINK OFF
44	SCK	I	Serial clock input from the system control (IC301).
45	SI	I	Data input from the BUS interface (IC381).
46	SO	O	Data output to the BUS interface (IC381).
47	VDD	—	Power supply terminal (+5V)
48	AVDD	—	Power supply terminal (+5V)
49	VREF	I	Reference voltage input terminal of A/D conversion.
50—53	—	—	Not used. (Connect to GND.)
54	DIST-SEL 1	I	Model selection input terminal.
55	DIST-SEL 2	I	Model selection input terminal. (Connect to GND.)
56	AM-S-METER	I	AM S meter voltage detection input
57	FM-S-METER	I	FM S meter voltage detection input. Uses the A/D conversion functions during BTM and RDS.
58—60	—	—	Not used. (Connect to GND.)
61	MODE 2	O	Tuner ON/OFF selection output to the power regulator (IC501).
62	—	—	Not used. (open)
63	RECEIVE	O	Receive input. Input level "L" when change the frequency.
64	—	—	Not used. (Connect to GND.)
65	MODE 1	O	FM ON/OFF selection output to the power regulator (IC501).
66	TUNER-MUTE	O	Muting control signal output



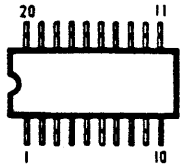
Pin No.	Pin Name	I/O	Pin Description
67	AF-SEEK	O	AF seek control output
68	—	—	Not used. (Connect to GND.)
69	—	O	Not used. (open)
70	ST-IN-MONO	I/O	Stereo indicator control input
71	SD-IN	I	SD input
72–80	—	—	Not used. (open)

## 6-2. SEMICONDUCTOR LEAD LAYOUTS

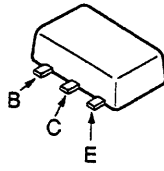
BA3910B-V2



LC7216M  
TDA7330BD-013TR

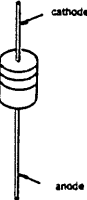


2SB1115A-YQ

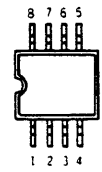


MTZJ-T-77-16B

MTZJ-11B  
MTZJ-6.2B  
MTZJ-7.5B  
RD3.9ESB2  
RD5.6ESB2  
RD6.8ESB2  
RD9.1ESB3  
1SS119-25

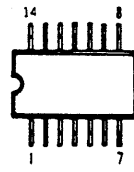


BA4558F  
TC4W66F



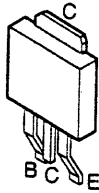
(TOP VIEW)

(TOP VIEW)  
MM1175XFF

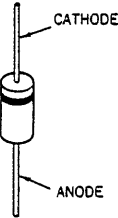


(TOP VIEW)

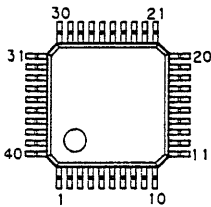
2SD1760F5-Q



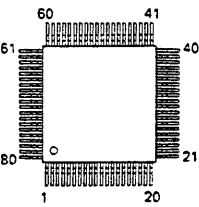
1N5404TU  
10E-2



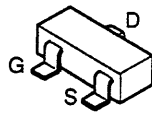
CXA1580Q-T4



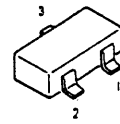
MM1883220SZF



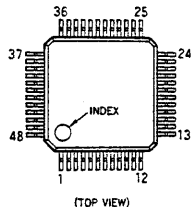
2SK1657-T1B



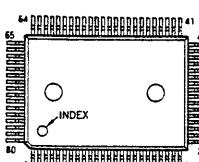
DAN202K  
RB425D



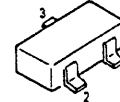
CXA1646Q



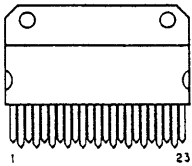
MSM6660-01GS-V1K  
μPD75518GF-280  
-3B9



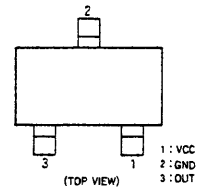
DAP202K



HA13151A

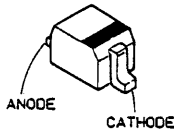


PST600EMT-T1

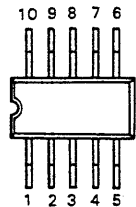


(TOP VIEW)

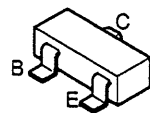
DTZ5.1C  
1SS355



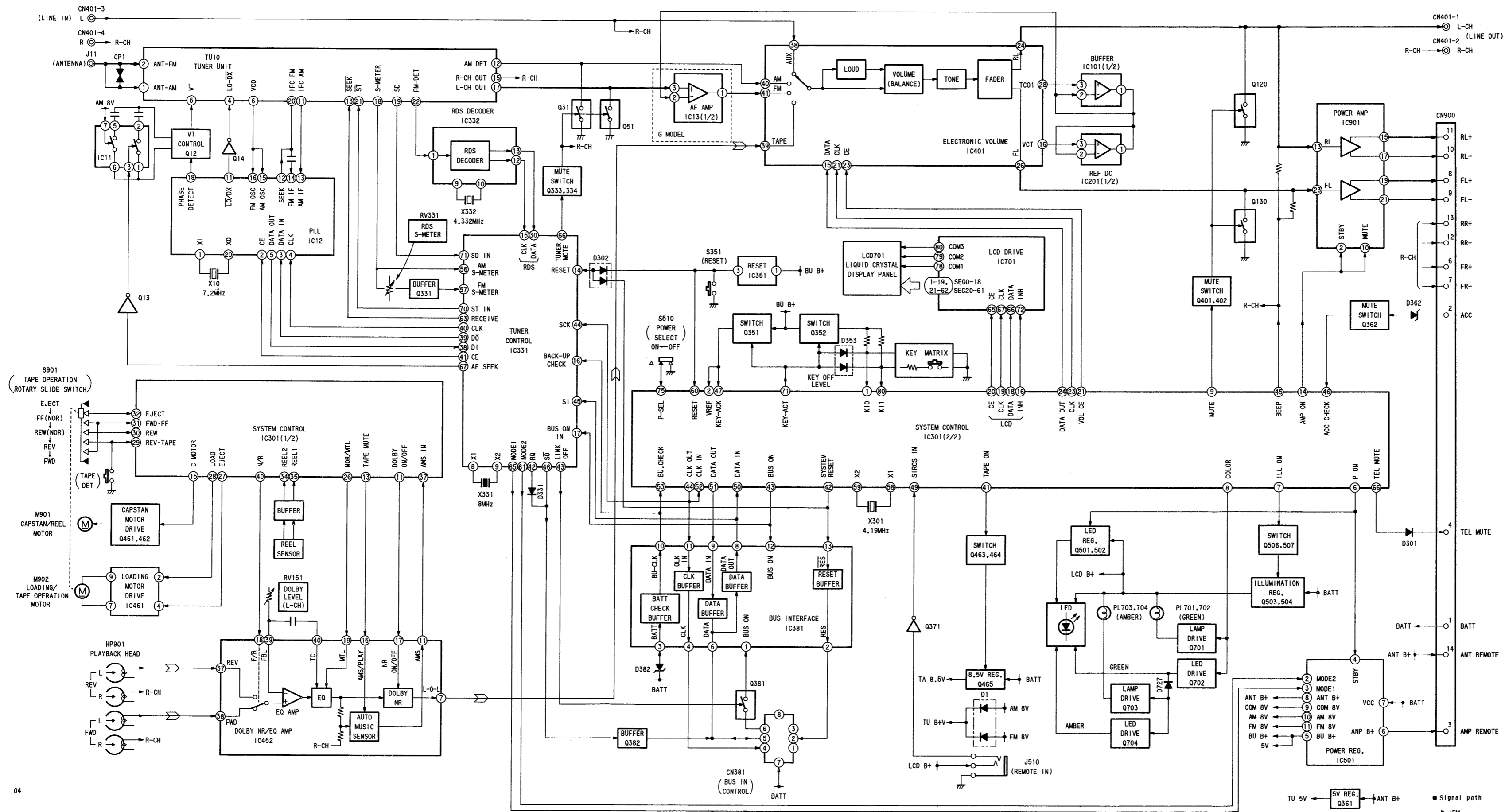
LB1638M



DTA114EK  
DTC114EK  
DTC314TKH04  
DTD113EK  
2SA1162-G  
2SC1623-L5L6

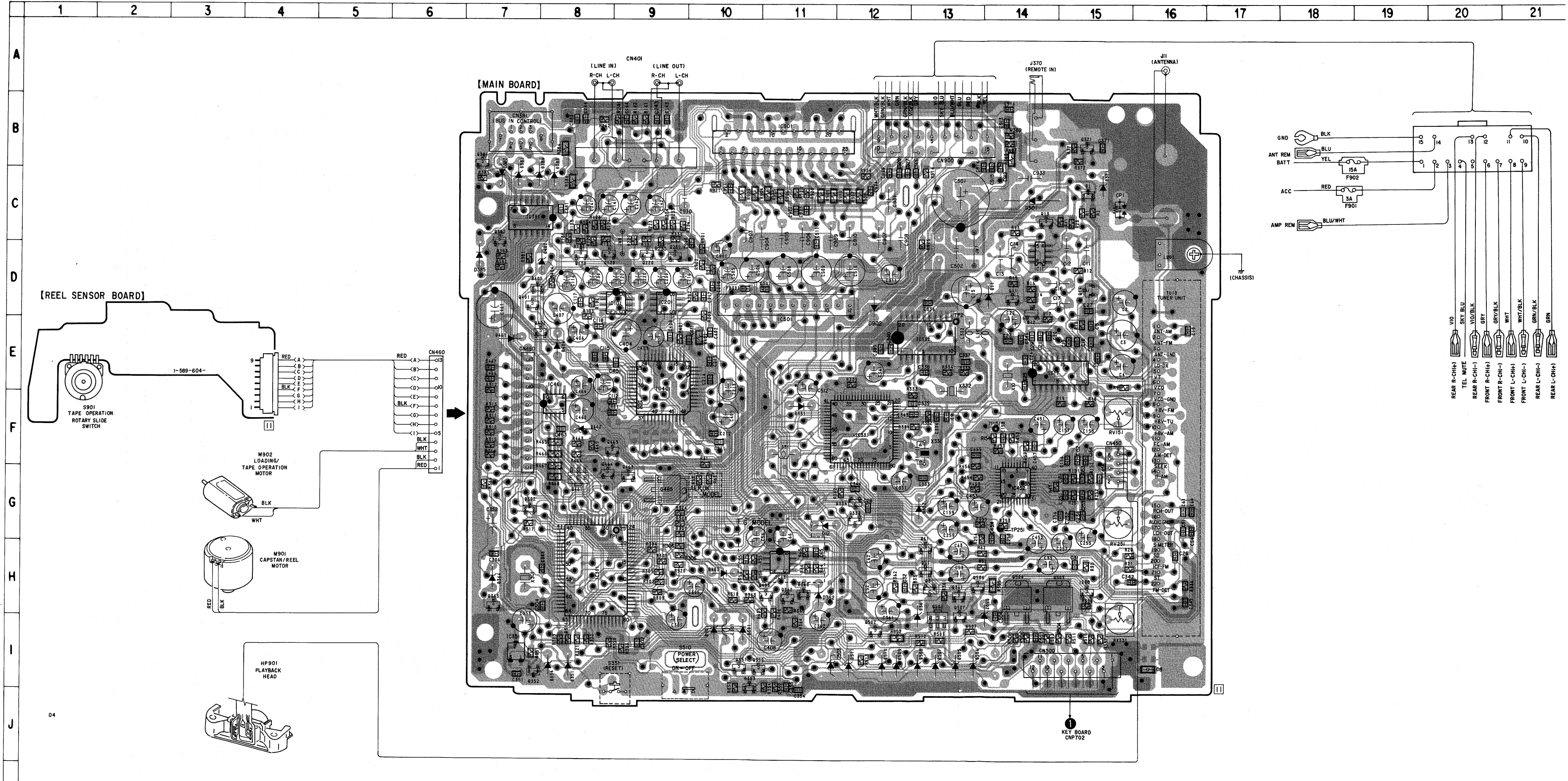


6-3. BLOCK DIAGRAM



● Signal Path  
 - - - FM  
 ····· PB

6-4. PRINTED WIRING BOARDS—MAIN SECTION— • Refer to page 26 for Semiconductor Lead Layouts.



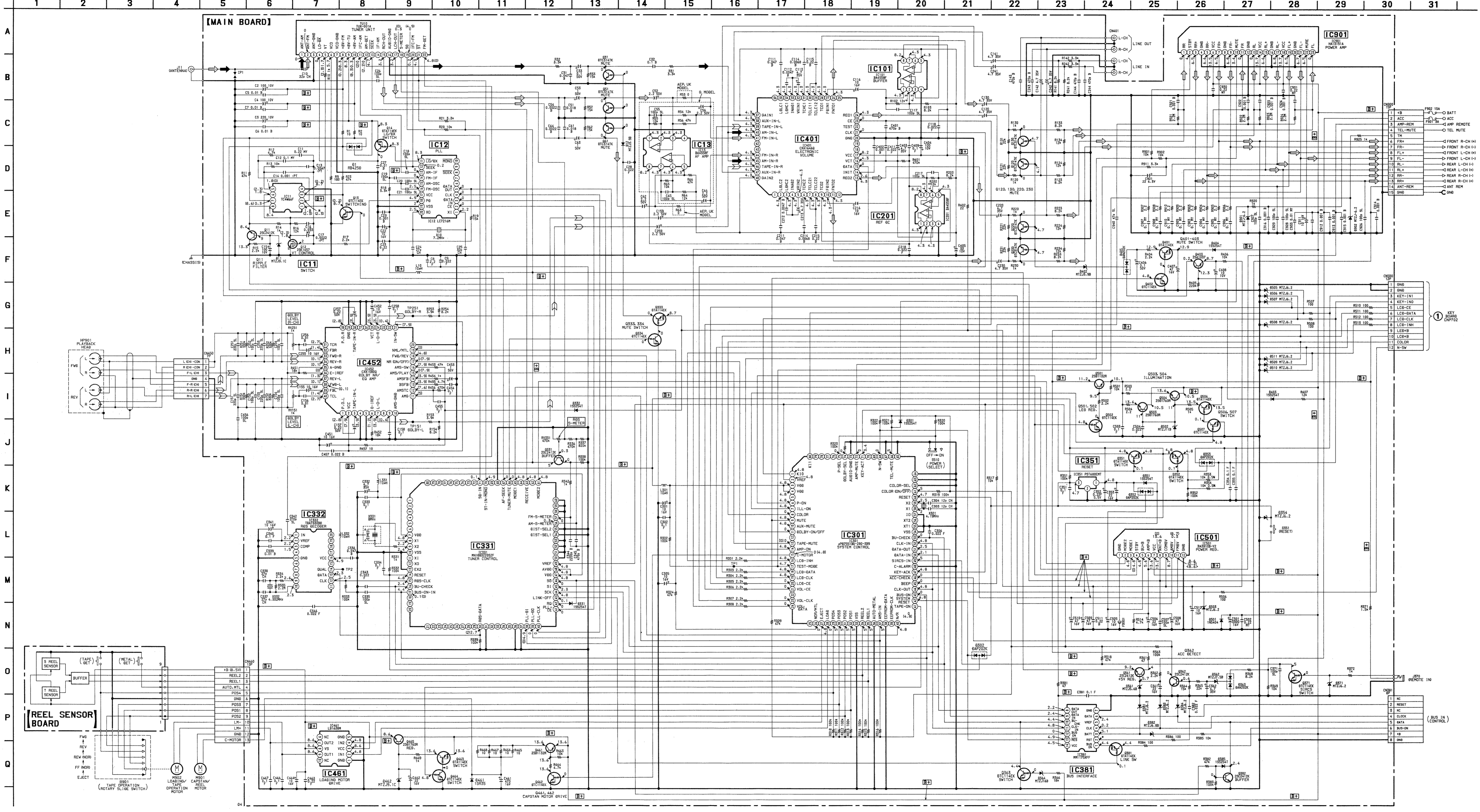
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	C-15	IC331	F-12
D11	D-14	IC332	E-13
D12	G-11	IC351	I-7
D301	I-10	IC381	C-7
D302	G-7	IC401	E-9
D331	F-11	IC452	G-14
D332	G-13	IC461	F-8
D351	I-8	IC501	D-11
D352	I-7	IC901	B-11
D353	I-10		
D354	I-8	Q11	D-14
D361	H-13	Q12	D-14
D362	H-11	Q13	C-14
D363	H-11	Q14	D-15
D364	H-7	Q31	H-13
D371	C-15	Q51	H-13
D381	C-7	Q61	H-13
D382	C-7	Q120	D-8
D383	C-8	Q130	D-8
D384	C-8	Q220	D-9
D385	D-7	Q230	D-9
D402	D-8	Q331	H-15
D403	H-10	Q333	G-12
D404	E-8	Q334	G-12
D405	D-7	Q351	I-10
D461	E-7	Q352	I-10
D462	F-8	Q361	H-13
D501	C-14	Q362	H-11
D502	I-14	Q363	H-7
D503	I-11	Q371	B-15
D505	I-13	Q381	B-7
D506	I-13	Q382	C-7
D507	I-13	Q401	D-7
D508	I-13	Q402	E-7
D509	I-12	Q403	H-11
D510	I-12	Q461	G-8
D511	I-12	Q462	G-9
D901	I-10	Q463	F-8
D902	D-12	Q464	G-8
		Q465	G-9
IC11	D-14	Q501	H-13
IC12	E-14	Q502	I-12
(IC13)	H-11	Q503	H-14
IC101	D-8	Q504	H-14
IC201	D-9	Q506	H-13
IC301	H-8	Q507	H-13

( ) : German model only

- Note:
- : parts extracted from the component side.
  - : Through hole.
  - : Pattern on the side which is seen.
  - : Pattern on the rear side.
  - Abbreviation
  - G : German model

6-5. SCHEMATIC DIAGRAM—MAIN SECTION— Refer to page 43 for IC Block Diagrams.

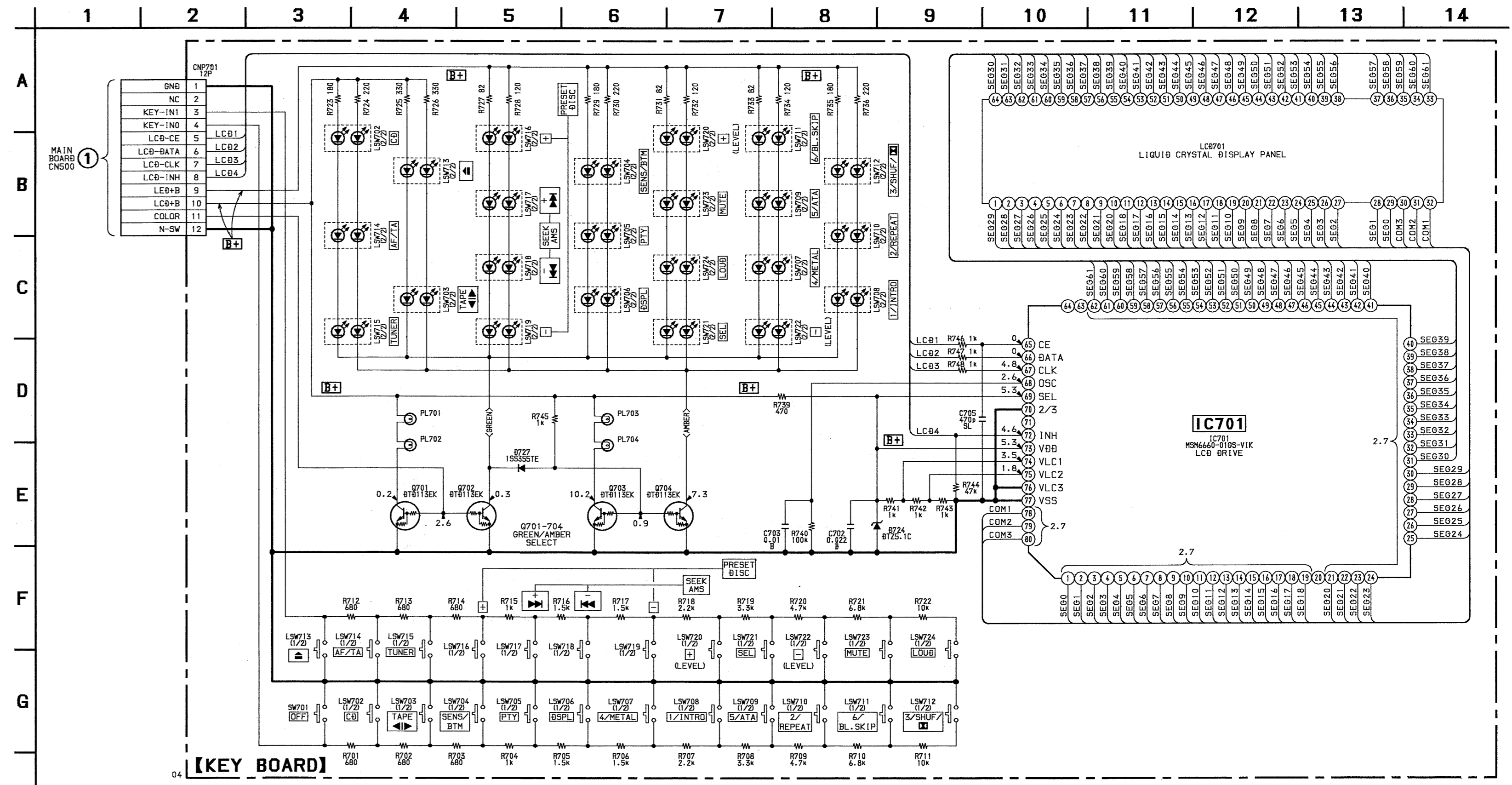
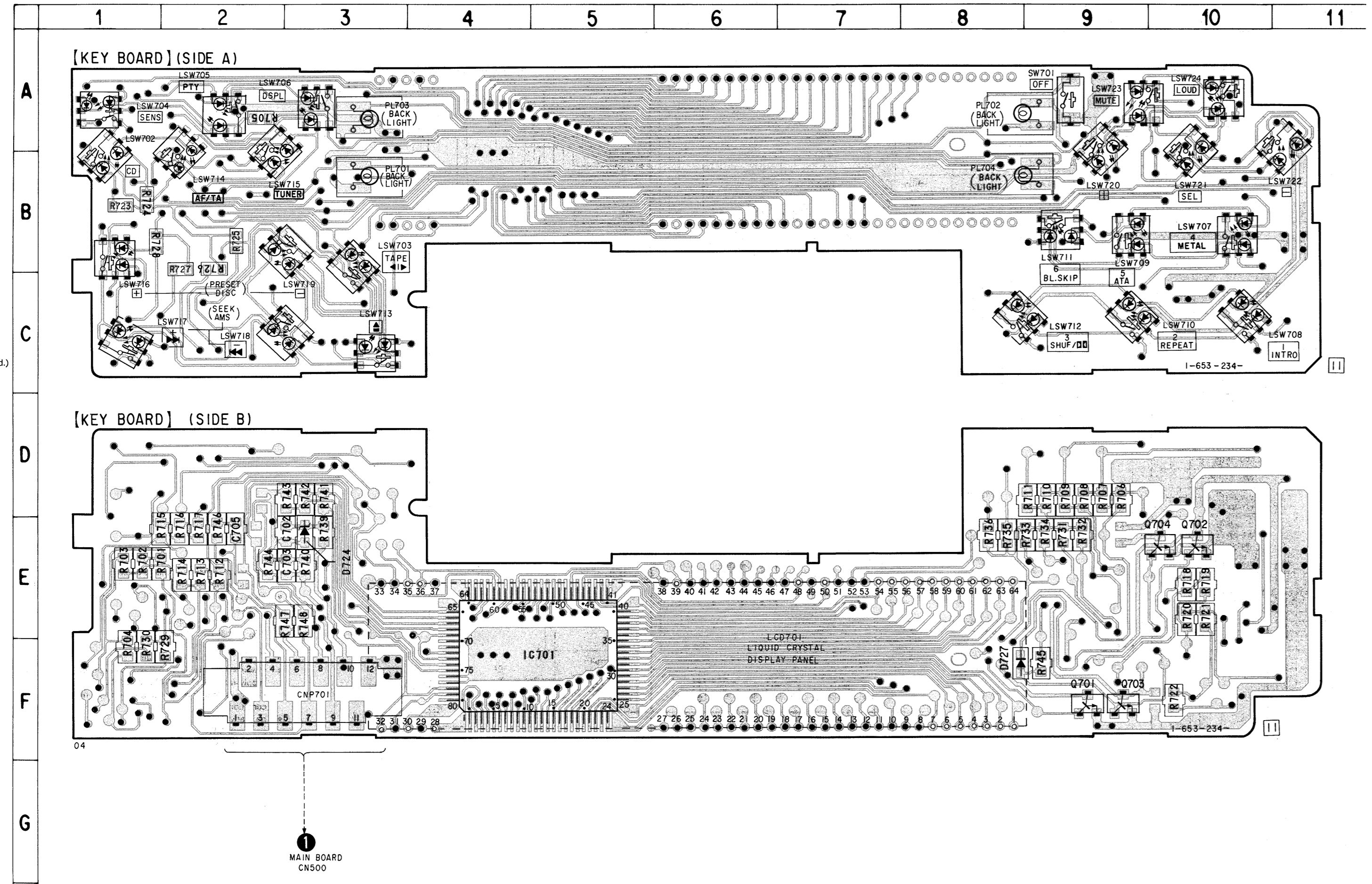


- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted;  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4\text{ W}$  or less unless otherwise specified.
  - $\Delta$ : internal component.
  - $\%$ : indicates tolerance.
  - $\square$ : B+ Line
  - $\square$ : 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 (detuned) conditions.
  - no mark: FM
  - ( ): MW
  - < : LW
  - > : LW
  - [ ]: PB
  - \* : impossible measurement point
  - Voltages are taken with a VOM (Input Impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Signal path:
    - FM
    - MW
    - PB
  - Abbreviation: G: German model

• Semiconductor Location

Ref. No.	Location
D724	E-3
D727	F-8
IC701	F-4
Q701	F-9
Q702	E-10
Q703	F-9
Q704	E-10

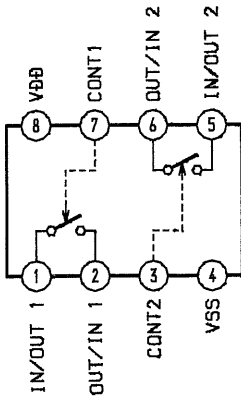
Note:  
 • — : parts extracted from the component side.  
 • — : Through hole.  
 • — : Pattern on the side which is seen.  
 (The other layer's patterns are not indicated.)



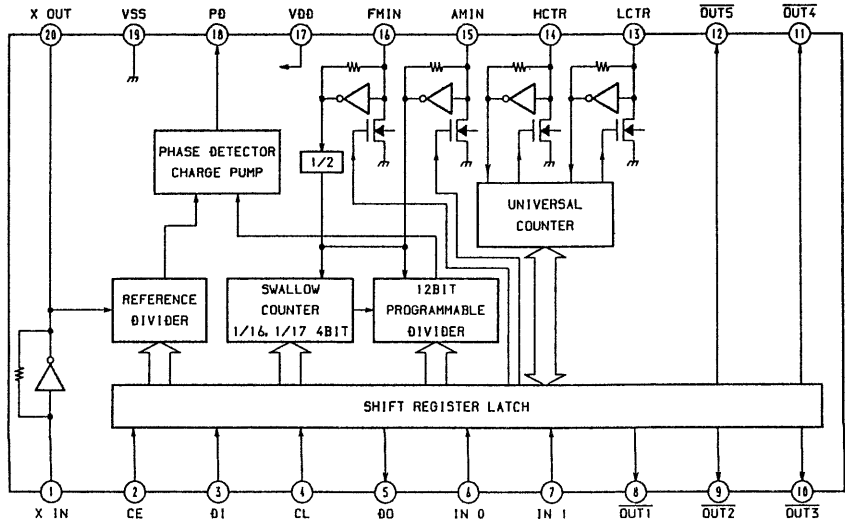
Note:  
 • All capacitors are in  $\mu$ F unless otherwise noted. pF :  $\mu$ F 50WV or less are not indicated except for electrolytics and tantalums.  
 • All resistors are in  $\Omega$  and 1/4 W or less unless otherwise specified.  
 • % : indicates tolerance.  
 • [B+] : B+ Line  
 • Power voltage 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 (detuned) conditions.  
 • no mark: FM

• IC Block Diagrams

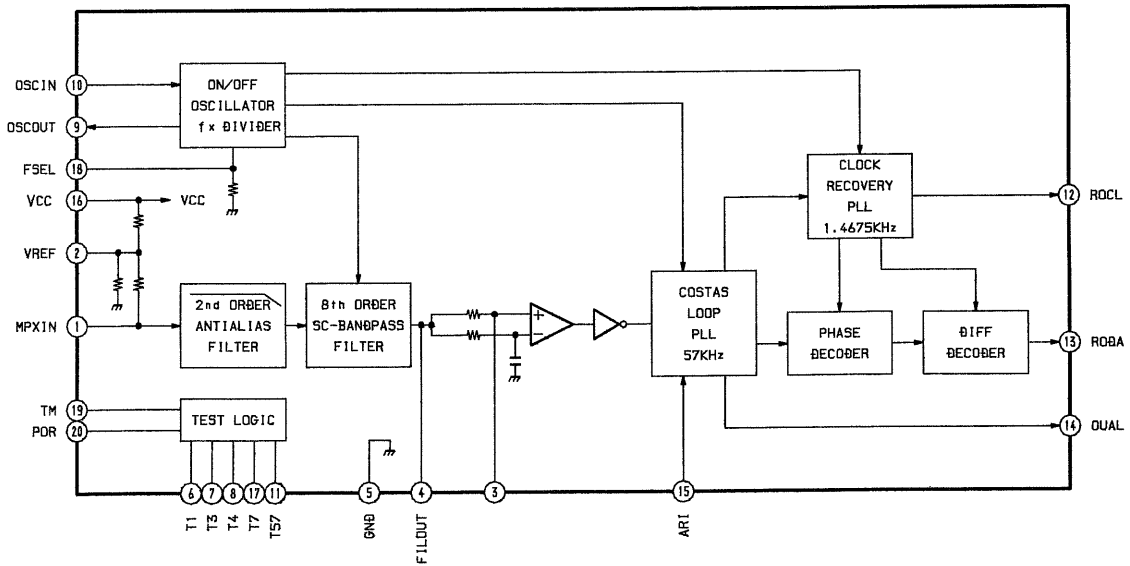
IC11 TC4W66F



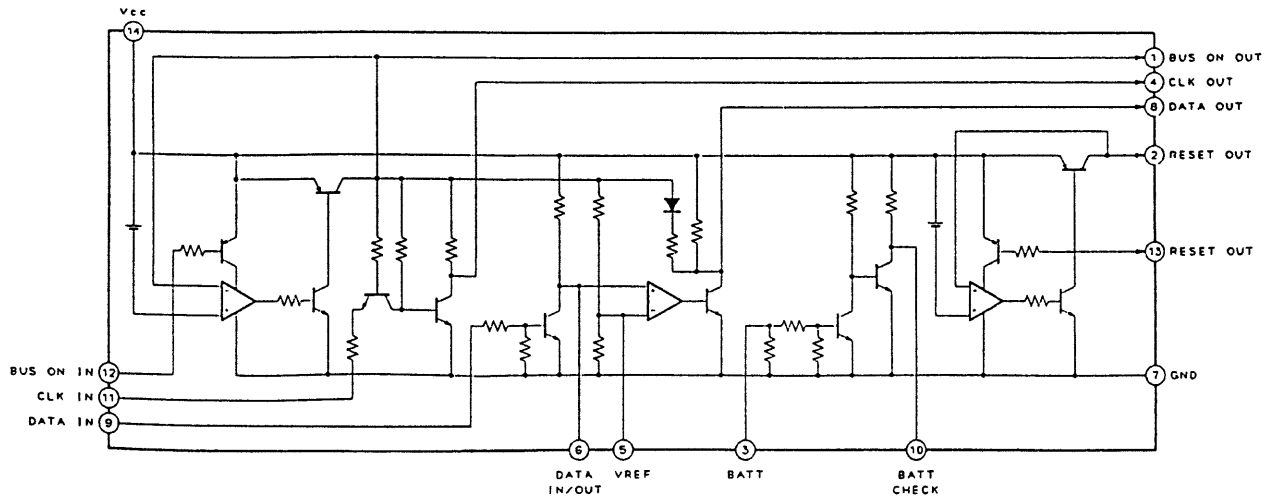
IC12 LC7216M



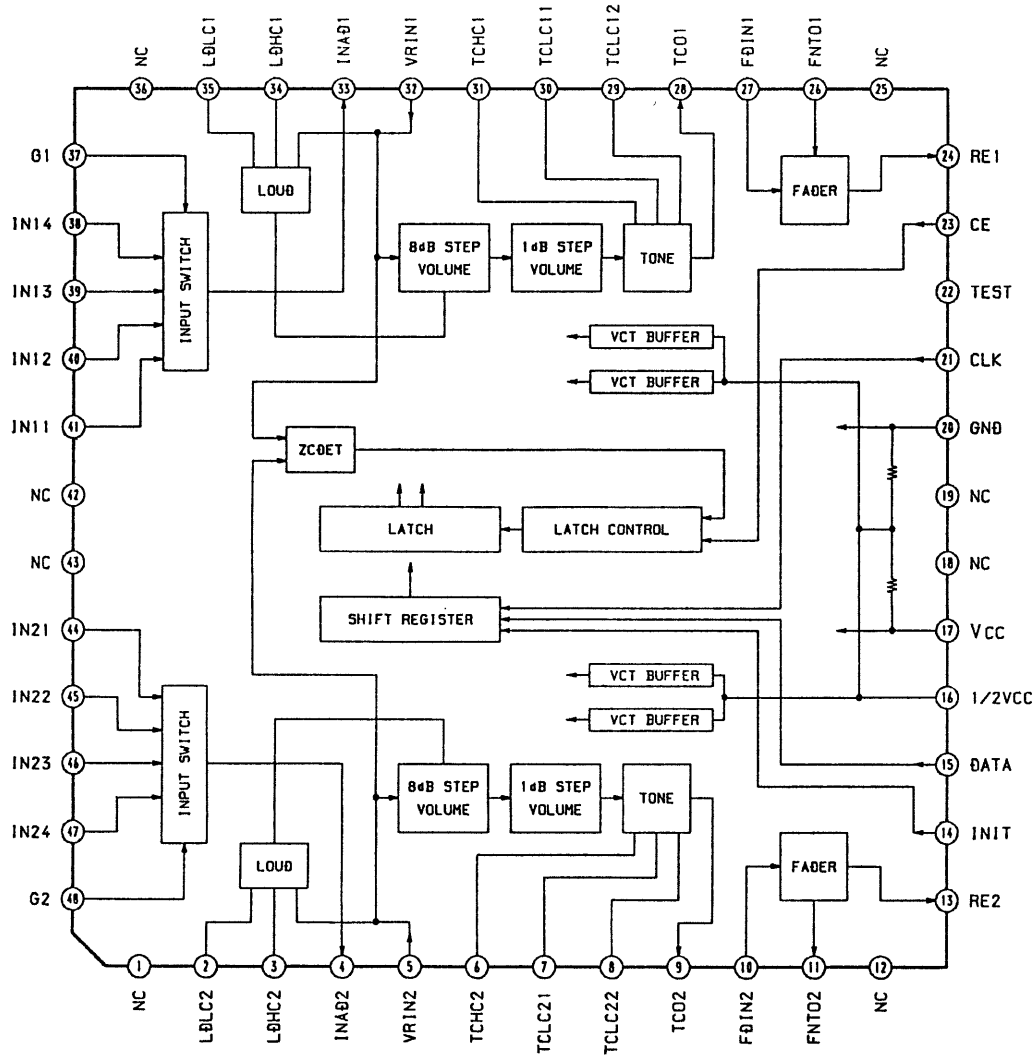
IC332 TDA7330BD



**IC381 MM1175XF**

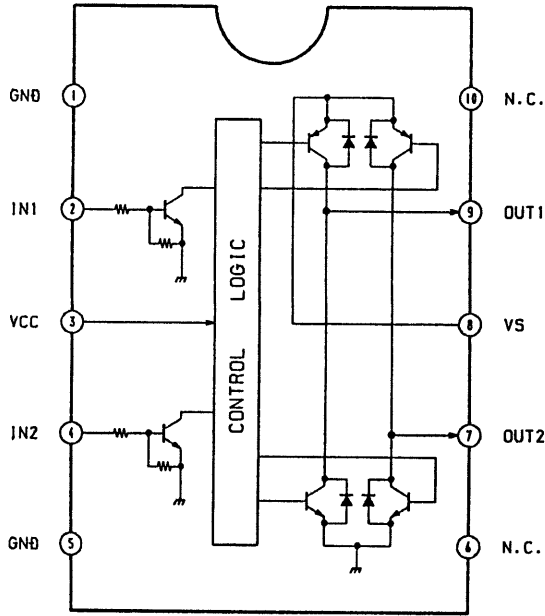


**IC401 CXA1646Q**

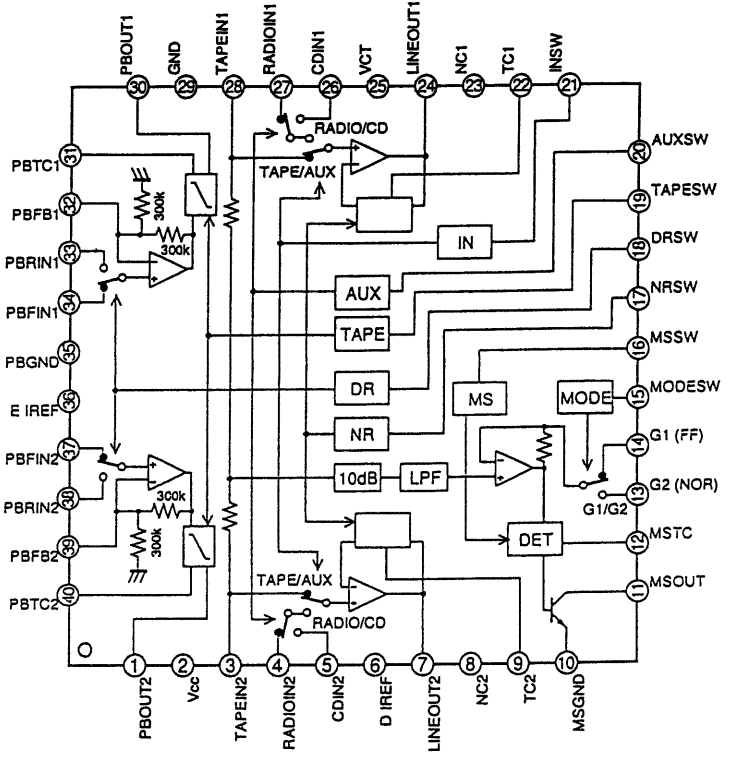




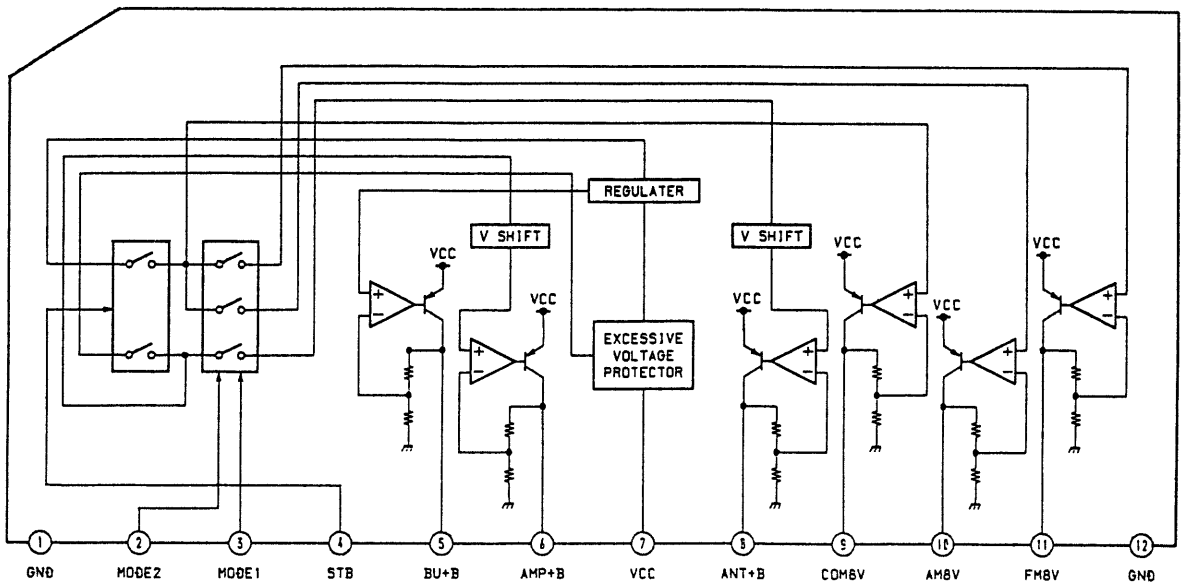
**IC461 LB1638M**



**IC452 CXA1580Q**



**IC501 BA3910B-V2**



## SECTION 7 EXPLODED VIEWS

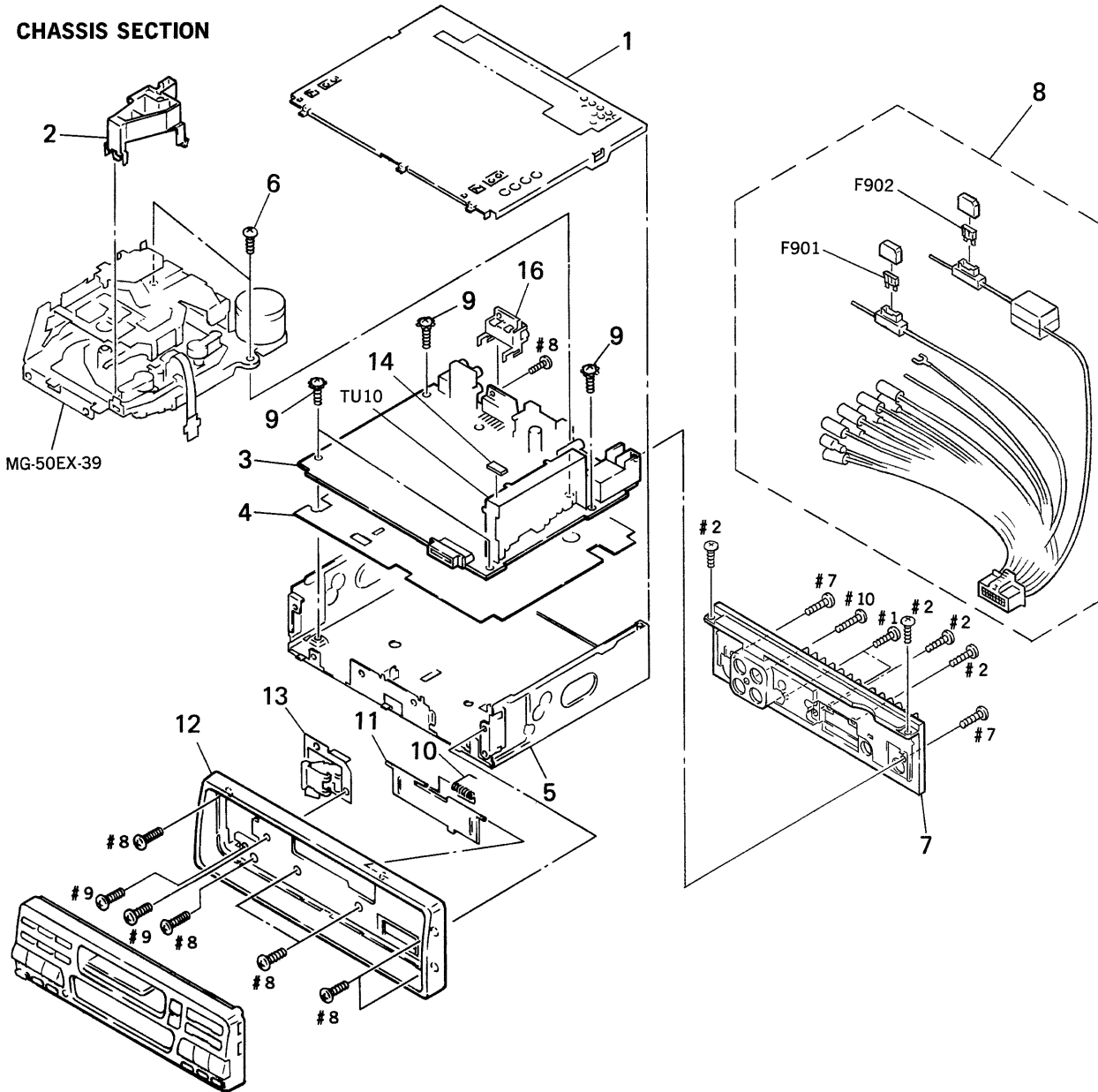
**NOTE:**

- 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  
G : German model

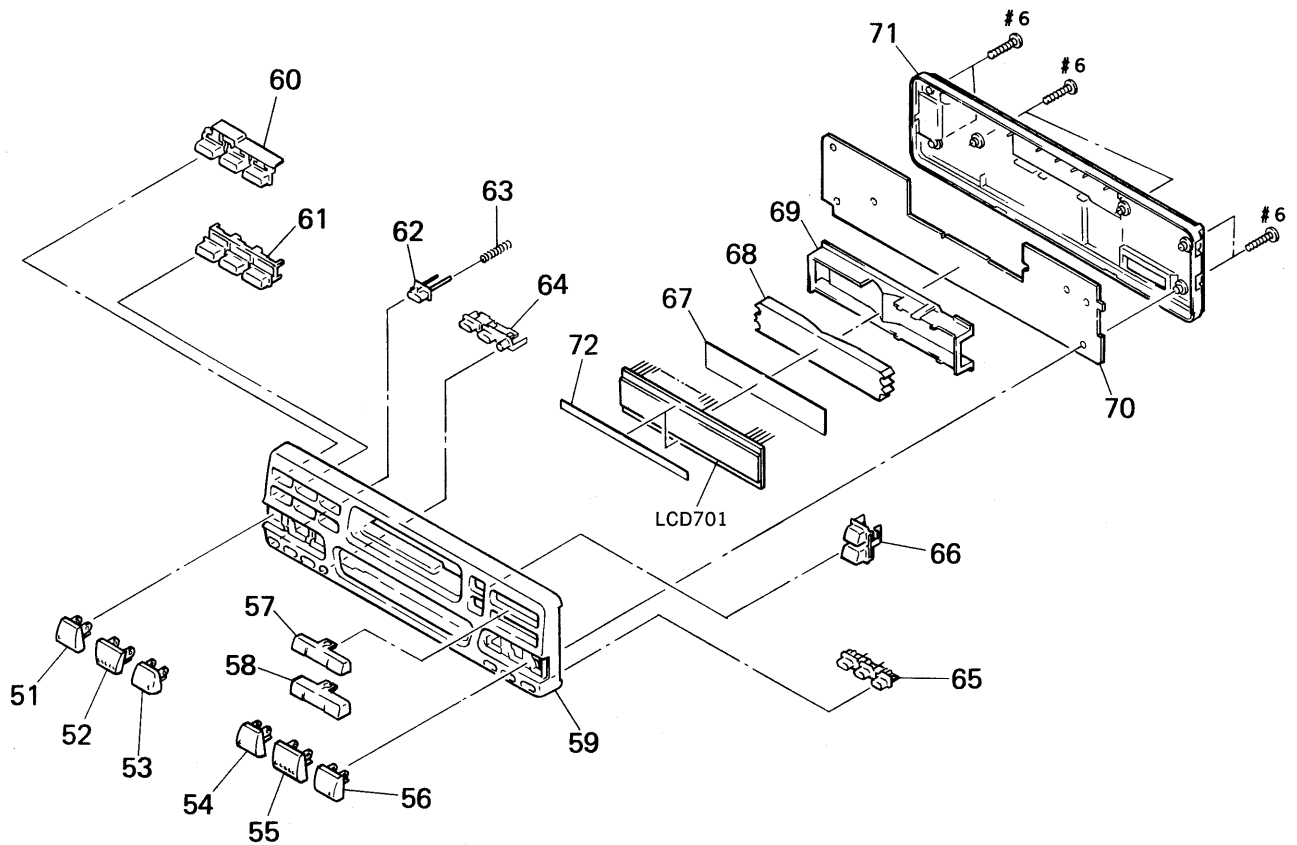
### 7-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	X-3368-833-1	COVER ASSY	
2	3-918-582-01	GUIDE	
* 3	A-3298-492-A	MAIN BOARD, COMPLETE (AEP, UK)	
* 3	A-3298-494-A	MAIN BOARD, COMPLETE (G)	
* 4	3-919-683-01	SHEET, INSULATING	
* 5	X-3368-832-1	CHASSIS ASSY	
6	3-919-171-01	SCREW (2. 6X6) (C TIGHT)	
* 7	3-921-319-01	HEAT SINK	
8	1-765-111-21	CORD (WITH CONNECTOR) 13P	
9	3-915-923-01	SCREW, GROUND POINT	

Ref. No.	Part No.	Description	Remark
10	3-913-076-01	SPRING (C DOOR), TORSION	
11	3-918-583-21	DOOR, CASSETTE	
12	3-916-373-01	PANEL, SUB	
13	X-3367-636-1	LOCK ASSY	
14	9-911-840-XX	CUSHION (U)	
* 16	3-921-320-01	HOLDER (IC)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)	

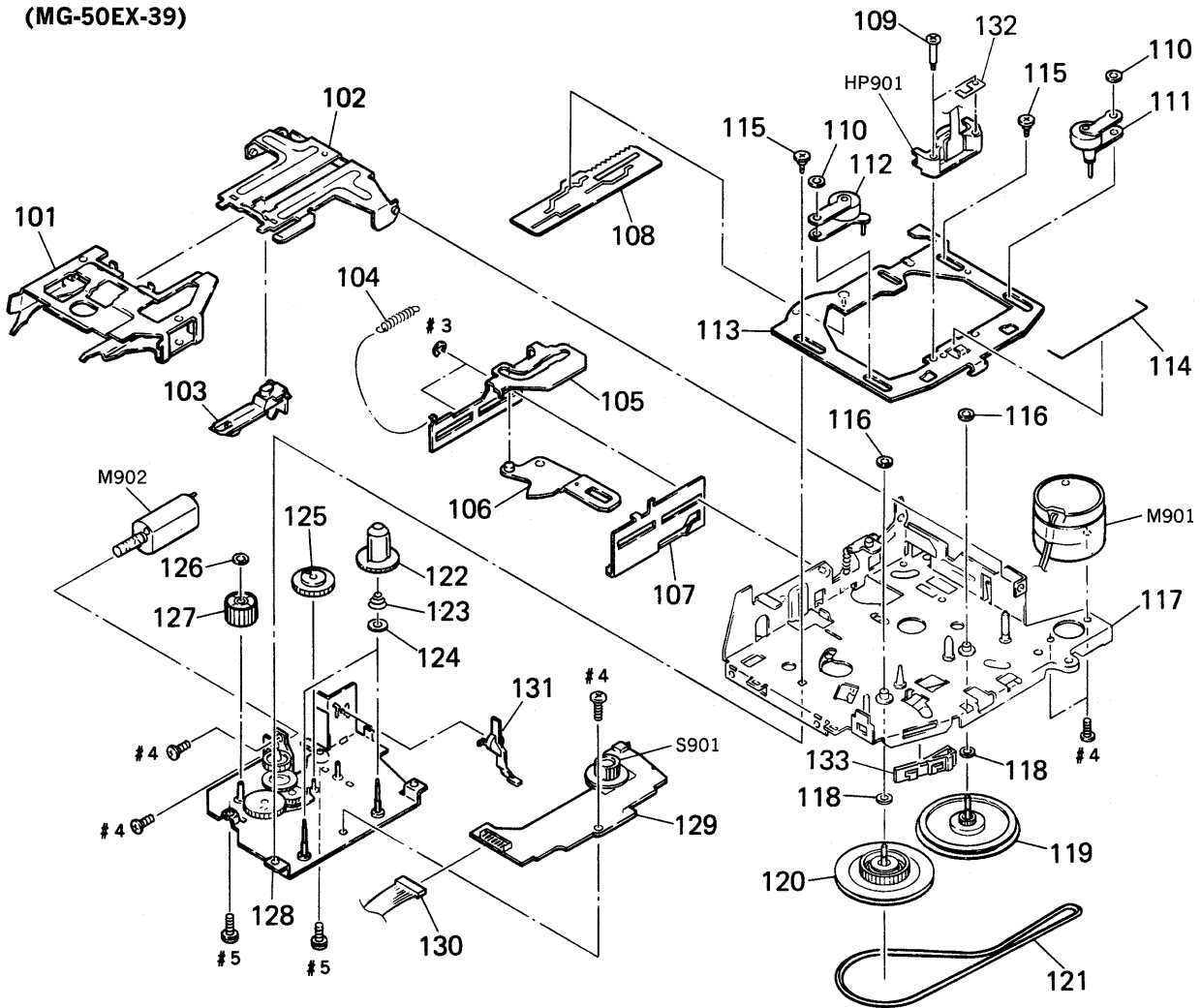
## 7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-909-316-01	BUTTON (-)	
52	3-909-317-01	BUTTON (SEL)	
53	3-909-318-01	BUTTON (+)	
54	3-909-319-01	BUTTON (C)	
55	3-909-320-31	BUTTON (D)	
56	3-909-321-11	BUTTON (E)	
57	3-916-367-01	BUTTON (S/A)	
58	3-916-368-01	BUTTON (P/D)	
59	3-916-362-81	PANEL, FRONT	
60	3-916-364-01	BUTTON (1-3)	
61	3-916-365-01	BUTTON (4-6)	
62	3-904-245-21	BUTTON (RELEASE)	

Ref. No.	Part No.	Description	Remark
63	3-904-193-01	SPRING (RELEASE)	
64	3-916-369-01	BUTTON (MUTE)	
65	3-916-371-11	BUTTON (FILE)	
66	3-916-366-01	BUTTON (EJECT)	
* 67	3-917-845-01	REFLECTOR, SHEET	
* 68	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE	
* 69	3-913-756-01	HOLDER (LCD)	
* 70	A-3298-580-A	KEY BOARD, COMPLETE	
71	3-916-363-01	PANEL, FRONT BACK	
* 72	3-911-575-11	SHEET (ELECTROSTATIC)	
LCD701 1-810-571-11 DISPLAY PANEL, LIQUID CRYSTAL			

**7-3. MECHANISM DECK SECTION  
(MG-50EX-39)**



Ref. No.	Part No.	Description	Remark
	101	3-912-881-01 HOUSING, CASSETTE	
*	102	3-912-882-01 HANGER, HOUSING	
	103	3-912-884-01 CATCHER	
	104	3-912-885-01 SPRING (LOADING LEVER), TENSION	
*	105	3-912-892-01 LEVER (B), LOADING	
*	106	3-912-883-01 ARM, SUCTION	
*	107	3-922-941-01 LEVER (A2), LOADING	
*	108	3-912-876-01 LEVER, MODE	
	109	3-912-893-01 SCREW, HEAD FITTING	
	110	3-579-788-01 WASHER, STOPPER	
	111	X-3368-266-1 PINCH LEVER (F) ASSY	
	112	X-3368-267-1 PINCH LEVER (R) ASSY	
*	113	X-3368-268-1 BASE ASSY, HEAD	
	114	3-912-879-01 SPRING, PINCH PRESS	
	115	3-912-897-01 SCREW (HB), STEP	
	116	3-364-151-01 WASHER	
	117	X-3368-841-1 CHASSIS (SV) ASSY (A), MECHANICAL	
	118	3-701-437-21 WASHER	
	119	3-913-825-01 FLYWHEEL (FZ)	

Ref. No.	Part No.	Description	Remark
	120	X-3369-124-1 CLUTCH (S) ASSY, FR	
	121	3-912-896-01 BELT	
	122	X-3368-843-1 GEAR ASSY, REEL	
	123	3-917-222-01 SPRING (B-T), COIL	
	124	3-917-324-01 WASHER (B-T)	
	125	3-912-888-01 GEAR (LOADING E)	
	126	3-321-813-01 WASHER, COTTER POLYETHYLENE	
	127	3-912-889-01 GEAR (LOADING F)	
	128	X-3368-842-1 BRACKET (SV) ASSY, REEL	
	129	1-589-604-11 REEL SENSOR BOARD	
	130	1-765-460-12 CORD (WITH CONNECTOR)	
	131	3-916-358-01 LEVER (TAPE IN 2)	
*	132	3-917-258-01 PLATE, GROUND	
	133	3-919-553-01 GUIDE (BELT)	
	HP901	1-500-196-11 HEAD, MAGNETIC (PLAYBACK)	
	M901	X-3368-684-1 MOTOR ASSY, MAIN (CAPSTAN/RELL)	
	M902	X-3368-685-1 MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
	S901	1-692-885-11 SWITCH, ROTARY SLIDE (TAPE OPERATION)	

## SECTION 8 ELECTRICAL PARTS LIST

<b>KEY</b>
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**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:  $\mu$ , for example:  
uA . . :  $\mu$ A. .    uPA . . :  $\mu$ PA.  
uPB . . :  $\mu$ PB. .    uPC . . :  $\mu$ PC. .    uPD . . :  $\mu$ PD. .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

When indicating parts by reference number, please include the board.
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- Abbreviation  
G : German model

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark
*	A-3298-580-A	KEY BOARD, COMPLETE *****			LSW714	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(AF/TA)
					LSW715	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(TUNER)
*	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE			LSW716	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+ (PRESET DISC))	
*	3-913-756-01	HOLDER (LCD)			LSW717	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (+ $\blacktriangleright$ (SEEK AMS))	
*	3-917-845-01	REFLECTOR, SHEET			LSW718	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (- $\blacktriangleleft$ (SEEK AMS))	
		< CAPACITOR >			LSW719	1-762-143-11	SWITCH, KEY BOARD (WITH LED) (- (PRESET DISC))	
C702	1-163-037-11	CERAMIC CHIP    0.022uF	10%	25V	LSW720	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(+)
C703	1-164-232-11	CERAMIC CHIP    0.01uF		50V	LSW721	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(SEL)
C705	1-163-005-11	CERAMIC CHIP    470PF	10%	50V	LSW722	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(-)
		< CONNECTOR >			LSW723	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(MUTE)
CNP701	1-764-423-11	PIN, CONNECTOR 12P			LSW724	1-762-143-11	SWITCH, KEY BOARD (WITH LED)	(LOUD)
		< DIODE >					< PILOT LAMP >	
D724	8-719-977-00	DIODE    DTZ5.1C			PL701	1-517-166-21	LAMP, PILOT	
D727	8-719-988-62	DIODE    1SS355			PL702	1-517-166-21	LAMP, PILOT	
		< IC >			PL703	1-517-165-21	LAMP, PILOT	
IC701	8-759-171-74	IC    MSM6660-01GS-V1K			PL704	1-517-165-21	LAMP, PILOT	
		< LIQUID CRYSTAL DISPLAY >					< TRANSISTOR >	
LCD701	1-810-571-11	DISPLAY PANEL, LIQUID CRYSTAL			Q701	8-729-904-66	TRANSISTOR	DTD113EK
		< SWITCH >			Q702	8-729-904-66	TRANSISTOR	DTD113EK
LSW702	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			Q703	8-729-904-66	TRANSISTOR	DTD113EK
LSW703	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			Q704	8-729-904-66	TRANSISTOR	DTD113EK
LSW704	1-762-143-11	SWITCH, KEY BOARD (WITH LED)					< RESISTOR >	
LSW705	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R701-703			
LSW706	1-762-143-11	SWITCH, KEY BOARD (WITH LED)				1-216-045-00	METAL CHIP	680    5%    1/10W
LSW707	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R704	1-216-049-11	METAL GLAZE	1K    5%    1/10W
LSW708	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R705	1-216-053-00	METAL CHIP	1.5K    5%    1/10W
LSW709	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R706	1-216-053-00	METAL CHIP	1.5K    5%    1/10W
LSW710	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R707	1-216-057-00	METAL CHIP	2.2K    5%    1/10W
LSW711	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R708	1-216-061-00	METAL CHIP	3.3K    5%    1/10W
LSW712	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R709	1-216-065-00	METAL CHIP	4.7K    5%    1/10W
LSW713	1-762-143-11	SWITCH, KEY BOARD (WITH LED)			R710	1-216-069-00	METAL CHIP	6.8K    5%    1/10W
					R711	1-216-073-00	METAL CHIP	10K    5%    1/10W
					R712-714			
						1-216-045-00	METAL CHIP	680    5%    1/10W

KEY	MAIN
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Ref. No.	Part No.	Description	Remark		
R715	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R716	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R717	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R718	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R719	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R720	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R721	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R722	1-216-073-00	METAL CHIP	10K	5%	1/10W
R723	1-216-031-00	METAL CHIP	180	5%	1/10W
R724	1-216-033-00	METAL CHIP	220	5%	1/10W
R725	1-216-037-00	METAL CHIP	330	5%	1/10W
R726	1-216-037-00	METAL CHIP	330	5%	1/10W
R727	1-216-023-00	METAL CHIP	82	5%	1/10W
R728	1-216-027-00	METAL CHIP	120	5%	1/10W
R729	1-216-031-00	METAL CHIP	180	5%	1/10W
R730	1-216-033-00	METAL CHIP	220	5%	1/10W
R731	1-216-023-00	METAL CHIP	82	5%	1/10W
R732	1-216-027-00	METAL CHIP	120	5%	1/10W
R733	1-216-023-00	METAL CHIP	82	5%	1/10W
R734	1-216-027-00	METAL CHIP	120	5%	1/10W
R735	1-216-031-00	METAL CHIP	180	5%	1/10W
R736	1-216-033-00	METAL CHIP	220	5%	1/10W
R739	1-216-041-00	METAL CHIP	470	5%	1/10W
R740	1-216-097-00	METAL CHIP	100K	5%	1/10W
R741-743					
	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R744	1-216-089-00	METAL CHIP	47K	5%	1/10W
R745-748					
	1-216-049-11	METAL GLAZE	1K	5%	1/10W
< SWITCH >					
SW701	1-692-037-31	SWITCH, KEY BOARD (OFF)			
*****					
*	A-3298-492-A	MAIN BOARD, COMPLETE (AEP, UK)			
*	A-3298-494-A	MAIN BOARD, COMPLETE (G)			
*****					
*	1-537-738-11	TERMINAL, EARTH			
*	3-921-320-01	HOLDER (IC)			
	7-621-773-95	SCREW +PTT 2.6X6 (S)			
< CAPACITOR >					
C2	1-124-443-00	ELECT	100uF	20%	10V
C3	1-126-176-11	ELECT	220uF	20%	10V
C4	1-124-443-00	ELECT	100uF	20%	10V
C5-7					
	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C8	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C9	1-163-033-00	CERAMIC CHIP	0.022uF		50V

Ref. No.	Part No.	Description	Remark		
C10	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C11	1-136-169-00	FILM	0.22uF	5%	50V
C12	1-136-165-00	FILM	0.1uF	5%	50V
C13	1-130-479-00	MYLAR	0.0047uF	5%	50V
C14	1-110-351-11	MYLAR	0.001uF	5%	50V
C15	1-124-584-00	ELECT	100uF	20%	10V
C16	1-136-159-00	FILM	0.033uF	5%	50V
C17	1-130-475-00	MYLAR	0.0022uF	5%	50V
C18-21					
	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C22	1-126-157-11	ELECT	10uF	20%	16V
C23	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C24	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C25	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C26	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C27	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C28	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C29	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C31	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C32	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C33	1-124-463-00	ELECT	0.1uF	20%	50V
C51	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C52	1-124-257-00	ELECT	2.2uF	20%	50V
C53	1-126-301-11	ELECT	1uF	20%	50V
C54	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C55	1-163-117-00	CERAMIC CHIP (G)	100PF	5%	50V
C56	1-124-257-00	ELECT (G)	2.2uF	20%	50V
C61	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C62	1-124-257-00	ELECT	2.2uF	20%	50V
C63	1-126-301-11	ELECT	1uF	20%	50V
C64	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C65	1-163-117-00	CERAMIC CHIP (G)	100PF	5%	50V
C66	1-124-257-00	ELECT (G)	2.2uF	20%	50V
C111	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-126-163-11	ELECT	4.7uF	20%	50V
C114	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C115	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C116	1-126-157-11	ELECT	10uF	20%	16V
C117	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C118	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C120	1-126-163-11	ELECT	4.7uF	20%	50V
C130	1-126-163-11	ELECT	4.7uF	20%	50V
C141	1-126-163-11	ELECT	4.7uF	20%	50V
C142	1-126-163-11	ELECT	4.7uF	20%	50V
C143	1-163-005-11	CERAMIC CHIP	470PF	10%	50V

Ref. No.	Part No.	Description	Remark
C144	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C151	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C152	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C153	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C154	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C155	1-126-157-11	ELECT 10uF	20% 16V
C156	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C157	1-124-464-11	ELECT 0.22uF	20% 50V
C158	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C159	1-124-257-00	ELECT 2.2uF	20% 50V
C211	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C212	1-163-017-00	CERAMIC CHIP 0.0047uF	5% 50V
C213	1-126-163-11	ELECT 4.7uF	20% 50V
C214	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V
C215	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C216	1-126-157-11	ELECT 10uF	20% 16V
C217	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C218	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C220	1-126-163-11	ELECT 4.7uF	20% 50V
C230	1-126-163-11	ELECT 4.7uF	20% 50V
C241	1-126-163-11	ELECT 4.7uF	20% 50V
C242	1-126-163-11	ELECT 4.7uF	20% 50V
C243	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C244	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C251	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C252	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C253	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C254	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C255	1-126-157-11	ELECT 10uF	20% 16V
C256	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C257	1-124-464-11	ELECT 0.22uF	20% 50V
C258	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C259	1-124-257-00	ELECT 2.2uF	20% 50V
C301	1-126-157-11	ELECT 10uF	20% 16V
C302	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C303	1-163-229-11	CERAMIC CHIP 12PF	5% 50V
C304	1-163-229-11	CERAMIC CHIP 12PF	5% 50V
C305	1-126-157-11	ELECT 10uF	20% 16V
C306	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C332	1-126-163-11	ELECT 4.7uF	20% 50V
C333	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C334	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C335	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C336	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C337	1-163-237-11	CERAMIC CHIP 27PF	5% 50V
C338	1-163-237-11	CERAMIC CHIP 27PF	5% 50V
C339	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C340	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C341	1-126-157-11	ELECT 10uF	20% 16V

Ref. No.	Part No.	Description	Remark
C342	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
C343	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C344	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C345	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C346	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C351	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C352	1-125-705-11	DOUBLE LAYERS 0.22F	5.5V
C353	1-124-234-00	ELECT 22uF	20% 16V
C354	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C355	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C361	1-124-234-00	ELECT 22uF	20% 16V
C362	1-126-163-11	ELECT 4.7uF	20% 50V
C371	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C381	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C382	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C401	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C402	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C403	1-126-163-11	ELECT 4.7uF	20% 50V
C404	1-124-584-00	ELECT 100uF	20% 10V
C405	1-124-229-00	ELECT 33uF	20% 10V
C406	1-124-463-00	ELECT 0.1uF	20% 50V
C407	1-124-589-11	ELECT 47uF	20% 16V
C408	1-126-157-11	ELECT 10uF	20% 16V
C409	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C411	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C451	1-126-157-11	ELECT 10uF	20% 16V
C452	1-126-157-11	ELECT 10uF	20% 16V
C453	1-126-301-11	ELECT 1uF	20% 50V
C454	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C455	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C456	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C457	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C461	1-126-935-11	ELECT 470uF	20% 16V
C462	1-124-234-00	ELECT 22uF	20% 16V
C463	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C464	1-126-157-11	ELECT 10uF	20% 16V
C466	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C467	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C501	1-126-936-11	ELECT 3300uF	20% 16V
C502	1-136-169-00	FILM 0.22uF	5% 50V
C503	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C504	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C505	1-126-157-11	ELECT 10uF	20% 16V
C506	1-124-234-00	ELECT 22uF	20% 16V
C507	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C508-510			
	1-124-589-11	ELECT 47uF	20% 16V
C511	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C512	1-126-157-11	ELECT 10uF	20% 16V

# MAIN

Ref. No.	Part No.	Description	Remark
C901	1-126-153-11	ELECT	22uF 20% 6.3V
C903-910	1-136-165-00	FILM	0.1uF 5% 50V
C911	1-126-157-11	ELECT	10uF 20% 16V
C912-916	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C921-924	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C926-929	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C930	1-136-169-00	FILM	0.22uF 5% 50V
C931	1-136-169-00	FILM	0.22uF 5% 50V
C933	1-136-153-00	FILM	0.01uF 5% 50V
C940	1-163-109-00	CERAMIC CHIP	47PF 5% 50V
< CONNECTOR >			
CN381	1-580-907-31	PLUG, CONNECTOR (BUS IN CONTROL)	
CN401	1-764-697-11	JACK, PIN 4P (LINE IN/OUT)	
CN450	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P	
* CN460	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P	
CN500	1-764-422-11	PLUG, CONNECTOR 12P	
CN900	1-764-426-11	PLUG, CONNECTOR 15P	
< DISCHARGE GAP >			
CP1	1-519-504-11	GAP, DISCHARGE	
< DIODE >			
D1	8-719-991-75	DIODE RB425D	
D11	8-719-110-14	DIODE RD9. 1ESB3	
D12	8-719-109-72	DIODE RD3. 9ESB2	
D301	8-719-911-19	DIODE 1SS119-25	
D302	8-719-914-44	DIODE DAP202K	
D331	8-719-911-19	DIODE 1SS119-25	
D332	8-719-911-19	DIODE 1SS119-25	
D351	8-719-911-19	DIODE 1SS119-25	
D352	8-719-914-44	DIODE DAP202K	
D353	8-719-914-44	DIODE DAP202K	
D354	8-719-921-54	DIODE MTZJ-6. 2B	
D361	8-719-109-89	DIODE RD5. 6ESB2	
D362	8-719-921-63	DIODE MTZJ-7. 5B	
D363	8-719-914-43	DIODE DAN202K	
D364	8-719-923-92	DIODE MTZJ-T-77-16B	
D371	8-719-921-54	DIODE MTZJ-6. 2B	
D381	8-719-921-54	DIODE MTZJ-6. 2B	
D382	8-719-109-97	DIODE RD6. 8ESB2	
D383	8-719-921-54	DIODE MTZJ-6. 2B	
D384	8-719-921-54	DIODE MTZJ-6. 2B	
D385	8-719-911-19	DIODE 1SS119-25	
D402	8-719-109-72	DIODE RD3. 9ESB2	

Ref. No.	Part No.	Description	Remark
D403	8-719-911-19	DIODE 1SS119-25	
D404	8-719-911-19	DIODE 1SS119-25	
D405	8-719-914-43	DIODE DAN202K	
D461	8-719-200-02	DIODE 10E-2	
D462	8-719-110-14	DIODE RD9. 1ESB3	
D501	8-719-049-38	DIODE 1N5404TU	
D502	8-719-921-80	DIODE MTZJ-11B	
D503	8-719-921-54	DIODE MTZJ-6. 2B	
D505	8-719-921-54	DIODE MTZJ-6. 2B	
D506	8-719-921-54	DIODE MTZJ-6. 2B	
D507	8-719-921-54	DIODE MTZJ-6. 2B	
D508	8-719-921-54	DIODE MTZJ-6. 2B	
D509	8-719-921-54	DIODE MTZJ-6. 2B	
D510	8-719-921-54	DIODE MTZJ-6. 2B	
D511	8-719-921-54	DIODE MTZJ-6. 2B	
D901	8-719-921-54	DIODE MTZJ-6. 2B	
D902	8-719-921-54	DIODE MTZJ-6. 2B	
< FERRITE BEAD >			
FB301	1-414-233-21	INDUCTOR, FERRITE BEAD	
< IC >			
IC11	8-759-242-66	IC TC4W66F	
IC12	8-759-823-81	IC LC7216M	
IC13	8-759-909-71	IC BA4558F (G)	
IC101	8-759-909-71	IC BA4558F	
IC201	8-759-909-71	IC BA4558F	
IC301	8-759-342-20	IC uPD75518GF-280-3B9	
IC331	8-759-330-63	IC MN1883220SZF	
IC332	8-759-163-63	IC TDA7330BD-013TR	
IC351	8-759-167-83	IC PST600EMT-T1	
IC381	8-759-096-16	IC MM1175XFF	
IC401	8-752-063-44	IC CXA1646Q	
IC452	8-752-070-22	IC CXA1580Q-T4	
IC461	8-759-823-87	IC LB1638M	
IC501	8-759-182-75	IC BA3910B-V2	
IC901	8-759-279-87	IC HA13151A	
< JACK >			
J11	1-764-808-11	JACK (ANT) (ANTENNA)	
J370	1-566-822-11	JACK (REMOTE IN)	
< COIL >			
L10	1-410-509-11	INDUCTOR 10uH	
L301	1-410-509-11	INDUCTOR 10uH	
L331	1-410-509-11	INDUCTOR 10uH	
L332	1-410-509-11	INDUCTOR 10uH	



Ref. No.	Part No.	Description	Remark
< TRANSISTOR >			
Q11	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q12	8-729-021-94	TRANSISTOR 2SK1657-I1B	
Q13	8-729-900-53	TRANSISTOR DTC114EK	
Q14	8-729-901-04	TRANSISTOR DTA114EK	
Q31	8-729-920-21	TRANSISTOR DTC314TKH04	
Q51	8-729-920-21	TRANSISTOR DTC314TKH04	
Q61	8-729-920-21	TRANSISTOR DTC314TKH04	
Q120	8-729-920-21	TRANSISTOR DTC314TKH04	
Q130	8-729-920-21	TRANSISTOR DTC314TKH04	
Q220	8-729-920-21	TRANSISTOR DTC314TKH04	
Q230	8-729-920-21	TRANSISTOR DTC314TKH04	
Q331	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q333	8-729-901-04	TRANSISTOR DTA114EK	
Q334	8-729-900-53	TRANSISTOR DTC114EK	
Q351	8-729-901-04	TRANSISTOR DTA114EK	
Q352	8-729-901-04	TRANSISTOR DTA114EK	
Q361	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q362	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q363	8-729-900-53	TRANSISTOR DTC114EK	
Q371	8-729-900-53	TRANSISTOR DTC114EK	
Q381	8-729-901-04	TRANSISTOR DTA114EK	
Q382	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q401	8-729-901-04	TRANSISTOR DTA114EK	
Q402	8-729-900-53	TRANSISTOR DTC114EK	
Q403	8-729-216-22	TRANSISTOR 2SA1162-G	
Q461	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q462	8-729-900-53	TRANSISTOR DTC114EK	
Q463	8-729-901-04	TRANSISTOR DTA114EK	
Q464	8-729-900-53	TRANSISTOR DTC114EK	
Q465	8-729-921-48	TRANSISTOR 2SD1760F5-Q	
Q501	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
Q502	8-729-900-53	TRANSISTOR DTC114EK	
Q503	8-729-921-48	TRANSISTOR 2SD1760F5-Q	
Q504	8-729-921-48	TRANSISTOR 2SD1760F5-Q	
Q506	8-729-901-04	TRANSISTOR DTA114EK	
Q507	8-729-900-53	TRANSISTOR DTC114EK	
< RESISTOR >			
R1	1-216-001-00	METAL CHIP 10 5%	1/10W
R2	1-216-001-00	METAL CHIP 10 5%	1/10W
R9	1-216-031-00	METAL CHIP 180 5%	1/10W
R10	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R11	1-216-089-00	METAL CHIP 47K 5%	1/10W
R12	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R13	1-216-073-00	METAL CHIP 10K 5%	1/10W
R14	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R15	1-216-057-00	METAL CHIP 2.2K 5%	1/10W

Ref. No.	Part No.	Description	Remark
R16	1-216-075-00	METAL CHIP 12K 5%	1/10W
R17	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R18	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R19	1-216-077-00	METAL CHIP 15K 5%	1/10W
R20	1-216-073-00	METAL CHIP 10K 5%	1/10W
R21	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R23	1-216-089-00	METAL CHIP 47K 5%	1/10W
R31	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R32	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R33	1-216-077-00	METAL CHIP 15K 5%	1/10W
R52	1-216-077-00	METAL CHIP 15K 5%	1/10W
R53	1-216-295-00	CONDUCTOR, CHIP (2012) (AEP,UK)	
R54	1-216-075-00	METAL CHIP 12K 5%	1/10W (G)
R55	1-216-073-00	METAL CHIP 10K 5%	1/10W (G)
R56	1-216-089-00	METAL CHIP 47K 5%	1/10W (G)
R62	1-216-077-00	METAL CHIP 15K 5%	1/10W
R63	1-216-295-00	CONDUCTOR, CHIP (2012) (AEP,UK)	
R64	1-216-075-00	METAL CHIP 12K 5%	1/10W (G)
R65	1-216-073-00	METAL CHIP 10K 5%	1/10W (G)
R66	1-216-089-00	METAL CHIP 47K 5%	1/10W (G)
R102	1-216-075-00	METAL CHIP 12K 5%	1/10W
R103	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R120	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R121	1-216-081-00	METAL CHIP 22K 5%	1/10W
R123	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R124	1-216-075-00	METAL CHIP 12K 5%	1/10W
R130	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R131	1-216-081-00	METAL CHIP 22K 5%	1/10W
R133	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R134	1-216-075-00	METAL CHIP 12K 5%	1/10W
R141	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R142	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R151	1-216-109-00	METAL CHIP 330K 5%	1/10W
R152	1-216-109-00	METAL CHIP 330K 5%	1/10W
R153	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R154	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R202	1-216-075-00	METAL CHIP 12K 5%	1/10W
R203	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R220	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R221	1-216-081-00	METAL CHIP 22K 5%	1/10W
R223	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R224	1-216-075-00	METAL CHIP 12K 5%	1/10W
R230	1-216-049-11	METAL GLAZE 1K 5%	1/10W
R231	1-216-081-00	METAL CHIP 22K 5%	1/10W
R233	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R234	1-216-075-00	METAL CHIP 12K 5%	1/10W
R241	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R242	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R251	1-216-109-00	METAL CHIP 330K 5%	1/10W

# MAIN

Ref. No.	Part No.	Description	Remark		
R252	1-216-109-00	METAL CHIP	330K	5%	1/10W
R253	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R254	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R301	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R302	1-216-097-00	METAL CHIP	100K	5%	1/10W
R303-308					
	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R309	1-216-089-00	METAL CHIP	47K	5%	1/10W
R310-316					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R317	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-089-00	METAL CHIP	47K	5%	1/10W
R319-323					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R324	1-216-089-00	METAL CHIP	47K	5%	1/10W
R331	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R332	1-216-097-00	METAL CHIP	100K	5%	1/10W
R333	1-216-097-00	METAL CHIP	100K	5%	1/10W
R334	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R335	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R336	1-216-113-00	METAL CHIP	470K	5%	1/10W
R337	1-216-119-00	METAL CHIP	820K	5%	1/10W
R338	1-216-097-00	METAL CHIP	100K	5%	1/10W
R339	1-216-097-00	METAL CHIP	100K	5%	1/10W
R342	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R351	1-216-097-00	METAL CHIP	100K	5%	1/10W
R352	1-216-097-00	METAL CHIP	100K	5%	1/10W
R353	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R354	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R361	1-216-017-00	METAL CHIP	47	5%	1/10W
R362	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W
R364	1-216-077-00	METAL CHIP	15K	5%	1/10W
R365	1-216-081-00	METAL CHIP	22K	5%	1/10W
R366	1-216-079-00	METAL CHIP	18K	5%	1/10W
R368	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W
R371	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R372	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R381	1-216-017-00	METAL CHIP	47	5%	1/10W
R382	1-216-089-00	METAL CHIP	47K	5%	1/10W
R383	1-216-097-00	METAL CHIP	100K	5%	1/10W
R384	1-216-174-00	METAL GLAZE	100	5%	1/8W
R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R386	1-216-174-00	METAL GLAZE	100	5%	1/8W
R401	1-216-113-00	METAL CHIP	470K	5%	1/10W
R402	1-216-158-00	METAL GLAZE	22	5%	1/8W
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R405	1-216-105-00	METAL GLAZE	220K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R406	1-216-073-00	METAL CHIP	10K	5%	1/10W
R407	1-216-075-00	METAL CHIP	12K	5%	1/10W
R451	1-216-079-00	METAL CHIP	18K	5%	1/10W
R452	1-216-079-00	METAL CHIP	18K	5%	1/10W
R453	1-216-089-00	METAL CHIP	47K	5%	1/10W
R454	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R455	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R456	1-216-113-00	METAL CHIP	470K	5%	1/10W
R457	1-216-001-00	METAL CHIP	10	5%	1/10W
R463	1-216-073-00	METAL CHIP	10K	5%	1/10W
R464	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R465-468					
	1-216-150-00	METAL GLAZE	10	5%	1/8W
R469	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R503	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R504	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R505	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R506-508					
	1-216-025-00	METAL GLAZE	100	5%	1/10W
R510-513					
	1-216-025-00	METAL GLAZE	100	5%	1/10W
R514	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-073-00	METAL CHIP	10K	5%	1/10W
R903-910					
	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R911	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R920	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R921-924					
	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R925	1-216-049-11	METAL GLAZE	1K	5%	1/10W
< VARIABLE RESISTOR >					
RV151	1-238-597-11	RES, ADJ, CARBON	1K		
RV251	1-238-597-11	RES, ADJ, CARBON	1K		
RV331	1-238-605-31	RES, ADJ, CARBON	470K		
< SWITCH >					
S351	1-571-532-21	SWITCH, TACTIL (RESET)			
S510	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
< TUNER >					
TU10	A-3282-003-A	TUNER UNIT (TUX-001A)			
< VIBRATOR >					
X10	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)			
X301	1-760-096-31	VIBRATOR, CRYSTAL (4.19MHz)			

Ref. No.	Part No.	Description	Remark
X331	1-579-952-21	VIBRATOR, CERAMIC (8MHz)	
X332	1-760-556-11	VIBRATOR, CRYSTAL (4.332MHz)	
*****			
MISCELLANEOUS			
*****			
8	1-765-111-21	CORD (WITH CONNECTOR) 13P	
130	1-765-460-12	CORD (WITH CONNECTOR)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	
HP901	1-500-196-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN (CAPSTAN/RELL)	
M902	X-3368-685-1	MOTOR ASSY, SUB (LOADING/TAPE OPERATION)	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
3-798-165-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, DUTCH, ITALIAN)		
3-798-165-41	MANUAL, INSTRUCTION (SPANISH, SWEDISH, PORTUGUESE) (AEP, UK)		
3-798-166-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, GUTCH, ITALIAN)		
X-3367-795-1	CASE ASSY		
*****			
*****			
<b>HARDWARE LIST</b>			
*****			
#1	7-621-770-67	SCREW +P 2. 6X6	
#2	7-621-770-XX	SCREW +PTT 2. 6X8 (S)	
#3	7-624-104-04	STOP RING 2. 0, TYPE -E	
#4	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
#5	7-628-253-05	SCREW +PS 2X4	
#6	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
#7	7-685-134-19	SCREW +P 2. 6X8 TYPE2 NON-SLIT	
#8	7-621-773-95	SCREW +PTT 2. 6X6 (S)	
#9	7-621-772-10	SCREW +B 2X4	
#10	7-621-773-87	SCREW +B 2. 6X10	
*****			

Ref. No.	Part No.	Description	Remark
MOUNTING HARDWARE			
*****			
151	X-3366-235-1	FRAME ASSY, FITTING	
152	3-386-828-01	SCREW, FITTING	
* 153	3-358-697-01	BUSHING	
154	3-388-078-01	KEY	

