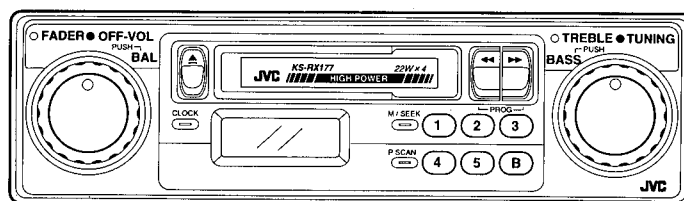


JVC

SERVICE MANUAL

CASSETTE CAR RECEIVER

KS-RX177 C/J



Area Suffix

C Canada
J U.S.A

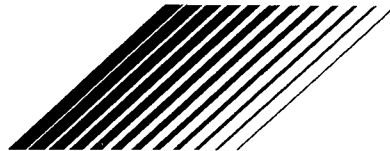
Contents

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2 Removal of Main Parts	9	8 Exploded View of Enclosure Assembly and Parts List	30
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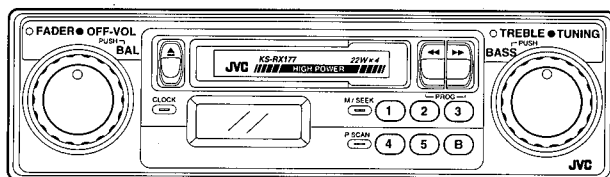
**CAUTION**

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

JVC

**CASSETTE RECEIVER KS-RX177**

KS-RX177

**For Customer Use:**

Enter below the Model No. and Serial No. which are located on the top or bottom of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

J version

INSTRUCTIONS

SPECIFICATIONS**AUDIO AMPLIFIER SECTION**

Maximum Power Output: (Front) 22 watts per channel
(Rear) 22 watts per channel

Continuous Power Output (RMS): (Front) 8 watts per channel into 4 Ω , 40 to 20,000 Hz at no more than 0.8% total harmonic distortion. (Rear) 8 watts per channel into 4 Ω , 40 to 20,000 Hz at no more than 0.8% total harmonic distortion.

Load Impedance: 4 Ω (4 - 8 Ω Allowable)

Tone Control Range

Bass: ± 10 dB at 100 Hz

Treble: ± 10 dB at 10 kHz

Frequency Response: 40 - 20,000 Hz

Signal-to-Noise Ratio: 60 dB

RADIO SECTION

Frequency Range

FM: 87.5 - 107.9 MHz

AM: 530 - 1,710 kHz

(FM Tuner)

Usable Sensitivity: 15.3 dBf (1.6 μ V/75 Ω)

50 dB Quieting Sensitivity: 18.8 dBf (2.4 μ V/75 Ω)

Alternate Channel Selectivity (400 kHz): 65 dB

Frequency Response: 40 - 15,000 Hz

Stereo Separation: 35 dB

Capture Ratio: 2.0 dB

(AM Tuner)

Sensitivity: 20 μ V

Selectivity: 35 dB

CASSETTE DECK SECTION

Wow & Flutter: 0.15 % (WRMS)

Fast Wind Time: 190 sec. (C-60)

Frequency Response:

50 - 14,000 Hz (± 3 dB)

Signal-to-Noise Ratio: 52 dB

Stereo Separation: 40 dB

GENERAL

Power Requirement:

Operating Voltage: DC 14.4 V (11 V - 16 V Allowable)

Grounding System: Negative Ground

Dimensions (W x H x D)

Chassis: 178 x 50 x 134 mm

(7-1/16" x 2" x 5-5/16")

Nosepiece: 105 x 42 x 35 mm

(4-3/16" x 1-11/16" x 1-7/16")

Control Shaft Pitch: 148 mm (5-7/8")

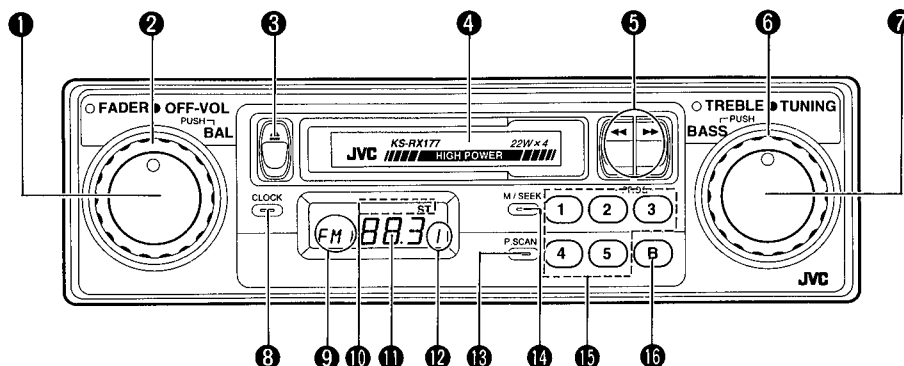
Gross Weight: 1.5 kg (3.4 lbs)

Design and specifications subject to change without notice.

If a kit is necessary for your car, consult your telephone directory for the nearest car audio speciality shop.

Thank you for purchasing a JVC product. Please read all instructions carefully before operation, to ensure your complete understanding and to obtain a longer service life from the unit.

LOCATION OF CONTROLS



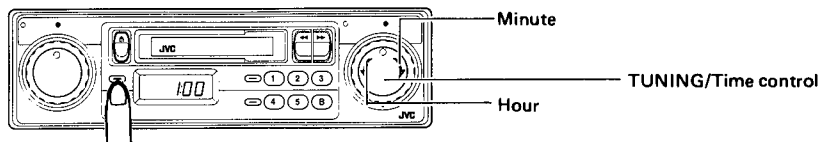
- | | |
|--|---|
| <ul style="list-style-type: none"> ① Power on-OFF/volume (VOL)/Push balance (PUSH BAL) control ② FADER control ③ Eject (▲) button ④ Cassette loading slot ⑤ Program (PROG)/◀▶ buttons ⑥ TREBLE/PUSH BASS control ⑦ TUNING/Time control ⑧ CLOCK button ⑨ Band indicator (FM1-FM2-FM3-AM) | <ul style="list-style-type: none"> ⑩ Indicators
SEEK
ST (FM Stereo)
◀▶ (Tape direction) ⑪ Radio frequency/Time display ⑫ Preset station indicator ⑬ Preset scan (P. SCAN) button ⑭ Manual (M)/SEEK button ⑮ Preset station buttons ⑯ Band (B) button |
|--|---|

CLOCK ADJUSTMENT

When listening to a tape, the display will show the time. When listening to the radio, each time the CLOCK button is pressed the time and frequency can be selected. When the radio is operated in the time mode, the display will switch to frequency, then, after a short time, will return to the time mode. To cancel the time mode, press the CLOCK button again.

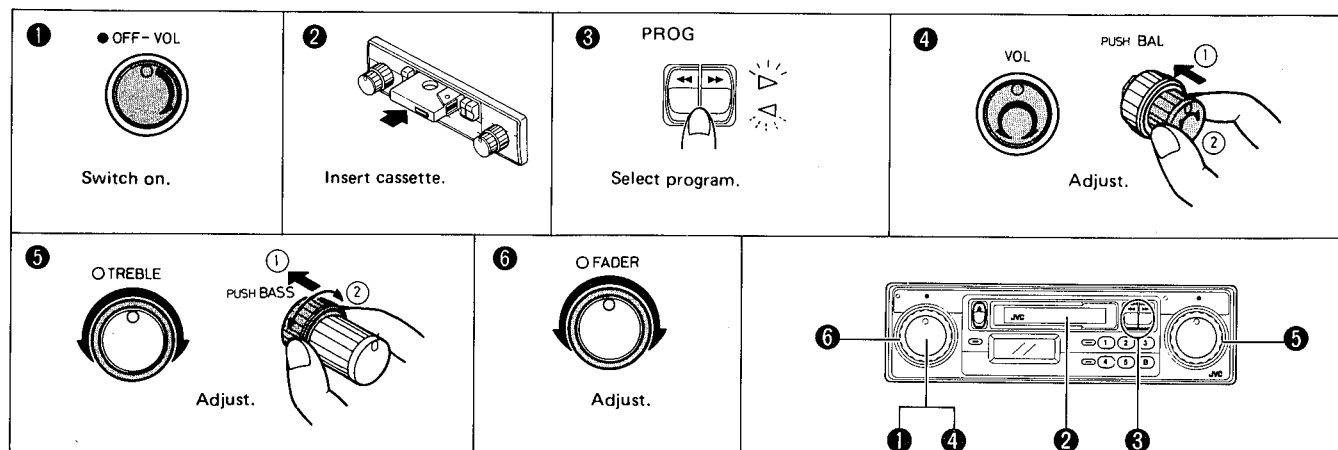
• How to adjust the clock

When the display is in the clock mode, while keeping the CLOCK button pressed, turn the Tuning control counterclockwise to adjust the "hours" and turn the Tuning control clockwise to adjust the "minutes".



TAPE OPERATION

Operate in the order shown.



AUTOMATIC LOUDNESS CONTROL

At low volumes, the human ear is less sensitive to high and low frequencies. This unit incorporates a circuit so that the low-volume sound at high and low frequencies is automatically boosted to output well-balanced sound.

HOW TO FAST-WIND TAPES

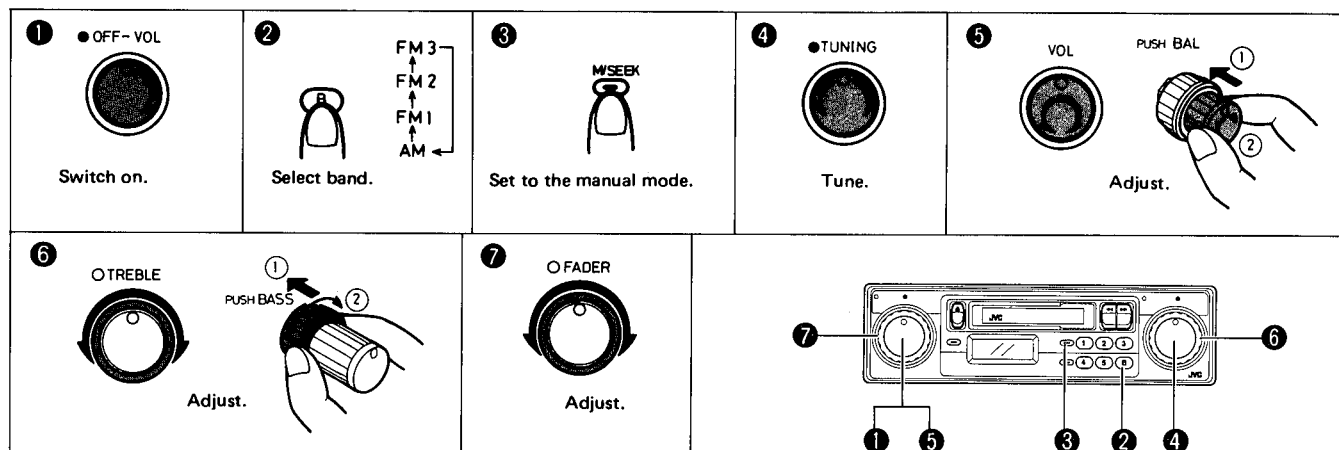
To fast-wind tapes, press either the ◀◀ or ▶▶ button. The tape will be wound in the direction of the arrows (◀◀ or ▶▶). To restart playback, lightly press the ◀◀ or ▶▶ button.

AUTO-REVERSE MECHANISM

When the tape reaches its end, this mechanism automatically switches over to play back the other side. To listen to the other side of the tape during playback, press the PROG(◀◀/▶▶) buttons. The change in direction can be checked in the Tape Direction indicator.

RADIO OPERATION

Operate in the order shown.



MANUAL TUNING

Set to the manual mode using the M/SEEK button. When SEEK is not shown in the display, the unit is in the manual mode. The Tuning control will not lock in place; it automatically returns to its center position when released. Keep the control in position for more than 0.5 second to change frequencies rapidly. You can step through the frequency in 200 kHz units for FM and 10 kHz units for AM.

SEEK TUNING

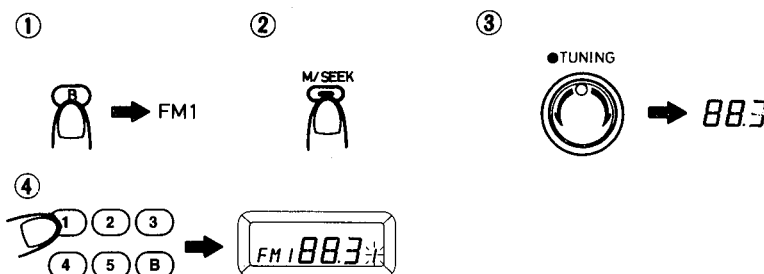
Set to the seek mode using the M/SEEK button; the SEEK indicator will light. Then, by turning the Tuning control the unit tunes to the adjacent station with a higher or lower frequency.

MANUAL STATION PRESET

You can preset up to 5 stations in each band (FM1, FM2, FM3 and AM) as follows;

- Example (when presetting Preset Station button "1" to FM station at 88.3 MHz)

- 1 Select the FM1 band using the B button.
 - 2 Set to the manual mode.
 - 3 Tune to the desired station.
 - 4 Press Preset Station button "1" for more than 2 sec. (When "1" blinks in the Preset Station display, the station is preset.)
- Repeat the above procedure for each of the other four stations using a different Preset Station button each time.
 - Follow the above procedure for the other bands (FM2, FM3 and AM).



Notes:

- The preset station is erased when a station is newly preset because the new station is stored in the memory.
- The preset station is erased when the power supply to the memory circuit is interrupted during battery replacement, etc. When this occurs, preset the station again.

PRESET SCAN BUTTON TUNING

This makes it possible to automatically scan preset FM and AM stations.

- ① Press the P.SCAN button.
- ② Scanning is performed in the order of preset stations in each frequency band (FM1, FM2, FM3 and AM). Each preset station is heard for approx. 5 seconds.
- ③ When the required station is heard and its frequency is flashing, press the P.SCAN button again.

IMPORTANT INFORMATION

1. This unit is designed to operate with 12 volts DC, NEGATIVE ground electrical systems only.
2. Replace the fuse with one of the specified rating. If the fuse blows frequently, consult your JVC car audio dealer.
3. Do not touch the highly-polished head with any metallic or magnetic tools.
4. If noise is a problem...
This unit incorporates a noise filter in the power circuit. However, with some vehicles, clicking or other unwanted noise may occur. If this happens, connect the unit's rear ground terminal to the car's chassis using shorter and thicker cords, such as copper braiding or gauge wire. If noise still persists, consult your JVC car audio dealer.
5. Never play dirty or dusty tapes since they will greatly degrade the sound and performance of your unit. Always keep your tapes clean.

Antenna noise

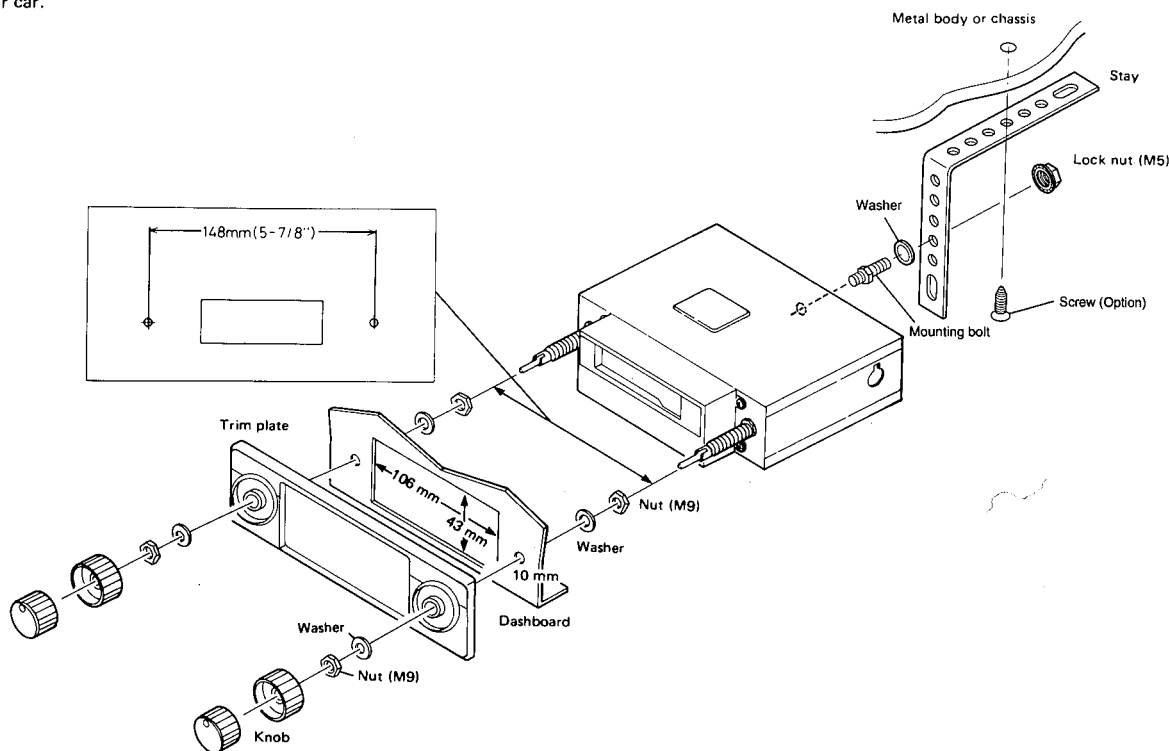
If you can hear static noise when listening to both AM and FM, check for loose antenna connections.

INSTALLATION (IN-DASH MOUNTING)

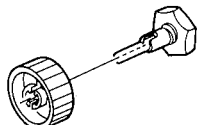
- The following illustration shows a typical installation. However, you should make adjustments corresponding to your specific car. If you have any questions or require information regarding installation kits, consult your JVC car audio dealer or a company supplying kits.

Note:

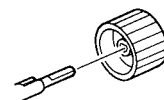
In some cases, it may be necessary to adjust the opening in the trim plate and/or dashboard, etc. to fit your car.



• Knob attachment



• Align both of the slots



• Align the flat parts

• Make sure to assemble as shown, or the knobs will not fit.

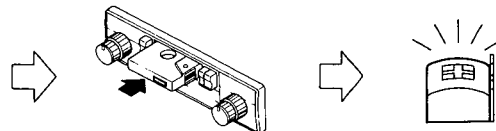
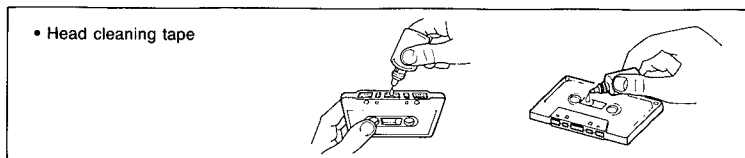
MAINTENANCE

• Cleaning The Head

Heads are important as they pick up sound. When they become dirty, the following symptoms become noticeable:

- The sound quality is reduced.
- The sound level is decreased.
- The sound can be heard intermittently. (Sound drop occurs.)

These are NOT malfunctions. However, before these symptoms appear, clean the heads after every 10 hours of use using a wet-type head cleaning tape, available from an audio store. For more details, refer to the Instructions of the Head Cleaning Tape.



TAPE CARE HINTS

It is very important to keep your tapes clean.

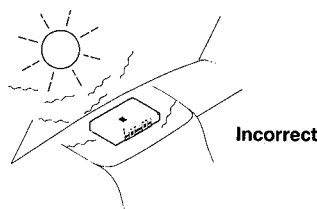
Always return them to their storage boxes after playback.

Never store tapes in direct sunlight, high humidity or extremely hot temperatures.

Never play dirty, dusty tapes or the tapes with peeling labels — they can damage the unit.

Slack tape in a cassette can cause trouble by becoming entangled with the mechanism.

- Always remove cassettes from the loading slot when not listening to them, as the tape may become slack.



ELECTRICAL CONNECTIONS

To prevent short circuits, we recommend that you disconnect the battery's negative terminal and make all electrical connections before installing the unit. If you are not sure how to install this unit correctly, have it installed by a qualified technician.

Note:

This unit is designed for a 12-volt DC negative ground. If your vehicle does not have this system, a voltage inverter is required, which can be purchased at JVC car audio dealers.

- Maximum input of the speakers should be more than 22 watts at the rear and 22 watts at the front, with an impedance of 4 to 8 ohms.

CAUTIONS:

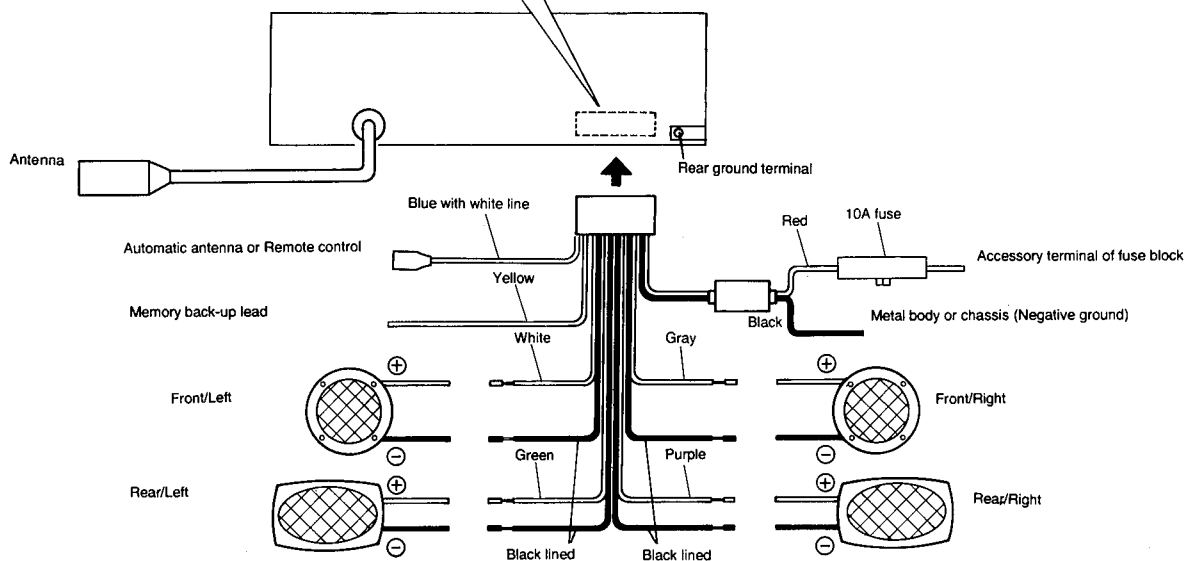
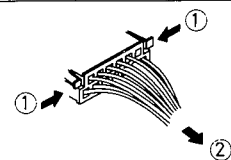
As this unit uses BTL (Balanced Transformerless) amplifier circuitry (floating ground system), please comply with the following:

1. Do NOT connect the black-lined speaker leads to a common point.
 2. Do NOT connect the speaker leads to the metal body or chassis.
 3. When NOT using the automatic antenna, cover the terminal with insulating tape to prevent the remote lead from shorting.
- Be sure to ground this unit to the car's chassis.

A. 4-Speaker Connections

• When connecting connectors, insert firmly till a click sound is heard.

• When disconnecting connectors, disengage the lock and pull out the connector.



B. 2-Speaker Connections

Two speakers can be connected to either the front or rear pair of speaker output terminals. Cover the unused terminals with insulating tape to prevent short-circuits.

D. Memory Back-Up Lead

Connect this lead (yellow) to a LIVE power source (supplied even when vehicle ignition is OFF).

C. Automatic Antenna Connections

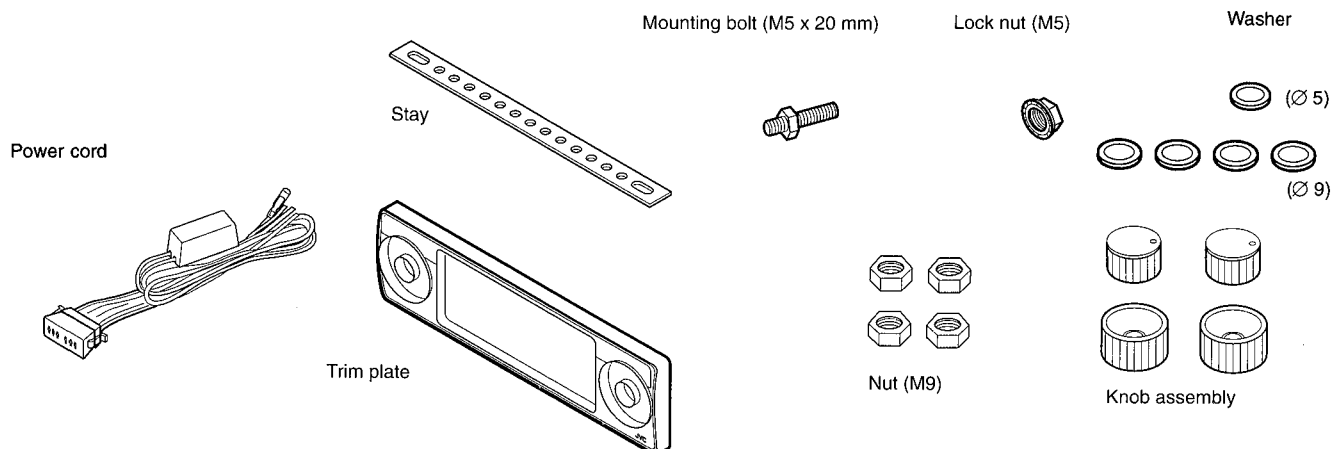
To use the automatic antenna, connect its remote lead (blue with white line) terminal. For details of installation, see the automatic antenna's Instruction Manual.

E. Fader Control

- When used in a 4-speaker system
When the FADER control is turned counterclockwise, the sound will be heard from the front speakers, and when turned clockwise, from the rear speakers.
- When used in a 2-speaker system
Set this control to the center position.

Parts list for installation and connection

The following parts are provided with this unit. After checking them, please set them correctly.



1 Location of Main Parts

■ Amplifier section

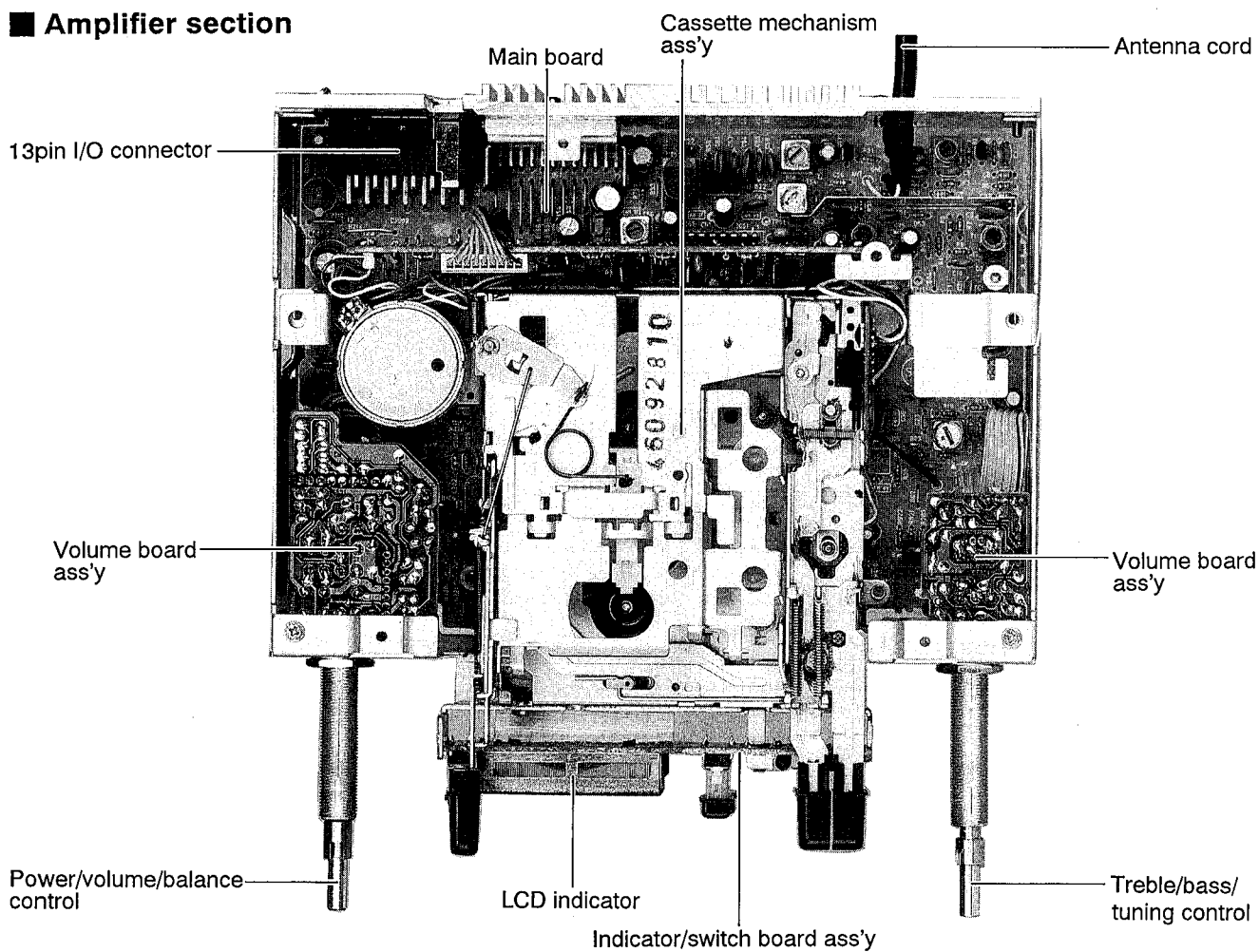


Fig. 1-1

■ Mechanism section

◆ Top view

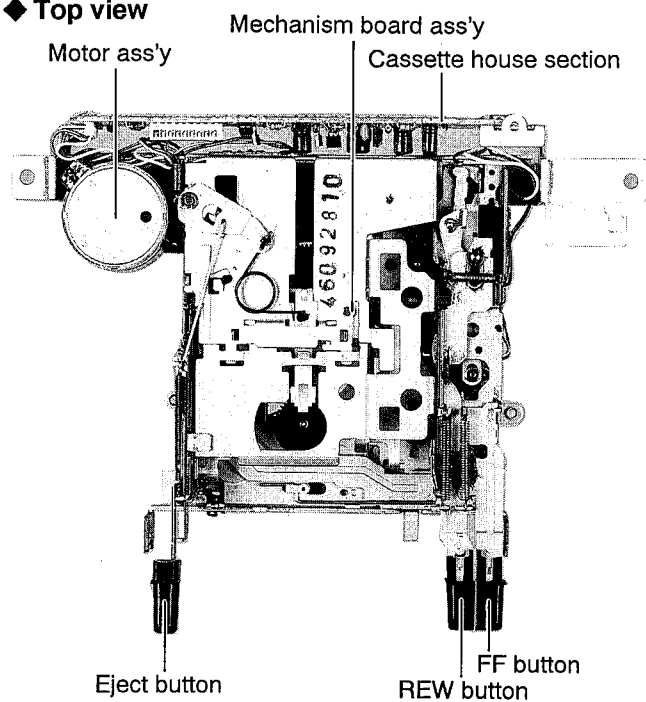


Fig. 1-2

◆ Bottom view

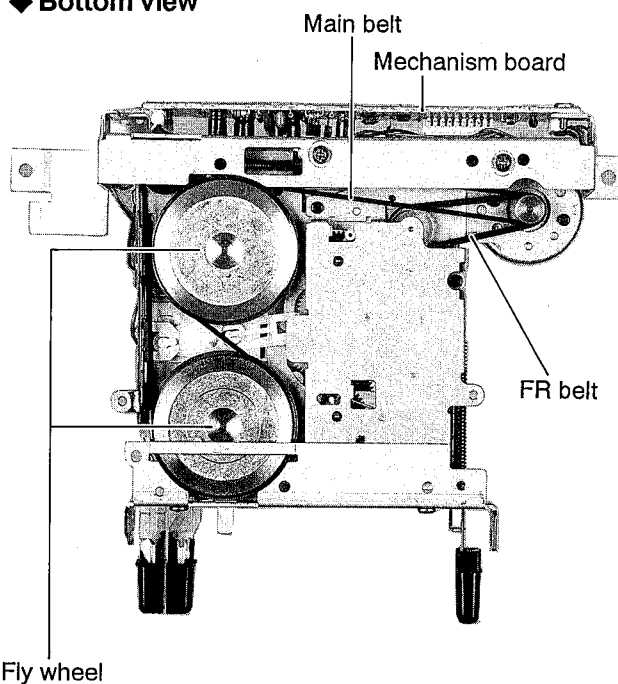


Fig. 1-3

2 Removal of Main Parts

■ Top cover (Figs. 2-1, 2-2, 2-3)

1. Remove three screws ([1] × 2, [2] × 1) retaining the top cover from the right top.
2. Remove two screws (3) retaining the top cover from the rear of the set.
3. Insert an ordinary screwdriver into a gap between the main body and the top cover while lifting the top cover upward to remove it.

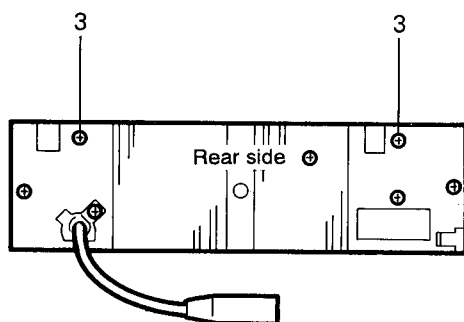


Fig. 2-2

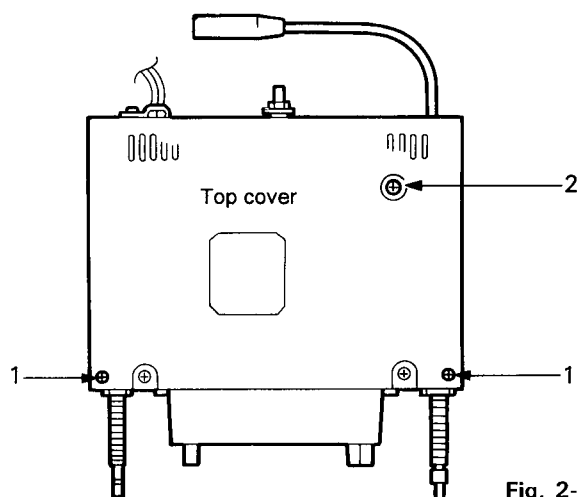


Fig. 2-1

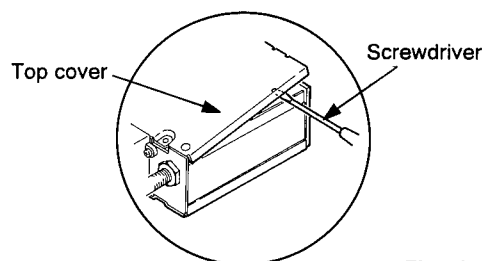


Fig. 2-3

■ Nosepiece assembly (Figs. 2-4)

- Remove four screws (4) retaining the nosepiece assembly from the front of the set.

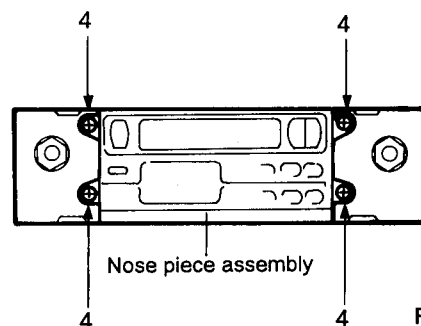


Fig. 2-4

■ Cassette mechanism assembly (Figs. 2-5, 2-6, 2-7)

1. Remove the top cover and nosepiece assembly. (Refer to the removal procedure of "Top cover" mentioned above.)
2. Remove two flat head screws (5) retaining the cassette mechanism assembly from the chassis.
3. Before disassembling the mechanism assembly into a single mechanism unit, remove the switch/display board. (Fig. 2-5)
4. Disconnect a 9-pin connector cable that is connected to the connector CP851 on the main board from the connector on the mechanism board.
5. Place the set upside down, and remove two flat head screws (6) retaining the cassette mechanism assembly.
6. Raise the mechanism board from its back side.

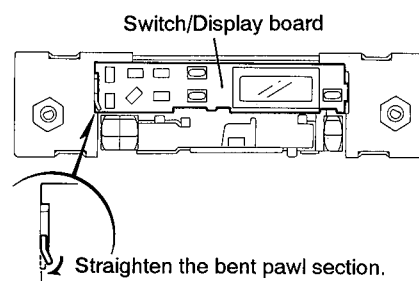


Fig. 2-5

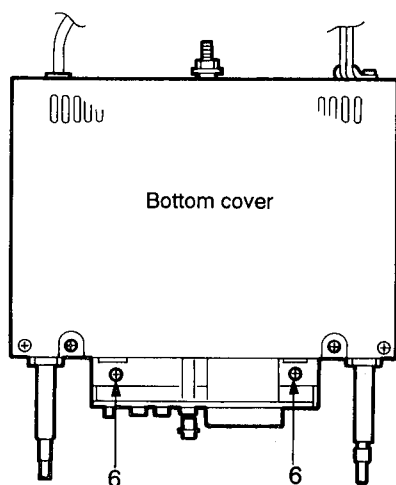


Fig. 2-7

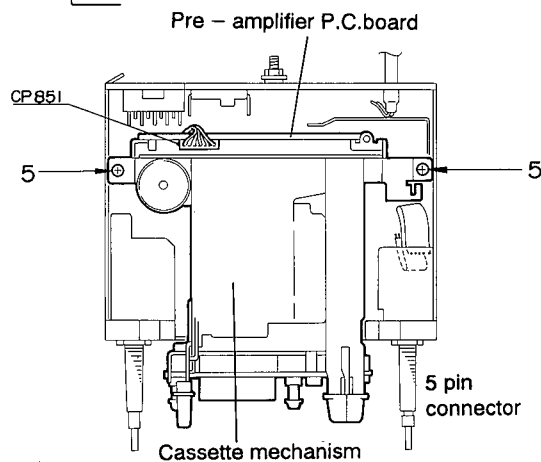


Fig. 2-6

■ **Bottom cover** (Figs. 2-8, 2-9, 2-10)

1. Place the set upside down, and remove two screws (7) retaining the bottom cover.
2. Place the set on its front side and remove two screws (8) retaining the bottom cover.
3. Remove the bottom cover in the same manner as for the top cover.

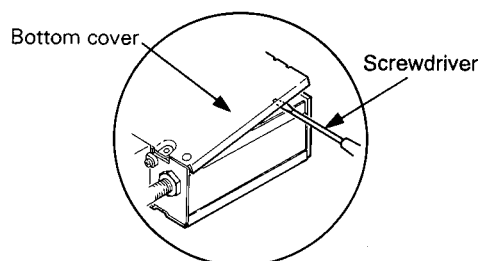


Fig. 2-10

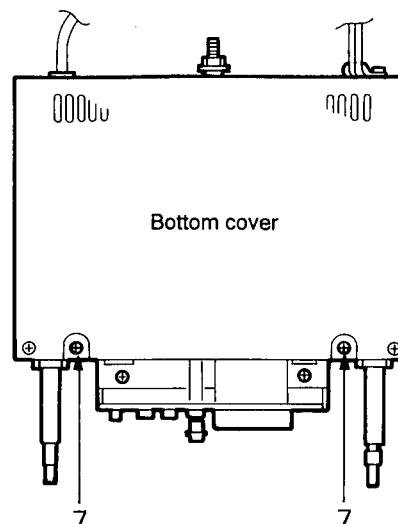


Fig. 2-8

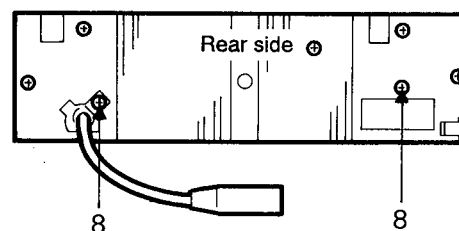


Fig. 2-9

■ **Volume boards in both sides** (Fig. 2-11)

1. Remove the top cover. (Refer to the removal procedure of "Top cover" mentioned above.)
2. Facing the front of the set, remove the nut with washer retaining the volume/balance board.
3. Remove the volume shaft through the hole in the front frame.
4. Remove the nut with washer retaining the treble/bass board.
5. Remove the volume shaft through the hole in the front frame.

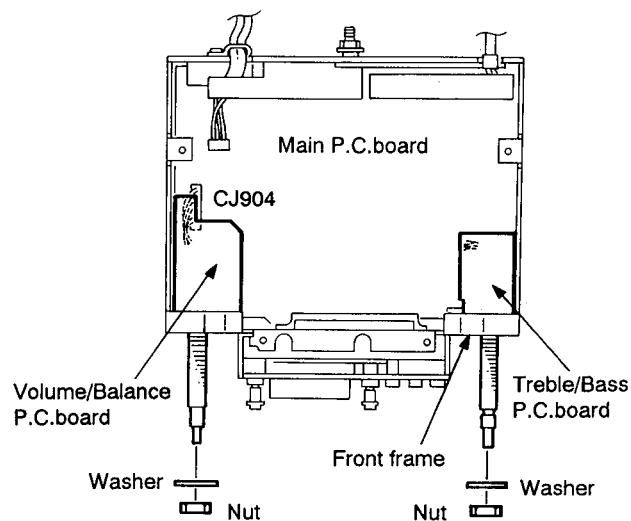


Fig. 2-11

■ Cassette mechanism disassembling method

- ☆ Remove the cassette housing unit and button lever unit when you need to replace or adjust heads.
- ☆ The capstan belt (main belt) can be replaced directly.
- ☆ To change the sub-belt, remove the three screws and loosen one screw. Then raise the belt side of the reelbase assembly slightly.

◆ Cassette housing unit (See Fig. 2-12~2-14)

1. From the rear of the unit, bend the cassette hanger and chassis claws **a** outwards.
 2. While pressing the eject lever, remove the cassette housing unit.
 3. Remove the turn link rod from the center plate of the cassette hanger.
- ※ The reel disk and capstan can now be replaced.
- Remove the C washer at the top of the reel disk to remove the disk. (Replace with a new C washer after repairing.)
 - To replace the flywheel capstan, remove the E washer in the pinch roller section. Remove the main belt of the flywheel beforehand.

★ Cassette housing assembling method

1. Set the turn rod.
2. Install the cassette housing unit on the chassis.
- While pressing the lever, assemble in the order shown below.

◆ Button lever assembling (See Fig. 2-15)

1. From the rear of the unit, remove the button lever mounting screw **①**.
2. From the upper part of the button lever, remove the mounting screw **②**. The screw cannot be taken out.
3. From the front, move the button lever upwards and pull it slightly to the front.

★ Assembling

1. Assemble the button lever and the rear section **c**.
2. Assemble the pinch roller shaft **d**, stud **e** and rod **f**.

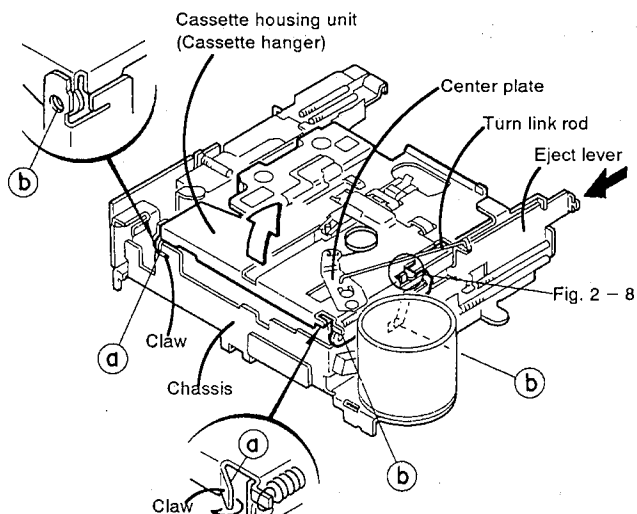


Fig. 2-12

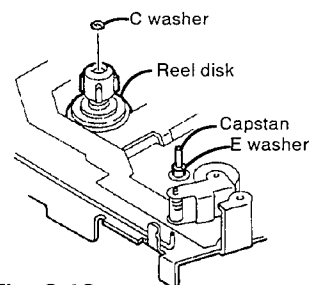


Fig. 2-13

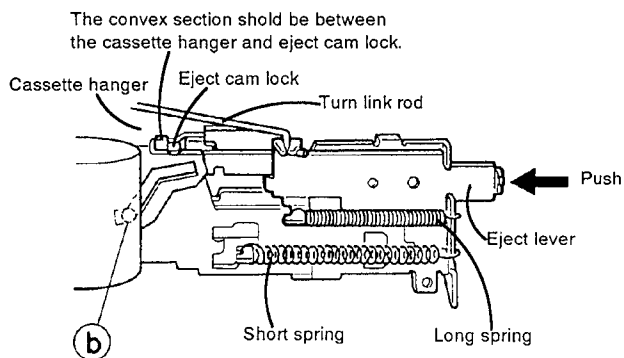


Fig. 2-14

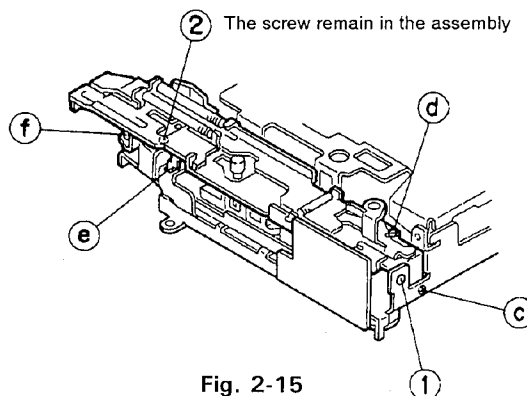


Fig. 2-15

◆ Replacing the head/pinch roller assembly.

○ Pinch roller. (See Fig. 2-16)

1. Remove the E washer ③ on the pinch roller shaft.
2. Remove the pinch roller spring from the chassis and pull out the pinch roller assembly.

○ Head assembly. (See Fig. 2-16)

1. Remove the head mounting screw ④.
2. Remove the C washer ⑤ to pull out the collar.
3. Remove the plate to remove the springs and head.
(The left and right springs are different.)

◆ Motor (See Fig. 2-17)

1. Remove the main belt (capstan belt)/sub-belt.
2. Remove the two motor mounting screws ⑥.

★ Sub-belt changing method.

1. Remove the main belt.
2. Remove the sub-belt from the motor pulley.
3. Remove the three reel base unit mounting screws ⑦ and loosen one ⑧.
4. Lift up the reel base slightly to change the belt.

◆ Reel base unit (See Fig. 2-17~2-19)

1. Remove select link B rod at the top front by turning the rod near the pinch roller as shown in the figure.
2. Remove the four reel base unit mounting screws ⑦ and ⑧.
3. Remove the reel base unit carefully. (Note: service for the reel base unit is not available.)

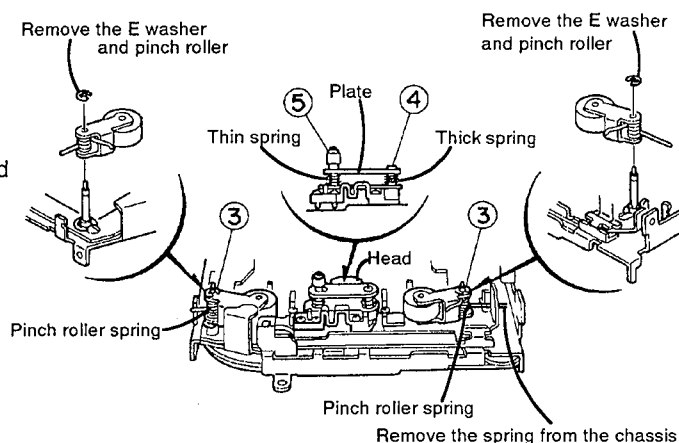


Fig. 2-16

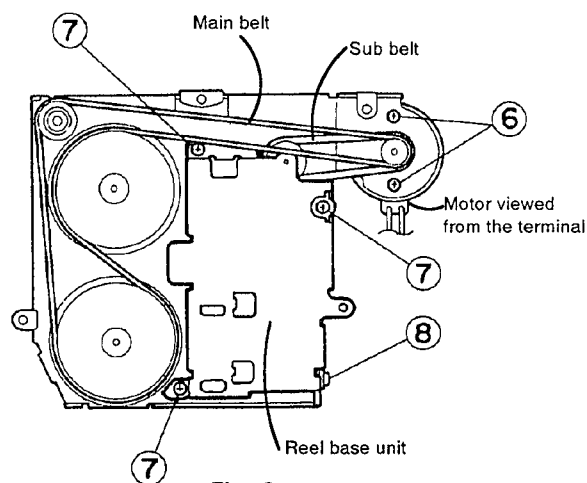


Fig. 2-17

Inside view of the reel base unit

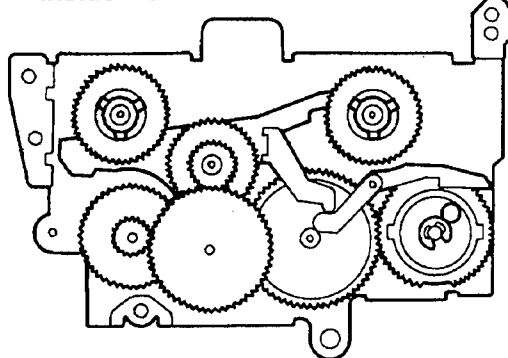


Fig. 2-19

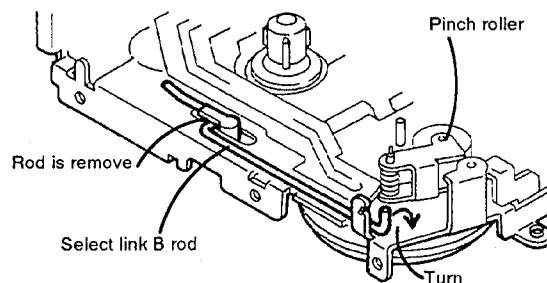


Fig. 2-18

3 Main Adjustment

■ Equipment and measuring instruments used for adjustment

- Electronic voltmeter
- Audio frequency oscillator
(range:50~20kHz and output 0 dB with impedance of 600 Ω)
- Attenuator(impedance;600 Ω)
- Frequency counter
- AM Standard signal generator
- FM Standard signal generator
- Wow flutter mater
- Torqu testing cassette gauge
CTG – N (mechanical adjusting)
TW – 2111A (FWD play)
TW – 2121A (REV play)
- Standard tape
VTT712(tape speed,wow&flutter adj.)
VTT724(reference level)
VTT736(playback frequency response)
VTT721(output level)
SCC – 1659 (mirror tape)
MTT – 942SP (azimuth)

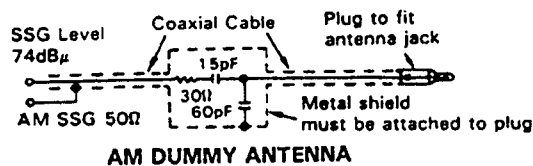
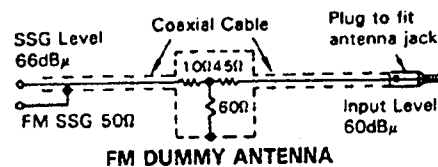
■ Condition for measurement

- Power Supply DC14.4V
(Reduced Voltage:10.5V)
- Load 4 Ω
(4-speaker connection)
- BASS/TRE, FADER Center
- Main volume Position with an output level of 1.4V during VTT724 playback

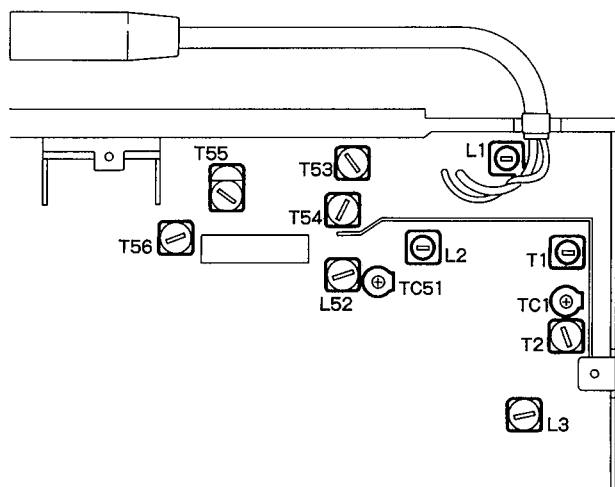
■ Tuner section

- **[FM]**;400Hz, 22.5kHz deviation(MONO)
- **[FM]**STEREO ;1kHz, 67.5kHz deviation, pilotsignal 7.5kHz
- **[AM]**;400Hz, 30% modulation ,74dB μ V
- Output impedance ;50 Ω

■ Dummy antenna



■ Location of Adjustment



● Preset memory Initialization

Band	Preset Memory				
	M1/M6	M2	M3	M4	M5
FM(MHz)	87.5	89.9	97.9	105.9	107.9
AM(kHz)	530	600	1000	1500	1710

● Manual Tuning Up/Down Frequency

- [FM]**;200kHz Step
- [AM]**;10kHz Step

Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
1. Head azimuth adjustment	Test tape: SCC - 1659 MTT942SP(10kHz)	◆ Head height adjustment ※ Adjust the azimuth directly. When you adjust the height using a mirror tape, remove the cassette housing from the mechanism chassis. After installing the cassette housing, perform the azimuth adjustment. 1. Load the SCC-1659 mirror tape. Adjust with height adjustment screw A and azimuth adjustment screw B so that line A of the mirror tape runs in the center between Lch and Rch in the reverse play mode. 2. After switching from REV to FWD then to REV, check that the head position set in procedure 1 is not changed. (If the position has shifted, adjust again and check.) 3. Adjust with azimuth adjustment screw B so that line B of the mirror tape runs in the center between Lch and Rch in the forward play mode. ◆ Head azimuth adjustment 1. Load VTT724 (VT724) (1 kHz) and play it back in the reverse play mode. Set the Rch output level to max. 2. Load VTT703 (VT703) (10 kHz) and play it back in the forward play mode. Adjust the Rch and Lch output levels to max. with azimuth adjustment screw B. In this case, the phase difference should be within 45°. 3. Engage the reverse mode and adjust the output level to max. with azimuth adjustment screw C. (The phase difference should be 45° or more.) 4. When switching between forward and reverse modes, the difference between channels should be within 3 dB. (Between FWD L and R, REV L and R) 5. When VTT721 (VT721) (315 Hz) is played back, the level difference between channels should be within 1.5 dB.	S.Values Head shield The head is at low position during FWD. Head shield The head is at high position during REV. Output level: Maximum separation adj. A Head azimuth adj. B azimuth adj. C phase (0°) (45°)	
2. Tape speed and wow flutter confirmation	Test tape:VTT712 (3kHz)	1. Check to see if the reading of the F. counter/wow flutter meter is within 2940~3090(FWD/REV), and less than 0.35% (JIS RMS). 2. In case of out of specification, adjust the motor with a built-in volume resistor.	Tape speed: 2940 ~3090Hz Wow flutter:less than0.35%	Built-in volume resistor
3.Playback frequency response confirmation	Test tape:VTT724 (1kHz) VTT739 (63Hz/1kHz/10kHz)	1. Play test tape VTT724, and set the volume position at 2 V 2. Play test tape VTT739 and confirm 1kHz/10kHz: - 1 ± 3dB, 1kHz/63Hz: 0 ± 3dB. 3. When 8 kHz is out of specification, it will be necessary to read adjust the azimuth	Speaker out 1kHz/63Hz :0 ± 3dB 1kHz/10kHz : - 1 ± 3dB	

Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
4. Maximum out put power confirmation	Test tape :VTT721 (1kHz) volume:maximum BASS/TRE:center	1. Confirm the rear output be more than 4.5V((5W).(4-speaker connected) 2. Confirm that consumption current at above condition to be less than 10A. 3. Sound leakage should not occur at volume minimum. 5. Oscillation should not occur at BASS/TRE at maximum.	Output level:more than 5W(4.5V) Consumption current :less than 10A	
5. Line out level adj.	Test tape:VTT721 (1kHz) Test point : Line out Load :20k	1. Comfirm the line out level to be within 0.8~1.3V	Line out level 0.8~1.3V	

■ Tuner section adjustment

Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
1.FM 0V adjustment	Test point: TP1 , TP2 FM 97.9MHz, 66 dB non modulation	Adjust L21 so that the TP1 between TP2 DC voltage level become 0 V when 97.9 MHz is indicated.	$0 \pm 10\text{mV}$	L21
2.BLEND adjustment	TP:AFout FM97.9MHz,52dB μ (1kHz,67.5kHz Dev, Pilot : 7.5kHz Dev)	1. With signal of 97.9MHz,52dB μ supplied from the signal generator to L or R channel. 2.Adjust VR21 so that speaker output level of the other channel becomes 20dB and signal levels of the two channels are balanced.	$20 \pm 1\text{dB}$	VR21
3.FM stereo indication sensitivity	97.9MHz,1kHz, 67.5kHz dev. pilot 7.5kHz dev.	1. When input is 16dB μ ,ST indication appears. 2. When input is 0dB μ ,STindication disappears. 3. By pushing MONO button when receiving stereo signal ,indication should change from ST to MO and signal become mono.	ON:16dB μ	
4. FMstero separation	97.9MHz,1kHz 67.5kHz dev. pilot 7.5kHz,66dB μ	1. Separation to be more than 24dB. 2. The left / right difference to be within 3dB.	More than 24dB	
5. FM S/N ratio	97.9MHz,66dB μ	Output difference level between modulation ON/OFF to be more than 47dB.	more than 47dB	
6. Radio/tape level difference	1kHz 22.5kHz dev. 66dB μ Tape VTT724	Against VTT724, the output difference level to be within $-7 \pm 3\text{dB}$.	Within $-7 \pm 3\text{dB}$	

4 Wiring Connections

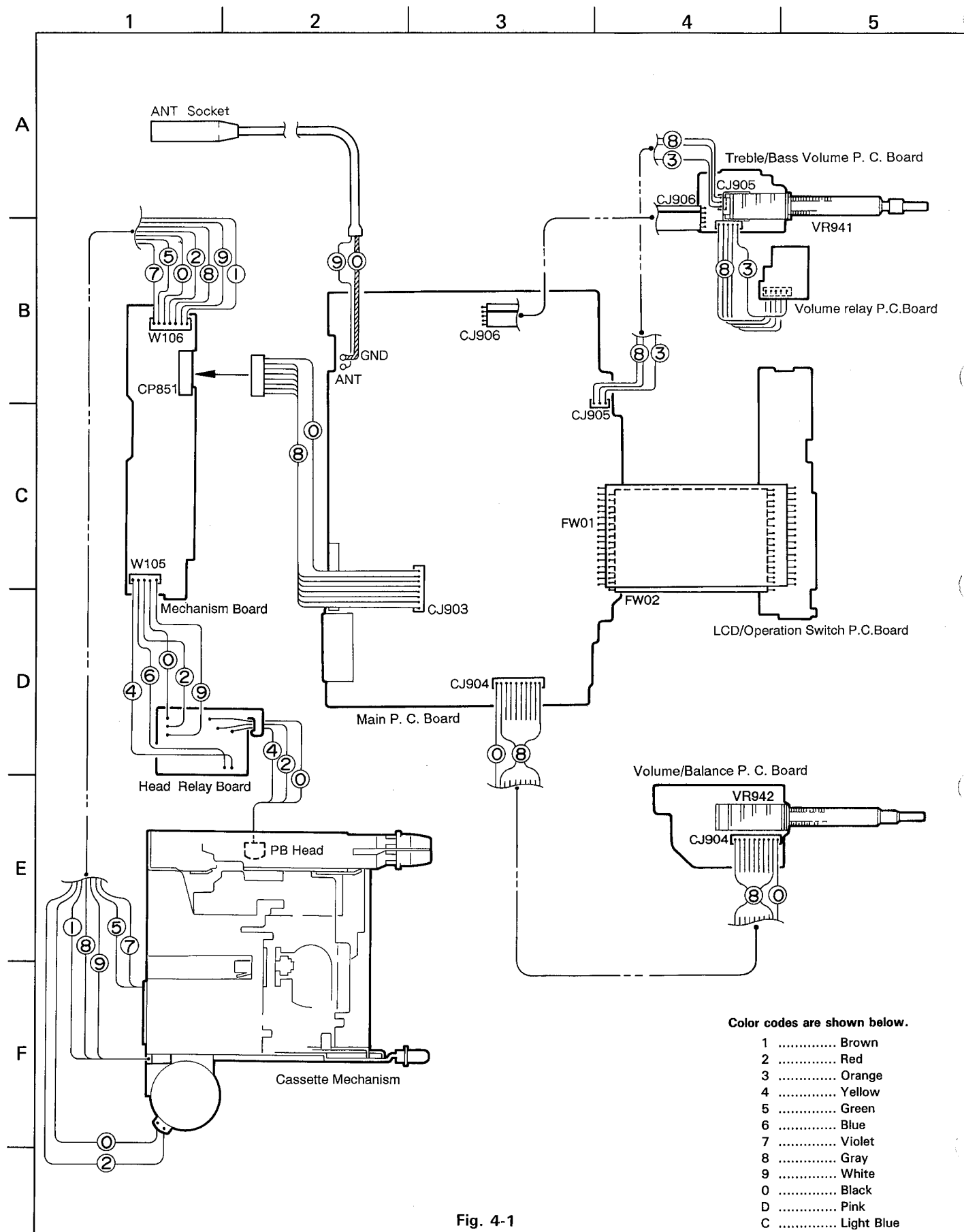


Fig. 4-1

5 Block Diagram

■ Integrated circuit

◆ IC701 PD1708AG-898 (controller)

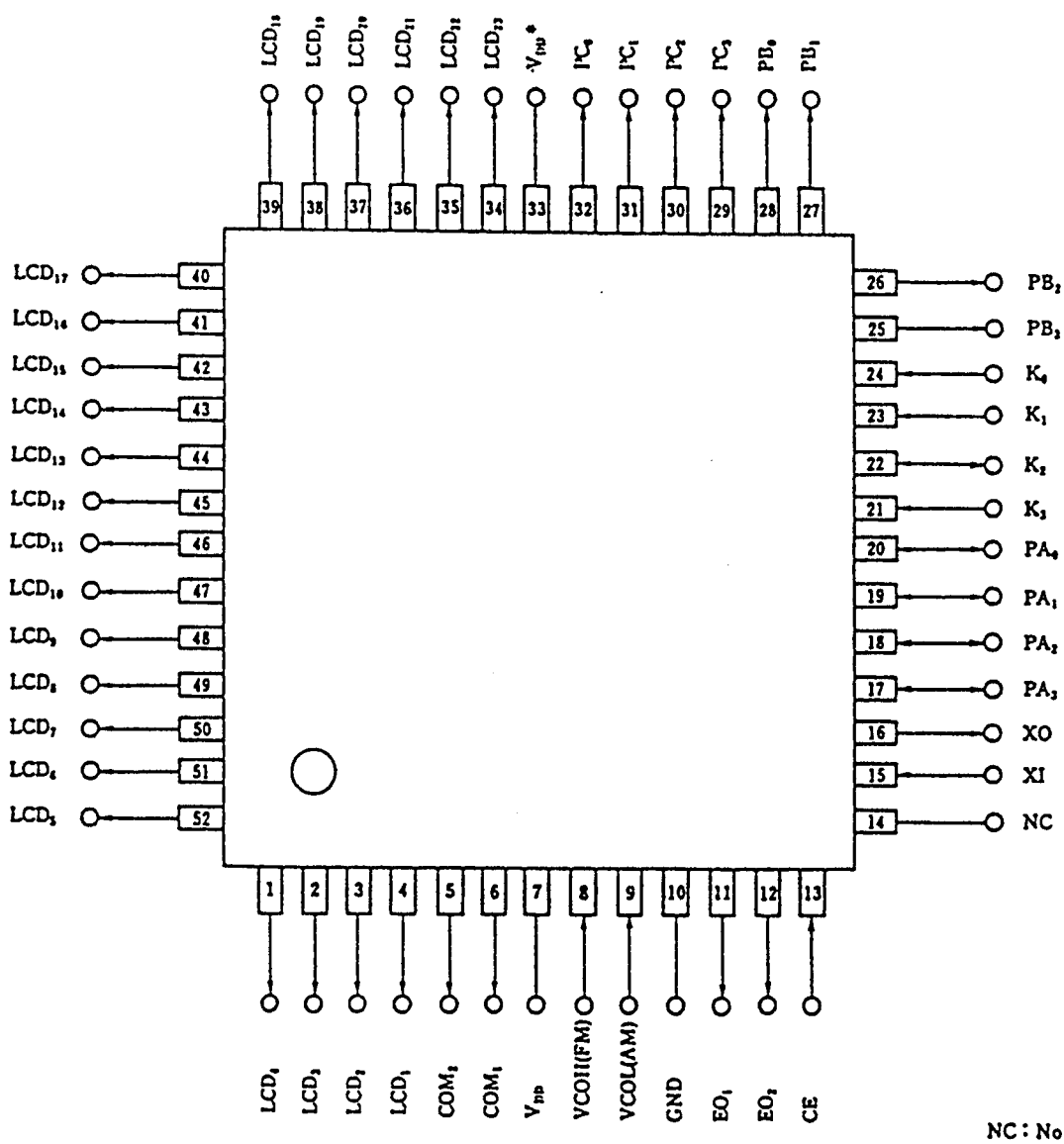


Fig. 5-1 (Top View)

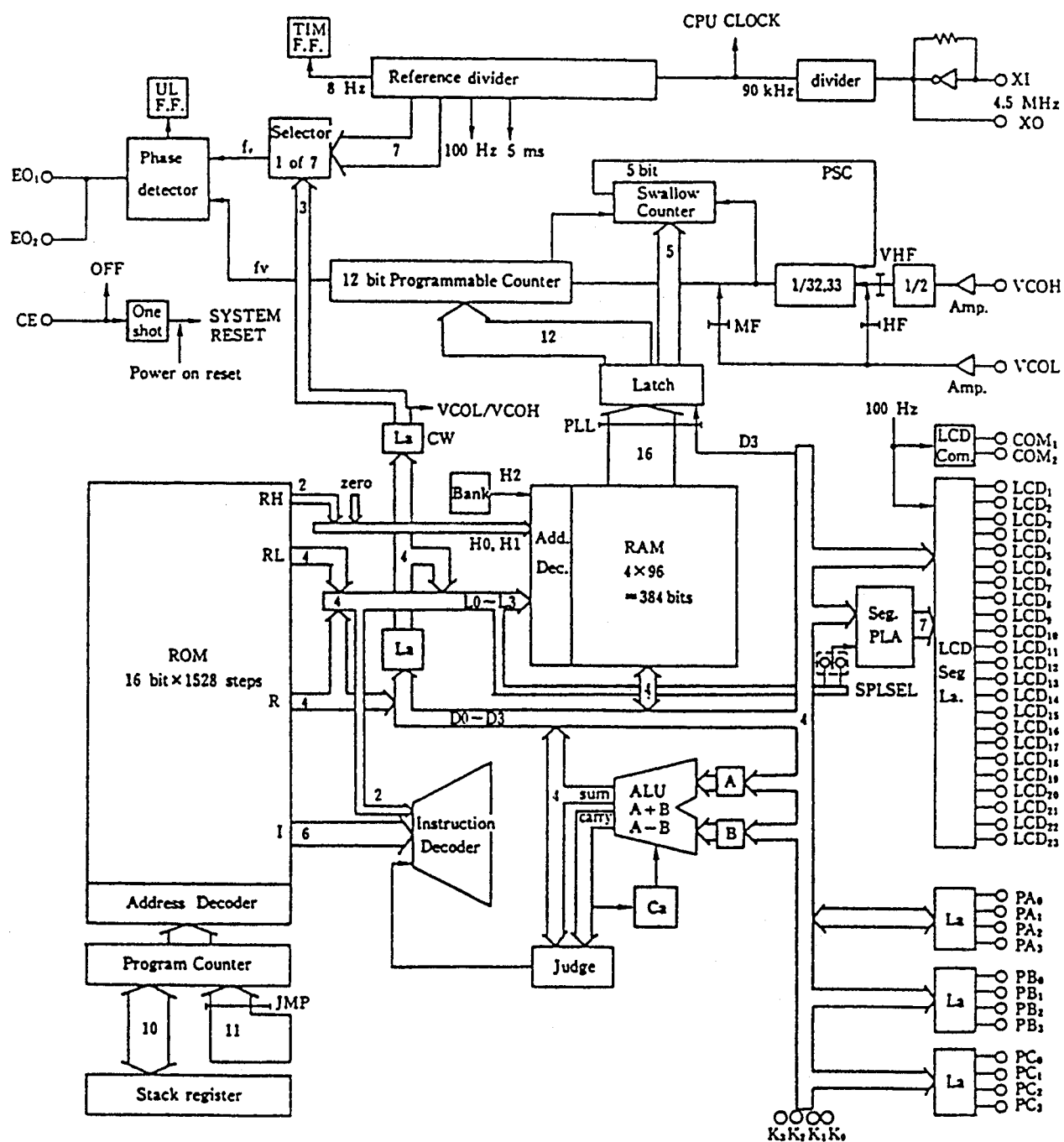


Fig. 5-2

■ IC701 MPD1708AG – 898

Terminal No.	Symbol	Designation	Description	Output form
34~52 1~4	LCD ₂₃ └ LCD ₅ LCD ₄ └ LCD ₁	LCD Segment Outputs	These are segment signal output terminals to the LCD panel. 46 dots can be displayed in maximum based on the matrixes with COM₁ and COM₂. By executing LCDD command, signals will be output to these terminals. The contents of optional address memory in the data memory (RAM) specified by the first operand section of LCDD command will be output to a digit of LCD matrix specified by the second operand section. When an even number of digit is specified at this time, the contents of data memory specified by the first operand section will be output to these terminals through a segment PLA (programmable logic array). 32 kinds of patterns can be generated by the segment PLA. Note: During power supply making ($V_{DD} = \text{Low} \rightarrow \text{High}$) and execution of CKSTP command, the "Low" level (display OFF mode) will be output automatically.	COMS push-pull
5, 6	COM ₂ COM ₁	LCD Common Output	These are common signal output terminals to the LCD panel. 46 dots can be displayed in maximum based on the matrixes with LCD1~LCD23. Three values of GND, $1/2V_{DD}$ and V_{DD} (5 msec. interval) will be output at a period of 50 Hz. The segment wherein a potential difference of $\pm V_{DD}$ has occurred between these terminals and LCD₁~LCD₂₃ will be turned on. Note: During power supply making ($V_{DD} = \text{Low} \rightarrow \text{High}$) and execution of CKSTP command, the "Low" level (display OFF mode) will be output automatically.	COMS push-pull
7, 33	V_{DD}	Power Supply	This is a power supply terminal to the device. When the device is in action, $5\text{ V} \pm 10\%$ will be supplied to it. When storing internal data memory (RAM) (during execution of CKSTP command), the voltage can be lowered to 2.5 V. When $0 \rightarrow 4.5\text{ V}$ has been supplied to this terminal, the device will be reset and the program be started from "0" address. Note: Since 7 PIN and 33 PIN are connected inside chips, there is no need to supply any voltage to both of the pins. When voltage is supplied to one of the pins, both of them will act. However, be careful since the 33 PIN is not connected in the case of the ES parts (ceramic package).	
8	VCOH (FM)	Local Oscillation Signal Input	This is a local oscillation output (VCO output) terminal from 10 to 150 MHz (0.5 V_{DD} min.). Provided in this terminal are 1/2 fixed division prescaler, 1/32 and 1/33 two modulus division prescalers. Therefore, it is necessary to determine the division value of programmable divider from half the frequency of the local oscillator output (VCO output). When the HF command has been executed based on the direct division and pulse swallow systems, namely, when the VCOL terminal has been selected, then the VCOH terminal will be placed automatically into "pull-down" state (GND). Since an AC amplifier is built in, the input should be made after condenser cutting.	Input

Terminal No.	Symbol	Designation	Description	Output form														
9	VCOL (AM)	Local Oscillation Signal Input	A local oscillation input (VCO output) from 0.6 to 60 MHz (0.3 V_{p-p} MIN.) will be input to this terminal. This terminal will be selected and become active when the HF command has been executed based on the direct division and pulse swallow systems. However, be careful since the upper limit of frequency and lower limit of division ratio which can be input vary between the above two division systems. <table border="1"><thead><tr><th>Division system</th><th>Input voltage (min.)</th><th>Input frequency</th><th>Division ratio</th></tr></thead><tbody><tr><td>Direct division</td><td>0.1 V_{p-p}</td><td>0.59 ~ 20 MHz</td><td>16 ~ (2¹² - 1)</td></tr><tr><td rowspan="2">Pulse swallow (HF command execution)</td><td>0.1 V_{p-p}</td><td>0.6 ~ 40 MHz</td><td rowspan="2">1024 ~ (2¹⁷ - 1)</td></tr><tr><td>0.3 V_{p-p}</td><td>0.6 ~ 50 MHz</td></tr></tbody></table> When the VHF command has been selected based on the pulse swallow system, namely, when the VCOH terminal has been selected, then the VCOL terminal will be placed automatically into pull-down state (GND). Since an AC amplifier is built in, the input should be made after condenser cutting.	Division system	Input voltage (min.)	Input frequency	Division ratio	Direct division	0.1 V _{p-p}	0.59 ~ 20 MHz	16 ~ (2 ¹² - 1)	Pulse swallow (HF command execution)	0.1 V _{p-p}	0.6 ~ 40 MHz	1024 ~ (2 ¹⁷ - 1)	0.3 V _{p-p}	0.6 ~ 50 MHz	Input
Division system	Input voltage (min.)	Input frequency	Division ratio															
Direct division	0.1 V _{p-p}	0.59 ~ 20 MHz	16 ~ (2 ¹² - 1)															
Pulse swallow (HF command execution)	0.1 V _{p-p}	0.6 ~ 40 MHz	1024 ~ (2 ¹⁷ - 1)															
	0.3 V _{p-p}	0.6 ~ 50 MHz																
10	GND	Ground	This is a ground terminala of the device.															
11, 12	EO ₁ EO ₂	Error Outputs	These are PLL error output terminals. When the divided local oscillation frequency (VCO output) is higher or lower than the reference frequency, the "High" or "Low" level will be output from these terminals. When the frequency complies with the reference frequency, the terminals will be floating. These error outputs will be input to the external LPF (low pass filter) and applied to varactor diode through the LPF. Meanwhile, since EO₁ and EO₂ are output in a same waveform, either of the terminals can be selected optionally.	COMS 3 states														
13	CE	Chip Enable	This is a device selection signal input terminal. Set this terminal to "High" level to let the device perform normal action and to "Low" level when the device is not used. While this terminal is kept at "Low" level, the PLL will be under Disable state. However, 134 μsec. or shorter input will not be accepted. In case the CKSTP command has been executed when the CKSTP command is bein used in program and the CE terminal is at "Low" level (The SKSTP command is effective only where "CE = Low", and acts similarly as in the case of NOP command where "CE = Low"), then the internal clock generator and CPU will be placed into standstill, and the memory can be protected at low consumption current (10 μA or less). At this time, the display outputs (LCD₁ ~ LCD₂₃ and COM₁ ~ COM₂) will be placed automatically into display OFF mode ("Low level). Input When the CE terminal has been selected from "Low" level to "High" level, the device will be reset and the program start from "0" address. At this time, moreover, the I/O port (Port A) will be set to the input mode.	input														

Terminal No.	Symbol	Designation	Description	Output form
14	NC	No-Connection	It is impossible to use this terminal since it is not connected to an internal chip. However, there will be no problem if this terminal is connected freely to OPEN, GND, V_{DD} and so forth.	
15, 16	XI XO	X'tal	This is a crystal oscillator connection terminal, and used for connecting 4.5 MHz crystal. The oscillation frequency (4.5 MHz) should be adjusted while observing the XO terminal.	Input CMOS
17~20	PA ₃ PA ₀	Port A	This port is a 4 bit L/O (input/output) port. With this port, it is possible to specify input and output every 1 bit according to the contents of 1FM address in data memory (RAM) called "PAIO" word (Refer to Notes 1 and 2).	CMOS push-pull
21~24	K ₃ K ₀	Key Return Signal Inputs	This are a 4 bit input port and used normally as a key matrix input port. When the KIN or KI command has been executed, the status of this terminal will be read in the data memory (RAM) specified by the corresponding operand section. Meanwhile, this is of such a special configuration as to enable use of higher 2 bits (PC₃ and PC₂) of Ports B and C as key return signal sources.	Input
25~28	PB ₃ PB ₀	Port B	This is a 4 bit output port, and used as a a port for key return signal source of key matrix since the sink current is made smaller particularly in view of its configuration. In other words, when this port is used as a key return signal source, the external diode can be omitted. In case this port is used as a normal output port, the sink current will become too small depending on the driving circuit. Therefore, a correct low level would not be output in some cases. In such a case, connect the pull-down resistor to this port (Refer to Notes 1 and 3).	CMOS push-pull
29~32	PC ₃ PC ₀	Port C	This is a 4 bit output port. The absorption current in PC ₃ and PC ₂ among 4 bits is made particularly small in view of configuration similarly as in the case of Port B above. Therefore, this port is used as a key return signal source of key matrix (Refer to Notes 1 and 3).	COMS push-pull

Note 1. In the port control commands (IN, OUT, SPB, RPB and other commands), PA₁ and PA₂ correspond respectively to the lowest and highest bits of resistor or operand data, and so in the case of Ports B and C.

Note 2. When the device has been reset (V_{DD} = Low → High and CE = Low → High) and when the CKSTP command has been executed, then the Port A (I/O port) will be set to input mode.

Note 3. Since instable data will be output to the special output ports (Ports B and C) during power supply making (V_{DD} = Low → High), it is necessary to initialize the ports with program. Moreover, when the CE terminal is "Low" → "High" and during execution of the CKSTP command, the contents of the output data will not be changed from those of the previous data. In this case, therefore, it is necessary to initialize the ports with program as required

■ Circuit diagram

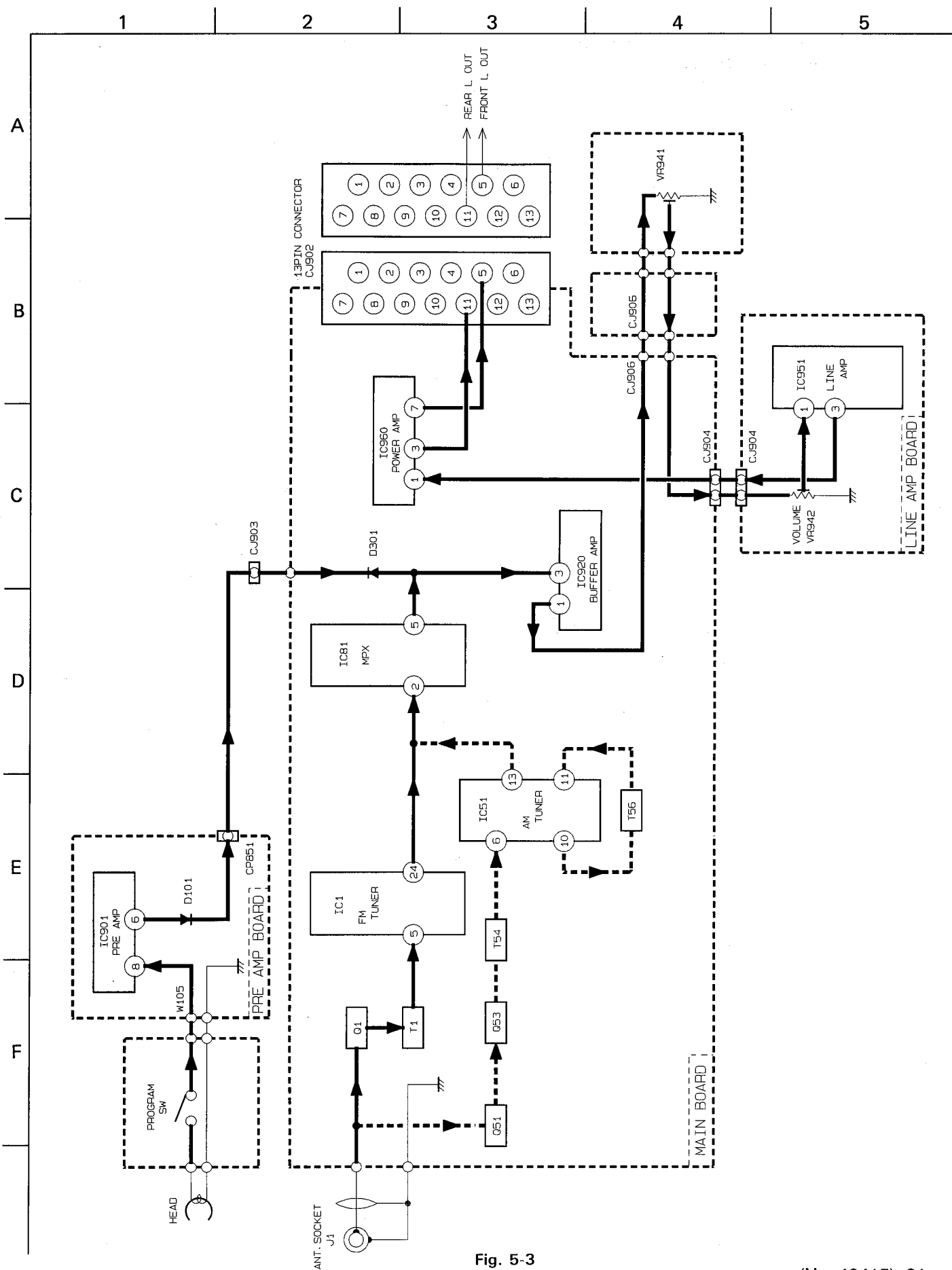
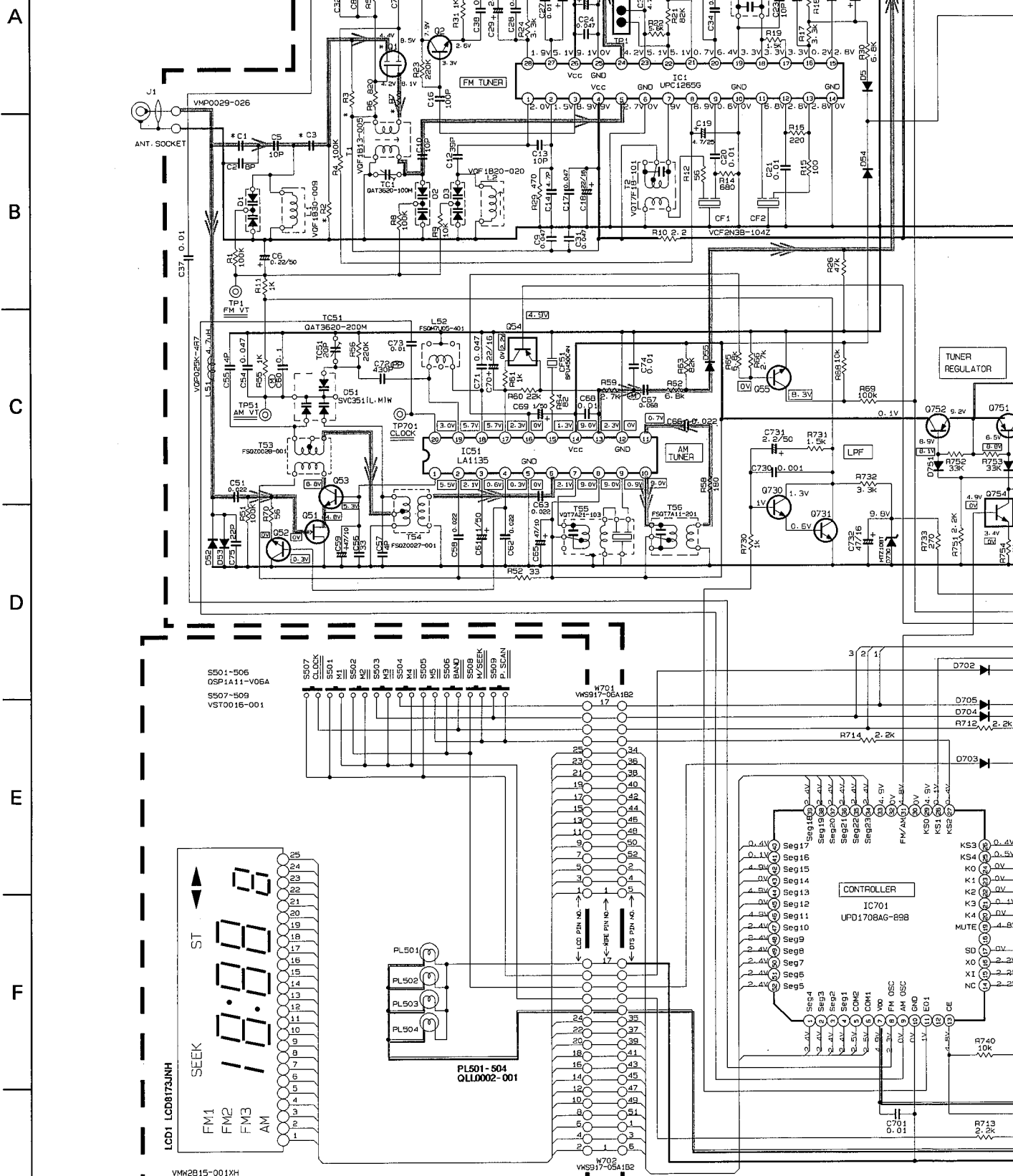


Fig. 5-3

6 Standard Circuit Diagram

Drawing No.
FSDH3007-006RV



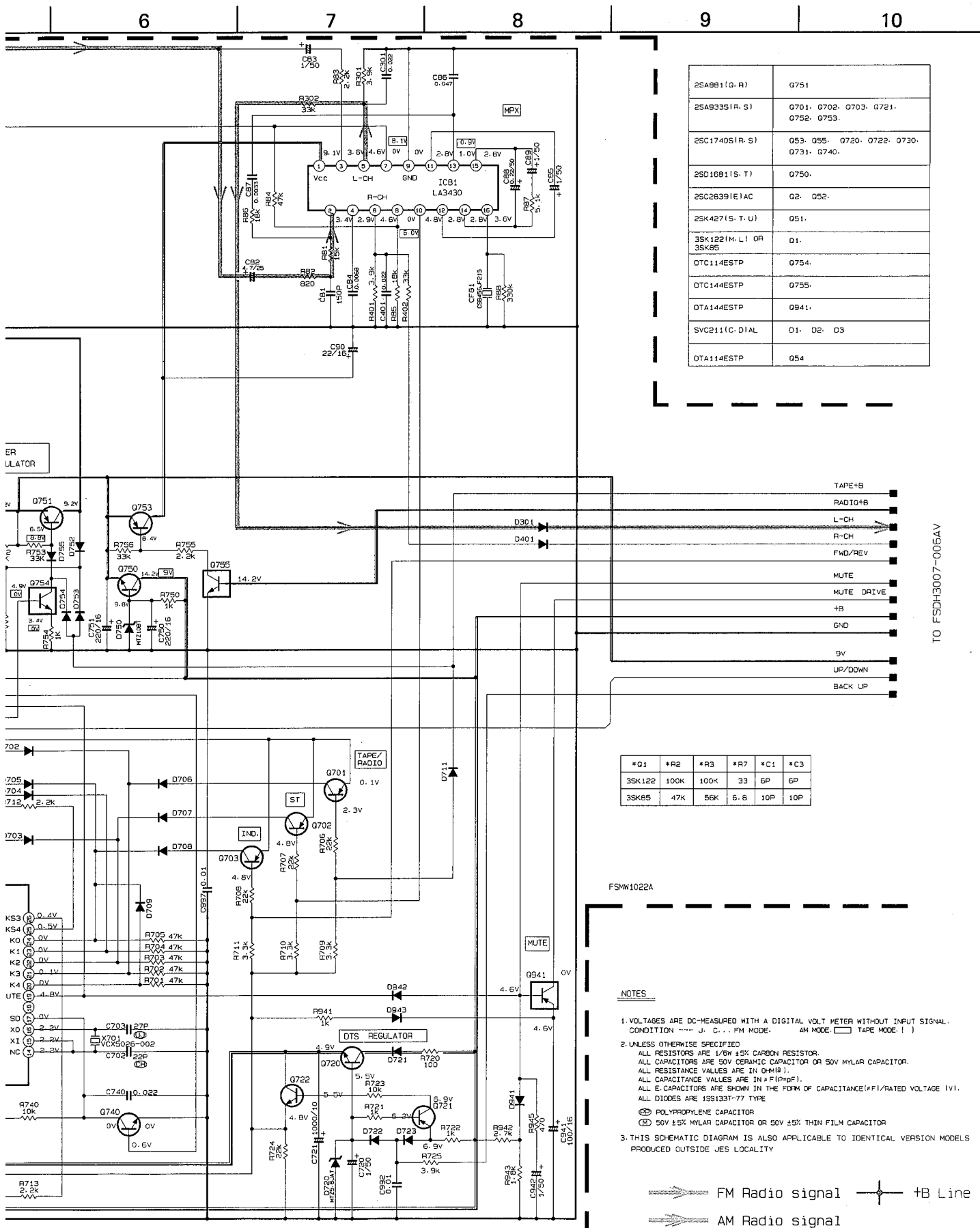


Fig. 6-1

Figure 1: Schematic diagram of the FSD3007-AV circuit. The diagram is divided into two main sections: the PRE AMP (top) and the BUFFER AMP (bottom).

PRE AMP Section:

- IC901 (UPC1228HA):** A dual operational amplifier used for pre-amplification. It is powered by a 1.5V battery (C203, 150P) and a 1.5V battery (C204, 150P). The input is connected to a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC902 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC903 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC904 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).

BUFFER AMP Section:

- IC920 (NJM4580L-S):** A dual operational amplifier used for buffering. It is powered by a 1.5V battery (C203, 150P) and a 1.5V battery (C204, 150P). The input is connected to a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC921 (NJM4580L-S):** A dual operational amplifier used for buffering. It is powered by a 1.5V battery (C203, 150P) and a 1.5V battery (C204, 150P). The input is connected to a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).

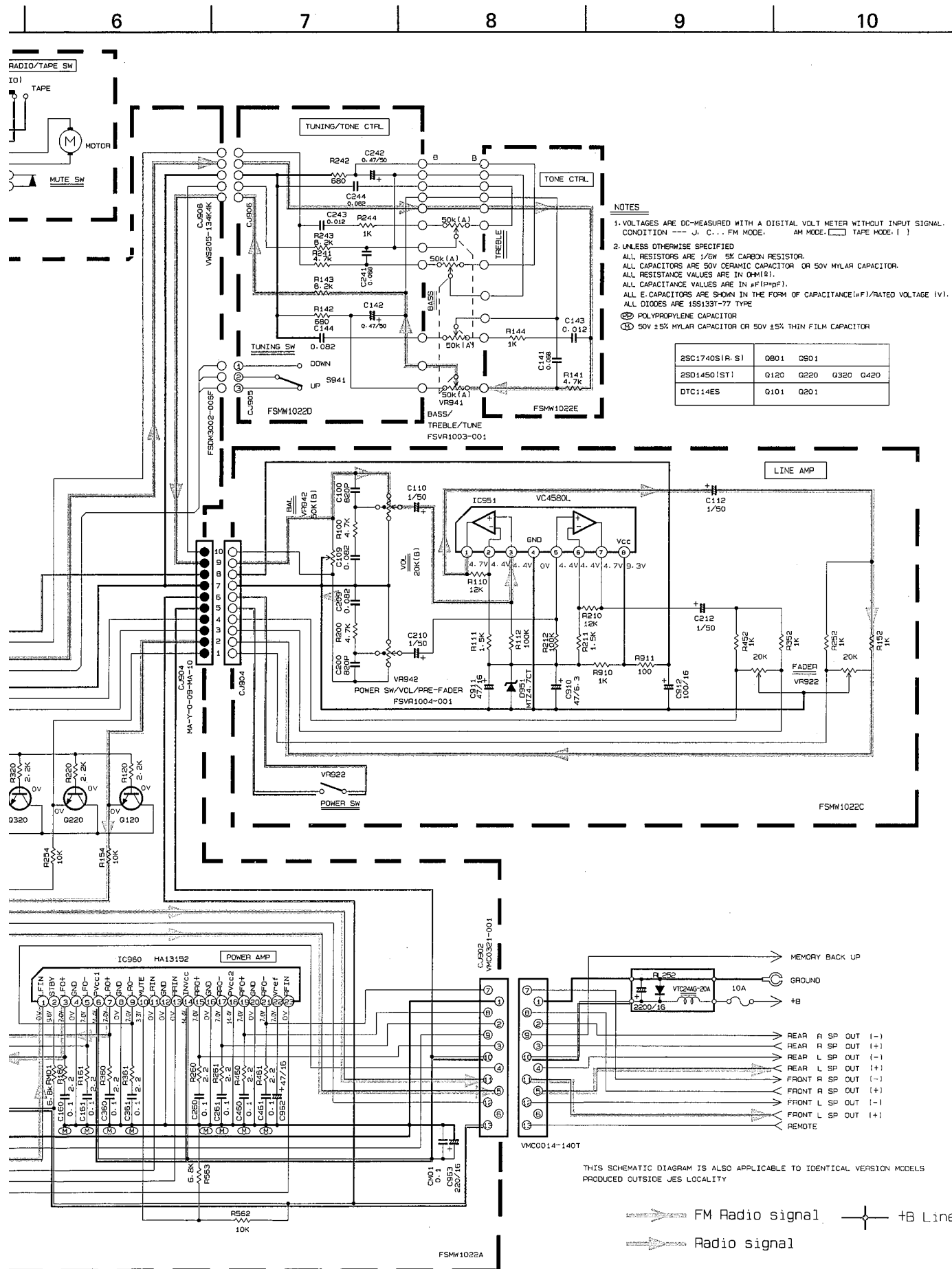
Other Components:

- IC905 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC906 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC907 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).
- IC908 (2SC1740SIR S1T):** A transistor used for signal processing. It is biased by a 1.5V battery (C201, 0.001) and a 1.5V battery (C202, 150P).

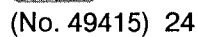
Connections:

- TO FSD3007-006RV:** The output of the PRE AMP is connected to the input of the BUFFER AMP.
- TO FSD3007-006A:** The output of the BUFFER AMP is connected to the input of the FSD3007-006A.

Fig. 6-2



7



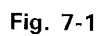
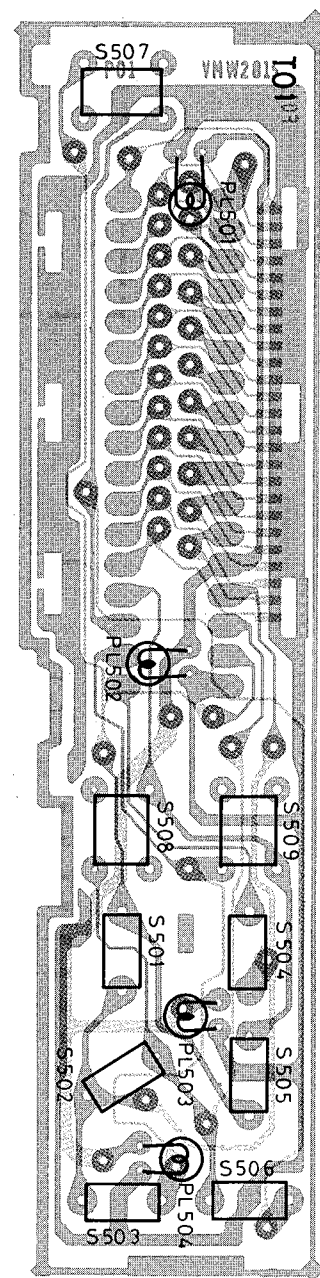


Fig. 7-2



● P. C. board parts list

BLOCK NO. 01111111

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
C 74	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 75	QCSB1HJ-220V	C.CAPACITOR	.22PF 5% 50V	
C 81	QCB1HK-151Y	C.CAPACITOR	.150PF 10% 50V	
C 82	QER41EM-475VM	E.CAPACITOR	4.7MF 20% 25V	
C 83	QER41HM-105VM	E.CAPACITOR	1.0MF 20% 50V	
C 84	QCVB1CM-682Y	C.CAPACITOR	.680PF 20% 16V	
C 85	QER41HM-105VM	E.CAPACITOR	1.0MF 20% 50V	
C 86	QCC11EM-473V	C.CAPACITOR	.047MF 20% 25V	
C 87	QCVB1CM-332Y	C.CAPACITOR	.330PF 20% 16V	
C 88	QERF1HM-224Z	E.CAPACITOR	.22MF 20% 50V	
C 89	QER41HM-105VM	E.CAPACITOR	1.0MF 20% 50V	
C 90	QERF1CM-226ZM	E.CAPACITOR	.22MF 20% 16V	
C 100	QCB1HK-821Y	C.CAPACITOR	.820PF 10% 50V	
C 101	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 102	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 103	QCB1HK-151Y	C.CAPACITOR	.150PF 10% 50V	
C 104	QFV41HJ-103ZM	TF CAPACITOR	.010MF 5% 50V	
C 105	QERF1AM-336ZM	E.CAPACITOR	.33MF 20% 10V	
C 109	QCC11EK-823ZV	C.CAPACITOR	.082MF 10% 25V	
C 110	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 112	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 121	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 141	QCC11EM-683V	C.CAPACITOR	.068MF 10% 25V	
C 142	QERF1HM-474Z	E.CAPACITOR	.47MF 20% 50V	
C 143	QCC11EK-123Z	C.CAPACITOR	.012MF 10% 25V	
C 144	QCC11EK-823ZV	C.CAPACITOR	.082MF 10% 25V	
C 160	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	
C 161	QFV41HJ-104ZM	TF CAPACITOR	1.0MF 5% 50V	
C 181	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 182	QETC1HM-475Z	E.CAPACITOR	4.7MF 20% 50V	
C 200	QCB1HK-821Y	C.CAPACITOR	.820PF 10% 50V	
C 201	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 202	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 203	QCB1HK-151Y	C.CAPACITOR	.150PF 10% 50V	
C 204	QFV41HJ-103ZM	TF CAPACITOR	.010MF 5% 50V	
C 205	QERF1AM-336ZM	E.CAPACITOR	.33MF 20% 10V	
C 209	QCC11EK-823ZV	C.CAPACITOR	.082MF 10% 25V	
C 210	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 212	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 221	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 241	QCC11EM-683V	C.CAPACITOR	.068MF 10% 25V	
C 242	QERF1HM-474Z	E.CAPACITOR	.47MF 20% 50V	
C 243	QCC11EK-123Z	C.CAPACITOR	.012MF 10% 25V	
C 244	QCC11EK-823ZV	C.CAPACITOR	.082MF 10% 25V	
C 260	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	
C 261	QFV41HJ-104ZM	TF CAPACITOR	1.0MF 5% 50V	
C 281	QERF1HM-105ZM	E.CAPACITOR	1.0MF 20% 50V	
C 282	QETC1HM-475Z	E.CAPACITOR	4.7MF 20% 50V	
C 301	QCC11EM-223V	C.CAPACITOR	.022MF 20% 25V	
C 321	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 360	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	
C 361	QFV41HJ-104ZM	TF CAPACITOR	1.0MF 5% 50V	
C 401	QCC11EM-223V	C.CAPACITOR	.022MF 20% 25V	
C 421	QCB1HK-102Y	C.CAPACITOR	1.000PF 10% 50V	
C 460	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	

BLOCK NO. 01111111

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
C 1	QCS31HJ-6R0Z	C.CAPACITOR	6.0PF 5% 50V	
C 2	QCS31HJ-8R0Z	C.CAPACITOR	8.0PF 5% 50V	
C 3	QCS31HJ-6R0Z	C.CAPACITOR	6.0PF 5% 50V	
C 5	QCS31HJ-100	C.CAPACITOR	10PF 5% 50V	
C 6	QETC1HM-224Z	E.CAPACITOR	.22MF 20% 50V	
C 7	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 8	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 9	QCC11EK-473ZV	C.CAPACITOR	.047MF 10% 25V	
C 10	QCS11HJ-100	C.CAPACITOR	10PF 5% 50V	
C 12	QCSB1HJ-390Y	C.CAPACITOR	39PF 5% 50V	
C 13	QCS11HJ-100	C.CAPACITOR	10PF 5% 50V	
C 14	QCSB1HK-4R7Y	C.CAPACITOR	4.7PF 10% 50V	
C 16	QCB1HK-101Y	C.CAPACITOR	100PF 10% 50V	
C 17	QCC11EM-473V	C.CAPACITOR	.047MF 20% 25V	
C 18	QERF1CM-226ZM	E.CAPACITOR	.22MF 20% 16V	
C 19	QETC1EM-475ZM	E.CAPACITOR	4.7MF 20% 25V	
C 20	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 21	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 22	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 23	QCT30UJ-100Y	C.CAPACITOR	10PF 5% 50V	
C 24	QCC11EK-473ZV	C.CAPACITOR	.047MF 10% 25V	
C 25	QERF1CM-226ZM	E.CAPACITOR	.22MF 20% 16V	
C 26	QER41HM-225	E.CAPACITOR	2.2MF 20% 50V	
C 27	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 28	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 29	QER41HM-225	E.CAPACITOR	2.2MF 20% 50V	
C 30	QETC1HM-105Z	E.CAPACITOR	1.0MF 20% 50V	
C 31	QCC11EK-473ZV	C.CAPACITOR	.047MF 10% 25V	
C 32	QCB1HK-101Y	C.CAPACITOR	100PF 10% 50V	
C 33	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 34	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 35	QERF1EM-475ZM	E.CAPACITOR	4.7MF 20% 25V	
C 36	QCS11HJ-330	C.CAPACITOR	33PF 5% 50V	
C 37	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 38	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 51	QCC11EM-223V	C.CAPACITOR	.022MF 10% 25V	
C 54	QCC11EK-473ZV	C.CAPACITOR	.047MF 10% 25V	
C 55	QCS31HJ-4R0Z	C.CAPACITOR	4.0PF 5% 50V	
C 56	QCS11HJ-330	C.CAPACITOR	33PF 5% 50V	
C 57	QCS31HJ-4R0Z	C.CAPACITOR	4.0PF 5% 50V	
C 58	QCC11EM-223V	C.CAPACITOR	.022MF 10% 25V	
C 59	QETC1AM-476Z	E.CAPACITOR	.47MF 20% 10V	
C 60	QFV41HJ-104ZM	TF CAPACITOR	.10MF 5% 50V	
C 61	QETC1HM-105Z	E.CAPACITOR	1.0MF 20% 50V	
C 62	QCC11EM-223V	C.CAPACITOR	.022MF 10% 25V	
C 63	QCC11EM-223V	C.CAPACITOR	.022MF 10% 25V	
C 65	QETC1AM-476Z	E.CAPACITOR	.47MF 20% 10V	
C 66	QCC11EM-223V	C.CAPACITOR	.022MF 10% 25V	
C 67	QFV41HJ-683Z	TF CAPACITOR	.068MF 5% 50V	
C 68	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	
C 69	QERF1HM-105VM	E.CAPACITOR	1.0MF 20% 50V	
C 70	QERF1CM-226ZM	E.CAPACITOR	.22MF 20% 16V	
C 71	QCC11EM-473V	C.CAPACITOR	.047MF 20% 25V	
C 72	QFP42AJ-431	PP CAPACITOR	430PF 5% 100V	
C 73	QCVB1CM-103Y	C.CAPACITOR	.010MF 20% 16V	

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
C 461	QFV41HJ-1042M	TF CAPACITOR	.10MF 5% 50V	
C 701	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
C 702	QCSB1HJ-220Y	C-CAPACITOR	22PF 5% 50V	
C 703	QC105CH-220	C-CAPACITOR	22PF 5% 50V	
C 704	QC130CH-3R9Y	C-CAPACITOR	3.9PF 5% 50V	
C 720	QETC1HM-105Z	E-CAPACITOR	1.0MF 20% 50V	
C 721	QETC1AM-108ZN	E-CAPACITOR	1000MF 20% 10V	
C 730	QCB1HK-102Y	C-CAPACITOR	1000PF 10% 50V	
C 731	QER41HM-225	E-CAPACITOR	2.2MF 20% 50V	
C 732	QER41CM-476M	E-CAPACITOR	47MF 20% 16V	
C 740	QCC11EM-223V	C-CAPACITOR	.022MF 10% 25V	
C 750	QERF1AM-227Z	E-CAPACITOR	220MF 20% 10V	
C 751	QETN1CM-227Z	E-CAPACITOR	220MF 20% 16V	
C 901	QEXF1CM-2267M	E-CAPACITOR	22MF 20% 16V	
C 902	QEF1CM-107ZN	E-CAPACITOR	100MF 20% 16V	
C 911	QEK41CM-476	E-CAPACITOR	47MF 20% 16V	
C 912	QEXF1CM-107ZN	E-CAPACITOR	100MF 20% 16V	
C 921	QETC1CM-476Z	E-CAPACITOR	47MF 20% 16V	
C 941	QETC1CM-107	E-CAPACITOR	100MF 20% 16V	
C 942	QETC1HM-105Z	E-CAPACITOR	1.0MF 20% 50V	
C 961	QEXF1CM-2267M	E-CAPACITOR	22MF 20% 16V	
C 962	QEXF1CM-106Z	E-CAPACITOR	10MF 20% 16V	
C 963	QETB1CM-477M	E-CAPACITOR	470MF 20% 16V	
C 992	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
C 997	QCVB1CM-103Y	C-CAPACITOR	.010MF 20% 16V	
CF 1	VCF2N3B-104Z	C-FILTER		
CF 2	VCF2N3B-104Z	C-FILTER		
CF 51	BFU45064N	C-FILTER		
CF 81	CSB456F11	CERA LOCK		
CJ902	VMC0321-001	FEED THU CONN		
CP851	VMC0064-009	CONNECTOR		
D 1	SVG211(C-D)	V-C-DIODE I/M		
D 2	SVG211(C-D)	V-C-DIODE I/M		
D 3	SVG211(C-D)	V-C-DIODE I/M		
D 5	1SS133	DIODE I/M		
D 6	1SS133	DIODE I/M		
D 51	SVG351(L,M,W)	V-C-DIODE		
D 52	1SS133	DIODE I/M		
D 53	1SS133	DIODE I/M		
D 54	1SS133	DIODE I/M		
D 55	1SS133	DIODE I/M		
D 101	1SS133	DIODE I/M		
D 201	1SS133	DIODE I/M		
D 301	1SS133	DIODE I/M		
D 401	1SS133	DIODE I/M		
D 702	1SS133	DIODE I/M		
D 703	1SS133	DIODE I/M		
D 704	1SS133	DIODE I/M		
D 705	1SS133	DIODE I/M		
D 706	1SS133	DIODE I/M		
D 707	1SS133	DIODE I/M		
D 708	1SS133	DIODE I/M		
D 709	1SS133	DIODE I/M		
D 711	1SS133	DIODE I/M		
D 720	MTZ5-6JA	DIODE I/M		

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
D 721	1SS133	DIODE I/M		
D 722	1SS133	DIODE I/M		
D 723	1SS133	DIODE I/M		
D 730	MTZ10B	Z DIODE		
D 750	MTZ10B	Z DIODE		
D 751	1SS133	DIODE I/M		
D 752	1SS133	DIODE I/M		
D 753	1SS133	DIODE I/M		
D 754	1SS133	DIODE I/M		
D 755	1SS133	DIODE I/M		
D 851	DSK10C-E	SI DIODE		
D 901	MTZ9-1JB	Z DIODE		
D 911	MTZ4-7C	Z DIODE		
D 941	1SS133	DIODE I/M		
D 942	1SS133	DIODE I/M		
D 943	1SS133	DIODE I/M		
D 944	MA700A	DIODE I/M		
D 945	1SS133	DIODE I/M		
FW 01	VMS917-06A1B2	FLAT WIRE		
FW 02	VMS917-05A1B2	PC JOINER WIRE		
IC 1	UPC1265G	I.C.		
IC 51	LA1135	I.C.		
IC 81	LA3430	I.C.		
IC701	UPD1708AG-898	I.C.		
IC901	UPC1228HA	I.C.		
IC920	NJM4580L-S	I.C.		
IC951	NJM4580L-S	I.C.		
IC960	HA13152	IC		
L 1	VQF1B30-009	COIL		
L 2	VQF1B20-020	COIL		
L 3	VQ7F07-502	I.F.T.		
L 51	VQP025K-4R7Y	INDUCTOR I/M		
L 52	VQM7U03-401S	OSC COIL (MW)		
Q 1	3SK85TF4	FET		
Q 2	2SC2839	TRANSISTOR I/M		
Q 51	2SK427	FET I/M		
Q 52	2SC2839	TRANSISTOR I/M		
Q 53	2SC1740S(R,S)	TRANSISTOR I/M		
Q 54	2SA933S(RS)	TRANSISTOR I/M		
Q 55	2SC1740S(R,S)	TRANSISTOR I/M		
Q 101	DTC114ES	TRANSISTOR I/M		
Q 120	2SD1450RST	TRANSISTOR I/M		
Q 201	DTC114ES	TRANSISTOR I/M		
Q 220	2SD1450RST	TRANSISTOR I/M		
Q 320	2SD1450RST	TRANSISTOR I/M		
Q 420	2SD1450RST	TRANSISTOR I/M		
Q 701	2SA933S(RS)	TRANSISTOR I/M		
Q 702	2SA933S(RS)	TRANSISTOR I/M		
Q 703	2SA933S(RS)	TRANSISTOR I/M		
Q 720	2SC1740S(R,S)	TRANSISTOR I/M		
Q 721	2SA933S(RS)	TRANSISTOR I/M		
Q 722	2SC1740S(R,S)	TRANSISTOR I/M		
Q 730	2SC1740S(R,S)	TRANSISTOR I/M		
Q 731	2SC1740S(R,S)	TRANSISTOR I/M		
Q 740	2SC1740S(R,S)	TRANSISTOR I/M		

BLOCK NO. 01

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
Q 750	2SD1681(S,T)	TRANSISTOR		
Q 751	2SA881	TRANSISTOR I/M		
Q 752	2SA933S(RS)	TRANSISTOR I/M		
Q 753	2SA933S(RS)	TRANSISTOR I/M		
Q 754	DTIC114ES	TRANSISTOR I/M		
Q 755	DTIC144ES	TRANSISTOR I/M		
Q 801	2SC1740S(R,S)	TRANSISTOR I/M		
Q 901	2SC1740S(R,S)	TRANSISTOR I/M		
Q 941	DTA144ES	TRANSISTOR I/M		
R 1	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 2	GRD161J-473	C.RESISTOR	47K 5% 1/6W	
R 3	GRD161J-563	C.RESISTOR	56K 5% 1/6W	
R 4	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 5	GRD161J-181	C.RESISTOR	180 5% 1/6W	
R 6	GRD161J-821	C.RESISTOR	820 5% 1/6W	
R 7	GRD161J-330	C.RESISTOR	33 5% 1/6W	
R 8	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 9	GRD161J-103	C.RESISTOR	10K 5% 1/6W	
R 10	GRD161J-2R2	C.RESISTOR	2.2 5% 1/6W	
R 11	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 12	GRD161J-560	C.RESISTOR	56 5% 1/6W	
R 14	GRD161J-681	C.RESISTOR	680 5% 1/6W	
R 15	GRD161J-101	C.RESISTOR	100 5% 1/6W	
R 16	GRD161J-221	C.RESISTOR	220 5% 1/6W	
R 17	GRD161J-332	C.RESISTOR	3.3K 5% 1/6W	
R 18	GRD161J-473	C.RESISTOR	47K 5% 1/6W	
R 19	GRD161J-152	C.RESISTOR	1.5K 5% 1/6W	
R 20	GRD161J-123	C.RESISTOR	12K 5% 1/6W	
R 21	GRD161J-823	C.RESISTOR	82K 5% 1/6W	
R 22	GRD161J-562	C.RESISTOR	5.6K 5% 1/6W	
R 23	GRD161J-224	C.RESISTOR	220K 5% 1/6W	
R 24	GRD161J-332	C.RESISTOR	3.3K 5% 1/6W	
R 25	GRD161J-123	C.RESISTOR	12K 5% 1/6W	
R 26	GRD161J-473	C.RESISTOR	47K 5% 1/6W	
R 27	GRD161J-471	C.RESISTOR	470 5% 1/6W	
R 28	GRD161J-473	C.RESISTOR	47K 5% 1/6W	
R 29	GRD161J-471	C.RESISTOR	470 5% 1/6W	
R 30	GRD161J-682	C.RESISTOR	6.8K 5% 1/6W	
R 31	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 51	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 52	GRD161J-330	C.RESISTOR	33 5% 1/6W	
R 55	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 56	GRD161J-224	C.RESISTOR	220K 5% 1/6W	
R 58	GRD161J-181	C.RESISTOR	180 5% 1/6W	
R 59	GRD161J-272	C.RESISTOR	2.7K 5% 1/6W	
R 60	GRD161J-223	C.RESISTOR	22K 5% 1/6W	
R 61	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 62	GRD161J-682	C.RESISTOR	6.8K 5% 1/6W	
R 63	GRD161J-823	C.RESISTOR	82K 5% 1/6W	
R 64	GRD161J-820	C.RESISTOR	82 5% 1/6W	
R 65	GRD161J-682	C.RESISTOR	6.8K 5% 1/6W	
R 66	GRD161J-272	C.RESISTOR	2.7K 5% 1/6W	
R 68	GRD161J-103	C.RESISTOR	10K 5% 1/6W	
R 69	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 70	GRD161J-560	C.RESISTOR	56 5% 1/6W	

BLOCK NO. 02

REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
R 81	GRD161J-153	C.RESISTOR	15K 5% 1/6W	
R 82	GRD161J-821	C.RESISTOR	820 5% 1/6W	
R 83	GRD161J-222	C.RESISTOR	2.2K 5% 1/6W	
R 84	GRD161J-473	C.RESISTOR	47K 5% 1/6W	
R 85	GRD161J-183	C.RESISTOR	18K 5% 1/6W	
R 86	GRD161J-183	C.RESISTOR	18K 5% 1/6W	
R 87	GRD161J-512	C.RESISTOR	5.1K 5% 1/6W	
R 88	GRD161J-334	C.RESISTOR	330K 5% 1/6W	
R 100	GRD161J-472	C.RESISTOR	4.7K 5% 1/6W	
R 101	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 102	GRD161J-121	C.RESISTOR	120 5% 1/6W	
R 103	GRD161J-334	C.RESISTOR	330K 5% 1/6W	
R 104	GRD161J-153	C.RESISTOR	15K 5% 1/6W	
R 106	GRD161J-562	C.RESISTOR	5.6K 5% 1/6W	
R 110	GRD161J-333	C.RESISTOR	33K 5% 1/6W	
R 111	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 112	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 120	GRD161J-222	C.RESISTOR	2.2K 5% 1/6W	
R 141	GRD161J-472	C.RESISTOR	4.7K 5% 1/6W	
R 142	GRD161J-681	C.RESISTOR	680 5% 1/6W	
R 143	GRD161J-822	C.RESISTOR	8.2K 5% 1/6W	
R 144	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 152	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 154	GRD161J-103	C.RESISTOR	10K 5% 1/6W	
R 155	GRD161J-333	C.RESISTOR	33K 5% 1/6W	
R 160	GRD161J-2R2	C.RESISTOR	2.2 5% 1/6W	
R 161	GRD161J-2R2	C.RESISTOR	2.2 5% 1/6W	
R 181	GRD161J-123	C.RESISTOR	12K 5% 1/6W	
R 182	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 183	GRD161J-152	C.RESISTOR	1.5K 5% 1/6W	
R 200	GRD161J-472	C.RESISTOR	4.7K 5% 1/6W	
R 201	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 202	GRD161J-121	C.RESISTOR	120 5% 1/6W	
R 203	GRD161J-334	C.RESISTOR	330K 5% 1/6W	
R 204	GRD161J-153	C.RESISTOR	15K 5% 1/6W	
R 206	GRD161J-562	C.RESISTOR	5.6K 5% 1/6W	
R 210	GRD161J-333	C.RESISTOR	33K 5% 1/6W	
R 211	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 212	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 220	GRD161J-222	C.RESISTOR	2.2K 5% 1/6W	
R 241	GRD161J-472	C.RESISTOR	4.7K 5% 1/6W	
R 242	GRD161J-681	C.RESISTOR	680 5% 1/6W	
R 243	GRD161J-822	C.RESISTOR	8.2K 5% 1/6W	
R 244	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 252	GRD161J-102	C.RESISTOR	1.0K 5% 1/6W	
R 254	GRD161J-103	C.RESISTOR	10K 5% 1/6W	
R 255	GRD161J-333	C.RESISTOR	33K 5% 1/6W	
R 260	GRD161J-2R2	C.RESISTOR	2.2 5% 1/6W	
R 261	GRD161J-2R2	C.RESISTOR	2.2 5% 1/6W	
R 281	GRD161J-123	C.RESISTOR	12K 5% 1/6W	
R 282	GRD161J-104	C.RESISTOR	100K 5% 1/6W	
R 283	GRD161J-152	C.RESISTOR	1.5K 5% 1/6W	
R 301	GRD161J-392	C.RESISTOR	3.9K 5% 1/6W	
R 302	GRD161J-333	C.RESISTOR	33K 5% 1/6W	
R 310	GRD161J-223	C.RESISTOR	22K 5% 1/6W	

BLOCK NO. 01

A	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
R 320	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 352	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 354	QRD161J-103	C.RESISTOR	10K 5% 1/6W		
R 355	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 360	QRD161J-2R2	C.RESISTOR	2.2 5% 1/6W		
R 361	QRD161J-2R2	C.RESISTOR	2.2 5% 1/6W		
R 401	QRD161J-392	C.RESISTOR	3.9K 5% 1/6W		
R 402	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 410	QRD161J-223	C.RESISTOR	22K 5% 1/6W		
R 420	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 452	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 454	QRD161J-103	C.RESISTOR	10K 5% 1/6W		
R 455	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 460	QRD161J-2R2	C.RESISTOR	2.2 5% 1/6W		
R 461	QRD161J-2R2	C.RESISTOR	2.2 5% 1/6W		
R 562	QRD167J-332	C.RESISTOR	3.3K 5% 1/6W		
R 563	QRD167J-562	C.RESISTOR	5.6K 5% 1/6W		
R 701	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 702	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 703	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 704	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 705	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 706	QRD161J-223	C.RESISTOR	22K 5% 1/6W		
R 707	QRD161J-223	C.RESISTOR	22K 5% 1/6W		
R 708	QRD161J-223	C.RESISTOR	22K 5% 1/6W		
R 709	QRD167J-332	C.RESISTOR	3.3K 5% 1/6W		
R 710	QRD167J-332	C.RESISTOR	3.3K 5% 1/6W		
R 711	QRD167J-332	C.RESISTOR	3.3K 5% 1/6W		
R 712	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 713	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 714	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 720	QRD161J-101	C.RESISTOR	100 5% 1/6W		
R 721	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 722	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 723	QRD161J-103	C.RESISTOR	10K 5% 1/6W		
R 724	QRD161J-223	C.RESISTOR	22K 5% 1/6W		
R 725	QRD161J-392	C.RESISTOR	3.9K 5% 1/6W		
R 730	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 731	QRD161J-152	C.RESISTOR	1.5K 5% 1/6W		
R 732	QRD167J-332	C.RESISTOR	3.3K 5% 1/6W		
R 733	QRD161J-271	C.RESISTOR	270 5% 1/6W		
R 740	QRD161J-103	C.RESISTOR	10K 5% 1/6W		
R 750	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 751	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 752	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 753	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 754	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 755	QRD161J-222	C.RESISTOR	2.2K 5% 1/6W		
R 756	QRD161J-333	C.RESISTOR	33K 5% 1/6W		
R 901	QRD161J-220	C.RESISTOR	22 5% 1/6W		
R 902	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 903	QRD161J-473	C.RESISTOR	47K 5% 1/6W		
R 904	QRD167J-562	C.RESISTOR	5.6K 5% 1/6W		
R 910	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 911	QRD161J-101	C.RESISTOR	100 5% 1/6W		

BLOCK NO. 01

A	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
R 921	QRD161J-122	C.RESISTOR	1.2K 5% 1/6W		
R 922	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 941	QRD161J-102	C.RESISTOR	1.0K 5% 1/6W		
R 942	QRD161J-272	C.RESISTOR	2.7K 5% 1/6W		
R 943	QRD161J-182	C.RESISTOR	1.8K 5% 1/6W		
R 944	QRD141J-102S	C.RESISTOR	1.0K 5% 1/4W		
R 945	QRD161J-471	C.RESISTOR	470 5% 1/6W		
T 1	VQF1813-005	IFT			
T 2	VQ77F18-101	I.F.T.			
T 53	VQZ0028-001S	ANT COIL			
T 54	VQZ0027-001S	ANT COIL			
T 55	VQ17A21-105	I.F.T.			
T 56	VQ17A11-206S	IFT			
TC 1	GAT3001-053	T-CAPACITOR			
TC 51	GAT3620-200M	T-CAPACITOR			
VR941	VCV1001-017T	V.RESISTOR			
VR942	FSVR1004-001	SW.VR.BAL.FADER			
X 701	V472124-A0	CRYSTAL			

[illegible]

8 Exploded View of Enclosure Assembly and Parts List

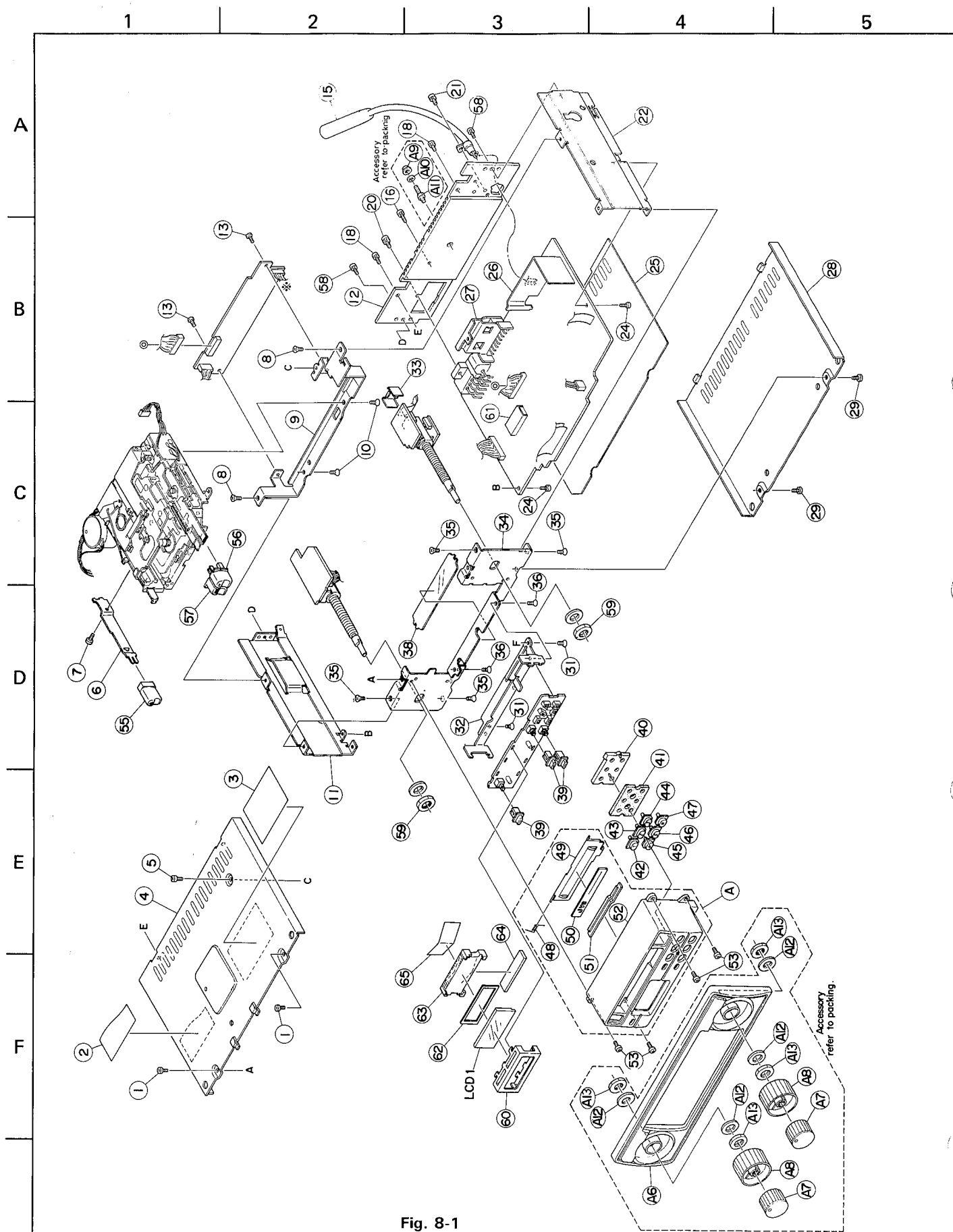


Fig. 8-1

● Enclosure component parts list

BLOCK NO. M1MM

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	A	ZCKSTX177J-NPA	NOSE PIECE ASSY		1		
	1	SDST2604Z	SCREW	FRONT+TOP COVER	2		
	2	VND5008-001	FCC LABEL(4)		1		
	3	VYN3789-0002	NAME PLATE		1		
	4	VKM3477-001SS	TOP COVER		1		
	5	SDST2604Z	SCREW	MECHA+TOP COVER	1		
	6	VKL6988-001SS	EJECT LEVER		1		
	7	SPSK2625Z	MINI SCREW	EJECT LEVEL	1		
	8	SSST2606Z	SCREW	SIDE+MECHA B(R)	2		
	9	VKM3569-001	MECHA HOLDER(R)		1		
	10	SSSP3006Z	SCREW	MECHA+MECHA B(R)	2		
	11	VKM3478-001SS	LEFT FRAME		1		
	12	FSJC3006-001	REAR FRAME		1		
	13	VKZ4381-001	SCREW	PWB+MECHA B(R)	2		
	15	VMP0029-011	ANTENNA SOCKET		1		
	16	LPSP2608N	SCREW	R.PANEL+I.C.BKT	1		
	18	LPSP2606Z	SCREW	R.PANEL+T.COVER	2		
	20	LPSP2608Z	SCREW	13 PIN CONNECTO	1		
	21	LPSP2606Z	SCREW	R.PANEL+ANT.COR	1		
	22	VKL3689-101	RIGHT FRAME		1		
	24	VKZ4381-001	SCREW	CHASSIS+MAIN PW	2		
	25	FSMA4001-003	INSULATOR		1		
	26	FSMA4002-002	SHIELD PLATE		1		
	27	VKL7687-001	IC BRACKET		1		
	28	FSKL3006-001	BOTTOM COVER		1		
	29	SDST2604Z	SCREW	FRONT+B.COVER	2		
	31	SSSP3006Z	SCREW	MECHA+MECHA B(F)	2		
	32	FSKL3005-002	MECHA HOLDER(F)		1		
	33	VKL6420-001	STOPPER		1		
	34	FSKM3001-002	FRONT FRAME		1		
	35	SSST2606Z	SCREW	SIDE+F.FRAME	4		
	36	SSST2606Z	SCREW	FRONT+M.HOLDER	2		
	38	VYTS494-001	SPACER	F.FRAME+PWB	1		
	39	VXP3421-002	PUSH BUTTON		3		
	40	VJK3453-002	BUTTON LENS		1		
	41	VYTH471-004	BUTTON CUSHION	PRESET BUTTON	1		
	42	VXP3279-001	PRESET BUTTON	#1	1		
	43	VXP3279-002	PRESET BUTTON	#2	1		
	44	VXP3279-003	PRESET BUTTON	#3	1		
	45	VXP3279-004	PRESET BUTTON	#4	1		
	46	VXP3279-005	PRESET BUTTON	#5	1		
	47	VXP3279-007	PRESET BUTTON	BAND	1		
	48	VKW4947-001	DOOR SPRING		1		
	49	VJC4145-002SS	CASSETTE LID		1		
	50	VJD5501-001	LID PLATE		1		
	51	VJK3454-001SS	LIGHT LENS		1		
	52	VJC1982-001SS	NOSE PIECE		1		
	53	SDST2606Z	SCREW	FRONT+NOSE PIEC	4		
	55	VXP3503-001	EJECT BUTTON		1		
	56	VXP3505-001	FF.BUTTON		1		
	57	VXP3504-001	REW BUTTON		1		
	58	LPSP2606Z	SCREW	SIDE+R.PANEL	2		
	59	VKZ4229-003	HEAVY NUT		2		
	60	VJC3188-001	LCD CASE		1		
	62	VYTT451-014	SHEET		1		
	63	VJK3451-002	LCD LENS		1		
	64	VMZ0053-003	INTER CONNECTOR		1		
	65	VYTT531-002	SCREEN		1		
LCD 1		LCD8173JNH	L.C.DISPL.PANEL		1		

9 Exploded View of Mechanism Assembly and Parts List

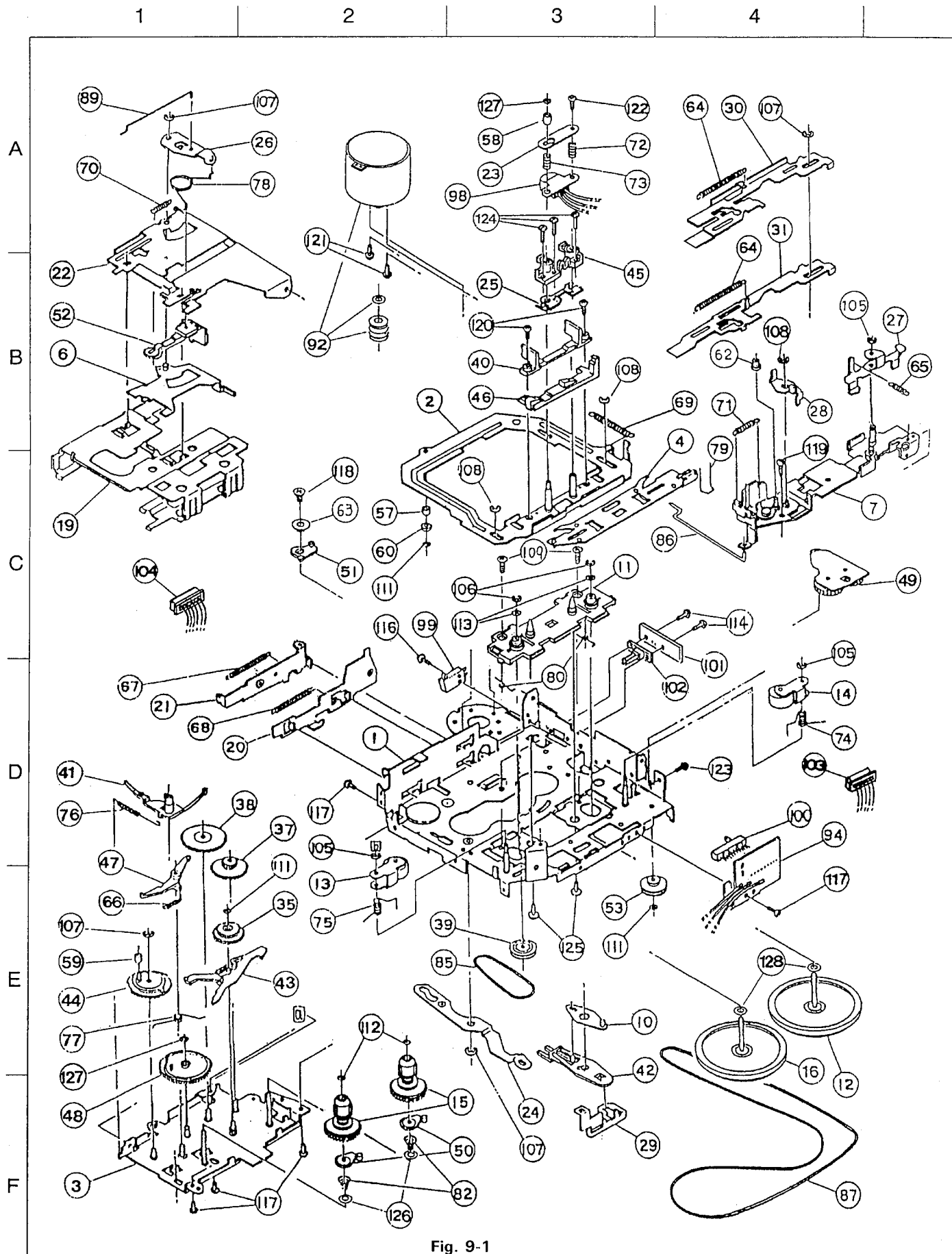


Fig. 9-1

● Mechanism component parts list

BLOCK NO. M2MM

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	X-0036-1001S	MAIN CHASSIS AS		1		
	2	X-0036-6082S	HEAD PLATE ASSY		1		
	3	X-0036-1009S	REEL BASE ASS'Y		1		
	4	X-0036-1010S	FR CHANGE ARM A		1		
	6	X-0036-1019S	EJ.CAM LOCK ASY		1		
	7	X-0036-6077S	LEVER BKT ASS'Y		1		
	10	X-0036-1025S	FR ARM(A)ASS'Y		1		
	11	X-0138-2006S	CM BKT ASS'Y(X)		1		
	12	1-0036-6010-0S	FLYWHEEL ASY(BF		1		
	13	1-0138-6002S	PINCH ARM(R)ASS		1		
	14	1-0138-6003S	PINCH ARM(F)ASS		1		
	15	X-0036-6080S	REEL SPINDLE AS		2		
	16	1-0036-6010-1S	FLYWHEEL ASY(BR		1		
	19	1-0138-1010S	CASSETTE HOLDER		1		
	20	1-0036-1006S	EJECT CAM		1		
	21	1-0036-1007S	EJECT LEVER		1		
	22	1-0138-1002S	CASSETTE HANGER		1		
	23	1-0036-1015S	SPG SUPPORT PLT		1		
	24	1-0036-1016S	CONVERSION LEVE		1		
	25	1-0138-1006S	ADJUSTER SHIN(X		1		
	26	1-0036-1018S	CENTER PLATE		1		
	27	1-0036-1013S	LOCK ARM		1		
	28	1-0036-1023S	CHANGE LEVER(B)		1		
	29	1003610040900S	FR ARM(B)		1		
	30	1003610050800S	FF LEVER(JVC)		1		
	31	1-0036-1066S	REW LEVER(JVC)		1		
	35	1-0036-2001S	IDLE GEAR		1		
	37	1-0036-2004-0S	REDUCT.GEAR(A)		1		
	38	1-0036-2003S	REDUCT.GEAR(B)		1		
	39	1-0036-2005-0S	PULLEY GEAR		1		
	40	1-0038-2018S	TAPE GUIDE		1		
	41	1-0036-2007S	RATCHET		1		
	42	1-0036-2008S	FF ARM		1		
	43	1-0036-2009S	SENSOR ARM		1		
	44	1-0036-2010S	SELECTOR GEAR		1		
	45	1-0138-2005-3S	ADJUSTER ARM(B)		1		
	46	1-0138-2004S	ADJUSTER LINC(X		1		
	47	1-0038-2014S	GEAR LOCK ARM		1		
	48	1-0036-2014S	DETECTOR GEAR		1		
	49	X-0036-2015S	TU GEAR ARM ASY		1		
	50	X-0136-2001S	DETEC. CAM ASSY		2		
	51	1-0038-2034S	MUTE ARM(N)		1		
	52	1-0058-2004S	TAPE HOOKER		1		
	53	1-0058-2021-5S	IDLE PULLEY(A)		1		
	57	1-0036-3024S	HP ROLLER(B)		1		
	58	1-0036-3004S	FF ROLLER	SELECTOR GEAR	1		
	59	1-0036-3018S	COLLER		1		
	60	1-0036-3002S	HP ROLLER(A)		1		
	62	1-0038-3012S	PROGRAM ROLLER		1		
	63	1-0038-3015S	MUTE ARM COLLER		1		
	64	1-0036-4001S	FF/REW LEVER SP		2		
	65	1-0036-4002S	LOCK LEVER SPG		1		
	66	1-0036-4003S	GEAR LOCK ARM S		1		
	67	1-0036-4004S	EJECT LEVER SPG		1		

BLOCK NO. M2MM [] [] []

Δ	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	68	1-0036-4005S	EJECT CAM SPG		1		
	69	1-0036-4006S	HEAD PLATE SPG		1		
	70	1-0036-4007S	EJ.CAM LOCK SPG		1		
	71	1-0036-4008S	PROGRAM ARM SPG		1		
	72	1-0036-4010S	ADJUST ARM SP(A		1		
	73	1-0036-4011S	ADJUST ARM SP(B		1		
	74	1-0036-4012S	PINCH ARM SPG(F		1		
	75	1-0036-4013S	PINCH ARM SPG(R		1		
	76	1-0038-4014S	RATCHET SPRING		1		
	77	1-0036-4015S	DASH SPRING		1		
	78	1-0036-4023S	CENTER P.SPRING	(B)	1		
	79	1-0036-4017S	CHANGING ARM SP		1		
	80	1-0036-4018S	EARTH SPG(R)		2		
	82	1-0138-4001S	BACK TEMSION SP		2		
	85	1-0036-5001S	SUB BELT		1		
	86	1-0138-5001S	SELECTOR LINK(B		1		
	87	1-0036-5020S	MAIN BELT(AL)		1		
	89	1-0036-5006S	RETURN LINK		1		
	92	X-0036-6075S	MOTOR ASS'Y		1		
	94	1-0036-7001S	SWITCH BOARD		1		
	98	1-0036-7016S	HEAD	P-7542-CF-0358	1		
	99	1-0036-7034S	POWER SWITCH		1		
	100	1-0036-7007S	SLIDE SWITCH		1		
	101	1-0138-7002S	MUTE BOARD		1		
	102	1-0138-7087S	MUTE SWITCH		1		
	103	1-0036-7088S	5P WIRE ASY(JVC		1		
	104	1-0036-7089S	6P WIRE ASY(JVC		1		
	105	2-1711-5040-16S	E RING	1.5	3		
	106	2-1711-6032-96S	E RING	1.6X3.2	2		
	107	2-1712-0050-16S	E RING	2	4		
	108	2-1712-5060-16S	E RING	2.5	3		
	109	2-1331-7030-C2S	SCREW S	PL M1.7X3	2		
	111	2-1812-0030-D2S	WASHER	1.2X3X0.25	3		
	112	1-0036-5023S	WASHER(REEL)	1.5X3.2X0.2	2		
	113	2-1821-0032-21S	WASHER	2.1X3.2X0.2	2		
	114	2-1331-7040-C2S	SCREW S	PL M1.7X4	2		
	116	2-1331-7060-C2S	SCREW S	PL M1.7X6	1		
	117	2-1382-0030-C2S	SCREW B	PL M2X3	5		
	118	2-1362-0040-F2S	SCREW B	FL M2X4	1		
	119	2-1332-0040-C1S	SCREW S	PL M2X4	1		
	120	2-1032-0070-C2S	SCREW	PL M2X7	2		
	121	2-1032-0025-C2S	SCREW	PL M2X2.5	2		
	122	2-1012-0040-C2S	SCREW	PL M2X4	1		
	123	2-1012-0030-F2S	SCREW	FL M2X3	1		
	124	1-0138-5002S	AZIMUTH SCREW	PL M2X5	3		
	125	1-0036-5005S	EJ HOOK SCREW	M2X5	2		
	126	1-0136-5001S	WASHER(RED)	2.1X3.5X0.05	2		
	127	1-0036-5024S	WASHER(REEL)	1.5X3.2X0.25	2		
	128	1-0036-5028S	WASHER(FLY)	2.1X5.5X0.05	2		

10 Illustration of Packing and Parts List

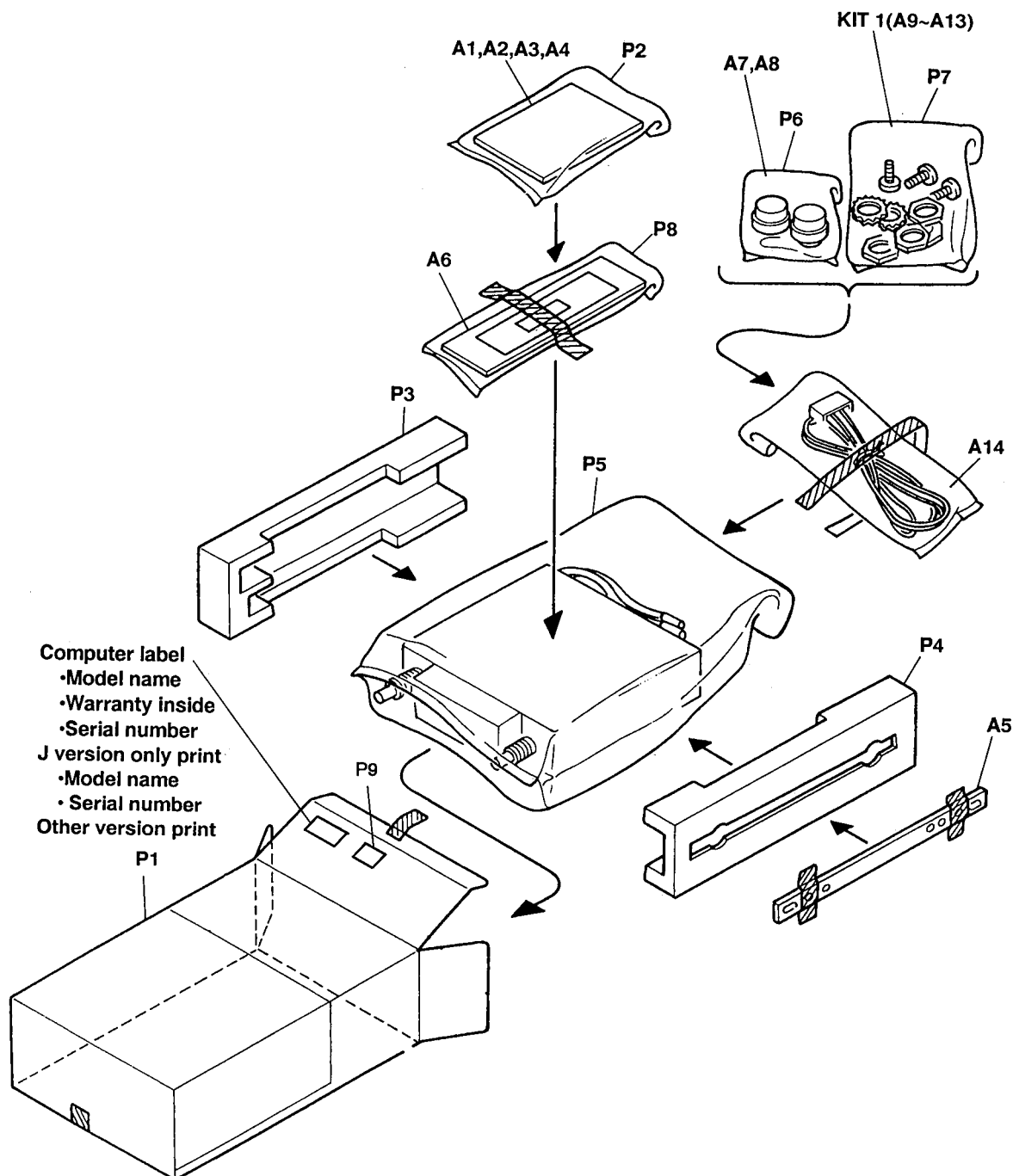


Fig. 10-1

BLOCK NO. **M3MM**

REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
P 1	VPC3789 - Q001	CARTON		1		
P 2	QPGA017-02505	POLY BAG	INSTRUCTIONS	1		
P 3	VPH2305-001	CUSHION (L)		1		
P 4	VPH2306-002	CUSHION (R)		1		
P 5	VPE3004-001	POLY BAG	FOR SET	1		
P 6	QPGA012-01505	POLY BAG	NOB ASSY	1		
P 7	QPGA007-01003	POLY BAG		1		
P 8	QPGA008-02508	POLY BAG	TRIME PLATE	1		
P 9	VND3072 - 066	UPC CODE LABEL	for CARTON	1		

BLOCK NO. **M4MM**

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△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
A	1	VNN3789-631C	INSTRUCTIONS		1		
A	2	BT-51009-2S	WARRANTY CARD		1		
A	3	BT-52001-3S	WARRANTY CARD		1		
A	4	VNC2400-090	IMPORTANT NOTE		1		
A	5	VKL5460-001	STAY		1		
A	6	FSJC2001-001	TRIM PLATE	KNOB A + SPRING	1		
A	7	FSXL4003-00A	KNOB ASS'Y		2		
A	8	FSXL4002-001	KNOB B		2		
A	9	VKZ4328-001	LOCK NUT		1		
A	10	WNS5000Z	WASHER		1		
A	11	VKH4871-001	MOUNT BOLT		1		
A	12	V1285022-003	WASHER		4		
A	13	V1285020-003	HEAVY NUT		4		
A	14	VMC0014-140T	13P CORD ASS'Y		1		
KIT	1	KSRX165K-SCREW	SCREW PARTS KIT	P7,A9-A13	1		

JVC

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