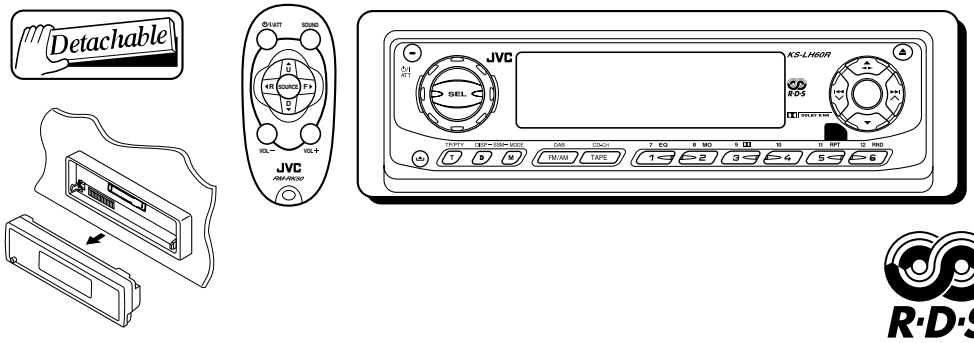
JVC

SERVICE MANUAL

CASSETTE RECEIVER

KS-LH60R



R·D·S

Area Suffix

E ---------- Continental Europe

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No.49855
2003/6

SPECIFICATION

AUDIO AMPLIFIER SECTION	Maximum Power Output:	Front	50 W per channel
		Rear	50 W per channel
	Continuous Power Output (RMS):	Front	19 W per channel into 4 Ω 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
		Rear	19 W per channel into 4 Ω 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
	Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
	Tone Control Range	Bass	±10 dB at 100 Hz
		Treble	±10 dB at 10 kHz
	Frequency Response		40 Hz to 20 000 Hz
	Signal-to-Noise Ratio		70 Db
	Line-Out Level/Impedance		2.0 V/20 kΩ load (250 nWb/m)
	Output Impedance		1 kΩ
TUNER SECTION	Frequency Range	FM	87.5 MHz to 108.0 MHz
		AM	(MW) 522 kHz to 1 620 kHz (LW) 144 kHz to 279 kHz
	[FM Tuner]	Usable Sensitivity	11.3 dBf (1.0 ΩV/75 Ω)
	50 dB Quieting Sensitivity		16.3 dBf (1.8 ΩV/75 Ω)
	Alternate Channel Selectivity (400 kHz)		65 dB
	Frequency Response		40 Hz to 15 000 Hz
	Stereo Separation		30 dB
	Capture Ratio		1.5 dB
	[MW Tuner]	Sensitivity	20 μV
		Selectivity	35 dB
	[LW Tuner]	Sensitivity	50 μV
CASSETTE DECK SECTION	Wow & Flutter		0.11% (WRMS)
	Fast-Wind Time		100 sec. (C-60)
	Frequency Response (Dolby B NR OFF)		30 Hz to 16 000 Hz (Normal tape)
	Signal-to-Noise Ratio		56 dB (Normal tape)
	(Dolby B NR ON)		65 dB
	(Dolby B NR OFF)		56 dB
	Stereo Separation		40 dB
GENERAL	Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)
	Grounding System		Negative ground
	Allowable Operating Temperature		0ºC to +40ºC
	Dimensions (W × H × D):	Installation Size (approx.)	182 mm ×52 mm × 150 mm
		Panel Size (approx.)	188 mm × 58 mm × 12 mm
		Mass (approx.)	1.5 kg (excluding accessories)

Design and specifications are subject to change without notice.

SECTION 1
PRECAUTION

1.1 Safety Precautions

> ⚠ ***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.**

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SEVICE INSTRUCTIONS.

SECTION 3
DISASSEMBLY

3.1 Main body

3.1.1 Removing the front panel assembly (See Fig.1)

(1) Press the release button and remove the front panel assembly.

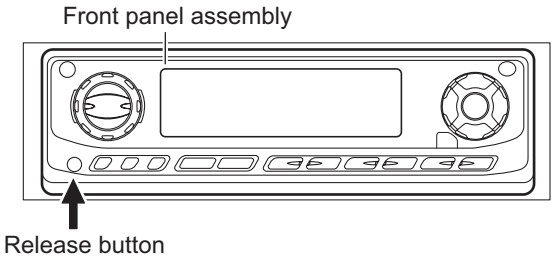


Fig.1

3.1.2 Removing the bottom cover (See Fig.2)

- Prior to performing the following procedures, remove the front panel assembly.
  (1) Turn the main body upside down.
  (2) Insert a screwdriver under the joints to release the two joints **a** on the left side, two joints **b** on the right side and joint **c** on the back side of the main body, then remove the bottom cover from the main body.

CAUTION:

When releasing the joints using a screwdriver, do not damage the main board.

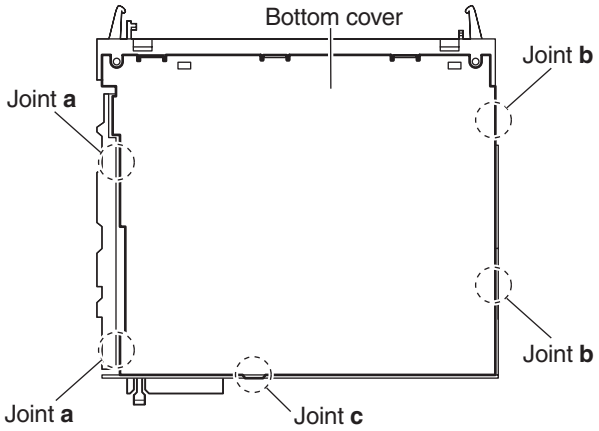


Fig.2

3.1.3 Removing the front chassis assembly (See Figs.3 and 4)

- Prior to performing the following procedures, remove the front panel assembly and bottom cover.
  (1) Remove the two screws **A** on the both sides of the main body. (See Fig.3.)
  (2) Remove the two screws **B** on the front side of the main body. (See Fig.4.)
  (3) Release the two joints **d** and two joints **e** on the both sides of the main body, then remove the front chassis assembly toward the front. (See Fig.3.)

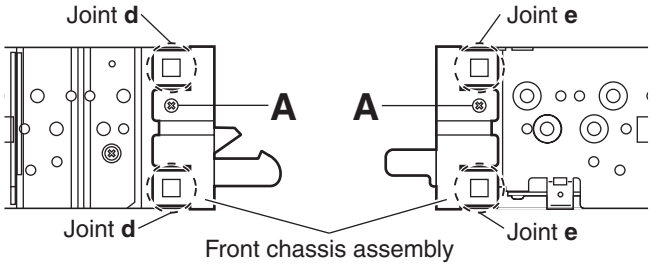


Fig.3

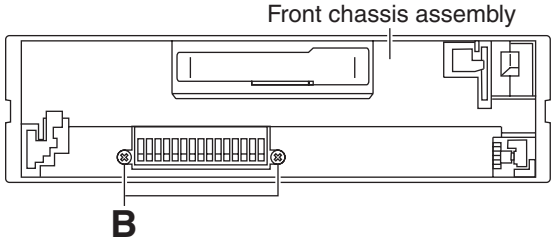


Fig.4

3.1.4 Removing the heat sink (See Fig.5)

- Prior to performing the following procedure, remove the front panel assembly.
  (1) Remove the two screws **C** and screw **D** attaching the heat sink on the left side of the main body, and remove the heat sink.

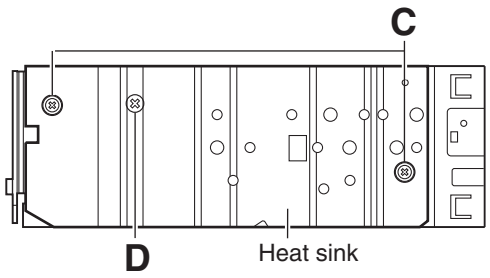


Fig.5

3.1.5 Removing the rear panel (See Fig.6)

- Prior to performing the following procedure, remove the front panel assembly and bottom cover.
  (1) Remove the two screws **E**, one screws **F** and three screws **G** attaching the rear panel on the back side of the main body.

Reference:

During reassembly, before fixing the rear bracket onto the main body, insert the STEERING cable into the slot.

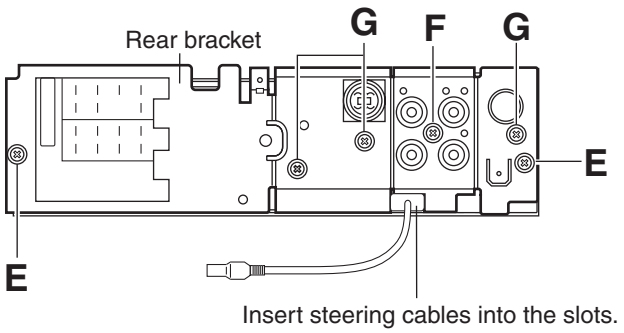


Fig.6

3.1.6 Removing the main board (See Fig.7)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, heat sink and rear panel.
  (1) Remove the two screws **H** attaching the main board on the top chassis.
  (2) Disconnect the connector CP401 on the main board from the cassette mechanism assembly.

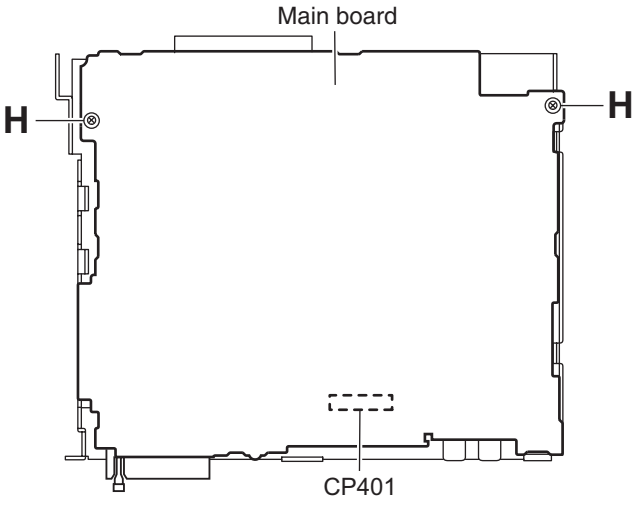


Fig.7

3.1.7 Removing the cassette mechanism assembly (See Fig.8)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, heat sink, rear panel and main board.
  (1) Disconnect the wire from the connector CN402 on the mecha board.
  (2) Disconnect the card wire from the connector CN403 on the mecha board.
  (3) Remove the four screws **J** attaching the cassette mechanism assembly to the top chassis, take out the cassette mechanism assembly.

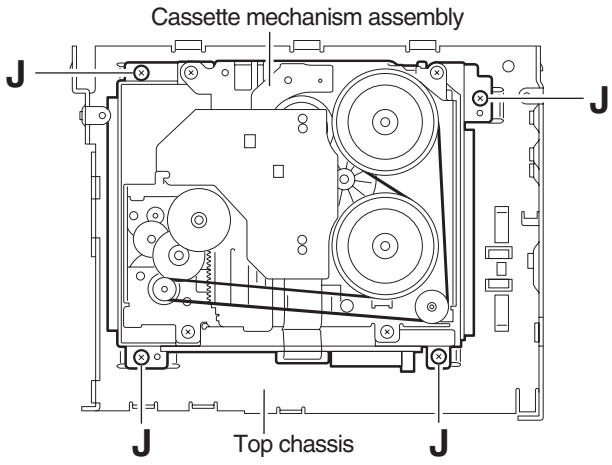


Fig.8

3.1.8 Removing the mecha board (See Fig.9)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, heat sink, rear panel and main board.
  (1) Disconnect the wire from the connector CN402 on the mecha board.
  (2) Disconnect the card wire from the connector CN403 on the mecha board.
  (3) Remove the screw **K** attaching the mecha board.
  (4) Bend the hook **f** in the direction of the arrow 1 and move the mecha board in the direction of the arrow 2.
  (5) Remove the mecha board from the mecha bracket (L) of the top chassis.

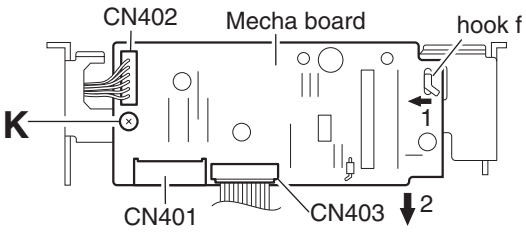


Fig.9

3.1.9 Removing the front board (See Figs.10 to 12)

- Prior to performing the following procedures, remove the front panel assembly.
  (1) Remove the four screws **L** attaching the rear cover on the back side of the front panel assembly. (See Fig.10.)
  (2) Release the nine joints **g**, the front panel assembly and rear cover become separate. (See Fig.11.)
  (3) Remove the front board from the front panel assembly. (See Fig.12.)

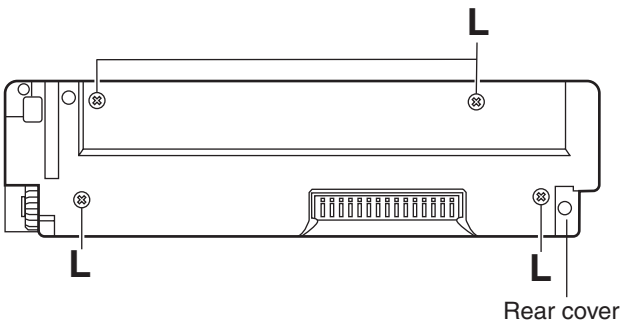


Fig.10

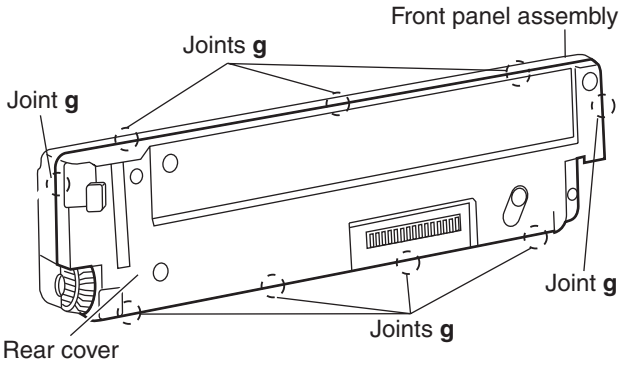


Fig.11

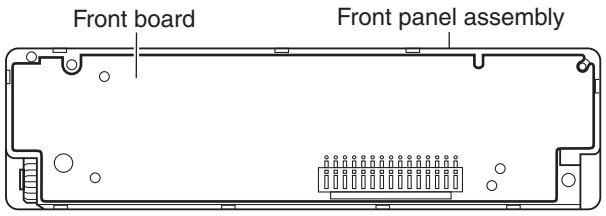


Fig.12

3.2 Cassette mechanism assembly

REFERENCE:

Prior to performing the following procedures, turn the mode gear on the bottom of the body until the respective part comes to the EJECT position (Refer to Fig.1).

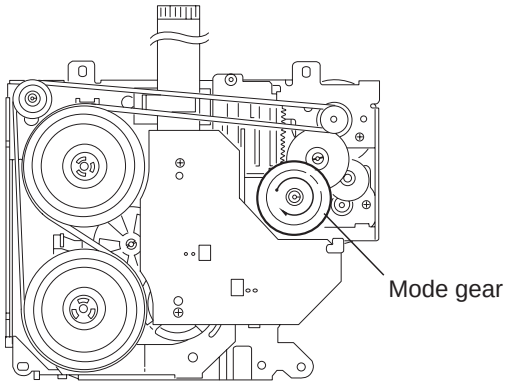


Fig.1

3.2.1 Removing the cassette guide (See Fig.2)

(1) Turn the mode gear to set to RVS play or subsequent mode.

(2) Remove the cassette guide from the main chassis while releasing each two joint tabs **a** in the direction of the arrow.

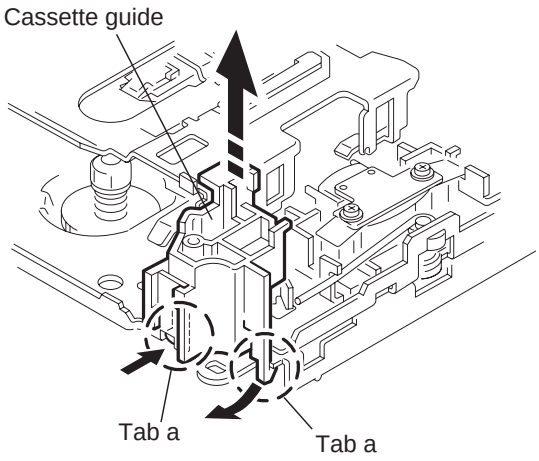


Fig.2

3.2.2 Removing the load arm (See Fig.3)

(1) Remove the E-washer attaching the load arm.

(2) Move the load arm in the direction of the arrow and release the joint **b** on the cassette catch.

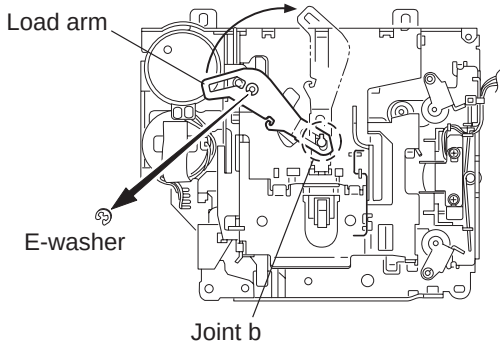


Fig.3

3.2.3 Removing the cassette hanger assembly / cassette holder (See Fig.4 to 7)

(1) Check the mode is set to EJECT. Push down the front part of the cassette holder and move in the direction of the arrow to release the joint **c**.
(2) Move the rear part of the cassette hanger assembly in the direction of the arrow to release it from the two joint bosses **d**.
(3) Release the holder stabilizer spring from the hooks **e** and **f**, then pull out from the cassette hanger assembly.
(4) Bring up the rear side of the cassette hanger assembly to release the joint **g** and **h**.
(5) Pull out the cassette catch from the cassette hanger assembly.

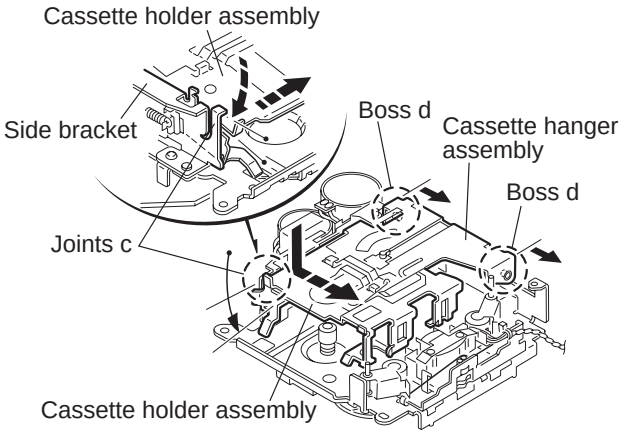


Fig.4

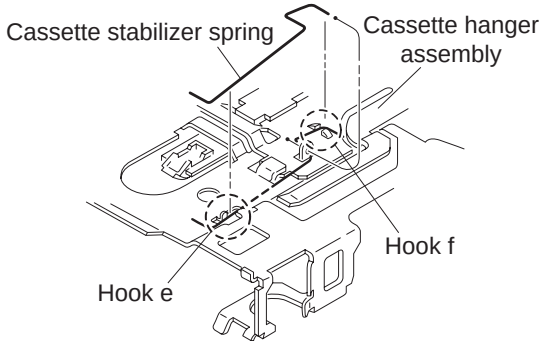


Fig.5

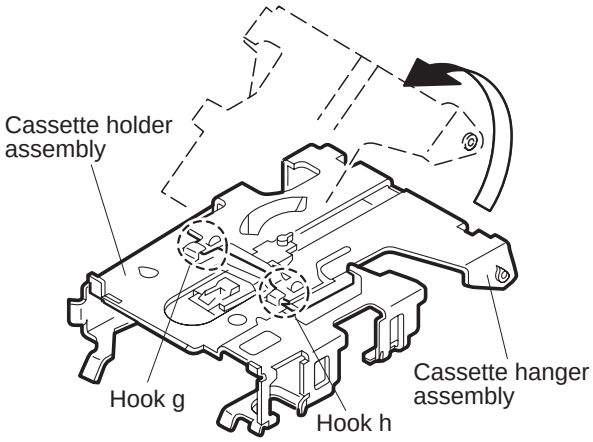


Fig.6

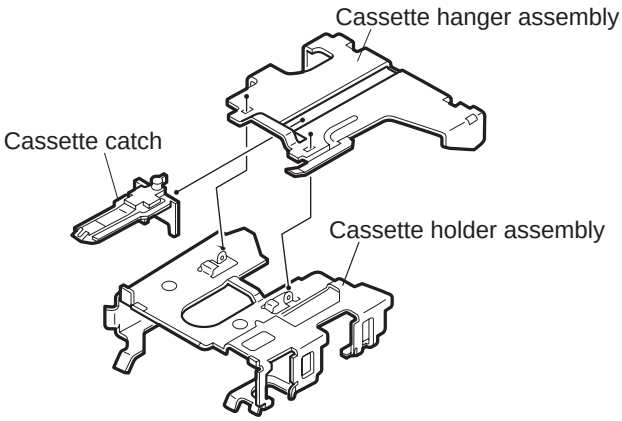


Fig.7

3.2.4 Removing the side bracket assembly (See Fig.8 to 10)

(1) Remove the screw **A** attaching the side bracket assembly.
(2) Detach the front side of the side bracket assembly upward and pull out forward to release the joint i and j in the rear.

CAUTION:

When reassembling, make sure that the boss **k** of the main chassis is set in the notch of the load rack under the side bracket assembly. Do not reattach the load rack on the boss **k**.

CAUTION:

After reattaching the side bracket assembly, confirm operation.

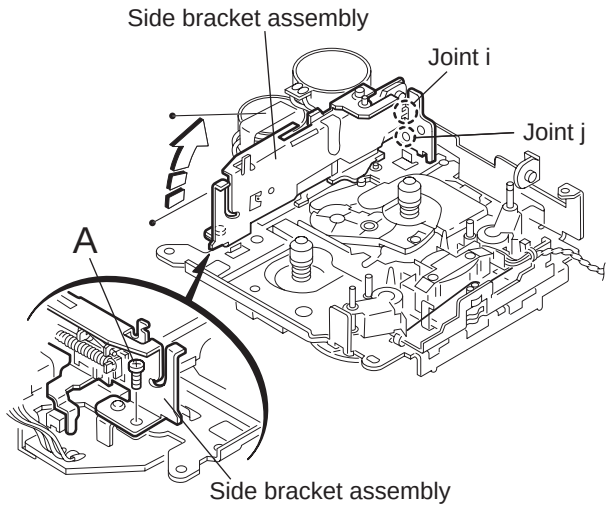


Fig.8

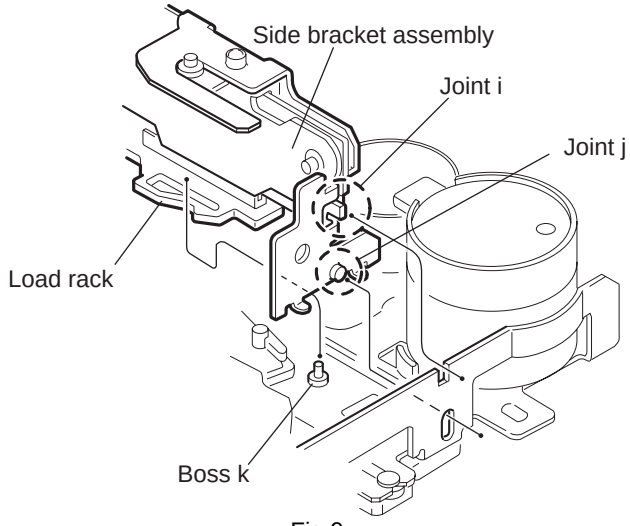


Fig.9

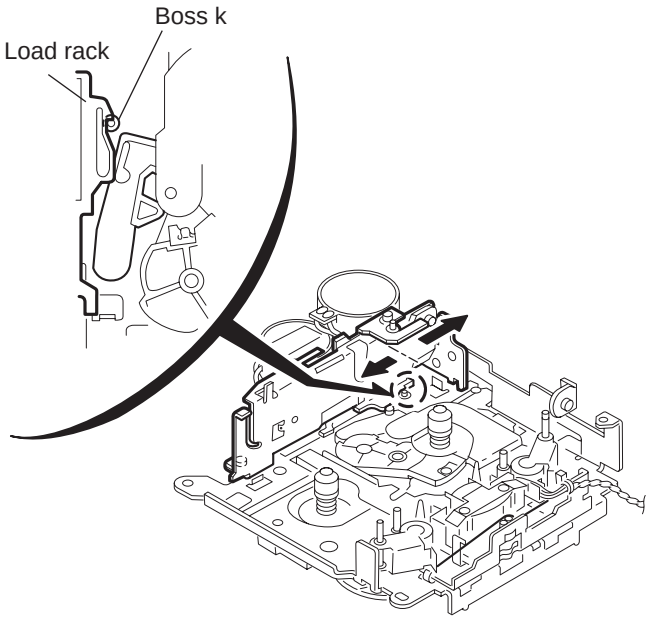


Fig.10

3.2.5 Removing the pinch arm (F) assembly (See Fig.11 and 12)

(1) Remove the polywasher and pull out the pinch arm **(F)** assembly.
(2) Remove the compulsion spring.

3.2.6 Removing the pinch arm (R) assembly (See Fig.11 and 12)

(1) Remove the polywasher and pull out the pinch arm **(R)** assembly.

3.2.7 Removing the slide chassis assembly (See Fig.13 and 14)

REFERENCE:

It is not necessary to remove the head and the tape guide.

(1) Move the slide chassis assembly in the direction of the arrow to release the two joints **l** and remove from the main chassis.
(2) Remove the rack link.

CAUTION:

When reassembling, first reattach the rack link, and next fit the boss **m** and hook **n** of the slide chassis assembly to the hole of the main chassis, and engage the two joints **l**.

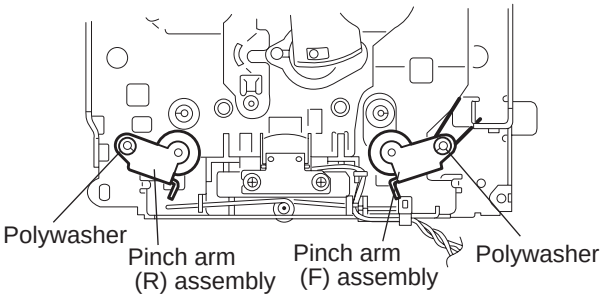


Fig.11

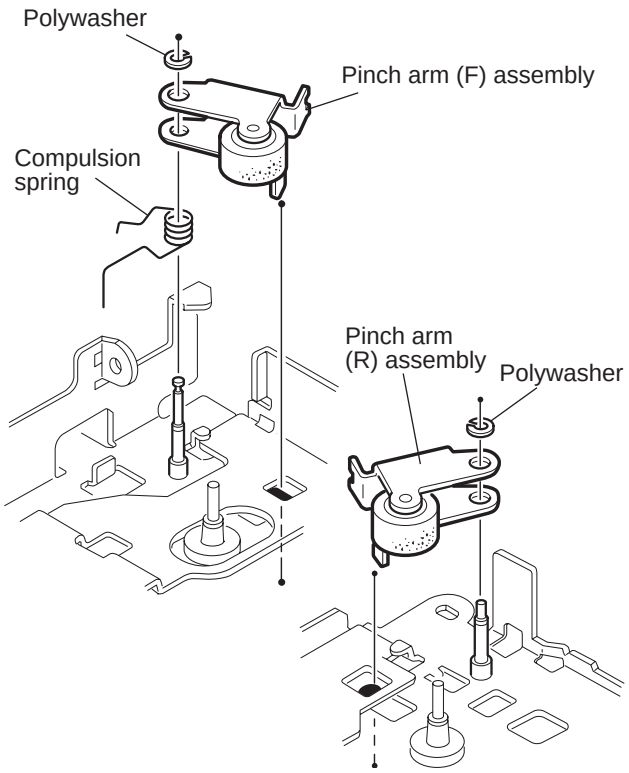


Fig.12

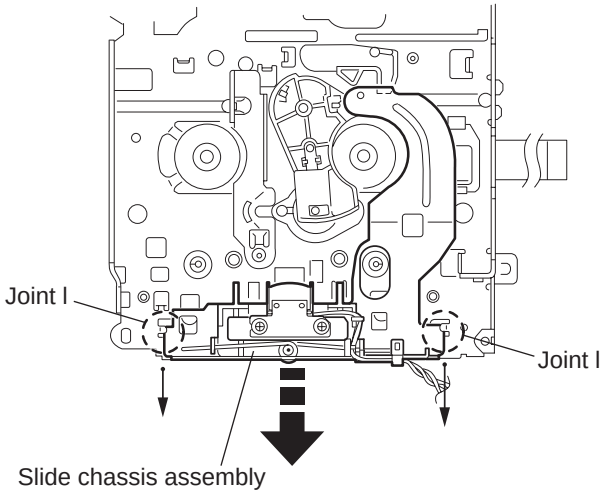


Fig.13

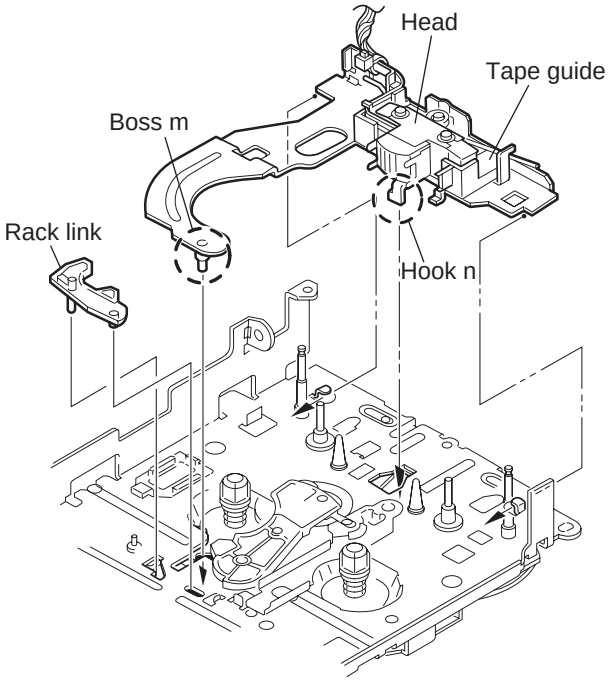


Fig.14

3.2.8 Removing the head / tape guide (See Fig.16 and 17)

REFERENCE:

It is not necessary to remove the slide chassis assembly.

(1) Remove the band attaching the wire to the head.
(2) Remove the two screws **B**, the head and the head support spring.
(3) Remove the pinch arm spring from the tape guide.
(4) Remove the tape guide and the pinch spring arm.

CAUTION:

When reattaching the pinch arm spring, set both end of it to the pinch spring arm (remarked **o**).

CAUTION:

When reattaching the head, set the wires into the groove of the tape guide (Fig.16).

3.2.9 Removing the flywheel assembly (F) & (R) (See Fig.18 and 19)

REFERENCE:

It is not necessary to remove the slide chassis assembly.

(1) Remove the belt at the bottom.
(2) Remove the two polywashers on the upper side.
(3) Pull out each flywheel assembly downward.

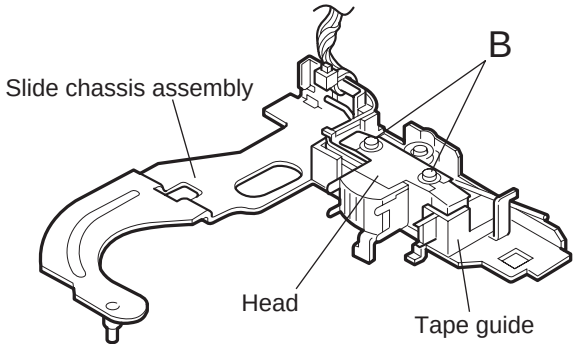


Fig.15

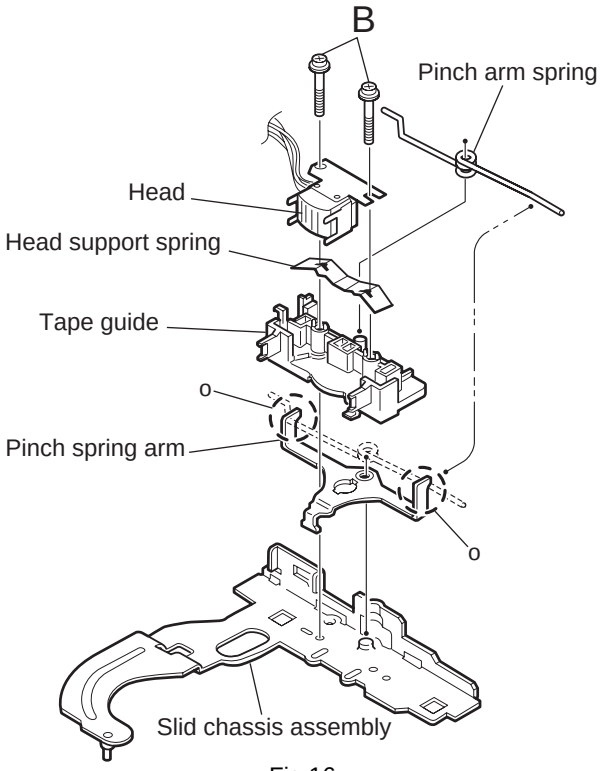


Fig.16

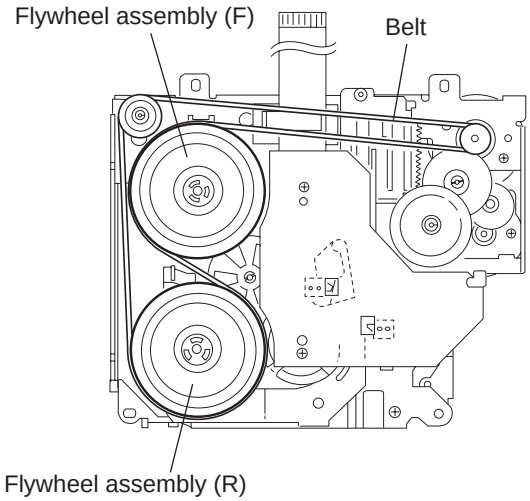


Fig.17

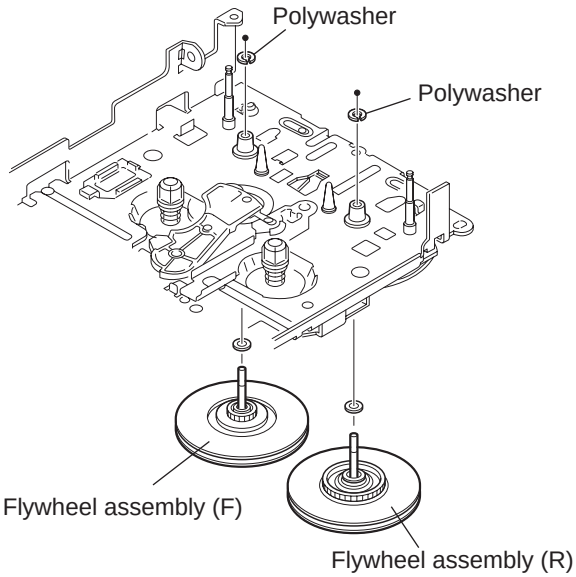


Fig.18

3.2.10 Disassembling the flywheel assembly (F) (See Fig.19 and 20)

(1) Push and turn counterclockwise the spring holder **(F)** to release the three joints **p** on the bottom of the flywheel.
(2) The spring holder **(F)**, the TU spring and the friction gear play come off.
(3) Remove the polywasher and felt.

3.2.11 Disassembling the flywheel assembly (R) (See Fig.19 and 20)

(1) Push and turn clockwise the spring holder **(R)** to release the three joints **q** on the bottom of the flywheel.
(2) The spring holder **(R)**, the FF spring and the friction gear FF come off.
(3) Remove the polywasher and the felt.

3.2.12 Removing the reel board (See Fig.21 and 22)

(1) Remove the two screws **C** attaching the reel board.
(2) Move the reel board in the direction of the arrow to release the joint **r**.
(3) Unsolder the wires if necessary.

CAUTION:

When reattaching, confirm operation of the MODE switch and the ST-BY switch.The mode position between EJECT and ST-BY is optimum for reattaching.Connect the card wire extending from the reel board to the FFC pad before reattaching the reel board.

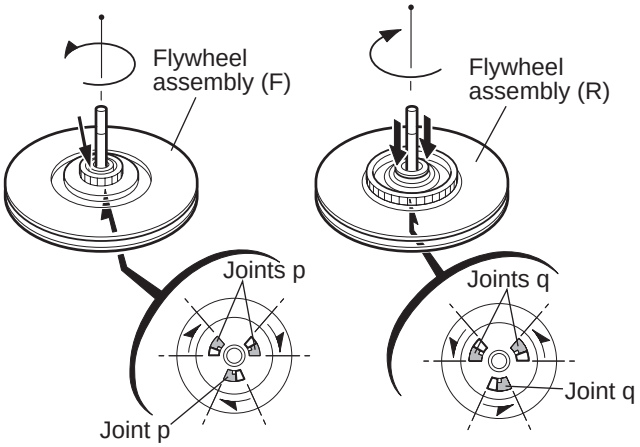


Fig.19

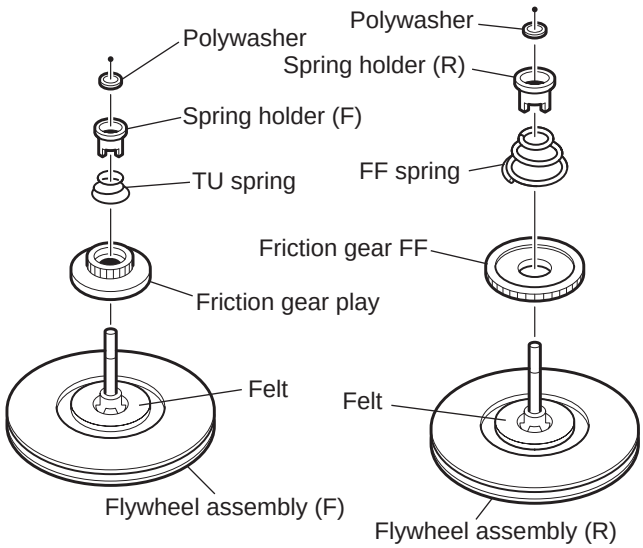


Fig.20

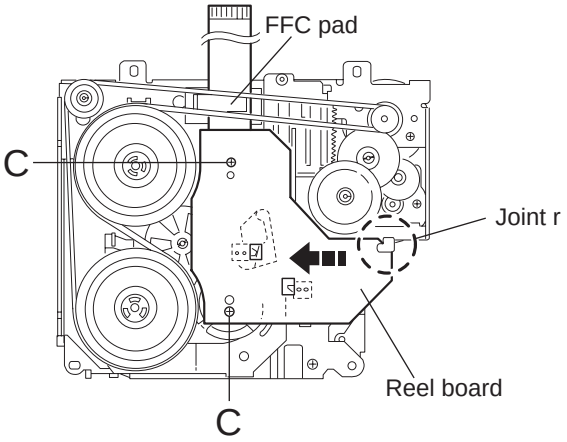


Fig.21

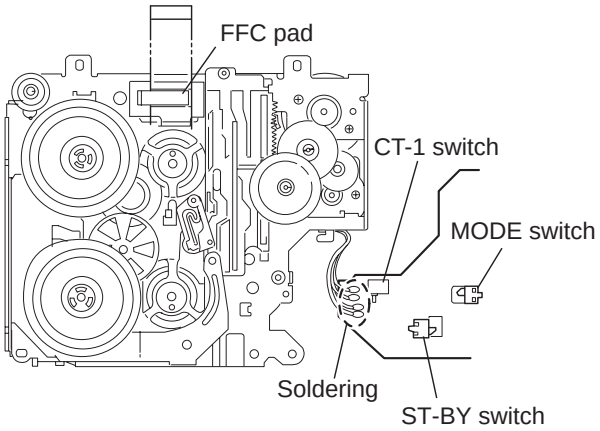


Fig.22

3.2.13 Removing the gear base arm / gear base link assembly (See Fig.23 to 25)

(1) Move the gear base arm in the direction of the arrow.
(2) Insert a slotted screwdriver to the gear base spring under the gear base arm, and release the gear base arm upward from the boss on the gear base assembly.
(3) Remove the gear base arm from the main chassis while releasing the two joints **s**.
(4) Move the gear base link assemby in the direction of the arrow to release the two joints **t**.

REFERENCE:

When reattaching the gear base arm, make sure that the boss on the gear base assembly is inside the gear base spring.

3.2.14 Removing the FFC pad (See Fig.25 and 27)

(1) Push each joint hook u of the FFC pad and remove toward the bottom.

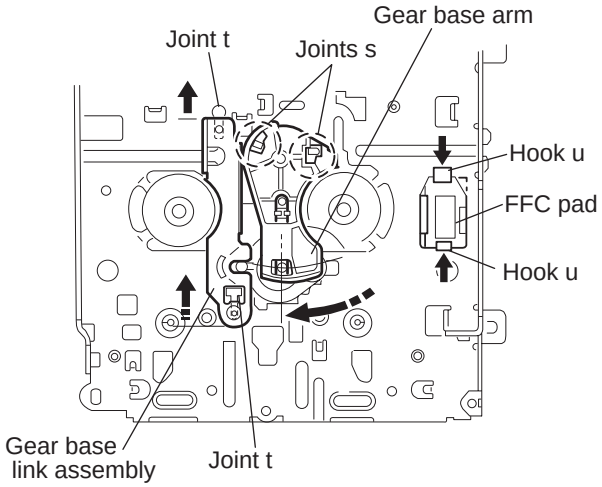


Fig.23

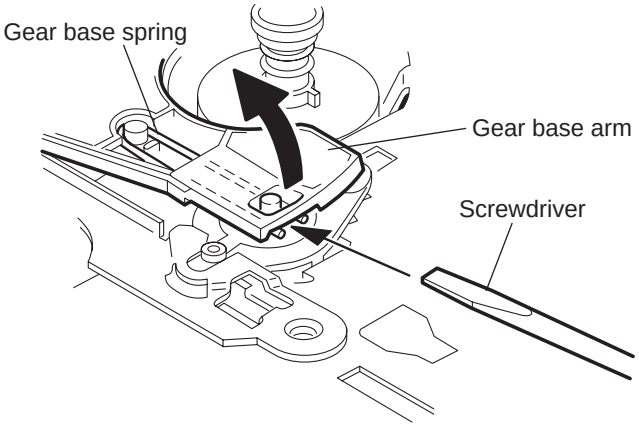


Fig.24

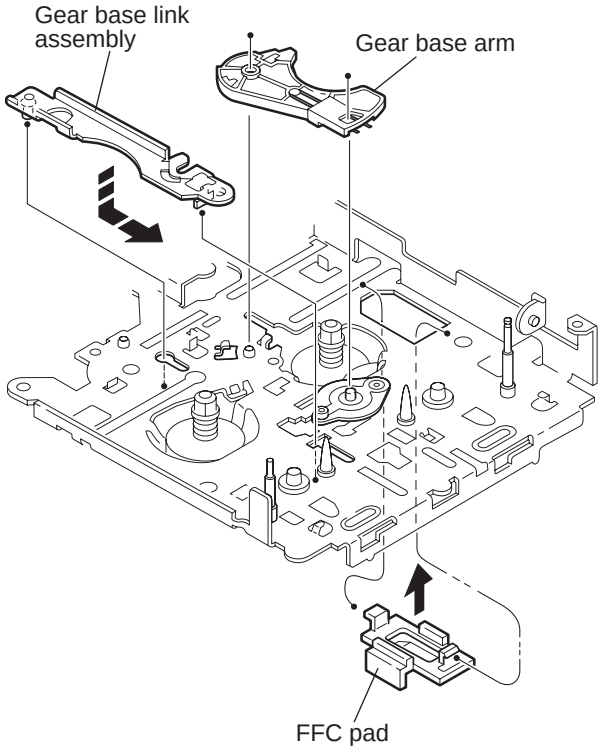


Fig.25

3.2.15 Removing the mode gear (See Fig.26 and 29)

(1) Remove the polywasher on the bottom and pull out the mode gear.

3.2.16 Removing the mode switch actuator (See Fig.26, 27 and 29)

(1) Pull out the mode switch actuator at the bottom.

REFERENCE:

When reattaching the mode switch actuator to the main chassis, make sure to set on the shaft and insert **v** into the slot **w**.

3.2.17 Removing the direction link / direction plate (See Fig.27 to 29)

(1) Remove the polywasher attaching the direction link.

(2) Bring up the direction link to release the three joints **x**, **y** and **z** at a time.

(3) Move the direction plate in the direction of the arrow to release the two joints **a'**.

REFERENCE:

When reattaching the direction plate, engage the two joints **a'** and move in the direction of the arrow (Refer to Fig.28).

REFERENCE:

When reattaching the direction link, move the direction plate in the direction of the arrow and engage the three joint **x**, **y** and **z** at a time (Refer to Fig.29).

3.2.18 Removing the mode rack assembly (See Fig.27 and 28)

(1) Move the mode rack assembly in the direction of the arrow to release the two joints **b'** and the joint **c'**.

REFERENCE:

When reattaching, set the two **b'** on the bottom of the mode rack assembly into the slots of the main chassis and move in the direction of the arrow (See Fig.28).

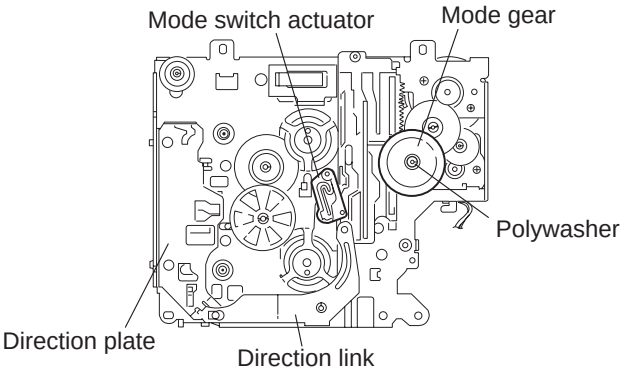


Fig.26

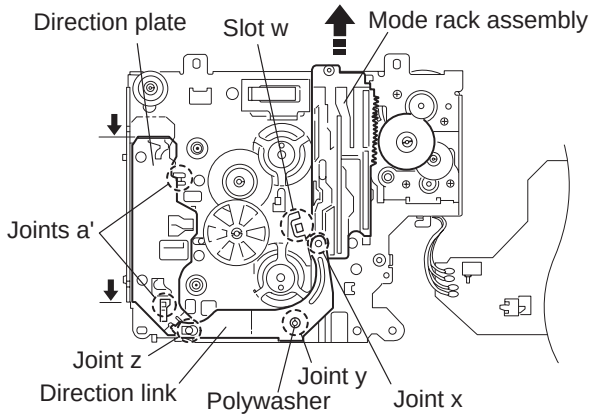


Fig.27

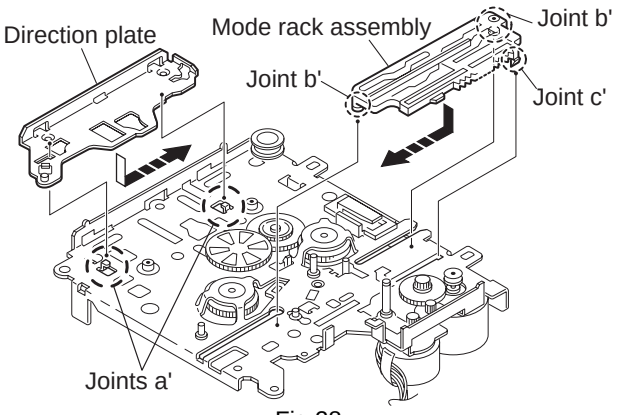


Fig.28

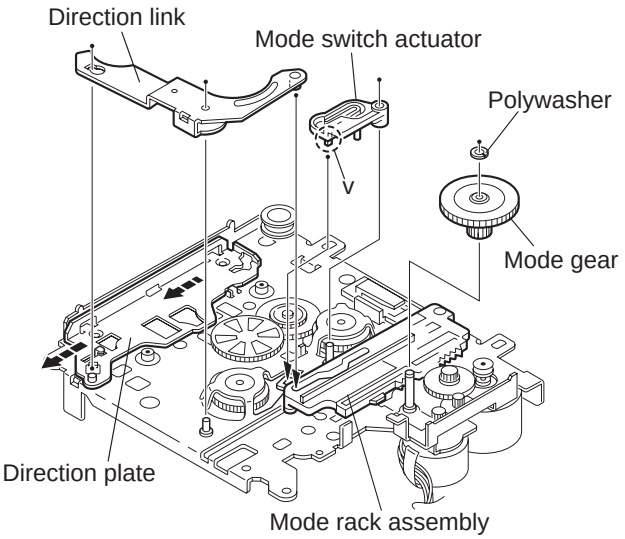


Fig.29

3.2.19 Removing the gear base assembly / take up gear / reflector gear (See Fig.30 to 32)

(1) Push in the pin **d'** of the gear base assembly on the upper side of the body and move the reflector gear toward the bottom, then pull out.
(2) Remove the polywasher on the bottom and pull out the take up gear.
(3) Move the gear base assembly in the direction of the arrow to release it from the two slots **e'** of the main chassis.

REFERENCE:

The parts are damaged when removed. Please replace with new ones.

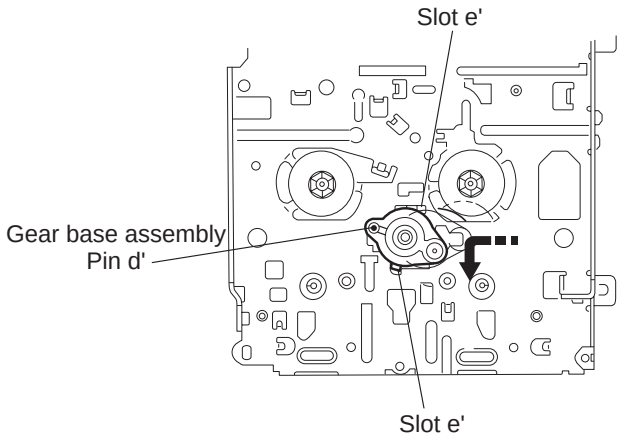


Fig.30

3.2.20 Removing the reel driver / reel spindle (See Fig.32)

(1) Draw out the reel driver from the shaft on the main chassis and remove the reel driver spring and the reel spindle respectively.

CAUTION:

The reel driver is damaged when removed. Please replace with a new one.

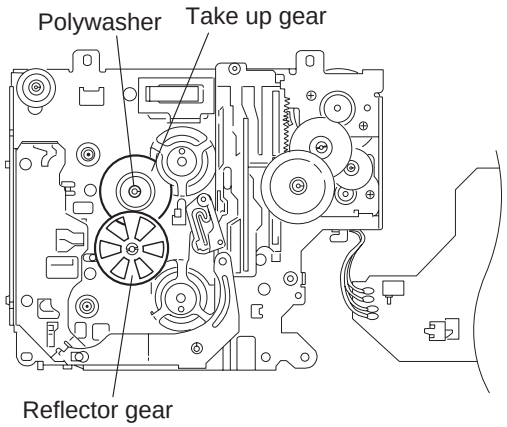


Fig.31

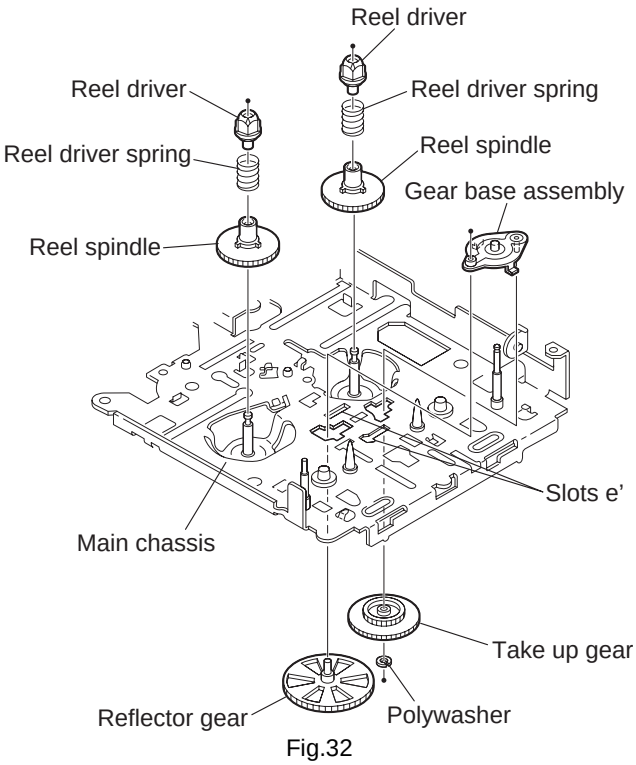


Fig.32

3.2.21 Removing the side bracket assembly (See Fig.33 to 37)

(1) Remove the eject cam plate spring.
(2) Push the joint **f'** through the slot to remove the load rack downward.
(3) Move the eject cam limiter in the direction of the arrow to release it from the boss **g'** of the side bracket assembly and from the two joints **h'**.
(4) Move the eject cam plate in the direction of the arrow to release the joint **i'**.

CAUTION:
When reassembling, confirm operation of each part before reattaching the eject cam plate spring.

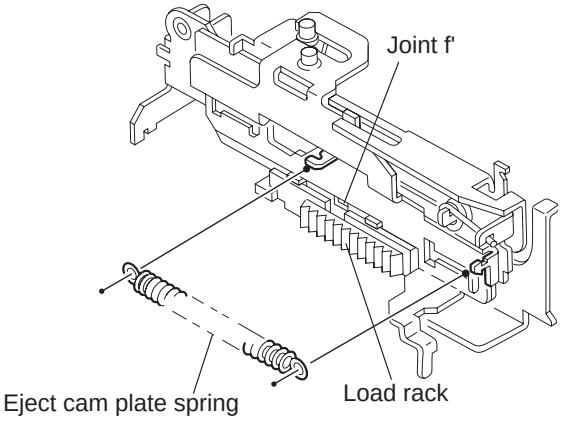


Fig.33

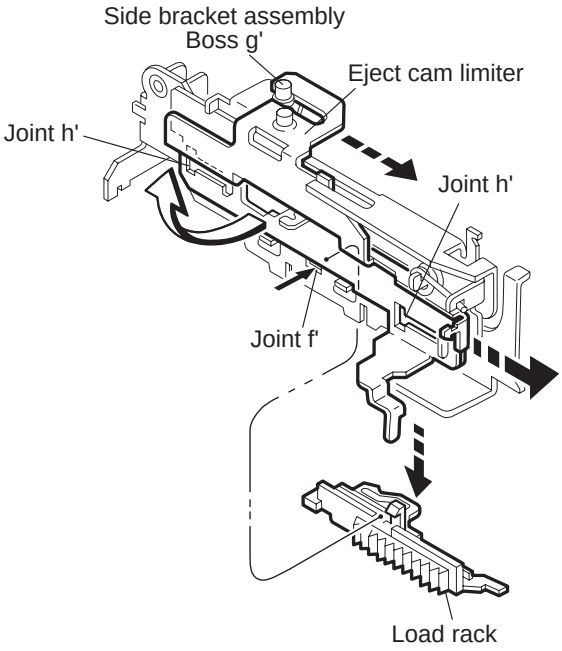


Fig.34

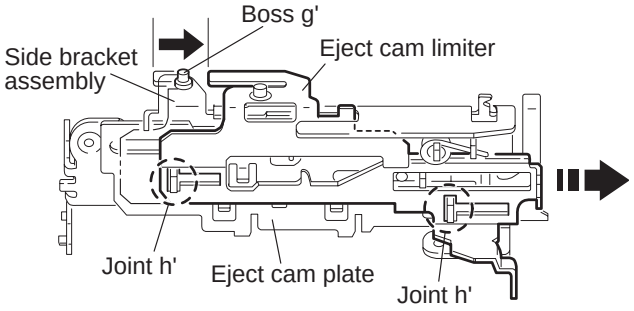


Fig.35

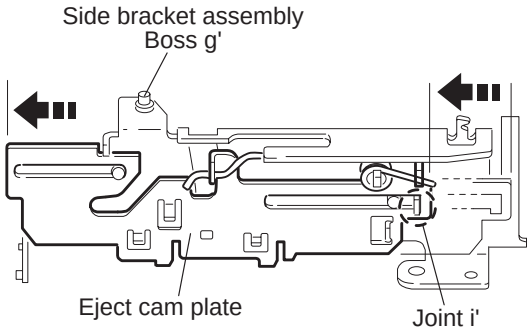


Fig.36

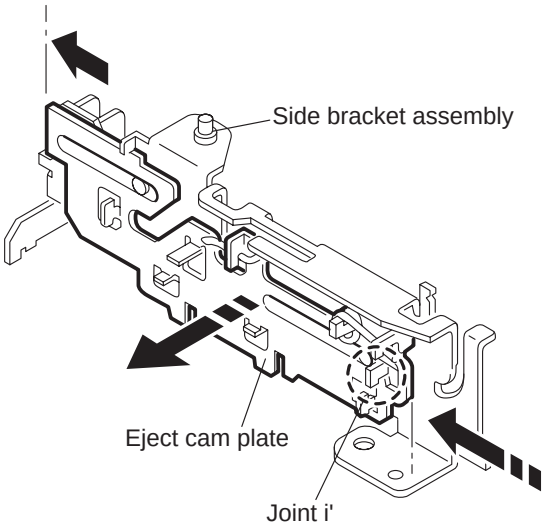


Fig.37

3.2.22 Removing the main motor assembly / sub motor assembly (See Fig.38 to 40)

(1) Remove the belt at the bottom.
(2) Remove the polywasher and pull out the mode gear.
(3) Pull out the reduction gear **(B)**.
(4) Remove the polywasher and pull out the reduction gear **(A)**.
(5) Remove the two screws attaching the main motor assembly.
(6) Remove the two screws **E** attaching the sub motor assembly.
(7) Unsolder the wires on the reel board if necessary.

CAUTION:

When reassembling, adjust the length of the wires extending from the sub motor asswmbly by attaching them to the side of the sub motor assembly with the wires extending from the main motor assembly using a spacer.

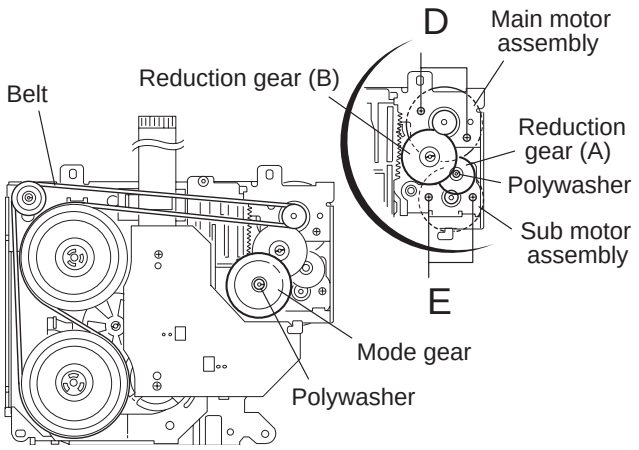


Fig.38

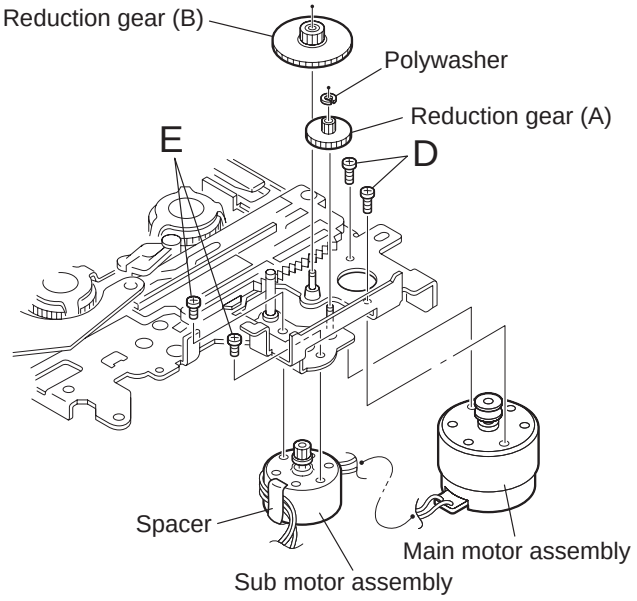


Fig.39

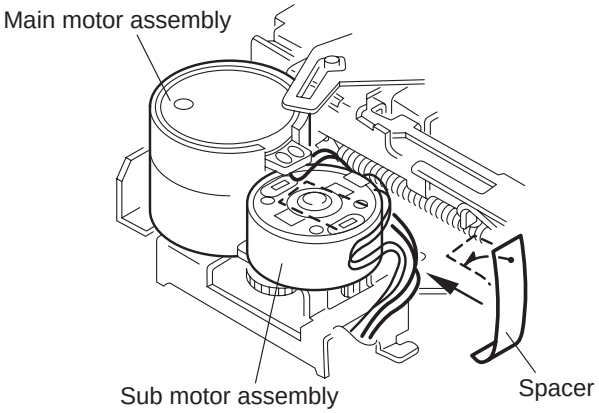


Fig.40

SECTION 4
ADJUSTMENT

4.1 Adjustment method

■ **Test instruments required for adjustment**

(1) Digital oscilloscope (100MHz)
(2) Frequency counter meter
(3) Electric voltmeter
(4) Wow & flutter meter
(5) Test tapes
- VT724.....For DOLBY level measurement
- VT739.....For playback frequency measurement
- VT712....For wow flutter & tape speed measurement
- VT703.....For head azimuth measurement

(6) Torque gauge.....Cassette type for CTG-N

■ **Standard volume position**

Balance and Bass, Treble volume, Fader : Center (Indication "0")
Loudness, Dolby NR, Sound, Cruise : Off
Volume position is about 2V at speaker output with following conditions, Playback the test tape VT721.

AM mode	999kHz/62dB, INT/400Hz, 30% modulation signal on receiving.
FM mono mode	97.9MHz/66dB, INT/400Hz, 22.5kHz deviation pilot off mono
FM stereo mode	1kHz, 67.5kHz dev. pilot 7.5kHz dev.
Output level	0dB (1μV,50Ω/open terminal)

■ **Measuring conditions (Amplifier section)**

- Power supply voltage..... DC14.4V (11V to 16V allowance)
- Load impedance..... 4Ω (4Ω to 8Ω allowance)
- Line out level/Impedance.....1.0V/20k load (250 nWb/m)

■ **Information for using a car audio service jig**

(1) We're advancing efforts to make our extension cords common for all car audio products.
Please use this type of extension cord as follows.
(2) As a U-shape type top cover is employed, this type of extension cord is needed to check operation of the mechanism assembly after disassembly.
(3) Extension cord : EXTKSRT002-18P (18 pin extension cord) For connection between mechanism assemblyand main board.
(4) Check for mechanism driving section such as motor ,etc.

■ **Disassembly method**

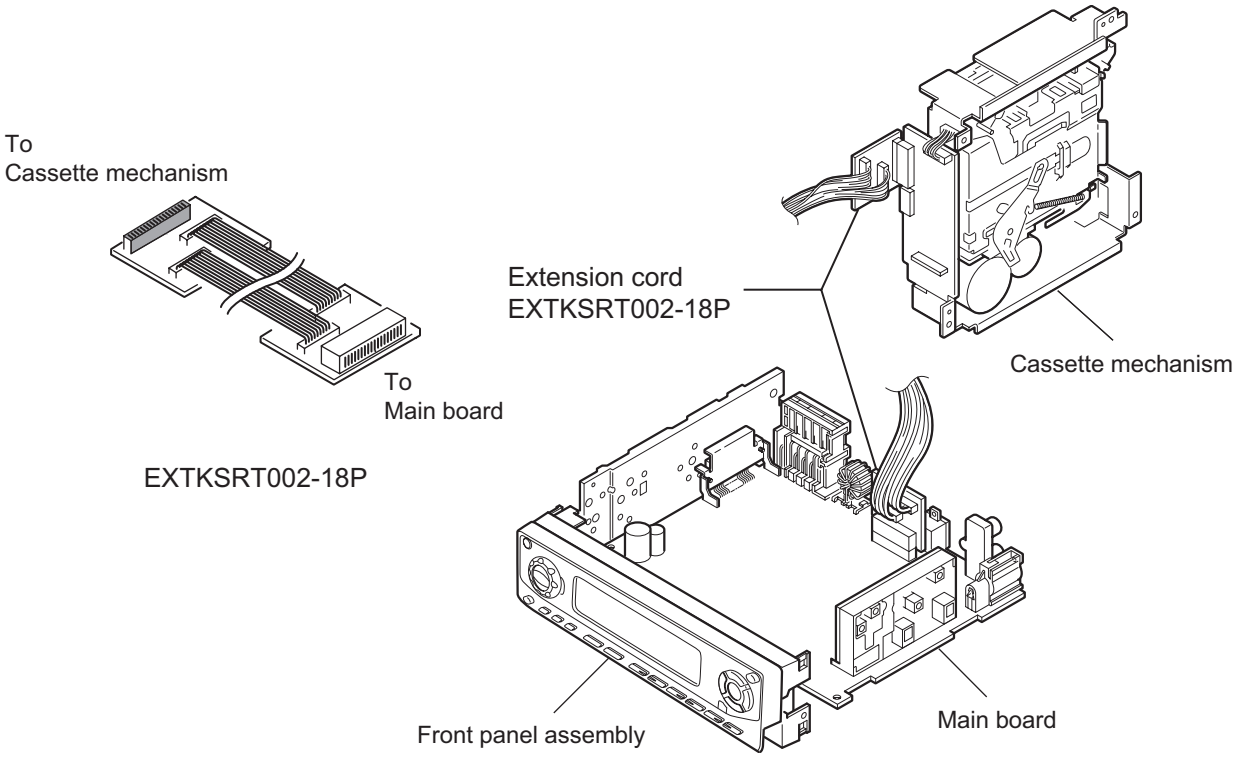
(1) Remove the front panel assembly.
(2) Remove the bottom cover.
(3) Remove the front chassis.
(4) Remove the heat sink.
(5) Remove the rear panel
(6) Remove the main board.
(7) Reattach the heat sink with the two screws B. (Refer to Disassembly method.)
(8) Reattach the rear panel with the screw E. (Refer to Disassembly method.)
(9) Reattach the front panel assembly.
(10) Confirm that current is being carried by connecting an extension cord jig.

NOTE:

Available to connect to the CJ601 connector when installing the front panel.

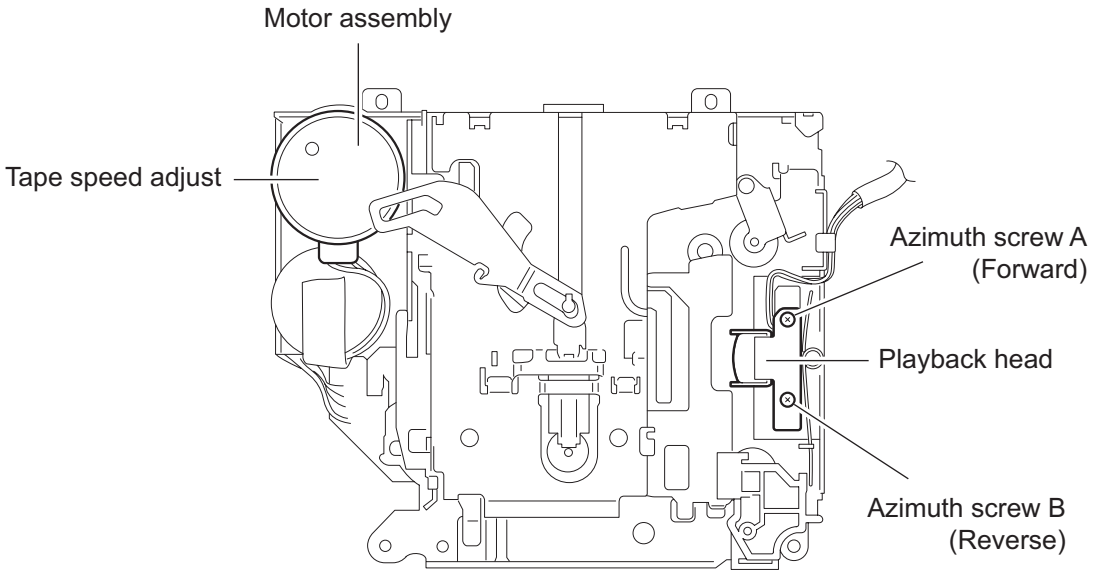
CAUTION :

Be sure to attach the heat sink and rear panel on the power amplifier IC and regulator IC of a main board when supplying the power.If voltage is applied without attaching those parts, the power amplifier IC and regulator IC will be destroyed by heat.

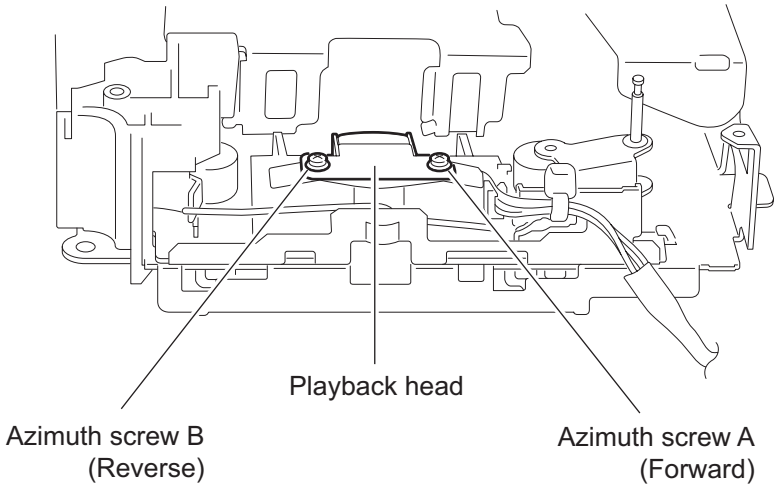


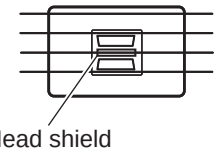
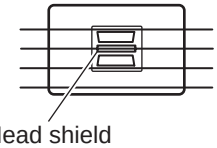
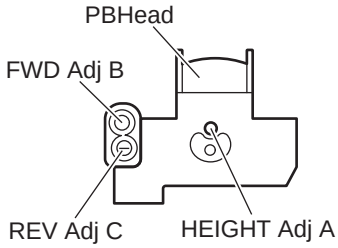
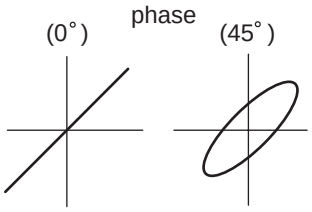
■ **Arrangement of adjusting & test points**

Cassette mechanism
(Surface)



Head section view



Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
1. Head azimuth adjustment	Test tape: SCC-1659 VT703 (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.	 The head is at low position during.  The head is at High position during REV.	
	Test tape: VT724 (1kHz) VT703 (10kHz) VT721 (315Hz)	**◆Head azimuth adjustment** (1) Load VT724 (1kHz) and play it back in the reverse play mode. Set the Rch output level to max. (2) Load VT703 (10kHz) 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 3dB. (Between FWD L and R, REV L and R.) (5) When VT721 (315Hz) is played back, the level difference between channels should be within 1.5dB.	Output level: Maximum  	
2. Tape speed and wow flutter confirmation	Test tape: VT712 (3kHz)	(1) Check to see if the reading of the F, counter / wow flutter meter is within 3015Hz to 3045Hz (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: 3015Hz to 3045Hz Wow flutter: less than 0.35%	Built-in volume resistor
3. Play back frequency response confirmation	Test tape: VT724 (1kHz) VT739 (63Hz / 1kHz / 10kHz)	(1) Play test tape VT724, and set the volume position at 2V. (2) Play test tape VT739 and confirm.1kHz / 10kHz: -1 ±3dB,1kHz / 63Hz: 0 ±3dB, (3) When 10kHz is out of specification, it will be necessary to read adjust the azimuth.	Speaker out 1kHz / 63Hz: 0 ±3dB 1kHz / 10kHz: -1 ±3dB	

The tuner section is of an adjustment-freedesign. In case the tuner is in trouble, replace the tuner pack.

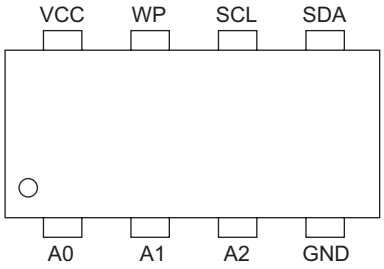
SECTION 5
TROUBLE SHOOTING

This service manual does not describe TROUBLE SHOOTING.

SECTION 6
DESCRIPTION OF MAJOR ICs

6.1 BR24L16F-W-X (IC771) : EEPROM

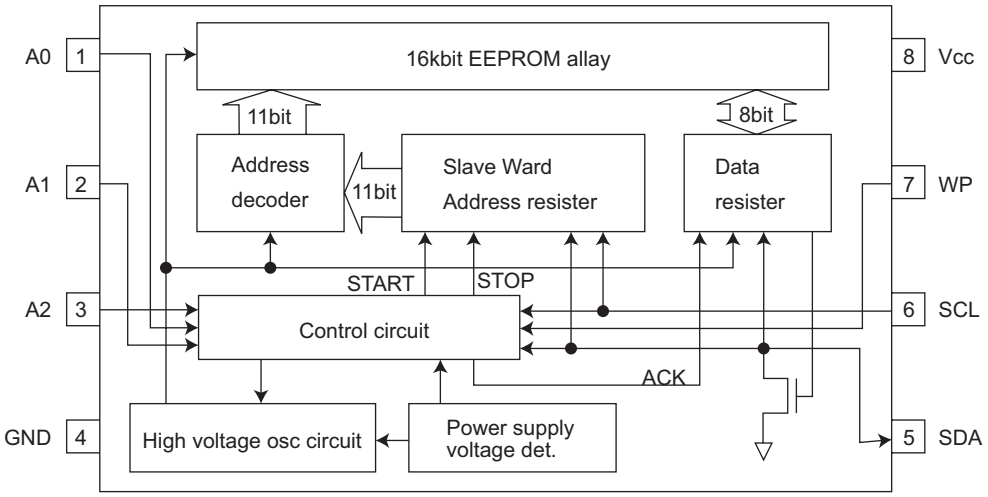
• Pin layout



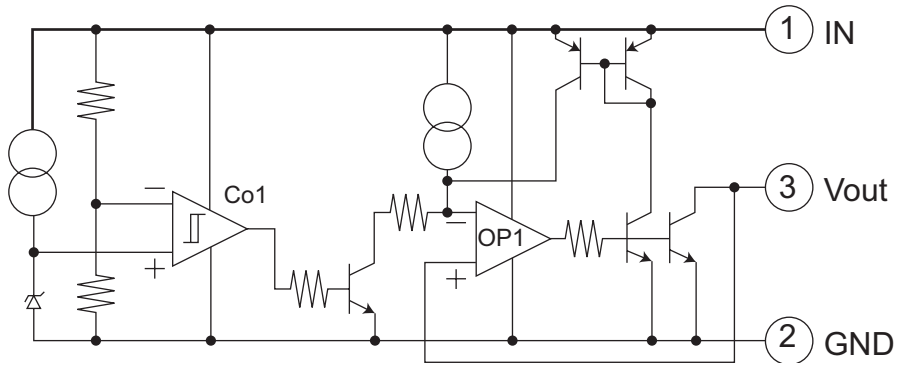
• Pin function

Symbol	I/O	Function
VCC	-	Power supply.
GND	-	GND
A0,A1,A2	I	No use connect to GND.
SCL	I	Serial clock input.
SDA	I/O	Serial data I/O of slave and ward address.
WP	I	Write protect terminal.

• Block diagram

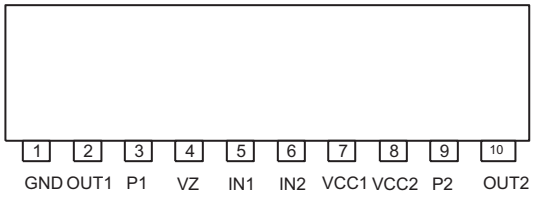


6.2 IC-PST600M/G/-W (IC702) : System reset



6.3 LB1641 (IC402) : DC Motor driver

• Pin layout

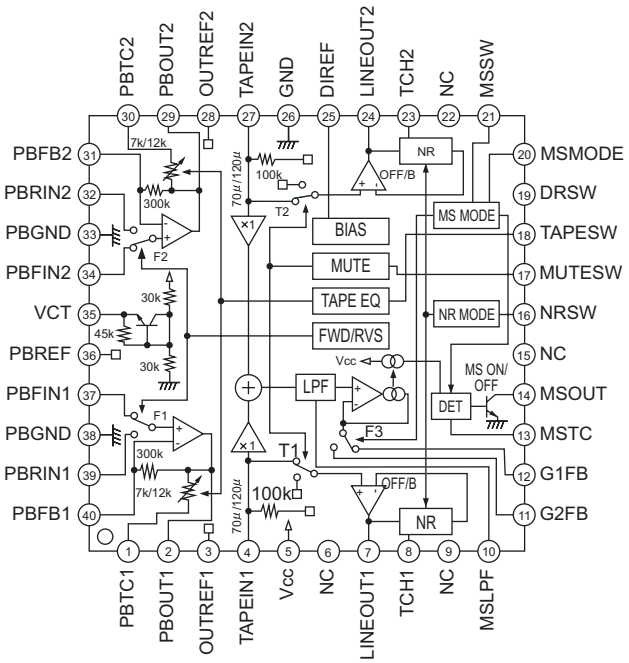


• Truth table

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

6.4 CXA2560Q (IC401) : Dolby B type noise reduction system with play back equalizer amp.

- Pin layout & block diagram



- Pin function

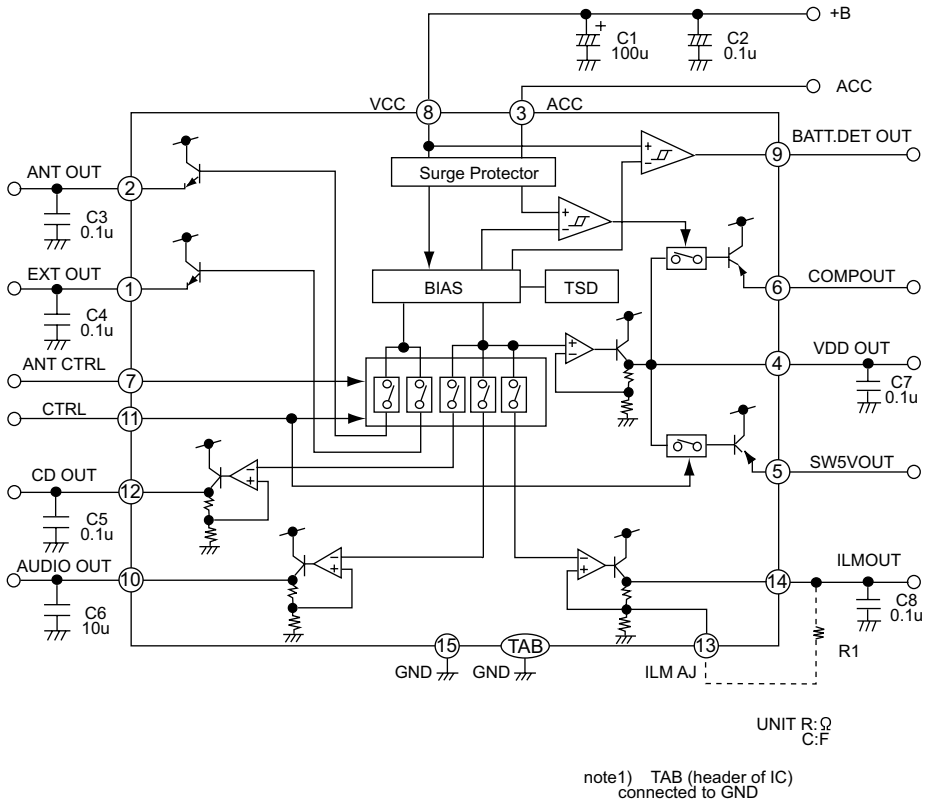
Pin No.	Symbol	I/O	Function
1	PBTC1	-	Playback equalizer amplifier capacitance
2	PBOUT1	O	Playback equalizer amplifier output
3	OUTREF1	O	Output reference
4	TAPEIN1	I	TAPE input
5	Vcc	-	Power supply
6	NC	-	
7	LINEOUT1	O	Line output
8	TCH1	-	Time constant for the HLS
9	NC	-	
10	MSLPF	-	Cut-off frequency adjustment of the music sensor LPF
11	G2FB	-	Music signal interval detection
12	G1FB	-	Music signal interval detection
13	MSTC	-	Time constant for detecting music signal interval
14	MSOUT	O	Music sensor out
15	NC	-	No use
16	NRSW	I	Dolby NR control
17	MUTESW	I	Mute function control
18	TAPESW	I	Playback equalizer amplifier control
19	DRSW	I	Head select control
20	MSMODE	I	Music sensor mode control
21	MSSW	I	Music sensor control
22	NC	-	
23	TCH2	-	Time constant for the HLS
24	LINEOUT2	O	Line output

Pin No.	Symbol	I/O	Function
25	DIREF	-	Resistance for setting the reference
26	GND	-	Ground
27	TAPEIN2	I	TAPE input
28	OUTREF2	O	Output reference
29	PBOUT2	O	Playback equalizer amplifier output
30	PBTC2	-	Playback equalizer amplifier capacitance
31	PBFB2	I	Playback equalizer amplifier feedback
32	PBRIN2	I	Playback equalizer amplifier input
33	PBGND	-	Playback equalizer amplifier ground
34	PBFIN2	I	Playback equalizer amplifier input
35	VCT	O	Center
36	PBREF	O	Playback equalizer amplifier reference
37	PBFIN1	I	Playback equalizer amplifier input
38	PBGND	-	Playback equalizer amplifier ground
39	PBRIN1	I	Playback equalizer amplifier input
40	PBFB1	I	Playback equalizer amplifier feedback

6.5 HA13164A (IC901) : Regulator

- Terminal layout

- Block diagram

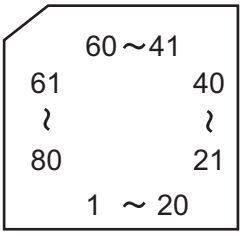


- Pin function

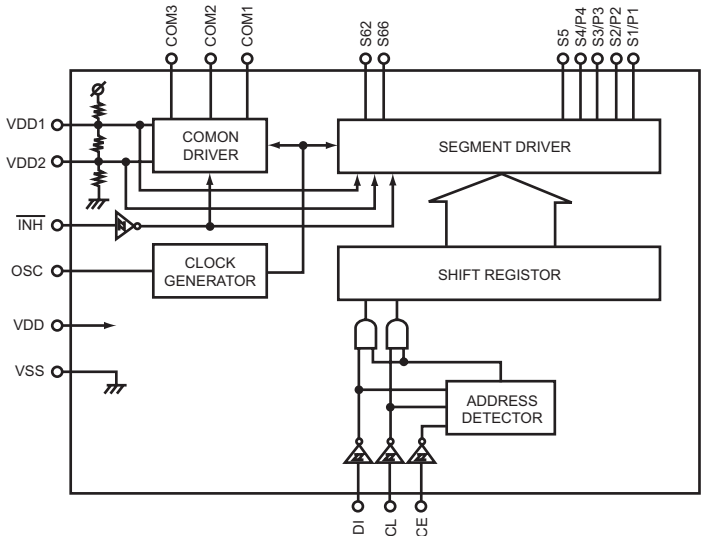
Pin No.	Symbol	Function
1	EXTOUT	Output voltage is VCC-1 V when M or H level applied to CTRL pin.
2	ANTOUT	Output voltage is VCC-1 V when M or H level to CTRL pin and H level to ANT-CTRL.
3	ACCIN	Connected to ACC.
4	VDDOUT	Regular 5.7V.
5	SW5VOUT	Output voltage is 5V when M or H level applied to CTRL pin.
6	COMPOUT	Output for ACC detector.
7	ANT CTRL	L:ANT output OFF H:ANT output ON
8	VCC	Connected to VCC.
9	BATT DET	Low battery detect.
10	AUDIO OUT	Output voltage is 9V when M or H level applied to CTRL pin.
11	CTRL	L:BIAS OFF M:BIAS ON H:CD ON
12	CD OUT	Output voltage is 8V when H level applied to CTRL pin.
13	ILM AJ	Adjustment pin for ILM output voltage.
14	ILM OUT	Output voltage is 10V when M or H level applied to CTRL pin.
15	GND	Connected to GND.

6.6 LC75873NW (IC601):LCD Driver

- Pin layout



- Block diagram

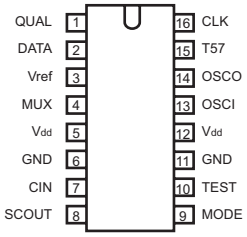


- Pin function

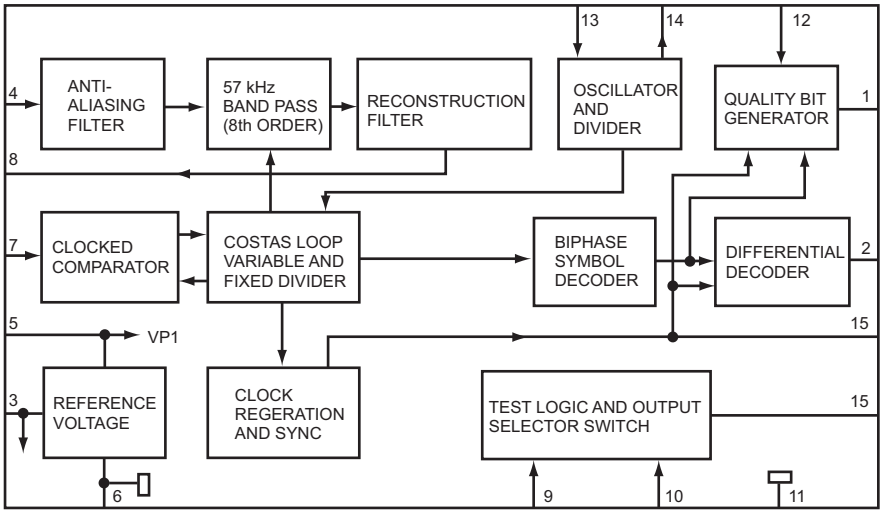
Pin No.	Pin name	I/O	Description
79,80 1,2,3 to 66	S1/P1 to S4/P4 S5 to S68	O	Segment outouts for displaying the display data transferred by serial data input. The S1/P1 to S4/P4 pins can be used as generalpurpose output ports under serial data control.
67 78 69	COM1 COM2 COM3	O	Common driver outputs. The frame frequency f0 is given by : f0 = (FOSC/384)Hz.
74	OSC	I/O	Oscillator connection An oscillator circuit is formed by connecting an external resistor and capacitor to this pin.
76 77 78	CE CL DI	I I I	Serial data transfer inputs. Connected to the controller. CE:Chip enable CL:Synchronization clock DI:Transfer data
75	$\overline{\text{INH}}$	I	Display off control input • $\overline{\text{INH}}$= "L"(VSS) ---Display forced off S1/P1 to S4/P4 = "L" (These pins are forcibly set to the segment output port function and held at the low level.) S5 to S68 = "L" COM1 to COM3"L" • $\overline{\text{INH}}$ = "H"(HDD)---Display on However, serial data transfer is possible when the display is forced off by this pin.
71	VDD1	I	Used for applying the LCD drive 2/3 bias voltage externally. Must be connected to VDD2 when a 1/2 bias drive scheme is used.
72	VDD2	I	Used for applying the LCD drive 1/3 bias voltage externally. Must be connected to VDD1 when a 1/2 bias drive scheme is used.
70	VDD	-	Power supply connection. Provide a voltage of between 3.0 and 6.0V.
73	VSS	-	Power supply connection. Connect to ground.

6.7 SAA6579T-X (IC71):RDS detecter

- Pin layout



- Block diagram

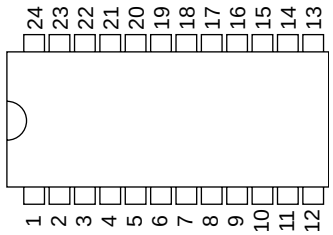


- Pin function

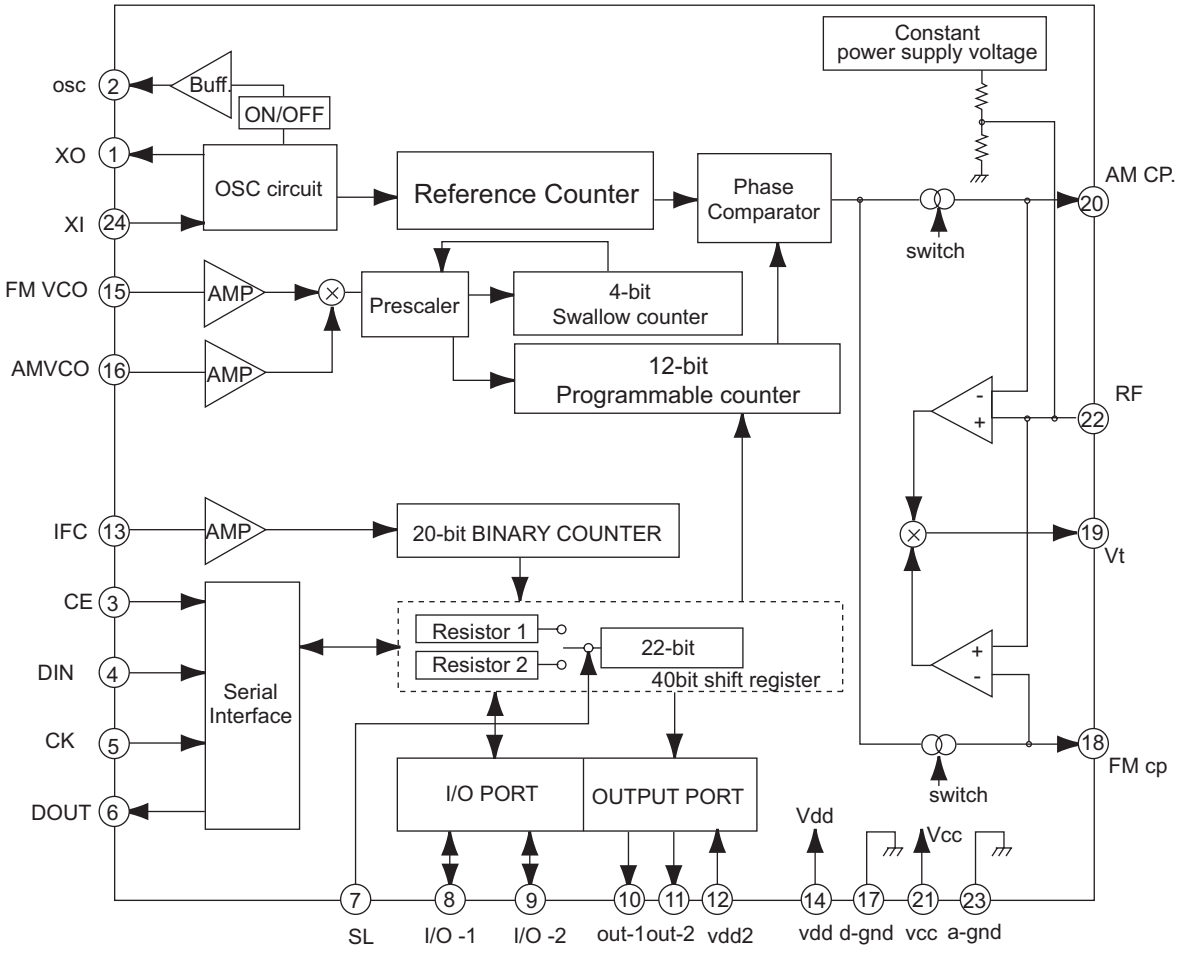
Pin No.	Symbol	Description
1	QUAL	Quality indication output
2	DATA	RDS data output
3	Vref	Reference voltage output (0.5VDDA)
4	MUX	Multiolex signal input
5	Vdd	+5V supply voltage for analog part
6	GND	Ground for analog part (0V)
7	CIN	Sub carrier input to comparator
8	SCOUT	Sub carrier output of reconstruction filter
9	MODE	Oscillator mode / test control input
10	TEST	Test enable input
11	GND	Ground for digital part (0V)
12	Vdd	+5V supply voltage for digital part
13	OSCI	Oscillator input
14	OSCO	Oscillator output
15	T57	57 kHz clock signal output
16	CLK	RDS clock output

6.8 TB2118F-X (IC31) : PLL

- Terminal Layout



- Block diagram

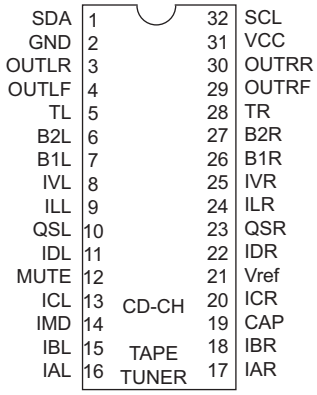


- Pin Function

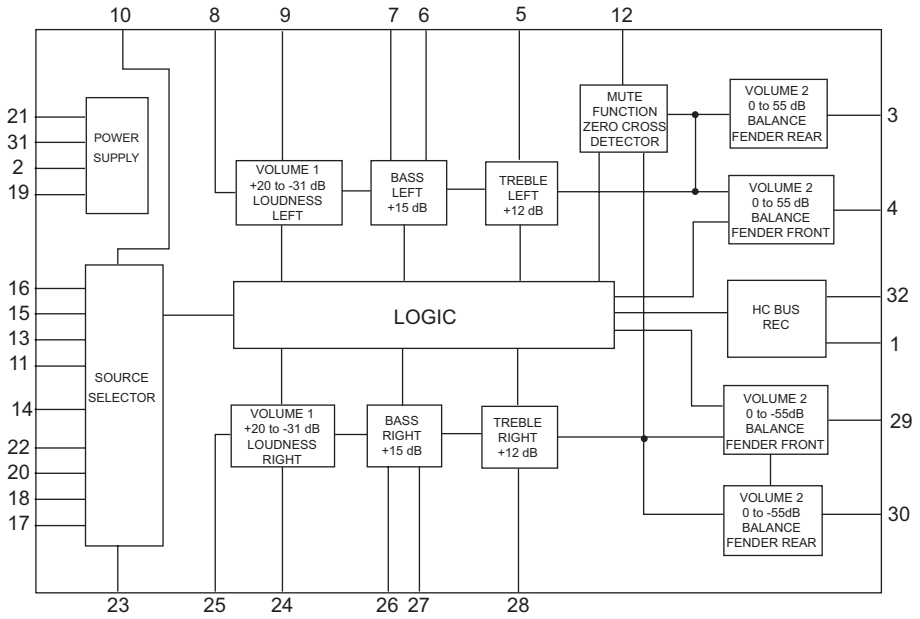
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XOUT	O	Crystal oscillator pin	13	IFC	I	IF signal input
2	OSC	-	Non connect	14	VDD	-	Power pins for digital block
3	CE	I	Chip enable input	15	FMIN	I	FM band local signal input
4	DI	I	Serial data input	16	AMIN	I	AM band local signal input
5	CK	I	Clock input	17	DGND	-	Connect to GND (for digital circuit)
6	DOUT	O	Serial data output	18	FMCP	O	Charge pump output for FM
7	SR	O	Register control pin	19	Vt	-	Tuning voltage biased to 2.5V.
8	I/01	I/O	I/O ports	20	AMCP	O	Charge pump output for AM
9	I/02	I/O	I/O ports	21	VCC	-	Power pins for analog block
10	OUT1	-	Non connect	22	RF	I	Ripple filter connecting pin
11	OUT2	-	Non connect	23	AGND	-	Connect to GND (for analog circuit)
12	VDD2	-	Single power supply for REF. frequency block	24	XIN	I	Crystal oscillator pin

6.9 TEA6320T-X (IC161) : E.volume

- Pin layout



- Block diagram



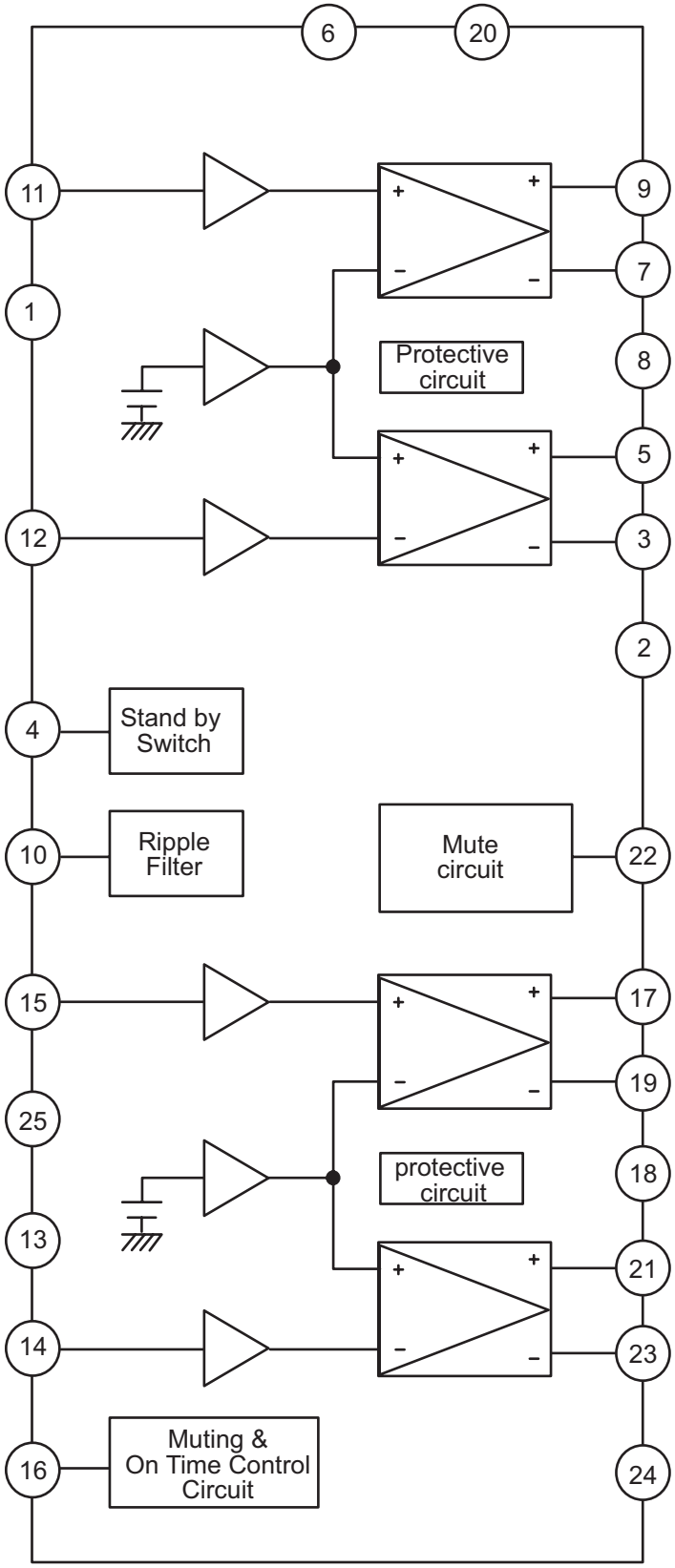
- Pin functions

Pin No.	Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.
2	GND	-	Ground.
3	OUTLR	O	output left rear.
4	OUTLF	O	output left front.
5	TL	I	Treble control capacitor left channel or input from an external equalizer.
6	B2L	-	Bass control capacitor left channel or output to an external equalizer.
7	B1L	-	Bass control capacitor left channel.
8	IVL	I	Input volume 1. left control part.
9	ILL	I	Input loudness. left control part.
10	QSL	O	Output source selector. left channel.
11	IDL	-	Not used
12	MUTE	-	Not used
13	ICL	I	Input C left source.
14	IMO	-	Not used
15	IBL	I	Input B left source.
16	IAL	I	Input A left source.

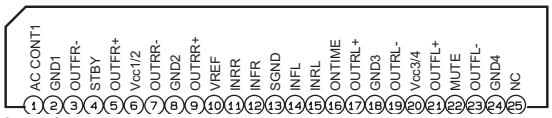
Pin No.	Symbol	I/O	Functions
17	IAR	I	Input A right source.
18	IBR	I	Input B right source.
19	CAP	-	Electronic filtering for supply.
20	ICR	I	Input C right source.
21	Vref	-	Reference voltage (0.5Vcc)
22	IDR	-	Not used
23	QSR	O	Output source selector right channel.
24	ILR	I	Input loudness right channel.
25	IVR	I	Input volume 1. right control part.
26	B1R	-	Bass control capacitor right channel
27	B2R	O	Bass control capacitor right channel or output to an external equalizer.
28	TR	I	Treble control capacitor right channel or input from an external equalizer.
29	OUTRF	O	Output right front.
30	OUTRR	O	Output right rear.
31	Vcc	-	Supply voltage.
32	SCL	I	Serial clock input.

6.10 LA47505 (IC301) : Power amp.

- Terminal layout



• Terminal layout

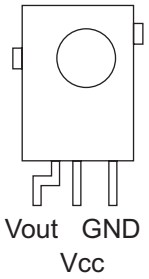


• Pin function

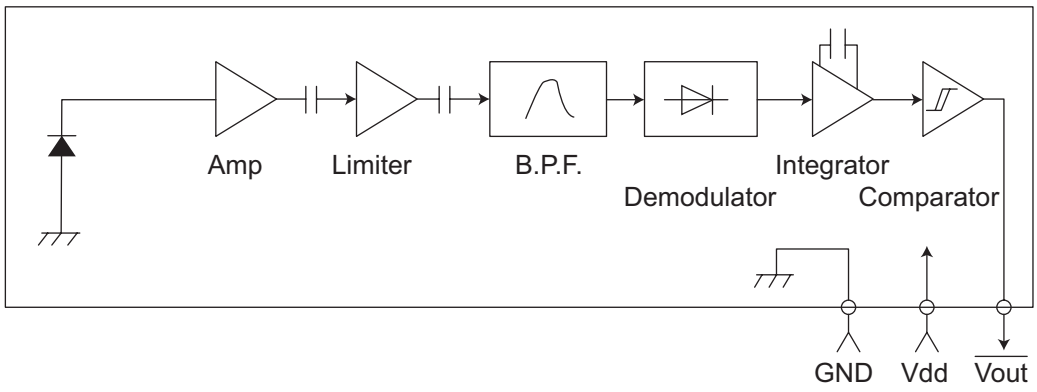
Pin No.	Symbol	Function
1	AC CONT1	Header of IC
2	GND1	Power GND
3	OUTFR-	Outpur(-) for front Rch
4	STBY	Stand by input
5	OUTFR+	Output (+) for front Rch
6	Vcc1/2	Power input
7	OUTRR-	Output (-) for rear Rch
8	GND2	Power GND
9	OUTRR+	Output (+) for rear Rch
10	VREF	Ripple filter
11	INRR	Rear Rch input
12	INFR	Front Rch input
13	SGND	Signal GND
14	INFL	Front Lch input
15	INRL	Rear Lch input
16	ONTIME	Power on time control
17	OUTRL+	Output (+) for rear Lch
18	GND3	Power GND
19	OUTRL-	Output (-) for rear Lch
20	Vcc3/4	Power input
21	OUTFL+	Output (+) for front
22	MUTE	Muting control input
23	OUTFL-	Output (-) for front
24	GND4	Power GND
25	NC	No connection

6.11 GP1UM261XK (IC602) : Receiver

• Pin layout

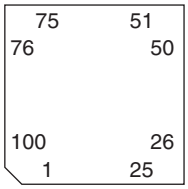


• Block diagram



6.12 UPD784215AGC208 (IC701) : CPU

- Pin layout



- Pin function

Pin No	Symbol	I/O	Function
1	TAPE IN	I	Cassette tape inside signal H:Inside L:Outside
2	STAND BY	I	Stand-by position detection signal input H:Loading L:Eject side
3 to 8	NC	-	Not use
9	VDD	-	Micon power supply
10	X2		
11	X1		
12	VSS	-	GND
13	XT2		
14	XT1		
15	RESET	I	System reset
16	Steering	I	Steering remocon input
17	BUS-INT	I	J-BUS INT
18	PS2	I	Power save2 H means STOP mode
19	NC	-	Not use
20	RDS-SCK	I	RDS clock input
21	RDS DA	I	RDS data input
22	REMOCON	I	Remocon input
23	AVDD	-	A/D converter power supply
24	AVREF0	-	A/D reference voltage
25	VOL1	I	Volume encoder pulse input 1
26	VOL2	I	Volume encoder pulse input 2
27	KEY0	I	Key input 0
28	KEY1	I	Key input 1
29	KEY2	I	Key input 2
30	LEVEL	I	Level meter input
31	NC	I	S.Quality level input
32	SM	I	S.METER input
33	AVSS	-	GND
34,35	NC	-	Not use
36	AVREF		
37	BUS-SI	I	J-BUS data input
38	BUS-SO	O	J-BUS data output
39	BUS-SCK	I/O	J-BUS clock input/output
40	BUS-I/O	O	J-BUS-I/O selection output:HÅEinput:L
41	LCD-DA	O	Data output for LCD driver
42	LCD-SCK	O	CLK output for LCD driver
43	LCD-CE	O	CE for LCD driver
44	BUZZER	O	BEEP signal output
45	E2PROM-DI	I	I2C data input
46	E2PROM-DA	I/O	E.VOL I2C data input/output
47	E2PROM-CLK	O	E.VOL I2C clock output
48	OPEN	I	DOOR OPEN SW
49,50	NC	-	Not use

Pin No	Symbol	I/O	Function
51,52	NC	-	Not use
53	SD/ST	I	Station detector or stereo indicator input ; H means a station is there. L means the program is stereo.
54	NC	-	Not use
55	MONO	O	Monaural selection output ; H means monaural
56 to 60	NC	-	Not use
61	DETACH	I	Detach detect input ; H means detaching
62	AFCK	O	AF check output
63	SEEK/STOP	O	Auto seek and stop selecting output ; H means seeking L means receiving.
64	IFC CONT	O	IFC control output
65	FM/AM	O	FM AM band selecting output ; H = FM L= AM
66	PLL-CE	O	CE output for PLL IC
67	PLL-DO	O	Data output for PLL IC
68	PLL-CLK	O	Clock output for PLL IC
69	PLL-DI	I	Data input from PLL IC
70	TEL-MUTING	I	Telephone muting detection input ; Active level can be selected H or L in PSM
71	NC	-	Not use
72	VSS	-	GND
73	DIMMER IN	I	Dimmer detector input L=dimmer on
74	PS1	I	Power save1 L= ACC off
75	POWER	O	POWER ON/OFF control output H=power on
76	NC	-	Not use
77	MUTING	O	Muting output L=muting on
78 to 80	NC	-	Not use
81	VDD	-	Micon power supply
82	NC	-	Not use
83	VOL-DA	O	Data output for e-vol IC
84	VOL-CLK	O	Clock output for e-vol IC
85 to 89	NC	-	Not use
90	STAGE1	I	Feature selection
91	MOTOR	O	Main motor control H:Motor drive
92	FF/REW	O	Audio level control for MS H:Play mode L:FF/REW mode
93	HEAD SEL(F/R)	O	Audio signal selector for head amp H:REV L:FWD
94	TEST		For rewriting flash memory
95	DOLBY	O	Dolby ON/OFF control H:Dolby on
96	MS IN	I	MS signal input L:no music
97	REEL	I	Reel pulse signal input (Pulse signal)
98	SUBMO-	O	Sub motor control. Eject direction
99	SUBMO+	O	Sub motor control. Loading direction
100	MODE	I	Mecha position detection signal

JVC
VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY MOBILE ENTERTAINMENT CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.49855)

Printed in Japan
WPC

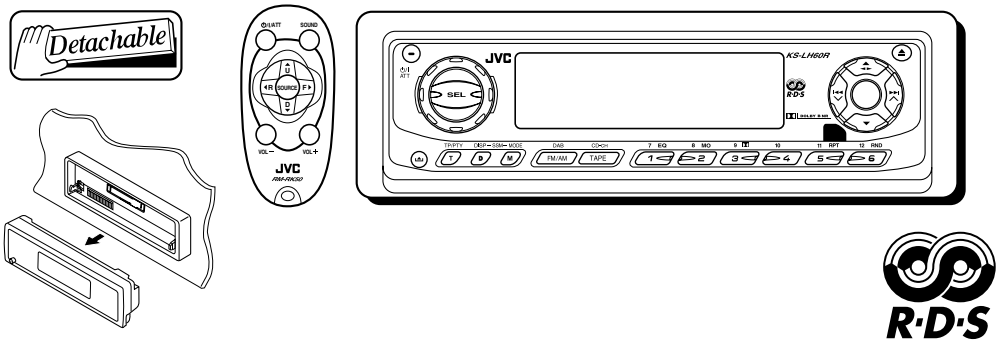
JVC

SCHEMATIC DIAGRAMS

CASSETTE RECEIVER

KS-LH60R

CD-ROM No.SML200306



Area Suffix
E ---------- Continental Europe

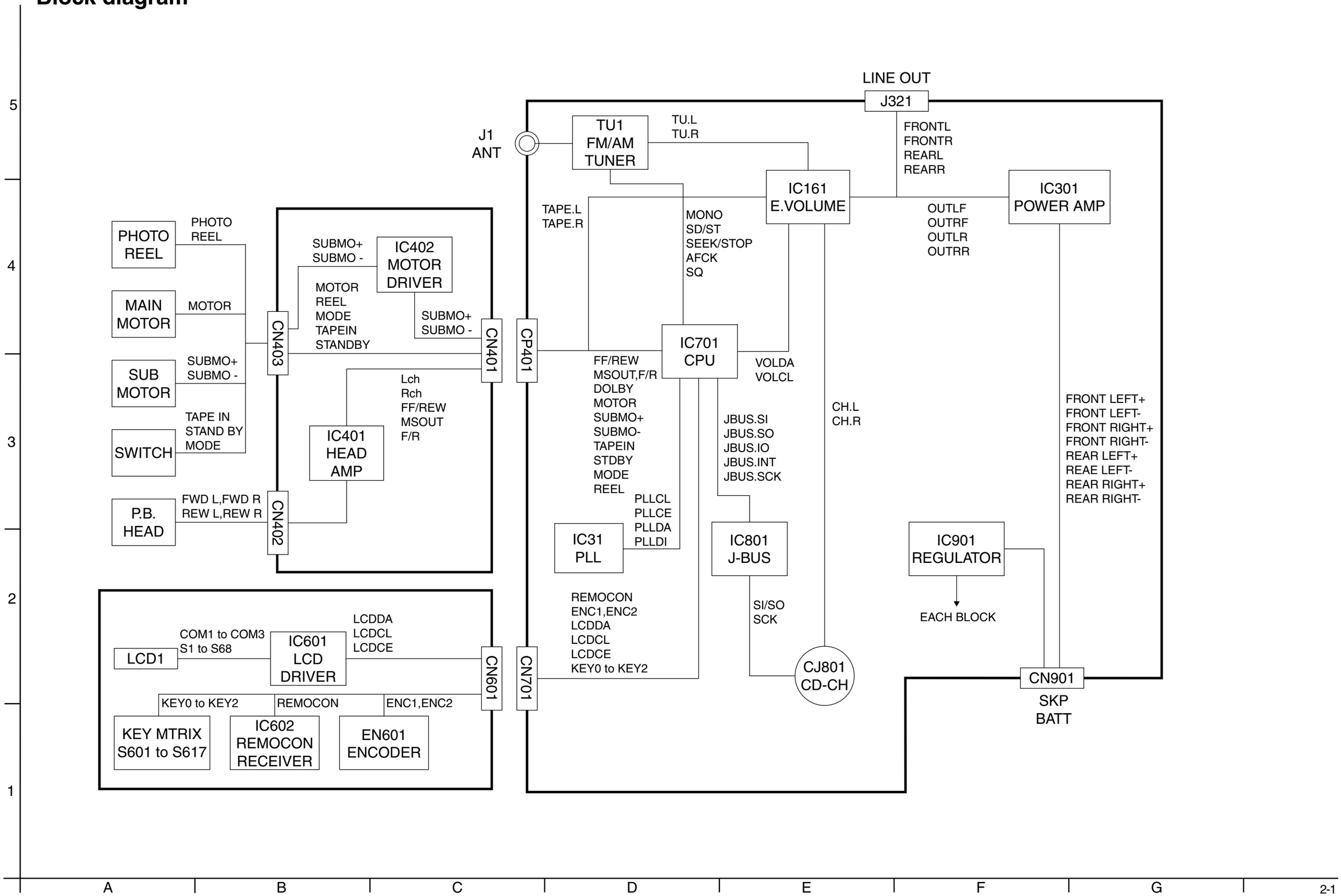
Contents

No.49855SCH
2003/06

Safety precaution

⚠ ***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.**

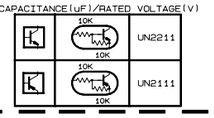
Block diagram



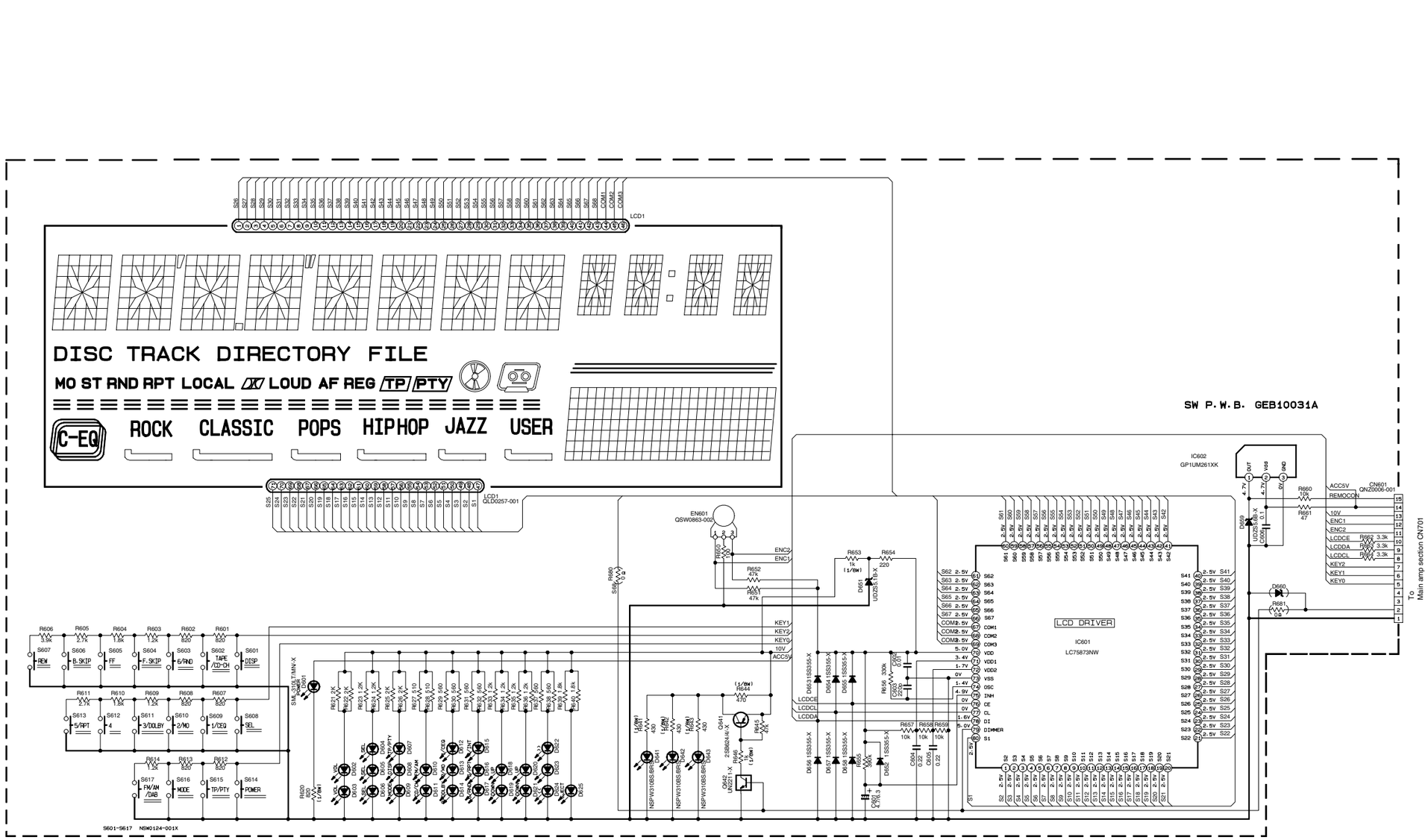
Standard schematic diagrams

■ Main amp section

NOTES
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL CONDITION---FM MODE. ▭ AM MODE. ( )CASSETTE MODE.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/16W 5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF(p=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
   MM ---- T.F. CAPACITOR
3. COMPONENTS IN () INDICATE NOT USE.



■ LCD & Key control section



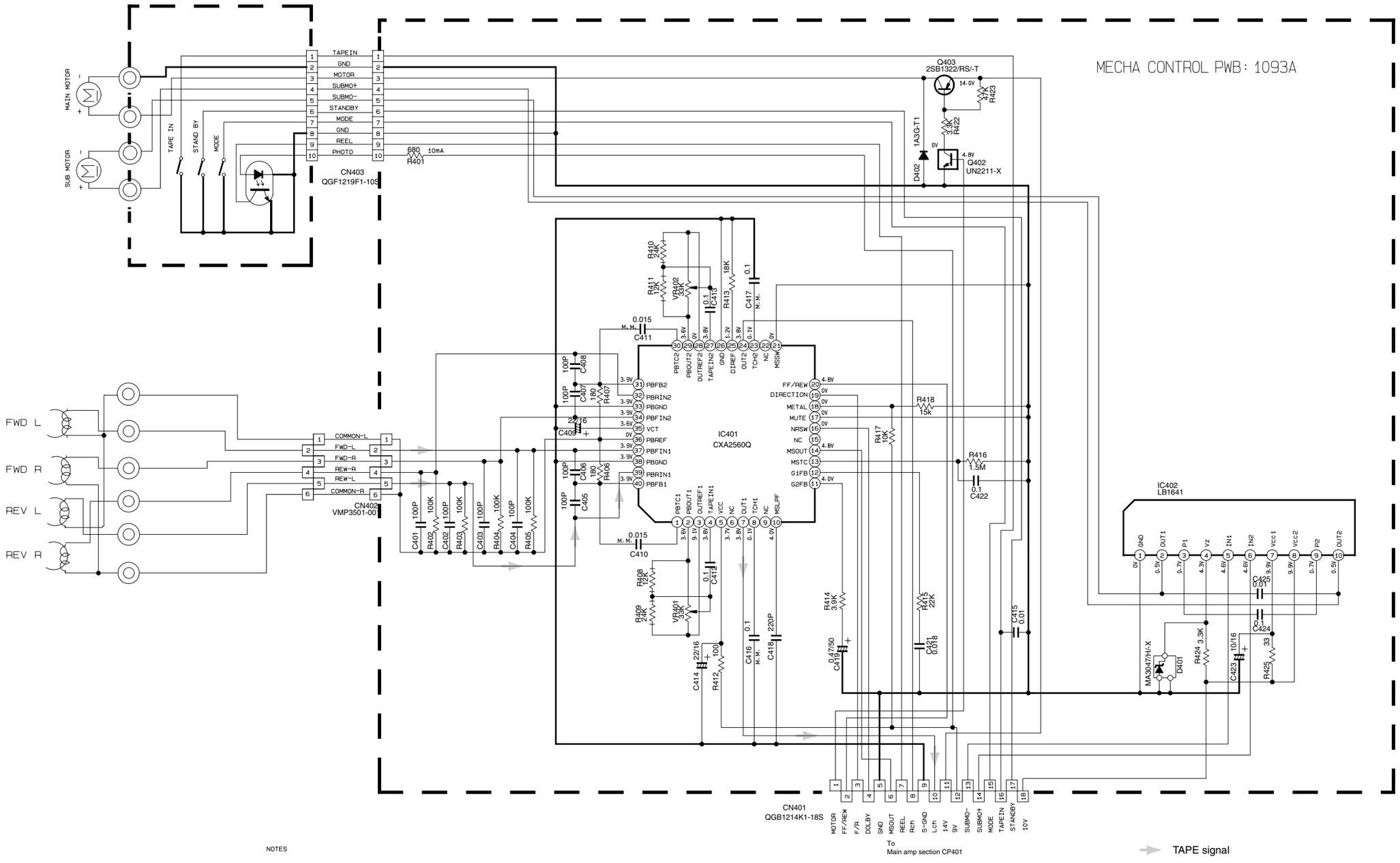
D602-D609	SML-310VT/JK/-X
D610-D611	CL-190UB-X-X
D612-D625	SML-310VT/JK/-X

NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/16W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF (p=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
3. COMPONENTS IN ( ) INDICATE NOT USE.

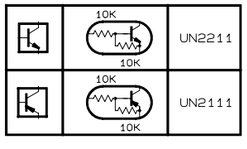
	10K / 10K	UN2211
	10K / 10K	UN2111

■ Head amp section



NOTES

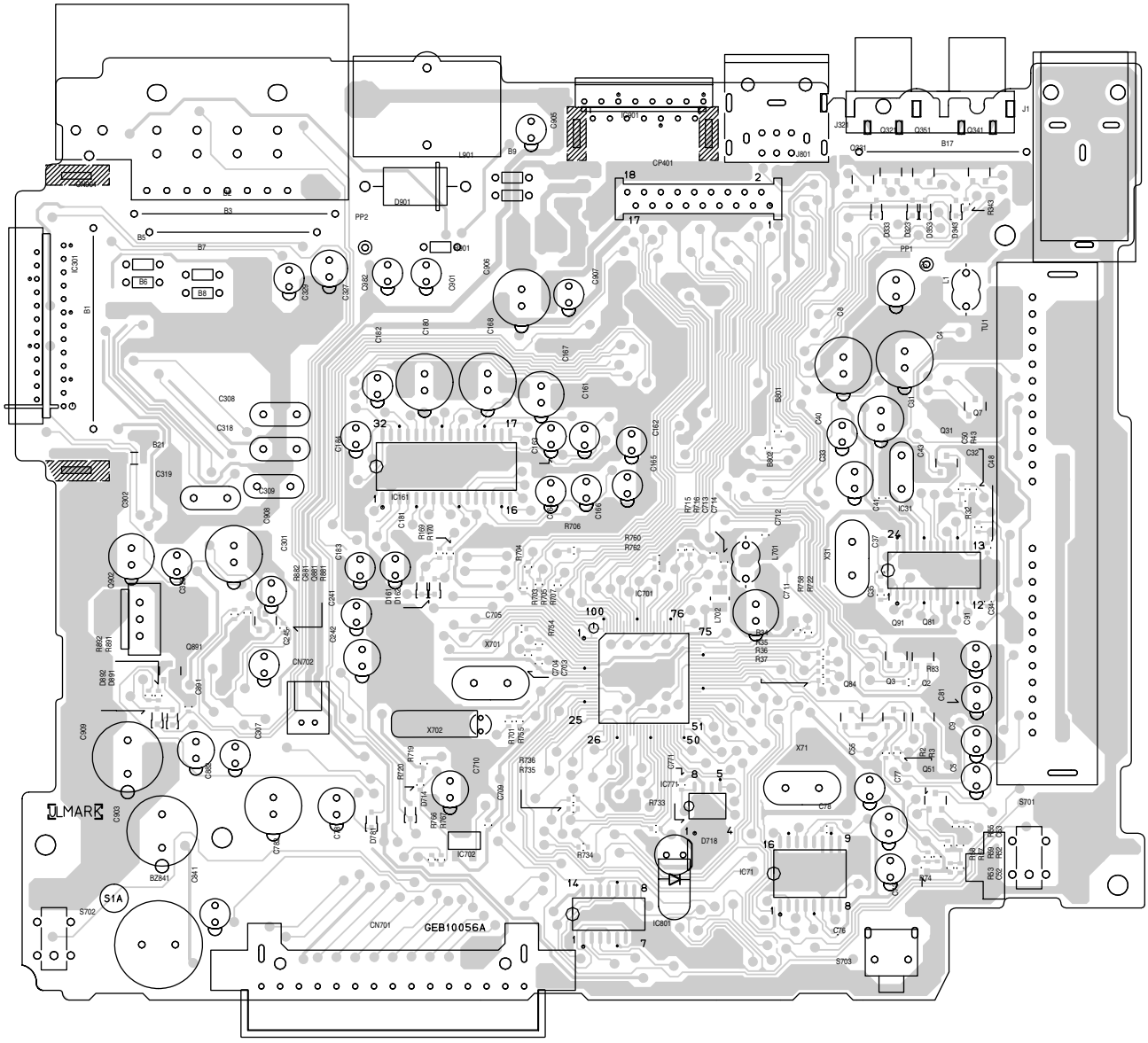
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
   CONDITION----TAPE MODE.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/10W ±5% OR 1/16W ±5% METAL GLAZE RESISTORS
   ALL CAPACITORS ARE 50V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM[Ω].
   ALL CAPACITANCE VALUES ARE IN μF[P=pF].
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE(V)
   M.M. -- M.M. CAPACITOR



Printed circuit boards

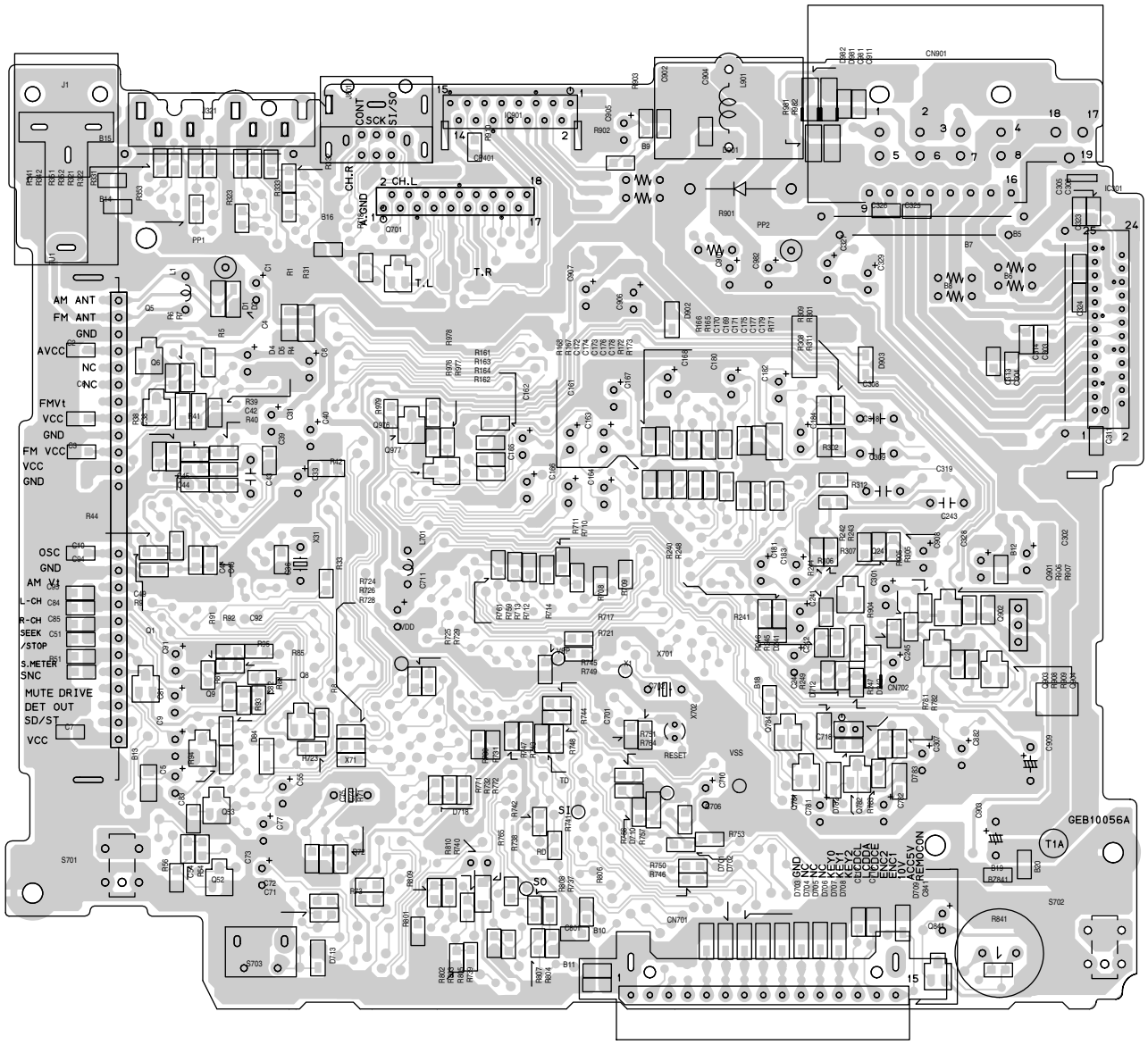
■ Main board

Forward side



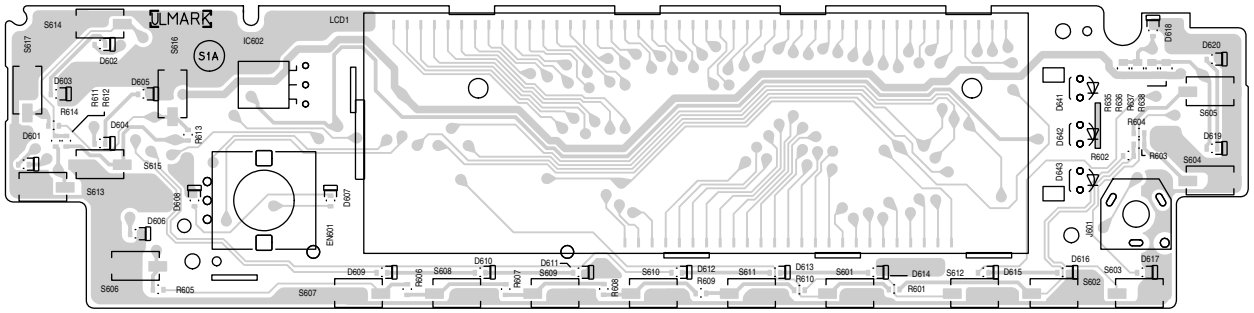
■ Main board

Reverse side

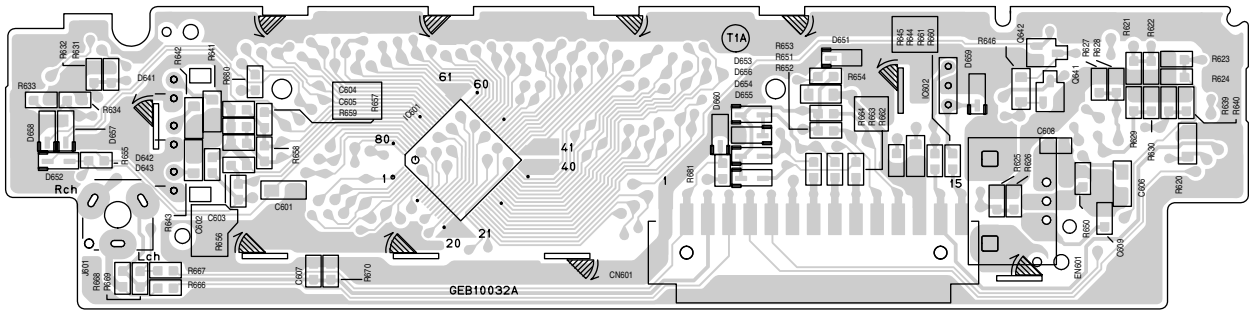


■ Front board

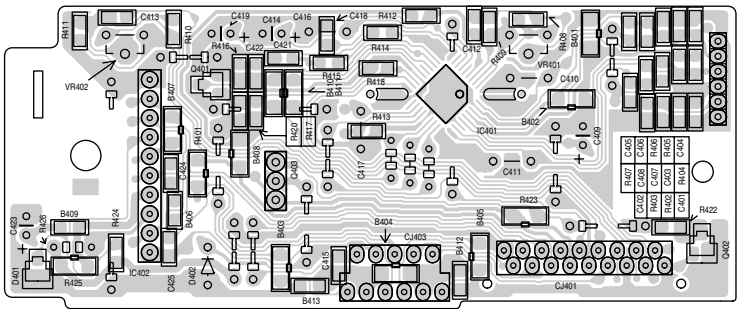
Forward side



Reverse side



■ Mecha board



KS-LH60R

JVC

VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY 10-1,1Chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.49855SCH)

Printed in Japan
2003/06

PARTS LIST

[KS-LH60R]

* All printed circuit boards and its assemblies are not available as service parts.

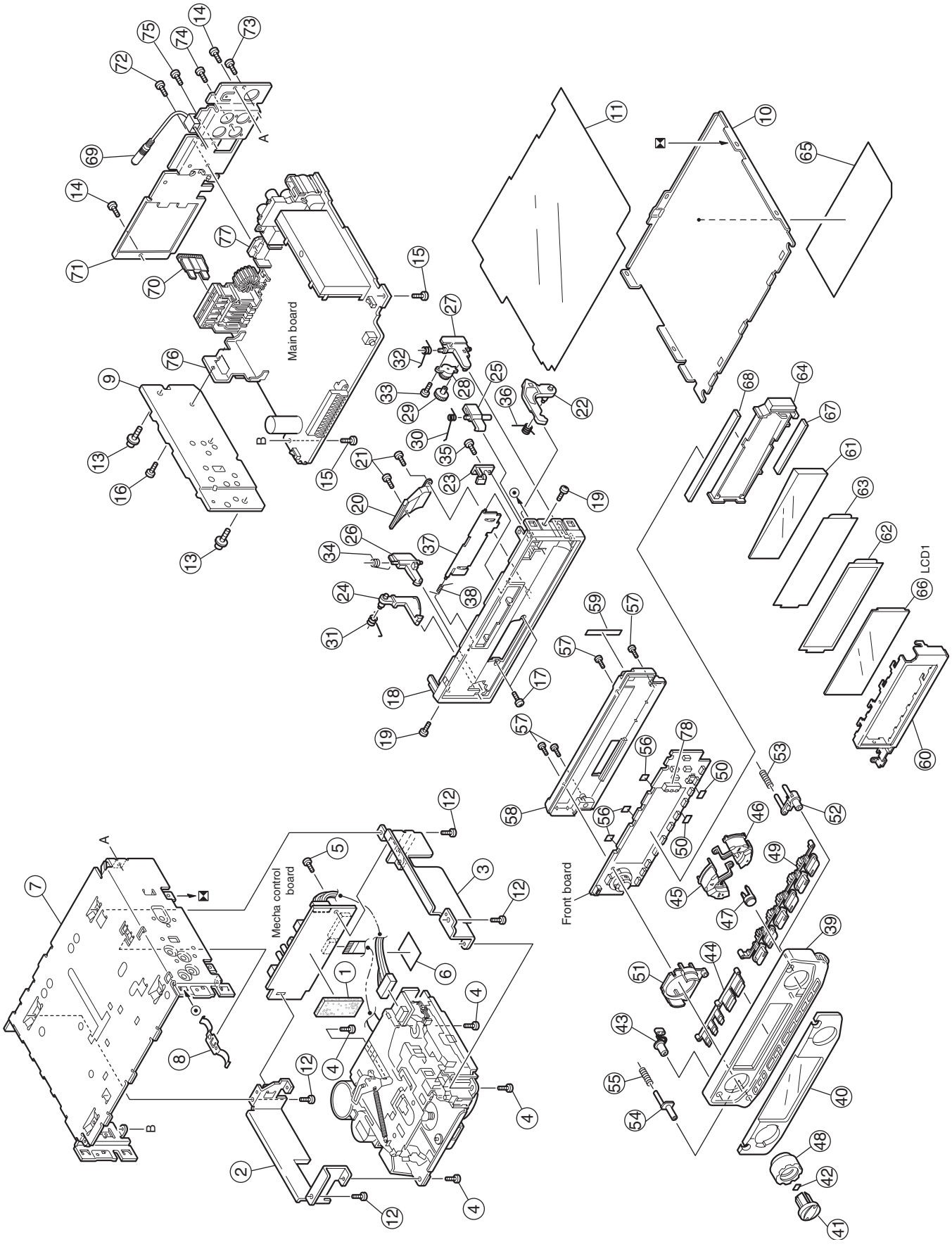
Area suffix

E---------- Continental Europe

- Contents -

Exploded view of general assmbly and parts list

Block No. M 1 M M



General assembly

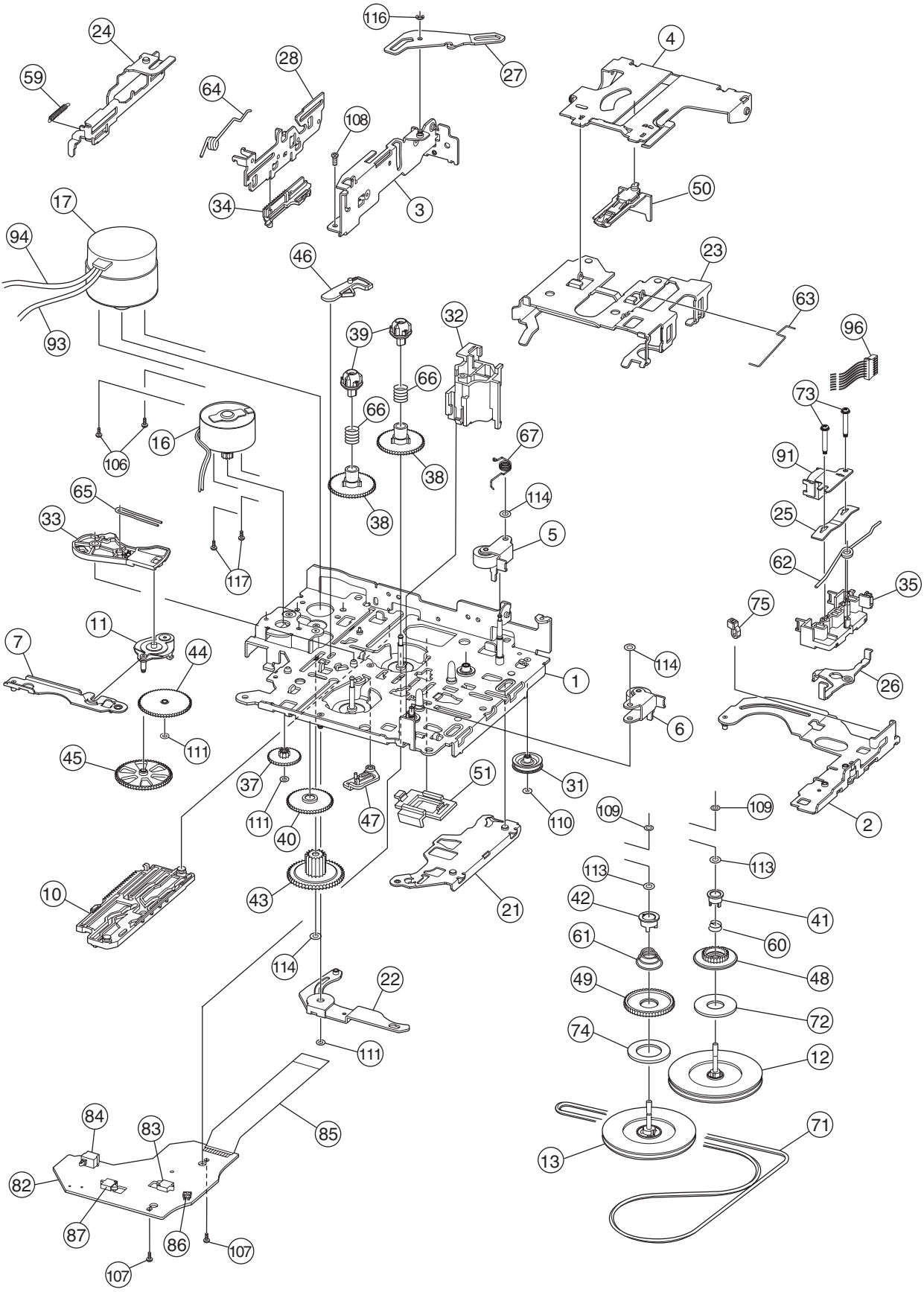
Block No. [M][1][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	FSYH4036-050	SPECER		
2	GE20136-001A	MECHA BKT(L)		
3	FSKL2002-002	MECHA BKT(R)		
4	QYSDST2606Z	SCREW	2.6mm x 6mm(x4)	
5	QYSDST2606Z	SCREW	2.6mm x 6mm	
6	LV40847-002A	SPECER		
7	GE10043-011A	TOP CHASIS		
8	GE40135-001A	EARTH PLATE		
9	GE30938-003A	SIDE PANEL		
10	GE30393-001A	BOTTOM COVER		
11	FSMA3005-001	INSULATOR		
12	QYSDST2604Z	SCREW	2.6mm x 4mm(x4)	
13	FSKZ4005-001	SCREW	(x2)	
14	QYSDST2604Z	SCREW	2.6mm x 4mm(x2)	
15	QYSDST2606Z	SCREW	2.6mm x 6mm(x2)	
16	QYSDST2610Z	SCREW	2.6mm x 10mm	
17	QYSDSF2006M	SCREW	2mm x 6mm(x2)	
18	GE10064-002A	FRONT CHASSIS		
19	QYSDST2004M	MINI SCREW	2mm x 4mm(x2)	
20	VJK3707-001	LIGHT LENS		
21	QYSPSGU1745N	MINI SCREW	1.7mm x 4.5mm(x2)	
22	GE30378-002A	OPEN LEVER		
23	FSKS3015-001	LOCK LEVER(O.L)		
24	VKS3798-002	RELEASE LEVER		
25	GE30379-001A	LOCK LEVER(TOP)		
26	VKS3794-003	LOCK LEVER(L)		
27	VKS3795-002	LOCK LEVER(R)		
28	VKS5563-001	GEAR		
29	VKZ4786-002	OIL DAMPER		
30	FSKW4012-001	T.SPRING		
31	GE40144-003A	T.SPRING		
32	VKW5262-001	T.SPRING		
33	QYSDSF2006M	SCREW	2mm x 6mm	
34	VKW5263-002	T.SPRING		
35	VKZ4777-001	MINI SCREW		
36	GE40164-001A	T.SPRING		
37	FSJC3014-001	CASS LID		
38	VKW4947-002	DOOR SPRING		
39	GE10044-017A	FRONT PANEL		
40	GE30855-004A	FINDER ASSY		
41	GE30840-002A	SEL BTN		
42	FSYH4036-032	SHEET		
43	GE30537-001A	POWER BUTTON		
44	GE20124-002A	D.FUNC BUTTON		
45	GE30581-006A	NAV UP BTN		
46	GE30582-001A	NAV DN BTN		
47	GE40148-002A	NAV CAP		
48	GE40132-001A	VOL KNOB		
49	GE20129-001A	PRESET BUTTON		
50	FSYH4036-069	SHEET	(x2)	
51	GE30387-003A	RIM LENS		
52	GE30538-003A	EJECT BUTTON		
53	VKW3001-330	COMP.SPRING		
54	GE30547-001A	DETACH BUTTON		
55	VKW3001-330	COMP.SPRING		
56	FSYH4036-081	SPECER	(x3)	
57	VKZ4777-001	MINI SCREW	(x4)	
58	GE10045-001A	REAR COVER		
59	FSYH4036-035	SHEET		
60	GE30389-001A	LCD CASE		
61	FSJK3028-001	LCD LENS		
62	GE40146-001A	LIGHTING SHEET		
63	FSYH4061-002	LIGHTING SHEET		
64	FSKS3013-001	LENS CASE		
65	GE30705-001A	NAME PLATE		
66	QLD0257-001	LCD1		
67	QNZ0450-001	LCD CONNECTOR		
68	QNZ0449-001	LCD CONNECTOR		
69	QAM0464-001	STEERING REMOTE		
⚠ 70	QMFZ047-150-T	FUSE	15A	
71	GE30912-001A	REAR BRAKET		
72	QYSDST2606Z	SCREW	2.6mm x 6mm	
73	QYSDST2606Z	SCREW	2.6mm x 6mm	
74	QYSDSF2606Z	SCREW	2.6mm x 6mm	
75	QYSDST2606Z	SCREW	2.6mm x 6mm	
76	GE40172-002A	IC BRACKET		
77	GE40124-001A	REG BRACKET		
78	FSKS3017-002	LED HOLDER		

Cassette mechanism assembly and parts list

CDS-802JE3

Block No. M P M M

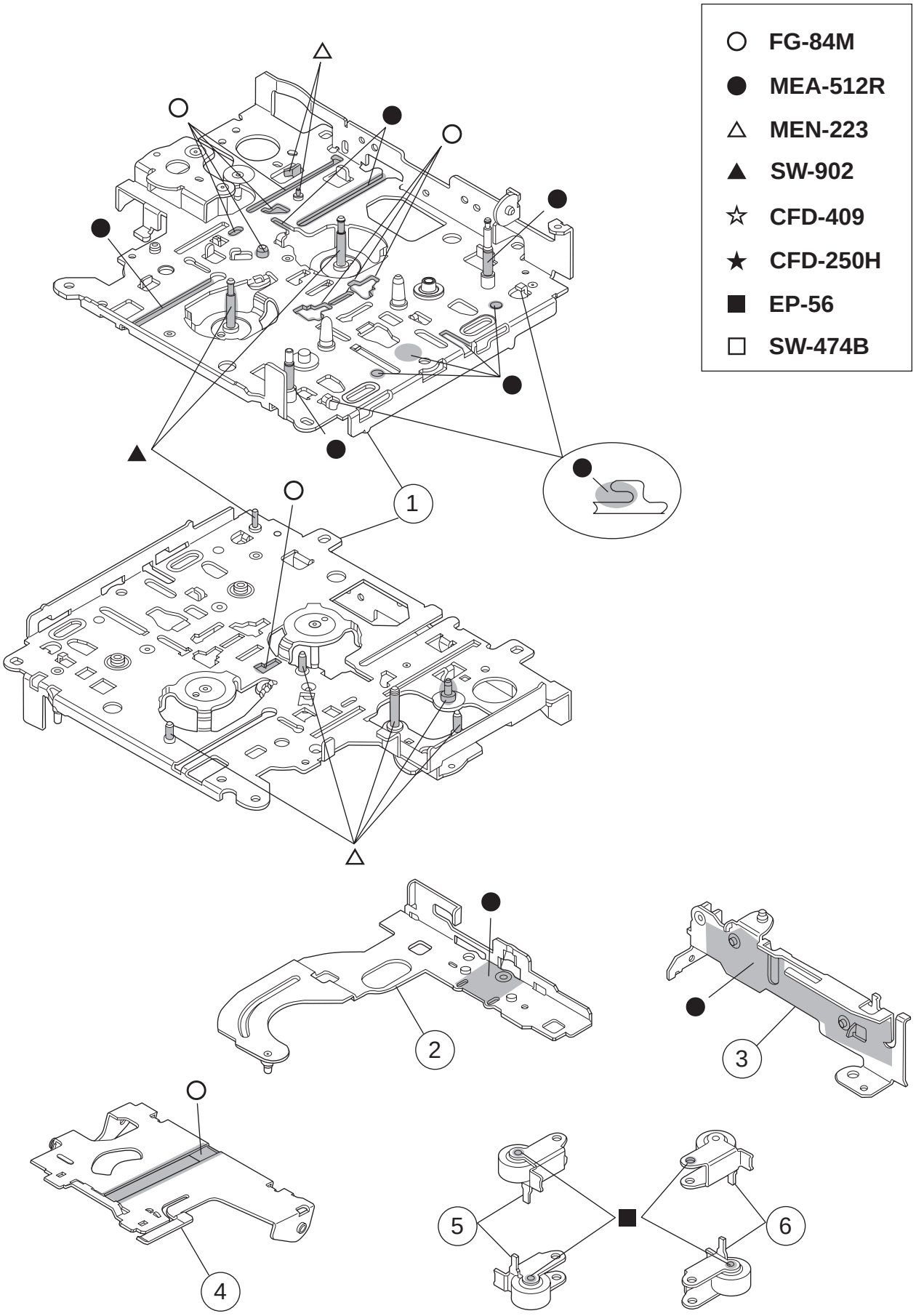


Cassette mechanism

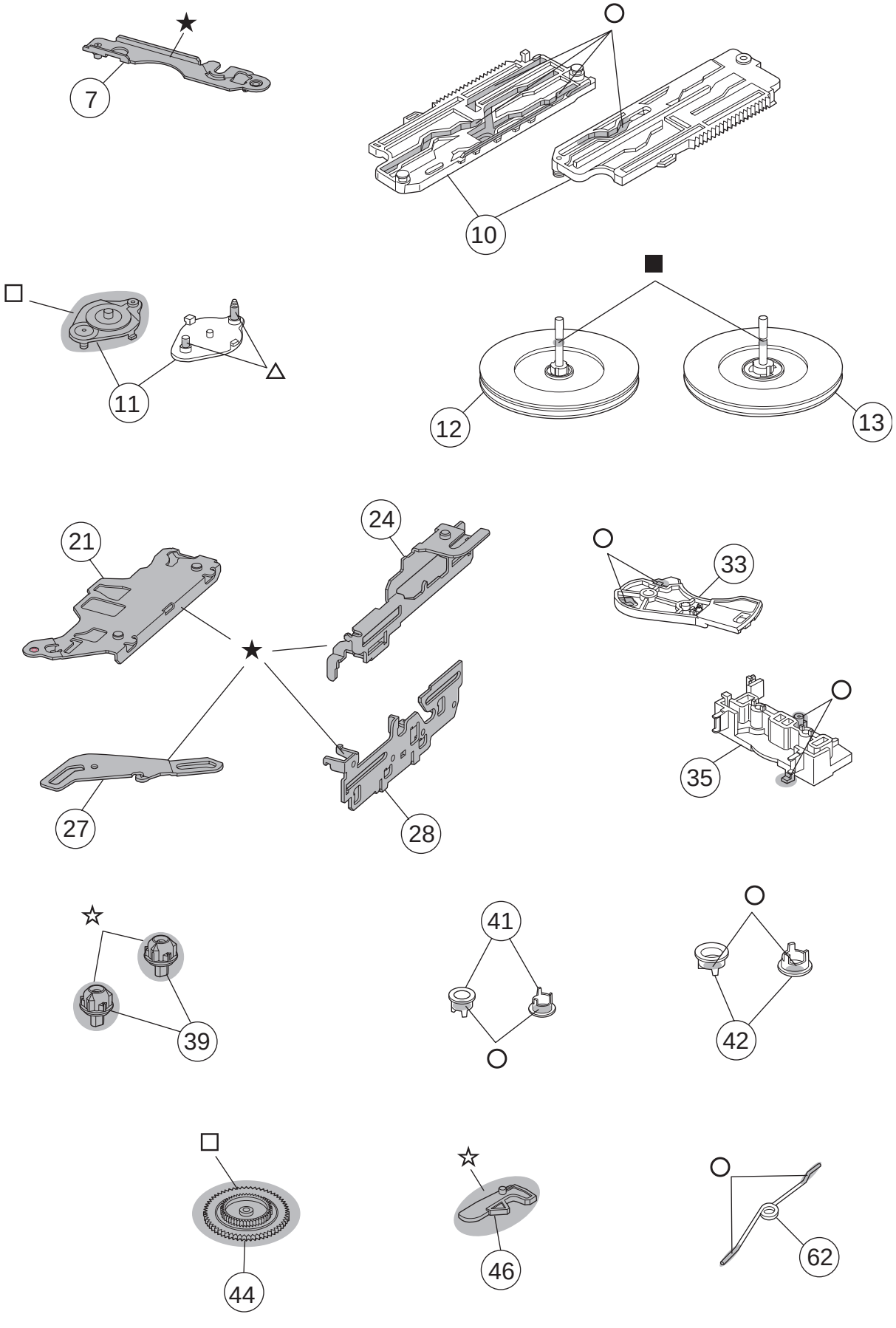
Block No. [M][P][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	X-0802-1009S	MAIN CHASSIS AS		
2	X-0802-1002S	SLIDE CHASSIS A		
3	X-0802-1003S	SIDE BKT ASSY		
4	X-0802-1004S	CASSETTE HANGER		
5	X-0802-1005S	PINCH ARM F ASS		
6	X-0802-1006S	PINCH ARM R ASS		
7	X-0802-1007S	GEARBASE LINK A		
10	X-0802-2001S	MODE RACK ASSY		
11	X-0802-2002S	GEAR BASE ASSY		
12	1-0802-6001S	FLYWHEEL ASSY F		
13	1-0802-6002S	FLYWHEEL ASSY R		
16	X-0802-7002S	SUB MOTOR ASSY		
17	X-0802-7004S	MAIN MOTOR ASSY		
21	1-0802-1002S	DIRECTION PLATE		
22	1-0802-1005S	DIRECTION LINK		
23	1-0802-1006S	CASSETTE HOLDER		
24	1-0802-1011S	EJECT CAM LIMIT		
25	1-0802-1012S	HEAD SUPT SPG		
26	1-0802-1013S	PINCH SPG ARM		
27	1-0802-1014S	LOAD ARM		
28	1-0802-1015S	EJECT CAM PLATE		
31	1-0101-2056S	IDLE PULLEY(A1)		
32	1-0802-2001S	CASSETTE GUIDE		
33	1-0802-2004S	GEAR BASE ARM		
34	1-0802-2006S	LOAD RACK		
35	1-0802-2007S	TAPE GUIDE		
37	1-0802-2009S	REDUCTION GEARA		
38	1-0802-2010S	REEL SPINDLE	(x2)	
39	1-0802-2011S	REEL DRIVER	(x2)	
40	1-0802-2012S	REDUCTION GEARB		
41	1-0802-2013S	SPG HOLDER F		
42	1-0802-2014S	SPG HOLDER R		
43	1-0802-2015S	MODE GEAR		
44	1-0802-2016S	TAKE UP GEAR		
45	1-0802-2017S	REFLECTOR GEAR		
46	1-0802-2018S	RACK LINK		
47	1-0802-2019S	MODE SW ACTUATR		
48	1-0802-2020S	FRICTION GEARPL		
49	1-0802-2021S	FRICTION GEARFF		
50	1-0802-2022S	CASSETTE CATCH		
51	1-0802-2026S	FFC PAD		
59	1-0802-4001S	EJECT CAM PL SP		
60	1-0802-4002S	TU SPG		
61	1-0802-4003S	FF SPG		
62	1-0802-4004S	PINCH ARM SPG		
63	1-0802-4005S	HOLDER STAB SPG		
64	1-0802-4006S	HOLDER CUSH SPG		
65	1-0802-4007S	GEAR BASE SPG		
66	1-0802-4008S	REEL DRIVER SPG	(x2)	
67	1-0802-4013S	COMPULSION SPG		
71	1-0802-5001S	BELT		
72	1-0802-5002S	FELT 7.5*18.5*1		
73	1-0802-5003S	AZIMUTH SCREW	(x2)	
74	1-0802-5004S	FELT 11*18.5*1		
75	1-0050-5023S	WTRE CLAMPER		
82	1-0802-7001S	REEL PCB DL		
83	1-0802-7010S	SW(MATSUCHITA ESE22)		
84	1-0802-7003S	SW(MICMPU11750)		
85	1-0802-7016S	FLAT CABLE 10P		
86	1-0801-7024S	PHOTO SENSOR		
87	1-0802-7009S	SW(MICMPU12370)		
91	1-0802-7007S	HEAD(MITSUMI P-5344)		
93	1-0801-7009-0S	M.MOTOR WIRE B		
94	1-0801-7009-1S	M.MOTOR WIRE R		
96	1-0802-7017S	JOINT WIRE ASSY		
106	2-1032-0025-C2S	SCREW	(x2)	
107	2-13S2-0025-P2S	+PLAIN SCR M2	(x2)	
108	2-1112-6035-C2S	+PLAIN SCR M2.6		
109	2-1816-0032-E8S	MYLAR WASHER(S)	(x2)	
110	2-1812-0032-D2S	PSW-S 1.2		
111	1-0036-5024S	PSW(REEL)	(x3)	
113	2-1821-0040-D1S	POLY WASHER	(x2)	
114	2-1821-0040-D2S	PSW-S 2.1	(x3)	
116	2-1711-5040-16S	E RING		
117	2-1031-7030-C2S	SCREW	(x2)	

Grease point 1/2



Grease point 2/2



Electrical parts list

Main board

Block No. [0][1][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC31	TB2118F-X	PLL IC	PLL	
IC71	SAA6579T-X	IC	RDS detecter	
IC161	TEA6320T-X	IC	E.volume	
IC301	LA47505	IC	Power amp.	
IC701	UPD784215AGC208			
IC702	IC-PST600M/G/-W	IC		
IC771	BR24L16F-W-X	IC	EEPROM	
IC801	HD74HC126FP-X	IC	Buffer	
IC901	HA13164A	IC	Regulator	
Q1	UN2211-X	TRANSISTOR		
Q2	2SD601A/R/-X	TRANSISTOR		
Q3	UN2111-X	TRANSISTOR		
Q5	2SB709A/R/-X	TRANSISTOR		
Q6	2SB624/4/-X	TRANSISTOR		
Q7	UN2211-X	TRANSISTOR		
Q8	UN2211-X	TRANSISTOR		
Q31	UN2211-X	TRANSISTOR		
Q51	2SC2412K/R/-X	TRANSISTOR		
Q52	2SC2412K/R/-X	TRANSISTOR		
Q53	UN2211-X	TRANSISTOR		
Q81	2SD601A/R/-X	TRANSISTOR		
Q84	UN2111-X	TRANSISTOR		
Q91	2SD601A/R/-X	TRANSISTOR		
Q241	2SD601A/R/-X	TRANSISTOR		
Q321	2SD1781K/QR/-X	TRANSISTOR		
Q331	2SD1781K/QR/-X	TRANSISTOR		
Q341	2SD1781K/QR/-X	TRANSISTOR		
Q351	2SD1781K/QR/-X	TRANSISTOR		
Q701	2SC2412K/R/-X	TRANSISTOR		
Q781	UN2111-X	TRANSISTOR		
Q782	UN2211-X	TRANSISTOR		
Q784	UN2111-X	TRANSISTOR		
Q841	UN2211-X	TRANSISTOR		
Q881	UN2211-X	TRANSISTOR		
Q891	UN2211-X	TRANSISTOR		
Q901	UN2211-X	TRANSISTOR		
Q902	2SA1855/RST/-T	TRANSISTOR		
Q976	UN2211-X	TRANSISTOR		
Q977	2SA1037AK/RS/-X	TRANSISTOR		
D1	1SS355-X	SI DIODE		
D2	1SS355-X	SI DIODE		
D4	1SS355-X	SI DIODE		
D5	1SS355-X	SI DIODE		
D84	1SS355-X	SI DIODE		
D161	1SS355-X	SI DIODE		
D162	1SS355-X	SI DIODE		
D241	1SS355-X	SI DIODE		
D242	RB160M-30-X	SB DIODE		
D323	1SS355-X	SI DIODE		
D333	1SS355-X	SI DIODE		
D343	1SS355-X	SI DIODE		
D353	1SS355-X	SI DIODE		
D701	UDZS6.2B-X	Z DIODE		
D702	UDZS6.2B-X	Z DIODE		
D703	UDZS6.2B-X	Z DIODE		
D704	UDZS6.2B-X	Z DIODE		
D705	UDZS6.2B-X	Z DIODE		
D706	UDZS6.2B-X	Z DIODE		
D707	UDZS6.2B-X	Z DIODE		
D708	UDZS6.2B-X	Z DIODE		
D709	UDZS6.2B-X	Z DIODE		
D710	1SS355-X	SI DIODE		
D713	UDZS5.6B-X	Z DIODE	1.5kΩ 1/10W J	
D714	UDZS5.6B-X	Z DIODE	1.5kΩ 1/10W J	
D718	SLR-56MC3F	LED		
D781	1SS355-X	SI DIODE		
D782	1SS355-X	SI DIODE		
D783	UDZS11B-X	Z DIODE		
D891	1SS355-X	SI DIODE		
D892	1SS355-X	SI DIODE		

⚠ Symbol No.	Part No.	Part Name	Description	Local
D901	1N5401-F64	DIODE		
D902	1SS355-X	SI DIODE		
D903	1SS355-X	SI DIODE		
D981	RB160M-30-X	SB DIODE		
D982	RB160M-30-X	SB DIODE		
C1	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C2	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C3	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C4	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C5	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C6	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C8	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C9	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C31	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C32	NCS31HJ-470X	C CAPACITOR	47pF 50V J	
C33	QERF0JM-476Z	E CAPACITOR	47uF 6.3V M	
C34	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C35	NDC31HJ-100X	C CAPACITOR	10pF 50V J	
C36	NDC31HJ-7R0X	C CAPACITOR	7pF 50V J	
C37	NDC31HJ-100X	C CAPACITOR	10pF 50V J	
C38	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C39	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C40	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C41	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C42	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C43	QFV61HJ-473Z	MF CAPACITOR	0.047uF 50V J	
C44	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C45	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C46	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C47	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C48	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C49	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C50	NCS31HJ-101X	C CAPACITOR	100pF 50V J	
C51	NCS31HJ-331X	C CAPACITOR	330pF 50V J	
C52	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C53	NCB31EK-472X	C CAPACITOR	4700pF 25V K	
C54	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C55	QERF1HM-474Z	E CAPACITOR	0.47uF 50V M	
C71	NCS31HJ-561X	C CAPACITOR	560pF 50V J	
C72	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C73	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C74	NDC31HJ-820X	C CAPACITOR	82pF 50V J	
C75	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C76	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C77	QERF0JM-476Z	E CAPACITOR	47uF 6.3V M	
C78	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C81	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C82	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C83	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C84	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C85	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C91	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C92	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C94	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C95	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C161	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C162	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C163	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C164	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C165	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C166	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C167	QERF1CM-476Z	E CAPACITOR	47uF 16V M	
C168	QERF1CM-107Z	E CAPACITOR	100uF 16V M	
C169	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C170	NCB21CK-184X	C CAPACITOR	0.18uF 16V K	
C171	NCB21CK-224X	C CAPACITOR	0.22uF 16V K	
C172	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C173	NCB21CK-184X	C CAPACITOR	0.18uF 16V K	
C174	NCB21CK-224X	C CAPACITOR	0.22uF 16V K	
C175	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C176	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C177	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C178	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C180	QERF1CM-107Z	E CAPACITOR	100uF 16V M	
C181	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C182	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C183	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C184	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C241	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C242	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C243	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C244	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C301	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C302	QERF1CM-476Z	E CAPACITOR	47uF 16V M	
C303	NCS31HJ-391X	C CAPACITOR	390pF 50V J	
C304	NCS31HJ-391X	C CAPACITOR	390pF 50V J	
C305	NCB21EK-224X	C CAPACITOR	0.22uF 25V K	
C306	NCB21EK-224X	C CAPACITOR	0.22uF 25V K	
C307	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C308	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C309	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C313	NCS31HJ-391X	C CAPACITOR	390pF 50V J	
C314	NCS31HJ-391X	C CAPACITOR	390pF 50V J	
C318	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C319	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C323	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C324	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C325	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C326	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C327	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C328	QERF1HM-474Z	E CAPACITOR	0.47uF 50V M	
C329	QERF1HM-474Z	E CAPACITOR	0.47uF 50V M	
C701	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C702	NDC31HJ-270X	C CAPACITOR	27pF 50V J	
C703	NDC31HJ-270X	C CAPACITOR	27pF 50V J	
C704	NDC31HJ-8R0X	C CAPACITOR	8pF 50V J	
C706	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C709	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C710	QERF0JM-476Z	E CAPACITOR	47uF 6.3V M	
C711	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C713	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C714	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C716	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C717	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C771	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C781	QERF0JM-476Z	E CAPACITOR	47uF 6.3V M	
C782	QERF1CM-107Z	E CAPACITOR	100uF 16V M	
C801	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C841	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C881	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C882	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C891	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C901	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C902	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C903	QEZ0622-338	E CAPACITOR	3300uF	
C905	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C906	QERF1CM-107Z	E CAPACITOR	100uF 16V M	
C907	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C908	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C909	QETN0JM-228Z	E CAPACITOR	2200uF 6.3V M	
C981	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C982	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
R1	NRS181J-120X	MG RESISTOR	12Ω 1/8W J	
R2	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R3	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R4	NRSA02J-332X	MG RESISTOR	3.3kΩ 1/10W J	
R5	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R6	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R7	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R8	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R9	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R31	NRS181J-100X	MG RESISTOR	10Ω 1/8W J	
R32	NRSA63J-622X	MG RESISTOR	6.2kΩ 1/16W J	
R33	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R34	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R35	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R36	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R37	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R38	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R39	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R40	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R41	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R42	NRS181J-100X	MG RESISTOR	10Ω 1/8W J	
R43	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R44	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R51	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R52	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R53	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R54	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R55	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R56	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R57	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R58	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R59	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R71	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R72	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R73	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R74	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R81	NRSA63J-912X	MG RESISTOR	9.1kΩ 1/16W J	
R82	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R83	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R85	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R91	NRSA63J-912X	MG RESISTOR	9.1kΩ 1/16W J	
R92	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R93	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R94	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R95	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R161	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R162	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R165	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R166	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R167	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R168	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R169	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R170	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R171	NRS181J-100X	MG RESISTOR	10Ω 1/8W J	
R172	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R173	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R240	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R241	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R242	NRSA63J-184X	MG RESISTOR	180kΩ 1/16W J	
R243	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R244	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R245	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R246	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R247	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R249	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R301	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R302	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R305	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R306	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R307	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R308	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R309	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R311	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R312	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R321	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R322	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R323	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R331	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R332	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R333	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R341	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R342	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R343	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R351	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R352	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R353	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R701	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R703	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R704	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R705	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R706	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R707	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R708	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J	
R709	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R710	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R711	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R713	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R714	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R717	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R718	NRSA02J-683X	MG RESISTOR	68kΩ 1/10W J	
R719	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R720	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R721	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R722	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R723	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R724	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R725	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R726	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R728	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R729	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R730	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R731	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R732	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R733	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R734	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R735	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R736	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R737	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R738	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R739	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R740	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R741	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R742	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R743	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R744	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R745	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R746	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R747	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R748	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R749	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R750	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R751	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R753	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R754	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R755	NRSA63J-106X	MG RESISTOR	10MΩ 1/16W J	
R756	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R757	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R758	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R759	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R761	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R764	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R765	NRS181J-511X	MG RESISTOR	510Ω 1/8W J	
R771	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R772	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R783	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R801	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R802	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R803	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R804	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R805	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R806	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R807	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R808	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R809	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R810	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R841	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R881	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R882	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R891	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R892	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R901	QRE142J-470X	C RESISTOR	47Ω 1/4W J	
R902	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W J	
R903	NRSA02J-472X	MG RESISTOR	4.7kΩ 1/10W J	
R904	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R905	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R906	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R907	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R976	NRSA02J-273X	MG RESISTOR	27kΩ 1/10W J	
R977	NRSA02J-123X	MG RESISTOR	12kΩ 1/10W J	
R981	NRS181J-222X	MG RESISTOR	2.2kΩ 1/8W J	
R982	NRS181J-222X	MG RESISTOR	2.2kΩ 1/8W J	
L1	QQL244J-4R7Z	COIL	4.7uH J	
L701	QQL244K-4R7Z	COIL	4.7uH K	
L702	NQL114M-1R0X	COIL	1uH M	
L901	QQR0703-001	CHOKE COIL		

⚠ Symbol No.	Part No.	Part Name	Description	Local
BZ841	QAN0023-001Z	BUZZER		
CN701	QNZ0007-002	CAR CONNECTOR		
CN702	QGA2006F1-02	CONNECTOR	W-B (1-2)	
CN901	QNZ0112-001	CAR CONNECTOR		
CP401	QGB1214J1-18S	CONNECTOR	B-B (1-18)	
J1	QNB0100-002	CAR ANT JACK		
J321	QNN0490-001	SURROUND JACK		
J801	QNZ0095-001	CONNECTOR		
PP1	QZW0010-001	STYLE PIN		
PP2	QZW0010-001	STYLE PIN		
S701	QSW0451-001	DETECT SW		
S702	QSW0451-001	DETECT SW		
S703	QSQ1A11-V06Z	TACT SW I/M		
TU1	QAU0292-001	TUNER PAC		
X31	QAX0616-001Z	CRYSTAL	10.250MHz	
X71	QAX0263-001Z	CRYSTAL	4.332MHz	
X701	QAX0617-001Z	CRYSTAL	12.500MHz	
X702	QAX0401-001	CRYSTAL	32.768KHz	

Mecha control board

Block No. [0][2][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC401	CXA2560Q	IC	Dolby B type noise reduction system with play back equalizer amp.	
IC402	LB1641	IC	DC Motor driver	
Q402	UN2211-X	TRANSISTOR		
Q403	2SB1322/RS/-T	TRANSISTOR		
D401	MA3047/H/-X	Z DIODE		
D402	1A3G-T1	SI DIODE		
C401	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C402	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C403	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C404	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C405	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C406	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C407	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C408	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C409	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C410	QFV61HJ-153Z	MF CAPACITOR	0.015uF 50V J	
C411	QFV61HJ-153Z	MF CAPACITOR	0.015uF 50V J	
C412	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C413	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C414	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C415	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C416	QFVD1HJ-104Z	MF CAPACITOR	0.1uF 50V J	
C417	QFVD1HJ-104Z	MF CAPACITOR	0.1uF 50V J	
C418	NDC31HJ-221X	C CAPACITOR	220pF 50V J	
C419	QEKJ1HM-474Z	E CAPACITOR	0.47uF 50V M	
C421	NCB31HK-183X	C CAPACITOR	0.018uF 50V K	
C422	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C423	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C424	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C425	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
R401	NRS181J-681X	MG RESISTOR	680Ω 1/8W J	
R402	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R403	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R404	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R405	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R406	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J	
R407	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J	
R412	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R413	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R414	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R415	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R416	NRSA63J-155X	MG RESISTOR	1.5MΩ 1/16W J	
R417	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R418	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R422	NRSA02J-332X	MG RESISTOR	3.3kΩ 1/10W J	
R423	NRS181J-473X	MG RESISTOR	47kΩ 1/8W J	
R424	NRSA02J-332X	MG RESISTOR	3.3kΩ 1/10W J	
R425	NRS181J-330X	MG RESISTOR	33Ω 1/8W J	
VR401	QVP0009-333Z	TRIM RESISTOR	33kΩ	
VR402	QVP0009-333Z	TRIM RESISTOR	33kΩ	
CN401	QGB1214K1-18S	CONNECTOR	B-B (1-18)	
CN402	QGA2001C1-06	CONNECTOR	W-B (1-6)	
CN403	QGF1219F1-10S	CONNECTOR	FFC/FPC (1-10)	
OT1	FSMW1093-101XSS	PW BOARD		

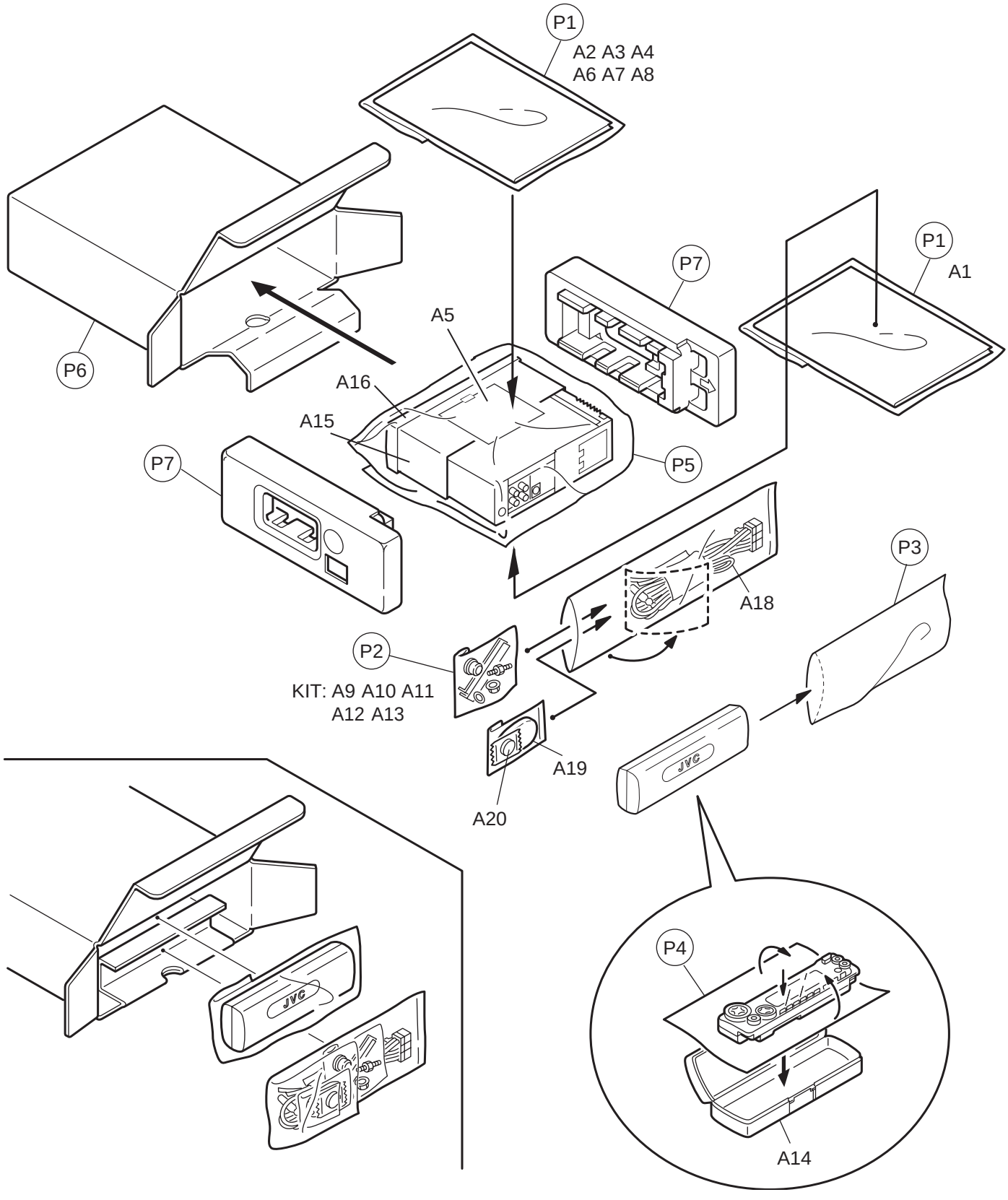
Front board

Block No. [0][3][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC601	LC75873NW	IC	LCD Driver	
IC602	GP1UM261XK	IR DETECT UNIT	Receiver	
Q641	2SB624/4/-X	TRANSISTOR		
Q642	UN2211-X	TRANSISTOR		
D601	SML-310LT/MN/-X	LED		
D602	SML-310VT/JK/-X	LED		
D603	SML-310VT/JK/-X	LED		
D604	SML-310VT/JK/-X	LED		
D605	SML-310VT/JK/-X	LED		
D606	SML-310VT/JK/-X	LED		
D607	SML-310VT/JK/-X	LED		
D608	SML-310VT/JK/-X	LED		
D609	SML-310VT/JK/-X	LED		
D610	CL-190UB-X-X	BLUE LED		
D611	CL-190UB-X-X	BLUE LED		
D612	SML-310VT/JK/-X	LED		
D613	SML-310VT/JK/-X	LED		
D614	SML-310VT/JK/-X	LED		
D615	SML-310VT/JK/-X	LED		
D616	SML-310VT/JK/-X	LED		
D617	SML-310VT/JK/-X	LED		
D618	SML-310VT/JK/-X	LED		
D619	SML-310VT/JK/-X	LED		
D620	SML-310VT/JK/-X	LED		
D621	SML-310VT/JK/-X	LED		
D622	SML-310VT/JK/-X	LED		
D623	SML-310VT/JK/-X	LED		
D624	SML-310VT/JK/-X	LED		
D625	SML-310VT/JK/-X	LED		
D641	NSPW310BS/BRS/	LED		
D642	NSPW310BS/BRS/	LED		
D643	NSPW310BS/BRS/	LED		
D651	UDZS5.1B-X	Z DIODE		
D652	1SS355-X	SI DIODE		
D653	1SS355-X	SI DIODE		
D654	1SS355-X	SI DIODE		
D655	1SS355-X	SI DIODE		
D656	1SS355-X	SI DIODE		
D657	1SS355-X	SI DIODE		
D658	1SS355-X	SI DIODE		
D659	UDZS5.6B-X	Z DIODE	1.5kΩ 1/10W J	
C601	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C602	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C603	NDC31HJ-221X	C CAPACITOR	220pF 50V J	
C604	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C605	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C606	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
R601	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R602	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R603	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R604	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R605	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R606	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R607	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R608	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R609	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R610	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R611	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R612	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R613	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R614	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R620	NRS181J-821X	MG RESISTOR	820Ω 1/8W J	
R621	NRSA02J-202X	MG RESISTOR	2kΩ 1/10W J	
R622	NRSA02J-202X	MG RESISTOR	2kΩ 1/10W J	
R623	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R624	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R625	NRSA02J-202X	MG RESISTOR	2kΩ 1/10W J	
R626	NRSA02J-202X	MG RESISTOR	2kΩ 1/10W J	
R627	NRSA02J-511X	MG RESISTOR	510Ω 1/10W J	
R628	NRSA02J-511X	MG RESISTOR	510Ω 1/10W J	
R629	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R630	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R631	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R632	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R633	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R634	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R635	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R636	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R637	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R638	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R639	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R640	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R641	NRS181J-431X	MG RESISTOR	430Ω 1/8W J	
R642	NRS181J-431X	MG RESISTOR	430Ω 1/8W J	
R643	NRS181J-431X	MG RESISTOR	430Ω 1/8W J	
R644	NRS181J-471X	MG RESISTOR	470Ω 1/8W J	
R645	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R646	NRS181J-102X	MG RESISTOR	1kΩ 1/8W J	
R650	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R651	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R652	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R653	NRS181J-102X	MG RESISTOR	1kΩ 1/8W J	
R654	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R655	NRSA63J-394X	MG RESISTOR	390kΩ 1/16W J	
R656	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R657	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R658	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R659	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R660	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R661	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R662	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R663	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R664	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
CN601	QNZ0006-001	CAR CONNECTOR		
EN601	QSW0863-002	ROTARY ENCODER		
S601	NSW0124-001X	TACT SW		
S602	NSW0124-001X	TACT SW		
S603	NSW0124-001X	TACT SW		
S604	NSW0124-001X	TACT SW		
S605	NSW0124-001X	TACT SW		
S606	NSW0124-001X	TACT SW		
S607	NSW0124-001X	TACT SW		
S608	NSW0124-001X	TACT SW		
S609	NSW0124-001X	TACT SW		
S610	NSW0124-001X	TACT SW		
S611	NSW0124-001X	TACT SW		
S612	NSW0124-001X	TACT SW		
S613	NSW0124-001X	TACT SW		
S614	NSW0124-001X	TACT SW		
S615	NSW0124-001X	TACT SW		
S616	NSW0124-001X	TACT SW		
S617	NSW0124-001X	TACT SW		

Packing materials and accessories parts list

Block No. M 3 M M



Packing and accessories

Block No. [M][3][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
A 1	GET0127-001A	INST BOOK	ENG,GER,FRE,DUT	
A 2	GET0127-002A	INST BOOK	RUS,SPA,ITA,POL	
A 3	GET0127-003A	INSTALL MANUAL	ENG,GER,FRE,DUT	
A 4	GET0127-004A	INSTALL MANUAL	RUS,SPA,ITA,POL	
A 5	LV40978-001A	CAUTION SHEET		
A 6	BT-54013-6	WARRANTY CARD		
A 7	VND3050-002	IDENTITY CARD		
A 8	VND3046-001	SERIAL TICKET		
A 9	VKZ4027-202	PLUG NUT		
A 10	VKH4871-001SS	MOUNT BOLT		
A 11	VKZ4328-001	LOCK NUT		
A 12	WNS5000Z	WASHER		
A 13	GE40130-001A	HOOK	(x2)	
A 14	FSJB3001-30C	HARD CASE		
A 15	GE20137-003A	MOUNTING SLEEVE		
A 16	GE20149-007A	TRIM PLATE		
A 18	QAM0176-002	POWER CORD		
A 19	RM-RK50	REMOCON UNIT		
A 20	----------	BATTERY		
KIT	KSFX480K-SCREW1	SCREW PARTS KIT	A9 to A13	
P 1	FSPG4002-001	POLY BAG	(x2)	
P 2	QPA00801205	POLY BAG	8cm x 12cm	
P 3	QPA01003003	POLY BAG	10cm x 30cm	
P 4	FSYH4036-068	SHEET		
P 5	QPC03004315P	POLY BAG	30cm x 43cm	
P 6	GE30706-001A	CARTON		
P 7	GE10070-001A	EPS CUSHION		