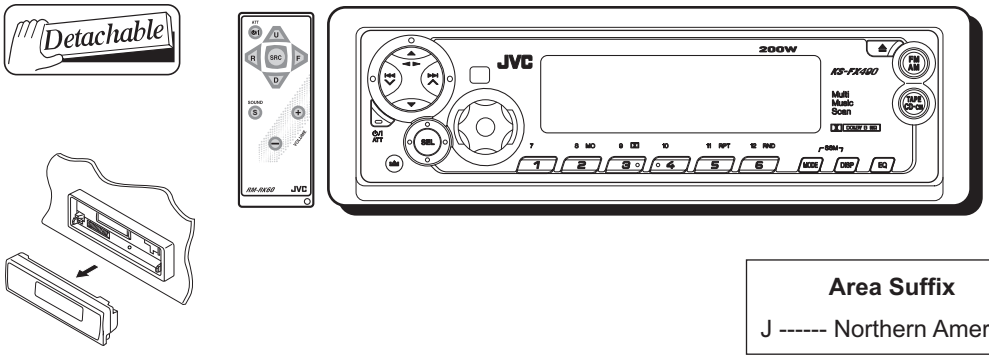
JVC

SERVICE MANUAL

CASSETTE RECEIVER

KS-FX490



Area Suffix

J ------ Northern America

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No.49845
2003/5

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	±9 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)
TUNER SECTION	Frequency Range	FM	87.5 MHz to 107.9 MHz
		AM	530 kHz to 1 710 kHz
	[FM Tuner]		
	Usable Sensitivity		11.3 dBf (1.0 μV/75 Ω)
	50 dB Quieting Sensitivity		16.3 dBf (1.8 μV/75 Ω)
	Alternate Channel Selectivity (400 kHz)		65 dB
	Frequency Response		40 Hz to 15 000 Hz
	Stereo Separation		35 dB
	Capture Ratio		1.5 dB
	[AM Tuner]		
	Sensitivity		20 μV
	Selectivity		35 dB
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 (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		0°C to +40°C (32°F to +104°F)
	Dimensions (W × H × D)	Installation Size	182 mm x 52 mm x 150 mm (7-3/16" x 2-1/16" x 5-15/16")
		Panel Size	188 mm x 58 mm x 12 mm (7-7/16" x 2-5/16" x 1/2")
		Mass	1.3 kg (2.9 lbs) (excluding accessories)

Design and specifications are subject to change without notice.

SECTION 1
Precautions

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
Disassembly method

2.1 Main body

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

(1) Push the detach button in the lower left part of the front panel assembly and remove the front panel assembly in the direction of the arrow.

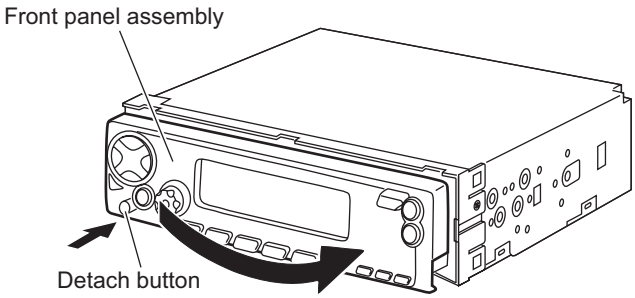


Fig.1

2.1.2 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.

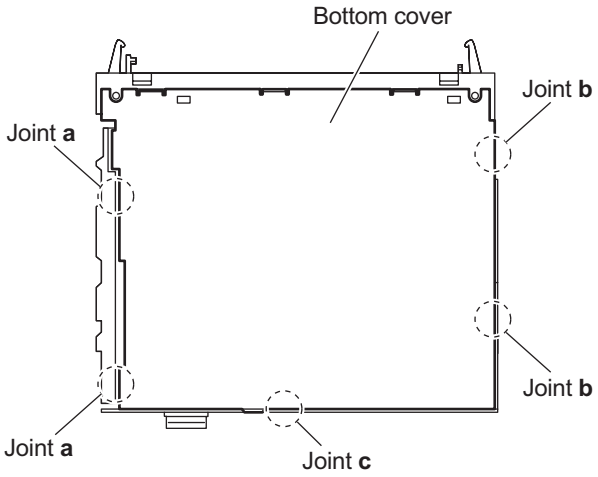


Fig.2

2.1.3 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.)

(1) 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.)

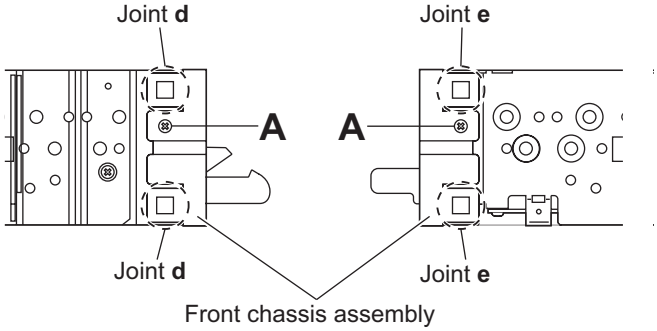


Fig.3

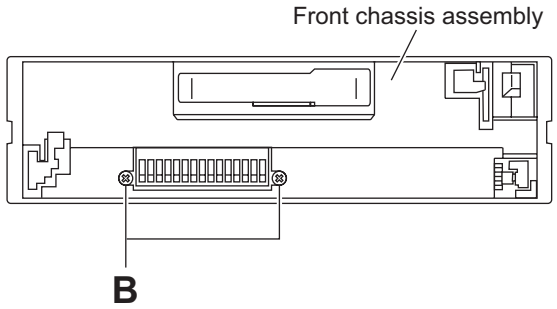


Fig.4

2.1.4 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.

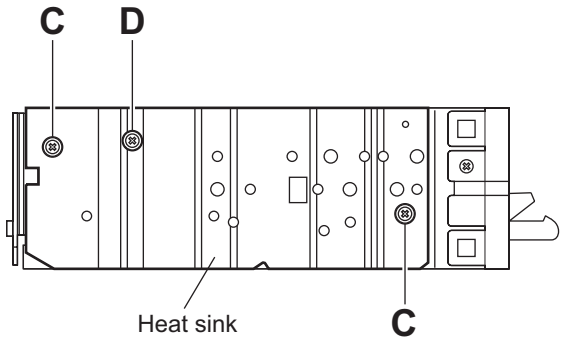


Fig.5

2.1.5 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**, three screws **F** and three screws **G** attaching the rear panel on the back side of the main body.

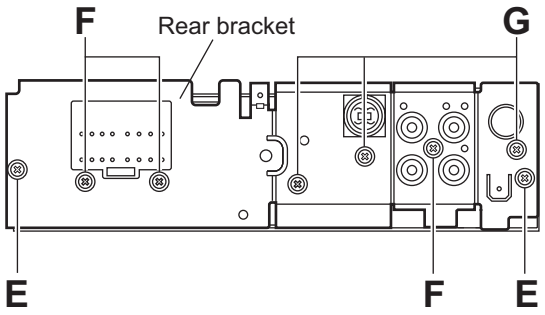


Fig.6

2.1.6 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.

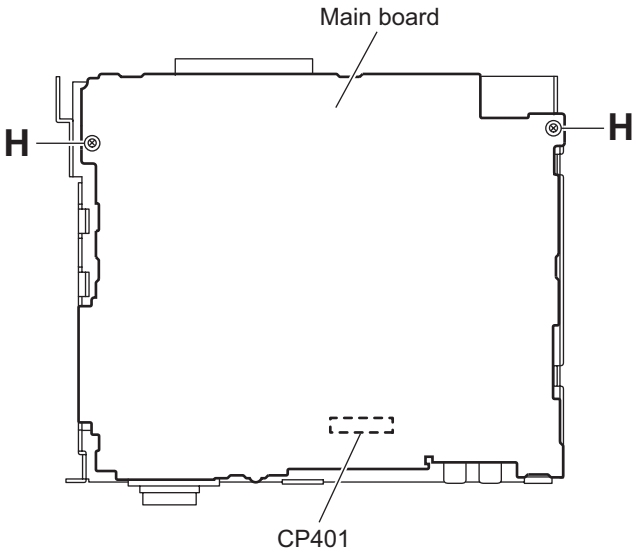


Fig.7

2.1.7 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.

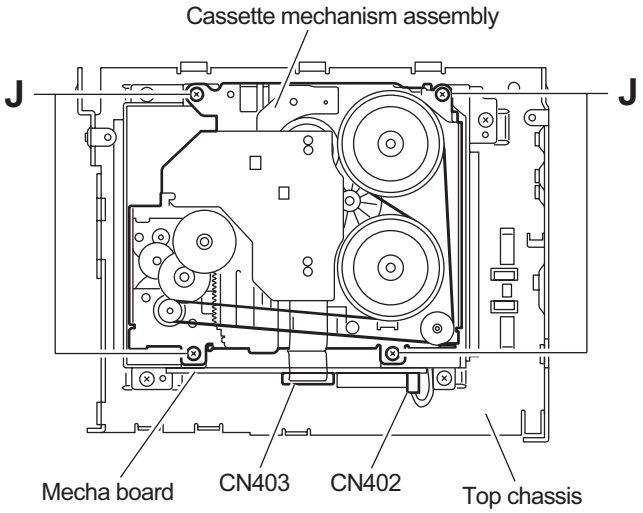


Fig.8

2.1.8 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.

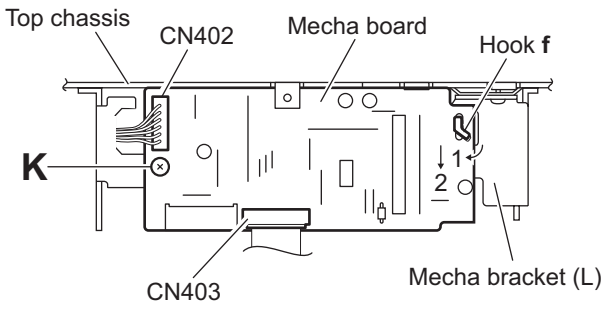


Fig.9

2.1.9 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.)

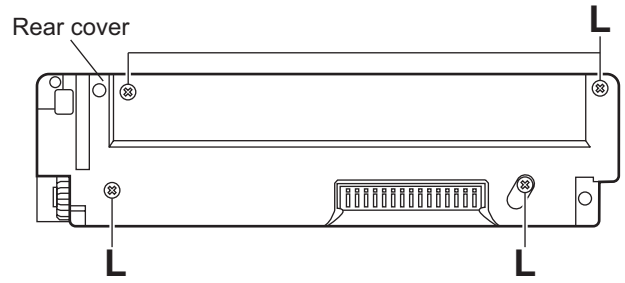


Fig.10

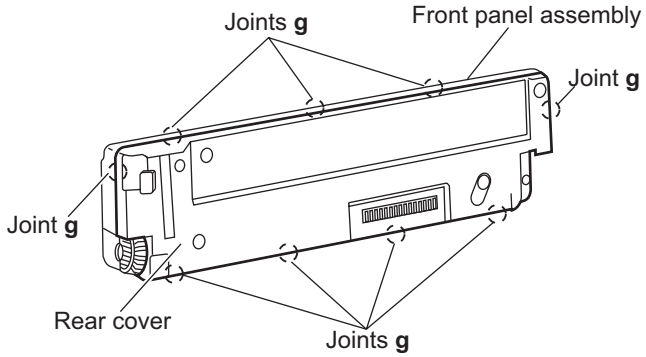


Fig.11

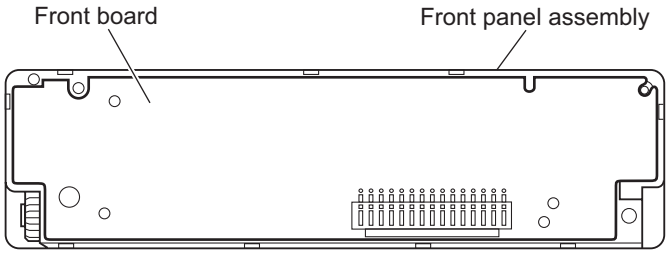


Fig.12

2.2 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).

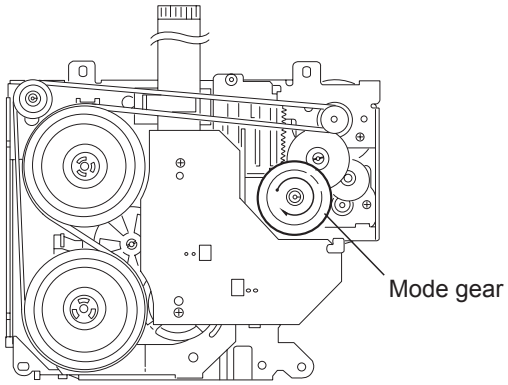


Fig.1

2.2.1 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.

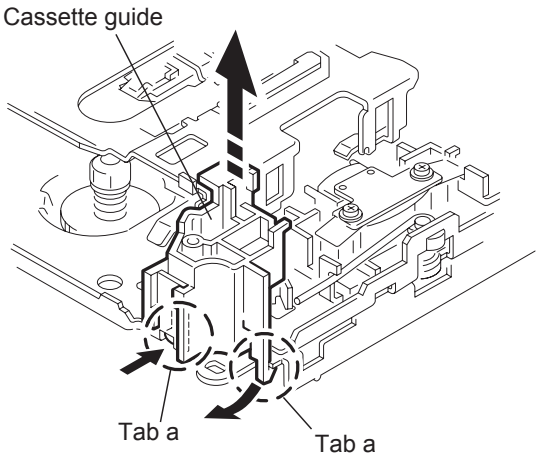


Fig.2

2.2.2 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.

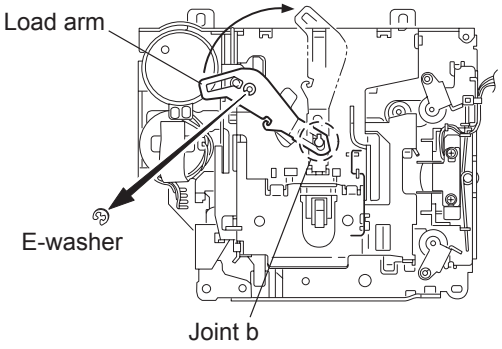


Fig.3

2.2.3 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.

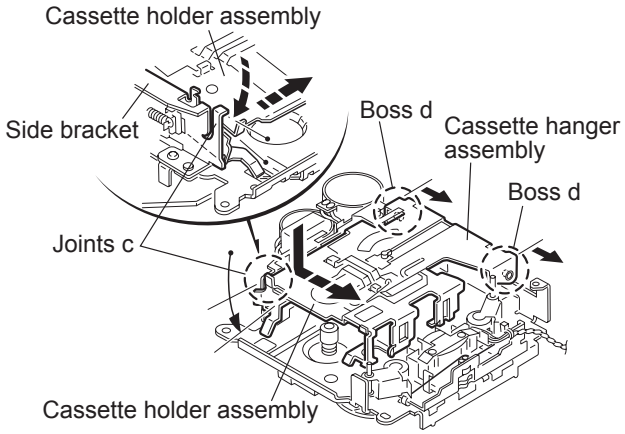


Fig.4

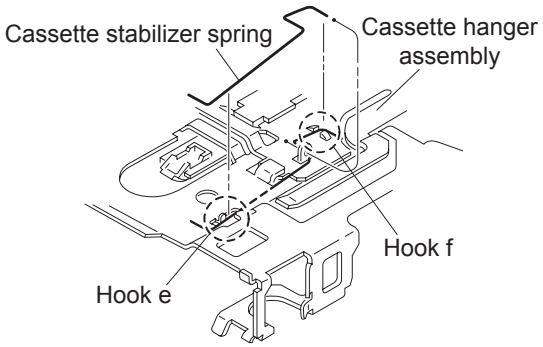


Fig.5

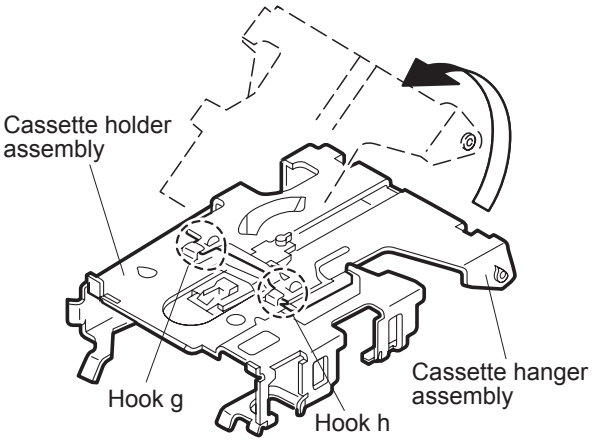


Fig.6

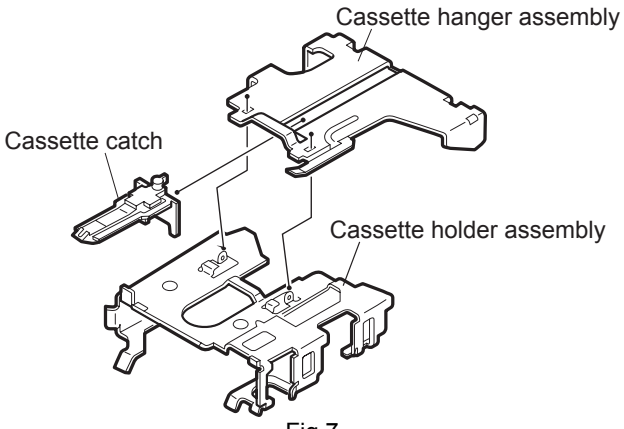


Fig.7

2.2.4 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.

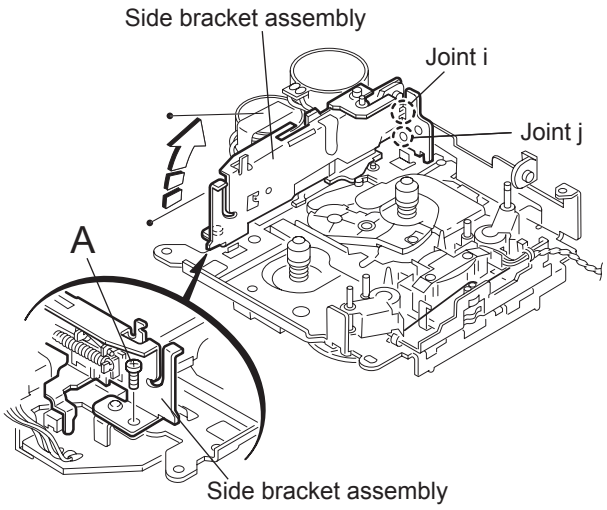


Fig.8

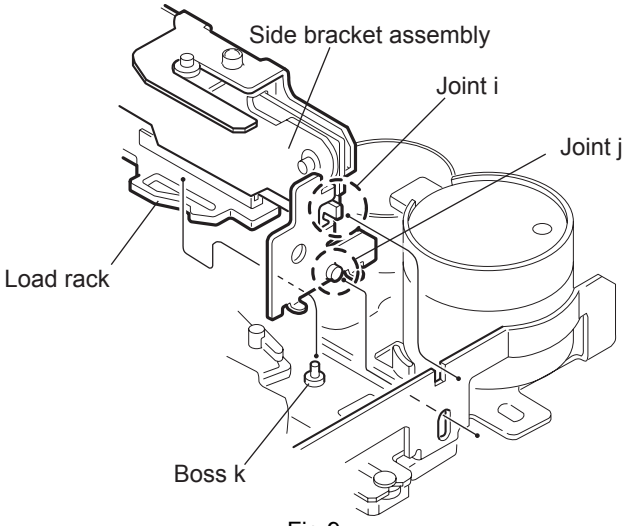


Fig.9

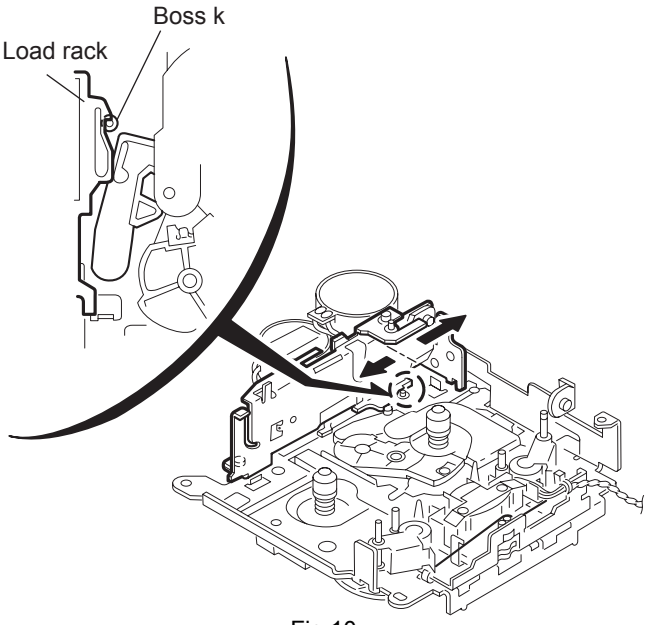


Fig.10

2.2.5 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.

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

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

2.2.7 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**.

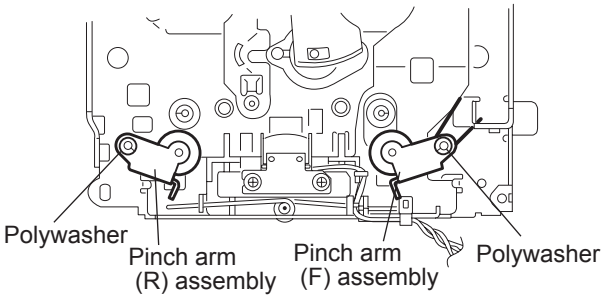


Fig.11

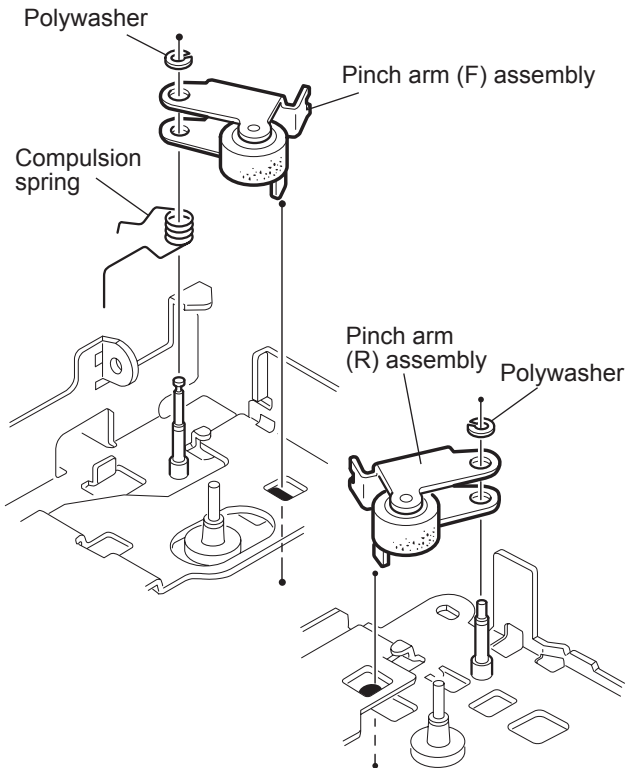


Fig.12

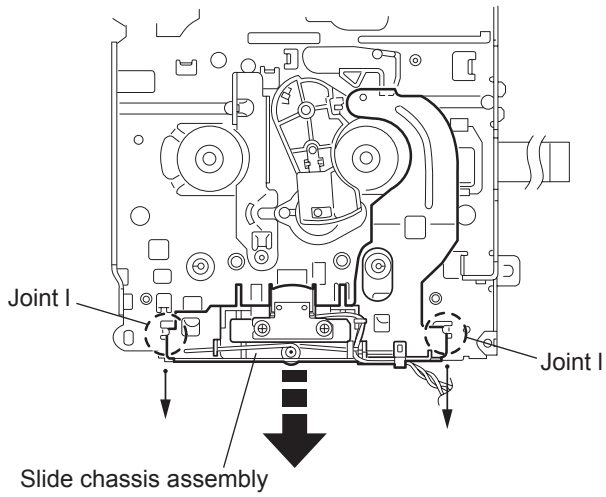


Fig.13

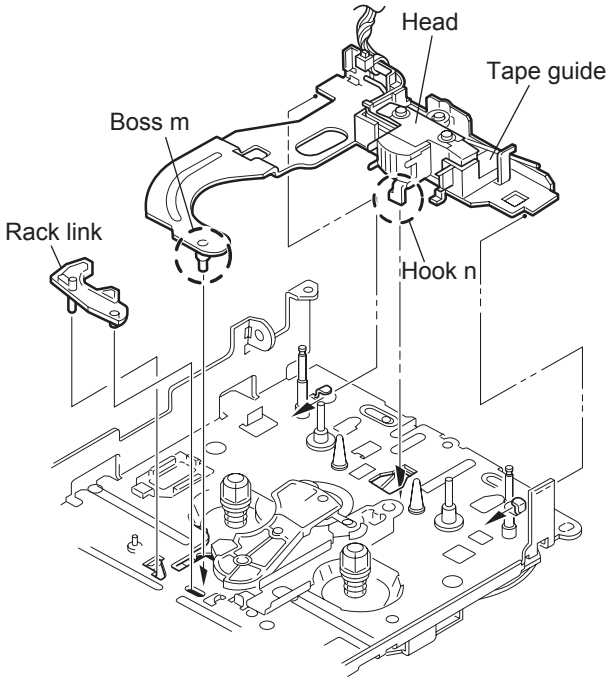


Fig.14

2.2.8 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).

2.2.9 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.

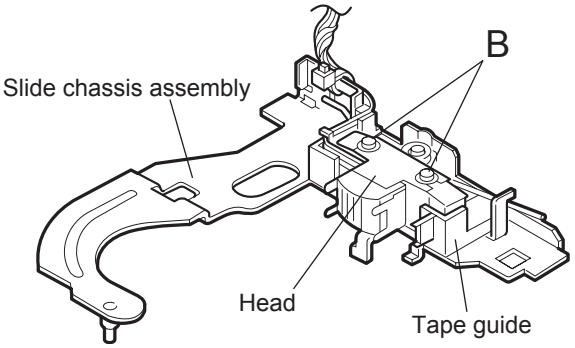


Fig.15

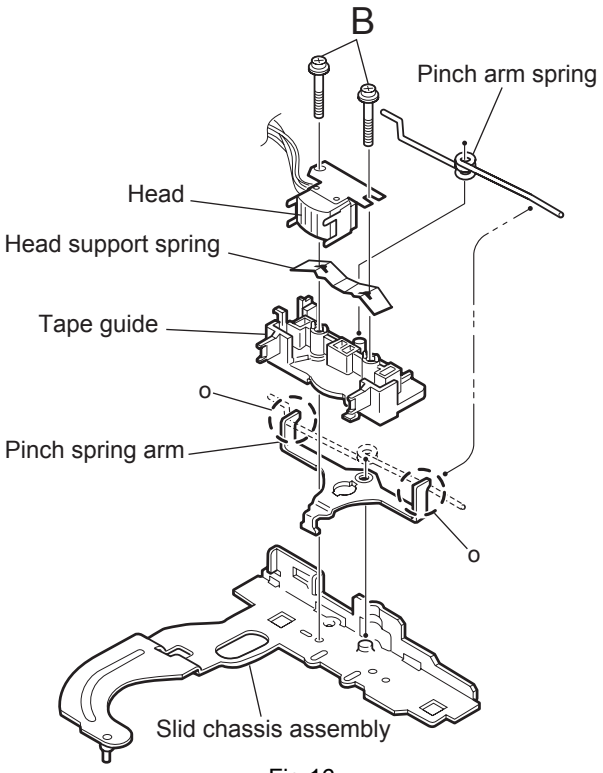


Fig.16

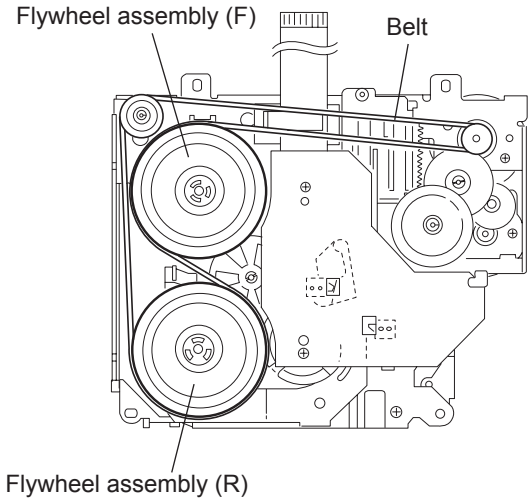


Fig.17

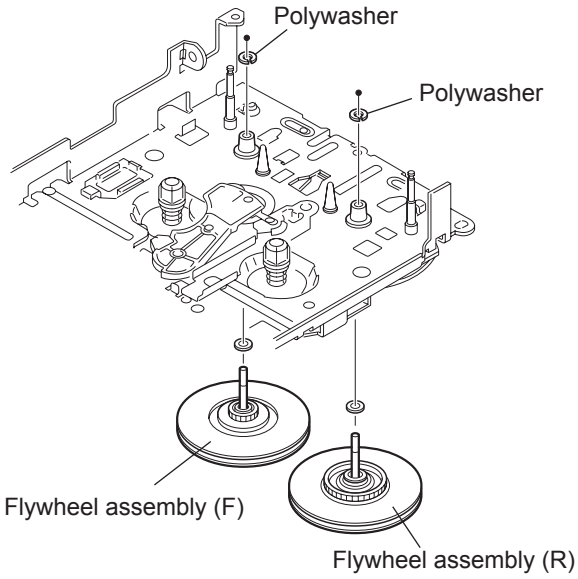


Fig.18

2.2.10 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.

2.2.11 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.

2.2.12 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.

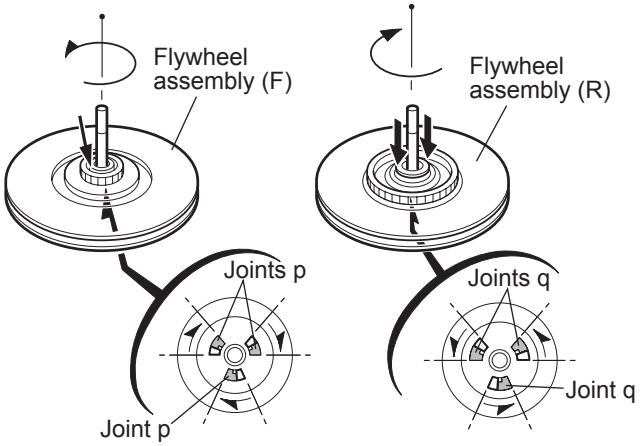


Fig.19

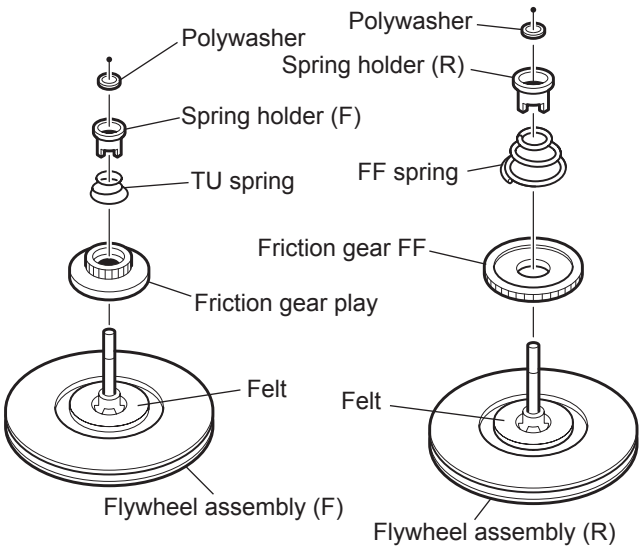


Fig.20

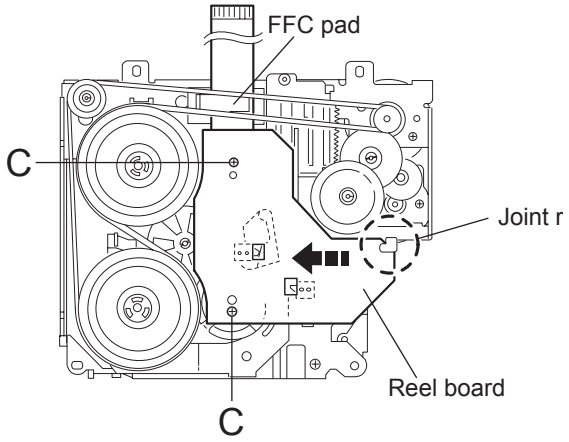


Fig.21

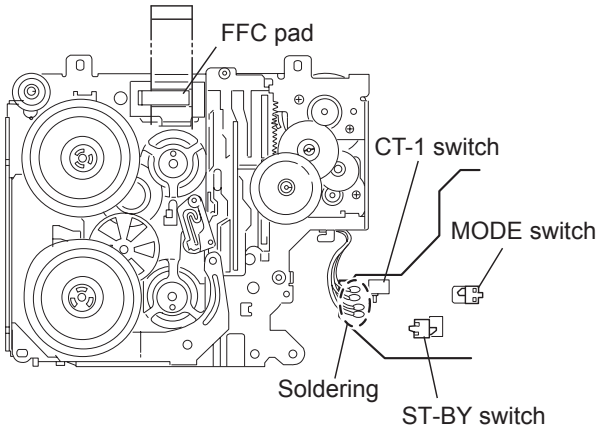


Fig.22

2.2.13 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.

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

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

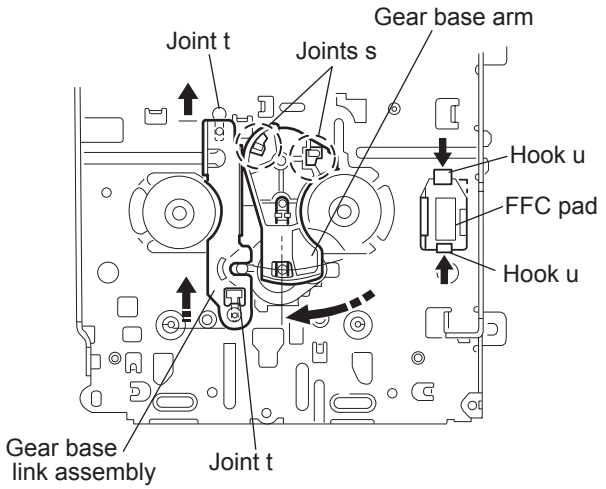


Fig.23

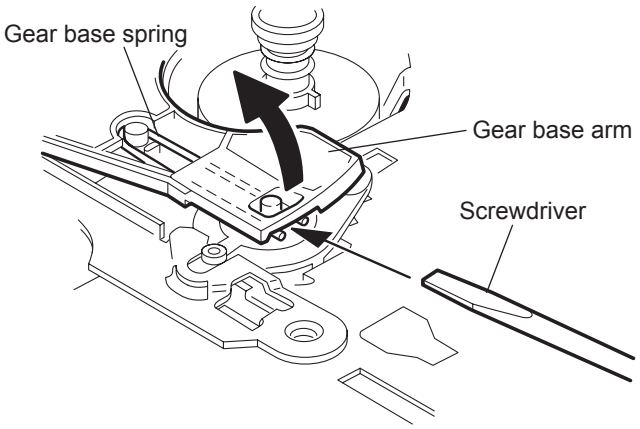


Fig.24

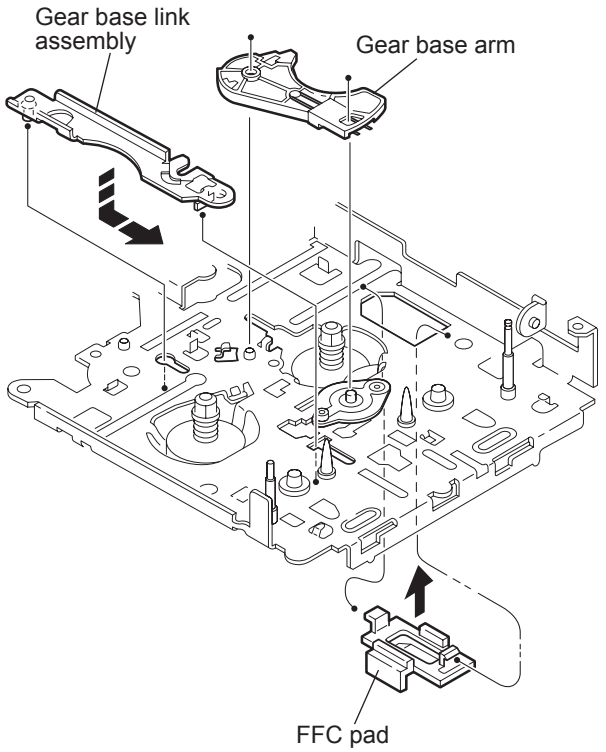


Fig.25

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

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

2.2.16 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**.

2.2.17 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).

2.2.18 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).

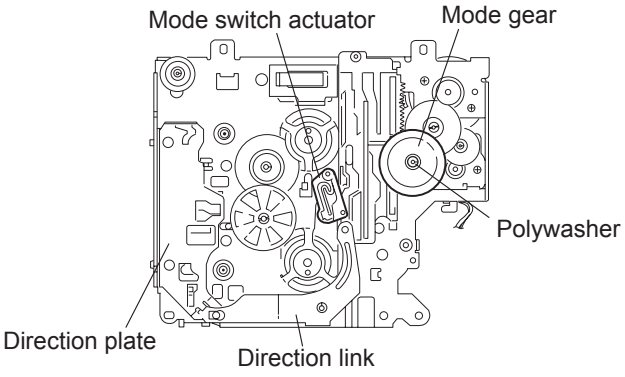


Fig.26

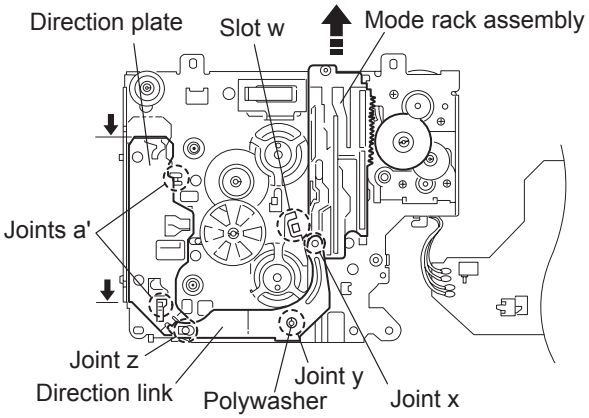


Fig.27

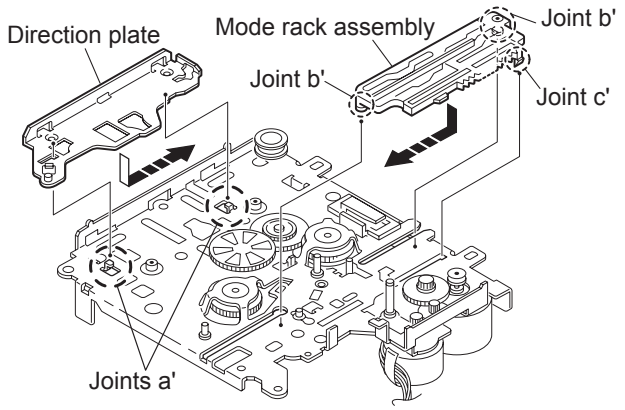


Fig.28

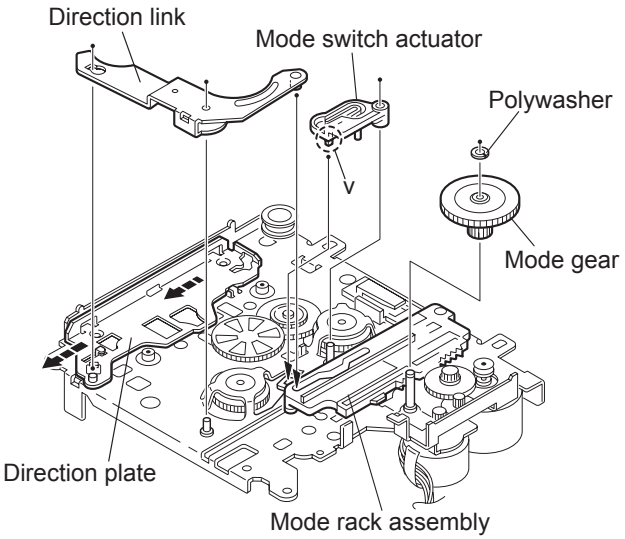


Fig.29

2.2.19 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.

2.2.20 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.

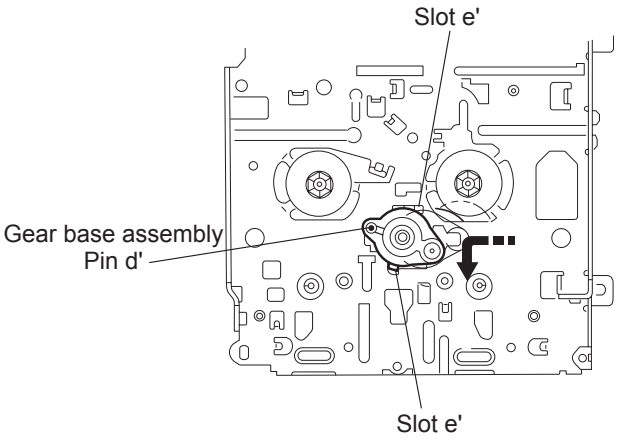


Fig.30

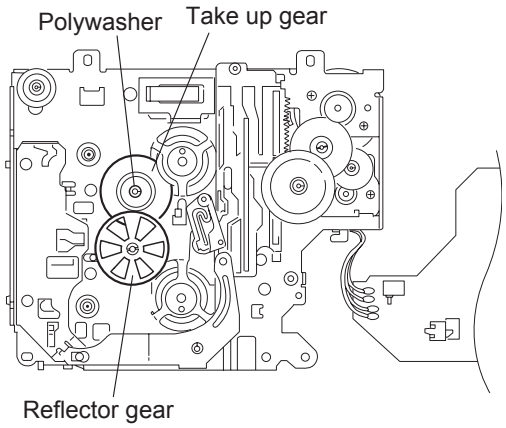


Fig.31

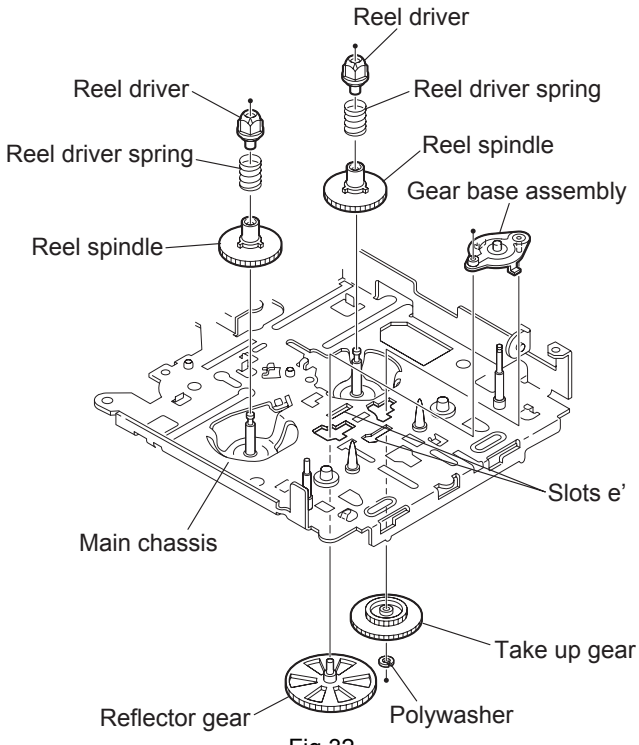


Fig.32

2.2.21 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.

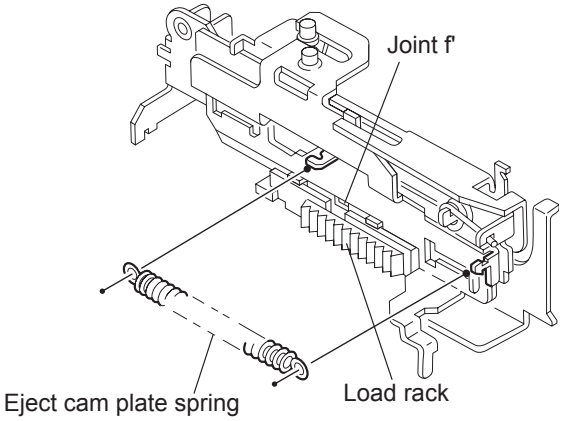


Fig.33

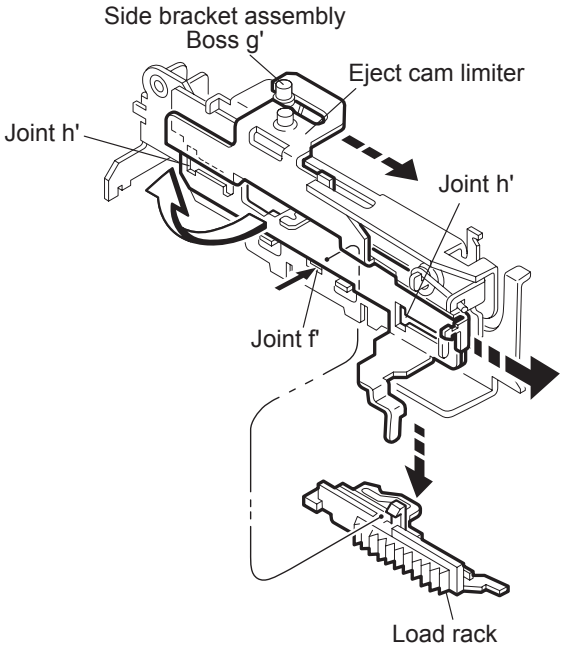


Fig.34

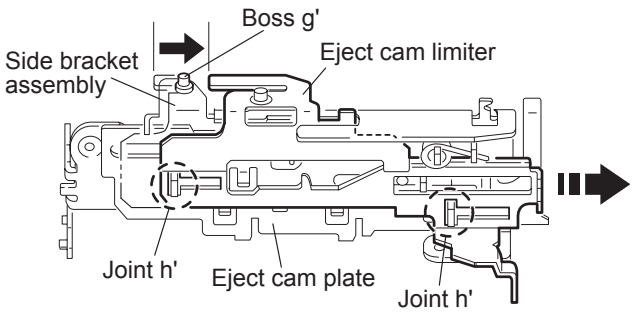


Fig.35

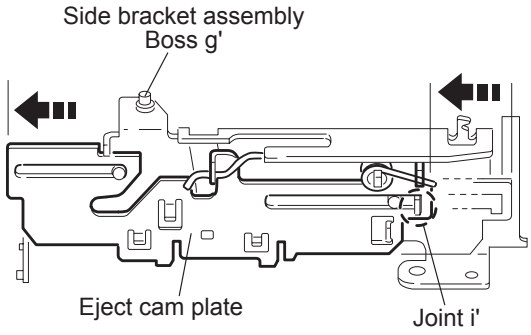


Fig.36

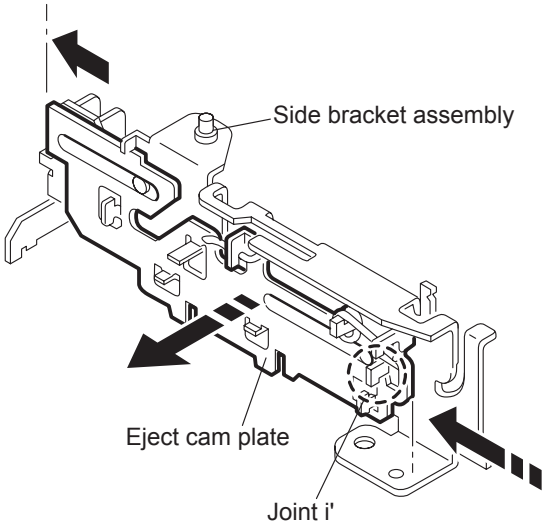


Fig.37

2.2.22 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.

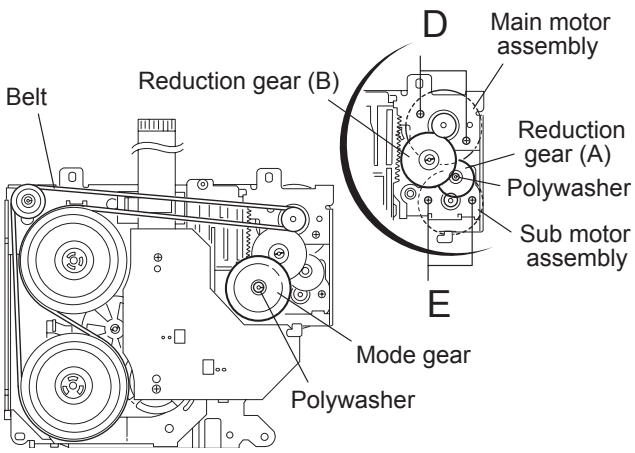


Fig.38

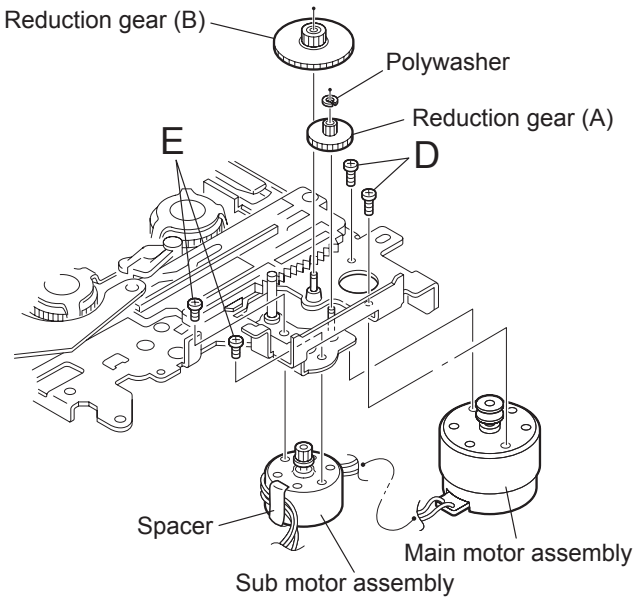


Fig.39

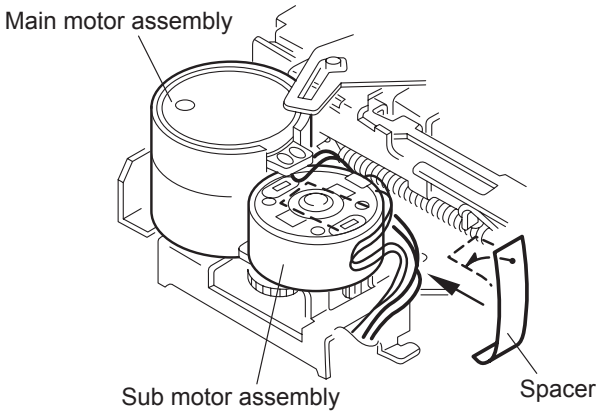


Fig.40

SECTION 3
Adjustment

3.1 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

3.2 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)

3.3 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/20kΩ load (250 nWb/m)

3.4 Frequency band

Band	FM	87.5 MHz to 107.9 MHz
	AM	530 kHz to 1710 kHz

3.5 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.

3.6 Disassembly method

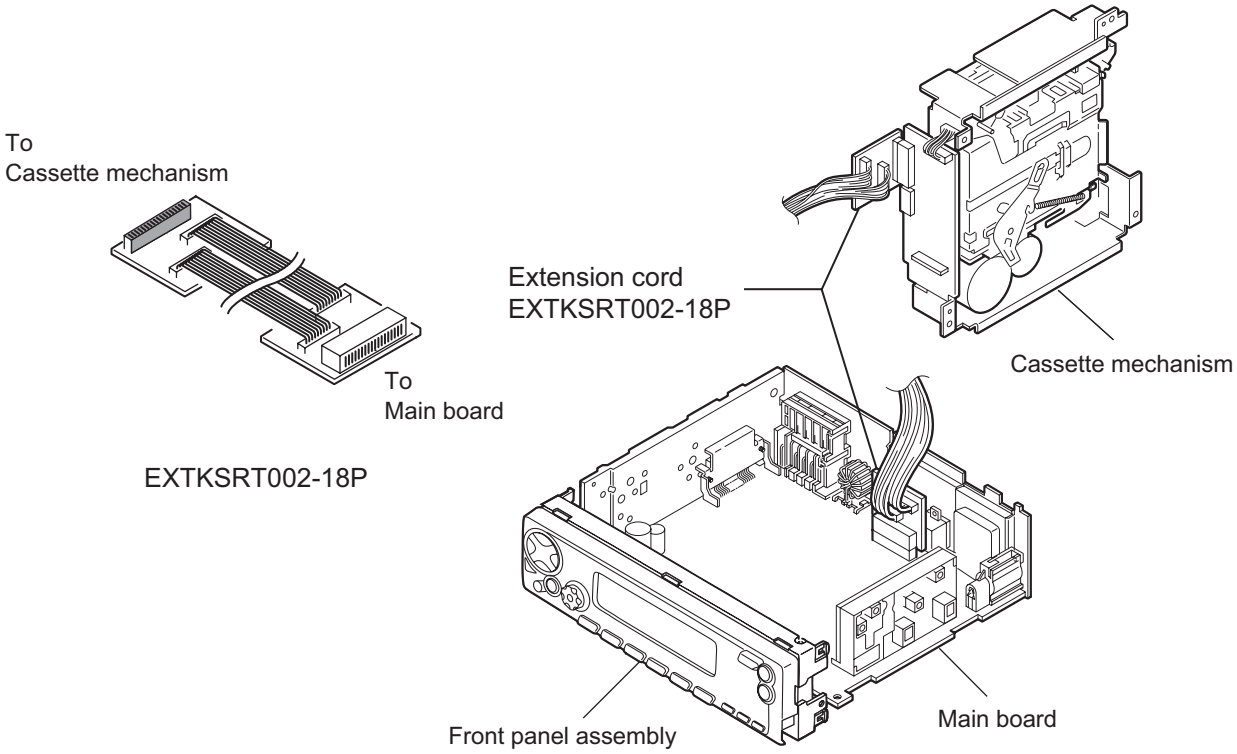
(1) Remove the front panel assembly.
(2) Remove the bottom cover.
(3) Remove the front chassis.
(4) Remove the heat sink.
(5) Remove the rear panel
(6) Remove the main board.
(7) Reattach the heat sink with the two screws B. (Refer to Disassembly method.)
(8) Reattach the rear panel with the screw E. (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.

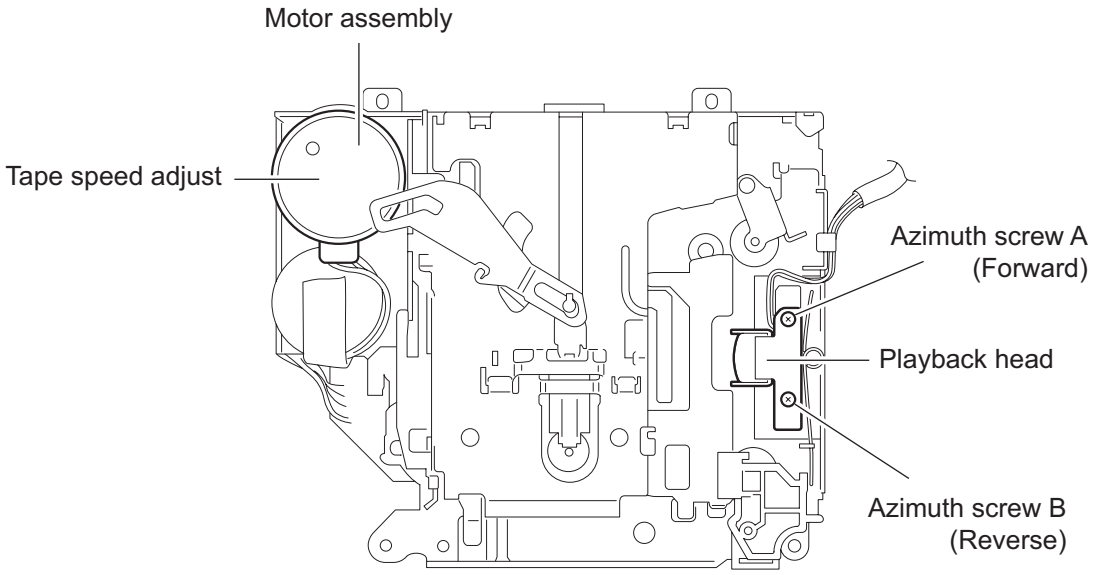
CAUTION :

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.

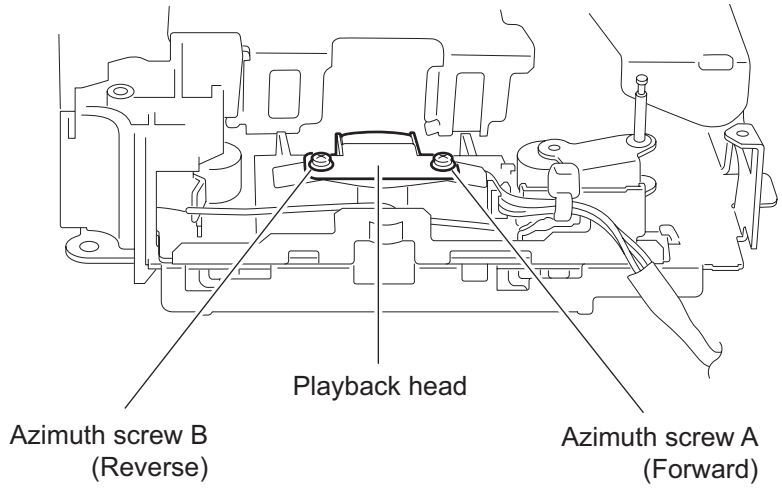


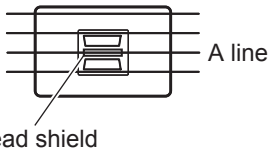
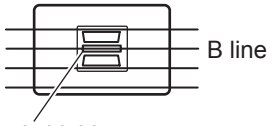
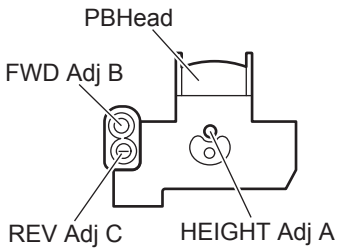
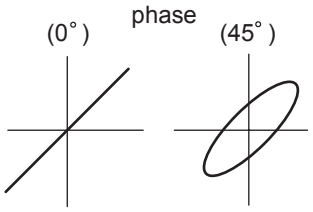
3.7 Arrangement of adjusting & test points

Cassette mechanism
(Surface)



Head section view



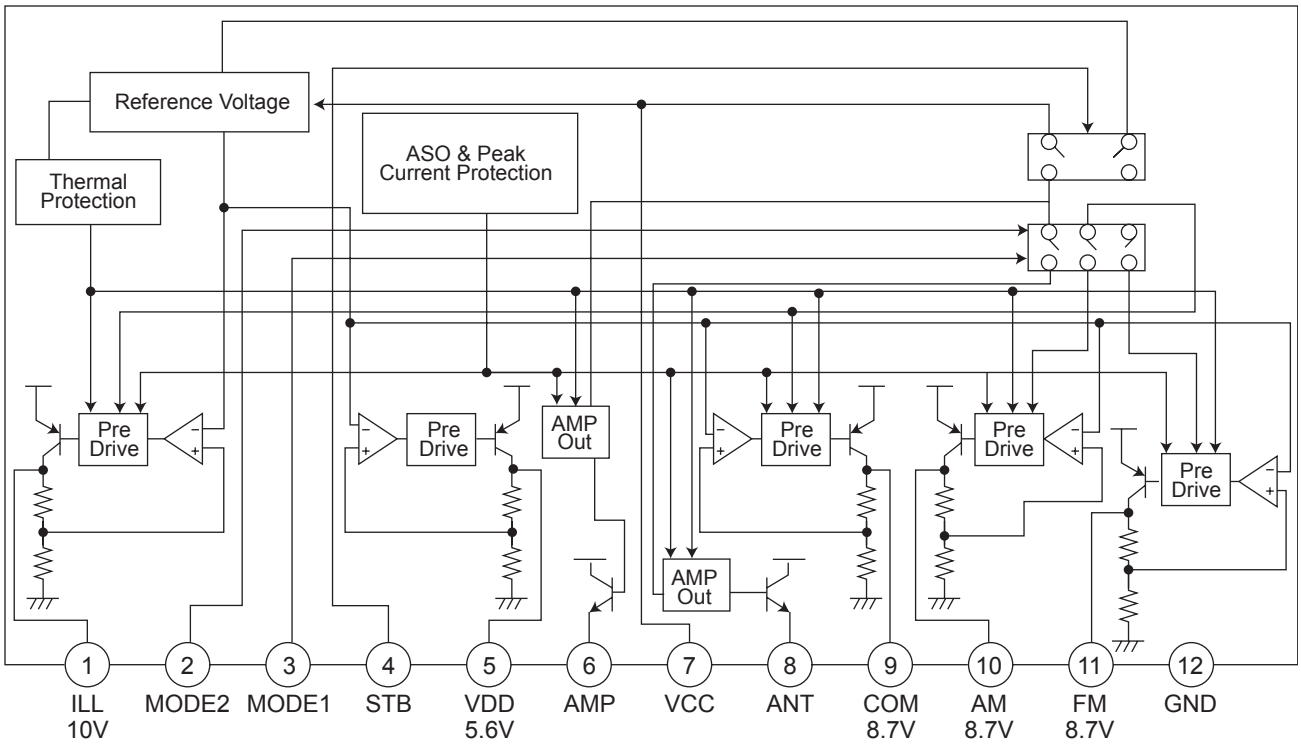
Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
1. Head azimuth adjustment	Test tape: SCC-1659 VT703 (10kHz)	◆**Head height adjustment** Adjust the azimuth directly. When you adjust the height using a mirror tape, remove the cassette housing from the mechanism chassis. After installing 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. Output level: Maximum	
	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.	 	
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 4
Description of major ICs

4.1 AN80T05 (IC901) : Regulator

• Pin layout & Block diagram

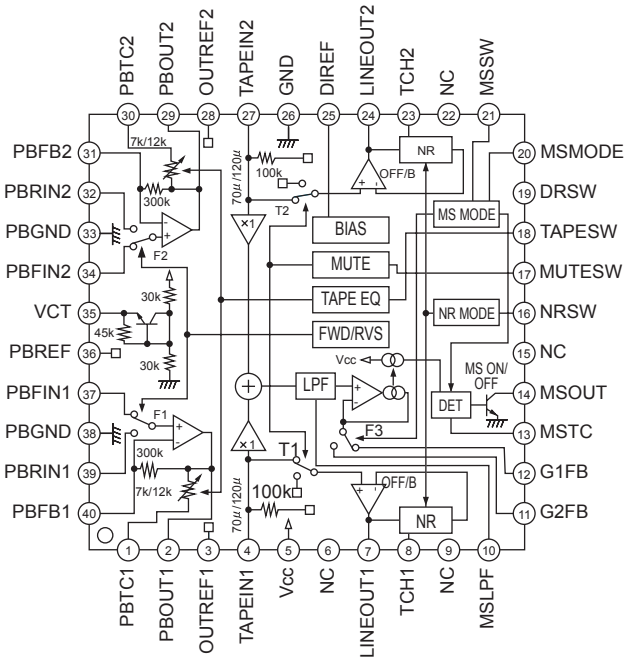


• Pin function

Pin No.	Symbol	Function
1	ILL	10V power supply for illumination.
2	MODE2	When 5V is input, becomes AM. and the antenna output is turned on.
3	MODE1	When 5V is input,becomes AM. and the output of FM is switched.
4	STB	When 5V is input outputs to ILL,COM, and AMP. It is 0V usually.
5	VDD	5.6V power supply.
6	AMP	Power supply supply to remote amplifier
7	VCC	Back up. connects with ACC with it.
8	ANT	Power supply supply to auto antenna.
9	COM	8.7V power supply.
10	AM	The power supply of 8.7V to AM.
11	FM	The power supply of 8.7V to FM.
12	GND	Ground

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

• Pin layout & Block diagram



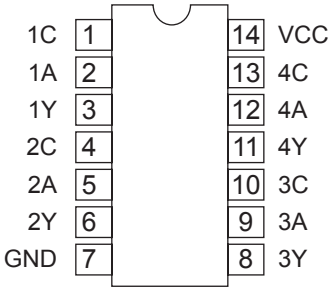
• Pin function

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

Pin No.	Symbol	I/O	Function
24	LINEOUT2	O	Line output
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

4.3 HD74HC126FP-X (IC801) : Buffer

• Pin layout

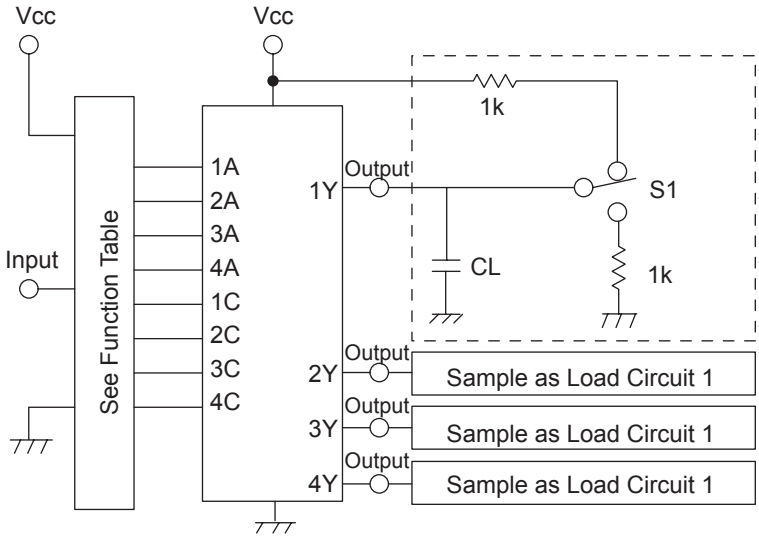


• Pin function

Input		Output
C	A	Y
L	X	Z
H	L	H
H	H	L

Note:
H:High level
L:Low level
X:Irrelevant
Z:Off(High-impedance)
State a 3-state input

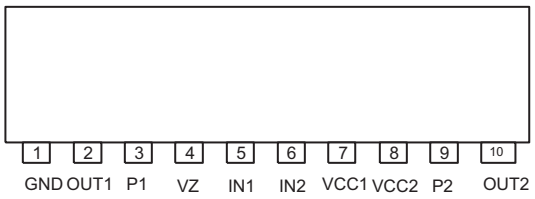
• Block diagram



Note:
CL includes probe and jig capacitance

4.4 LB1641 (IC402) : DC Motor driver

• Pin layout

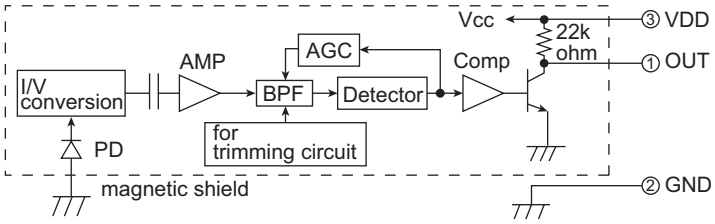


• Pin function

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

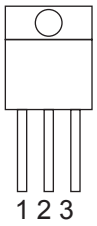
4.5 RPM6938-SV4 (IC602) : Remote control receiver

• Block diagram

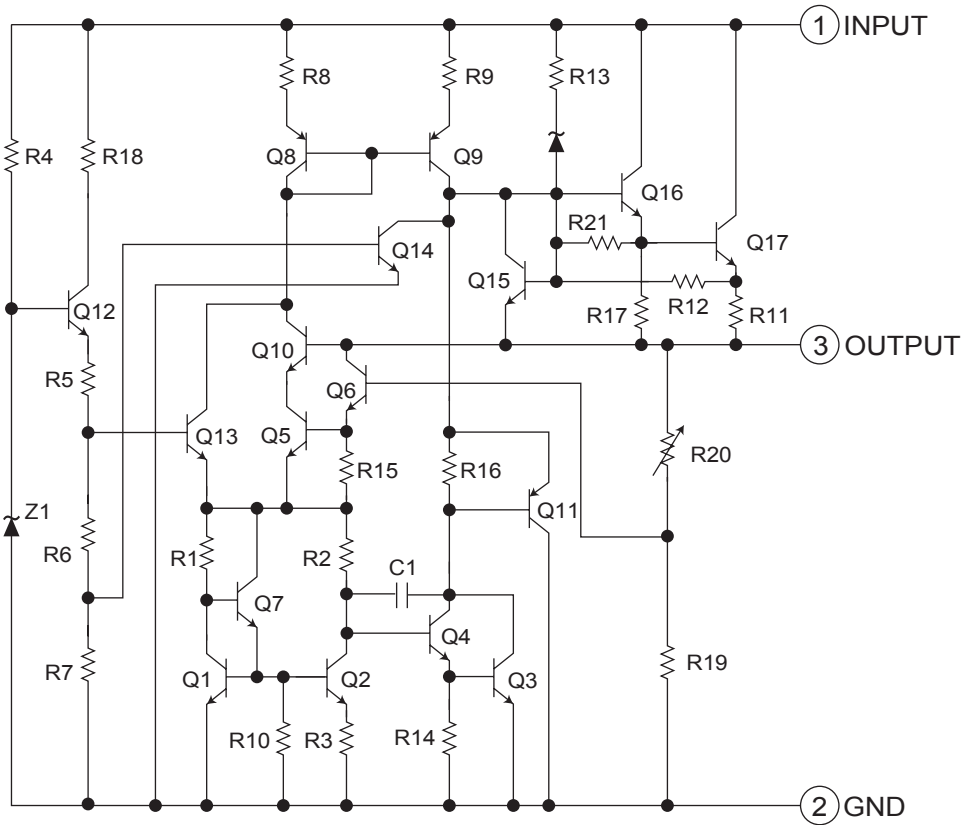


4.6 KIA7810PI (IC902) : Regulator

• Pin layout

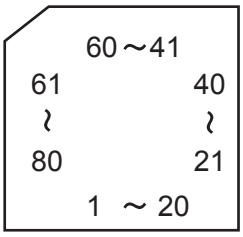


• Block diagram

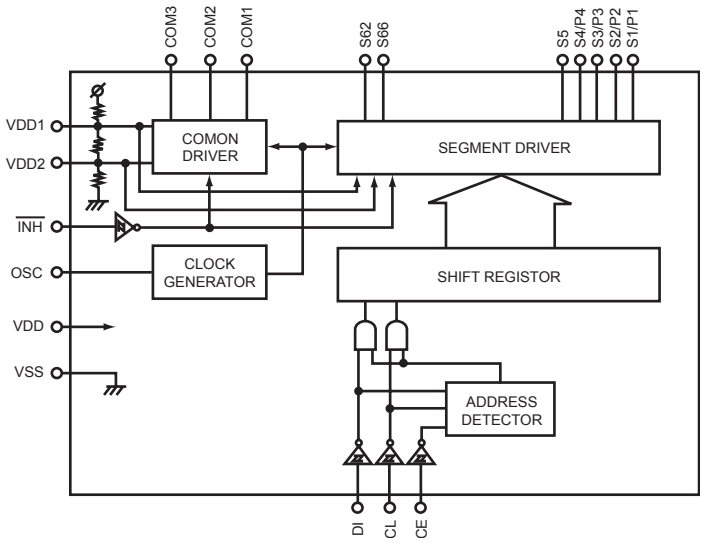


4.7 LC75873NW (IC601) : LCD Driver

• Pin layout



• Block diagram

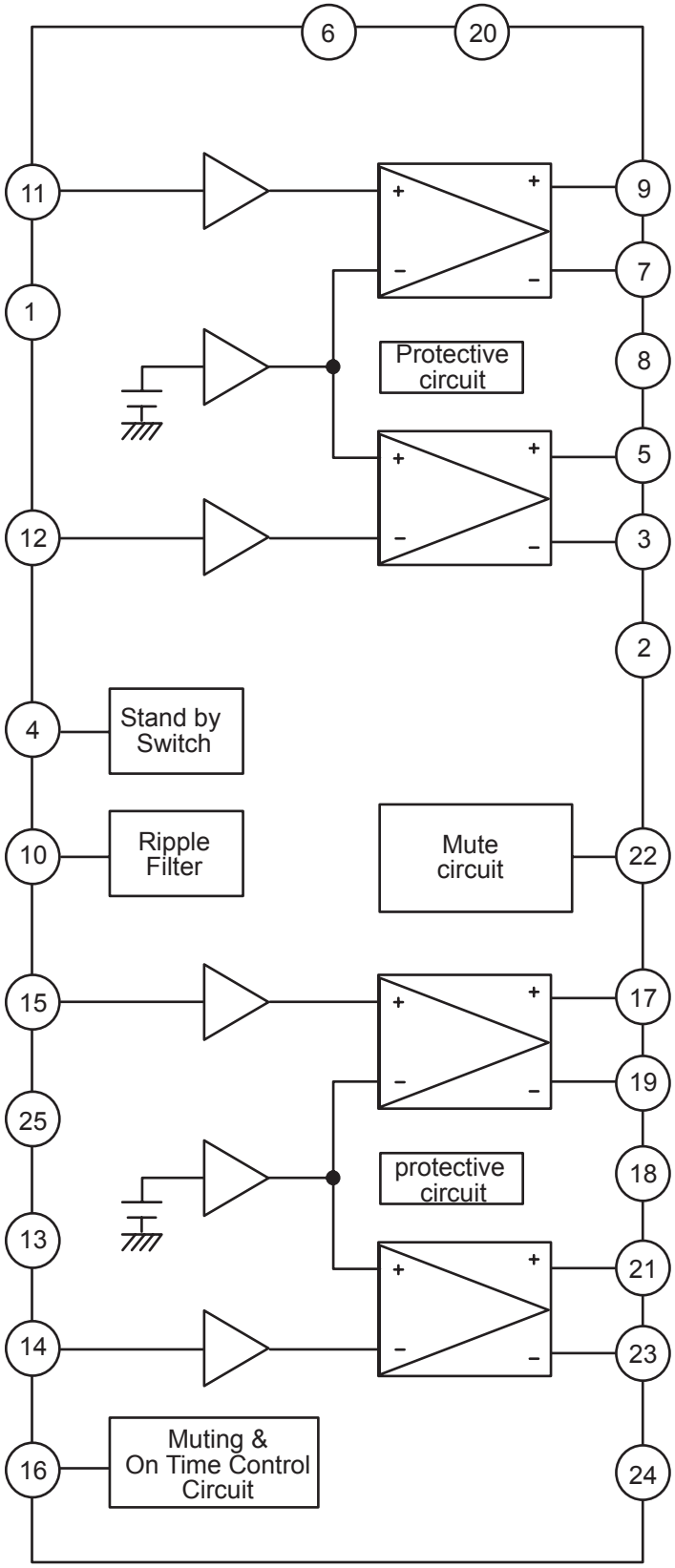


• Pin function

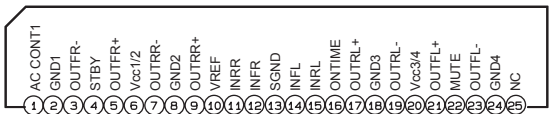
Pin No.	Pin name	I/O	Description
79,80 1,2,3 to 66	S1/P1 to S4/P4 S5 to S68	O	Segment outouts for displaying the display data transferred by serial data input. The S1/P1 to S4/P4 pins can be used as generalpurpose output ports under serial data control.
67 78 69	COM1 COM2 COM3	O	Common driver outputs. 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.

4.8 LA47505 (IC301) : Power amp.

• Block diagram



• Pin layout

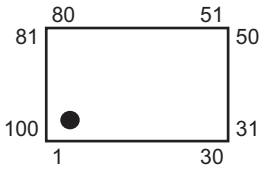


• Pin function

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

4.9 UPD178078GF-618 (IC701) : System CPU

• Pin layout



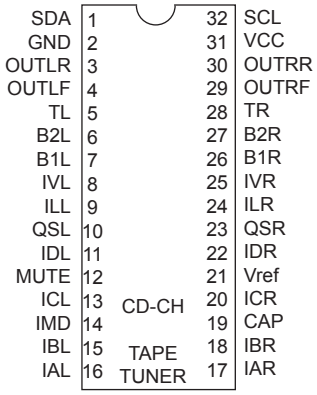
• Pin functions

Pin No.	Symbol	I/O	Function
1	PS1(on)	I	ACC ON/OFF detection signal input
2	PS2(stop)	I	Memory ON/OFF detection signal input
3	POWER	O	POWER ON/OFF control output
4	STAND BY	I	Stand-by position detection signal input
5	TAPE IN	I	Cassette tape inside signal
6	NC	-	Not connect
7	J-BUS I/O	O	J-BUS I/O selection output
8	J-BUS IN	I	J-BUS data input
9	J-BUS OUT	O	J-BUS data output
10	J-BUS SCK	I/O	J-BUS clock output/input
11	NC	-	Not connect
12	I2C DA	I/O	E.VOL I2C data input/output
13	I2CSCK	O	E.VOL I2C clock
14	MODE	I	Mecha position detection signal
15	SUBMO+	O	Sub motor control. Loading direction
16	SUBMO-	O	Sub motor control. Eject direction
17	REEL	I	Reel pulse signal input
18	MS IN	I	MS signal input
19	DOLBY	O	Dolby ON/OFF control
20	HEAD SEL(F/R)	O	Audio signal selector for head amp
21	FF/REW	O	Audio level control for MS
22	MOTOR	O	Main motor control
23	LEVEL	I	Level meter input
24	SM	I	S.METER input
25	SQ	I	SQ level input
26	NC	I	Connect to GND
27	AVDD	-	Power supply
28	NC	-	Connect to GND
29	KEY0	I	A/D key input 0
30	KEY1	I	A/D key input 1
31	KEY2	I	A/D key input 2
32	AVSS	I	Ground
33	REGCPU	-	Connect to GND path through 0.1uF
34	VDD	-	Power supply
35	REGOSC	-	Connect to VDD
36	X2	-	X'tal
37	X1	I	X'tal
38	GND0	-	Ground
39	SEEK/STOP	O	Auto seek/receiving control output
40	GND2	-	Ground
41	NC	-	Pull down to GND

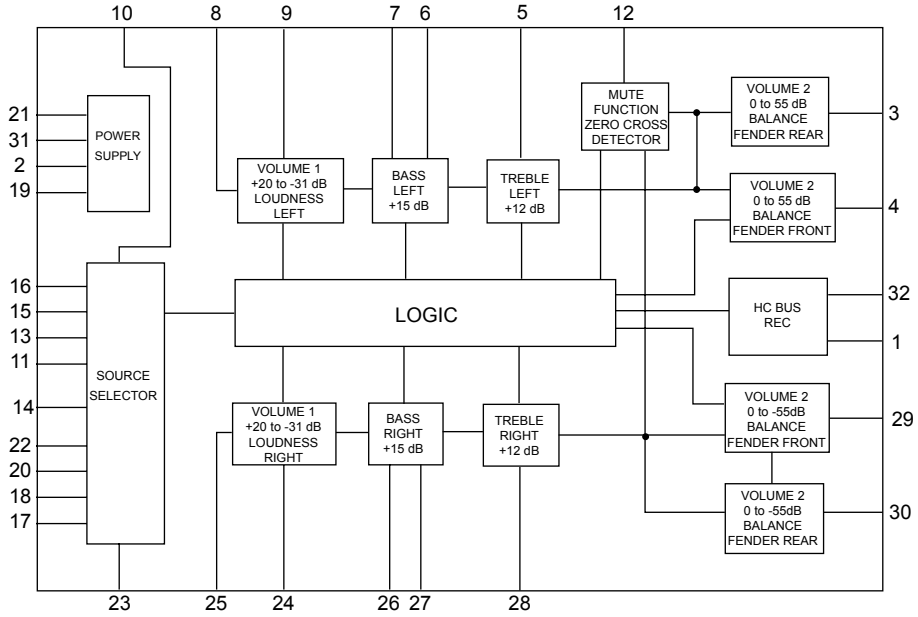
Pin No.	Symbol	I/O	Function
42	IFC	I	IF count input
43	VDDPLL	-	-
44	OSC INPUT	I	FM/AM local osc input
45	NO USE	-	PLL disable & Pull down to GND
46	GNDPLL	-	Connect to ground
47	AM E.OUT	O	AM error output
48	FM E.OUT	O	FM error output
49	IC(VPP)	-	SETTING TO WRITE FOR FLASH
50	RESET	I	System reset input
51	NC	-	Not connect
52	NC	-	Not connect
53	MONO	O	Mono control output
54	SD/ST	I	Signal detector/Stereo signal input
55	FM/AM	O	FM/AM selecting output
56	NC	-	Not connect
57	DETACH	I	Detach detecting input
58	NC	-	Not connect
59	NC	-	Not connect
60	LCD DA	O	LCD driver DATA output
61	LCD CLK	O	LCD driver CLK output
62	LCD CE	O	LCD driver CE output
63 to 68	NC	-	Not connect
69	RX	O	
70	TX	O	
71	IFC CONT	O	IFC control output
72	OPEN	I	Door open detection input
73 to77	NC	-	Not connect
78	REMOCON	I	Remote control signal input
79	NC	-	Not connect
80	J-BUS INT	I	J-BUS interrupt input
81	NC	-	Not connect
82	GND1	-	Ground
83	STAGE1	O	Setting for model
84	NC	-	Not connect
85	MUTE	O	Mute output
86, 87	NC	-	Not connect
88	TEL MUTE	I	Tel mute detection signal input
89	UNLOOK	O	Tuner lock signal output
90	DIMMER OUT	O	Dimmer control output (Dimmer on: L)
91	VOL-1	O	Volume encoder pulse input 1
92	VOL-2	O	Volume encoder pulse input 2
93	DIMMER IN	O	Dimmer detector input L: dimmer on
94	ANT REMOTE	O	ANTENNA CONT. OUTPUT
95 to 98	NC	-	Not connect
99	VDDPORT	-	Connect to FLASH PRO
100	GNDPORT	-	Connect to FLASH PRO

4.10 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.

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AV & MULTIMEDIA COMPANY MOBILE ENTERTAINMENT CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.49845)

Printed in Japan
WPC

PARTS LIST

[KS-FX490]

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

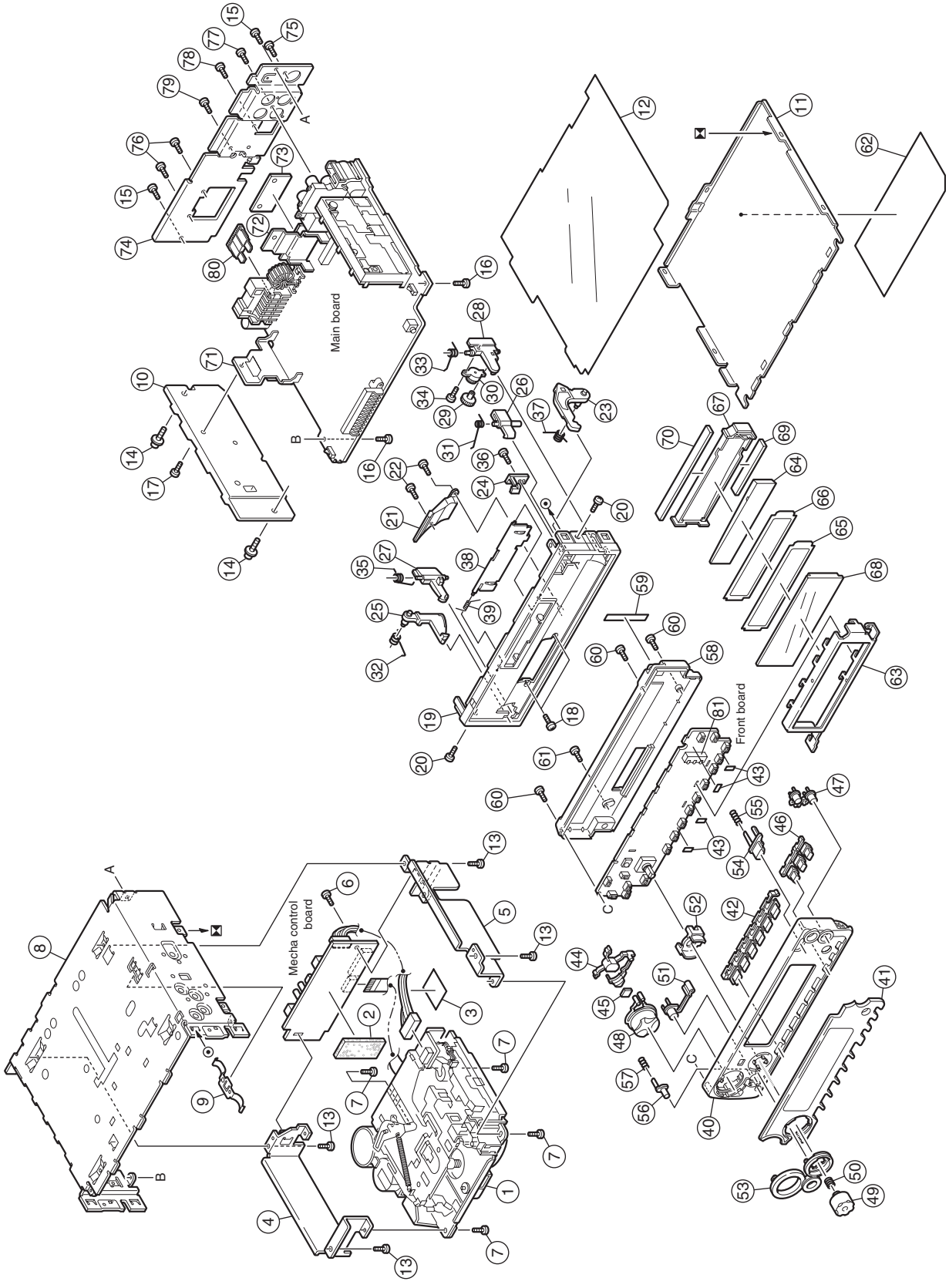
Area suffix

J ---------- Northern America

- Contents -

Exploded view of general assmbly and parts list

Block No. M 1 M M



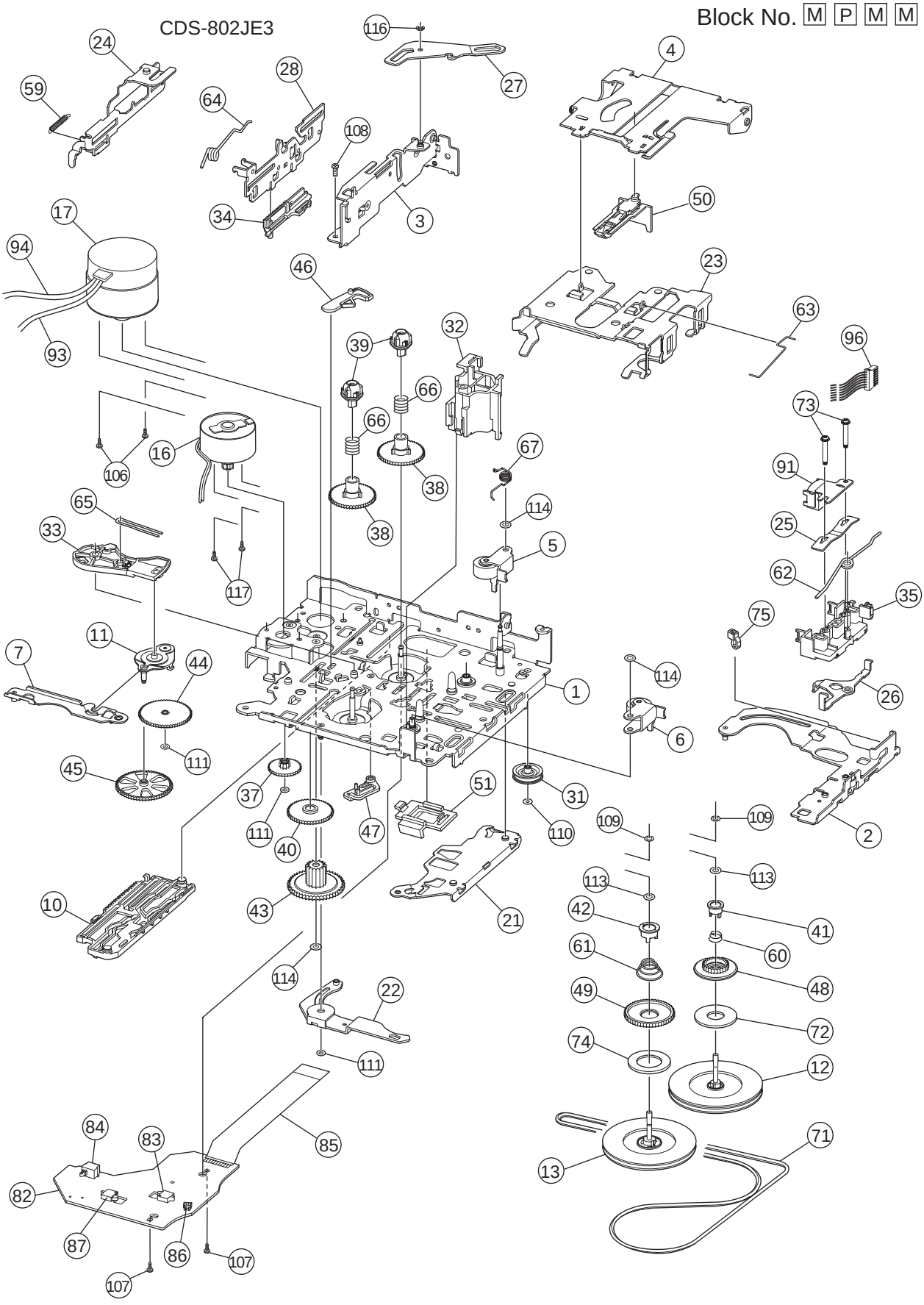
General assembly

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

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	----------	MECHA		
2	FSYH4036-050	SHEET		
3	LV40847-002A	SPACER		
4	FSKL2001-004	MECHA BKT(L)		
5	FSKL2002-002	MECHA BKT(R)		
6	QYSDST2606Z	SCREW	2.6mm x 6mm	
7	QYSDST2606Z	SCREW	2.6mm x 6mm(x4)	
8	GE10043-011A	TOP CHASIS		
9	GE40135-001A	EART PLATE		
10	GE30938-003A	HEAT SINK		
11	GE30393-001A	BOTTOM COVER		
12	FSMA3005-001	INSULATOR		
13	QYSDST2604Z	SCREW	2.6mm x 4mm(x4)	
14	FSKZ4005-001	SCREW	(x2)	
15	QYSDST2604Z	SCREW	2.6mm x 4mm(x2)	
16	QYSDST2606Z	SCREW	2.6mm x 6mm(x2)	
17	QYSDST2610Z	SCREW	2.6mm x 10mm	
18	QYSDSF2006M	SCREW	2mm x 6mm(x2)	
19	GE10064-001A	FRONT CHASSIS		
20	QYSDST2004M	MINI SCREW	2mm x 4mm(x2)	
21	VJK3707-001	LIGHT LENS		
22	QYSPSGU1745N	MINI SCREW	1.7mm x 4.5mm(x2)	
23	GE30378-002A	OPEN LEVER		
24	FSKS3015-001	LOCK LEVER(O.L)		
25	VKS3798-002	RELEASE LEVER		
26	GE30379-001A	LOCK LEVER(TOP)		
27	VKS3794-003	LOCK LEVER(L)		
28	VKS3795-002	LOCK LEVER(R)		
29	VKS5563-001	GEAR		
30	VKZ4786-002	OIL DAMPER		
31	FSKW4012-001	T.SPRING		
32	GE40144-001A	T.SPRING		
33	VKW5262-001	T.SPRING		
34	QYSDSF2006M	SCREW	2mm x 6mm	
35	VKW5263-002	T.SPRING		
36	VKZ4777-001	MINI SCREW		
37	GE40164-001A	T.SPRING		
38	FSJC3014-001	CASS LID		
39	VKW4947-002	DOOR SPRING		
40	GE10041-005A	FRONT PANEL		
41	GE30369-023A	FINDER ASSY		
42	GE20104-004A	PRESET BUTTON		
43	FSYH4036-069	SHEET	(x4)	
44	GE30535-001A	POWER BUTTON		
45	FSYH4036-074	SHEET		
46	GE30374-001A	SND FUNC BTN		
47	GE30370-002A	D.FUNC BUTTON		
48	GE30371-002A	NAVIGATION BTN		
49	GE30372-001A	VOL KNOB		
50	GE40127-001A	KNOB SPRING		
51	GE40129-001A	SEL BUTTON		
52	GE30373-001A	RIM LENS		
53	GE20148-001A	RIM COVER		
54	GE40128-001A	EJECT BUTTON		
55	VKW3001-330	COMP.SPRING		
56	GE30116-001A	DETACH BUTTON		
57	VKW3001-330	COMP.SPRING		
58	GE10042-003A	REAR COVER		
59	FSYH4036-078	SHEET		
60	VKZ4777-001	MINI SCREW	(x3)	
61	VKZ4777-001	MINI SCREW		
62	GE30681-001A	NAME PLATE		
63	GE30375-001A	LCD CASE		
64	FSJK3028-001	LCD LENS		
65	FSYH4061-001	LIGHTING SHEET		
66	FSYH4061-002	LIGHTING SHEET		
67	FSKS3013-001	LENS CASE		
68	QLD0257-001	LCD MODULE		
69	QNZ0450-001	RUBBER CONNE		
70	QNZ0449-001	RUBBER CONNE		
71	GE40172-002A	IC BRACKET		
72	GE40103-002A	REG BRACKET		
73	GE40107-002A	HEAT SINK		
74	GE30912-002A	REAR BRACKET		
75	QYSDST2606Z	SCREW	2.6mm x 6mm	
76	QYSDSF2606Z	SCREW	2.6mm x 6mm(x2)	
77	QYSDSF2606Z	SCREW	2.6mm x 6mm	
78	QYSDST2606Z	SCREW	2.6mm x 6mm	
79	QYSDST2606Z	SCREW	2.6mm x 6mm	
⚠ 80	QMFZ047-150-T	FUSE	15A	
81	FSKS3017-002	LED HOLDER		

Cassette mechanism assembly and parts list

Block No. M P M M

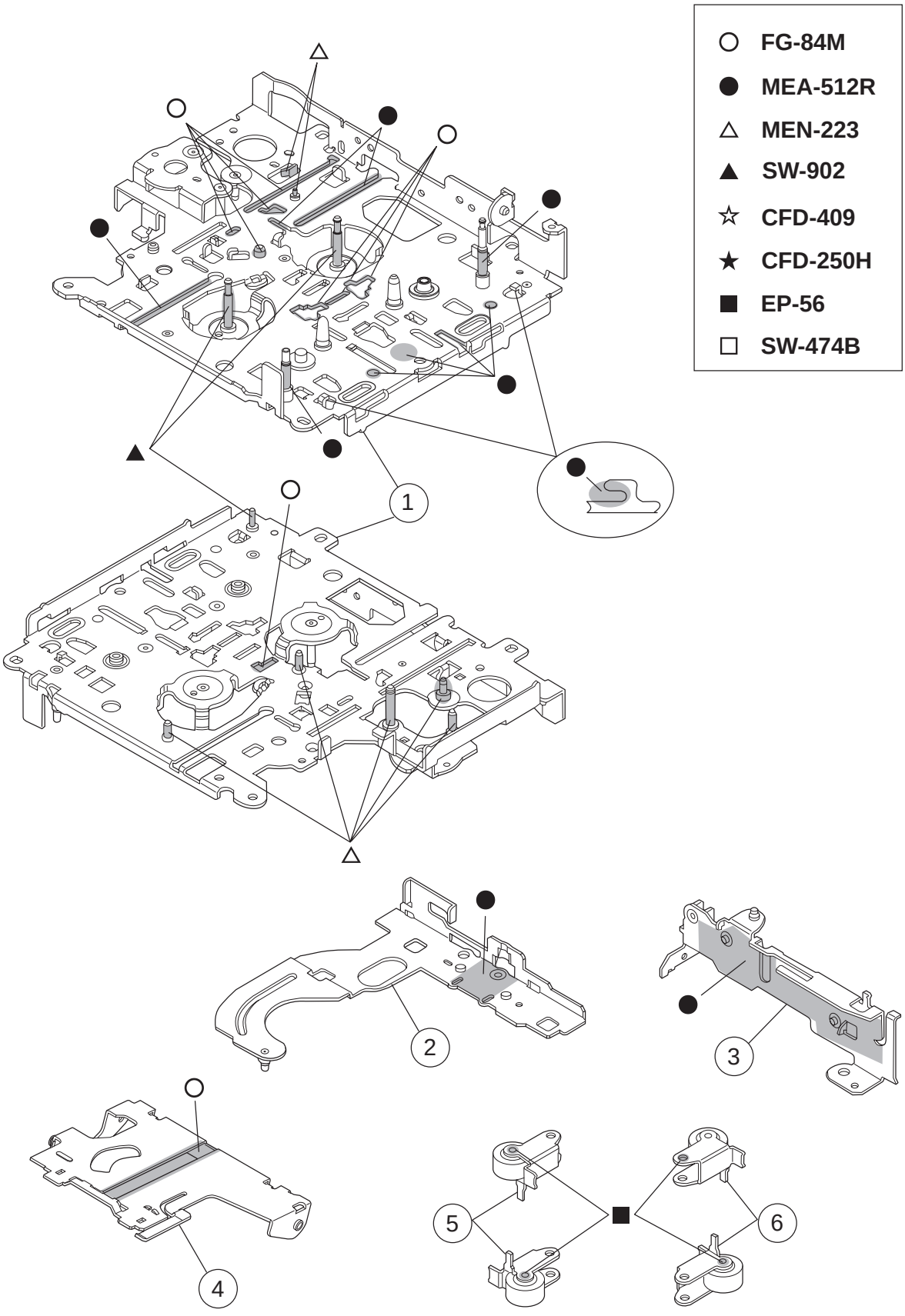


Cassette mechanism

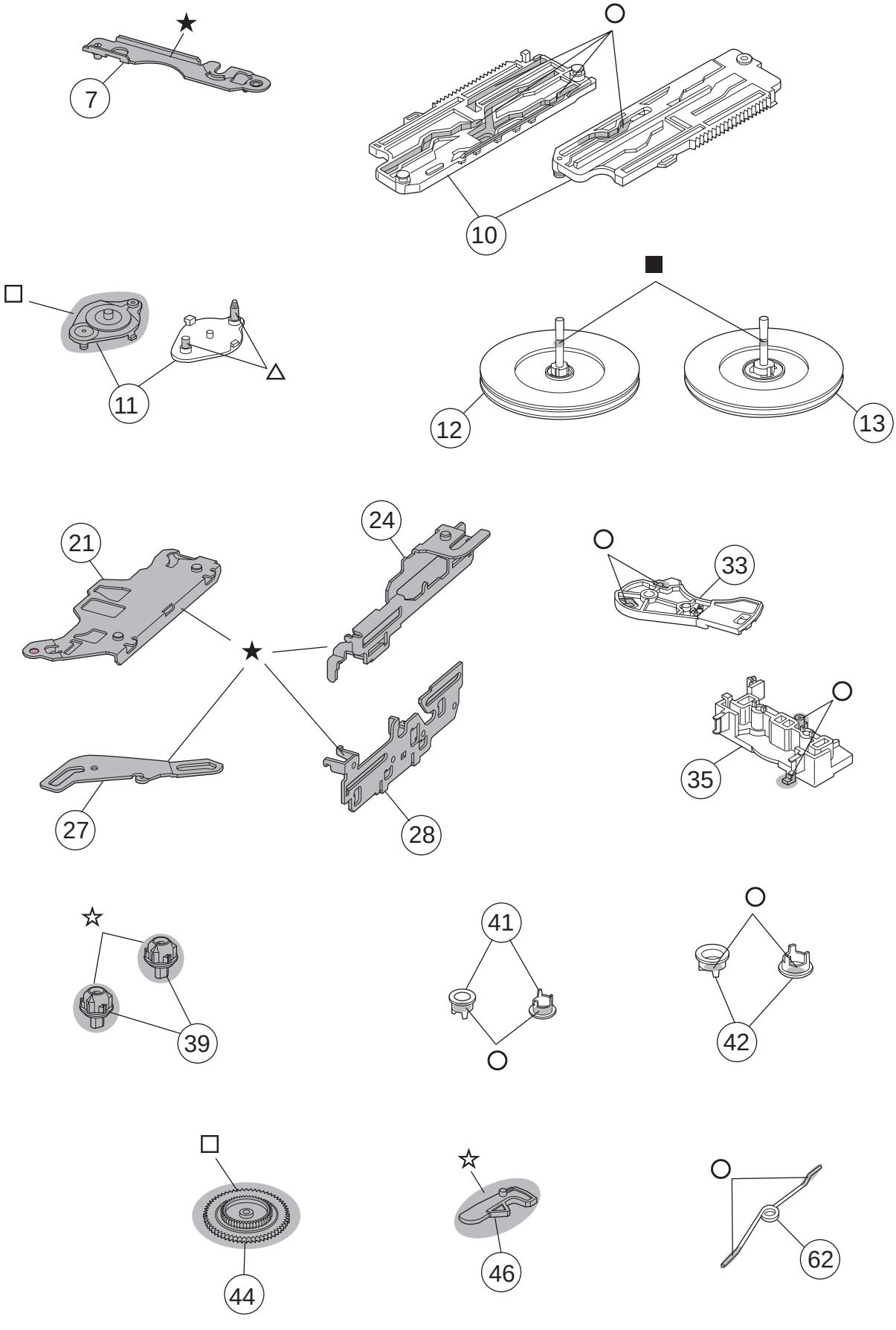
Block No. [M][P][M][M]

⚠ 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
IC161	TEA6320T-X	IC		
IC301	LA47505	IC		
IC701	UPD178078GF-618	IC		
IC801	HD74HC126FP-X	IC		
IC901	AN80T05	IC		
IC902	KIA7810PI	10V REGULATOR		
Q1	2SB709A/R/-X	TRANSISTOR		
Q2	2SB624/4/-X	TRANSISTOR		
Q3	UN2211-X	TRANSISTOR		
Q4	UN2211-X	TRANSISTOR		
Q5	UN2211-X	TRANSISTOR		
Q31	2SC2412K/R/-X	TRANSISTOR		
Q32	2SC2412K/R/-X	TRANSISTOR		
Q241	2SD601A/R/-X	TRANSISTOR		
Q301	UN2211-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	UN2111-X	TRANSISTOR		
Q901	2SA1037AK/RS/-X	TRANSISTOR		
Q902	UN2211-X	TRANSISTOR		
Q903	UN2111-X	TRANSISTOR		
Q904	UN2211-X	TRANSISTOR		
Q905	2SA1855/RST/-T	TRANSISTOR		
Q906	UN2211-X	TRANSISTOR		
Q907	2SA1037AK/RS/-X	TRANSISTOR		
Q976	2SA1037AK/RS/-X	TRANSISTOR		
Q977	UN2211-X	TRANSISTOR		
D1	1SS355-X	SI DIODE		
D2	1SS355-X	SI DIODE		
D3	1SS355-X	SI DIODE		
D4	1SS355-X	SI DIODE		
D31	UDZS9.1B-X	Z DIODE		
D32	1SS355-X	SI DIODE		
D241	1SS355-X	SI DIODE		
D242	RB160M-30-X	SB DIODE		
D243	UDZS5.1B-X	Z DIODE		
D310	1SS355-X	SI DIODE		
D321	1SS355-X	SI DIODE		
D331	1SS355-X	SI DIODE		
D341	1SS355-X	SI DIODE		
D351	1SS355-X	SI DIODE		
D701	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	UDZS6.2B-X	Z DIODE		
D711	UDZS6.2B-X	Z DIODE		
D712	UDZS6.2B-X	Z DIODE		
D713	UDZS6.2B-X	Z DIODE		
D715	UDZS6.2B-X	Z DIODE		
D753	SLR-56MC3F	LED		
D781	1SS355-X	SI DIODE		
D782	UDZS11B-X	Z DIODE		
D901	1N5401-F64	DIODE		
D903	RB160M-30-X	SB DIODE		
D904	RB160M-30-X	SB DIODE		
D908	1SS355-X	SI DIODE		
D909	1SS355-X	SI DIODE		
C1	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C2	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C4	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C6	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
C8	NCS31HJ-121X	C CAPACITOR	120pF 50V J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C9	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C10	NCS31HJ-102X	C CAPACITOR	1000pF 50V J	
C13	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C31	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C32	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C33	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C34	NCS31HJ-102X	C CAPACITOR	1000pF 50V J	
C35	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C81	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C82	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C91	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C92	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C162	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C163	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C164	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C165	NCB21CK-184X	C CAPACITOR	0.18uF 16V K	
C166	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C167	NCB31CK-333X	C CAPACITOR	0.033uF 16V K	
C168	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C172	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C173	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C174	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C175	NCB21CK-184X	C CAPACITOR	0.18uF 16V K	
C176	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C177	NCB31CK-333X	C CAPACITOR	0.033uF 16V K	
C178	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C181	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C182	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C191	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C192	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C195	QERF1CM-476Z	E CAPACITOR	47uF 16V M	
C196	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C197	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C198	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
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	QERF1HM-224Z	E CAPACITOR	0.22uF 50V M	
C301	QERF1CM-476Z	E CAPACITOR	47uF 16V M	
C302	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C303	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C304	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C305	QCS31HJ-471Z	C CAPACITOR	470pF 50V J	
C313	QERF1HM-474Z	E CAPACITOR	0.47uF 50V M	
C314	QERF1HM-474Z	E CAPACITOR	0.47uF 50V M	
C315	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C316	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C317	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C318	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C319	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C321	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C322	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C331	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C332	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C341	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C342	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C351	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C352	QFVD1HJ-224Z	MF CAPACITOR	0.22uF 50V J	
C361	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C362	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C701	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C703	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C704	NDC31HJ-270X	C CAPACITOR	27pF 50V J	
C706	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C707	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C708	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C710	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C712	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C713	NCB21EK-224X	C CAPACITOR	0.22uF 25V K	
C714	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C781	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C782	QERF1CM-476Z	E CAPACITOR	47uF 16V M	
C801	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C901	QEZ0622-338	E CAPACITOR	3300uF	
C902	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C903	QERF1AM-227Z	E CAPACITOR	220uF 10V M	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C904	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C905	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C906	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C907	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C908	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C909	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C910	NCB21CK-334X	C CAPACITOR	0.33uF 16V K	
C911	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C912	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C917	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
R1	NRSA63J-100X	MG RESISTOR	10ΩI 1/16W J	
R2	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R4	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R5	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R6	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R7	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R8	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	
R9	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R13	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R22	NRS181J-0R0X	MG RESISTOR	0Ω 1/8W J	
R24	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R25	NRS181J-6R8X	MG RESISTOR	6.8Ω 1/8W J	
R26	NRS181J-0R0X	MG RESISTOR	0Ω 1/8W J	
R31	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R32	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R33	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R34	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W J	
R35	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R36	NRSA02J-471X	MG RESISTOR	470Ω 1/10W J	
R81	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R82	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
R91	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R92	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
R161	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R162	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R165	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R166	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R171	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R172	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R175	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R176	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R177	NRS181J-100X	MG RESISTOR	10Ω 1/8W J	
R241	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J	
R242	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J	
R243	NRSA63J-184X	MG RESISTOR	180kΩ 1/16W J	
R244	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R245	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R246	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R247	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R248	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J	
R249	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R250	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R303	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R305	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R321	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R323	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R324	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R325	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R331	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R333	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R334	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R335	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R341	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R343	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R344	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R345	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R351	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R353	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R354	NRSA02J-101X	MG RESISTOR	100Ω 1/10W J	
R355	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R702	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R703	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R704	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R705	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R706	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R707	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R708	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R709	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R710	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R711	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J	
R712	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R713	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R714	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R717	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R718	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J	
R719	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R720	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R721	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-473X	MG RESISTOR	47kΩ 1/16W J	
R726	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R727	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R730	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R732	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R733	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R734	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R735	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R736	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R739	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R741	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R742	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R743	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R744	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R746	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R752	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R753	NRS181J-511X	MG RESISTOR	510Ω 1/8W J	
R755	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R756	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R757	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R758	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R801	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R802	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R803	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R804	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R805	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R806	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R807	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R808	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R809	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R810	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R901	QRE142J-470X	C RESISTOR	47Ω 1/4W J	
R902	NRSA02J-682X	MG RESISTOR	6.8kΩ 1/10W J	
R903	NRSA02J-113X	MG RESISTOR	11kΩ 1/10W J	
R904	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R905	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R906	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R907	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R908	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R909	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R911	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R912	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R913	NRS181J-222X	MG RESISTOR	2.2kΩ 1/8W J	
R914	NRS181J-222X	MG RESISTOR	2.2kΩ 1/8W J	
R976	NRSA02J-123X	MG RESISTOR	12kΩ 1/10W J	
R977	NRSA02J-273X	MG RESISTOR	27kΩ 1/10W J	
L1	QQL244J-4R7Z	INDUCTIOR	4.7uH J	
L901	QQR0703-001	CHOKE COIL		
L902	QQL244J-470Z	COIL	47uH J	
CJ321	QNN0489-001	PIN JACK		
CN701	QNZ0007-002	CAR CONNECTOR		
CN901	QNZ0611-001	16P CONNECTOR		
CP401	QGB1214J1-18S	CONNECTOR	B-B (1-18)	
J1	QNB0100-002	CAR ANT JACK		
J801	QNZ0095-001	CONNECTOR		
S701	QSQ1A11-V06Z	TACT SW I/M		
S702	QSW0451-001	DETECT SW		
S703	QSW0451-001	DETECT SW		
TU1	QAU0281-001	TUNER PACK		
X701	QAX0406-001Z	CRYSTAL	4.5MHz	

Front board

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

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC601	LC75873NW	IC		
IC602	RPM6938-SV4	IC		
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	SML-310VT/JK/-X	LED		
D611	SML-310VT/JK/-X	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	LNJ308G81/1-3/X	LED		
D618	SML-310VT/JK/-X	LED		
D619	SML-310VT/JK/-X	LED		
D620	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		
C601	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C602	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C603	NCS31HJ-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	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C608	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C609	NCB31HK-103X	C CAPACITOR	0.01uF 50V 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-821X	MG RESISTOR	820Ω 1/16W J	
R606	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R607	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R608	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R609	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R610	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R611	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R612	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R613	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R614	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R620	NRS181J-821X	MG RESISTOR	820Ω 1/8W J	
R621	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R622	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R623	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R624	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R625	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R626	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R627	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R628	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R629	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R630	NRSA02J-561X	MG RESISTOR	560Ω 1/10W J	
R631	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R632	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R633	NRSA02J-911X	MG RESISTOR	910Ω 1/10W J	
R634	NRSA02J-911X	MG RESISTOR	910Ω 1/10W J	
R635	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R636	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W J	
R637	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R638	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R639	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R640	NRSA02J-122X	MG RESISTOR	1.2kΩ 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-0R0X	MG RESISTOR	0Ω 1/8W J	
R650	NRSA63J-0R0X	MG RESISTOR	0Ω 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	QSW0976-001	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		

Mecha control board

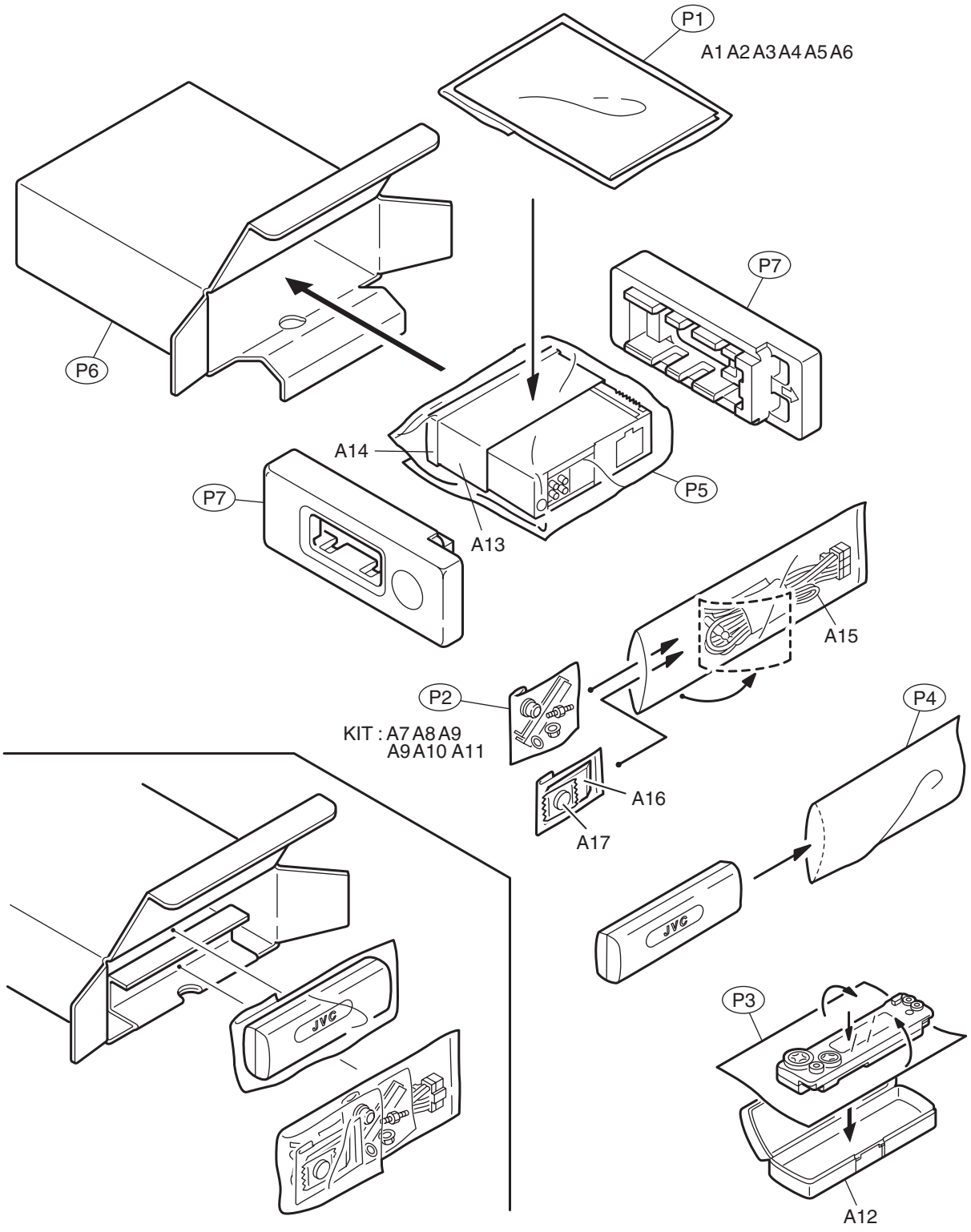
Block No. [0][3][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC401	CXA2560Q	IC		
IC402	LB1641	IC		
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	

⚠ Symbol No.	Part No.	Part Name	Description	Local
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	
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		

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	GET0120-001A	INST BOOK	ENG FRE SPA	
A 2	GET0120-002A	INSTALL MANUAL	ENG FRE SPA	
A 3	LVT0717-002B	TROUBLE SHOOTIN		
A 4	BT-51018-3	WARRANTY CARD		
A 5	BT-52006-2	WARRANTY CARD		
A 6	BT-51028-2	J=REGIST CARD		
A 7	VKZ4027-202	PLUG NUT		
A 8	VKH4871-001SS	MOUNT BOLT		
A 9	VKZ4328-001	LOCK NUT		
A 10	WNS5000Z	WASHER		
A 11	GE40130-001A	HOOK	(x2)	
A 12	FSJB3002-00C	HARD CASE		
A 13	GE20137-003A	MOUNTING SLEEVE		
A 14	GE20149-005A	TRIM PLATE		
A 15	QAM0013-006	16P CORD ASSY		
A 16	RM-RK60	REMOCON UNIT		
A 17	----------	BATTERY		
KIT	KSFX480K-SCREW1	SCREW PARTS KIT	A7 to A11	
P 1	FSPG4002-001	POLY BAG		
P 2	QPA00801205	POLY BAG	8cm x 12cm	
P 3	FSYH4036-068	SHEET		
P 4	QPA01003003	POLY BAG	10cm x 30cm	
P 5	QPC03004315P	POLY BAG	30cm x 43cm	
P 6	GE30682-001A	CARTON		
P 7	GE10070-001A	EPS CUSHION		

JVC

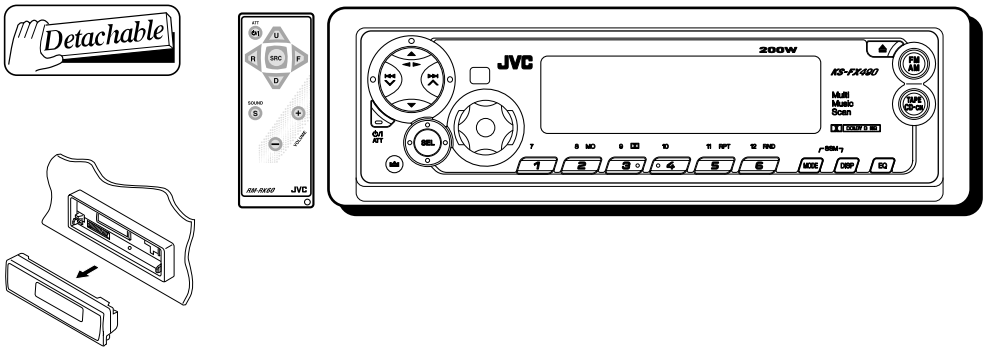
SCHEMATIC DIAGRAMS

CASSETTE RECEIVER

KS-FX490

CD-ROM No.SML200305

Area Suffix
J ---------- Northern America



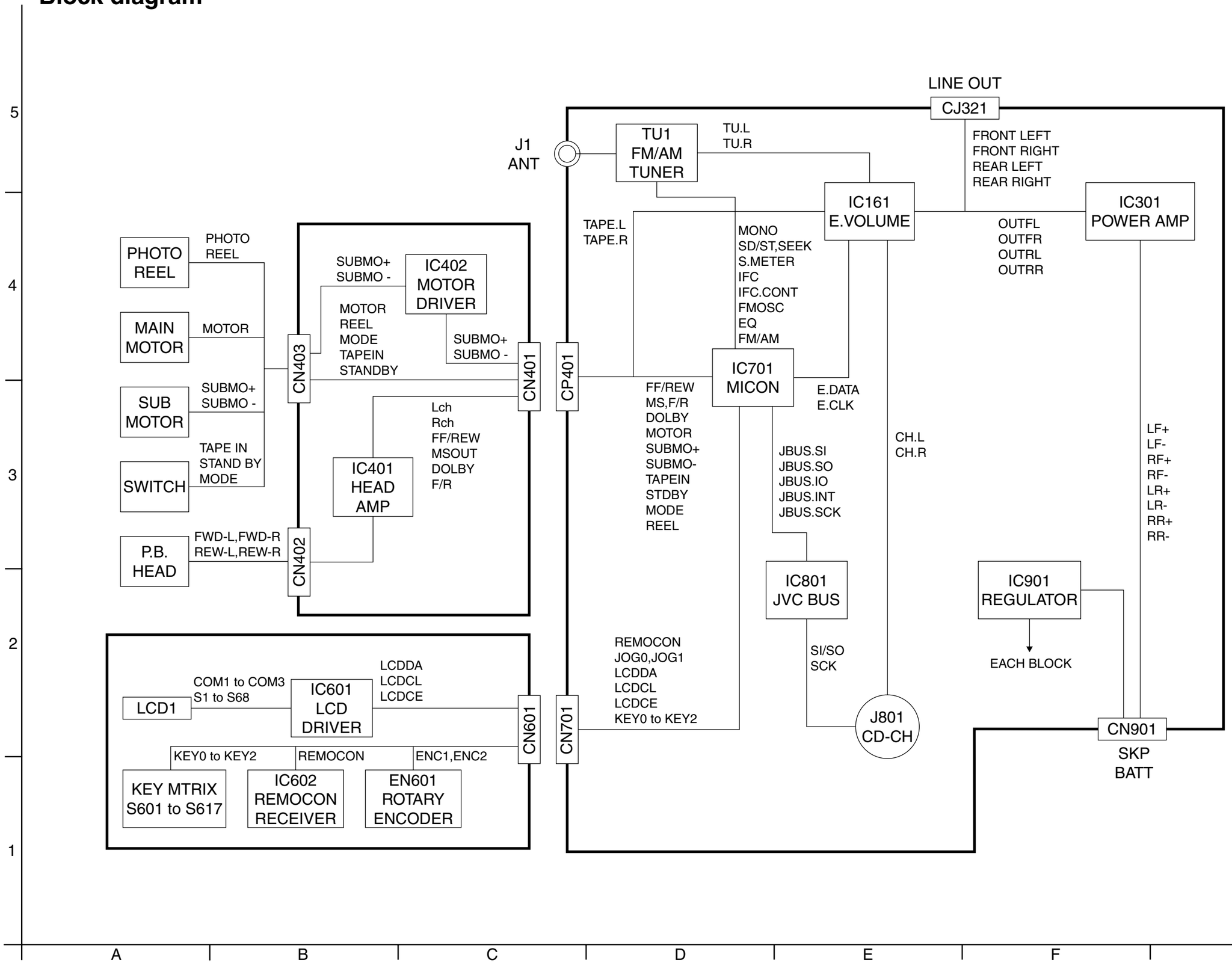
Contents

No.49845SCH
2003/05

Safety precaution

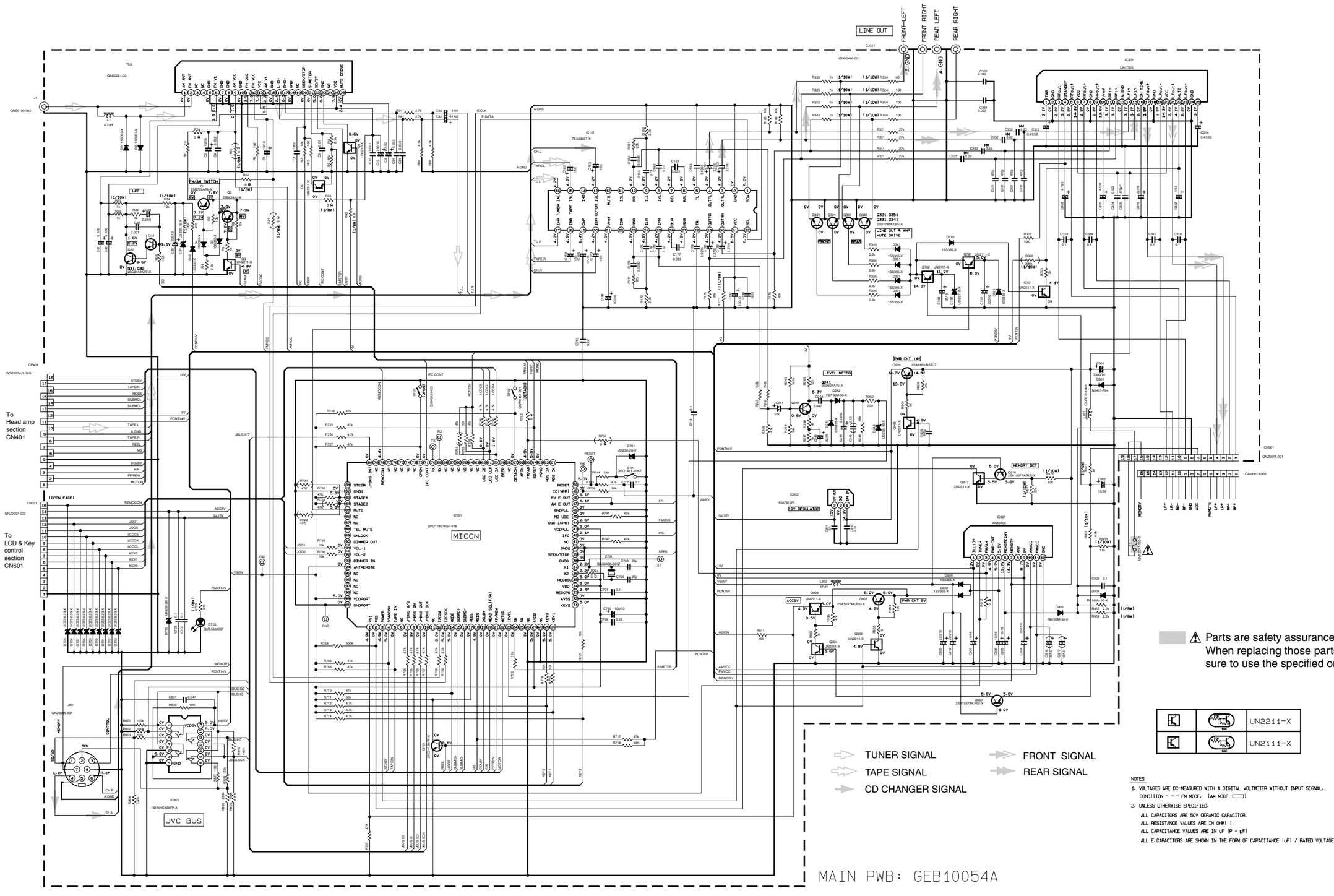
⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

Block diagram



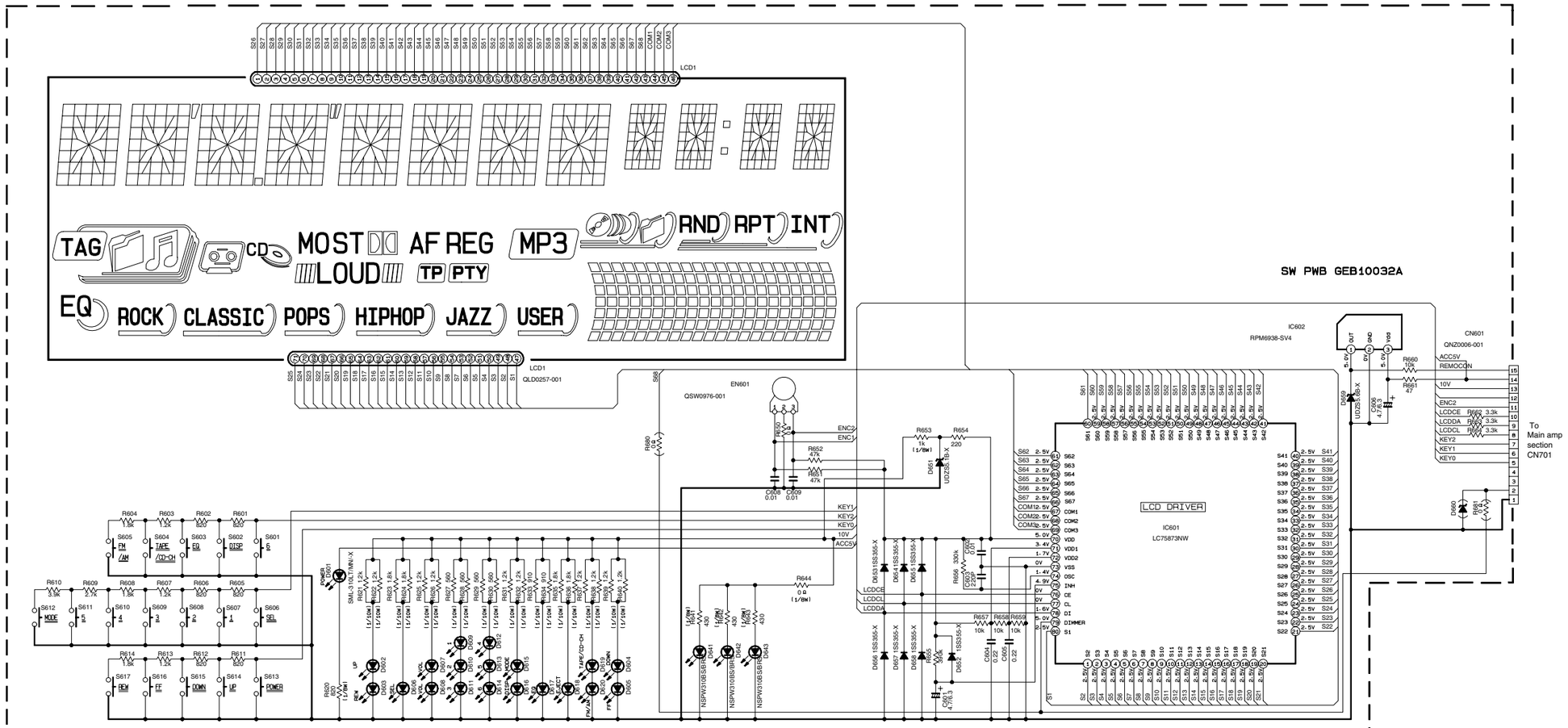
Standard schematic diagrams

■ Main amp section



⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

■ LCD & Key control section



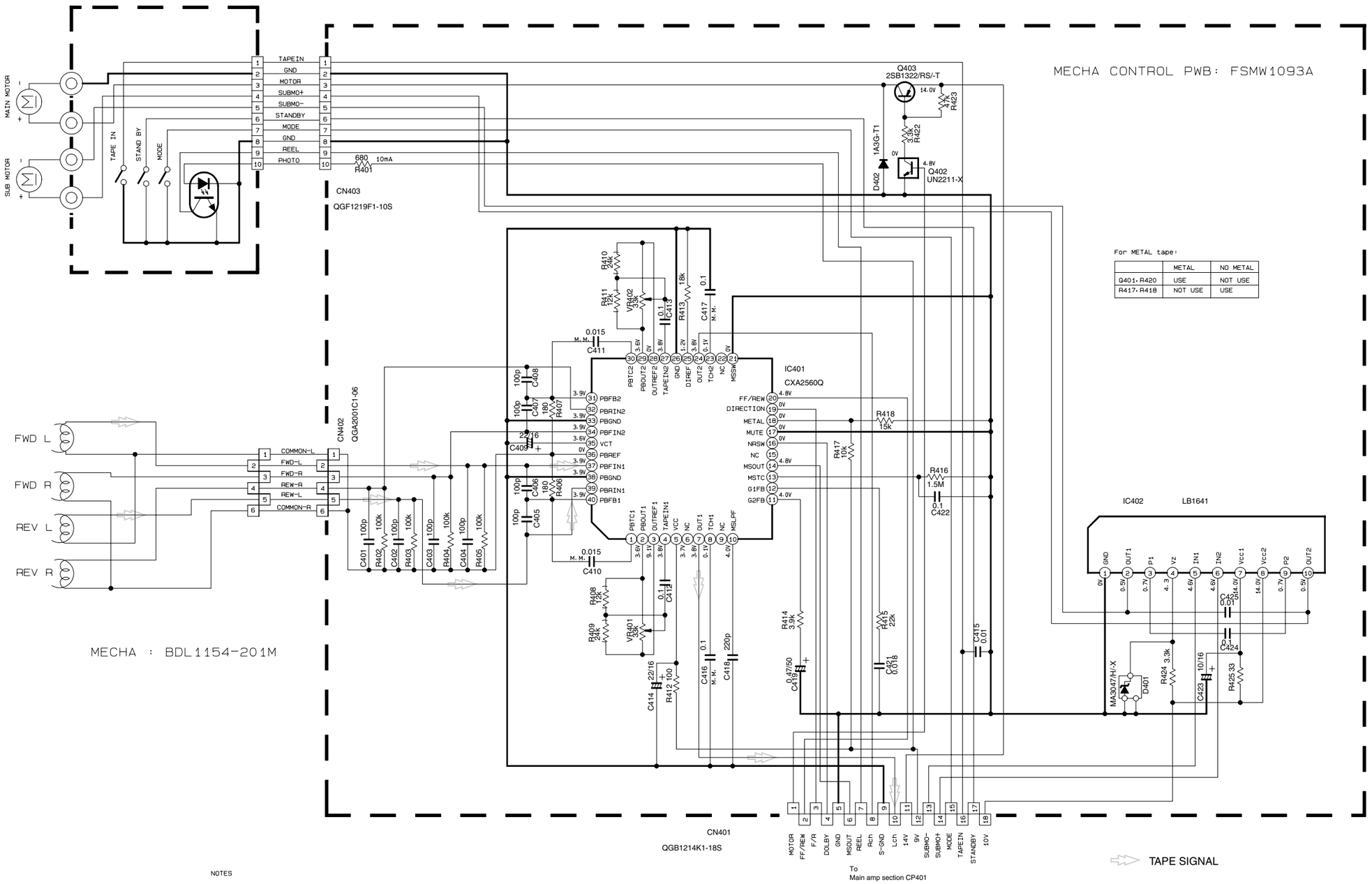
D602-D616, D618-D620	SML-310VT/JK/-X
D617	LNJ308G81/1-3/X
S601-S617	NSW0124-001X

	UN2211
	UN2111

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.

■ Head amp section



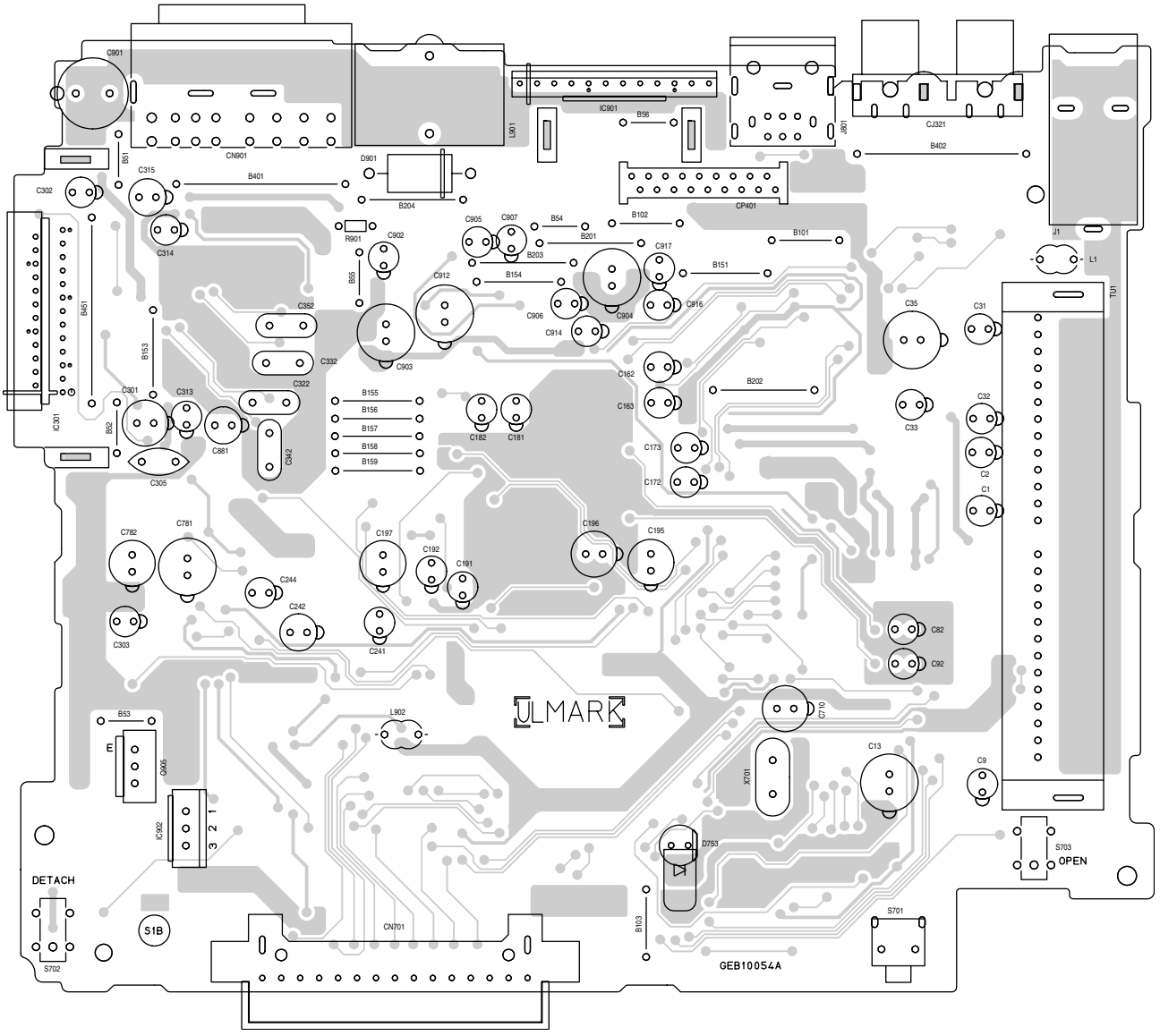
NOTES

1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
   CONDITION----TAPE MODE.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/4W ±5% OR 1/10W ±5% METAL GLAZE RESISTOR.
   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
3. Components in ( ) indicate not use

Printed circuit boards

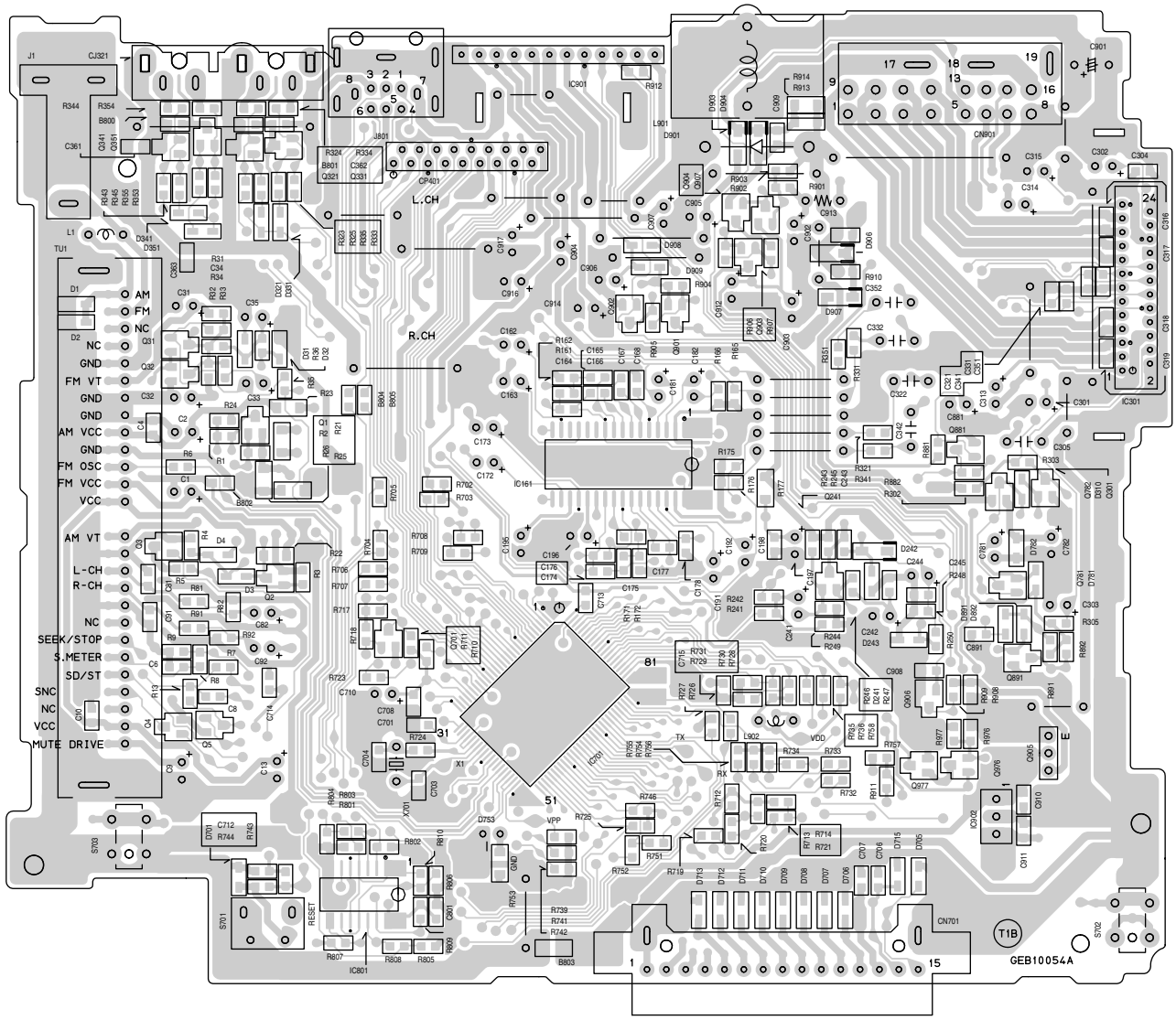
■ Main board

Forward side



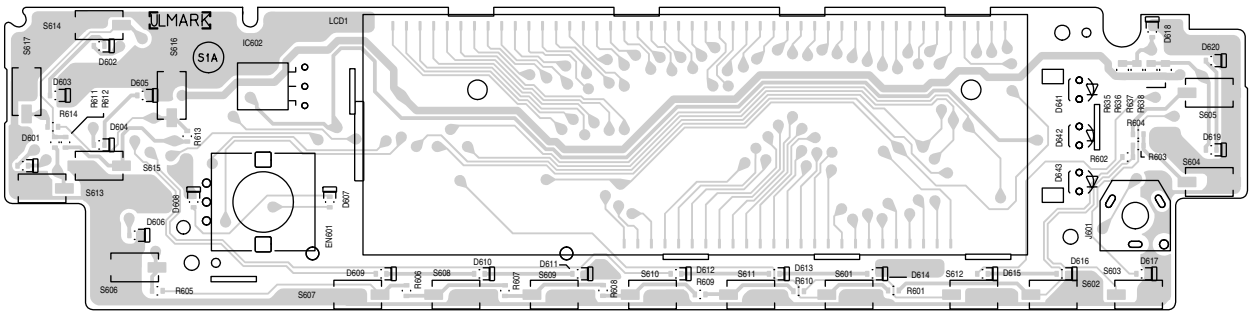
■ Main board

Reverse side

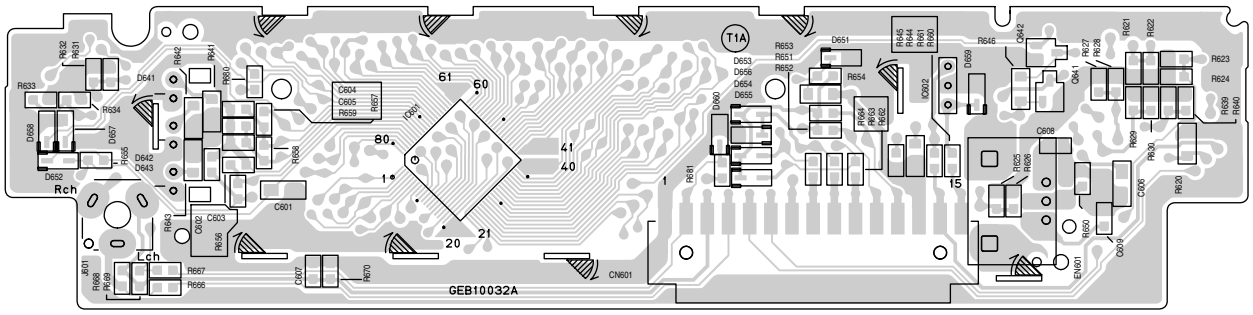


■ Front board

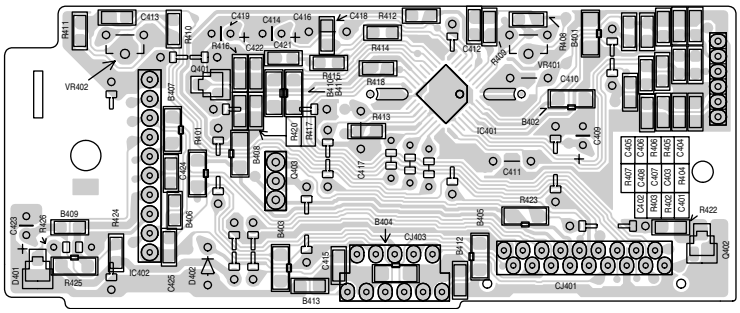
Forward side



Reverse side



■ Mecha board



KS-FX490

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(No.49845SCH)

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