

JVC

SERVICE MANUAL

SYSTEM CONTROLLER

RM-RE9000



Area Suffix
 E Continental Europe

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (\triangle) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

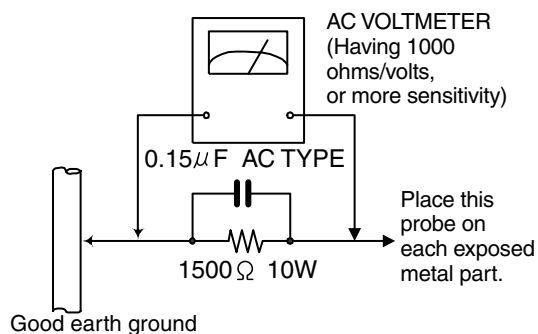
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

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.

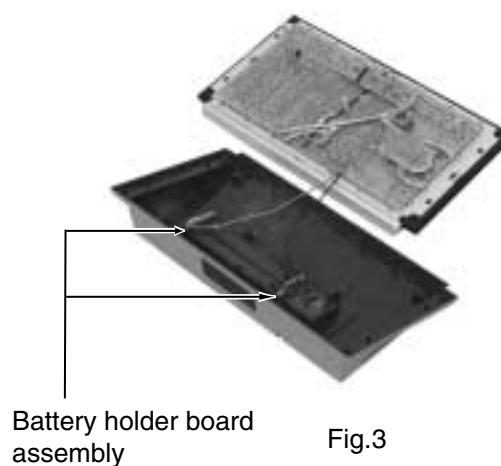
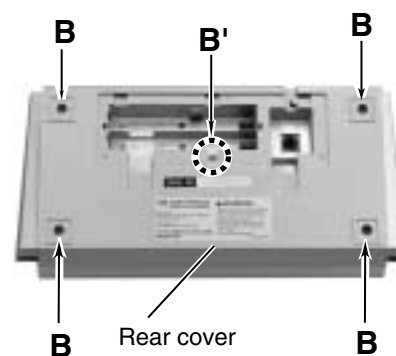
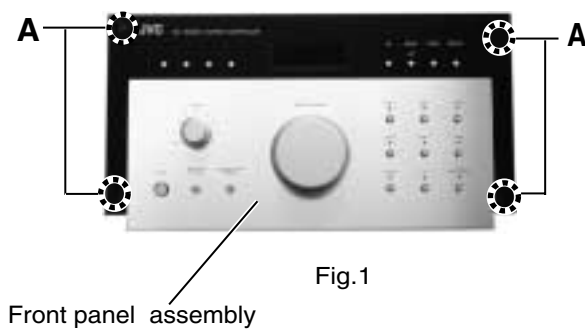
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (▣) and ICP (●) or identified by the " \triangle " mark nearby are critical for safety.

When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Disassembly method

■ Removing the rear cover (See Fig.1 to 3)

1. Remove the four screws **A** on the front with a hexagon wrench.
2. Place the reverse side of the set upward.
3. After taking off the cushions from the four places, remove the four screws **B** at the inside of the rear cover.
4. Remove the screw **B'** at the inside of the battery cover.
5. Remove the rear cover and the front panel assembly. (Because they should have been tightly engaged, remove them with due care.)
6. Remove the battery holder board assembly from the rear cover by pulling it up.



■ Removing the remote controller transmission board assembly (See Fig.4)

1. Remove the rear cover.
2. Remove the two screws **C** attaching the remote controller transmission board assembly.
3. Remove the connector CN201 connecting the main board assembly to the remote controller transmission board assembly.

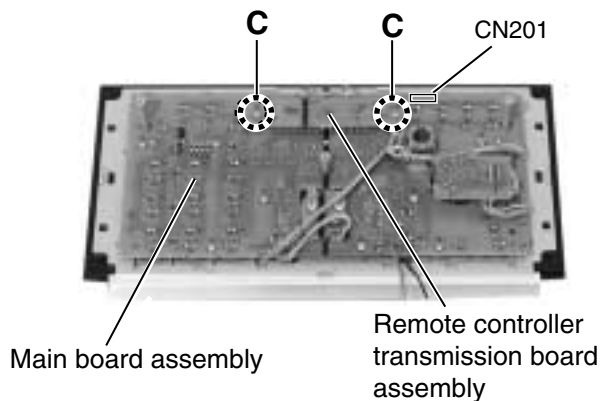


Fig.4

■ Removing the main board assembly (See Fig.5 to 7)

1. Remove the rear cover.
2. Remove the remote controller transmission board assembly.
3. After taking off the screws **D** & **E** attaching the volume knob and the rotary switch, remove their knobs.
4. After taking off the nut **F** attaching the volume board assembly with a box-type driver, remove the volume board assembly.
5. After taking off the nut **G** attaching the rotary switch board assembly with a box-type driver, remove the rotary switch board assembly.
6. Remove the fourteen screws **H** attaching the main board assembly.
7. Remove the connector CN103 connecting the main board assembly to the volume board assembly, and the connector CN301 connecting the main board assembly to the rotary switch board assembly, respectively.

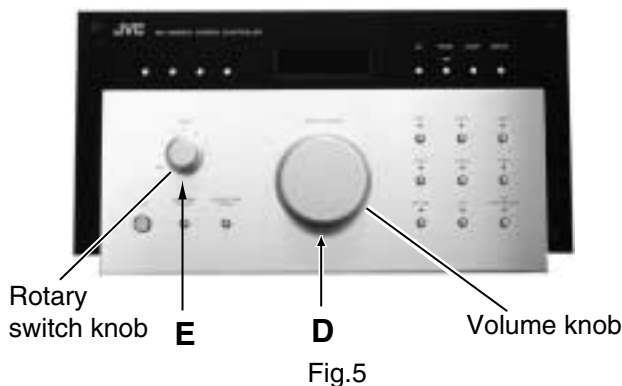


Fig.5

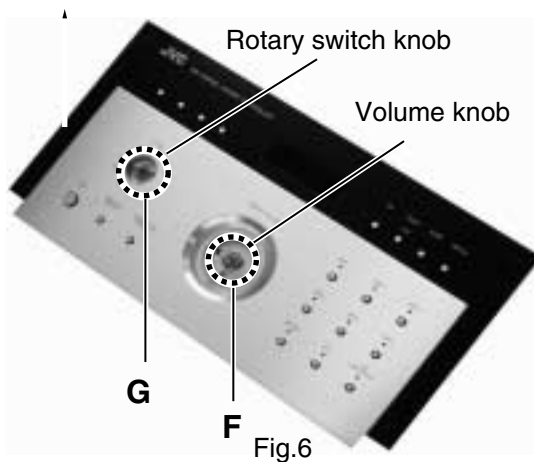


Fig.6

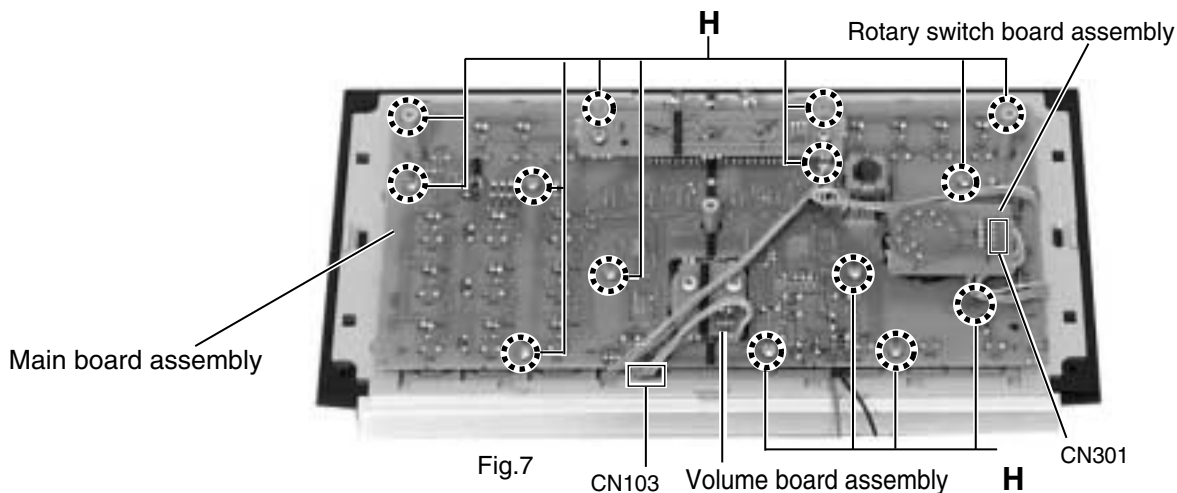


Fig.7

■ Removing the modular jack board assembly (See Fig.8)

1. Remove the rear cover.
2. Remove the remote controller transmission board assembly.
3. Remove the main board assembly.
4. Remove the two screws **I** attaching the modular jack board assembly.
5. Remove the connector CN501 connecting the main board assembly to the connector terminal board assembly.

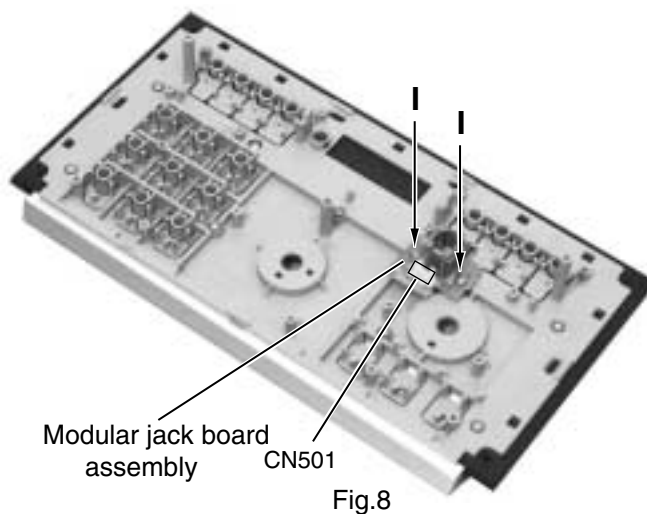


Fig.8

■ Removing the switch board (See Fig.9)

1. Remove the rear cover.
2. Remove the remote controller transmission board assembly.
3. Remove the main board assembly.
4. Remove the modular jack board assembly.
5. Remove the seven screws **J** attaching the switch board.
6. Remove the board by lifting it.

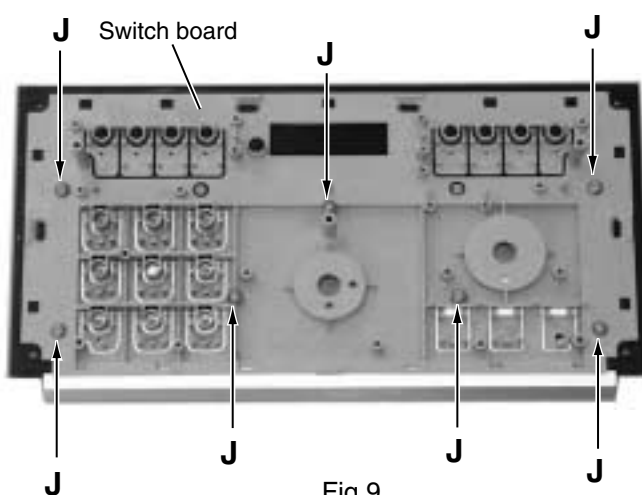


Fig.9

■ Removing the top panel (See Fig.10)

1. Remove the rear cover.
2. Remove the remote controller transmission board assembly.
3. Remove the main board assembly.
4. Remove the modular jack board assembly.
5. Remove the board.
6. Remove the two screws **K** attaching the lens and the top panel.

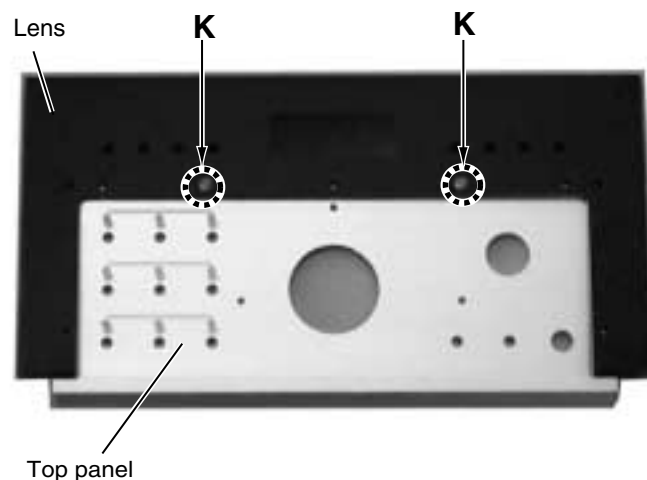


Fig.10

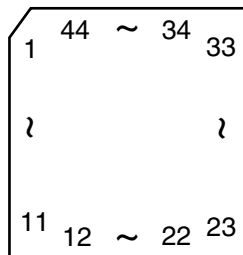
■ Reminder when the top panel is reassembled

1. When the top panel is reassembled, use the screws with the specified size (M3x8mm) without fail (Screws marked **K**).
Using longer screws may damage the top panel and cause the top panel unstable.

Description of major ICs

■ MN101CP117(IC101) : System controller

1.Pin layout

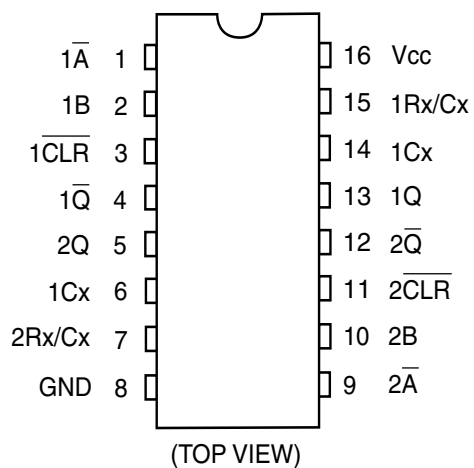


2.Pin function

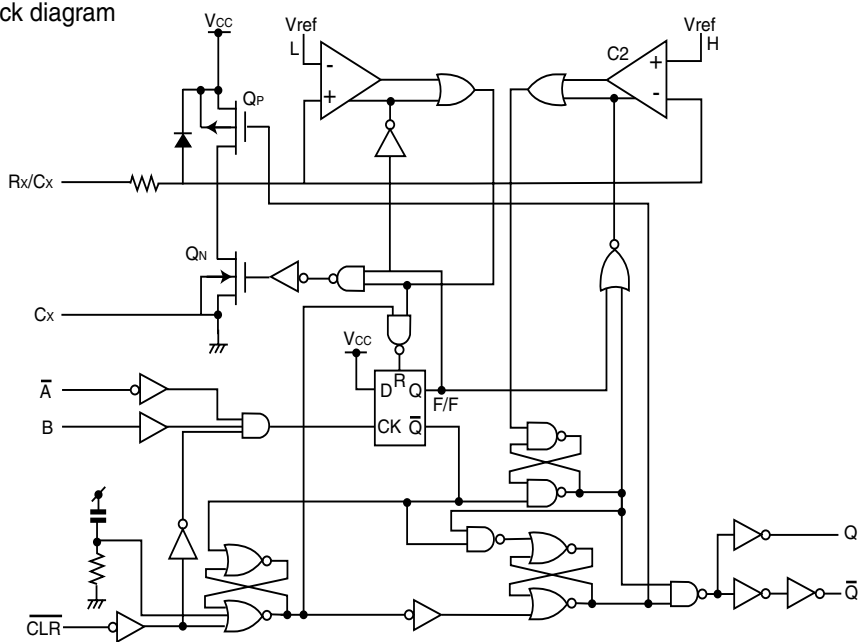
Pin No.	Symbol	Function	I/O	Pin No.	Symbol	Function	I/O
1	KY13	Key input 8	I	23	CK1	7segment circuit clock 1	O
2	ROT1	Rotary output 1	O	24	LATCH1	7segment circuit latch output 1	O
3	ROT2	Rotary output 2	O	25	RST1	7segment circuit latch reset 1	O
4	ROT3	Rotary output 3	O	26	SIN1	Output data 1	O
5	ROT4	Rotary input 1	I	27	WAKE	Wake	I
6	ROT5	Rotary input 2	I	28	KY2	Key input 2	I
7	ROT6	Rotary input 3	I	29	KY3	Key input 3	I
8	N.C	GND	I	30	KY4	Key input	I
9	N.C	GND	I	31	KY5	Key output 1	O
10	VOL1	Volume input 1	I	32	KY6	Key output 2	O
11	VOL2	Volume input 2	I	33	CK2	LED circuit clock 2	O
12	AD	AD input	I	34	LATCH2	LED circuit latch output 2	O
13	VDD	2.0V~5.0V Supply		35	RST2	LED circuit reset 2	O
14	OSC2	clock output	O	36	SIN2	LED circuit data output 2	O
15	OSC1	clock input	I	37	KY7	Key output 3	O
16	VSS	0.0V		38	KY8	Key output 4	O
17	NC	—————		39	RST	Reset	I
18	SDATO	Serial output data	O	40	MMOD	GND	I
19	BRI	Blight adjustment	O	41	KY9	Key output 5	O
20	SCLK	Serial clock	O	42	KY10	Key input 5	I
21	KY1	Key input 1	O	43	KY11	Key input 6	I
22	RMOUT	Remocon output	O	44	KY12	Key input 7	I

■ TC74VHC123AF-X(IC112) :Shift register for relay control

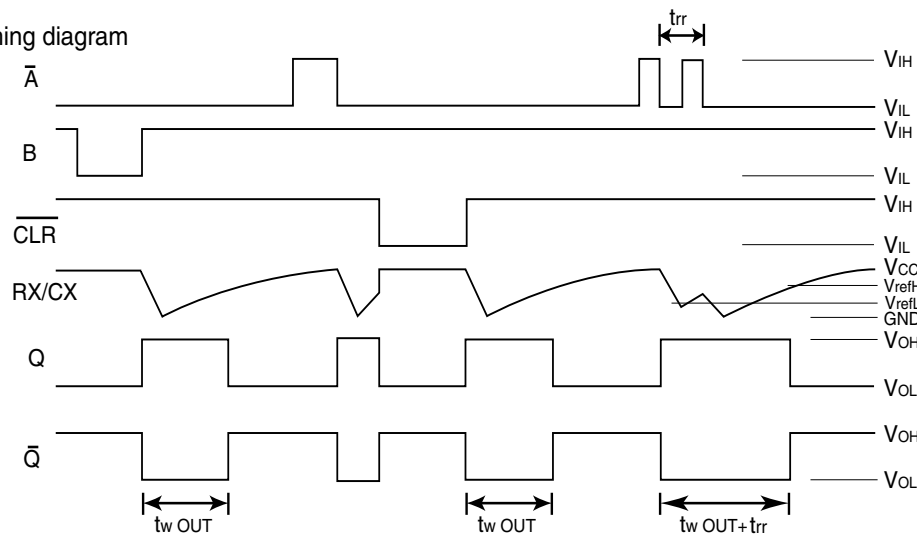
1. Pin layout



2. Block diagram

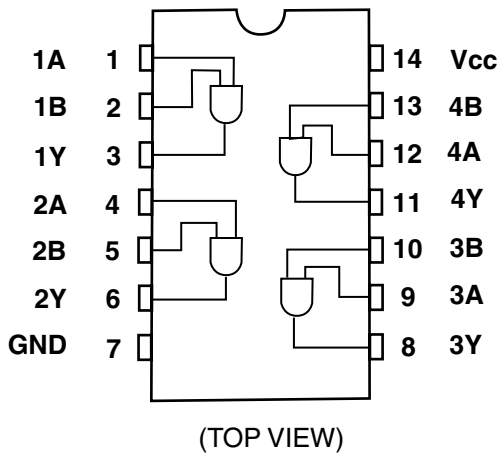


3. Timing diagram



■ **TC74VHC08F-X (IC112) :Data line buffer**

1. Pin. layout



2. True table

A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

X : Don't Care

< MEMO >

JVC

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