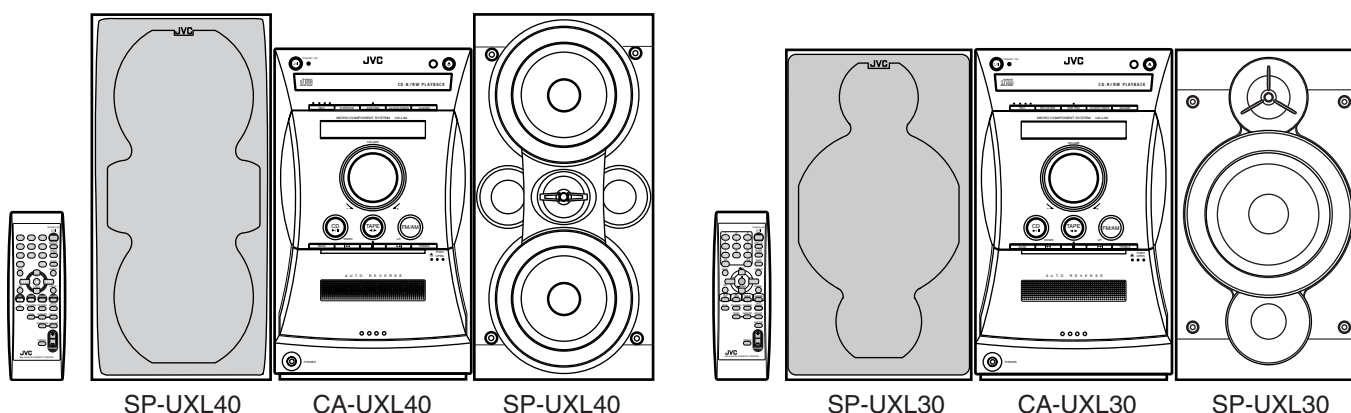


JVC

SERVICE MANUAL

MICRO COMPONENT SYSTEM

UX-L40/UX-L30



UX-L40	
Area Suffix	
US	----- Singapore
UP	----- Korea
UW	----- Brazil, Mexico, Peru



UX-L30	
Area Suffix	
US	----- Singapore
UP	----- Korea
UW	----- Brazil, Mexico, Peru
UJ	----- U.S. Military

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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.

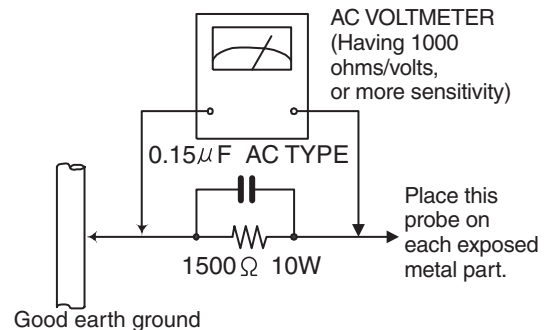
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA 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. Voltage measured any 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 (\blacksquare), diode (\blacksquare) and ICP (\bullet) or identified by the (\triangle) mark nearby are critical for safety.

(This regulation does not correspond to J and C version.)

Preventing static electricity

1. Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

2. About the earth processing for the destruction prevention by static electricity

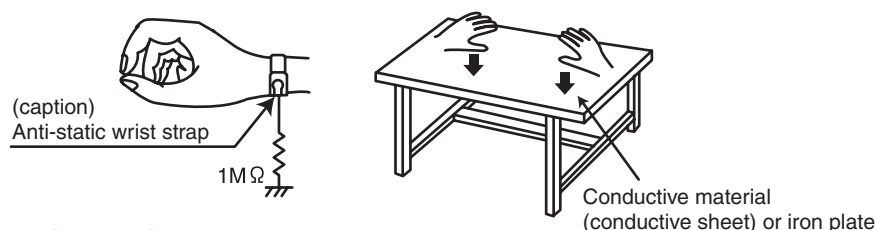
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

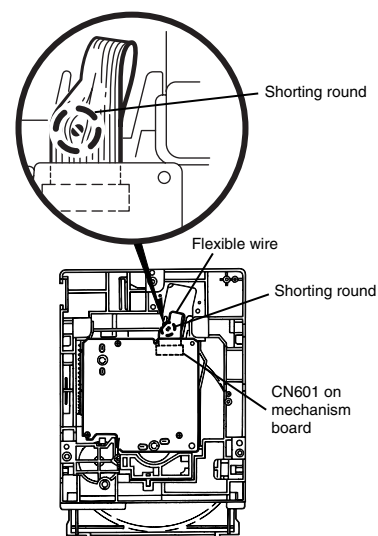
4. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
3. Handle the flexible cable carefully as it may break when subjected to strong force.
4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for pick-up and how to detach the substrate.**

1. Solder is put up before the card wire is removed from connector on the CD substrate as shown in Figure.
(When the wire is removed without putting up solder, the CD pick-up assembly might destroy.)
2. Please remove solder after connecting the card wire with when you install picking up in the substrate.



Important for laser products

1.CLASS 1 LASER PRODUCT


2.DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**CAUTION** Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.

VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

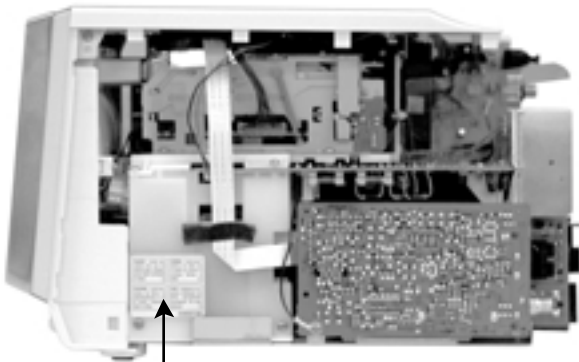
ADVARSEL : Usynlig laserstråling ved åbning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL



CLASS 1
LASER PRODUCT



CAUTION : Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING : Osynlig laserstrålning när denna del är öppnad och spårren är urkopplad. Betrakta ej strålen. (s)

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (d)

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)

E406507-001

Disassembly method

<Main body>

■ Removing the Metal cover

(See Fig.1 to 3)

1. Remove the six screws **A** on the back of the main body.
2. Remove the screw **B** on each side and remove the cover in the direction of the arrow.

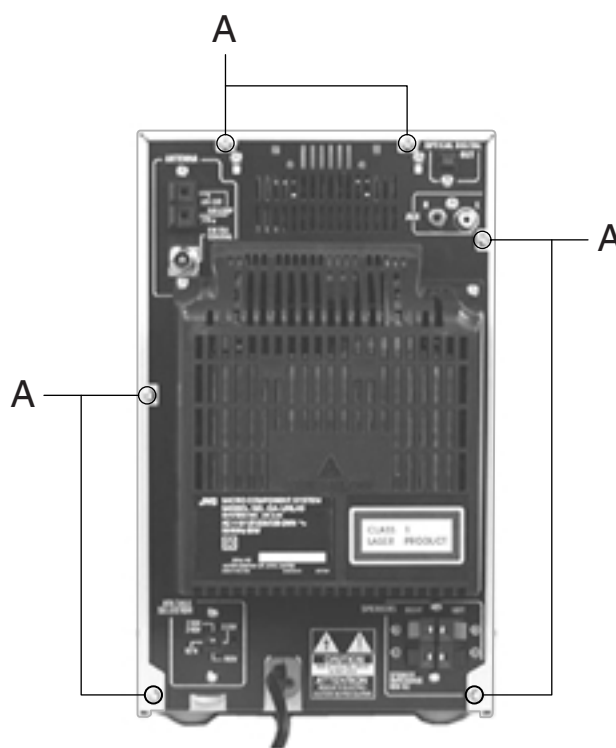


Fig.1



Fig.3



Fig.2

■ Removing the Rear cover

(See Fig.4)

- Remove the metal cover.
1. Remove the two screws **C** retaining the rear cover.

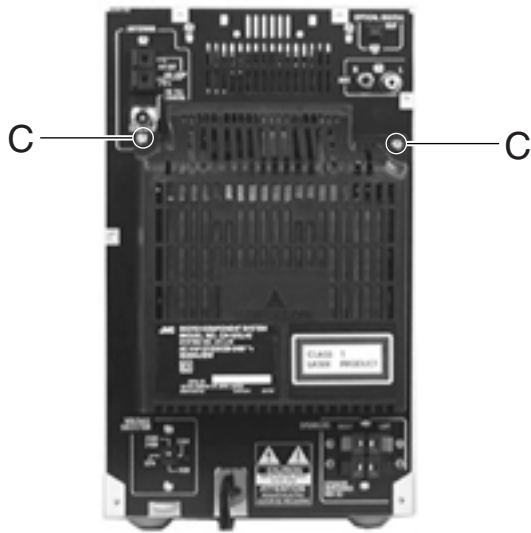


Fig.4

■ Removing the Rear panel

(See Fig.5)

- Remove the metal cover and the rear cover.
1. Remove the twelve screws **D** retaining the rear panel. Release the two joints **a** on the rear side and the joint **b** on each side.

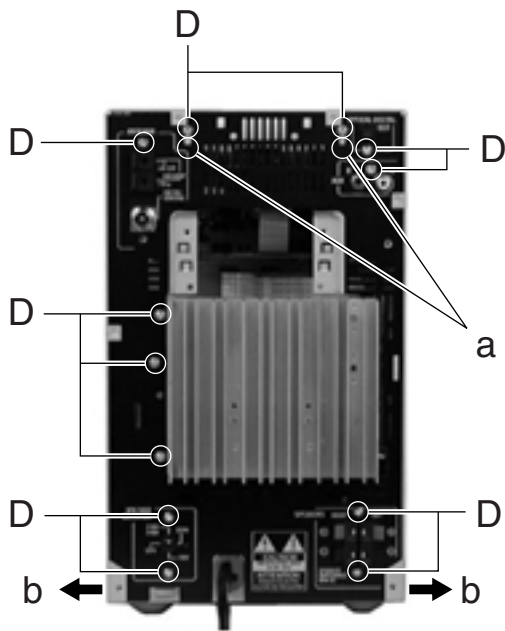


Fig.5

■ Removing the Tuner board

(See Fig.6)

- Remove the metal cover.
- 1. Disconnect the card wire from connector CN1 on the tuner board.
- 2. Remove the two screws **E** on the rear side and the screw **F** on the side.

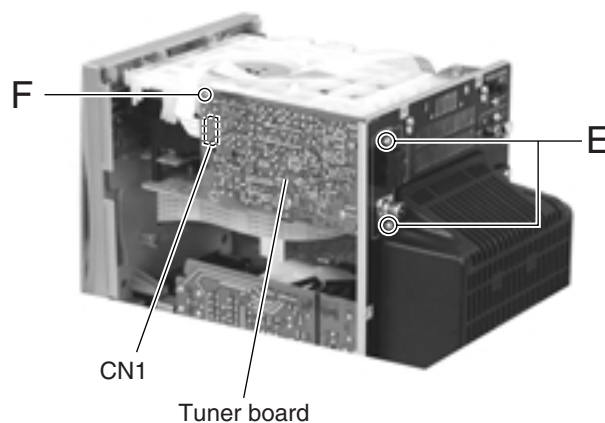


Fig.6

■ Removing the Optical digital board

(See Fig.7)

- Remove the metal cover.
- 1. Disconnect the shield wire from connector CN905 on the optical digital board.
- 2. Remove the screw **G** on the rear side and the screw **H** on the upper side.

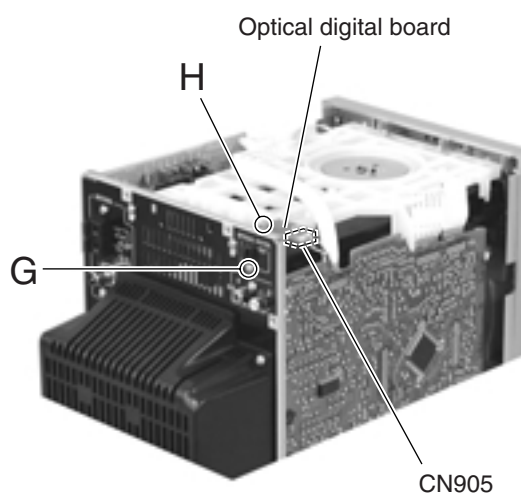


Fig.7

■Removing the CD-R/RW mechanism assembly (See Fig.8)

- Remove the metal cover, the rear cover, the rear panel, the tuner board and the optical digital board.

1. Disconnect the card wire from connector CN903 and CN904 on the main board.
2. Pull the joint **c** in the direction of the arrow and remove the CD-R/RW mechanism assembly backward while releasing the joint **d**.

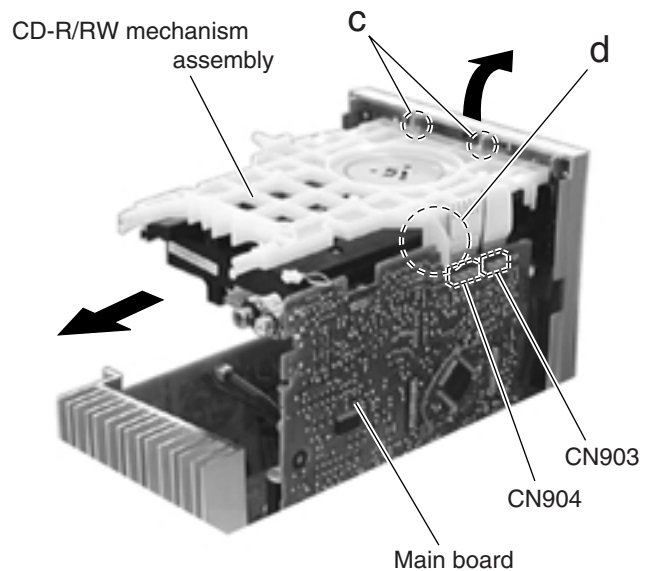


Fig.8

■ Removing the Main board/ the Heat sink board (See Fig.9 to 11)

- Remove the metal cover, the rear cover and the rear panel.

1. Disconnect the card wire from connector CN902, CN903, CN904 and CN905 on the main board and remove the CD-R/RW mechanism assembly.

REFERENCE: Refer to the method of removing the CD-R/RW mechanism assembly and Fig.8.

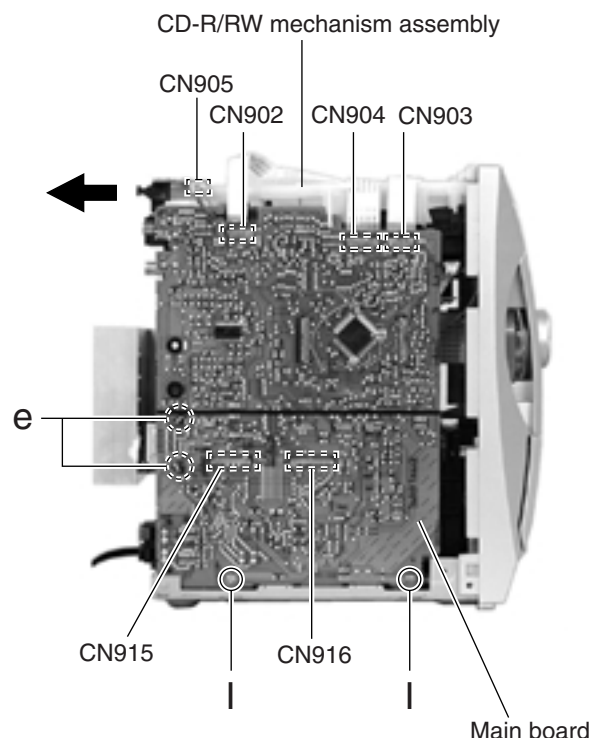


Fig.9

2. Remove the two screws **l** to remove the main board.
3. Disconnect the card wire from connector CN931, CN935, CN933, CN934, CN913, CN901, CN900 and CN917 on the main board.
4. Remove the band **f** and disconnect the card wire from connector CN951 on the power transformer assembly. Remove the main board / the heat sink board from the body.
5. Release the joint **e** of the main board and disconnect connector CN944 and CN945 of the heat sink board from connector CN915 and CN916 of the main board respectively.

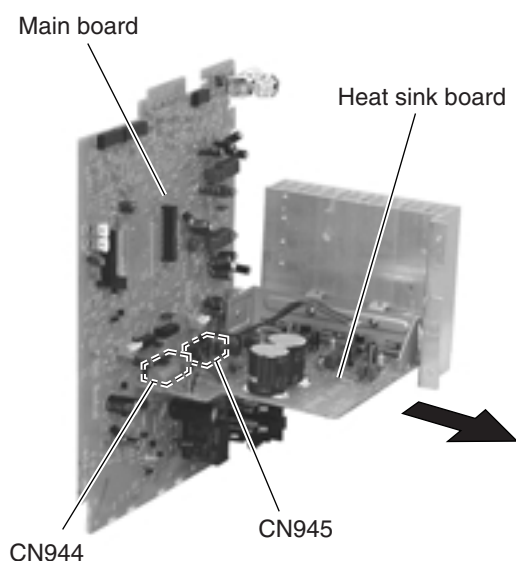


Fig.11

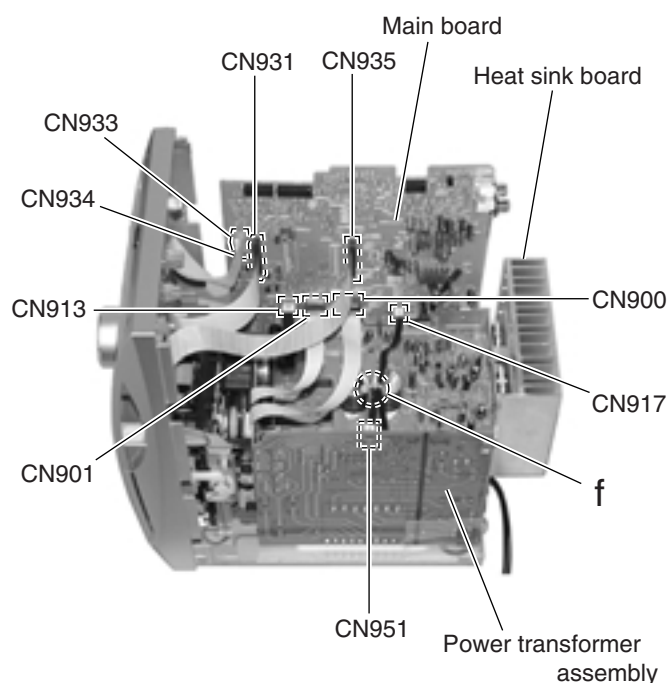


Fig.10

■ Removing the Power transformer assembly (See Fig.12)

- Remove the metal cover, the rear cover, the rear panel, the CD-R/RW mechanism assembly and the main board.
1. Disconnect the power cord from connector J1000 on the power transformer assembly.
 2. Remove the four screws **J**.

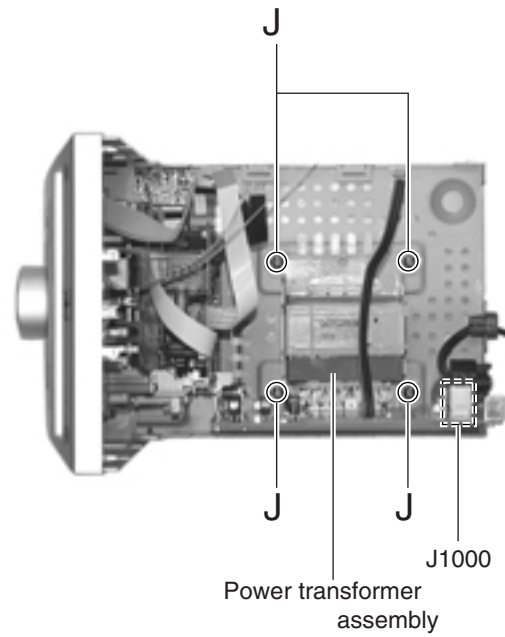


Fig.12

■ Removing the Front panel assembly (See Fig.13 to 16)

- Remove the metal cover.
1. Remove the screw **K** on each side. Pull the joint **h** on both sides and lift the front panel assembly to release the joint **g**.
 2. Disconnect connector CN931, CN935, CN933 and CN934 on the main board.
 3. Disconnect the card wire from connector CN33 and CN34 on the cassette mechanism board.

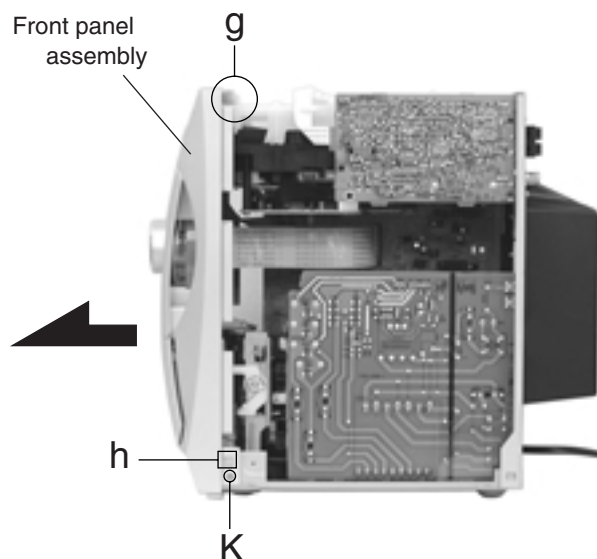


Fig.13

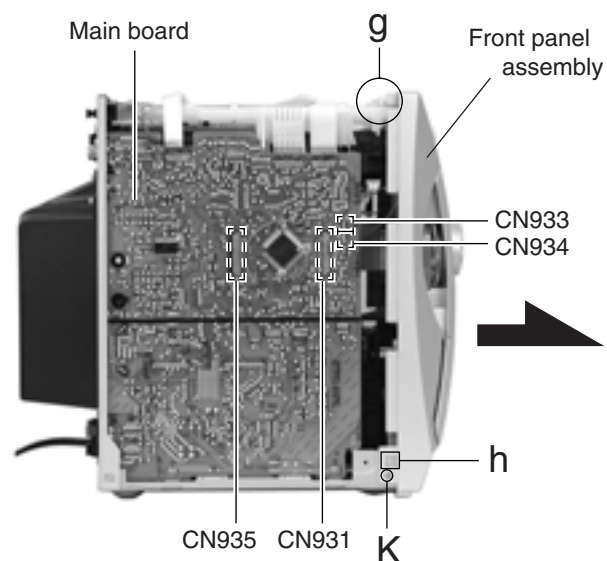


Fig.14

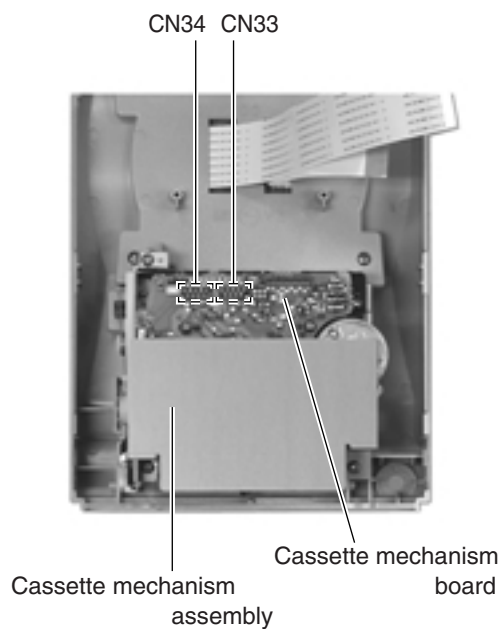


Fig.16



Fig.15

■ Removing the Phones board

(See Fig.17)

- Prior to performing the following procedure, remove the metal cover and the front panel assembly.

1. Disconnect connector CN913 on the main board.

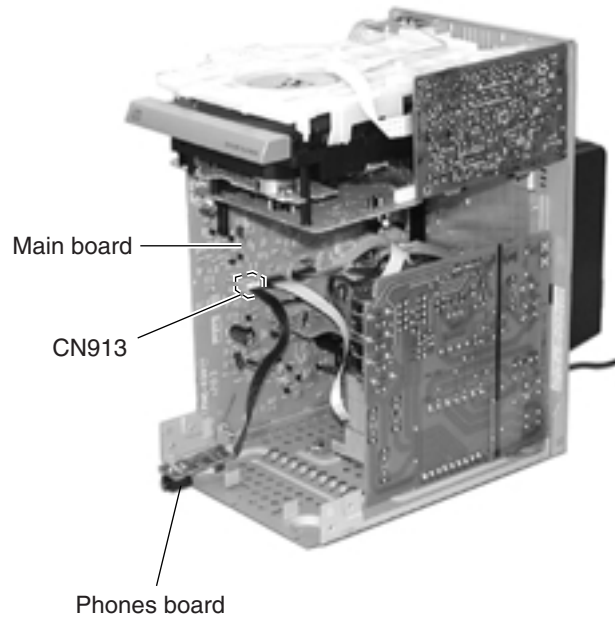


Fig.17

■ Removing the Cassette mechanism assembly

(See Fig.18)

- Prior to performing the following procedure, remove the metal cover and the front panel assembly.

1. Remove the four screws **L** retaining the cassette mechanism assembly.

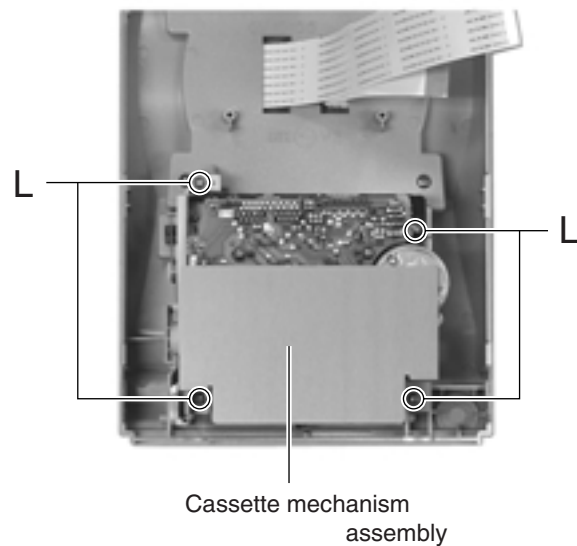


Fig.18

■ Removing the Control board

(See Fig.19)

- Prior to performing the following procedure, remove the metal cover and the front panel assembly.
1. Remove the seven screws **M** to remove the control board.

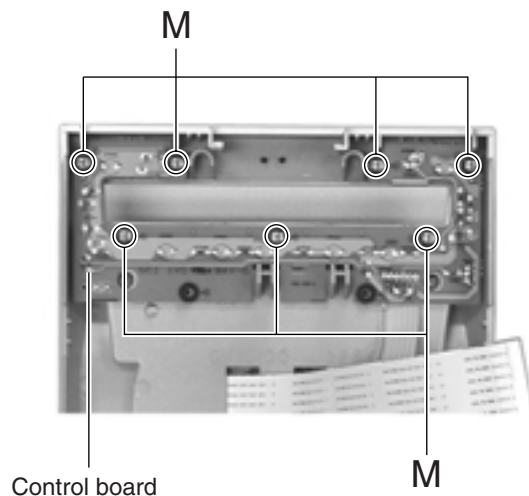


Fig.19

■ Removing the Volume board

(See Fig.20 and 21)

- Prior to performing the following procedure, remove the metal cover and the front panel assembly.
1. Remove the four screws **N** attaching the volume panel on the front panel assembly.
 2. Remove the six screws **O** attaching the volume board on the volume panel, and remove the volume board.

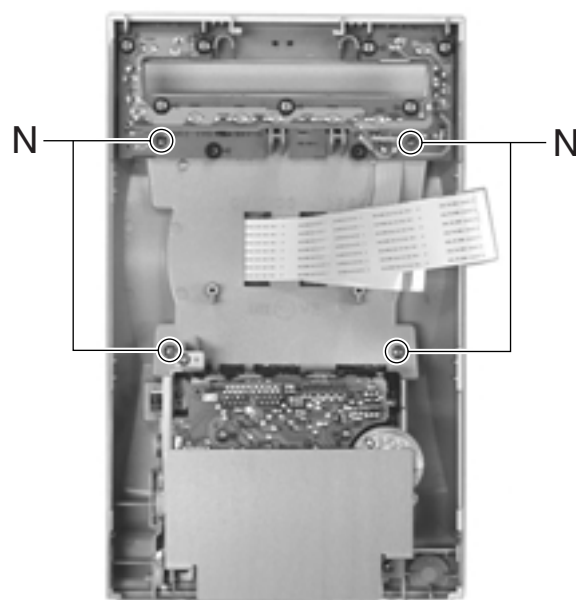


Fig.20

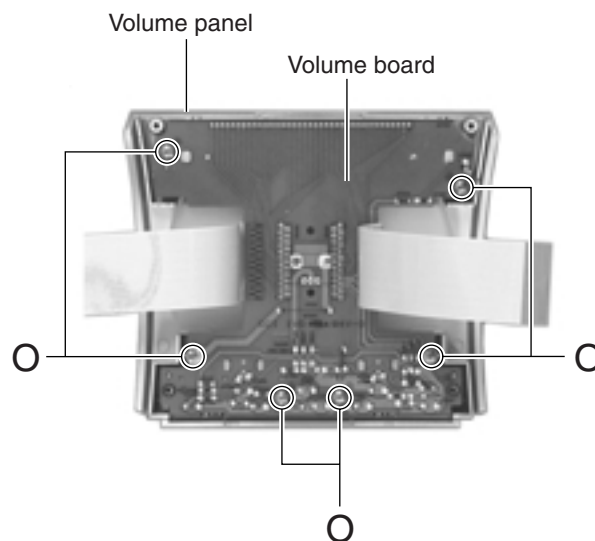


Fig.21

<CD mechanism assembly section>

■ Removing the CD servo board

(See Fig.1, 2)

CAUTION: Solder the shorting round before disconnecting the card wire extending from the pickup. If you do not follow this instruction, the pickup may be damaged.

1. Remove the two screws **A** on the bottom of the loading base.
2. Disconnect the card wire from connector CN606 on the CD servo board. Turn over the CD servo board as shown in Fig.2 and put aside temporarily.
3. Solder the shorting round on the pickup board in the CD pickup section.
4. Disconnect the card wire from connector CN601 and the wire from CN801 on the CD servo board.

CAUTION: When reassembling, make sure to unsolder the shorting round after connecting the card wire from the pickup to the connector.

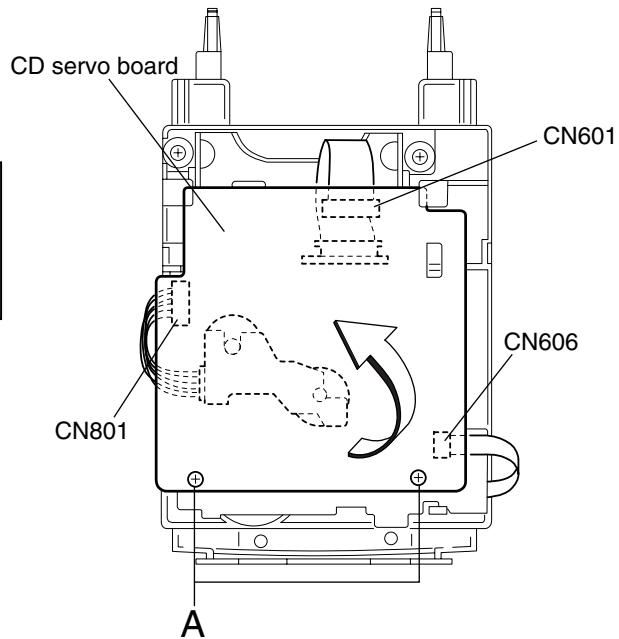


Fig.1

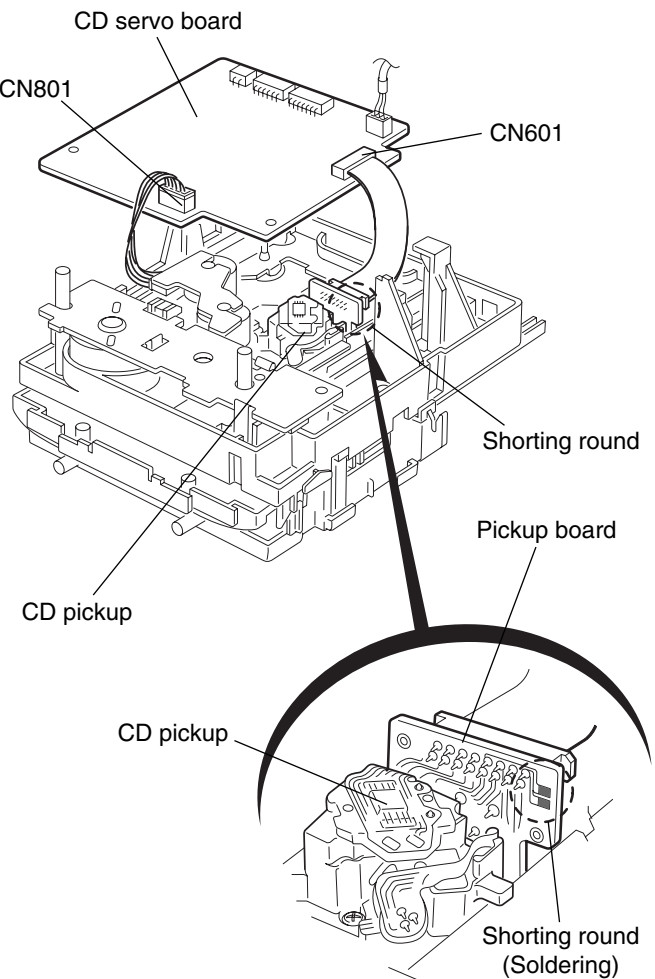


Fig.2

■ Removing the clamber base / tray (See Fig.3 ~ 5)

1. Bring up the fitting in the direction of the arrow to release the three joints **a**.
2. On the front side of the body, move the cam plate lever to the center.
3. Remove the stopper screw **B** and pull out the tray toward the front.
4. Remove the four screws **C** attaching the clamber base.
5. From the rear side, remove the clamber base upward.

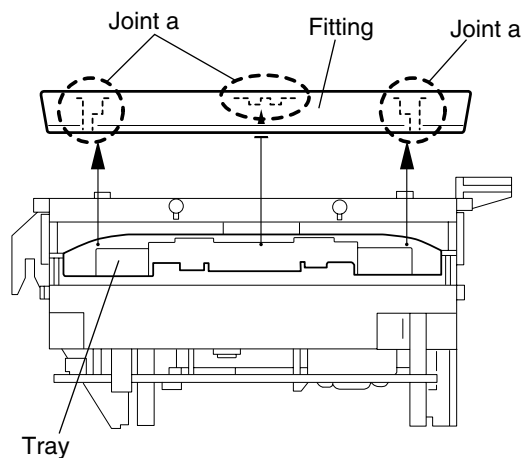


Fig.3

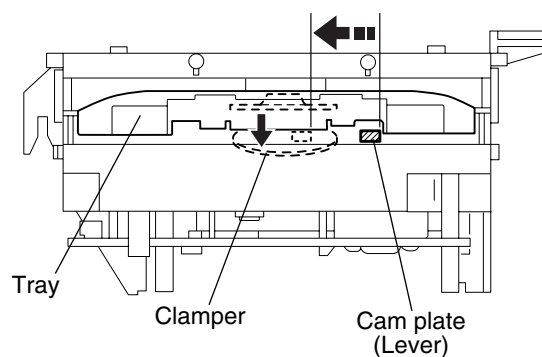


Fig.4

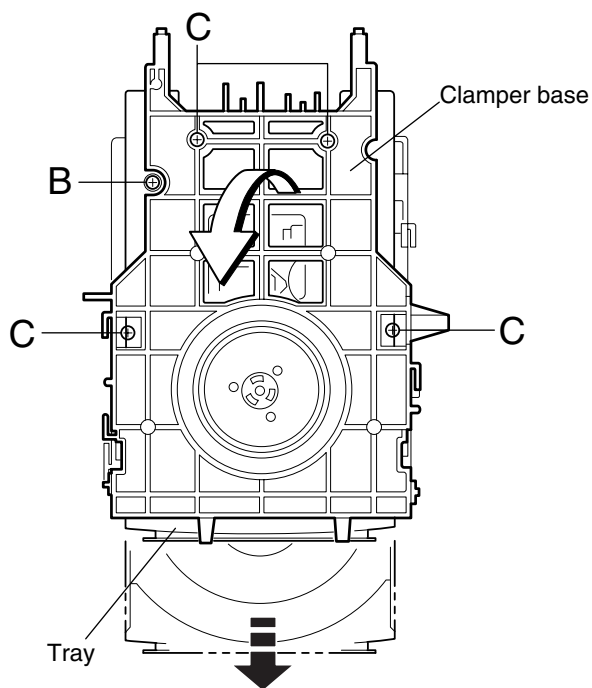


Fig.5

■ Removing the CD mechanism assembly (See Fig.6, 7)

- Prior to performing the following procedure, remove the clamper base / tray and the CD servo board.

1. Remove the screw **D** attaching the CD mechanism assembly.
2. Move the CD mechanism assembly backward to release the two joints **b** of the CD base on the front side.

CAUTION: When reassembling, fit the front part of the CD mechanism assembly to the two chassis joints **b** and attach the four dampers correctly.

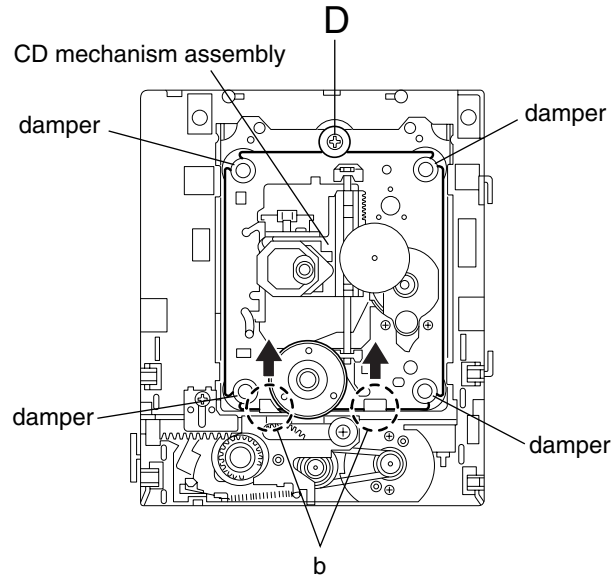


Fig.6

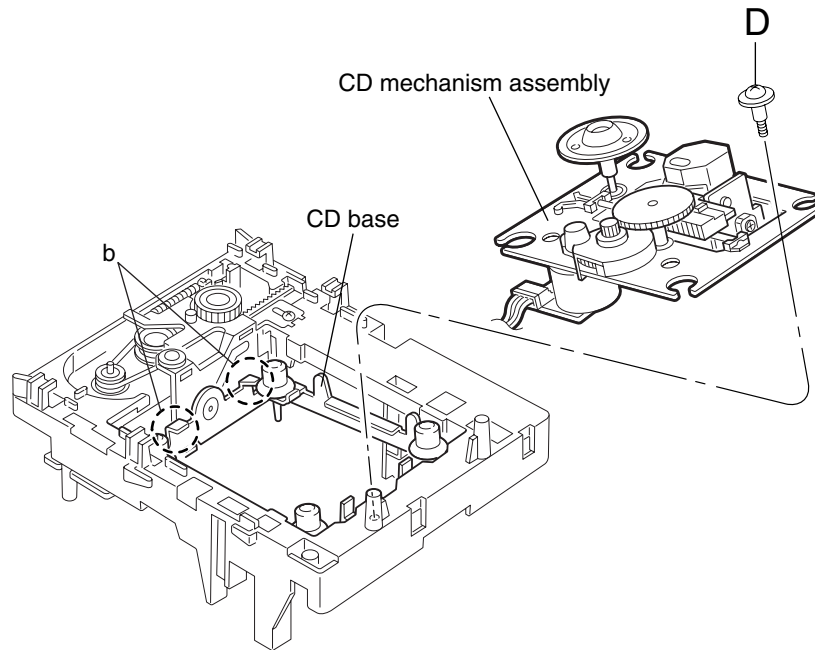


Fig.7

■ Removing the loading motor / loading motor board (See Fig.8, 9)

- Prior to performing the following procedure, remove the clamber base / tray and the CD servo board.
1. From upside of the loading base, remove the belt from the motor pulley.
 2. Remove the two screws **E** attaching the loading motor.
 3. At the bottom of the body, release the three joints **c** outward and pull out the loading motor board from the shaft. The loading motor comes off with the loading board.
 4. Unsolder the two soldered points **d** on the loading motor board and remove the loading motor.

REFERENCE: When removing the loading motor board only, unsolder the two soldering **d** on the loading motor and release the three joints **c**.

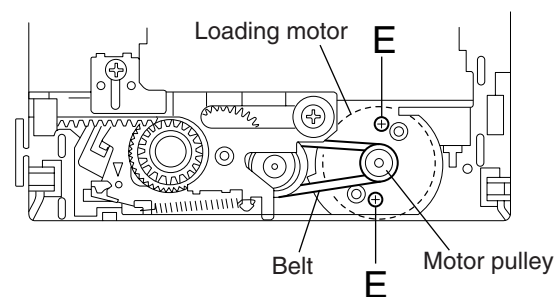


Fig.8

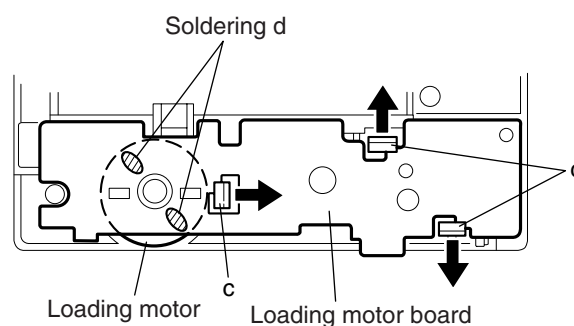


Fig.9

■ Removing the C.D. gear (1), (2) and (3) (See Fig.10 ~ 13)

- Prior to performing the following procedure, remove the CD servo board.

1. Remove the two screws **F** attaching the CD base on the bottom of the loading base.
2. Remove the rear part of the CD base upward and pull out the shaft **e** of the CD base from the camplate on the front side of the loading base.

REFERENCE: The CD mechanism assembly comes off with the CD base.

3. Remove the leaf spring on the upside of the loading base.
4. Remove the screw **G** attaching the cam plate fitting.
5. Remove the screw **H** and the cam plate upward.
6. Remove the belt from the C.D. gear (1).
7. Pull out the C.D. gear (1), (2) and (3) respectively.

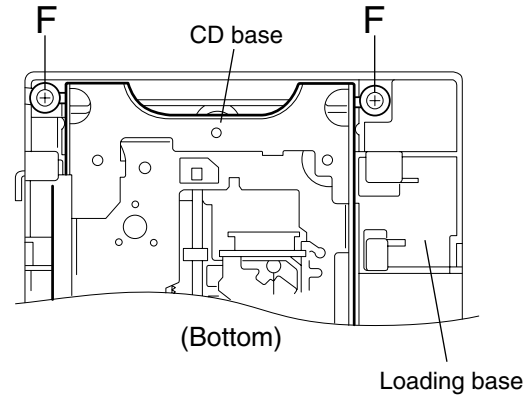


Fig.10

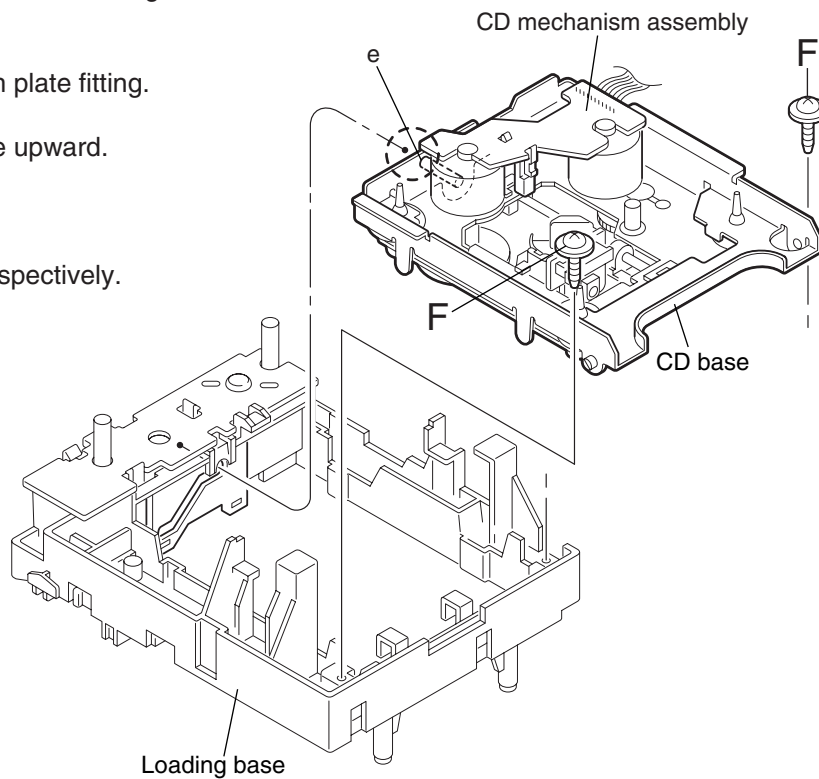


Fig.11

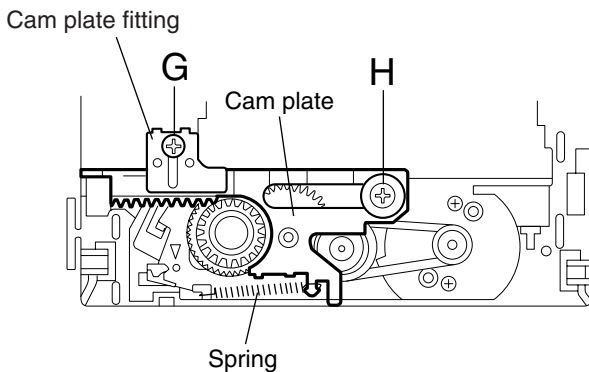


Fig.12

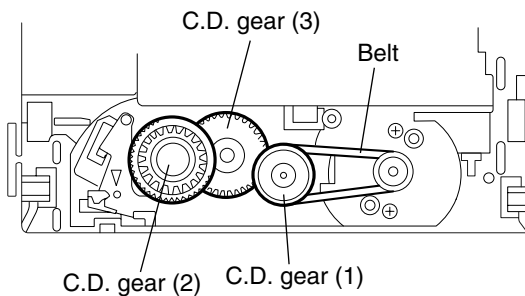
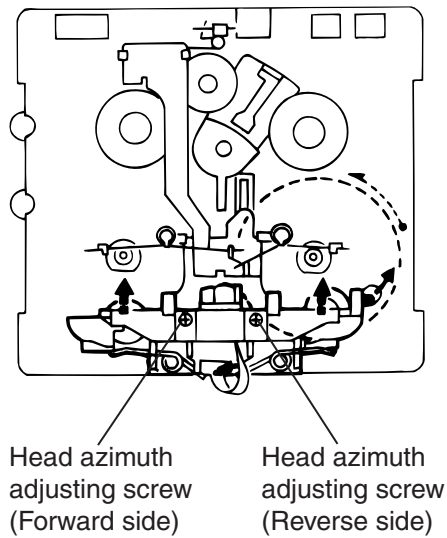


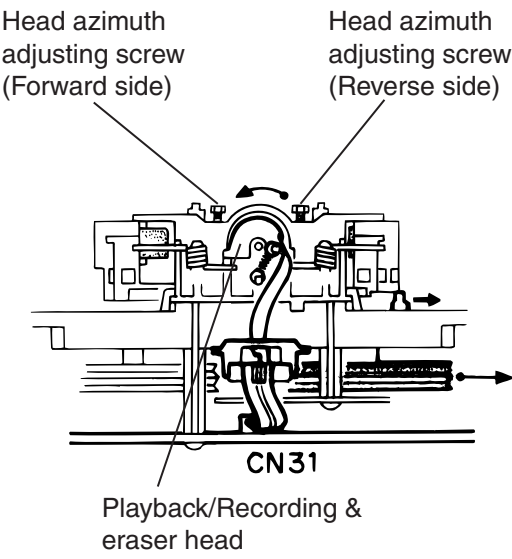
Fig.13

<<Arrangement of Adjusting Position>>

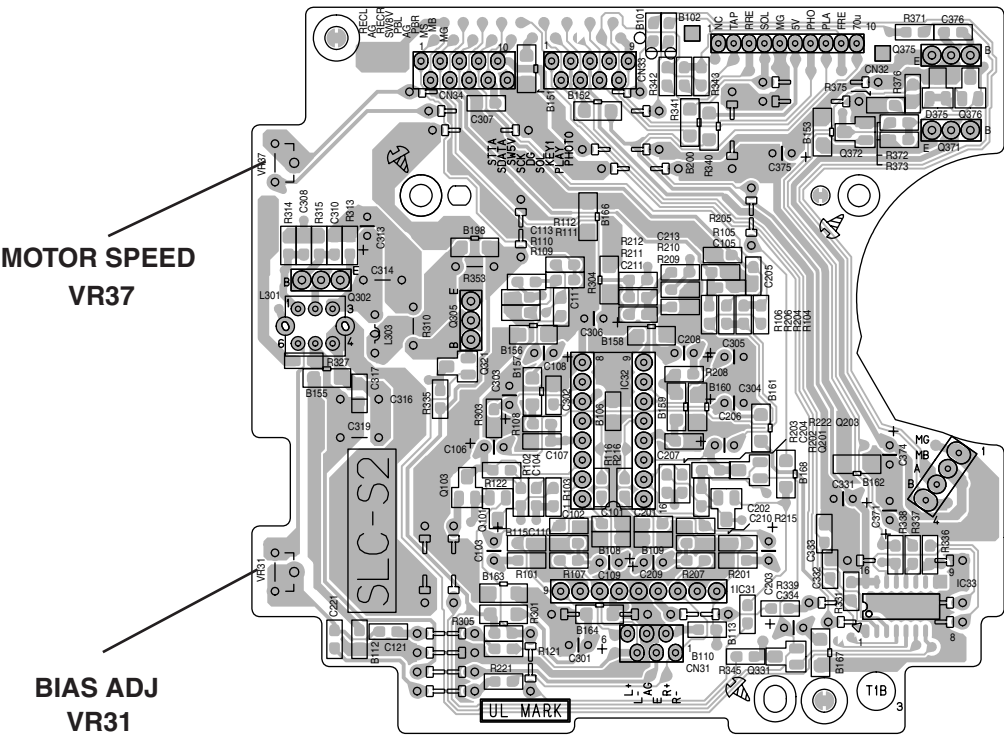
Cassette mechanism section



Cassette mechanism section (Back side)



Cassette AMP board



■ Tape Recorder Section

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Confirmation of head angle	Test tape : VT703L (8kHz) Measurement output terminal : Speaker terminal Speaker R (Load resistance: 4 Ω) : Headphone terminal	1 Playback the test tape VT703L (8kHz) 2 With the recording & playback mechanism, adjust the head azimuth screw so that the forward and reverse output levels become maximum. After adjustment, lock the head azimuth at least by half turn. 3 In either case, this adjustment should be performed in both the forward and reverse directions with the head azimuth screw.	Maximum output	Adjust the head azimuth screw only when the head has been changed.
Confirmation of tape speed	Test tape : VT712 (3kHz) Measurement output terminal : Headphone terminal	Adjust VR37 so that the frequency counter reading becomes 2,940~3,090Hz \pm when playing back the test tape VT712 (3kHz) with playback and recording mechanism after ending forward winding of the tape.	Tape speed of deck : 2,940 ~ 3,090Hz	VR37

■ Reference Values for Confirmation Items

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Difference between the forward and reverse speed	Test tape : VT712 (3kHz) Measurement output terminal : Speaker terminal Speaker R (Load resistance: 4 Ω) Measurement output terminal : Headphone	When the test tape VT712 (3kHz) has been played back with the recording and playback mechanism at the beginning of forward winding, the frequency counter reading of the difference between both of the mechanism should be 6.0Hz or less.	6.0Hz or less	Head azimuth screw
Wow & flutter	Test tape : VT712 (3kHz) Measurement output terminal : Headphone terminal	When the test tape VT712 (3kHz) has been played back with the recording and playback mechanism at the beginning of forward winding, the frequency counter reading of wow & flutter should be 0.25% or less (WRMS).	0.25% or less (WRMS)	

■ Electrical Performance

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Adjustment of recording bias current (Reference Value)	<ul style="list-style-type: none"> Mode: Forward or reverse mode Recording mode Test tape : AC-514 to TYPE II and AC-225 to TYPE I Measurement output terminal : Both recording and headphone terminals	<ol style="list-style-type: none"> 1 With the recording and playback mechanism, load the test tapes (AC-514 to TYPE II and AC-225 to TYPE I), and set the mechanism to the recording and pausing condition in advance. 2 After connecting 100 Ω in series to the recorder head, measure the bias current with a valve voltmeter at both of the terminals. 3 After resetting the [PAUSE] mode, start recording. At this time, adjust VR31 for Lch and VR32 for Rch so that the recording bias current values become 4.0 μ A (TYPE I) and 4.20 μ A (TYPE II). 	AC-225 : 4.20 μ A AC-514 : 4.0 μ A	VR31
Adjustment of recording and playback frequency characteristics	Reference frequency : 1kHz and 10kHz (REF.: -20dB) Test tape : AC-514 to TYPE II Measurement input terminal : OSC IN	<ol style="list-style-type: none"> 1 With the recording and playback mechanism, load the test tapes (AC-514 to TYPE II), and set the mechanism to the recording and pausing condition in advance. 2 While repetitively inputting the reference frequency signal of 1kHz and 10kHz from OSC IN, record and playback the tape. 3 While recording and playback the test tape in TYPE II, adjust VR31 for Lch and VR32 for Rch so that the output deviation between 1kHz and 10kHz becomes -1dB \pm 2dB. 	Output deviation between 1kHz and 10kHz : -1dB \pm 2dB	VR31

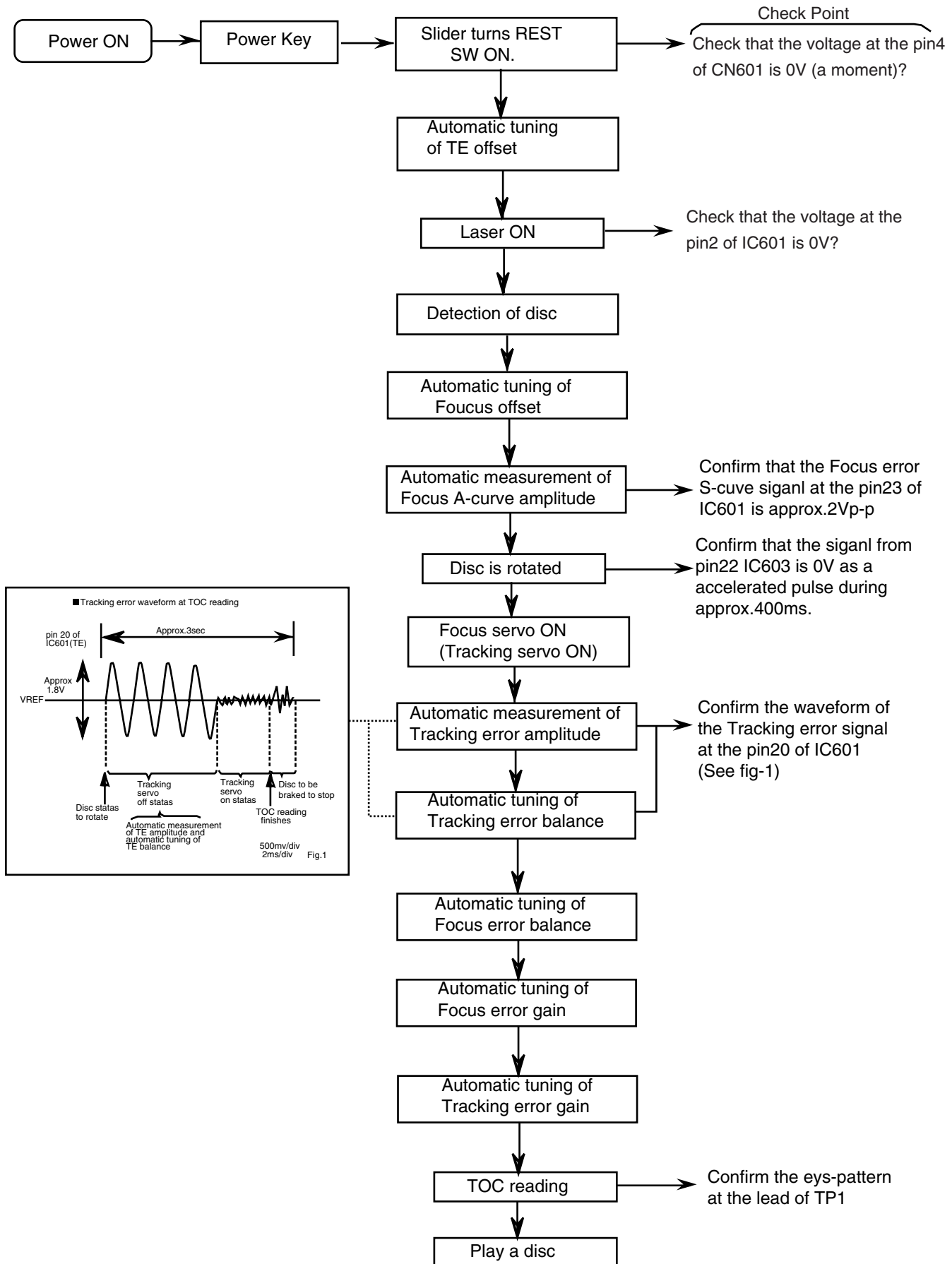
■ Reference Values for Electrical Function Confirmation Items

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Recording bias frequency	Forward or reverse <ul style="list-style-type: none"> Test tape : TYPE II (AC-514) Measurement terminal : BIAS TP on P.C. board 	<ol style="list-style-type: none"> 1 While changing over to and from BIAS 1 and 2, confirm that the frequency is changed. 2 With the recording and playback mechanism, load the test tape. (AC-514 to TYPE II), and set the mechanism to the recording and pausing condition in advance. 3 Confirm that the BIAS TP frequency on the P.C. board is 100kHz \pm 6kHz. 	100 kHz \pm 6 kHz	
Eraser current (Reference value)	Forward or reverse <ul style="list-style-type: none"> Recording mode Test tape : AC-514 to TYPE II and AC-225 to TYPE I Measurement terminal : Both of the eraser head terminals	<ol style="list-style-type: none"> 1 While recording and playback mechanism, load the test tapes (AC-514 to TYPE II and AC-225 to TYPE I), and set the mechanism to the recording and pausing conditions in advance. 2 After setting to the recording conditions, connect 1W in series to the eraser head on the recording and playback mechanism side, and measure the eraser current from both of the eraser terminals. 	TYPE II : 120 mA TYPE I : 75 mA	

■ Extension code connecting method



Flow of functional operation until TOC read (CD)



Maintenance of laser pickup

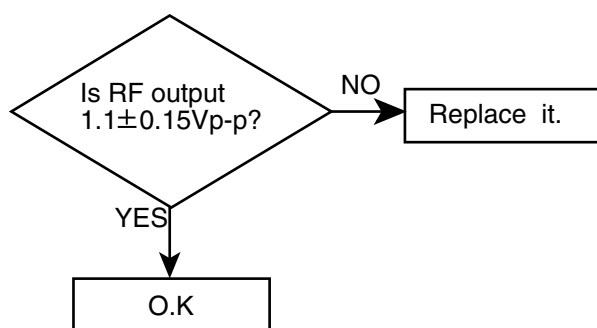
(1) Cleaning the pick up lens

Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode (Fig.1)

When the life of the laser diode has expired, the following symptoms will appear.

- (1) The level of RF output (EFM output: amplitude of eye pattern) will below.



(Fig.1)

(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of laser pickup

Turn off the power switch and, disconnect the power cord from the ac outlet.

Replace the pickup with a normal one. (Refer to "Pickup Removal" on the previous page)

Plug the power cord in, and turn the power on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.

Play a disc.

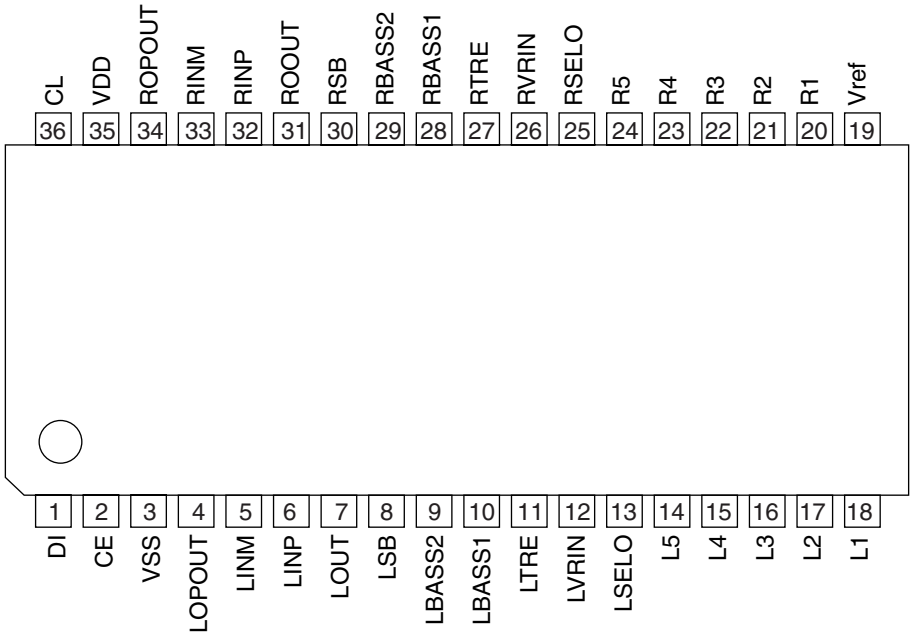
Check the eye-pattern at TP1.

Finish.

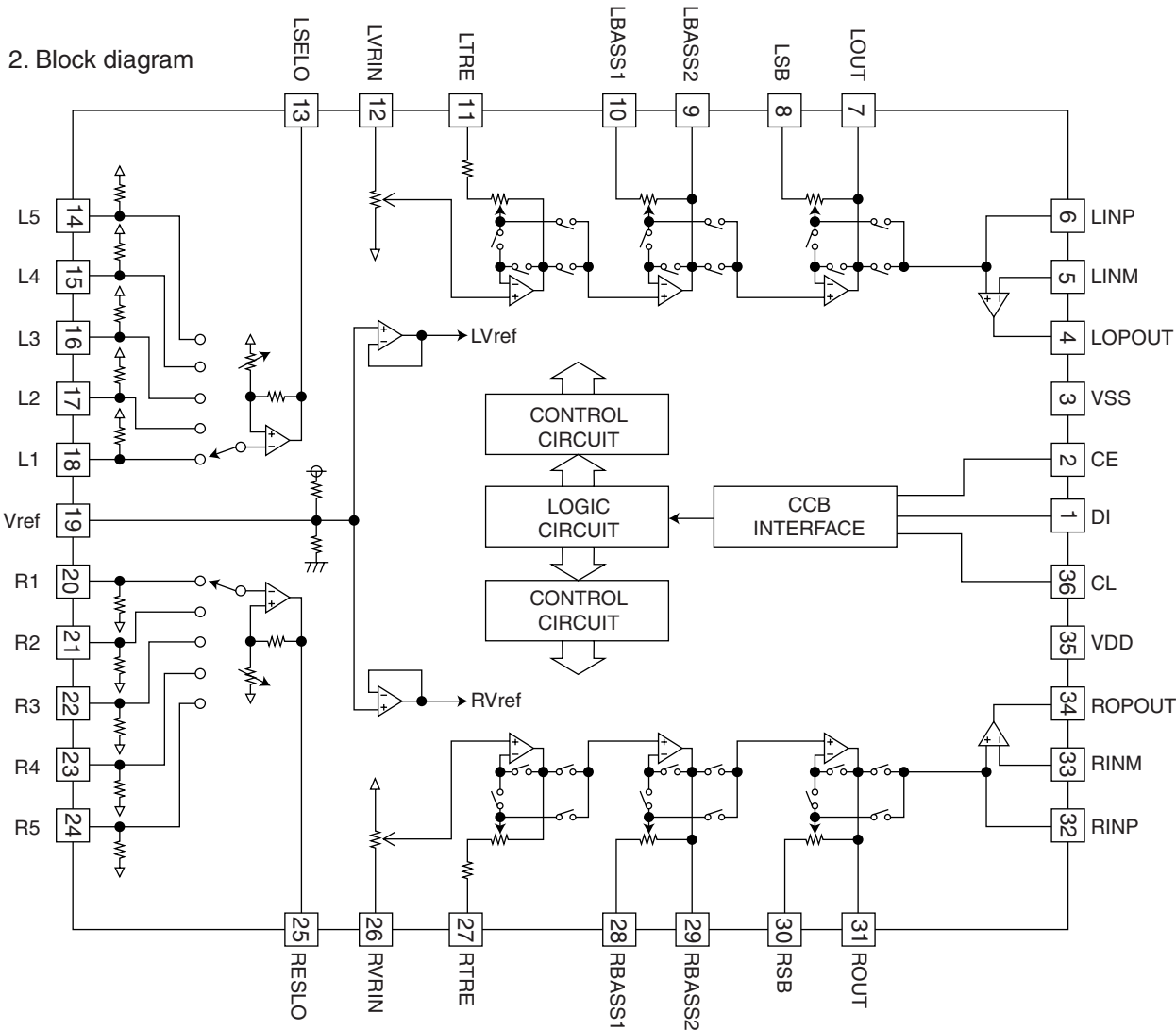
Description of major ICs

■ LC75345M-X (IC901) : E.volume

1. Pin layout



2. Block diagram

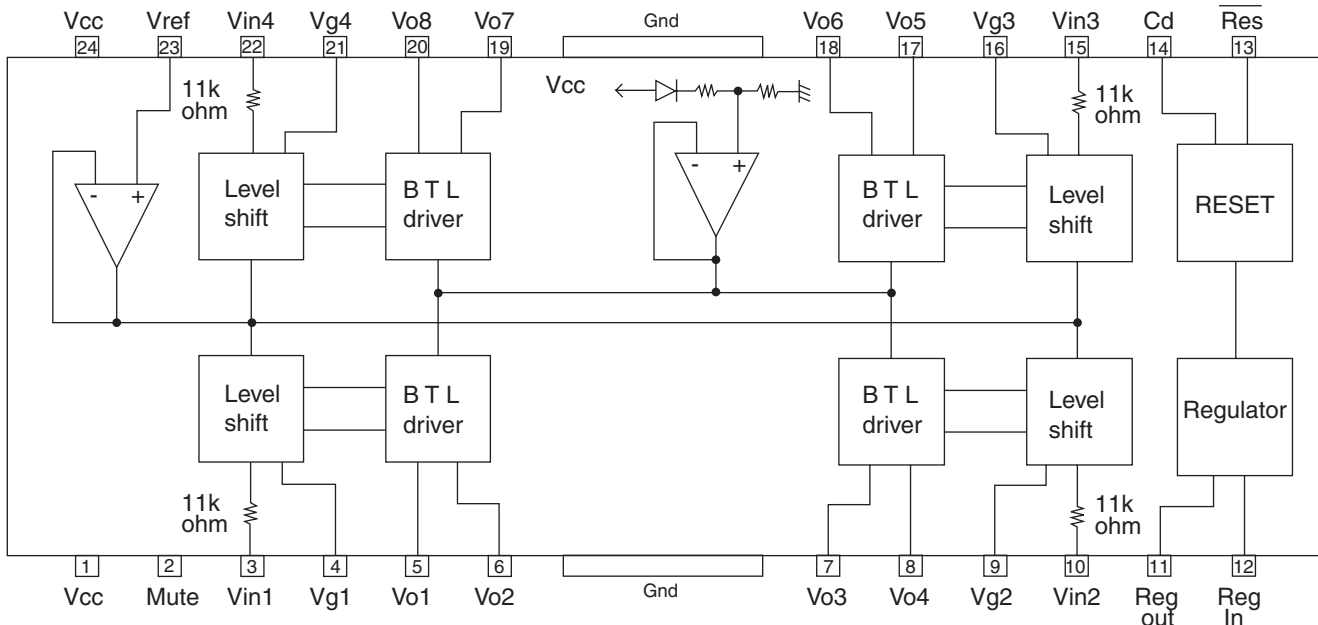


3. Pin function

Pin No.	Symbol	Function
1	DI	Serial data and clock input pin for control.
2	CE	Chip enable pin.
3	VSS	Ground pin.
4	LOPOUT	Output pin of general-purpose operation amplifier.
5	LINM	Non-inverted input pin of general-purpose operation amplifier.
6	LINP	Non-inverted input pin of general-purpose operation amplifier.
7	LOUT	ATT + equalizer output pin.
8	LSB	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
9	LBASS2	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
10	LBASS1	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
11	LTRE	Capacitor and resistor connection pin comprising treble band filter.
12	LVRIN	Volume input pin.
13	LSELO	Input selector output pin.
14	L5	Input signal pin.
15	L4	Input signal pin.
16	L3	Input signal pin.
17	L2	Input signal pin.
18	L1	Input signal pin.
19	Vref	0.5 x VDD voltage generation block for analog ground.
20	R1	Input signal pin.
21	R2	Input signal pin.
22	R3	Input signal pin.
23	R4	Input signal pin.
24	R5	Input signal pin.
25	RSELO	Input selector output pin.
26	RVRIN	Volume input pin.
27	RTRE	Capacitor connection pin comprising treble band filter.
28	RBASS1	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
29	RBASS2	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
30	RSB	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
31	ROUT	ATT + equalizer output pin.
32	RINP	Non inverted input pin of general-purpose operation amplifier.
33	RINM	Non inverted input pin of general purpose operation amplifier.
34	ROPOUT	Output pin of general-purpose operation amplifier.
35	VDD	Supply pin.
36	CL	Serial data and clock input pin for control.

■ LA6541-X (IC801) : Servo driver

1. Pin Layout & block diagram

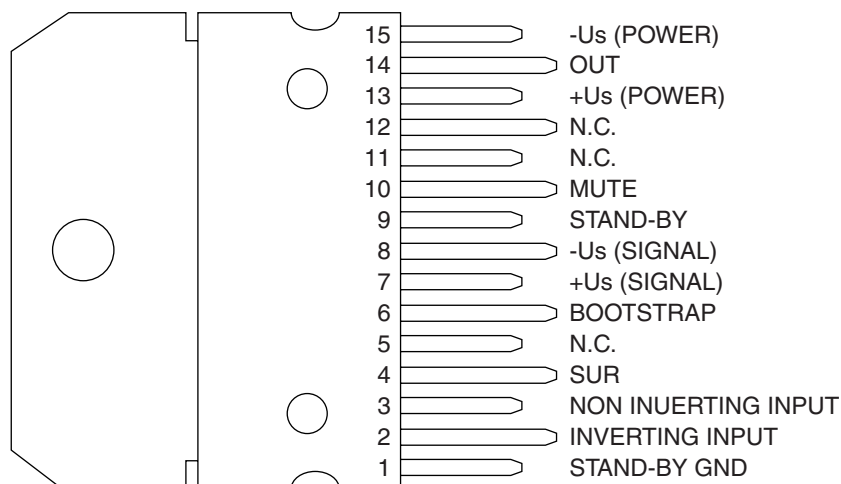


2. Pin function

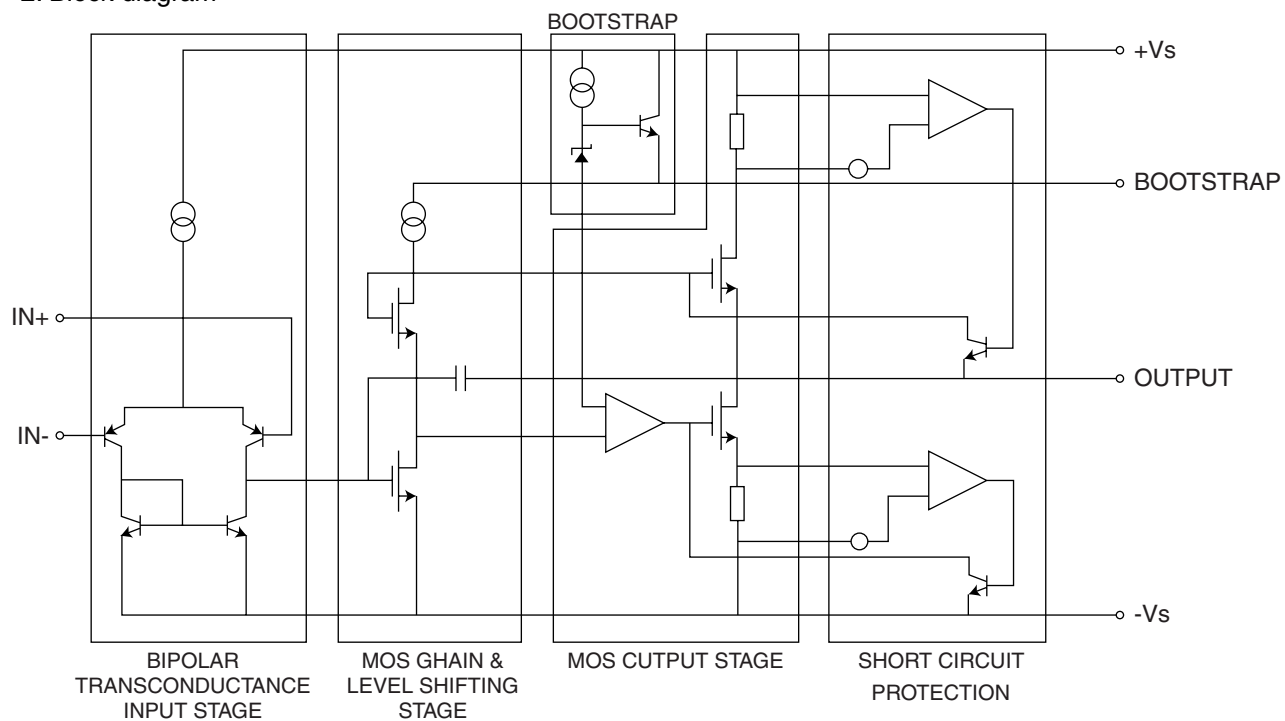
Pin No.	Symbol	Function
1	Vcc	Power supply (Shorted to pin 24)
2	Mute	All BTL amplifier outputs ON / OFF
3	Vin1	BTL AMP 1 input pin
4	Vg1	BTL AMP 1 input pin (For gain adjustment)
5	Vo1	BTL AMP 1 input pin (Non inverting side)
6	Vo2	BTL AMP 1 input pin (Inverting side)
7	Vo3	BTL AMP 2 input pin (Inverting side)
8	Vo4	BTL AMP 2 input pin (Non inverting side)
9	Vg2	BTL AMP 2 input pin (For gain adjustment)
10	Vin2	BTL AMP 2 input pin
11	Reg Out	External transistor collector (PNP) connection. 5V power supply output
12	Reg In	External transistor (PNP) base connection
13	Res	Reset output
14	Cd	Reset output delay time setting (Capacitor connected externally)
15	Vin3	BTL AMP 3 input pin
16	Vg3	BTL AMP 3 input pin (For gain adjustment)
17	Vo5	BTL AMP 3 output pin (Non inverting side)
18	Vo6	BTL AMP 3 output pin (Inverting side)
19	Vo7	BTL AMP 4 output pin (Inverting side)
20	Vo8	BTL AMP 4 output pin (Non inverting side)
21	Vg4	BTL AMP 4 output pin (For gain adjustment)
22	Vin4	BTL AMP 4 output pin
23	Vref	Level shift circuit's reference voltage application
24	Vcc	Power supply (Shorted to pin 1)

■ TDA7294 (IC940, IC941) : Audio amp.

1. Pin layout

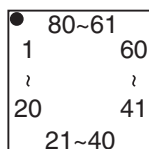


2. Block diagram



MN662748RPMFA (IC651) : DSP

1. Terminal layout

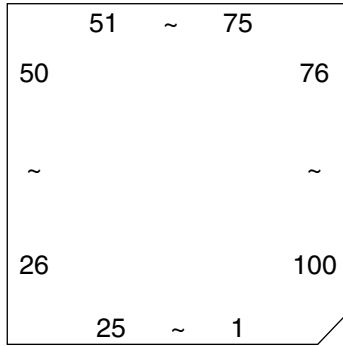


2. Pin function

Pin No	Symbol	I/O	Function	Pin No	Symbol	I/O	Function
1	BCLK	-	Not use	41	PLL2	-	Not use
2	LRCK	-	Not use	42	TOFS	-	Not use
3	SRDATA	-	Not use	43	WVEL	-	Not use
4	DVDDI	-	Power supply for digital circuit	44	ARF	I	RF signal input
5	DVSSI	-	GND for digital circuit	45	IREF	I	Reference current input
6	TX	-	Not use	46	DRF	I	Bias pin for DSL
7	MCLK	I	Micro computer command clock signal input	47	DSL2	I/O	Loop filter pin for DSL
8	MDATA	I	Micro computer command data input	48	PLL2	I/O	Loop filter pin for PLL
9	MLD	I	Micro computer command load signal input (L: Load)	49	VCOF	I/O	Loop filter pin for VCO
10	SENSE	-	Not use, connect to TP716	50	AVDD2	-	Power supply for analog circuit
11	FLOCK	-	Not use, connect to TP717	51	AVSS2	-	GND for analog circuit
12	TLOCK	-	Not use, connect to TP718	52	EFM	-	Not use, connect to TP724
13	BLKCK	O	Sub code block clock signal output	53	PCK	O	Clock output for PLL
14	SQCK	I	External clock input for sub code Q register input	54	VCOF2	I/O	Loop filter pin for Digital servo VCO
15	SUBQ	O	Sub code Q data output	55	SUBC	-	Not use
16	DMUTE	-	Not use, connect to TP719	56	SBCK	-	Not use
17	STAT	O	Status signal input	57	VSS	-	GND for crystal oscillation circuit
18	RST	I	Reset signal input (L: Reset)	58	X1	I	Input for crystal oscillation circuit (f=16.9344MHz)
19	SMCK	-	Not use	59	X2	O	Output for crystal oscillation circuit (f=16.9344MHz)
20	PMCK	-	Not use, connect to TP720	60	VDD	-	Power supply for crystal oscillation circuit
21	TRV	O	Traverse enforced output	61	BYTCK/TRVSTP	-	Not use
22	TVD	O	Traverse drive output	62	CLDCK	O	Sub code frame clock signal output
23	PC	-	Not used	63	FCLK	-	Not used
24	ECM	O	Spindle motor drive signal (Enforced mode output)	64	IPFLAG	O	Interpolation flag signal output, Connect to TP721
25	ECS	O	Spindle motor drive signal (Servo error signal output)	65	FLAG	O	Flag signal output, Connect to TP722
26	KICK	O	Kick pulse output	66	CLVS	-	Not use
27	TRD	O	Tracking drive output	67	CRC	-	Not use
28	FOD	O	Focus drive output	68	DEMPH	O	De-emphasis detect signal output, Connect to TP723
29	VREF	I	Reference voltage for D/A output block	69	RESY	-	Not use
30	FBAL	O	Focus balance adjust signal output	70	IOSEL	I	Mode select pin, Connect to DVDD1 (H fix)
31	TBAL	O	Tracking balance adjust signal output	71	/TEST	I	Test pin, Connect to DVDD1 (H fix)
32	FE	I	Focus error signal input (Analog input)	72	AVDD1	-	Power supply for analog circuit
33	TE	I	Tracking error signal input (Analog input)	73	OUTL	O	L-channel audio output
34	RFENV	I	RF envelope signal input (Analog input)	74	AVSS1	-	GND for analog circuit
35	VDET	I	Vibration detect signal input (H:Detect)	75	OUTR	O	R-channel audio output
36	OFT	I	Off track signal input (H:Off track)	76	RSEL	I	RF signal polarity setting pin, Connect to DVDD1 (H fix)
37	TRCRS	I	Track cross signal input	77	CSEL	I	Oscillation frequency setting pin, Connect to GND (L fix)
38	/RFDET	I	RF detect signal input (L:Detect)	78	PSEL	I	IOSEL=H, Test pin, Connect to GND (L fix)
39	BDO	I	Drop out signal input (H:Drop out)	79	MSEL	I	IOSEL=H, SMCK output, Frequency select pin
40	LDON	O	Laser on signal output (H:ON)	80	SSEL	I	IOSEL=H, SMCK output, SUBQ output mode select pin

■ MN101C38CEK1 (IC931) : Micro controller

1. Pin layout

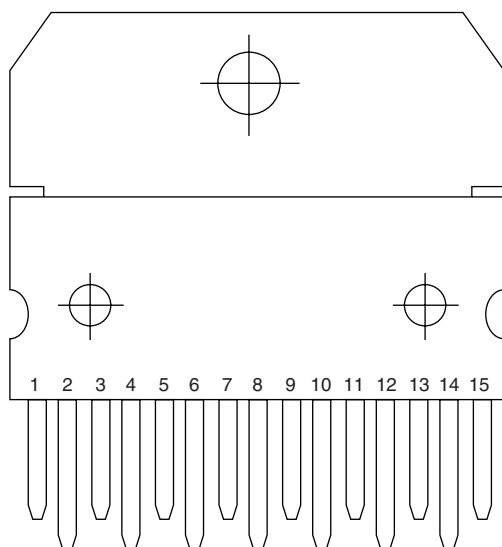


2. Pin Function

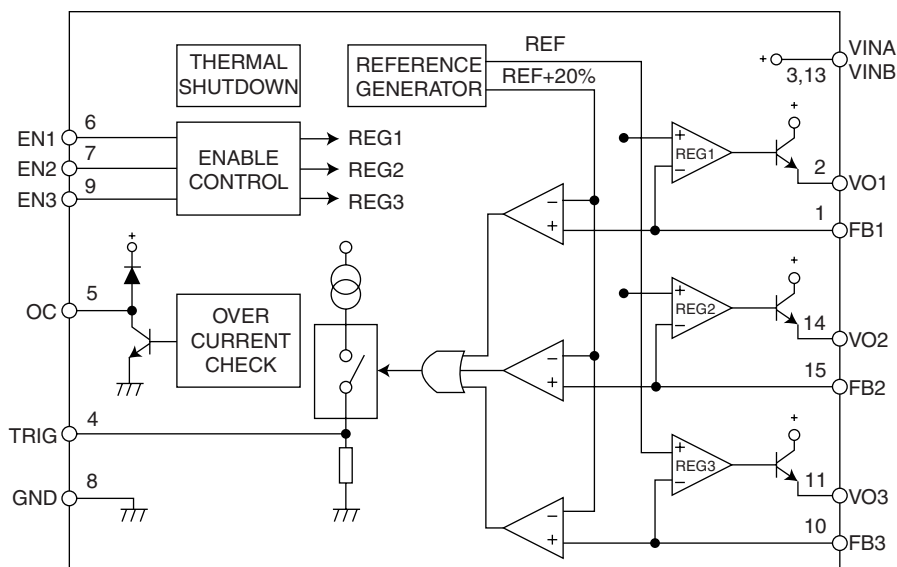
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1~4	COM3~0	-	LCD Bias common	46	DIMCTL	O	LCD DIM control. DIMMER ON =L
5~7	VLC3~1	-	LCD Bias voltage	47	LEDCTL	O	Power standby LED control STANDBY = L, POWER ON = H
8	VDD	-	5V	48	SURR	O	Surround IC control, H:=Surround on
9	OSC2	O	Main oscillation 12MHz	49	NC	O	No use. Open
10	OSC1	I	Main oscillation 12MHz	50	SEG12	O	SEGMENT OUTPUT
11	VSS	-	Ground	51	MDATA	O	CD data input port
12	NC	I	No use. Fixed to VSS.	52	MCLK	O	CD data clock
13	NC	O	No use. Open	53	XRST	O	CD reset
14	MMOD	I	Fixed to ground	54	MLD	O	CD command ready signal
15	VREF-	-	Ground	55	STTA	O	Tape IC strobe
16	SAFETY0	I	Irregular voltage detection 0	56	REEL	I	Reel pulse input
17	SAFETY1	I	Irregular voltage detection 1	57	VOL+	I	Volume plus
18	TAPE0	I	Tape Switch 0	58	VOL-	I	Volume minus
19	TAPE1	I	Tape Switch 1	59	PERIOD	O	Tuner PLL strobe
20, 21	KEY0, 1	I	Unit KEY INPUT	60	F_TU	O	Tuner function ('H'=Tuner)
22	DOOR_RST	I	Rest/close switch detect port	61	CLOSE	O	Door close motor control output
23	CDSAFETY	I	CD safety voltage detect port	62	OPEN	O	Door open motor control output
24	VREF+	-	5V	63	P_OUT	O	Power on/off ('H'=Power ON)
25	SDATA	I/O	Serial data (Tuner/ PLL IC)	64	BUPT	I	Back up power detect. When detect 'H', goto backup mode (STOP mode).
26	NC	O	No use. OUTPUT LOW	65	BTLMUTE	O	BTL mute control port. MUTE ON =L During non CD play, MUTE ON.
27	SCK	O	Serial clock (Tuner/ PLL IC)	66	NC	O	No use. OUTPUT LOW
28	NC	O	No use. OUTPUT LOW	67~88	SEG13~34	O	SEGMENT OUTPUT
29	QRIN	I	Q-code data input port	89~100	SEG0~11	O	SEGMENT OUTPUT
30	SQCK	O	Q-code serial clock				
31	F_CD	O	CD Function ("H"= CD)				
32	/RST	I/O	RESET				
33	MPX	I	FM stereo detection ('L'= stereo)				
34	BCTL	O	During Back up set H, other case L. This back up means plug out.				
35	VOLCE	O	volume chip enable				
36	NC	O	No use. OUTPUT LOW				
37	PROTR	I	Protector detect. When detect PROTR=L, set SPKMUTE to 'L'.				
38	REM	I	Remoto control input				
39	RDSCK	I	RDS clock				
40	BLKCK	I	Block clock input port				
41	FLAG	I	Error Correction Count Input				
42	STAT	I	CD status input port				
43	SMUTE	O	MUTE ON=L				
44	SPKMUTE	O	Speaker mute. When detect PROTR=L, set SPKMUTE to 'L'.				
45	AHB	O	Active Hyper Bass On/Off AHB OFF=H, AHB1, 2=L				

■ L4909 (IC942) : Regulator

1. Pin layout



2. Block diagram

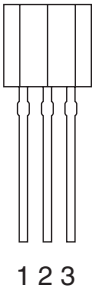


3. Pin functions

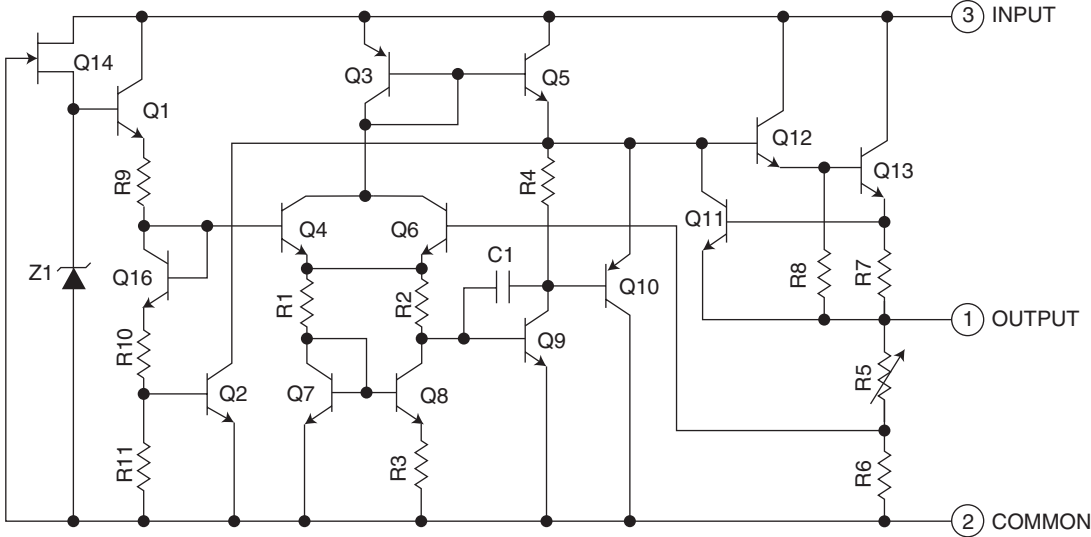
Pin No.	Symbol	Function
1	FB1	REG1 feedback voltage input
2	VO1	REG1 output voltage
3	VINA	Input DC supply voltage
4	TRIG	Trigger for external SCR (crowbar protection)
5	OC	Over current warning output
6	EN1	REG1 enable input
7	EN2	REG2 enable input
8	GND	Analog ground
9	EN3	REG3 enable input
10	FB3	REG3 feedback voltage input
11	VO3	REG3 output voltage
12	N.C.	Not connected
13	VINB	Input DC supply voltage
14	VO2	REG2 output voltage
15	FB2	REG2 feedback voltage input

■ KIA78S06P-T (IC932) : Regulator

1. Pin layout

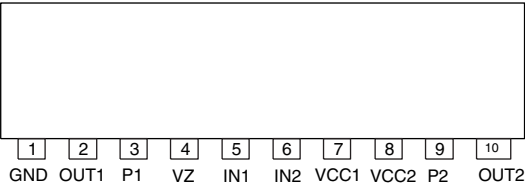


2. Block diagram



■ LB1641 (IC802) : DC motor driver

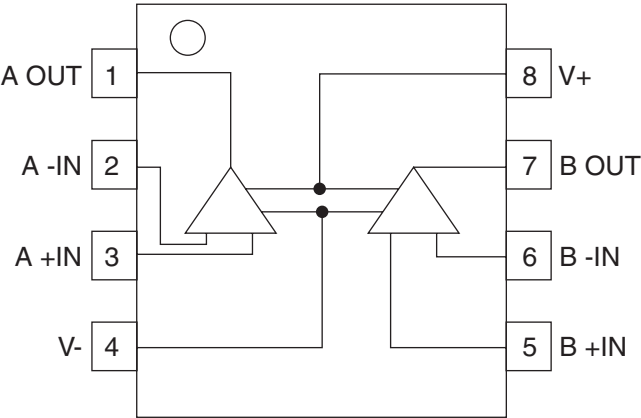
1. Pin layout



2. Pin function

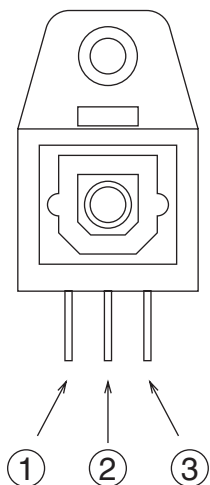
Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

■ NJM4580E-W (IC652) : Ope amp.



■ GP1FA550TZ (ICJ902) : Fiber-optic transmitter unit

1.Pin layout

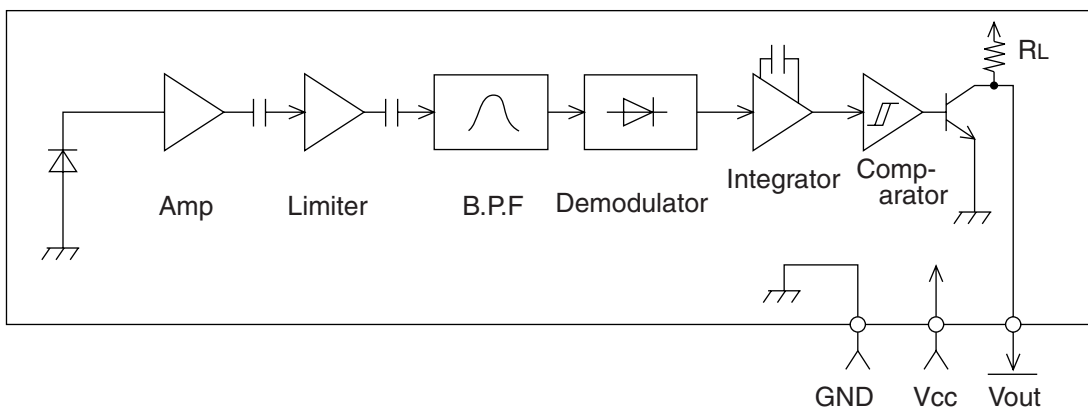


2.Pin function

- ① V_{in}
- ② V_{cc}
- ③ GND

■ GP1UM261XK (IC750) : Detecting unit for remote control

1.Block diagram





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