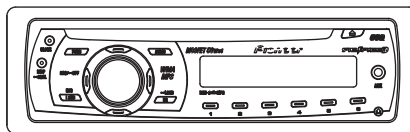


Service Manual



DEH-2050MPA/XN/EC

ORDER NO.
CRT4045

CD RECEIVER

DEH-2050MPA_{/XN/EC}

DEH-2050MPG_{/XN/EC}

DEH-2090MP_{/XN/ID}

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3195	CRT3815	S10.5COMP2	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

● Safety Precautions for those who Service this Unit.

- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13 cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replaced only with the same or equivalent type recommended by the manufacture.
Discard used batteries according to the manufacture's instructions.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS

● Service Precaution



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40° C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373° C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

2. SPECIFICATIONS

2.1 SPECIFICATIONS

General

Rated power source 14.4 V DC
(allowable voltage range:
12.0 V to 14.4 V DC)
Grounding system Negative type
Max. current consumption
..... 10.0 A
Backup current
..... 2 mA or less

Dimensions (W × H × D):

DIN

Chassis 178 × 50 × 162 mm
Nose 188 × 58 × 15 mm

D

Chassis 178 × 50 × 162 mm
Nose 170 × 48 × 15 mm

Weight 1.3 kg

Audio

Maximum power output 50 W × 4
Continuous power output ... 22 W × 4 (50 Hz to 15 000
Hz, 5% THD, 4 Ω load, both
channels driven)
Load impedance 4 Ω (4 Ω to 8 Ω allowable)
Preout max output level 2.2 V
Tone controls:

Bass

Frequency 100 Hz
Gain ±13dB

Mid

Frequency 1 kHz
Gain ±12 dB

Treble

Frequency 10 kHz
Gain ±12 dB

AM tuner

Frequency range 531 kHz to 1 602 kHz (9 kHz)
530 kHz to 1 640 kHz (10
kHz)
Usable sensitivity 18 μV (S/N: 20 dB)
Signal-to-noise ratio 65 dB (IEC-A network)



Note

Specifications and the design are subject to mod-
ifications without notice due to improvements.

CD player

System Compact disc audio system
Usable discs Compact disc
Signal-to-noise ratio 94 dB (1 kHz) (IEC-A net-
work)
Number of channels 2 (stereo)
WMA decoding format Ver. 7, 7.1, 8, 9, 10, 11 (2ch
audio)
(Windows Media Player)
MP3 decoding format MPEG-1 & 2 Audio Layer 3
WAV signal format Linear PCM & MS ADPCM

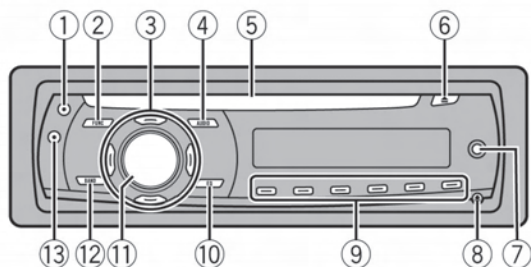
FM tuner

Frequency range 87.5 MHz to 108.0 MHz
Usable sensitivity 8 dBf (0.7 μV/75 Ω, mono,
S/N: 30 dB)
Signal-to-noise ratio 75 dB (IEC-A network)

2.2 DISC/CONTENT FORMAT



Head unit



- ① **CLOCK button**
Press to change to the clock display.
- ② **FUNCTION button**
Press to recall the function menu when operating a source.
- ③ **▲/▼/◀/▶ buttons**
Press to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.
- ④ **AUDIO button**
Press to select various sound quality controls.
- ⑤ **Disc loading slot**
Insert a disc to play.
- ⑥ **EJECT button**
Press to eject a CD from your built-in CD player.
- ⑦ **AUX input jack (3.5 mm stereo jack)**
Use to connect an auxiliary equipment.
- ⑧ **DETACH button**
Press to remove the front panel from the head unit.
- ⑨ **1 to 6 buttons**
Press for preset tuning.
- ⑩ **EQ button**
Press to select various equalizer curves. Press and hold to turn loudness on or off.

⑪ **SOURCE button, VOLUME**

This unit is turned on by selecting a source. Press to cycle through all the available sources. Press and hold to recall the initial setting menu when the sources are off. Rotate it to increase or decrease the volume.

⑫ **BAND button**

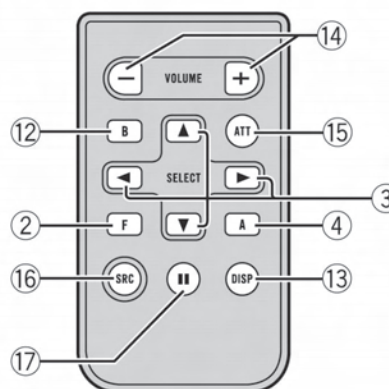
Press to select among three FM bands and one AM band and to cancel the control mode of functions.

⑬ **DISPLAY button**

Press to select different displays.

Remote control

Operation is the same as when using the buttons on the head unit. See the explanation of the head unit about the operation of each button with the exception of **ATT**, which is explained below.



⑭ **VOLUME button**

Press to increase or decrease the volume.

⑮ **ATT button**

Press to quickly lower the volume level by about 90%. Press once more to return to the original volume level.

⑯ **SOURCE button**

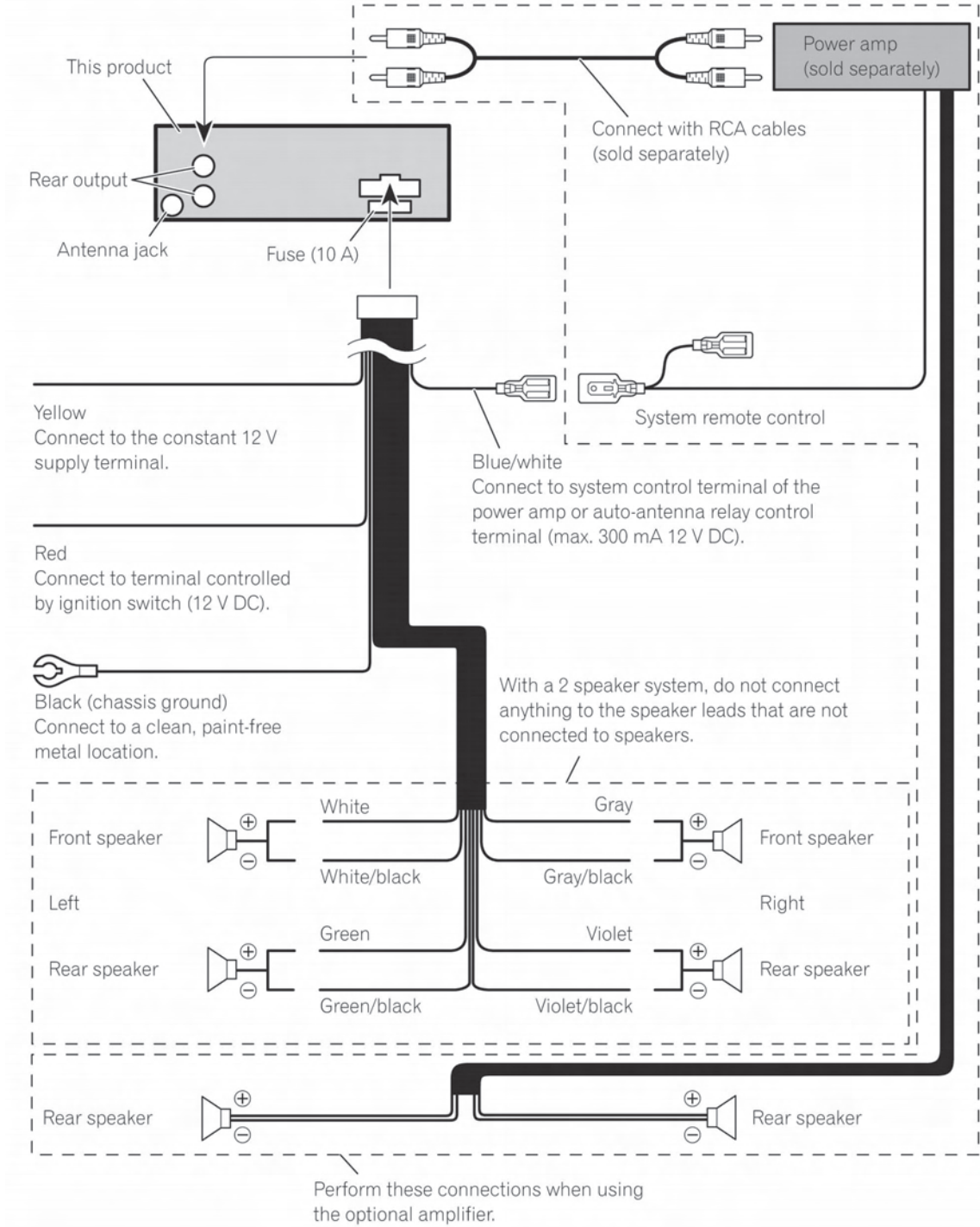
Press to cycle through all the available sources. Press and hold to turn the source off.

⑰ **PAUSE button**

Press to turn pause on or off.

2.4 PANEL FACILITIES

● Connection Diagram



3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

To keep the product quality after servicing, please confirm following check points.

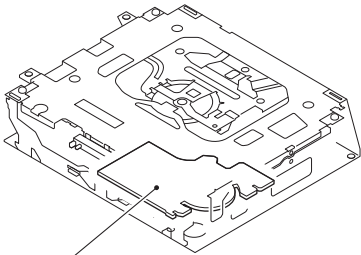
No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, audio and operations must be normal.
2	CD	Play back a CD. (Track search)	No malfunction on display, audio and operation. Display, audio and operations must be normal.
3	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
4		Check whether no disc is inside the product.	The media used for the operating check must be ejected.
5		Appearance check	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATIONS

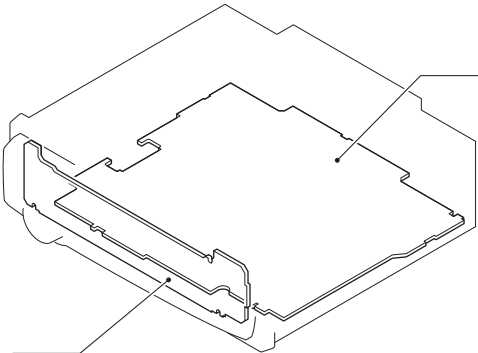
A



C

CD Core Unit(S10.5)

B



A

Tuner Amp Unit

B

Keyboard Unit

C

D

Unit Number	:	YWM5238(EC)
Unit Number	:	YWM5234(ID)
Unit Name	:	Tuner Amp Unit
Unit Number	:	
Unit Name	:	Keyboard Unit
Unit Number	:	CWX3514
Unit Name	:	CD Core Unit(S10.5COMP2)

E

F

3.3 JIGS LIST

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module



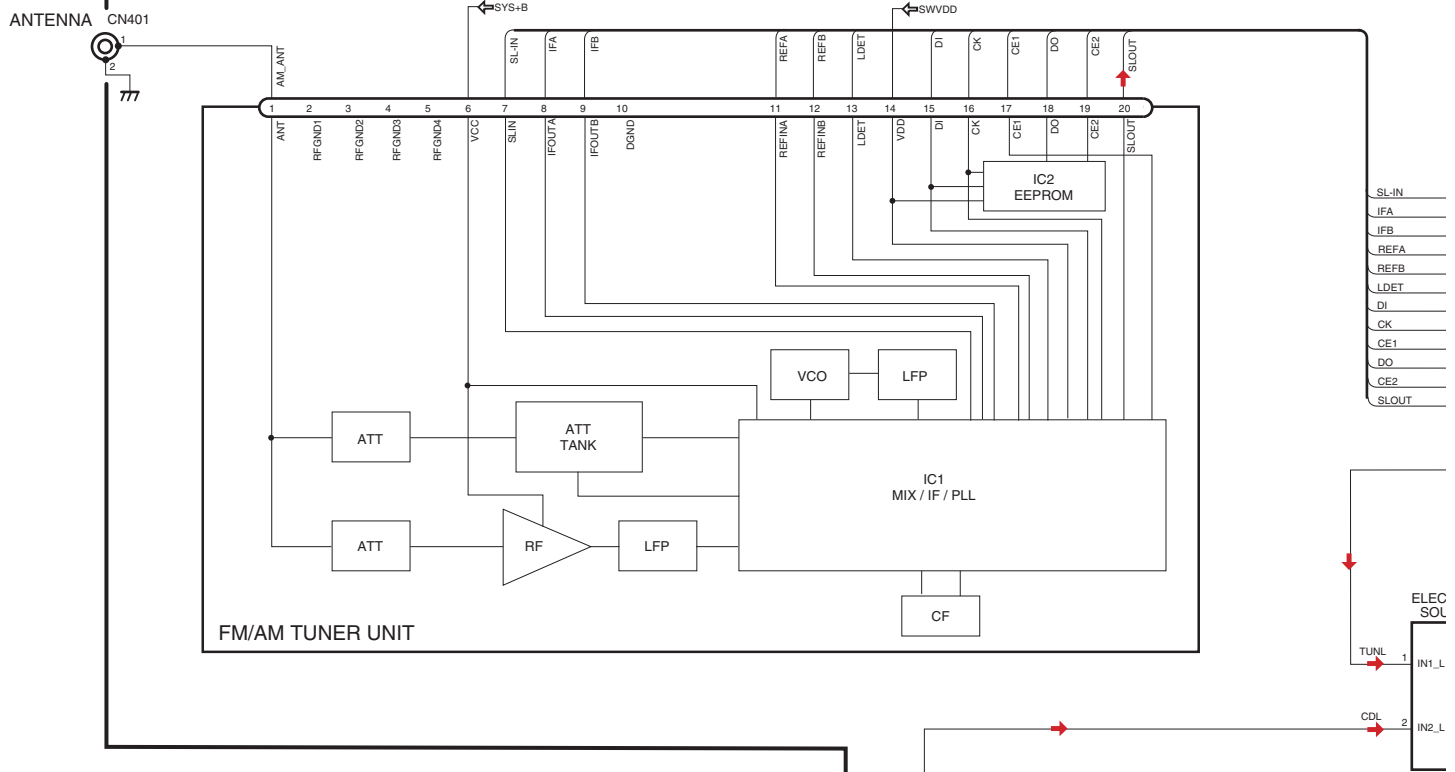
Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

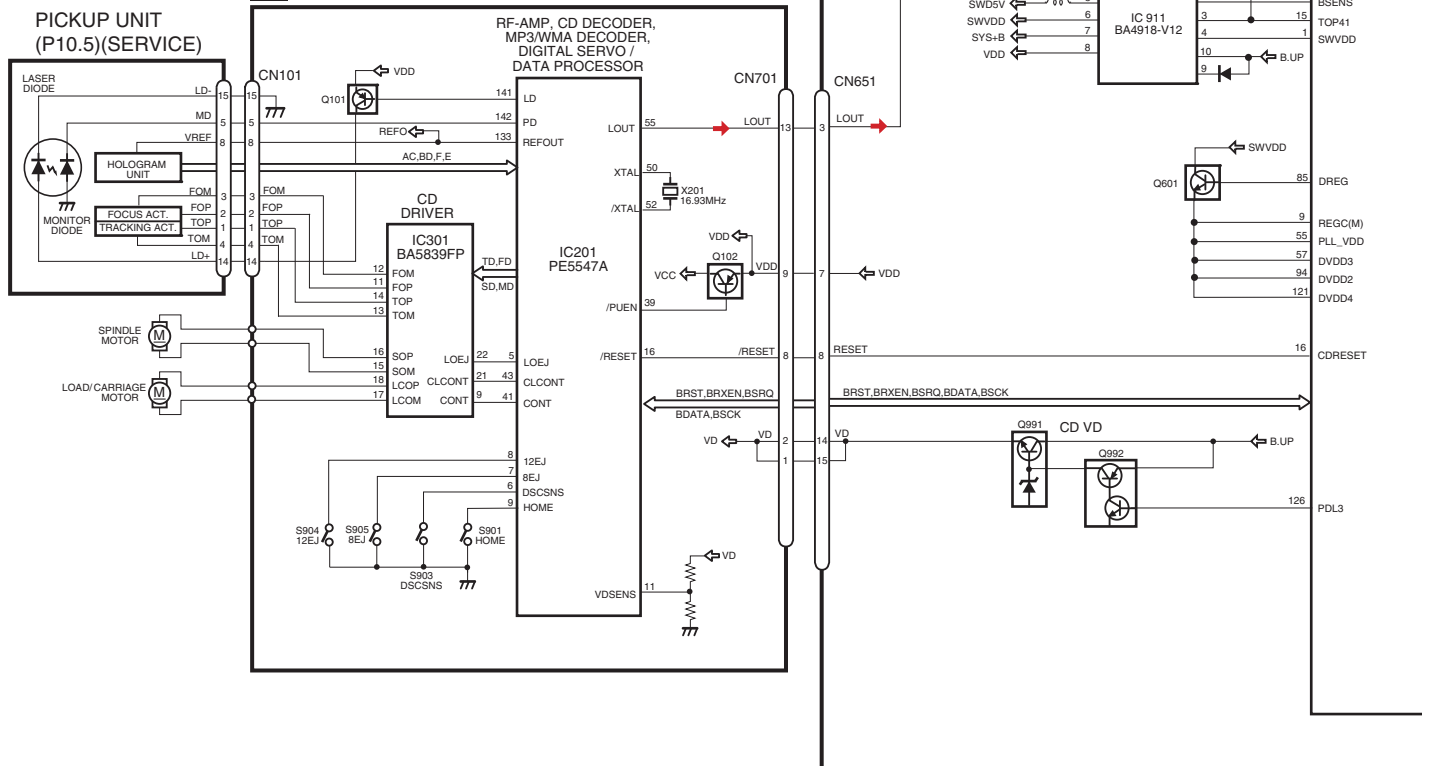
4. BLOCK DIAGRAM

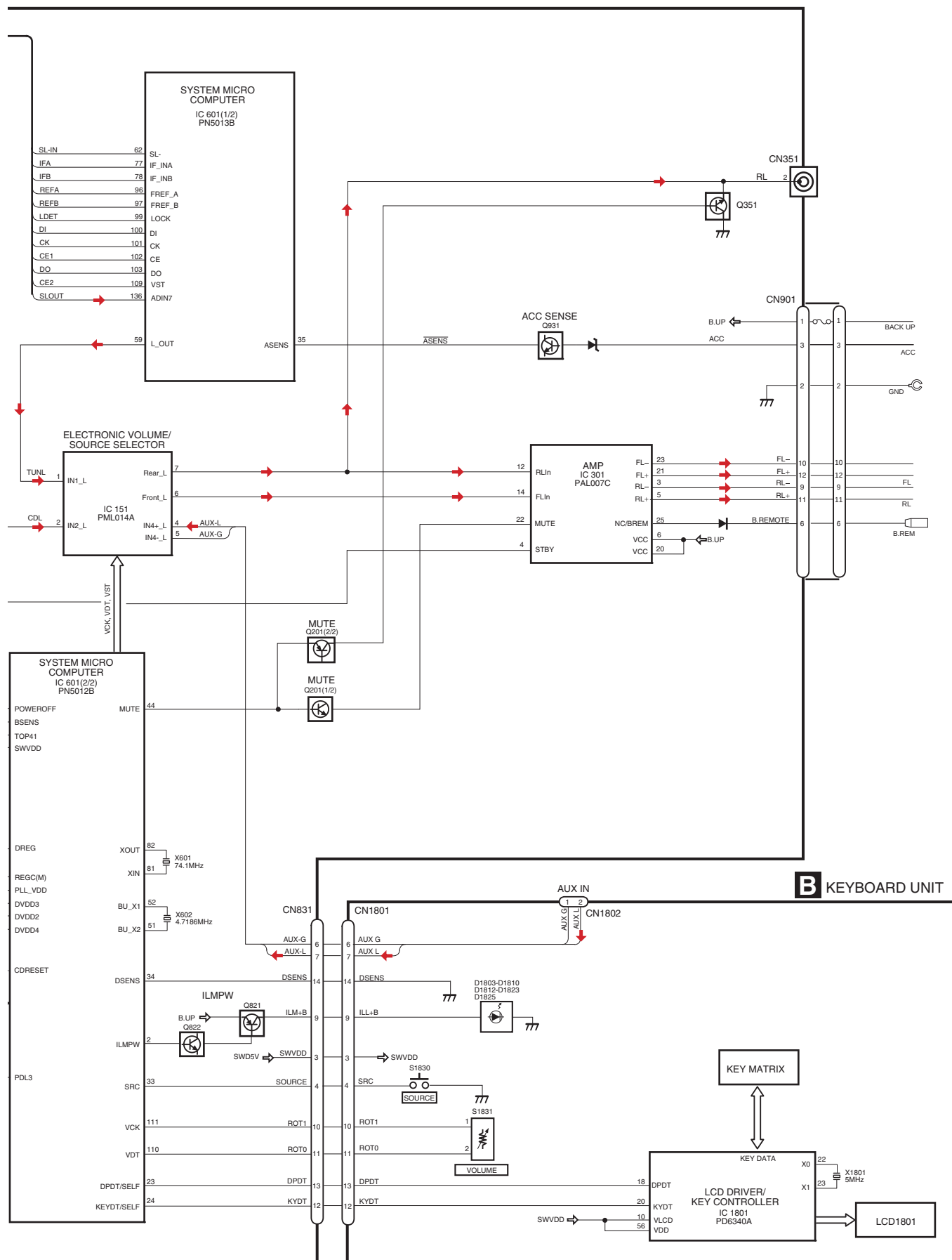
4.1 BLOCK DIAGRAM

A TUNER AMP UNIT

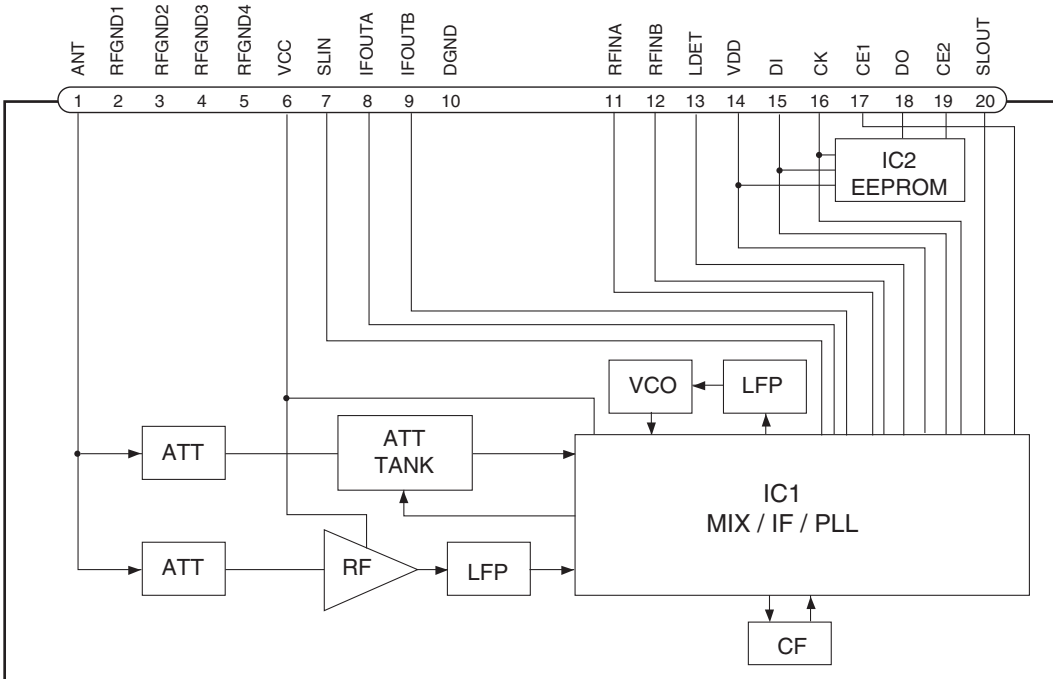


C CD CORE UNIT(S10.5COMP2)



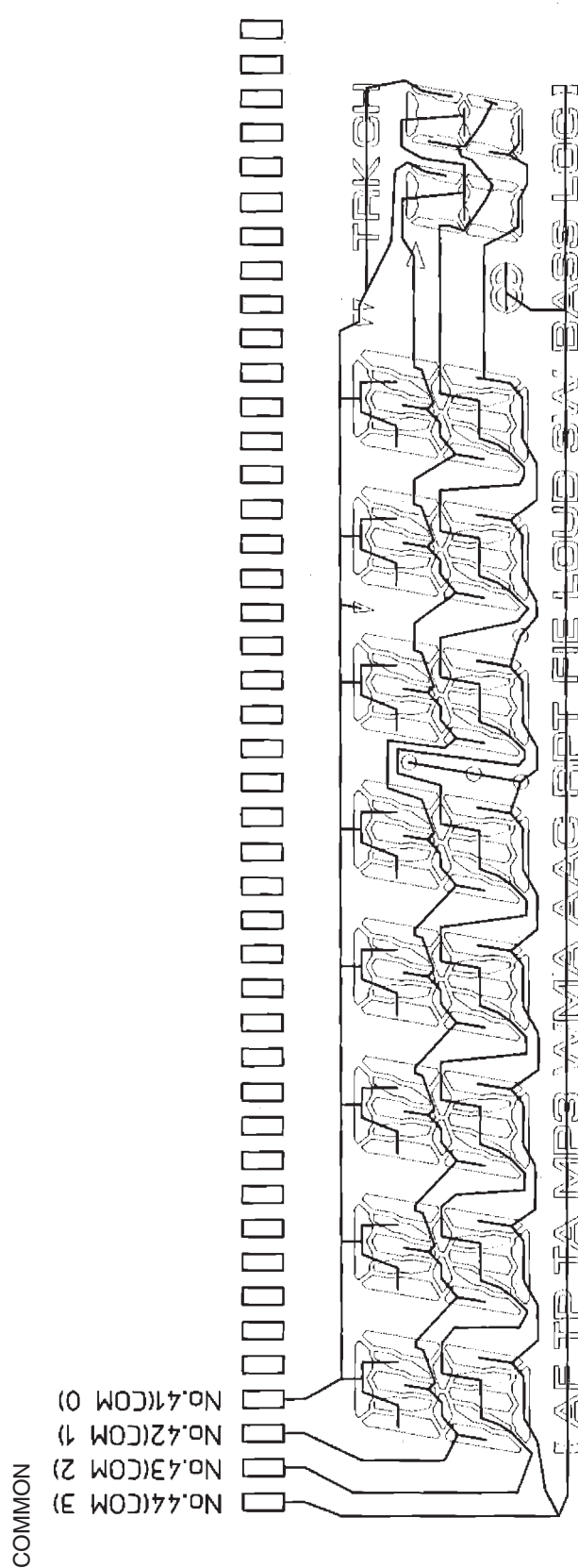
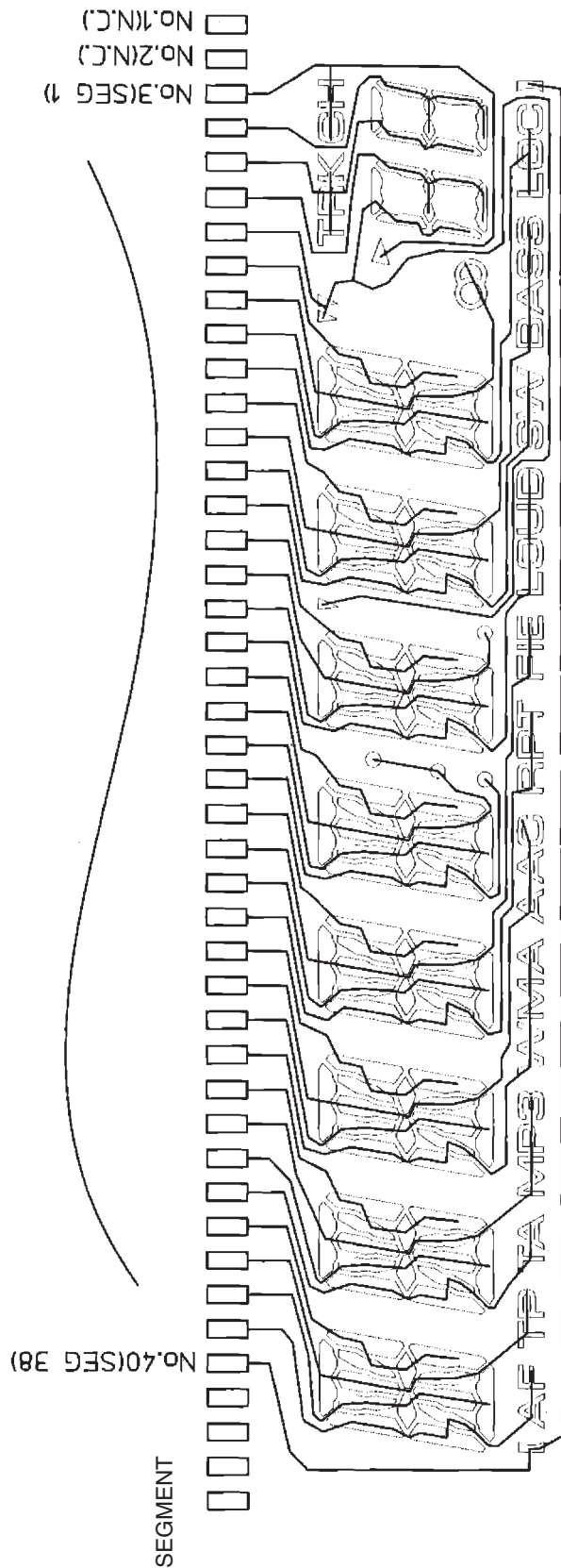


FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	ANT	I	Antenna Input	Antenna input. 75 ohm. Surge absorber is necessary. Series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the ham of power transmission line.
2	RFGND1		RF Ground	Ground of R.F. block
3	RFGND2		RF Ground	Ground of R.F. block
4	RFGND3		RF Ground	Ground of R.F. block
5	RFGND4		RF Ground	Ground of R.F. block
6	VCC		Power Supply	Power supply for Analog block. D.C 8.4 V $\pm$ 0.3 V (performance isn't guaranteed besides 8.4 V)
7	SLIN	I	Signal Level Input	Input signa level from BE_IC
8	IFOUTA	O	IF Output	IF signal output (F.E.output)
9	IFOUTB	O	IF Output	IF signal output (F.E.output)
10	DGND		Digital Ground	Ground of Digital. block
11	REFINA	I	Reference Signal	Input reference signal for PLL part with FE_IC
12	REFINB	I	Reference Signal	Input reference signal for PLL part with FE_IC
13	LDET	O	Lock Detector	PLL lock detector output "High" active
14	VDD		Power Supply	Power supply for Digital block. D.C 3.3 V $\pm$ 0.2 V
15	DI	I	Data In	Data input (not sending data in tuner reception operating in noise being output)
16	CK	I	CK	Clock data input(not sending data in tuner reception operating in noise being output)
17	CE1	I	Chip Enable-1	Chip enable for FE_IC "High" active
18	DO	O	Data Out	Data output
19	CE2	O	Chip Enable-2	Chip enable for EEPROM "Low" active. in power ON/OFF, please turn CE2 into "High" (= VDD).
20	SLOUT	O	Signal Level Output	Output of FM/AM signals level (D.C.)

● LCD(CAW1930)



1234

5. DIAGNOSIS

5.1 OPERATIONAL FLOW CHART

A

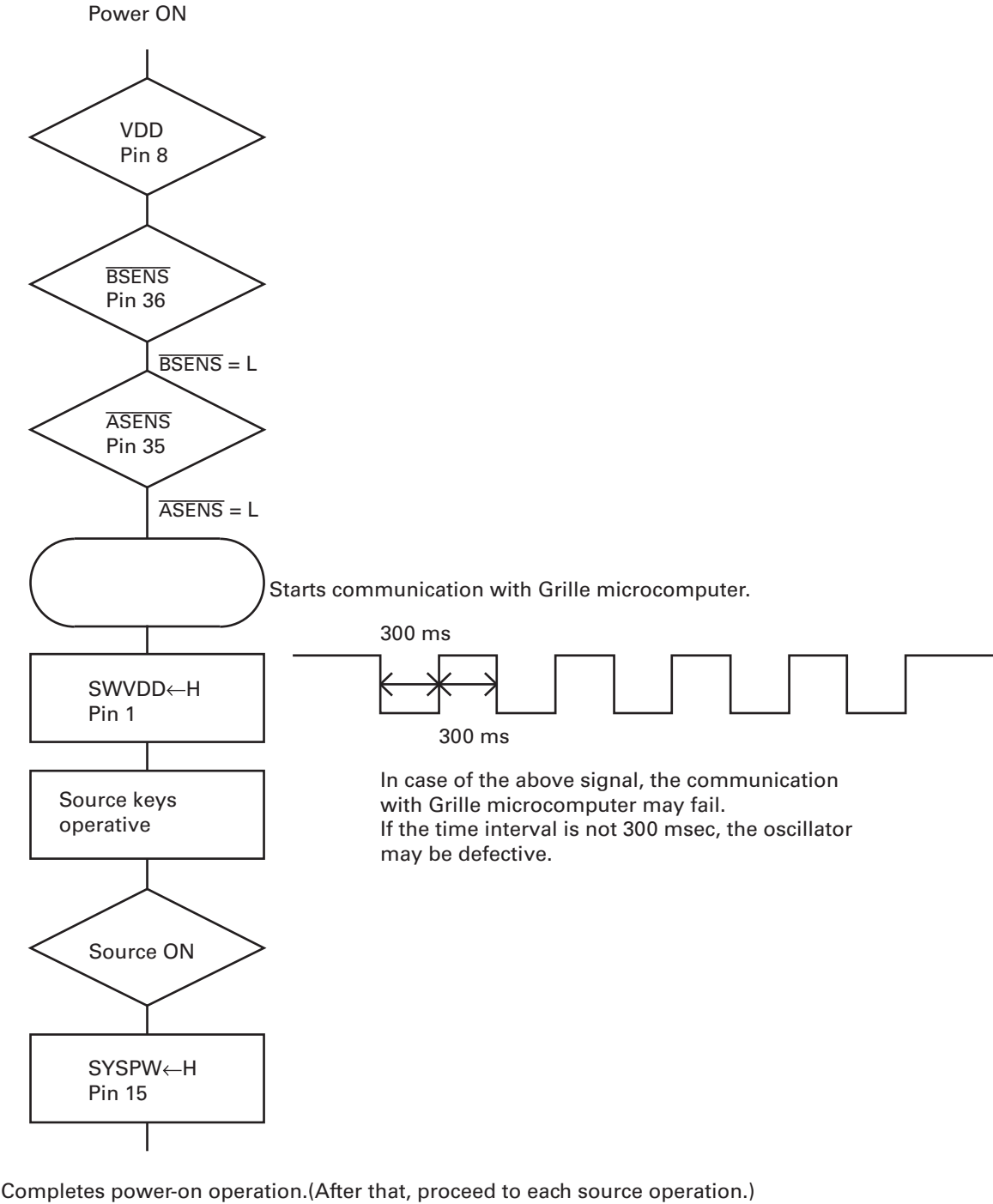
B

C

D

E

F



5.2 ERROR CODE LIST

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	SearchTime Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

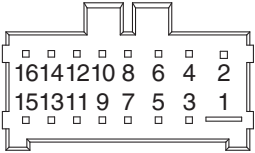
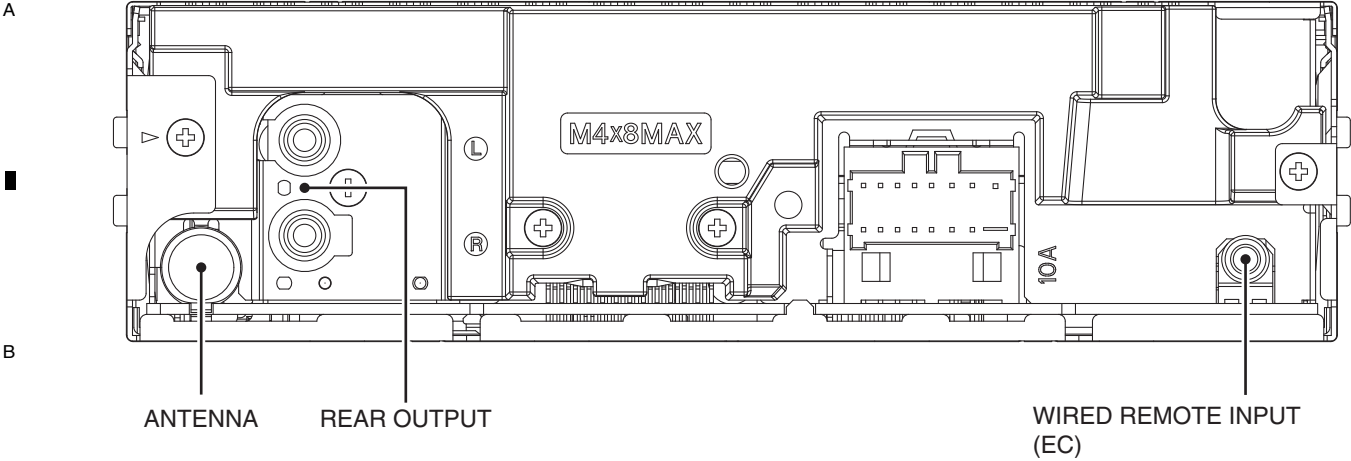
Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

5.3 CONNECTOR FUNCTION DESCRIPTION



Pin No.		Pin No.	
1	B. UP	9	RL-
2	GND	10	FL-
3	ACC	11	RL+
4	NC	12	FL+
5	NC	13	RR-
6	B.REM	14	FR-
7	NC	15	RR+
8	TEL	16	FR+

6. SERVICE MODE

6.1 CD TEST MODE

1) Cautions on adjustments

- In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

- a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
- b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
- c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

- Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

- For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

- In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

- The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

- The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

- To enter the test mode.
While pressing the 4 and 6 keys at the same time, reset.
- To exit from the test mode.
Turn off the ACC and back up.

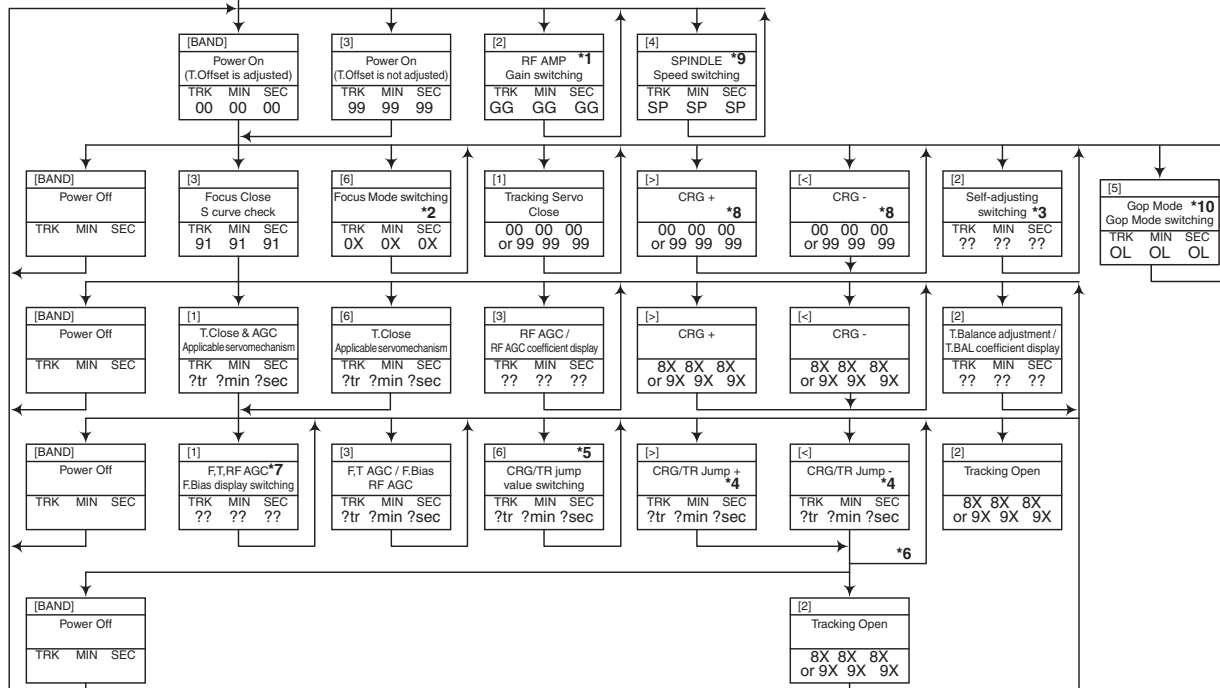
Notes:

- a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
- b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
- c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
- d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
- e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

Flow Chart

[Key]	[4] + [6] + Reset or [4] + [6] + BU + ACC Test Mode In
Contents	
Display	

[CD] or [SOURCE]
Source On
TRK MIN SEC



*1) TYP → + 6 dB → + 12 dB
TRK MIN SEC → TRK₀₆MIN₀₆SEC₀₆ → TRK₁₂MIN₁₂SEC₁₂

*2) Focus Close → S Curve check setting → F EQ measurement setting
TRK₀₀MIN₀₀SEC₀₀ → TRK₀₁MIN₀₁SEC₀₁ → TRK₀₂MIN₀₂SEC₀₂
(TRK₉₉MIN₉₉SEC₉₉)

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

*9) TYP (1X) → 2X → 1X
TRK MIN SEC → TRK₂₂MIN₂₂SEC₂₂ → TRK₁₁MIN₁₁SEC₁₁

*10) OFF(TYP) → FORCUS → TRACKING
TRK MIN SEC → TRK₇₀MIN₇₀SEC₇₀ → TRK₇₁MIN₇₁SEC₇₁

• As for the double speed (2x), audio output cannot be supported

*) • After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.

• When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).

• In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.

• When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

[Key]	Operation
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction of the external surface)
[<]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC, AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close, S Curve / Rough Servo and RF AGC / F.T, RF AGC
[4]	SPDL 1X/2X switching As for the double speed(2x), audio output <u>cannot</u> be supported.
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG•TR Jump Switching

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

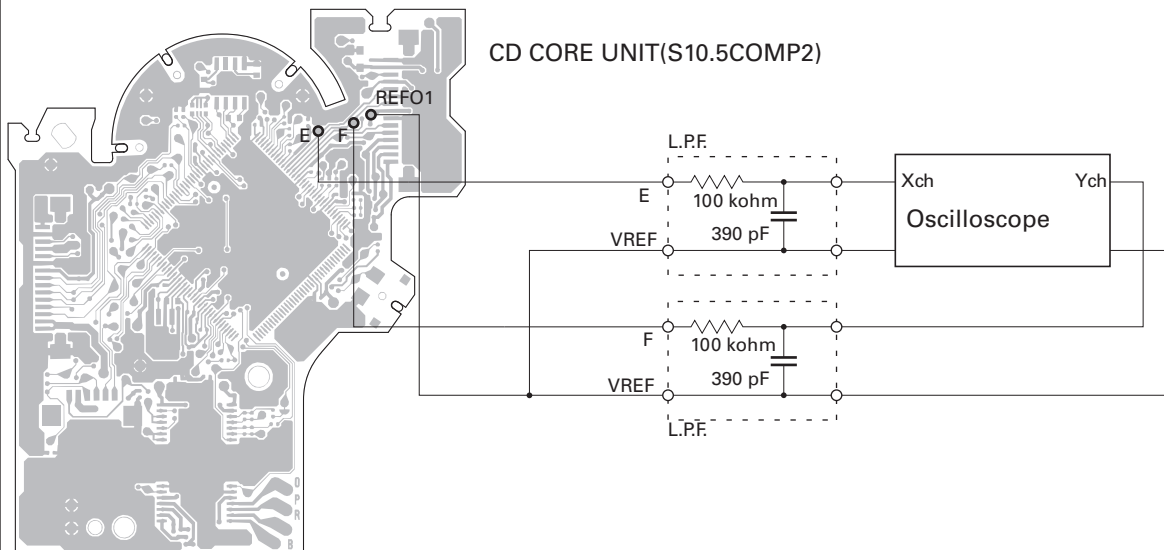
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, REFO1 |
| • Disc | • TCD-782 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 3 V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75 degrees. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75 degrees try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75 degrees then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

Reloading the disc changes the clamp position and may decrease the "wobble".

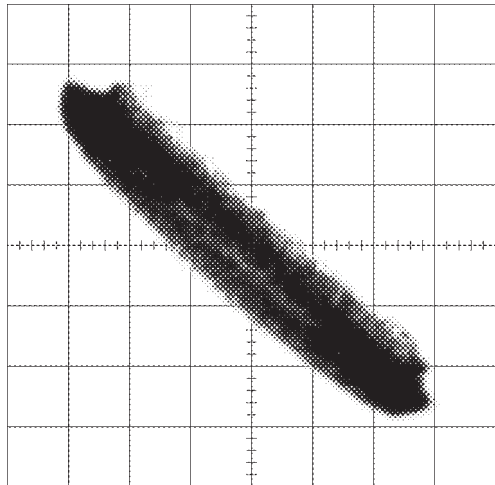
Grating waveform

Ech → Xch 20 mV/div, AC

Fch → Ych 20 mV/div, AC

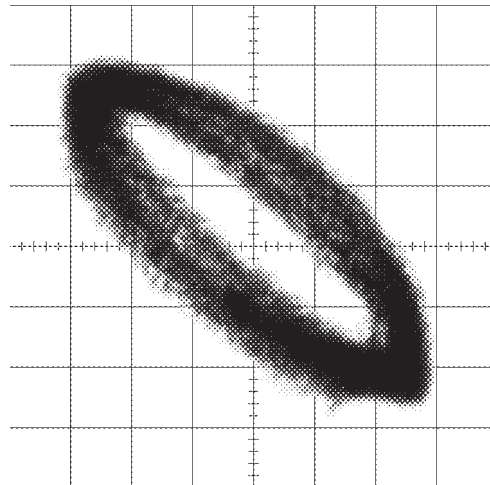
A

0 degrees



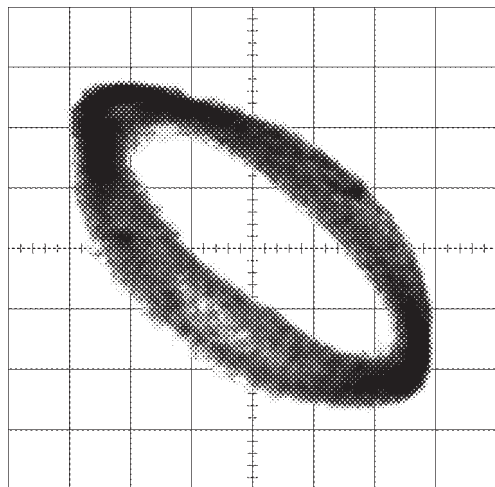
B

30 degrees



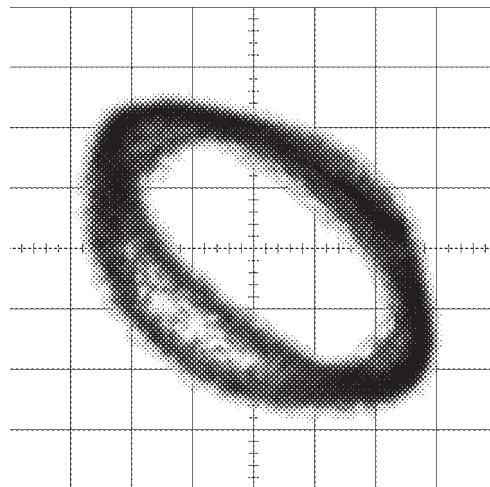
C

45 degrees



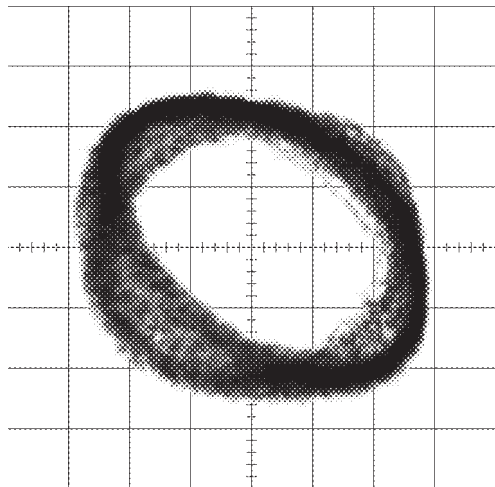
D

60 degrees



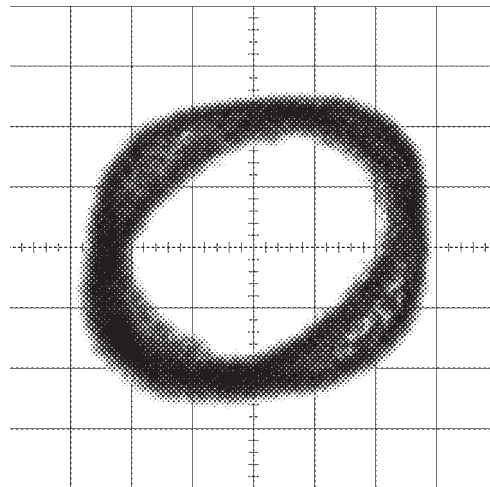
E

75 degrees



F

90 degrees



7. DISASSEMBLY

While the photograph shown is slightly different from this model in shape, the disassembly procedure is the same.

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

- 1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

● Removing the Grille Assy (Fig.1)

- 2 Release the two latches and then remove the Grille Assy.

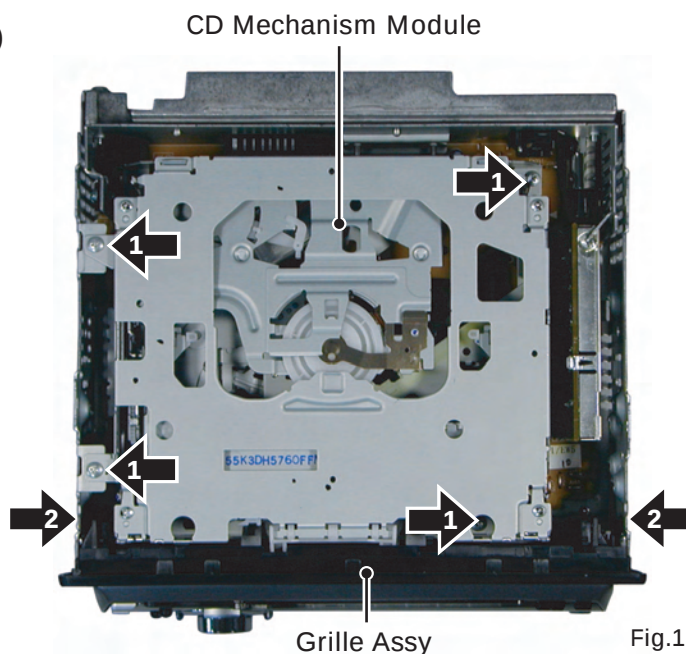
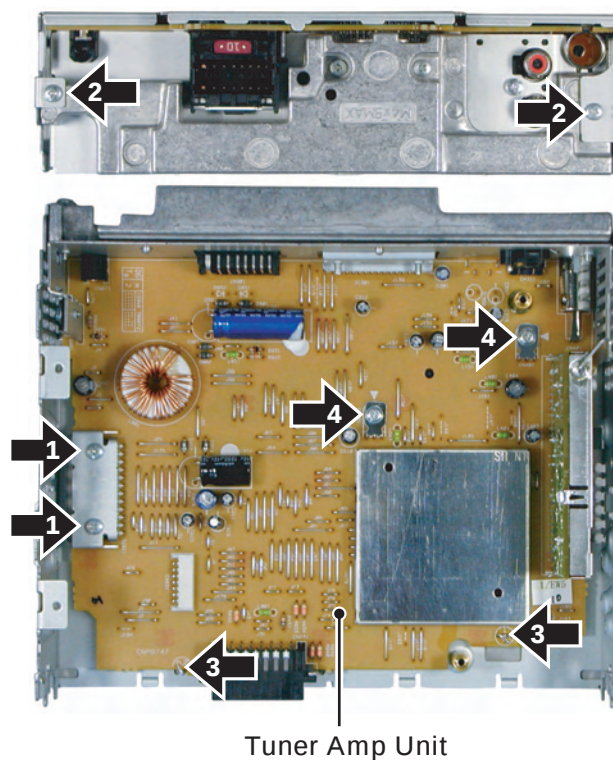


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

- 1 Remove the two screws.
- 2 Remove the two screws.
- 3 Straighten the tabs at two locations indicated.
- 4 Remove the two screws and then remove the Tuner Amp Unit.

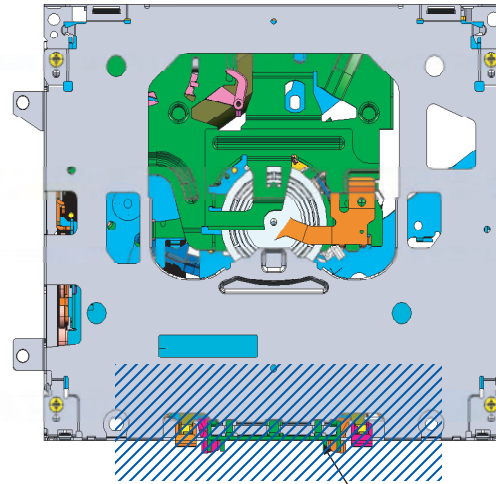


Tuner Amp Unit

Fig.2

● How to hold the Mechanism Unit

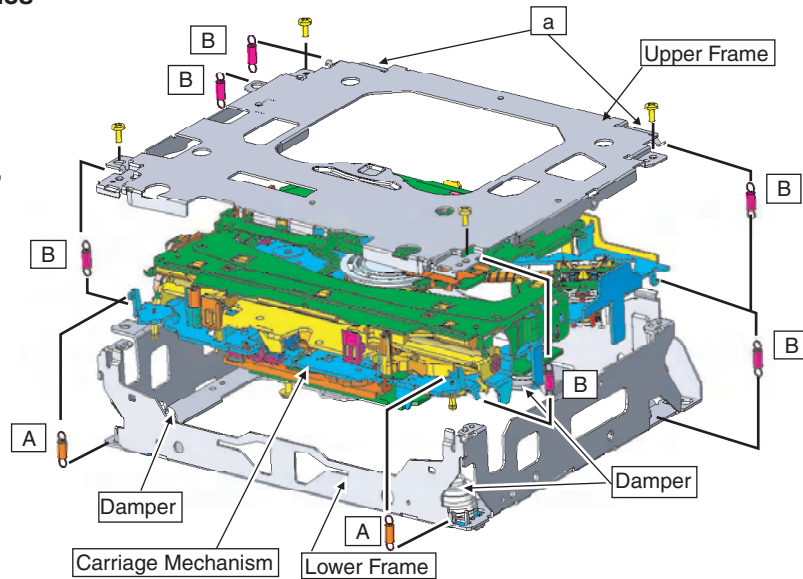
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



Do not squeeze this area.

● Removing the Upper and Lower Frames

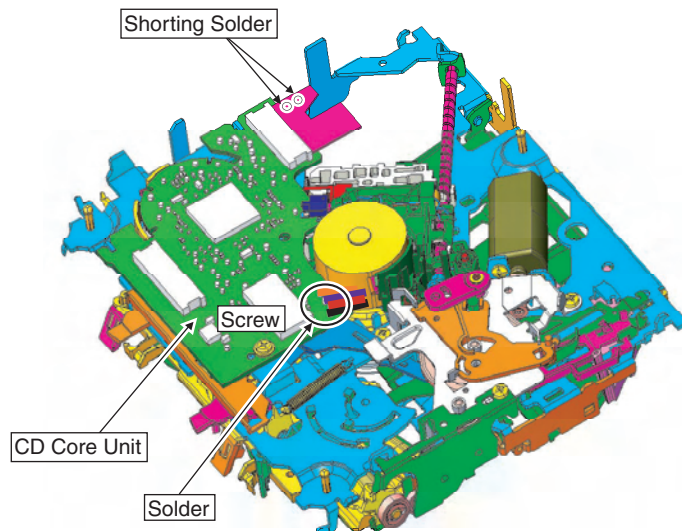
1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
 2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
 3. While lifting the Carriage Mechanism, remove it from the three Dampers.
- Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

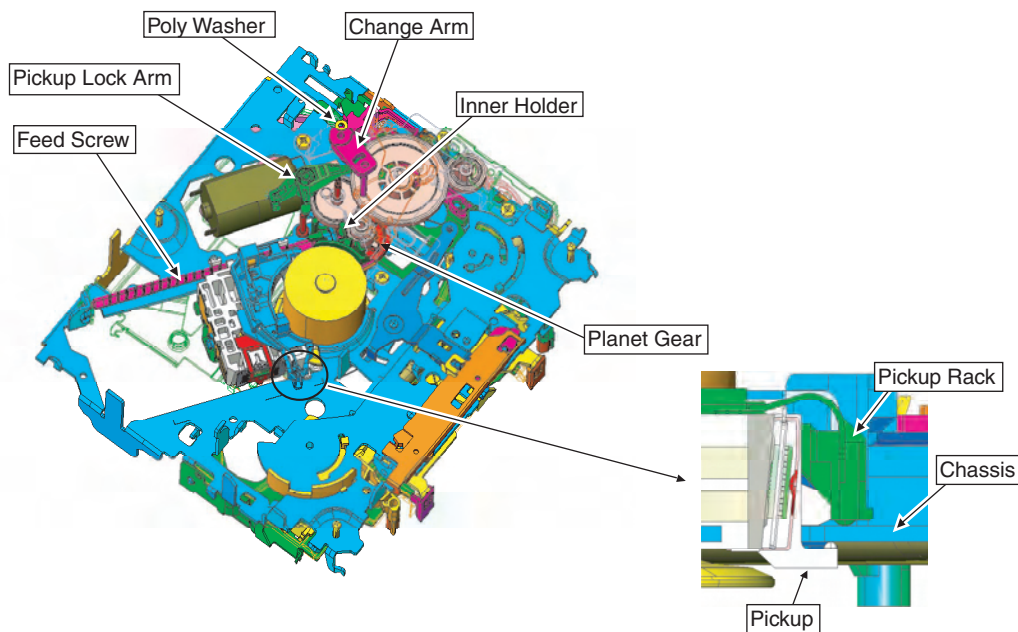


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



8. EACH SETTING AND ADJUSTMENT

8.1 PCL OUTPUT CONFIRMATION



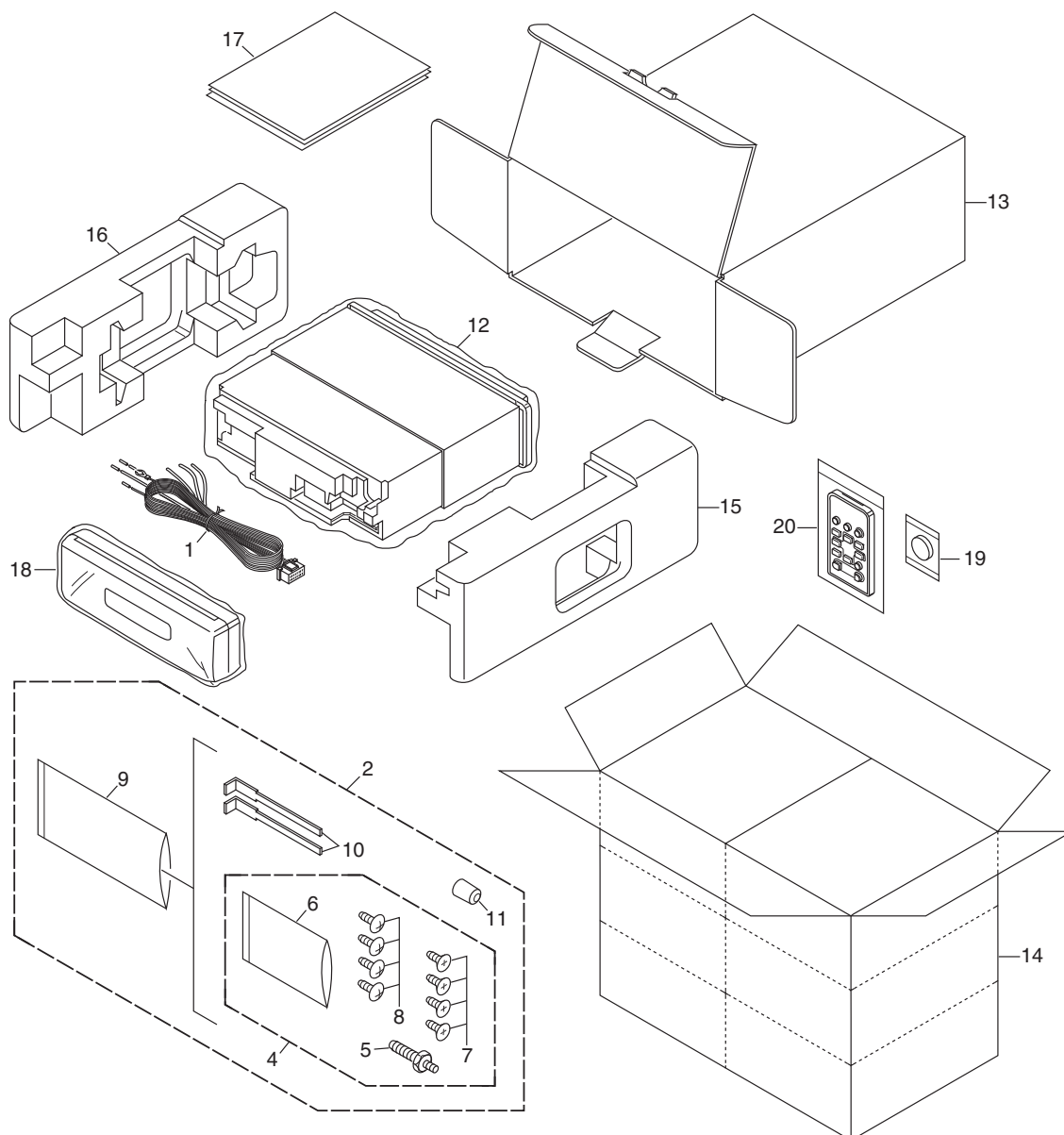
● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 112) terminal to H. The clock signal is output from the SCET IC601(Pin 43) terminal. The frequency of the clock signal is 1 Hz. The clock signal should be $1 \text{ Hz} \pm 0.000 \text{ 04 Hz}$. If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

9. EXPLODED VIEWS AND PARTS LIST

- NOTES :**
- Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screw adjacent to  mark on the product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING



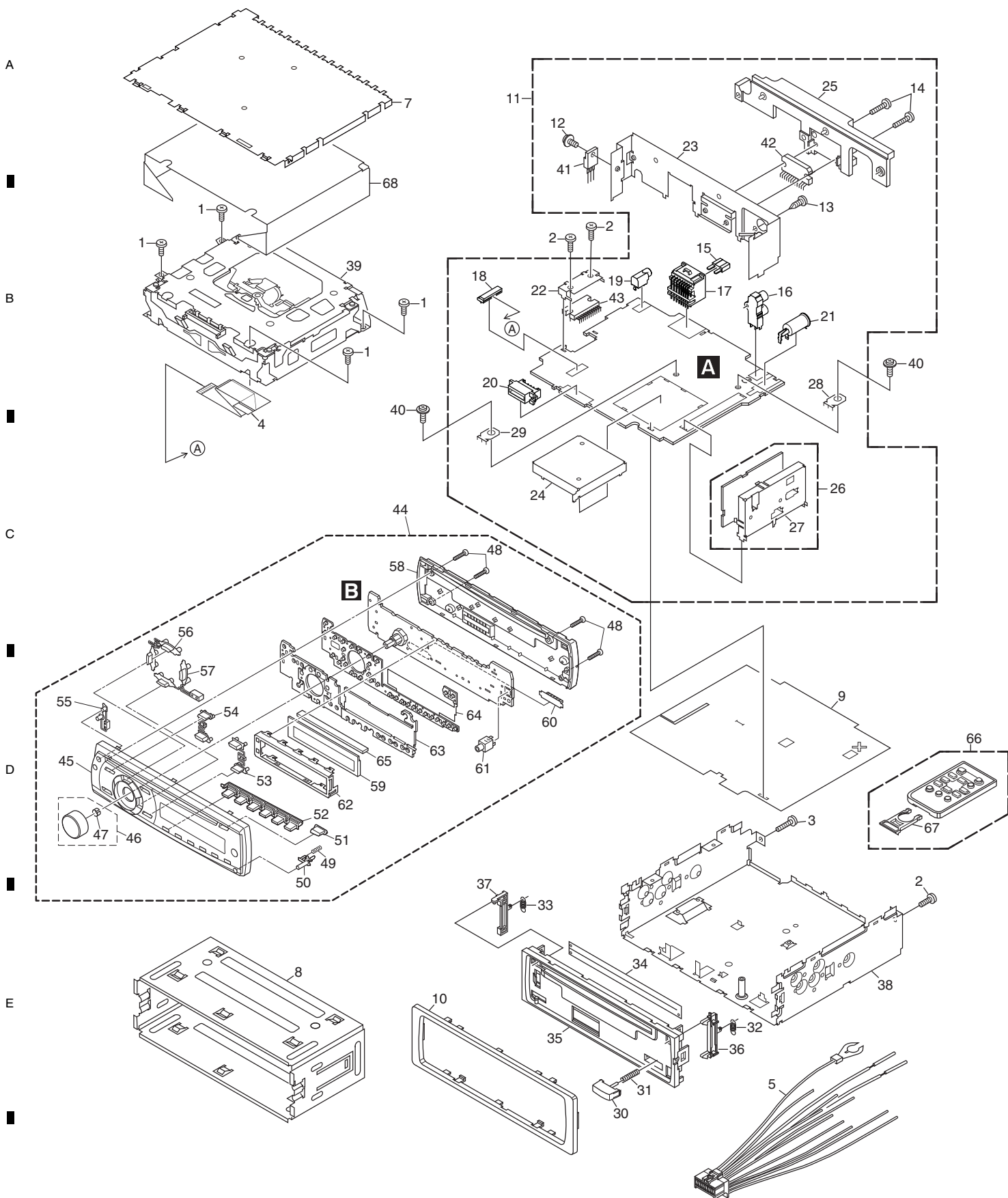
PACKING SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Cord Assy(EC)	CDP1090	12	Polyethylene Bag(ID)	CEG1373
	Cord Assy(ID)	CDP1017	13	Unit Box(ID)	YHG5332
2	Accessory Assy(ID)	CEA6708			
3	*****		14	Contain Box(ID))	YHL5332
4	Screw Assy(2050MPA,2090MP)	CEA3849	15	Protector(ID)	YHP5309
5	Screw(2050MPA,2090MP)	CBA1650			
			16	Protector(ID)	YHP5040
*	6 Polyethylene Bag(2050MPA,2090MP)CEG-127		17	Owner's Manual(ID)	YRB5047
	7 Screw(2050MPA,2090MP)	CRZ50P090FTC			
	8 Screw(2050MPA,2090MP)	TRZ50P080FTC	*	18 Case Assy	YXB5009
	9 Polyethylene Bag(ID)	CEG1160		19 Battery	CEX1065
	10 Handle(ID)	CND3707			
			20	Remote Control Assy	CXC5719
	11 Bush(2050MPA,2090MP)	CNV3930			

Owner's Manual,Installation Manual

Part No.	Language
YRB5047	English

9.2 EXTERIOR



EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BSZ26P060FTC		Grille Assy(ID)	YXA5375	
2	Screw	BSZ26P100FTC	45	Grille Unit(2050MPA/XN/EC)	YXA5335	A
3	Screw	BSZ26P180FTC		Grille Unit(2050MPG/XN/EC)	YXA5310	
4	Cable	CDE8336		Grille Unit(ID)	YXA5338	
5	Cord Assy(EC)	CDP1090	46	Knob Unit(EC)	YXC5073	
	Cord Assy(ID)	CDP1017		Knob Unit(ID)	YXC5072	
6			47	Spring	YBL5010	
7	Case(EC)	CNB3337	48	Screw	BPZ20P100FTC	
	Case(ID)	CNB2793	49	Spring	CBH2210	
8	Holder(2050MPA/XN/EC)	CND4402	50	Button(Detach)	YAC5217	
	Holder(ID)	CND3598	51	Button(EJECT)	YAC5218	
9	Insulator	CNN2325	52	Button(1 - 6)	YAC5219	B
10	Panel	YNS5276	53	Button(AUDIO,EQ)	YAC5220	
			54	Button(FUNC,BAND)	YAC5221	
11	Tuner Amp Assy(EC)	YWM5238	55	Button(DISP,CLK)	YAC5222	
	Tuner Amp Assy(ID)	YWM5234	56	Button(EC)(UP,<)	YAC5236	
12	Screw	BSZ26P060FTC		Button(ID)(UP,<)	YAC5247	
13	Screw	BPZ26P080FTC	57	Button(EC)(DOWN,>)	YAC5237	
14	Screw	BSZ26P160FTC		Button(ID)(DOWN,>)	YAC5248	
⚠ 15	Fuse(10 A)	YEK5001	58	Cover	YNS5248	
			59	LCD(LCD1801)	CAW1930	
16	Pin Jack(CN351)	CKB1059	60	Connector(CN1801)	CKS5663	C
17	Plug(CN901)	CKM1376	61	Jack(CN1802)	YKN5001	
18	Connector(CN651)	CKS3829	62	Holder	YNC5045	
19	Connector(CN871)(EC)	CKS4124	63	Lighting Conductor	YNV5108	
20	Connector(CN831)	CKS5664	64	Rubber Contact	YNV5109	
21	Antenna Jack(CN401)	CKX1056	65	Connector	YNV5166	
22	Holder	CND3545	66	Remote Control Assy	CXC5719	
23	Holder(EC)	CND3705	67	Cover	CNS7068	
	Holder(ID)	CND3754	68	Sheet(ID)	CNM9404	D
24	Holder	CND3706				
25	Heat Sink	CNR1668				
26	FM/AM Tuner Unit	CWE2025				
27	Holder	CND3466				
28	Terminal(CN402)	VNF1084				
29	Terminal(CN601)	VNF1084				
30	Button(DETACH)	CAC4836				
31	Spring	CBH2367				
32	Spring	CBH2961				
33	Spring	CBH2962				
34	Cover	CNN1665				E
35	Panel	CNS9206				
36	Arm	CNV9311				
37	Arm	CNV9312				
38	Chassis Unit	YXA7391				
39	CD Mechanism Module(S10.5)	CXK5763				
40	Screw	ISS26P055FTC				
41	Transistor(Q991)	2SD2396				
42	IC(IC301)	PAL007C				
43	IC(IC911)	BA4918-V12				F
44	Detachable Assy(2050MPA/XN/EC)	YXA5315				
	Grille Assy(2050MPG/XN/EC)	YXA5376				

9.3 CD MECHANISM MODULE

A

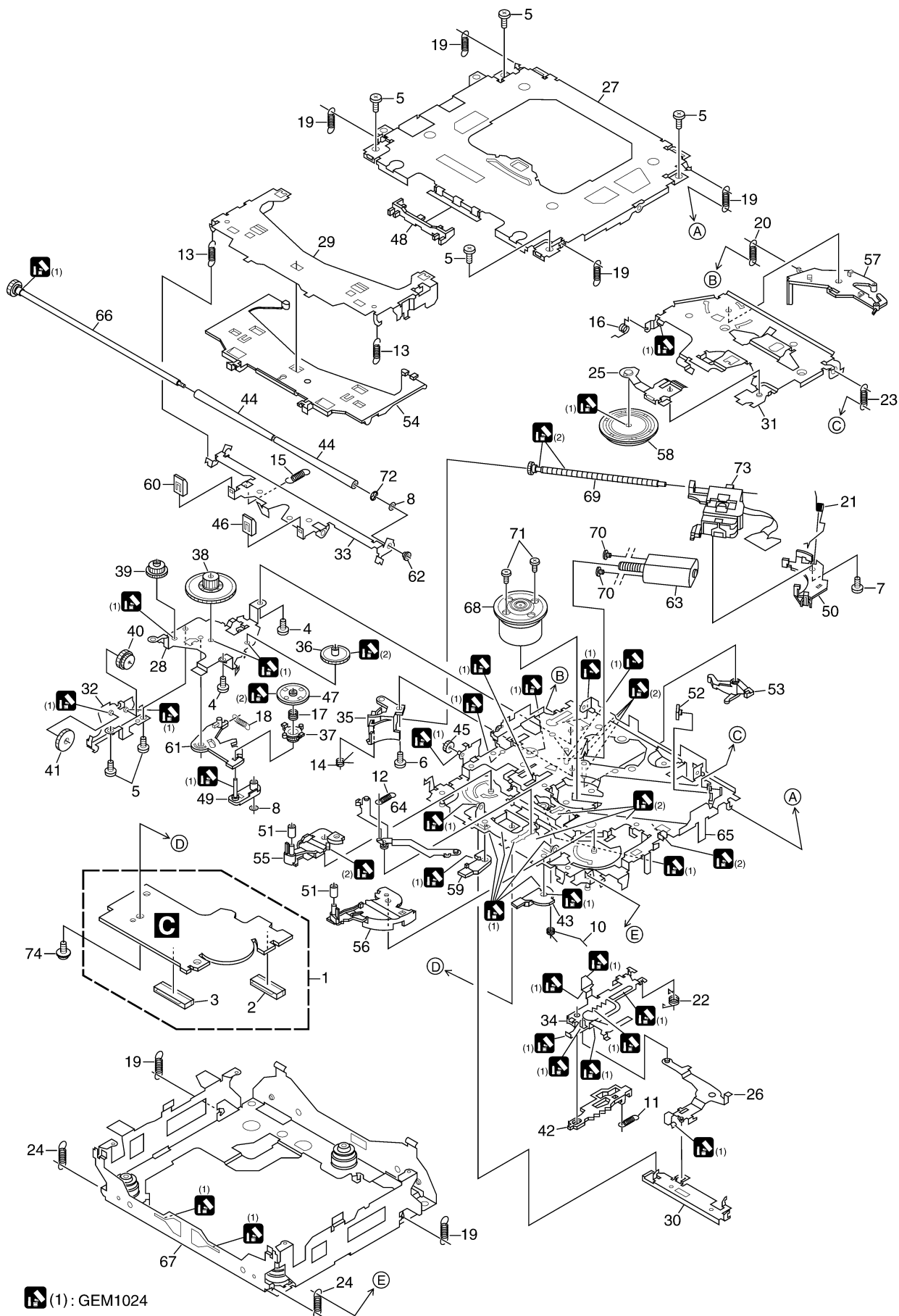
B

C

D

E

F



CD MECHANISM MODULE SECTION PARTS LIST

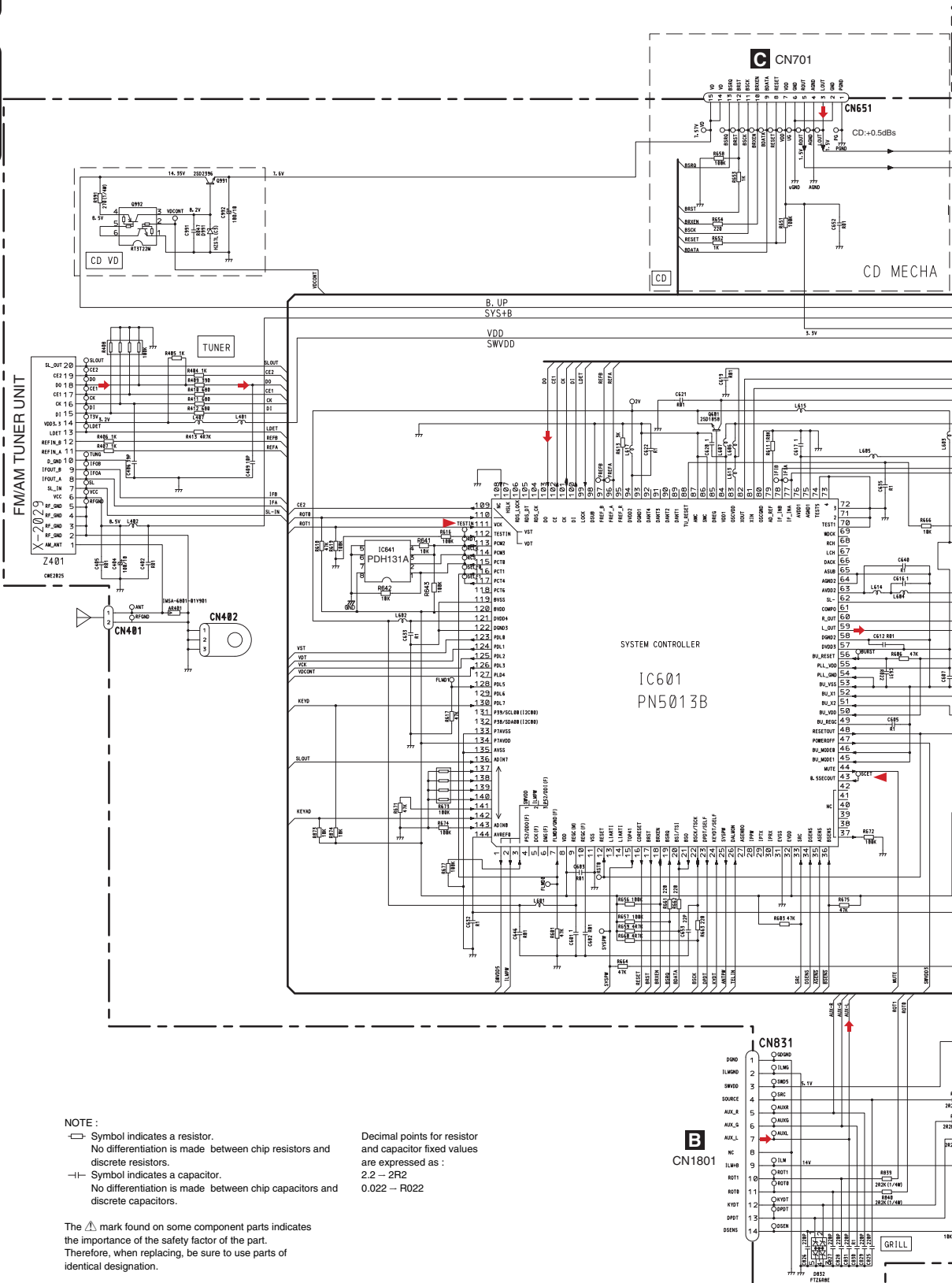
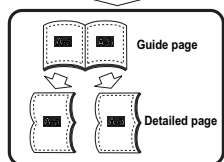
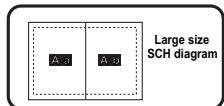
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	CD Core Unit(S10.5COMP2)	CWX3514	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				A
3	Connector(CN701)	CKS4808	51	Roller	CNV8343	
4	Screw	BMZ20P025FTC	52	Holder	CNV8344	
5	Screw	BSZ20P040FTC	53	Arm	CNV8345	
			54	Guide	CNV8347	
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348	
7	Screw(M2 x 4)	CBA1835				
8	Washer	CBF1038	56	Arm	CNV8349	
9	*****		57	Arm	CNV8350	
10	Spring	CBH2609	58	Clamper	CNV8365	
			59	Arm	CNV8386	
11	Spring	CBH2612	60	Guide	CNV8396	B
12	Spring	CBH2614				
13	Spring	CBH2616	61	Arm	CNV8413	
14	Spring	CBH2617	62	Collar	CNV8938	
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026	
			64	Arm Unit	CXC4027	
16	Spring	CBH2855	65	Chassis Unit	CXC4028	
17	Spring	CBH2937				
18	Spring	CBH2735	66	Gear Unit	CXC4029	
19	Spring	CBH2854	67	Frame Unit	CXC4031	
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134	
			69	Screw Unit	CXC6359	C
21	Spring	CBH2856	70	Screw	JFZ20P020FTC	
22	Spring	CBH2857				
23	Spring	CBH2860	71	Screw	JGZ17P022FTC	
24	Spring	CBH2861	72	Washer	YE20FTC	
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942	
			74	Screw	IMS26P030FTC	
26	Arm	CND1909				
27	Frame	CND2582				
28	Bracket	CND2583				
29	Arm	CND2584				
30	Lever	CND2585				D
31	Arm	CND2586				
32	Bracket	CND2587				
33	Arm	CND2588				
34	Lever	CND2589				
35	Holder	CNV7201				
36	Gear	CNV7207				
37	Gear	CNV7208				
38	Gear	CNV7209				
39	Gear	CNV7210				E
40	Gear	CNV7211				
41	Gear	CNV7212				
42	Rack	CNV7214				
43	Arm	CNV7216				
44	Roller	CNV7218				
45	Gear	CNV7219				
46	Guide	CNV7361				
47	Gear	CNV7595				F
48	Guide	CNV7799				
49	Arm	CNV7805				

10. SCHEMATIC DIAGRAM

10.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



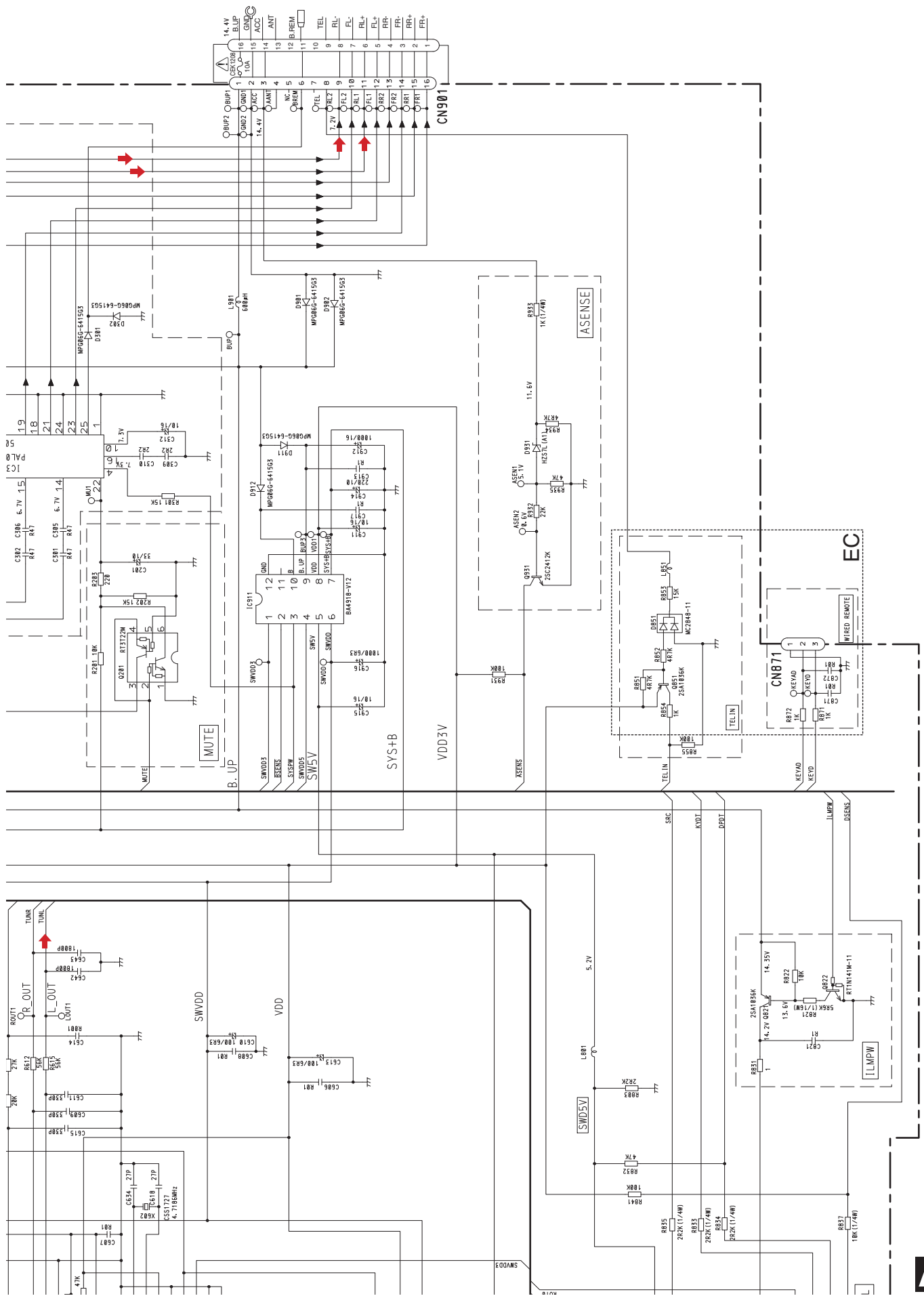
NOTE :

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2 ~ 2R2
0.022 ~ R022

The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A



DEH-2050MPA/XN/EC

A-a A-b

A-b

A

B

C

D

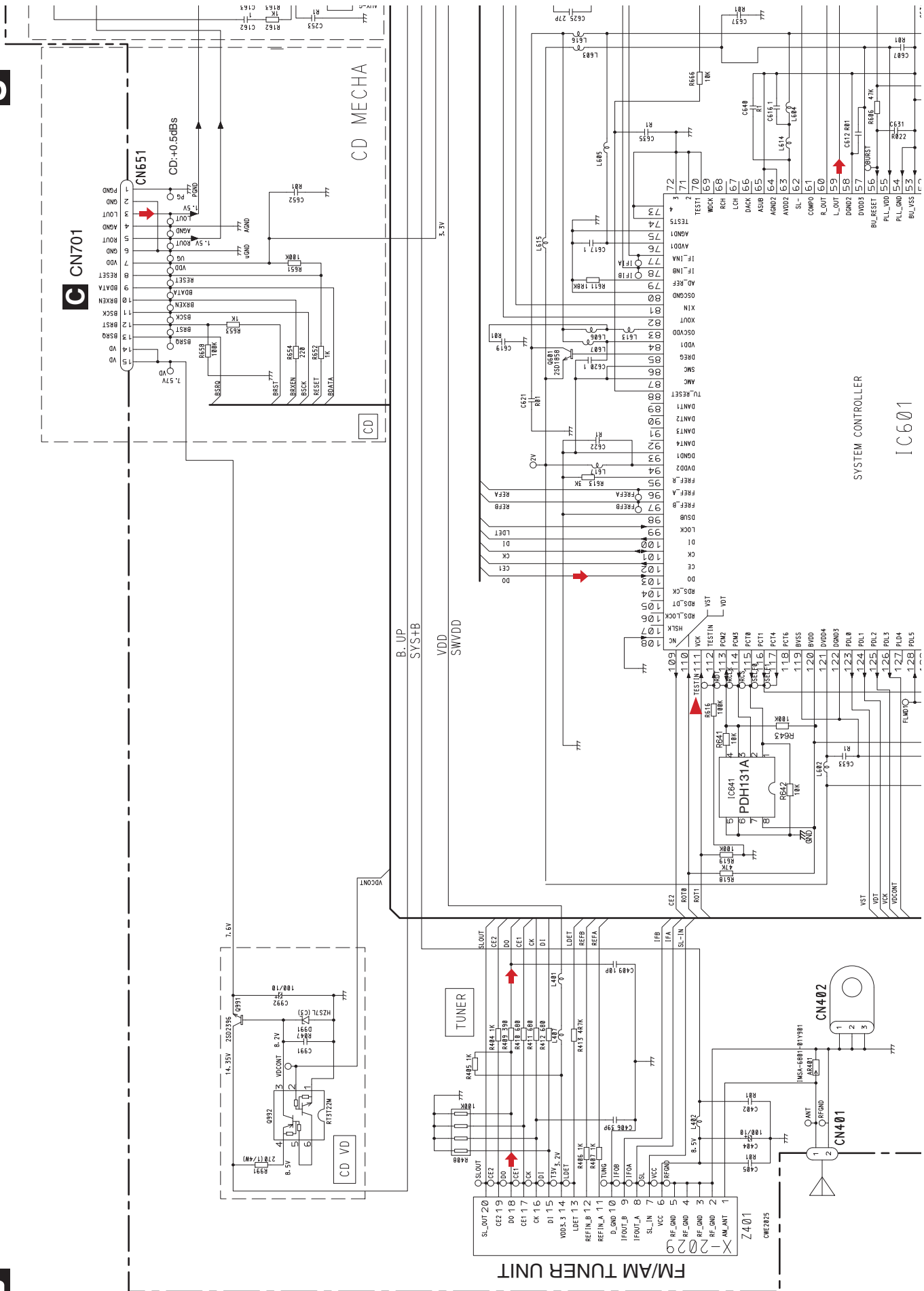
E

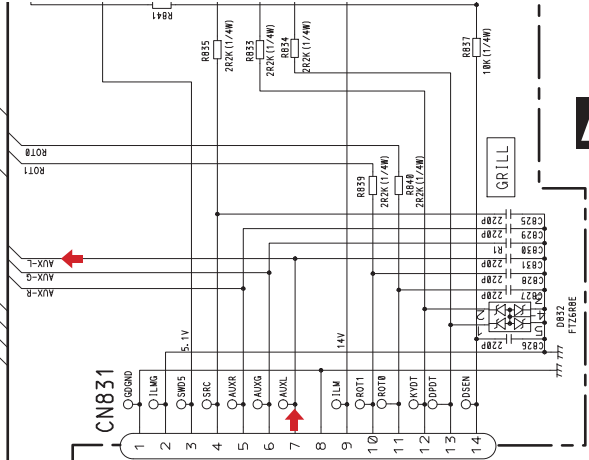
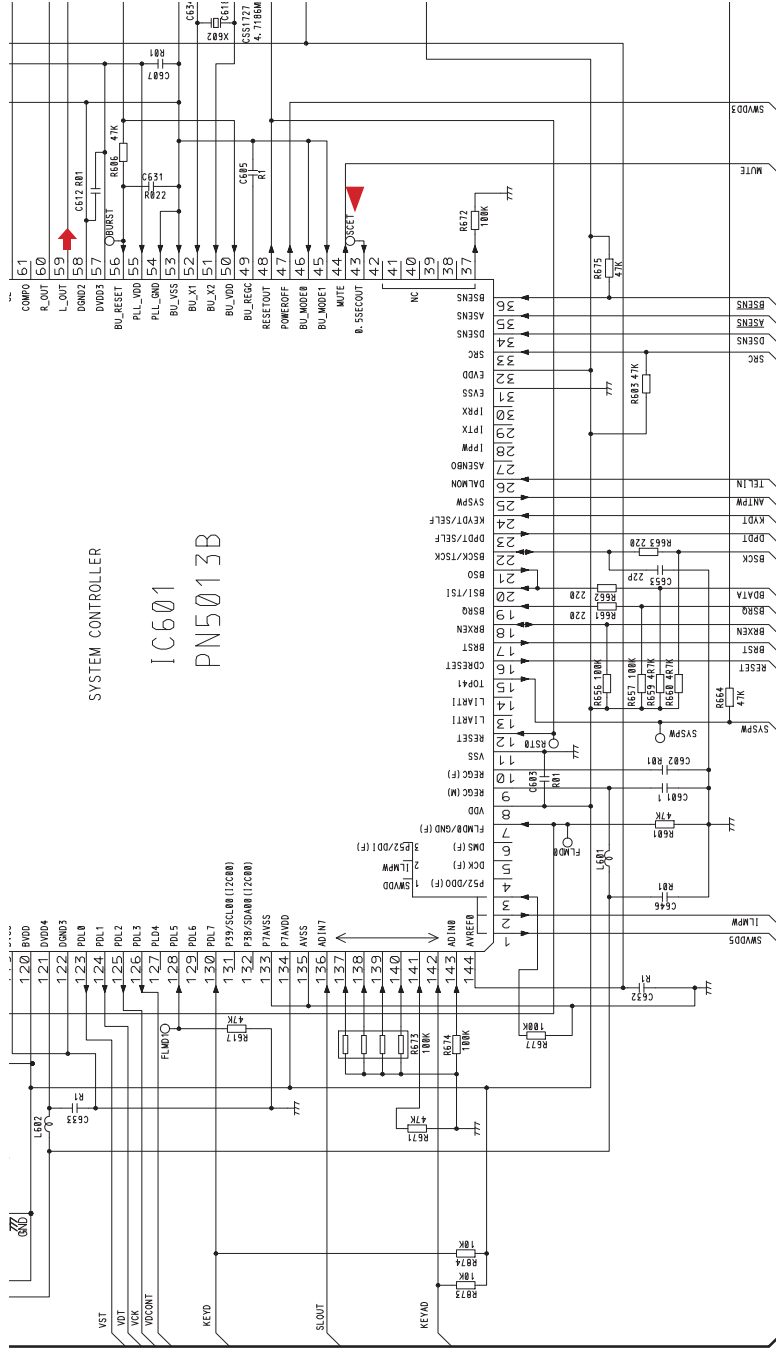
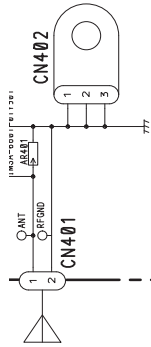
F

A-b

A-a A-b

A-a





NOTE :

Symbol indicates a resistor.

No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.

No differentiation is made between chip capacitors and discrete capacitors.

The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

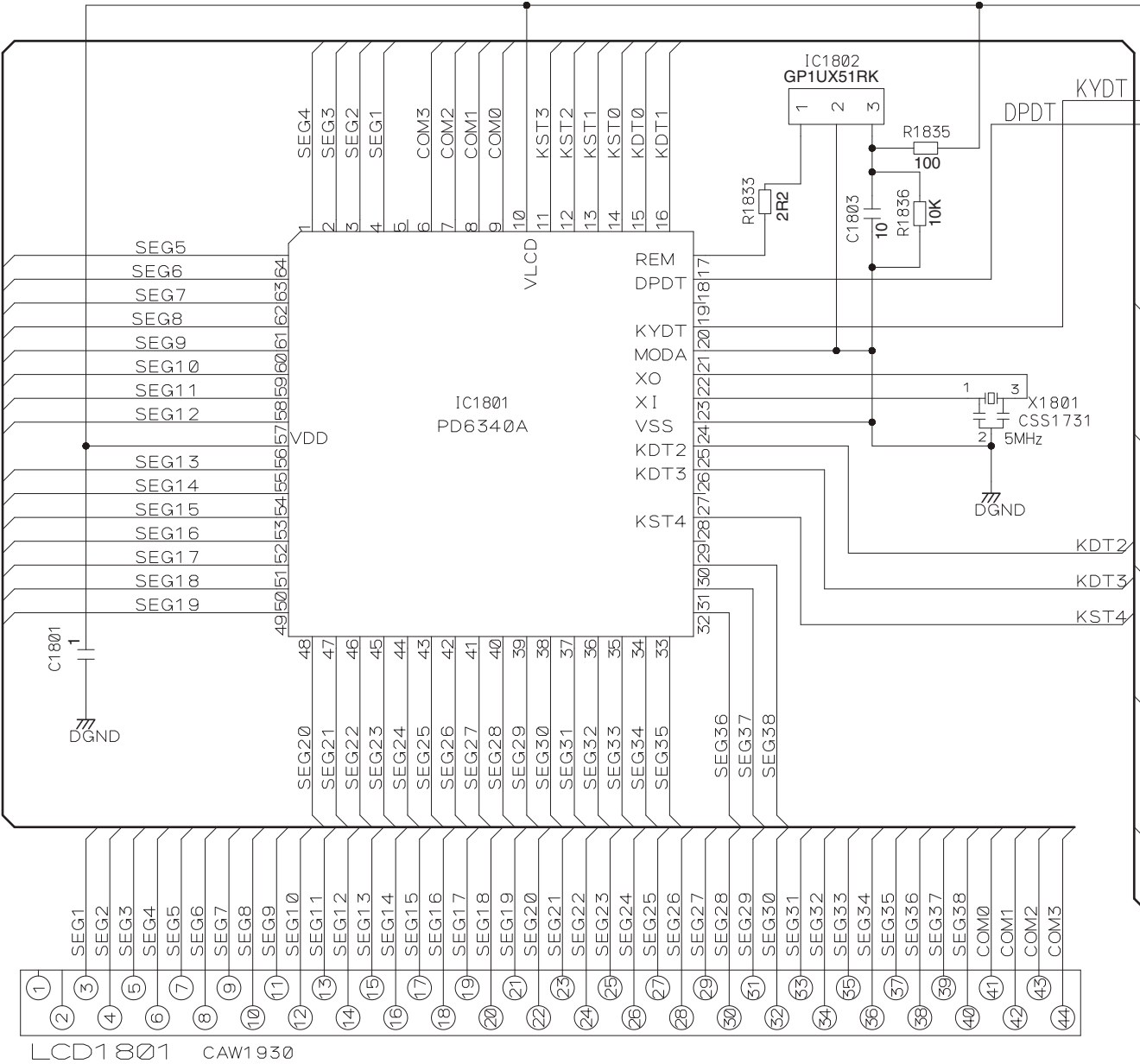
Decimal points for resistor and capacitor fixed values are expressed as :

2.2 — 2R2
0.022 — R022

A-a

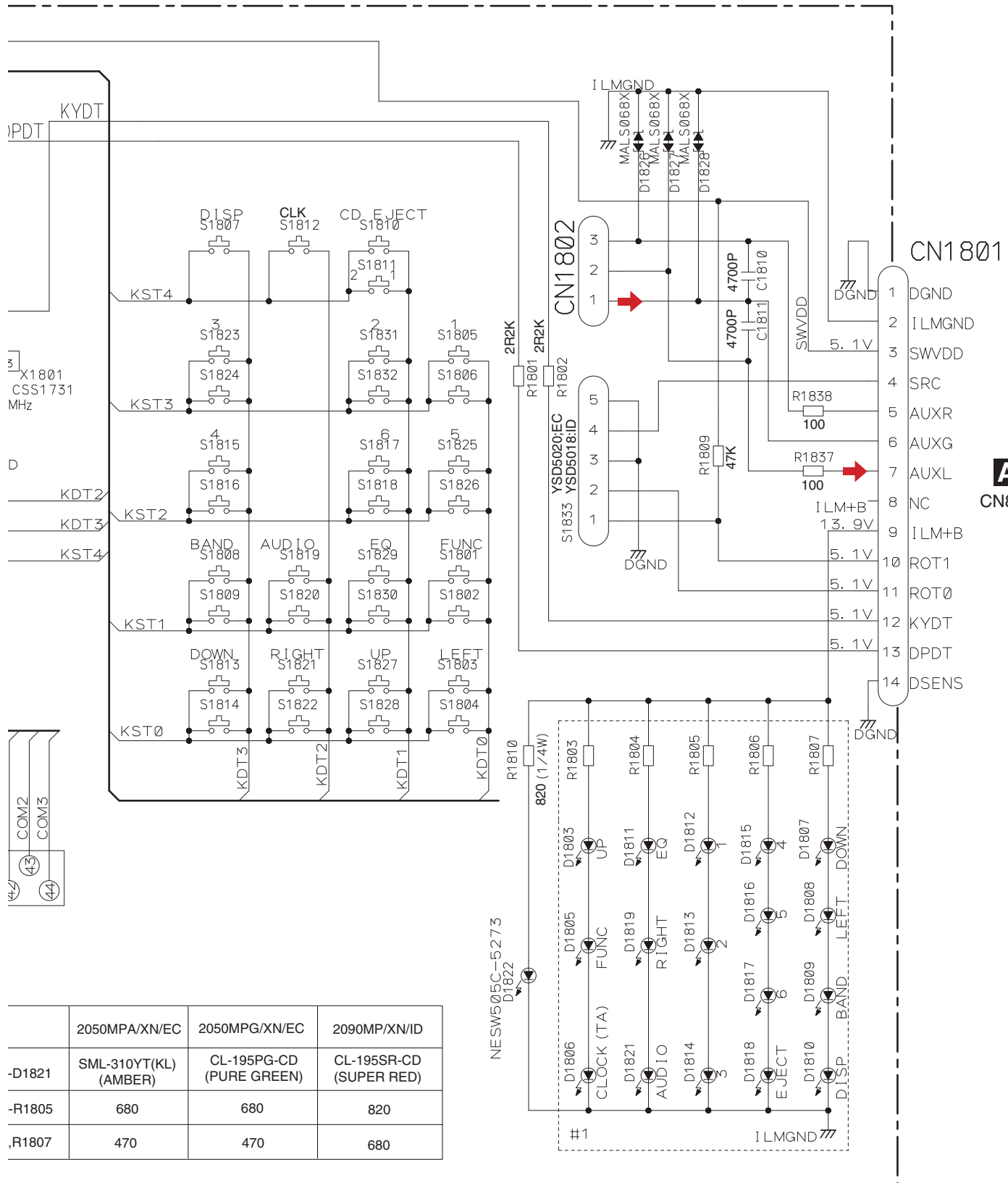
A-b

10.2 KEYBOARD UNIT



#1	
D1803-D1821	2050N
R1803-R1805	SML-3 (AI)
R1806,R1807	

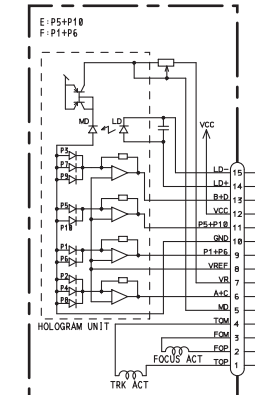
B KEYBOARD UNIT



10.3 CD MECHANISM MODULE(GUIDE PAGE)

C-a

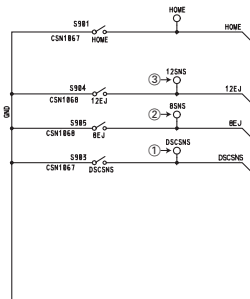
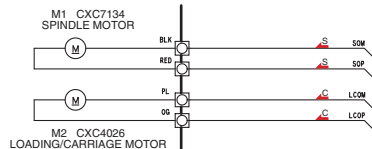
PICKUP UNIT(P10.5)(SERVICE)



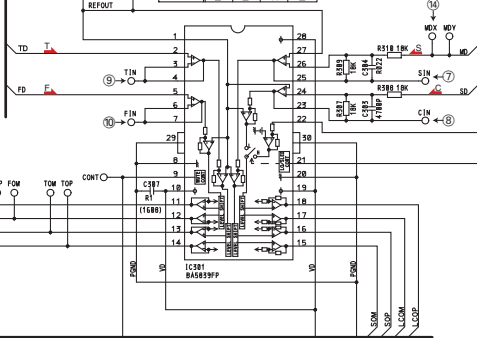
F. ACT: Applying positive voltage to FOP.
the lens moves DISC side.
T. ACT: Applying positive voltage to TOP.
the lens moves OUTSIDE of Disc Reference.

SWITCHES:
CD CORE UNIT(S10.5COMP2)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.



	LOAD	EJ	PLAY	OFF
CLCONT	H	H	L	L
LOEJ	L	H	-	-
CONT	L	L	H	L



CD DRIVER

RF AMP. CD DECODE
DIGITAL SERVO/D

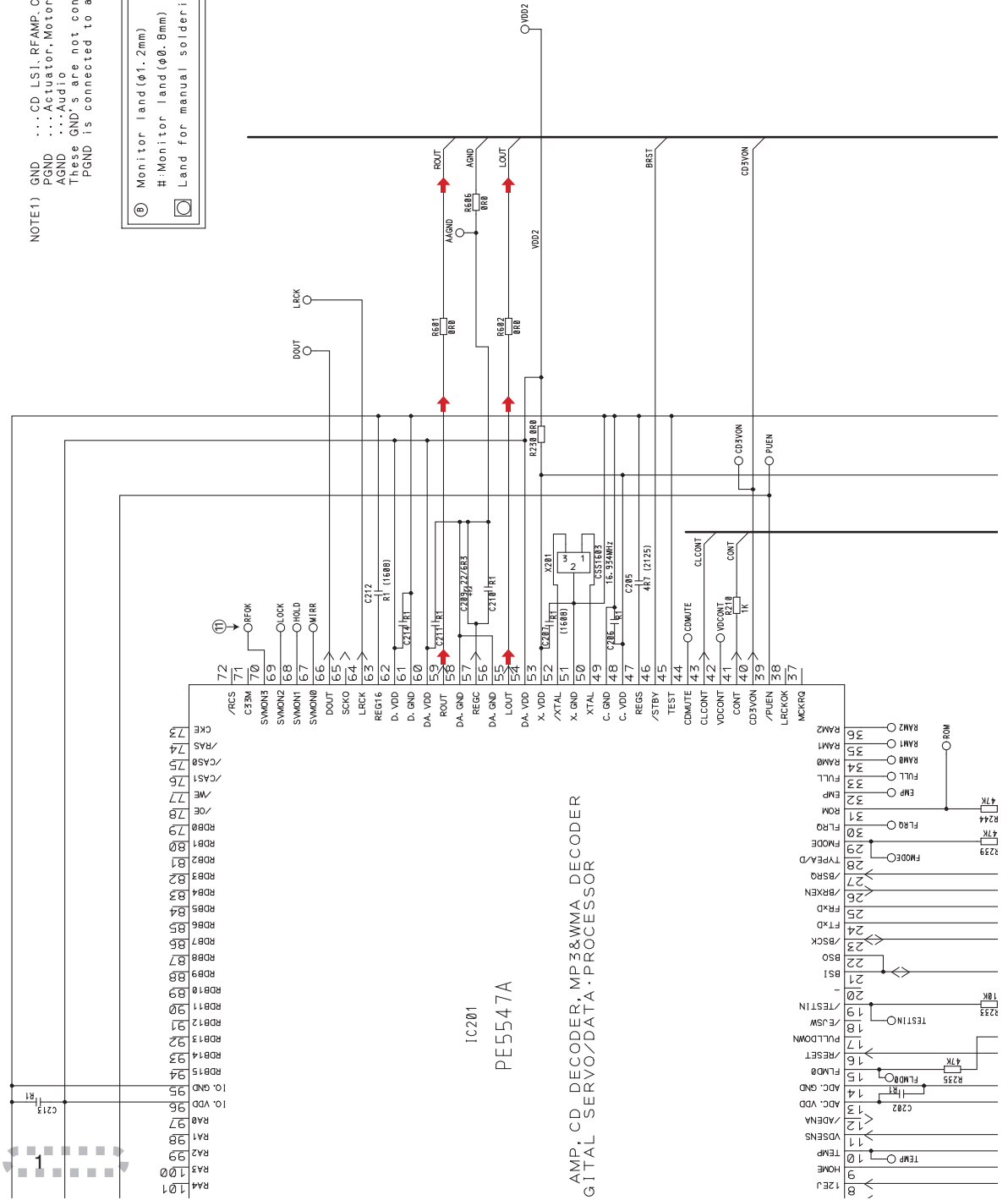
IC2
PE55

CD CORE UNIT(S10.5COMP2)

NOTE1) GND ...CD LSI, RFAMP, CPU
PGND ...Actuator, Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

⑨ Monitor land (φ1.2mm)
#:Monitor land (φ0.8mm)
Land for manual soldering

↑ SIGNAL LINE
↑ FOCUS SERVO LINE
↑ TRACKING SERVO LINE
↑ CARRIAGE SERVO LINE
↑ SPINDLE SERVO LINE



DEH-2050MPA/XN/EC

C-a C-b

C-b

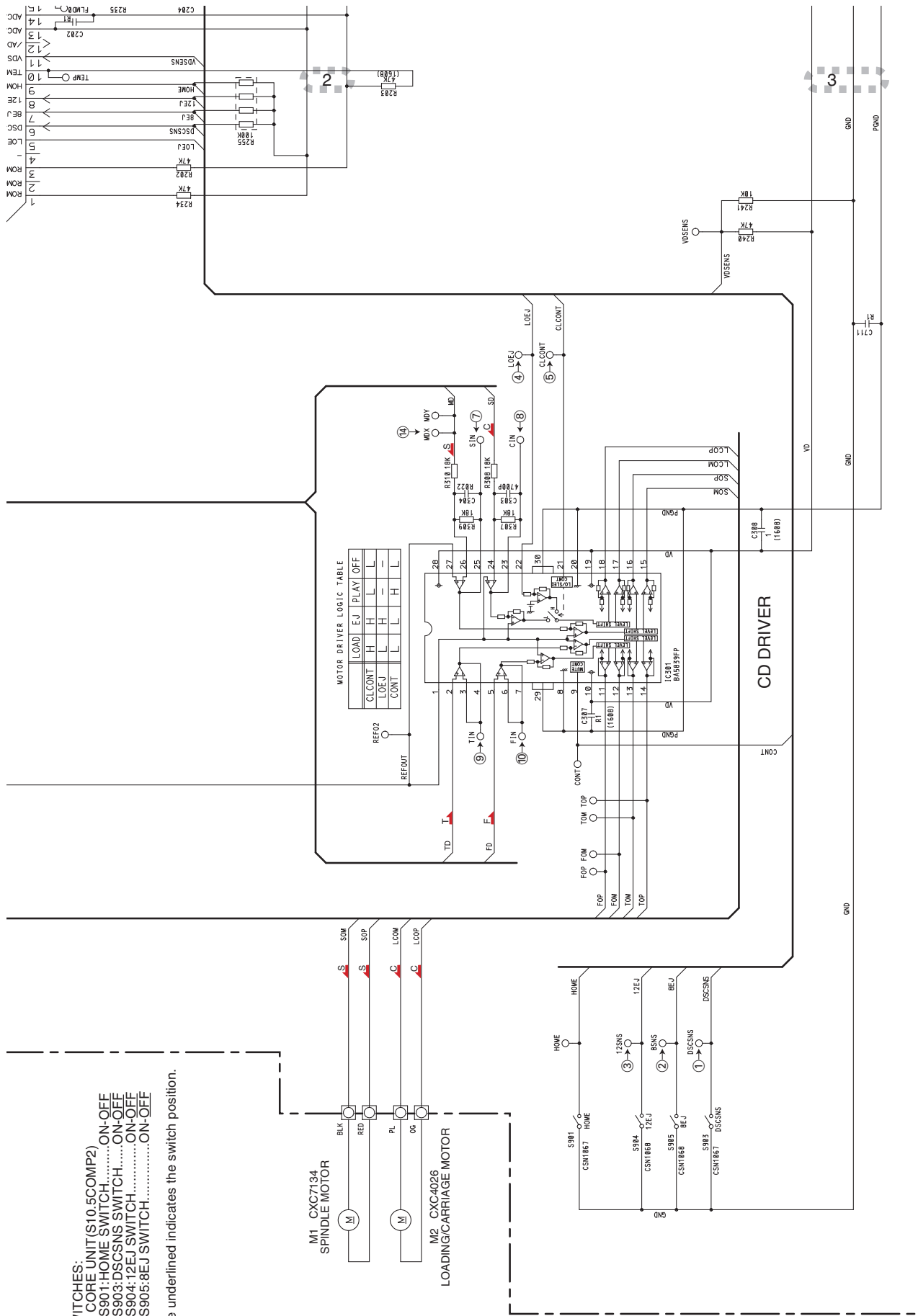


SWITCHES:
 CD CORE UNIT(S10.5COMP2)
 S901:HOME SWITCH.....ON-OFF
 S903:DSCSNS SWITCH.....ON-OFF
 S904:12EJ SWITCH.....ON-OFF
 S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

M1_CXC7134
 SPINDLE MOTOR

M2_CXC4026
 LOADING/CARRIAGE MOTOR



C-a

C-a c-b

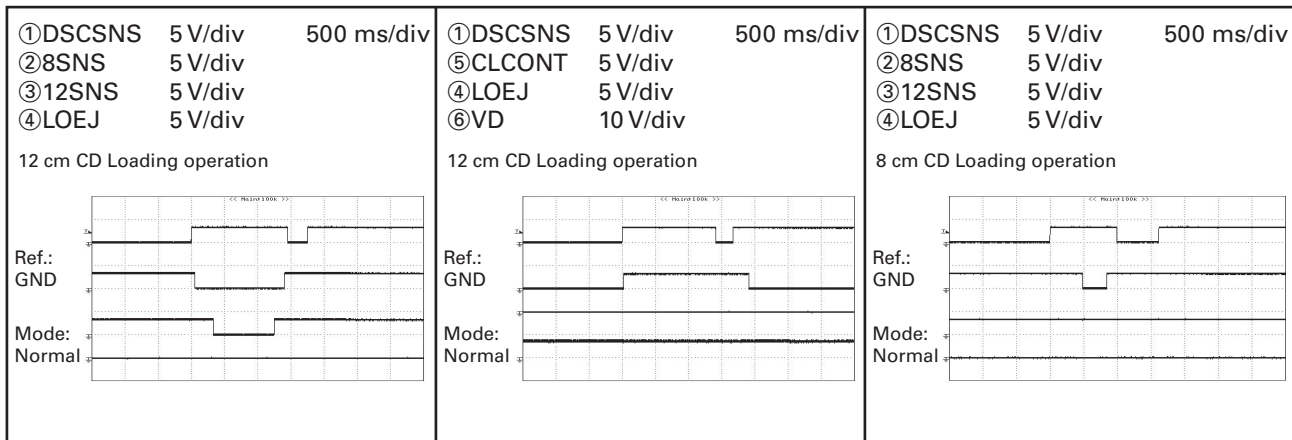
C-b

10.4 WAVEFORMS

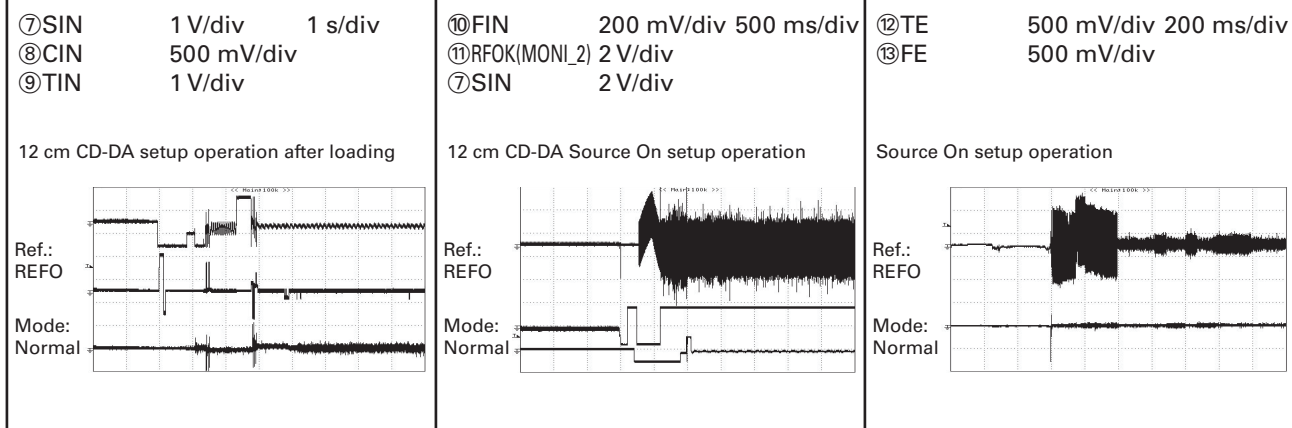
● CD Core Unit

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

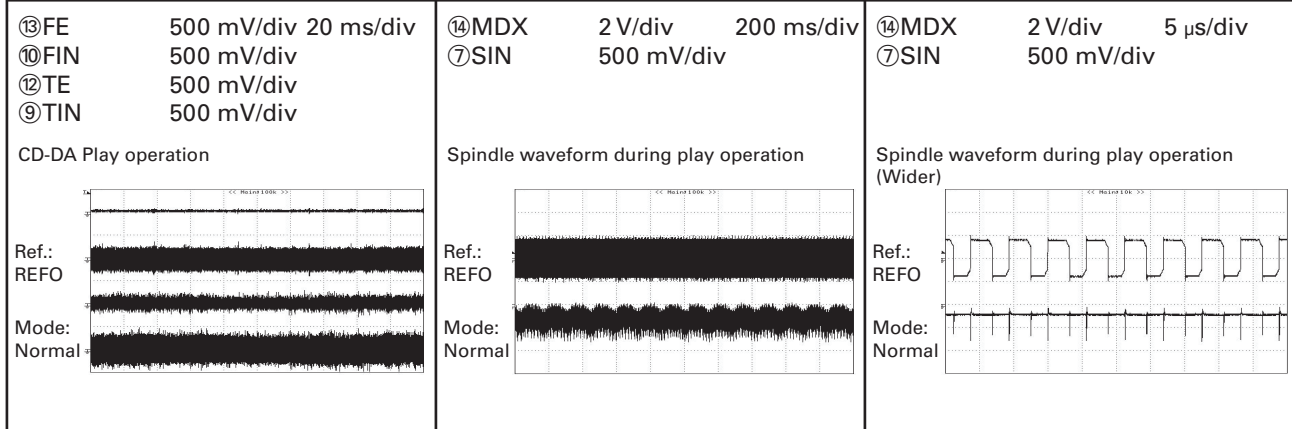
A



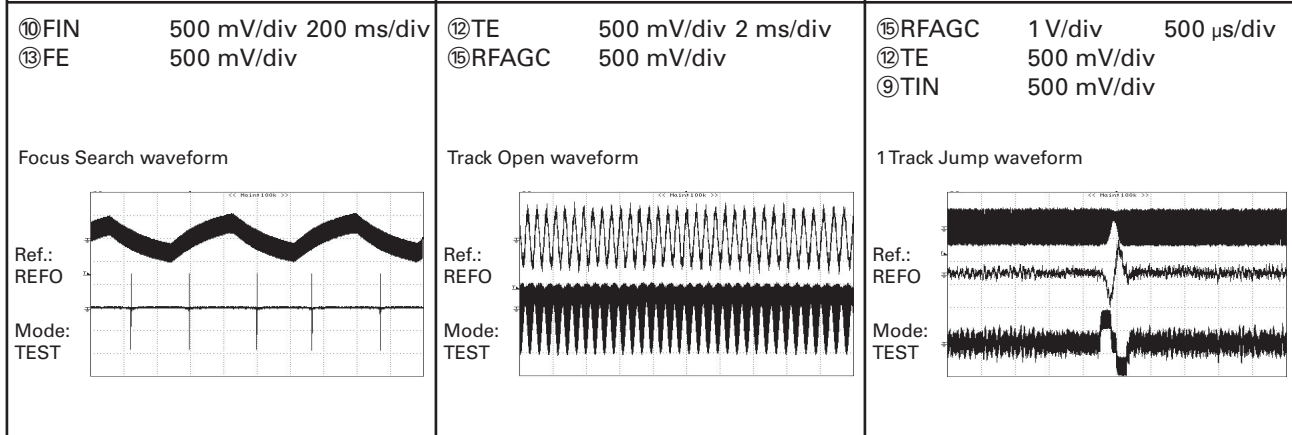
B



C

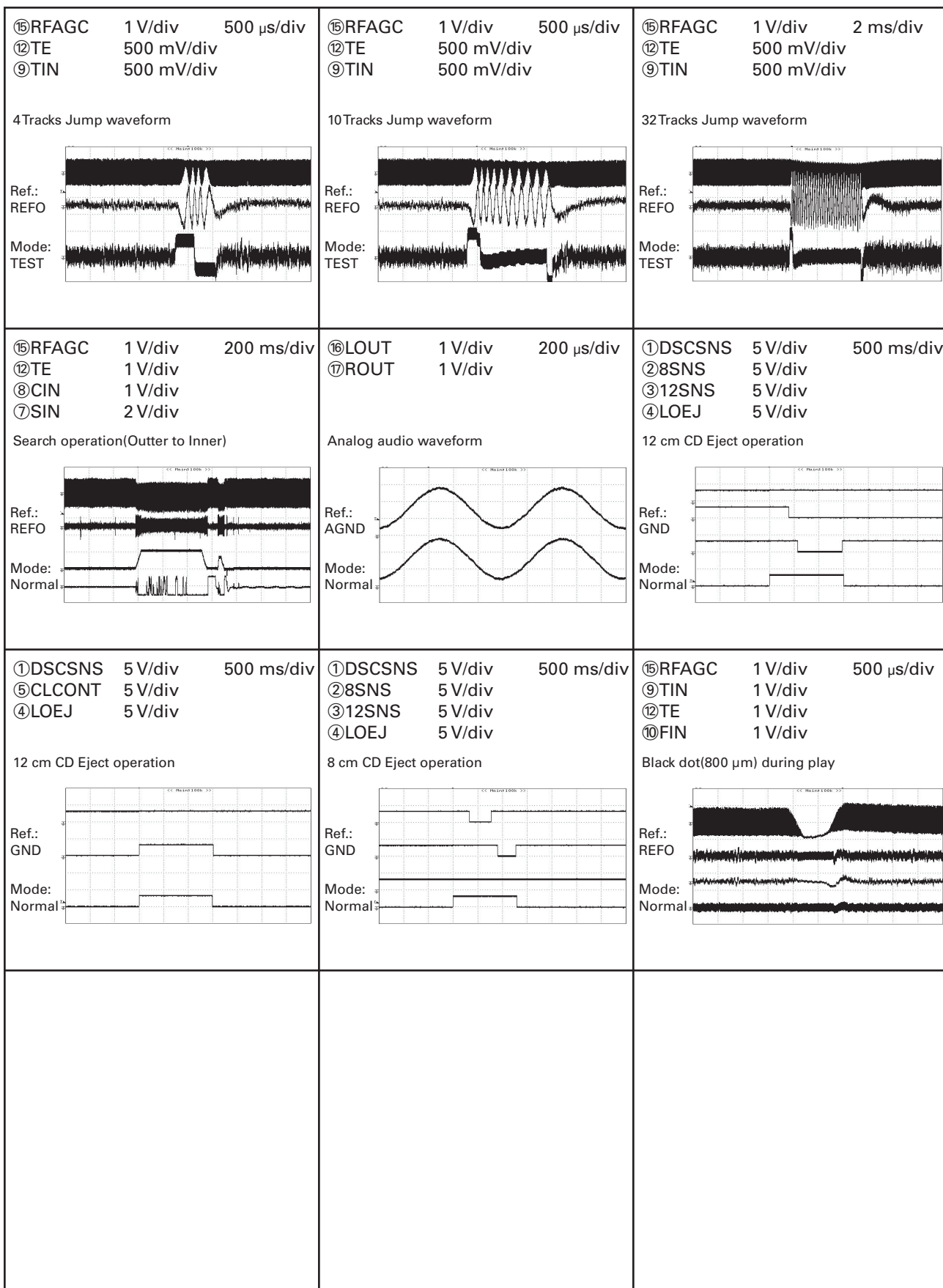


D



E

F



11. PCB CONNECTION DIAGRAM

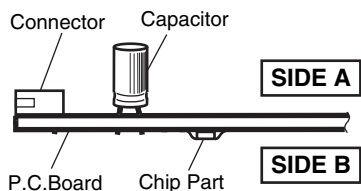
11.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

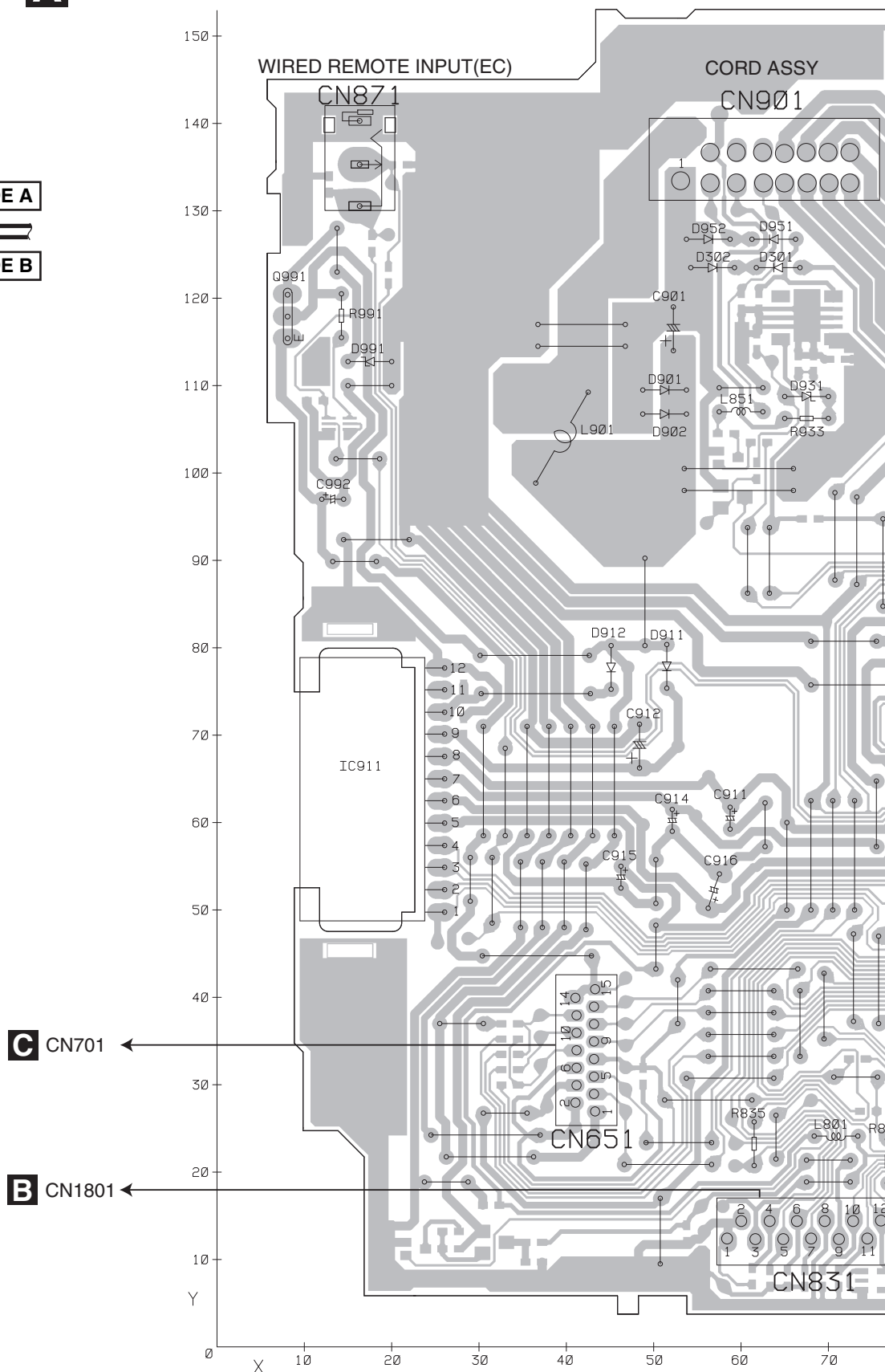
1. The parts mounted on this PCB include all necessary parts for several destination.

For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams

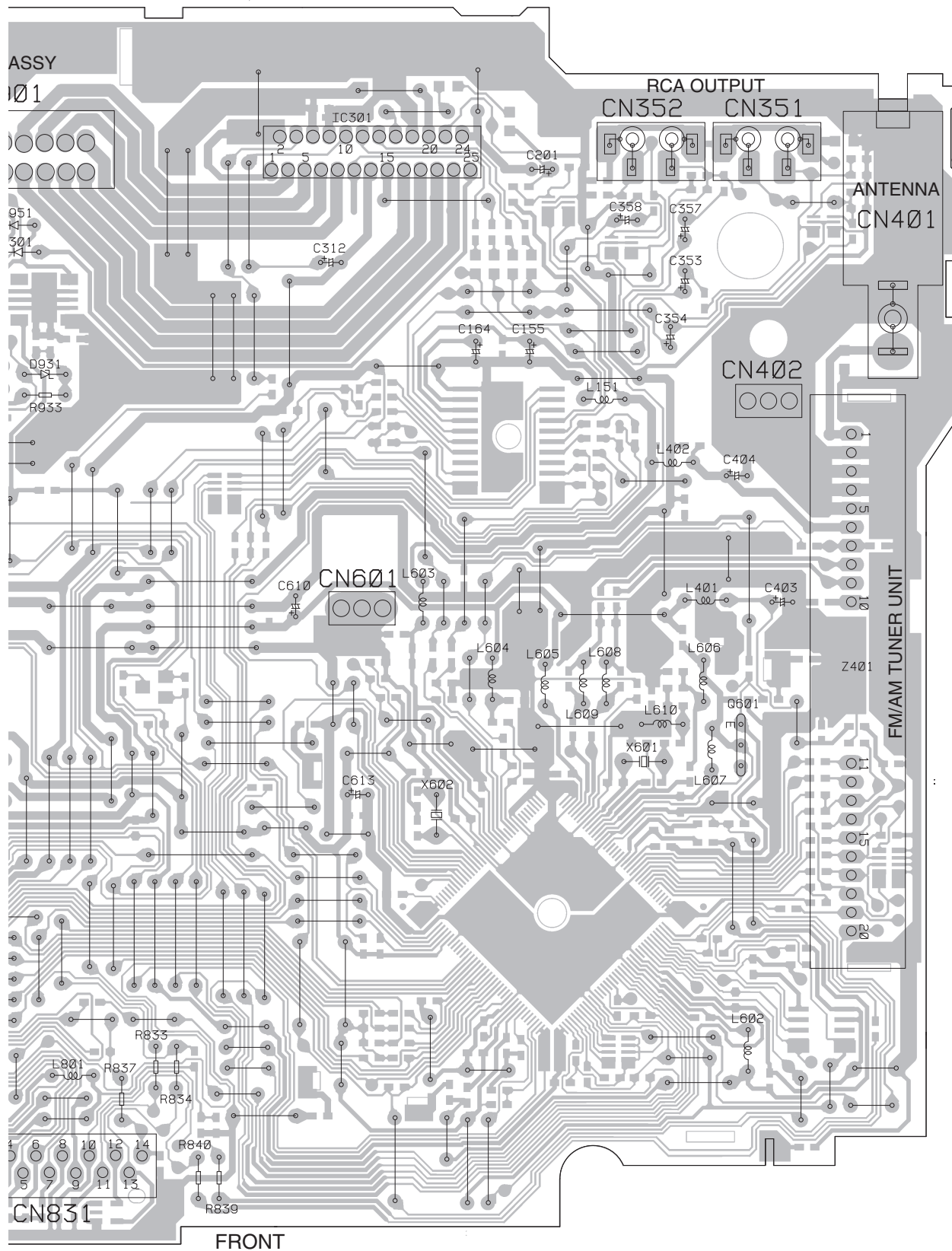


A TUNER AMP UNIT



A

SIDE A



A

A TUNER AMP UNIT

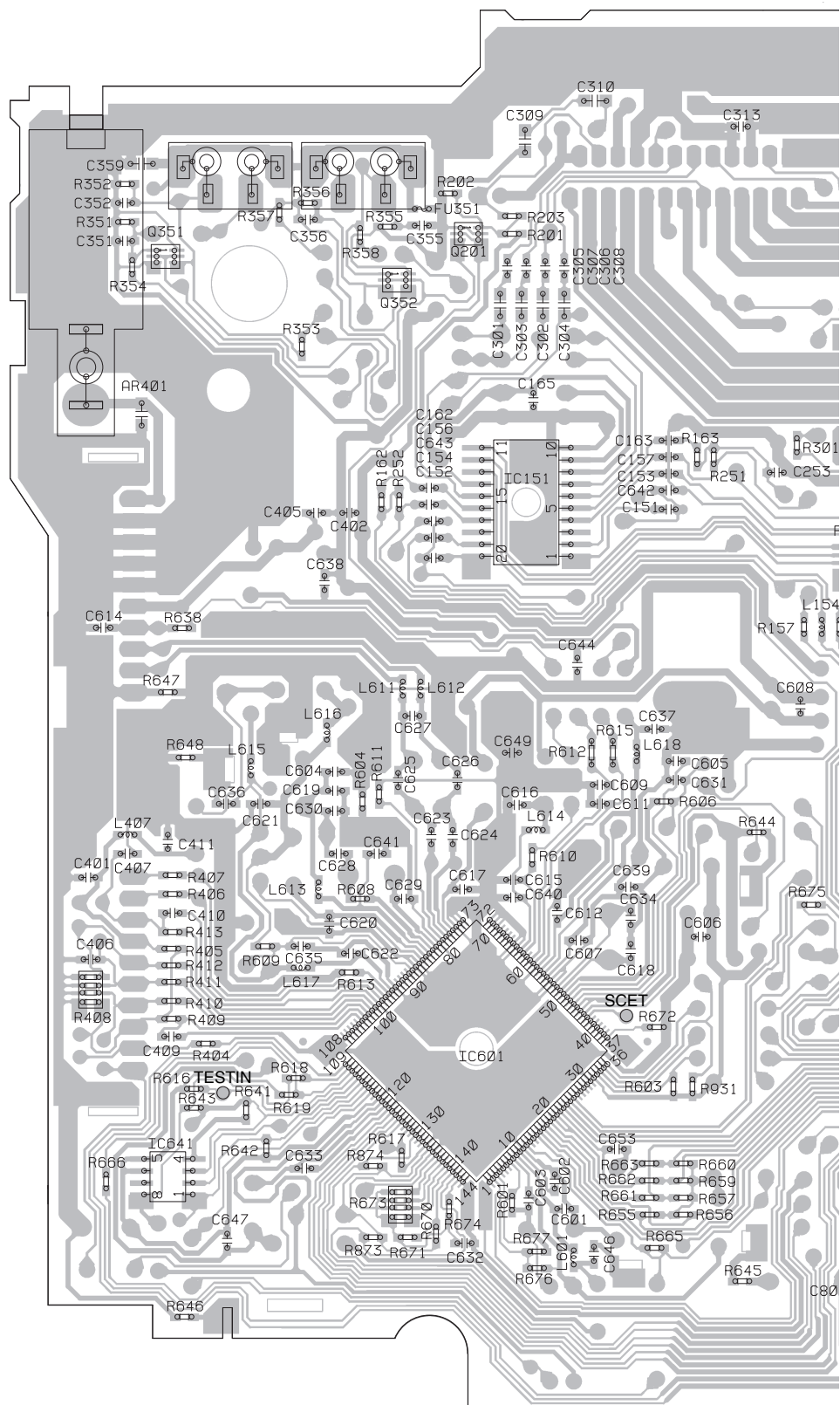
B

C

D

E

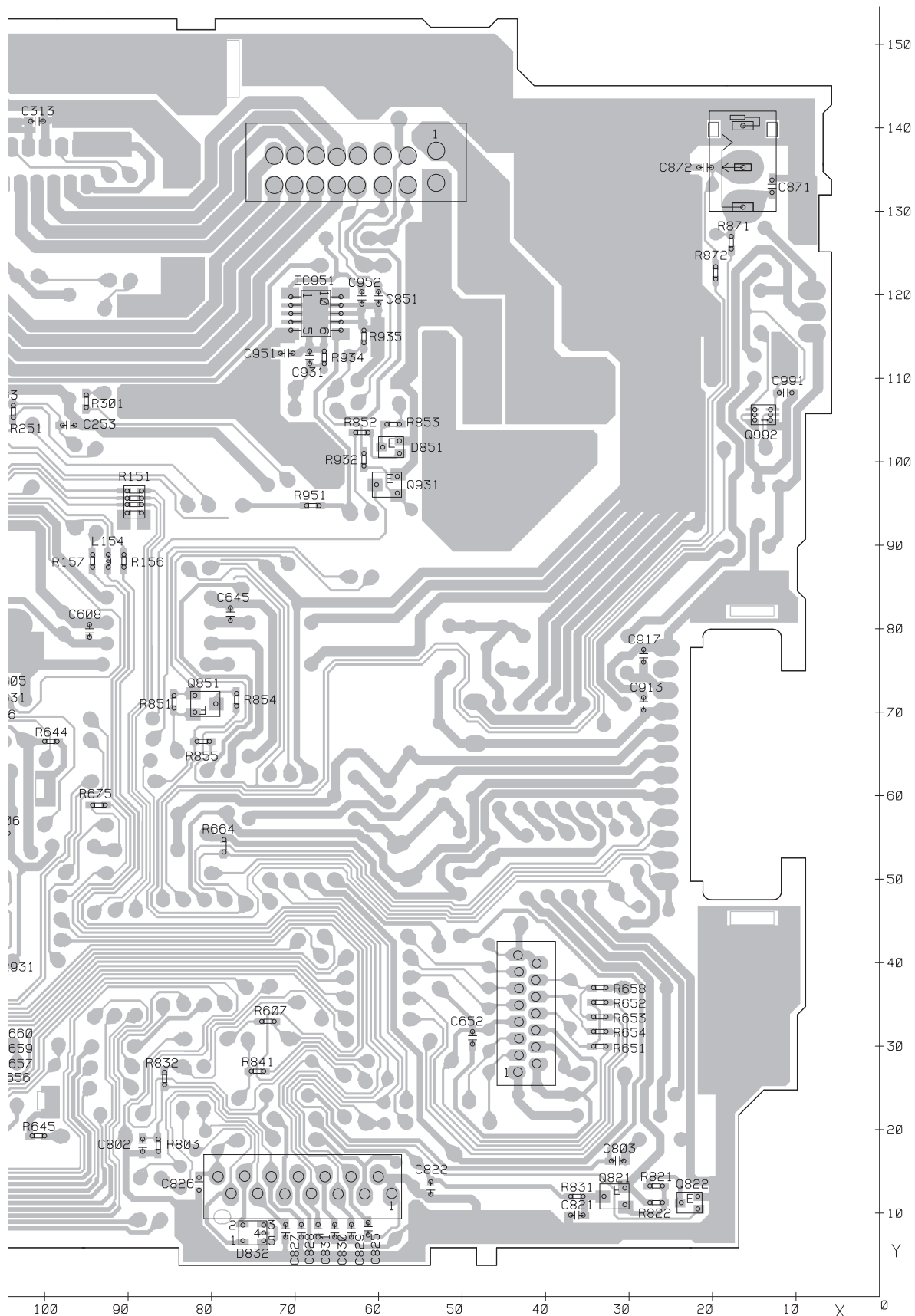
F



A

DEH-2050MPA/XN/EC

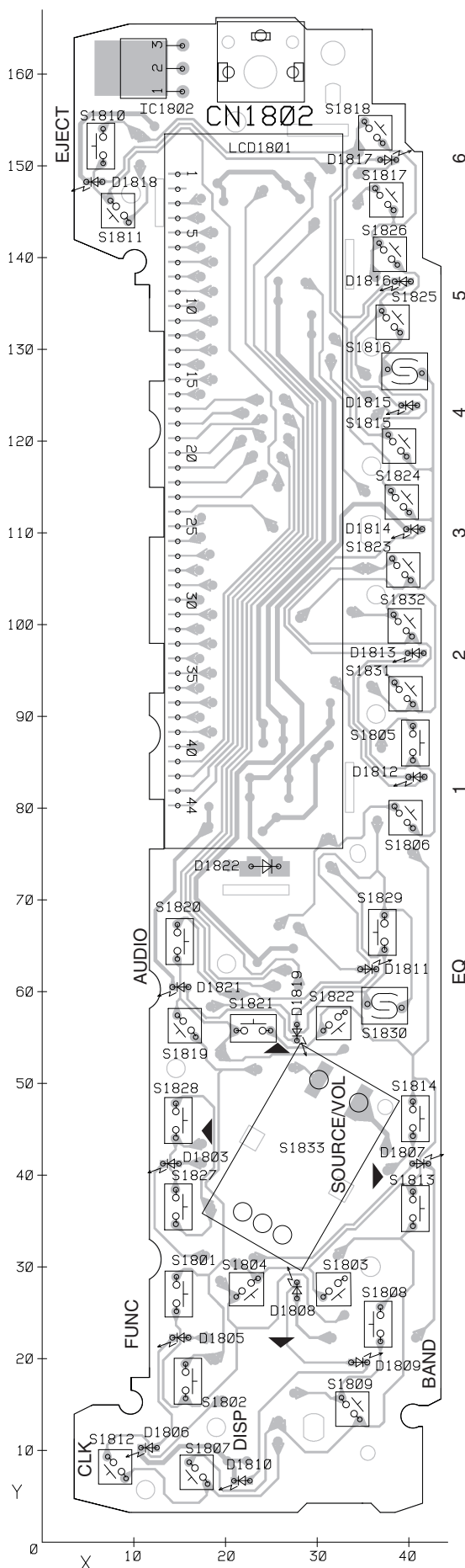
SIDE B



11.2 KEYBOARD UNIT

B KEYBOARD UNIT

SIDE A

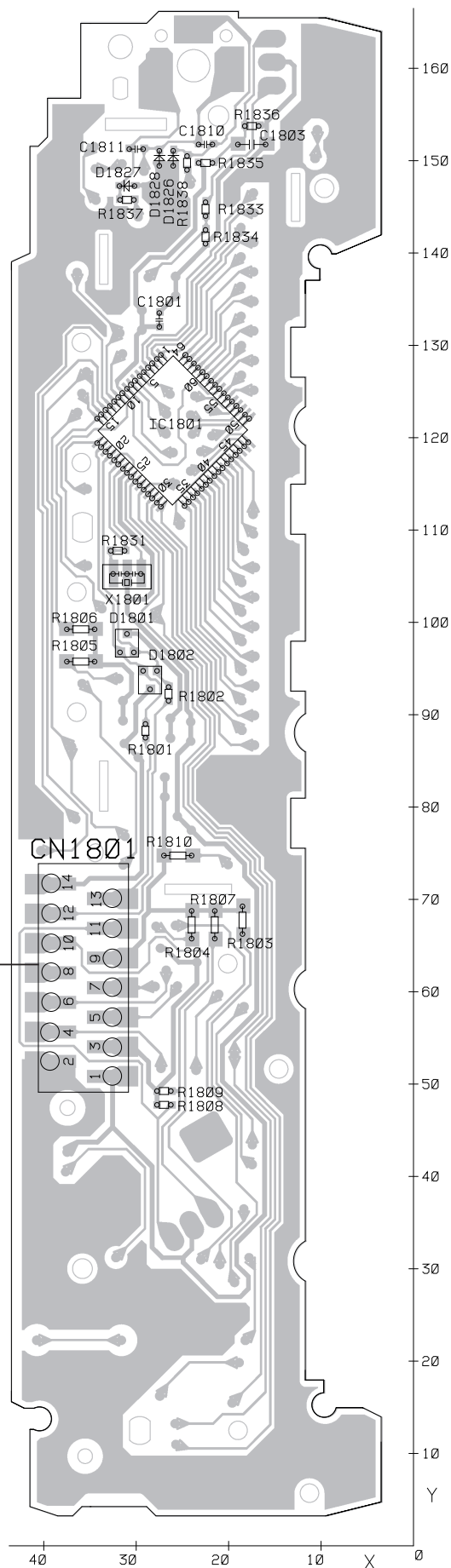


DEH-2050MPA/XN/EC

B KEYBOARD UNIT

SIDE B

A
CN831



DEH-2050MPA/XN/EC

B

12. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○○○○○J,RS1/○○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.

Part No.

Unit Number : YWM5238(EC)

Unit Number : YWM5234(ID)

Unit Name : Tuner Amp Unit

Unit Number :

Unit Name : Keyboard Unit

Unit Number : CWX3514

Unit Name : CD Core

Unit(S10.5COMP2)

A

Unit Number : YWM5238(EC)

Unit Number : YWM5234(ID)

Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 151	(B,124,101) IC	PML014A
IC 301	(A,95,133) IC	PAL007C
IC 601	(B,129,44) IC	PN5013B
IC 641	(B,161,30) IC	PDH131A
IC 911	(A,17,68) IC	BA4918-V12
Q 201	(B,130,130) Transistor	RT3T22M

Q 351	(B,162,127) Transistor	RT3N66M
Q 601	(A,152,67) Transistor	2SD1858
Q 821	(B,32,12) Transistor	2SA1036K
Q 822	(B,23,11) Transistor	RT1N141M-11
Q 851	(B,81,71) Transistor(EC)	2SA1036K

Q 931	(B,59,97) Transistor	2SC2412K
Q 991	(A,8,115) Transistor	2SD2396
Q 992	(B,14,106) Transistor	RT3T22M
D 301	(A,67,124) Diode	MPG06G-6415G3
D 302	(A,54,124) Diode	MPG06G-6415G3

D 832	(B,75,8) Diode	FTZ6R8E
D 851	(B,59,102) Diode(EC)	MC2848-11
D 901	(A,49,110) Diode	MPG06G-6415G3
D 902	(A,49,107) Diode	MPG06G-6415G3

Circuit Symbol and No.

Part No.

D 911	(A,52,80) Diode	MPG06G-6415G3
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D 912	(A,45,80) Diode	MPG06G-6415G3
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D 931	(A,65,109) Diode	HZS7L(A1)
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D 991	(A,20,113) Diode	HZS7L(C3)
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L 151	(A,138,106) Inductor	LAU2R2K
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L 401	(A,150,82) Inductor	LAU2R2K
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L 402	(A,146,98) Inductor	LAU2R2K
-------	---------------------	---------

L 407	(B,166,66) Inductor	CTF1473
-------	---------------------	---------

L 601	(B,119,22) Inductor	CTF1389
-------	---------------------	---------

L 602	(A,152,25) Inductor	LAUR47K
-------	---------------------	---------

L 603	(A,113,79) Inductor	LAU2R2K
-------	---------------------	---------

L 604	(A,122,70) Inductor	LAUR47K
-------	---------------------	---------

L 605	(A,128,69) Inductor	LAUR47K
-------	---------------------	---------

L 606	(A,147,69) Inductor	LAU1R0K
-------	---------------------	---------

L 607	(A,148,61) Inductor	LAU1R0K
-------	---------------------	---------

L 608	(A,135,69) Inductor	LAU1R5K
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L 609	(A,133,69) Inductor	LAU1R5K
-------	---------------------	---------

L 610	(A,140,67) Inductor	LAU1R2J
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L 611	(B,137,82) Inductor	CTF1379
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L 612	(B,135,82) Inductor	CTF1379
-------	---------------------	---------

L 613	(B,145,61) Inductor	CTF1379
-------	---------------------	---------

L 614	(B,123,67) Inductor	CTF1379
-------	---------------------	---------

L 615	(B,153,73) Inductor	CTF1379
-------	---------------------	---------

L 616	(B,145,77) Inductor	CTF1379
-------	---------------------	---------

L 617	(B,147,52) Inductor	CTF1389
-------	---------------------	---------

L 801	(A,73,24) Inductor	LAU2R2K
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L 851	(A,58,107) Inductor(EC)	LAU2R2K
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L 901	(A,36,98) Choke Coil 600 μ H	CTH1280
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X 601	(A,142,62) Oscillator 74.100 MHz	CSS1749
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X 602	(A,115,58) Oscillator 4.7186 MHz	CSS1727
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$\triangle$ FU351	(B,135,132) Fuse 3 A	CEK1286
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AR401	(B,164,111) Surge Protector	IMSA-6801-01Y901
	(A,165,75) FM/AM Tuner Unit	CWE2025

RESISTORS

R 151	(B,89,95)	RAB4C102J
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R 156	(B,91,88)	RS1/16S681J
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R 157	(B,94,88)	RS1/16S681J
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R 162	(B,139,101)	RS1/16S102J
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R 163	(B,106,106)	RS1/16S102J
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5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 201	(B,125,130)	RS1/16S103J		R 803	(B,86,18)	RS1/16S222J	
R 202	(B,132,134)	RS1/16S153J					
R 203	(B,125,131)	RS1/16S221J		R 821	(B,27,13)	RS1/16S562J	A
R 251	(B,104,106)	RS1/16S223J		R 822	(B,27,11)	RS1/16S103J	
R 252	(B,137,101)	RS1/16S223J		R 831	(B,36,12)	RS1/16S1R0J	
				R 832	(B,86,26)	RS1/16S473J	
				R 833	(A,81,23)	RD1/4PU222J	
R 301	(B,95,107)	RS1/16S153J					
R 351	(B,166,131)	RS1/16S223J		R 834	(A,83,23)	RD1/4PU222J	
R 352	(B,166,135)	RS1/16S223J		R 835	(A,62,21)	RD1/4PU222J	
R 353	(B,147,118)	RS1/16S821J		R 837	(A,77,19)	RD1/4PU103J	
R 354	(B,165,126)	RS1/16S821J		R 839	(A,89,14)	RD1/4PU222J	
				R 840	(A,86,14)	RD1/4PU222J	
R 404	(B,157,44)	RS1/16S102J					
R 405	(B,161,54)	RS1/16S102J		R 841	(B,75,27)	RS1/16S104J	
R 406	(B,161,60)	RS1/16S102J		R 851	(B,85,71) (EC)	RS1/16S223J	
R 407	(B,161,62)	RS1/16S102J		R 852	(B,62,104) (EC)	RS1/16S472J	B
R 408	(B,169,50)	RAB4C104J		R 853	(B,58,105) (EC)	RS1/16S153J	
				R 854	(B,77,72) (EC)	RS1/16S102J	
R 409	(B,161,47)	RS1/16S391J					
R 410	(B,161,49)	RS1/16S681J		R 855	(B,81,67)	RS1/16S104J	
R 411	(B,161,51)	RS1/16S681J		R 871	(B,18,126) (EC)	RS1/16S102J	
R 412	(B,161,53)	RS1/16S681J		R 872	(B,20,123) (EC)	RS1/16S102J	
R 413	(B,161,56)	RS1/16S472J		R 873	(B,140,24)	RS1/16S103J	
				R 874	(B,140,31)	RS1/16S103J	
R 601	(B,125,28)	RS1/16S473J					
R 603	(B,108,40)	RS1/16S473J		R 931	(B,106,40)	RS1/16S104J	
R 606	(B,109,70)	RS1/16S473J		R 932	(B,62,100)	RS1/16S223J	
R 608	(B,141,60)	RS1/16S470J		R 933	(A,70,106)	RD1/4PU102J	
R 610	(B,123,64)	RS1/16S203J		R 934	(B,67,113)	RS1/16S472J	C
				R 935	(B,62,115)	RS1/16S473J	
R 611	(B,139,71)	RS1/16S182J					
R 612	(B,117,75)	RS1/16S563J		R 991	(A,14,116)	RD1/4PU271J	
R 613	(B,142,52)	RS1/16S302J					
R 615	(B,114,75)	RS1/16S563J					
R 616	(B,159,40)	RS1/16S104J					
				<u>CAPACITORS</u>			
R 617	(B,137,32)	RS1/16S473J		C 151	(B,109,101)	CKSRYB224K10	
R 618	(B,148,41)	RS1/16S473J		C 152	(B,133,95)	CKSRYB224K10	
R 619	(B,149,39)	RS1/16S104J		C 153	(B,109,104)	CKSRYB105K10	
R 638	(B,160,88)	RS1/16S273J		C 154	(B,133,98)	CKSRYB105K10	
R 641	(B,153,37)	RS1/16S103J		C 155	(A,126,113)	CEJQ470M10	
R 642	(B,151,33)	RS1/16S103J					
				C 156	(B,134,101)	CKSRYB105K10	D
R 643	(B,159,38)	RS1/16S104J		C 157	(B,109,106)	CKSRYB105K10	
R 644	(B,99,67)	RS1/16S0R0J		C 162	(B,134,103)	CKSRYB105K10	
R 645	(B,101,19)	RS1/16S0R0J		C 163	(B,109,108)	CKSRYB105K10	
R 646	(B,160,16)	RS1/16S0R0J		C 164	(A,120,113)	CEJQ100M16	
R 648	(B,159,74)	RS1/16S0R0J					
R 651	(B,34,30)	RS1/16S104J		C 165	(B,123,112)	CKSRYB104K16	
				C 201	(A,129,134)	CEJQ330M10	
R 652	(B,34,35)	RS1/16S102J		C 253	(B,97,104)	CKSRYB104K16	
R 653	(B,34,34)	RS1/16S102J		C 301	(B,126,122)	CKSQYB474K16	
R 654	(B,34,32)	RS1/16S221J		C 302	(B,122,122)	CKSQYB474K16	
R 656	(B,107,26)	RS1/16S104J					
R 657	(B,107,28)	RS1/16S104J		C 303	(B,124,122)	CKSQYB474K16	E
				C 304	(B,120,122)	CKSQYB474K16	
R 658	(B,34,37)	RS1/16S104J		C 305	(B,126,126)	CKSRYB474K10	
R 659	(B,107,30)	RS1/16S472J		C 306	(B,122,126)	CKSRYB474K10	
R 660	(B,107,32)	RS1/16S472J		C 307	(B,124,126)	CKSRYB474K10	
R 661	(B,111,28)	RS1/16S221J					
R 662	(B,111,30)	RS1/16S221J		C 308	(B,120,126)	CKSRYB474K10	
				C 309	(B,124,139)	CKSQYB225K10	
R 663	(B,111,32)	RS1/16S221J		C 310	(B,116,144)	CKSQYB225K10	
R 664	(B,79,54)	RS1/16S473J		C 312	(A,101,122)	CEJQ100M16	
R 666	(B,168,30)	RS1/16S103J		C 313	(B,101,141)	CKSRYB104K16	
R 671	(B,136,24)	RS1/16S473J					
R 672	(B,110,46)	RS1/16S104J		C 353	(A,145,119)	CEJQ2R2M50	
				C 354	(A,143,112)	CEJQ2R2M50	F
R 673	(B,137,27)	RAB4C104J		C 359	(B,164,137)	CCSQCH471J50	
R 674	(B,132,27)	RS1/16S104J		C 402	(B,142,100)	CKSRYB103K50	
R 675	(B,94,59)	RS1/16S473J		C 404	(A,150,97)	CEJQ101M10	
R 677	(B,122,22)	RS1/16S104J					

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A C 405 (B,146,100) CKSRYB103K50
 C 406 (B,169,53) CCSRCH390J50
 C 409 (B,161,45) CCSRCH100D50
 C 601 (B,120,27) CKSRYB105K10
 C 602 (B,121,30) CKSRYB103K50

C 916 (A,58,55) 1 000 μ F/6.3 V CCH1751(P35)
 C 917 (B,28,77) CKSRYB104K16
 C 991 (B,11,108) CKSRYB473K25
 C 992 (A,12,97) CEJQ101M10

B**Unit Number : (EC)****Unit Name : Keyboard Unit****MISCELLANEOUS**

C 603 (B,123,28) CKSRYB103K50
 C 605 (B,108,74) CKSRYB104K16
 C 606 (B,105,56) CKSRYB103K50
 C 607 (B,118,55) CKSRYB103K50
 C 608 (B,95,80) CKSRYB103K50

IC 1801 (B,26,121) IC PD6340A
 IC 1802 (A,10,161) Remote IC GP1UX51RK
 D 1803 (A,14,42) LED(2050MPA) SML-310YT(KL)
 (A,14,42) LED(2050MPG) CL-195PG-CD
 D 1805 (A,15,23) LED(2050MPA) SML-310YT(KL)
 (A,15,23) LED(2050MPG) CL-195PG-CD

B C 609 (B,116,72) CKSRYB331K50
 C 610 (A,98,80) CEJQ101M6R3
 C 611 (B,116,70) CKSRYB331K50
 C 612 (B,120,58) CKSRYB103K50
 C 613 (A,104,58) CEAL101M6R3

D 1806 (A,12,11) LED(2050MPA) SML-310YT(KL)
 (A,12,11) LED(2050MPG) CL-195PG-CD
 D 1807 (A,41,42) LED(2050MPA) SML-310YT(KL)
 (A,41,42) LED(2050MPG) CL-195PG-CD
 D 1808 (A,28,28) LED(2050MPA) SML-310YT(KL)
 (A,28,28) LED(2050MPG) CL-195PG-CD

C 614 (B,168,88) CKSRYB102K50
 C 615 (B,125,62) CKSRYB331K50
 C 616 (B,125,69) CKSRYB105K10
 C 617 (B,130,61) CKSRYB105K10
 C 618 (B,113,54) CCSRCH270J50

D 1809 (A,35,20) LED(2050MPA) SML-310YT(KL)
 (A,35,20) LED(2050MPG) CL-195PG-CD
 D 1810 (A,22,7) LED(2050MPA) SML-310YT(KL)
 (A,22,7) LED(2050MPG) CL-195PG-CD
 D 1811 (A,36,63) LED(2050MPA) SML-310YT(KL)
 (A,36,63) LED(2050MPG) CL-195PG-CD

C 619 (B,144,71) CKSRYB103K50
 C 620 (B,144,57) CKSRYB105K10
 C 621 (B,152,70) CKSRYB103K50
 C 622 (B,142,54) CKSRYB104K16
 C 623 (B,134,66) CKSRYB102K50

D 1812 (A,41,84) LED(2050MPA) SML-310YT(KL)
 (A,41,84) LED(2050MPG) CL-195PG-CD
 D 1813 (A,41,97) LED(2050MPA) SML-310YT(KL)
 (A,41,97) LED(2050MPG) CL-195PG-CD
 D 1814 (A,41,111) LED(2050MPA) SML-310YT(KL)
 (A,41,111) LED(2050MPG) CL-195PG-CD

C 624 (B,131,66) CKSRYB102K50
 C 625 (B,137,72) CCSRCH270J50
 C 626 (B,131,72) CCSRCH270J50
 C 627 (B,136,79) CCSRCH150J50
 C 628 (B,143,64) CKSRYB102K50

D 1815 (A,40,124) LED(2050MPA) SML-310YT(KL)
 (A,40,124) LED(2050MPG) CL-195PG-CD
 D 1816 (A,39,138) LED(2050MPA) SML-310YT(KL)
 (A,39,138) LED(2050MPG) CL-195PG-CD
 D 1817 (A,38,151) LED(2050MPA) SML-310YT(KL)
 (A,38,151) LED(2050MPG) CL-195PG-CD

C 629 (B,136,60) CCSRCH4R0C50
 C 630 (B,144,69) CCSRCH8R0D50
 C 631 (B,108,72) CKSRYB223K50
 C 632 (B,130,23) CKSRYB104K16
 C 633 (B,147,31) CKSRYB104K16

D 1818 (A,6,149) LED(2050MPA) SML-310YT(KL)
 (A,6,149) LED(2050MPG) CL-195PG-CD
 D 1819 (A,28,55) LED(2050MPA) SML-310YT(KL)
 (A,28,55) LED(2050MPG) CL-195PG-CD
 D 1821 (A,15,61) LED(2050MPA) SML-310YT(KL)
 (A,15,61) LED(2050MPG) CL-195PG-CD

D C 634 (B,113,58) CCSRCH270J50
 C 635 (B,147,55) CKSRYB104K16
 C 637 (B,110,77) CKSRYB103K50
 C 640 (B,125,60) CKSRYB104K16
 C 642 (B,109,103) CKSRYB182K50

D 1822 (A,24,74) White LED NESW505C-5273
 D 1826 (B,26,151) Diode MALSO68X
 D 1827 (B,31,148) Diode MALSO68X
 D 1828 (B,28,151) Diode MALSO68X
 X 1801 (B,31,106) Ceramic Resonator 5.00 MHz CSS1731

C 643 (B,133,99) CKSRYB182K50
 C 646 (B,116,22) CKSRYB103K50
 C 652 (B,49,31) CKSRYB103K50
 C 653 (B,114,33) CCSRCH220J50
 C 821 (B,36,10) CKSRYB104K16

E C 825 (B,61,8) CCSRCH221J50
 C 826 (B,82,14) CCSRCH221J50
 C 827 (B,71,8) CCSRCH221J50
 C 828 (B,69,8) CCSRCH221J50
 C 829 (B,63,8) CCSRCH221J50

S 1833 (A,28,42) Rotary Switch YSD5020
 LCD1801 (A,15,149) LCD CAW1930

C 830 (B,65,8) CKSRYB104K16
 C 831 (B,67,8) CCSRCH221J50
 C 871 (B,13,133) (EC) CKSRYB103K50
 C 872 (B,21,135) (EC) CKSRYB103K50
 C 901 (A,52,114) 3 300 μ F/16 V CCH1732

RESISTORS

F C 911 (A,59,62) CEJQ100M16
 C 912 (A,48,66) CEAT102M16
 C 913 (B,28,71) CKSRYB104K16
 C 914 (A,52,62) CEAT221M10
 C 915 (A,46,55) CEJQ100M16

R 1801 (B,29,89) RS1/16S222J
 R 1802 (B,27,93) RS1/16S222J
 R 1803 (B,19,68) RS1/4SA681J

Circuit Symbol and No.**Part No.**

R 1804	(B,24,68)	RS1/4SA681J
R 1805	(B,36,96)	RS1/4SA681J
R 1806	(B,36,100)	RS1/4SA471J
R 1807	(B,22,68)	RS1/4SA471J
R 1809	(B,27,50)	RS1/16S473J
R 1810	(B,26,75)	RS1/4SA821J
R 1833	(B,23,145)	RS1/16S2R2J
R 1835	(B,23,150)	RS1/16S101J
R 1836	(B,18,154)	RS1/16S103J
R 1837	(B,31,146)	RS1/16S101J
R 1838	(B,25,150)	RS1/16S101J

CAPACITORS

C 1801	(B,28,133)	CKSRYB105K10
C 1803	(B,18,152)	CKSYF106Z10
C 1810	(B,23,152)	CKSRYB472K50
C 1811	(B,30,152)	CKSRYB472K50

B**Unit Number : (ID)****Unit Name : Keyboard Unit****MISCELLANEOUS**

IC 1801	(B,26,121) IC	PD6340A
IC 1802	(A,10,161) Remote IC	GP1UX51RK
D 1803	(A,14,42) LED	CL-195SR-CD
D 1805	(A,15,23) LED	CL-195SR-CD
D 1806	(A,12,11) LED	CL-195SR-CD
D 1807	(A,41,42) LED	CL-195SR-CD
D 1808	(A,28,28) LED	CL-195SR-CD
D 1809	(A,35,20) LED	CL-195SR-CD
D 1810	(A,22,7) LED	CL-195SR-CD
D 1811	(A,36,63) LED	CL-195SR-CD
D 1812	(A,41,84) LED	CL-195SR-CD
D 1813	(A,41,97) LED	CL-195SR-CD
D 1814	(A,41,111) LED	CL-195SR-CD
D 1815	(A,40,124) LED	CL-195SR-CD
D 1816	(A,39,138) LED	CL-195SR-CD
D 1817	(A,38,151) LED	CL-195SR-CD
D 1818	(A,6,149) LED	CL-195SR-CD
D 1819	(A,28,55) LED	CL-195SR-CD
D 1821	(A,15,61) LED	CL-195SR-CD
D 1822	(A,24,74) White LED	NESW505C-5273
D 1826	(B,26,151) Diode	MALS068X
D 1827	(B,31,148) Diode	MALS068X
D 1828	(B,28,151) Diode	MALS068X
X 1801	(B,31,106) Ceramic Resonator 5.00 MHz	CSS1731
S 1833	(A,28,42) Rotary Switch	YSD5018
LCD1801	(A,15,149) LCD	CAW1930

RESISTORS

R 1801	(B,29,89)	RS1/16S222J
R 1802	(B,27,93)	RS1/16S222J
R 1803	(B,19,68)	RS1/4SA821J
R 1804	(B,24,68)	RS1/4SA821J
R 1805	(B,36,96)	RS1/4SA821J
R 1806	(B,36,100)	RS1/4SA681J
R 1807	(B,22,68)	RS1/4SA681J

Circuit Symbol and No.**Part No.**

R 1809	(B,27,50)	RS1/16S473J
R 1810	(B,26,75)	RS1/4SA821J
R 1833	(B,23,145)	RS1/16S2R2J
R 1835	(B,23,150)	RS1/16S101J
R 1836	(B,18,154)	RS1/16S103J
R 1837	(B,31,146)	RS1/16S101J
R 1838	(B,25,150)	RS1/16S101J

CAPACITORS

C 1801	(B,28,133)	CKSRYB105K10
C 1803	(B,18,152)	CKSYF106Z10
C 1810	(B,23,152)	CKSRYB472K50
C 1811	(B,30,152)	CKSRYB472K50

C**Unit Number : CWX3514****Unit Name : CD Core****Unit(S10.5COMP2)****MISCELLANEOUS**

IC 201	(A,34,46) IC	PE5547A
IC 301	(A,27,14) IC	BA5839FP
Q 101	(B,56,72) Transistor	2SA1577
Q 102	(B,47,57) Chip Transistor	2SB1689
X 201	(A,23,35) Ceramic Resonator 16.934 MHz	CSS1603
S 901	(A,53,37) Switch(HOME)	CSN1067
S 903	(B,19,58) Switch(DSCSNS)	CSN1067
S 904	(B,38,67) Switch(12EJ)	CSN1068
S 905	(B,24,68) Switch(8EJ)	CSN1068

RESISTORS

R 101	(B,60,73)	RS1/10SR2R4J
R 102	(B,59,71)	RS1/10SR2R4J
R 103	(B,60,71)	RS1/10SR2R7J
R 104	(B,52,69)	RS1/16SS222J
R 105	(B,41,57)	RS1/16SS102J
R 107	(B,41,59)	RS1/16SS105J
R 202	(B,32,62)	RS1/16SS473J
R 203	(B,42,45)	RS1/16S473J
R 204	(A,25,61)	RS1/16SS221J
R 206	(B,26,53)	RS1/16SS104J
R 210	(B,13,32)	RS1/16SS102J
R 214	(B,36,34)	RS1/16SS472J
R 216	(B,47,49)	RS1/16SS472J
R 221	(B,36,32)	RS1/16SS103J
R 222	(B,35,32)	RS1/16SS103J
R 225	(A,49,49)	RS1/16SS103J
R 226	(A,49,50)	RS1/16SS393J
R 227	(B,45,51)	RS1/16SS562J
R 228	(B,42,53)	RS1/16SS122J
R 229	(B,44,53)	RS1/16SS472J
R 230	(B,21,28)	RS1/16SS0R0J
R 232	(B,43,51)	RS1/16SS122J
R 233	(B,29,52)	RS1/16SS103J
R 234	(B,30,61)	RS1/16SS473J
R 235	(A,25,63)	RS1/16SS473J
R 239	(B,26,48)	RS1/16SS473J
R 240	(B,10,31)	RS1/16SS473J
R 241	(B,9,32)	RS1/16SS103J

Circuit Symbol and No.**Part No.**

A	R 244	(A,20,52)	RS1/16SS473J
	R 255	(A,27,63)	RAB4CQ104J
	R 307	(A,34,19)	RS1/16SS183J
	R 308	(A,38,20)	RS1/16SS183J
	R 309	(A,35,21)	RS1/16SS183J
	R 310	(A,38,21)	RS1/16SS183J
	R 601	(B,28,38)	RS1/16SS0R0J
	R 602	(B,27,41)	RS1/16SS0R0J
	R 606	(B,23,41)	RS1/16SS0R0J
	R 701	(B,16,35)	RS1/16SS221J
	R 702	(A,23,55)	RS1/16SS221J

CAPACITORS

B	C 106	(B,56,69)	CKSQYB475K6R3
	C 202	(A,27,57)	CKSSYB104K10
	C 204	(A,24,63)	CKSSYB103K16
	C 205	(B,23,43)	CKSQYB475K6R3
	C 206	(A,22,39)	CKSSYB104K10
	C 207	(A,24,37)	CKSRYB104K16
	C 209	(B,33,40)	CEVW220M6R3
	C 210	(B,29,42)	CKSSYB104K10
	C 211	(A,27,34)	CKSSYB104K10
C	C 212	(B,29,32)	CKSRYB104K16
	C 213	(A,44,37)	CKSSYB104K10
	C 214	(A,28,33)	CKSSYB104K10
	C 216	(A,50,51)	CKSSYB332K50
	C 217	(A,46,51)	CKSSYB104K10
	C 218	(A,49,51)	CKSSYB473K10
	C 219	(A,45,53)	CKSSYB104K10
	C 220	(A,46,53)	CKSSYB182K50
	C 221	(A,44,53)	CKSSYB104K10
	C 222	(B,43,53)	CCSSCH560J50
D	C 223	(B,45,53)	CCSSCH4R0C50
	C 224	(A,43,55)	CKSSYB104K10
	C 226	(A,40,58)	CCSSCH680J50
	C 227	(A,40,60)	CCSSCH470J50
	C 228	(A,39,62)	CKSSYB103K16
	C 229	(B,49,59)	CKSSYB104K10
	C 236	(A,42,61)	CKSSYB104K10
	C 239	(B,44,51)	CCSSCH220J50
	C 240	(A,35,61)	CKSSYB104K10
	C 250	(B,36,30)	CKSSYB102K50
E	C 251	(B,33,29)	CKSSYB102K50
	C 303	(A,35,19)	CKSSYB472K25
	C 304	(A,34,21)	CKSSYB223K16
	C 307	(B,25,9)	CKSRYB104K16
	C 308	(B,10,27)	CKSRYB105K10
	C 703	(B,11,37)	CCSSCH101J50
	C 704	(B,8,36)	CKSSYB102K50
	C 711	(A,25,26)	CKSSYB104K10

Miscellaneous Parts List

Pickup Unit(P10.5)(Service) CXX1942

M 1 Motor Unit(SPINDLE) CXC7134

M 2 Motor Unit(LOADING/CARRIAGE) CXC4026

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