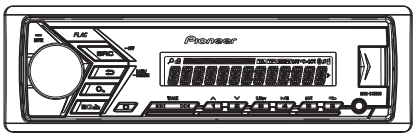
Pioneer

Service Manual



MVH-S100UB/XINEW5

ORDER NO.
CRT6126

DIGITAL MEDIA RECEIVER

MVH-S100UB/XINEW5
MVH-S100UBG/XINEW5
MVH-S100UBA/XINEW5
MVH-S100UBW/XINEW5
MVH-S010UB/XINEW5

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ⓒ**PIONEER CORPORATION 2017**

K-ZZZ JULY 2017

SAFETY INFORMATION

CAUTION

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.

Where in a manufacturer's service documentation, for example in circuit diagrams or lists of components, a symbol is used to indicate that a specific component shall be replaced only by the component specified in that documentation for safety reasons, the following symbol shall be used:

⚠

CAUTION

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

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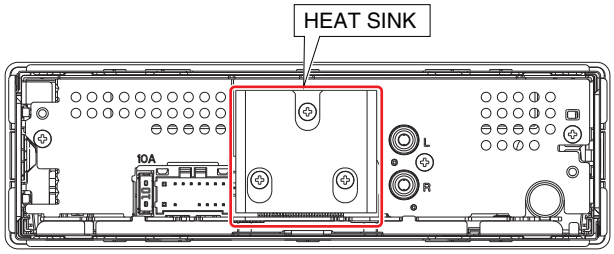
1. SERVICE PRECAUTIONS

1.1 SAFETY PRECAUTIONS

- 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.

- Heat sink becomes hot areas. Be careful not to burn yourself.



1.2 NOTES ON DISASSEMBLY / ASSEMBLY

- 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.

- Please be sure to conduct line process to original status if you make assembling after repair.

1.3 NOTES ON REPLACING PARTS

- Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

- Please be careful of not to apply static charge onto integrated circuits, etc, when you conduct repair work.
  Especially, please use soldering iron with its tip grounded.
  Also, please use a pair of tweezers with static charge protection capability if there is the possibility of contacting to device terminals, and avoid the use of metal-made tweezers.

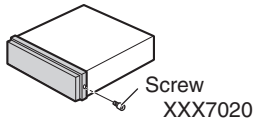
- The part listed below is difficult to replace as a discrete component part.
  When the part listed in the table is defective, replace whole Assy.

Function	Ref No.	Part No.	Reason
Tuner IC	IC401	TEF6686HN-V102	with Bottom pad
DC DC Converter	IC531	KBD9876EFJ	with Bottom pad

1.4 OTHERS

- **Notes on soldring**
  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.

- **To secure the front panel**
  The front panel can be secured with the supplied screw.



2. SPECIFICATIONS
2.1 SPECIFICATIONS

For all items except the backup current, refer to the Owner's Manual.

Backup current..... 4.0 mA or less

3. BASIC ITEMS FOR SERVICE
3.1 CHECK POINTS AFTER SERVICING

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

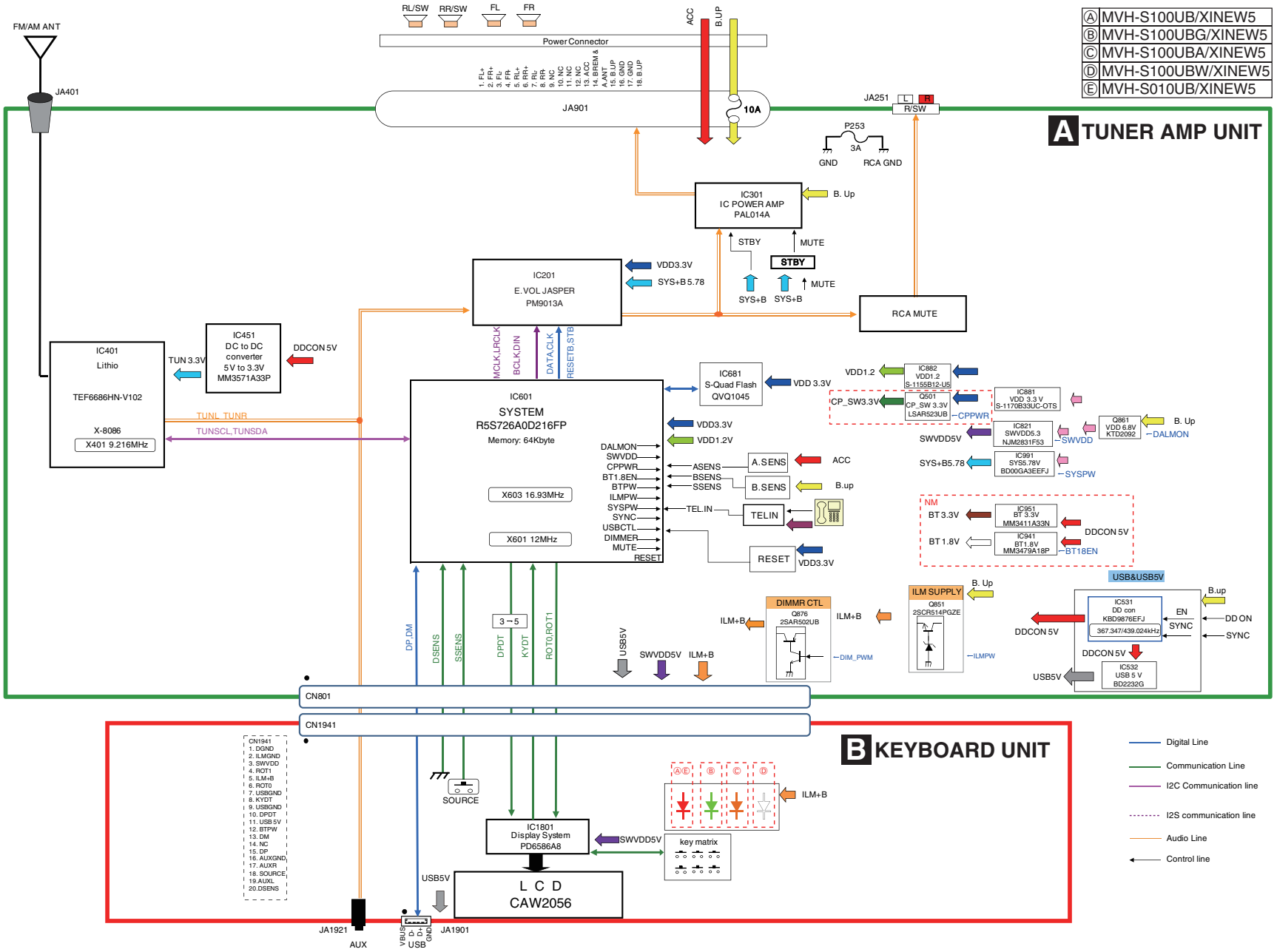
No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, audio and operations must be normal.
2	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
3		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 audio:

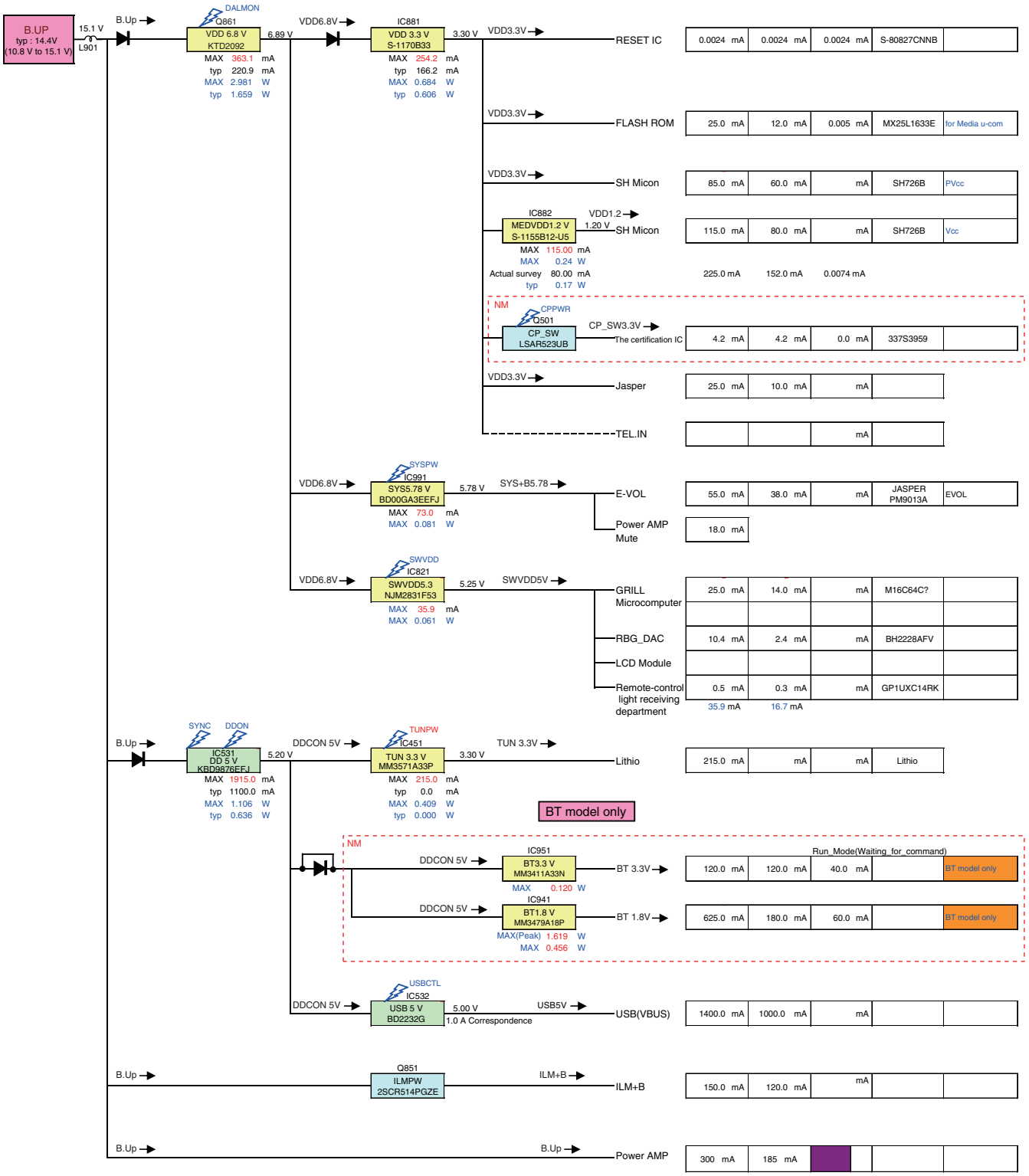
Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

4. BLOCK DIAGRAM

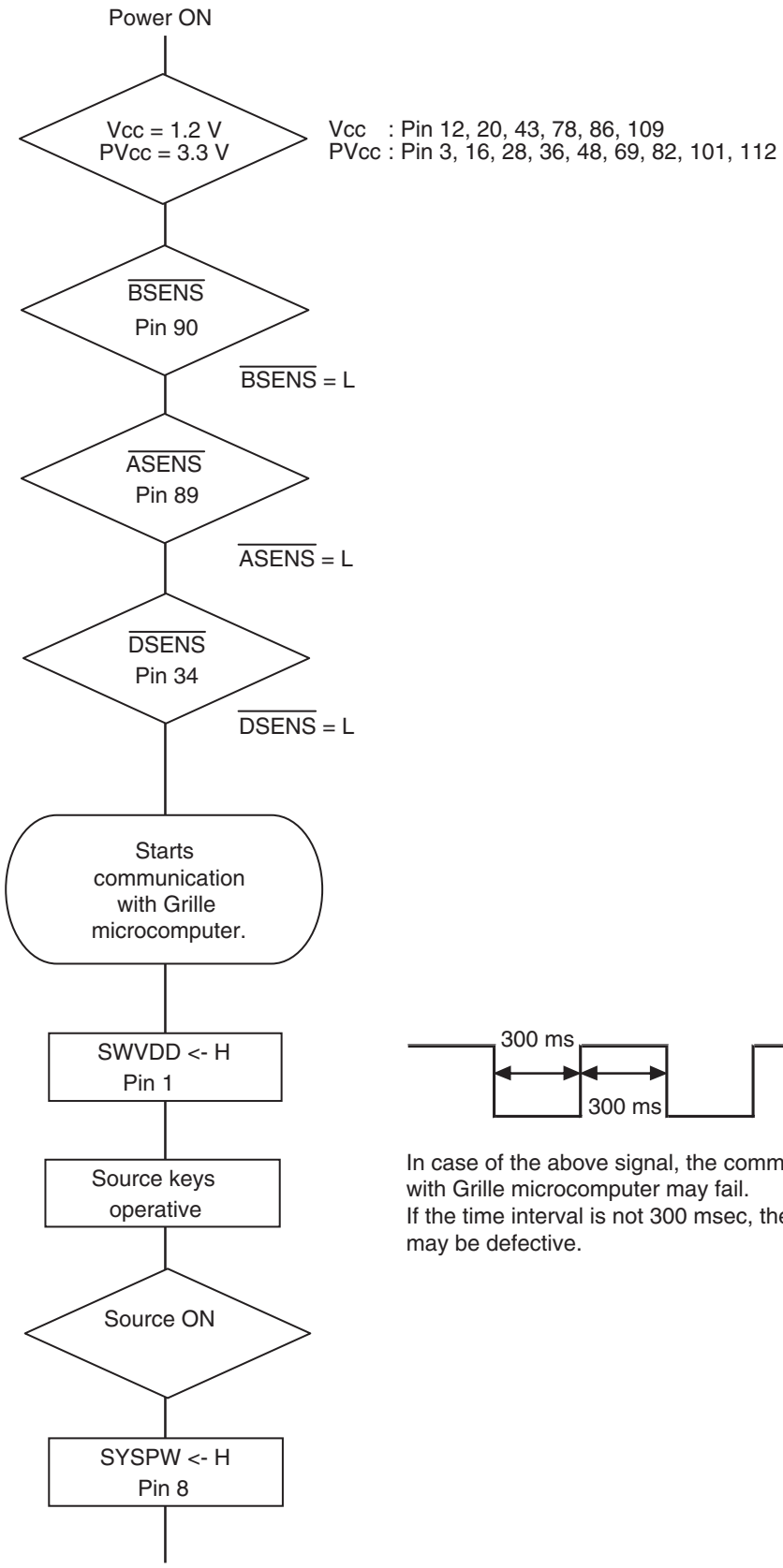
- Ⓐ MVH-S100UB/XINEW5
- Ⓑ MVH-S100UBG/XINEW5
- Ⓒ MVH-S100UBA/XINEW5
- Ⓓ MVH-S100UBW/XINEW5
- Ⓔ MVH-S010UB/XINEW5

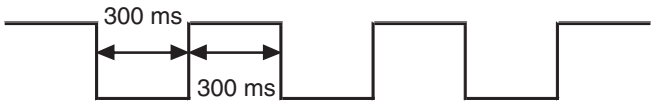


4.2 POWER SUPPLY SYSTEM FIGURE



5. DIAGNOSIS
5.1 OPERATIONAL FLOWCHART





In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300 msec, the oscillator may be defective.

5.2 ERROR CODE LIST

Common

AMP ERROR
→ This unit fails to operate or the speaker connection is incorrect; the protection circuit is activated.
– Check the speaker connection.
– Check the power IC and its peripheral circuit.

NO XXXX(NO TITLE, for example)
→ There is no embedded text information.
– Switch the display or play another track/file.

USB device

FORMAT READ
→ Sometimes there is a delay between the start of playback and when you start to hear any sound.
– Wait until the message disappears and you hear sound.

NO AUDIO
→ There are no songs.
– Transfer the audio files to the USB device and connect.
→ The connected USB device has security enabled.
– Follow the USB device instructions to disable the security.

SKIPPED
→ The connected USB device contains DRM protected files.
– The protected files are skipped.

PROTECT
→ All the files on the connected USB device are embedded with DRM.
– Replace the USB device.

N/A USB
→ The connected USB device is not supported by this unit.
– Disconnect your device and replace it with a compatible USB device.

HUB ERROR
→ The USB device connected via a USB hub is not supported by this unit.
– Connect the USB device directly to this unit using a USB cable.

CHECK USB
→ The USB connector or USB cable has short-circuited.
– Check that the USB connector or USB cable is not caught in something or damaged.
→ The connected USB device consumes more than maximum allowable current.
– Disconnect the USB device and do not use it. Turn the ignition switch OFF and back to ACC or ON. Connect only compliant USB devices.

ERROR-19
→ Communication failed.
– Perform one of the following operations, then return to the USB source.
• Turn the ignition switch OFF and back to ON.
• Disconnect the USB device.
• Change to a different source.

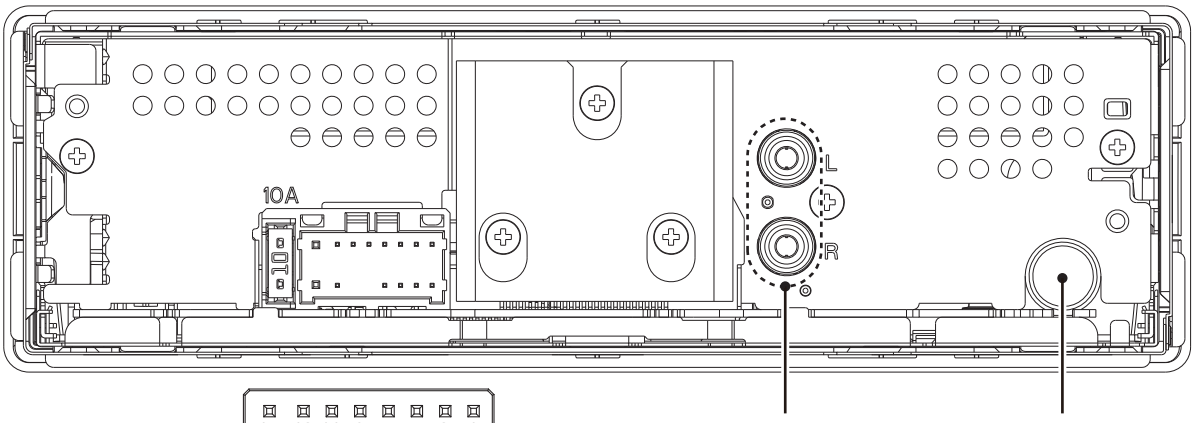
ERROR-23
→ USB device was not formatted properly.
– Format the USB device with FAT12, FAT16 or FAT32.

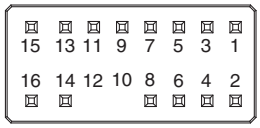
STOP
→ There are no songs in the current list.
– Select a list that contains songs.

Apps

START UP APP
→ The application has not started running yet.
– Operate the mobile device to start up the application.

5.3 CONNECTOR FUNCTION DESCRIPTION





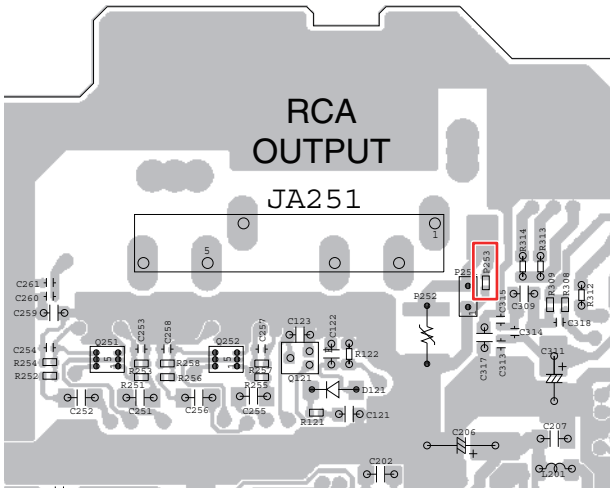
1	FL+	9	NC
2	FR+	10	NC
3	FL-	11	NC
4	FR-	12	NC
5	RL+	13	ACC
6	RR+	14	B.REM
7	RL-	15	B.UP
8	RR-	16	GND

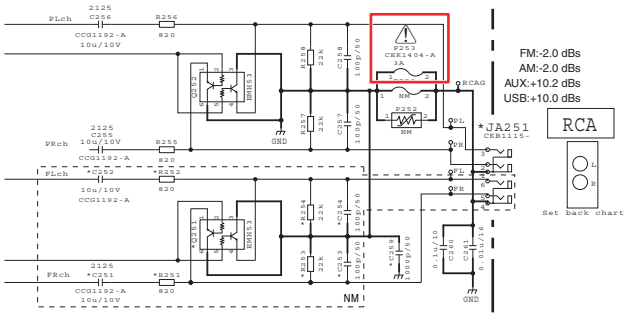
5.4 FUSE CHECK

● **No sounds and display output of external unit (the condition when the fuse is blown)**

This product may receive excessive current if the power line connection of the external product is incorrect, such as Ground connection failure.
The fuse P253 on TUNER AMP UNIT is used to protect this product from this excessive current.
Even though the fuse is blown, the sounds of Pre-out output and AUX input are output properly and also other functions work correctly.
However, you cannot turn on the external product connected to this product as the power is not supplied if the fuse is blown. (The symptom in this case is the sounds of external product are not output on this product when the external product is connected on a vehicle.)

If you find the symptoms above, check if the fuse is not blown.
If you replace to a new fuse and the fuse is blown again (you cannot turn on the power of external product), check the power connection (Ground) of external product.

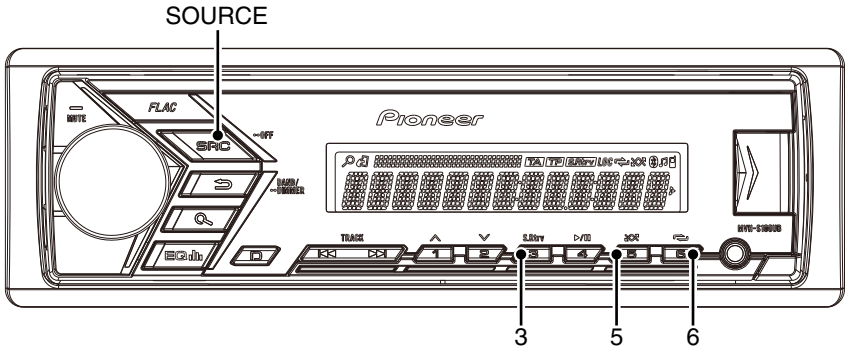




6. SERVICE MODE
6.1 DISPLAY TEST MODE1

[How to enter Test mode]

Press and hold "5" and "6" buttons together, and turn BUP and ACC on.



		Grille condition	
Confirmation item	Operate	LCD	ILM *1
All light up	Button 5 + Button 6	States 1	ILM①
All light off	SOURCE	States 2 (No light)	No light
Conf. Button feeling	Button 3	States 3	ILM②

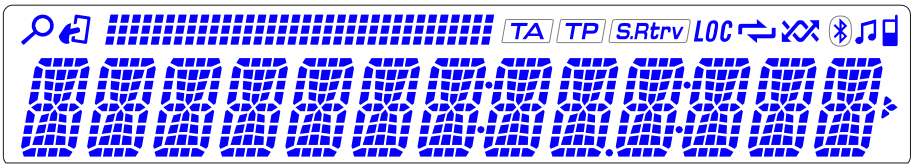
LCD States

Status 1: All light up. Refer to "Draw 1" below for detail.
States 2: All light off
Status 3: Refer to "Draw 2" below for detail.

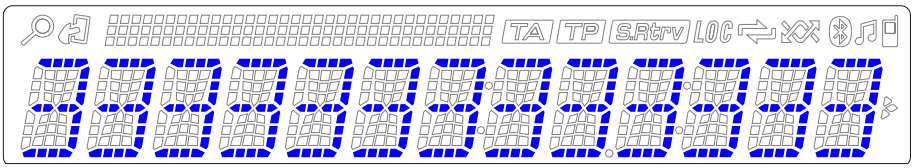
*1

Model	ILM①	ILM②
MVH-S100UB/XINEW5	RED	RED
MVH-S100UBG/XINEW5	GREEN	GREEN
MVH-S100UBA/XINEW5	AMBER	AMBER
MVH-S100UBW/XINEW5	WHITE	WHITE
MVH-S010UB/XINEW5	RED	RED

Draw 1



Draw 2



6.2 DISPLAY TEST MODE2

The information such as the system microcomputer version is checked.

[How to enter Test mode]

Press and hold "1" and "3" buttons together, and turn BUP and ACC on.

[Operation key]

Operation key	Processing	Remarks
① + ③	Enter display test mode 2 Switch display status	

[Test items]

Start display test mode.
Press and hold "1" and "3" buttons together, and turn BUP and ACC on.

System Version information is displayed.

S $ $ $ $ # # #

$ PD number — For PEA010A, "010A" is displayed

System microcomputer version — For Ver.7.01, "701" is displayed

Switching to next display by pressing " ① " + " ③ " buttons together.

Display is normally updated

Product operation is performed as usual, in appearance.

Switching to next display by pressing " ① " + " ③ " buttons together.

Display update is stopped

The screen gets still when entering this item.

Switching to next display by pressing " ① " + " ③ " buttons together.

	Key Illumination	Icon
* Initial condition	Off	All off
	On (an initial value)	All off
	On (an initial value or setting value of default menu)	All off
	On (an initial value or setting value of default menu)	On (lighting condition of normal times)
	On (an initial value or setting value of default menu)	On (state when entering test mode)

6.3 SOFTWARE VERSION UP METHOD

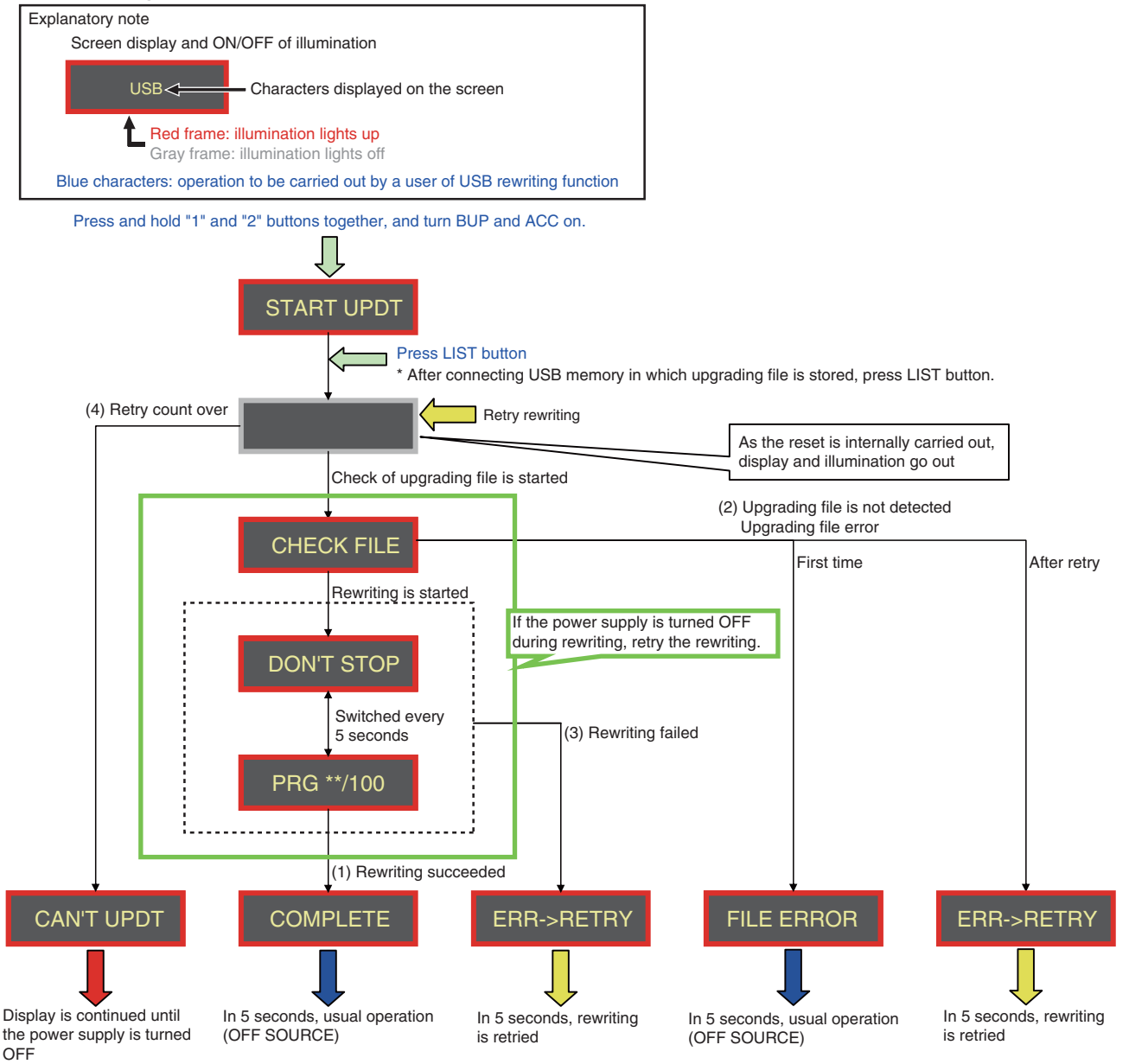
Overview

This mode is used for upgrading the MCU software of system using USB memory.

How to enter in USB rewriting mode

Press and hold "1" and "2" buttons together, and turn BUP and ACC on.

USB rewriting operation flow



Result of rewriting

(1) Rewriting succeeded	Displayed when USB rewriting is normally terminated. In 5 seconds, usual operation (OFF SOURCE) is started.
(2) Upgrading file error Upgrading file is not detected	Displayed when there is no upgrading file in USB memory or the data of upgrading file is different. In 5 seconds, usual operation (OFF SOURCE) is started. If the upgrading file error is detected or the upgrading file is not detected after the rewriting is retried, the rewriting is failed. In 5 seconds, rewriting is retried.
(3) Rewriting failed	Displayed when the writing of upgrading file in serial Flash is not normally terminated. Or, displayed if the upgrading file error is detected or the upgrading file is not detected after the rewriting is retried. In 5 seconds, rewriting is retried.
(4) Retry count over	Displayed when the retry becomes unavailable because the retry count is exceeded. The display is continued until the power supply is turned OFF. If the power supply is turned ON again, the display is not changed. Since USB Updating is disabled, it is necessary to replace Flash ROM UNIT.

7. DISASSEMBLY

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

● Removing the Panel Assy (Fig.1)

1. Release the two latches.
2. Release the two latches and then remove the Panel Assy.

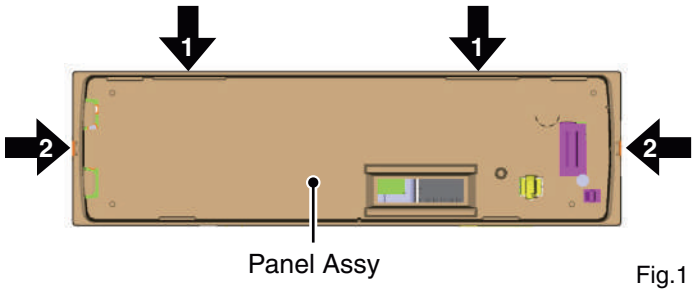
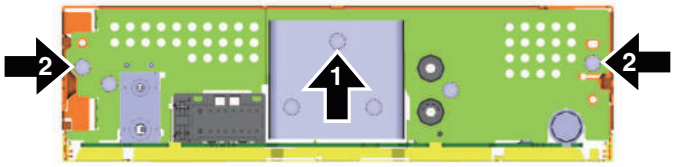


Fig.1

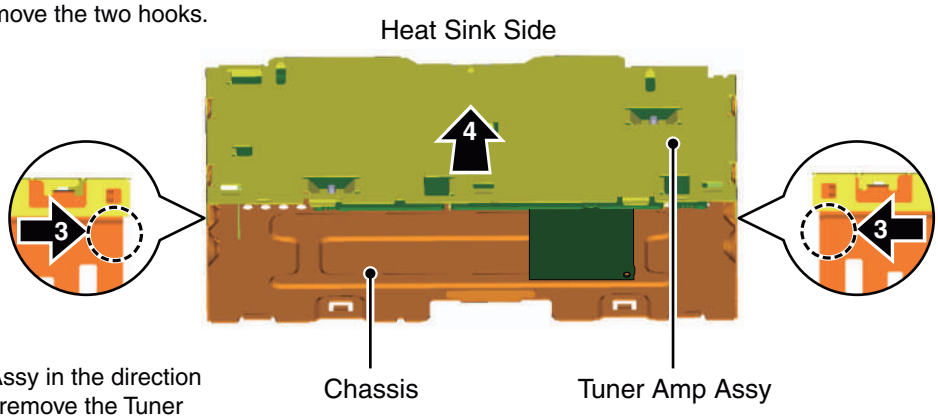
● Removing the Tuner Amp Assy (Fig.2)

1. Remove the screw.
2. Remove the two screws.



The Chassis side is made a bottom.

3. Push the area and remove the two hooks.



4. Slide the Tuner Amp Assy in the direction of the arrow and then remove the Tuner Amp Assy.

Fig.2

● Removing the Tuner Amp Unit (Fig.3)

1. Remove the two screws.
2. Straighten the tab at location indicated and then remove the Tuner Amp Unit.

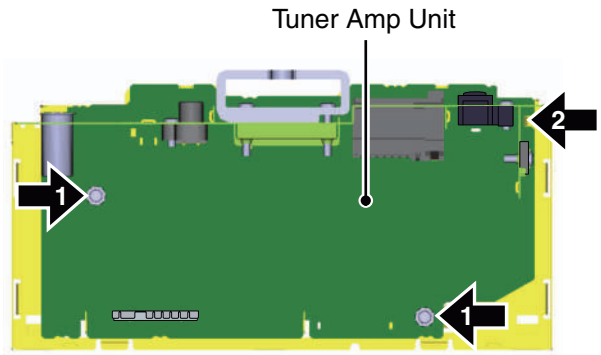


Fig.3

● Disassembling the Panel Part (Fig.4, 5)

1. Remove the arm while bending the rib of the panel upward.

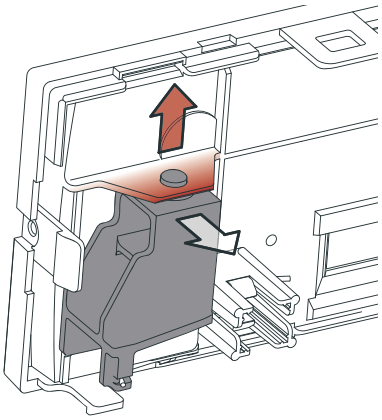


Fig.4

2. Press the upside hook and the bottom side hook of the button at the same time, and pull out the button.

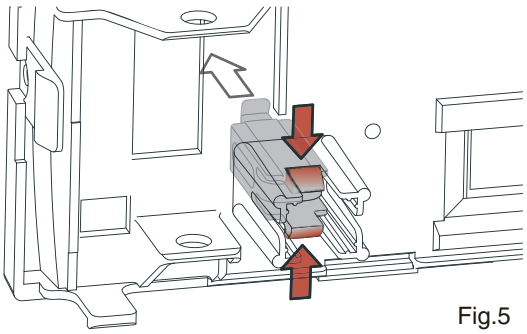


Fig.5

● Assembling the Panel Part (Fig.6, 7, 8)

1. Attach the button from the front side of the panel.

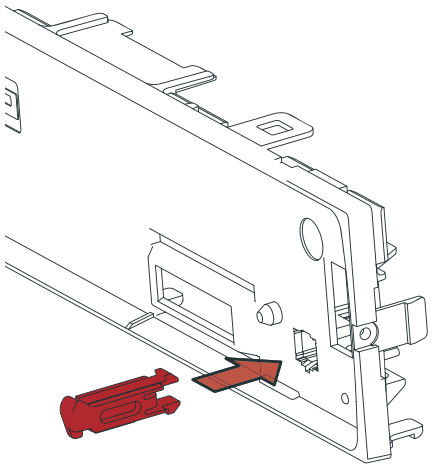


Fig.6

2. Attach the spring to the arm as shown in the figure.

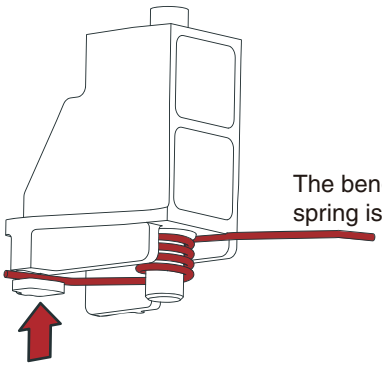


Fig.7

3. Fit the spring in the groove at the position shown in the figure.
4. Fit the boss on the lower side of the arm in the lower hole of the panel, and then warp the rib on the panel in the direction shown in the figure and fit the boss of the arm in the panel.

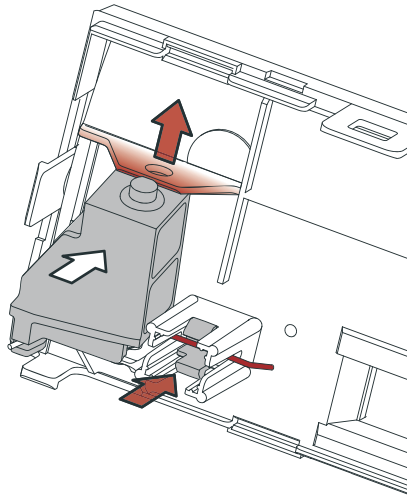


Fig.8

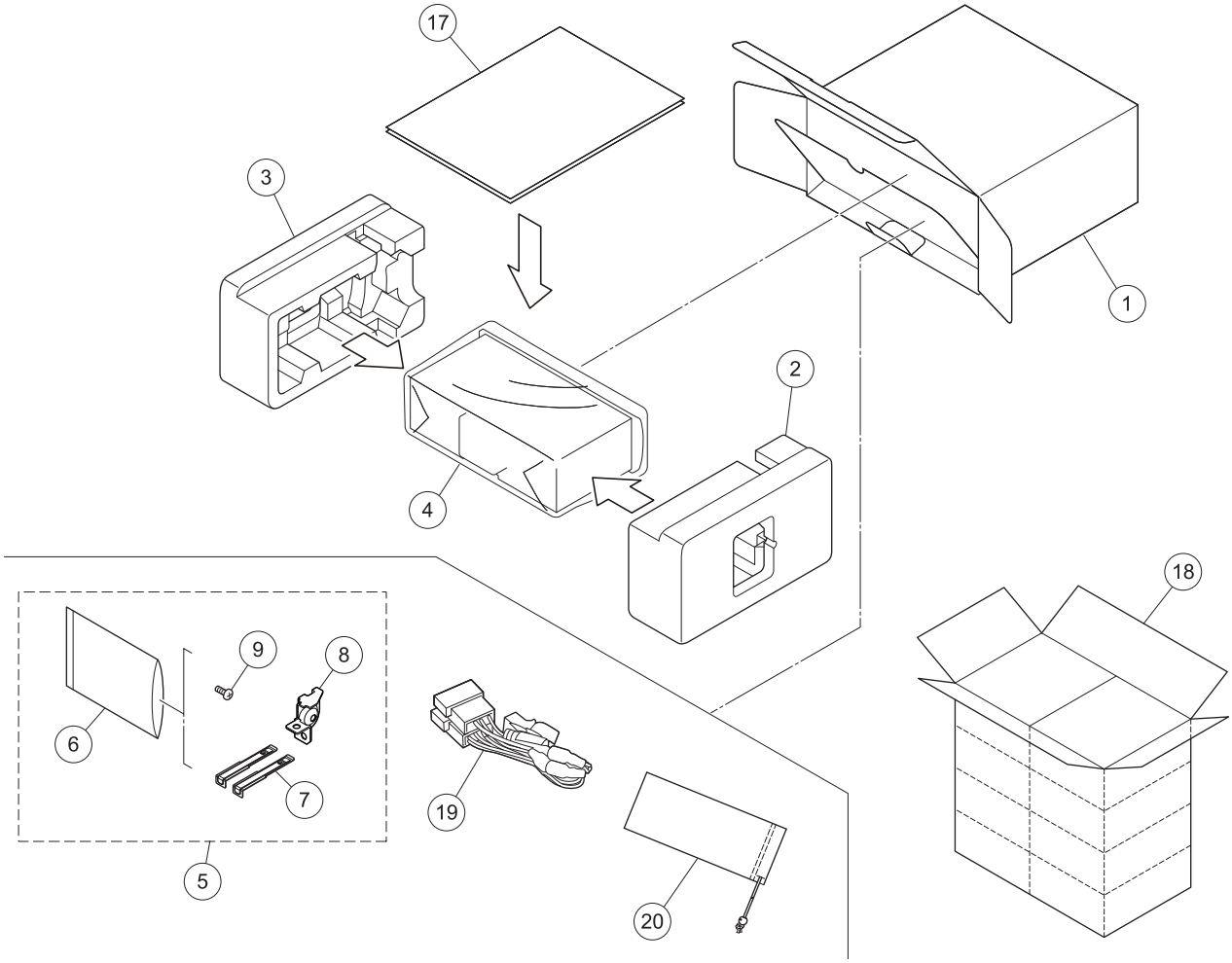
8. EACH SETTING AND ADJUSTMENT

There is no information to be shown in this chapter.

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 SECTION



(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Unit Box	See Contrast table (2)
	2	Protector	QHP3050
	3	Protector	QHP3051
	4	Polyethylene Bag	CEG1260
	5	Accessory Assy	QEA3318
*	6	Polyethylene Bag	CEG1160
	7	Handle	QNC3119
	8	Bracket	QNC3086
	9	Screw	BSZ26P060FTC
	10	•••••	
	11	•••••	
	12	•••••	
	13	•••••	
	14	•••••	
	15	•••••	
	16	•••••	
	17-1	Owner's Manual	QRD3508
*	17-2	Warranty Card	CRY1376
	18	Contain Box	See Contrast table (2)
	19	Cord Assy	QDP3071
	20	Detach G Case	QEG3004

(2) CONTRAST TABLE

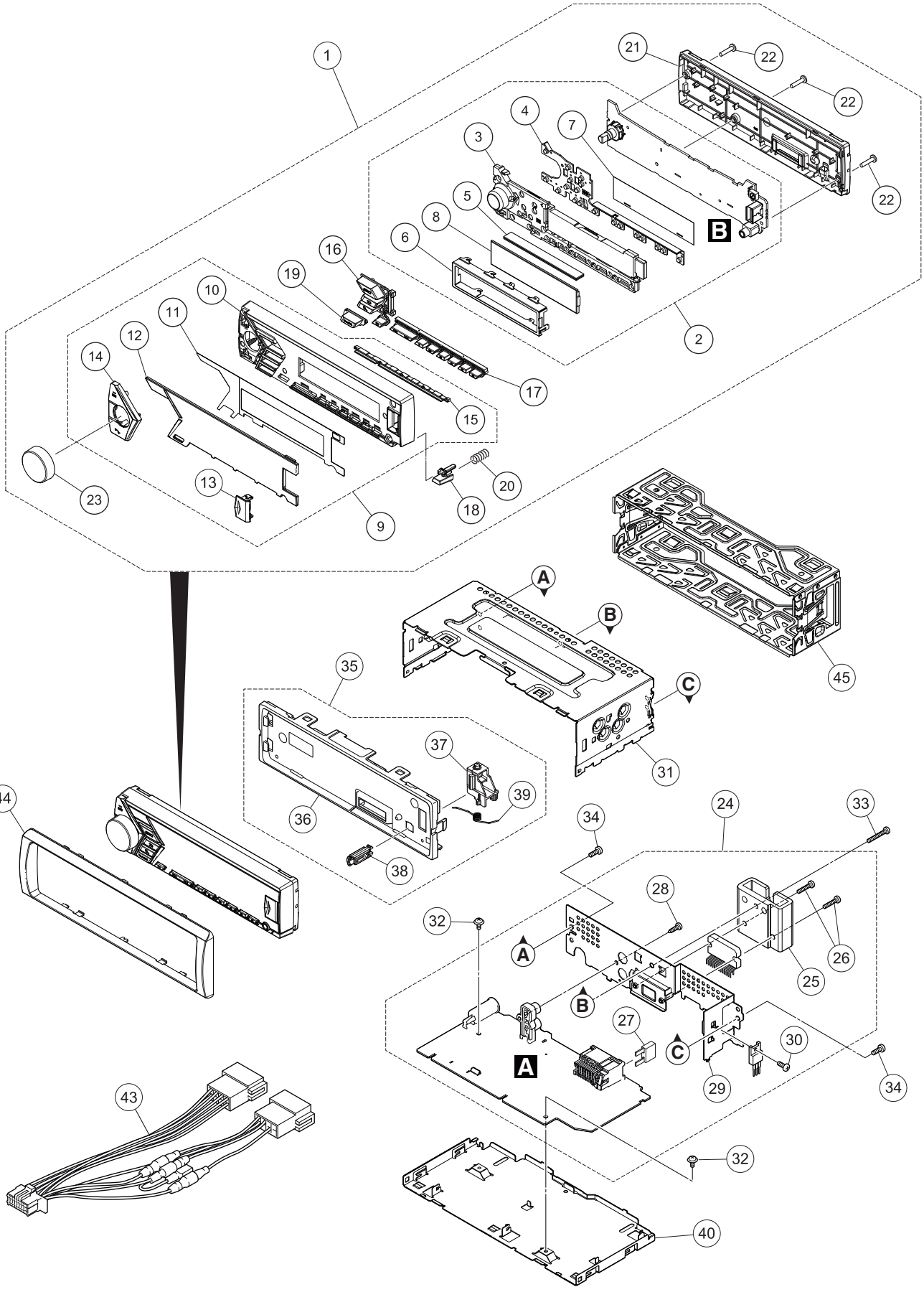
MVH-S100UB/XINEW5, MVH-S100UBG/XINEW5, MVH-S100UBA/XINEW5, MVH-S100UBW/XINEW5 and MVH-S010UB/XINEW5 are constructed the same except for the following:

Mark	No.	Symbol and Description	MVH-S100UB /XINEW5	MVH-S100UBG /XINEW5	MVH-S100UBA /XINEW5	MVH-S100UBW /XINEW5	MVH-S010UB /XINEW5
	1	Unit Box	QHG4202	QHG4203	QHG4200	QHG4201	QHG4192
	18	Contain Box	QHL4202	QHL4203	QHL4200	QHL4201	QHL4192

Owner's Manual,Installation Manual

Part No.	Language
QRD3508	English, French, Italian, Spanish(Espanol), German, Dutch, Russian

9.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Detach Grille Assy	See Contrast table (2)
	2	Keyboard Unit	See Contrast table (2)
	3	Lighting Conductor	QNV3149
	4	Contact Rubber	QNV3144
	5	Rubber Connector	QNV3129
	6	Holder	QNC3130
	7	Sheet	QNM3159
	8	Segment LCD (V1801)	CAW2056
	9	Grille Unit	See Contrast table (2)
*	10	Grille	QNS4168
*	11	Ds Tape	QNM3206
*	12	Plate	QNS4169
*	13	Door	QAT3029
*	14	Button(MUTE)	QAC3277
*	15	Lighting Conductor	QNV3143
	16	Button(SRC)	QAC3278
	17	Button(TRACK, 1-6)	QAC3279
	18	Button(DETACH)	QAC3280
	19	Button(EQ)	QAC3283
	20	Spring	CBH2210
	21	Cover	QNS4170
	22	Screw	BPZ20P100FTC
	23	Knob Unit	QXA5051
*	24	Tuner Amp Unit	See Contrast table (2)
	25	Heat Sink	QNR3012
	26	Screw	BSZ26P160FTC
⚠	27	Fuse(10 A)	YEK5001
	28	Screw	BPZ26P080FTC
	29	Holder	QNC3106
	30	Screw	BSZ26P060FTC
	31	Chassis	QNA3027
	32	Screw	ASZ26P050FTC
	33	Screw	BSZ26P160FTC
	34	Screw	BSZ26P060FTC
	35	Panel Unit	QXA5290
*	36	Panel	QNS3289
*	37	Arm	QNV3025
*	38	Button	QNV3026
	39	Spring	QBH3001
	40	Case	QNB3041
	41	•••••	
	42	•••••	
	43	Cord Assy	QDP3071
	44	Panel	QNS3568
	45	Holder	QNC3118

(2) CONTRAST TABLE

MVH-S100UB/XINEW5, MVH-S100UBG/XINEW5, MVH-S100UBA/XINEW5, MVH-S100UBW/XINEW5 and MVH-S010UB/XINEW5 are constructed the same except for the following:

Mark	No.	Symbol and Description	MVH-S100UB /XINEW5	MVH-S100UBG /XINEW5	MVH-S100UBA /XINEW5	MVH-S100UBW /XINEW5	MVH-S010UB /XINEW5
	1	Detach Grille Assy	QXA5164	QXA5165	QXA5166	QXA5167	QXA5162
	2	Keyboard Unit	QWM4666	QWM4670	QWM4669	QWM4741	QWM4666
	9	Grille Unit	QXA5154	QXA5155	QXA5156	QXA5157	QXA5152
*	24	Tuner Amp Unit	QWM4731	QWM4732	QWM4742	QWM4743	QWM4747

10. SCHEMATIC DIAGRAM

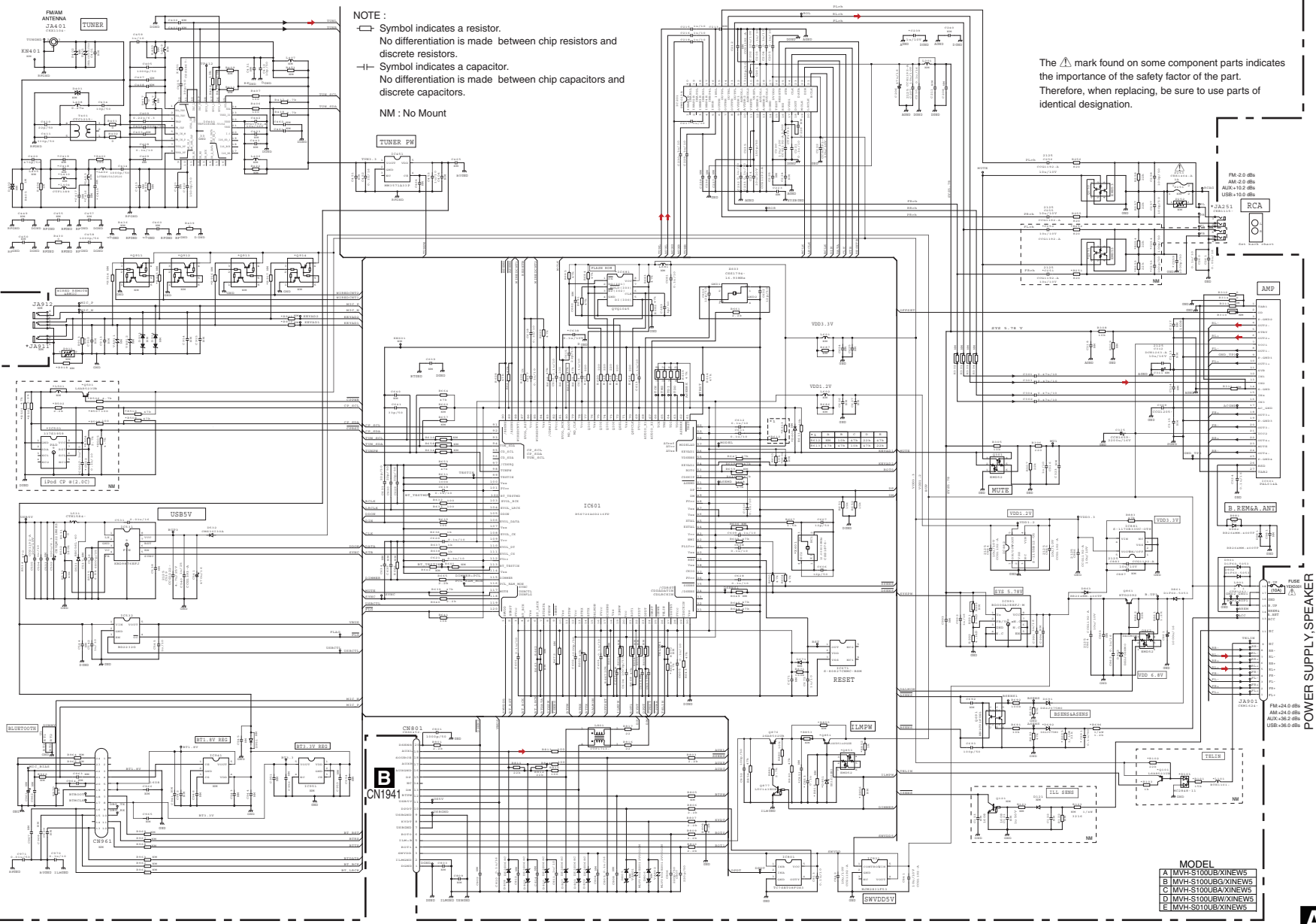
Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A TUNER AMP UNIT

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.

NM : No Mount

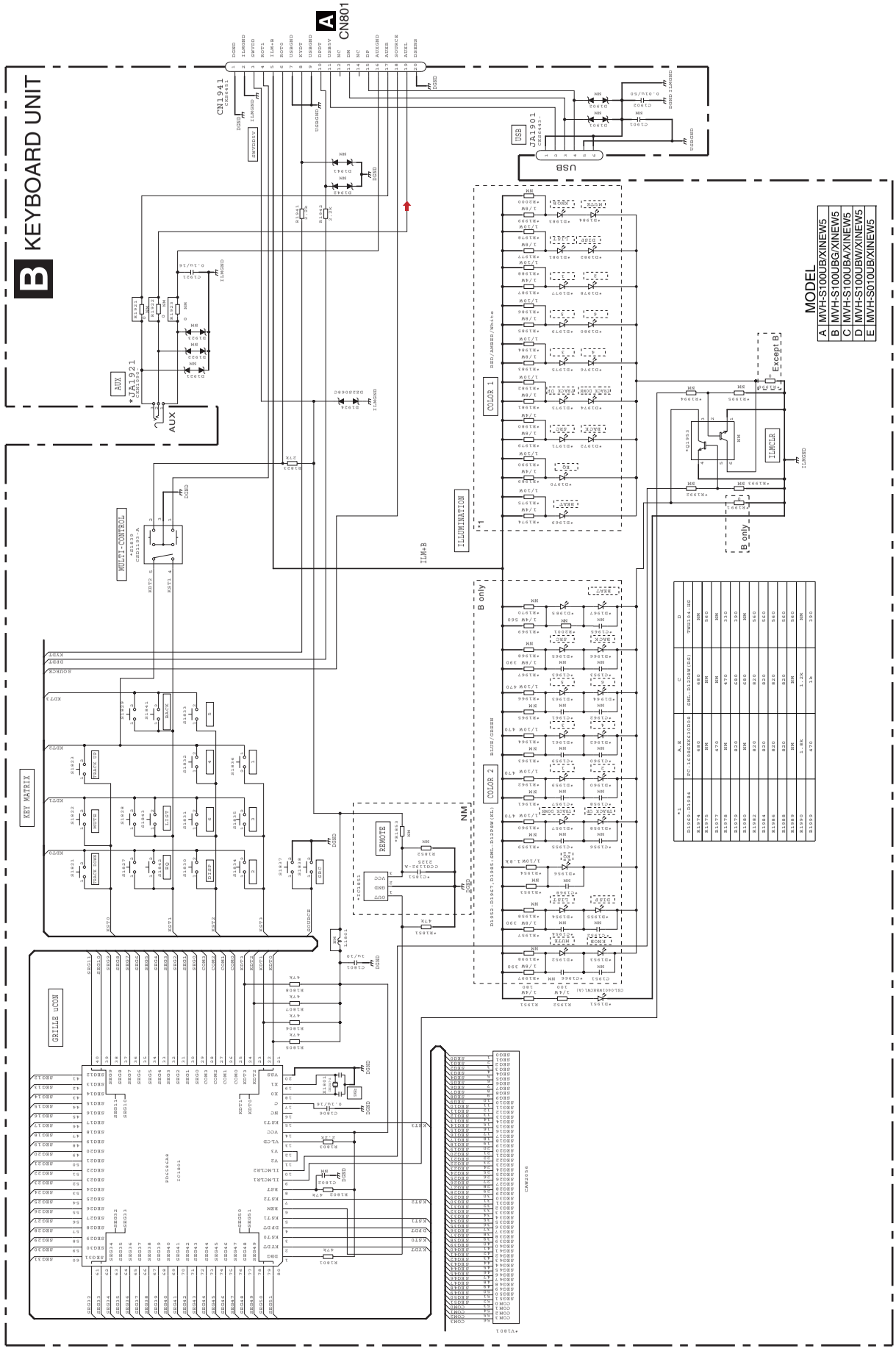
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



MODEL

A	MVH-S100UB/XINEW5
B	MVH-S100UBG/XINEW5
C	MVH-S100UBA/XINEW5
D	MVH-S100UBW/XINEW5
E	MVH-S010UB/XINEW5

10.2 KEYBOARD UNIT



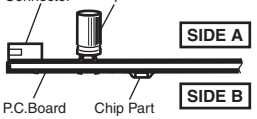
11. PCB CONNECTION DIAGRAM

A TUNER AMP UNIT

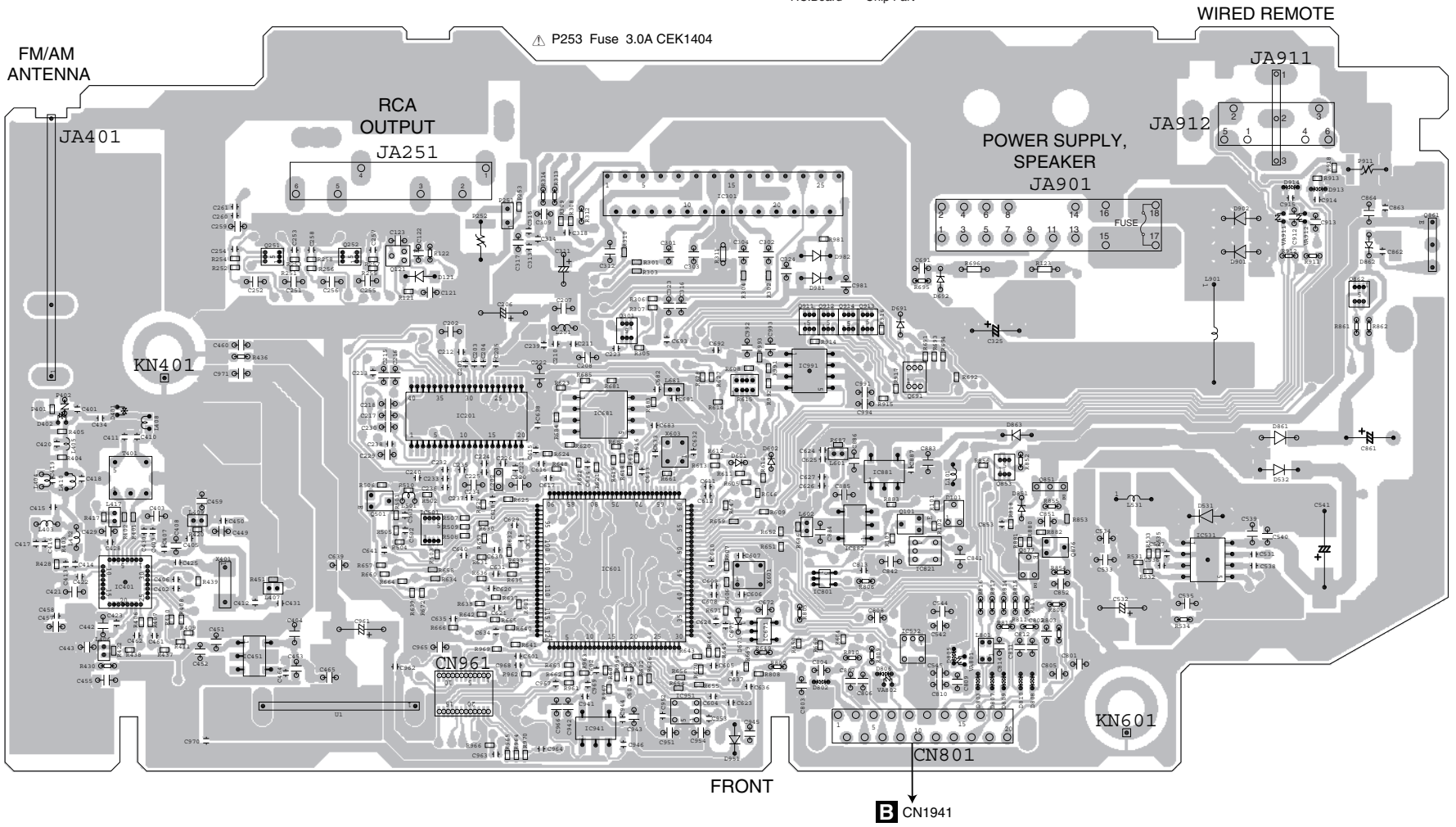
NOTE FOR PCB DIAGRAMS

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



SIDE A



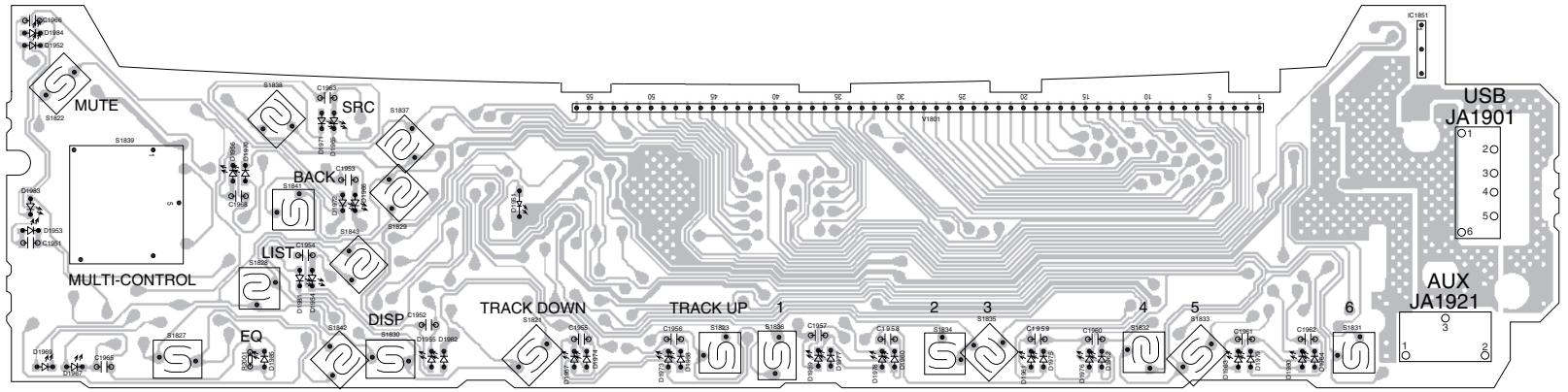
A TUNER AMP UNIT

SIDE B

11.2 KEYBOARD UNIT

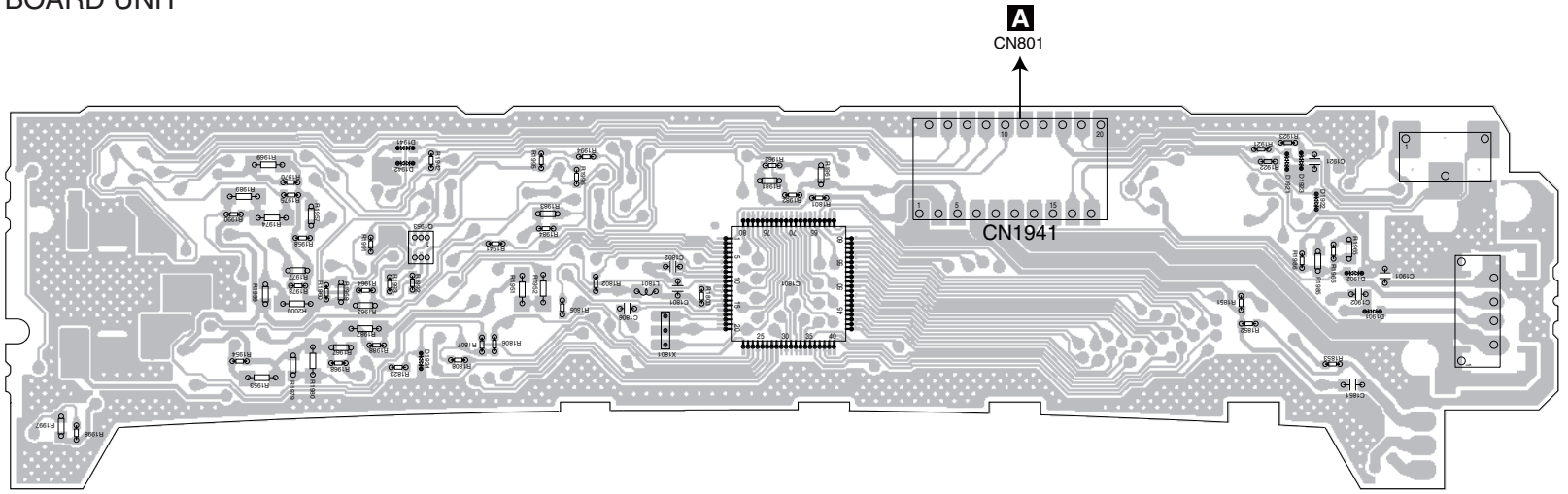
B KEYBOARD UNIT

SIDE A



B KEYBOARD UNIT

SIDE 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/◯S◯◯◯J,RS1/◯◯S◯◯◯J

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

  CKS....., CCS....., CSZS.....
- *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.*
- *The expression of the unit in this manual is shown by u instead of μ. Please do not make a mistake.*

A:MVH-S100UB/XINEW5
B:MVH-S100UBG/XINEW5
C:MVH-S100UBA/XINEW5
D:MVH-S100UBW/XINEW5
E:MVH-S010UB/XINEW5

Unit Number: QWM4731(A)
Unit Number: QWM4732(B)
Unit Number: QWM4742(C)
Unit Number: QWM4743(D)
Unit Number: QWM4747(E)
Unit Name : Tuner Amp Unit
Unit Number: QWM4666(A,E)
Unit Number: QWM4670(B)
Unit Number: QWM4669(C)
Unit Number: QWM4741(D)
Unit Name : Keyboard Unit

A

Unit Number: QWM4731(A)
Unit Number: QWM4732(B)
Unit Number: QWM4742(C)
Unit Number: QWM4743(D)
Unit Number: QWM4747(E)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 201	E-VOL System LSI	PM9013A
IC 301	Power Amp IC	PAL014A
IC 401	Tuner IC	TEF6686HN-V102
IC 451	Regulator IC	MM3571A33P
IC 531	DC/DC Converter IC	KBD9876EFJ
IC 532	Power supply IC	BD2232G-G
IC 601	Blank Flash IC	R5S726A0D216FP
IC 671	IC	S-80827CNMC-B8M
IC 681	Flash ROM Unit	QVQ1045
IC 801	Logic IC	TC7SET08FUS3
IC 821	Regulator IC	NJM2831F53
IC 881	Regulator IC	S-1170B33UC-OTS
IC 882	Regulator IC	S-1155B12-U5
IC 991	Regulator IC	BD00GA3EEFJ
⚠ P253	Fuse 3.0 A	CEK1404

B

Unit Number: QWM4666(A,E)
Unit Number: QWM4670(B)
Unit Number: QWM4669(C)
Unit Number: QWM4741(D)
Unit Name : Keyboard Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 1801	Flash Written UC IC	PD6586A8