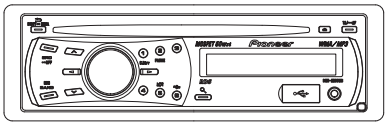
Pioneer

Service Manual



DEH-2200UB/XSEW5

ORDER NO.
CRT4455

CD RDS RECEIVER

DEH-2200UB/XSEW5
DEH-2200UBB/XSEW5
DEH-2220UB/XSEW5
DEH-2210UB/XSUR

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

Model No.	Order No.	Mech. Module	Remarks
CX-3269	CRT4488	S11iPod/USB	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

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

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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.

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:

● **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:
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION
CLASS 1M INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

WARNING!

The AEL (accessible emission level)of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.
A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

Wave length : 785 nm to 814 nm

Maximum output : 1 190 µW(Emitting period : unlimited)

Additional Laser Caution

Transistors Q101 in PCB drive the laser diodes.
When Q101 is shorted between their terminals, the laser diodes will radiate beam.
If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

[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

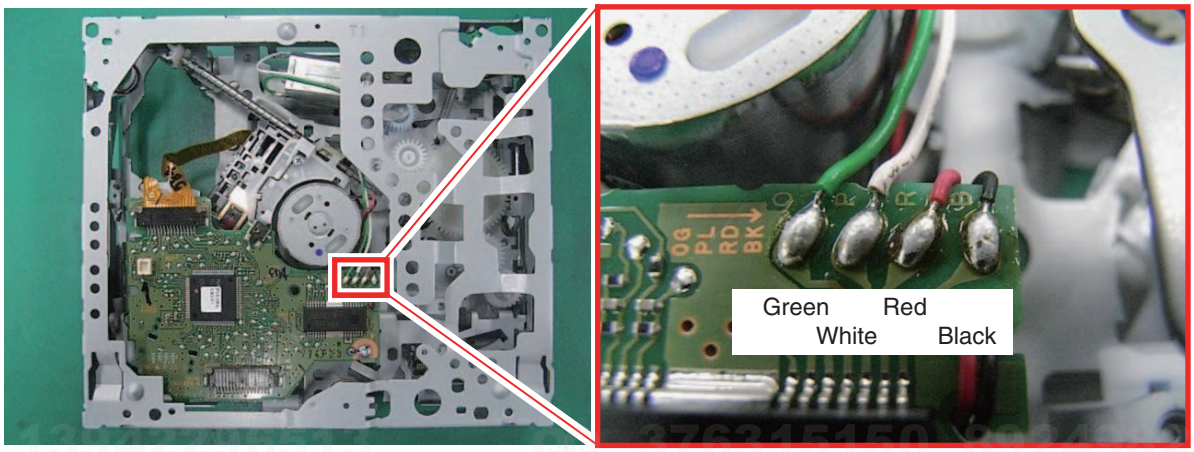
To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS

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.
6. On CD Core Unit, actual cable colors and silk print are different.



7. CD Mech. Assembly Wrong Installation Check
   If iPod corresponding mech. assembly is installed at iPod non corresponding model, or if iPod non corresponding mech. assembly is installed at iPod corresponding model by mistake, this becomes error indication with CDS, USB sources as shown below;

Wrong Inst. Error of CD Mech. Assembly	C	H	K		C	D	C		O	R	E

Judgment condition of wrong installation is as follows;

USB Corresponding Model		
S11 USB/iPod Mech. Assembly	Authentication IC: No	OK
	Authentication IC: Yes	Wrong Installation Indication
S11 USB Mech. Assembly	Authentication IC: No	OK
	Authentication IC: Yes	Wrong Installation Indication
USB/iPod Corresponding Model		
S11 USB/iPod Mech. Assembly	Authentication IC: No	Wrong Installation Indication
	Authentication IC: Yes	OK
S11 USB Mech. Assembly	Authentication IC: No	Wrong Installation Indication
	Authentication IC: Yes	OK

* The condition becomes as shown above since a microcomputer of corresponding USB mech. assembly and a microcomputer of iPod corresponding mech. assembly are the same.

However, this is determined by the presence or absence of authentication IC since problem occurs depending on different mech. assembly.

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.

1 2 3 4
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2. SPECIFICATIONS

2.1 SPECIFICATIONS

DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5

General

Power source ..... 14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system ..... Negative type
Maximum current consumption ..... 10.0 A
Back up current ..... 2 mA or less

Dimensions (W × H × D):
- DIN
  - Chassis ..... 178 mm × 50 mm × 165 mm
  - Nose ..... 188 mm × 58 mm × 24 mm
- D
  - Chassis ..... 178 mm × 50 mm × 165 mm
  - Nose ..... 170 mm × 48 mm × 24 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 ohm load, both channels driven)
Load impedance ..... 4 ohm (4 ohm 8 ohm allowable)
Preout maximum output level ..... 2.0 V
Tone controls:
- Bass
  - Frequency ..... 100 Hz
  - Gain ..... ±12 dB
- Mid
  - Frequency ..... 1 kHz
  - Gain ..... ±12 dB
- Treble
  - Frequency ..... 10 kHz
  - Gain ..... ±12 dB

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
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 (Non-compressed)

USB

USB standard specification ..... USB 2.0 full speed
Maximum current supply .... 500 mA
Minimum memory capacity ..... 256 MB
USB Class ..... MSC (Mass Storage Class)
File system FAT16, FAT32
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 (Non-compressed)

FM tuner

Frequency range ..... 87.5 MHz to 108.0 MHz
Usable sensitivity ..... 11 dBf (0.7 µV/75 ohm , mono, S/N: 30 dB)
Signal-to-noise ratio ..... 72 dB (IEC-A network)

MW tuner

Frequency range ..... 531 kHz to 1 602 kHz
Usable sensitivity ..... 25 µV (S/N: 20 dB)
Signal-to-noise ratio ..... 62 dB (IEC-A network)

LW tuner

Frequency range ..... 153 kHz to 281 kHz
Usable sensitivity ..... 28 µV (S/N: 20 dB)
Signal-to-noise ratio ..... 62 dB (IEC-A network)

Note

Specifications and the design are subject to modifications without notice. ■

Общие

Источник питания ..... 14,4 В постоянного тока (допустимый диапазон от 10,8 В до 15,1 В)
Система заземления ..... Заземление отрицательного полюса
Максимальный потребляемый ток ..... 10,0 А
Back up current ..... 2 mA or less
Размеры (Ш × В × Г):
DIN
Шасси ..... 178 мм × 50 мм × 165 мм
Передняя панель ..... 188 мм × 58 мм × 24 мм
D
Шасси ..... 178 мм × 50 мм × 165 мм
Передняя панель ..... 170 мм × 48 мм × 24 мм
Масса ..... 1,3 кг

Аудио

Максимальная выходная мощность ..... 50 Вт × 4
Номинальная выходная мощность ..... 22 Вт × 4 (50 Гц до 15 000 Гц, суммарное значение коэффициента нелинейных искажений 5 %, нагрузка 4 Ω для обоих каналов)
Сопротивление нагрузки ..... 4 Ω (допустимо – от 4 Ω до 8 Ω)
Максимальная выходная мощность ..... 2,0 В
Регуляторы тембра:
Низкие частоты
Частота ..... 100 Гц
Усиление ..... ±12 дБ
Средние частоты
Частота ..... 1 кГц
Усиление ..... ±12 дБ
Высокие частоты
Частота ..... 10 кГц
Усиление ..... ±12 дБ

Проигрыватель компакт-дисков

Система ..... Аудиосистема с компакт-диском
Используемые диски ..... Компакт-диск
Отношение сигнал/шум .... 94 дБ (1 кГц) (сеть IEC-A)
Число каналов ..... 2 (стерео)
Формат декодирования файлов WMA ..... Версии 7, 7.1, 8, 9, 10, 11 (двухканальный звук) (Windows Media Player)
Формат декодирования файлов MP3 ..... MPEG-1 и 2 Audio Layer 3
Формат сигнала WAV ..... Linear PCM и MS ADPCM (без компрессии)

USB

Стандартная спецификация USB ..... USB 2.0 полноскоростной
Максимальный ток питания ..... 500 мА
Минимальная емкость памяти ..... 256 Мб
Класс USB ..... MSC (Mass Storage Class)
Файловая система FAT16, FAT32
Формат декодирования файлов WMA ..... Версии 7, 7.1, 8, 9, 10, 11 (двухканальный звук) (Windows Media Player)
Формат декодирования файлов MP3 ..... MPEG-1 и 2 Audio Layer 3
Формат сигнала WAV ..... Linear PCM и MS ADPCM (без компрессии)

FM-тюнер

Диапазон частот ..... от 65 МГц до 74 МГц
от 87,5 МГц до 108,0 МГц
Полезная чувствительность ..... 11 дБф (0,7 мкВ/75 Ω, моно, отношение сигнал/шум: 30 дБ)
Отношение сигнал/шум .... 72 дБ (сеть IEC-A)

MW-тюнер

Диапазон частот ..... от 531 кГц до 1 602 кГц
Полезная чувствительность ..... 25 мкВ (отношение сигнал/шум: 20 дБ)
Отношение сигнал/шум .... 62 дБ (сеть IEC-A)

LW-тюнер

Диапазон частот ..... от 153 кГц до 281 кГц
Полезная чувствительность ..... 28 мкВ (отношение сигнал/шум: 20 дБ)
Отношение сигнал/шум .... 62 дБ (сеть IEC-A)

Примечание:
В соответствии со статьей 5 закона Российской Федерации “О защите прав потребителей” и постановлением правительства Российской Федерации № 720 от 16.06.97 компания Pioneer Europe NV оговаривает следующий срок службы изделий, официально поставляемых на российский рынок.
Автомобильная электроника: 6 лет
Другие изделия (наушники, микрофоны и т.п.): 5 лет

Примечания

- Характеристики и конструкция могут быть изменены без предварительного уведомления.
- Данное устройство произведено в Китае. ■

2.2 DISC/CONTENT FORMAT

COMPACT disc DIGITAL AUDIO

COMPACT disc DIGITAL AUDIO TEXT

Plays Windows Media™

5 6 7 8

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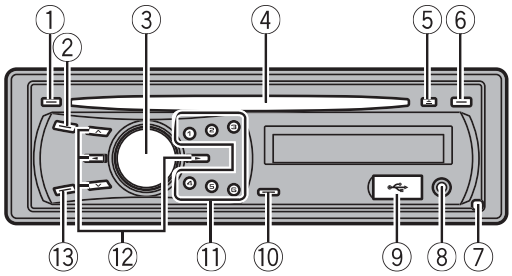
2.3 PANEL FACILITIES

DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5

Head unit

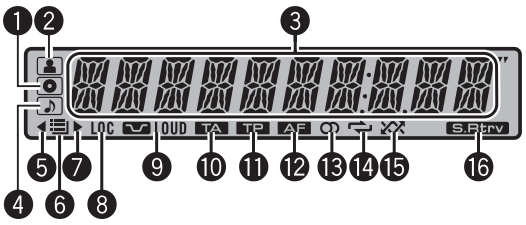


	Part		Part
①	**DISP/ ⮌ /SCRL**	⑧	AUX input jack (3.5 mm stereo jack)
②	**SRC/OFF**	⑨	USB port
③	**MULTI-CONTROL (M.C.)**	⑩	🔍 (list)
④	Disc loading slot	⑪	**1** to **6**
⑤	⏏ (eject)	⑫	▲/▼/◀/▶
⑥	**TA/ AF**	⑬	**BAND/ESC**
⑦	(detach)		

⚠ CAUTION

Use an optional Pioneer USB cable (CD-U50E) to connect the USB audio player/USB memory to the USB port. Since the USB audio player/USB memory is projected forward from the unit, it is dangerous to connect directly.
Do not use the unauthorized product.■

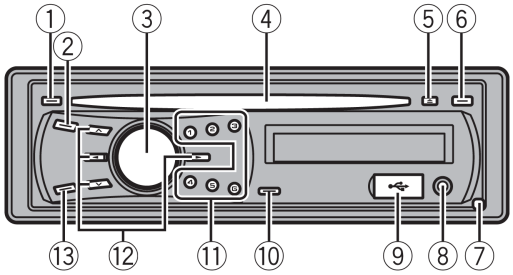
Display indication



	Indicator	State
❶	(disc)	The disc (album) name is displayed.
❷	(artist)	The disc (track) artist name is displayed.
❸	Main display section	• Tuner: band and frequency • RDS: program service name, PTY information and other literal information • Built-in CD player and USB: elapsed playback time and text information
❹	(song)	The track (song) name is displayed. A playable audio file has been selected while operating the list.
❺	◄	An upper tier of folder or menu exists.
❻	(folder)	The list function is operated.
❼	►	A lower tier of folder or menu exists.
❽	**LOC**	The local seek tuning is on.
❾	**LOUD** (loudness)	The loudness is on.
❿	TA (TA)	TA function is on.
⓫	TP (TP)	A TP station is tuned in.
⓬	AF (AF)	AF (alternative frequencies search) function is on.
⓭	(stereo)	The selected frequency is being broadcasted in stereo.
⓮	(repeat)	Track or folder repeat is on.
⓯	(random)	Random play is on.
⓰	S.Rtrv (sound retriever)	The sound retriever function is on.

■

Основное устройство

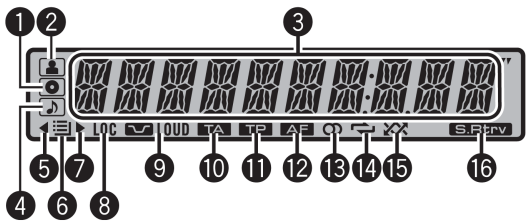


	Элемент		Элемент
①	**DISP/⮌/SCRL**	⑧	Вход AUX (стерео-разъем 3,5 мм)
②	**SRC/OFF**	⑨	USB порт
③	**MULTI-CONTROL (M.C.)**	⑩	🔍 (список)
④	Щель для загрузки диска	⑪	от **1** до **6**
⑤	⏏ (извлечение)	⑫	**▲/▼/◄/►**
⑥	**TA/AF**	⑬	**BAND/ESC**
⑦	⏏ (снять)		

⚠ ВНИМАНИЕ

Для подключения портативного USB-аудиоплеера/запоминающего устройства USB к USB порту используйте USB-кабель Pioneer (CD-U50E, приобретается отдельно). Поскольку USB-аудиоплеер/запоминающее устройство USB в подключенном состоянии выступают из устройства, подключать их непосредственно к разъему опасно.
Не используйте изделия, не разрешенные производителем к использованию. ■

Индикация на дисплее

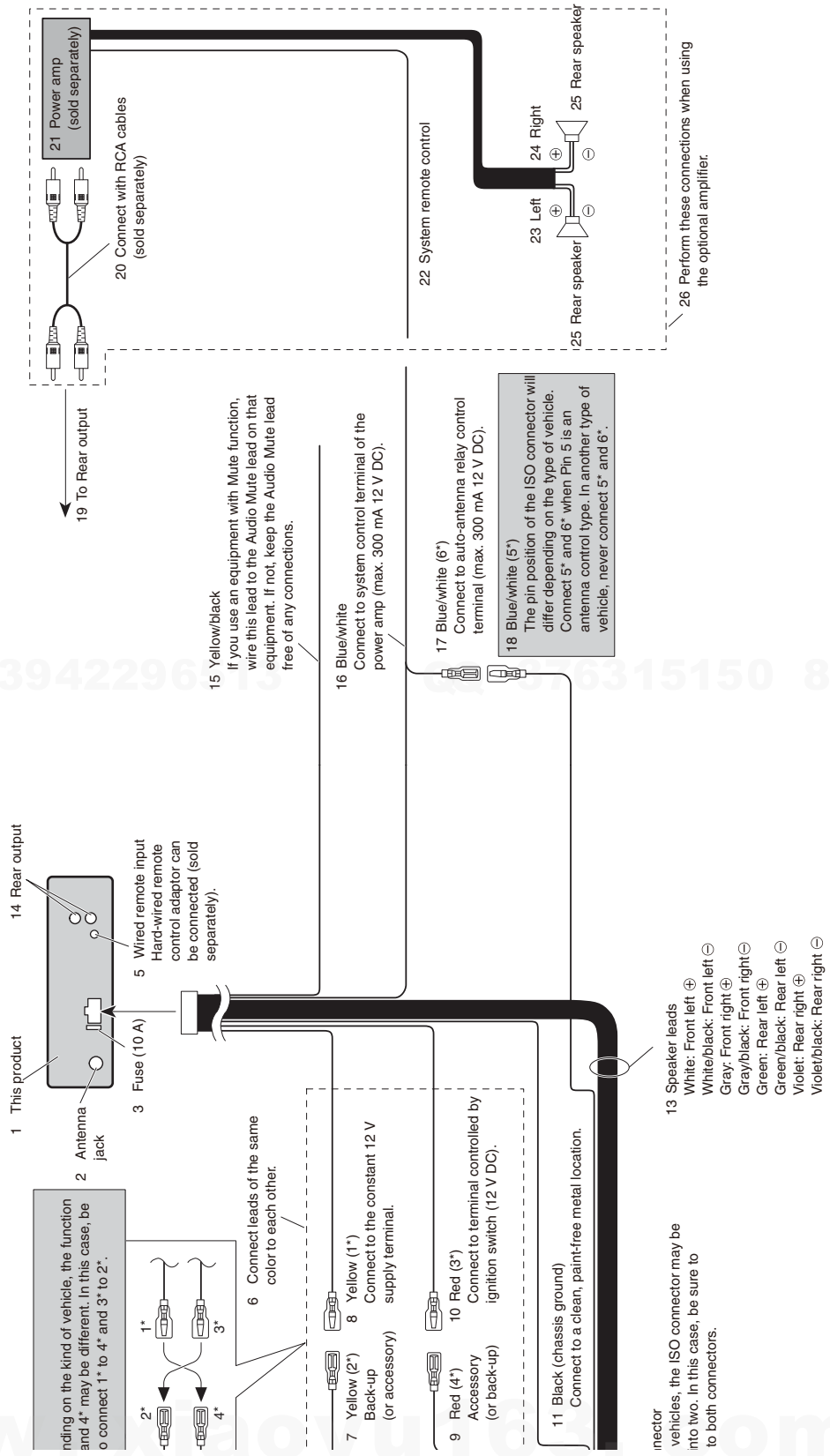


	Индикатор	Состояние
❶	(диск)	Отображается название диска (альбома).
❷	(исполнитель)	Отображается имя исполнителя диска (дорожки).
❸	Основной сектор дисплея	• Тюнер: диапазон и частота • RDS: название программы, PTY-информация и прочая текстовая информация • Встроенный проигрыватель компакт-дисков и устройства USB: время, прошедшее с начала воспроизведения, и текстовая информация
❹	(композиция)	Отображается название дорожки (композиции). При работе со списком выбран аудиофайл совместимого формата.
❺	◄	Имеется верхний уровень папки или меню.
❻	: (папка)	Работа со списком.
❼	►	Имеется нижний уровень папки или меню.
❽	**LOC**	Включена настройка с местным поиском.
❾	**LOUD** (тонкомпенсация)	Включена функция тонкомпенсации.
❿	TA (прием дорожных сводок)	Включена функция приема дорожных сводок.
⓫	TP (TP)	Тюнер настроен на TP-станцию.
⓬	AF AF (поиск альтернативных частот)	Включена функция AF (поиск альтернативных частот).
⓭	(стерео)	Вещание на выбранной частоте ведется в режиме стерео.

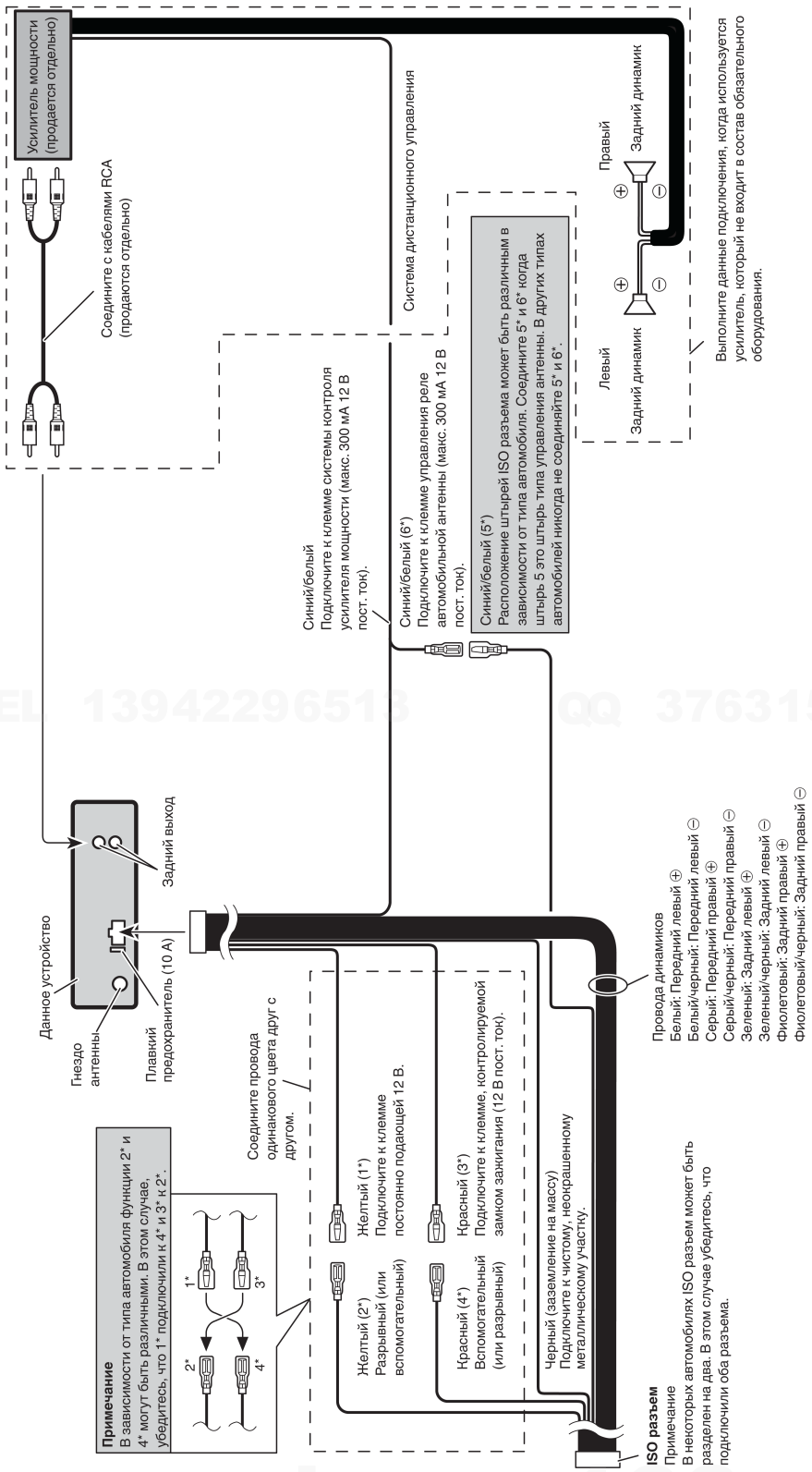
⓮	⇄ (повтор)	Включён режим повторного воспроизведения дорожки или папки.
⓯	⤮ (в произвольной последовательности)	Включён режим воспроизведения в произвольной последовательности.
⓰	S.Rtrv (sound retriever, технология преобразования звука)	Включен режим Sound Retriever (технология преобразования звука).

2.4 CONNECTION DIAGRAM

DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5



DEH-2210UB/XSUR



3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

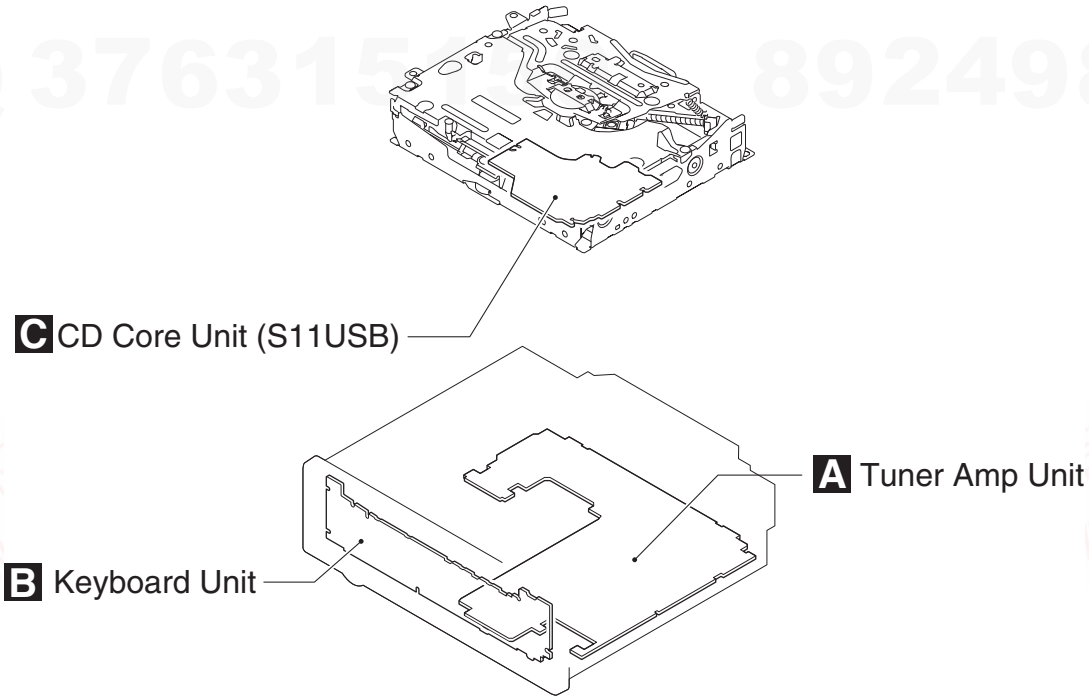
To keep the product quality after servicing, please confirm following check points.

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.
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 audio:

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

3.2 PCB LOCATIONS



A:DEH-2200UB/XSEW5
B:DEH-2200UBB/XSEW5
C:DEH-2220UB/XSEW5
D:DEH-2210UB/XSUR

Unit Number	:	YWM5445(A)
Unit Number	:	YWM5447(B)
Unit Number	:	YWM5446(C)
Unit Number	:	YWM5448(D)
Unit Name	:	Tuner Amp Unit
Unit Number	:	(A)
Unit Number	:	(B)
Unit Number	:	(D)
Unit Name	:	Keyboard Unit
Unit Number	:	(C)
Unit Name	:	Keyboard Unit
Unit Number	:	CWX3776
Unit Name	:	CD Core Unit(S11USB)

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**

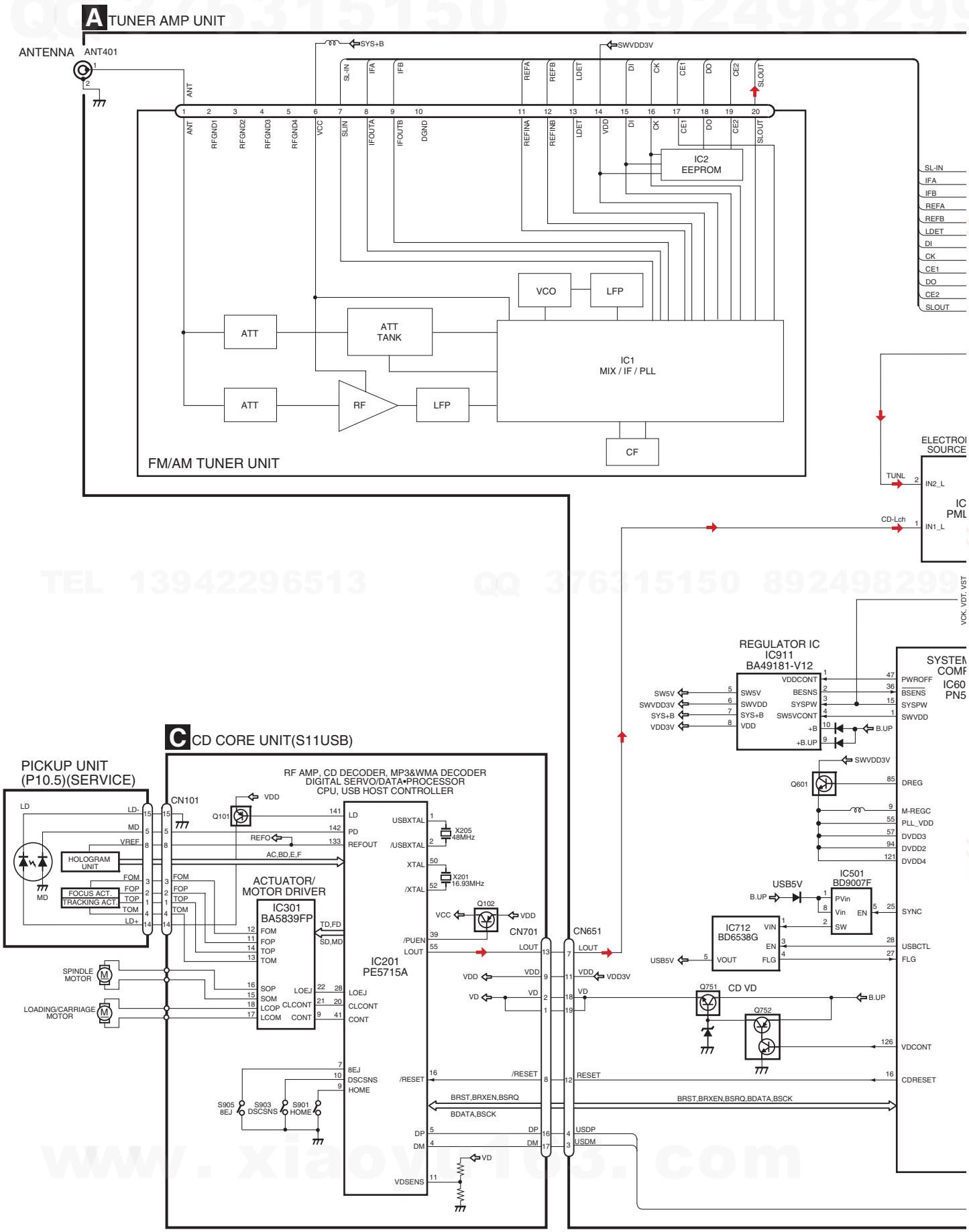
Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module

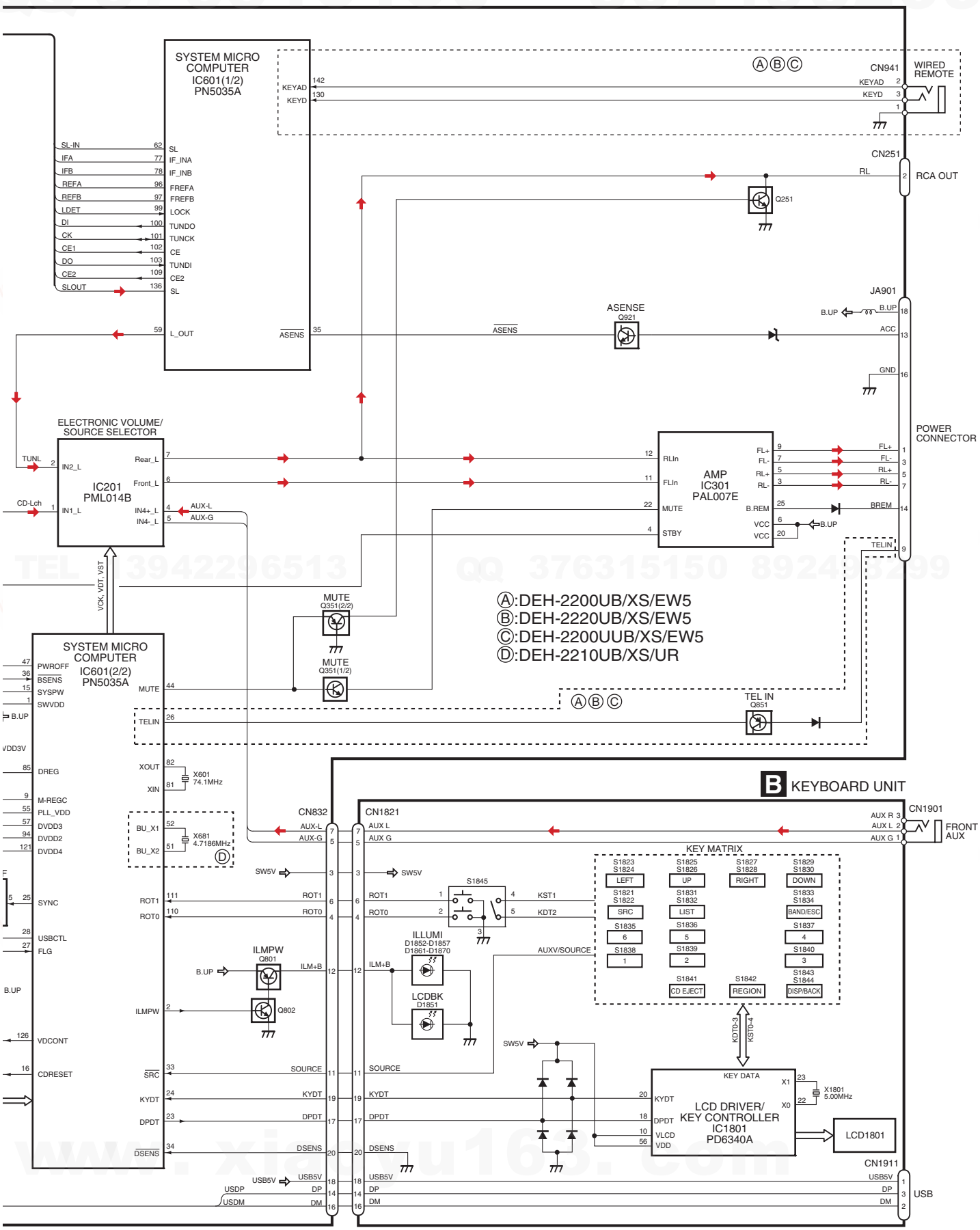
3.4 CLEANING

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

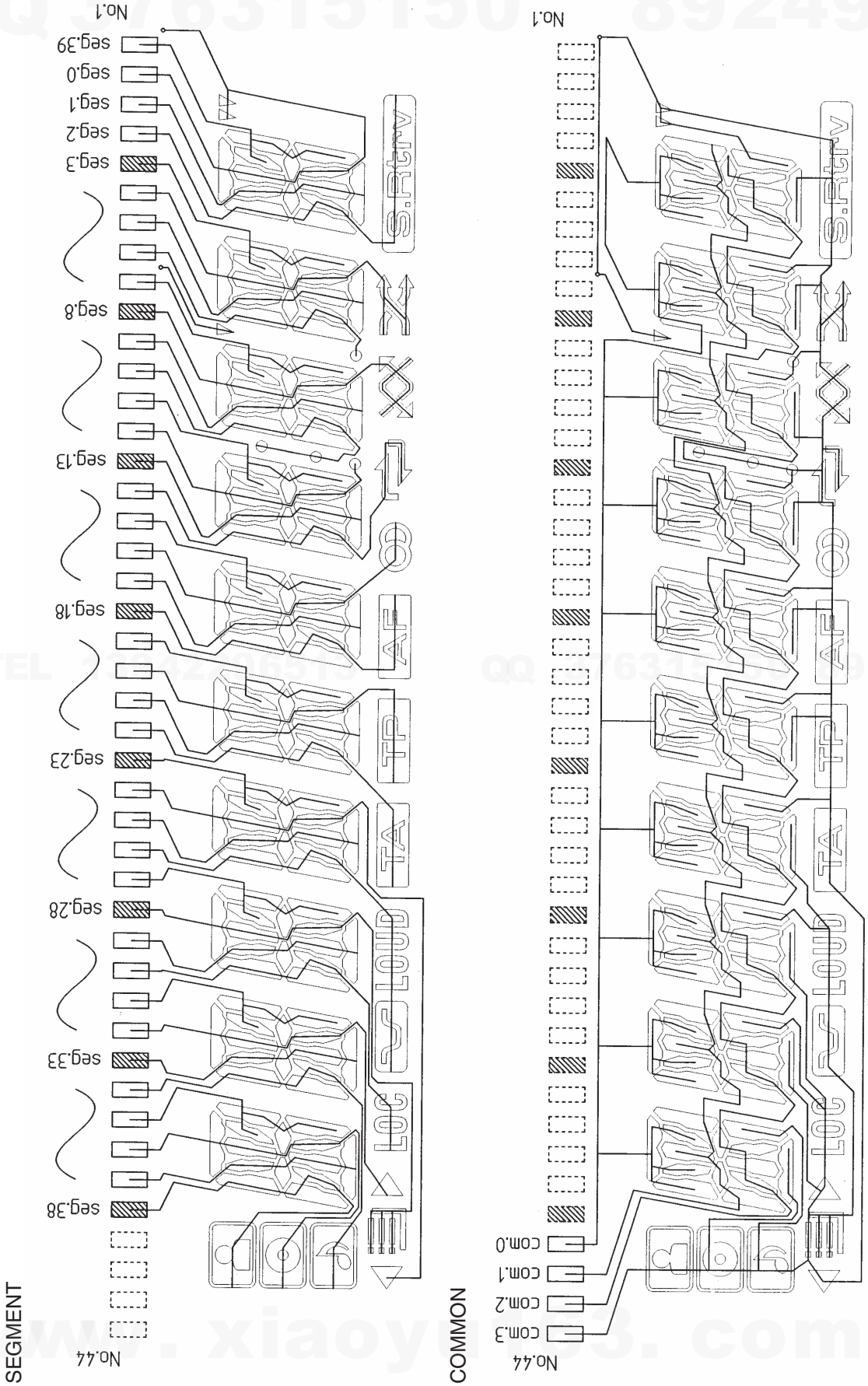
Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

4. BLOCK DIAGRAM



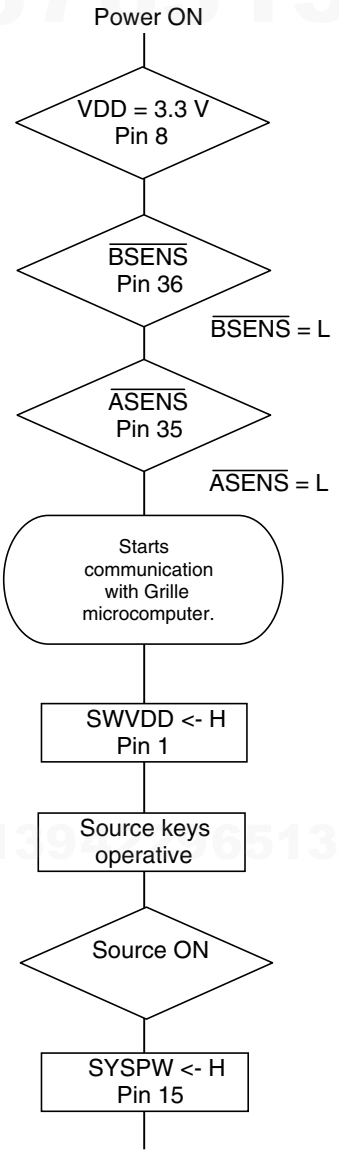


LCD (CAW1970)

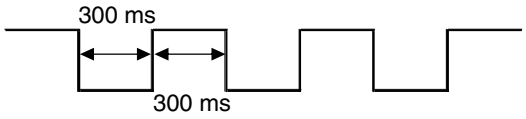


5. DIAGNOSIS

5.1 OPERATIONAL FLOWCHART



Completes power-on operation.
(After that, proceed to each source operation)



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

● ERROR CODES

If a CD or USB memory device is inoperable, or operation of such media is stopped by an error, the error mode is established and a cause of the error is displayed by an error code. Indication of error codes is intended to reduce the number of calls from customers and facilitate failure analysis and repair work in servicing.

(1) DISPLAY METHOD

If "0xFD" error mode is displayed in CD MODE (CD MODE area for display) or USB MODE (USB MODE area), an error code will be displayed in the DMIN (minute display) and DSEC (second display) areas.

The same code is displayed in the DMIN and DSEC areas.
The DTNO area is blank (#0FFH), as it conventionally was.

- The error mode for a VD error is 0xFB. (This is because the system microcomputer recognizes a VD error even in the No Display format.)
- Display example of the head unit
  Depending on the display capability of LCDs, the display format varies, as shown below. XX denotes an error number.
  Note: In a case of an OEM product, the error display format is subject to the specifications used by the equipment manufacturer.

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

(2) LIST OF CD ERROR CODES (Error Mode: 0xFD)

Code	Classification	Error code to be displayed	Details and possible causes
10	Electricity	Carriage Home NG Failure in communication with the Servo LSI	The CRG cannot move toward the inner track. The CRG cannot move from the inner track. --> Defective HOME SW; Failure in CRG movement; Failure in communication between the microcomputer and the Servo LSI.
11	Electricity	Focus Search NG	Focusing not available --> Disc placed upside-down; CD-RW disc used; Stains on the disc; excessive vibration.
12	Electricity	Spindle Lock NG Subcode NG RF-amp NG	Spindle not locked. Subcode not readable. Proper RF AMP gain not obtained. --> Defective spindle; Scratches or stains on the disc; excessive vibration. --> A CD-R disc that does not contain data loaded, or in a rare case, disc placed upside-down. --> CD signal error.
15	Electricity	Failure in RF data	RF not read --> A CD-R disc that does not contain data loaded --> A CD-RW disc that does not contain data loaded
17	Electricity	Setup NG	AGC protection does not work. Focus can be easily lost. --> Scratches or stains on the disc; excessive vibration; CD-RW disc used.
22	Disc	No playback	Playable MP3 or WMA file not found --> No MP3 or WMA file exists on the loaded CD-ROM disc.
23	Disc	File Format NG	Data are written in a file format not supported. --> A CD-ROM disc on which data are written in a file format other than ISO 9660, Level-1 or -2 (for example, in UDF) is loaded.
24	Disc	All DRM	All the playable files on the disc are DRM-protected. --> This error code will not be displayed when even one file not protected by DRM is contained on the disc.
30	Electricity	Search Time Out	Failed to reach a target address --> CRG tracking error or scratches on the disc
50	Mechanism	Failure in ejection	Disc ejection not completed --> A foreign object inserted in the mechanism; Disc jammed.
51	Mechanism	Failure in retried turning for ejection	Disc could not be ejected even after disc turning had been retried. --> A foreign object inserted in the mechanism; Disc jammed.
52	Mechanism	Failure in disc loading	Disc loading not completed --> A foreign object inserted in the mechanism; Disc jammed.

NOTES

- Indications of error codes are available only during disc operations, because CD operations are unavailable if a mechanical error is generated.
- If the TOC cannot be read, this is not processed as an error, and operation continues accordingly.
- If you design a new head unit, be sure to use one of the display formats indicated in "Display example of the head unit."

- The 2 high-order digits of an error code denote the main classification, shown below.
  1x: Setup-related errors
  2x: Errors related to TOC reading
  3x: Search-related errors
  4x: Playback-related errors
  5x: Loading-ejection-related errors
  Ax: Other type of errors

- How to restore from each error is shown below.
  1x, 2x, 3x, and 4x: ACC-OFF then ON, CD-OFF then ON, Disc ejection, DKSTOP then DKPLAY
  5X: ACC-OFF then ON, Disc ejection, Disc reloading, Disc removal
  Ax: ACC-OFF then ON

(3) USB-RELATED ERROR CODES

Code	Classification	Error code to be displayed	Details and possible causes
16 (*1)	Device	iPod authentication error	Authentication of iPod failed --> After a reattempt of iPod authentication, an error was returned from the iPod machine and authentication IC.
18	Device	Unsupported device	Connection of a device not supported was detected. --> A device other than a mass-storage device and iPod is connected. --> An iPod of a generation earlier than 5G/nano is connected. Or, an iPod (even one of a generation after 5G/nano) with the firmware that does not support digital streaming is connected.
19	Device	Communication error	Communication with a device failed. --> Communication failed because of a defective device, etc.
22	Device	Playback unavailable	Playable file (MP3/WMA/AAC/WAV) not found --> No playable file (MP3/WMA/AAC/WAV) exists in the device set.
23	Device	File Format NG	Data are written in file format not supported. --> A format other than FAT is used.
24	Device	All DRM	All the playable files on the disc are DRM-protected. --> This error code will not be displayed when even one file not protected by DRM is contained on the disc.

*Error code only for models that support iPod.

NOTES

- The 2 high-order digits of an error code denote the main classification, shown below.
  1x: Setup-related errors
  2x: Errors related to file-system reading
  Ax: Other type of errors

- How to restore from each error is shown below.
  1x: ACC-OFF then ON, USB-OFF then ON, Device removal, DKSTOP then DKPLAY
  2X: ACC-OFF then ON, USB-OFF then ON, Device removal, DKSTOP then DKPLAY
  Ax: ACC-OFF then ON

(4) LIST OF ERROR CODES (Error Mode: 0xFA) Only for USB

Code	Classification	Error code to be displayed	Details and possible causes
A1	System	Failure in power supply	Excess current detected in the USB bus. --> Electric current exceeding the specified 500 mA flowed in the USB bus. The bus power is shut off and the unit is stopped in response to an error. For restoration, turn the unit OFF then back ON again

Note: Whether power supply failed or not can be judged from just the error mode (0xFA). (Referring to the error code [0xA1] is not necessary.)

(5) LIST OF ERROR CODES (Error Mode: 0xFB) Only for CD

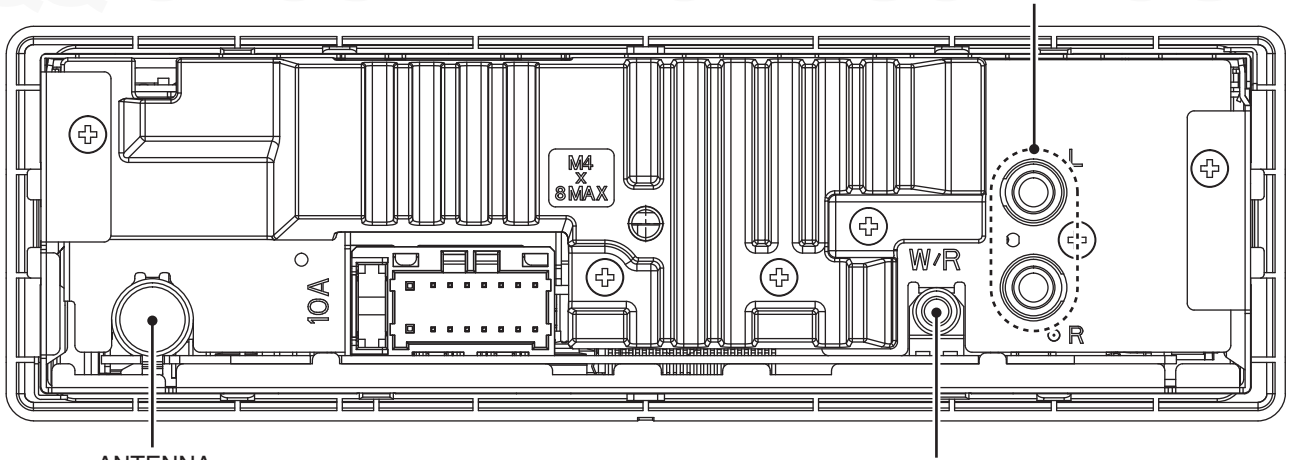
Code	Classification	Error code to be displayed	Details and possible causes
A0	System	Failure in power supply	A voltage or ground short was generated in the VD power. --> Defective SW transistor; Failure in the power supply unit (defective connector); Ejection is not possible; Restoration is only possible by turning the unit OFF then back ON again.

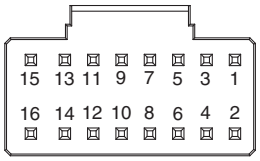
Note: Whether power supply failed or not can be judged from just the error mode (0xFB). (Referring to the error code [0xA0] is not necessary.)

(6) ACTIONS OF CD/USB DURING ERROR

Mode	Error code	CD action	USB action	Mode	Error code	CD action	USB action
FD	1x	Stopped for an error	Operable	FD	4x	Stopped for an error	Operable
	2x (CD)	Stopped for an error	Operable		5x	Stopped for an error	Operable
	2x (USB)	Operable	Stopped for an error	FB	A0	Stopped for an error	Operable
	3x	Stopped for an error	Operable	FA	A1	Operable	Stopped for an error

5.3 CONNECTOR FUNCTION DESCRIPTION





1	FL+	9	TEL
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

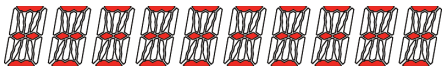
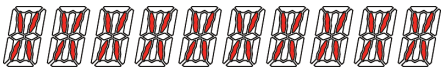
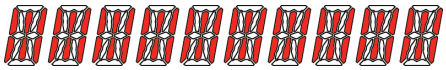
6. SERVICE MODE

6.1 DISPLAY TEST MODE

1. To enter the test mode (1)

Turn on ACC and Backup while pressing the RIGHT and the DOWN buttons together.

2. Operation method

Key	Contents
LIST	All lighting of display
1	All lights out of display
4	LCD check mode A 
5	LCD check mode B 
6	LCD check mode C 
DISP	System version display  ex.) Ver.7.01 -> “VER 7.01”

3. To enter the test mode (2)

Turn on ACC and Backup while pressing the 1 and the 3 buttons together.

4. Operation method

Change display as follows by pressing the 1 and the 3 buttons together.

[Test Overview]

Start to test mode

ROM Correction version display

ROM Correction is not connected

ROM Correction check sum error

Normal movement

Sn ROM Correction number

Cn CH use information (1:Use / 0:Not use Corresponds from the left to CH1, CH2, CH3, CH4)

Normal display

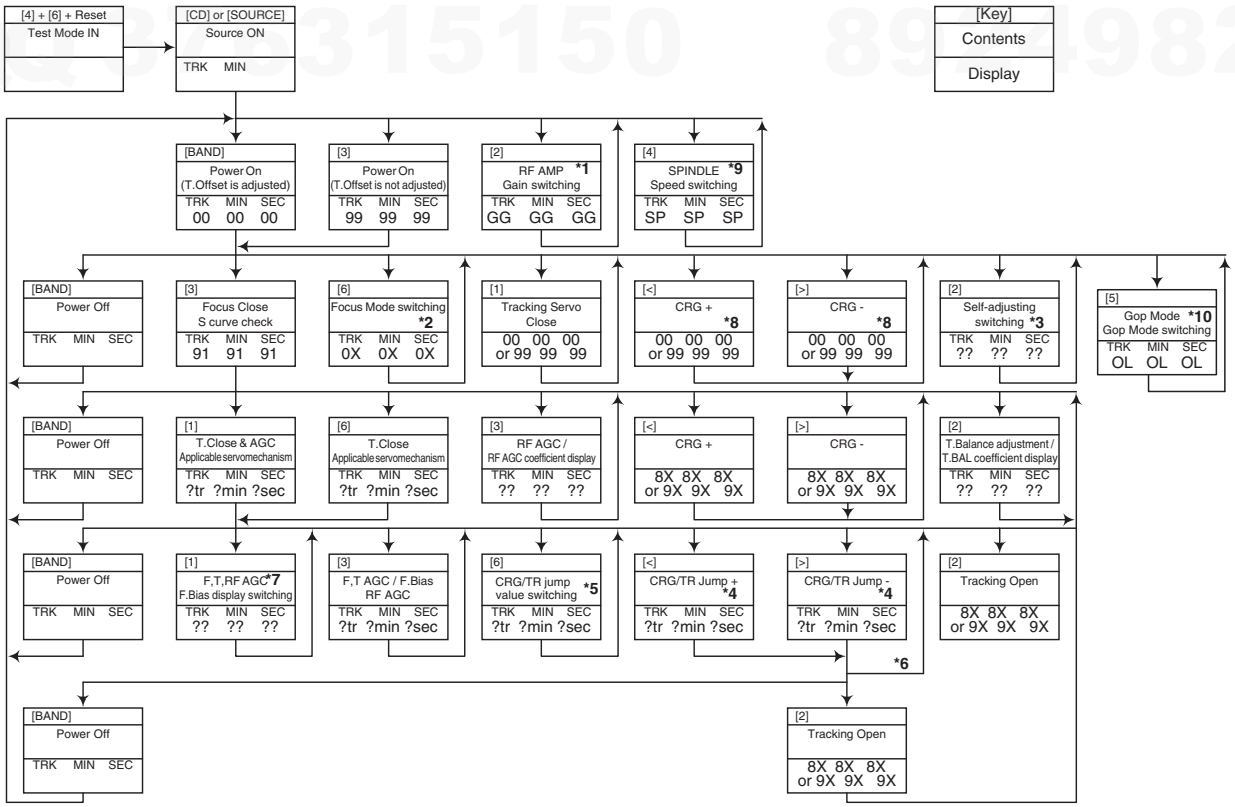
The display mode to the display usually.

Display stop

To the static display of the display mode.

6.2 CD TEST MODE

● Flow Chart



*1) TYP (TRK MIN SEC) → + 6 dB ($^{TRK}06^{MIN}06^{SEC}06$) → + 12 dB ($^{TRK}12^{MIN}12^{SEC}12$)

*2) Focus Close ($^{TRK}00^{MIN}00^{SEC}00$ / $^{TRK}99^{MIN}99^{SEC}99$) → S. Curve ($^{TRK}01^{MIN}01^{SEC}01$) → F EQ measurement setting ($^{TRK}02^{MIN}02^{SEC}02$)

*3) F.Offset Display → 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(84) 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) (TRK MIN SEC) → 2X ($^{TRK}22^{MIN}22^{SEC}22$) → 1X ($^{TRK}11^{MIN}11^{SEC}11$)

*10) OFF(TYP) (TRK MIN SEC) → FORCUS ($^{TRK}70^{MIN}70^{SEC}70$) → TRACKING ($^{TRK}71^{MIN}71^{SEC}71$)

[Key]	Operation Test Mode
[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 cannot be supported.
[5]	Gop Mode switching
[6]	F. Mode switching / Tracking Close / CRG • TR Jump Switching

- 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.
- Do not do Tracking Servo Close before doing Focus Servo Close. (Because the overcurrent flows)

7. DISASSEMBLY

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

● Removing the Case and Panel Assy (Fig.1)

Remove the Case.

1 Remove the two hooks and then remove the Panel Assy.

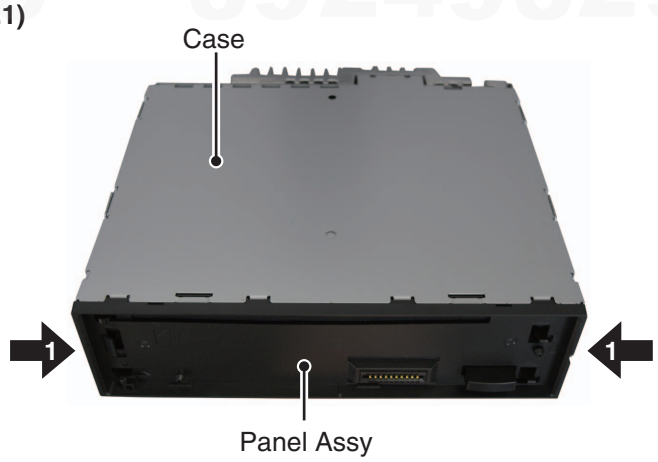


Fig.1

● Removing the CD Mechanism Module (Fig.2)

1 Remove the four screws.

2 Disconnect the FFC and then remove the CD Mechanism Module.

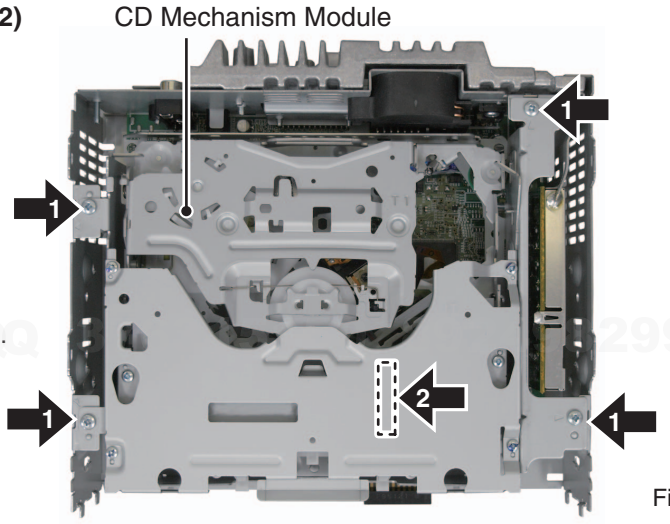


Fig.2

● Removing the Tuner Amp Unit (Fig.2, 3)

1 Remove the two screws.(Fig.3)

2 Remove the two screws.(Fig.4)

3 Straighten the tabs at two locations indicated.(Fig.4)

4 Remove the two screws and then remove the Tuner Amp Unit.(Fig.4)

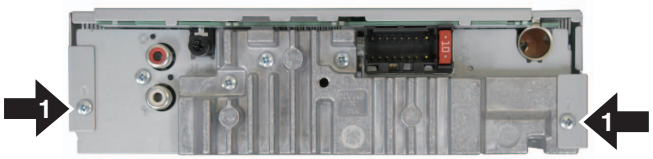


Fig.3

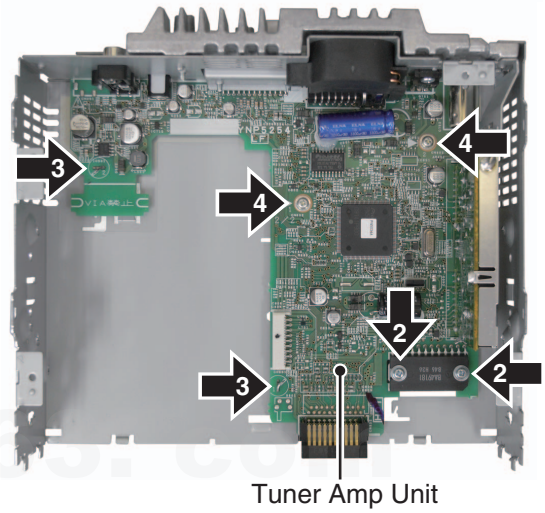
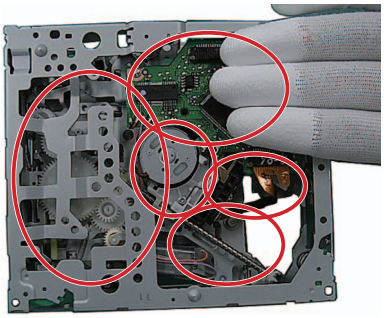


Fig.4

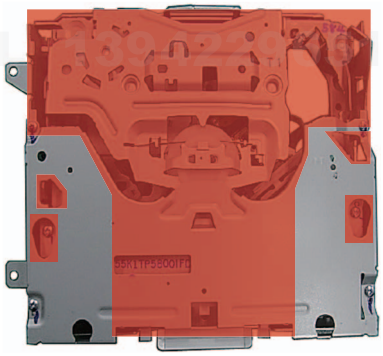
● How to Hold the Mechanism Unit

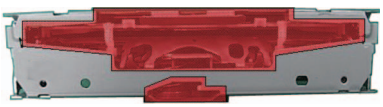
1. Hold the Upper and Lower Frames at the specified parts (circled with broken blue lines in the photo below).
2. You can hold the tabs of the Lower Frame (circled with broken green lines in the photo below) if you do so only while lifting the Mechanism Unit from the table. Keeping the Mechanism Unit lifted by holding these tabs with your fingers may result in deformation.
3. Be careful NOT to hold the front part of the Upper Frame or the CRG Mechanism and NOT to insert foreign objects into these mechanisms. Doing so may result in deformation.

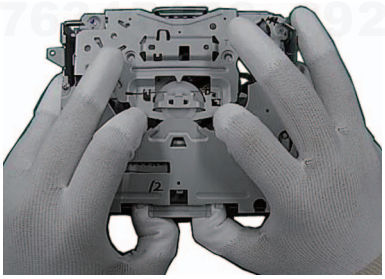
Proper handling

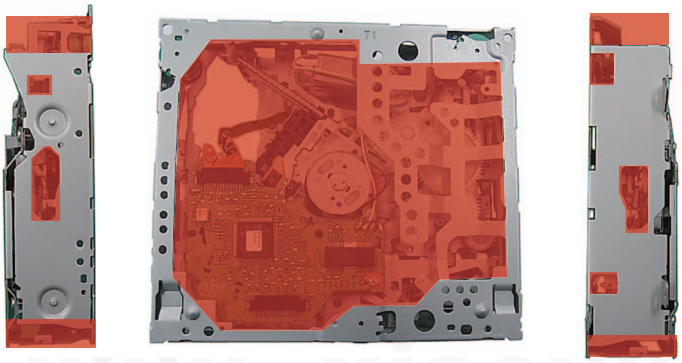


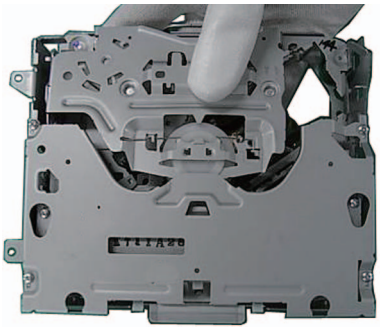
Improper handling

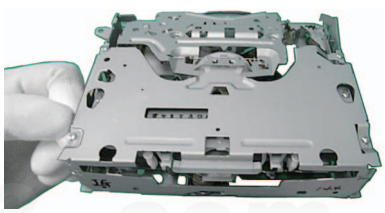












● Mechanism Module: How to Set to the Quasi-Clamp State (Driven by the Motor)

1. Remove the solder from the CRG-motor lead wire (Fig. 1).
2. Push in the Disc Detection Arm while applying 4-V power to the CRG Motor (Fig. 2). (Apply 4-V power to the green lead wire. The white lead wire is for grounding.)
   The Mechanism Module is set to the clamped state, and the PU will move toward the outer track.
   Note: NEVER apply power to the CRG-motor lead wire without removing the solder from the wire. Doing so may result in damage to the ICs and the PU.
3. Stop the motor when the PU reaches around the middle track.
   Note: Jumpiness will occur when the PU reaches the outermost track. Although jumpiness does not constitute a problem, it is recommended that it occur as least frequently as possible.

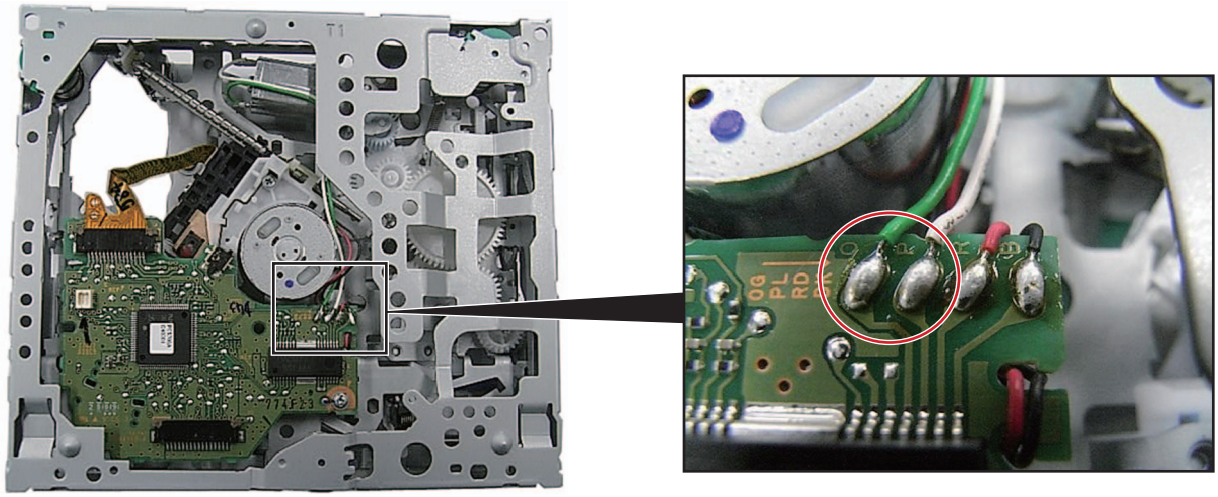


Fig. 1

Note: Be aware that the colors of the lead wires do not match the indications on the Core Board Pattern (green wire to O and white wire to P).

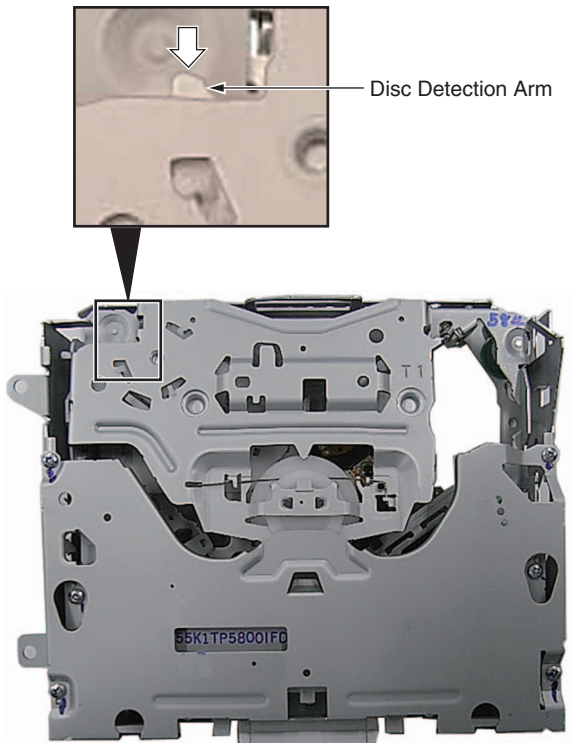


Fig. 2

● How to Remove the PU Unit

1. Set the unit to the quasi-clamp state, following the procedures described in “Mechanism Module: How to Set to the Quasi-Clamp State (Driven by the Motor).”
2. Temporarily change the engagement position of the bias spring of the feed screw (Fig. 2b).
   Be careful not to cut yourself on the tip of the spring.
3. Hold the PU unit by parts A in Fig. 1 then slide it toward the inner track.
4. Remove the backend of the feed screw from the outer holder, by first sliding it, as shown in Fig. 3, then lifting it.
5. Remove the PU unit, by lifting it. Lifting the PU unit will disengage the PU unit from the part B of the chassis.

Note: When reassembling the PU unit, be sure to securely engage the PU unit with the part B of the chassis, as shown in Fig. 4. Also, be sure to change the engagement position of the bias spring of the feed screw to its original position (Fig. 2a). After reassembling, perform the PU adjustment, following the description in the service manual.

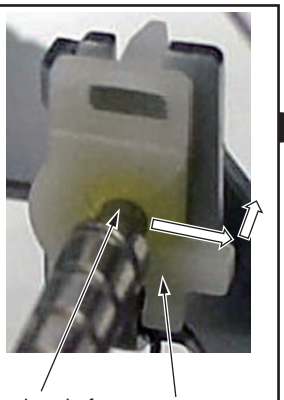


Fig. 3

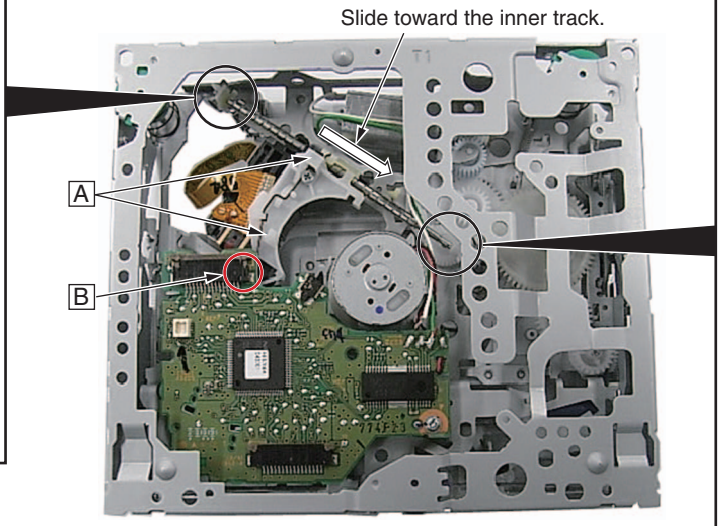
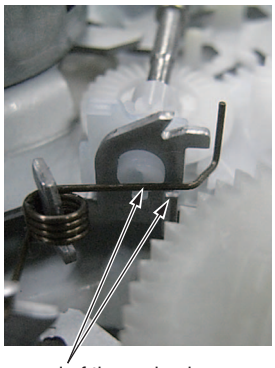


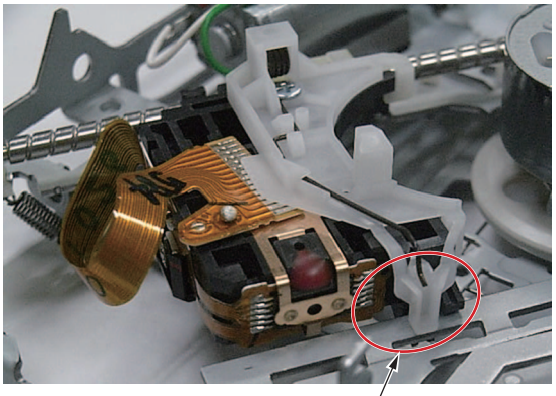
Fig. 1



One end of the spring is engaged beneath the resin flange and plate bend.

Fig. 2a
Original engagement position

Fig. 2b
Temporary engagement position



Properly assembled state

Fig. 4

[Improper assembly]
The chassis is not properly pinched by the PU case and PU rack.

● How to Move the PU toward the Outer Track

1. Set the unit to the quasi-clamp state, following the procedures described in “Mechanism Module: How to Set to the Quasi-Clamp State (Driven by the Motor).”
2. Move the PU unit toward the outer track, by applying 1.5-V power to the CRG motor.

Note: After moving the PU toward the outer track and taking the necessary measures, be sure to solder the lead wires.

● How to Remove the PU Rack

1. Remove the PU Unit, following the procedures described in “How to Remove the PU Unit.”
2. Remove the PU Rack fixing screw (Fig. 1).
3. Remove the PU Rack, by applying force in the direction of the arrow in Fig. 2.

Notes:

While handling the PU Unit, be careful NOT to touch the actuator block shown in Fig. 6 or bang the actuator block against your workbench.

Handle the PU and PU Unit with care, according to the description in “How to Hold the PU.”

When reattaching the PU Rack to the PU, first reassemble parts a and b shown in Fig. 3 into the PU case then attach the boss shown in Fig. 4 to the PU case.

After reassembling the PU Rack, insert the feed screw from side c in Fig. 5 (insertion depth: Approx. 18 mm for the part indicated in the photo).

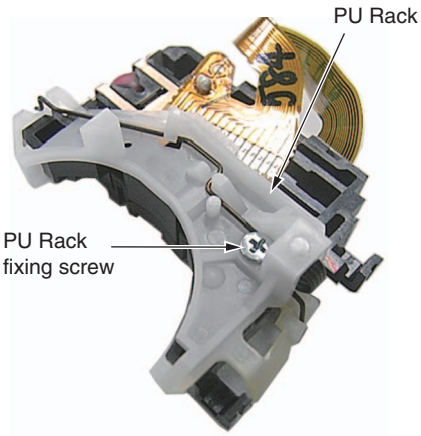


Fig. 1

Fig. 2

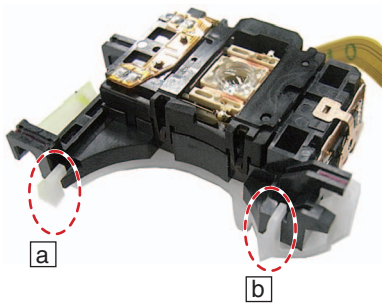


Fig. 3

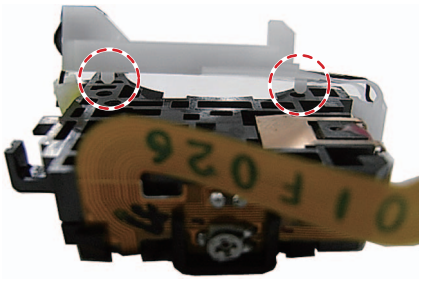


Fig. 4

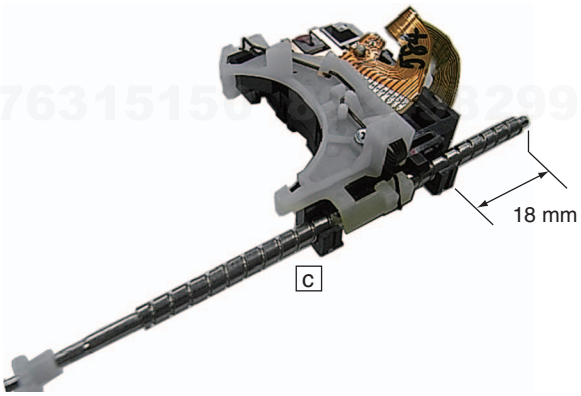


Fig. 5

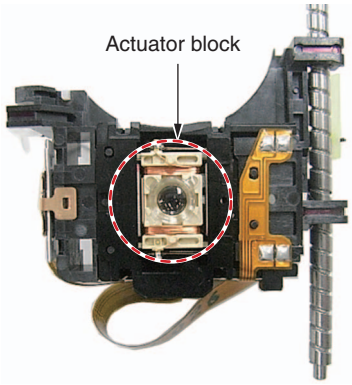
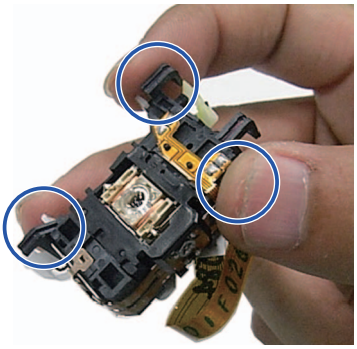


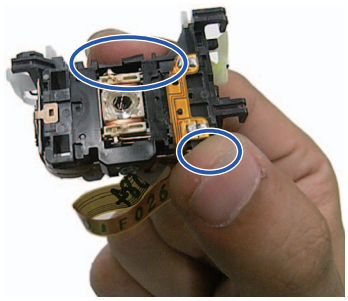
Fig. 6

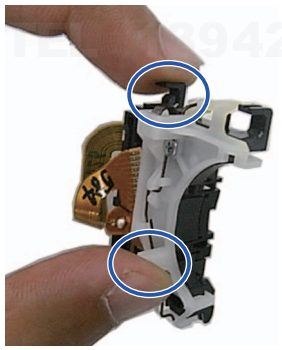
● How to Hold the PU

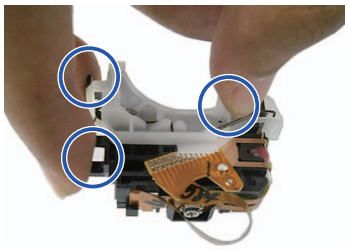
1. Be sure to hold the PU at the positions shown in “Proper handling.” NEVER hold it as shown in “Improper handling.”

Proper handling

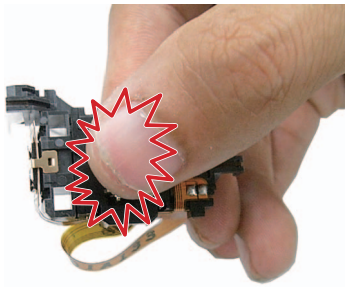




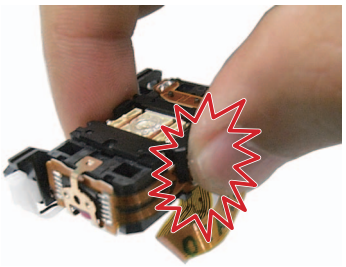




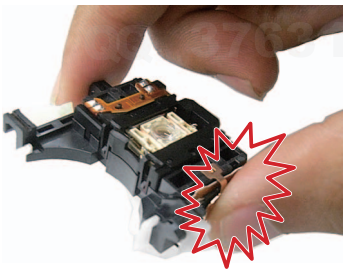
Improper handling



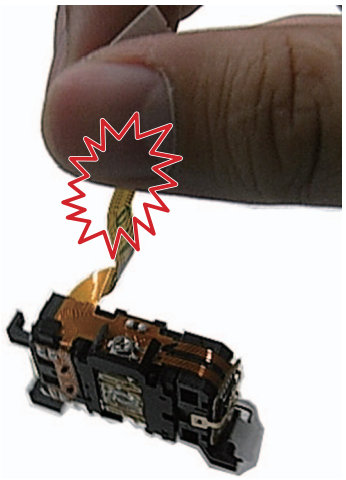
Do not touch the object lens and ACT.



Do not touch the VR.



Do not touch the Hologram.



Do not pull the FPC.

8. EACH SETTING AND ADJUSTMENT

8.1 CD ADJUSTMENT

1) Cautions on adjustments

• In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) 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 RFAGC 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 guarantied 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.

[1]+[6]+[DISC](three times) press
↓
Diagnosis IN
↓
[DISC]+[RIGHT] press
↓
Display : PBUS TEST
↓
[DISC] pressed for 1.7 seconds or more
↓
Diagnosis OUT
↓
[DISC] press

• 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.

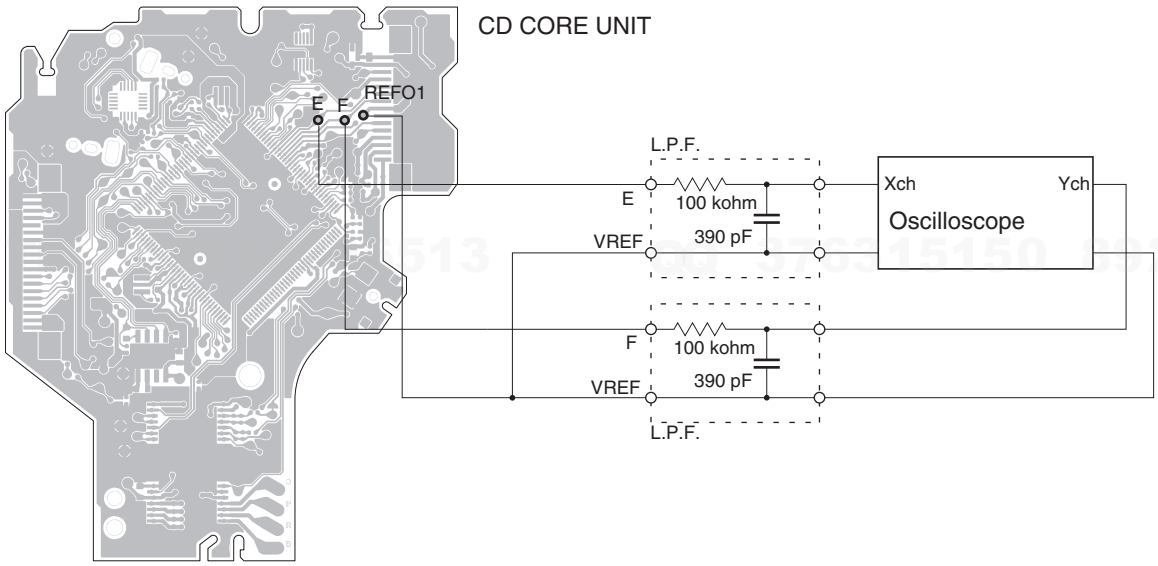
8.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

- **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

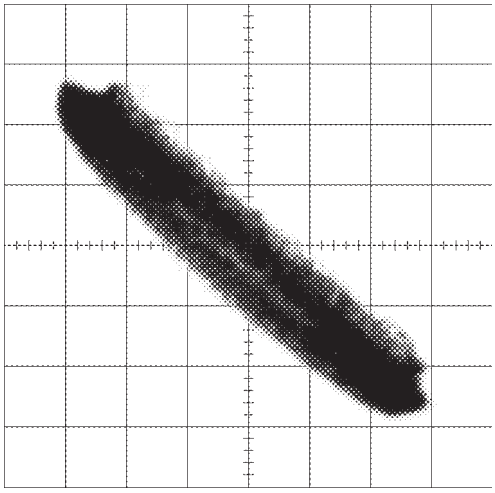


- **Checking Procedure**
  1. In test mode, load the disc and switch the 3 V regulator on.
  2. Using the right and left buttons, move the PU unit to the innermost track.
  3. Press key CH4 to close focus, the display should read "91". Press key CH3 to implement the tracking balance adjustment the display should now read "81". Press key CH4. 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°. Refer to the photographs supplied to determine the phase angle.
  5. If the phase difference is determined to be greater than 75° 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° 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".

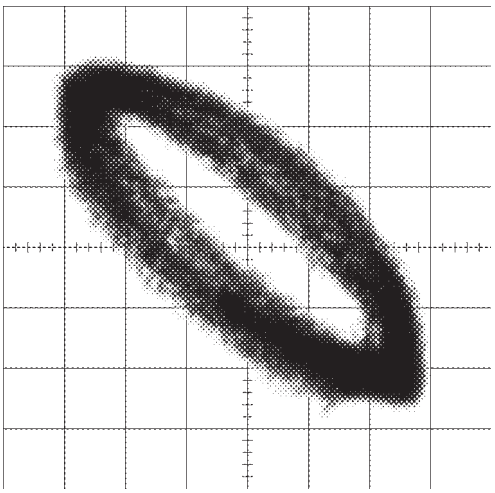
Grating waveform

Ech -> Xch 20 mV/div, AC
Fch -> Ych 20 mV/div, AC

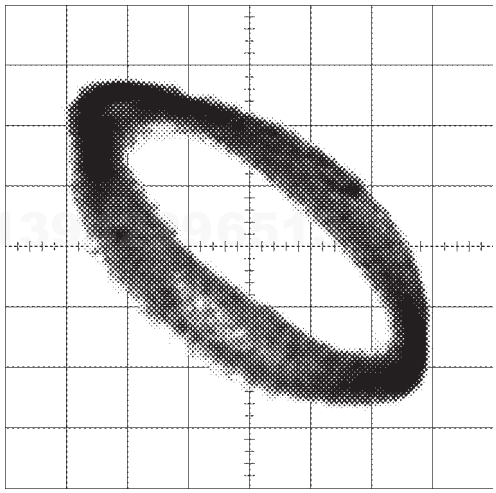
0 degrees



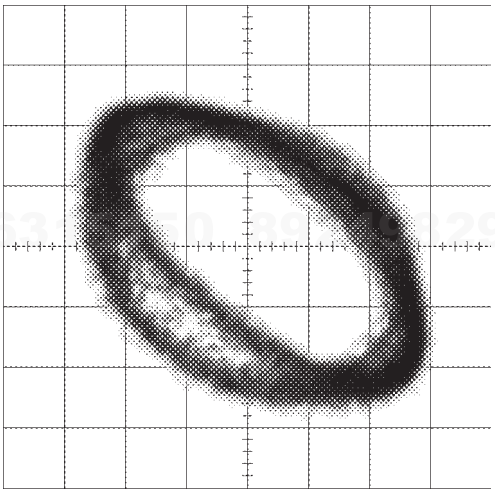
30 degrees



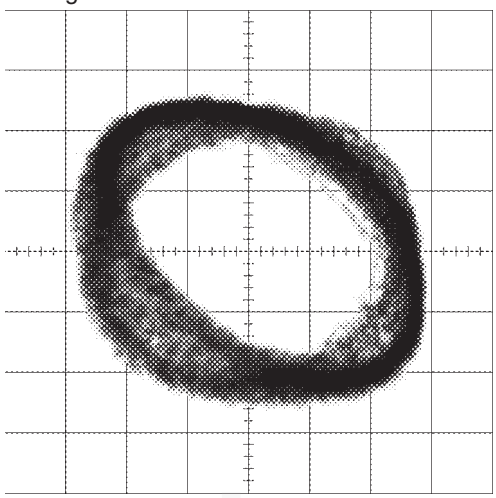
45 degrees



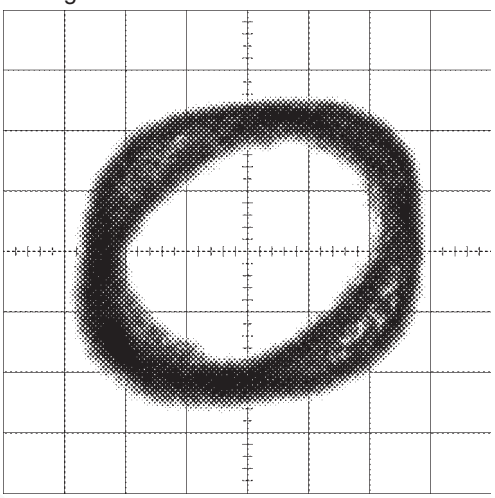
60 degrees



75 degrees



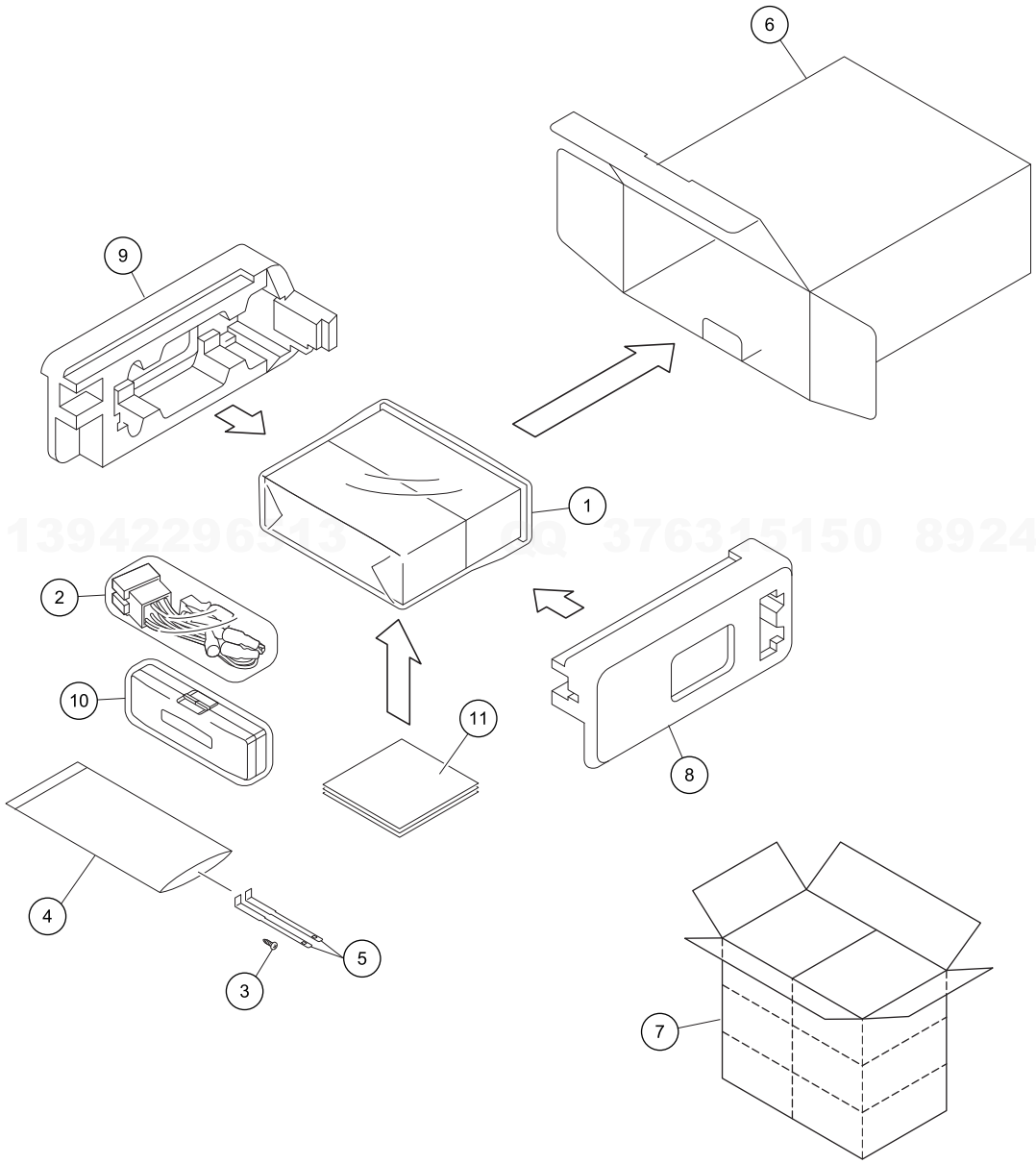
90 degrees



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



(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Polyethylene Bag	QEG3001
	2	Cord Assy	See Contrast table (2)
	3	Screw	BPZ20P060FTC
	4	Polyethylene Bag	CEG1160
	5	Handle	CND3707
	6	Unit Box	See Contrast table (2)
	7	Contain Box	See Contrast table (2)
	8	Protector	YHP5069
	9	Protector	YHP5070
	10	Case Assy	YXB5009
*	11-1	Warranty Card	See Contrast table (2)
	11-2	Owner's Manual	See Contrast table (2)
	11-3	Installation Manual	See Contrast table (2)

(2) CONTRAST TABLE

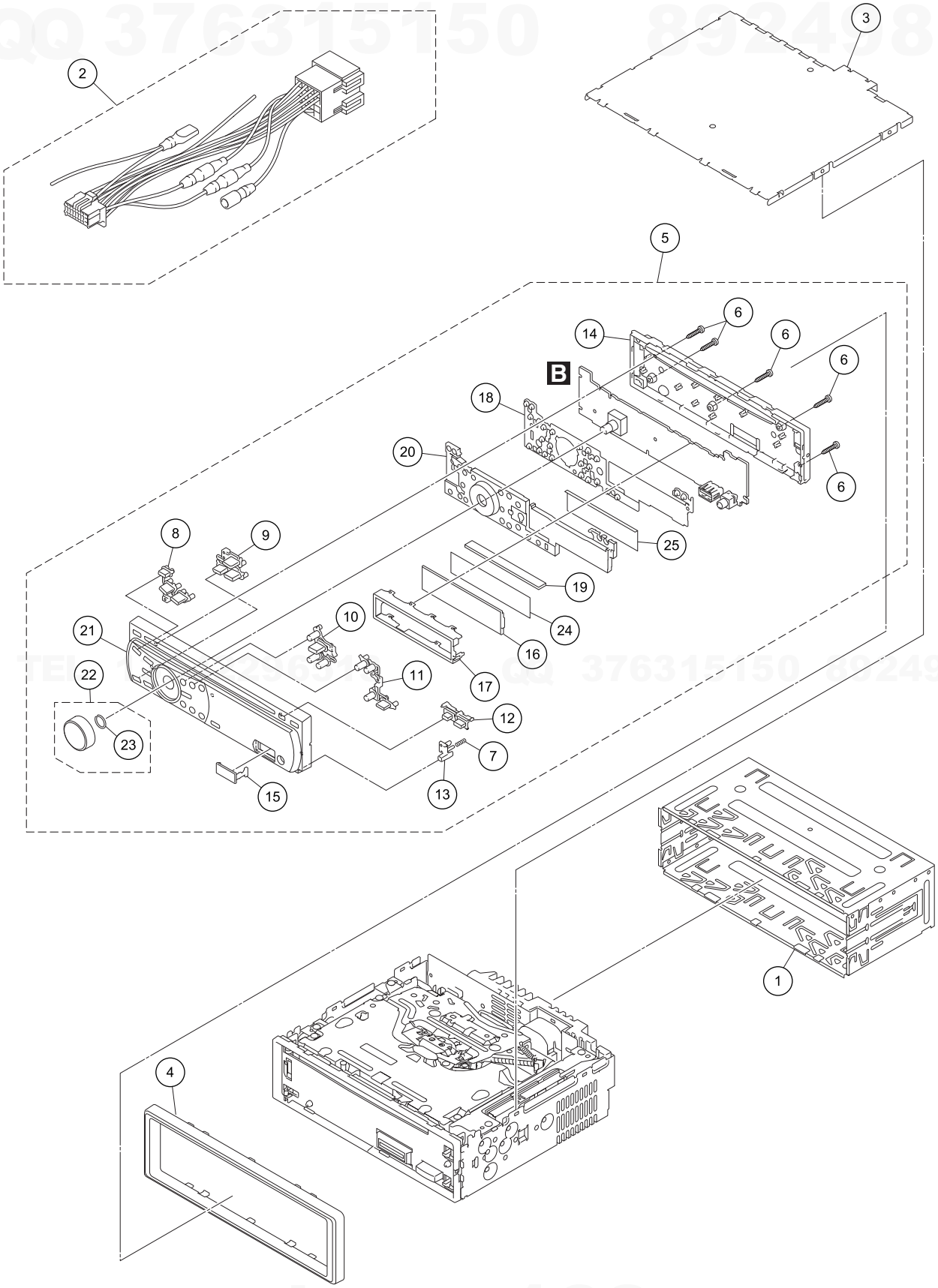
DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5 and DEH-2210UB/XSUR are constructed the same except for the following:

Mark	No.	Description	DEH-2200UB/XSEW5	DEH-2200UBB/XSEW5	DEH-2220UB/XSEW5	DEH-2210UB/XSUR
	2	Cord Assy	YDP5037	YDP5037	YDP5037	YDP5041
	6	Unit Box	YHG5540	YHG5542	YHG5541	YHG5544
	7	Contain Box	YHL5540	YHL5542	YHL5541	YHL5544
*	11-1	Warranty Card	CRY1279	CRY1279	CRY1279	YRY5003
	11-2	Owner's Manual	YRD5303	YRD5303	YRD5303	YRB5127
	11-3	Installation Manual	YRD5304	YRD5304	YRD5304	Not used

Owner's Manual,Installation Manual

Part No.	Language
YRD5303	English, French, Italian, Spanish(Espanol), German, Dutch, Russian
YRD5304	English, French, Italian, Spanish(Espanol), German, Dutch, Russian
YRB5127	Russian

9.2 EXTERIOR(1)



(1) EXTERIOR(1) SECTION PARTS LIST

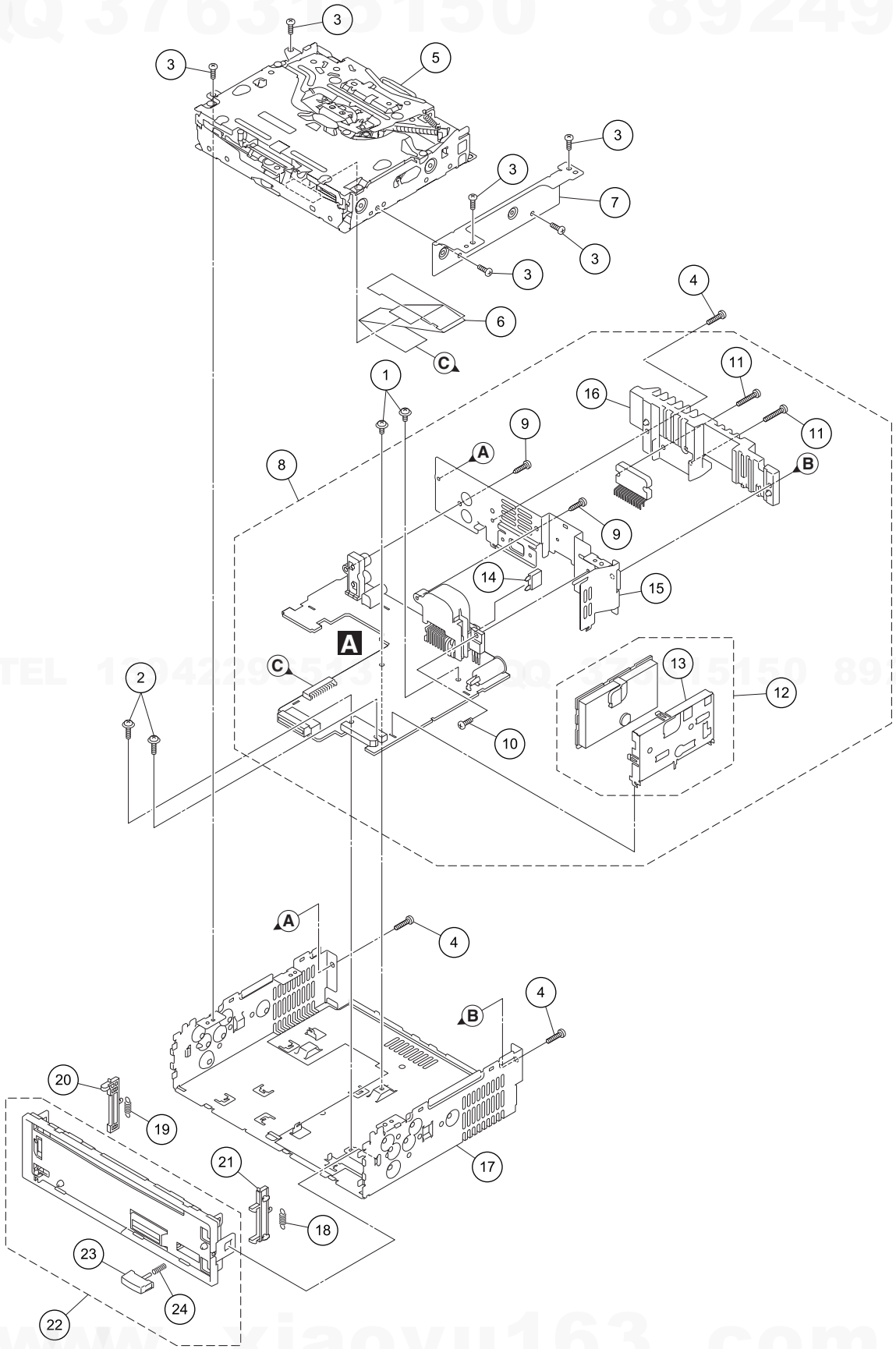
Mark	No.	Description	Part No.
	1	Holder	CND3598
	2	Cord Assy	See Contrast table (2)
	3	Case	YNB5063
	4	Panel	YNS5537
	5	Detachable Assy	See Contrast table (2)
	6	Screw	BPZ20P100FTC
	7	Spring	CBH2210
	8	Button(DISP, SRC, UP)	YAC5384
	9	Button(ESC, DOWN, LEFT)	YAC5385
	10	Button(1, RIGHT, 4, 5)	YAC5386
	11	Button(2, 3, 6, LIST)	YAC5387
	12	Button(EJECT, TA/AF)	YAC5388
	13	Button(DETACH)	YAC5389
	14	Cover	YNS5536
	15	Grip(USB)	YNV5194
	16	LCD(LCD1801)	See Contrast table (2)
	17	Holder	YNC5083
	18	Rubber	YNV5191
	19	Connector	YNV5192
	20	Lighting Conductor	YNV5193
	21	Grille Unit	See Contrast table (2)
	22	Knob Unit	YXC5123
	23	Spring	YBL5010
	24	Sheet	See Contrast table (2)
	25	Sheet	See Contrast table (2)

(2) CONTRAST TABLE

DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5 and DEH-2210UB/XSUR are constructed the same except for the following:

Mark	No.	Description	DEH-2200UB/XSEW5	DEH-2200UBB/XSEW5	DEH-2220UB/XSEW5	DEH-2210UB/XSUR
	2	Cord Assy	YDP5037	YDP5037	YDP5037	YDP5041
	5	Detachable Assy	YXA5676	YXA5678	YXA5677	YXA5679
	16	LCD(LCD1801)	CAW1970	YAW5107	CAW1970	CAW1970
	21	Grille Unit	YXA5648	YXA5687	YXA5649	YXA5689
	24	Sheet	Not used	CNN1381	Not used	Not used
	25	Sheet	Not used	CNN1382	Not used	Not used

9.3 EXTERIOR(2)



(1) EXTERIOR(2) SECTION PARTS LIST

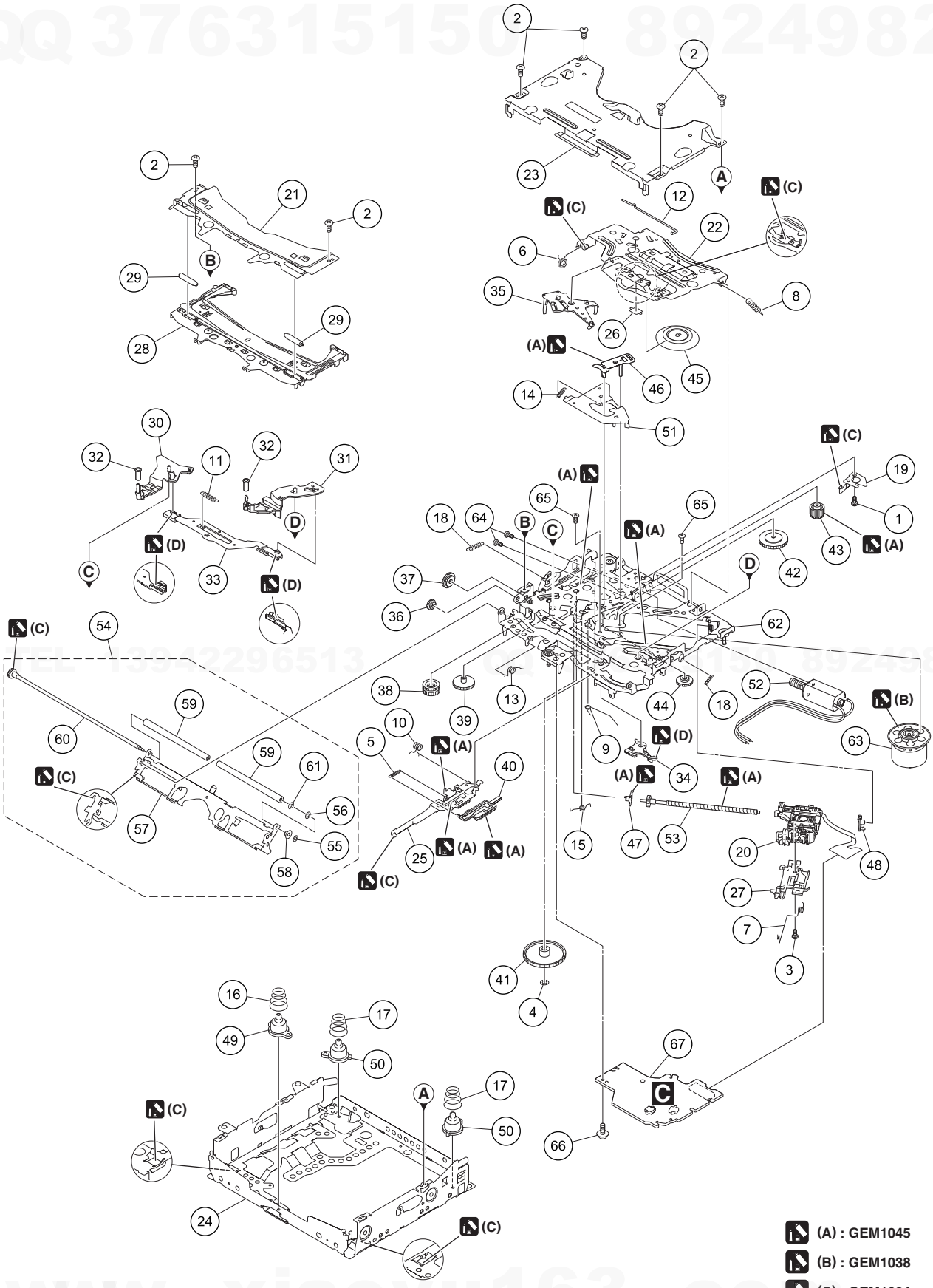
Mark	No.	Description	Part No.
	1	Screw	ASZ26P050FTC
	2	Screw	ASZ26P080FTC
	3	Screw	BSZ26P060FTC
	4	Screw	BSZ26P100FTC
	5	CD Mechanism Module(S11)	CXK5870
	6	Cable	YDE5059
	7	Holder	YND5048
	8	Tuner Amp Unit	See Contrast table (2)
	9	Screw	BPZ26P080FTC
	10	Screw	BSZ26P060FTC
	11	Screw	BSZ26P160FTC
	12	FM/AM Tuner Unit	See Contrast table (2)
	13	Holder	CND3466
⚠	14	Fuse(10 A)	YEK5001
	15	Holder	See Contrast table (2)
	16	Heat Sink	YNR5139
	17	Chassis Unit	See Contrast table (2)
	18	Spring	CBH2961
	19	Spring	CBH2962
	20	Arm	CNV9312
	21	Arm	CNW1439
	22	Panel Unit	YXA5650
	23	Button	CAC4836
	24	Spring	YBH5012

(2) CONTRAST TABLE

DEH-2200UB/XSEW5, DEH-2200UBB/XSEW5, DEH-2220UB/XSEW5 and DEH-2210UB/XSUR are constructed the same except for the following:

Mark	No.	Description	DEH-2200UB/XSEW5	DEH-2200UBB/XSEW5	DEH-2220UB/XSEW5	DEH-2210UB/XSUR
	8	Tuner Amp Unit	YWM5445	YWM5447	YWM5446	YWM5448
	12	FM/AM Tuner Unit	CWE2106	CWE2106	CWE2106	CWE2123
	15	Holder	YND5043	YND5043	YND5043	YND5045
	17	Chassis Unit	YXA5651	YXA5651	YXA5651	YXA5652

9.4 CD MECHANISM MODULE



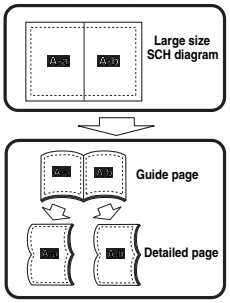
CD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ20P020FTC
	2	Screw	BSZ20P040FTC
	3	Screw(M2 x 4)	CBA1835
	4	Washer	CBF1038
	5	Spring	CBH3010
	6	Spring	CBH2855
	7	Spring	CBH2856
	8	Spring	CBH2860
	9	Spring	CBH2609
	10	Spring	CBH3011
	11	Spring	CBH3012
	12	Spring	CBH3014
	13	Spring	CBH3015
	14	Spring	CBH3016
	15	Spring	CBH3017
	16	Spring	CBH3018
	17	Spring	CBH3019
	18	Spring	CBH3020
	19	Spring	CBL1797
	20	Pickup Unit(S10.5)(Service)	CXX1942
	21	Bracket	CND4553
	22	Arm	CND4555
	23	Frame	CND4557
	24	Frame	CND5217
	25	Lever	CND5398
	26	Sheet	CNN2280
	27	Rack	CNV8342
	28	Guide	CNW1171
	29	Roller	CNW1172
	30	Arm	CNW1173
	31	Arm	CNW1174
	32	Roller	CNW1175
	33	Lever	CNW1176
	34	Arm	CNW1177
	35	Arm	CNW1178
	36	Gear	CNW1180
	37	Gear	CNW1181
	38	Gear	CNW1182
	39	Gear	CNW1183
	40	Rack	CNW1184
	41	Gear	CNW1185
	42	Gear	CNW1186
	43	Gear	CNW1187
	44	Gear	CNW1188
	45	Clamper	CNW1190
	46	Arm	CNW1192
	47	Holder	CNW1193
	48	Holder	CNW1194
	49	Damper	CNW1197
	50	Damper	CNW1198
	51	Arm	CNW1726
	52	Motor Unit	CXC4026
	53	Screw Unit	CXC8894
	54	Arm Assy	CXC8896
	55	Washer	CBF1037
	56	Washer	CBF1038
	57	Arm	CND4554
	58	Collar	CNV6906
	59	Roller	CNW1196
	60	Gear Unit	CXC8893
	61	Washer	YE15FTC
	62	Chassis Unit	CXE1946
	63	Motor Unit	CXE2273
	64	Screw	JFZ20P025FTC
	65	Screw	JGZ17P022FTC
	66	Screw	IMS20P030FTC
	67	CD Core Unit (S11USB)	CWX3776

10. SCHEMATIC DIAGRAM

10.1 TUNER AMP UNIT(GUIDE PAGE)

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

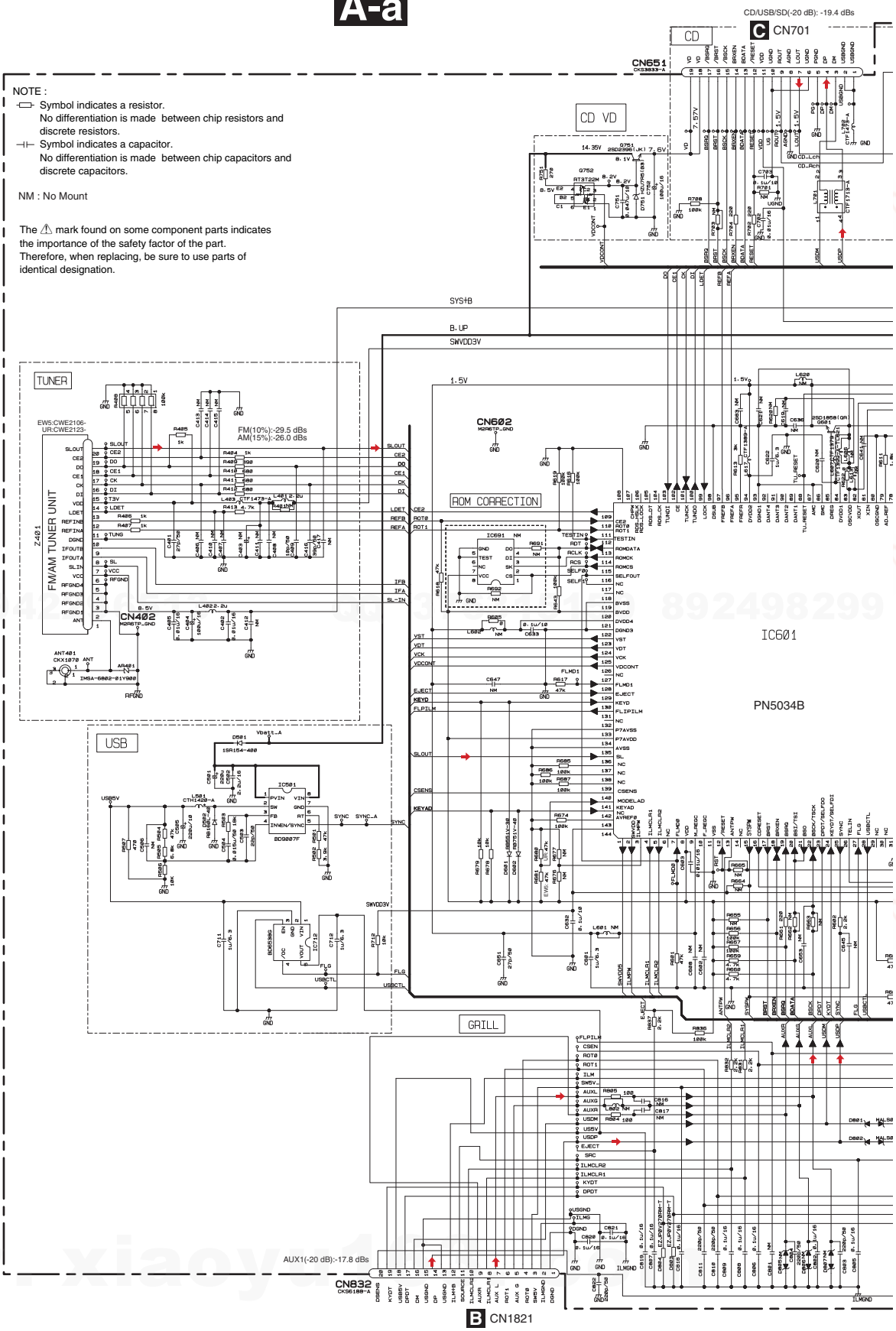


A-a

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.

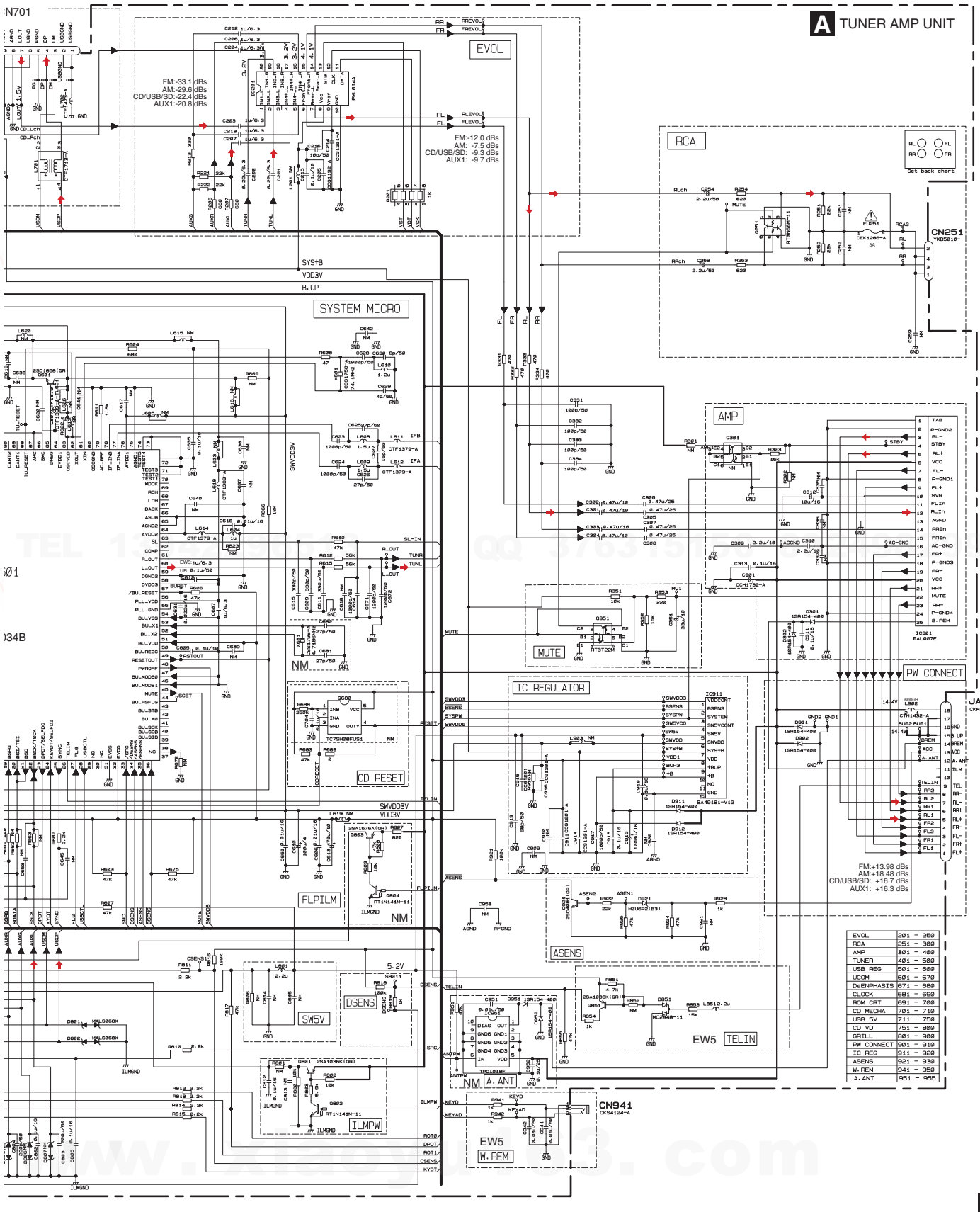
NM : No Mount

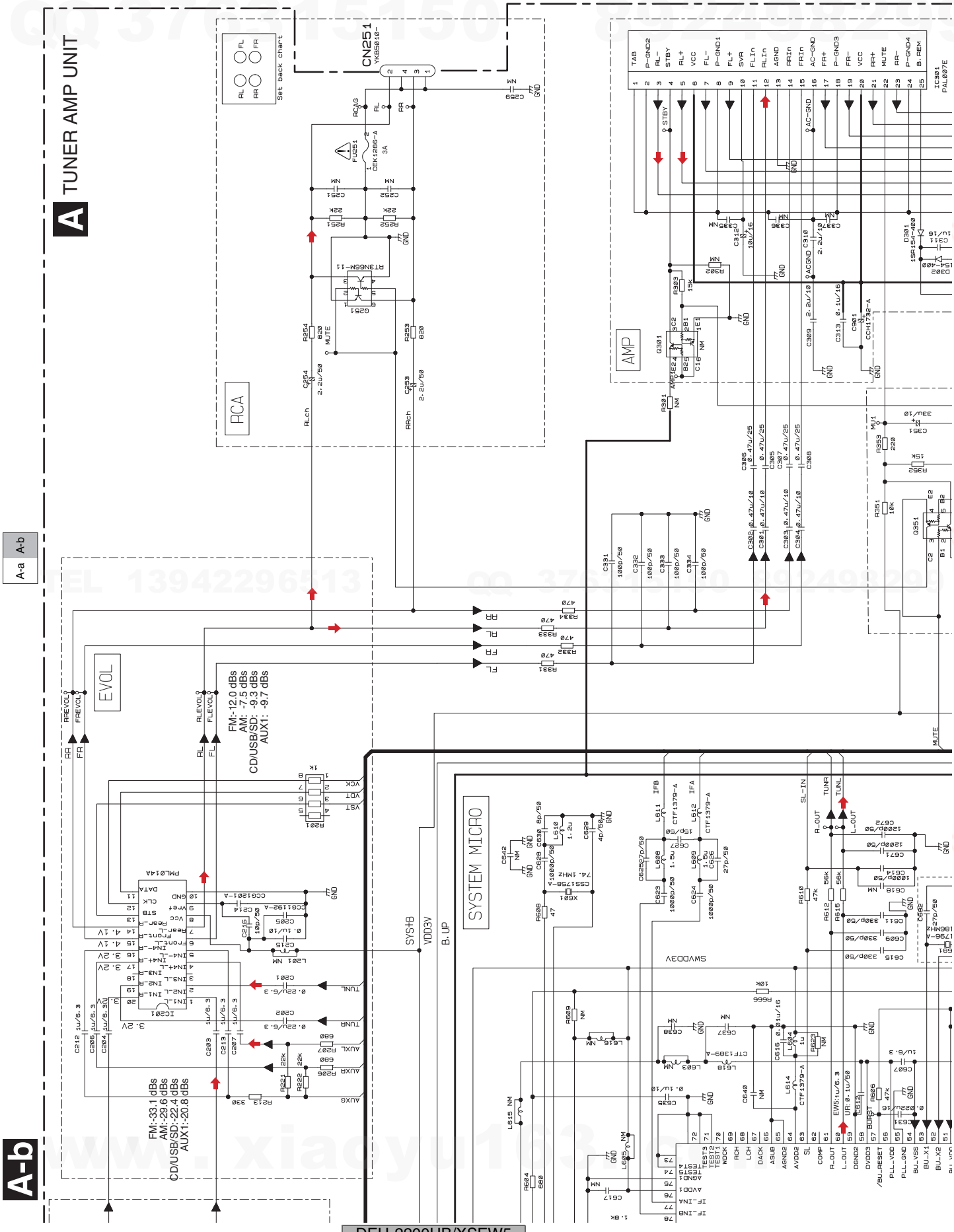
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

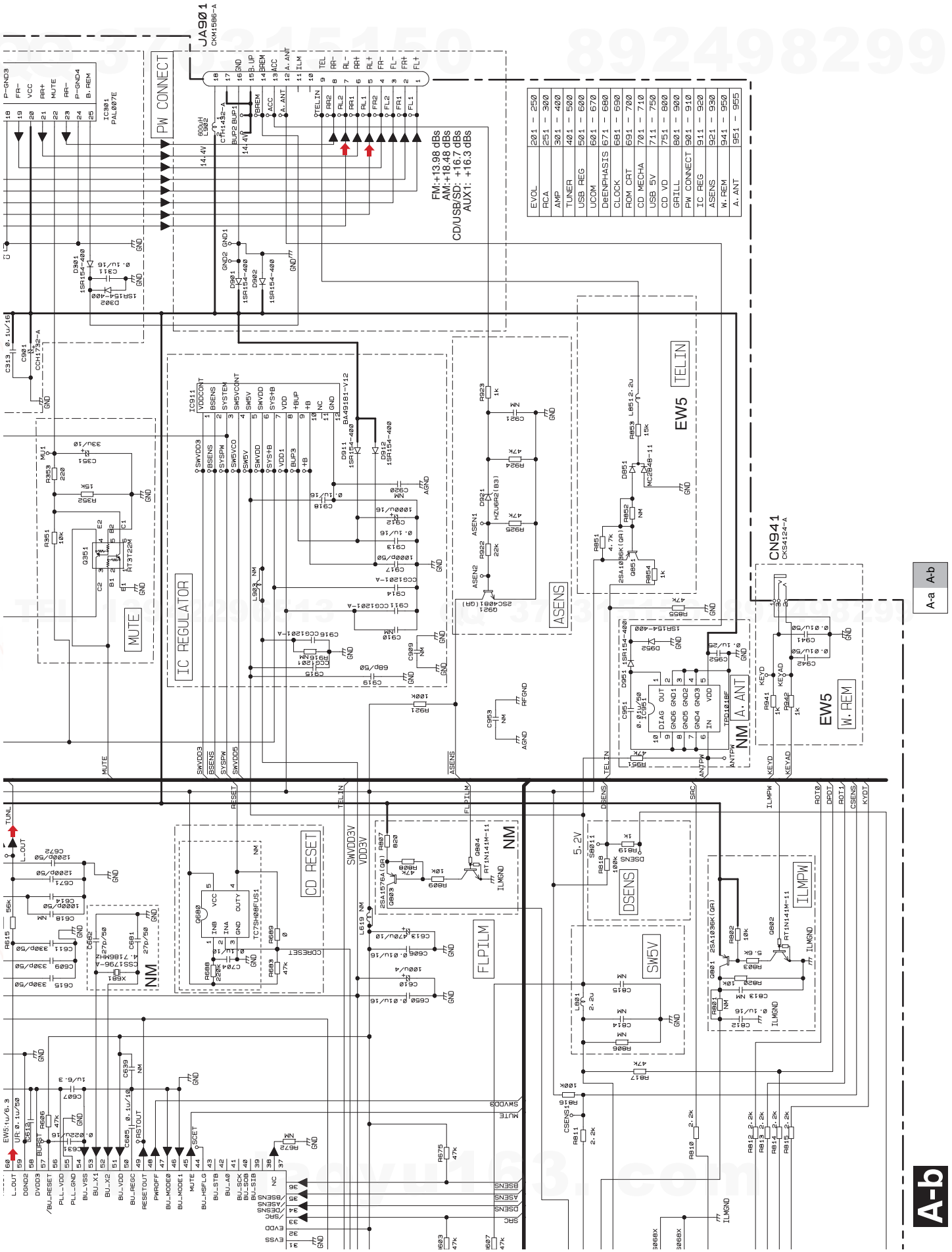


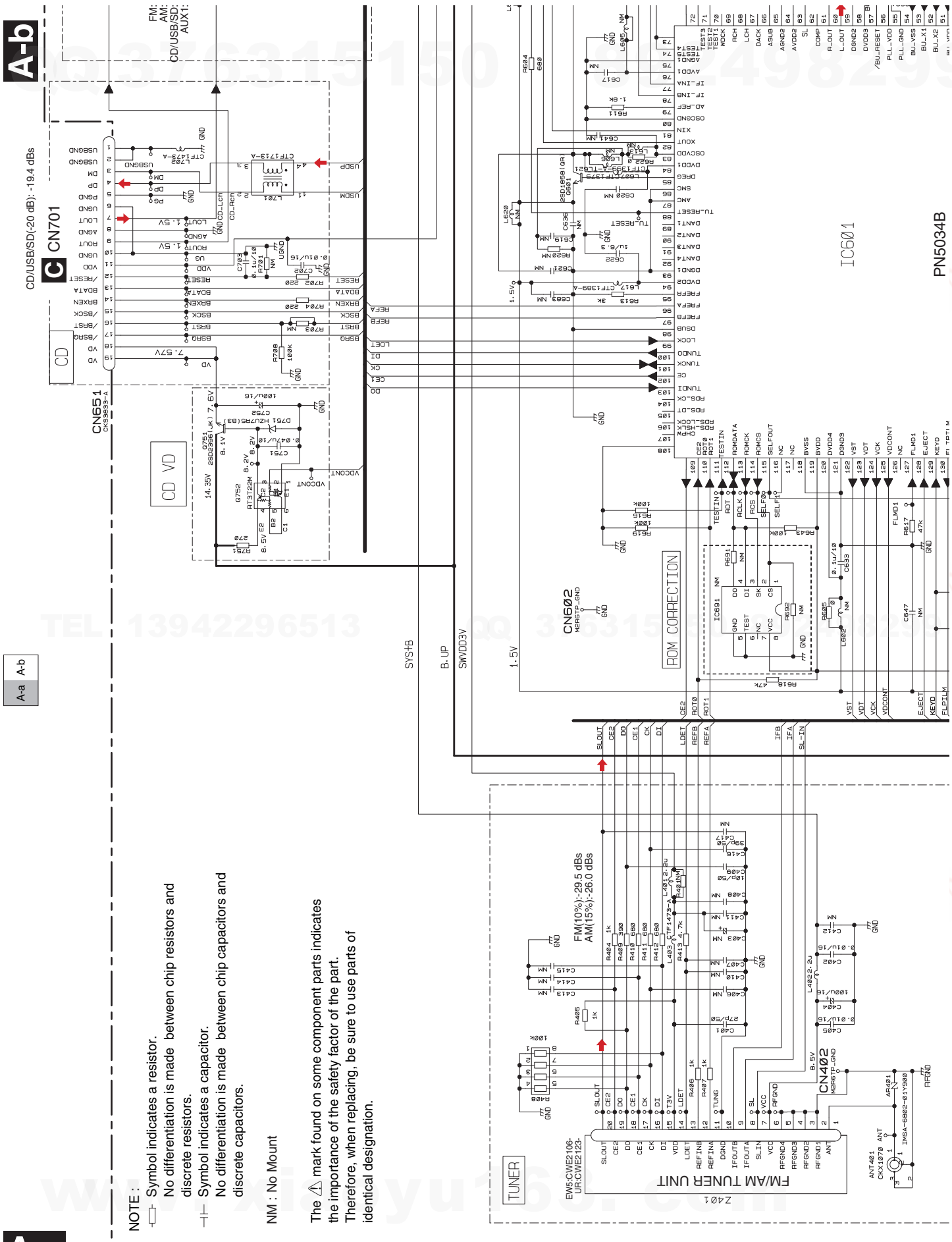
A

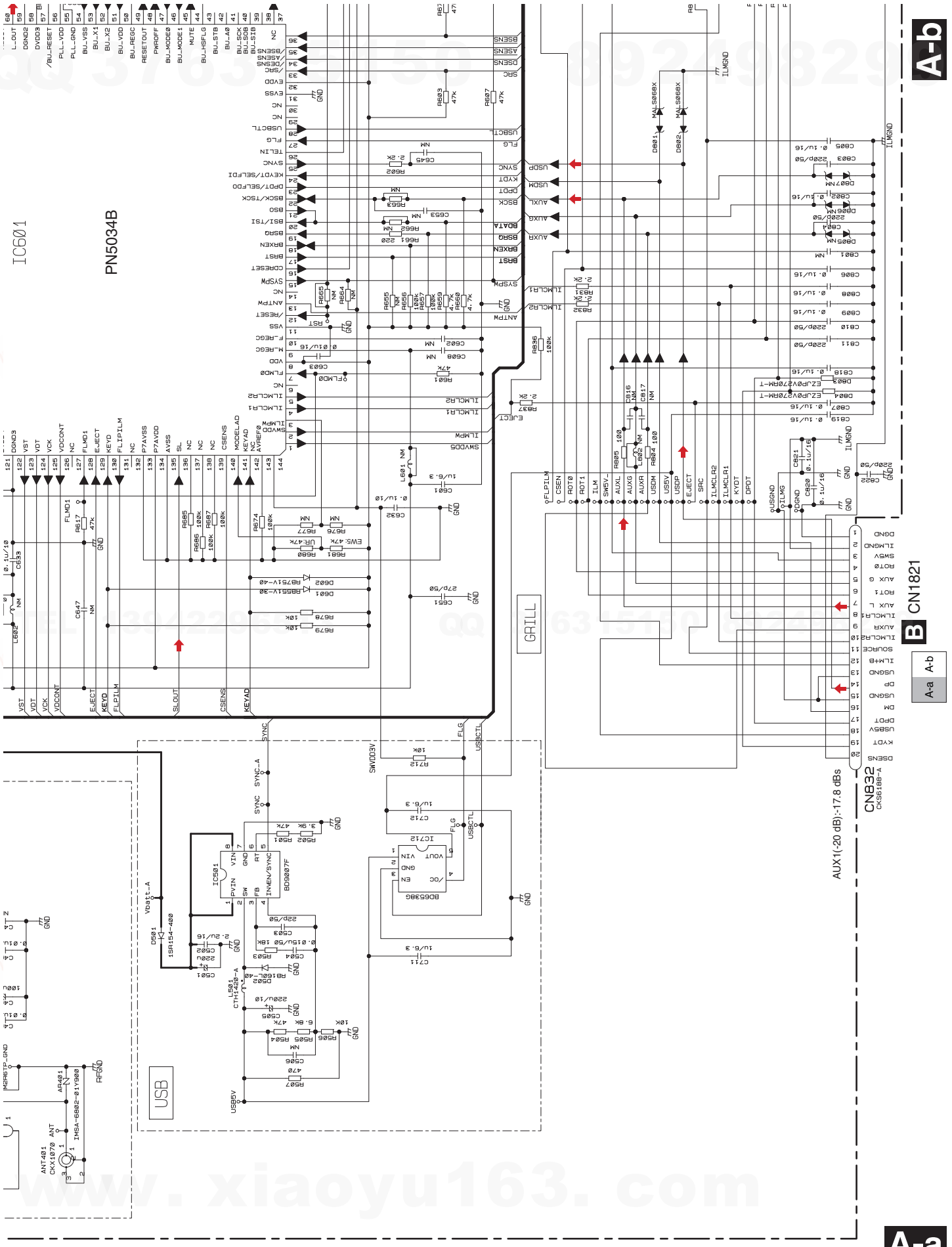
A-b





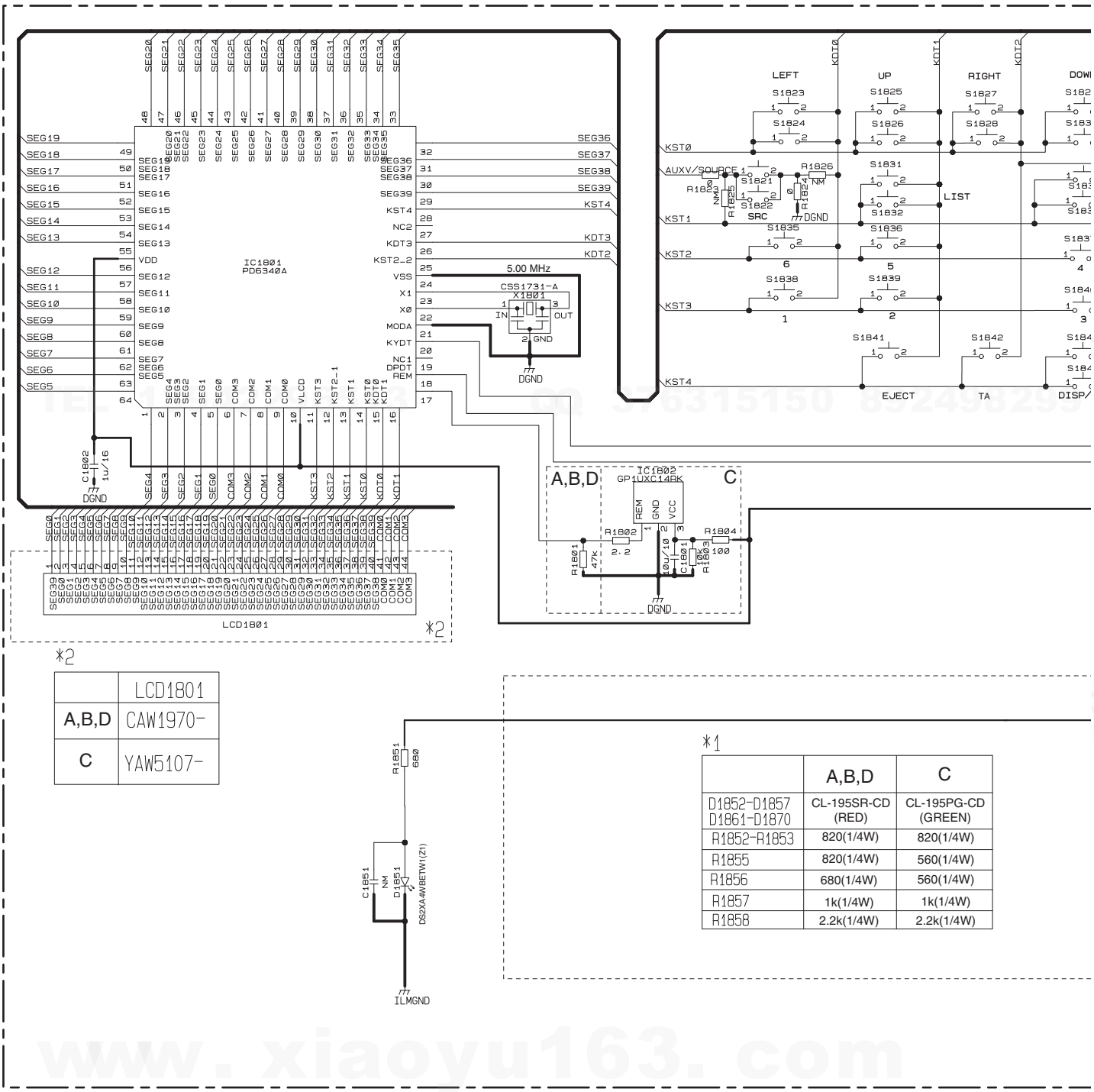






10.2 KEYBOARD UNIT

B KEYBOARD UNIT



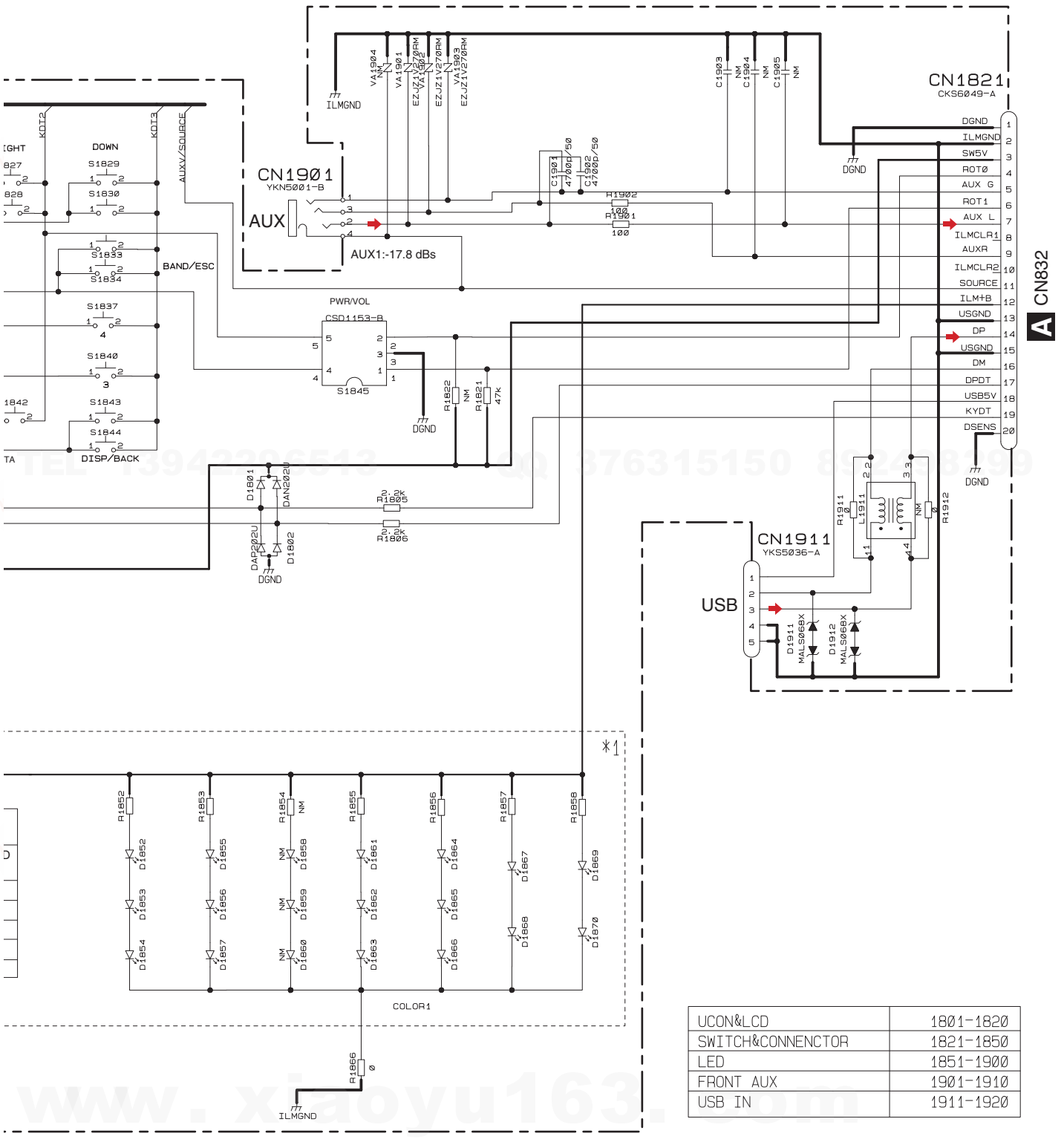
*2

	LCD1801
A,B,D	CAW1970-
C	YAW5107-

*1

	A,B,D	C
D1852-D1857 D1861-D1870	CL-195SR-CD (RED)	CL-195PG-CD (GREEN)
R1852-R1853	820(1/4W)	820(1/4W)
R1855	820(1/4W)	560(1/4W)
R1856	680(1/4W)	560(1/4W)
R1857	1k(1/4W)	1k(1/4W)
R1858	2.2k(1/4W)	2.2k(1/4W)

A:DEH-2200UB/XSEW5
B:DEH-2200UBB/XSEW5
C:DEH-2220UB/XSEW5
D:DEH-2210UB/XSUR



UCON&LCD	1801-1820
SWITCH&CONNENCTOR	1821-1850
LED	1851-1900
FRONT AUX	1901-1910
USB IN	1911-1920

10.3 CD MECHANISM MODULE(GUIDE PAGE)

C-a

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.

PICKUP UNIT (P10.5)(SERVICE)
CXX1942

E:P5+P10
F:P1+P6

HOLOGRAM UNIT

FOCUS ACT
TRK ACT

CN101
CKS4808

F.ACT:Applying positive voltage to FOP.
the lens moves DISC side.
T.ACT:Applying positive voltage to TOP.
the lens moves outer circumference.

M1 CXE2273
SPINDLE MOTOR

M2 CXC4026
LOADING/CARRIAGE
MOTOR

Land for manual soldering

MOTOR DRIVER LOGIC TABLE

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

SWITCHES:
CD CORE UNIT
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

C CD CORE UNIT (S11USB)

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

IC201
PE5715A
(uPD63790CGJ)

X201
CSS1603
16.934 MHz

MASK/FLASH

MASK	NM
FLASH	4.7u

IC202

IC205
341S2162

CN704
NM

CN701
CKS5854

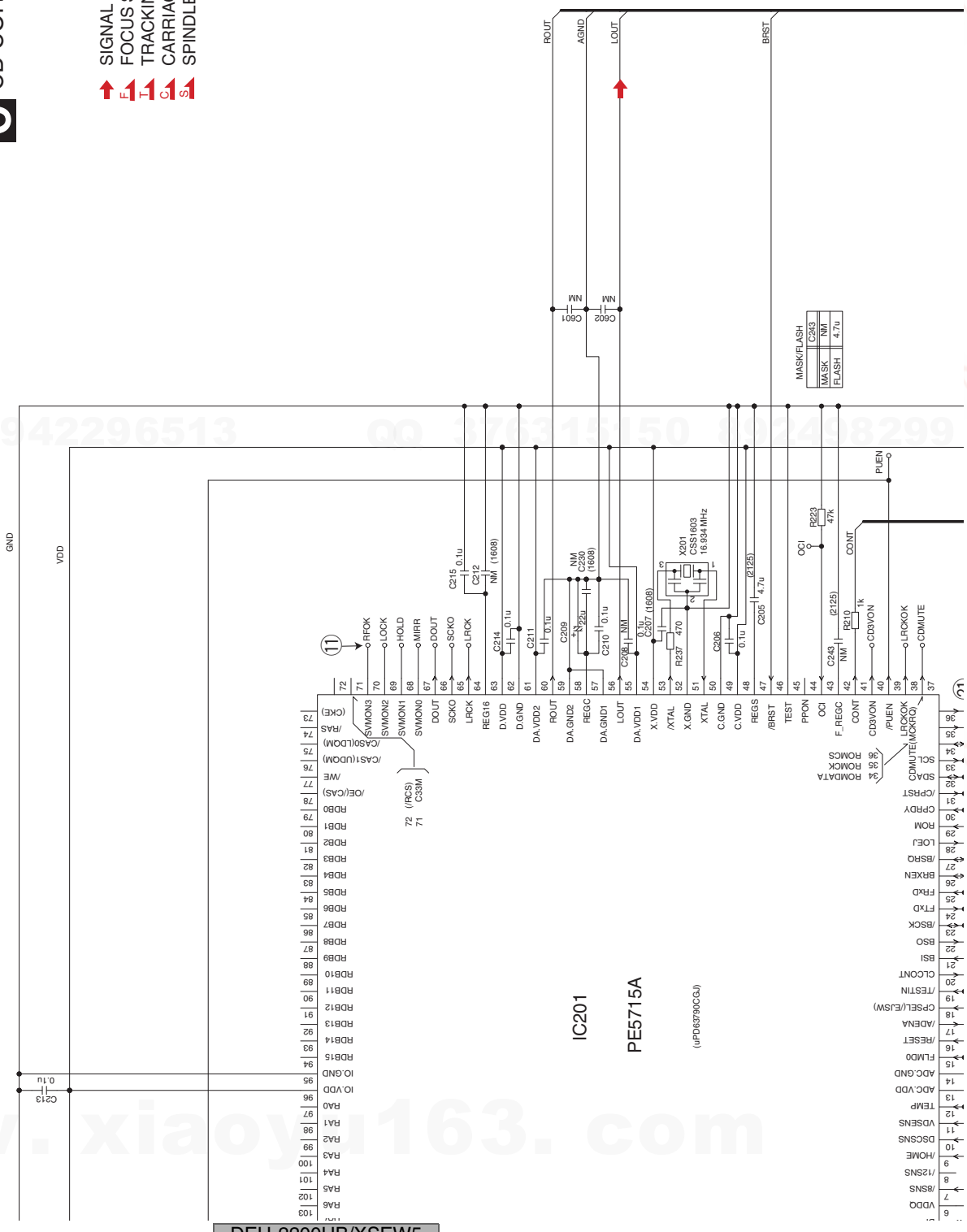
CN651
I/O

MSC MODEL ONLY

NM iPod CONNECTED MODEL ONLY

C CD CORE UNIT (S11USB)

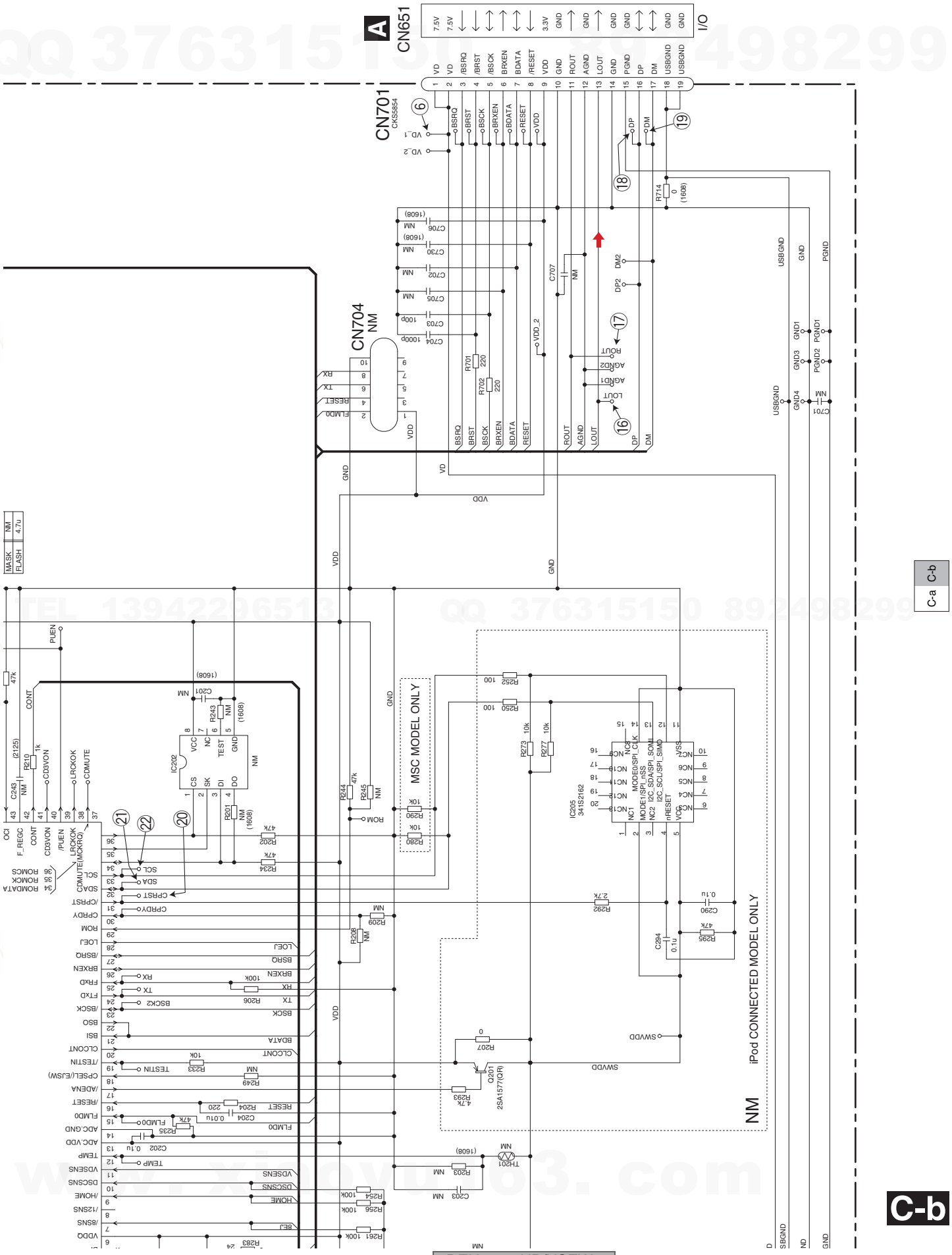
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE

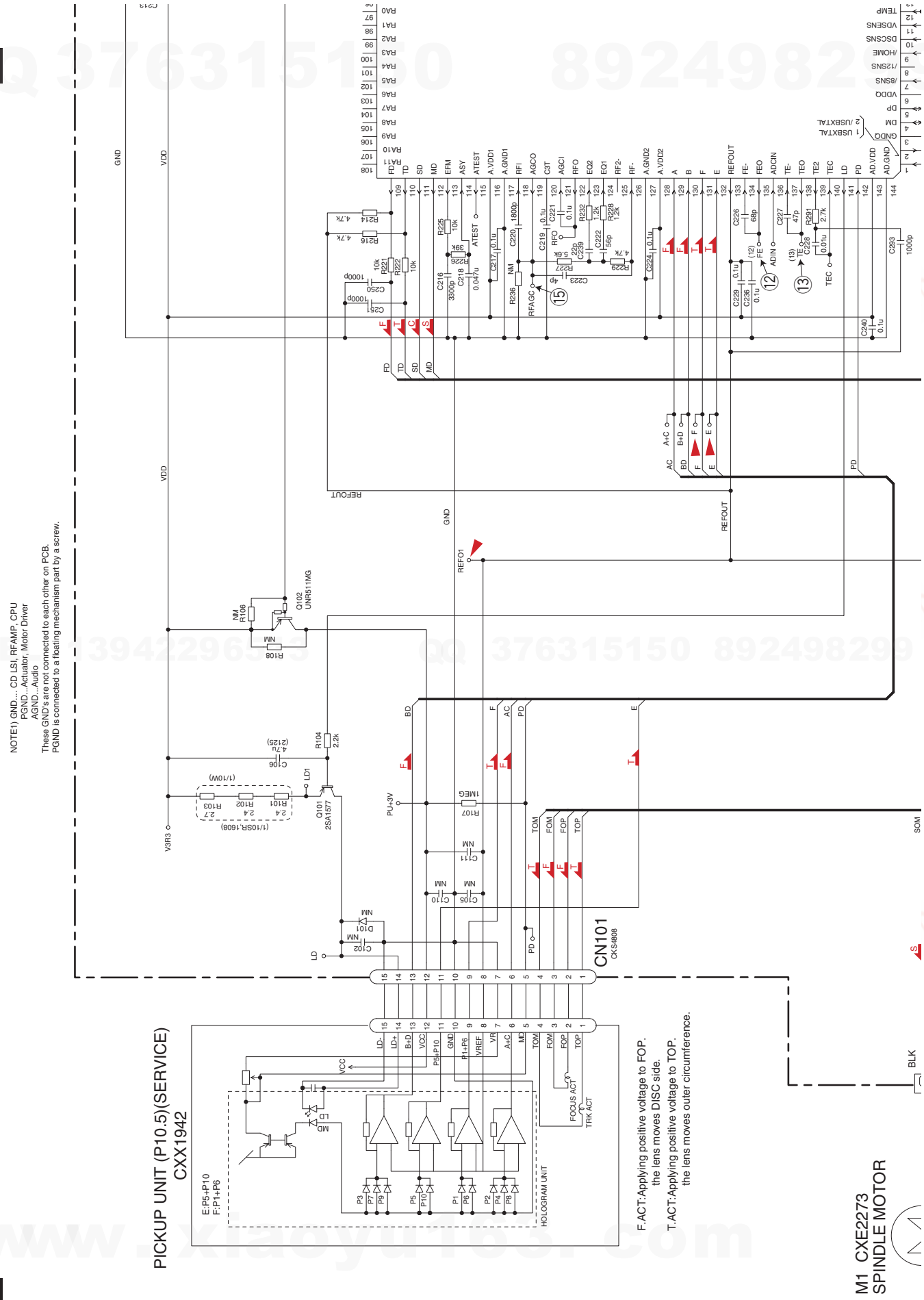


C-a C-b

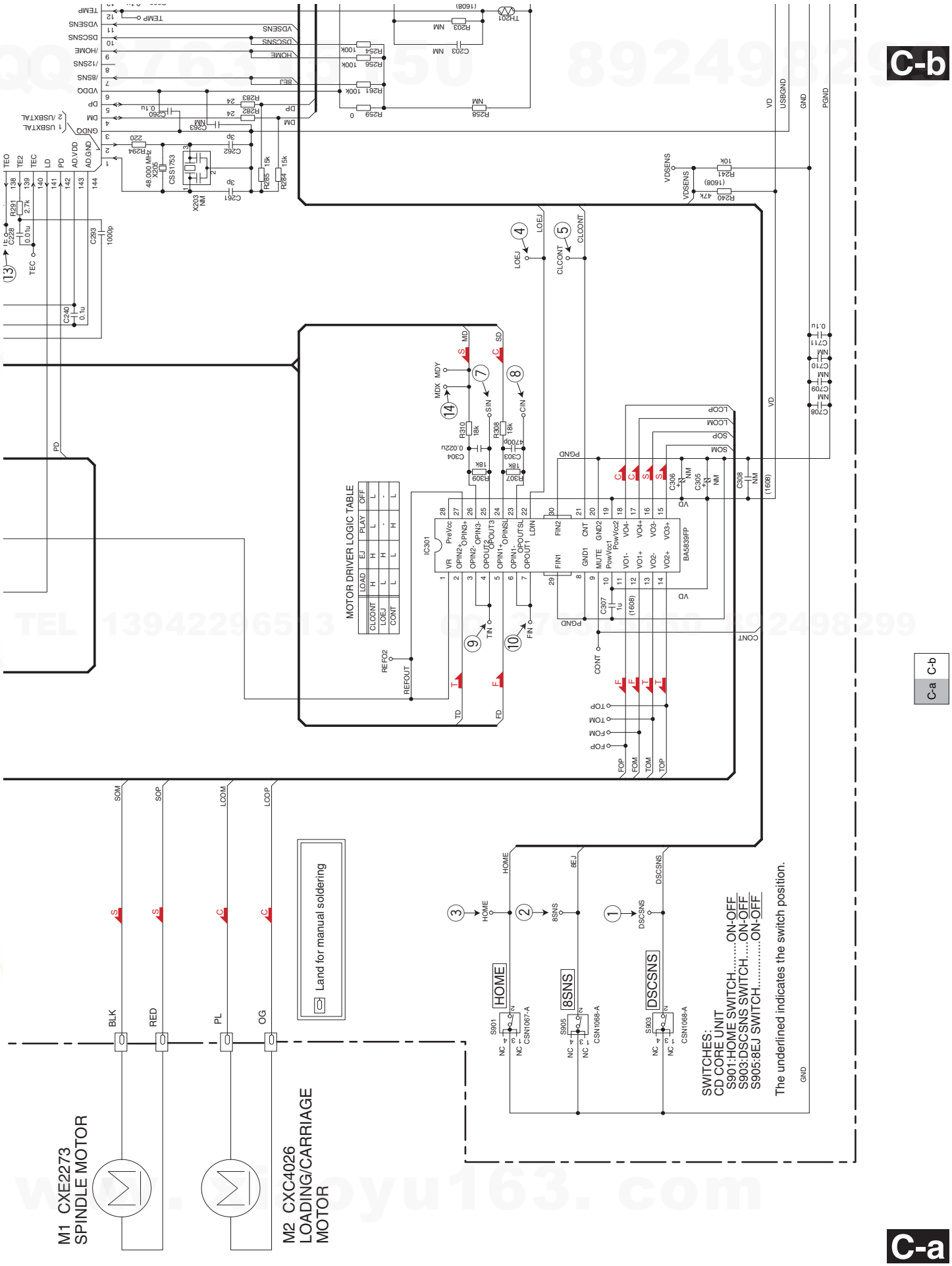
C-b

DEH-2200UB/XSEW5





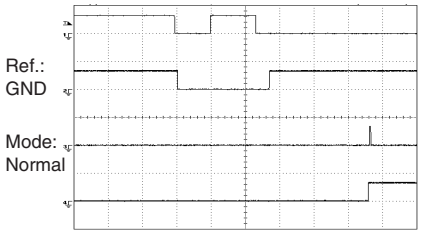
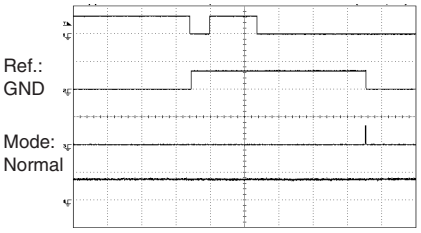
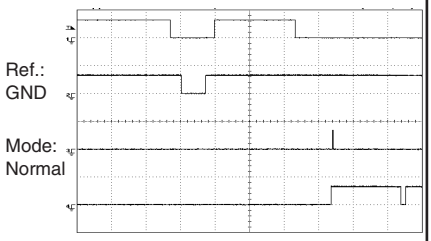
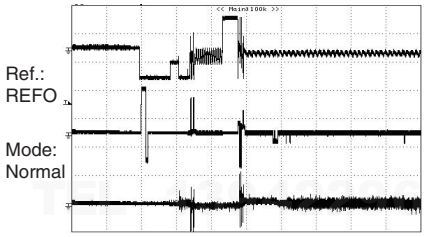
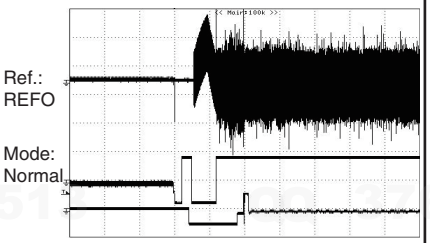
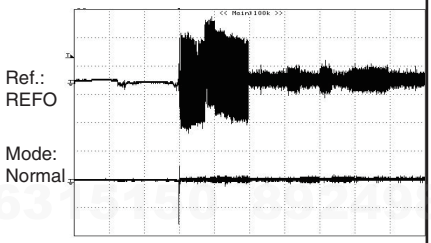
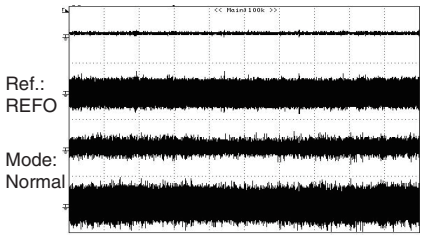
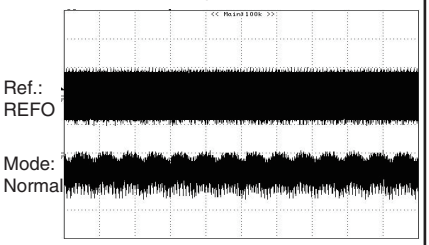
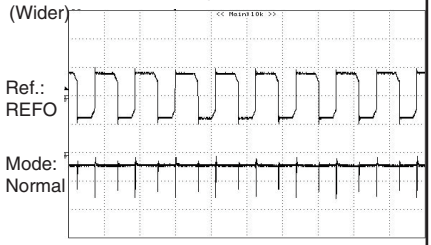
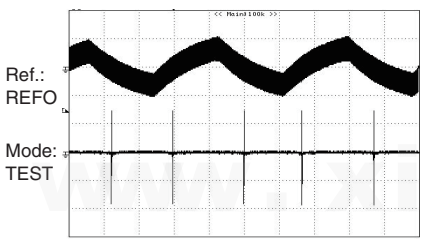
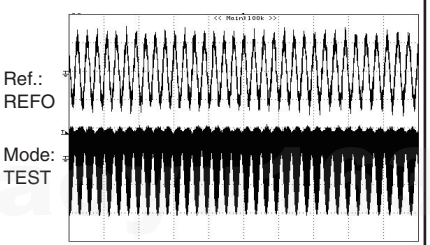
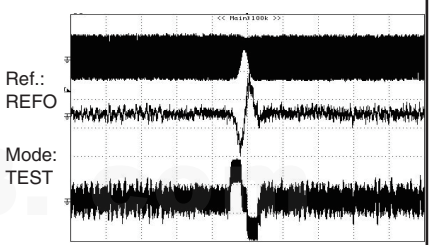
C-a C-b



10.4 WAVEFORMS

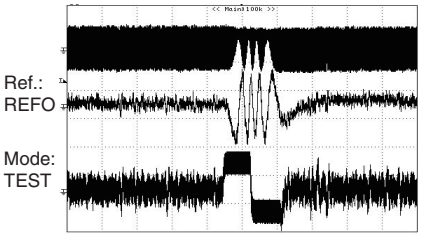
● CD CORE UNIT

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

①DSCSNS 5 V/div 500 ms/div ②8SNS 5 V/div ③12SNS 5 V/div ④LOEJ 5 V/div 12 cm CD Loading operation  	①DSCSNS 5 V/div 500 ms/div ⑤CLCONT 5 V/div ④LOEJ 5 V/div ⑥VD 10 V/div 12 cm CD Loading operation  	①DSCSNS 5 V/div 500 ms/div ②8SNS 5 V/div ③12SNS 5 V/div ④LOEJ 5 V/div 8 cm CD Loading operation 
⑦SIN 1 V/div 1 s/div ⑧CIN 500 mV/div ⑨TIN 1 V/div 12 cm CD-DA setup operation after loading  	⑩FIN 200 mV/div 500 ms/div ⑪RFOK(MONI_2) 2 V/div ⑦SIN 2 V/div 12 cm CD-DA Source On setup operation  	⑫TE 500 mV/div 200 ms/div ⑬FE 500 mV/div Source On setup operation 
⑬FE 500 mV/div 20 ms/div ⑩FIN 500 mV/div ⑫TE 500 mV/div ⑨TIN 500 mV/div CD-DA Play operation  	⑭MDX 2 V/div 200 ms/div ⑦SIN 500 mV/div Spindle waveform during play operation  	⑭MDX 2 V/div 5 us/div ⑦SIN 500 mV/div Spindle waveform during play operation (Wider) 
⑩FIN 500 mV/div 200 ms/div ⑬FE 500 mV/div Focus Search waveform  	⑫TE 500 mV/div 2 ms/div ⑮RFAGC 500 mV/div Track Open waveform  	⑮RFAGC 1 V/div 500 us/div ⑫TE 500 mV/div ⑨TIN 500 mV/div 1 Track Jump waveform 

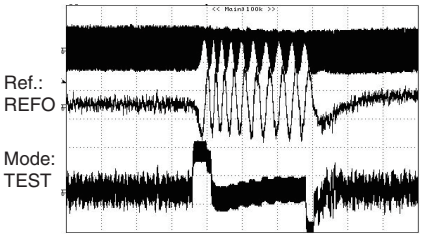
⑮RFAGC	1 V/div	500 us/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

4 Tracks Jump waveform



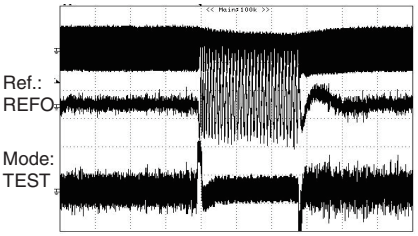
⑮RFAGC	1 V/div	500 us/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

10 Tracks Jump waveform



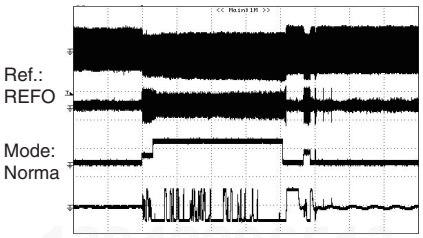
⑮RFAGC	1 V/div	2 ms/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

32 Tracks Jump waveform



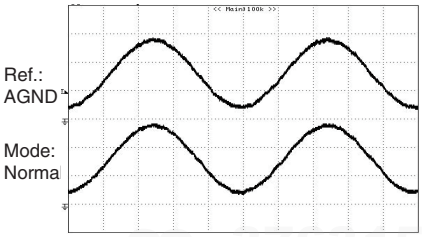
⑮RFAGC	1 V/div	200 ms/div
⑫TE	1 V/div	
⑧CIN	1 V/div	
⑦SIN	2 V/div	

Search operation(Outter to Inner)



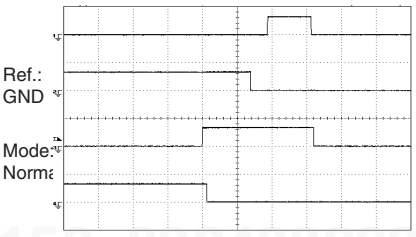
⑯LOUT	1 V/div	200 us/div
⑰ROUT	1 V/div	

Analog audio waveform



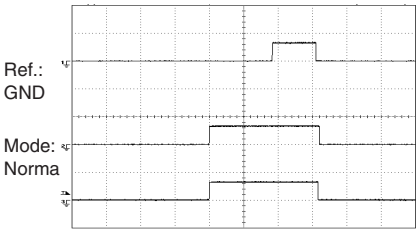
①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
④HOME	5 V/div	
③LOEJ	5 V/div	

12 cm CD Eject operation



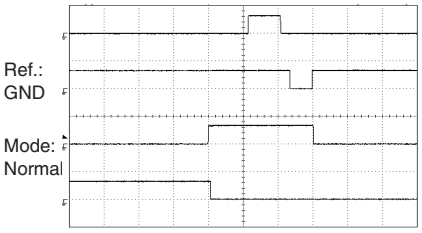
①DSCSNS	5 V/div	500 ms/div
⑤CLCONT	5 V/div	
④LOEJ	5 V/div	

12 cm CD Eject operation



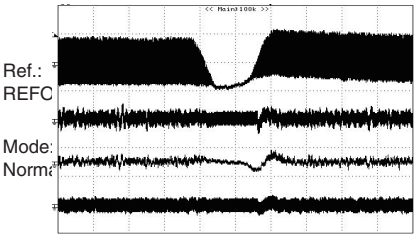
①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
④HOME	5 V/div	
③LOEJ	5 V/div	

8 cm CD Eject operation



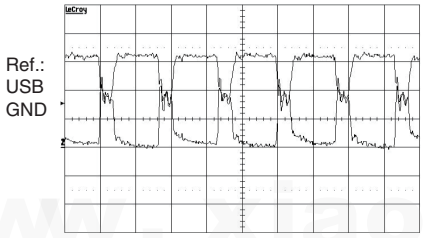
⑮RFAGC	1 V/div	500 us/div
⑨TIN	1 V/div	
⑫TE	1 V/div	
⑩FIN	1 V/div	

Black dot(800 um) during play



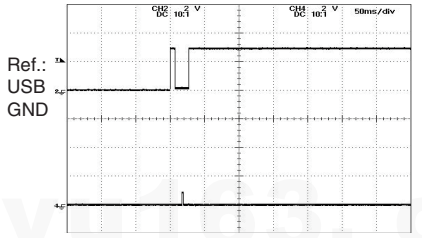
⑱DP	1 V/div	50 ns/div
⑲DM	1 V/div	

USB Play



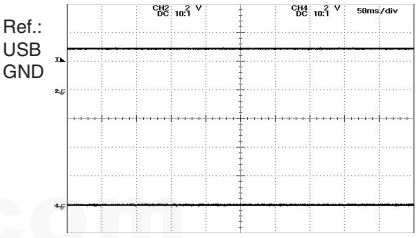
⑱DP	2 V/div	50 ms/div
⑲DM	2 V/div	

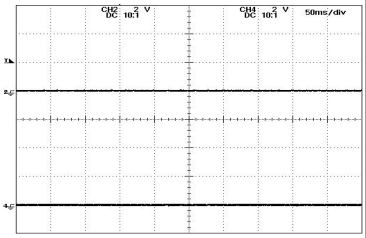
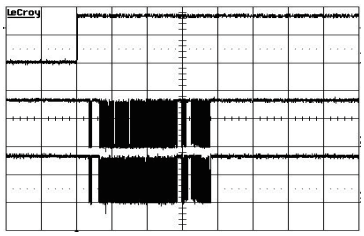
USB device inserting to USB connector.



⑱DP	1 V/div	50 ms/div
⑲DM	1 V/div	

CD Play with USB(iPod) device connecting.



⑱DP 2 V/div 50 ms/div ⑲DM 2 V/div ACC OFF with USB(iPod) device connecting. Ref.: USB GND 	⑳CPRST 2 V/div 500 ms/div ㉑SDA 2 V/div ㉒SCL 2 V/div iPod Authentication Operation Ref.: GND 	

A

B

C

D

E

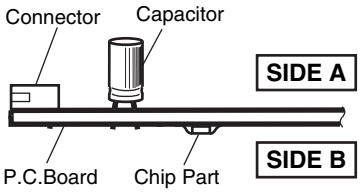
F

11. PCB CONNECTION DIAGRAM

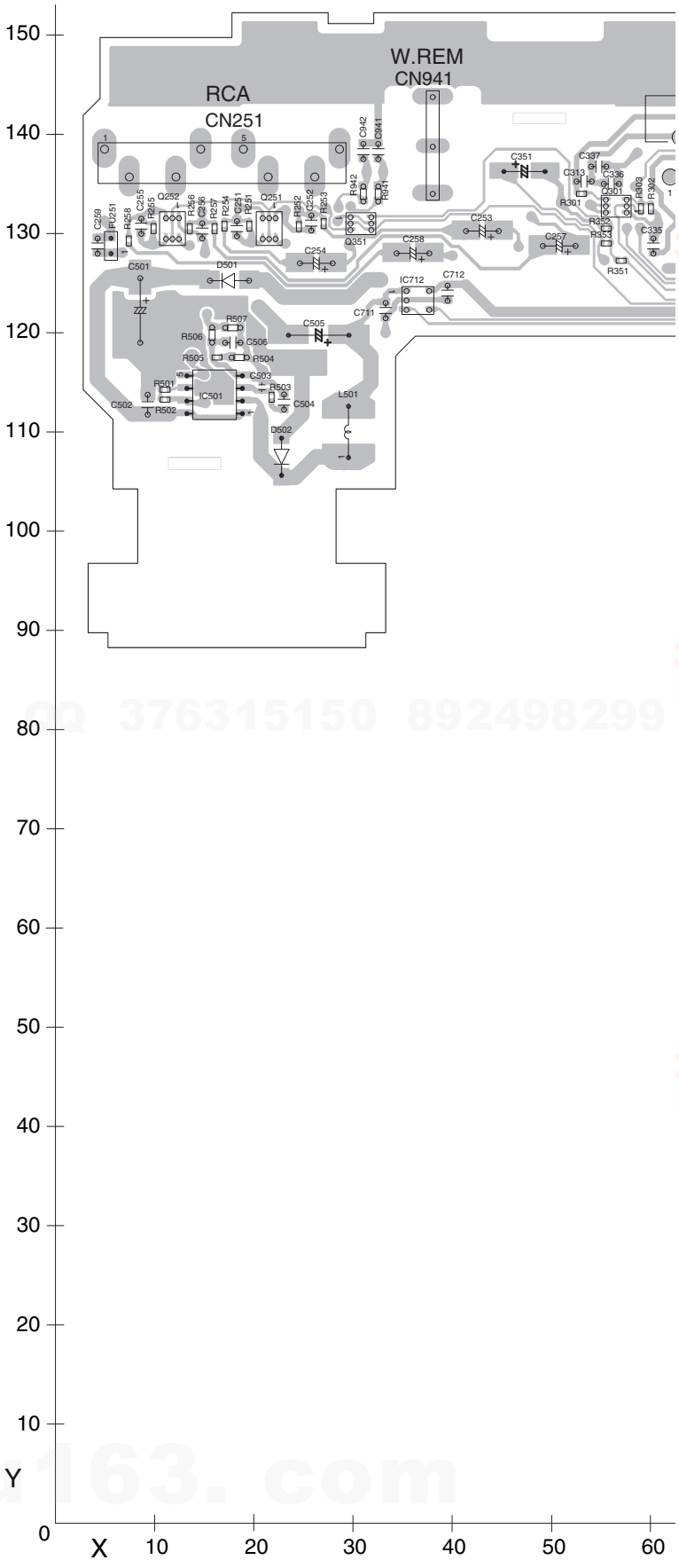
11.1 TUNER AMP UNIT

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

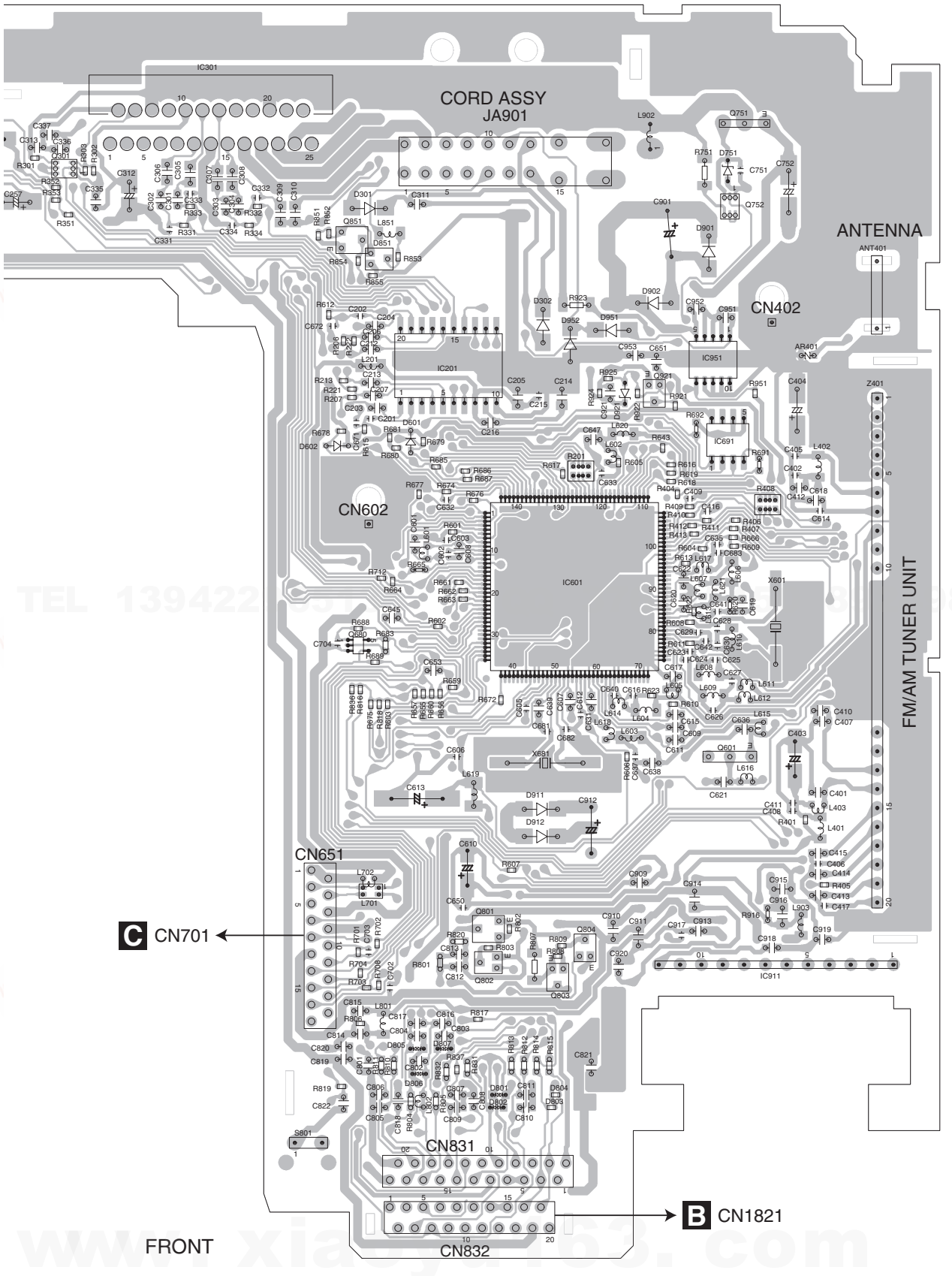


A TUNER AMP UNIT



SIDE A

⚠ FU 251 (A,5,129) Fuse 3 A CEK1286



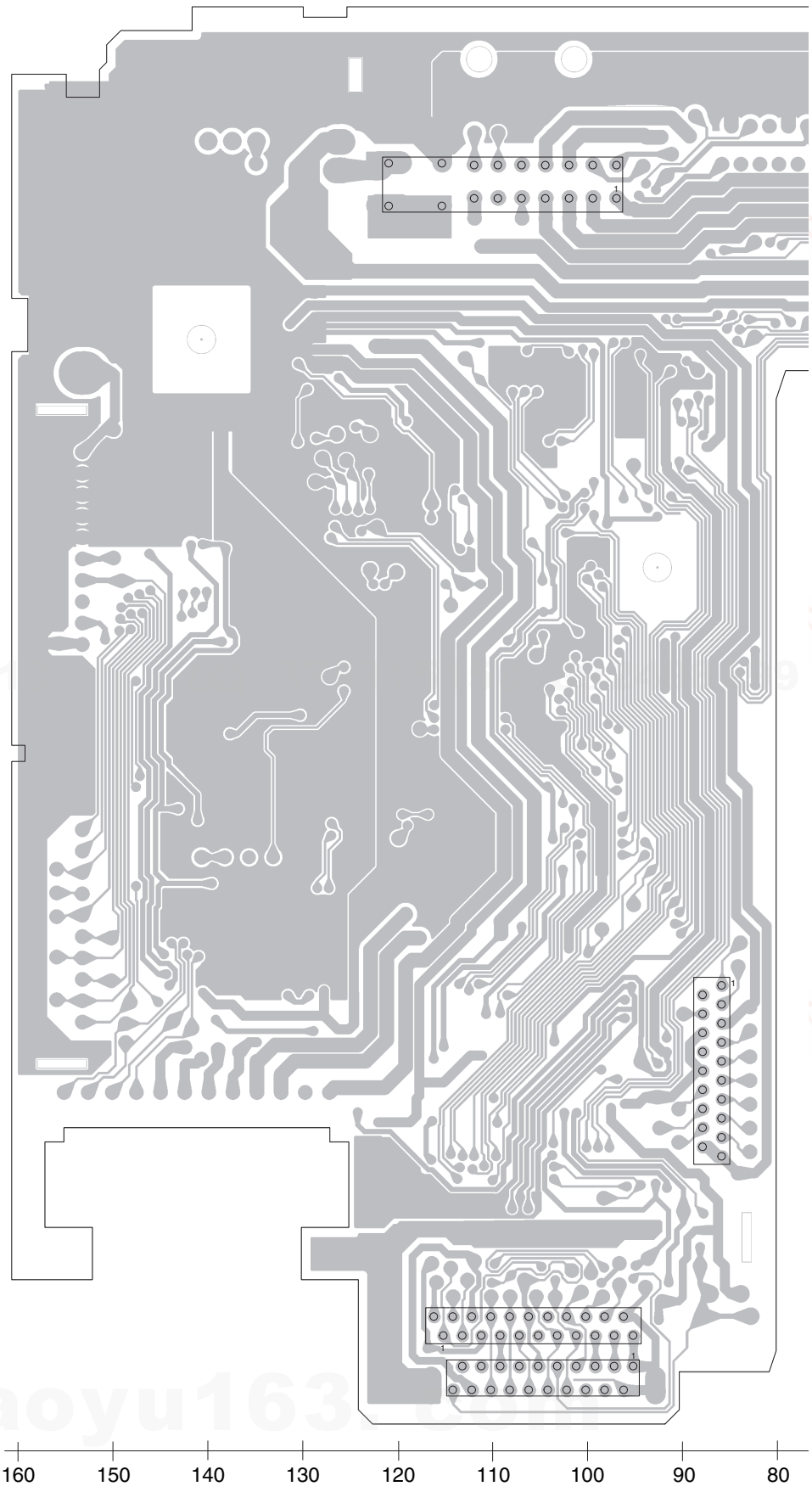
50 60 70 80 90 100 110 120 130 140 150 160

A

5 6 7 8

http://www.xiaoyu163.com

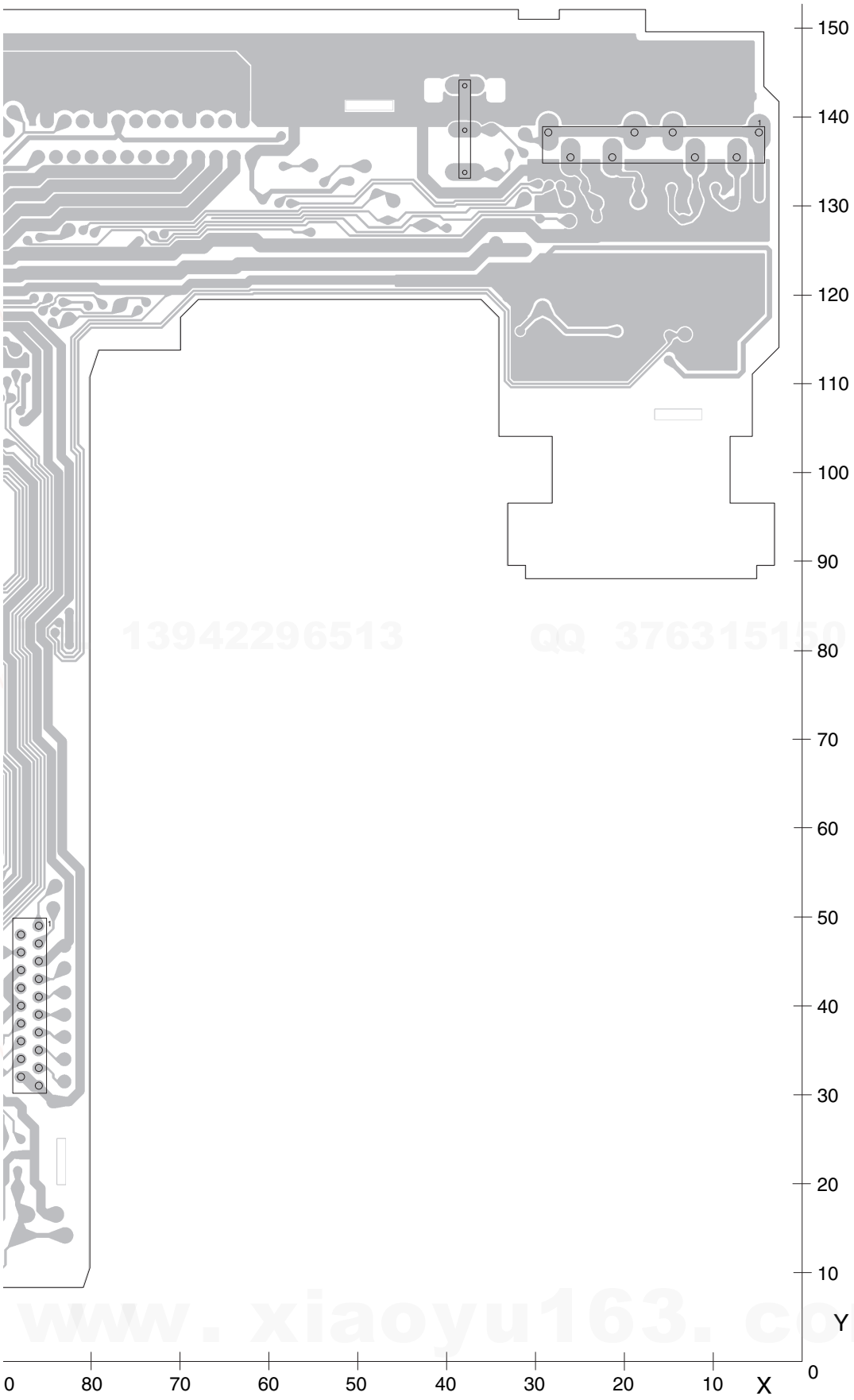
A TUNER AMP UNIT



DEH-2200UB/XSEW5

1 2 3 4

SIDE B

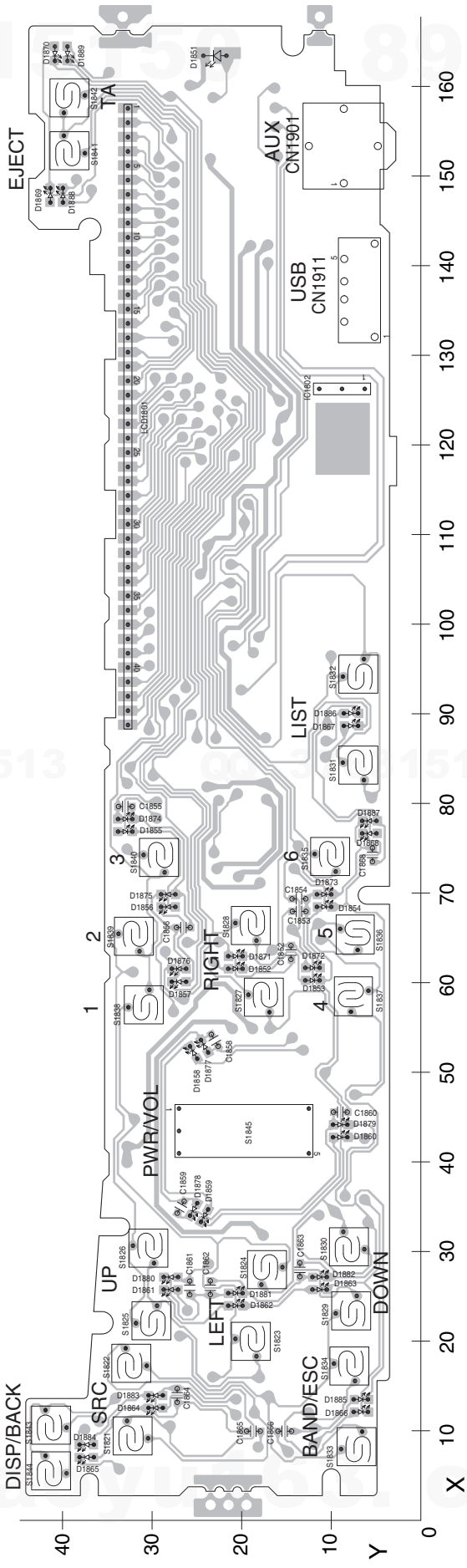


DEH-2200UB/XSEW5

11.2 KEYBOARD UNIT

B KEYBOARD UNIT

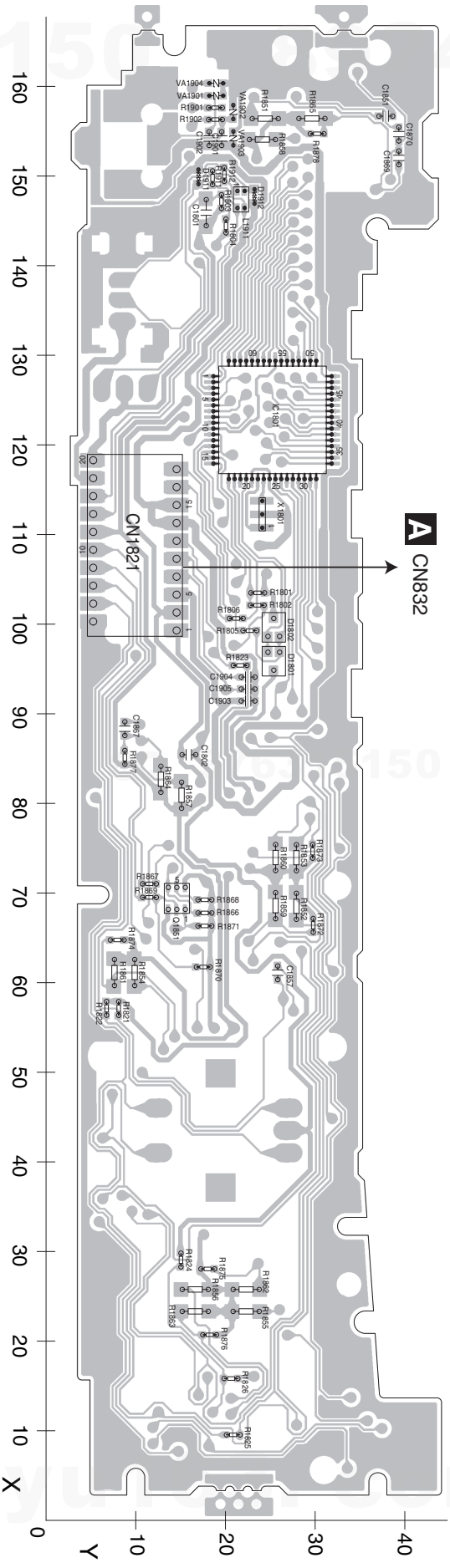
SIDE A



B

B KEYBOARD UNIT

SIDE B

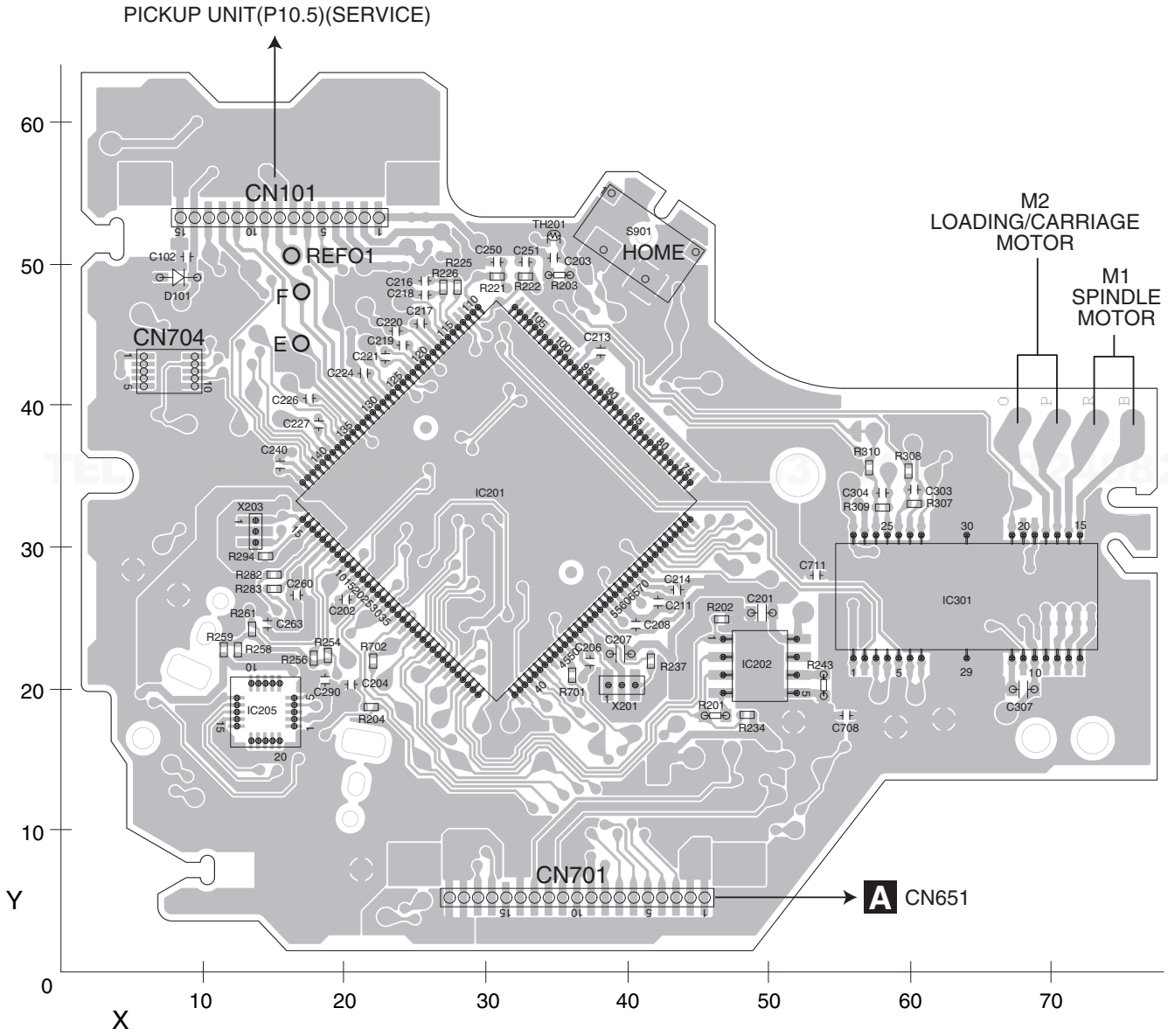


B

11.3 CD CORE UNIT(S11USB)

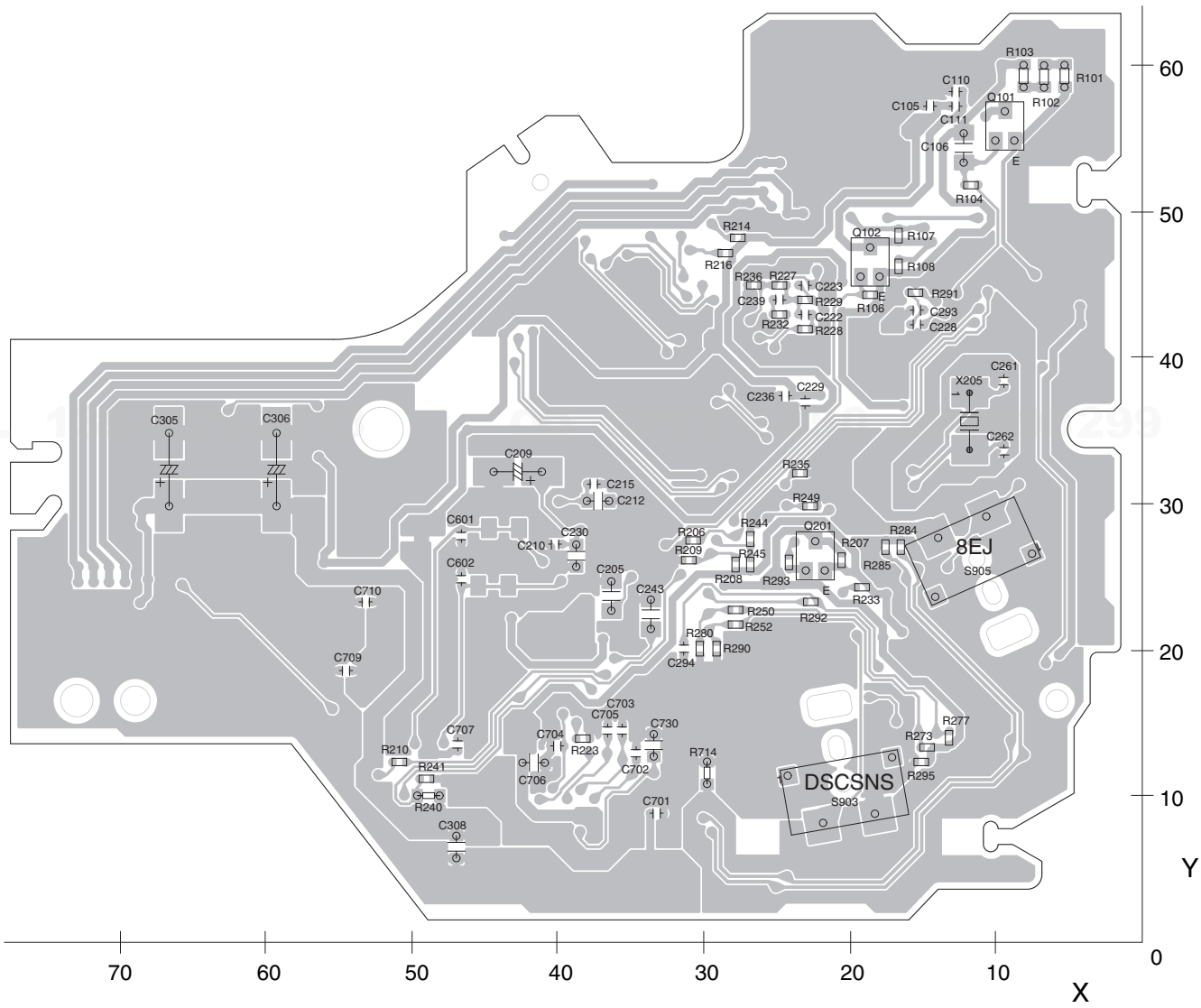
C CD CORE UNIT(S11USB)

SIDE A



C CD CORE UNIT(S11USB)

SIDE B



http://www.xiaoyu163.com

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.....

- *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.*
- *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

A:DEH-2200UB/XSEW5
B:DEH-2200UBB/XSEW5
C:DEH-2220UB/XSEW5
D:DEH-2210UB/XSUR

Unit Number : YWM5445(A)
Unit Number : YWM5447(B)
Unit Number : YWM5446(C)
Unit Number : YWM5448(D)
Unit Name : Tuner Amp Unit
Unit Number : (A)
Unit Number : (B)
Unit Number : (D)
Unit Name : Keyboard Unit
Unit Number : (C)
Unit Name : Keyboard Unit
Unit Number : CWX3776
Unit Name : CD Core Unit(S11USB)

A:DEH-2200UB/XSEW5
C:DEH-2220UB/XSEW5
D:DEH-2210UB/XSUR

A

Unit Number : YWM5445(A)
Unit Number : YWM5447(B)
Unit Number : YWM5446(C)
Unit Number : YWM5448(D)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.			Part No.
IC 201	(A,102,109)	IC	PML014A
IC 301	(A,74,141)	IC	PAL007C
IC 501	(A,16,114)	IC	BD9007F
IC 601	(A,117,83)	IC	PN5034B
IC 712	(A,36,123)	IC	BD6538G
IC 911	(A,141,28)	IC	BA49181-V12
Q 251	(A,21,130)	Transistor	UMH3N
Q 351	(A,31,131)	Transistor	RT3T22M
Q 601	(A,136,63)	Transistor	2SD1858
Q 751	(A,137,139)	Transistor	2SD2396
Q 752	(A,136,128)	Transistor	RT3T22M
Q 801	(A,107,42)	Transistor	2SA1036K
Q 802	(A,107,38)	Transistor	RT1N141M-11
Q 851	(A,91,124)	Transistor(A,B,C)	2SA1036K
Q 921	(A,127,106)	Transistor	LSC4081UB
D 301	(A,93,128)	Diode	1SR154-400
D 302	(A,113,114)	Diode	1SR154-400
D 501	(A,17,125)	Diode	1SR154-400
D 502	(A,23,107)	Diode	RB160L-40
D 601	(A,98,100)	Diode(A,B,C)	RB551V-30
D 602	(A,89,100)	Diode(A,B,C)	RB751V-40
D 751	(A,135,132)	Diode	HZU7R5(B3)
D 801	(A,108,22)	Diode	MALS068X
D 802	(A,108,21)	Diode	MALS068X
D 803	(A,114,21)	Varistor	EZJP0V270RM
D 804	(A,115,22)	Varistor	EZJP0V270RM
D 851	(A,94,122)	Diode(A,B,C)	MC2848-11
D 901	(A,133,123)	Diode	1SR154-400
D 902	(A,127,117)	Diode	1SR154-400
D 911	(A,113,56)	Diode	1SR154-400
D 912	(A,113,53)	Diode	1SR154-400
D 921	(A,123,106)	Diode	HZU6R2(B3)
L 401	(A,146,54)	Inductor	LCTAW2R2J2520
L 402	(A,146,97)	Inductor	LCTAW2R2J2520
L 403	(A,146,57)	Inductor	CTF1473
L 501	(A,29,110)	Choke Coil 47 u	HCTH1420
L 604	(A,126,68)	Chip Coil	LCTAW1R0J2520
L 607	(A,133,83)	Inductor	CTF1379
L 608	(A,133,72)	Chip Coil	LCTAW1R5J2520
L 609	(A,134,70)	Chip Coil	LCTAW1R5J2520
L 610	(A,136,77)	Inductor	LCTAW1R2J2520
L 611	(A,138,71)	Inductor	CTF1379

Circuit Symbol and No.		Part No.
L 612	(A,137,69) Inductor	CTF1379
L 614	(A,122,69) Inductor	CTF1379
L 617	(A,132,85) Inductor	CTF1389
L 618	(A,121,65) Inductor	CTF1389
L 621	Chip Ferrite Bead	CTF1399
L 701	(A,93,47) Inductor	CTF1713
L 702	(A,93,48) Inductor	CTF1473
L 801	(A,94,31) Inductor	LCTAW2R2J2520
L 851	(A,95,125) Inductor(A,B,C)	LCTAW2R2J2520
L 902	(A,107,140) Choke Coil 600 u	HCTH1432
X 601	(A,141,78) Oscillator 74.1 MHz	CSS1758
X 681	(A,114,62) Oscillator 4.7186 MHz(D)	CSS1796
FU251	(A,5,129) Fuse 3 A	CEK1286
AR401	(A,145,110) Surge Protector	IMSA-6802-01Y900
ANT401	(A,153,128) Antenna Jack	CKX1070
CN251	(A,17,139) Pin Jack	YKB5010
CN651	(A,85,40) Connector	CKS3833
CN832	(A,105,3) Connector	CKS6188
CN941	(A,38,139) Connector(A,B,C)	CKS4124
JA901	(A,109,141) Plug	CKM1586
Z 401	(A,153,105) FM/AM Tuner Unit(A,B,C)	CWE2106
	(A,153,105) FM/AM Tuner Unit(D)	CWE2123

RESISTORS

R 201	(A,118,97)	RAB4CQ102J
R 206	(A,90,112)	RS1/16SS681J
R 207	(A,91,105)	RS1/16SS681J
R 213	(A,90,107)	RS1/16SS331J
R 221	(A,91,106)	RS1/16SS223J
R 222	(A,91,112)	RS1/16SS223J
R 251	(A,19,131)	RS1/16SS223J
R 252	(A,24,131)	RS1/16SS223J
R 253	(A,27,131)	RS1/16SS821J
R 254	(A,17,131)	RS1/16SS821J
R 303	(A,59,132)	RS1/16SS153J
R 331	(A,71,126)	RS1/16SS471J
R 332	(A,79,128)	RS1/16SS471J
R 333	(A,71,128)	RS1/16SS471J
R 334	(A,78,126)	RS1/16SS471J
R 351	(A,57,127)	RS1/16SS103J
R 352	(A,55,130)	RS1/16SS153J
R 353	(A,55,129)	RS1/16SS221J
R 404	(A,129,94)	RS1/16SS102J
R 405	(A,147,47)	RS1/16SS102J
R 406	(A,136,91)	RS1/16SS102J
R 407	(A,136,90)	RS1/16SS102J
R 408	(A,140,93)	RAB4CQ104J
R 409	(A,131,92)	RS1/16SS391J
R 410	(A,131,91)	RS1/16SS681J
R 411	(A,133,91)	RS1/16SS681J
R 412	(A,131,90)	RS1/16SS681J
R 413	(A,131,89)	RS1/16SS472J
R 501	(A,11,114)	RS1/16SS473J
R 502	(A,11,113)	RS1/16SS392J
R 503	(A,22,113)	RS1/16SS183J
R 504	(A,18,117)	RS1/10SR4702F
R 505	(A,16,117)	RS1/16SS682J
R 506	(A,16,120)	RS1/10SR1002F
R 507	(A,18,120)	RS1/10SR471J

Circuit Symbol and No.		Part No.
R 601	(A,103,89)	RS1/16SS473J
R 602	(A,101,78)	RS1/16SS222J
R 603	(A,95,69)	RS1/16SS473J
R 604	(A,132,87)	RS1/16SS681J
R 605	(A,122,98)	RS1/16SS0R0J
R 606	(A,123,63)	RS1/16SS473J
R 607	(A,110,49)	RS1/16SS473J
R 608	(A,131,79)	RS1/16SS470J
R 610	(A,129,69)	RS1/16SS473J
R 611	(A,131,76)	RS1/16SS182J
R 612	(A,88,115)	RS1/16SS563J
R 613	(A,130,86)	RS1/16SS302J
R 615	(A,92,102)	RS1/16SS563J
R 616	(A,129,97)	RS1/16SS104J
R 617	(A,116,96)	RS1/16SS473J
R 618	(A,129,95)	RS1/16SS473J
R 619	(A,129,96)	RS1/16SS104J
R 622	(A,132,80)	RS1/16SS0R0J
R 643	(A,128,99)	RS1/16SS104J
R 656	(A,101,70)	RS1/16SS104J
R 657	(A,98,70)	RS1/16SS104J
R 659	(A,103,71)	RS1/16SS472J
R 660	(A,100,70)	RS1/16SS472J
R 661	(A,103,83)	RS1/16SS221J
R 666	(A,136,89)	RS1/16SS103J
R 674	(A,102,94)	RS1/16SS104J
R 675	(A,93,69)	RS1/16SS473J
R 678	(A,89,101)	RS1/16SS103J
R 679	(A,99,100)	RS1/16SS103J
R 680	(A,96,99) (D)	RS1/16SS473J
R 681	(A,95,101) (A,B,C)	RS1/16SS473J
R 683	(A,95,76)	RS1/10SR473J
R 685	(A,101,97)	RS1/16SS104J
R 686	(A,104,97)	RS1/16SS104J
R 687	(A,104,96)	RS1/16SS104J
R 689	(A,93,74)	RS1/16SS0R0J
R 702	(A,94,40)	RS1/16SS221J
R 704	(A,92,37)	RS1/16SS221J
R 708	(A,94,35)	RS1/16SS104J
R 712	(A,94,84)	RS1/16SS103J
R 751	(A,133,132)	RS1/4SA271J
R 802	(A,109,42)	RS1/16SS103J
R 803	(A,107,40)	RS1/16SS562J
R 804	(A,98,22)	RS1/10SR101J
R 805	(A,101,22)	RS1/10SR101J
R 810	(A,96,26)	RS1/10SR222J
R 811	(A,94,26)	RS1/10SR222J
R 812	(A,111,26)	RS1/10SR222J
R 813	(A,110,26)	RS1/10SR222J
R 814	(A,113,26)	RS1/10SR222J
R 815	(A,114,26)	RS1/10SR222J
R 816	(A,92,71)	RS1/16SS104J
R 817	(A,106,31)	RS1/16SS473J
R 818	(A,94,69)	RS1/16SS104J
R 819	(A,90,21)	RS1/16SS102J
R 820	(A,103,41)	RS1/10SR103J
R 831	(A,104,26)	RS1/10SR222J
R 832	(A,102,25)	RS1/10SR222J
R 836	(A,91,71)	RS1/16SS104J
R 837	(A,103,25)	RS1/16SS222J
R 851	(A,87,125) (A,B,C)	RS1/16SS472J

Circuit Symbol and No.			Part No.
R 853	(A,96,122)	(A,B,C)	RS1/16SS153J
R 854	(A,91,122)	(A,B,C)	RS1/16SS102J
R 855	(A,93,120)		RS1/16SS473J
R 921	(A,129,104)		RS1/16SS104J
R 922	(A,125,106)		RS1/16SS223J
R 923	(A,117,116)		RS1/4SA102J
R 924	(A,120,106)		RS1/16SS473J
R 925	(A,121,108)		RS1/16SS473J
R 941	(A,32,134)	(A,B,C)	RS1/10SR102J
R 942	(A,31,134)	(A,B,C)	RS1/10SR102J

CAPACITORS

C 201	(A,93,103)		CKSSYB224K6R3
C 202	(A,92,115)		CKSSYB224K6R3
C 203	(A,93,104)		CKSRYB105K6R3
C 204	(A,93,114)		CKSRYB105K6R3
C 205	(A,110,105)	10 uF	CCG1192
C 206	(A,93,112)		CKSRYB105K6R3
C 207	(A,93,106)		CKSRYB105K6R3
C 212	(A,93,111)		CKSRYB105K6R3
C 213	(A,93,107)		CKSRYB105K6R3
C 214	(A,116,105)	4.7 uF	CCG1201
C 215	(A,113,106)		CKSSYB104K10
C 216	(A,107,102)		CCSRCH100D50
C 253	(A,43,130)		CEVW2R2M50
C 254	(A,26,127)		CEVW2R2M50
C 301	(A,70,129)		CKSRYB474K10
C 302	(A,68,129)		CKSRYB474K10
C 303	(A,76,128)		CKSRYB474K10
C 304	(A,77,128)		CKSRYB474K10
C 305	(A,71,132)		CKSQYB474K25
C 306	(A,69,132)		CKSQYB474K25
C 307	(A,75,131)		CKSQYB474K25
C 308	(A,76,131)		CKSQYB474K25
C 309	(A,82,127)		CKSQYB225K10
C 310	(A,84,127)		CKSQYB225K10
C 311	(A,98,128)		CKSRYB104K16
C 312	(A,64,129)		CEVW100M16
C 313	(A,53,135)		CKSRYB104K16
C 331	(A,69,125)		CCSSCH101J50
C 332	(A,79,129)		CCSSCH101J50
C 333	(A,71,130)		CCSSCH101J50
C 334	(A,76,126)		CCSSCH101J50
C 351	(A,47,136)		CEVW330M10
C 401	(A,146,58)		CCSRCH270J50
C 402	(A,143,96)		CKSSYB103K16
C 404	(A,144,104)		CEVW101M16
C 405	(A,143,98)		CKSSYB103K16
C 409	(A,131,93)		CCSSCH100D50
C 416	(A,133,92)		CCSSCH390J50
C 501	(A,8,122)		CEVW221M16
C 502	(A,9,113)		CKSQYB225K16
C 503	(A,21,114)		CCSSCH220J50
C 504	(A,23,113)		CKSRYB153K50
C 505	(A,26,119)		CEVW221M10
C 601	(A,98,88)		CKSRYB105K6R3
C 603	(A,102,88)		CKSSYB103K16
C 605	(A,111,68)		CKSSYB104K10

Circuit Symbol and No.			Part No.
C 606	(A,103,63)		CKSSYB103K16
C 607	(A,117,69)		CKSRYB105K6R3
C 609	(A,129,66)		CKSRYB331K50
C 610	(A,104,49)		CEVW101M4
C 611	(A,129,65)		CKSRYB331K50
C 612	(A,119,69)	(A,B,C)	CKSRYB105K6R3
	(A,119,69)	(D)	CKSRYB103K50
C 613	(A,99,57)		CEVW471M10
C 614	(A,146,92)		CKSSYB102K50
C 615	(A,129,68)		CKSRYB331K50
C 616	(A,124,70)		CKSSYB103K16
C 622	(A,130,84)		CKSRYB105K6R3
C 623	(A,131,75)		CKSSYB102K50
C 624	(A,130,74)		CKSSYB102K50
C 625	(A,134,74)		CCSSCH270J50
C 626	(A,134,68)		CCSSCH270J50
C 627	(A,136,72)		CCSSCH150J50
C 628	(A,134,78)		CKSSYB102K50
C 629	(A,132,78)		CCSSCH4R0C50
C 630	(A,134,76)		CCSSCH8R0D50
C 631	(A,118,68)		CKSSYB223K16
C 632	(A,102,93)		CKSSYB104K10
C 633	(A,120,96)		CKSSYB104K10
C 635	(A,134,88)		CKSSYB104K10
C 640	(A,122,70)		CKSSYB104K10
C 650	(A,104,45)		CKSSYB103K16
C 651	(A,127,110)	(A,B,C)	CCSRCH270J50
C 671	(A,91,102)		CKSSYB122K50
C 672	(A,88,114)		CKSSYB122K50
C 681	(A,114,66)	(D)	CCSSCH270J50
C 682	(A,116,66)	(D)	CCSSCH270J50
C 702	(A,95,35)		CKSSYB103K16
C 703	(A,93,39)		CKSSYB104K10
C 711	(A,33,122)		CKSRYB105K6R3
C 712	(A,39,124)		CKSRYB105K6R3
C 751	(A,137,132)		CKSSYB473K10
C 752	(A,143,130)		CEVW101M16
C 802	(A,99,26)		CKSRYB104K16
C 803	(A,102,29)		CCSRCH221J50
C 804	(A,98,29)		CCSRCH221J50
C 805	(A,94,21)		CKSRYB104K16
C 806	(A,94,22)		CKSRYB104K16
C 807	(A,103,22)		CKSRYB104K16
C 808	(A,105,22)		CKSRYB104K16
C 809	(A,103,21)		CKSRYB104K16
C 810	(A,111,21)		CCSRCH221J50
C 811	(A,111,22)		CCSRCH221J50
C 812	(A,103,38)		CKSRYB104K16
C 818	(A,96,22)		CKSRYB104K16
C 819	(A,91,23)		CKSRYB104K16
C 820	(A,91,26)		CKSRYB104K16
C 821	(A,119,26)		CKSRYB104K16
C 822	(A,90,22)		CCSRCH221J50
C 901	(A,128,125)	3 300 uF/16 V	CCH1732
C 911	(A,124,41)	4.7 uF	CCG1201
C 912	(A,119,54)		CEAT102M16
C 913	(A,132,41)		CKSRYB104K16
C 914	(A,130,45)	4.7 uF	CCG1201
C 915	(A,142,47)	4.7 uF	CCG1201
C 916	(A,142,44)	4.7 uF	CCG1201

Circuit Symbol and No.		Part No.
C 917	(A,129,40)	CKSSYB102K50
C 918	(A,141,40)	CKSRYB104K16
C 919	(A,147,41)	CCSRCH680J50
C 941	(A,32,138) (A,B,C)	CKSRYB103K50
C 942	(A,31,138) (A,B,C)	CKSRYB103K50

B

Unit Number : (A)
Unit Number : (B)
Unit Number : (D)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1801	(B,123,25) IC	PD6340A
D 1801	(B,96,25) Diode	MC2848-11
D 1802	(B,100,25) Diode	MC2846-11
D 1851	(A,163,23) White LED	DS2XA4WBETW1(Z1)
D 1852	(A,62,21) LED	CL-195SR-CD
D 1853	(A,60,12) LED	CL-195SR-CD
D 1854	(A,68,11) LED	CL-195SR-CD
D 1855	(A,77,33) LED	CL-195SR-CD
D 1856	(A,68,28) LED	CL-195SR-CD
D 1857	(A,60,27) LED	CL-195SR-CD
D 1861	(A,26,28) LED	CL-195SR-CD
D 1862	(A,24,21) LED	CL-195SR-CD
D 1863	(A,26,11) LED	CL-195SR-CD
D 1864	(A,13,30) LED	CL-195SR-CD
D 1865	(A,7,37) LED	CL-195SR-CD
D 1866	(A,12,7) LED	CL-195SR-CD
D 1867	(A,89,8) LED	CL-195SR-CD
D 1868	(A,77,6) LED	CL-195SR-CD
D 1869	(A,148,41) LED	CL-195SR-CD
D 1870	(A,164,41) LED	CL-195SR-CD
D 1911	(B,150,17) Diode	MALS068X
D 1912	(B,148,23) Diode	MALS068X
X 1801	(B,112,24) Ceramic Resonator 5.00 MHz	CSS1731
S 1845	(A,43,20) Rotary Switch	CSD1153
VA1901	(B,159,19) Varistor	EZJZ1V270RM
VA1902	(B,157,21) Varistor	EZJZ1V270RM
VA1903	(B,154,21) Varistor	EZJZ1V270RM
VA1904	(B,160,19) Varistor	EZJZ1V270RM
LCD1801	(A,158,33) LCD(A,D)	CAW1970
	LCD(B)	YAW5107
CN1821	(B,109,10) Connector	CKS6049
CN1901	(A,153,9) Jack	YKN5001
CN1911	(A,137,9) Connector	YKS5036

RESISTORS

R 1801	(B,103,24)	RS1/10SR473J
R 1805	(B,99,23)	RS1/10SR222J
R 1806	(B,101,21)	RS1/10SR222J
R 1821	(B,57,8)	RS1/10SR473J
R 1823	(B,95,22)	RS1/10SR0R0J
R 1824	(B,29,15)	RS1/10SR0R0J
R 1851	(B,156,24)	RS1/4SA681J
R 1852	(B,68,28)	RS1/4SA821J
R 1853	(B,74,28)	RS1/4SA821J
R 1855	(B,23,22)	RS1/4SA821J
R 1856	(B,26,17)	RS1/4SA681J
R 1857	(B,81,15)	RS1/4SA102J
R 1858	(B,154,24)	RS1/4SA222J
R 1866	(B,68,18)	RS1/10SR0R0J
R 1901	(B,158,19)	RS1/10SR101J
R 1902	(B,156,19)	RS1/10SR101J

CAPACITORS

C 1802	(B,85,16)	CKSRYB105K10
C 1901	(B,154,20)	CKSRYB472K50
C 1902	(B,154,18)	CKSRYB472K50

B

Unit Number : (C)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1801	(B,123,25) IC	PD6340A
D 1801	(B,96,25) Diode	MC2848-11
D 1802	(B,100,25) Diode	MC2846-11
D 1851	(A,163,23) White LED	DS2XA4WBETW1(Z1)
D 1852	(A,62,21) LED	CL-195PG-CD
D 1853	(A,60,12) LED	CL-195PG-CD
D 1854	(A,68,11) LED	CL-195PG-CD
D 1855	(A,77,33) LED	CL-195PG-CD
D 1856	(A,68,28) LED	CL-195PG-CD
D 1857	(A,60,27) LED	CL-195PG-CD
D 1861	(A,26,28) LED	CL-195PG-CD
D 1862	(A,24,21) LED	CL-195PG-CD
D 1863	(A,26,11) LED	CL-195PG-CD
D 1864	(A,13,30) LED	CL-195PG-CD
D 1865	(A,7,37) LED	CL-195PG-CD
D 1866	(A,12,7) LED	CL-195PG-CD
D 1867	(A,89,8) LED	CL-195PG-CD
D 1868	(A,77,6) LED	CL-195PG-CD
D 1869	(A,148,41) LED	CL-195PG-CD
D 1870	(A,164,41) LED	CL-195PG-CD
D 1911	(B,150,17) Diode	MALS068X
D 1912	(B,148,23) Diode	MALS068X
X 1801	(B,112,24) Ceramic Resonator 5.00 MHz	CSS1731
S 1845	(A,43,20) Rotary Switch	CSD1153
VA1901	(B,159,19) Varistor	EZJZ1V270RM
VA1902	(B,157,21) Varistor	EZJZ1V270RM
VA1903	(B,154,21) Varistor	EZJZ1V270RM
VA1904	(B,160,19) Varistor	EZJZ1V270RM
LCD1801	(A,158,33) LCD	CAW1970
CN1821	(B,109,10) Connector	CKS6049
CN1901	(A,153,9) Jack	YKN5001
CN1911	(A,137,9) Connector	YKS5036

RESISTORS

R 1801	(B,103,24)	RS1/10SR473J
R 1805	(B,99,23)	RS1/10SR222J
R 1806	(B,101,21)	RS1/10SR222J
R 1821	(B,57,8)	RS1/10SR473J
R 1823	(B,95,22)	RS1/10SR0R0J
R 1824	(B,29,15)	RS1/10SR0R0J

Circuit Symbol and No.		Part No.
R 1851	(B,156,24)	RS1/4SA681J
R 1852	(B,68,28)	RS1/4SA821J
R 1853	(B,74,28)	RS1/4SA821J
R 1855	(B,23,22)	RS1/4SA561J
R 1856	(B,26,17)	RS1/4SA561J
R 1857	(B,81,15)	RS1/4SA102J
R 1858	(B,154,24)	RS1/4SA222J
R 1866	(B,68,18)	RS1/10SR0R0J
R 1901	(B,158,19)	RS1/10SR101J
R 1902	(B,156,19)	RS1/10SR101J

CAPACITORS

C 1802	(B,85,16)	CKSRYB105K10
C 1901	(B,154,20)	CKSRYB472K50
C 1902	(B,154,18)	CKSRYB472K50

C

Unit Number : CWX3776
Unit Name : CD Core Unit(S11USB)

MISCELLANEOUS

IC 201	(A,31,33)	IC	PE5715A
IC 301	(A,64,27)	IC	BA5839FP
Q 101	(B,9,56)	Transistor	2SA1577
Q 102	(B,19,47)	Digital TR(PNP)	UNR511MG
X 201	(A,40,20)	Ceramic Resonator 16.934 MHz	CSS1603
X 205	(B,12,36)	Oscillator 48.000 MHz	CSS1753
S 901	(A,42,53)	Switch(HOME)	CSN1067
S 903	(B,21,12)	Switch(DSCSNS)	CSN1068
S 905	(B,11,25)	Switch(8EJ)	CSN1068
CN101	(A,15,58)	Connector	CKS4808
CN701	(A,36,10)	Connector	CKS5854

RESISTORS

R 101	(B,5,59)	RS1/10SR2R4J
R 102	(B,7,59)	RS1/10SR2R4J
R 103	(B,8,59)	RS1/10SR2R7J
R 104	(B,12,52)	RS1/16SS222J
R 107	(B,17,48)	RS1/16SS105J
R 202	(A,47,25)	RS1/16SS473J
R 204	(A,22,19)	RS1/16SS221J
R 206	(B,31,27)	RS1/16SS104J
R 210	(B,51,12)	RS1/16SS102J
R 214	(B,28,48)	RS1/16SS472J
R 216	(B,29,47)	RS1/16SS472J
R 221	(A,31,49)	RS1/16SS103J
R 222	(A,33,49)	RS1/16SS103J
R 223	(B,38,14)	RS1/16SS473J
R 225	(A,28,48)	RS1/16SS103J
R 226	(A,27,48)	RS1/16SS393J
R 227	(B,25,45)	RS1/16SS562J
R 228	(B,23,42)	RS1/16SS122J
R 229	(B,23,44)	RS1/16SS472J
R 232	(B,25,43)	RS1/16SS122J
R 233	(B,19,24)	RS1/16SS103J
R 234	(A,48,18)	RS1/16SS473J
R 235	(B,23,32)	RS1/16SS473J
R 237	(A,42,22)	RS1/16SS471J

Circuit Symbol and No.		Part No.
R 240	(B,49,10)	RS1/16S473J
R 241	(B,49,11)	RS1/16SS103J
R 244	(B,27,28)	RS1/16SS473J
R 254	(A,19,22)	RS1/16SS104J
R 256	(A,18,22)	RS1/16SS104J
R 259	(A,12,23)	RS1/16SS0R0J
R 261	(A,14,24)	RS1/16SS104J
R 280	(B,30,20)	RS1/16SS103J
R 282	(A,15,28)	RS1/16SS240J
R 283	(A,15,27)	RS1/16SS240J
R 284	(B,17,27)	RS1/16SS153J
R 285	(B,18,27)	RS1/16SS153J
R 290	(B,29,20)	RS1/16SS103J
R 291	(B,16,44)	RS1/16SS272J
R 294	(A,14,29)	RS1/16SS221J
R 307	(A,60,33)	RS1/16SS183J
R 308	(A,60,35)	RS1/16SS183J
R 309	(A,58,33)	RS1/16SS183J
R 310	(A,57,36)	RS1/16SS183J
R 701	(A,36,21)	RS1/16SS221J
R 702	(A,22,22)	RS1/16SS221J
R 714	(B,30,12)	RS1/16S0R0J

CAPACITORS

C 106	(B,12,54)	CKSQYB475K6R3
C 202	(A,20,26)	CKSSYB104K10
C 204	(A,21,20)	CKSSYB103K16
C 205	(B,36,24)	CKSQYB475K6R3
C 206	(A,37,22)	CKSSYB104K10
C 207	(A,40,22)	CKSRYB104K16
C 209	(B,43,32)	CEVW220M6R3
C 210	(B,40,27)	CKSSYB104K10
C 211	(A,42,26)	CKSSYB104K10
C 213	(A,38,44)	CKSSYB104K10
C 214	(A,44,27)	CKSSYB104K10
C 215	(B,38,31)	CKSSYB104K10
C 216	(A,26,49)	CKSSYB332K50
C 217	(A,25,46)	CKSSYB104K10
C 218	(A,26,48)	CKSSYB473K10
C 219	(A,24,44)	CKSSYB104K10
C 220	(A,24,45)	CKSSYB182K50
C 221	(A,23,43)	CKSSYB104K10
C 222	(B,23,43)	CCSSCH560J50
C 223	(B,23,45)	CCSSCH4R0C50
C 224	(A,21,42)	CKSSYB104K10
C 226	(A,18,41)	CCSSCH680J50
C 227	(A,18,39)	CCSSCH470J50
C 228	(B,15,42)	CKSSYB103K16
C 229	(B,23,37)	CKSSYB104K10
C 236	(B,24,37)	CKSSYB104K10
C 239	(B,25,44)	CCSSCH220J50
C 240	(A,15,36)	CKSSYB104K10
C 250	(A,31,50)	CKSSYB102K50
C 251	(A,33,50)	CKSSYB102K50
C 260	(A,17,27)	CKSSYB104K10
C 261	(B,9,38)	CCSSCJ3R0C50
C 262	(B,9,34)	CCSSCJ3R0C50
C 293	(B,15,43)	CKSSYB102K50
C 303	(A,60,34)	CKSSYB472K25

Circuit Symbol and No.		Part No.
C 304	(A,58,34)	CKSSYB223K16
C 307	(A,68,20)	CKSRYB105K10
C 703	(B,36,14)	CCSSCH101J50
C 704	(B,40,13)	CKSSYB102K50
C 711	(A,53,28)	CKSSYB104K10

Miscellaneous Parts List

	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDLE)	CXE2273
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026