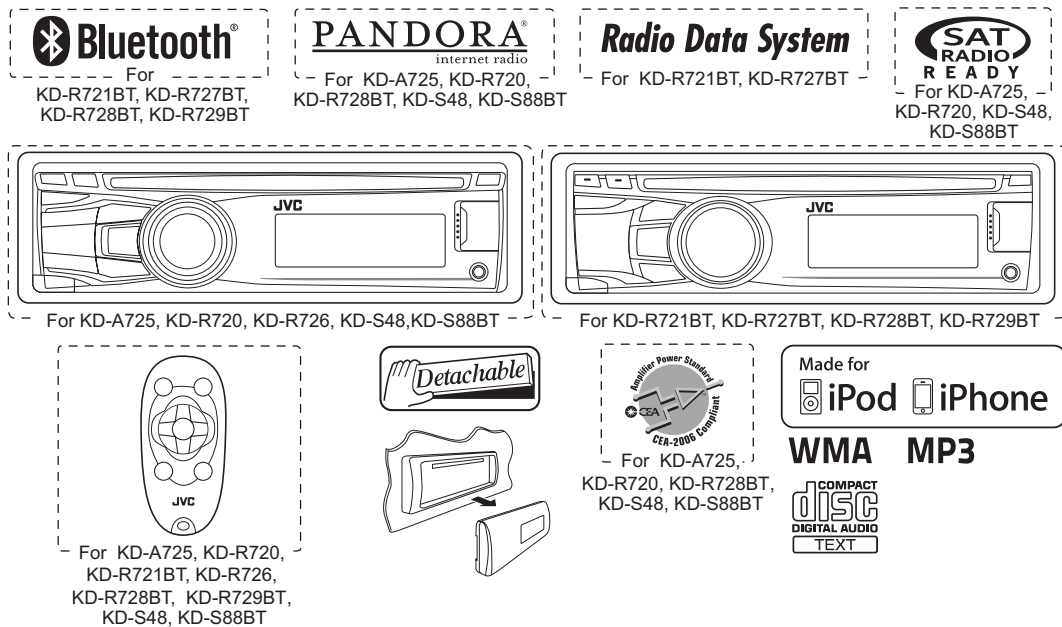


JVC

SERVICE MANUAL

CD RECEIVER

**KD-A725J, KD-R720J, KD-R721BTE,
KD-R721BTEU, KD-R721BTEY, KD-R726U,
KD-R726UH, KD-R726UT, KD-R727BTEE,
KD-R728BTJ, KD-R729BTUR, KD-S48J,
KD-S88BTJ**



Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 219 Centigrade)
Lead free solder used in the board (material : Sn-Cu, melting point : 230 Centigrade)

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SPECIFICATION

KD-A725/KD-R720/KD-S48/KD-S88BT

AUDIO AMPLIFIER SECTION

Power Output	20 W RMS × 4 Channels at 4 Ω and ≤ 1% THD+N
Signal-to-Noise Ratio	80 dBA (reference: 1 W into 4 Ω)
Load Impedance	4 Ω (4 Ω to 8 Ω allowance)
Frequency Response	40 Hz to 20 000 Hz
Line-Out or Subwoofer-Out Level / Impedance	2.5 V/20 kΩ load (full scale)
Output Impedance	≤ 600 Ω
Other Terminal	AUX (auxiliary) input jack, USB input terminal, USB rear cable, Expansion port, Antenna terminal

TUNER SECTION

Frequency Range	FM	with channel interval set to	200 kHz	87.9 MHz to 107.9 MHz
			50 kHz	87.5 MHz to 108.0 MHz
	AM	with channel interval set to	10 kHz	530 kHz to 1 700 kHz
			9 kHz	531 kHz to 1 611 kHz
FM Tuner	Usable Sensitivity	9.3 dBf (0.8 μV/75Ω)		
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)		
	Alternate Channel Selectivity (400 kHz)	65 dB		
	Frequency Response	40 Hz to 15 000 Hz		
	Stereo Separation:	40 dB		
AM Tuner	Sensitivity/Selectivity	20 μV/40 dB		

CD PLAYER SECTION

Type	Compact disc player		
Signal Detection System	Non-contact optical pickup (semiconductor laser)		
Number of Channels	2 channels (stereo)		
Frequency Response	5 Hz to 20 000 Hz		
Signal-to-Noise Ratio	98 dB		
	102 dB (For KD-S48)		
Wow and Flutter	Less than measurable limit		
MP3 Decoding Format (MPEG1/2 Audio Layer 3)	Max. Bit Rate	320 kbps	
WMA (Windows Media [®]) Audio) Decoding Format	Max. Bit Rate	320 kbps	

USB SECTION

USB Standard	USB 1.1, USB 2.0		
Data Transfer Rate (Full Speed)	Max. 12 Mbps		
Compatible Device	Mass Storage Class (except HDD)		
Compatible File System	FAT 32/ 16/ 12		
Playable Audio Format	MP3/ WMA/ WAV		
Max. Current	DC 5 V --- 1 A		
Output Power (For KD-S48)	DC 5 V --- 1 A , USB input terminal (front/rear)		

BLUETOOTH SECTION

Version	Bluetooth 2.1 certified (+EDR)		
Profile	HFP 1.5, OPP 1.1, A2DP 1.2, AVRCP 1.3, PBAP 1.0		

GENERAL

Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)
Grounding System	Negative ground	
Allowable Operating Temperature	0°C to +40°C (32°F to 104°F)	
Dimensions (W× H × D) : (approx.)	Installation Size	182 mm × 52 mm × 158 mm (7-3/16" × 2-1/16" × 6-1/4")
	Panel Size	188 mm × 59 mm × 9 mm (7-7/16" × 2-3/8" × 3/8")
Mass	1.3 kg (2.9 lbs) (excluding accessories)	

- Subject to change without notice.
- If a kit is necessary for your car, consult your telephone directory for the nearest car audio speciality shop.

KD-R721BT, KD-R727BT, KD-R729BT			
AUDIO AMPLIFIER SECTION			
Maximum Power Output	50 W per channel		
Continuous Power Output (RMS)	20 W per channel into 4 Ω , 40 Hz to 20 000 Hz at no more than 1% total harmonic distortion.		
Signal-to-Noise Ratio	70 dB		
Load Impedance	4 Ω (4 Ω to 8 Ω allowance)		
Frequency Response	40 Hz to 20 000 Hz		
Line-Out or Subwoofer-Out Level / Impedance	2.5 V/20 k Ω load (full scale)		
Output Impedance	\leq 600 Ω		
Other Terminal	USB input terminal, USB rear cable, Auxiliary input jack, Antenna input		
TUNER SECTION			
Frequency Range	FM	87.5 MHz to 108.0 MHz	
		LW [For KD-R727]	65.0 MHz to 74.0 MHz
	AM	MW	531 kHz to 1 611 kHz
		LW	153 kHz to 279 kHz
FM Tuner	Usable Sensitivity	9.3 dBf (0.8 μ V/75 Ω)	
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μ V/75 Ω)	
	Alternate Channel Selectivity (400 kHz)	65 dB	
	Frequency Response	40 Hz to 15 000 Hz	
	Stereo Separation:	40 dB	
MW Tuner	Sensitivity/Selectivity	20 μ V/40 dB	
LW Tuner	Sensitivity	50 μ V	
CD PLAYER SECTION			
Type	Compact disc player		
Signal Detection System	Non-contact optical pickup (semiconductor laser)		
Number of Channels	2 channels (stereo)		
Frequency Response	5 Hz to 20 000 Hz		
Signal-to-Noise Ratio	102 dB		
Wow and Flutter	Less than measurable limit		
MP3 Decoding Format (MPEG1/2 Audio Layer 3)	Max. Bit Rate: 320 kbps		
WMA (Windows Media [®] Audio) Decoding Format	Max. Bit Rate: 192 kbps		
USB SECTION			
USB Standard	USB 1.1, USB 2.0		
Data Transfer Rate (Full Speed)	Max. 12 Mbps		
Compatible Device	Mass Storage Class (except HDD)		
Compatible File System	FAT 32/ 16/ 12		
Playable Audio Format	MP3/ WMA/ WAV		
Output Power	DC 5 V \pm 1 A, USB input terminal (front/rear)		
BLUETOOTH SECTION			
Version	Bluetooth 2.1 certified (+EDR)		
Power Class	Class 2 Radio		
Service Area	10 m		
Profile	HFP 1.5, OPP 1.1, A2DP 1.2, AVRCP 1.3, PBAP 1.0		
GENERAL			
Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)	
Grounding System	Negative ground		
Allowable Operating Temperature	0°C to +40°C		
Dimensions (W× H × D) : (approx.)	Installation Size	182 mm × 52 mm × 158 mm	
	Panel Size	188 mm × 59 mm × 9 mm	
Mass	1.3 kg (excluding accessories)		

• Subject to change without notice.

KD-R726**AUDIO AMPLIFIER SECTION**

Maximum Power Output	50 W per channel
Continuous Power Output (RMS)	20 W per channel into 4 Ω , 40 Hz to 20 000 Hz at no more than 1% total harmonic distortion.
Signal-to-Noise Ratio	70 dB
Load Impedance	4 Ω (4 Ω to 8 Ω allowance)
Frequency Response	40 Hz to 20 000 Hz
Line-Out or Subwoofer-Out Level / Impedance	5.0 V/20 k Ω load (full scale)
Output Impedance	\leq 600 Ω
Other Terminal	USB input terminal, USB rear cable, Auxiliary input jack, Antenna input

TUNER SECTION

Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	531 kHz to 1 611 kHz
FM Tuner	Usable Sensitivity	9.3 dBf (0.8 μ V/75 Ω)
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μ V/75 Ω)
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation:	40 dB
AM Tuner	Sensitivity/Selectivity	20 μ V/40 dB

CD PLAYER SECTION

Type	Compact disc player
Signal Detection System	Non-contact optical pickup (semiconductor laser)
Number of Channels	2 channels (stereo)
Frequency Response	5 Hz to 20 000 Hz
Signal-to-Noise Ratio	98 dB
Wow and Flutter	Less than measurable limit
MP3 Decoding Format (MPEG1/2 Audio Layer 3)	Max. Bit Rate: 320 kbps
WMA (Windows Media [®] Audio) Decoding Format	Max. Bit Rate: 320 kbps

USB SECTION

USB Standard	USB 1.1, USB 2.0
Data Transfer Rate (Full Speed)	Max. 12 Mbps
Compatible Device	Mass Storage Class (except HDD)
Compatible File System	FAT 32/ 16/ 12
Playable Audio Format	MP3/ WMA/ WAV
Max. Current	DC 5 V \equiv 1 A

BLUETOOTH SECTION

Version	Bluetooth 2.1 certified (+EDR)
Profile	HFP 1.5, OPP 1.1, A2DP 1.2, AVRCP 1.3, PBAP 1.0

GENERAL

Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)
Grounding System	Negative ground	
Allowable Operating Temperature	0°C to +40°C	
Dimensions (W \times H \times D) : (approx.)	Installation Size	182 mm \times 52 mm \times 158 mm
	Panel Size	188 mm \times 59 mm \times 9 mm
Mass	1.3 kg (excluding accessories)	

- Subject to change without notice.

KD-R728BT				
AUDIO AMPLIFIER SECTION				
Power Output	20 W RMS × 4 Channels at 4 Ω and ≤ 1% THD+N			
Signal-to-Noise Ratio	80 dBA (reference: 1 W into 4 Ω)			
Load Impedance	4 Ω (4 Ω to 8 Ω allowance)			
Frequency Response	40 Hz to 20 000 Hz			
Line-Out or Subwoofer-Out Level / Impedance	2.5 V/20 kΩ load (full scale)			
Output Impedance	≤ 600 Ω			
Other Terminal	AUX (auxiliary) input jack, USB input terminal, USB rear cable, Antenna terminal			
TUNER SECTION				
Frequency Range	FM	with channel interval set to	200 kHz	87.9 MHz to 107.9 MHz
			50 kHz	87.5 MHz to 108.0 MHz
	AM	with channel interval set to	10 kHz	530 kHz to 1 700 kHz
			9 kHz	531 kHz to 1 611 kHz
FM Tuner	Usable Sensitivity	9.3 dBf (0.8 μV/75Ω)		
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)		
	Alternate Channel Selectivity (400 kHz)	65 dB		
	Frequency Response	40 Hz to 15 000 Hz		
	Stereo Separation:	40 dB		
AM Tuner	Sensitivity/Selectivity	20 μV/40 dB		
CD PLAYER SECTION				
Type	Compact disc player			
Signal Detection System	Non-contact optical pickup (semiconductor laser)			
Number of Channels	2 channels (stereo)			
Frequency Response	5 Hz to 20 000 Hz			
Signal-to-Noise Ratio	98 dB			
Wow and Flutter	Less than measurable limit			
MP3 Decoding Format (MPEG1/2 Audio Layer 3)	Max. Bit Rate: 320 kbps			
WMA (Windows Media [®]) Audio) Decoding Format	Max. Bit Rate: 320 kbps			
USB SECTION				
USB Standard	USB 1.1, USB 2.0			
Data Transfer Rate (Full Speed)	Max. 12 Mbps			
Compatible Device	Mass Storage Class (except HDD)			
Compatible File System	FAT 32/ 16/ 12			
Playable Audio Format	MP3/ WMA/ WAV			
Max. Current	DC 5 V --- 1 A			
BLUETOOTH SECTION				
Version	Bluetooth 2.1 certified (+EDR)			
Power Class	Class 2 Radio			
Service Area	10 m (10.9 yd)			
Profile	HFP 1.5, OPP 1.1, A2DP 1.2, AVRCP 1.3, PBAP 1.0			
GENERAL				
Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)		
Grounding System	Negative ground			
Allowable Operating Temperature	0°C to +40°C (32°F to 104°F)			
Dimensions (W× H × D) : (approx.)	Installation Size	182 mm × 52 mm × 158 mm (7-3/16" × 2-1/16" × 6-1/4")		
	Panel Size	188 mm × 59 mm × 9 mm (7-7/16" × 2-3/8" × 3/8")		
Mass	1.3 kg (2.9 lbs) (excluding accessories)			

- Subject to change without notice.
- If a kit is necessary for your car, consult your telephone directory for the nearest car audio speciality shop.

SECTION 1 PRECAUTION

1.1 Safety Precautions

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

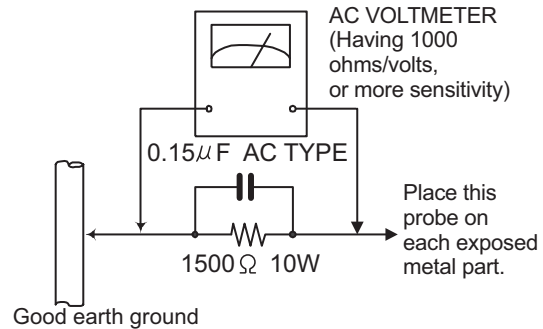
(5) Leakage shock hazard testing

After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
- Alternate check method
Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 Ω per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC

voltmeter.

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



1.2 Warning

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

1.3 Caution

Burrs formed during molding may be left over on some parts of the chassis.

Therefore, pay attention to such burrs in the case of pre-forming repair of this system.

1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (■) and ICP (●) or identified by the " Δ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer.
(This regulation does not Except the J and C version)

1.5 Preventing static electricity

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

1.5.1 Grounding to prevent damage by static electricity

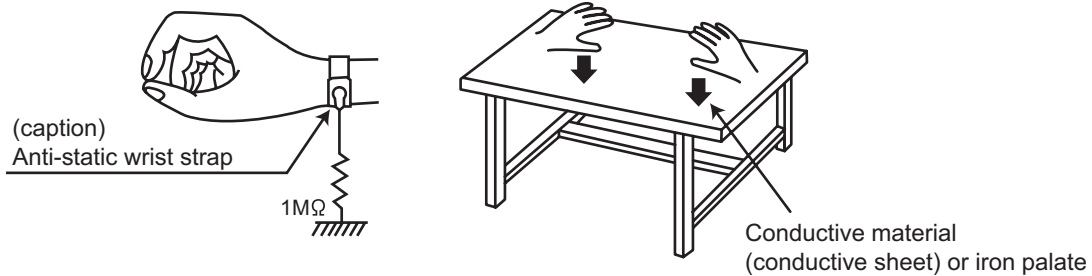
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as laser products. Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench

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

(2) Ground yourself

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



(3) Handling the optical pickup

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

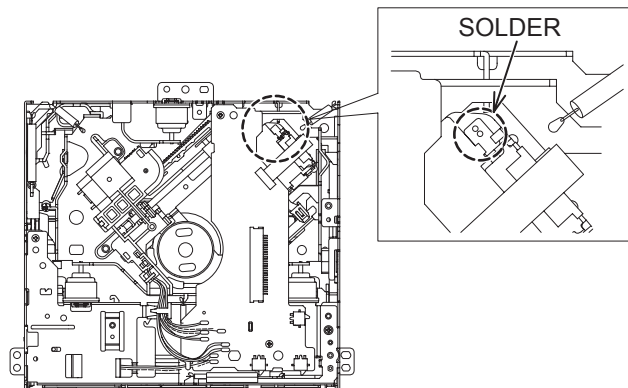
1.6 Handling the traverse unit (optical pickup)

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

1.7 Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for the pickup unit.**

- Apply solder to the short land sections before the card wire is disconnected from the connector on the servo board. (If the card wire is disconnected without applying solder, the pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land sections after connecting the card wire.



1.8 Important for laser products

1.CLASS 1 LASER PRODUCT

2.CAUTION :

(For U.S.A.) Visible and/or invisible class II laser radiation when open. Do not stare into beam.

(Others) Visible and/or invisible class 1M laser radiation when open. Do not view directly with optical instruments.

3.CAUTION : Visible and/or invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

4.CAUTION : This laser product uses visible and/or invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

(For U.S.A.)

CAUTION : Visible and/or invisible class II laser radiation when open. Do not stare into beam.

(Others)

CAUTION : Visible and/or invisible class 1M laser radiation when open. Do not view directly with optical instruments

ACHTUNG: Sichtbare und/oder unsichtbare Laserstrahlung der Klasse 1M bei offenen Abdeckungen. Nicht direkt mit optischen Instrumenten betrachten.

ATTENTION: Rayonnement laser visible et/ou invisible de classe 1M une fois ouvert. Ne pas regarder directement avec des instruments optiques.

VOORZICHTIG: Zichtbare en/of onzichtbare klasse 1M laserstralen indien geopend. Bekijk niet direct met optische instrumenten.

ATTENZIONE: Radiazione laser in classe 1M visibile e/o invisibile quando aperto. Non osservare direttamente con strumenti ottici.

WARNING: Synlig och/eller osynlig laserstrålning, klass 1M, när denna del är öppnad. Betrakta ej strålen med optiska instrument.

VARO! Avattaessa olet alttiina nakyyvalle ja/tai näkymättömälle luokan 1M lasersateilylle. Älä tarkastele sitä optisen laitteen läpi.

ADVASEL: Synlig og/eller usynlig klasse 1M-laserstrålning ved åbning. Se ikke direkte med optiske instrumenter.

AVISO: Radiación láser de clase 1M visible y/o invisible cuando está abierto. No mirar directamente con instrumental óptico.

PRECAUÇÃO: Radiação laser de classe 1M visível e/ou invisível quando aberto. Não olhe diretamente com instrumentos ópticos.

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

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



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

PRECAUÇÃO: Radiação laser de classe 1M visível e/ou invisível quando aberto. Não olhe diretamente com instrumentos ópticos.

ПРЕДУПРЕЖДЕНИЕ: В открытом состоянии происходит видимое и/или невидимое излучение лазера класса 1M. Не смотрите непосредственно в оптические инструменты.

UWAGA: Otwarcie spowoduje narażenie na widzialne i/lub niewidzialne promieniowanie lasera klasy 1M. Nie patrzeć bezpośrednio w przyrządy optyczne.

UPOZORNĚNÍ: Při otevření vydává viditelné popř. neviditelné laserové ozáření třídy 1M. Nedívejte se do otvoru přímo s optickými nástroji.

FIGYELMEZTETÉS: Látható és/vagy láthatatlan 1M osztályú sugárzás nyitott állapotban. Ne nézze közvetlenül optikai műszerekkel.

注意: 打開蓋板可能會產生可見或不可見的 1M 級鐳射。不要使用光學儀器直接進行窺視。

注意: 打开蓋板可能会产生可见或不可见的 1M 级辐射。不要使用光学仪器直接进行窥视。

تنبيه: يوجد إشعاع ليزري مرئي و/أو غير مرئي من الفئة 1M عندما يكون الجهاز مفتوحاً. تجنب النظر مباشرة داخل الجهاز باستخدام أدوات بصرية.

احتياطات: هنگامی که باز گردد، تشعشع مرئی و یا نامرئی کلاس 1M لیزر وجود دارد. با لوازم چشمی مستقیماً به آن نگاه نکنید.

주의: 개방하면 가시 및/또는 비가시 클래스 1M 레이저 방사선이 나옵니다. 광학 기구로 직접 들여다보지 마십시오.

REPRODUCTION AND POSITION OF LABELS and PRINT WARNING LABEL and PRINT



CAUTION VISIBLE AND/OR INVISIBLE CLASS 1M LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1:2001 (ENG)	ATTENTION RAYONNEMENT LASER VISIBLE ET/OU INVISIBLE DE CLASSE 1M UNE FOIS OUVERT. NE PAS REGARDER DIRECTEMENT AVEC DES INSTRUMENTS OPTIQUES. (FRA)	AVISO RADIACIÓN LASER DE CLASE 1M VISIBLE Y/O INVISIBLE CUANDO ESTÁ ABIERTO. NO MIRAR DIRECTAMENTE CON INSTRUMENTAL ÓPTICO. (ESP)	WARNING SYNLIG OCH/ELLER OSYNLIG LASERSTRÅLNING, KLASS 1M, NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT. (SWE)	注意 ニニモ顯くと不可視 及び/または不可視 のクラス1M レーザー放射が 出ます。 光学儀器で直接 見ないでください。 (JPN)	CAUTION VISIBLE AND/OR INVISIBLE CLASS II LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR (ENG) LV44633-003A
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SECTION 2 SPECIFIC SERVICE INSTRUCTIONS

2.1 KD-S88BTJ

The KD-S88BTJ is packaged products of a CD RECEIVER and a BLUETOOTH ADAPTER+Microphone.

CD RECEIVER	BLUETOOTH ADAPTER
KD-R720J	KS-UBT1+ Microphone

SECTION 3 DISASSEMBLY

3.1 Main body (Used model : KD-R720)

3.1.1 Removing the Bottom chassis (See Fig.1)

- (1) Disengage the seven hooks **a** engaging the Bottom chassis.
- (2) Slide the Bottom chassis backward to remove it.

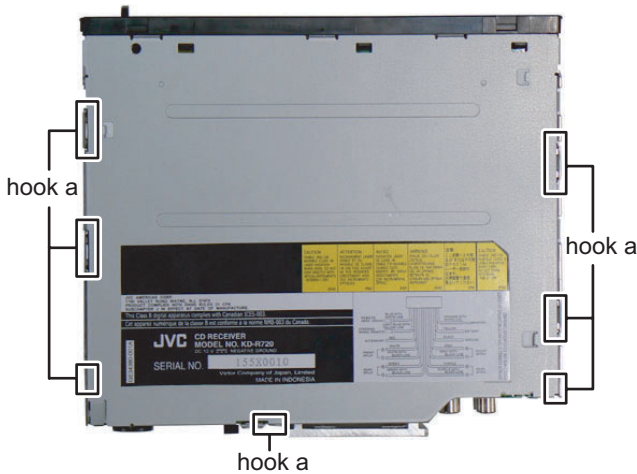


Fig.1

3.1.2 Removing the Front chassis (See Fig.2)

- (1) Disengage the four hooks **b** engaging both sides of the Front chassis.

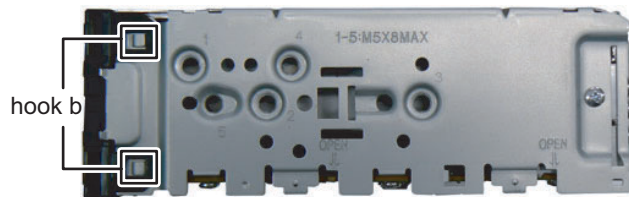


Fig.2

3.1.3 Removing the Main board (See Fig.3, 4 and 5)

- (1) Remove the one screw **A** attaching the Rear Bracket. (See Fig.3)

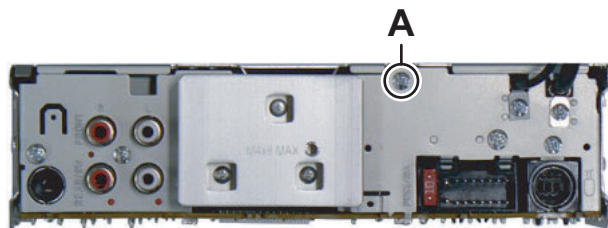


Fig.3

- (2) Remove the two screws **B** attaching both sides of the Top chassis. (See Fig.4)



Fig.4

- (3) Remove the three screws **C** attaching the Main board. (See Fig.5)

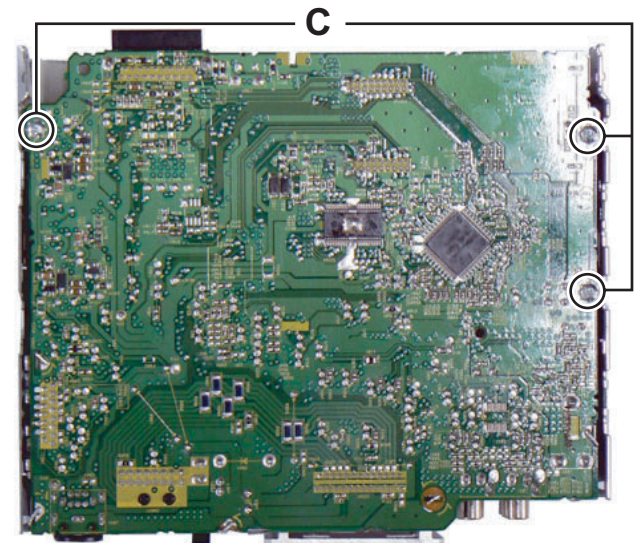


Fig.5

- (4) Disconnect the board to board connector [CN502](#) connecting the Main board and the CD mechanism. (See Fig.6)

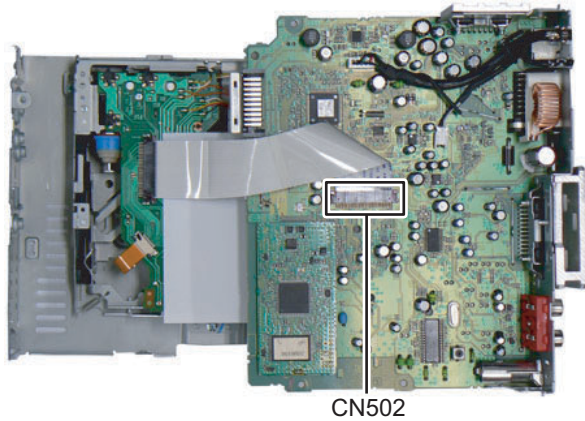


Fig.6

3.2 CD mechanism assembly section

3.2.1 Removing the Mecha control board

- (1) Solder the short land on the pickup. (See Fig. 1)

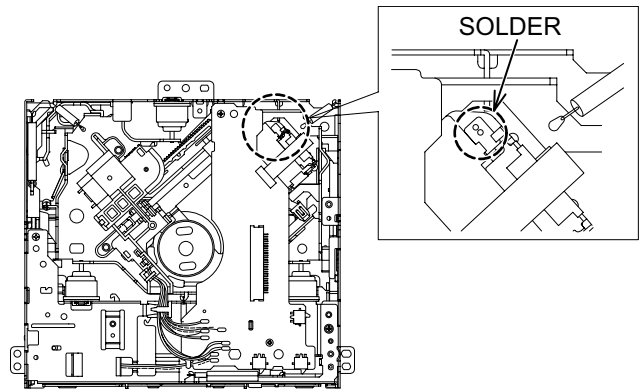


Fig.1

- (2) Remove the eight wires from the Mecha control board. (See Fig.2)

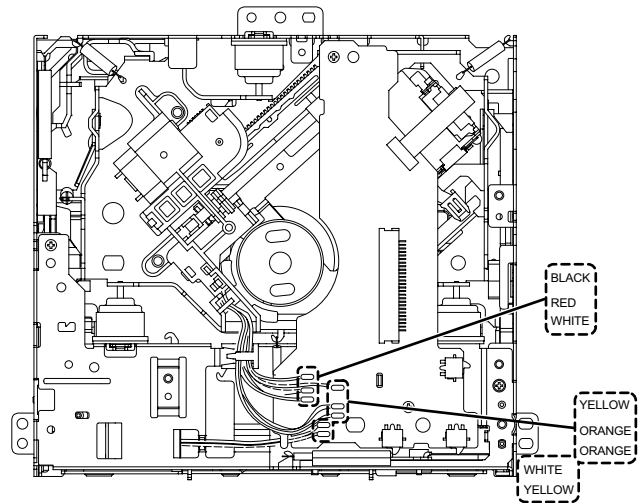


Fig.2

- (3) Disconnect the flexible wire from the pickup connected to the connector [CN102](#) on the Mecha control board. (See Fig.3)
- (4) Remove the two screws **A** attaching the Mecha control board. (See Fig.3)

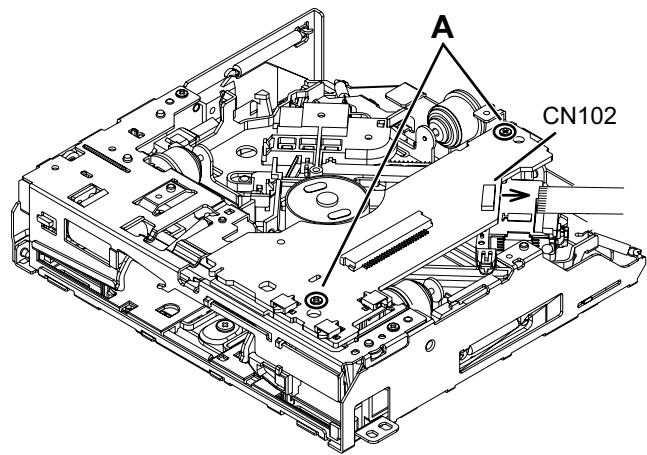


Fig.3

3.1.4 Removing the CD mechanism (See Fig.7)

- (1) Remove the three screws **D** attaching the CD mechanism.

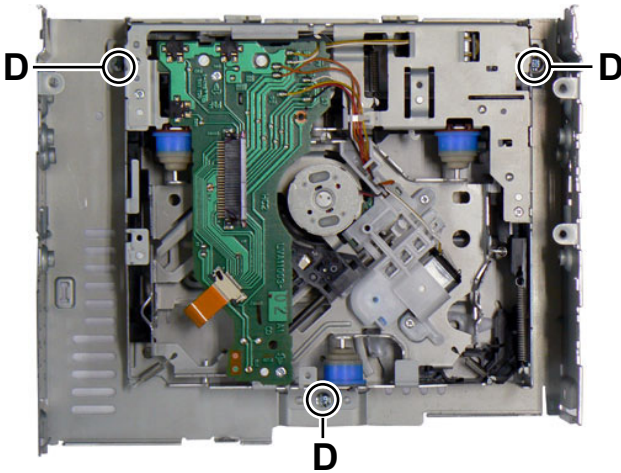


Fig.7

3.1.5 Removing the Switch board (See Fig.8)

- (1) Remove the Volume knob.
- (2) Remove the four screws **E** attaching the Rear cover.
- (3) Disengage the thirteen hooks **c** engaging the Rear cover.

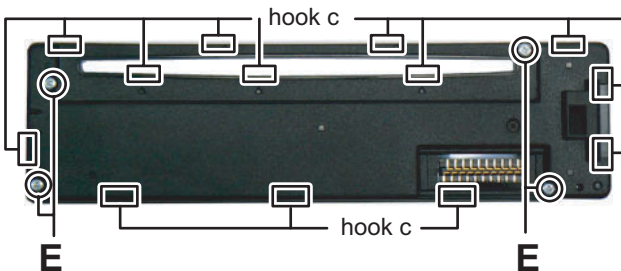


Fig.8

3.2.2 Removing the Traverse mechanism (See Fig.4, 5)

- (1) Remove the five springs from the traverse mechanism. (See Fig.4)

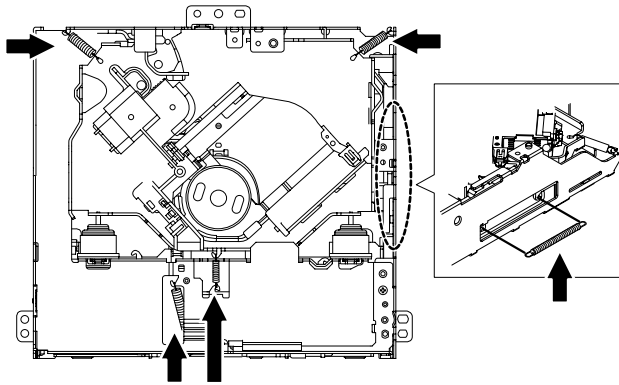


Fig.4

- (2) Remove the three screws **B** attaching the bottom frame assembly. (See Fig.5)
- (3) Remove the three dumpers from the bottom frame assembly. (See Fig.5)

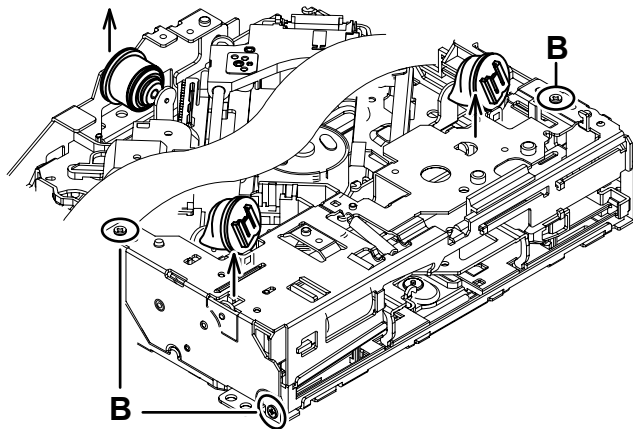


Fig.5

3.2.3 Removing the Pickup (See Fig.6, 7)

- (1) Remove the two screws **C** attaching the feed bracket assembly. (See Fig.6)

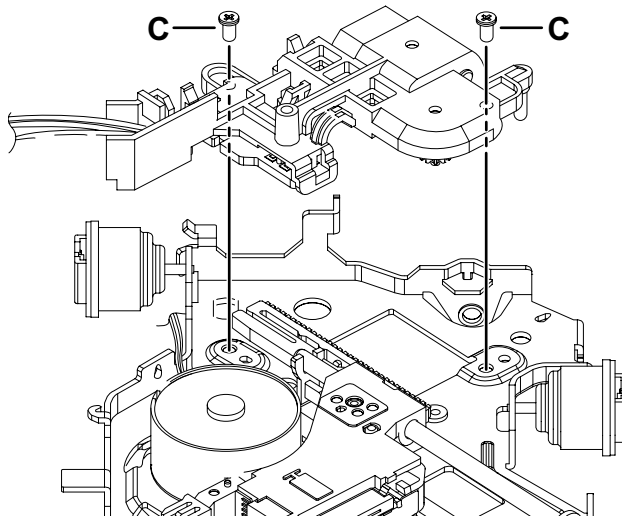


Fig.6

- (2) Remove the shaft from the TM base. (See Fig.7)
- (3) Disengage the hook **a** on the pickup from the TM base. (See Fig.7)

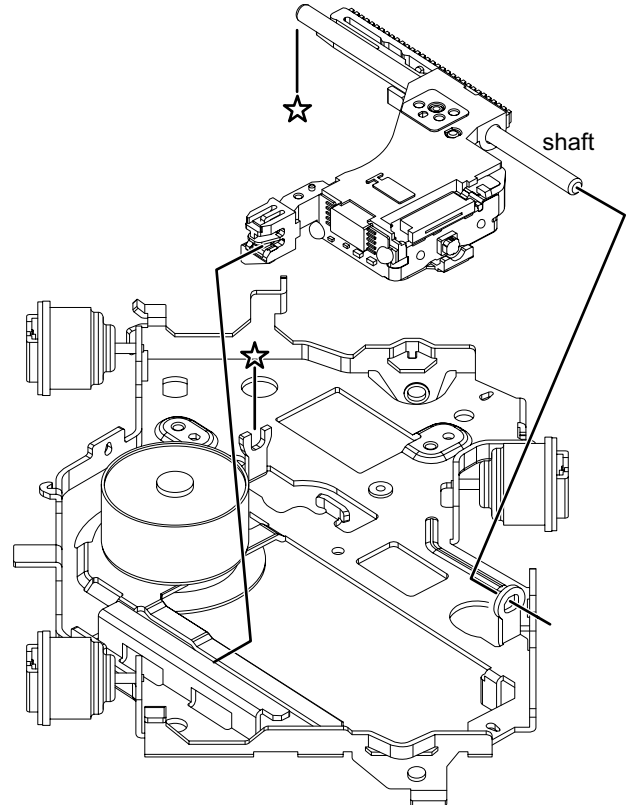


Fig.7

3.2.4 Removing the Spindle motor (See Fig.8, 9)

- (1) Remove the HC CL. Spring from the HC CL. base and the TM base, and then lift up the HC CL. base. (See Fig.8)

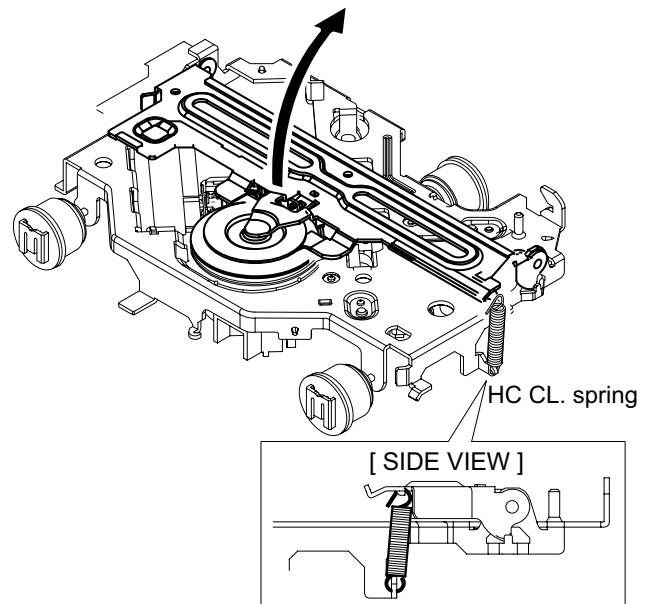


Fig.8

- (2) Remove the HC CL. base from the holes on the TM base.
(See Fig.9)

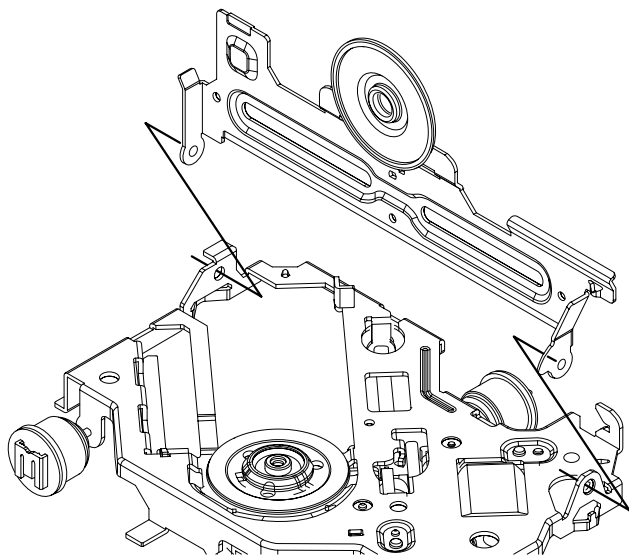


Fig.9

- (3) Remove the two screws **D** attaching the spindle motor.
(See Fig.10)

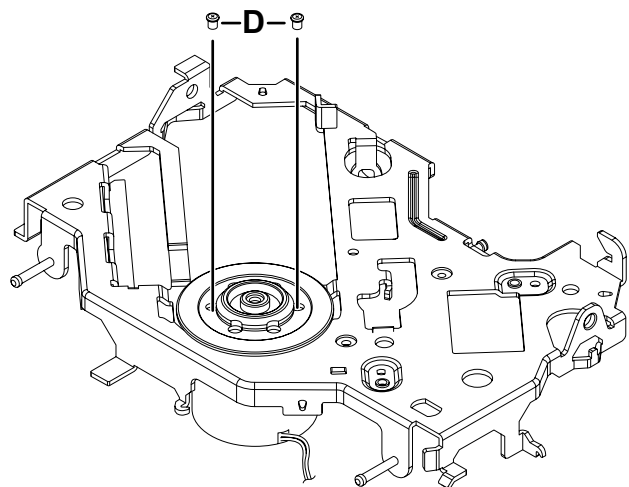


Fig.10

3.2.5 Removing the Loading motor

- (1) Remove the roller arm assembly from the bottom frame assembly. (See Fig.11)

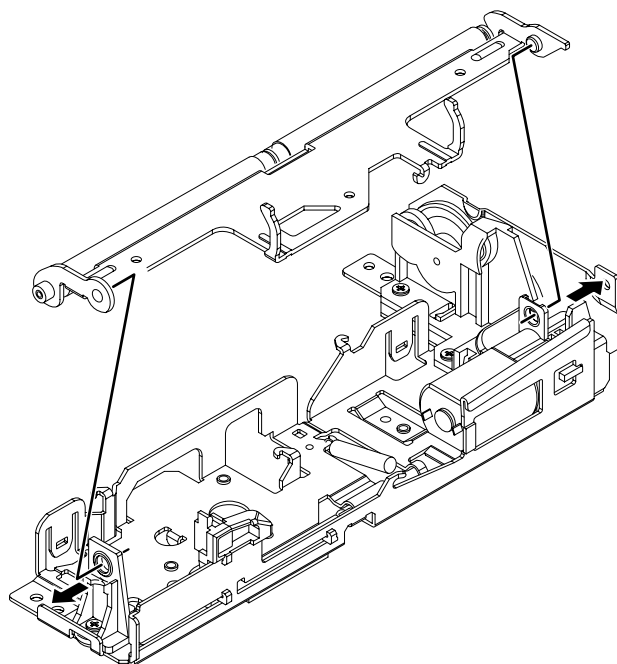


Fig.11

- (2) Remove the two screws **E** attaching the loading motor assembly, and then remove the loading motor assembly in the direction of the arrow. (See Fig.12)

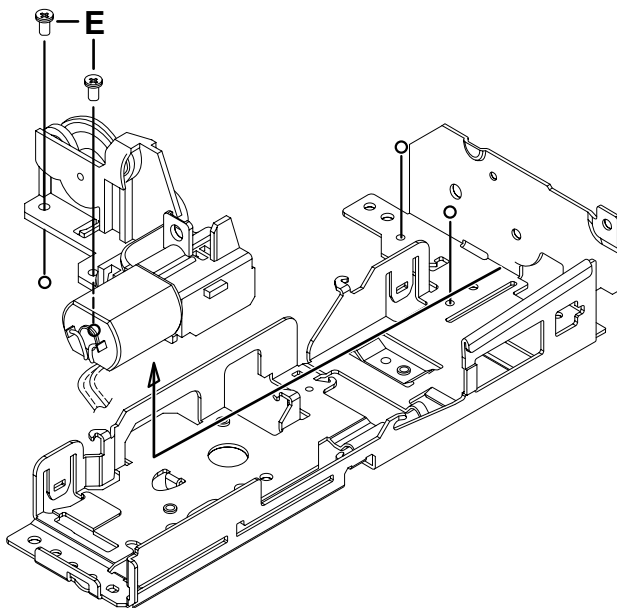


Fig.12

SECTION 4 ADJUSTMENT

4.1 Test instruments required for adjustment

- (1) Digital oscilloscope (100MHz)
- (2) Digital tester
- (3) Test Disc

4.2 Standard measuring conditions

Power supply voltage DC14.4V(10.5 to 16V)
Load impedance 20K ohm (2 Speakers connection)
Output Level Line out 2.5V (Vol. MAX)

4.5 How to connect the cable for adjusting

Caution:

Be sure to attach the heat sink and rear bracket onto the power amplifier IC and regulator IC respectively, before supply the power.
If voltage is applied without attaching these parts, the power amplifier IC and regulator IC will be destroyed by heat.

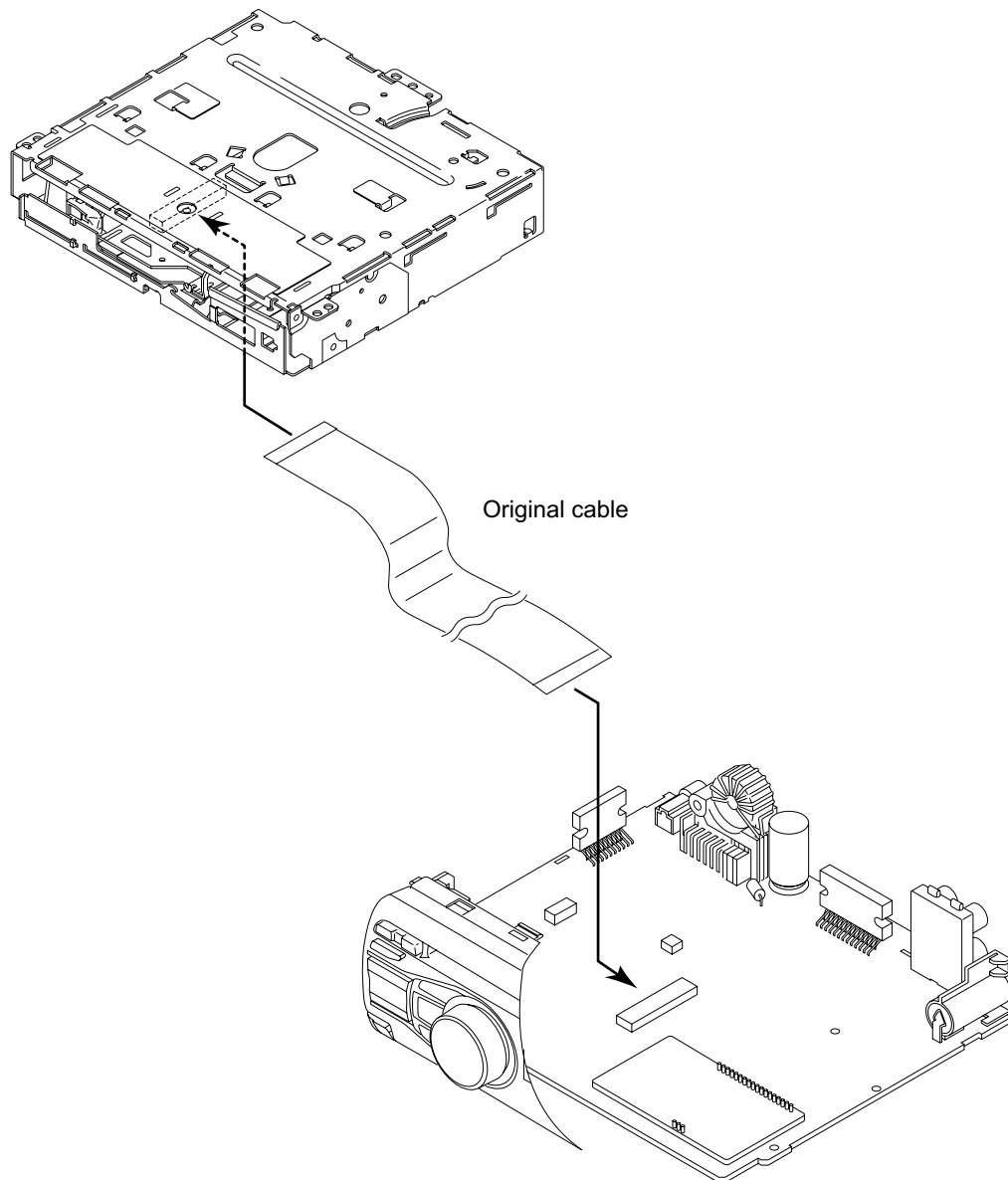
4.3 Standard volume position

Balance and Bass & Treble volume : Indication "0"
Loudness : OFF

4.4 Dummy load

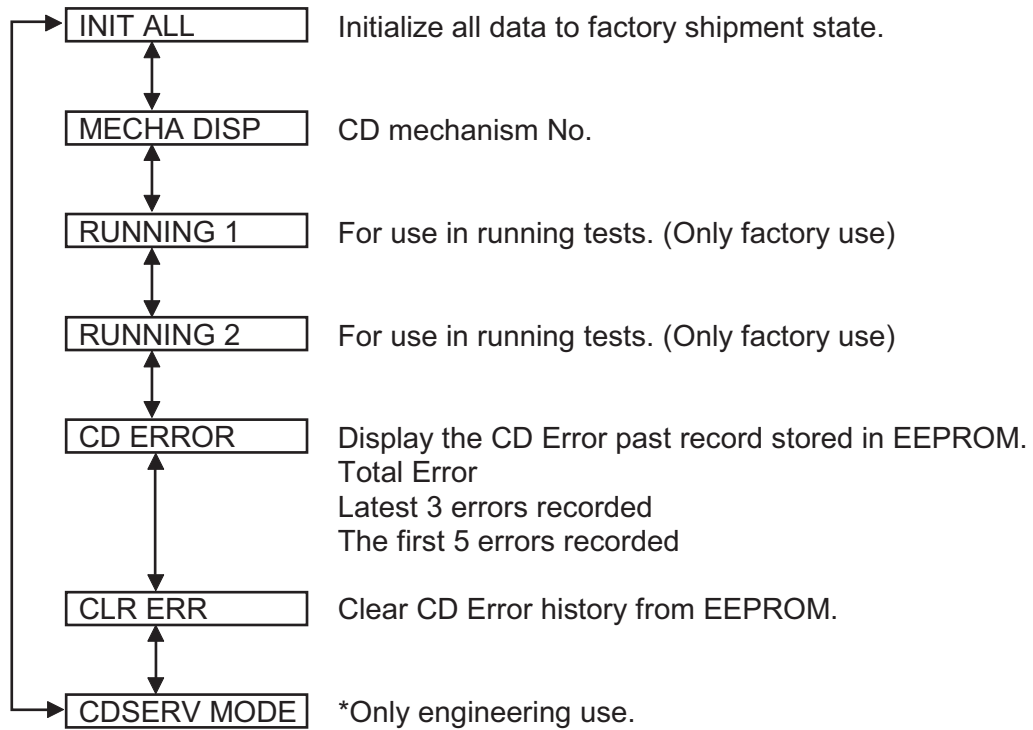
Exclusive dummy load should be used for AM, and FM.
For FM dummy load, there is a loss of 6dB between SSG output and antenna input.

The loss of 6dB need not be considered since direct reading of figures are applied in this working standard.



4.6 Service Mode

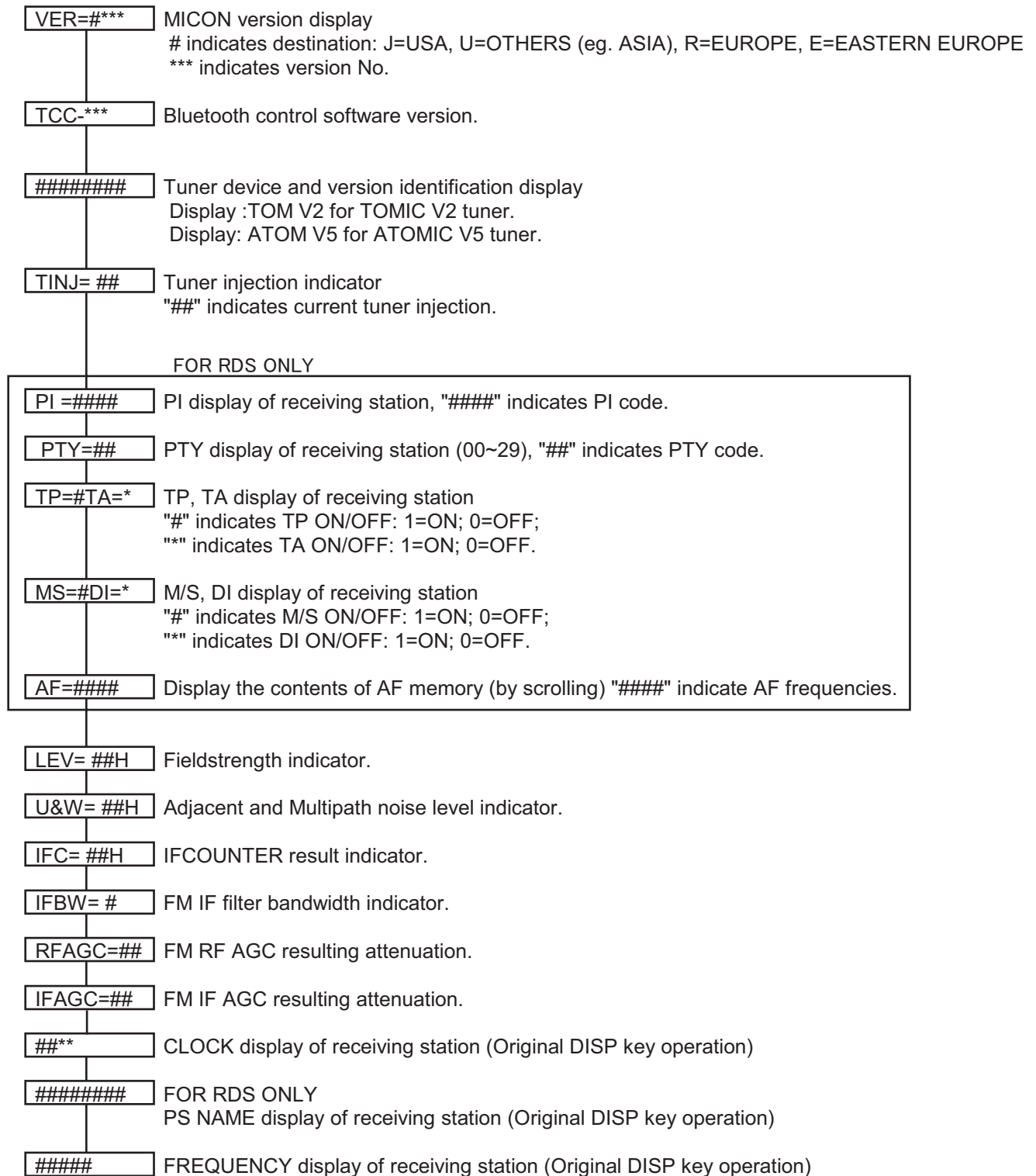
- Operating key: [MENU] → [DOWN] (3 sec)
- Navigation key : Press [SEL] in any main display item to select that option.
- Volume knob turn : forward and backward selection.



4.7 Tuner service mode

4.7.1 Key operation (FM and AM mode)

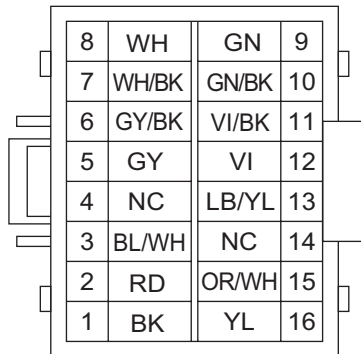
- Enter service mode: [SEL] → [MENU] (3 sec)
- Exit service mode: press [ENTER] (SEL) key.
- Go to next item: press [DISP] key
- Back to previous item: press [BACK] key



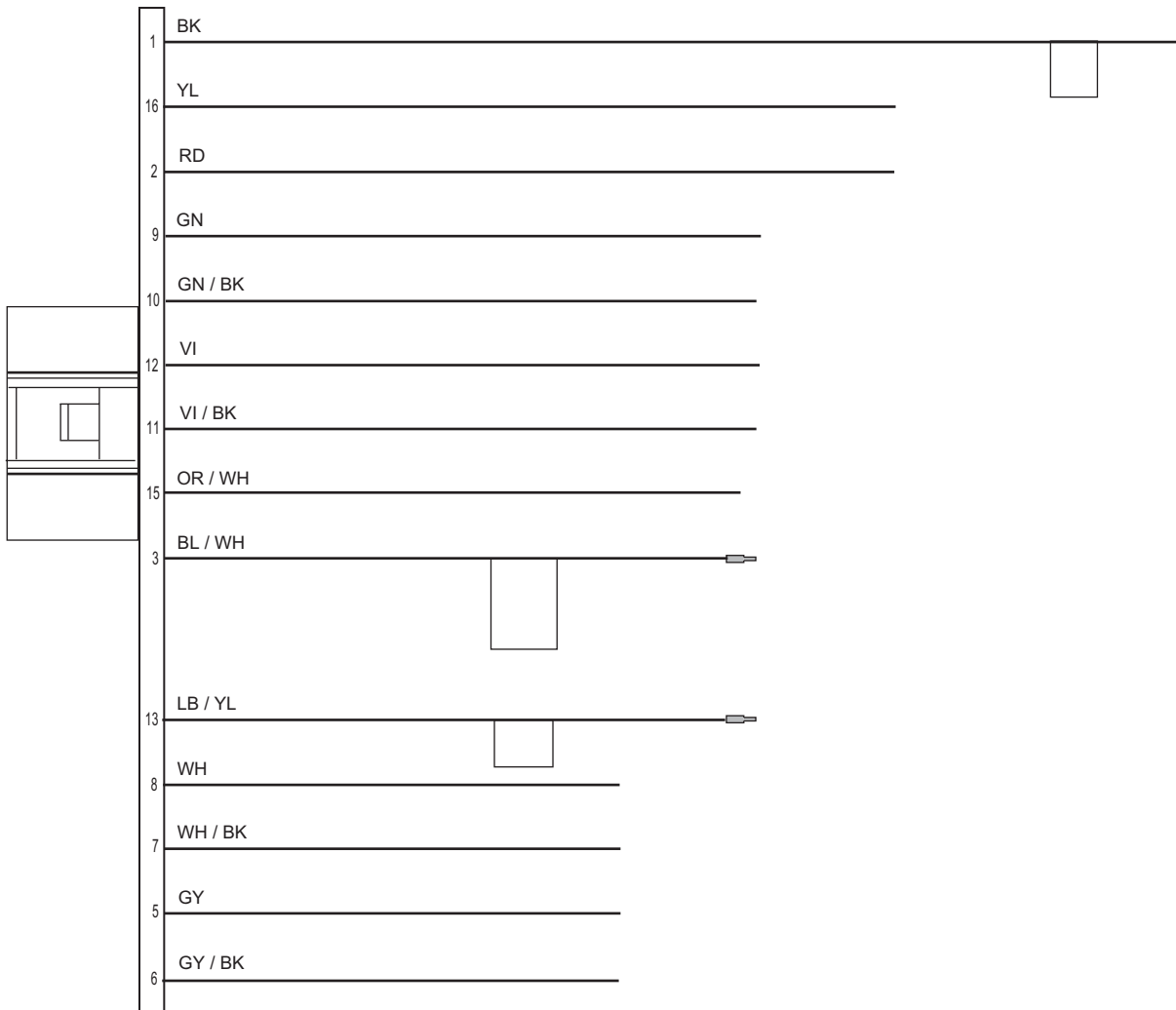
SECTION 5 TROUBLESHOOTING

5.1 16PIN CORD DIAGRAM

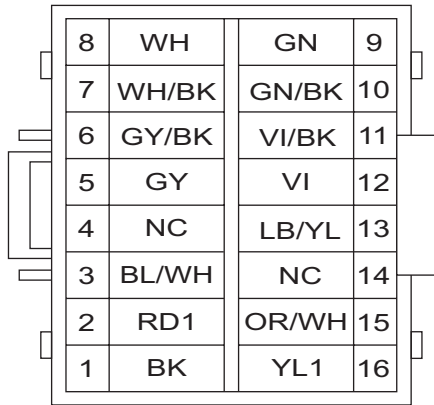
- For KD-A725, KD-R720, KD-R728BT



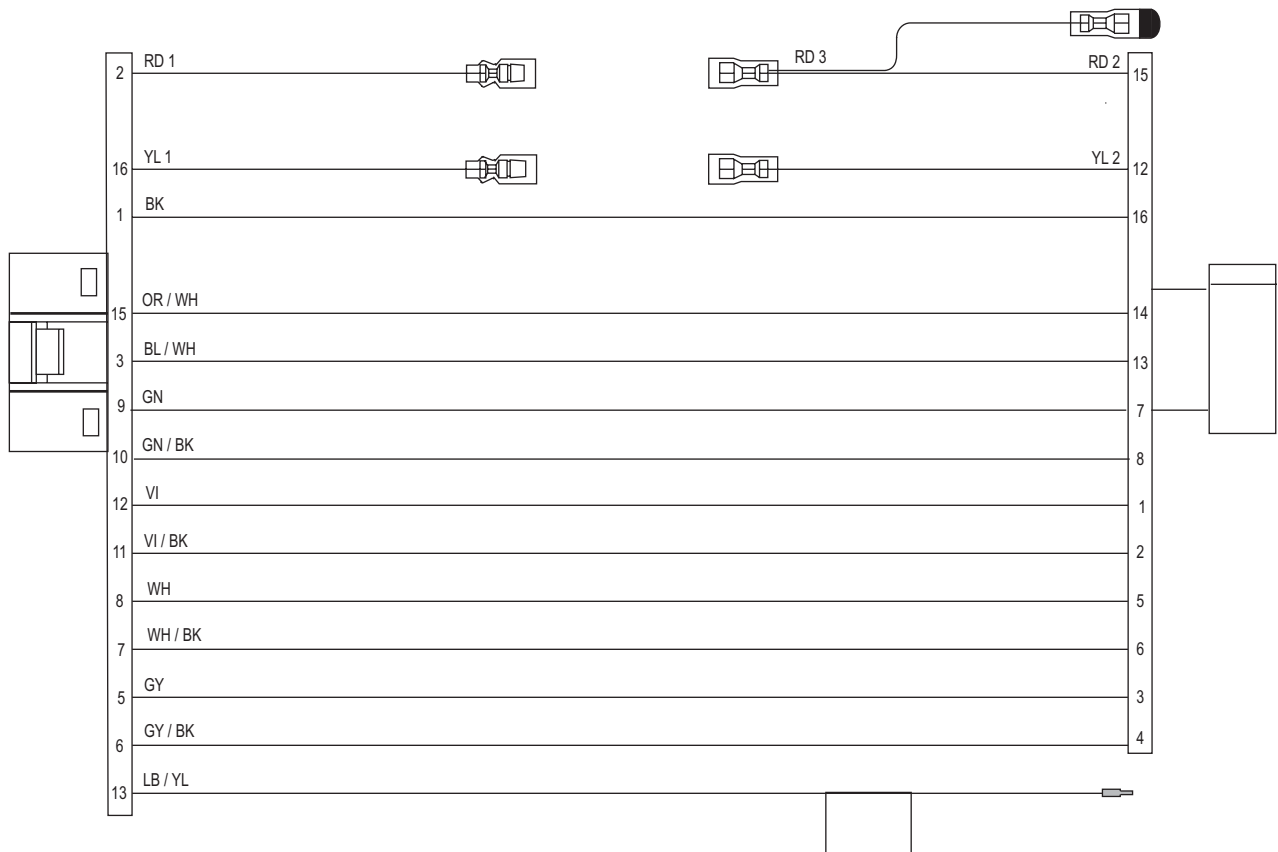
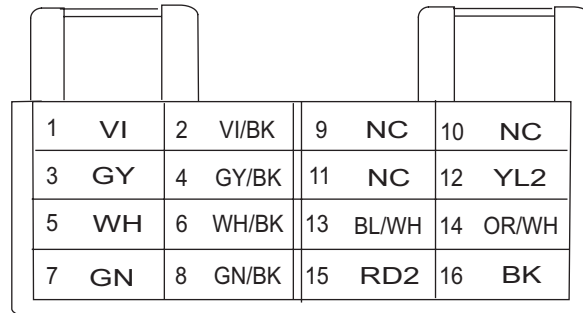
BK	Black	GN	Green
RD	Red	VI	Violet
BL	Blue	LB	Light Blue
WH	White	OR	Orange
GY	Gray	YL	Yellow



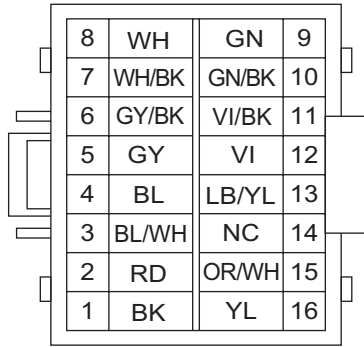
- For KD-R721BT



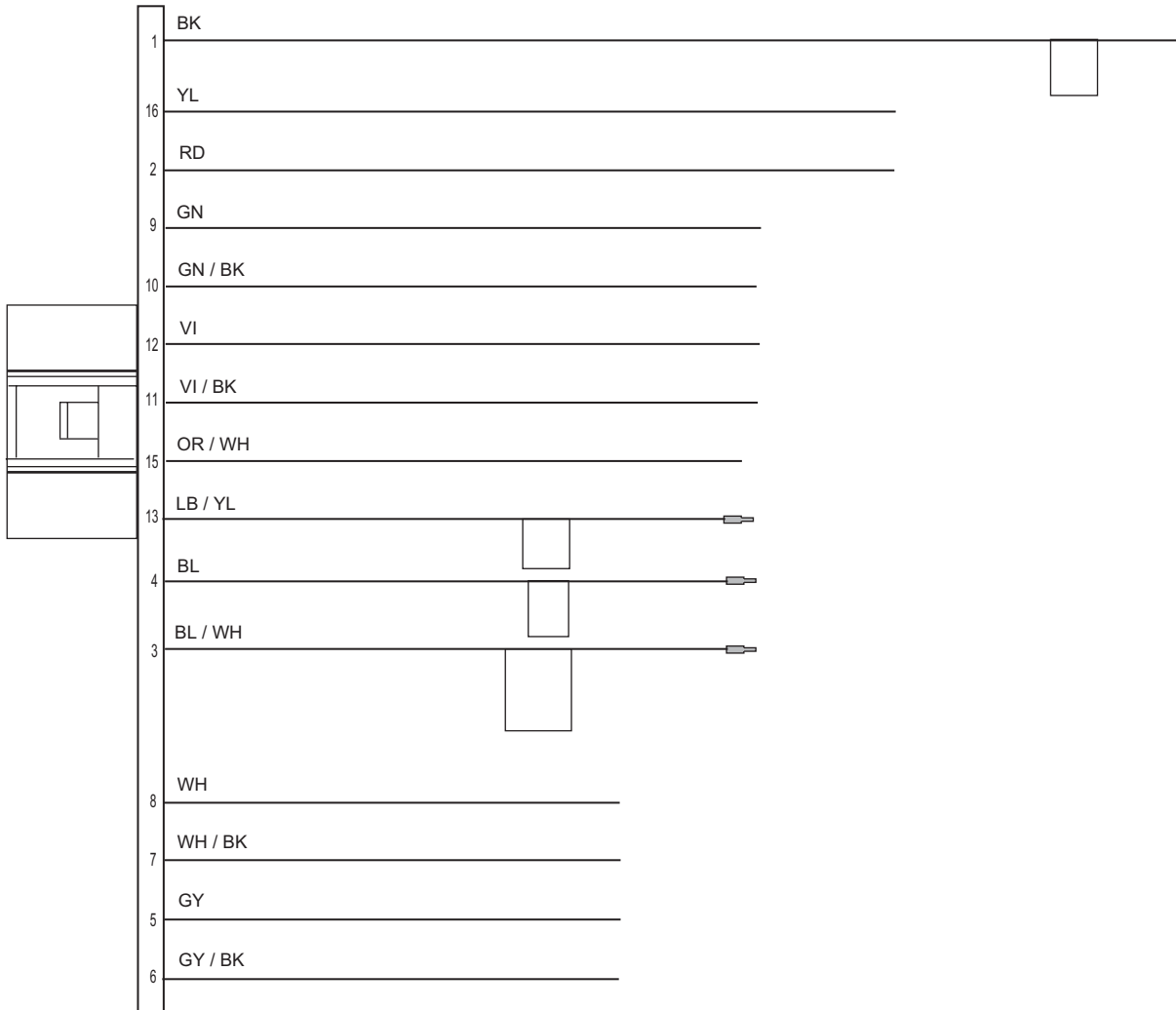
WH	White	GN	Green
BK	Black	VI	Violet
GY	Gray	LB	Light Blue
BL	Blue	YL	Yellow
RD	Red	OR	Orange



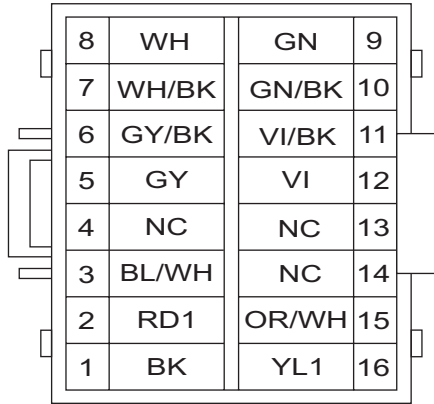
• For KD-R726



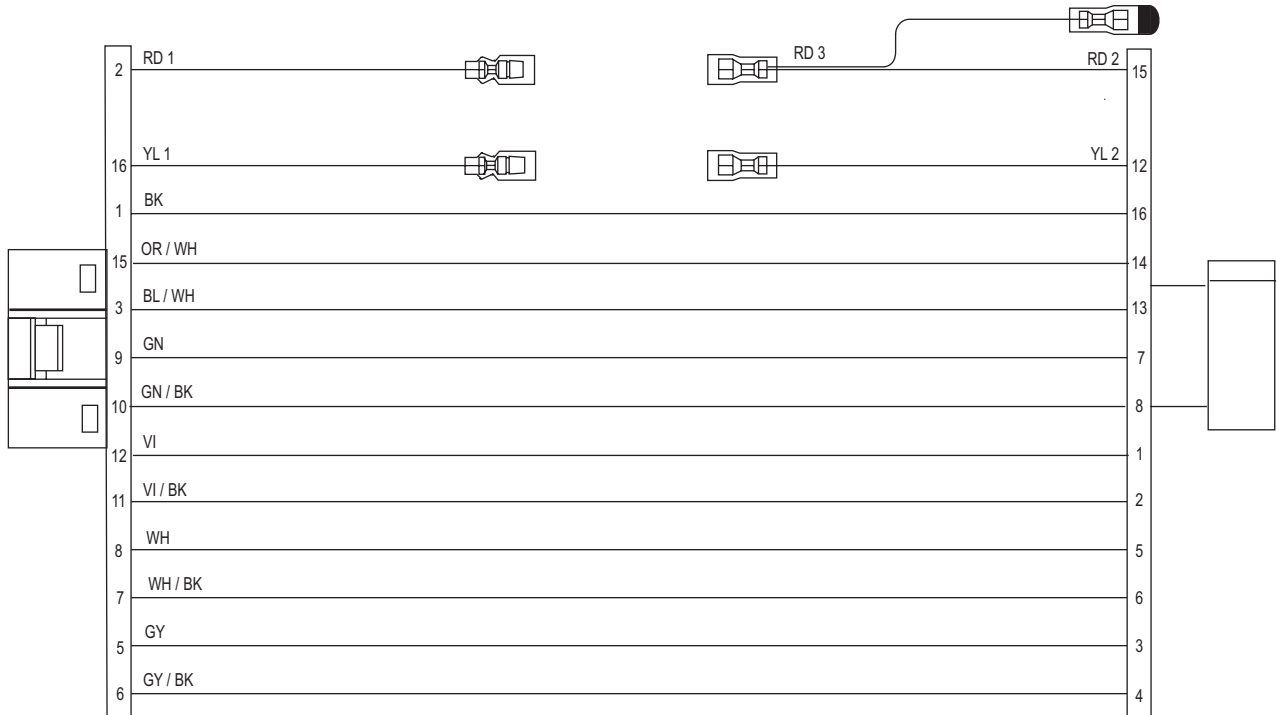
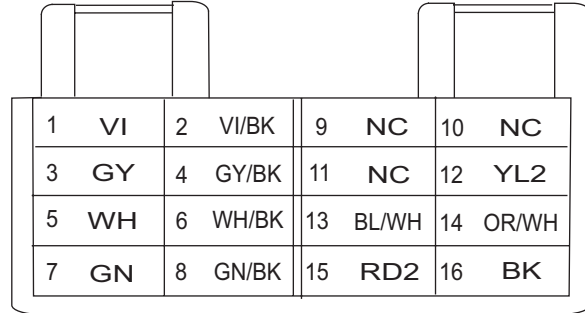
WH	White	GN	Green
BK	Black	VI	Violet
GY	Gray	LB	Light Blue
BL	Blue	YL	Yellow
RD	Red	OR	Orange



• For KD-R727BT



WH	White	GN	Green
BK	Black	VI	Violet
GY	Gray	OR	Orange
BL	Blue	YL	Yellow
RD	Red		





JVC

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