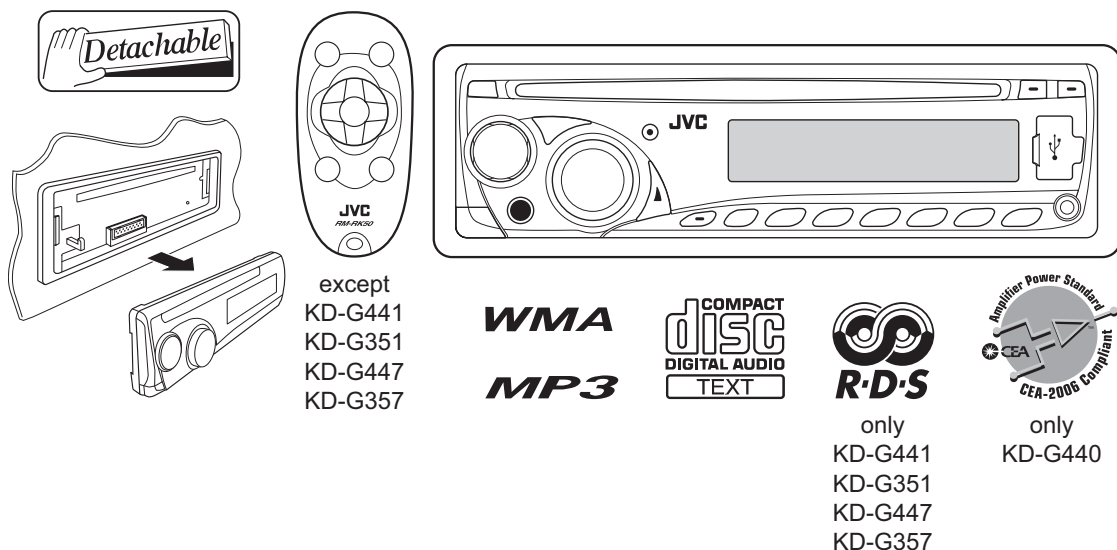


# JVC

## SERVICE MANUAL

### CD RECEIVER

**KD-G351E, KD-G351EX, KD-G351EY, KD-G351EU,  
KD-G357EE, KD-G440J, KD-G441E, KD-G441EX,  
KD-G441EY, KD-G441EU, KD-G447EE, KD-G644UI,  
KD-G645U, KD-G645UN, KD-G645UT, KD-G645UH,  
KD-G646U, KD-G646UN, KD-G646UT, KD-G646UH,  
KD-G648UF**



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-G441/KD-G351

<b>AUDIO AMPLIFIER SECTION</b>		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 $\Omega$ 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion
Load Impedance	4 $\Omega$ (4 $\Omega$ to 8 $\Omega$ allowance)	
Tone Control Range	Bass	$\pm 12$ dB at 60 Hz
	Middle	$\pm 12$ dB at 1 kHz
	Treble	$\pm 12$ dB at 10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Signal to Noise Ratio	70 dB	
Audio Output Level (for KD-G441)	Line-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)
	Output Impedance	1 k $\Omega$
	Subwoofer-Out Level/Impedance	2.5 V /20 k $\Omega$ load (full scale)
Other Terminals	AUX (auxiliary) input jack USB input jack Steering wheel remote input (forKD-G441)	
<b>TUNER SECTION</b>		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	MW: 522 kHz to 1 620 kHz LW: 144 kHz to 279 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 $\mu$ V/75 $\Omega$ )
	50 dB Quieting Sensitivity	16.3 dBf (1.8 $\mu$ V/75 $\Omega$ )
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
MW Tuner	Sensitivity/Selectivity	20 $\mu$ V/35 dB
LW Tuner	Sensitivity	50 $\mu$ V
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate (Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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)	Installation Size (approx.)	182 mm $\times$ 52 mm $\times$ 160 mm
	Panel Size (approx.)	188 mm $\times$ 58 mm $\times$ 13 mm
Mass (approx.)	1.3 kg (excluding accessories)	

Design and specifications are subject to change without notice.

**KD-G447/KD-G357**

<b>AUDIO AMPLIFIER SECTION</b>		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 $\Omega$ 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion
Load Impedance	4 $\Omega$ (4 $\Omega$ to 8 $\Omega$ allowance)	
Tone Control Range	Bass	$\pm 12$ dB at 60 Hz
	Middle	$\pm 12$ dB at 1 kHz
	Treble	$\pm 12$ dB at 10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Signal to Noise Ratio	70 dB	
Other Terminals	AUX (auxiliary) input jack, USB input jack	
<b>TUNER SECTION</b>		
Frequency Range	FM1/FM2	87.5 MHz to 108.0 MHz
	FM3	65.00 MHz to 74.00 MHz
	AM	MW: 522 kHz to 1 620 kHz LW: 144 kHz to 279 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 $\mu$ V/75 $\Omega$ )
	50 dB Quieting Sensitivity	16.3 dBf (1.8 $\mu$ V/75 $\Omega$ )
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
MW Tuner	Sensitivity/Selectivity	20 $\mu$ V/35 dB
LW Tuner	Sensitivity	50 $\mu$ V
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate (Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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)	Installation Size (approx.)	182 mm $\times$ 52 mm $\times$ 160 mm
	Panel Size (approx.)	188 mm $\times$ 58 mm $\times$ 13 mm
Mass (approx.)	1.3 kg (excluding accessories)	

Design and specifications are subject to change without notice.

**KD-G440**

<b>AUDIO AMPLIFIER SECTION</b>		
Power Output	20 W RMS × 4 Channels at 4 Ω and < or = 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)	
Tone Control Range	Bass/Mid-range/Treble	±12 dB at 60 Hz/1 kHz/10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Line-Out Level/Impedance	2.5 V/20 kΩ load (full scale)	
Output Impedance	1 kΩ	
Subwoofer-Out Level/Impedance	2.5 V/20 kΩ load (full scale)	
Other Terminal	AUX (auxiliary) input jack USB input jack Steering wheel remote input	
<b>TUNER SECTION</b>		
Frequency Range	FM	87.5 MHz to 107.9 MHz (with channel interval set to 100 kHz or 200 kHz) 87.5 MHz to 108.0 MHz (with channel interval set to 50 kHz)
	AM	530 kHz to 1 710 kHz (with channel interval set to 10 kHz) 531 kHz to 1 602 kHz (with channel interval set to 9 kHz)
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 μV/75 Ω)
	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	35 dB
AM Tuner	Sensitivity/Selectivity	20 μV/35 dB
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate (Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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 × 160 mm (7-3/16" × 2-1/16" × 6-5/16")
	Panel Size	188 mm × 58 mm × 6 mm (7-7/16" × 2-5/16" × 1/4")
Mass	1.3 kg (2.9 lbs) (excluding accessories)	

Design and specifications are subject to change without notice.

**KD-G644**

<b>AUDIO AMPLIFIER SECTION</b>		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 $\Omega$ 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
Load Impedance	4 $\Omega$ (4 $\Omega$ to 8 $\Omega$ allowance)	
Tone Control Range	Bass	$\pm 12$ dB at 60 Hz
	Mid-range	$\pm 12$ dB at 1 kHz
	Treble	$\pm 12$ dB at 10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Signal-to-Noise Ratio	70 dB	
Line-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Output Impedance	1 k $\Omega$	
Subwoofer-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Other Terminal	AUX (auxiliary) input jack, USB input jack	
<b>TUNER SECTION</b>		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	531 kHz to 1 602 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 $\mu$ V/75 $\Omega$ )
	50 dB Quieting Sensitivity	16.3 dBf (1.8 $\mu$ V/75 $\Omega$ )
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
AM Tuner	Sensitivity/Selectivity	20 $\mu$ V/35 dB
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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 <sup>®</sup> Audio) Decoding Format	Max. Bit Rate
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate (Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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 $\times$ 160 mm
	Panel Size	188 mm $\times$ 58 mm $\times$ 6 mm
Mass	1.3 kg (excluding accessories)	

Design and specifications are subject to change without notice.

**KD-G646/KD-G645**

<b>AUDIO AMPLIFIER SECTION</b>		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 $\Omega$ 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
Load Impedance	4 $\Omega$ (4 $\Omega$ to 8 $\Omega$ allowance)	
Tone Control Range	Bass	$\pm 12$ dB at 60 Hz
	Mid-range	$\pm 12$ dB at 1 kHz
	Treble	$\pm 12$ dB at 10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Signal-to-Noise Ratio	70 dB	
Line-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Output Impedance	1 k $\Omega$	
Subwoofer-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Other Terminal	AUX (auxiliary) input jack, USB input jack	
<b>TUNER SECTION</b>		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	531 kHz to 1 602 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 $\mu$ V/75 $\Omega$ )
	50 dB Quieting Sensitivity	16.3 dBf (1.8 $\mu$ V/75 $\Omega$ )
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
AM Tuner	Sensitivity/Selectivity	20 $\mu$ V/35 dB
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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 $\times$ 160 mm
	Panel Size	188 mm $\times$ 58 mm $\times$ 6 mm
Mass	1.3 kg (excluding accessories)	


Design and specifications are subject to change without notice.

<b>AUDIO AMPLIFIER SECTION</b>		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 $\Omega$ 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
Load Impedance	4 $\Omega$ (4 $\Omega$ to 8 $\Omega$ allowance)	
Tone Control Range	Bass	$\pm 12$ dB at 60 Hz
	Mid-range	$\pm 12$ dB at 1 kHz
	Treble	$\pm 12$ dB at 10 kHz
Frequency Response	40 Hz to 20 000 Hz	
Signal-to-Noise Ratio	70 dB	
Line-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Output Impedance	1 k $\Omega$	
Subwoofer-Out Level/Impedance	2.5 V/20 k $\Omega$ load (full scale)	
Other Terminal	AUX (auxiliary) input jack, USB input jack	
<b>TUNER SECTION</b>		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	531 kHz to 1 602 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 $\mu$ V/75 $\Omega$ )
	50 dB Quieting Sensitivity	16.3 dBf (1.8 $\mu$ V/75 $\Omega$ )
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
AM Tuner	Sensitivity/Selectivity	20 $\mu$ V/35 dB
<b>CD PLAYER SECTION</b>		
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	
Dynamic Range	96 dB	
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
<b>USB SECTION</b>		
USB Standard	USB 1.1, USB 2.0	
Data Transfer Rate Full Speed)	Max. 12 Mbps	
Storage	Less than 8 GB (1 partition type)	
Compatible Device	Mass storage class (except HDD)	
Compatible File System	FAT 32/16/12	
Playable Audio Format	MP3/WMA	
Max. Current	500 mA	
<b>GENERAL</b>		
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 $\times$ 160 mm
	Panel Size	188 mm $\times$ 58 mm $\times$ 6 mm
Mass	1.3 kg (excluding accessories)	

Design and specifications are subject to change without notice.

# SECTION 1 PRECAUTION

## 1.1 Safety Precautions

 **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 performing repair of this system.

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



## 1.2 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.

### 1.2.1 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.

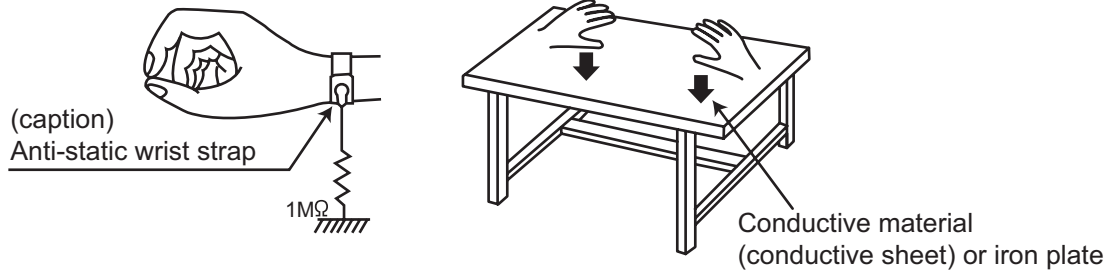
Be careful to use proper grounding in the area where repairs are being performed.

(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.

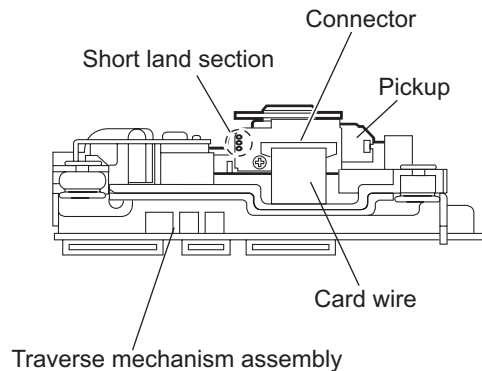
## 1.3 Handling the traverse unit (optical pickup)

- (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.

## 1.4 Attention when traverse unit is decomposed

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

- Apply solder to the short land before the card wire is disconnected from the connector on the pickup unit. (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 after connecting the card wire.



## 1.5 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 级鐳射。不要使用光学仪器直接进行窺視。

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

احتياط: 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



<b>CAUTION</b> VISIBLE AND/OR INVISIBLE CLASS 1M LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1:2001 (ENG)	<b>ATTENTION</b> RAYONNEMENT LASER VISIBLE ET/OU INVISIBLE DE CLASSE 1M UNE FOIS OUVERT. NE PAS REGARDER DIRECTEMENT AVEC DES INSTRUMENTS OPTIQUES. (FRA)	<b>AVISO</b> RADIACIÓN LASER DE CLASE 1M VISIBLE Y/O INVISIBLE CUANDO ESTÁ ABIERTO. NO MIRAR DIRECTAMENTE CON INSTRUMENTAL ÓPTICO. (ESP)	<b>WARNING</b> SYNLIG OCH/ELLER OSYNLIG LASERSTRÅLNING, KLASS 1M, NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT. (SWE)	<b>注意</b> ニモ可視と不可視 及び/または不可視 のクラス1M レーザー放射が 出ます。 光学機器で直接 見ないでください。 (JPN)	<b>CAUTION</b> VISIBLE AND/OR INVISIBLE CLASS II LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR (ENG) LV44603-003A
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## SECTION 2 SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

## SECTION 3 DISASSEMBLY

### 3.1 Main body (used figure is KD-G440)

#### 3.1.1 Removing the FRONT CHASSIS assembly (See Fig.3-1)

- (1) Disengage the four hooks **a** engaged the both side of the FRONT CHASSIS assembly.



hook **a**

Fig.3-1

#### 3.1.2 Removing the HEAT SINK (See Fig.3-2, 3-3)

- (1) Remove the three screws **A** and the two screws **B** attaching the HEAT SINK. (See Fig.3-2)
- (2) Remove the two screws **C** and the one screw **D** attaching the HEAT SINK. (See Fig.3-3)

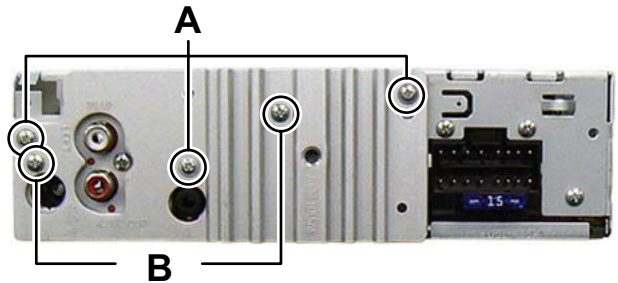


Fig.3-2

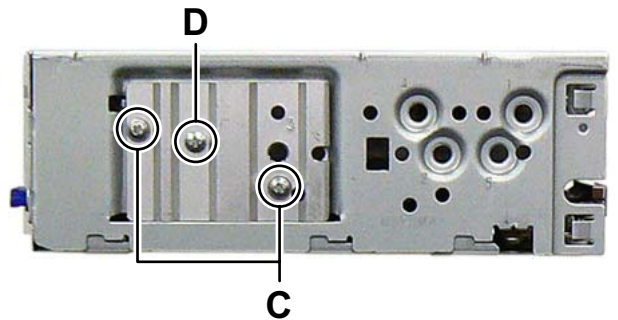


Fig.3-3

### 3.1.3 Removing the BOTTOM COVER (See Fig.3-4)

- (1) Remove the one screw **E** and the one screw **F** attaching the BOTTOM COVER.
- (2) Slide the BOTTOM COVER to backward.

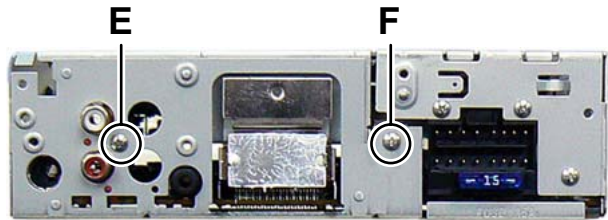


Fig.3-4

### 3.1.4 Removing the MAIN BOARD assembly (See Fig.3-5, 3-6)

- (1) Remove the two screws **G** and the two screws **H** attaching the MAIN BOARD assembly. (See Fig.3-5, 3-6)
- (2) Disconnect the connector [CN501](#) connected to MAIN BOARD assembly and CD MECHANISM assembly. (See Fig.3-6)

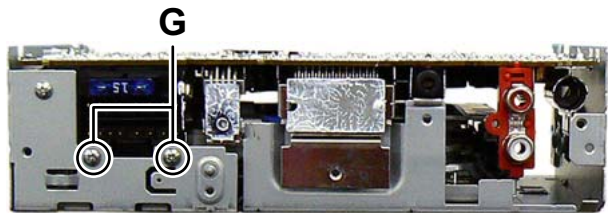


Fig.3-5

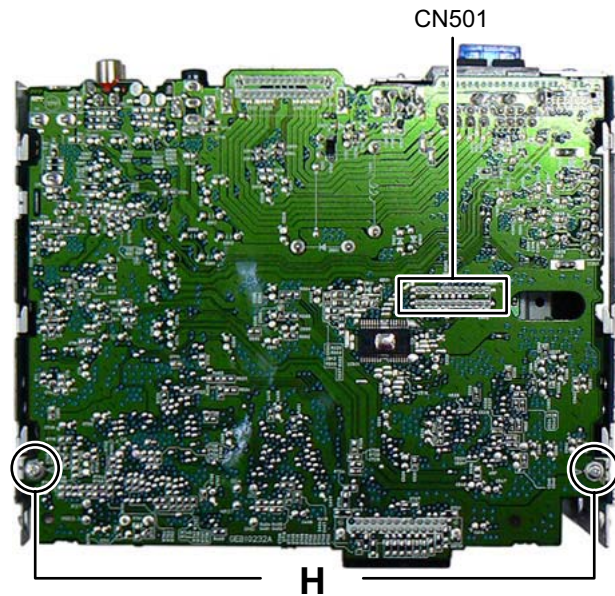


Fig.3-6

### 3.1.5 Removing the CD MECHANISM assembly (See Fig.3-7)

- (1) Remove the three screws **J** attaching the CD MECHANISM assembly.

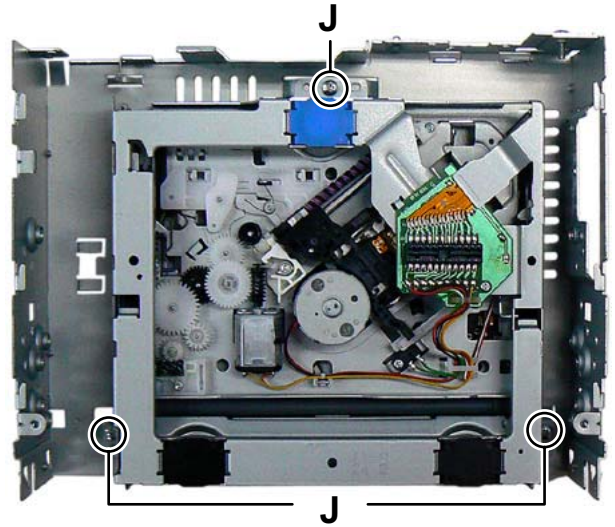


Fig.3-7

### 3.1.6 Removing the SWITCH BOARD assembly (See Fig.3-8)

- (1) Remove the VOLUME KNOB.
- (2) Remove the four screws **K** attaching the REAR COVER.
- (3) Disengage the nine hooks **b** engaged the REAR COVER.

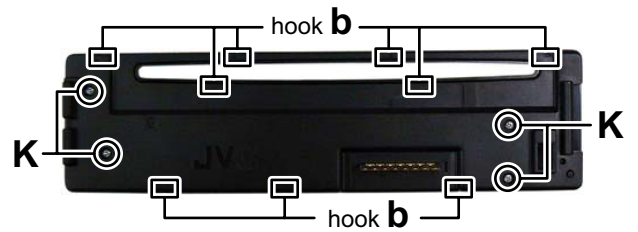


Fig.3-8

## 3.2 CD mechanism assembly

### 3.2.1 Removing the top cover (See Figs.1 and 2)

- (1) From the both side of the CD mechanism assembly, remove the four screws **A** attaching the top cover. (See Fig.1.)
- (2) Lift the front side of the top cover and move the top cover backward to release the two joints **a**. (See Figs.1 and 2.)

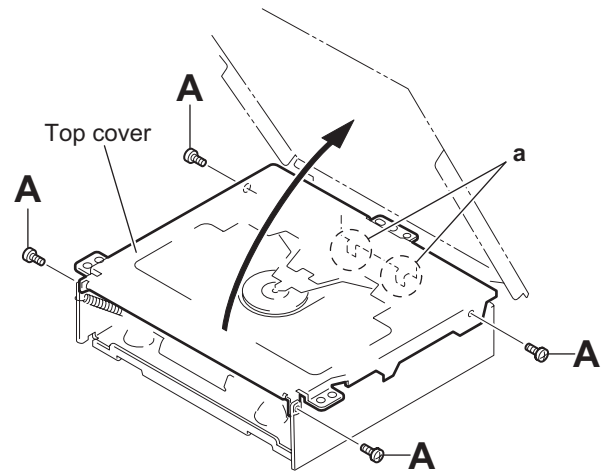


Fig.1

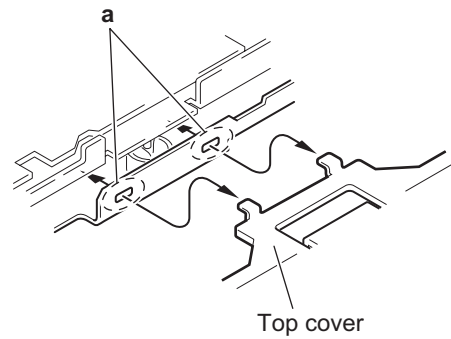


Fig.2

**3.2.2 Removing the push switch**  
(See Figs.3)

- (1) From the bottom side of the CD mechanism assembly, remove the screw **B** attaching the push switch.
- (2) Take out the push switch from the CD mechanism assembly.

**Reference:**

Remove the wires from soldered sections **b** of the push switch as required.

**3.2.3 Removing the base board**  
(See Figs.3 and 4)

**Caution:**

Solder the short land **c** before the flexible wire is disconnected from the connector on the pickup. If the flexible wire is disconnected without applying solder, the pickup may be destroyed by static electricity. (See Fig.3.)

- (1) From the bottom side of the CD mechanism assembly, remove the screw **C** attaching the base board. (See Figs.3 and 4.)
- (2) Solder the short land **c** on the pickup. (See Fig.3.)
- (3) Disconnect the flexible wire from the connector on the pickup. (See Fig.3.)
- (4) Remove the base board from the joints **d** of the frame in the direction of the arrow. (See Figs.3 and 4.)

**Reference:**

Remove the wires from the soldered sections **e** on the base board as required. (See Fig.3.)

**Caution:**

When reattaching the base board, be sure to remove solder from the short land **c** after connecting the flexible wire. (See Fig.3.)

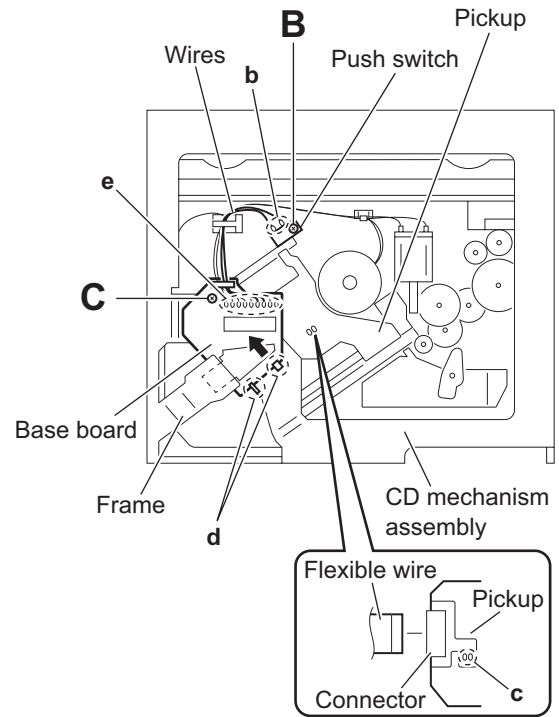


Fig.3

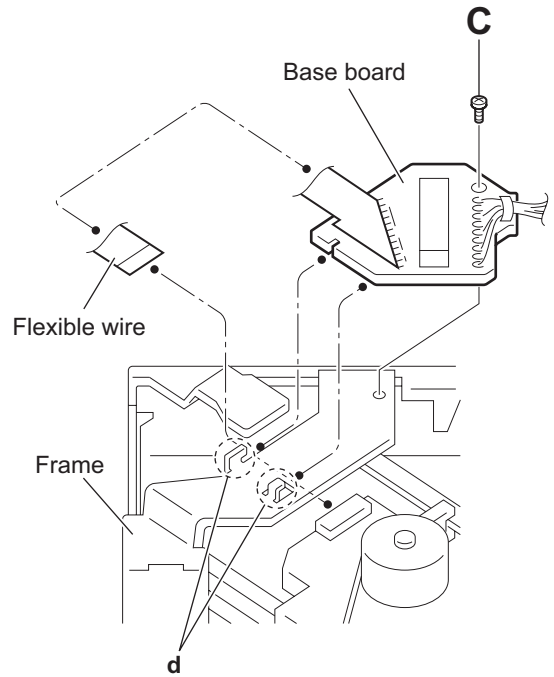


Fig.4

### 3.2.4 Removing the chassis unit (See Figs.5 and 6)

- Remove the top cover and base board.
  - From the top side of the CD mechanism assembly, remove the front suspension springs and rear suspension springs attaching the chassis unit to the frame. (See Fig.5.)
  - Remove the chassis unit from the dampers on the frame in an upward direction. (See Fig.6.)

**Note:**

- Pay attention to misuse and loss of each spring. (See Fig.5.)
- When reassembling, make sure that the three shafts on the underside of the chassis unit are inserted to the dampers certainly. (See Fig.6.)

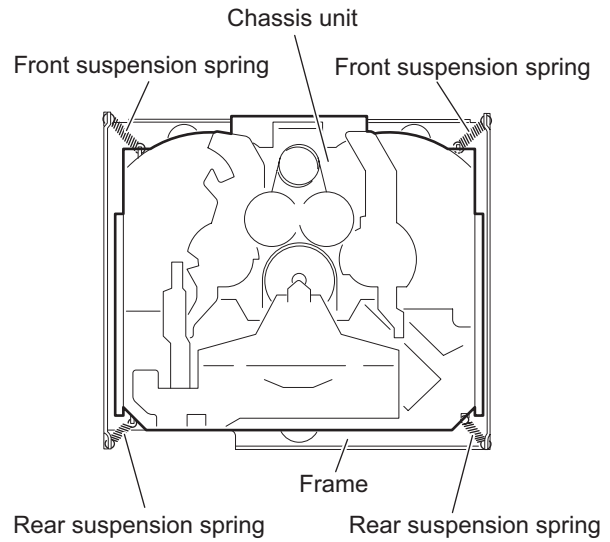


Fig.5

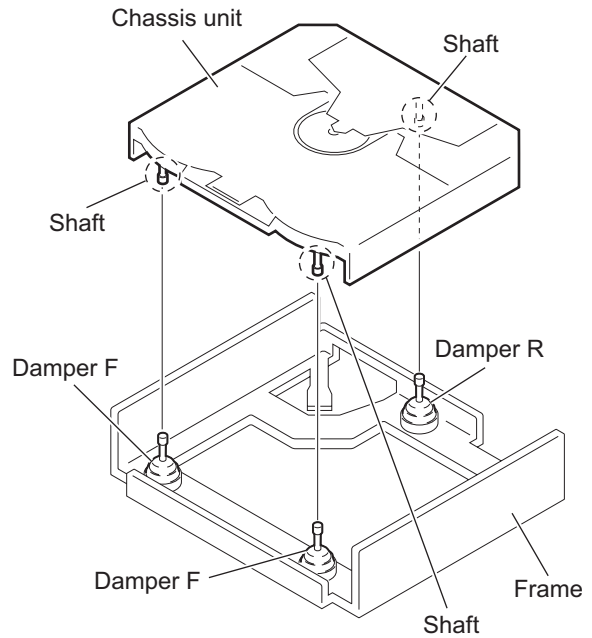


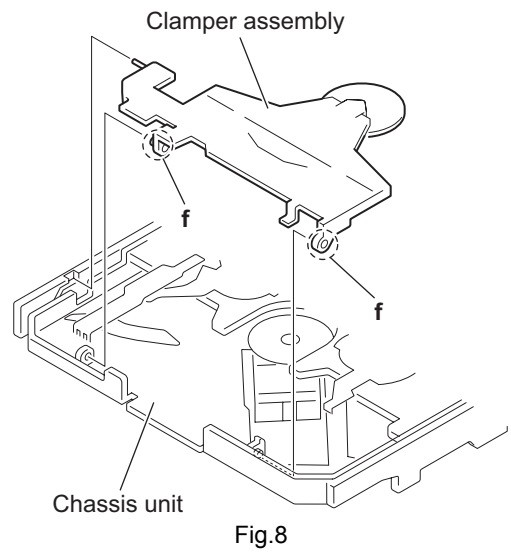
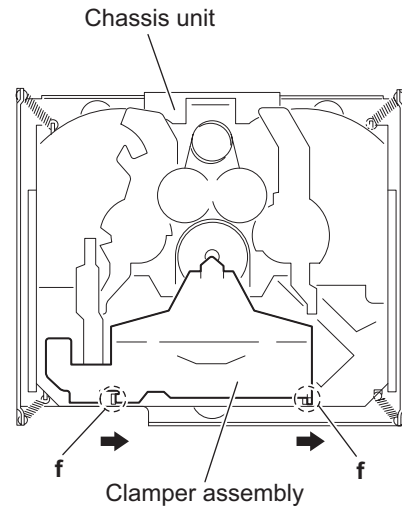
Fig.6



### 3.2.5 Removing the clamber assembly (See Figs.7 and 8)

- Remove the top cover.

Move the clamber assembly in the direction of the arrow to release the joints **f** from the chassis unit.



### 3.2.6 Removing the loading/feed motor assembly (See Fig.9)

- Remove the top cover, base board and chassis unit.  
From the bottom side of the chassis unit, remove the screw **D** and take out the loading/feed motor assembly in the direction of the arrow.

#### Reference:

Remove the wires from the soldered sections **g** of the loading/feed motor assembly as required.

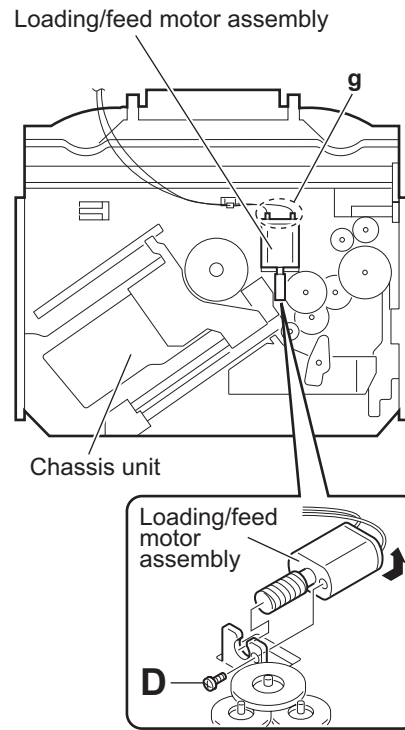


Fig.9

### 3.2.7 Removing the pickup (See Figs.10 to 12)

- Remove the top cover, base board and chassis unit.
  - (1) From the bottom side of the chassis unit, remove the screw **E** attaching the pu. shaft holder B and pull the pu. shaft out of the pu. shaft holder A. (See Fig.10.)
  - (2) Remove the screw **F** attaching the pu. shaft holder A. (See Fig.10.)
  - (3) Take out the pickup with pu. shaft holder A and feed screw assembly from the chassis unit. (See Fig.11.)
  - (4) Remove the section **h** of the pu. shaft holder A in the direction of the arrow. (See Fig.11.)
  - (5) Remove the feed screw assembly from the section **j** of the pickup in the direction of the arrow. (See Fig.11.)
  - (6) Remove the screw **G** attaching the feed screw holder to the pickup. (See Fig.12.)

**Reference:**

Remove the feed nut spring from the feed screw holder as required. (See Fig.12.)

- (7) Release the claw **k** in the direction of the arrow to remove the feed sub holder. (See Fig.12.)

### 3.2.8 Reattaching the pickup (See Figs.10 to 13)

- (1) Reattach the feed sub holder to the pickup. (See Fig.12.)
- (2) Reattach the feed screw holder to the pickup using the screw **G**. (See Fig.12.)
- (3) Reattach the feed screw assembly and pu. shaft holder A to the pickup as before. (See Fig.11.)
- (4) Set the section **m** of the pickup to the rail of the chassis unit at first and attach the pickup to the chassis unit with the screw **F** as before. (See Figs.10 and 13.)
- (5) Attach the pu. shaft to the pickup as before. (See Fig.10.)
- (6) Attach the pu. shaft holder B to the chassis unit with the screw **E** as before. (See Fig.10.)

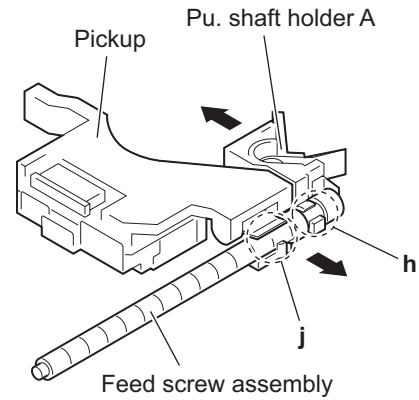


Fig.11

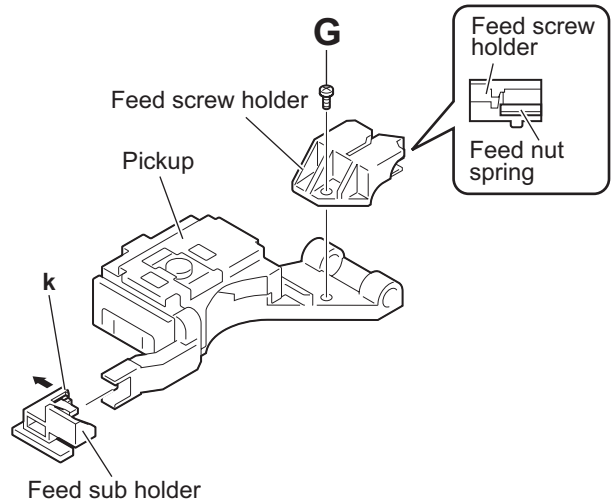


Fig.12

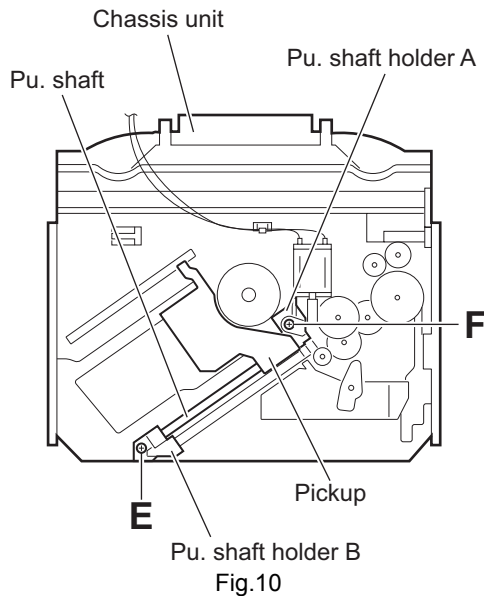


Fig.10

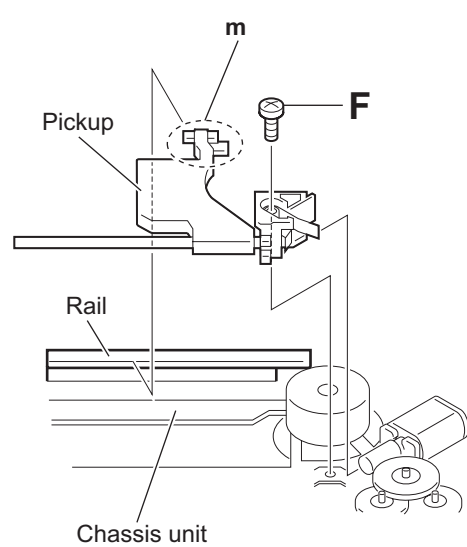


Fig.13

### 3.2.9 Removing the trigger arm (See Fig.14)

- Remove the top cover, base board, chassis unit and clamber assembly.

- From the top side of the chassis unit, remove the trigger arm spring from the sections (n, p).
- From the bottom side of the chassis unit, release the claws q of the trigger arm base in the direction of the arrow to remove them from the sections r of the chassis unit to the other side.

**Note:**

When releasing the claws q, take care not to break them.

- From the top side of the chassis unit, move the select arm R and select lock arm in the direction of the arrow to remove the trigger arm base from the section s in the direction of the arrow.
- Remove the trigger arm from the section t.

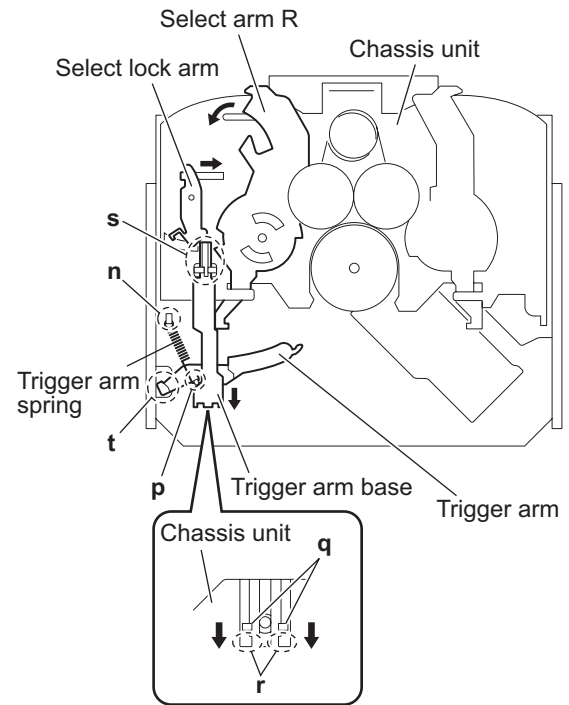


Fig.14

### 3.2.10 Removing the top plate assembly (See Fig.15)

- Remove the top cover, base board, chassis unit, clamber assembly and trigger arm.

- Remove the screw H attaching the top plate assembly.
- Move the top plate assembly in the direction of the arrow to release the joints (u, v).

**Reference:**

Remove the wires from the soldered sections w of the top plate assembly as required.

**Note:**

When reassembling, solder the wires as before.

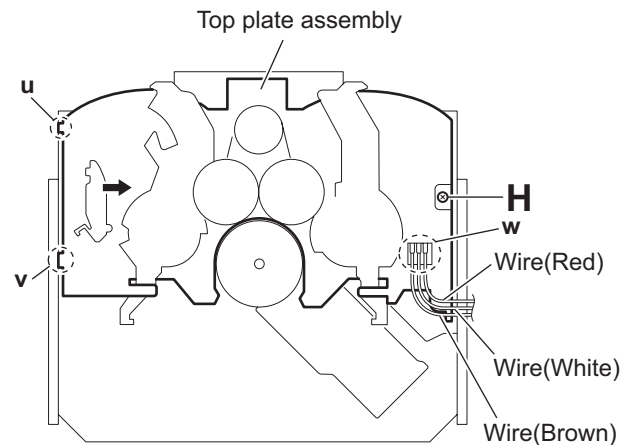


Fig.15

### 3.2.11 Removing the mode switch (See Fig.16)

- Remove the top cover, base board, chassis unit, clamber assembly, trigger arm and top plate assembly.
  - From the top side of the top plate assembly, remove the link gear spring from the sections **x** of the link gear L and link gear R.
  - Remove the link gear L in an upward direction while releasing the claws **y** of the link gear L in the direction of the arrow.
  - Move the mode switch in the direction of the arrow 1 to remove the sections **z** of the top plate assembly.
  - Move the mode switch in the direction of the arrow 2 and remove the mode switch from the sections (**aa**, **ab**).

**Note:**

When reattaching the link gear L, attach it after aligning the hole **ac** of the link gear L to the hole **ac** of the link gear R.

**Reference:**

When reassembling, reverse the above removing procedure.

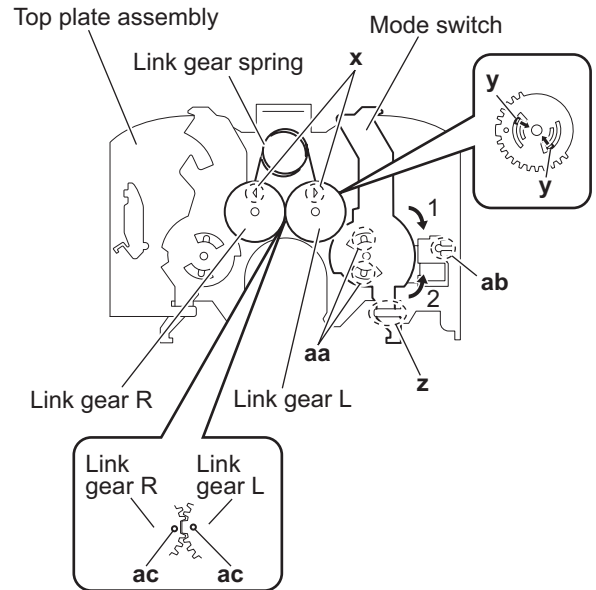


Fig.16

**3.2.12 Removing the select arm R and select lock arm**  
**(See Figs.17 and 18)**

• Remove the top cover, base board, chassis unit, clamper assembly, trigger arm and top plate assembly.

- (1) From the top side of the top plate assembly, remove the link gear spring from the sections **ad** of the link gear L and link gear R. (See Fig.17.)
- (2) Remove the link gear R in an upward direction while releasing the claws **ae** of the link gear R in the direction of the arrow. (See Fig.17.)
- (3) Move the select arm R in the direction of the arrow 1 to remove the sections **af** of the top plate assembly. (See Fig.17.)
- (4) Move the select arm R in the direction of the arrow 2 and remove the select arm R from the sections **ag**. (See Fig.17.)
- (5) From the bottom side of the top plate assembly, remove the select lock arm spring from the section **ah**. (See Fig.18.)
- (6) From the top side of the top plate assembly, remove the section **aj** of the select lock arm from the top plate assembly at first and remove the sections (**ak**, **am**) of the select lock arm from the top plate assembly. (See Fig.18.)

**Note:**

- When removing the select lock arm spring, be careful not to lose it. (See Fig 18.)
- When reattaching the link gear R, attach it after aligning the hole **an** of the link gear R to the hole **an** of the link gear L. (See Fig.17.)

**Reference:**

When reassembling, reverse the above removing procedure.

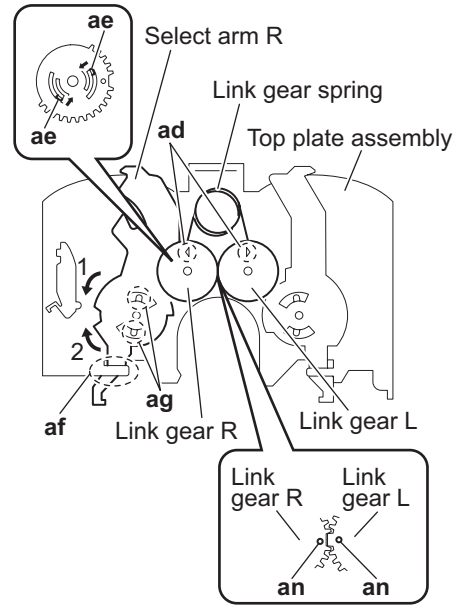


Fig.17

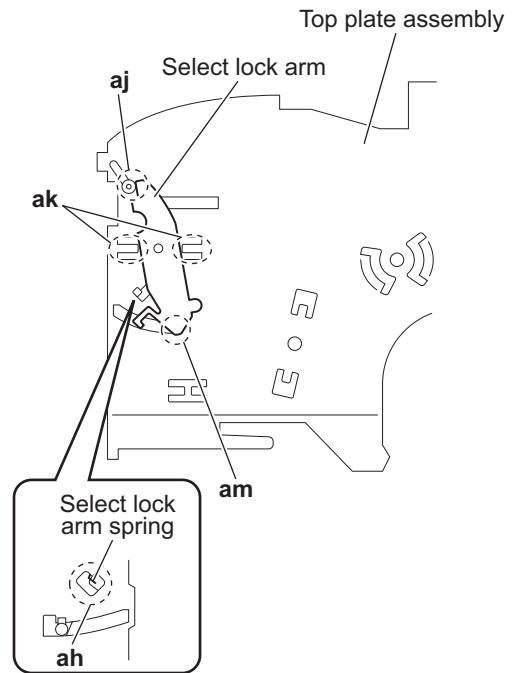


Fig.18

### 3.2.13 Removing the loading roller assembly (See Figs.19 to 21)

- Remove the top cover, base board, chassis unit, clamper assembly and top plate assembly.
  - (1) From the left side of the chassis unit, remove the screw **J** attaching the lock arm assembly. (See Fig.19.)
  - (2) Remove the projection **ap** of the lock arm assembly from the joint **aq** while opening the cam plate R in the direction of the arrow. (See Fig.19.)
  - (3) Remove the lock arm assembly from the projection **ar** of the chassis unit. (See Fig.19.)
  - (4) Remove the projection **as** of the lock arm assembly from the joint **at** of the cam plate L assembly. (See Fig.19.)
  - (5) From the right side of the lock arm assembly, remove the loading roller spring L from the section **au**. (See Fig.20.)
  - (6) From the top side of the lock arm assembly, remove the loading roller spring R in the direction of the arrow and remove the loading roller assembly. (See Fig.20.)
  - (7) Remove the roller guide R, HL washer and roller guide L from the both ends of the loading roller assembly. (See Fig.21.)

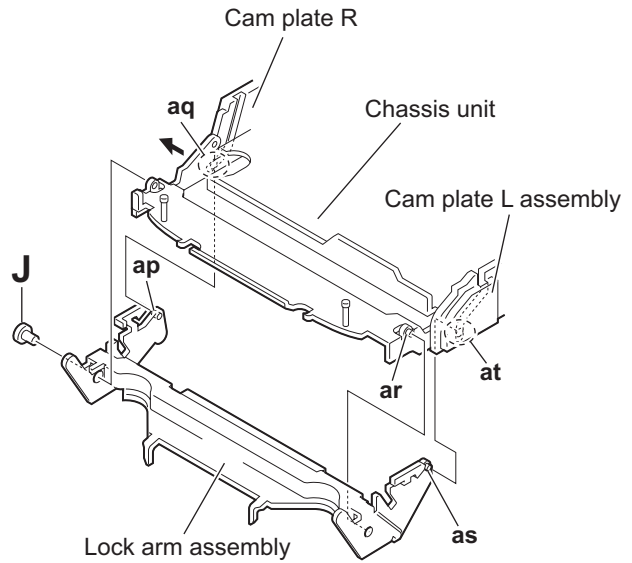


Fig.19

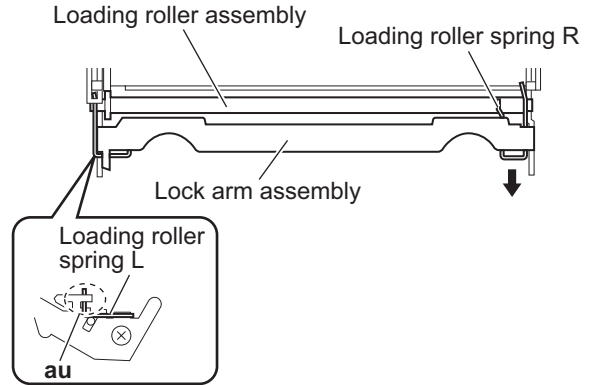


Fig.20

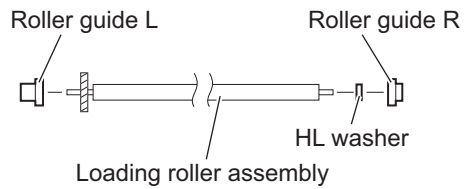


Fig.21

**3.2.14 Removing the loading gear 1, loading gear 2, loading gear 3 and feed gear 1**  
(See Fig.22)

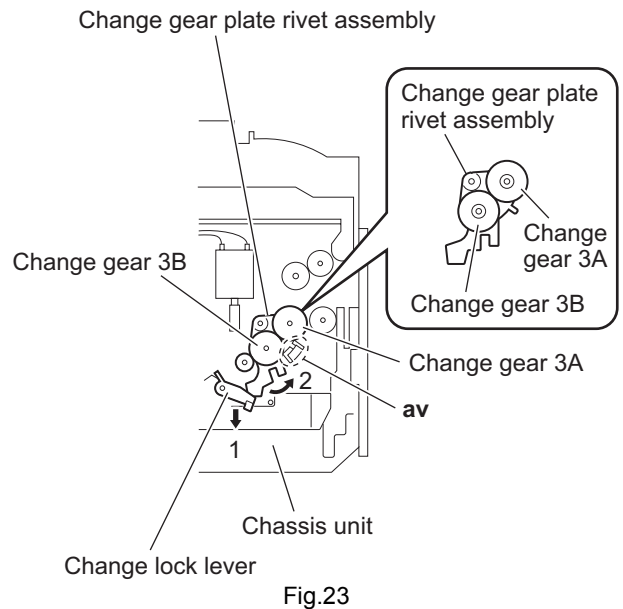
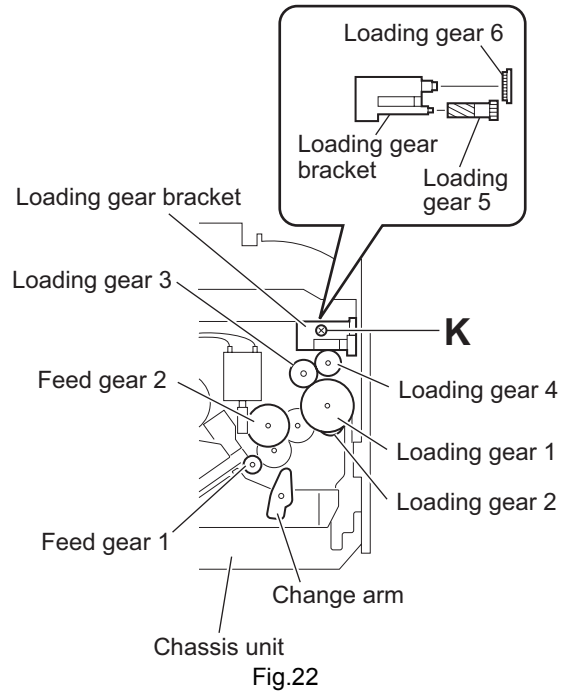
- Remove the top cover, base board and chassis unit.
  - From the bottom side of the chassis unit, pull out the loading gear 1.
  - Take out the loading gear 2.
  - Pull out the loading gear 3.
  - Pull out the feed gear 1.

**3.2.15 Removing the loading gear 4, loading gear 5 and loading gear 6**  
(See Fig.22)

- Remove the top cover, base board and chassis unit.
  - From the bottom side of the chassis unit, remove the screw **K** attaching the loading gear bracket.
  - Take out the loading gear bracket and remove the loading gear 5 and loading gear 6 from the loading gear bracket.
  - Pull out the loading gear 4.

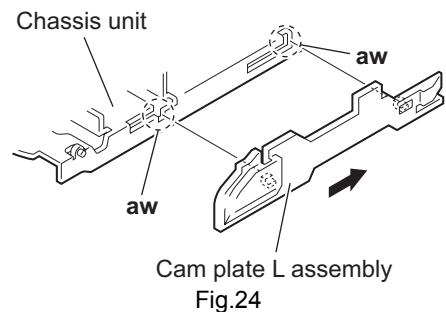
**3.2.16 Removing the change gear 2, change gear 3A and change gear 3B**  
(See Figs.22 and 23)

- Remove the top cover, base board and chassis unit.
  - From the bottom side of the chassis unit, pull out the loading gear 1. (See Fig.22.)
  - Pull out the change gear 2. (See Fig.22.)
  - Pull out the change arm. (See Fig.22.)
  - Move the change gear plate rivet assembly in the direction of the arrow 2 to remove the section **av** of the change gear plate rivet assembly from the chassis unit while moving the change lock lever in the direction of the arrow 1. (See Fig.23.)
  - Pull out the change gear 3A and change gear 3B from the change gear plate rivet assembly. (See Fig.23.)



**3.2.17 Removing the cam plate L assembly**  
(See Fig.24)

- Remove the top cover, base board, chassis unit, clamper assembly, top plate assembly and loading roller assembly.
  - From the left side of the chassis unit, slide the cam plate L assembly in the direction of the arrow.
  - Remove the cam plate L assembly from the slots **aw** of the chassis unit.





**3.2.18 Removing the cam plate R**  
**(See Fig.25)**

- Remove the top cover, base board, chassis unit, clamber assembly, top plate assembly and loading roller assembly.
- From the right side of the chassis unit, remove the cam plate R from the slots **ax** of the chassis unit.

**Reference:**

When a slide hook rivet assembly and a trigger rack spring have come off from the chassis unit, attach them before attaching the cam plate R.

**3.2.19 Removing the trigger rack plate**  
**(See Figs.25 and 26)**

- Remove the top cover, base board, chassis unit, clamber assembly, top plate assembly, loading roller assembly and cam plate R.
  - Remove the slide hook rivet assembly and trigger rack spring from the chassis unit. (See Fig.25.)
  - From the bottom side of the chassis unit, pull out the loading gear 1. (See Fig.26.)
  - Remove the trigger control spring from the sections (**ay**, **az**). (See Fig.26.)
  - Take out the trigger rack plate from the chassis unit. (See Fig.26.)

**Reference:**

When attaching the trigger rack plate, insert the projection **a'** of the chassis unit in the slot **b'** on the bottom side of the trigger rack plate as before. (See Fig.26.)

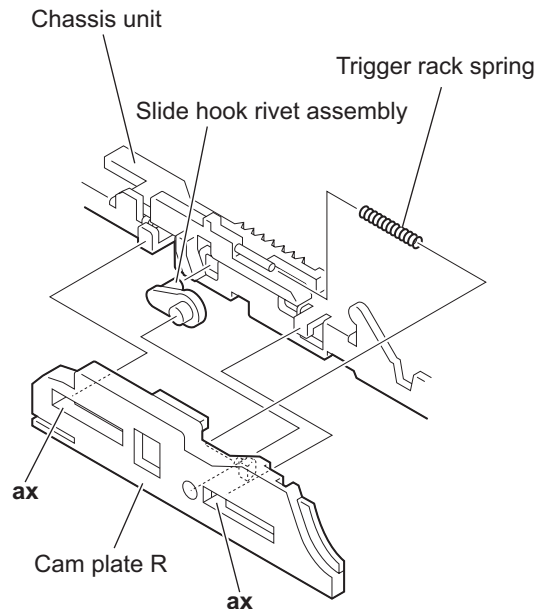


Fig.25

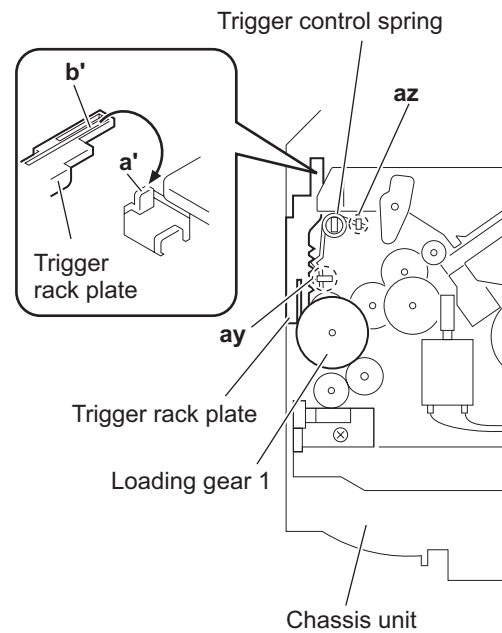


Fig.26

### 3.2.20 Removing the spindle motor assembly (See Figs.27 and 28)

- Remove the top cover, base board, chassis unit and clasper assembly.
  - From the top side of the chassis unit, turn the turn table from side to side and remove the two screws **M** attaching the spindle motor assembly through the hole of the turn table. (See Fig.27.)
  - From the bottom side of the chassis unit, turn the change gear 2 in the direction of the arrow 2 while pulling the trigger arm in the direction of the arrow 1 and let the pickup move in the direction of the arrow 3. (See Fig.28.)
  - Slide the spindle motor assembly in the direction of the arrow and take out it in an upward direction from the chassis unit. (See Fig.28.)

#### Reference:

Remove the wires from the soldered sections **c'** on the base board and remove them from the sections (**d'**, **e'**) on the chassis unit as required.

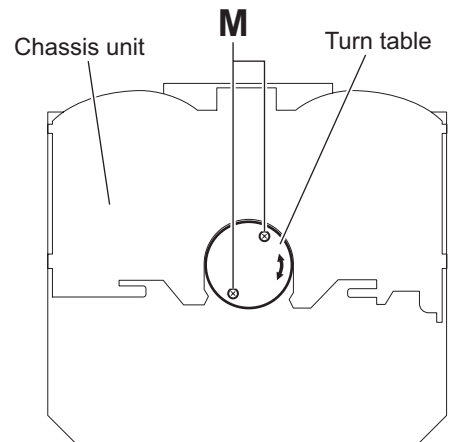


Fig.27

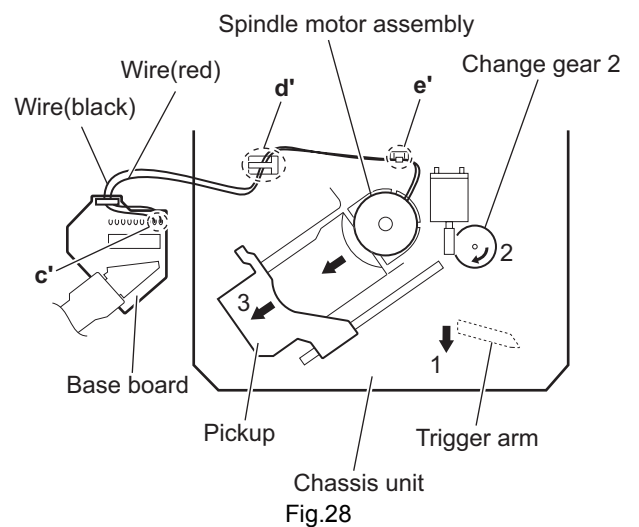


Fig.28

## SECTION 4 ADJUSTMENT

### 4.1 Test instruments required for adjustment

- (1) Digital oscilloscope (100MHz)
- (2) Electric voltmeter
- (3) Digital tester
- (4) Tracking offset meter
- (5) Test Disc JVC :CTS-1000
- (6) Extension cable for check  
EXTSH002-22P x 1

### 4.2 Standard measuring conditions

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

### 4.5 How to connect the extension 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.

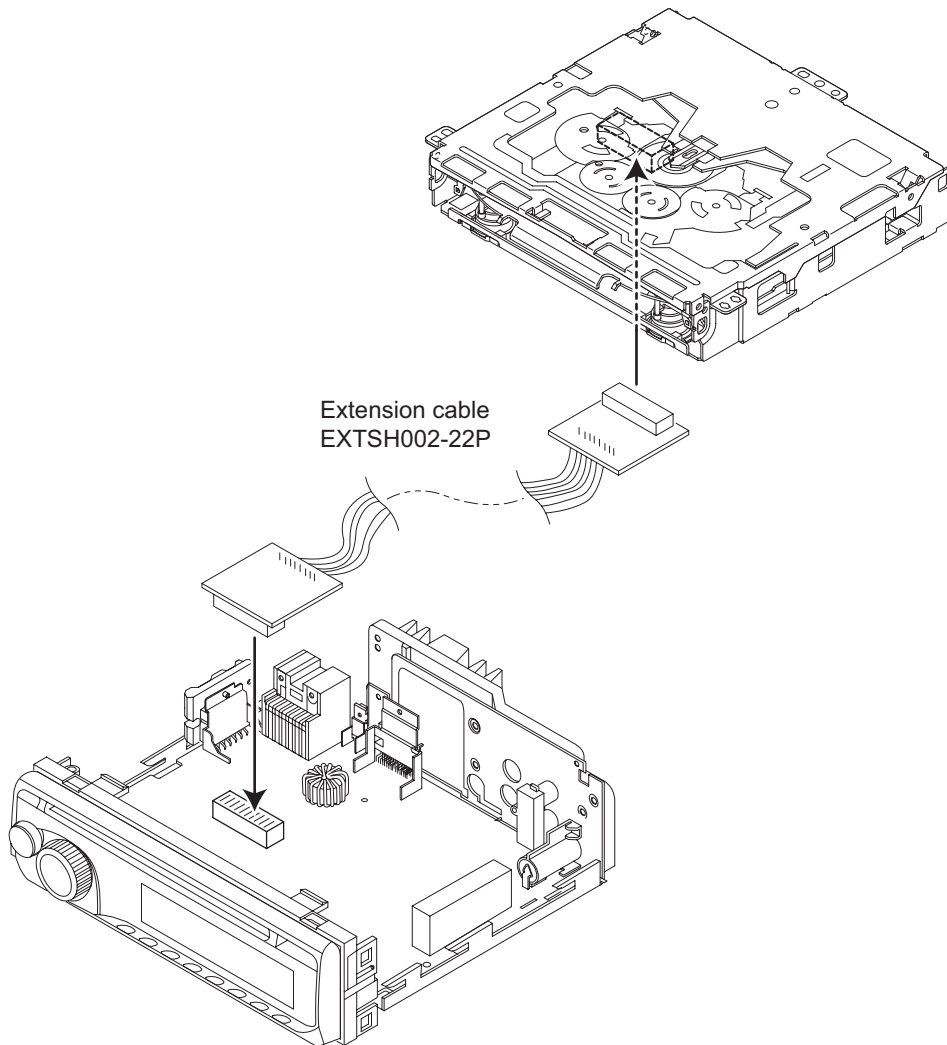
### 4.3 Standard volume position

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

### 4.4 Dummy load

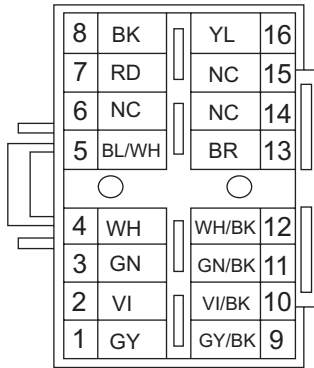
Exclusive dummy load should be used for AM, and FM.  
For FM dummy load, there is a loss of 6dB between SSG output and antenna input.

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

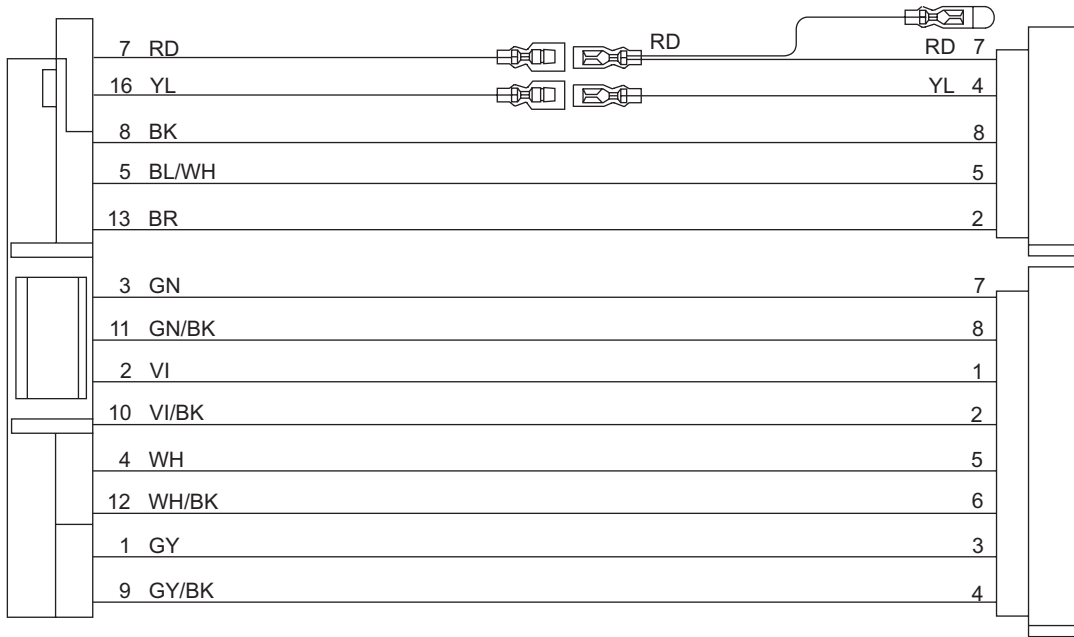
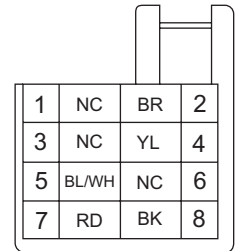


# SECTION 5 TROUBLESHOOTING

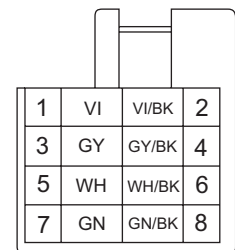
## 5.1 16PIN CORD DIAGRAM (for KD-G351, KD-G357, KD-G441, KD-G447)



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

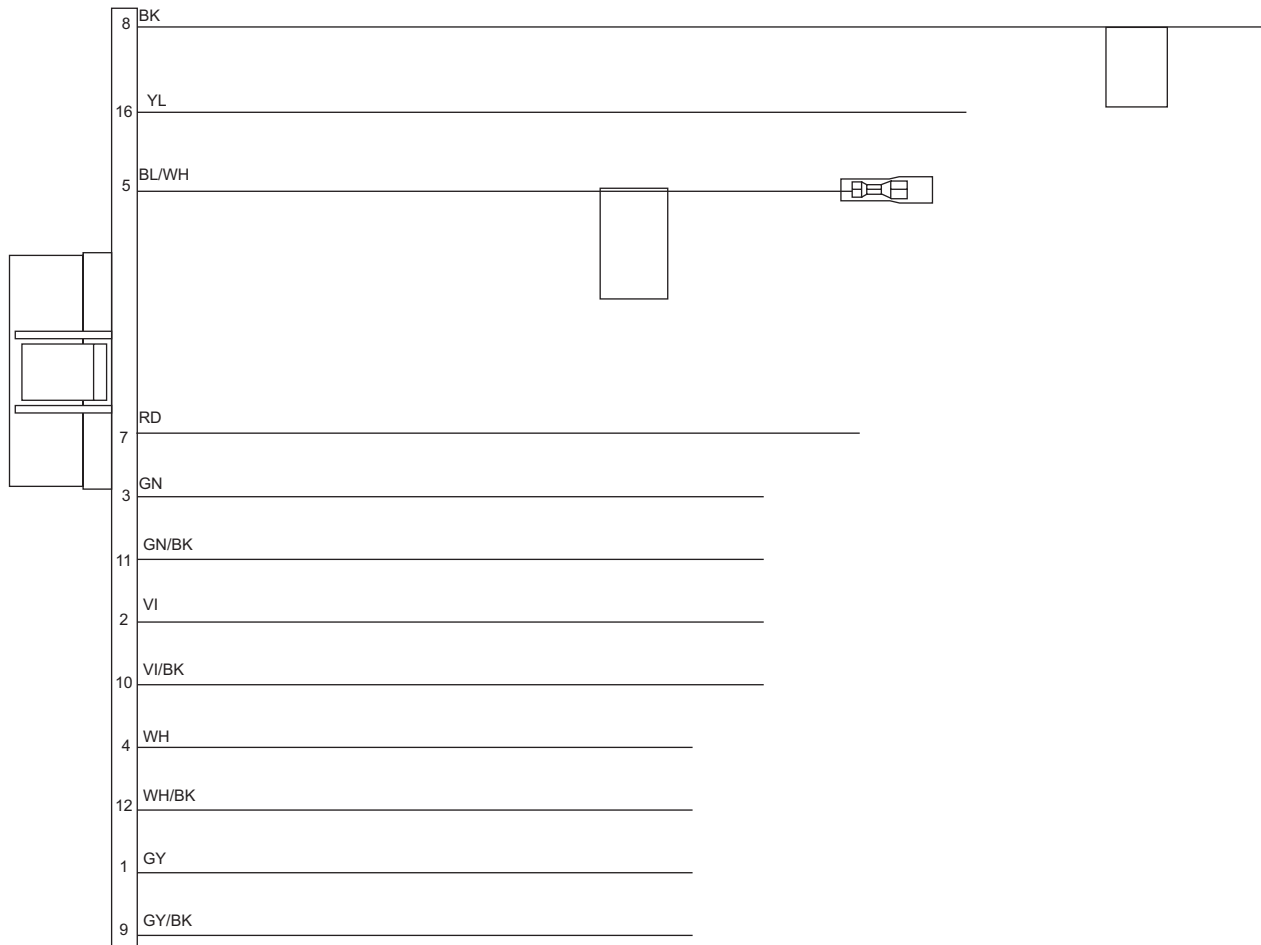
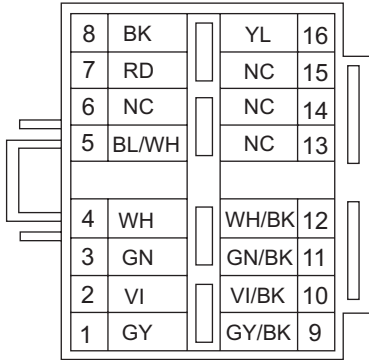


RR	Rear Right	ACC	ACC Line
FR	Front Right	TEL	Telephone Muting
FL	Front Left	GND	Ground
RL	Rear Left	MEMORY	Memory Backup Battery+
REMOTE	Remote	ANT	Auto Antenna
ILL	Illuminations Control		



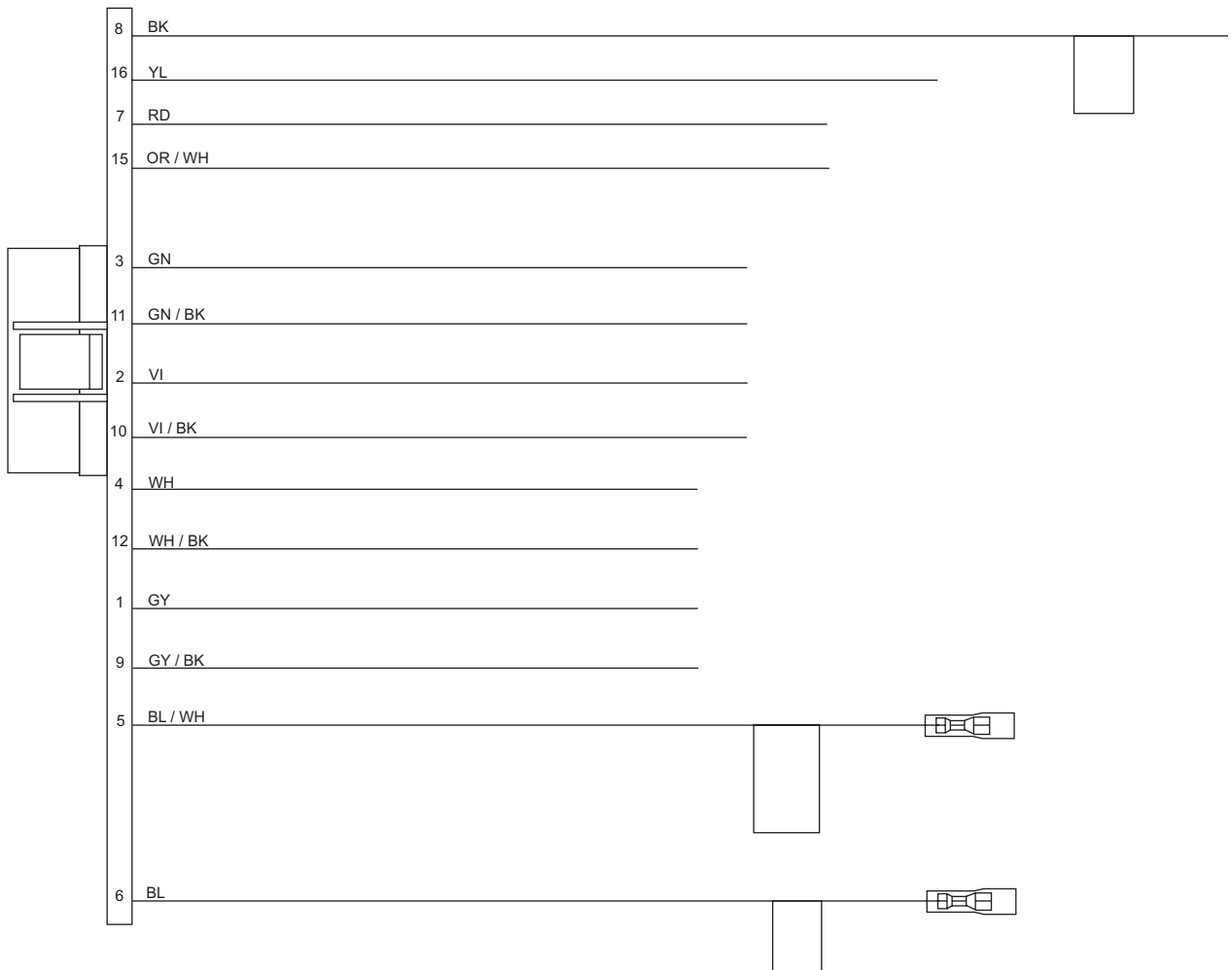
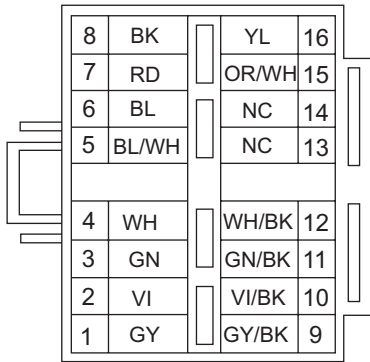
## 5.2 16 PIN CORD DIAGRAM (for KD-G440)

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

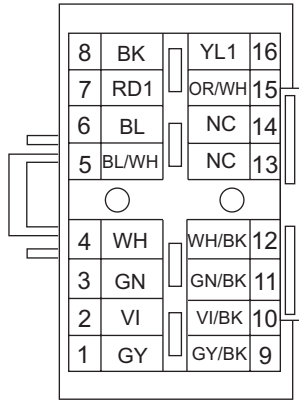


**5.3 16 PIN CORD DIAGRAM (for KD-G644, KD-G645, KD-G646)**

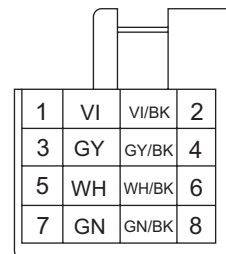
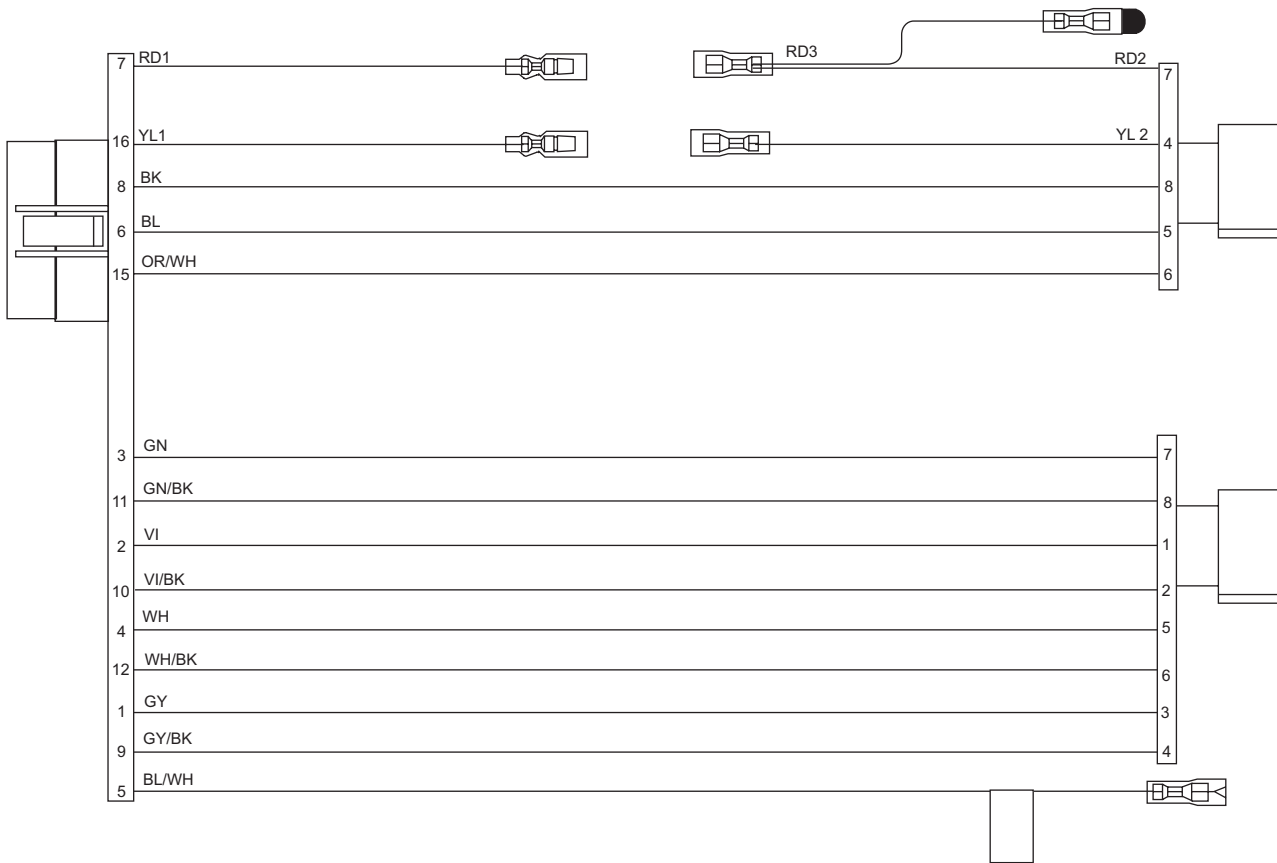
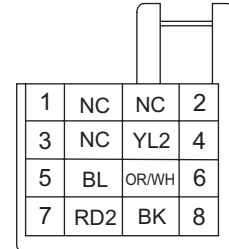
BK	Black	GN	Green
RD	Red	VI	Violet
BL	Blue	GY	Gray
WH	White	YL	Yellow
		OR	Orange



### 5.4 16 PIN CORD DIAGRAM (for KD-G648)



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





# JVC

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(No.MA377<Rev.001>)