JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

MX-DK1US,MX-DK1UW,MX-DK1UG,MX-DK1UN,
MX-DK3US,MX-DK3UW,MX-DK3UG,MX-DK3UN,MX-DK15UN

SP-MXDK3F CA-MXDK3 SP-MXDK3F SP-MXDK3W

SP-MXDK1F CA-MXDK1 SP-MXDK1F
SP-MXDK15F CA-MXDK15 SP-MXDK15F

ACTIVE BASS EXTENSION

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

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SPECIFICATION

Amplifier section	Output Power	CA-MXDK1/CA-MXDK15		90 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 10% total harmonic distortion.
		CA-MXDK3	MAIN SPEAKERS	100 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 10% total harmonic distortion.
			SUBWOOFERS	100 W per channel, min. RMS, driven into 6 Ω at 63 Hz with no more than 10% total harmonic distortion.
	Digital output	OPTICAL DIGITAL OUTPUT		-21 dBm to -15 dBm (660 nm ±30 nm)
		Audio input sensitivity/ Impedance*1	AUX	400 mV/47 k Ω
			MIC 1/2	3.0 mV/50 k Ω
	VIDEO OUT	Color system		NTSC/PAL selectable
		VIDEO (composite)		1 V(p-p)/75Ω
		S-VIDEO	Y (luminance)	1 V(p-p)/75 Ω
			C (chrominance, burst)	0.286 V(p-p)/75 Ω
		COMPONENT (Interlace/Progressive: CA-MXDK5 only)	(Y)	1 V(p-p)/75 Ω
			(PB/PR)	0.7 V(p-p)/75 Ω
		Speaker Terminals		6 Ω - 16 Ω (Main speakers) 6 Ω - 16 Ω (Subwoofers)
Tuner section	FM tuning range			87.50 MHz - 108.00 MHz
	AM (MW) tuning range			531 kHz - 1 710 kHz (at 9 kHz) 530 kHz - 1 710 kHz (at 10 kHz) 531 kHz - 1 602 kHz (at 9 kHz) (For Saudi Arabia only) 530 kHz - 1 600 kHz (at 10 kHz)
Disc player section	Playable disc			DVD Video/DVD Audio*2/CD/VCD/SVCD CD-R/-RW/-ROM (CD/VCD/SVCD/MP3/WMA/MPEG-1/MPEG-2/ASF*2/JPEG/DivX*2 format) DVD-R/-RW (DVD Video/DVD Video Recording (VR)/ MP3/WMA/MPEG-1/MPEG-2/ASF*2/JPEG/DivX*2 format) +R/+RW (DVD Video format)
	Dynamic range			90 dB
	Horizontal resolution			500 lines
	Wow and flutter			Immeasurable
Cassette deck section	Frequency response Normal (type I)			50 Hz - 14 000 Hz
	Wow and flutter			0.15% (WRMS)
General	Power requirement			AC 110 V / AC 127 V / AC 220 V / AC 230 V - AC 240 V , (adjustable with the voltage selector), 50 Hz / 60 Hz
	Power consumption	at operation		160 W (CA-MXDK3) 95 W (CA-MXDK1/ CA-MXDK15)
		on standby		20 W (CA-MXDK3) 17 W (CA-MXDK1/ CA-MXDK15)
	Dimensions (approx.)			265 mm × 337 mm × 370 mm (W/H/D)
	Mass (approx.)	CA-MXDK5/CA-MXDK3		8.4 kg
		CA-MXDK1/CA-MXDK15		7.9 kg

Speaker section (except for MX-DK5)	Main speakers (SP-MXDK3F/ SP-MXDK1F/ SP-MXDK15F)	Type		3-Way 3-Speaker Bass Reflex Type (Magnetically-Shielded Type)
		Speakers	Woofer	16 cm cone × 1
			Midrange	5 cm cone × 1
			Tweeter	2 cm dome × 1
		Power handling capacity		100 W (SP-MXDK3F) 80 W (SP-MXDK1F/SP-MXDK15F)
		Impedance		6 Ω
		Frequency range		45 Hz - 20 000 Hz
		Sound pressure level		85 dB/W·m
		Dimensions (approx.)		215 mm × 337 mm × 259 mm (W/H/D)
		Mass (approx.)		3.7 kg each
	Subwoofer (SP-MXDK3W) (only for MX-DK3)	Type		1-Way Bass Reflex Type (Magnetically-Shielded Type)
		Speaker		16 cm cone × 1
		Power handling capacity		100 W
		Impedance		6 Ω
		Dimensions (approx.)		215 mm × 337 mm × 259 mm (W/H/D)
		Mass (approx.)		3.5 kg

*1: Measured at 1 kHz, with tape recording signal 400 mV)

*2: CA-MXDK5 only

Design and specifications are subject to change without notice.

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 manufacturers warranty and will further relieve the manufacture 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 (⚠) 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 parts 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, 1,000Ω per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF 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 preforming 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 " ⚠ " 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 dose 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) I t 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 connecto 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.

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.**

(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.

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

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

ADVARSEL: Synlig og/eller usynlig klasse 1M-laserstråling 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 directamente com instrumentos ópticos.

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

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：打开盖板可能会产生可见或不可见的 1M 级镭射。
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 مفتوحا. 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

CAUTION	ATTENTION	AVISO	VARNING	注意	CAUTION
VISIBLE AND/OR INVISIBLE CLASS 1M LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1:2001 (ENG)	RAYONNEMENT LASER VISIBLE ET/OU INVISIBLE DE CLASSE 1M UNE FOIS OUVERT. NE PAS REGARDER DIRECTEMENT AVEC DES INSTRUMENTS OPTIQUES. (FRA)	RADIACIÓN LÁSER DE CLASE 1M VISIBLE Y/O INVISIBLE CUANDO ESTÁ ABIERTO. NO MIRAR DIRECTAMENTE CON INSTRUMENTAL OPTICO. (ESP)	SYNLIG OCH/ELLER OSYNLIG LASERSTRÅLNING, KLASS 1M, NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT. (SWE)	ここを開くと可視及び/または不可視のクラス1Mレーザー放射が出ます。光学装置で直接見ないでください。 (JPN)	VISIBLE AND/OR INVISIBLE CLASS II LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR (ENG) LV44603-003A

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 LÁSER DE CLASE 1M VISIBLE Y/O INVISIBLE CUANDO ESTÁ ABIERTO. NO MIRAR DIRECTAMENTE CON INSTRUMENTAL OPTICO. (ESP)
VARNING	SYNLIG OCH/ELLER OSYNLIG LASERSTRÅLNING, KLASS 1M, NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT. (SWE)
注意	ここを開くと可視及び/または不可視のクラス1Mレーザー放射が出ます。光学装置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. (ENG) FDA 21 CFR LV44603-004A

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

SECTION 3
DISASSEMBLY

3.1 Main body

3.1.1 Removing the metal cover (See Fig.1, 2)

(1) Remove the six screws **A** attaching the metal cover. (See Fig.1)

(2) Remove the two screws **B** attaching the metal cover. (See Fig.2)

Fig.1

Fig.2

3.1.2 Removing the DVD mechanism assembly (See Fig.3)

(1) Disconnect the card wires from connector CN300, CN301 and CN303 of the main board.

(2) Remove the three screws **C** attaching the DVD mechanism assembly.

Fig.3

3.1.3 Removing the front panel assembly (See Fig.4 to 7)

(1) Disconnect the connector wires from connector CN103 of the transformer board. (See Fig.4)
(2) Disconnect the card wires from connector CN303, CN306 and CN307 of the main board. (See Fig.5)
(3) Disconnect the connector wire from connector CN140 of the amplifier board. (See Fig.6)
(4) Remove the two screws **D** attaching the front panel assembly from bottom side of main body. (See Fig.7)
(5) Remove the one screw **E** attaching the front panel assembly from left side of main body. (See Fig.4)
(6) Remove the one screw **F** attaching the front panel assembly from right side of main body. (See Fig.5)
(7) Remove the one screw **G** attaching the earth wire from switch board to main board. (See Fig.5)
(8) Disengage the hook **a** and hook **b** of the both side of the front panel and then take out the front panel assembly. (See Fig.4, 5)

3.1.4 Removing the center chassis (See Fig.1, 5)

(1) Disconnect the connector wire from connector CN330 of the main board. (See Fig. 5)
(2) Remove the one screw **H** attaching the center chassis. (See Fig. 5)
(3) Remove the two screws **J** attaching the center chassis. (See Fig. 1)

3.1.5 Removing the tuner pack (See Fig.1, 5)

(1) Disconnect the card wire from connector CN335 of the main board. (See Fig. 5)
(2) Remove the two screws **K** attaching the tuner pack. (See Fig.1)

Fig.4

Fig.5

Fig.6

Fig.7

3.1.6 Removing the rear panel
(See Fig.1, 4, 5, 8 and 9)

(1) Disconnect the parallel wire from connector CN210 of the sub woofer jack board. (See Fig.8)
(2) Remove the one screw **L** attaching the rear cover. (See Fig. 1)
(3) Remove the twelve screws **M** attaching the rear panel. (See Fig. 9)
(4) Disengage the hook **c** and hook **d** of the rear panel and then take out the rear panel. (See Fig.4, 5)

Fig.8

Fig.9

3.1.7 Removing the main board
(See Fig. 5)

(1) Disconnect the card wire from connector CN312, CN313 and CN314 of the main board.
(2) Disengage the connector CN309 and CN311 connect to primary board and main board and then take out the main board to upward.

3.1.8 Removing the primary board
(See Fig. 10)

(1) Disconnect the connector wire from connector CN119 of the transformer board.
(2) Remove the one screw **N** attaching the primary board.

Fig.10

3.1.9 Removing the heat sink
(See Fig. 11)

(1) Remove the five screws **P** attaching the heat sink.

Fig.11

3.1.10 Removing the regulator board
(See Fig. 12)

(1) Disconnect the connector CN160 connect to primary board and regulator board.

Fig.12

3.1.11 Removing the cassette mechanism assembly (See Fig.13)

(1) Remove the six screws **Q** attaching the cassette mechanism assembly.

Fig.13

3.1.12 Removing the switch board (See Fig.14)

(1) Take out the volume knob.
(2) Remove the twelve screws **R** attaching the switch board.

Fig.14

3.1.13 Removing the FL board (See Fig.15)

(1) Remove the four screws **S** attaching the FL board.
(2) Remove the two screws **T** attaching the open/close switch board.

Fig.15

3.2 DVD mechanism

3.2.1 Removing the traverse mechanism (See Fig.1 to 6)

(1) Remove the two screws **A** attaching the tramecha holder from top side of DVD mechanism assembly. (See Fig.1)
(2) Remove the two screws **B** attaching the DVD module board. (See Fig.2)
(3) Remove the four screws **C** attaching the CB holder and take out it. (See Fig.3)
(4) Remove the four screws **D** attaching the traverse mechanism. (See Fig.4)
(5) Solder the solder part of DVD pick up. (See Fig.5)
(6) Disconnect the card wire from CN101 and CN201 on the DVD module board. (See Fig. 6)

Caution:

- Solder the short land section on the DVD pickup before disconnecting the card wire from the connector on the DVD pickup. If the card wire is disconnected without attaching solders, the pickup may be destroyed by static electricity.
- When attaching the DVD pickup, be sure to remove solders from the short land section after connecting the card wire to the connector on the DVD pickup.

Fig.1

Fig.2

Fig.3

Fig.4

Fig.5

Fig.6

3.2.2 Removing the pickup assembly (See Fig.7 to 11)

(1) Remove the two rod springs pressing the guide shaft. (See Fig.7)
(2) Remove the screw **E** and **F** attaching the spring holder. (See Fig.8)
(3) Remove the read screw from traverse mechanism assembly. (See Fig.9)

Caution:
When remove the lead screw, do not loss the middle gear. (See Fig.10 and 11)

(4) Remove the bar spring pressing the shaft. (See Fig.10)
(5) Take out the pickup assembly from traverse mechanism chassis by order. (See Fig.11)

Fig.7

Fig.8

Fig.9

Fig.10

Fig.11

3.2.3 Removing the feed motor assembly (See Fig.12)

(1) Remove the one screw **G** attaching the feed motor assembly.

(2) Remove the feed motor wires from solder part of spindle motor board.

Fig.12

3.2.4 Removing the spindle motor assembly (See Fig.13)

(1) Remove the two screws **H** attaching the spindle motor from spindle motor board.

Fig.13

3.2.5 Removing the tray assembly (See Fig.14 & 15)

(1) Remove the two screws **J** attaching the clamper base. (See Fig.14)
(2) Remove the one screw **K** attaching the shaft guide from bottom side. (See Fig.14)
(3) Remove the two screws **L** attaching the shaft guide from top side. (See Fig.15)

Caution:

When attach the tray assembly, boss of loading sub assembly should attach to guide of bottom side at tray assembly. (See Fig.15)

Fig.14

Fig.15

SECTION 4
ADJUSTMENT

4.1 ATTENTION IN SERVICE OF DVD SECTION

(1) When pickup, Flash ROM ,DVD module board were changed, initialize EEPROM by all means.
(2) When full initialization was excuted, excute learning with a DVD test disc by all means.
Test disc : VT-501, VT-502
Learning method : It is adjusted automatically by normal playback of a DVD disc.

4.2 TEST MODE

In DVD test mode, initialization processing, the version of a microcomputer, a front end check, JITTA, and a laser current value are indicated.

Step	Operation	Function	FL display 1	2	3	4	5	6	7	8		Remarks
1	The AC code is pulled out, The STOP and PLAY key of a main unit are pushed simultaneously.											
2	The AC code is inserted with the state of 1.	It is made POWER ON in test mode, and VERSION is displayed on FL.	TEST		J	C	#		*	*		Version display The version code is as the following. 0x01: JC 0x02: 1U 0x03: D 0x04: E 0x05: 2U 0x06: 3U 0x07: UB 0x08: UT 0x09: 4U 0x0a: UY 0x0b: EE 0x0c: UF Region code display 0x00: 0(Free) 0x01: 1 0x02: 2 0x04: 3 0x08: 4 0x10: 5 0x20: 6 0x40: 7 0x80: 8 "X" is indicated at the time as the one except for the above. The study state and an initialization state from a back end are displayed on the 10th and 11th figure of FL display. 0xFF : Blank display The study state(The 10th figure) 0x03: DVD Study un-completing, CD Study un-completing. ("3") 0x02: DVD Study completing, CD Study un-completing. ("2") 0x01: DVD Study un-completing, CD Study completing. ("1") 0x00: DVD Study completing, CD Study completing. ("0") The initialization state (The 11th figure) 0x03: FULL initialization end ("3") 0x00: NORMAL initialization end ("0") 0xFF: Initialization un-ending. ("Blank")
①	Push the PAUSE key of a main unit. NORMAL initialization	* segment of FL is RDS on at the time of the completion of initialization.	T		J	C	#		*	*		
②	Push the STOP+POWER+10 key of a remote control for a long time. FULL initialization	* segment of FL is COLT START on at the time of the completion of initialization.	T		J	C	#		*	*		
3	Push the STOP+POWER+9 key of remote control.	Display the version of a micom on FL.	aa _	. DVD	bbb _	_ ee	cc ee	. _	dd		5sec temporary 5sec temporary	aa: Reserve(blank), bbb: syscom version, ->017 cc: syscom model->_1/_3/51 dd:syscom destination ->U1/U2/U3/U4/EE eeee: DVD backend version ->0271 syscon destination->U1:US/A U2:UN U3:UG/UX U4:UW/UY EE:EE

Step	Operation	Function	FL display 1	2	3	4	5	6	7	8		Remarks
4	Push the MENU key of remote control.	Switch on the all-points light of FL and LED.										
5	Push the MENU key of remote control.	Display the check mode of a frontend on FL.		C	H	E	C	K				
①	Push 1 key (of 10KEY) of remote control.	Starting of DISC & normal play (Play from the started position)		C	H	E	C	K				
②	Push 2 key (of 10KEY) of remote control.	Existence of WOBBLE 0: WOBBLE_NO_CHECK (Un-checking.) 1: WOBBLE_PRESS_MEDIA (Press) 2: WOBBLE_MINUS_MEDIA (DVD-R/-RW Media) 3: WOBBLE_PLUS_MEDIA (DVD+R/+RW Media)	*	*	*	*	*	*	*	*		Arg2-3: 0 Arg4-5: WOBBLE detection result
③	Push 3 key (of 10KEY) of remote control.	With no assignment		C	H	E	C	K				
④	Push 4 key (of 10KEY) of remote control.	CD_LD lighting & laser current display	*	*	*	*	*	*	*	*		Arg2-3: Laser current value (a BACKUP value, actual measurement) Arg4-5: 0
⑤	Push 5 key (of 10KEY) of remote control.	DVD_LD lighting & laser current display	*	*	*	*	*	*	*	*		Arg2-3: Laser current value (a BACKUP value, actual measurement) Arg4-5: 0
⑥	Push 6 key (of 10KEY) of remote control.	DVD_SL x 1 JITTA measurement mode	*	*	*	*	*	*	*	*		Arg2-3: Laser current value (a BACKUP value, actual measurement) Arg4-5: actual measurement
⑦	Push 7 key (of 10KEY) of remote control.	The contents of a backup memory (0x00-0x46) display (BWD)	*	*	*	*	*	*	*	*		Arg2-3: Backup memory address (0x00-0x46) Arg4-5: The contents of a backup memory
⑧	Push 8 key (of 10KEY) of remote control.	The contents of a backup memory (0x00-0x46) display (FWD)	*	*	*	*	*	*	*	*		Arg2-3: Backup memory address (0x00-0x46) Arg4-5: The contents of a backup memory
⑨	Push 9 key (of 10KEY) of remote control.	Temperature sensor value (AD value) display	*	*	*	*	*	*	*	*		Arg2-3: 0 Arg4-5: Temperature sensor value
⑩	Push 10 key (of 10KEY) of remote control.	DVD-DL (Parallel , opposite), DVD-SL Search & JITTA measurement to a predetermined position	*	*	*	*	*	*	*	*		Arg2-3: 0x00-0x06 (The measurement position in VT501) Arg4-5: JITTA value
⑪	Push 0 key (of 10KEY) of remote control.	MONITOR output change 1: SRV_MONI_CIRC 2: SRV_MONI_SERVO 3-5: SRV_MONI_ANALOG 6-7: SRV_MONI_DRC 8-11: SRV_MONI_SERVO_JIG 12: SRV_MONI_DEFAULT	*	*	*	*	*	*	*	*		Arg2-3: 0x00-0x0C Arg4-5: 0
⑫	Push +10 key (of 10KEY) of remote control.	Initialization of the contents of a backup memory	*	*	*	*	*	*	*	*		
⑬	Push STOP key (of 10KEY) of remote control.	Disk stop, LD-OFF		C	H	E	C	K				
⑭	Push OPEN/CLOSE key (of 10KEY) of remote control.	Tray open/close		C	H	E	C	K				
⑮	Push PLAY key (of 10KEY) of remote control.	Play disc	*	*	*	*	*	*	*	*		Arg2-3: Laser current value (a BACKUP value, actual measurement) Arg4-5: JITTA value
6	Push the MENU key of remote control.	Return to STEP2.										
	Push the POWER key of a main unit.	Cancel test mode.										It cancels, even if it does by all STEP.

*1 Fundamentally ,the mode carries out a toggle by pushing the MENU key.

SECTION 5
TROUBLESHOOTING

This service manual does not describe TROUBLESHOOTING.

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