

Toshiba D-VR40SF Service Manual

Dvd video recorder/video cassette recorder

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SERVICE MANUAL /Videorcos fates Recorder

The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2). For (*1) and (*2), see the next page. TOSHIBA CORPORATION 2006

PAL PAL











DVD Video Recorder FILE NO. 810-20 TOSHIBA D-VR16SB D-VR16SB D-VR40SF Weblished in Japan, July, 2006 GREN



REVISED: 01

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Related Manuals for Toshiba D-VR40SF

DVD VCR Combo TOSHIBA D-VR16SB Owner's Manual Dvd video recorder / video cassette recorder (73 pages) VCR Toshiba D-KVR20U Owner's Manual Dvd video recorder / video cassette recorder (111 pages) VCR Toshiba M-672 Service Manual (94 pages) VCR Toshiba M751 Owner's Manual Toshiba m751: user guide (29 pages) VCR Toshiba M264 Owner's Manual Toshiba m264: user guide (26 pages) VCR Toshiba M-662 Owner's Manual Toshiba m662: user guide (46 pages) VCR Toshiba M-663 Owner's Manual Toshiba m663: user guide (52 pages) VCR Toshiba M-65 Owner's Manual Toshiba m65: user guide (51 pages) VCR Toshiba RD-XV47KE Service Manual Hdd & dvd / video cassette recorder (134 pages) VCR Toshiba W-422 Owner's Manual Hi-fi vhs sqpb video cassette recorder (35 pages) VCR Toshiba V-M32 Quick Reference Card (2 pages) VCR Toshiba VE28 Service Manual (84 pages) VCR Toshiba W-528 Service Manual (79 pages) VCR Toshiba W-528 Owner's Manual (35 pages) VCR Toshiba M450 Owner's Manual Toshiba m450: user guide (45 pages) VCR Toshiba M-750 Owner's Manual Toshiba m-750: user guide (61 pages)

Summary of Contents for Toshiba D-VR40SF

Page 1 This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2). For (*1) and (*2), see the next page. TOSHIBA CORPORATION 2006 Published in Japan, July, 2006 GREEN...

Page 2 Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances. Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities.

Page 3: Table Of Contents

MAIN SECTION DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER D-VR16SB/D-VR40SF Main Section I Specifications I Preparation for Servicing I Adjustment Procedures I Schematic Diagrams I CBA's I Exploded Views I Parts List TABLE OF CONTENTS Specifications1-1-1 Laser Beam Safety Precautions.

Page 4: Specifications

Output level : 500mVp-p (75 Ω) Tuner Note The specifications and design of this product are subject to Receivable channels change without notice. IRA - E69 (D-VR16SB) "L(SECAM L)" F1 - E69 (D-VR40SF) "BG(PAL B / G)" E2 - E69 (D-VR40SF) 1-1-1 E9BA1SP...

Page 5: Laser Beam Safety Precautions

LASER BEAM SAFETY PRECAUTIONS This DVD player uses a pickup that emits a laser beam. Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin. The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on.

Page 6: Important Safety Precautions

IMPORTANT SAFETY PRECAUTIONS Product Safety Notice K. Crimp type wire connector The power transformer uses crimp type connectors Some electrical and mechanical parts have special which connect the power cord and the primary side safety-related characteristics which are often not evi- of the transformer.

<u>Page 7</u> Safety Check after Servicing Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, Chassis or Secondary Conductor parts, and wires have been returned to their original positions. Afterwards, do the following tests and con-Primary Circuit firm the specified values to verify compliance with safety standards.

Page 8: Standard Notes For Servicing

STANDARD NOTES FOR SERVICING NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. Circuit Board Indications Pb (Lead) Free Solder 1. The output pin of the 3 pin Regulator ICs is When soldering, be sure to use the Pb free solder. indicated as shown. How to Remove / Install Flat Pack-IC Top View Bottom View...

<u>Page 9</u> 3. The flat pack-IC on the BOARD is affixed with With Soldering Iron: glue, so be careful not to break or damage the foil 1. Using desoldering braid, remove the solder from of each pin or the solder lands under the IC when all pins of the flat pack-IC.

<u>Page 10</u> With Iron Wire: 2. Installation 1. Using desoldering braid, remove the solder from 1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder the foil of each pin of the flat pack-IC on the flux which is applied to all pins of the flat pack-IC, BOARD so you can install a replacement flat pack- you can remove it easily.

<u>Page 11</u> Instructions for Handling Semi- conductors Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work. 1. Ground for Human Body Be sure to wear a grounding band $(1 \text{ M}\Omega)$ that is properly grounded to remove any static electricity that may be charged on the body.

Page 12: Preparation For Servicing

PREPARATION FOR SERVICING How to Enter the Service Mode About Optical Sensors Caution: An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically. What to do for preparation Insert a tape into the Deck Mechanism Assembly and press the PLAY button.

Page 13: Cabinet Disassembly Instructions

CABINET DISASSEMBLY INSTRUCTIONS NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1. Disassembly Flowchart REMOVAL This flowchart indicates the disassembly steps to gain REMOVE/*UNHOOK/ LOC. PART Fig. access to item(s) to be serviced. When reassembling, UNLOCK/RELEASE/ Note follow the steps in reverse order. Bend, route, and UNPLUG/DESOLDER dress the cables as they were originally.

Page 14 e.g. 6(S-1) = six Screws (S-1), Reference Notes 5(L-1) = five Locking Tabs (L-1) CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. (5): Refer to "Reference Notes." Be careful not to break them. 1-1. Release five Locking Tabs (L-1). 1-2.

Page 15 (S-7) [5] Jack Bracket (S-8A) (S-4) (S-6A) (S-6B) [8] Panel Rear Unit (S-7) [6] BOARD (S-8B) Front Jack Jack Plate Earth Fig. D3 (S-7) (S-5A) CN101 (S-5B) CN701 CN1503 (S-5A) CN1504 [7] DVD Mechanism & DVD Main BOARD Fig. D5 Assembly [12] Panel Rear (S-11)

Page 16 (S-13) (S-13) (S-14B) (S-14B) (S-13) (S-14B) (S-15) (S-14A) (S-14A) (S-16) (S-12) [14] VCR Chassis Unit [13] Bracket R Fig. D7 1-6-4 E9BA1DC...

Page 17 [15] Deck Cylinder Assembly Assembly FE Head ACE Head Assembly SW507 LD-SW Plate Earth [18] BOARD Rear Jack [16] BOARD [19] BOARD Power Switch Main (with [19] BOARD Main BOARD AFV) [15] Deck Assembly Cam Gear Desolder (S-17) from bottom Hole Shaft (S-18)

Page 18 (S-19) (S-19) [20] Deck Pedestal [21] Front Bracket R (S-20) Fig. D9 3. How to Eject Manually Note: When servicing, do not touch white resin part as shown below. When rotating the gear, be careful not to damage the gear. 1.

Page 19: Electrical Adjustment Instructions

ELECTRICAL ADJUSTMENT INSTRUCTIONS NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. NOTE: 1.Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after Figure 1 all repairs and replacements have been com- pleted.

Page 20: How To Initialize The Dvd Recorder & Vcr

HOW TO INITIALIZE THE DVD RECORDER & VCR To put the program back at the factory-default, initialize the DVD recorder & VCR as the following procedure. < DVD Section > 1. Turn the DVD recorder on. 2. Confirm that no disc is loaded or that the disc tray is open.

Page 21: Firmware Renewal Mode

FIRMWARE RENEWAL MODE 1. Turn the power on and remove the disc on the tray. 4. Select the firmware version pressing arrow buttons, then press [ENTER]. 2. To put the DVD recorder into version up mode, Fig. d appears on the screen and Fig. e appears press [INSTANT SKIP], [6], [5], and [4] buttons on on the VFD.

Page 22: Troubleshooting

TROUBLESHOOTING NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1 Power Supply Section FLOW CHART NO.1 The power cannot be turned on. See FLOW CHART No.2 <The fuse blows out.> Is the fuse normal? Is normal state restored when once unplugged Check for lead or short-circuiting of primary power cord is plugged again after several seconds.

Page 23 FLOW CHART NO.6 P-ON+44V is not outputted. Check D013, C013, and their periphery, and Is 44V voltage supplied to the emitter of Q1516? service it if defective. Is the "L" pulse (approximately 0V) inputted to Is the "H" pulse (approximately 5V) inputted to the base of Q1516? the base of Q1517? Replace Q1516.

Page 24 FLOW CHART NO.11 DVD-P-ON+3.3V is not outputted. Is 5V voltage supplied to Pin(1) of IC1505? Check D016, D1032, L013, C017, C018 and their periphery, and service it if defective. Replace IC1505. FLOW CHART NO.12 DVD-P-ON+12V is not outputted. Is 12V voltage supplied to the emitter of Q1511? Check D1031, L1013, C1037, C1039 and their periphery, and service it if defective.

Page 25 2 DVD Section FLOW CHART NO.1 The key operation is not functioning. Re-install the key switches correctly or replace Are the contact point and the installation state of the key

switches normal? the poor switch. Is the control voltage normally inputted into Pin(8) Check the key switches and their periphery, and of IC501? service it if defective.

Page 26 FLOW CHART NO.4 VIDEO E-E does not appear normally. Are the video signals inputted to each pin of Check the line between video input terminal and IC1518? each pin of IC1518. IC1518 1PIN VIDEO-IN (AV1) 1PIN → JK1502 VIDEO-IN (AV1) IC1581 IC1518 3PIN...

Page 27 FLOW CHART NO.5 Picture does not appear normally. [In the S-VIDEO/Composite video output (JK1502, JK1506, JK2001)] Set the disc on the disc tray and playback. "A" Replace DVD MECHANISM & DVD MAIN BOARD Are the video signals inputted to each pin of CN1502? No ASSEMBLY.

Page 28 FLOW CHART NO.6 Picture does not appear normally. [In the RGB/Component video output (JK1501, JK1502)] Set the disc on the disc tray and playback. "B" Are the video signals outputted to each pin of Replace DVD MECHANISM & DVD MAIN BOARD CN1502? ASSEMBLY.

<u>Page 29</u> "C1" Check the line between each pin of IC1516 and Are the video signals inputted to each pin of IC1516 each pin of IC1510, and service it if defective. and each pin of IC1514? IC1516 3PIN → IC1510 13PIN VIDEO-Y(I/P)-OUT (Output to JK1501) IC1516 8PIN →...

<u>Page 30</u> FLOW CHART NO.7 Audio E-E does not appear normally. Check the line between audio input terminal and No (Rear each pin of IC1518, and service it if defective. or Front input) Are the audio signals inputted to each pin of \rightarrow JK1502 IC1518 10,16PIN...

<u>Page 31</u> "C" Check each line between each pin of CN1502 Are the analog audio signals inputted to each pin of IC1513? and each pin of IC1513, and service it if defective. CN1502 14PIN → IC1513 2PIN AUDIO(L)-OUT IC1513 2PIN AUDIO (L)-OUT CN1502 16PIN →...

Page 32 FLOW CHART NO.8 Audio is not outputted during playback. Set the disc on the disc tray, and playback. Replace the DVD MECHANISM & DVD MAIN Are the analog audio signals outputted to each pin BOARD ASSEMBLY. of CN1502? CN1502 14PIN AUDIO (L)-OUT CN1502 16PIN AUDIO (R)-OUT Check each line between each pin of CN1502 Are the analog audio signals inputted to each pin...

Page 33 "D" Are the analog audio signals outputted to each pin of IC1518? Is 12V voltage supplied to Pin(2,4) of IC1518? IC1518 21,25PIN AUDIO-OUT 1 (AV1) IC1518 22,26PIN AUDIO-OUT 2 (AV2) Check the AL+12V line and Replace IC1518. service it if defective. Are the audio signals outputted to the specific Check the periphery between Pin(21,25) of IC1518 output terminal?

<u>Page 34</u> 3 VCR Section FLOW CHART NO.1 The key operation is not functioning. Are the contact point and the installation state of Re-install some key switches correctly or the key switches normal? replace some key switches. Check the key switches and their periphery, and Is the control voltage normally inputted into service it if defective.

Page 35 FLOW CHART NO.3 Cassette tape can not be loaded. When loading a cassette tape, on Pin(10) of Check the line between the start sensor and IC501, does the "L" pulse switch to the "H" pulse? Pin(10) of IC501, and service it if defective. When loading a cassette tape, is the specified Replace the Capstan Motor Unit.

Page 36 FLOW CHART NO.6 Capstan Motor does not rotate. Is 5V voltage supplied to Pin(2) of CN502? Check the P-ON+5V line and service it if defective. Is over approximately 2.6V voltage supplied to Check the line between Pin(5) of CN502 and Pin(5) of CN502? Pin(76) of IC501, and service it if defective.

<u>Page 37</u> FLOW CHART NO.10 Video E-E does not appear. Are the video signals inputted to each pin of Check the line between video input terminal and IC1518? each pin of IC1518. IC1518 1PIN VIDEO-IN (AV1) 1PIN → JK1502 VIDEO-IN (AV1) IC1581 3PIN →...

Page 38 "E" Are the video signals outputted to each pin of IC1518? Is 12V voltage supplied to Pin(2,4) of IC1518? IC1518 29PIN VIDEO-OUT 1 (AV1) IC1518 30PIN VIDEO-OUT 2 (AV2) Check the AL+12V(1) line Replace IC1518. and service it if defective. Are the video signals outputted to the specific output terminal? Check the periphery of JK1502 from Pin(29) of...

Page 39 "F" Check the line between Pin(3,13) of IC1501 and Is the audio signal supplied to Pin(4,50) of IC451? Pin(4,50) of IC451, and service it if defective. Is the 5V voltage supplied to Pin(16,32,35,36,46,55) of Check the circuit of AL+5V, P-ON+5V and IC451, or the 9V voltage supplied to Pin(69) of IC451? P-ON+9V, and service it if defective.

Page 40 FLOW CHART NO.12 Hi-Fi audio can not be recorded normally. (E-E mode is normal.) Is the REC FM signal outputted to Pin(26) of IC451? Replace IC451. Is the line between Pin(8) of CN251 and Check the line between Pin(8) of CN251 and Pin(26) of IC451, and service it if defective.

Page 41 FLOW CHART NO.15 Hi-Fi audio can not be playbacked normally in the linear audio mode. (E-E mode is normal.) Is the audio signal outputted to Pin(11) of IC301? Is the audio signal supplied to Pin(5) of IC301? Replace Check the line between Pin(11) of IC301 and Pin(80) of IC451, and IC301.

Page 42: Function Indicator Symbols

FUNCTION INDICATOR SYMBOLS < VCR Section > Note: If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [STANDBY-ON] button, an error message is displayed on the TV screen for 5 seconds. MODE INDICATOR ACTIVE When reel or capstan mechanism is not...

<u>Page 43</u> < DVD Section > Note: If an error occurs, a message with the error number appears on the screen. Recording Error Error message You cannot record on this disc as Power Calibration Area is full. Error No. Error Message Solution Error Description Priority An error occurs during data reading.

<u>Page 44</u> (Once the screen of the program line is exited, the program line for the error will be cleared.) (No Error Message is displayed for the error No. 40 ~ 42.) Example : D-VR16SB Example : D-VR40SF Timer Programming VCR DVD...

Page 45: Block Diagrams

BLOCK DIAGRAMS Servo/System Control Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. (DECK ASSEMBLY) IC501 SW507 BOARD MAIN (SERVO/SYSTEM CONTROL) SW681 OPEN/CLOSE ACE HEAD ASSEMBLY CN510 CN681 LD-SW CN504 AL+5V LD-SW OPEN/CLOSE-SW CONTROL CTL(+) CTL(+) DUBBING-SW TP501 HEAD CTL(-) DUBBING CTL(-) SW682 KEY- 2 8...

Page 46 Digital Signal Process Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REC VIDEO SIGNAL PB VIDEO SIGNAL REC AUDIO SIGNAL PB AUDIO SIGNAL DVD MECHANISM IC201 IC101 ERROR AMP CN701 CN201 VIDEO VIDEO-Y(I/P)-OUT 24 TO VIDEO ENCODER VIDEO VIDEO-Y(I)-OUT 30 OUTPUT SELECT VIDEO-C-OUT 22...

Page 47 NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REC-VIDEO SIGNAL PB-VIDEO SIGNAL MODE: SP/REC IC501 (OSD) IIC-BUS SCL TO SERVO/SYSTEM CHARACTER CONTROL BLOCK IIC-BUS SDA DIAGRAM COLOR D-VR40SF Q301 IC301 VIDEO SIGNAL PROCESS /HEAD AMP (DECK ASSEMBLY) SERIAL (DVD VCR DUBBING) DECORDER Y. DELAY TO VIDEO...

Page 48 Video Input Select Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REC VIDEO SIGNAL PB VIDEO SIGNAL TU1501 (TUNER UNIT) IC1518 (VIDEO INPUT SELECT) BOARD REAR JACK VIDEO OUT BUFFER JK1502 VIDEO-OUT2 VIDEO IN 20 DRIVER JK2001 CL2001 CN1507 TO VIDEO VIDEO-IN2 VIDEO-IN2 VIDEO-OUT1...

Page 49 Video Output Select Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REC VIDEO SIGNAL PB VIDEO SIGNAL IC1515 (VIDEO DRIVER) DRIVER JK1506 S-VIDEO IC1510 (SW) -6dB DRIVER DRIVER (DVD VCR DUBBING) TO VIDEO DVD-VIDEO(DUB) BLOCK DIAGRAM CONTROL IC1516 (VIDEO DRIVER) CN1502 9 10 11 JK1501...

Page 50 Audio Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. PB-AUDIO SIGNAL REC-AUDIO SIGNAL Mode : SP/REC BOARD MAIN N-A-PB TO HI-FI AUDIO N-A-REC BLOCK DIGRAM IC301 (AUDIO SIGNAL PROCESS) TUNER PB-ON LINE MUTE (DECK ASSEMBLY) SP/LP-ON ACE HEAD ASSEMBLY REC-ON Q404 CN504 AUDIO...

Page 51 Audio Input/Output Select Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REC AUDIO SIGNAL PB AUDIO SIGNAL BOARD REAR JACK JK2001 CN1507 CN2001

IC1518 (INPUT/OUTPUT SELECT) JK2-AUDIO(L)-IN AUDIO(L)-IN2 JK2-AUDIO(R)-IN AUDIO(R)-IN2 JK2-AUDIO(L)-OUT AUDIO(L)-OUT2 BUFFER JK2-AUDIO(R)-OUT AUDIO(R)-OUT2 JK2-AUDIO-MUTE MUTE-ON MUTE-ON Q2003, Q2002, Q2005 Q2004 JK1502...

Page 52 Hi-Fi Audio Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. PB-AUDIO SIGNAL REC-AUDIO SIGNAL Mode : SP/REC BOARD MAIN PB/EE-AUDIO(L) TO AUDIO INPUT/OUTPUT PB/EE-AUDIO(R) SELECT BLOCK DIAGRAM IC451 (Hi-Fi AUDIO PROCESS) R-CH IIC-BUS SDA SERIAL COMP NOISE DATA IIC-BUS SCL DECODER R-CH (DVD...

<u>Page 53</u> Power Supply Block Diagram NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. NOTE: CAUTION ! CAUTION ! The voltage for parts in hot circuit is measured using Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. For continued protection against fire hazard, hot GND as a common terminal.

Page 54: Schematic Diagrams / Board's And Test Points

SCHEMATIC DIAGRAMS / BOARD'S AND TEST POINTS NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. Standard Notes WARNING Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Page 55 LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES: 1. CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. 2. CAUTION: Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.

Page 56 Main 1/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-3 E9BA1SCM1...

Page 57 Main 2/10, Power Switch, Function & Sensor Schematic Diagram < VCR Section > FL601 MATRIX CHART NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. P.SCAN REPEAT VCD VCR VCD VCR XP SP LP EP REPEAT P.SCAN 1-13-4 E9BA1SCM2...

Page 58 Main 3/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-5 E9BA1SCM3...

Page 59 Main 4/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-6 E9BA1SCM4...

Page 60 Main 5/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-7 E9BA1SCM5...

Page 61 Main 6/10 & Front Jack Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-8 E9BA1SCM6...

Page 62 Main 7/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-9 E9BA1SCM7...

Page 63 Main 8/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-10 E9BA1SCM8...

Page 64 Main 9/10 Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-11 E9BA1SCM9...

Page 65 Main 10/10 Schematic Diagram < VCR Section > (D-VR40SF only) NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-12 E9BA2SCM10...

Page 66 Power Supply & Junction Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. CAUTION ! CAUTION ! NOTE: Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. For continued protection against fire hazard, The voltage for parts in hot circuit is measured using If Main Fuse (F1001) is blown , check to

see that all components in the power supply replace only with the same type fuse.

Page 67 Rear Jack Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-14 E9BA1SCRJ...

Page 68 AFV Schematic Diagram < VCR Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1-13-15 E9BA1SCAFV...

Page 69 DVD Main 1/5 Schematic Diagram < DVD Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1 NOTE: The order of pins shown in this diagram is different from that of actual IC101. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section. 1-13-16 E9BA1SCD1...

Page 70 DVD Main 2/5 Schematic Diagram < DVD Section > 1 NOTE: NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. The order of pins shown in this diagram is different from that of actual IC101. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section. 1-13-17 E9BA1SCD2...

Page 71 DVD Main 3/5 Schematic Diagram < DVD Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1 NOTE: The order of pins shown in this diagram is different from that of actual IC101. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section. 1-13-18 E9BA1SCD3...

Page 72 DVD Main 4/5 Schematic Diagram < DVD Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1 NOTE: The order of pins shown in this diagram is different from that of actual IC101. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section. 1-13-19 E9BA1SCD4...

Page 73 DVD Main 5/5 Schematic Diagram < DVD Section > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. 1 NOTE: The order of pins shown in this diagram is different from that of actual IC101. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section. 1-13-20 E9BA1SCD5...

Page 74 BOARD MAIN Top View BOARD SENSOR Top View NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. TO BOARD SENSOR (END-SENSOR) BHF300F01012A J236 TO BOARD SENSOR (START-SENSOR) JK1-V-OUT BHF300F01012B TP301 C-PB VR501 SW-P TP503 TP504 RF-SW TP501 S-INH 1-13-21 BE9B00F01012A...

Page 75 BOARD MAIN Bottom View NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. PIN 6 OF IC1515 WF10 PIN 28 OF CN1501 PIN 14 OF IC1502 PIN 22 OF CN1502 PIN 24 OF CN1502 PIN 26 OF CN1502 PIN 28 OF CN1502 1-13-22 BE9B00F01012A...

Page 76 NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. BOARD POWER SWITCH BOARD POWER SWITCH BOARD FUNCTION BOARD FUNCTION Top View Bottom View Top View Bottom View BE9B00F01012B BE9B00F01012C BOARD FRONT JACK BOARD FRONT JACK Top View Bottom View BOARD JUNCTION BOARD JUNCTION Top View Bottom View BE9B00F01021B...

<u>Page 77</u> BOARD POWER SUPPLY Top View NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. CAUTION ! CAUTION ! Because a hot chassis ground is present in the power For continued protection against fire hazard, Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. supply circut, an isolation transformer must be used.

Page 78 BOARD POWER SUPPLY Bottom View NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. CAUTION ! CAUTION ! Because a hot chassis ground is present in the power For continued protection against fire hazard, Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. supply circut, an isolation transformer must be used.

Page 79 BOARD REAR JACK Bottom View BOARD REAR JACK Top View NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. BE9B00F01021C BOARD AFV Top View BOARD AFV Bottom View BE6800F01091 1-13-26...

Page 80: Waveforms

WAVEFORMS NOTE: Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL) TP301 UPPER Pin 28

of CN1502 TP504 Pin 6 of IC1515 LOWER C-PB 0.2V RF-SW VIDEO-Cb 0.2V 20µs VIDEO-CVBS 0.5V 20µs J236 UPPER Pin 24 of CN1502 Pin 28 of CN1501 TP504 WF10 LOWER...

Page 81: Wiring Diagram < Vcr Section

WIRING DIAGRAM < VCR SECTION > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. REAR CN1501 VIDEO- VIDEO- DIGITAL AUDIO OUT S-VIDEO VIDEO-Y AUDIO(R) AUDIO(L) Cb/Pb Cr/Pr ANT-IN ANT-OUT (COAXIAL) -OUT -OUT (DECK ASSEMBLY) EV+10.5V EV+10.5V JK1502 EV+10.5V ACE HEAD P-ON+5V ASSEMBLY CN504 P-ON+5V CL051A...

Page 82: Wiring Diagram < Dvd Section

WIRING DIAGRAM < DVD SECTION > NOTE: BOARD MEANS PRINTED CIRCUIT BOARD. DVD MECHANISM & DVD MAIN BOARD ASSEMBLY DVD MECHANISM CN101 CN1001 CN301 18 W CN1003 17 V 16 U SLED EV+10.5V SENSOR 15 VCC EV+10.5V 14 HU+ EV+10.5V BOARD ENCODER 13 HU- 12 HV+...

Page 83: Ic Pin Function Descriptions

Comparison Chart of Models and Marks VIDEO- Video Input Select Signal Model Mark VIDEO-Video Input Select D-VR16SB Signal D-VR40SF REG- Power Regulator Control CONT2 Signal DVD- DVD Audio Mute Control AUDIO- Signal IC501(SERVO / SYSTEM CONTROL IC)

Page 84 Signal Signal Mark Function Mark Function Name Name OUT OSD-V- OSD Video Signal Capstan Motor Control OUT C-CONT Output Signal OSDVcc OSDVcc Drum Motor Control OUT D-CONT Signal LPF Connected Terminal (Slicer) Capstan Motor FWD/ OUT C-F/R REV Control Signal Not Used (FWD="L"/REV="H") SECAM or MESECAM...

Page 85 IC612 (FIP DRIVER) Signal Name Function Name Signal Name Function Name POWER- Power LED Signal Output VCR Mode LED Signal OUT VCR-LED Grid Output Output DVD Mode LED Signal OUT DVD-LED Output Not Used Oscillator Input Power Supply Not Used Serial Data Input Clock Input...

Page 86: Lead Identifications

LEAD IDENTIFICATIONS PQ070XF01SZH PT204-6B-12 KRA103M-AT/P 2SC1815-Y(TE2 F T) KRA104M-AT/P KTA1273-Y-AT/P KRC103M-AT/P KTA1281Y-AT/P KTA-1266-GR-AT/P KTC3198-Y-AT/P KTA1267-Y-AT/P KTC3203-Y-AT/P KTC3199-(BL,Y)-AT/P KTC3205-Y-AT/P 1 2 3 4 E C B E C B EL817A RN1511(TE85R.F) KRC103S-RTK/P KIA4558P/P KTC3875S-(GR,Y)-RTK/P RC4580IP KTC3879-Y-RTK/P 1: Anode 2: Cathode 3: Emitter 4: Collector B1 E B2 LA70100M-TRM-E...

Page 87: Exploded Views

(P2) DVD MECHANISM & DVD 2L110 2L017 MAIN BOARD ASSEMBLY 2L015 2L017 2L015 2L017 2B11 2L014 Comparison Chart of 2L061 Models and Marks Model Mark (P1) D-VR16SB 2B13 BOARD MCV D-VR40SF 2B59 BOARD Front Jack 1-18-1 E9BA1CEX...

Page 88 Packing [B] [A] X20B X20A [A] [A] Comparison Chart of Models and Marks Model Mark D-VR16SB D-VR40SF 1-18-2 E9BA1PEX...

Page 89: Mechanical Parts List

Comparison Chart of Models and Marks WASHERHEAD+ 2L081 GBHS3060 S-TIGHT SCREW M3X6 Model Mark BIND HEAD+BLACK D-VR16SB 2L082 GBHS3060 S-TIGHT SCREW M3X6 BIND HEAD+BKACK D-VR40SF 2L083 GBHP3080 SCREW P-TIGHT M3X8 BIND HEAD+ BLK 2L100 1VM420034A P-TIGHT SCREW M3X34 E9400UD 2L110 GBJS3100 SCREW S-TIGHT M3X10 Loca-...

Page 90: Electrical Parts List

C315 CHD1JK30B473 CHIP CERAMIC CAP .(1608) B K 0.047µF/ Model Mark D-VR16SB C316 CE1JMAVSL1R0 ELECTROLYTIC CAP . 1µF/ D-VR40SF 50V M H7 C317 CHD1JZ30F104 CHIP CERAMIC CAP .(1608) F Z 0.1µF/50V DVD MECHANISM & DVD MAIN C322 CHD1JZ30F104 CHIP CERAMIC CAP .(1608) F Z 0.1µF/50V...

Page 91 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. C370 CCA1CMT0Y103 CERAMIC CAP .(AX) Y M C456 CE1CMAVSL100 ELECTROLYTIC CAP . 0.01µF/16V 10µF/16V M H7 C371 CHD1JK30B223 CHIP CERAMIC C457 CE1EMAVSL4R7 ELECTROLYTIC CAP . CAP .(1608) B K 0.022µF/ 4.7µF/25V M H7

C458...

Page 92 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. C509 CHD1JK30B102 CHIP CERAMIC C611 CE1JMASSL220 ELECTROLYTIC CAP . CAP .(1608) B K 1000pF/ 22µF/50V M H7 C612 CHD1JK30B472 CHIP CERAMIC C510 CHD1JK30B472 CHIP CERAMIC CAP .(1608) B K 4700pF/...

Page 93Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No.Description tion No. tion No. C1542 CE1CMASDL101 ELECTROLYTIC CAP . C1588 CHD1JJ3CH470CHIP CERAMIC 100 μ F/16V M CAP .(1608) CH J 47pF/50V C1543 CHD1JZ30F104 CHIP CERAMICC1589 CHD1JZ30F104 CHIP CERAMIC CAP .(1608) F Z 0.1 μ F/50V CAP .(1608) F Z 0.1 μ F/50V...

 $\label{eq:page 94} \begin{array}{l} \mbox{Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. C1630 CHD1JK30B103 CHIP CERAMIC C1694 CHD1AZ30F105 CHIP CERAMIC CAP . F Z CAP .(1608) B K 0.01 \mu F/1 \mu F/10V C1695 CE1JMASDL1R0 ELECTROLYTIC CAP . 1 \mu F/C1631 CHD1JK30B102 CHIP CERAMIC... \\ \end{array}$

Page 95 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. D1529 NDTA00DZ11BS ZENER DIODE DZ- L1504 JW5.0T BOARD JUMPER D0.6- 11BSAT265 P5.0 D1531 NDTA00DZ11BS ZENER DIODE DZ- L1505 LLAXKATTU101 INDUCTOR(100μH K) 11BSAT265 LAP02TA101K D1532 NDTA00DZ11BS ZENER DIODE DZ-...

<u>Page 96</u> Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. Q1517 NQSZKRC103MP NPN TRANSISTOR R371 RCX6JATZ0562 CARBON RES. 1/6W J 5.6k Ω KRC103M-AT/P CHIP RES. 1/10W J 3.9k Ω Q1518 NQSYKTC3205P TRANSISTOR KTC3205-Y- R372 RRXAJR5Z0392 AT/P...

<u>Page 97</u> Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. CHIP RES. 1/10W J 18k Ω CHIP RES. 1/10W J 560 Ω R541 RRXAJR5Z0183 R647 RRXAJR5Z0561 CHIP RES. 1/10W J 5.6k Ω R542 RRXAJR5Z0562 R648...

<u>Page 98</u> Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. CHIP RES. 1/10W J 10k Ω RRXAFR5H1302 CHIP RES. 1/10W F 13k Ω R1557 RRXAJR5Z0103 R1637 RRXAFR5H1002 CHIP RES. 1/10W F 10k Ω RRXAFR5H1302 CHIP RES.

Page 99Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No.Description tion No. tion No. R1700 RRXAZR5Z0000 CHIP RES.(1608) 1/10W 0 PS502QPWZP1302C70 PHOTO INTERRUPTER Ω RPI-302C70 R1702 RRXAZR5Z0000 CHIP RES.(1608)1/10W 0 TP301 JW11.5T BOARD JUMPER D0.6- Ω...

Page 100 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. D1547 NDTA00DZ11BS ZENER DIODE DZ- C1013 CCA1JJT0B102 CERAMIC CAP .(AX) B J 11BSAT265 1000pF/50V RESISTORS C1018 CE1AMASDL101 ELECTROLYTIC CAP . 100µF/10V M CHIP RES.

Page 101 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. L1001-1 JW20.0T PCB JUMPER D0.6-P20.0 R1059 RCX4JATZ0102 CARBON RES. 1/4W J 1k Ω L1001-2 XL03010XM001 BEAD CORE B16 RH CHIP RES. 1/10W J 33k Ω 3.5X10X1.3 R1126 RRXAJR5Z0333...

Page 102 Loca- Loca- Mark TSB P/N Reference No. Description Mark TSB P/N Reference No. Description tion No. tion No. D2006 NDTA00DZ11BS ZENER DIODE DZ- CE1CMASSL100 ELECTROLYTIC CAP . 11BSAT265 10μF/16V M H7 D2007 NDTA00DZ11BS ZENER DIODE DZ-CE1CMASSL100 ELECTROLYTIC CAP . 11BSAT265 10μF/16V M H7 D2008...

Page 103 DECK MECHANISM SECTION DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER D-VR16SB/D-VR40SF Deck Mechanism Section I Standard Maintenance I Mechanism Alignment Procedures I Disassembly / Assembly of Mechanism I Deck Exploded Views I Deck Parts List TABLE OF CONTENTS Standard Maintenance2-1-1 Service Fixture and Tools.

Page 104: Standard Maintenance

STANDARD MAINTENANCE Service Schedule of Components This maintenance chart shows you the standard of replacement and cleaning time for each part. Because those may replace

depending on environment and purpose for use, use the chart for reference. I: Replace h: Hours : Cleaning Deck Periodic Service Schedule...

Page 105 Cleaning Cleaning of ACE Head Clean the head with a cotton swab. Cleaning of Video Head Procedure Clean the head with a head cleaning stick or chamois 1.Remove the top cabinet. cloth. 2.Dip the cotton swab in 90% ethyl alcohol and clean Procedure the ACE Head.

Page 106: Service Fixture And Tools

SERVICE FIXTURE AND TOOLS J-1-1, J-1-2 Ref. No. Name Part No. Adjustment J-1-1 Alignment Tape FL6A Head Adjustment of ACE Head J-1-2 Alignment Tape FL6N8 Azimuth and X Value Adjustment of ACE Head / (2 Head model) Adjustment of Envelope Waveform FL6NS8 (4 Head model) Guide Roller Adj.

Page 107: Mechanical Alignment Procedures

MECHANICAL ALIGNMENT PROCEDURES Explanation of alignment for the tape to correctly run B. Method to place the Cassette Holder in the tape- starts on the next page. Refer to the information below loaded position without a cassette tape on this page if a tape gets stuck, for example, in the 1.

<u>Page 108</u> 1. Tape Interchangeability Alignment Note: To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.) Equipment required: Dual Trace Oscilloscope VHS Alignment Tape (FL6NS8) Guide Roller Adj.

Page 109 1-A. Preliminary/Final Checking and 4. If creasing or snaking is apparent, adjust the Tilt Alignment of Tape Path Adj. Screw of the ACE Head. (Fig. M6) Purpose: To make sure that the tape path is well stabilized. Azimuth Adj. Screw Symptom of Misalignment: If the tape path is unstable, the tape will be damaged.

Page 110 either at the beginning or end of track as shown in 5. To shift the CTL waveform, press [PROGRAM Fig. M9. or [PROGRAM] button. Then make sure that the maximum output position of PB FM envelope Dropping envelope level at the beginning of track. ±...

Page 111 1-D. Azimuth Alignment of Audio/Con- 2. When the tape has been curled up or bent, turn the trol/ Erase Head alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.) Purpose: To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Page 112: Disassembly/Assembly Procedures Of Deck Mechanism

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.) All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode;...

Page 113 REMOVAL INSTALLATION STEP START- REMOVE/*UNHOOK/ /LOC. PART ADJUSTMENT Fig. No. UNLOCK/RELEASE/ CONDITION UNPLUG/DESOLDER Loading Arm (SP) (+)Refer to Alignment DM2H, DM14H [34] [26] Assembly Sec.Page 2-5-1 Loading Arm (TU) (+)Refer to Alignment [35] [34] DM2H, DM14H Assembly Sec.Page 2-5-1 M Brake (TU) [36] [16],[26] DM1H, DM15H...

Page 114 Top View [44] [45] [49] [46] [14] [13] [11] [15] [38] [10] [12] [37] [36] [43] [32] [41] [31] [40] [42] Fig. DM1H Bottom View [19] [35] [34] [25] [23] [24] [26] [27] [22] [28] [20] [33] Fig. DM2H 2-4-3 U29PHSDA...

Page 115 (S-1) (S-1) (L-1) (L-3) (L-2) (S-1A) (P-1) Installation of [3] and [6] First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in the direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.

Page 116 [11] (S-4A) (L-4) [49] (P-3) [13] [50] Removal of [11] [12] (L-12) 1) Remove screw (S-4A). 2) Unhook spring (P-2). [10] Release (L-4) while (P-2) holding [12] with a finger. Loosen a finger holding [12] and remove [11]. (S-2) Pin of [12] Pin of [10] Groove of [27] When reassembling [10] and...

Page 117 Installation of [13] and [12] (S-5) [14] (S-6) [13] [15] Hook spring (P-3) up to [12] and [13], then install them to (P-3) the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.) [12] Fig.

Page 118 (C-1) turn [22] (S-8) [20] (L-6) [21] [19] Cap Belt Pin on [22] Installation position of Cap Belt [20] Cap Belt [27] Position of pin on [22] Fig. DM12H [19] View for A Fig. DM11H 2-4-7 U29PHSDA...

Page 119 Installation of [26] [26] (C-3) Position of Mode Lever when installed Pin of [33] Pin of [37] (S-9) Pin of [36] (L-8) [23] (L-7) Bottom View [24] (C-5) [26] (C-4) (C-2) [28] [27] [25] [29] [30] Align [26] and [27] as shown. [27] First groove on [27] First tooth on [47]...

Page 120 [38] [36] [43] (P-6) turn [39] (L-10) turn [42] turn [47] [48] Slide [37] Fig. DM17H (C-7) [41] (C-6) [40] Fig. DM15H [45] [44] [46] (L-11) Slide Plate (S-11) Fig. DM16H 2-4-9 U29PHSDA...

Page 121: Alignment Procedures Of Mechanism

ALIGNMENT PROCEDURES OF MECHANISM The following procedures describe how to align the Alignment 1 individual gears and levers that make up the tape Loading Arm (SP) and (TU) Assembly loading/unloading mechanism. Since information about the state of the mechanism is provided to the Install Loading Arm (SP) and (TU) Assembly so that System Control Circuit only through the Mode Switch, their triangle marks point to each other as shown in...

Page 122: Deck Exploded Views

DECK EXPLODED VIEWS Deck Mechanism View 1 Mark Description Floil G-684G or Multemp MH-D (Blue grease) SLIDUS OIL #150 B494 L1467 B553 L1191 B411 B567 L1053 B410 L1051 Chassis Assembly Top View (Lubricating Point) L1322 B501 L1450 L1450 L1466 B121 B126 B492 B571...

Page 123 Deck Mechanism View 2 Mark Description Floil G-684G or Multemp MH-D (Blue grease) B587 B521 B487 SLIDUS OIL #150 B416 B591 SANKOUL FG84M (Yellow grease) B590 B522 L1406 B148 B573 B499 B508 B574 B592 B585 B518 B558 B564 B557 B414 B572 B565 L1151...

Page 124 Deck Mechanism View 3 Mark Description Floil G-684G or Multemp MH-D (Blue grease) L1321 SLIDUS OIL #150 B347 L1321 B355 B354 B483 L1341 B425 B482 B562 B300 B563 B313 B529 B360 B359 B361 B555 B303 Some Ref. Numbers are not in sequence. B514 2-6-3 U29P4HSDEX...

Page 125: Deck Parts List

DECK PARTS LIST Loca- TSB P/N Reference No. Description tion No. Loca- TSB P/N Reference No. Description B557 0VM403205A MOTOR PULLEY U5 tion No. B558 MMDZB12MF003 LOADING MOTOR RF-500TB- P000468240 N236CCYL CYLINDER ASSEMBLY MK12.5 12560 PAL 6HD B559 P000468020 0VSA13450 CLUTCH ASSEMBLY(HI) MK12 P000468180 1VSA12912 LOADING MOTOR ASSEMBLY...

Page 127 Appendix: D-VR16SB, D-VR40SF REVISION HISTORY Date Reason for Change Changed Parts List due to correct TSB P/N, Reference No, and Description 07/30/07 for LED, Location No. D555...

This manual is also suitable for:

D-vr16sb