

DCR-VX2100/VX2100E

RMT-811

SERVICE MANUAL

LEVEL 2

Ver 1.0 2003. 10

Revision History

How to use
Acrobat Reader



Photo : DCR-VX2100

US Model
Canadian Model
Korea Model
DCR-VX2100
AEP Model
UK Model
Australian Model
Chinese Model
DCR-VX2100E
E Model
Hong Kong Model
Tourist Model
DCR-VX2100/VX2100E

C MECHANISM

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987628851.pdf).
- For INSTRUCTION MANUAL, refer to SERVICE MANUAL, LEVEL 1 (987628841.pdf).
- For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL IV **C MECHANISM**" (9-974-050-11).
- Reference No. search on printed wiring boards is available.

On the VC-358 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-358 board.

Therefore, schematic diagram, printed wiring board, mounted parts location and electrical parts list of the FP-594 and VC-358 board are not shown.

The following pages are not shown.

Schematic diagram	Pages 4-43 to 4-78	Mounted parts location	Pages 4-127 to 4-128
Printed wiring board	Pages 4-113 to 4-118	Electrical parts list	Pages 5-27 to 5-35
Waveforms	Page 4-121 to 4-123		

Mini **DV** Digital
Video
Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®



HANDYCAM

Cassette
Memory

InfoLITHIUM™



MEMORY STICK

SPECIFICATIONS

Video camera recorder

System

Video recording system

2 rotary heads

Helical scanning system

Audio recording system

Rotary heads, PCM system

Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)

Video signal

DCR-VX2100:

NTSC color, EIA standards

DCR-VX2100E:

PAL color, CCIR standards

Usable cassette

Mini DV cassette with the mark printed

Tape speed

SP: Approx. 18.81 mm/s

LP: Approx. 12.56 mm/s

Recording/playback time (using cassette DVM60)

SP: 1 h

LP: 1.5 h

Fast-forward/rewind time (using cassette DVM60)

Approx. 2 min and 30 s

Viewfinder

Electric viewfinder (color)

Image device

1/3 type CCD (3 Charge Coupled Device)

Approx. 380 000 pixels

(Effective: Approx. 340 000 pixels)

Lens

Combined power zoom lens

Filter diameter 58 mm (2 3/8 in)

12· (Optical), 48· (Digital)

F1.6 - 2.4

Focal length

6 - 72 mm (1/4 - 2 7/8 in)

When converted to a 35 mm still camera

43.2 - 518.4 mm (1 3/4 - 20 1/2 in)

Color temperature

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

CAUTION :

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

**: LEAD FREE MARK**

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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- MI-050 (MIC IN)
PRINTED WIRING BOARD 4-99
- FT-092 (REMOTE)
PRINTED WIRING BOARD 4-99
- LB-100 (BACK LIGHT)
PRINTED WIRING BOARD 4-101
- HL-013 (LCD DRIVE)
PRINTED WIRING BOARD 4-103
- FP-196 FLEXIBLE
PRINTED WIRING BOARD 4-104
- MA-430 (AUDIO AMP)
PRINTED WIRING BOARD 4-105
- DD-216 (DC/DC CONVERTER, DC REGURATOR)
PRINTED WIRING BOARD 4-107
- ZM-030 (ZOOM SWITCH)
PRINTED WIRING BOARD 4-109
- RM-091 (REAR REMOCON RECEIVER)
PRINTED WIRING BOARD 4-111

Printed wiring boards of the FP-594 and VC-358 board are not shown.
Pages from 4-113 to 4-118 are not shown.

4-4. WAVEFORMS 4-119

Waveforms of the VC-358 board are not shown.
Pages 4-121 to 4-123 are not shown.

4-5. MOUNTED PARTS LOCATION 4-124

Mounted parts locations of the VC-358 board are not shown.
Page 4-127 to 4-128 are not shown.

5. REPAIR PARTS LIST

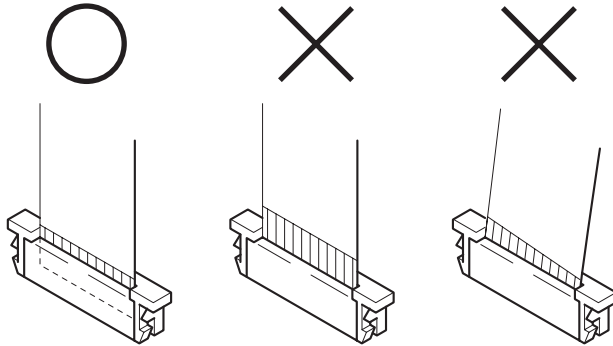
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Parts list of the VC-358 board is not shown.
Pages from 5-27 to 5-35 are not shown.

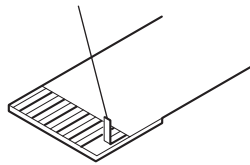
SECTION 1 SERVICE NOTE

1-1. NOTE FOR REPAIR

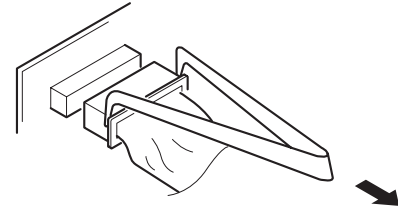
*Make sure that the flat cable and flexible board are not cracked or bent at the terminal.
Do not insert the cable insufficiently nor crookedly.*



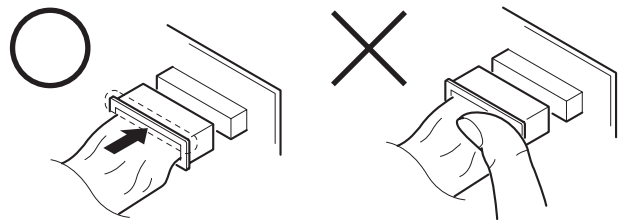
*Cut and remove the part of gilt which comes off at the point.
(Take care that there are some pieces of gilt left inside)*



*When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.*



*When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.*



1-2. SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.

These following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

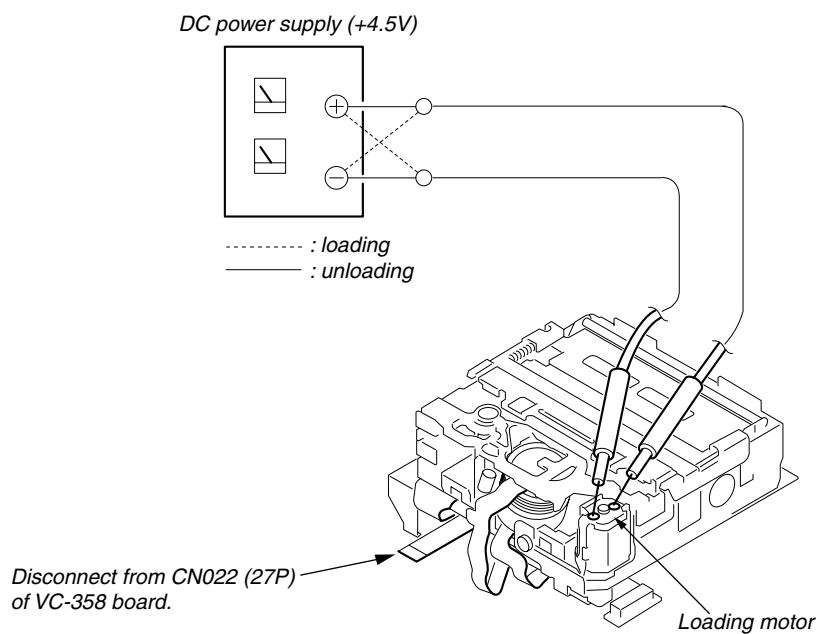
Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the “ADJ” side.

Method 2.

Use the DC IN terminal. (Use the AC power adaptor. (AC-L10, AC-VQ800 etc.))

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

- ① Refer to page 2-3 to remove the upper handle block assembly.
- ② Refer to page 2-6 to remove the cabinet (L) assembly.
- ③ Refer to page 2-6 to remove the mechanism deck (Including VC-358 board and DD-216 board).
- ④ Remove DD-216 board from the mechanism deck (Including VC-358 board).
- ⑤ Remove the CN022 (27P 0.3 mm) of VC-358 board.
- ⑥ Supply +4.5V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.



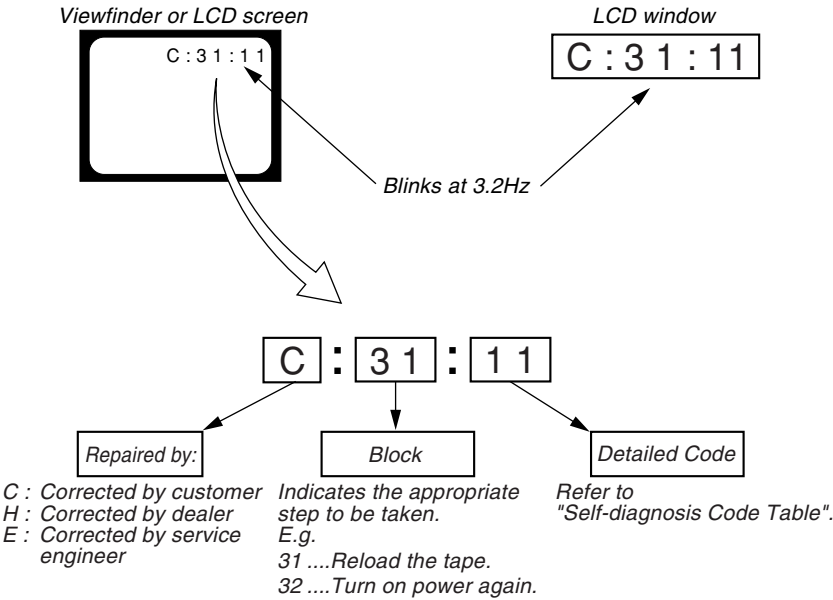
1-3. SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder, LCD screen or LCD window what to do. This function consists of two display; self-diagnosis display and service mode display. Details of the self-diagnosis functions are provided in the Instruction manual.

2. SELF-DIAGNOSIS DISPLAY

When problems occur while the unit is operating, the counter of the viewfinder, LCD screen or LCD window consists of an alphabet and 4-digit numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.



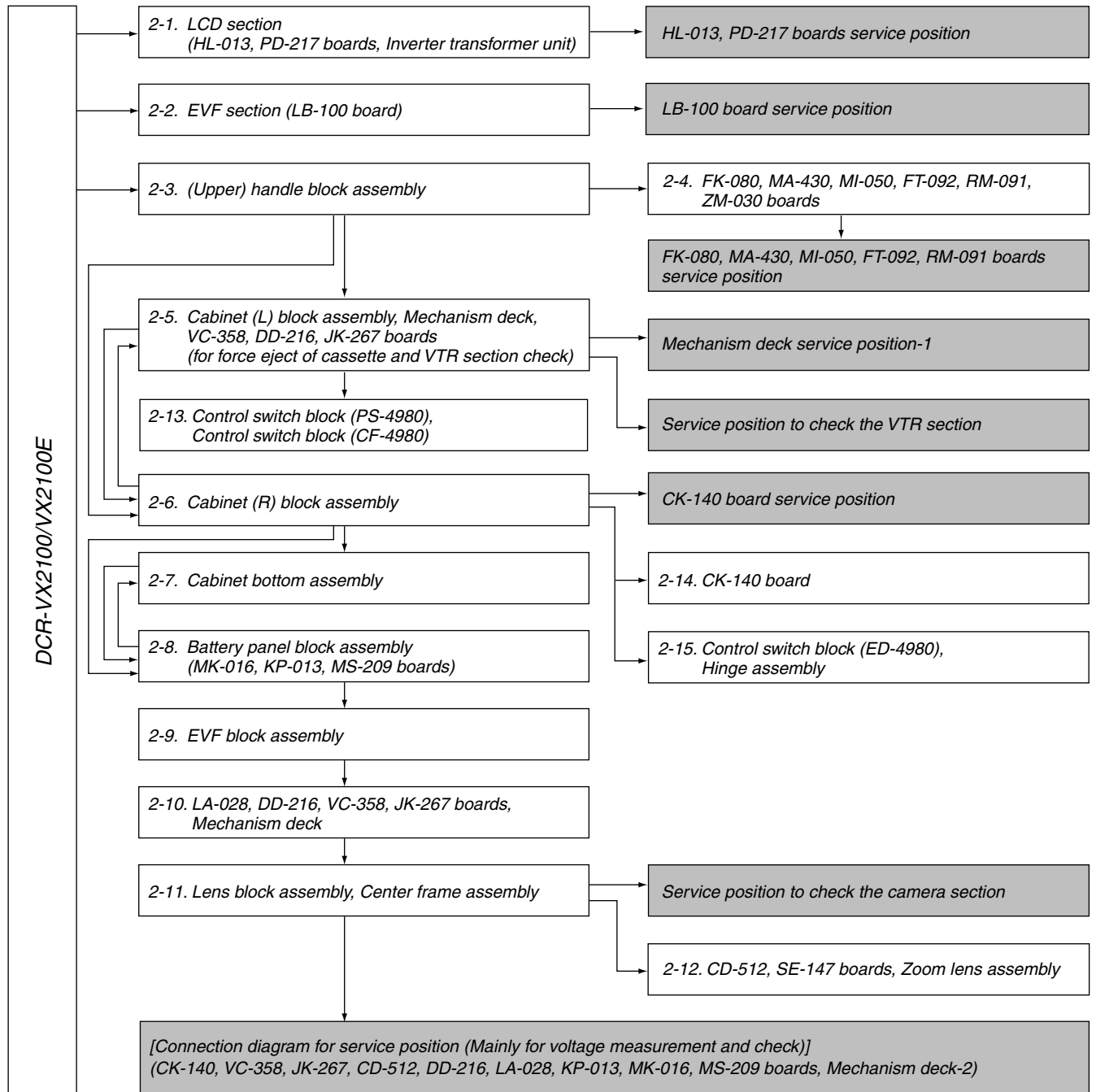
Note: The “self-diagnosis display” data will be backed up by the coin-type lithium battery of ZM-030 board BT801, 802. When the (upper) handle block is removed, the “self-diagnosis display” data will be lost by initialization.

3. SELF-DIAGNOSIS CODE TABLE

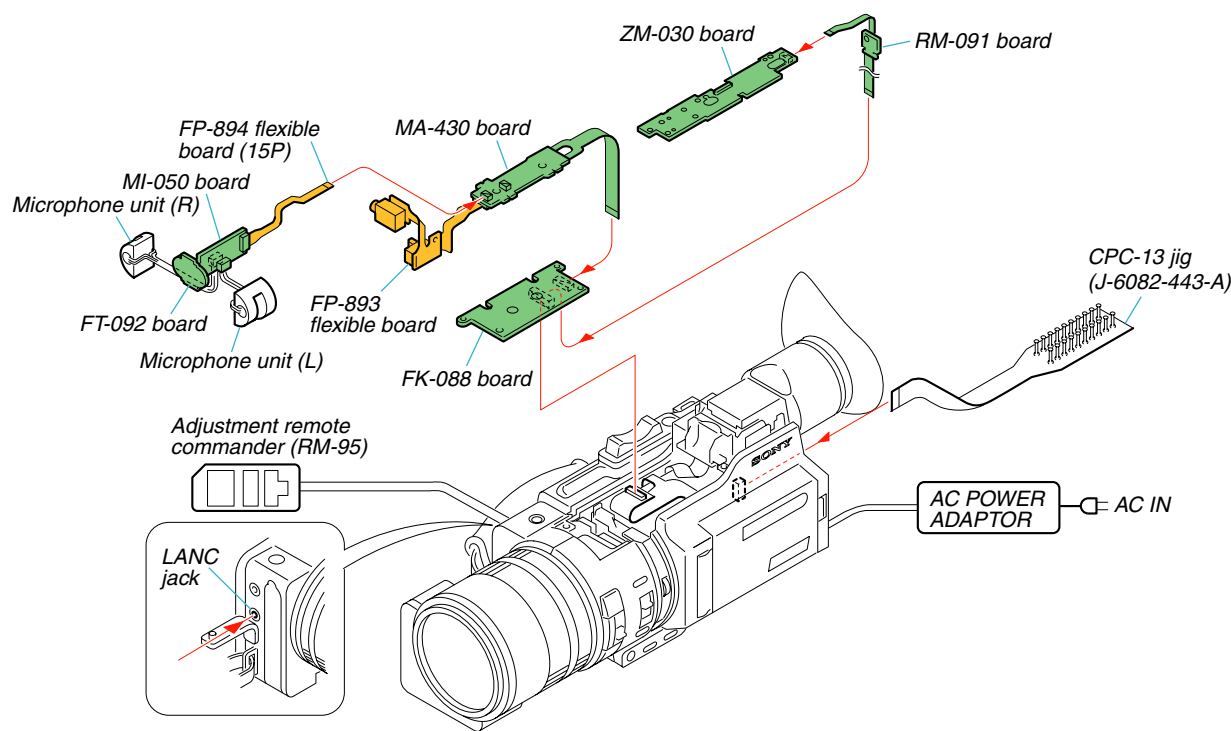
Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	0 4	0 0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2 1	0 0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2 2	0 0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3 1	1 0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	2 0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3 1	2 1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3 1	2 2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	3 0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3 1	4 0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 2	1 0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	1 1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ②⑤ of LA-028 board) when focusing is performed when the focus ring is rotated in the focus manual mode, and the focus motor drive circuit (IC140 of LA-028 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ②⑥ of LA-028 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC140 of LA-028 board) when zooming is not performed.
E	6 2	0 0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE601 of SE-147 board) peripheral circuits.
E	6 2	0 1	Steadyshot function does	

SECTION 2 DISASSEMBLY

The following flow chart shows the disassembly procedure.



[FK-088, MA-430, MI-050, FT-092, RM-091 BOARDS SERVICE POSITION]



3. BLOCK DIAGRAMS

Link

OVERALL BLOCK DIAGRAM (1/4)	POWER BLOCK DIAGRAM (1/3)
OVERALL BLOCK DIAGRAM (2/4)	POWER BLOCK DIAGRAM (2/3)
OVERALL BLOCK DIAGRAM (3/4)	POWER BLOCK DIAGRAM (3/3)
OVERALL BLOCK DIAGRAM (4/4)	

