SERVICE MANUAL

Ver. 1.2 2007.11

Revision History

How to use Acrobat Reader

Revised-1

I See La

Replace the previously issued SERVICE MANUAL 9-876-290-11 with this manual.



US Model Canadian Model CCD-TRV128/TRV328 AEP Model East European Model North European Model CCD-TRV228E/TRV428E UK Model CCD-TRV228E E Model CCD-TRV128/TRV228/TRV228E/TRV328/TRV428E Australian Model Hong Kong Model CCD-TRV428E Argentine Model Brazilian Model CCD-TRV128

Tourist Model CCD-TRV428/TRV428E

M2100/M2101 MECHANISM

Photo: CCD-TRV328

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

NTSC MODEL: CCD-TRV128/TRV228/TRV328/TRV428 PAL MODEL: CCD-TRV228E/TRV428E

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987629051.pdf).
- INSTRUCTION MANUAL is shown at the end of this document.
- For MECHANISM ADJUSTMENTS, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL IX
 M2000 MECHANISM
 " (9-929-861-12).
- Reference No. search on printed wiring boards is available.
- Table for differences of function of each model.
- TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)
- When the machine needs to be repaired, make sure to follow the items of "LCD TYPE CHECK".
- HELP: Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

video Hi 8 VIDEO CAMERA RECORDER







Video camera recorder

System

Video recording system 2 rotary heads, Helical scanning FM system Audio recording system Rotary heads, FM system Video signal CCD-TRV228E/428E: PAL color, CCIR standards CCD-TRV128/228/328/428: NTSC color, EIA standards Usable cassette 8 mm video format cassette Tape speed CCD-TRV228E/428E: SP: Approx. 20.05 mm/s LP: Approx. 10.06 mm/s CCD-TRV128/228/328/428: SP: Approx. 14.35 mm/s LP: Approx. 7.19 mm/s Recording/playback time (using 90 min. Hi8/ Digital8 video cassette) CCD-TRV228E/428E: SP: 1 h 30 min LP: 3 h Recording/playback time (using 120 min. Hi8/ Digital8 video cassette) CCD-TRV128/228/328/428: SP: 2 h LP: 4 h Fast forward/rewind time (CCD-TRV228E/428E: using 90 min. Hi8/ Digital8 video cassette) (CCD-TRV128/228/328/428: using 120 min. Hi8/Digital8 video cassette) Approx. 5 min Viewfinder Electric viewfinder (monochrome) Image device CCD-TRV228E/428E: 3.0 mm (1/6 type) CCD (Charge Coupled Device) Gross: Approx. 380 000 pixels Effective: Approx. 230 000 pixels CCD-TRV128/228/328/428: 3.0 mm (1/6 type) CCD (Charge Coupled Device) Gross: Approx. 320 000 pixels Effective: Approx. 200 000 pixels Lens Combined power zoom lens Filter diameter: 37 mm (1 1/2 in.) $20 \times (\text{Optical}), 990 \times (\text{Digital})$ F=1.6 - 2.4 Focal length 2.5 - 50 mm (1/8 - 2 in.) When converted to a 35 mm still camera 42 - 840 mm (1 11/16 - 33 1/8 in.) **Color temperature** Auto Minimum illumination 1 lx (lux) (F 1.6) 0 lx (lux) (in the NightShot plus mode)*

* Objects unable to be seen due to the dark can be

shot with infrared lighting.

SPECIFICATIONS

Input/Output connectors

S video output 4-pin mini DIN Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced CCD-TRV228E/428E Chrominance signal: 0.3 Vp-p, 75 Ω (ohms), unbalanced CCD-TRV128/228/328/428: Chrominance signal: 0.286 Vp-p, 75 Ω (ohms), unbalanced Audio/Video output AV MINIJACK Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative Audio signal: 327 mV (at output impedance more than 47 k Ω (kilohms)), Output impedance with less than 2.2 k Ω (kilohms) Monaural minijack (ø 3.5 mm) **RFU DC OUT** Mini-minijack (ø 2.5 mm), DC5V

LCD screen

Picture 6.2 cm (2.5 type) Total dot number 123 200 (560 × 220)

General

Power requirements DC 7.2 V (battery pack) DC 8.4 V (AC Adaptor) Average power consumption (when using the battery pack) During camera recording using the viewfinder 1.8 W During camera recording using the LCD 2.7 W **Operating temperature** 0°C to 40°C (32°F to 104°F) Storage temperature -20° C to $+ 60^{\circ}$ C (-4° F to $+ 140^{\circ}$ F) Dimensions (approx.) $85\times98\times151$ mm (3 3/8 \times 3 7/8 \times 6 in.) (w/h/ d) Mass (Approx.) 780 g (1 lb 11 oz) main unit only 890 g (1 lb 15 oz) including the NP-FM30 rechargeable battery pack, Hi8/ Digital8 cassette, lens cap, and shoulder strap Supplied accessories AC Adaptor (1) Power cord (1) Lens cap (1) Shoulder strap (1) Wireless Remote Commander (1) RMT-833: (CCD-TRV228/228E/428/428E) A/V connecting cable (1) Rechargeable battery pack NP-FM30 (1) 21-pin adaptor (1): (AEP, UK, EE, NE) Camera Operations Guide (This manual) (1) See page 5-23.

AC Adaptor AC-L15A/L15B Power requirements AC 100 - 240 V, 50/60 Hz Current consumption 0.35 - 0.18 A Power consumption

18 W Output voltage DC 8.4 V, 1.5 A Operating temperature 0° C to 40° C (32° F to 104° F) Storage temperature -20° C to + 60° C (-4° F to + 140° F) Dimensions (approx.) $56 \times 31 \times 100 \text{ mm} (2 1/4 \times 1 1/4 \times 4 \text{ in.}) (w/h/d)$ excluding the projecting parts Mass (approx.) 190 g (6.7 oz) excluding the mains lead

Rechargeable battery pack (NP-FM30)

Maximum output voltage DC 8.4 V Output voltage DC 7.2 V Capacity

5.0 Wh (700 mAh) **Dimensions (approx.)** 38.2 × 20.5 × 55.6 mm

(1 9/16 × 13/16 × 2 1/4 in.) (w/h/d) Mass (approx.)

65 g (2.3 oz)

Operating temperature

 $0^{\circ}C$ to $40^{\circ}C~(32^{\circ}F$ to $104^{\circ}F)$ Type

Lithium ion

Design and specifications are subject to change without notice.

Model	CCD-TRV128	CCD-TRV228	CCD-TRV228E	CCD-TRV328	CCD-TRV428	CCD-TRV428E
Destination	US, CND, E, AR, BR	Е	AEP, UK, EE, NE, E	US, CND, E	JE	AEP, EE, NE, E, AUS, HK, JE
Remote commander	×	0	0	×	0	0
Color system	NTSC	NTSC	PAL	NTSC	NTSC	PAL
Mechanism deck	M2100	M2100	M2101	M2100	M2100	M2101
SteadyShot	t X X X O O					0
LCD type	Please refer to page 1-3 to discriminate the type of LCD (TYPE C or TYPE S).					

Table for differences of function

• Abbreviation AR : Argentine model

AUS : Australian model

BR : Brazilian model

CND: Canadian model

- EE : East European model
 - HK : Hong Kong model
- JE : Tourist model

NE : North European model

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 IDENTIFÉS PAR UNE MARQUE A SUR LES

DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

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 leadfree 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 $350^{\circ}C$.

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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SECTION 1 SERVICE NOTE

1-1. NOTE FOR REPAIR

Make sure that the flat cable and flexible board are not cracked of 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. (Be careful or some pieces of gilt may be left inside)



When remove a connector, don't pull at wire of connector. It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector. It is possible that a wire is snapped.



1-2. 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.

The following method is available to prevent this.

Method 1.

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

1-3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

- ① Refer to "SECTION 2. DISASSEMBLY" to remove the mechanism deck block.
- Disconnect CN401 (2P) of VC-341 board.
- ③ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compartment.



1-4. LCD TYPE CHECK

The LCD type can be checked with data value by connecting the adjustment remote commander.

Note: About PD-204 board and LCD module, discriminate LCD type on the machine, and replace the same type.

Preparations:

- 1) Connect the equipment for adjustments according to Fig. 1.
- Connect the adjustment remote commander to VC-341 board CN007 via I/F unit for LANC control (J-6082-521-A) and CPC jig connector (J-6082-539-A).

To operate the adjustment remote commander, connect the AC power adaptor to the DC IN jack of I/F unit for LANC control, or connect the L series Info-LITHIUM battery to the battery terminal of I/F unit for LANC control.

Checking method:

- 1) Select page: 3, address: CC.
- 2) By checking the data value of display data, the type of LCD can be discriminated.

Data	LCD type
64 to 67	TYPE C
40 to 43	TYPE S



1-5. SELF-DIAGNOSIS FUNCTION

1-5-1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; selfdiagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual

1-5-2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and 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.



1-5-3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

1. **Display Method**

Ε

While pressing the "STOP" key, set the switch from OFF to "ON", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.) [1] : Occurred first time [3] : Occurred third time [5] : Occurred fifth time

[2] : Occurred second time [4] : Occurred fourth time [6] : Occurred the last time

3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The "self-diagnosis display" data will not be erased (reset), when the lithium battery (CONTROL KEY BLOCK (CF-5100): BT001) is removed.

1-5-4. Self-diagnosis Code Table

Self-diagnosis Code			sis Coo	le		
Repaired by:	Bl Fun	ock iction	Deta Coo	iled de	Symptom/State	Correction
С	0	4	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
С	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
С	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
С	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
С	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.
С	3	1	2	1	S reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
С	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	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
С	3	1	3	1	FG fault during normal capstan operations.	Load the tape again, and perform operations from the beginning.
С	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
С	3	1	4	1	PG 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	1	4	3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
С	3	1	4	4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
			_		LOAD direction loading motor time-	Remove the battery or power cable, connect, and perform
C	3	2	1	0	out.	operations from the beginning.
C	2	r	1	1	UNLOAD direction loading motor	Remove the battery or power cable, connect, and perform
	2	2	1	1	time-out.	operations from the beginning.
C	3	2	2	0	T reel side tape slacking when	Remove the battery or power cable, connect, and perform
Ľ		-	-	0	unloading.	operations from the beginning.
С	3	2	2	1	S reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	3	1	FG fault during normal capstan operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	1	PG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
С	3	2	4	4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

_						
	Self-diagnosis Code		le			
Repaired by:	Bl	ock action	Deta Coo	iled de	Symptom/State	Correction
Е	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⁽¹⁾) of CN201 of VC- 341 board) when focusing is performed when the control dial is rotated in the focus manual mode and the focus motor drive circuit (IC201 of VC-341 board) when the focusing is not performed.
Е	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin (19) of CN201 of VC- 341 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC201 of VC-341 board) when zooming is not performed.
Е	6	2	0	0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE752 of SI-039 board) peripheral circuits. *1
E	6	2	0	1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE751 of SI-039 board) peripheral circuits. *1

*1: STEADYSHOT model (CCD-TRV328/TRV428/TRV428E)

SECTION 2 DISASSEMBLY



2-2. MECHANISM DECK SERVICE POSITION



Connection to Check the Mechanism deck

To check the mechanism deck, set the Camera or VTR to the "Forced power ON" mode. (Or, connect the control key block (SS-5100) to the CN006 of VC-341 board and set the power switch to the "CAMERA" or "PLAY/edit" position.) Operate the Camera functions of the zoom and focus, the VTR function using the adjustment remote commander (with the HOLD switch set in the OFF position).

Setting the "Forced Camera Power ON" mode

1) Select page: 0, address: 01, and set data: 01.

 Select page: D, address: 10, set data: 02 and press the PAUSE button of the adjustment remote commander.

Setting the "Forced VTR Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- Select page: D, address: 10, set data: 02 and press the PAUSE button of the adjustment remote commander.

Exiting the "Forced Power ON" mode

- Select page: 0, address: 01, and set data: 01.
 Select page: D, address: 10, data: 00, and press the PAUSE
- button of the adjustment remote commander.
- 3) Select page: 0, address: 01, and set data: 00.



When exiting the "Forced Power ON" mode, connect the control key block (SS-5100) to the CN006 of VC-341 board. Or, when ejecting the cassette, connect the control key block (SS-5100) to the CN006 of VC-341 board. and press the Eject switch.

2-3. LCD SERVICE POSITION



2-4. CIRCUIT BOARDS LOCATION



Board Name	Function			
CD-465	CCD IMAGER			
VC-341	A/D CONVERTER, TIMING GENERATOR, CAMERA/VTR PROCESS,			
	LENS CONTROL, LENS DRIVE, REC/PB AMP, SERVO,			
	CAMERA/MECHA CONTROL, HI CONTROL, AUDIO, VIDEO, DC CONTROL,			
	STEADYSHOT, CONNECTOR			
PD-204	LCD DRIVE, BACKLIGHT DRIVE			
SI-039	STEADYSHOT, JACK			

2-5. FLEXIBLE BOARDS LOCATION



HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.



Note: Close the LCD panel, when you work.

Link	
• OVERALL BLOCK DIAGRAM (1/5)	• OVERALL BLOCK DIAGRAM (5/5)
• OVERALL BLOCK DIAGRAM (2/5)	• POWER BLOCK DIAGRAM (1/2)
• OVERALL BLOCK DIAGRAM (3/5)	POWER BLOCK DIAGRAM (2/2)
• OVERALL BLOCK DIAGRAM (4/5)	

SECTION 3 BLOCK DIAGRAMS

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/5) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.







3-3

3-3. OVERALL BLOCK DIAGRAM (3/5) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.



3-4. OVERALL BLOCK DIAGRAM (4/5) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.





3-5. OVERALL BLOCK DIAGRAM (5/5) (): Number in parenthesis () indicates the division number of schematic diagram where the component is located.









4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAMS



4-2. SCHEMATIC DIAGRAMS

Link	
CD-465 BOARD (CCD IMAGER)	 VC-341 BOARD (9/10) (DC CONTROL)
VC-341 BOARD (1/10) (A/D CONVERTER, TIMING GENERATOR)	VC-341 BOARD (10/10) (STEADYSHOT, CONNECTOR)
VC-341 BOARD (2/10) (CAMERA/VTR PROCESS, LENS CONTROL)	PD-204 BOARD (LCD DRIVER, BACKLIGHT DRIVE)
 VC-341 BOARD (3/10) (LENS DRIVE) 	SI-039 BOARD (STEADYSHOT, JACK) FP-792 FLEXIBLE BOARD
• VC-341 BOARD (4/10) (REC/PB AMP)	FP-228, FP-299, FP-300, FP-301, FP-302, FP-802 FLEXIBLE BOARD
 VC-341 BOARD (5/10) (SERVO) 	CONTROL KEY BLOCK (SS-5100)
VC-341 BOARD (6/10) (CAMERA/MECHA CONTROL)	CONTROL KEY BLOCK (PR-5100)
 VC-341 BOARD (7/10) (HI CONTROL) 	• CONTROL KEY BLOCK (CF-5100)
• VC-341 BOARD (8/10) (AUDIO, VIDEO)	

COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS





Precautions for Replacement of CCD Imager

- The CD-465 board mounted as a repair part is not equipped with a CCD imager.
- When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram • Refer to page 4-43 for printed wiring board. 5 6 7 8 9 10 12 2 3 4 ____I 11 13 VC-341 BOARD (1/10) А A/D CONVERTER.TIMING GENERATOR(CAM BLOCK) XX MARK:NO MOUNT AX MARK.NO MOUNT NO MARK.REC/PB MODE R:REC MODE P:PB MODE *:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS. ---- CAM_-7.5V 2 IC151 (9) REC/PB (9/10) REG_GND MMM A_2.8V 2.8 Vp-p X151 28.63636363MHz: TRV128/TRV228/TRV328/TRV428 28.375MHz: TRV228E/TRV428E В 🔁 🕄 D_2.8V NTSC: 14.318 MHz PAL: 14.187 MHz 히黛 3 IC151 1 REC/PB R158 XX R159 XX R159 XX R159 XX R161 XX C166 D151 0.01u ISV329(TPL3) NTSC: 14.318 MHz PAL: 14.187 MHz (2) R164 470k 3.0 Vp-p 6 FB151 (1) IC151 (5) (X151) REC/PB С NTSC: 28.636 MHz PAL: 28.375 MHz 8.2F (4) IC151 (1) REC/PB V4 3.0 Vp-p 10987654321 V2 3 V1 -≪ ск_солт1 NTSC: 14.318 MHz PAL: 14.187 MHz GND CK_CONT2 D CD-465 BOARD CN951 THROUGH THE FFC-005 FLEXIBLE FLAT CABLE (PAGE 4-7) H1 VDD2 (4)CKCONT1 47 48 R2.8/Pt CKCONT2 46 0 CKCONT2 46 R2 7/PO R151 R153 XX XX R2.3/P0 (14) R2.3/P0 (15) R2.3/P0 (16) RG VSS3 -≪ CAM_DD_ON GND XSHP XSHD 5 XSHD CAM_15V AVD (45) XVC_SCK C152 0.001u —≪I xvc sck ` VSHT 17 XRS 18 RG VSHT XRS IC151 AHD VC_SO CAM_-7.5V VDD6 (43) TIMING GENERATO —≫ vc_si) (9) VC_SI GND (19) VDD3 IC151 CXD2444AR-T4 DSGAT (42) XV1 (41) RST (40) .8 20 20 21 20 22 Е CCD OUT VDD4 XBST VTB H1 XCS_IC_301 –≪ xcs_ic_301 ⊃ (7) XCS_IC_301 R1.4/F H2 SEN (39) VC_SO VSS4 SSI 38 23 (24 XVC_SCK NC SSK XRST_VTR R-0.3P0 01-0.3P0 01-0.3P0 01-0.3P0 01-0.3P0 01-0.2P0 00 CH_SO 10 CH_SCK F CS_CH —≪ сs_сн (6/10)C157 2.2u 25 26 27 28 29 30 31 32 33 34 35 —>>> ın R152 0 - 🛛 AVD -CAND C165 _____ 0.1u ____≊ V_STO R155 100k VC_SI → XV1 2 5 8 8 VSHT → XSG1 G -CLP1 →>> ADCK 9 L151 9 10uH (2/10) ⇒⇒≫ —∑> мск Н R156 XX FB152 → ∑> CL AD10 C177 22u 4V AD9 → AD9 121110987654321 AD8 → → → AD8 AD7 → DN AD7 AD6 C16 R0.4 R0.8 R0.9 R1.2 R1.2 CH_SCK 22 AL-RVDD XSCK CH_SO AD5 RVSS CS_CH AD4 DVSS XCF → AD4 AD3 →>> AD3 ADCLK sysv (🛱 AD2 R157 XX LatchSelect IC152 AD1 XRST_VTR HDRST → DN AD1 C154 XX חחעם S/H,AGC,A/D CONVER IC152 AD80013AJSTRL AVSS 🛱 PBLK (12) \square L_>> CL) AVSS (= YSHP AVDD (😜 XSHD fi}⊣ t∐t= C179 1u 6.3V XSHD VRB (👷 6 IC152 36 PB CLPDN VRT (👷 . | Чн חחענ CMLEVEL C176 0.1u 150 mVp-p AVSS AVDD CLPOUT CLPRF CLPRF CLPRF CLPRYP NC CLPBYP AVDD AVSS C155 XX SIGNAL PATH VIDEO SIGNAL VIDEO SIGNAL 5 IC152 3 REC н C173 470p ← C_RF) 13 In loop 1 C173 470p CHROMA Y/CHROMA 1.2 Vp-p - 11 IT k PB \Rightarrow REC н

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B



VC-341 (3/10)

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



4-15

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



VC-341 (5/10)

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



VC-341 (7/10)

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B


4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram • Refer to page 4-43 for printed wiring board.



The components identified by mark \triangle or dotted	Les composants identifiés par une marque 🛆 sont
line with mark A are critical for safety.	critiques pour la sécurité. Ne les remplacer que
Replace only with part number specified.	par une piéce portant le numéro spécifié.

4-2. SCHEMATIC DIAGRAMS VC-341 BOARD SIDE A VC-341 BOARD SIDE B

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.



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4-2. SCHEMATIC DIAGRAMS

PD-204 BOARD

For Schematic Diagram • Refer to page 4-47 for printed wiring board.



The components identified by mark $\begin{tabular}{ll} \begin{tabular}{ll} \end{tabular}$ or dotted	Les composants identifiés par une marque \land sont
line with mark A are critical for safety.	critiques pour la sécurité. Ne les remplacer que
Replace only with part number specified.	par une piéce portant le numéro spécifié.

4-2. SCHEMATIC DIAGRAMS SI-039 BOARD, FP-792 FLEXIBLE BOARD

For Schematic Diagram

• Refer to page 4-49 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS FP-228, 299, 300, 301, 302, 802 FLEXIBLE BOARD

For Schematic Diagram



FP-228, FP-299, FP-300, FP-301, FP-302, FP-802, SS-5100, PR-5100

4-2. SCHEMATIC DIAGRAMS



4-3. PRINTED WIRING BOARDS

Link	
• CD-465 BOARD	• SI-039 BOARD
 VC-341 BOARD (SIDE A) 	• FP-792 FLEXIBLE BOARD
 VC-341 BOARD (SIDE B) 	FP-228, FP-299, FP-300, FP-301, FP-302, FP-802 FLEXIBLE BOARD
• PD-204 BOARD	

• COMMON NOTE FOR PRINTE		
MOUNTED PARTS LOCATION	CIRCUIT BOARDS LOCATION	FLEXIBLE BOARDS LOCATION

Board Name	Function
CD-465	CCD IMAGER
VC-341	A/D CONVERTER, TIMING GENERATOR, CAMERA/VTR PROCESS,
	LENS CONTROL, LENS DRIVE, REC/PB AMP, SERVO,
	CAMERA/MECHA CONTROL, HI CONTROL, AUDIO, VIDEO, DC CONTROL,
	STEADYSHOT, CONNECTOR
PD-204	LCD DRIVE, BACKLIGHT DRIVE
SI-039	STEADYSHOT, JACK

4-3. PRINTED WIRING BOARDS

4-3. PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS

- Uses unleaded solder.
 - : Circuit board
 - : Flexible board
 - Pattern from the side which enables seeing.

(The other layers' patterns are not indicated)

- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- ____: panel designation



Poord Name	Danta Lagation	Pattern			
board Name	Parts Location	Total Number of Layers	Layers Not Indicated		
CD-465	_	4 layers	2 to 3 layers		
VC-341	4-53	4 layers	2 to 3 layers		
PD-204	4-54	2 layers	_		
SI-039	4-54	2 layers	_		
FP-792 Flexible	-	1 layer	-		
FP-228 Flexible	-	1 layer	_		
FP-299 Flexible	_	1 layer	_		
FP-300 Flexible	_	1 layer	_		
FP-301 Flexible	_	1 layer	_		
FP-302 Flexible	-	1 layer	_		
FP-802 Flexible	-	1 layer	_		

CD-465

Note for Printed Wiring Board (See page 4-39).

: Uses unleaded solder.

CD-465 BOARD

4-2. SCHEMATIC DIAGRAMS



4-3. PRINTED WIRING BOARDS

05

VC-341

Note for Printed Wiring Board (See page 4-39).

: Uses unleaded solder.

VC-341 BOARD (SIDE A)



4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

VC-341 (SIDE A)

MOUNTED PARTS LOCATION

4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

MOUNTED PARTS LOCATION

Note for Printed Wiring Board (See page 4-39).

: Uses unleaded solder.

VC-341 BOARD (SIDE B)



VC-341 (SIDE B)

4-2. SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

MOUNTED PARTS LOCATION

PD-204

Note for Printed Wiring Board (See page 4-39).

: Uses unleaded solder.





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4-3. PRINTED WIRING BOARDS

C509 B-5 * C513 B-5

4-4. MOUNTED PARTS LOCATION

* C217 D-2 * C218 D-1

VC-341 BOARD

C002 D-5 C003 D-5
 CN401
 C-9
 Q002
 F-4
 * R096
 G-5

 CN402
 A-7
 Q051
 G-8
 * R097
 D-9

 CN403
 A-6
 Q052
 F-8
 * R098
 D-9

 CN403
 A-6
 Q052
 F-8
 * R098
 D-9

 CN404
 A-3
 Q053
 G-8
 * R099
 E-9

 CN404
 A-3
 Q055
 G-8
 * R100
 G-5

 CN481
 A-5
 Q055
 G-8
 * R101
 F-5

 D001
 G-1
 * Q056
 F-7
 * R102
 F-5

 D006
 E-9
 * Q057
 G-6
 * R103
 F-5

 D006
 E-9
 * Q058
 F-6
 * R104
 F-5

 D007
 E-8
 * Q058
 F-6
 * R104
 F-5

 D008
 G-4
 * Q059
 G-5
 * R105
 G-5

 D008
 G-4
 * Q059
 G-5
 * R106
 G-5

* C053	F-9	* C251 * C252	B-6	C514	B-5	CN403	A-6	Q052	F-8	* R098 D-9
C054	г-9 G-8	C252	A-0 D-2	C601	Б-Э С-7	CN404 CN481	A-5 A-5	0053	G-7	* B100 G-5
* C056	G-0 F-9	C278	D-2	C602	C-8	01401	ЛJ	* 0055	G-8	* B101 F-5
* C057	E-9	* C280	E-2	C603	C-8	D001	G-1	* Q056	F-7	* R102 F-5
* C058	G-8	* C281	D-1	C604	C-6	D006	E-9	* Q057	G-6	* R103 F-5
* C059	G-8	* C282	E-2	C605	C-7	D007	E-8	* Q058	F-6	* R104 F-5
* C060	E-8	* C283	D-2	C606	C-6	D008	G-4	* Q059	G-5	* R105 G-5
* C062	E-8	* C301	C-5	* C607	C-8	D009	F-5	* Q060	G-/	* R106 G-5
* 0063	6-8 E 0	* 0302	0-7 C 7	0609	D-6	D051	F-9	" QU61 * 0062	6-/ 57	* RIU/ G-5
* 0065	E-0 E-0	* C303	C-7	C611	D-0	* D052	G-0 E_0	* 0063	F-/	* P110 C-/
* C066	G-8	* C306	C-7	C614	E-6	* D053	G-8	* 0064	E-5	* B111 G-4
* C067	E-8	* C307	C-6	C615	E-7	D055	F-7	* Q065	D-8	* R114 G-6
* C068	G-8	* C309	C-7	C616	E-7	* D151	B-3	* Q066	G-4	* R116 G-6
* C069	G-8	* C310	C-7	C617	E-7	* D202	C-2	* Q067	G-5	* R152 C-3
* C070	E-8	* C320	C-6	C618	E-6	* D301	D-7	* Q068	G-4	* R155 C-3
C071	F-8	* C322	C-7	* C619	D-8	* D302	D-7	* Q069	E-9	* R162 C-3
^ U072	E-8	^ U323 * C224	C-5	6620	U-6	D701	D-3	^ QU/U * 0071	G-5	^ R163 B-3
* C075	Г-0 С-8	* C325	C-6	0022	E-/ E-8	E001	E-8	4071 * 0072	G-5	* P203 C-3
* C076	G-0 F-8	* C326	D-7	C624	D-8	F002	G-8	* 0072	G-5 F-4	* R203 C-2
* C078	G-6	* C328	D-7	C708	E-5	F003	F-8	* Q074	G-4	* R205 C-2
* C079	G-6	* C329	C-7	C709	F-4	F004	F-8	* Q075	E-8	* R206 C-2
* C080	G-7	* C332	D-5	C710	F-4			* Q201	C-2	* R207 C-2
* C081	F-7	* C333	D-7	C711	F-4	FB051	F-6	Q202	D-3	* R208 C-1
C082	F-7	* C334	D-7	C712	E-3	* FB151	B-3	* Q203	D-2	* R209 C-2
^ C083	F-/	^ 0335	D-5	6713	F-3	^ FB152	B-4	^ Q302	U-6	^ R210 - C1
5004 * C085	F-7	C401	E-0	0714	E-3 D_4	FD201 * EB252	D-0 A_6	4 0304 * 0306	0-7 C-5	™211 0-1 * ₽212 0-1
* C085	G-6	* C401	Δ-4	C801	D-4 F-2	* FR401	Δ-6	* 0401	Δ-3	* B213 D-2
* C087	F-6	* C406	A-3	C802	F-2	FB481	A-5	* Q481	A-5	* R214 D-2
* C088	G-6	* C407	A-6	C805	E-2	FB482	A-5	* Q482	A-4	* R215 D-2
* C089	G-6	* C408	A-6	* C806	F-1	FB601	D-6	* Q483	A-4	* R216 D-2
* C090	G-7	* C409	A-6	C807	E-2			* Q484	B-5	* R271 D-2
* C091	F-5	* C410	A-6	C808	F-2	IC001	D-5	* Q485	B-5	* R272 D-2
C094	F-/	* C411	A-6	* C810	F-1	* 10051	F-8	Q/01	E-3	* R2/3 E-2
* 0006	6-6 5 6	* 0412	A-0 B-6	* 0910	F-1 E 1	* 10151	D-3	P001	C 4	* P202 C 7
C090	F-0 G-5	* C415	B-6	* C814	E-1	* 10152	D-4 D-3	R001	G-4 F-1	* B302 C-7
C098	E-5	* C417	B-6	C815	F-2	* 10201	D-2	R004	G-1	* B306 C-7
C099	G-5	* C420	B-7	* C816	E-1	* IC251	B-6	R005	Ĕ-7	* R307 C-7
C100	F-6	* C423	A-7	C817	E-2	* IC271	E-2	R006	E-7	* R308 C-7
C102	F-6	* C424	B-7	* C818	E-2	* IC301	D-6	R007	G-1	* R309 C-7
C103	F-5	* C425	B-7	* C819	F-2	* IC302	E-4	R010	G-1	* R310 C-7
C104	G-5	* C426	A-7	C820	E-2	* IC401	B-7	R011	G-1	* R311 C-7
^ C105	D-9	* 0427	A-7	* 0821	E-2	10481	B-5	KU14	E-9	* R314 D-7
* C105	G-4 E-5	* C428	A-7 B-9	* 0822	F-2 C-2	10001	D-7	RU18 2021	F-4 E-0	* R310 U-7
* C108	G-5	* C430	A-7	C825	F-2	IC701	F-4	* R022	D-8	* B317 C-5
* C109	G-4	* C431	B-8	* C826	G-2	* IC801	F-2	R051	F-8	* R318 C-5
* C152	B-4	* C432	B-7	* C828	F-2			* R052	F-9	* R319 C-5
* C156	C-3	* C433	B-7	* C829	E-2	L051	F-7	R053	G-8	* R320 C-5
* C157	C-4	* C434	B-7	* C830	F-2	L052	G-6	* R054	F-9	* R321 C-6
* C158	B-3	* C435	B-8	* C831	G-2	L053	G-/	* R061	F-9	* R322 C-t
* 0160	6-5 D 4	* 0430	B-/	* 0000	E-2	L054	G-/	RU62	G-8	* D204 C C
* C163	D-4 R-3	× C/30	D-7 B-7	* C834	G-2 F-2	L000	г-/ F-6	R003 R064	г-э F-8	* B324 - 0-0
* C164	B-3	* C441	B-8	* C835	E-2	L057	G-6	* R065	E-9	* B327 C-6
* C165	C-3	* C442	B-8	* C836	F-2	L058	F-6	* R066	E-8	* R328 C-6
* C166	B-3	* C443	A-7	* C837	E-2	L059	G-6	R067	F-8	* R330 C-7
* C167	B-5	* C444	A-7	* C839	G-2	* L060	F-6	R068	G-8	* R331 C-7
* C168	B-5	* C445	A-8	* C840	F-3	L061	F-5	* R069	E-8	* R332 D-7
* C169	B-5	* C481	A-5	C841	E-2	L062	F-6	* R070	E-8	R333 C-5
* 0170	B-5	* 0482	A-5	* 0042	F-2	L064	F-0	* D070	E-0 E 0	* P225 D 3
* C172	Б-5 С-5	* C483	Δ-5	* C844	F-2 F-2	1065	E-6	* B073	E-0 F-8	* B336 D-7
* C173	C-5	* C486	A-5	C845	F-2	L066	G-5	* R074	E-8	* R339 C-4
* C176	C-5	* C487	A-5	C846	G-2	* L151	C-4	* R075	E-8	* R341 E-7
* C177	C-4	C488	A-5	* C847	E-2	L201	D-3	* R076	E-8	R401 A-6
* C179	C-5	C489	A-5	C848	F-3	* L202	D-1	* R077	E-8	R402 A-6
* C202	D-1	* C490	A-4	C849	F-2	* L271	D-2	* R078	E-8	* R403 A-3
^ U2U3	U-2	* C491	A-4	* C850	E-2	* L301	U-7	* R082	G-8	* K404 A-4
6204 * C205	0-2 D-2	0492	A-4 ∆_5	CNIOO2	G-4	* L3U2	D-7 C-5	* DU03	г-9 С-4	* D/00 A-3
* C205	G-2	C493	A-5	CN002	D-5	* 1 30/3	C-7	* RU86	D-9	* RA10 R-A
* C207	C-1	* C495	A-5	CN005	F-5	* L308	D-7	* R087	G-5	* R411 R-6
C208	D-3	C496	A-5	CN006	E-9	* L481	A-5	* R089	G-5	* R412 B-7
* C209	C-1	C497	A-4	* CN007	D-9	* L482	A-4	* R090	G-4	* R413 A-7
C210	E-3	* C498	A-5	CN008	G-3	* L483	A-5	* R091	F-5	* R414 A-7
* C211	D-1	* C500	A-4	CN009	E-1	* L484	A-4	* R092	E-9	* R424 B-8
* 0212	U-2	C505	B-4	CN053	F-9	* L801	F-3	* KU93	F-5	* K426 A-7
6214 * C215	U-2 D-2	600/ 6500	D-0 R-2	UN151 CN201	0-5 D-4	0001	G_1	" KU94 * DOGE	G-1	∵K42/ A-δ ∗Ω/Ω1 Ω7
0210	U-2	6008	D-0	011201	U-4	QUUI	0-1	L090	u-4	n431 B-7

4-3. PRINTED WIRING BOARDS

no mark : side A * mark : side B

		PD-204	4 BOARD	SI-039	BOARD
* R481	A-4	C6001	A-2	C758	B-4
* R482 * R483	A-5 A-5	C6002	B-2 4-3	C759	C-3
R484	A-5	C6004	A-2	* CN755	C-4
R487 * R488	A-5 A-5	C6005 C6006	A-2 B-3	D751	C-2
* R489	A-5	C6007	A-4	D752	C-2
* R490 * R491	A-4 Δ-4	C6009 C6010	B-2 B-2	* D753 * D754	B-2 B-2
* R492	A-5	C6011	A-5	D755	C-3
R493 R494	A-5 A-4	C6012 C6013	D-3 C-4	D759	C-2
R495	B-5	C6015	C-2	* FB751	C-3
R601	C-7	C6016 C6019	A-3	* IC751	C-2
R616 R619	E-7 E-6	C6020	A-3	* 1751	D_2
R636	C-8	C6022	C-2	* J752	A-1
R704 R707	F-4 F-3	C6026	C-3	* J753	B-1
R708	E-3	C6028	B-3	Q751	A-2
R709 R710	E-3 F-3	C6029	B-3	B752	B-2
R711	E-3	CN6001	B-1	R753	B-2
R/12 R713	F-4 E-3	CN6003 CN6004	D-4 D-1	R761 R763	В-4 В-2
R714	E-5	CN6005	C-1	05751	 D 0
R715 R716	E-3 D-4	D6004	D-3	* SE751	в-з В-3
R717	D-4	D6006	B-3		
* R806	F-1	D0009	D-3		
* R807 * R810	F-1 F-1	FB6001	B-2		
* R811	G-2	IC6001	B-2		
* R812 * R815	E-1 E-2	L6001	A-3		
* R817	G-2	L6002	A-4		
* R818 * R819	E-2 F-3	L6003 L6004	A-4 C-3		
* DB201	D_1	06002	٨_4		
* RB202	D-2	Q6002 Q6004	C-2		
RB203 * RB271	D-4 F-1	Q6005 Q6008	C-2 C-3		
* RB301	C-7	Q6009	C-3		
* RB302 * RB401	C-6 A-6	R6005	B-4		
* RB481	A-4	R6009	B-2		
* RB482	В-5 А-4	R6010 R6012	D-3 B-2		
RB601	C-6	R6013	B-2		
RB605 RB606	D-8 D-6	R6014 R6019	D-3 C-2		
RB608	E-7	R6020	C-2		
* RB610	E-6 D-8	R6026 R6030	B-3		
RB612	D-6	R6031	B-3		
RB701	F-5	R6032	C-3		
RB703	F-4 F-3	R6040	C-3 C-3		
RB705	E-5				
RB706 88708	E-5 D-3	RB6001 RB6002	C-2 C-2		
RB801	F-2	RB6003	B-2		
* X151	B-3	T6001	B-4		
X601	C-8 D-4				
X702	E-3				



5. REPAIR PARTS LIST

NOTE: Characters A to L of the electrical parts list indicate location of exploded views in which the desired part is shown.



Link l	EL	ECTRICAL PARTS LI	ST ACCESSORIES
CD-465 BOARD	С	FP-792 FLEXIBLE BOARD B	 SI-039 BOARD
FP-300 FLEXIBLE BOARD	J	FP-802 FLEXIBLE BOARD	 VC-341 BOARD
FP-301 FLEXIBLE BOARD	J	PD-204 BOARD (TYPE C)	
FP-302 FLEXIBLE BOARD	J	PD-204 BOARD (TYPE S)	

5. REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS: uF: μF
- COILS
- uH: μH
- RESISTORS
 All resistors are in ohms.

 METAL: metal-film resistor
 METAL OXIDE: Metal Oxide-film resistor
 F: nonflammable
- SEMICONDUCTORS
 In each case, u: μ, for example:
 uA...; μA..., uPA..., μPA..., uPB..., μPB..., μPC..., μPC...,
- uPD..., µPD... Abbreviation
- AR : Argentine model
- AUS : Australian model
- BR : Brazilian model
- CND: Canadian model
- EE : East European model
- HK : Hong Kong model
- JE : Tourist model NE : North European model

When indicating parts by reference number, please include the board name.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified. Les composants identifiés par une marque

 \triangle sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

About PD-204 board and LCD module, discriminate LCD type on the machine referring to page 1-3, and replace the same type.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL ASSEMBLY



<u>Ref. No.</u>	<u>Part No.</u>	Description	<u>Ref. No.</u>	Part N	No.	Description
1	X-3953-964-1	CABINET (C) (515) ASSY, P	7	3-087	7-810-01	LID (51), CPC
2	3-080-203-31	SREW (M2), LOCK ACE, P2	8	CAUT	ION	RETAINER (51), EVF FLEXIBLE
3	3-087-813-01	COVER (51), JACK	9	3-079	9-012-01	SCREW (30), TRIPOD
4	3-087-812-01	SHEET (51), JACK	10	3-087	7-831-01	LABEL (51) (TRV128/TRV228/TRV228E)
5	3-087-811-01	CABINET (UPPER) (51)	10	3-087	7-831-11	LABEL (51) (TRV328/TRV428/TRV428E)
6	3-078-889-11	SCREW (M1.7)	11	3-080)-204-21	SCREW TAPPING, P2
					CAUTIC For the	DN : part of 8 : RETAINER (51), EVF FLEXIBLE

(3-088-616-01), cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

5. REPAIR PARTS LIST

5-1-2. FRONT PANEL BLOCK

ns: not supplied

D753, D754, IC751, J751, J752 and J753 are not
included in SI-039 complete board.

<u>Part No.</u>	Description	<u>R</u>
3-087-738-01	RETAINER (51), MICROPHONE	
3-087-740-01	PLATE (51), MAGNIFICATION	
X-3953-959-1	PANEL (515) ASSY, FRONT (TRV228/TRV228E)	
X-3953-960-1	PANEL (520) ASSY, FRONT (TRV328)	
X-3953-961-1	PANEL (525) ASSY, FRONT (TRV428E)	
X-3954-020-1	PANEL (510) ASSY, FRONT (TRV128)	
3-087-739-01	PLATE (51), NAME	
3-087-743-01	SCREW (51), FILTER	
3-087-742-01	RING (51), FRONT	
3-087-749-01	COVER (51), S TERMINAL	
3-080-204-21	SCREW, TAPPING, P2	
A-7111-950-A	SI-039 BOARD, COMPLETE (Note)	
	(TRV128/TRV228/TRV228E)	
A-7111-951-A	SI-039 BOARD, COMPLETE (Note)	
	(TRV328/TRV428/TRV428E)	
	Part No. 3-087-738-01 3-087-740-01 X-3953-959-1 X-3953-960-1 X-3953-961-1 X-3954-020-1 3-087-739-01 3-087-743-01 3-087-749-01 3-080-204-21 A-7111-950-A A-7111-951-A	Part No. Description 3-087-738-01 RETAINER (51), MICROPHONE 3-087-740-01 PLATE (51), MAGNIFICATION X-3953-959-1 PANEL (515) ASSY, FRONT (TRV228/TRV228E) X-3953-960-1 PANEL (520) ASSY, FRONT (TRV328) X-3953-961-1 PANEL (525) ASSY, FRONT (TRV428E) X-3954-020-1 PANEL (510) ASSY, FRONT (TRV428E) X-3954-020-1 PANEL (510) ASSY, FRONT (TRV128) 3-087-739-01 PLATE (51), NAME 3-087-743-01 SCREW (51), FILTER 3-087-749-01 COVER (51), S TERMINAL 3-080-204-21 SCREW, TAPPING, P2 A-7111-950-A SI-039 BOARD, COMPLETE (Note) (TRV128/TRV228/TRV228E) A-7111-951-A SI-039 BOARD, COMPLETE (Note) (TRV328/TRV428/TRV428/TRV428E)

<u>Ref. No.</u>	<u>Part No.</u>	Description
60 D001 D002 D003 D753	1-860-929-11 6-500-744-01 6-500-744-01 6-500-744-01 8-719-060-65	FP-792 FLEXIBLE BOARD DIODE NSPW500BS-TL2 (VIDEO LIGHT) DIODE NSPW500BS-TL2 (VIDEO LIGHT) DIODE NSPW500BS-TL2 (VIDEO LIGHT) DIODE DCC3810 (IR EMITTER) (Note)
D754 IC751 J751 J752 J753	8-719-060-65 6-704-975-01 1-778-518-11 1-778-040-11 1-817-944-11	DIODE DCC3810 (IR EMITTER) (Note) IC RPM7240-V4 (TRV228/TRV228E/TRV428/TRV428E) CONNECTOR, EXTERNAL (S VIDEO OUT) (Note) JACK, SMALL TYPE (A/V OUT) (Note) JACK, SMALL TYPE (RFU DC OUT) (Note)
MIC901	1-542-567-11	MICROPHONE

5. REPAIR PARTS LIST

5-1-3. LENS BLOCK

			(Note	e) Be sure to Imager" on	read "Precuations for Replacement of CCD page 4-8 when changing the CCD imager.
<u>Ref. No.</u>	Part No.	Description	Ref. No.	<u>Part No.</u>	Description
101	8-848-765-01	DEVICE, LENS LSV-820A	105	3-080-204-21	SCREW, TAPPING, P2
102	1-758-865-11	FILTER BLOCK OPTICS	IC951	A-7013-219-A	CCD BLOCK ASSY (CCD IMAGER)
103	3-053-973-01	RUBBER (W), SEAL			(TRV128/TRV228/TRV328/TRV428) (Note)
104	A-7111-944-A	CD-465 BOARD, COMPLETE	IC951	A-7013-276-A	CCD BLOCK ASSY (CCD IMAGER)
		(TRV228E/TRV428E)			(TRV228E/TRV428E) (Note)
104	A-7111-945-A	CD-465 BOARD, COMPLETE (TRV128/TRV228/TRV328/TRV428)			

5. REPAIR PARTS LIST

5-1-4. LCD BLOCK

(Note) About PD-204 board and LCD module, discriminate LCD type on the machine referring to page 1-3, and replace the same type.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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<u>Ref. No.</u>	<u>Part No.</u>	Description
LCD901	1-805-137-51	INDICATOR MODULE LIQUID CRYSTAL
		(TYPE S) (Note)
LCD901	1-805-138-21	INDICATOR MODULE LIQUID CRYSTAL
		(TYPE C) (Note)
▲ND901	1-518-951-11	TUBE, FLUORESCENT, COLD CATHODE

<u>Ref. No.</u>	<u>. No. Part No.</u>	Description
151	3-087-780-01	CABINET (M) (51), P
152	52 3-087-781-01	FRAME (51), PANEL
153	A-7111-949-A	PD-204 BOARD, COMPLETE (TYPE C) (Note)
153	53 A-7111-948-A	PD-204 BOARD, COMPLETE (TYPE S) (Note)
154	3-080-204-21	SCREW, TAPPING, P2
155	3-078-889-11	SCREW (M1.7)
155	155 3-078-889-11	SCREW (M1.7)

5. REPAIR PARTS LIST

5-1-5. CABINET R BLOCK

<u>Ref. No.</u>	<u>Part No.</u>	Description	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
201	1-478-416-11	KEY BLOCK, CONTROL (CF-5100)	206	3-087-825-01	COVER (C) (51), HINGE
202	3-080-206-11	SCREW, TAPPING, P2	207	3-078-889-11	SCREW (M1.7)
203	3-080-205-21	SCREW, TAPPING, P2	208	1-478-418-11	KEY BLOCK, CONTROL (PR-5100)
204	1-962-648-11	HARNESS (PD-124)	209	X-3953-962-1	HINGE (51) ASSY
205	3-087-826-01	COVER (M) (51), HINGE	210	X-3953-963-1	CABINET (R) (515) ASSY

5. REPAIR PARTS LIST

5-1-6. EVF BLOCK

ns: not supplied

<u>Ref. No.</u>	Part No.	Description	<u>Ref. No.</u>	<u>Part No.</u>	Description
251	X-3953-965-1	CABINET (UPPER) (515) ASSY, EVF	257	3-080-203-31	SCREW (M2), LOCK ACE, P2
252	X-3951-166-1	LENS (M) ASSY, VF	258	1-860-928-11	FP-797 FLEXIBLE BOARD
253	X-3953-966-1	CABINET (LOWER) (515) ASSY, EVF	LCD902	1-805-465-61	INDICATOR MODULE LIQUID CRYSTAL
254	3-080-204-21	SCREW, TAPPING, P2			(TRV128/TRV228/TRV328/TRV428)
255	X-3953-967-1	BASE (51) ASSY, SLDE	LCD902	1-805-465-81	INDICATOR MODULE LIQUID CRYSTAL
					(TRV228E/TRV428E)
256	3-087-788-01	BASE (51), SLIDE			

5. REPAIR PARTS LIST

5-1-7. BATTERY PANEL BLOCK

ns: not supplied

<u>Ref. No.</u>	<u>Part No.</u>	Description	Ref. No.	<u>Part No.</u>	<u>Description</u>
301 302 303	3-087-799-01 3-078-889-11 X-3953-968-1	SHEET METAL (LOWER) (51), STRAP SCREW (M1.7) PANEL (515) ASSY, BATTERY	304 BT901	3-072-305-01 1-694-772-11	LID (2500), JACK TERMINAL BOARD, BATTERY

5. REPAIR PARTS LIST

5-1-8. MD FRAME BLOCK

<u>Ref. No.</u>	<u>Part No.</u>	Description
351 352 353 354 355	1-478-417-11 3-080-253-01 X-3953-958-1 3-080-204-21 3-078-889-11	KEY BLOCK, CONTROL (SS-5100) SCREW (M1.7), LOCK ACE, P2 FRAME (51) ASSY, CS SCREW, TAPPING, P2 SCREW (M1.7)
356 357 358 359 359	3-066-169-01 3-087-809-01 1-860-926-12 A-7112-396-A A-7112-394-A	SHEET (30), MD FRAME (51), MD FP-795 FLEXIBLE BOARD VC-341 BOARD, COMPLETE (SERVICE) (TRV428E) VC-341 BOARD, COMPLETE (SERVICE) (TRV228E)
359 359	A-7112-393-A A-7112-395-A	VC-341 BOARD, COMPLETE (SERVICE) (TRV128/TRV228) VC-341 BOARD, COMPLETE (SERVICE) (TRV328/TRV428)

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
360	1-827-980-11	CABLE, FLEXIBLE FLAT (FFC-005)
361	3-088-391-01	SHEET (51), SHIELD, DD
362	X-3953-957-1	CABINET (L) (51) ASSY
363	3-978-765-01	SLIDER, G LOCK
364	3-087-802-01	BELT (51), GRIP
365	3-080-203-31	SREW (M2), LOCK ACE, P2
366	3-087-832-01	LABEL (L) (51) (TRV128)
366	3-087-832-11	LABEL (L) (51) (TRV228)
366	3-087-832-21	LABEL (L) (51) (TRV228E)
366	3-087-832-31	LABEL (L) (51) (TRV328)
266	2 007 020 51	I ADEL (I.) (51) (TD)(400)
300	0.007.002-01	LADEL (L) (51) (TRV420)
366	3-087-832-61	LABEL (L) (51) (1RV428E)
367	3-080-204-11	SCREW, TAPPING, P2

5. REPAIR PARTS LIST

5-1-9. CASSETTE COMPARTMENT ASSEMBLY, DRUM ASSEMBLY

<u>Ref. No.</u>	<u>Part No.</u>	Description	<u>Ref. No.</u>	<u>Part No.</u>	Description
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	709	3-947-503-01	SCREW (M1.4)
702	3-065-895-01	LEVER, REEL RELEASE	710	X-3951-299-1	SCREW ASSY, DRUM FITTING
703	3-065-896-01	PLATE, BLIND	711	3-074-309-01	ROLLER A, LS GUIDE
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY	712	7-624-101-04	STOP RING 1.2 (E TYPE)
705	X-3951-302-1	DAMPER ASSY	M901	A-7048-988-A	DRUM (DGH-0F3B-R) (SERVICE) (MDX-M2100)
					(TRV128/TRV228/TRV328/TRV428)
706	X-3951-297-1	GEAR ASSY, R DRIVE			
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)	M901	A-7048-990-A	DRUM (DGH-0F4B-R) (SERVICE) (MDX-M2101)
708	3-065-935-01	HLC CUT 1.8X4X0.5			(TRV228E/TRV428E)

5. REPAIR PARTS LIST

5-1-10. Ins: not su	LS CHASS	S BLOCK ASSEMBLY 759	760 <i>S</i>	001	764	70 8	67
		757 758				766	म 768 769
				g 763	765		
		8	762	761	নাট		770
		756 - 7					4444e
,		5			772	775 770	781
	Q001	S002	7	'52		776	780
	a e	H001	77	74		779	
	FP-802- ns	P P	1002	·		7777	773
	FP-3	01 D001				secure 2	
	FP-300	FP-302 ns					
	110	ns	S.				
	754	753					
		751-4			1	783	
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		<u>Ref. No.</u>	<u>Part No.</u>	Description	
751 752	3-065-822-02 3-947-503-01	RAIL (S), GUIDE SCREW (M1.4)		771	3-065-830-01 X-3951-288-1	SPRING, S RATCHE TABLE (T) ASSY, R	ET EEL
753	A-7096-416-B	BASE (S) BLOCK ASSY, GUIDE		773	3-065-819-01	SPRING, TG1 ARM	
754 755	A-7096-415-A A-7096-426-A	BASE (1) BLOCK ASSY, GUIDE CHASSIS ASSY, LS		774 775	3-065-821-01 X-3951-289-1	RAIL (T), GUIDE TABLE (S) ASSY, R	EEL
756	3-065-802-01	SPRING, TG7 ARM		776	3-065-833-01	GUIDE, LOCK	
757 758	A-7096-414-A	ARM BLOCK ASSY, TG7		777	3-065-831-01 X-3051-304-1	PLATE (SPR), RE R	RETURN
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	4	779	3-065-835-01	GUIDE (S), CASSE	TTE
760	X-3951-303-1	ARM ASSY, PINCH		780	3-065-820-01	SPRING, RVS ARM	1
761	3-065-823-01	ARM, T RATCHET		781	X-3951-296-1	BAND (ASSY), BT	
762 763	3-065-794-01 3-065-792-01	ROAD (SPR), PINCH ARM ROLLER, P LIM ARM		D001	3-067-167-01 8-719-988-42	DIODE GL453 (TAP	CAIVIERA TAPPING PE LED)
764 765	3-065-834-01 3-065-824-01	GUIDE (T), CASSETTE SPRING, T RATCHET		H001 H002	8-719-033-37 8-719-033-37	ELEMENT, HALL H	W-105Ć (T REEL) W-105C (S REEL)
766	A-7096-417-A	SOFT ASSY, T		Q001	8-729-907-25	PHOTO TRANSIST	OR PT4850F (TAPE TOP)
767	3-071-650-01	SCREW (M1.7) (S)		Q002	8-729-907-25	PHOTO TRANSIST	OR PT4850F (TAPE END)
/68 769	3-065-832-01 3-065-828-01	PLATE, LS CAM ARM, S RATCHET		S001	1-692-614-11 1-572-688-11	SWITCH, PUSH (3 SWITCH, PUSH I F	KEY) (REC PROOF) VER (1 KEY) (C. C. LOCK)
770	3-065-829-01	PLATE, S RATCHET (RE)				5 511, 1 0011 EL	(

5. REPAIR PARTS LIST

5-1-11. MECHANICAL CHASSIS BLOCK ASSEMBLY-1

ns: not supplied

<u>Ref. No.</u>	<u>Part No.</u>	Description	<u>Ref. No.</u>	<u>Part No.</u>	Description
801	A-7096-422-A	BASE ASSY, DRUM	814	3-065-881-01	SPRING, P PRESSURE PLATE
802	3-947-503-01	SCREW (M1.4)	815	3-065-934-01	HLW CUT 0.98X3X0.25
803	3-065-928-01	SPACER, GROUND	816	1-786-096-11	SWITCH, ROTARY
804	3-065-927-01	GROUND, DRUM	817	3-065-898-01	SPRING, EJECT ARM
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	818	3-065-870-01	ROLLER, LS GUIDE
806	3-067-154-01	SPRING, CAPSTAN	819	A-7096-421-A	ARM ASSY, HCL
807	3-065-931-01	RAIL (T2), GUIDE	820	3-065-918-01	GEAR (2), CAM RELAY
808	X-3947-398-1	SCREW ASSY, M1.7 PW	821	A-7096-419-A	GEAR ASSY, CHANGE
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA	822	3-065-902-01	BELT, TIMING
810	1-677-049-11	FP-228 FLEXIBLE BOARD	823	3-065-905-01	GEAR, RELAY
811	1-680-434-11	FP-299 FLEXIBLE BOARD	824	3-065-882-01	ARM, EJECT
812	3-065-877-01	PLATE (T), GUIDE LOCK	M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE	M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)

5. REPAIR PARTS LIST

5-1-12. MECHANICAL CHASSIS BLOCK ASSEMBLY-2

<u>Ref. No.</u>	<u>Part No.</u>	Description	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
851	3-065-920-01	ARM, HC DRIVE	860	7-624-101-04	STOP RING 1.2 (E TYPE)
852	3-065-913-01	GEAR (4), LD	861	A-7096-412-A	GEAR (T) ASSY, GUIDE
853	3-065-914-01	SHEET, COVER	862	X-3951-307-1	PLATE ASSY, M SLIDE
854	3-065-917-01	GEAR (1), CAM RELAY	863	X-3951-305-1	ARM ASSY, LS
855	3-065-934-01	HLW CUT 0.98X3X0.25	864	3-065-901-01	ROLLER, LS ARM
856	3-065-915-01	GEAR (1), CAM	865	3-065-916-01	GEAR (2), CAM
857	3-065-878-01	PLATE (S), GUIDE LOCK	866	3-065-919-01	ARM, T1 LIMITTER
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA	867	X-3951-308-1	ARM ASSY, GL
859	A-7096-413-A	GEAR (S) ASSY, GUIDE	868	X-3951-300-2	CHASSIS ASSY, MECHANICAL

Part Max Description Ar.111-444.4 CO-465 BOARD, COMPLETE [TRV/228/TRV/28]; (TRV/228/TRV/28/TRV/28]; (TRV/228/TRV/28/TRV/28/TRV/28]; (TRV/28/TRV/28/TRV/28/TRV/28]; (TRV/28/TRV/28/TRV/28/TRV/28); (TRV/28/TRV/28/TRV/28/TRV/28/TRV/28); (TRV/28/TRV/28/TRV/28/TRV/28/TRV/28); (TRV/28/TRV/28/TRV/28/TRV/28/TRV/28); (TRV/28/TRV/28/TRV/28/TRV/28/TRV/28/TRV/28); (TRV/28/	CD-4	165	FP	-300	FP	-301	FP-	302	FP-792	2	FP-80)2	PD-2	04 (T)	PE C	;)
Bell Mo. Part Mo. Description A7111-944 CD-685 BOARD, COMPLETE (TRV1228/TRV228/TRV228/TRV228) (00051 is and induited in this complete board). (COMPLETE (TRV1228/TRV228/TRV228/TRV228) (00051 is and induited in this complete board). (COMPLETE (TRV128/TRV228/TRV228/TRV228) (00051 is and induited in this complete board). (COMPLETE (TRV128/TRV228/TRV228/TRV228) (00051 is and induited in this complete board). (COMPLETE (TRV128/TRV228/TRV228/TRV228) (COS1 is and induited in this complete board). (COMPLETE (TRV128/TRV228/TRV228/TRV228) (COS1 is and induited in this complete board). (COMPLETE (CS is 1-128-964-11 EECT CMP 220F 20% 10% (CS is 1-128-964-11 EECT CMP 220F 20% 10% (CS is 1-128-964-11 EECT CMP 220F 20% 10% (TRV128/TRV228/TRV228/TRV228) (CS is 1-128-964-11 FFC CLEF (NOV-21F) 14P (CS is 1-128-974-11 FFC CLEF (NOV-21F) 14P (CS is 1-128-974-11 FFC CLEF (NOV-21F) 14P (CS is 1-128-974-11 FFC CLEF (NOV-21F) 14P (CF is 1-128-974-11 FFC CLEF	5-2. E	ELEC	TRIC	AL P	ARTS	S LIST										
A 7111-94-6 CD-645 BOARD, COMPLETE (17228/ETRV228/	<u>Ref. No.</u>	<u>Part N</u>	<u>0.</u>	<u>Descript</u>	<u>ion</u>				<u>Ref. No.</u>	<u>Pa</u>	<u>art No.</u>	<u>Descri</u>	ption			
A-7111-945-A CD-465 B0ABD_COMPLET_(RV228/TRV228) (COST is not included in this dex/be board. (COST is not included in this complete board.) (COST is not included in this complete board.) (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (CONNECTOR > (COL) (COL) (CO		A-711	1-944-A	CD-465	BOARD,	COMPLET	E			1-	860-929-11	FP-79	2 FLEXIBLE	BOARD		
		A-711	1-945-A	CD-465	BOARD, (TR)	COMPLET	(TRV228E) E 228/TRV32	8/TRV428E			(D001, D002	and D	003 are not	included in	n this flexi	ble board.)
(CB35 Is not included in this complete board), CAPACITOR > (CB35 Is not included in this complete board), CB35 Is 1-228-398-41 ELECT CHIP 224F 20% 10V CB55 Is 1-289-398-41 ELECT CHIP 274F 20% 10V CB55 Is 1-278-398-41 ELECT CHIP 274F 20% 10V CB55 Is 1-278-398-11 FECCONNECTOR, FPC (LIF (NON-ZIP)) 14P CIC> P=802 FEXIBLE BOARD (Not Supplied) (CB51 Is 777-73 TRANSISTOR > (COL) S718-033-37 ELEMENT HALL HW-105C (T REL) COUL > (CB51 Is 729-117-73 TRANSISTOR > (COL) S718-033-37 ELEMENT HALL HW-105C (T REL) COUL > (CB51 Is 777-71 TARSISTOR > (COL) A-7113-926-A CD D LOCK ASSY (CD IMAGER) (Not) (TRV229/TRV228) (TV229/TRV228) (CB51 Is 729-110-723 TRANSISTOR > (COL) A-7113-926-A PD-204 BOARD (Not Supplied) (CB51 Is 729-110-723 TRANSISTOR > (CB001 Is 1-25-777-11 CERAMIC CHIP 0.11F 10% 10V CB003 Is 1-64-43-11 CERAMIC CHIP 0.11F 10% 10V CB003 Is 1-64-43-11 CERAMIC CHIP 0.11F 10% 10V CB003 Is 1-27-77-11 CERAMIC CHIP 0.10				******	*****	*****	**	0,1111120	/			< DIO	DE >			
COPACITOR> D002 8-507-744-01 D002 NEXPUGADESTI2 (VIDEO LIGHT) C003 1-126-385-11 ELECT CHIP 22/uF 20% 10V C003 1-126-385-11 ELECT CHIP 22/uF 20% 10V C003 1-126-385-11 ELECT CHIP 22/uF 20% 10V C004 CONNECTOR - CONNECTOR - CONNECTOR - CONNECTOR - C004 -779-331-11 FFD-CONNECTOR FPC (LIF (NON-ZIF)) 14P - H001 8-719-033-37 ELEMENT, HALL HW-105C (T REEL) C035 A-7013-219-A CCD BLOCK ASSY (CCD IMAGEN) (Molts) (TRV1228/TFW228/TFW228) S001 18-729-438-11 SWTCH - VISI'S (KEY) (REC PROOF) S001 A-7013-276-A CCD BLOCK ASSY (CCD IMAGEN) (Molts) (TRV1228/TFW228) CONL> A-7111-496-A P0-204 B0ARD, CONPLETE (TYPE C) C001 - - CAPACITOR > COP2-115-777-11 CEMENT, MALL HW-105C (S REEL) C001 - - - CAPACITOR > COP2-115-777-11 CEMENT, MALL HW-105C (T REEL) C001 - - -				(IC951	is not ir	ncluded in [•]	this compl	ete board.	001	6-	500-744-01		NSPW50)0BS-TI 2 (HT)
0931 1-126-396-11 ELECT CHIP 22µF 20% 10V 0931 1-126-396-11 ELECT CHIP 22µF 20% 10V 0931 1-28-990-22 ELECT CHIP 22µF 20% 10V 0951 1-739-331-11 FF0-020 MIGCTOR , FFC (LIF (M0H-2IF)) 14P 16V 01051 A-7013-219-A COB BLOCK ASSY (CCD IMAGER) (Noto) (TRV128/TRV228/TRV228/TRV228) S001 1-692-614-11 SWTCH > USK (SVC) (RE C PROOF) 0501 1-309-528-91 INDUCTOR 100µH COLL > COLL > S001 1-692-614-11 SWTCH > USK (SVC) (RE C PROOF) S001 1-369-783-11 SWTCH > USK (SVC) (RE C PROOF) S001 1-562-614-11 SWTCH > USK (SVC) (RE C PROOF) S001 1-469-528-91 INDUCTOR 100µH S001 1-562-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-562-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-562-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-563-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-563-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-563-7711 (EERAMIC CHIP 0.01µF 10% 10V S001 1-577711 (E				< CAPAC	CITOR >				D002 D003	6- 6-	500-744-01 500-744-01	DIODE	NSPW50)0BS-TL2 ()0BS-TL2 ()0BS-TL2 (VIDEO LIG VIDEO LIG	iHT) iHT)
0955 1-164-360-11 DEFAMIC CHIP 0.11F 1657 0955 1-646-360-11 DEFAMIC CHIP 0.11F 1657 0951 1-779-331-11 FFC/CONNECTOR, FPC (LIF (NON-ZIF)) 14P (1051 A-7013-275-A CCD BLOCK ASSY (CDD IMAGER) (Mole) (TRV 228T/78/228T/	C951	1-126	-395-11	ELECT C	HIP нір	22uF 47uF	20% 20%	16V 10V								
< CONNECTOR >	C955	1-164	-360-11	CERAMI	C CHIP	0.1uF	2070	16V				FP-80	2 FLEXIBLE	BOARD (N	lot Suppli	ed)
CN851 1-779-331-11 FFCCONNECTOR, FFC (LF (NON-ZIF)) 14P C C051 A-7013-219-A CCD BLOCK ASSY (CD IMAGER) (Noth) (TRV/228/TRV/228) SVITCH- C051 A-7013-219-A CCD BLOCK ASSY (CD IMAGER) (Noth) (TRV/228/TRV/228) SVITCH- C051 A-7013-219-A CCD BLOCK ASSY (CD IMAGER) (Noth) (TRV/228/TRV/228) SVITCH- C011 - COIL - SVITCH- SVITCH-PUSH (EVP (CC LOCK)) C011 - COIL - SVITCH-PUSH (EVP (CC LOCK)) C011 - COIL - COIL - C011 - COIL - COIL - C011 - COIL - COIL - C012 - COIL - COIL - C013 - COIL - COIL - C014 - CREATER (EVP (CC CL COCK)) P352 1-208-528-91 INDUCTOR 100-H C001 - CREATER (EVP (CC CL COCK)) COON 1-125-777-11 C6002 1-126-473-11 CREATER (EVP (CC CL COCK)) P352 1-208-511 RESC (IT REL) DOUL 1 DV C0001 8-729-907-25 PHOTO TRANSISTOR > COON 1-64-74-7411 CRAMIC CHIP O.10F				< CONNE	ECTOR >							*****	*********	******		
<1C> +1C 1C351 A-7013-219-A CCD BLOCK ASSY (CCD IMAGER) (Mole) (TRV128/TRV28/TRV428) (TRV128/TRV28/TRV428) (TRV28/TRV28/TRV428) (TRV28/TRV28/TRV428) (TRV28/TRV28/TRV428) SWTCH. SWTCH. 2051 A-7013-276-A CCD BLOCK ASSY (CCD IMAGER) (Mole) (TRV128/TRV28/TRV428) (TRV28/TRV428) (TRV28/TRV428) SWTCH. SWTCH. 2051 A-7013-276-A CCD BLOCK ASSY (CCD IMAGER) (Mole) (TRV128/TRV28/TRV428) A-7111-949-A PD-204 BOARD, COMPLETE (TYPE C) 2051 B-729-117-73 TRANSISTOR 2SC4178-F14 (RESISTOR > C6001 1-125-777-11 CERAMIC CHIP 0.01 JF 10% 10V 2051 1-219-865-11 RESISTOR > C6001 CERAMIC CHIP 0.01 JF 10% 10V 20601 1-124-947-11 CERAMIC CHIP 0.01 JF 10% 10V 10% 10V 20021 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6002 1-125-777-11 CERAMIC CHIP 0.11F 10% 10V 2001 8-719-988-42 DIODE > CHODE N C6002 1-125-777-11 CERAMIC CHIP 10W 10W C6001 1-164-943-11 CERAMIC CHIP 0.11F 10% 10V	CN951	1-779	-331-11	FFC/CON	INECTOF	R, FPC (LIF	(NON-ZIF)) 14P				< HUL		1>		
C102 6-7(19:03-37) ELEMENT, PALL NM-TOBS (5 REEL) C001 A-7013-276-A CCD BLOCK ASSY (CCD IMAGER) (Note) (TRV228FTRV228/TRV228/TRV228/TRV228) (TRV228E/TRV228FTRV228) S001 1-692-614-11 SWITCH, PUSH LEVER (1 KEY) (EC PROOF) L951 1-469-528-91 INDUCTOR 1000H - - <transistor> CAPACITOR > - - 0951 8-729-117-73 TRANSISTOR > CAPACITOR > - - 0951 8-729-117-73 TRANSISTOR > CAPACITOR > - - - - - - 10% 10% 0001 - <td< td=""><td></td><td></td><td></td><td>. 10 .</td><td></td><td></td><td></td><td></td><td>H001</td><td>8-</td><td>719-033-37</td><td>ELEM</td><td>ENT, HALL</td><td>HW-105C</td><td>(T REEL)</td><td></td></td<></transistor>				. 10 .					H001	8-	719-033-37	ELEM	ENT, HALL	HW-105C	(T REEL)	
IOS1 A-7013-219-A CCD BLOCK ASSY (CCD IMAGER) (Note) (TRV228E/TRV428) (CRV228E/TRV428) (CRV228E/TRV428) (CRV228E/TRV428) S001 1-982-614-11 SWITCH > IOS1 A-7013-276-A CCD BLOCK ASSY (CCD IMAGER) (Note) (TRV228E/TRV428) S001 1-982-614-11 SWITCH > IOS1 A-7013-276-A CCD L> A-7111-949-A PD-204 BOARD, COMPLETE (TYPE C) IS51 1-469-528-91 INDUCTOR 100uH - - IS51 1-469-528-91 INDUCTOR 100uH - - VEX - - - - - 0951 8-729-117-73 TRANSISTOR 2SC4178-F14 - <td></td> <td></td> <td></td> <td>< 16 ></td> <td></td> <td></td> <td></td> <td></td> <td>H002</td> <td>ð-</td> <td>/19-033-3/</td> <td>ELEIVI</td> <td>ENT, HALL</td> <td>HW-1050</td> <td>(S REEL)</td> <td></td>				< 16 >					H002	ð-	/19-033-3/	ELEIVI	ENT, HALL	HW-1050	(S REEL)	
10951 A-7013-276-A COD BLICK ASSY (CC) MAGER) (NV320/119V220) (TRV228E7TRV428E) S001 1-692-614-11 SWITCH, PUSH (3 KEY) (REC PROOF) 20951 A-7013-276-A COD L> A-7111-949-A PD-204 BOARD, COMPLETE (TYPE C) 20951 8-729-117-73 TRANSISTOR 2 SC4178-F14 CRESISTOR > 20951 8-729-117-73 TRANSISTOR > CRESISTOR > CRESISTOR > CRESISTOR > 20001 8-729-907-25 PHOTO TRANSISTOR > CRESISTOR > <t< td=""><td>IC951</td><td>A-701</td><td>3-219-A</td><td>CCD BLC</td><td>CK ASS</td><td>Y (CCD IM</td><td>AGER) (No</td><td>ote)</td><td></td><td></td><td></td><td>< SWI</td><td>TCH ></td><td></td><td></td><td></td></t<>	IC951	A-701	3-219-A	CCD BLC	CK ASS	Y (CCD IM	AGER) (No	ote)				< SWI	TCH >			
< COIL> A-7111-949-A PD-204 BOARD. COMPLETE (TYPE C). L951 1-469-528-91 INDUCTOR 100uH CAPACITOR> 0951 8-729-117-73 TRANSISTOR 2SC4178-F14 CAPACITOR> 0951 8-729-117-73 TRANSISTOR 2SC4178-F14 CAPACITOR> 0951 8-729-117-73 TRANSISTOR 2SC4178-F14 CAPACITOR> 0951 8-729-117-73 TRANSISTOR 0.5% 1/16W 0951 8-729-107-73 TRANSISTOR 0.5% 1/16W 0951 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6002 1-125-777-11 CERAMIC CHIP 0.01F 10% 16V 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) FP-301 FLEXIBLE BOARD (Not Supplied) C6012 1-125-777-11 CERAMIC CHIP 0.1F 10% 10V C6022 1-125-777-11 CERAMIC CHIP 0.1F 10% 10V C6011 1-64-943-11 CERAMIC CHIP 0.1F 10% 10V C6010 1-164-973-11 CERAMIC CHIP 0.1F 10% 10V C6012 1-125-777-11 CERAMIC	IC951	A-701	3-276-A	CCD BLC	OCK ASS	Y (CCD IM	(TRV32) (AGER) (No (TRV228E)	ote) /TRV428E) S001 S002	1- 1-	692-614-11 572-688-11	SWIT(SWIT(CH, PUSH (CH, PUSH L	3 KEY) (RE .EVER (1 K	C PROOF) EY) (C.C. I) LOCK)
List 1-469-528-91 INDUCTOR 100uH cTRANSISTOR > cAPACITOR > 0951 8-729-117-73 TRANSISTOR 2SC4178-F14 cBESISTOR > cRESISTOR > cBESISTOR > cC0001 1-125-777-11 CERAMIC CHIP 0.01 JF 10% 6.3V R952 1-208-635-11 METAL CHIP 10 0.5% 1/16W C6000 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 6.3V R952 1-208-635-11 REFAULC CHIP 10K 5% 1/16W C6000 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 16V C6001 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 16V C6001 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 10V C6001 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 10V C6001 1-164-943-11 CERAMIC CHIP 0.01 JF 10% 10V C6011 1-163-73-11 CERAMIC CHIP 0.01 JF 10% 10V C6011 1-163-73-11 CERAM																
	L951	1-469	-528-91		DR	100uH				A-	7111-949-A	PD-20 ****	4 BOARD, ********	COMPLETE	(TYPE C) *	
0951 8-729-117-73 TRANSISTOR 2SC4178-F14 CG001 1-125-777-11 CERAMIC CHIP 0.1uF 10% 6.3V R952 1-208-635-11 METAL CHIP 10 0.5% 1/16W CG002 1-125-437-91 CERAMIC CHIP 0.01uF 10% 6.3V R952 1-208-635-11 METAL CHIP 10 0.5% 1/16W CG002 1-125-777-11 CERAMIC CHIP 0.01uF 10% 16V R953 1-218-965-11 RES-CHIP 10K 5% 1/16W CG000 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-164-73-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-164-73-11 CERAMIC CHIP 0.01uF 10% 10V C6010 1-164-73-11 CERAMIC CHIP 0.01uF 10% 10V C6011 1-164-73-11 CERAMIC CHIP 0.01uF 10%																
0951 8-729-117-73 TRANSISTOR 2SC4178-F14 C6000 1-125-737-11 CERAMIC CHIP 0.1uF 10% 10% 10% R952 1-208-635-11 METAL CHIP 10 0.5% 1/16W C6000 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V R952 1-218-965-11 RES-CHIP 10 0.5% 1/16W C6000 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V R953 1-218-965-11 RES-CHIP 10 0.5% 1/16W C6000 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-155-66-11 CERAMIC CHIP 0.01uF 10% 16V C6001 1-164-943-11 CERAMIC CHIP 0.01uF 10% 10V C6001 1-164-793-11 CERAMIC CHIP 0.01uF 10% 10V C6001 1-125-777-11 CERAMIC CHIP 0.01uF 10% 50V C6011 1-164-793-11 CERAMIC CHIP 0.1uF 10% 10V C6011 1-164-731-11 CERAMIC CHIP 0.1uF 10% 10V C6021 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>></td><td></td><td></td><td></td><td></td><td></td><td></td><td>AUTUR ></td><td></td><td></td><td></td></td<>						>							AUTUR >			
< RESISTOR > <td>Q951</td> <td>8-729</td> <td>-117-73</td> <td>TRANSIS</td> <td>STOR</td> <td>2SC4178</td> <td>3-F14</td> <td></td> <td>C6001</td> <td>1-</td> <td>125-777-11</td> <td>CERAI</td> <td></td> <td>0.1uF</td> <td>10%</td> <td>10V 6 3V</td>	Q951	8-729	-117-73	TRANSIS	STOR	2SC4178	3-F14		C6001	1-	125-777-11	CERAI		0.1uF	10%	10V 6 3V
R952 1-208-635-11 METAL CHIP 10 0.5% 1/16W R953 1-218-965-11 RES-CHIP 10K 5% 1/16W C6004 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V FP-300 FLEXIBLE BOARD (Not Supplied) ************************************				< RESIS	TOR >				C6002	1-	164-943-11	CERAI	MIC CHIP	0.01uF	10%	16V
11320 1220-333-11 MICHCOMIN 10 0.37.8 1/16W 108 1218-965-11 RES-CHIP 10K 5% 1/16W 108 100 5% 1/16W 60003 1-164-93-11 CERAMIC CHIP 0.01uF 10% 10% 100 FP-300 FLEXIBLE BOARD (Not Supplied) - - 60007 1-115-566-11 CERAMIC CHIP 0.01uF 10% 10% 10% 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6013 1-164-739-11 CERAMIC CHIP 0.1uF 10% 10% 10% 10% 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6013 1-108-371-11 CERAMIC CHIP 0.1uF 10%	P052	1_208	625-11	ΜΕΤΛΙ (סווי	10	0.5%	1/16\//	C6004	1-	164-943-11	CERAI		0.01uF	10%	16V
CC000 1-164-943-11 CERAMIC CHIP 0.01uF 10% 16V C6007 1-115-566-11 CERAMIC CHIP 0.01uF 10% 10V C6007 1-125-777-11 CERAMIC CHIP 0.01uF 10% 10V C6010 1-164-739-11 CERAMIC CHIP 0.01uF 10% 50V C6011 1-163-023-00 CERAMIC CHIP 0.11uF 10% 50V C6011 1-163-023-00 CERAMIC CHIP 0.11uF 10% 50V C6012 1-125-777-11 CERAMIC CHIP 0.11uF 10% 50V C6012 1-125-777-11 CERAMIC CHIP 0.11uF 10% 50V C6013 1-100-37111 CERAMIC CHIP 0.11uF 10% 10V C6013 1-100-37111 CERAMIC CHIP 0.11uF 10% 10V C6014 1-127-573-11 CERAMIC CHIP 0.11uF 10% 10V C6020 1-104-847-11 TANTAL. CHIP 22uF 20% 6.3V C6021	R953	1-218	-965-11	RES-CHI	IP	10K	0.3 <i>%</i> 5%	1/16W	00005	1-	104-343-11	ULINAI		0.0101	10 /0	100
FP-300 FLEXIBLE BOARD (Not Supplied) 00001 1-125-3777-11 CERAMIC CHIP 0.11F 10% 10% 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6011 1-163-023-00 CERAMIC CHIP 0.01F 10% 50V 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6012 1-125-777-11 CERAMIC CHIP 0.11F 10% 50V C6011 1-103-023-00 CERAMIC CHIP 0.11F 10% 50V C6012 1-125-777-11 CERAMIC CHIP 0.11F 10% 50V C6013 1-103-3017LEXIBLE BOARD (Not Supplied) 100-100F 3.01F 220F 20% 4V C6022 1-125-777-11 CERAMIC CHIP 0.11F 10% 10V 6002 10V 6002 1-10-457-11 10F 10% 10V C6022 1-125-777-11 CERAMIC CHIP 0.11F 10% 16V 6002 1-110-457-11 10V 6002 1-10-457-11 10V 6002 1-10-457-11 10V 10% 10V 6002 1-110-457-11 10V 10V 10V 10% <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>C6006</td><td>1-</td><td>164-943-11</td><td>CERAI</td><td></td><td>0.01uF</td><td>10%</td><td>16V</td></t<>									C6006	1-	164-943-11	CERAI		0.01uF	10%	16V
************************************				FP-300 F		E BOARD (Not Suppli	ed)	C6009	1-	125-777-11	CERA	MIC CHIP	4.7ui 0.1uF	10%	10V 10V
OUT 1 F105-022-00 CERAMIC CHIP 0.010F 10% 300 OUT 1 F105-022-00 CERAMIC CHIP 0.010F 10% 300 OUT 1 F105-022-00 CERAMIC CHIP 0.10F 10% 10V C6011 1-100-371-11 CERAMIC CHIP 12F 5% 3.15KV C6012 1-125-777-11 CERAMIC CHIP 12F 5% 3.15KV C6013 1-104-847-11 TANTAL. CHIP 22UF 20% 4V C6020 1-1104-847-11 TANTAL. CHIP 22UF 20% 4V C6020 1-110-457-11 ELECT CHIP 3.3UF 20% 25V C6022 1-125-777-11 CERAMIC CHIP 0.1UF 10% 10V C6024 1-127-573-11 CERAMIC CHIP 0.1UF 10% 16V C6026 1-119-750-11 TANTAL. CHIP 22UF 20% 6.3V C6027 1-125-777-11 CERAMIC CHIP 0.1UF 10% 16V C6028 1-119-750-11 TANTAL. CHIP 22UF 20% 6.3V C6027 1-125-777-11 CERAMIC CHIP 0.1UF 10% 16V C6028 1-119-750-11 TANTAL. CHIP 22UF 20% 6.3V C6028 1-119-750-11 TANTAL. CHIP 22UF 20% 6.3V C6028 1-115-407-11 ELECT CHIP 10UF 10% 16V C6028 1-115-407-11 ELECT CHIP 10UF 10% 16V C6028 1-115-407-11 ELECT CHIP 10UF 10% EV C6028 1-115-407-11 ELECT CHIP 10UF 10% EV C6028 1-115-407-11 ELECT CHIP 10UF 10% EV C6028 1-115-407-11 ELECT CHIP 10UF 10V EV C6028 1-115-407-11 ELECT CHIP 10UF 10V EV C6028 1-115-407-11 ELECT CHIP 0.10F EV C6028 1-115-407-11 ELECT CHIP 0.10F EV E				******	*****	*****			C6010	1-	164-739-11	CERAI		560PF	5%	50V
0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6012 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0001 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE TOP) C6012 1-125-777-11 CERAMIC CHIP 11uF 10% 10V 001 8-719-988-42 DIODE GL453S (TAPE LED) C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0001 8-719-988-42 DIODE GL453S (TAPE LED) C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0002 8-719-988-42 DIODE GL453S (TAPE LED) C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0002 8-719-988-42 DIODE GL453S (TAPE LED) C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0002 8-719-988-42 DIODE GL453S (TAPE LED) C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V 0002 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE END) CN60001 1-794-997-11 PIN,				< PHOTO) TRANS	ISTOR >			60011	1-	103-023-00	GENAI		0.0150F	10%	500
0001 8-729-907-23 PHOTO TRANSISTOR PT4630F (TAPE FOF) 1001 1100-5371-11 CERAMIC CHIP 12FP 3% 3.13KV FP-301 FLEXIBLE BOARD (Not Supplied) ************************************	0001	0 700	007.05		граменс				C6012	1-	125-777-11	CERA		0.1uF	10%	10V
PP-301 FLEXIBLE BOARD (Not Supplied) - - 20% 4V ************************************	Q001	0-729	-907-25	PHUIU	INANGIC	DIUR PI4		E TUP)	C6013	1-	127-573-11	CERAI	MIC CHIP	12PF 1uF	5% 10%	3.15KV 16V
PP-301 FLEXIBLE BOARD (NOI Supplied) 20% 23V ************************************					י בעוסו ז		Not Cuppli	ad)	C6019	1-	104-847-11	TANTA	AL. CHIP	22uF	20%	4V
V DIODE > C6022 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V V C6024 1-127-573-11 CERAMIC CHIP 10F 10% 16V V C6022 1-125-777-11 CERAMIC CHIP 10F 10% 16V V C6024 1-127-573-11 CERAMIC CHIP 10F 10% 16V C6024 1-125-777-11 CERAMIC CHIP 10F 10% 16V C6025 1-119-750-11 TANTAL. CHIP 10F 10% 10V C6026 1-119-750-11 TANTAL. CHIP 10F 10% 10V C6028 1-115-407-11 ELECT CHIP 10uF 10V 10V C6028 1-115-407-11 ELECT CHIP 10uF 10V 10V C6028 1-115-407-11 ELECT CHIP 10uF 10V 10V 10V C6028 1-115-407-11 ELECT CHIP 10uF 10V 10V 10V C002 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE END) CN6003 1-764-709-11 CNNECTOR, FFC/FPC (ZIF) 24P 200DE				FP-301 F	*******	= BUARD (******	Not Suppli	eu)	66020	1-	110-437-11	ELEUI	CHIP	3.3UF	20%	201
COUCLES COULLES CUULLES									C6022	1-	125-777-11	CERAI		0.1uF	10%	10V
D01 8-719-988-42 DIODE GL453S (TAPE LED) C6027 1-125-777-11 CERAMIC CHIP 0.1uF 10% 10V FP-302 FLEXIBLE BOARD (Not Supplied) ************************************					>				C6024	1-	119-750-11	TANTA	AL. CHIP	22uF	20%	6.3V
FP-302 FLEXIBLE BOARD (Not Supplied) < CONNECTOR > ************************************	D001	8-719	-988-42	DIODE	GL453S	(TAPE LED))		C6027 C6028	1- 1-	125-777-11 115-407-11	CERAI ELECT	MIC CHIP CHIP	0.1uF 10uF	10%	10V 16V
<pre></pre>				FP-302 F ******		E BOARD(******	Not Suppli	ed)				< CON	INECTOR >			
Q002 8-729-907-25 PHOTO TRANSISTOR PT4850F (TAPE END) CN6004 1-815-031-11 CONNECTOR, FFC/FPC (ZIF) 24P CN6005 1-816-176-11 CONNECTOR, FFC/FPC (ZIF) 6P CN6004 8-719-073-01 DIODE > D6004 8-719-071-34 DIODE RB521S-30-TE61				< PHOT() TRANS	ISTOR >			CN6001 CN6003	1- 1-	794-997-11 764-709-11	PIN, C FFC/C	ONNECTOR	R 20P R, FPC (LIF)	10P	
< DIODE > D6004 8-719-073-01 DIODE MA111-(K8).S0 D6009 8-719-071-34 DIODE RB521S-30-TE61	Q002	8-729·	-907-25	PHOTO T	TRANSIS	STOR PT4	850F (TAP	e end)	CN6004 CN6005	1- 1-	815-031-11 816-176-11	CONN CONN	ECTOR, FF(ECTOR, FF(C/FPC (ZIF) C/FPC (ZIF)	24P 6P	
D6004 8-719-073-01 DIODE MA111-(K8).S0 D6009 8-719-071-34 DIODE RB521S-30-TE61									•			< DIO	DE >			
D6009 8-719-073-01 DIODE MATTI-(K8).S0 D6009 8-719-071-34 DIODE RB521S-30-TE61									Decod	0	710 070 01	חסט				
									D6004 D6009	8- 8-	719-073-01 719-071-34	DIODE	: IVIA111-(E RB521S-	(N8).50 -30-TE61		

Note: Be sure to read "Precautions for Replacement of CCD Imager" on page 4-8 when changing the CCD imager.

PD-204 (TYPE S)

PD-204 (TYPE C)

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>				<u> </u>	Ref. No.	<u>Part No.</u>	<u>Descriptio</u>	<u>on</u>			
		< FERRITE BEAD	>				C6022 C6024	1-125-777-11 1-127-573-11	CERAMIC	CHIP	0.1uF 1uF	10% 10%	10V 16V
FB6001	1-414-760-21	FERRITE, EMI (SI	MD) (1608)				C6026 C6027	1-119-750-11 1-125-777-11	TANTAL.	CHIP CHIP	22uF 0.1uF	20% 10%	6.3V 10V
		< IC >					C6028	1-115-407-11	FI FCT CH	łІР	10uF		16V
IC6001	6-705-329-01	IC CM7104L42-	Τ4				C6029	1-125-827-91	CERAMIC	CHIP	1uF	10%	25V
		< COIL >							< CONNE	CTOR >			
L6001 L6002 L6003 L6004	1-469-527-91 1-412-056-11 1-428-878-11 1-469-526-91	INDUCTOR INDUCTOR INDUCTOR INDUCTOR	47uH 4.7uH 82uH 22uH				CN6001 CN6003 CN6004 CN6005	1-794-997-11 1-764-709-11 1-815-031-11 1-816-176-11	PIN, CON Connect FFC/Coni Connect	NECTOI TOR, FF NECTOF TOR, FF	R 20P C/FPC (LIF R, FPC (ZIF C/FPC (ZIF) 10P) 24P) 6P	
		< TRANSISTOR >							< DIODE :	>			
Q6002	6-550-065-01	TRANSISTOR	CPH5504-	TL-E			D6004	8-719-988-61	DIODE 1	SS355	TE-17		
		< RESISTOR >					D6006 D6009	8-719-988-61 8-719-071-34	DIODE 1 DIODE F	88355 85218	-30-TE61		
R6005 R6009	1-216-824-11 1-218-975-11	METAL CHIP BES-CHIP	1.8K 68K	5% 5%	1/10W 1/16W				< FERRIT	e bead	>		
R6010 R6012	1-218-969-11	RES-CHIP	22K	5% 0.5%	1/16W		FB6001	1-414-760-21	FERRITE,	EMI (S	MD)(1608))	
R6013	1-208-935-11	METAL CHIP	100K	0.5%	1/16W				< IC >				
R6014 R6019	1-218-949-11	RES-CHIP	470 0	5%	1/16W		IC6001	6-705-330-01	IC LRS5	7231			
R6020	1-218-990-11	SHORT CHIP	0						< C0IL >				
R6026 R6030	1-218-990-11 1-218-962-11	SHORT CHIP RES-CHIP	0 5.6K	5%	1/16W		L6001	1-469-527-91 1-412-056-11		R	47uН 4 7uН		
R6031 R6032	1-218-990-11 1-218-978-11	SHORT CHIP RES-CHIP	0 120K	5%	1/16W		L6003 L6004	1-428-878-11 1-469-526-91	INDUCTO INDUCTO	R R	82uH 22uH		
		< COMPOSITION	CIRCUIT BL	_OCK >					< TRANS	ISTOR >	•		
BB6003	1-934-379-91	RES NETWORK	100 x 4 (100)5)			06002	6-550-065-01	TRANSIS	TOR	CPH5504	1-TI -F	
nboood		< TRANSFORME	{>	,0)			Q6004 Q6005	8-729-054-48 8-729-054-48	TRANSIS	TOR TOR	UP04601 UP04601	1008S0 1008S0	
⊥∆ T6001	1-435-786-31	TRANSFORMER,	INVERTER				Q6008 Q6009	6-550-242-01 6-550-232-01	TRANSIS TRANSIS	TOR TOR	DTC114E 2SA2029	emt2l)t2lq/r	
									< RESIST	0R >			
	A-7111-948-A	PD-204 BOARD, (COMPLETE	(TYPE S)			R6005	1-216-824-11	METAL C	HIP	1.8K	5%	1/10W
		< CAPACITOR >					R6009 R6010	1-218-975-11 1-218-969-11	RES-CHIF RES-CHIF		68K 22K	5% 5%	1/16W 1/16W
C6001	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V		R6012 R6013	1-208-707-11	METAL CI	HIP HIP	10K 100K	0.5% 0.5%	1/16W 1/16W
C6002	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V		D6014	1 210 0/0 11			470	F0/	1/16\//
C6003	1-164-943-11	CERAMIC CHIP	0.01uF 0.01uF	10%	16V		R6030	1-218-949-11	RES-CHIP	5	470 5.6K	5%	1/16W
C6005	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V		R6039	1-218-960-11	RES-CHIP	0	3.9K	5%	1/16W
C6006	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V		R6040 R6041	1-218-973-11	RES-CHIE RES-CHIE	5	47K 1K	5% 5%	1/16W 1/16W
C6007	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V								
C6009	1-125-777-11	CERAMIC CHIP	0.1uF	10% 5%	10V 50V				< COMPO	SITION	CIRCUIT	BLOCK >	
C6011	1-163-023-00	CERAMIC CHIP	0.015uF	10%	50V 50V		RB6001 RB6002	1-234-378-21 1-234-384-11	RES, NET RES, NET	WORK WORK	10K x 4 (1) 1M x 4 (10	005) 105)	
C6012	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V		RB6003	1-234-372-21	RES, NET	WORK	100 x 4 (10	005)	
C6013 C6015	1-100-371-11	CERAMIC CHIP	ı∠₽⊦ 1uF	ว% 10%	3.15KV 16V				< TRANS	FORMFI	R>		
C6016	1-100-249-11	CERAMIC CHIP	0.01uF	10%	16V					OTIME			
C6019	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	4	∆T6001	1-435-786-31	TRANSFC	RMER,	INVERTER	{	
C6020	1-110-457-11	ELECT CHIP	3.3uF	20%	25V								
							The	components ider	tified by	Les co	mposants	identifiés	par une
							mark mark Repl	$\Delta \Delta$ or dotted 1 $\Delta \Delta$ are critical for ace only with p	ine with or safety. art num-	marqu sécurit Ne les	té. remplacer	critiques	pour la ine pièce
						5-15	\mathbf{D} bers	pecineu.		portan	i ie numer	o specifie	

SI-03	39 VC-3	341									
Ref. No.	<u>Part No.</u>	Description				<u>Ref. No.</u>	<u>Part No.</u>	Description			
	A-7111-950-A	SI-039 BOARD, (0/TD\/000E\		A-7112-393-A	VC-341 BOARD,	COMPLETE	(SERVIC) Эругруурор
	A-7111-951-A	SI-039 BOARD, (COMPLET (TRV3	E 28/TRV42	8/TRV428F)		A-7112-394-A	VC-341 BOARD,	COMPLETE	(SERVIC	20/TRV220)E) (TRV228F
(D750 D		************	*******	**			A-7112-395-A	VC-341 BOARD,	COMPLETE	(SERVIC	(11102202)E)
(D753, D	J754, IG751, J75	1, J752 and J753 a	are not inc	ciuded in th	board.)		A-7112-396-A	VC-341 BOARD,	COMPLETE	(SERVIC	28/TRV428)E) /TDV/4005
		< CAPACITOR >						*****	******	:	(TRV428E
C758	1-127-760-11	CERAMIC CHIP	4.7uF	10% 28/TB\/42	6.3V 8/TB\/428E)			< CAPACITOR >			
C759	1-127-760-11	CERAMIC CHIP	4.7uF (TRV3	10% 28/TRV42	6.3V 8/TRV428E)	C002 C003	1-125-777-11 1-127-760-11	CERAMIC CHIP	0.1uF 4 7uF	10% 10%	10V 6.3V
			(1110	20,111,12	o, 1111 1202)	C053	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >				C055	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
CN755	1-750-361-21	CONNECTOR, FF	C/FPC (ZI	F) 30P		0050	1 104 041 11		0.0047	100/	101/
						C056	1-164-941-11	CERAMIC CHIP	0.0047uF	10% 10%	16V 16V
						C058	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
D751	6-500-044-01	DIODE DF6A6.8	3FU (TE85	R)		C059	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
D752	6-500-044-01	DIODE DF6A6.8	SFU (TE85	R)		C060	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
D753	8-/19-060-65			TTED		C062	1 164 020 11		0.00000	100/	501/
D755	6-500-044-01		SELL (TE85	iR)		C063	1-104-939-11	CERAMIC CHIP	0.0022ui 0.1uF	10%	10V
0100	0 000 011 01	DIODE DIONO.C				C064	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
D759	6-500-506-01	DIODE TLRMV1	1021 (T15	SOY, F) (T	ALLY)	C065	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
			,		,	C066	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
		< FERRITE BEAD	>			C067	1-127-988-81	CEBAMIC CHIP	15000PF	10%	16V
FB751	1-414-760-21	INDUCTOR, FER	RITF BFA	D		C068	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
			(TRV3	- 28/TRV42	8/TRV428E)	C069	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
			(,	C070	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
		< IC >				C071	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
IC751	6-704-975-01	IC RPM7240-V	4			C072	1-127-772-81	CERAMIC CHIP	33000PF	10%	10V
		(TRV2	28/TRV22	8E/TRV42	8/TRV428E)	C073	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
						C075	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
		< JACK >				C076	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
1751	1_778_518_11				דוור	C078	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
.1752	1-778-040-11	JACK SMALL TY	PF (A/V)		501)	C079	1-115-566-11	CERAMIC CHIP	4 7uF	10%	10V
J753	1-817-944-11	JACK. SMALL TY	PE (RFU	DC OUT)		C080	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
		, -	(-	,		C081	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
		< TRANSISTOR :	>			C082	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
0751	0 700 000 00	TRANSISTOR	00001-	1.412		C083	1-125-827-91	CERAMIC CHIP	1uF	10%	25V
Q751	8-729-023-22	TRANSISTOR	29021	14K		C084	1-125-827-91	CERAMIC CHIP	1uF	10%	25V
		< RESISTOR >				C085	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
						C086	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
R752	1-216-806-11	METAL CHIP	56	5%	1/10W	C087	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
R753	1-216-806-11	METAL CHIP	56	5%	1/10W	C088	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
R761	1-216-864-11	SHORT CHIP	0	50/		0000				100/	1011
R763	1-216-821-11	METAL CHIP	1K	5%	1/10W	C089	1-115-566-11	CERAMIC CHIP	4./u⊦ 4.7⊑	10%	10V
						C090	1-110-000-11		4./UF 0.1uE	10%	101
		< SLINGUN >				C091	1-135-259-11	TANTAL CHIP	10uF	20%	6.31/
SE751	1-476-807-41	SENSOR, ANGUI	LAR VELC	CITY (YAW	V)	C095	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
05355	4 470 000 0		(TRV3	28/TRV42	8/TRV428E)			TANTAL CUIT	00 -	0.007	
SE/52	1-4/6-80/-31	SENSOR, ANGUI				C096	1-119-749-11	IANIAL. CHIP	33uF	20%	4V
			(TRV3	28/1KV42	o/IKV428E)	009/	1-119-750-11		22UF 4 705	20%	6.3V
						CU00	1-110-000-11		4./uг 2.2шF	10% 10%	6 31/
						C100	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
						0100	1 107 700 11		1 7.JE	100/	6 914
						C102	1-12/-/60-11 1-127-760-11		4./UF 2∖7⊔F	10% 10%	0.3V 6.3V
						C103	1-119-750-11		 2211F	20%	6.31/
						1 0104	1 10 100-11		LLUI		0.0 V

VC-341

<u>Ref. No.</u>	<u>Part No.</u>	Description				<u>Ref. No.</u>	<u>Part No.</u>	Description			
C105	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V	C306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C106	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C307	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
						C309	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C107	1-164-506-11	CERAMIC CHIP	4.7uF		16V	C310	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C108	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C320	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C109	1-164-505-11	CERAMIC CHIP	2.2uF		16V						
C152	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V	C322	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C156	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	C323	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
						C324	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C157	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V	C325	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C158	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V	C326	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	50V
C160	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V						
C161	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	C328	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C163	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C329	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
0.10.1			0.05		501/	C332	1-125-837-91	CERAMIC CHIP	1u-	10%	6.3V
C164	1-164-848-11	CERAMIC CHIP	8PF	0.5PF	50V	C333	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
0165	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V	0334	1-100-252-11	CERAMIC CHIP	0.1uF	10%	6.3V
0100	1-164-943-11	CERAMIC CHIP	0.010F	10%	16V	0005	4 405 007 04			100/	0.01/
0167	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	0335	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
0168	1-125-837-91	CERAMIC CHIP	TUF	10%	6.3V	0339	1-125-777-11		0.10F	10%	100
0100			0.1	100/	101/	0401	1-125-777-11		0.105	10%	101
0170	1-125-777-11			10%		0404 0400	1-125-777-11		0.105	10%	101
0170	1 105 777 11			10%	0.3V 10V	6406	1-125-777-11	CERAIMIC CHIP	U.TUF	10%	100
0171	1 115 467 11		0.10F	10/0	101/	C/07	1 100 246 11		0.001E	100/	501/
0172	1-110-407-11		0.22UF 470DE	10%	10V 50V	C/08	1-100-240-11		0.001uF	10%	16V
0173	1-104-955-11		4/066	10 /0	500	C400	1-100-249-11		0.01UF	10%	101/
C176	1-195-777-11		0 1uE	10%	101/	C/10	1-105-837-01		0.047ui 1.1E	10%	631/
C177	1-104-847-11	ΤΔΝΙΤΔΙ CHIP	22uF	20%	4V	C411	1-164-943-11		0.01uF	10%	16\/
C179	1-100-696-91	CERAMIC CHIP	10F	10%	6.3V	0111	1 104 540 11	OERAWIO ORI	0.0101	1070	100
C202	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C412	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C203	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C413	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
						C415	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C204	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V	C417	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C205	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C420	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C206	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V						
C207	1-164-935-11	CERAMIC CHIP	470PF	10%	50V	C423	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C208	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C424	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
						C425	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C209	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	C426	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C210	1-165-708-11	ELECT	47uF	20%	6.3V	C427	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C211	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V				(TRV228E	/TRV428E)
C212	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V						
C214	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C428	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
0015	1 104 000 11		0.0000E	100/	F0\/	0400	1 105 007 01		(1⊏	1RV228E/	(TRV428E)
0210	1 107 760 11		0.0022UF	10%	50V	0429	1 107 010 11			10%	0.3V 16V
0217	1-12/-/00-11		4./uF 0.1uE	10%	10\/	C430	1-107-019-11		0.022UF	10%	101/
C251	1-125-837-91	CERAMIC CHIP	1.1F	10%	6.3V	C432	1-125-777-11	CERAMIC CHIP	0.047ui 0.1uF	10%	101/
0257	1-117-720-11	CERAMIC CHIP	4 7uF	1070	101/	0402	1 120 111 11	OERAWIO ORI	0.101	1070	100
OLOL	1 111 120 11	olin and only	1.7 01		101	C433	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C276	1-110-666-11	ELECT CHIP	22uF	20%	6.3V	C434	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
			(TRV328/	TRV428/	TRV428E)	C435	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C278	1-110-666-11	ELECT CHIP	22uF	20%	6.3V [′]	C436	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
			(TRV328/	/TRV428/	TRV428E)	C437	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C280	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V						
			(TRV328/	/TRV428/	TRV428E)	C439	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C281	1-100-252-11	CERAMIC CHIP	0.1uF	10%	6.3V	C441	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
			(TRV328/	/TRV428/	TRV428E)	C442	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C282	1-100-251-11	CERAMIC CHIP	0.047uF	10%		C443	1-10/-826-11	CERAMIC CHIP	0.1uF	10%	16V
			(TRV328/	180428/	TRV428E)	6444	1-164-943-11	CERAMIC CHIP	0.01uF	10%	167
0.283	1-100-251-11		0 047uF	10%	101/	C445	1-164-0/3-11		0.01.15	10%	16\/
0200	1-100-201-11		(TR\/328)	TR\/428/	TRV428F)	C.481	1-164-943-11	CERAMIC CHIP	0.01uF	10%	161/
C301	1-127-760-11	CERAMIC CHIP	4.711F	10%	6.3V	C482	1-104-752-11	TANTAL CHIP	330F	20%	6.3V
C302	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	C483	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C303	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C484	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C304	1-164-392-11	CERAMIC CHIP	390PF	5%	50V						
						C486	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V

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<u>Ref. No.</u>	<u>Part No.</u>	Description				<u>Ref. No.</u>	<u>Part No.</u>	Description			
C487	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	C807	1-124-779-00	ELECT CHIP	10uF	20%	16V
C488	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C808	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C489	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C810	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C490	1-164-874-11	CERAMIC CHIP	100PF	5%	50V	C811	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
						C812	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C491	1-164-878-11	CERAMIC CHIP	150PF	5%	50V						
C492	1-164-872-11	CERAMIC CHIP	82PF	5%	50V	C814	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C493	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C815	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C494	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C816	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C495	1-164-874-11	CERAMIC CHIP	100PF	5%	50V	C817	1-124-779-00	ELECT CHIP	10uF	20%	16V
						C818	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C496	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C497	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C819	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C498	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V	C820	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C500	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C821	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C505	1-100-249-11	CERAMIC CHIP	0.01uF	10%	16V	C822	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V
						C823	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C507	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V						
C508	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C825	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C509	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C826	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C513	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	C828	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C514	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C829	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
						C830	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C515	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V						
C601	1-100-249-11	CERAMIC CHIP	0.01uF	10%	16V	C831	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C602	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V	C832	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C603	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V	C833	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C834	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
						C835	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V						
C606	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C836	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V
C607	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C837	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C839	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C840	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
						C841	1-124-779-00	ELECT CHIP	10uF	20%	16V
C611	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V						
C614	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	C842	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C615	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C843	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C616	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C844	1-164-870-11	CERAMIC CHIP	68PF	5%	50V
C617	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C845	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
			(TRV328	/TRV428/	(TRV428E)	C846	1-126-209-11	ELECT CHIP	100uF	20%	4V
C617	1-218-977-11	RES-CHIP	100K	5%	1/16W	C847	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
		(Not	e) (TRV128	/TRV228/	(TRV228E)	C848	1-126-209-11	ELECT CHIP	100uF	20%	4V
C618	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C849	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
			(TRV328/	/TRV428/	(TRV428E)	C850	1-100-696-91	CERAMIC CHIP	1uF	10%	6.3V
C618	1-218-977-11	RES-CHIP	100K	5%	1/16W						
		(Not	e) (TRV128,	/TRV228/	(TRV228E)			< CONNECTOR >			
C619	1-164-943-11	CERAMIC CHIP	0.01u⊦	10%	16V						
C620	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	CN002	1-794-998-31	PIN, CONNECTOR	R 20P		
0000			o 4 E	100/	1011	CN004	1-779-328-21	CONNECTOR, FFG	C/FPC 8P		
C622	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	CN005	1-779-335-21	CONNECTOR, FFG	C/FPC 22P		
C623	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	CN006	1-766-677-21	CONNECTOR, FFC	C/FPC 16P		
C624	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	CN007	1-766-677-21	CONNECTOR, FFG	C/FPC 16P		
C708	1-124-778-00	ELECT CHIP	22u⊦	20%	6.3V						
C709	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	CN008	1-794-057-21	PIN, CONNECTOR	R (PC BOAR	D) 2P	
						CN009	1-818-072-11	CONNECTOR, FFC	C/FPC (ZIF)	30P	
C710	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	CN053	1-573-806-21	PIN, CONNECTOR	R (1.5MM)(S	3MD) 6P	
C/11	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	CN151	1-779-331-11	FFC/CONNECTOR	, FPC (LIF (NON-ZIF))) 14P
C712	1-164-856-81	CERAMIC CHIP	18PF	5%	50V	CN201	1-750-360-21	CONNECTOR, FFG	C/FPC (ZIF)	24P	
C/13	1-100-249-11	CERAMIC CHIP	0.01uF	10%	16V						
C714	1-164-856-81	CERAMIC CHIP	18PF	5%	50V	* CN401	1-580-055-21	PIN, CONNECTOR	R (SMD) 2P		
074-	4 405	0504140 0005	0 4 F	4.007	4017	CN402	1-/66-646-21	CONNECTOR, FFC	J/FPC 10P	005	
U/15	1-125-///-11		U.1uF	10%	100	CN403	1-816-1/9-11	FFC/CUNNECTOR	, FPG (ZIF) (222	
C801	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	CN404	1-/66-345-21	CUNNECTOR, FFC	J/FPC 15P		
0802	1-124-779-00		10UF	20%	16V	CN481	1-/66-64/-21	CONNECTOR, FFC	J/FPC 11P		
0805	1-124-779-00			20%							
0806	1-164-943-11	JERAMIC CHIP	0.01UF	10%	101						

Note: Resistors are mounted to the location where C617, C618 are printed. (TRV128/TRV228/TRV228E only)

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<u>Ref. No.</u>	<u>Part No.</u>	Description	Ref. No	<u>. Part No.</u>	<u>Description</u>	on	
		< DIODE >	L055	5 1-416-669-11	INDUCTO	R	22uH
D001	6 500 214 01		1.050			D	00L
DUUI	0-500-314-01					К D	22UH
D000	0-500-044-01					К D	
D007	0-000-044-01			1 409-024-91		К D	4.7UH
	6-500-776-01		1.060	1-412-030-11 1-460-594-01		n R	4.7un 4.7un
D009	0-500-770-01	DIODE MAZWO00HULSU	LUOU	1-409-524-91	INDUCIO	n	4.7 UN
D051	6-500-776-01	DIODE MAZW068H0LS0	L061	1-469-524-91	INDUCTO	R	4.7uH
D052	8-719-074-08	DIODE MA4ZD03001S0	L062	2 1-469-524-91	INDUCTO	R	4.7uH
D053	8-719-027-76	DIODE 1SS357-TPH3	L063	3 1-469-526-91	INDUCTO	R	22uH
D054	6-500-314-01	DIODE DAN222MT2L	L064	1-469-524-91	INDUCTO	R	4.7uH
D055	8-719-074-08	DIODE MA4ZD03001S0	L065	5 1-469-526-91	INDUCTO	R	22uH
D151	8-719-082-63	DIODE 1SV329 (TPL3)	L066	6 1-410-389-31	INDUCTO	R	47uH
D202	8-719-988-61	DIODE 1SS355TE-17	L151	1-400-588-11	INDUCTO	R. LAMI	NATE CHIP 10uH
D301	6-500-818-01	DIODE KV1870RTL-G	L201	1-414-398-11	INDUCTO	Ŕ	10uH
D302	6-500-818-01	DIODE KV1870RTL-G	L202	2 1-400-588-11	INDUCTO	R, LAMI	NATE CHIP 10uH
D701	8-719-988-61	DIODE 1SS355TE-17	L271	l 1-400-588-11	INDUCTO	R, LAMI	NATE CHIP 10uH
							(TRV328/TRV428/TRV428E)
		< FUSE >	1301	1_/00_588_11		RIAMI	
₫ F001	1-576-406-21		1303	0 1_400-588_11		R I AMI	
▲ F001	1-576-406-21	FUSE (1.4A/32V)	1.303	3 1-400-588-11		R I AMI	NATE CHIP 100H
▲ F002	1-576-406-21	FUSE (1 4A/32V)	1.304	1-400-588-11		R I AMI	NATE CHIP 100H
▲ F000	1-576-406-21	FUSE (1 4A/32V)	1.308	3 1-412-985-31		R	3 3uH
21001	1010 100 21		2000		1120010		0.0011
		< FERRITE BEAD >	L481	1-414-406-41	INDUCTO	R	220uH
			L482	2 1-400-197-11	INDUCTO	R	12uH
FB051	1-414-760-21	FERRITE, EMI (SMD) (1608)	L483	3 1-469-526-91	INDUCTO	R	22uH
FB151	1-414-760-21	FERRITE, EMI (SMD) (1608)	L484	1-414-406-41	INDUCTO	R	220uH
FB152	1-414-760-21	FERRITE, EMI (SMD) (1608)	L801	1-400-588-11	INDUCTO	R, LAMI	NATE CHIP 10uH
FB251	1-414-760-21	FERRITE, EMI (SMD) (1608)					
FB252	1-414-/60-21	FERRITE, EMI (SMD) (1608)			< TRANS	ISTOR >	
FB401	1-414-760-21	FERRITE, EMI (SMD) (1608)	Q00 ⁻	1 8-729-402-84	TRANSIS	TOR	XN4601
FB481	1-414-228-11	INDUCTOR, FERRITÉ BEAD	Q00	2 6-550-242-01	TRANSIS	TOR	DTC114EMT2L
FB482	1-414-228-11	INDUCTOR, FERRITE BEAD	Q05 ⁻	1 6-550-237-01	TRANSIS	TOR	2SC5658T2LQ/R
FB601	1-414-760-21	FERRITE, EMI (SMD) (1608)	Q05	2 6-550-404-01	TRANSIS	TOR	UPA1858GR-9JG-E2-A
			Q053	8-729-101-07	TRANSIS	TOR	2SB798-DL
		< 10 >	005/	4 6-550-234-01	TRANSIS	TOR	11NB3243001 S0
IC001	6-702-302-01	IC TK11133CSCI -G	005	5 6-550-406-01	TRANSIS	TOR	MCH3335-S-TI -F
IC051	6-705-264-01	IC MB44A120BPFV-G-BND-ERE1	Q05	6-550-559-01	TRANSIS	TOR	XNONE9200LS0
IC151	8-752-417-70	IC CXD2444AR-T4	Q05	7 6-550-559-01	TRANSIS	TOR	XN0NE9200LS0
IC152	8-759-699-92	IC AD80013AJSTRL	Q05	8 6-550-559-01	TRANSIS	TOR	XNONE9200LS0
IC201	8-759-637-96	IC uPD16877MA-6A5-E2					
			Q05	9 6-550-559-01	TRANSIS	TOR	XNONE9200LS0
IC202	8-759-681-42	IC NJM12902V (TE2)	Q06	0 6-550-559-01	TRANSIS	TOR	XNONE9200LS0
IC251	8-759-713-19	IC BH2222FV-E2	Q06 ⁻	1 6-550-559-01	TRANSIS	TOR	XNONE9200LS0
IC2/1	8-759-489-19	IC uPC6756GR-8JG-E2	Q06	2 6-550-560-01	TRANSIS	TOR	CPH5819-IL-E
10301	8-759-677-85	(TRV328/TRV428/TRV428/TRV428E) IC MB87M1011PFF-G-BND	Q06,	3 8-729-101-07	IRAN919	IUK	298798-DL
IC302	6-705-530-01	IC BU3097-03FV-E2	0064	4 6-550-237-01	TRANSIS	TOR	2SC5658T2LQ/R
			Q06	5 6-550-232-01	TRANSIS	TOR	2SA2029T2LQ/R
IC401	6-705-676-01	IC TB6550FG (O, EB)	Q06	6 6-550-237-01	TRANSIS	TOR	2SC5658T2LQ/R
IC481	8-752-093-69	IC CXA3265R-T4	Q06	7 6-550-232-01	TRANSIS	TOR	2SA2029T2LQ/R
IC601	6-803-730-01	IC MB91194APFF-G-153-BNDE1	Q06	8 6-550-237-01	TRANSIS	TOR	2SC5658T2LQ/R
IC602	6-705-122-01	IC BR25C320FV-WE2					
IC701	6-803-798-01	IC MB89097PFV-G-170-BND-ERE1	Q06	9 8-729-053-52	TRANSIS	TOR	HN1C01FE-Y/GR (TPLR3)
			Q07	0 8-729-053-52	TRANSIS	TOR	HN1C01FE-Y/GR (TPLR3)
IC801	6-704-790-01	IC AN12985A-VB	Q07 ⁻	1 6-550-232-01	TRANSIS	TOR	2SA2029T2LQ/R
		001	Q0/2	2 8-729-053-52	TRANSIS	TOR	HN1C01FE-Y/GR (TPLR3)
		< 501L >	UU/:	o o-729-053-54	TRANSIS	IUK	niviauire-Y/GK (IPLK3)
L051	1-416-670-11	INDUCTOR 33uH	Q074	4 8-729-053-54	TRANSIS	TOR	HN1A01FE-Y/GR (TPLR3)
L052	1-416-669-11	INDUCTOR 22uH	Q07	5 6-550-234-01	TRANSIS	TOR	UNR32A300LS0
L053	1-416-669-11	INDUCTOR 22uH	Q20 ⁻	1 6-550-758-01	TRANSIS	TOR	DTC113TMT2L
L054	1-416-670-11	INDUCTOR 33uH	Q202	2 8-729-054-51	TRANSIS	TOR	UP04116008S0
			Т	he components iden	tified by	Les co	mposants identifiés par une
			n	hark \triangle or dotted 1	ine with	marque	Δ sont critiques pour la
				eplace only with n	art num-	Ne les	remplacer que par une pièce
		5-	19 ^b	er specified.		portant	le numéro spécifié.
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<u>Ref. No.</u>	<u>Part No.</u>	Description				<u>Ref. No.</u>	<u>Part No.</u>	Description			
Q203	6-550-237-01	TRANSISTOR	2SC56581	[2LQ/R		R082	1-216-789-11	METAL CHIP	2.2	5%	1/10W
Q302	6-550-383-01	TRANSISTOR	HN4A71FI	K (TE85	R)	R083	1-218-949-11	RES-CHIP	470	5%	1/16W
Q304	8-729-054-48	TRANSISTOR	UP046010	008S0	,	R085	1-218-977-11	RES-CHIP	100K	5%	1/16W
Q306	6-550-232-01	TRANSISTOR	2SA2029T	2LQ/R		R086	1-218-973-11	RES-CHIP	47K	5%	1/16W
0401	6-550-283-01	TRANSISTOR	UNR32A6	001 S0		B087	1-218-977-11	RES-CHIP	100K	5%	1/16W
Q481	8-729-047-19	TRANSISTOR	2SA1965-	S-TL		R089	1-218-977-11	RES-CHIP	100K	5%	1/16W
Q482	6-550-232-01	TRANSISTOR	2SA20291	2LQ/R		R090	1-218-977-11	RES-CHIP	100K	5%	1/16W
Q483	8-729-054-48	TRANSISTOR	UP046010	008S0		R091	1-218-969-11	RES-CHIP	22K	5%	1/16W
0484	6-550-234-01	TRANSISTOR	LINR32A3	001 S0		B092	1-218-961-11	RES-CHIP	4 7K	5%	1/16W
0485	6-550-240-01	TRANSISTOR	DTA114TM	MT2I		B093	1-218-969-11	RES-CHIP	22K	5%	1/16W
Q701	8-729-041-43	TRANSISTOR	HN1L02FU	J (TE85	R)	R094	1-218-969-11	RES-CHIP	22K	5%	1/16W
		< RESISTOR >				R095	1-218-977-11	RES-CHIP	100K	5%	1/16W
						R096	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R001	1-218-949-11	RES-CHIP	470	5%	1/16W	R097	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R002	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	B098	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R004	1-211-977-11	METAL CHIP	22	0.5%	1/10W	B099	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R005	1-218-969-11	RES-CHIP	22K	5%	1/16W	11000	1 200 707 11		. on	0.070	1/1011
11000			2210	0,0	(TRV228F)	B100	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R005	1-918-07/-11	RES-CHIP	56K	5%	1/16W/	B101	1_208_0/3_11	METAL CHIP	2201	0.0%	1/16\
1005	1-210-3/4-11	NL3-0HIF	JUN	J /0	(TD)//00E)	D100	1 200-343-11		1001	0.5%	1/10/
					(160420E)		1-200-900-11		100K	0.0%	1/1000
DOOF	4 040 077 44		1001/	50/	4 /4 014/	RIU3	1-208-721-11		396	0.5%	
R005	1-218-9/7-11	RES-CHIP	100K	5% (TRV1	1/16W 28/TRV228)	R104	1-208-908-11	METAL CHIP	7.5K	0.5%	1/16W
B006	1-218-965-11	RES-CHIP	10K	5%	1/16W	B105	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
	. 2.0 000			(TRV3	28/TRV428)	B106	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R006	1-218-073-11	RES-CHIP	47K	5%	1/16W/	B107	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
11000	1 210 5/0 11			(TR\/1	28/TB\/228)	B100	1_218_000_11		0.21	0 /0	1/1000
DUUG	1 010 075 11		COK	(IIIVI 50/	1/16\//	D110	1 200 042 11		2201	0 50/	1/16\//
11000	1-210-975-11	NL3-0HIF	UUK	J /0	(TRV428E)	INTIO	1-200-945-11		2201	0.5 /0	1/1000
R006	1-218-977-11	RES-CHIP	100K	5%	`1/16W ´	R111	1-208-931-11	METAL CHIP	68K	0.5%	1/16W
					(TRV228E)	R114	1-216-295-91	SHORT CHIP	0		
					· · ·	R116	1-216-295-91	SHORT CHIP	0		
R007	1-208-683-11	MFTAL CHIP	1K	0.5%	1/16W	B152	1-216-864-11	SHORT CHIP	0		
R010	1-208-707-11	METAL CHIP	10K	0.5%	1/16W	B155	1-218-977-11	RES-CHIP	100K	5%	1/16W
R011	1-218-953-11	RES-CHIP	161	5%	1/16W				roon	0 /0	1/1011
R01/	1_218_0/0_11	RES_CHIP	82	5%	1/16W/	B162	1-218-080-11	RES-CHIP	1.M	5%	1/16\//
R019	1-218-0/3-11	RES-CHIP	150	5%	1/16W/	B163	1-218-000-11		0	J /0	1/1000
11010	1-210-343-11		100	J /0	1/1000	P164	1-218-085-11		170K	5%	1/16\//
D001	1 010 040 11		150	E0/	1/16/1		1 200 625 11		470K	0 F0/	1/1000
RUZ I	1-218-943-11		100	0% 50/	1/1000	R203			10	0.5%	1/1000
RU22	1-218-953-11	RES-UHIP	IK	5%	1/16W	R204	1-218-989-11	RES-CHIP	I IVI	5%	1/1600
R051	1-218-953-11	RES-CHIP	1K	5%	1/16W				0.01/	50/	
R052	1-220-200-81	RES-CHIP	30K	5%	1/16W	R205	1-218-95/-11	RES-CHIP	2.2K	5%	1/16W
R053	1-218-9//-11	RES-CHIP	100K	5%	1/16W	R206	1-218-965-11	RES-CHIP	10K	5%	1/16W
						R207	1-218-981-11	RES-CHIP	220K	5%	1/16W
R054	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R208	1-218-985-11	RES-CHIP	470K	5%	1/16W
R061	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R209	1-218-985-11	RES-CHIP	470K	5%	1/16W
R062	1-218-989-11	RES-CHIP	1M	5%	1/16W						
R063	1-218-973-11	RES-CHIP	47K	5%	1/16W	R210	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R064	1-216-797-11	METAL CHIP	10	5%	1/10W	R211	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
						R212	1-218-985-11	RES-CHIP	470K	5%	1/16W
R065	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R213	1-218-947-11	RES-CHIP	330	5%	1/16W
R066	1-218-970-11	RES-CHIP	27K	5%	1/16W	R214	1-218-953-11	RES-CHIP	1K	5%	1/16W
R067	1-218-954-11	BFS-CHIP	1.2K	5%	1/16W						
R068	1-218-963-11	RES-CHIP	6.8K	5%	1/16W	B215	1-218-965-11	RES-CHIP	10K	5%	1/16W
R069	1-218-964-11	RES-CHIP	8.2K	5%	1/16W	R216	1-218-973-11	RES-CHIP	47K	5%	1/16W
1000	. 210 004 11		0.211	0,0	1,101	R271	1-218-080-11	RES-CHIP	1M	5%	1/16\//
P070	1_010_071 11	BES-CHID	33 ⊼	50/	1/16\//	112/1	1210-303-11		יאיי (TD\/סטט	/TR///00/	TR///2001
D071	1-210-3/1-11	REG-CHID	10¥	5%	1/16\//	D070	1-218-065 11	BES-CHID	104	50/2	1/16\M
110/1	1 010 050 11		101	J /0	1/1000		1-210-900-11			J /0 /TD\//00/	
KU/2	1-218-953-11	RED-UHIP	11	5%	1/10VV	0070	1 010 005 1		(160328	/167428/	1KV428E)
KU/3	1-218-953-11	KES-CHIP	1K	5%	1/16W	R2/3	1-218-965-11	RES-CHIP	10K	5%	1/16W
KU/4	1-208-709-11	METAL CHIP	12K	0.5%	1/16W				(187328	/187428/	1KV428E)
R075	1-218-953-11	RES-CHIP	1K	5%	1/16W	R274	1-218-989-11	RES-CHIP	1M	5%	1/16W
R076	1-218-990-11	SHORT CHIP	0	2,0	.,				(TR\/328	/TRV428/	TRV428F1
R077	1-218-078-11	BES-CHIP	120K	5%	1/16W	R302	1-218-965-11	RES-CHIP	10K	5%	1/16W/
D070	1_200_370-11		1201 201ℓ	0.50/	1/16\//	D202	1_210-303-11	REQ_CHID	1 012	5%	1/16\//
110/0	1-200-710-11		ZZN	0.0%	1/10//	1 1303	1-210-904-11		1.21	J /0	1/10//

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<u>Ref. No.</u>	Part No.	Description				<u>Ref. No.</u>	<u>Part No.</u>	Description			
R306	1-218-949-11	RES-CHIP	470 5.6K	5%	1/16W	R484	1-218-970-11	RES-CHIP	27K	5%	1/16W
N307	1-210-902-11	RES-UNIP	0.0K	3 %	1/1000	D/97	1_018_070_11		97K	5%	1/16\//
D308	1-018-052-11		11/	50/	1/16\//	D/88	1-210-570-11		220	5%	1/16W
D000	1 010 000 11			576	1/1000	D 400	1 010 045 11		220	J /0	1/1000
R309	1 010 050 11		0.01	0% 50/	1/1000	R409	1-210-940-11		220	07/0 E0/	1/1000
R3IU	1-218-959-11	RES-UHIP	3.3K	5%	1/16W	R490	1-218-946-11	RES-UHIP	270	5%	1/16W
R311	1-218-941-81	RES-CHIP	100	5%	1/16W	R491	1-218-945-11	RES-CHIP	220	5%	1/16W
R314	1-218-967-11	RES-CHIP	15K	5%	1/16W						
						R492	1-218-971-11	RES-CHIP	33K	5%	1/16W
R315	1-218-952-11	RES-CHIP	820	5%	1/16W	R493	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R316	1-218-966-11	RES-CHIP	12K	5%	1/16W	R494	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R317	1-218-949-11	RES-CHIP	470	5%	1/16W	R495	1-208-939-11	METAL CHIP	150K	0.5%	1/16W
R318	1-218-945-11	RES-CHIP	220	5%	1/16W	B601	1-218-941-81	RES-CHIP	100	5%	1/16W
R310	1-218-962-11	RES-CHIP	5 6K	5%	1/16W	11001	1 210 011 01		100	0,0	1/1011
11010	1 210 302 11		0.01	0 /0	1/1000	B602	1-218-065-11	RES-CHIP	10K	5%	1/16W/
0000	1 010 066 11		101/	E0/	1/161	DC1C	1 010 050 11		101	J /0	1/10W
RJZU	1-218-900-11	RES-UHIP	12K	5%	1/1000	Rolo	1-218-953-11	RES-UHIP	IK	0% 50/	1/1000
R321	1-218-946-11	RES-CHIP	270	5%	1/16W	R619	1-218-953-11	RES-CHIP	1K	5%	1/16W
R322	1-218-946-11	RES-CHIP	270	5%	1/16W	R636	1-218-9/7-11	RES-CHIP	100K	5%	1/16W
R323	1-218-966-11	RES-CHIP	12K	5%	1/16W	R704	1-218-973-11	RES-CHIP	47K	5%	1/16W
R324	1-218-966-11	RES-CHIP	12K	5%	1/16W						
						R707	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R325	1-218-946-11	RES-CHIP	270	5%	1/16W	R708	1-218-989-11	RES-CHIP	1M	5%	1/16W
R327	1-218-966-11	RES-CHIP	12K	5%	1/16W	B709	1-219-570-11	METAL CHIP	10M	5%	1/10W
B328	1_218_0/6_11	RES-CHIP	270	5%	1/16W	B710	1_218_085_11	RES_CHIP	1701	5%	1/16W
D220	1 010 070 11		210	J /0	1/10/	D711	1 000 007 11		4701	J/0 0 E0/	1/10W
N330	1-210-9/2-11		396	3% 5%	1/1000		1-200-927-11		4/K	0.3%	1/1000
R331	1-218-989-11	RES-CHIP	TIM	5%	1/16W	5740			101/	50/	
						R/12	1-218-965-11	RES-CHIP	10K	5%	1/16W
R332	1-218-967-11	RES-CHIP	15K	5%	1/16W	R713	1-218-990-11	SHORT CHIP	0		
R333	1-218-966-11	RES-CHIP	12K	5%	1/16W	R714	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R334	1-218-949-11	RES-CHIP	470	5%	1/16W	R715	1-218-953-11	RES-CHIP	1K	5%	1/16W
R335	1-218-953-11	RES-CHIP	1K	5%	1/16W	R716	1-218-989-11	RES-CHIP	1M	5%	1/16W
B336	1-218-965-11	RES-CHIP	10K	5%	1/16W	-					
11000	1 210 000 11		TOIL	070	1/1011	B717	1-218-040-11	RES-CHIP	470	5%	1/16W
D220	1 010 057 11		0 0K	E 0/	1/16\/	D710	1 010 077 11		1001/	5%	1/16W
D044	1-210-907-11		2.2N	J /0	1/1000		1-210-9/7-11			J /0	1/1000
R341	1-218-953-11	RES-CHIP	1K	5%	1/16W	R806	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R401	1-218-973-11	RES-CHIP	47K	5%	1/16W	R807	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R402	1-218-983-11	RES-CHIP	330K	5%	1/16W	R810	1-218-965-11	RES-CHIP	10K	5%	1/16W
R403	1-218-949-11	RES-CHIP	470	5%	1/16W						
						R811	1-218-973-11	RES-CHIP	47K	5%	1/16W
R404	1-218-946-11	RES-CHIP	270	5%	1/16W	R812	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R405	1-218-990-11	SHORT CHIP	0			R815	1-218-979-11	RES-CHIP	150K	5%	1/16W
R409	1-216-808-11	METAL CHIP	82	5%	1/10W	B817	1-218-985-11	RES-CHIP	470K	5%	1/16W
R/10	1_216_780_11		22	5%	1/10W	B818	1_218_000_11		0	0 /0	1/1011
D/11	1 016 700 11		2.2	5%	1/10/	noro	1-210-330-11		0		
N411	1-210-709-11		2.2	3%	1/1000	DOIO	1 010 050 11		000	F 0/	1/10/11
B.440				50/		R819	1-218-952-11	RES-CHIP	820	5%	1/16W
R412	1-216-/89-11	METAL CHIP	2.2	5%	1/10W						
R413	1-218-965-11	RES-CHIP	10K	5%	1/16W			< COMPOSITION	CIRCUIT E	BLOCK >	
				(TRV228E	/TRV428E)						
R413	1-218-990-11	SHORT CHIP	0			RB201	1-234-375-21	RES, NETWORK	1K x 4 (100)5)	
		(TR)	/128/TR	/228/TRV32	8/TRV428)	RB202	1-234-379-21	RES. NETWORK	22K x 4 (10	005)	
R414	1-218-967-11	RES-CHIP	15K	5%	1/16W	BB203	1-234-380-21	RES NETWORK	47K x 4 (1(005)	
	1 210 007 11	/TR\	/128/TB	/228/TB\/22	8/TB\//28)	BB271	1_23/1_370_21	RES NETWORK	22K v / (10	105)	
D/1/	1 010 070 11		/120/110 /71/	50/	1/16\/	110271	1 204 075 21		/TD\/22	0/TD\//200	/TD\//200E\
N414	1-210-9/3-11	NE3-CHIP	47 K			00001	1 004 070 01		101(4 (10	0/10V420	/INV420E)
				(TRV228E	/TRV428E)	RB301	1-234-378-21	RES, NETWORK	10K X 4 (10	JU5)	
R424	1-218-965-11	RES-CHIP	10K	5%	1/16W	RB302	1-234-376-21	RES, NETWORK	2.2K x 4 (1	005)	
R426	1-218-967-11	RES-CHIP	15K	5%	1/16W	RB401	1-234-378-21	RES, NETWORK	10K x 4 (10	005)	
R427	1-218-965-11	RES-CHIP	10K	5%	1/16W	RB481	1-234-379-21	RES, NETWORK	22K x 4 (10	005)	
				(TRV228F	/TRV428F)	BB482	1-234-383-21	RES NETWORK	470K x 4 (1	1005)	
B/127	1-218-000-11	SHORT CHIP	Ο	(11112202	,	BB/83	1_23/1_376_21	RES NETWORK	2 2 K v / / 1	005)	
11421	1-210-330-11	(TD)	0 /100/TD	רכו\דם/סרי	0/TD\//200\	110400	1-204-070-21		2.21(^ 4 (1	003)	
D/01	1 010 004 44		/ 120/ IRN	1220/19132	0/1111420)	DDCO4	1 004 004 04			1005	
K431	1-216-864-11	SHOKI CHIP	U			KB601	1-234-381-21	KES, NETWORK	100K X 4 (1	1005)	
_						KB605	1-234-375-21	RES, NETWORK	1K x 4 (100	J5)	
R481	1-218-936-11	RES-CHIP	39	5%	1/16W	RB606	1-234-378-21	RES, NETWORK	10K x 4 (10	005)	
				(TRV228E	/TRV428E)	RB608	1-234-384-11	RES, NETWORK	1M x 4 (10	05)	
R481	1-218-938-11	RES-CHIP	56	5%	1/16W ⁽	RB610	1-234-377-21	RES, NETWORK	4.7K x 4 (1	005)	
		(TR\	/128/TR	/228/TRV32	8/TRV428)			-,	(TRV32	8/TRV428	/TRV428F)
R482	1-218-950-11	RES-CHIP	560	5%	1/16W				\0L		
R/82	1_218_0/1_91	RES-CHIP	100	5%	1/16\//	RR611	1-23/-381-01		1006 v 4 /1	1005)	
11-00	1 210-041-01		100	J /0	1/1010		1 207-001-21	HEO, NEI WORK	10011 7 4 (

VC-341

<u>Ref. No.</u>	<u>Part No.</u>	Description
RB612	1-234-380-21	RES, NETWORK 47K x 4 (1005)
RB701	1-234-377-21	RES. NETWORK 4.7K x 4 (1005) RES. NETWORK $470K \times 4$ (1005)
RB703	1-234-375-21	RES, NETWORK 1K x 4 (1005)
RB704	1-234-375-21	RES. NETWORK 1K x 4 (1005)
RB705	1-234-375-21	RES, NETWORK 1K x 4 (1005)
RB706	1-234-375-21	RES, NETWORK 1K x 4 (1005)
RB708	1-234-381-21	RES, NETWORK 100K x 4 (1005)
RB801	1-234-702-11	RES, NETWORK 68 x 4 (1005)
		< VIBRATOR >
X151	1-760-320-11	VIBRATOR, CRYSTAL (28.636363MHZ)
		(TRV128/TRV228/TRV328/TRV428)
X151	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz)
VCOI	1 700 000 41	
X601	1-760-655-41	
X/01	1-795-244-11	VIBRATUR, CERAMIC (10MHZ)
X702	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)

Ver. 1.2 2007.11

The changed portions from Ver. 1.1 are shown in blue.

Checking supplied accessories.



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified. Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

3-087-918-11(1)

SONY

Camera Operations Guide

Read this first



Video Camera Recorder/Digital Video Camera Recorder

нлпруслт

video Hi8 CCD-TRV128/TRV228/TRV328/TRV428 Digital 8 DCR-TRV260/TRV265



© 2004 Sony Corporation

Read this first

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For customers in the U.S.A. and CANADA

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable.

You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.



For more information regarding recycling of rechargeable batteries, call toll free 1-800-822- 8837, or visit http://www.rbrc.org/

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

For customers in the U.S.A.

If you have any questions about this product, you may call:

Sony Customer Information Center 1-800-222-SONY (7669)

The number below is for FCC related matters only. Regulatory Information

Declaration of Conformity

Trade Name: SONY Model No.: DCR-TRV260 Responsible Party: Sony Electronics Inc. Address: 680 Kinderkamack Road, Oradell, NJ 07649 U.S.A. Telephone No.: 201-930-6972 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____-TRV _____ Serial No. _____ Model No.AC-_____ Serial No.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Ø Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult a Sony dealer or an experienced radio/TV technician for help.

The interface cable supplied must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

Notes on use

Note on a cassette tape

You can use standard 8 mm 🖪 and Hi8 Hi 🕄,

Digital8 () video cassettes on your camcorder. See page 82 for details.

Notes on recording

- Before starting to record, test the recording function to make sure the picture and sound are recorded without any problems.
- Compensation for the contents of recordings cannot be provided, even if recording or playback is not possible due to a malfunction of the camcorder, etc.
- TV color systems differ depending on the country/ regions. To view your recordings on a TV, you need an NTSC system-based TV.
- Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized

recording of such materials may be contrary to the copyright laws.

Notes on the LCD panel, viewfinder, and lens

• The LCD screen and the viewfinder are manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use.

However, there may be some tiny black points and/ or bright points (white, red, blue, or green in color) that appear constantly on the LCD screen and the viewfinder.

These points are normal results of the manufacturing process and do not affect the recording in any way.

- Exposing the LCD screen, the viewfinder, or the lens to direct sunlight for long periods of time may cause malfunctions. Be careful when placing the camera near a window or outdoors.
- Do not aim at the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun only in low light conditions, such as at dusk.

Note on connecting other device

Before connecting your camcorder to other device such as a VCR or a computer with an USB or i.LINK cable, be sure to insert the connector plug in the proper direction. If you insert the connector plug forcibly in the wrong direction, the terminal may be damaged. This may cause a malfunction of your camcorder.

Notes on using this manual

- The images of the LCD screen and the viewfinder used on this manual are captured using a digital still camera, and thus may appear different from what you see.
- In this instruction manual, each model is indicated as follows.

CCD-TRV128: **Hi B** TRV128 CCD-TRV228: **Hi B** TRV228 CCD-TRV328: **Hi B** TRV328

CCD-TRV428: **HiB** TRV428

DCR-TRV260: DTRV260

DCR-TRV265: HTRV265

Instructions with no specific model names are for all models.

Instructions with specific model names are for the indicated models only.

Before you start reading this manual, check the model name of your camcorder.

• The illustrations used on this manual are based on the model DCR-TRV265.

Notes on using the camcorder

• Hold your camcorder correctly.



• To ensure a good grip, fasten the grip belt as shown in the following illustration.



- You can change the language to be used for screen display on your camcorder (p. 19).
- Do not hold the camcorder by the following parts.



Battery pack

• Turn the SEL/PUSH EXEC dial to select desired item, then press the dial to decide.



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For [] TRV260/265:

Refer also to other operating instructions supplied with your camcorder:

• Editing images with your computer →Computer Applications Guide



Quick Start Guide

Recording movies

Attach the charged battery pack to the camcorder.

To charge the battery, see page 12.

- Lift up the viewfinder.
- 2 Slide the battery pack in the direction of the arrow until it clicks.





2 Insert a cassette into the camcorder.

Slide the L OPEN/ EJECT lever in the direction of the arrow to open the lid. The cassette compartment

The cassette compartment comes out automatically.

Insert the cassette with its window-side facing up, then push the center of the back of the cassette.

Window-side

3 Press PUSH. Close the cassette lid after the cassette compartment

the cassette compartment slides back in by itself.







3 Start recording while checking the subject on the LCD screen.

The date and time is not set up in the default setting. To set the date and time, see page 17.



4 View the recorded picture on the LCD screen.





Recording/Playing back with ease

By switching to Easy Handycam operation, recording/playback operation becomes even easier.

Easy Handycam operation allows easy recording/playback for even first time users by providing only the basic functions for recording/playback.



For details, see instructions for each operation. See page 26 for recording, page 36 for playback.

RMT-830: (F) TRV265)

Step 1: Checking supplied items

Make sure you have following items supplied with your camcorder.

The number in parentheses indicates the number of that item supplied.

AC Adaptor (1)







Lens cap (1) See page 91 on how to attach the lens cap.



Shoulder strap (1) See page 94 on how to attach the shoulder strap.



Wireless Remote Commander (1) A button-type lithium battery is already installed.

RMT-833: (FII TRV228/428)





A/V connecting cable (1) Monaural: (Hi 🖸 TRV128/228/328/428)



Stereo: (F)TRV260/265)



USB cable (1) (H) TRV260/265)



Rechargeable battery pack NP-FM30 (1)

CD-ROM "SPVD-012 USB Driver" (1) (H) TRV260/265)

Camera Operations Guide (This manual) (1)

Computer Applications Guide (1) (DTRV260/265)

Step 2: Charging the battery pack

You can charge the battery by attaching the **"InfoLITHIUM" battery pack (M series)** to your camcorder.

Ø Notes

- You cannot use batteries other than the "InfoLITHIUM" battery pack (M series) (p. 83).
- Do not short-circuit the DC plug of the AC Adaptor or battery terminals with any metallic objects. This may cause a malfunction.
- Use a nearby wall outlet when using the AC Adaptor. Disconnect the AC Adaptor from the wall outlet immediately if any malfunction occurs.



To the wall outlet

1 Lift up the viewfinder.



2 Attach the battery pack by sliding it in the direction of the arrow until it clicks.



3 With the ▲ mark on the DC plug facing up, connect the AC Adaptor to the DC IN jack on your camcorder.



- 4 Connect the power cord to the AC Adaptor.
- **5** Connect the power cord to the wall outlet.
- **6** Slide the POWER switch up to (CHG) OFF.

The CHG (charge) lamp lights up and charging starts.



Getting started

After charging the battery

The CHG (charge) lamp turns off when the battery is fully charged. Disconnect the AC Adaptor from the DC IN jack.

To remove the battery pack



- **1** Lift up the viewfinder.
- **2** Set the POWER switch to (CHG) OFF.
- **3** Slide the battery pack out in the direction of the arrow while pressing the BATT (battery) release button down.

Ø Note

• If you do not use the battery pack for a long time, use up the battery pack completely before storing it. See page 83 about storage of the battery pack.

To check the remaining battery – Battery Info



You can check the battery's current charge level and its current remaining recording time both during charging or when the power is turned off.

- **1** Set the POWER switch to (CHG) OFF.
- **2** Press OPEN and open the LCD panel.

3 Press DSPL/BATT INFO.

The battery information appears for about 7 seconds.

Keep the button pressed to view it for about 20 seconds.



- **1** Battery charge level: Displays approximate remaining amount of power left in the battery pack.
- 2 Approximate possible recording time using the LCD panel.
- 3 Approximate possible recording time using the viewfinder.

Charging time

Approximate number of minutes required when you fully charge a fully discharged battery pack at 25°C (77°F). (10 - 30°C (50 - 86°F)recommended.)

Battery pack	
NP-FM30 (supplied)	145
NP-FM50	150
NP-QM71/QM71D	260
NP-QM91/QM91D	360

Recording time when recording with the LCD screen on

Approximate number of minutes available when you use a fully charged battery pack at $25^{\circ}C$ (77°F).

→ continued

For **FIE TRV128/228/328/428**:

Battery pack	Continuous recording time	Typical* recording time
NP-FM30 (supplied)	115	55
NP-FM50	185	90
NP-QM71/ QM71D	445	220
NP-QM91/ QM91D	670	335

For []) TRV260/265:

Battery pack	Continuous recording time	Typical* recording time
NP-FM30 (supplied)	90	50
NP-FM50	145	80
NP-QM71/ QM71D	335	220
NP-QM91/ QM91D	535	300

Recording time when recording with the viewfinder

Approximate number of minutes available when you use a fully charged battery pack at $25^{\circ}C$ (77°F).

For HIB TRV128/228/328/428:

Battery pack	Continuous recording time	Typical* recording time
NP-FM30 (supplied)	175	85
NP-FM50	280	135
NP-QM71/ QM71D	675	330
NP-QM91/ QM91D	1010	495

For [) TRV260/265:

Battery pack	Continuous recording time	Typical* recording time
NP-FM30 (supplied)	125	65
NP-FM50	200	105
NP-QM71/ QM71D	485	255
NP-QM91/ QM91D	725	385

* Approximate number of minutes when recording while you repeatedly record, start/stop, slide the POWER switch to change the power mode, and zoom. The actual battery life may be shorter.

Playing time

Approximate number of minutes available when you use a fully charged battery pack at 25°C (77°F).

For HiB TRV128/228/328/428:

Battery pack	LCD panel opened	LCD panel closed
NP-FM30 (supplied)	115	185
NP-FM50	185	295
NP-QM71/ QM71D	445	715
NP-QM91/ QM91D	670	1070

For DTRV260/265:

Battery pack	LCD panel opened	LCD panel closed
NP-FM30 (supplied)	100	150
NP-FM50	160	240
NP-QM71/ QM71D	390	580
NP-QM91/ QM91D	585	865

Ø Notes

- The power will not be supplied from the battery pack when the AC Adaptor is connected to the DC IN jack of your camcorder, even if its power cord is disconnected from the wall outlet.
- The recording and playback time will be shorter when you use your camcorder in low temperature.
- The CHG (charge) lamp flashes during charging, or the battery information will not be correctly displayed in following conditions.
 - The battery pack is not attached correctly.
 - The battery pack is damaged.
 - The battery pack is fully discharged. (For Battery information only.)

Using an outside power source

You can use the AC Adaptor as the power source when you do not want the battery to run out. While you are using the AC Adaptor, the battery pack will not lose its charge even when it is attached to your camcorder.

PRECAUTION

Even if your camcorder is turned off, AC power (house current) is still supplied to it while connected to the wall outlet via the AC Adaptor.

Connect your camcorder as shown in "Charging the battery pack" (p. 12).

Step 3: Turning the power on

You need to slide the POWER switch repeatedly to select the desired power mode to record or play.

When using this camcorder for the first time, the [CLOCK SET] screen appears (p. 17).

While pressing the green button, slide the POWER switch down.

The power turns on.

To enter the recording or playing mode, slide the switch repeatedly until the respective lamp for the desired power mode lights up.



- CAMERA mode: To record on a tape.
- PLAY/EDIT mode: To play or edit pictures on a tape.

To turn off the power

Slide the POWER switch up to (CHG) OFF.



Step 4: Adjusting the LCD panel and viewfinder

Adjusting the LCD panel

You can adjust the angle and brightness of the LCD panel to meet various recording situations.

Even when there are obstructions between you and the subject, you can check the subject on the LCD screen during recording by adjusting the angle of the LCD panel.



Open the LCD panel 90 degrees to the camcorder, then rotate it to the desired position.

To adjust the brightness of the LCD screen

- 1 Press MENU.
- 2 Turn the SEL/PUSH EXEC dial to select (LCD SET), then press the dial.

- **3** Turn the SEL/PUSH EXEC dial to select [LCD BRIGHT], then press the dial (p. 53).
- 4 Adjust the brightness of the LCD screen with the SEL/PUSH EXEC dial, then press the dial.
- 5 Press MENU.

ີ່ 🏹 Tips

- If you rotate the LCD panel 180 degrees to the lens side, you can close the LCD panel with the LCD screen facing out.
- If you are using the battery pack for power source, you can adjust the brightness by selecting [LCD B.L.] in the () (LCD SET) menu (p. 53).
- The recorded picture will not be affected by this setting.
- You can turn off the operation confirmation beep by setting [BEEP] in the **ETC** (OTHERS) menu to [OFF] (p. 59).

Adjusting the viewfinder

You can view images using the viewfinder when you close the LCD panel. Use the viewfinder when the battery is running out, or when the screen is hard to see.



Viewfinder lens adjustment lever

- **1** Lift up the viewfinder.
- **2** Adjust the viewfinder lens adjustment lever until the picture is clear.

Step 5: Setting the date and time

Set the date and time when using this camcorder for the first time. If you do not set the date and time, the [CLOCK SET] screen appears every time you turn on your camcorder.

Ø Note

• If you do not use your camcorder for about **3 months**, the built-in rechargeable button-type battery gets discharged and the date and time settings may be cleared from the memory. In that case, charge the rechargeable button-type battery (p. 87) and then set the date and time again.



- **1** Turn on your camcorder (p. 15).
- 2 Press OPEN and open the LCD panel. Proceed to step 6 when you set the clock for the first time.

3 Press MENU.





5 Turn the SEL/PUSH EXEC dial to select [CLOCK SET], then press the dial.



6 Turn the SEL/PUSH EXEC dial to set [Y] (year), then press the dial.



You can set any year up to the year 2079.

7 Set [M] (month), [D] (day), [H] (hour) and [M] (minute) in the same way as was done in step 6, then press the dial. For midnight, set it to 12:00 AM. For midday, set it to 12:00 PM.

Getting started

→continued

To check the preset date and time

For **Hi**[©] TRV128/228/328/428: Press DATE to display the date indicator. Press TIME to display the time indicator. Press DATE (or TIME) and then press TIME (or DATE) to simultaneously display the date and time indicator.

To hide the date and/or time indicator, press DATE and/or TIME again.

Step 6: Inserting a cassette tape

You can use standard 8 mm 🖸 and Hi8 Hi🖸, Digital8 🕑 video cassettes on your camcorder. For details on these cassettes (such as writeprotection), See page 82.

Ø Notes

• Do not force the cassette into the compartment. This may cause a malfunction of your camcorder.

• For [)TRV260/265: The recording time when you use your camcorder is half of the indicated time on Hi8 **Hi**¹ tape. If you select the [LP] mode in the menu settings, the recording time is 3/4 of the indicated time on Hi8 **Hi**¹ tape.

 Slide the OPEN/EJECT lever in the direction of the arrow and open the lid.



The cassette compartment automatically comes out and opens up.

2 Insert a cassette with its window-side facing up.



3 Press PUSH.

The cassette compartment automatically slides back in.



4 Close the lid.

To eject the cassette

- Slide the COPEN/EJECT lever in the direction of the arrow and open the lid. The cassette compartment automatically comes out.
- **2** Take out the cassette, then press PUSH. The cassette compartment automatically slides back in.
- **3** Close the lid.

Step 7: Setting the screen language

You can select the language to be used on the LCD screen.



- **1** Turn on your camcorder.
- **2** Press OPEN to open the LCD panel.

3 Press MENU.

MANUAL SET STBY TPROGRAM AE TP EFFCT AUTO SHTR E TP (MENU]: END

4 Turn the SEL/PUSH EXEC dial to select ☐ (SETUP MENU), then press the dial.



➡ continued

5 Turn the SEL/PUSH EXEC dial to select [LANGUAGE], then press the dial.

6 Turn the SEL/PUSH EXEC dial to select the desired language, then press the dial.

7 Press MENU.

Ϋ́ς Τip

• Your camcorder offers [ENG [SIMP]] (simplified English) for when you cannot find your native tongue among the options.

Recording movies

Before recording, follow steps 1 to 7 in

"Getting started" (p. 11 - p. 19).

For **HiB** TRV128/228/328/428:

Movies will be recorded along with monaural sound.

For HTRV260/265:

Movies will be recorded along with stereo sound.

Camera recording lamp



OPEN REC START/STOP POWER switch

Ø Note

• For **Hi 🛙** TRV128/228/328/428:

The date is automatically recorded for 10 seconds after you start recording (Auto date function). This function works only once a day. See page 57 for details.

Ϋ́ς Tip

• Performing Easy Handycam operation, even first time users can record easily. For details, see page 26.

1 Remove the lens cap. Pull the lens cap string down and attach it to the grip belt.



2 Press OPEN and open the LCD panel.

3 Slide the POWER switch until the CAMERA lamp lights up.

Your camcorder is set to the standby mode.



Slide the POWER switch while pressing the green button.

4 Press REC START/STOP.

Recording starts. [REC] appears on the LCD screen and the Camera recording lamp lights up. Press REC START/STOP again to stop recording.

To turn the power off

Slide the POWER switch up to (CHG) OFF.

Ϋ́Υ Tip

• If you do not use your camcorder for a long time, remove the cassette and store it.

Recording

→continued

Indicators displayed during recording

The indicators will not be recorded on the tape.

For HIB TRV128/228/328/428:



For DTRV260/265:

Date/time and camera settings data (p. 37) will not be displayed during recording.



1 Remaining battery time

The indicated time may not be correct depending on the environment of use. When you opened or closed the LCD panel, it takes about 1 minute to display the correct remaining battery time.

- **2** Recording mode (SP or LP)
- 3 Recording status ([STBY] (standby) or [REC] (recording))
- **4 Tape counter (hour: minute: second)** To set the counter to 0:00:00, press COUNTER RESET (p. 93).
- 5 Recording capacity
 For Hi⊠ TRV128/228/328/428:
 This appears after you insert a cassette and record for a while.
 For ⊕TRV260/265:
 This appears after a while when you set the manufacture of the provided set of the provid

POWER switch to CAMERA and insert a cassette.

6 Hi8 format

This appears while recording Hi8 format tapes.

7 Time code/Tape counter (hour: minute: second)/Tape photo recording

Ø Notes

- Before changing the battery pack, slide the POWER switch up to (CHG) OFF.
- In the default setting, if you do not operate the camcorder for more than about 5 minutes, the power will automatically turn off to preserve battery power ([A.SHUT OFF], p. 59). To restart recording, slide the POWER switch down to select CAMERA, and then press REC START/STOP.

ີ່ 🏹 Tips

- To ensure smooth transition on a tape from the last recorded scene to the next, note the following.
 - Do not remove the cassette. (The picture will be recorded continuously without a break even when you turn the power off.)
 - Do not record pictures in SP mode and LP mode on the same tape.
 - Avoid stopping then recording a movie in the LP mode.
- For [] TRV260/265:

The recording time, date, and the camera settings data are recorded automatically on the tape without being displayed on the screen. You can view this information during playback by selecting [DATA CODE] on the screen (p. 59).

Recording for a longer time

To record for a longer time

In the (TAPE SET) menu, select [REC MODE], then [LP] (p. 54). In the LP mode, you can record longer than when recording in the SP mode (2 times longer for HIE TRV128/228/328/428, 1.5 times longer for HTRV260/265). A tape recorded in the LP mode should be played back only on this camcorder.

Using zoom

When the CAMERA mode is selected, you can choose zoom to magnification levels greater than 20 times, and from that point activate the digital zoom ([D ZOOM], p. 47). Occasional use of the zoom is effective, but use it sparingly for best results.



* The minimum distance required between your camcorder and the subject to get a sharp focus in that position of the lever.

Move the power zoom lever slightly for a slower zoom. Move it further for a faster zoom.

To record wider range of view

Move the power zoom lever towards W. The subject appears farther away (Wide angle).

To record closer view

Move the power zoom lever towards T. The subject appears closer (Telephoto).

Using the built-in light

You can use the built-in light to suit your shooting situation. The recommended distance between the subject and camcorder is about 1.5 m (5 feet).



Press LIGHT repeatedly to select a setting.

The settings are displayed cyclically in the following order.

No indicator displayed: Always records without using the built-in light.

ŧ

ECAUTO : Automatically turns on and off according to the ambient brightness.

ECON : Always turns on.

To turn off the built-in light

Press LIGHT repeatedly until no indicator appears on the screen.

➡ continued

Ø Notes

- The built-in video light emits very bright light, which is perfectly safe in normal use. However, avoid directly aiming the light at a subject's eyes from very close range.
- The battery pack discharges quickly while the builtin light is turned on.
- When you do not use your camcorder, turn the builtin light off and remove the battery pack to avoid turning on the built-in light accidentally.
- When flickering occurs while shooting in the **ECAUTO** mode, press LIGHT until **ECON** appears.
- The built-in light may turn on/off when you use the [PROGRAM AE] or back light function while shooting in the **=CORUTO** mode.
- For **[)** TRV260/265: The built-in light is turned off during the interval time of Interval recording.
- When you use the conversion lens (optional), light from the built-in light is blocked and may not illuminate the subject properly.

Recording in mirror mode

You can turn the LCD panel towards the subject so that you and your subject can share the image being recorded. You can also utilize this function when recording yourself, to keep the attention of small children attracted to the camcorder while you record them.



Open the LCD panel 90 degrees to the camcorder, then rotate it 180 degrees towards the subject.

A mirror-image of the subject appears on the LCD screen, but the picture will be normal when recorded.

Ø Notes

For Field TRV128/228/328/428:

- During recording in the mirror mode, DATE and TIME on your camcorder do not work.

Superimposing the date and time on pictures (FII: TRV128/228/328 /428)

You can record the date and/or time displayed on the screen superimposed on the picture.



Press DATE to record the date. Press TIME to record the time. Press DATE (or TIME), then press TIME (or DATE) to record the date and time.

To hide the date and time, press DATE and/or TIME again.

When you purchase your camcorder, the clock is not set up yet. Set the date and time to your local time before using (p. 17).

Ø Note

• The date and time indicators recorded manually cannot be deleted.

Ϋ́ Тір

 If you do not record the date and time in the picture, record the date and time in the black screen as the background for about 10 seconds, then erase the date and time indicators before starting actual recording.

Recording still images

- Tape photo recording (F) TRV260/265)

You can record still images. Before recording, follow steps 1 to 7 in "Getting started" (p. 11 - p. 19).



- **1** Remove the lens cap. Pull the lens cap string down and attach it to the grip belt.



2 Press OPEN and open the LCD panel.

➡ continued

3 Slide the POWER switch to select the CAMERA mode.





Slide the POWER switch while pressing the areen button.

4 Press and hold PHOTO lightly.

You will hear a small beep sound, and the picture will become a still image. Recording does not start at this point.

- = 60min	SP CAPTURE	The indicator appears

5 Press PHOTO fully.

A shutter sound is heard, and the image is recorded with sound for 7 seconds. The still image is displayed on the screen until recording is completed.

To turn the power off

Slide the POWER switch up to (CHG) OFF.

() Note

• $\bigcirc \bigcirc \bigcirc$ appears when the tape photo recording does not work.

ΫTip

· You can record about 510 images in the SP mode and about 765 images in the LP mode on a tape which can record for 60 minutes in the SP mode

Recording with ease

- Easy Handycam

With this Easy Handycam operation, most of the camera settings are set to automatic mode, only basic functions become available. and screen font size increases for easy viewing. Even first time users can enjoy easy recording. Before recording, follow steps 1 to 7 in "Getting started" (p. 11 - p. 19).

Camera recording lamp EASY POWER switch



OPEN

REC START/STOP

ΰŤΤip

· Buttons that do not work during Easy Handycam operation have a dot beside them on your camcorder. Also, only menu items that are available during Easy Handycam operation are displayed when MENU is pressed.

1 Remove the lens cap. Pull the lens cap string down and attach it to the grip belt.

2 Press OPEN and open the LCD panel.

3 Slide the POWER switch to select the CAMERA mode.

You can record movies only.

4 Press EASY.

EASY lights up in blue.

5 Press REC START/STOP.

Recording starts. [REC] appears on the LCD screen and the Camera recording lamp lights up. Press REC START/STOP again to stop recording.

To turn the power off

Slide the POWER switch up to (CHG) OFF.

To cancel Easy Handycam operation

Press EASY again.

Ø Notes

- You cannot switch from/to Easy Handycam operation during recording.
- For DTRV260/265: During Easy Handycam operation, you cannot connect the USB cable to your camcorder.
- For DTRV260/265: You cannot use Easy Handycam operation together with USB Streaming.
- All the settings return to their defaults during Easy Handycam operation. Previously made settings are restored when you cancel Easy Handycam operation.

Adjusting the exposure

The exposure is adjusted automatically in the default setting.

Adjusting the exposure for backlit subjects

When your subject has its back to the sun or other light, you can adjust the exposure to prevent the subject from becoming shadowed.



Press BACK LIGHT in CAMERA mode.

☑ appears.

To cancel the back light function, press BACK LIGHT again.

Ø Note

• The back light function is canceled when you press EXPOSURE (p. 28).

➡ continued

Adjusting the exposure manually

You can fix the brightness of a picture at the best exposure. When recording indoors on a clear day, for instance, you can avoid backlight shadows on people next to the window by manually fixing the exposure to that of the wall side of the room.



1 Press EXPOSURE in CAMERA mode.

The exposure indicator appears on the screen.

2 Turn the SEL/PUSH EXEC dial to adjust the brightness.



While exposure is set to manual mode, $rac{l}$ is displayed in the left-hand corner of the screen.

To return the setting to automatic exposure

Press EXPOSURE.

Recording in dark places

- NightShot plus

You can record subjects in dark places (such as when capturing the face of your baby sleeping) with this function.



Set the NIGHTSHOT PLUS switch to ON.

Image: The second se

Ø Notes

- Do not use the NightShot plus function in bright places. This may cause a malfunction.
- You cannot use the NightShot plus function together with:
 - [PROGRAM AE]
 - Manual exposure
- Adjust the focus manually when it is hard to focus automatically.
- Do not cover the infrared port with your fingers or other objects. Remove the conversion lens (optional) if it is attached.
- Depending on the shooting conditions or circumstances, colors may not be reproduced properly.

Ϋ́Tip

 If you record subjects in complete darkness, set [N.S. LIGHT] to [ON] in the menu settings. The maximum shooting distance using the NightShot Light is about 3 meters (10 feet). If you record subjects in dark places (such as night scene or in moonlight), set [N.S. LIGHT] to [OFF] in the menu settings. You can make image color deeper (p. 50).

Adjusting the focus manually

The focus is adjusted automatically in the default setting.

You can adjust the focus manually according to the recording conditions.

Use this function in the following cases.

- To record a subject behind a window covered with raindrops.
- To record horizontal stripes.
- To record a subject with little contrast between the subject and its background.
- When you want to focus on a subject in the background.



- To record a stationary subject using a tripod.



Press FOCUS in CAMERA mode. (B) appears.

2 Turn the SEL/PUSH EXEC dial to sharpen focus.

C changes to \blacktriangle when the focus cannot be adjusted any further. C changes to \bigstar when the focus cannot be adjusted any closer.

Recording

Tips for focusing manually

- It is easier to focus on the subject when you use the zoom function. Move the power zoom lever towards T (telephoto) to adjust the focus, and then, towards W (wide angle) to adjust the zoom for recording.
- When you want to record a close-up image of a subject, move the power zoom lever towards W (wide angle) to fully magnify the image, then adjust the focus.

To adjust the focus automatically

Press FOCUS again.

Recording a picture using various effects



Fading in and out of a scene – FADER

You can add the following effects to currently recording pictures.



[STRIPE FADER]

This feature is for **HiB** TRV128/228/328/428 only.



[MONOTONE FADER]

When fading in, the picture gradually changes from black-and-white to color.

When fading out, the picture gradually changes from color to black-and-white.

- **1** Slide the POWER switch to select the CAMERA mode.
- **2** Press FADER until the desired fader indicator flashes in the standby mode (to fade in) or during recording (to fade out).



3 Press REC START/STOP.

The fader indicator stops flashing and disappears when the fade is complete.

To cancel the operation

In step 2, press FADER repeatedly until the indicator disappears.

Ø Notes

- For [) TRV260/265:
 - You cannot use the FADER function together with:
 - Tape photo recording
 - [FRAME REC] (Frame recording)
 - [INT. REC] (Interval recording)
- Titles do not fade in or fade out. The date and time indicator for **Hig TRV128/228/328/428** also does not fade in or fade out.

Erase them before operating the FADER function if they are not needed.

Superimposing a title

You can insert a title when recording. You can select one of the 8 preset titles and the 2 custom titles.



1 Slide the POWER switch to select the CAMERA mode, then press TITLE.

Select a desired title from the displayed titles (2 original titles that you have created before and the preset titles that have been stored in your camcorder). You can create original titles (up to 2 types of title of within 20 characters each) in the following procedure.

1 Turn the SEL/PUSH EXEC dial to select [CUSTOM1""] or [CUSTOM2""], then press the dial.



- **2** Turn the SEL/PUSH EXEC dial to select [CREATE/EDIT], then press the dial.
- **3** Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
4 Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.

TITLE SET S	P1	STBY
ABCDE 12345 FGHIJ 67890 KLMNO ÁĚLOÚ PORET ÁĚLOÚ UVWXY ÁĚDÆ Z& ?! ÁČNÝS ',/– ÁLOÚÁ [TITLE]: END	\$f¥000£ ¿iø" [← [→P2 [O K	

To erase a character: Select $[\leftarrow]$. To enter a space: Select [Z& ? !], then select the blank part between & and ?. To select alphabet and Russian characters: Select $[\rightarrow P2]$.

- **5** Turn the SEL/PUSH EXEC dial to select the next character, and enter the character in the same manner.
- **6** When you have finished entering characters, turn the SEL/PUSH EXEC dial to select [O K], then press the dial. The title is stored in memory.

2 Turn the SEL/PUSH EXEC dial to select the title you want to insert, then press the dial.

To insert an original title, turn the SEL/ PUSH EXEC dial to select [CUSTOM1""] or [CUSTOM2""], and press the dial, then select [OK] and press the dial.

3 Change [COLOR], [SIZE], or [POSITION] as necessary.

- 1 Turn the SEL/PUSH EXEC dial to select [COLOR], [SIZE], or [POSITION], then press the dial. The selected item appears on the screen.
- **2** Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
- **3** Repeat steps 1 and 2 until the title is laid out as desired.

[COLOR] (color) [WHITE] \leftrightarrow [YELLOW] \leftrightarrow [VIOLET] \leftrightarrow [RED] \leftrightarrow [CYAN] \leftrightarrow [GREEN] \leftrightarrow [BLUE] [SIZE] (size) [SMALL] \leftrightarrow [LARGE] (You can only select [SMALL] when you are entering more than 13 characters.) [**POSITION**] (position) You can select from 8 to 9 choices.

- 4 Turn the SEL/PUSH EXEC dial to select [OK], then press the dial. The title appears.
- **5** Press REC START/STOP.
- 6 Press TITLE at the scene you want to erase the title off.

To superimpose the title while you are recording

Press TITLE and carry out steps 2 to 4. When you press the SEL/PUSH EXEC dial at step 4, the title is recorded.

Ø Notes

- If you display the menu while superimposing a title, the title is not recorded while the menu is displayed.
- When you are selecting and setting the title, the title displayed on the screen is not recorded.
- When you superimpose a title while you are recording, the beep does not sound.
- When you are using your camcorder on the battery pack and do not operate it for 5 minutes, the power automatically goes off as the default setting. If you may take 5 minutes or longer to enter characters, set [A.SHUT OFF] in the ETO (OTHERS) menu to [NEVER] (p. 59). The power will not to be turn off. Even though the power goes off, the characters you have entered remain stored in memory. Turn the power back on, then start again from step 1 to continue superimposing the title.
- For **HIG** TRV128/228/328/428: The date and time, or either of them, may not be displayed depending on the size or position of the title.

Ϋ́Tip

• To change a created title, select the title in step 1, then press the SEL/PUSH EXEC dial. Then reselect the characters again.

Searching for the last scene of the most recent recording

- END SEARCH

This function is handy when you have played back the tape, for example, but want to start recording right after the most recently recorded scene. The END SEARCH function will not work once you eject the cassette after you have recorded on the tape.



1 Slide the POWER switch to select the CAMERA mode.

2 Press END SEARCH.

The last scene of the most recent recording is played back for about 5 seconds, and the camcorder enters the standby mode at the point where the last recording has finished.

To cancel the operation

Press END SEARCH again.

Ø Note

 The END SEARCH function will not work correctly when there is a blank section between recorded sections on the tape.

Ϋ́ΎTip

• When PLAY/EDIT mode is selected, you can do this operation by pressing END SEARCH.

Viewing pictures recorded on a tape

Make sure you have a recorded cassette inserted into your camcorder. When you want to play back the recorded picture on your TV, see page 39. For Hig TRV228/428/ DTRV265: You can control playback using the Remote Commander.



Ϋ́Υ Tip

• Performing Easy Handycam operation, even first time users can play back easily. For details, see page 36.

1 Press OPEN and open the LCD panel.

2 Slide the POWER switch repeatedly to select the PLAY/EDIT mode.



Slide the POWER switch while pressing the green button. **3** Press (rewind) to go to the point you want to view.

4 Press 🗩 (play) to start playback.

To adjust the volume

Press either of the two buttons on VOLUME. When you close the LCD panel, sound is turned off.

-: To turn the volume down

(+):To turn the volume up

To stop playback

Press (I) (stop).

To pause

Press (II) (pause) during playback. Press (II) (pause) or (II) (play) to restart the playback.

Playback stops automatically when pause mode continues for a few minutes.

To fast forward or rewind

Press (fast forward) or (rewind) in stop mode.

To review movies on the viewfinder Close the LCD panel.

Indicators displayed during playing back

For HIB TRV128/228/328/428:



Playback



- **1** Remaining battery time
- **2** Recording mode (SP or LP)
- **3** Tape transport indicator
- **4** Tape counter (hour: minute: second)
- 5 Hi8 format

This appears while playing back Hi8 format tapes.

6 Time code (hour: minute: second: frame) or tape counter (hour: minute: second)

Ø Note

• For HTRV260/265:

If you use a standard 8 mm 🖪 tape, be sure to play back the tape on your camcorder. Mosaic noise may appear when you play back the standard 8 mm 🕄 tape on other camcorders (including another DCR-TRV260/TRV265).

Playing back in various modes

To fast forward or rewind during playback – Picture search

Keep on pressing (fast forward) or (rewind) during playback.

To resume normal playback, release the button.

To view the picture while fast forwarding or rewinding – Skip scan

Keep on pressing (F) (fast forward) or ((rewind)) while fast forwarding or rewinding the tape.

To resume fast forwarding or rewinding, release the button.

To view pictures at slow speed (slow playback)*

For **Hi**¹ TRV228/428/ DTRV265:

Press SLOW I> on the Remote Commander during playback. To resume normal playback, press PLAY.

* For [) TRV265:

Pictures output from the **b** DV Interface cannot be played back smoothly in the slow mode.

Ø Notes

• For **Fig TRV228/428**:

If slow playback lasts for about 1 minute, the camcorder automatically returns to normal speed playback.

- For Hig TRV128/228/328/428: When you play back a tape recorded in the LP mode, noise may appear on the LCD screen in the following cases:
 - Slow playback (Hi 🕄 TRV228/428)
 - Playback pause
 - Picture search

Playing back with ease

– Easy Handycam

Easy Handycam operation allows easy playback for even first time users by providing only the basic functions for playback. Also screen font size increases for easy viewing. Make sure you have a recorded cassette inserted into your camcorder.



Ϋ́Υ Tip

- Buttons that do not work during Easy Handycam operation have a dot beside them on your camcorder. Also, only menu items that are available during Easy Handycam operation are displayed when MENU is pressed.
- **1** Press OPEN and open the LCD panel.

2 Slide the POWER switch repeatedly to select the PLAY/EDIT mode.

3 Press EASY.

EASY lights up in blue.

Easy Handycam operation ON

4 Play back a tape.

The following buttons can be operated. (play)/() (stop)/() (pause)/ (fast forward)/() (rewind) For Hig TRV228/428/ () TRV265: You can operate those operations and SLOW > on the Remote Commander.

To cancel Easy Handycam operation

Press EASY again.

Ø Notes

For HTRV260/265:

- During Easy Handycam operation, you cannot connect the USB cable to your camcorder.
- You cannot use Easy Handycam operation together with USB Streaming.

Various playback functions

You can display the recorded date on the screen.



Displaying the screen indicators

You can choose to display the time code, tape counter, and other information on the screen.

Press DSPL/BATT INFO.

The indicators appear/disappear as you press the button.

ີ່ 🏹 Tips

- For **HIG** TRV228/428/ **()** TRV265: You can display the screen indicators by pressing DISPLAY on the Remote Commander.
- You can display the screen indicators during playback on a TV. Select the ETC (OTHERS) menu, [DISPLAY], then [V-OUT/LCD] (p. 60).

Displaying the date/time and camera settings data – Data code (⊕TRV260/265)

During playback, you can view the date/time data ([DATE/TIME]) and the camera settings data ([CAM DATA]) that are automatically recorded while recording pictures on a tape.

- **1** Slide the POWER switch repeatedly to select the PLAY/EDIT mode.
- 2 Press MENU during playback or playback pause.
- **3** Turn the SEL/PUSH EXEC dial to select **ETC** (OTHERS), then press the dial.
- **4** Turn the SEL/PUSH EXEC dial to select [DATA CODE], then press the dial.

OTHERS TO DATA CODE OFF TO WORLD TIME DATE/TIME TO BERLOW CAM DATA COMMANDER EFFO DISPLAY VIDEO EDIT PRETURN
[MENU] : END

5 Turn the SEL/PUSH EXEC dial to select the [DATE/TIME] or [CAM DATA], then press the dial.

6 Press MENU.



To hide the date/time or the camera settings data

Follow steps 2 to 4, and select [OFF] in step 5.

Camera settings data display

In the date/time data display, the date and time is displayed in the same area.

If you record the picture without setting the clock, [--- --] and [--:--] will appear.



- **1** SteadyShot off
- **2** Exposure
- **3** White balance
- 4 Gain
- **5** Shutter speed
- 6 Aperture value

Playing the picture on a TV

Connect your camcorder to a TV using the supplied A/V connecting cable as shown in the following illustration. Connect the supplied AC Adaptor to the wall outlet for the power supply (p. 12).

Refer also to the instruction manuals supplied with the devices to be connected.

To copy to another tape, see page 63.



For FII ETRV128/228/328/428:





➡ continued

* When there is an S video jack on the device to be connected, connect the S video plug to that jack instead of using the yellow video plug. The audio will not be output when you connect with the S video plug alone.

Pictures can be reproduced more faithfully with this connection.

When your TV is connected to a VCR

Connect your camcorder to the LINE IN input on the VCR using the A/V connecting cable. Set the input selector on the VCR to LINE.

To connect to a TV without audio/video input jacks

For HIB TRV128/228/328/428:

Use a NTSC system RFU adaptor (optional). Refer to the operating instructions of your TV and the RFU adaptor.

When your TV is stereo

For HIB TRV128/228/328/428:

Connect the audio plug of the A/V connecting cable to the left (white) input jack of your TV.

When your TV is monaural (When your TV has only one audio input jack)

For HTRV260/265:

Connect the yellow plug of the A/V connecting cable to the video input jack and connect the white or the red plug to the audio input jack of your TV or VCR.

When you want to play the sound in monaural mode, use a connecting cable (optional) for that purpose.

Locating a scene on a tape for playback

(I) TRV265)

Searching quickly for a desired scene – Zero set memory



1 During playback, press ZERO SET MEMORY on the Remote Commander at the point you want to locate later on.

The tape counter is reset to "0:00:00" and +0+ appears on the screen. If the tape counter is not displayed, press DISPLAY on the Remote Commander.

2 Press STOP when you want to stop playback.

3 Press **4** REW.

The tape stops automatically when the tape counter reaches "0:00:00."

4 Press PLAY.

The playback starts from the point designated "0:00:00" on the tape counter.

To cancel the operation

Press ZERO SET MEMORY on the Remote Commander again.

Ø Notes

- There may be a discrepancy of several seconds between the time code and the tape counter.
- Zero set memory will not function correctly if there is a blank section between recorded sections on the tape.

Searching for a scene by date of recording – Date search

You can locate the point where the recording date changes.



- **1** Slide the POWER switch repeatedly to select the PLAY/EDIT mode.
- 2 Press SEARCH M. on the Remote Commander repeatedly to select [DATE SEARCH].
- **3** Press I◄◀ (previous)/►►I (next) on the Remote Commander to select a recording date.

Playback starts automatically from the point where the date changes. Each time you press the button, the previous or the next date will be searched for and displayed.

To cancel the operation

Press STOP on the Remote Commander.

Ø Notes

• If one day's recording is less than 2 minutes, your camcorder may not accurately find the point where the recording date changes.

• The Date search will not function correctly when there is a blank section between recorded sections on the tape.

Searching for a still image – Photo search

You can locate the still image you have recorded on a tape.



- **1** Slide the POWER switch repeatedly to select the PLAY/EDIT mode.
- 2 Press SEARCH M. on the Remote Commander repeatedly to select [PHOTO SEARCH].
- 3 Press I ← (previous)/ ►► I (next) on the Remote Commander to select the photo for playback.

Playback of the photo starts automatically. Each time you press the button, the previous or the next photo will be searched for and displayed.

To cancel the operation

Press STOP on the Remote Commander.

Ø Note

• If a tape has a blank section between recorded sections, the Photo search function may not work correctly.

Playing back still images in sequence – Photo scan

You can also locate still images one after another and display each image for 5 seconds automatically.



- **1** Slide the POWER switch repeatedly to select the PLAY/EDIT mode.
- **2** Press SEARCH M. on the Remote Commander repeatedly to select [PHOTO SCAN].
- **3** Press I ← (previous)/ ►► I (next) on the Remote Commander.

Each photo will be played back for about 5 seconds.

To cancel the operation

Press STOP on the Remote Commander.

Ø Note

• If a tape has a blank section between recorded sections, the Photo scan function may not work correctly.

► Advanced operations

Customizing Your Camcorder

Changing the menu settings

You can change various settings or make detailed adjustments using the menu items displayed on the screen.



SEL/PUSH EXEC dial POWER switch

1 Turn on the power (p. 15).

2 Press MENU.

The menu screen appears.



3 Turn the SEL/PUSH EXEC dial to select desired menu, then press the dial.

MANUAL SET (p. 44)
 CAMERA SET (p. 47)
 PLAYER SET (p. 51) (Hit TRV128/228/328/428)
 VCR SET (p. 51) (HTRV260/265)
 LCD SET (p. 53)
 TAPE SET (p. 54)
 SETUP MENU (p. 57)

ETC OTHERS (p. 59)



4 Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.

The available menu items vary depending on the position of the POWER switch. Unavailable items will be grayed out.



5 Turn the SEL/PUSH EXEC dial to select the desired mode, then press the dial.



6 Press MENU to hide the menu screen.

If you want to change other items, select $[\rightarrow \text{RETURN}]$ and press the dial, then repeat steps from 3 to 5.

Using the m (MANUAL SET) menu - PROGRAM AE/P EFFECT, etc.

You can select items listed below in the MANUAL SET menu. To select these items, see "Changing the menu settings" (p. 43).

The default settings are marked with \triangleright . The settings you can adjust vary depending on the power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

MANUAL SET PROGRAM AE AUTO SHTR Control S	
[MENU] : END	

PROGRAM AE

You can record pictures easily in a situation that requires various techniques by selecting the following settings.

⊳ AUTO	Select this when not using PROGRAM AE.	
SPOTLIGHT* (spotlight) (骨)	Select to prevent people's faces from appearing excessively white when subjects are lit by strong light, such as in a theater or at a wedding.	J.
PORTRAIT (soft portrait) (♣ऀ)	Select to bring out the subject such as people or flowers while creating a soft background.	
SPORTS* (sports lesson) (ฦิ)	Select to minimize shake when shooting fast- moving subjects such as in tennis or golf.	4-
BEACH&SKI* (beach & ski)(🎓)	Select to prevent people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.	**
SUNSETMOON ** (sunset & moon) (e C)	Select to maintain the atmosphere of situations such as sunsets, general night views, fireworks, and neon signs.	
LANDSCAPE** (landscape) (🛋)	Select when shooting distant subjects such as mountains. This setting also prevents your camcorder from focusing on glass or metal mesh in windows that comes in between the camcorder and the subject.	

* Your camcorder is adjusted to focus only on subjects in the middle to far distance.

**Your camcorder is adjusted to focus only on distant subjects.

Ø Note

• When you set the NIGHTSHOT PLUS switch to ON, [PROGRAM AE] does not work. (The indicator flashes.)

P EFFECT

For **Hi** B TRV128/228/328/428:

You can add special effects (such as films) to a picture before recording. \overline{p}^* , appears when each effect is selected.

For DTRV260/265:

You can add special effects (such as films) to a picture before or after recording. $\boxed{P^+}$ appears when each effect is selected.

⊳OFF	Select when not using the Picture effect setting.	
NEG.ART	Select to record/play the picture with the color and brightness of the picture reversed.	×
SEPIA	Select to record/play the picture appearing in sepi	a.
B&W	Select to record/play the picture appearing in mor and-white).	nochrome (black-
SOLARIZE	Select to record/play the picture looking like an illustration with strong contrast.	
SLIM	Select to record the picture appearing vertically expanded. (This effect is not available during playback.)	*
STRETCH	Select to record the picture appearing horizontally expanded. (This effect is not available during playback.)	**
PASTEL	Select to record the picture looking like a pale pastel drawing. (This effect is not available during playback.)	- Alex
MOSAIC	Select to record the picture appearing mosaic- patterned. (This effect is not available during playback.)	

Ø Note

• For DTRV260/265:

You cannot add effects to externally input pictures. Also, you cannot output pictures edited with Picture effects via the **i** DV Interface.

→ continued

[†] TipYou can copy pictures edited using picture effects to another tape (p. 63).

AUTO SHTR

⊳ON	Select to automatically activate the electronic shutter to adjust the shutter speed when recording in bright conditions.
OFF	Select when recording without using the electronic shutter.

Using the C (CAMERA SET) menu - 16:9 WIDE/STEADYSHOT, etc.

You can select items listed below in the CAMERA SET menu. To select these items, see "Changing the menu settings" (p. 43). The default settings are marked with \triangleright . The settings you can adjust vary depending on the power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

CAMERA SET COMERA SET SET COMERA SET SET COMERA SET SET COMERA SET COMERA SET CO
[MENU] : END

D ZOOM

You can select the maximum zoom level in case you want to zoom to a level greater than 20 times while recording on a tape. Note that the image quality decreases when you are using the digital zoom. This function is useful when recording enlarged pictures of a distant subject, such as a bird.

WI	 The right side of the bar shows the digital zooming zone. The zooming zone appears when you select the zooming level.
⊳OFF	Select to deactivate the digital zoom. Up to 20 times zoom is performed optically.
40 ×	Select to activate the digital zoom. 20 times through 40 times zoom is performed digitally.
990 ×	Select to activate the digital zoom. 20 times through 990 times zoom is performed digitally

For **Hi** B TRV128/228/328/428:

You can record a cinema-like picture ([CINEMA] mode) or a 16:9 wide picture ([16:9 FULL] mode) to watch on the 16:9 wide-screen TV. Refer also to the manuals supplied with your TV. In [CINEMA] mode

When viewed on the LCD screen/viewfinder



In [16:9 FULL] mode When viewed on the LCD screen/viewfinder



 * Picture appears in full screen when the wide-screen TV switches to full mode.
 **Played in 4:3 mode. When you play a picture in the wide mode, it appears as you have seen on the LCD screen or in the viewfinder.

⊳OFF	Standard setting (to record pictures to play back on a 4:3 TV). The recorded picture will not be wide.
CINEMA (<u>16:9</u>)	Select to record a picture to be played back in CINEMA mode.
16:9 FULL (<u>16:9</u>)	Select to record a picture to be played back on a 16:9 wide TV.

ប៉្ត៍ Tips

- The ID-1 system sends aspect ratio information (16:9, 4:3, or letter box) by inserting signals between video signals.
- When you record in the [16:9 FULL], the date or time indicator will be widened on widescreen TVs.
- For **Hill** TRV328/428:

The SteadyShot does not work. If you set [16:9 FULL] in the menu settings when the SteadyShot is working, "" flashes and the SteadyShot does not function.

For DTRV260/265:

You can record a 16:9 wide picture on the tape to watch on a 16:9 wide-screen TV ([16:9 WIDE] mode).

With this function [ON], your camcorder offers even wider angles when you move the power zoom lever to the "W" side than recording in [OFF]. When you connect your camcorder to the S video input jack of a TV compatible with the ID-1/ID-2 system and play the tape, the TV switches to full mode

automatically.

Refer also to the manuals supplied with your TV.

When viewed on the LCD screen



* Picture appears in full screen when the wide-screen TV switches to full mode.

**In 4:3 mode. When you play a picture in the wide mode, it appears as you have seen on the LCD screen.

⊳OFF	Standard setting (to record pictures to play back on a 4:3 TV). The recorded picture will not be wide.
ON (<u>16:9</u>)	Select to record a picture to be played back on a 16:9 wide TV. The recorded picture will be played in full mode when you connect to your TV using an S (S1) video input jack compatible with ID-1/ID-2 systems.

ີ່ 🏹 Tips

- The ID-1 system sends aspect ratio information (16:9, 4:3, or letter box) by inserting signals between video signals.
- The ID-2 system sends a copyright protection signal with the ID-1 signals inserted between video signals in an analog connection.
- S1 video sends information with the standard S video signal to select wide mode automatically.
- The SteadyShot does not work. If you set [16:9 WIDE] to [ON] in the menu settings when the SteadyShot is working "" flashes and the SteadyShot does not function.

→continued

For **HiB** TRV328/428/ **H** TRV260/265:

You can select this function to compensate for camera-shake.

⊳ON	Standard setting (enable the SteadyShot function). If you select a function that STEADYSHOT cannot work with, "" appears.	
OFF (″₩҈)	Select to deactivate the SteadyShot function. Select to shoot a stationary subject with a tripod, or when using a conversion lens (optional). Natural pictures are produced.	

Ø Note

• For HTRV260/265:

- Camera-shake cannot be completely compensated for in the following cases:
- When recording in a dark place
- When recording a subject with little contrast to the background
- When recording horizontal stripes
- When using the zoom
- When recording a fast moving subject
- When the zoom position is set to the W-end side

N.S. LIGHT

When using the NightShot plus function to record, you can record clearer pictures by using the NightShot Light to emit infrared rays (invisible).

⊳ON	Select to use the NightShot Light. (p. 28)
OFF	Select to disable the NightShot Light. (p. 28)

Using the (PLAYER SET)/ (VCR SET) (VCR SET) (VCR SET)

You can select the items listed below in the menu (the PLAYER SET menu for Hite TRV128/228/328/428, the VCR SET menu for HTRV260/265.) To select these items, see "Changing the menu settings" (p. 43).

The default settings are marked with \triangleright . The settings you can adjust vary depending on the power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

VCR SET III HIFI SOUND III AUDIO MIX IIII IIII IIIII IIIIIIIIIIIIIIII	
[MENU] : END	

HiFi SOUND

For [+) TRV260/265:

You can select how to play back audio recorded on a tape in stereo mode.

⊳STEREO	Select to play back a stereo tape or dual sound track tape with main and sub sound.
1	Select to play back a stereo tape with the left channel sound or a dual sound track tape with main sound.
2	Select to play back a stereo tape with the right channel sound or a dual sound track tape with sub sound.

O Notes

- You can playback a dual sound track cassette on this camcorder. However, you cannot record a dual sound track on this camcorder.
- The setting returns to [STEREO] when you disconnect the power source from your camcorder for more than 5 minutes.

EDIT

For HIB TRV128/228/328/428:

Picture degradation is minimized when you dub or edit a tape using the camcorder as the playback device.

⊳OFF	Select this for no compensation.
ON	Select to minimize picture degradation.

Ø Note

• The setting returns to [OFF] when you disconnect the power source from your camcorder for more than 5 minutes.

For HiB TRV128/228/328/428:

⊳ON	Select to correct jitter (horizontal picture shake during playback).
OFF	Select to not compensate picture distortion when playing back a tape on which you have dubbed repeatedly or recorded TV game signals.

DNR

For HIB TRV128/228/328/428:

⊳ON	Select to eliminate color noise in the picture.
OFF	Select to minimize picture artifacts in a picture containing lots of movement.

AUDIO MIX

For **H**TRV260/265:

You can adjust the audio balance between ST1 (the originally recorded sound) and ST2.

Ø Notes

- You cannot adjust sound recorded in 16 bit audio mode.
- Only the originally recorded sound will be heard when you disconnect the power source from your camcorder for more than 5 minutes.

Using the **(LCD** SET) menu – LCD B.L./LCD COLOR, etc.

You can select the items listed below in the LCD SET menu. To select these items, see "Changing the menu settings" (p. 43).

The default settings are marked with \triangleright . The settings you can adjust vary depending on the power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

LCD SET CD BRIGHT CD B.L. CD B.L. CCD COLOR CD CD CD CD CD CD CD CD CD CD	
[MENU] : END	

LCD BRIGHT

See page 16 for details.

LCD B.L.

You can adjust the brightness of the LCD screen's backlight. The recorded picture will not be affected by this setting.

▷BRT NORMAL	Standard brightness.
BRIGHT	Select to brighten the LCD screen.

Ø Notes

- When you connect your camcorder to outside power sources, [BRIGHT] is automatically selected for the setting.
- When you select [BRIGHT], battery life is reduced by about 10 percent during recording.

LCD COLOR

Turn the SEL/PUSH EXEC dial to adjust the color on the LCD screen. The recorded picture will not be affected by this setting.

Using the code (TAPE SET) menu – FRAME REC/ INT.REC, etc.

You can select items listed below in the TAPE SET menu. To select items, see "Changing the menu settings" (p. 43).

The default settings are marked with \triangleright . The settings you can adjust vary depending on the

REC MODE

power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

TAPE SET TREC MODE G AUDIO MODE G SEREMAIN G FRAME REC En INT. REC Fr P	
[MENU] : END	

⊳SP (<u>sp</u>)	Select to record in the SP (Standard Play) mode on a cassette.
LP (<u>LP</u>)	Select to increase the recording time from that of the SP mode (2 times longer for Hi 🖸 TRV128/228/328/428, 1.5 times longer for H TRV260/265) (Long Play). The use of Sony cassettes is recommended to get the most out of your camcorder.

Ø Notes

• If you record in the LP mode, a mosaic-like noise may appear or sound may be interrupted when you play back the tape on other camcorders or VCRs.

- For **Hi C** TRV128/228/328/428: When you record a tape in the LP mode on your camcorder, recording is carried out in the standard 8 mm **C** system.
- For DTRV260/265:
 When you mix recordings in the SP mode and in the LP mode on one tape, the playback picture may be distorted or the time code may not be written properly between the scenes.

AUDIO MODE

For BTRV260/265:

⊳12BIT	Select to record in the 12-bit mode (2 stereo sounds).
16BIT ()16b)	Select to record in the 16-bit mode (1 stereo sound with high quality).

ORC TO SET

For HIB TRV128/228/328/428:

You can automatically adjust the recording condition to get the best possible recording.

When you select [ORC TO SET] in the menu settings, [START/STOP KEY] appears. Press REC START/STOP. [ORC] appears on the screen and adjustment starts. Your camcorder returns to the standby mode when adjustment is complete. It takes about 10 seconds for adjustment.

Ø Notes

• Each time you eject a cassette, this setting will be canceled.

- When you set [ORC TO SET], a non-recorded section of about 0.1 second appears on the tape. However, note that this non-recorded section disappears from the tape when you continue recording from this section.
- To check if you have already set this setting, select [ORC TO SET] in the menu settings. [ORC ON] is displayed if it is already set.

📼 REMAIN

⊳AUTO	 Select to display the remaining tape bar: For about 8 seconds after you turn on your camcorder with the cassette inserted, and your camcorder calculates the remaining amount of tape. For about 8 seconds after (P) (play) is pressed.
	 For about 8 seconds after DSPL/BATT INFO is pressed to display the screen indicators. For the period of tape rewinding, forwarding or picture search.
ON	Select to always display the remaining tape indicator.

FRAME REC

For DTRV260/265:

You can record pictures with a stop-motion animated effect by alternately frame recording and then moving the subject a little.

For DTRV265:

Operate your camcorder using the Remote Commander to prevent camera shake.

⊳OFF	Select to record in the standard recording mode.		
ON	Sel	Select to record pictures using the frame recording function.	
	1	Turn the SEL/PUSH EXEC dial to select [ON], then press the dial.	
	2	Press MENU to hide the menu settings. (D) lights up.	
	3	Press REC START/STOP. A picture (approximately 6 frames) is recorded, and your camcorder enters the standby mode.	
	4	Move the subject and repeat step 3.	

Ø Notes

• When you use frame recording continuously, the remaining tape time will not be indicated correctly.

• The last scene will be longer than other scenes.

For DTRV260/265:

You can achieve excellent recordings of flowers blooming, etc., with this function. Connect your camcorder to the wall outlet using the supplied AC Adaptor during the operation.



a. [REC TIME]

b. [INTERVAL]

- 1 Turn the SEL/PUSH EXEC dial to select [SET], then press the dial.
- 2 Turn the SEL/PUSH EXEC dial to select [INTERVAL], then press the dial.
- **3** Turn the SEL/PUSH EXEC dial to select the desired interval time (30 seconds, 1, 5, 10 minutes), then press the dial.
- 4 Turn the SEL/PUSH EXEC dial to select [REC TIME], then press the dial.
- **5** Turn the SEL/PUSH EXEC dial to select the desired recording time (0.5, 1, 1.5, 2 seconds), then press the dial.
- 6 Turn the SEL/PUSH EXEC dial to select [→ RETURN], then press the dial.
- 7 Turn the SEL/PUSH EXEC dial to select [ON], then press the dial.
- 8 Press MENU to hide the menu settings.
- **9** Press REC START/STOP.

The interval recording starts.

ights up during interval recording.

To cancel recording, set to [OFF] in the menu settings.

Ø Note

• There may be a discrepancy in recording time of up to ± 6 frames from the selected time.

ີ່ 🖞 Tips

- If you adjust the focus manually, you may be able to record clear pictures even if the light changes (p. 29).
- You can silence the beeps during recording (p. 59).

Using the 🖻 (SETUP MENU) – CLOCK SET/USB STREAM/

LANGUAGE, etc.

You can select items listed below in the SETUP MENU. To select items, see "Changing the menu settings" (p. 43).

The default settings are marked with \triangleright . The settings you can adjust vary depending on the power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

SETUP MENU TO LOCK SET USB STREAM TO LTR SIZE TO DEMO MODE Fro P
[MENU] : END

CLOCK SET

You can set the date and time (p. 17).

AUTO DATE

For **Hi** CTRV128/228/328/428:

You can automatically record the date once a day for 10 seconds after you start recording.

⊳ON	Select to record the date for 10 seconds after recording has started.
OFF	Select to cancel the auto date function.

Ϋ́ΎTip

• The auto date function automatically displays the date once a day. However, the date may automatically appear more than once a day if:

- you set the date and time.
- you eject and insert the tape again.
- you stop recording within 10 seconds.
- you set [AUTO DATE] to [OFF] once and set it back to [ON] in the menu settings.

USB STREAM

For DTRV260/265:

You can connect a USB cable (supplied) to your camcorder, and view the picture displayed on the screen of your camcorder on your computer (USB Streaming). For details, refer to the "Computer Applications Guide."

⊳OFF	Select to deactivate the USB Streaming function.
ON	Select to activate the USB Streaming function.

LTR SIZE

⊳NORMAL	Select to display selected menu items in normal size.
2×	Select to display selected menu items at twice the normal height.

➡ continued

LANGUAGE

You can select or change the language used for the on-screen display (p. 19). You can select from English, Simplified English, Canadian-French, Latin American Spanish, Brazilian-Portuguese, Traditional-Chinese, or Korean.

DEMO MODE

When you remove a cassette from your camcorder, and select the CAMERA mode, you can view the demonstration in about 10 minutes.

Select to see an overview of the functions available such as when you are using this camcorder for the first time.
are using this cancorder for the first time.
Select when you do not intend to use the [DEMO MODE].

Ø Note

· You can view the demonstration only when the NIGHTSHOT PLUS switch is set to OFF.

ີ 🏹 Tips

- The demonstration will be suspended in situations such as those described below.
 - When a cassette is inserted.
 - When a mode other than CAMERA is selected.
- If [A.SHUT OFF] is set to [5 min] when the camcorder is used on the battery pack, the power will be turned off after approximately 5 minutes (p. 59).

Using the ETC (OTHERS) menu – world TIME/VIDEO EDIT, etc.

You can select items listed below in the OTHERS menu. To select items, see "Changing the menu settings" (p. 43). The default settings are marked with \triangleright . The settings you can adjust vary depending on the

DATA CODE

power mode of your camcorder. The screen shows the items you can operate at the moment. Unavailable items will be grayed out.

OTHERS WORLD TIME GF BEEP GF A. SHUT OFF GF COMMANDER DISPLAY GF4 REC LAMP T
[MENU] : END

For DTRV260/265:

⊳OFF	Select not to display date, time and the camera settings data during playback.
DATE/TIME	Select to display the date and time during playback. (p. 37)
CAM DATA	Select to display the camera setting data during playback. (p. 37)

WORLD TIME

You can adjust the time difference when using your camcorder abroad. Set the time difference by turning the SEL/PUSH EXEC dial, the clock will be adjusted in accordance with the time difference. If you set the time difference to 0, the clock returns to the originally set time.

BEEP

⊳MELODY	Select to play a melody when you start/stop recording, operate your camcorder with the SEL/PUSH EXEC dial, or when an unusual condition occurs on your camcorder.
NORMAL	Select to sound a beep instead of the melody.
OFF	Select to cancel the melody, beep sound, shutter sound and operation confirmation beep.

A.SHUT OFF

⊳5 min	Select to activate the Auto shut off. When approximately 5 minutes have elapsed while you do not operate your camcorder, the camcorder is automatically turned off to prevent the battery from becoming consumed.
NEVER	Select to deactivate the Auto shut off.

Ø Note

 When you connect your camcorder to the wall outlet, [A.SHUT OFF] is automatically set to [NEVER].

COMMANDER

For **Hi** TRV228/428/ () TRV265:

⊳ON	Select when using the Remote Commander supplied with your camcorder.
OFF	Select to deactivate the Remote Commander to prevent your camcorder from responding to a command sent by another VCR remote control unit.

Ø Note

 The setting returns to [ON] when you have the power source disconnected from your camcorder for more than 5 minutes.

DISPLAY

⊳LCD	Select to show the displays such as the time code on the LCD screen and in the viewfinder.
V-OUT/LCD	Select to show the displays such as the time code on the TV screen, LCD screen, and in the viewfinder.

REC LAMP

⊳ON	Select to turn on the camera recording lamp on the front of your camcorder during recording.
OFF	 Select this setting in the following recording situations. The camera recording lamp will not light up during recording. When you do not want the subject to be nervous about being recorded. When you are recording close to the subject. When the subject reflects the recording lamp.

VIDEO EDIT

For [+) TRV260/265:

You can select up to 20 scenes (programs) and record them in the desired order to another recording device such as VCR (p. 69).

Connecting to a VCR

You can create a copy of the picture recorded on your camcorder on other recording devices (p. 63).

For DTRV260/265, you can also record the picture from a VCR to a tape on your camcorder (p. 68).

Connect your camcorder to a VCR as shown in the following illustration.

For HIETRV128/228/328/428:



Signal flow

➡ continued

For [+) TRV260/265:



Signal flow

* When there is an S video jack on the device to be connected, connect the S video plug to that jack instead of using the yellow video plug. The audio will not be output when you connect with the S video plug alone.

Pictures can be reproduced more faithfully with this connection.

Ø Notes on the A/V connecting cable

- Use the A/V connecting cable to connect your camcorder to other devices. Before connecting, make sure the [DISPLAY] setting in the ETC (OTHERS) menu is set to [LCD] (the default setting) (p. 60).
- For **Hi B** TRV128/228/328/428: When you are connecting your camcorder to stereo device, connect the audio plug of the A/V connecting cable to the left (white) jack on the VCR.
- For [) TRV260/265: When you are connecting your camcorder to monaural device, connect the yellow plug of the A/V connecting cable to the video jack, and the red or the white plug to the audio jack on the VCR.

To use an i.LINK cable for connection For DTRV260/265:

Use an i.LINK cable (optional) to connect your camcorder to other device via the DV Interface. The video and sound signals are transmitted digitally, producing high quality pictures. Note that you cannot record the picture and sound separately. For details, see page 84.

Dubbing to another tape

You can copy and edit the picture played back on your camcorder to other recording devices (such as VCRs).

1 Connect your VCR to your camcorder as a recording device (p. 61, 62).

2 Prepare your VCR for recording.

- Insert a cassette for recording.
- If your VCR has an input selector, set it to the input mode.

3 Prepare your camcorder for playback.

- Insert the recorded cassette.
- Slide the POWER switch to select the PLAY/EDIT mode.

4 Start the playback on your camcorder, and record it on the VCR.

Refer to the operating instructions supplied with your VCR for details.

5 When the dubbing is finished, stop your camcorder and the VCR.

Ø Notes

• When dubbing using the A/V connecting cable, press DSPL/BATT INFO to hide indicators such as time code (p. 37). Otherwise, they will be recorded on the tape.

• For [) TRV260/265: When connected using the A/V connecting cable, to record the date/time and camera settings data, have it displayed on screen (p. 37).

- For HTRV260/265: When your camcorder is connected to the VCR via the DV Interface, you cannot record the title or indicators.
- For DTRV260/265: Pictures edited with Picture effect ([P EFFECT] p. 45) cannot be output via the DV Interface.
- For DTRV260/265: When connected using the i.LINK cable, the recorded picture becomes rough when a picture is paused on your camcorder while recording to a VCR.

Ϋ́ς Tip

- For Hi B TRV128/228/328/428:
 - To prevent deterioration of pictures, set [EDIT] to [ON] in the r (PLAYER SET) menu before dubbing (p. 51).

Dubbing a tape easily - Easy Dubbing

(FII: C) TRV128/228/328/428)

You can control VCR for dubbing with your camcorder easily with the VCR connected to the camcorder.

Step 1: Preparing your camcorder and VCR for operation

Follow the steps below when you are performing the Easy Dubbing for the first time. You can skip this setting if you have set up the VCR by the following procedure before.

Ø Note

- You cannot perform the Easy Dubbing on a VCR that does not support [IR SETUP] codes.
- **1** Connect your VCR to your camcorder as a recording device (p. 62).

2 Prepare your VCR for recording.

- Insert a cassette for recording.
- Set the input selector to input mode, if your VCR has one.

3 Prepare your camcorder for playback.

- · Insert a cassette for editing.
- Slide the POWER switch repeatedly to select the PLAY/EDIT mode.

4 Press EASY DUB.



5 Turn the SEL/PUSH EXEC dial to select [SETUP], then press the dial.



6 Turn the SEL/PUSH EXEC dial to select [IR SETUP], then press the dial.

When you connect with an A/V connecting cable, you need to check the [IR SETUP] code signal to see if your VCR can be operated by your camcorder (infrared ray emitter).

7 Turn the SEL/PUSH EXEC dial to select the [IR SETUP] code of your VCR, then press the dial.

For the [IR SETUP] code of your VCR, refer to "[IR SETUP] code list" (p. 65). When there is more than one code listed for the manufacturer of your VCR, try each code and find the most appropriate one.

8 Turn the SEL/PUSH EXEC dial to select [PAUSE MODE], then press the dial.



9 Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial. Refer to the operating instructions supplied with your VCR for details on operation. 10Point the infrared ray emitter of your camcorder towards the remote sensor on your VCR, from about 30 cm (12 in.) away, with no obstructions.



11Set the VCR to recording pause.

12Turn the SEL/PUSH EXEC dial to select [IR TEST], then press the dial.

13Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial.

Recording starts on your VCR when the setting is correct. [COMPLETE] appears when the [IR SETUP] code test is finished. Go on to the next step. When recording fails to start, select another

[IR SETUP] code and try again.

14Turn the SEL/PUSH EXEC dial to select [→ RETURN], then press the dial.

[IR SETUP] code list

The following [IR SETUP] codes are recorded on your camcorder by default. (It is set at "3" as the default setting.)

Manufacturing company	[IR SETUP] code
Sony	1, 2, 3, 4, 5, 6
Admiral (M. Wards)	89
Aiwa	47, 54, 80
Akai	49, 51
Audio Dynamic	21, 35
Bell&Howell (M. Wards)	36
Broksonic	21, 70, 82
Canon	77, 78
Citizen	47
Craig	47, 73
Curtis Mathis	8, 77, 80
Daewoo	26, 40, 77
DBX	21, 33, 35
Dimensia	8
Emerson	26, 48, 59, 70, 80, 81, 82
Fisher	36, 37, 44, 45
Funai	80
General Electric	8, 32*, 77, 94*, 101
Goldstar/LG	47
GO VIDEO	71
Hitachi	8, 42, 78
HQ	40
Instant Replay	77, 78
JC Penny	8, 21, 33, 35, 36, 42, 77
JVC	12, 13, 14, 21, 33, 35
Kenwood	21, 33, 35, 47
LXI (Sears)	36, 37, 42, 44, 45, 47, 49, 80
Magnavox	17, 77, 78, 83
Marantz	21, 33, 35
Marta	47
Memorex	37, 77
Minolta	8,42
Mitsubishi/MGA	22, 23, 24, 28, 29

Dubbing/Editing

→continued

Manufacturing company	[IR SETUP] code
Multitech	23, 32, 80
NEC	21, 33, 35
Olympic	77, 78
Optimus	22
Orion	60
Panasonic	16, 17, 77, 78
Pentax	8,42
Philco	26, 70, 77, 78
Philips	47, 77, 78, 83
Pioneer	78
Quasar	6, 16, 17, 77, 78
RCA/PROSCAN	7, 8, 16, 40, 41, 42, 77, 78, 78*, 83, 101
Realistic	22, 36, 37, 77, 80, 88
Sansui	21
Singer	73
Samsung	24, 24*, 32, 32*, 41, 94, 94*
Sanyo	26, 36, 37, 47
Scott	22, 23, 24, 28, 32, 37, 40, 41
Sharp	88, 89
Shintom	73
Signature 2000	80, 89
Sylvania	77, 78, 80, 83
Symphonic	80
Tashiro	47
Tatung	21, 33, 35
Teac	21, 33, 35, 80
Technics	77, 78
Toshiba	7, 40, 49
Wards	37, 47, 88, 89, 95
Yamaha	21, 33, 35, 36
Zenith	95

* TV/VCR component

Step 2: Selecting the title

You can insert a title.

You can select one of the 8 preset titles and the 2 custom titles. See steps 1 to 4 on page 31 to create original titles.

1 Turn the SEL/PUSH EXEC dial to select [TITLE SEL], then press the dial.

EASY DUBBING TITLE SEL	0:00:00
OFF	
HELLO!	
HAPPY BIRTHDAY	
HAPPY HOLIDAYS	
CONCRATULATIONS	
CONGRATULATIONS	
OUR SWEET BABY	
+	
[EASY DUB]:END	
ILAGI DODI-LIND	

2 Turn the SEL/PUSH EXEC dial to select the desired title, then press the dial.

The title flashes.

EASY DUBBING 0:00:00 OK SUZE BACK COLOR SIZE HELLO! (EASY DUB]:END

3 Change [COLOR] (color), [SIZE] (size), or [BACK COL.] (back ground color) as necessary.

If you do not need to change them, go to Step 3 (p. 67).

- 1 Turn the SEL/PUSH EXEC dial to select [COLOR], [SIZE], or [BACK COL.], then press the dial. The selected item appears on the screen.
- **2** Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
- **3** Repeat steps 1 and 2 until the title is laid out as desired.

4 Turn the SEL/PUSH EXEC dial to select [OK], then press the dial.

The title lights up.

EASY DUBBING START TITLE SEL ON MODE SEL SETUP	0:00:00	
HELLO!		
[EASY DUB]:END	NORMAL	

Ø Notes

- You can put a title only into the tape of the VCR.
- If you set the background color to [FADE], the picture may not appear properly, depending on the connected VCR.

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- The title color changes as follows: [WHITE] \leftrightarrow [YELLOW] \leftrightarrow [VIOLET] \leftrightarrow [RED] \leftrightarrow [CYAN] \leftrightarrow [GREEN] \leftrightarrow [BLUE]
- The title size changes as follows: [SMALL] ↔ [LARGE]
- The background color changes as follows: $[FADE] \leftrightarrow [WHITE] \leftrightarrow [YELLOW] \leftrightarrow$ $[VIOLET] \leftrightarrow [RED] \leftrightarrow [CYAN] \leftrightarrow [GREEN]$ $\leftrightarrow [BLUE] \leftrightarrow [BLACK]$

Step 3: Selecting the dubbing mode

You can choose either normal recording ([NORMAL]) or interval recording ([PREVIEW]).

1 Turn the SEL/PUSH EXEC dial to select [MODE SEL], then press the dial.



2 Turn the SEL/PUSH EXEC dial to select [NORMAL] or [PREVIEW], then press the dial.

When you select [NORMAL]

You can record into the VCR normally.

When you select [PREVIEW]

You can make a time-lapse dubbing by setting the VCR to automatically repeat 5 seconds' recording and 25 seconds' standby.



- a. Recording time (VCR)
- b. Waiting time (VCR)
- c. Playback time (camcorder)

Step 4: Performing Easy Dubbing

Make sure that your camcorder and VCR are connected, and that the VCR is set to recording pause.

1 Turn the SEL/PUSH EXEC dial to select [START], then press the dial.


2 Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial.

When dubbing ends, your camcorder and VCR stop automatically. Then the display returns to the Easy Dubbing initial screen.

To stop dubbing during editing

Press (stop) on your camcorder.

To quit Easy Dubbing

Press EASY DUB.

Ø Note

• [NOT READY] appears on the screen when [START] is not carried out.

Recording pictures from a VCR (HTRV260/265)

You can record and edit pictures from a VCR on a tape inserted in your camcorder. Insert a cassette for recording in your camcorder.

O Note

 Your camcorder can only record from an NTSC source. For example, European video or TV programs (PAL/SECAM) cannot be recorded correctly. See page 81 for details on TV color systems.

1 Connect your VCR to your camcorder (p. 62).

Use an i.LINK cable (optional) for connection.

- **2** Slide the POWER switch repeatedly to select the PLAY/EDIT mode.
- **3** Press (rec) and the button on its right simultaneously on your camcorder, then immediately press (n) (pause) on your camcorder.

4 Start playing the cassette on your VCR.

The picture played on the connected device appears on the LCD screen of your camcorder.

5 Press (II) (pause) at the point you want to start recording.

6 Press (**1**) (stop) to stop recording.

Ϋ́Tip

• DV IN appears when you connect your camcorder and other devices via an i.LINK cable. (This indicator may also appear on your TV.)

Dubbing selected scenes from a tape

Digital program editing (₽ TRV260/265)

You can select up to 20 scenes (programs) and record them in the desired order to other recording device such as VCR.



Step 1: Preparing your camcorder and VCR for operation

Follow the steps below when you are performing digital program editing for the first time to a tape in a VCR. You can skip this setting if you have set up the VCR by the following procedure before.

Ø Notes

- You cannot perform the Digital program editing on a VCR that does not support [IR SETUP] codes.
- When your camcorder is connected to the VCR via the **b**, DV Interface, you cannot record the title or indicators.

1 Connect your VCR to the camcorder as a recording device (p. 62).

You can use either the A/V connecting cable or the i.LINK cable to make the connection. The dubbing procedure is easier with the i.LINK connection.

2 Prepare your VCR.

- Insert a cassette for recording.
- Set the input selector to input mode, if your VCR has one.

3 Prepare your camcorder (playing device).

- Insert a cassette for editing.
- Slide the POWER switch repeatedly to select the PLAY/EDIT mode.

4 Press MENU.

- **5** Turn the SEL/PUSH EXEC dial to select **ETC** (OTHERS), then press the dial.
- **6** Turn the SEL/PUSH EXEC dial to select [VIDEO EDIT], then press the dial.

VIDEO EDIT MARK 1 UNDO ERASE ALL START EDIT SET	0:08:55:06 IN
TOTAL 0:00:00:00 SCENE 0 200000000000000000000000000000000000	8899998

7 Turn the SEL/PUSH EXEC dial to select [EDIT SET], then press the dial.

VIDEO EDIT EDIT SET [CONTROL] IR ADJ TEST "CUT-IN" "CUT-IN" "CUT-UT" IR SETUP PAUSEMODE IR TEST ₽RETURN [MENU] : END	0:08:55:06

8 Turn the SEL/PUSH EXEC dial to select [CONTROL], then press the dial.



9 Turn the SEL/PUSH EXEC dial to select [i.LINK] or [IR], then press the dial.

When connecting with an i.LINK cable

After selecting [i.LINK], go on to "Step 2: Adjusting the synchronization of the VCR" (p. 70).

When connecting with an A/V connecting cable

After selecting [IR], follow the procedure described in "To set the [IR SETUP] code" (p. 70).

To set the [IR SETUP] code

When you connect with an A/V connecting cable, you need to check the [IR SETUP] code signal to see if your VCR can be operated by your camcorder (infrared ray emitter).



- 1 Turn the SEL/PUSH EXEC dial to select [IR SETUP], then press the dial.
- 2 Turn the SEL/PUSH EXEC dial to select the [IR SETUP] code of your VCR, then press the dial.

For the [IR SETUP] code of your VCR, refer to "[IR SETUP] code list" (p. 65). When there is more than one code listed for the manufacturer of your VCR, try each code and find the most appropriate one.

- **3** Turn the SEL/PUSH EXEC dial to select [PAUSEMODE], then press the dial.
- **4** Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.

Refer to the operating instructions supplied with your VCR for details on operation.

- 5 Point the infrared ray emitter of your camcorder towards the remote sensor on your VCR, from about 30 cm (12 in.) away, with no obstructions.
- 6 Insert a cassette into your VCR, and set the VCR to recording pause.
- 7 Turn the SEL/PUSH EXEC dial to select [IR TEST], then press the dial.
- 8 Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial. The recording starts on your VCR when the setting is correct. [COMPLETE] appears when the [IR SETUP] code test is finished. Go on to "Step 2: Adjusting the synchronization of the VCR" (p. 70). When recording fails to start, select another IR code and try again.

Step 2: Adjusting the synchronization of the VCR

Follow the steps below when you are performing digital program editing for the first time to a tape in a VCR. You can skip this setting if you have set up your VCR before using the following procedure. You can adjust the synchronization of your camcorder and the VCR to avoid not recording the starting scene.

- **1** Remove the cassette from your camcorder. Prepare a pen and paper to take notes.
- 2 Set the VCR to recording pause mode. Skip this step if you have selected [i.LINK] in step 9 on p. 70.

Ø Note

• Run the tape for about 10 seconds before pausing. The starting scenes may not get recorded when you start recording from the beginning of the tape.

3 Turn the SEL/PUSH EXEC dial to select [ADJ TEST], then press the dial.

VIDEO EDIT	0:08:55:06
CONTROL	
	TURN
CUT-IN E/	ECUTE
IR SETUP EN	IGAGE
PAUSEMODE RE	C PAUSE
IR TEST	
[INIEINO] · EIND	

4 Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial. [EXECUTING] flashes and a picture (about 50 seconds long) with 5 [IN] and [OUT] indicators each for adjusting synchronization is recorded. [COMPLETE] appears when the recording is finished.



5 Rewind the tape on your VCR, then play back in slow mode.

5 opening numbers for each [IN] and closing numbers for each [OUT] appear.

- **6** Take a note of the opening numerical value of each [IN] and the closing number value of each [OUT], then calculate the average numerical value for each [IN] and [OUT].
- 7 Turn the SEL/PUSH EXEC dial to select ["CUT-IN"], then press the dial.



8 Turn the SEL/PUSH EXEC dial to select the average numerical value of [IN], then press the dial.

The calculated start position for recording is set.

9 Turn the SEL/PUSH EXEC dial to select ["CUT-OUT"], then press the dial.



10Turn the SEL/PUSH EXEC dial to select the average numerical value of [OUT], then press the dial.

The calculated stop position for recording is set.

11 Turn the SEL/PUSH EXEC dial to select [→ RETURN], then press the dial.

Recording the selected scenes as programs

When you are performing digital program editing for the first time to a tape in a VCR, go through the procedures described in Steps 1 and 2 (p. 69 to p. 70) beforehand.

1 Prepare a cassette.

Insert a tape to be played back into the camcorder. Insert a cassette for recording into your VCR. **2** Press MENU.

- **3** Turn the SEL/PUSH EXEC dial to select **ETC** (OTHERS), then press the dial.
- **4** Turn the SEL/PUSH EXEC dial to select [VIDEO EDIT], then press the dial.



- **5** Search for the beginning of the first scene that you want to record on your camcorder, then pause playback.
- **6** Turn the SEL/PUSH EXEC dial to select [MARK], then press the dial.

The starting point of the first program is set, and the upper part of the program mark changes to light blue.



7 Search for the end of the first scene that you want to record on your camcorder, then pause playback.

8 Press the SEL/PUSH EXEC dial.

The ending point of the first program is set, and the lower part of the program mark changes to light blue.

- VIDEO EDIT 0090706 (MARK 2 IN ERASE AL STATE EDIT SET TOTAL 0001200 SCENE 1 <u>ERASEAUSTONICATIONS</u> (MENU] : END
- **9** Repeat steps 5 to 8 and create programs.

10Set your VCR to the recording pause.

Skip this step if your camcorder is connected via an i.LINK cable.

11 Turn the SEL/PUSH EXEC dial to select [START], then press the dial.



12Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial.

A search for the beginning of the first program starts, then the recording starts. [SEARCH] appears during search and [EDITING] appears during editing.

VIDEO EDIT EDITING	•	0:00:06:00
SCENE 1/1		
[■]: CANCEL	[M	IENU] : END

When a program is recorded, the program mark stops flashing and remains lit. When all programs have been recorded, the program editing operation stops automatically.

To cancel recording, press () (stop).

To end Digital program editing

Press MENU.

To save a program without using it to record

Press MENU in step 11. The program is stored in memory until the cassette is ejected.

To erase programs

- **1** Follow steps 1 to 4 in "Recording the selected scenes as programs" (p. 71).
- 2 Turn the SEL/PUSH EXEC dial to select [UNDO] or [ERASE ALL], then press the dial.

When you select [UNDO] You can erase the last set program.

When you select [ERASE ALL] You can erase all the programs.

3 Turn the SEL/PUSH EXEC dial to select [EXECUTE], then press the dial. The programs are deleted. To cancel this operation, select [RETURN], and then press the dial.

Ø Notes

- You cannot set starting point or ending point on a blank section of the tape. If there is a blank section, the total time may not appear correctly.
- When you cannot operate the device correctly using an i.LINK cable connection, select [IR] in step 9 on p. 70, and set the [IR SETUP] code.

Troubleshooting

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem

Overall operations

persists, remove the power source and contact your Sony dealer. If "C: D: D" is displayed on the LCD screen or the viewfinder, the self-diagnosis display function is activated. See page 79 for details.

Symptom	Cause and/or Corrective Actions
The power does not turn on.	 The battery pack is discharged, running low, or not attached to the camcorder. →Attach a charged battery pack to the camcorder. (p. 12) →Use the AC Adaptor to connect to the wall outlet. (p. 15)
The camcorder does not operate even when the power is set to on.	→Disconnect the AC Adaptor from the wall outlet or remove the battery pack, then reconnect it after about 1 minute. If the functions still do not work, press the RESET button using a sharp-pointed object. (If you press the RESET button, all settings including the clock setting are reset.)
For HiB TRV228/428/ H TRV265: The supplied Remote Commander does not function.	 →Set [COMMANDER] in the ETC (OTHERS) menu to [ON]. (p. 60) →Insert a battery into the battery holder with the + – polarities correctly matching the + – marks. If this still does not solve the problem, insert a new battery since the battery is dead. (p. 95) →Remove any obstructions between the Remote Commander and the remote sensor.

Batteries/Power sources

Symptom	Cause and/or Corrective Actions
The CHG (charge) lamp does not light while the battery pack is being charged.	 →Attach the battery pack to the camcorder correctly. If the lamp still does not light up, then it indicates that no power is supplied from the wall outlet. The battery charge is completed. (p. 12)
The CHG (charge) lamp flashes while the battery pack is being charged.	→Attach the battery pack to the camcorder correctly. If the problem persists, disconnect the AC Adaptor from the wall outlet and contact your Sony dealer. The battery pack may be damaged. (p. 12)
The battery pack is quickly discharged.	 The temperature of the environment is too low, or the battery pack has not been charged enough. This is not a malfunction. →Fully charge the battery again. If the problem persists, replace the battery pack with a new one. It may be damaged. (p. 12, 83)

Symptom	Cause and/or Corrective Actions
The remaining battery time indicator does not indicate the correct time.	 The temperature of the environment is too high or too low, or the battery pack has not been charged enough. This is not a malfunction. →Fully charge the battery again. If the problem persists, replace the battery pack with a new one. It may be damaged. (p. 12, 83)
The power turns off frequently although the remaining battery indicator indicates that the battery pack has enough power to operate.	 A problem has occurred in the remaining battery time indicator, or the battery pack has not been charged enough. →Fully charge the battery again to correct the indication. (p. 12)
The power abruptly turns off.	 [A.SHUT OFF] in the ETC (OTHERS) menu is set to [5 min]. (p. 59) When approximately 5 minutes have elapsed while you do not operate your camcorder, the camcorder is automatically turned off. Slide the POWER switch down to turn the power on again. (p. 15) Or use the AC adaptor.
A problem occurs when the camcorder is connected to the AC Adaptor.	→Turn off the power, and disconnect the AC Adaptor from the wall outlet. Then, connect it again.

Cassette tapes

Symptom	Cause and/or Corrective Actions
Cassette cannot be ejected from the compartment.	 →Make sure the power source (battery pack or AC Adaptor) is connected correctly. (p. 12) →Remove the battery pack from the camcorder, then attach it again. (p. 12) →Attach a charged battery pack to the camcorder. (p. 12)
Cassette is not ejected even when the cassette lid is open.	→Moisture condensation is starting in your camcorder. (p. 86)
The remaining tape indicator is not displayed.	→ Set [

LCD screen/viewfinder

Symptom	Cause and/or Corrective Actions
An unknown language appears on the screen.	→See page 19.
An unknown picture appears on the screen.	→The camcorder is in [DEMO MODE]. (The [DEMO MODE] is automatically displayed when you leave the camcorder for 10 minutes after selecting CAMERA without inserting a cassette.) Insert a cassette to cancel [DEMO MODE]. You can also set [DEMO MODE] to [OFF] in the menu. (p. 58)
An unknown indicator appears on the screen.	→Refer to the indicator list. (p. 97)

→ continued

Symptom	Cause and/or Corrective Actions
The picture in the viewfinder is not clear.	\Rightarrow Use the viewfinder lens adjustment lever to adjust the lens. (p. 16)
The picture in the viewfinder has	→Close the LCD panel. The picture is not displayed in the viewfinder
disappeared.	when the LCD panel is open. (p. 16)

Recording

Symptom	Cause and/or Corrective Actions
The tape does not start when you press REC START/STOP.	 →Slide the POWER switch to turn on the CAMERA lamp. (p. 15) →The tape has reached the end. Rewind it, or insert a new cassette. →Set the write-protect tab to REC or insert a new cassette. (p. 82) →The tape is stuck to the drum due to moisture condensation. Remove the cassette and leave your camcorder for at least 1 hour, then re-insert the cassette. (p. 86)
The power abruptly turns off.	 [A.SHUT OFF] in the ETC (OTHERS) menu is set to [5 min]. (p. 59) →When approximately 5 minutes have elapsed while you do not operate your camcorder, the camcorder is automatically turned off. Slide the POWER switch down to turn the power on again (p. 15). Or use the AC Adaptor. The battery pack is discharged. (p. 12)
For HIB TRV328/428/ [+) TRV260/ 265: The SteadyShot does not function.	 →Set [STEADYSHOT] to [ON] in the (CAMERA SET) menu. (p. 50) →Set [16:9 WIDE] to [OFF] in the (CAMERA SET) menu. (p. 48)
The auto focus does not function.	 →Press FOCUS to enable auto focus. (p. 29) →The recording conditions are not suitable for auto focus. Adjust the focus manually. (p. 29)
A vertical band appears when recording candlelight or electric light in the dark.	• This occurs when the contrast between the subject and the background is too high. This is not a malfunction.
A vertical band appears when recording a bright subject.	• This phenomenon is called the smear effect. This is not a malfunction.
The color of the picture is not correctly displayed.	→Deactivate the NightShot plus function. (p. 28)
Picture appears too bright on the screen, and the subject does not appear on the screen.	 →Deactivate the NightShot plus function in bright places. (p. 28) →Cancel the back light function. (p. 27)
The shutter sound is not heard.	→Set [BEEP] to [MELODY] or [NORMAL] in the ETC (OTHERS) menu. (p. 59)
For HIB TRV328/428/ H TRV260/ 265: Black bands appear when you record a TV screen or computer screen.	→Set [STEADYSHOT] to [OFF] in the (CAMERA SET) menu. (p. 50)

Symptom	Cause and/or Corrective Actions
Flickering or changes in color occurs.	→This occurs when recording pictures under a fluorescent lamp, sodium lamp, or mercury lamp in the soft portrait or sports lesson mode. Cancel [PROGRAM AE] in this case. (p. 44)
END SEARCH does not work.	 The cassette was ejected after recording. The cassette is new and has nothing recorded.
END SEARCH does not work correctly.	• There is a blank section in the beginning or middle of the tape. This is not a malfunction.
The built-in light does not function.	 →Press LIGHT repeatedly to select =C>ON. →If the problem presists, contact your Sony dealer or local authorized Sony service facility.

Playback

Symptom	Cause and/or Corrective Actions
Cannot play back.	\Rightarrow If the tape has reached the end, rewind the tape. (p. 34)
Horizontal lines appear on the picture. The displayed pictures are not clear or do not appear.	 →Clean the head using the cleaning cassette (optional). (p. 86) For HiB TRV128/228/328/428: The television's video channel is not adjusted correctly. →Adjust it. (p. 39) →For HiB TRV128/228/328/428: Set [EDIT] to [OFF] in the T (PLAYER SET) menu. (p. 51)
No sound or only a low sound is heard.	 →For [) TRV260/265: Set [HiFi SOUND] to [STEREO] in the (VCR SET) menu. (p. 51) →Turn up the volume. (p. 34) →For [) TRV260/265: In the (VCR SET) menu, adjust [AUDIO MIX] from the [ST2] side until the sound is heard appropriately. (p. 52) →When you are using an S VIDEO plug, make sure the black plug for (15) TRV128/228/328/428, or the red and white plugs for (15) TRV260/265 of the A/V connecting cable are connected as well. (p. 39)
The sound breaks off.	\rightarrow Clean the head using the cleaning cassette (optional). (p. 86)
For DTRV265: Cannot perform the Date search with the recording date displayed on the screen.	• There is a blank section in the beginning or middle of the tape. This is not a malfunction.
For DTRV260/265: "" is displayed on the screen.	The tape you are playing was recorded without setting the date and time.A blank section on the tape is being played.The data code on a tape with a scratch or noise cannot be read.
END SEARCH does not work.	 The cassette was ejected after recording. The cassette is new and has nothing recorded.
END SEARCH does not work correctly.	• There is a blank section in the beginning or middle of the tape. This is not a malfunction.

→ continued

Symptom	Cause and/or Corrective Actions
For () TRV260/265: The picture does not appear on the screen when playing back a tape.	• The tape is recorded in the Hi8 Hi8/standard 8 mm 8 system.
Noises appear on the screen.	• The tape was recorded in a TV color system other than that of your camcorder. (p. 81)

Dubbing/Editing

Symptom	Cause and/or Corrective Actions
Cannot dub correctly using the A/V connecting cable.	→Set [DISPLAY] to [LCD] in the $\boxed{\text{ETC}}$ (OTHERS) menu. (p. 60)
For () TRV260/265: Pictures from connected devices are not displayed correctly.	• The input signal is not NTSC. (p. 68)
For () TRV260/265: Digital program editing does not function.	 →Set the input selector on the VCR correctly, then check the connection between your camcorder and the VCR. (p. 62) →When your camcorder is connected to a DV device that is not a Sony product via an i.LINK cable, select [IR] in step 9 of "Step 1: Preparing your camcorder and VCR for operation." (p. 69) →Adjust the synchronization of the VCR. (p. 70) →Enter a correct [IR SETUP] code. (p. 65) →Select the mode used to cancel recording pause again. (p. 70) →Set your camcorder and the VCR more than 30 cm (12 in.) apart. (p. 70) The program may not be set to a blank section on the tape.
For DRV260/265: The VCR is not responding properly during Digital program editing when it is connected via an i.LINK cable.	→While connecting via an i.LINK cable, select [IR] in step 9 of "Step 1: Preparing your camcorder and VCR for operation." (p. 69)
For HiB TRV128/228/328/428: Easy Dubbing does not function.	 Your VCR and/or video camera recorder is not set correctly. →Make sure the input selector of the VCR is set to LINE. Also, make sure the power switch of the video camera recorder is set to VCR. (p. 64) The [IR SETUP] code or [PAUSE MODE] is not set correctly. → Select the correct [IR SETUP] code and [PAUSE MODE], according to your VCR. Then confirm VCR operation with the [IR TEST] function. (p. 64)

Warning indicators and messages

Self-diagnosis display/Warning indicators

If indicators appear on the screen, check the following. See the page in parentheses for details.

Indication	Cause and/or Corrective Actions
C:	Some symptoms can be fixed by yourself. If the problem persists even after you tried a couple of times, contact your Sony dealer or local authorized Sony service facility. C:04:
	→A battery pack that is not an "InfoLITHIUM" battery pack is being used. Use an "InfoLITHIUM" battery pack. (p. 83) C:21:□□
	→ Moisture condensation has occurred. Remove the cassette and leave your camcorder for at least 1 hour, then re-insert the cassette. (p. 86) C:22:□□
	→Clean the head using a cleaning cassette (optional). (p. 86) C:31□□ / C:32□□
	→Symptoms that are not described above have occurred. Remove and insert the cassette, then operate your camcorder again. Do not perform this procedure if moisture starts to condense. (p. 85)
	 →Remove the power source. Reconnect it again and operate your camcorder again. →Change the tape.
	\rightarrow Press the RESET button and operate your camcorder again. E:61: $\square / E:62: \square \square$
	→Contact your Sony dealer or local authorized Sony service facility. Inform them of the 5-digit code, which starts from "E."
Gattery level warning) Solution Solution	 The battery pack is nearly used up. Depending on the operating, environmental, or battery conditions, the indicator may flash, even if there are approximately 5 to 10 minutes remaining.
(Moisture condensation warning)*	→Eject the cassette, set the POWER switch to (CHG) OFF, and leave it for about 1 hour with the cassette lid open. (p. 86)
(Warning indicator pertaining to the tape)	Slow flashing:There is less than 5 minutes remaining on the tape.
	 No cassette is inserted.* The write-protect tab on the cassette is set to lock. (p. 82)*
	Fast flashing:The tape has run out.*

Indication	Cause and/or Corrective Actions
▲ (Eject cassette warning)*	Slow flashing:
	• The write-protect tab on the cassette is set to lock. (p. 82)
	Fast flashing:
	Moisture condensation has occurred. (p. 86)
	• The tape has run out.
	• The self-diagnosis display code is displayed. (p. 79)
L	

* You hear a melody or beep sound when the warning indicators appear on the screen.

Warning messages

The following messages will appear to prompt you to correct the situation.

Subjects	Indications	Corrective Actions/References
Battery	Use the "InfoLITHIUM" battery pack.	→See page 83.
	Battery level is low.	→Charge the battery. (p. 12)
	Old battery. Use a new one.	→See page 83
	▲ Re-attach the power source.	-
Moisture	■ $▲$ Moisture condensation. Eject the cassette	→See page 86.
condensation	Moisture condensation. Turn off for 1H.	→See page 86.
Cassette/tape	🕅 Insert a cassette.	→See page 18.
	A Reinsert the cassette.	\rightarrow The cassette might be damaged, etc.
	$\boxed{100}$ \triangleq The tape is locked - check the tab.	→See page 82.
	\eth The tape has reached the end.	-
Others	Cannot record due to copyright protection.	-
	Dirty video head. Use a cleaning cassette.	→See page 86.
	Cannot start Easy Handycam	→See page 26 and 36.
	Cannot cancel Easy Handycam	→See page 26 and 36.
	Cannot start Easy Handycam with USB connected	-
	Invalid button with Easy Handycam operation	→See page 26 and 36.
	USB invalid during Easy Handycam	→Press SEL/PUSH EXEC dial.

Using your camcorder abroad

Power supply

You can use your camcorder in any country/ regions using the AC Adaptor supplied with your camcorder within AC 100 V to 240 V, 50/60 Hz.

Use a commercially available AC plug adaptor [a], if necessary, depending on the design of the wall outlet [b].



On TV color systems

Your camcorder is an NTSC system-based camcorder. If you want to view the playback picture on a TV, it must be an NTSC systembased TV (see following list) with the AUDIO/ VIDEO input jack.

System	Used in
NTSC	Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Guyana, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.
PAL	Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, United Kingdom, etc.
PAL - M	Brazil
PAL - N	Argentina, Paraguay, Uruguay
SECAM	Bulgaria, France, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference when using your camcorder abroad. Select [WORLD TIME] in the ETC (OTHERS) menu, then set the time difference (p. 59).

Usable cassette tapes

You can use standard 8 mm 👩 and Hi8 Hiß, Digital8 🕑 video cassettes on your camcorder.

Hi8 Hi8 system

This Hi8 HiB system is an extension of the standard 8 mm B system, and was developed to produce higher quality pictures.

You cannot play back a tape recorded in the Hi8 **Hi1** system correctly on video recorders/ players other than a Hi8 video recorder/player.

Digital8 → system

This video system has been developed to enable digital recording to Hi8 HiB/Digital8 D video cassette.

The recording time when you use your Digital8 [] system camcorder on Hi8 [][]/ standard 8 mm [] tape is half the recording time when using the conventional Hi8 [][]/standard 8 mm [] system camcorder. (120 minutes of recording time becomes 60 minutes in the SP mode.)

To prevent a blank section from being made on the tape

Press END SEARCH to go to the end of the recorded section before you begin the next recording in the following cases:

- You have ejected the cassette during recording.
- You have played back the tape.

If there is a blank section or discontinuous signals on your tape, re-record from the beginning to the end of the tape as described above.

Copyright signal When you play back

If the cassette you play back on your camcorder contains copyright signals, you cannot copy it to a tape in another video camera connected to your camcorder.

For ()TRV260/265:

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.

[Cannot record due to copyright protection.] appears on the LCD screen, or on the TV screen if you try to record such software.

Your camcorder does not record copyright control signals on the tape when it records.

Notes on use

To prevent accidental erasure

Slide the write-protect tab on the cassette to set to SAVE.



REC: The cassette can be recorded.

SAVE: The cassette cannot be recorded (writeprotected).

When labeling the cassette

Be sure to place the label only on the locations as shown in the following illustration so as not to cause malfunction of your camcorder.



Do not put a label along the border.

Labeling position

After using the cassette

Rewind the tape to the beginning to avoid distortion of the picture or the sound. The cassette should then be put in its case, and stored in an upright position.

video Hi8, Digital 8, 0, Hi 0 and 0 are trademarks.

About the "InfoLITHIUM" battery pack

This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery pack. "InfoLITHIUM" M series battery packs have the (1) InfoLITHIUM M mark.

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithiumion battery pack that has functions for communicating information related to operating conditions between your camcorder and an optional AC Adaptor/charger.

The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes. With an AC Adaptor/charger (optional), the remaining battery time and charging time appear.

To charge the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the CHG (charge) lamp turns off. If you charge the battery pack outside of this temperature range, you may not be able to charge it efficiently.
- After charging is complete, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

To use the battery pack effectively

• Battery pack performance decreases when the surrounding temperature is 10°C (50°F) or below, and the length of time you can use the battery pack becomes shorter. In that case, do one of the following to use the battery pack for a longer time.

- Put the battery pack in a pocket to warm it up, and insert it in your camcorder right before you start taking shots.
- Use a large capacity battery pack: NP-QM71/QM71D/QM91/QM91D (optional).
- Frequent use of the LCD screen or a frequent playback, fast forward or rewind operation wears out the battery pack faster. We recommend using a large capacity battery pack: NP-QM71/QM71D/QM91/QM91D (optional).
- Be sure to set the POWER switch to (CHG) OFF when not recording or playing back on your camcorder. The battery pack is also consumed when your camcorder is in recording standby or playback pause.
- Have spare battery packs ready for two or three times the expected recording time, and make trial recordings before making the actual recording.
- Do not expose the battery pack to water. The battery pack is not water resistant.

About remaining battery time indicator

- When the power goes off even though the remaining battery time indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again. The indication on the remaining battery time will be indicated correctly. Note, however, that the battery indication will not be restored if it is used in high temperatures for a long time, or if left in a fully charged state, or when the battery pack is frequently used. Use the remaining battery time indication as a guide to the approximate shooting time.
- The ⇔ mark that indicates low battery flashes even if there are still 5 to 10 minutes of battery time remaining, depending on the operating conditions or ambient temperature and environment.

About storage of the battery pack

• If the battery pack is not used for a long time, fully charge the battery pack and use it on your camcorder once a year to maintain the proper function.

To store the battery pack, remove it from your camcorder and put it in a dry, cool place.

• To completely use up the battery pack on your camcorder, leave your camcorder in tape

⇒continued

recording standby until the power goes off without a cassette inserted.

About battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies depending on how it is stored and the operating conditions and environment for each battery pack.

"InfoLITHIUM" is a trademark of Sony Corporation.

About i.LINK

The DV Interface on this unit is an i.LINKcompliant DV Interface. This section describes the i.LINK standard and its features.

What is i.LINK?

i.LINK is a digital serial interface for transferring digital video, digital audio, and other data to other i.LINK-compatible device. You can also control other device using the i.LINK.

i.LINK-compatible device can be connected using an i.LINK cable. Possible applications are operations and data transactions with various digital AV devices.

When two or more i.LINK-compatible device are connected to this unit in a daisy chain, operations and data transactions are possible with not only the device that this unit is connected to but also with other devices via the directly connected device.

Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the device to be connected. Also, operations and data transactions may not be possible on some connected device.

Ø Note

• Normally, only one device can be connected to this unit with the i.LINK cable. When connecting this unit to i.LINK-compatible device having two or more DV Interfaces, refer to the operating instructions of the device to be connected.

ີ່ 🏹 Tips

- i.LINK is a more familiar term for the IEEE 1394 data transport bus proposed by Sony, and is a trademark approved by many corporations.
- IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronics Engineers.

About i.LINK Baud rate

i.LINK's maximum baud rate varies according to the device. There are three types.

S100 (approx. 100Mbps*) S200 (approx. 200Mbps) S400 (approx. 400Mbps)

The baud rate is listed under "Specifications" in the operating instructions of each piece of

device. It is also indicated near the i.LINK interface on some device.

The maximum baud rate for device that does not have any indication (such as this unit) is "\$100."

The baud rate may differ from the indicated value when the unit is connected to device with a different maximum baud rate.

* What is Mbps?

Mbps stands for "megabits per second," or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

To use i.LINK functions on this unit

For details on how to dub when this unit is connected to other video device having a DV Interface, see page 62, 63.

This unit can also be connected to other i.LINK (DV Interface) compatible device made by Sony (e.g. a VAIO series personal computer) as well as to video device.

Before connecting this unit to your computer, make sure that application software supported by this unit is already installed on your computer.

Some i.LINK compatible video device such as Digital Televisions, DVD recorders/players, and MICROMV recorders/players are not compatible with DV device. Before connecting to other device, be sure to confirm whether the device is compatible with DV device or not. For details on precautions and compatible application software, refer also to the operating instructions for the device to be connected.

About the required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

i.LINK and **i** are trademarks of Sony Corporation.

Maintenance and precautions

On use and care

- Do not use or store the camcorder and accessories in the following locations.
 - Anywhere extremely hot or cold. Never leave them exposed to temperatures above 60°C (140°F), such as under direct sunlight, near heaters or in a car parked in the sun. They may malfunction or become deformed.
 - Near strong magnetic fields or mechanical vibration. The camcorder may malfunction.
 - Near strong radio waves or radiation. The camcorder may not be able to record properly.
 - Near AM receivers and video equipment. Noise may occur.
 - Sandy beach or anywhere dusty. If sand or dust gets in your camcorder, it may malfunction. Sometimes this malfunction cannot be repaired.
 - Near windows or outdoors, where the LCD screen, the viewfinder, or the lens may be exposed to direct sunlight. This damages the inside of the viewfinder or the LCD screen.
 - Anywhere very humid.
- Operate your camcorder on DC 7.2 V (battery pack) or DC 8.4 V (AC Adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- Do not let your camcorder get wet, for example, from rain or sea water. If your camcorder gets wet, it may malfunction. Sometimes this malfunction cannot be repaired.
- If any solid object or liquid get inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling, disassembling, modifying, or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch setting to (CHG) OFF when you are not using your camcorder.

➡ continued

- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- When disconnecting the power code, pull by the plug and not the code.
- Do not damage the power code such as by placing anything heavy on it.
- Keep metal contacts clean.
- Keep the Remote Commander and buttontype battery out of children's reach. If the battery is accidentally swallowed, consult a doctor immediately.
- If the battery electrolytic liquid has leaked,
- consult your local authorized Sony service facility.
- wash off any liquid that may have contacted your skin.
- if any liquid gets in your eyes, wash with plenty of water and consult a doctor.

When not using your camcorder for a long time

Occasionally turn it on and let it run such as by playing back tapes for about 3 minutes. Otherwise, unplug it from the wall outlet.

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, [① Moisture condensation. Eject the cassette] or [① Moisture condensation. Turn off for 1H.] appears. The indicator will not appear when the moisture condenses on the lens.

If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette lid open. Your camcorder can be used again if the \blacksquare or \triangleq does not appear when the power is turned on again.

If moisture starts to condense, your camcorder sometimes cannot detect condensation. If this happens, the cassette is sometimes not ejected for 10 seconds after the cassette lid is opened. This is not a malfunction. Do not close the cassette lid until the cassette is ejected.

Notes on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a humid place as shown below.

- When you bring your camcorder from a ski slope into a place warmed up by a heating device.
- When you bring your camcorder from an airconditioned car or room into a hot place outside.
- When you use your camcorder after a squall or a shower.
- When you use your camcorder in a hot and humid place.

How to prevent moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and seal it tightly. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

Video head

- When the video head becomes dirty, you cannot record pictures normally, or distorted picture or sound is played back.
- The video head suffers from wear after long use. If you cannot obtain a clear image even after using a cleaning cassette, it might be because the video head is worn. Please contact your Sony dealer or local authorized Sony service facility to have the video head replaced.
- For **Hig** TRV128/228/328/428: If the following problem occurs, clean the video heads for 10 seconds with the Sony V8-25CLD cleaning cassette (optional).
 - Playback pictures contains noise or the screen is displayed in blue.
 - Playback pictures are hardly visible.



- Playback pictures do not appear.
- [In the second content of the

• For I) TRV260/265:

If the following problem occurs, clean the video heads for 10 seconds with the Sony V8-25CLD cleaning cassette (optional).

 Mosaic-pattern noise appears on the playback picture or the screen is displayed in blue.





- Playback pictures do not move.
- Playback pictures do not appear or the sound breaks off.
- [s is Dirty video head. Use a cleaning cassette.] appears on the screen during recording.

LCD screen

- Do not add excessive pressure on the LCD screen, as it may cause damage.
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

To clean the LCD screen

• If fingerprints or dust make the LCD screen dirty, it is recommended you using the cleaning cloth (supplied) to clean it. When you use the LCD Cleaning Kit (optional), do not apply the cleaning liquid directly to the LCD screen. Use cleaning paper moistened with the liquid.

On handling the casing

- If the casing is soiled, clean the camcorder body with a soft cloth lightly moistened with water, and then wipe the casing with a dry soft cloth.
- Avoid the following to avoid damage to the finish.
- Using chemicals such as thinner, benzine, alcohol, chemical cloths, repellent and insecticide.
- Handling with above substances on your hands.

 Leaving the casing in contact with rubber or vinyl objects for a long period of time.

About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
 - When there are fingerprints on the lens surface.
 - In hot or humid locations
 - When the lens is exposed to salty air such as at the seaside.
- Store in a well-ventilated location subject to little dirt or dust.
- To prevent molds periodically clean the lens as described above.

It is recommended you operate your camcorder about once a month to keep it in an optimum state for a long time.

To charge the pre-installed button-type battery

Your camcorder has a pre-installed button-type battery to retain the date, time, and other settings even when the POWER switch is set to (CHG) OFF. The pre-installed button-type battery is always charged while you are using your camcorder but it will get discharged gradually if you do not use your camcorder. The button-type battery will be fully discharged in about 3 months if you do not use your camcorder at all. However, even if the preinstalled button-type battery is not charged, the camcorder operation will not be affected as long as you are not recording the date.

Procedures

Connect your camcorder to a wall outlet using the supplied AC Adaptor, and leave it with the POWER switch set to (CHG) OFF for more than 24 hours.

Specification

Video camera recorder

System

Video recording system For HiE TRV128/228/328/428: 2 rotary heads, Helical scanning FM system For HTRV260/265: 2 rotary heads, Helical scanning system Audio recording system For HiB TRV128/228/328/428: Rotary heads, FM system For [] TRV260/265: Rotary heads, PCM system Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo) Video signal NTSC color, EIA standards Usable cassette 8 mm video format cassette Tape speed For HiB TRV128/228/328/428: SP: Approx. 14.35 mm/s LP: Approx. 7.19 mm/s For HTRV260/265: SP: Approx. 28.67 mm/s LP: Approx. 19.11 mm/s Recording/playback time (using 120 min. Hi8/ **Digital8 video cassette)** For **HiE** TRV128/228/328/428: SP: 2 h LP: 4 h For HTRV260/265: SP: 1 h LP: 1 h 30 min Fast forward/rewind time (using 120 min. Hi8/ Digital8 video cassette) Approx. 5 min Viewfinder Electric viewfinder (monochrome) **Image device** For **HiB** TRV128/228/328/428: 3.0 mm (1/6 type) CCD (Charge Coupled Device) Gross: Approx. 320 000 pixels Effective: Approx. 200 000 pixels

For BTRV260/265: 3.0 mm (1/6 type) CCD (Charge Coupled Device) Gross: Approx. 460 000 pixels Effective: Approx. 290 000 pixels Lens Combined power zoom lens Filter diameter: 37 mm (1 1/2 in.) $20 \times (\text{Optical}), 990 \times (\text{Digital})$ F=1.6 - 2.4 Focal length 2.5 - 50 mm (1/8 - 2 in.)When converted to a 35 mm still camera 42 - 840 mm (1 11/16 - 33 1/8 in.) Color temperature Auto Minimum illumination For Fig TRV128/228/328/428: 1 lx (lux) (F 1.6) For FTRV260/265: 4 lx (lux) (F 1.6) 0 lx (lux) (in the NightShot plus mode)* * Objects unable to be seen due to the dark can be shot with infrared lighting. Input/Output connectors S video output 4-pin mini DIN Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced Chrominance signal: 0.286 Vp-p, 75 Ω (ohms), unbalanced AV MINIJACK Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative

Audio/Video output Audio signal: 327 mV (at output impedance more than 47 k Ω (kilohms)), Output impedance with less than 2.2 k Ω (kilohms) For HiB TRV128/228/328/428: Monaural minijack (ø 3.5 mm) For HTRV260/265: Stereo minijack (ø 3.5 mm) **RFU DC OUT** For FIE TRV128/228/328/428: Mini-minijack (ø 2.5 mm), DC5V **DV** input/output For HTRV260/265: 4-pin connector **USB** jack For HTRV260/265: mini-B

LCD screen

Picture 6.2 cm (2.5 type) Total dot number 123 200 (560 × 220)

General

Power requirements DC 7.2 V (battery pack) DC 8.4 V (AC Adaptor) Average power consumption (when using the battery pack) For Hi8 TRV128/228/328/428: During camera recording using the viewfinder 1.8 W During camera recording using the LCD 2.7 W For HTRV260/265: During camera recording using viewfinder 2.5 W During camera recording using LCD 3.4 W **Operating temperature** 0°C to 40°C (32°F to 104°F) Storage temperature -20° C to $+ 60^{\circ}$ C (-4° F to $+ 140^{\circ}$ F) Dimensions (approx.) $85 \times 98 \times 151 \text{ mm} (3 3/8 \times 3 7/8 \times 6 \text{ in.}) (w/h/$ d) Mass (Approx.) 780 g (1 lb 11 oz) main unit only 890 g (1 lb 15 oz) including the NP-FM30 rechargeable battery pack, Hi8/Digital8

cassette, lens cap, and shoulder strap

Supplied accessories

See page 11.

AC Adaptor AC-L15A/L15B Power requirements AC 100 - 240 V, 50/60 Hz Current consumption 0.35 - 0.18 A Power consumption 18 W Output voltage DC 8.4 V, 1.5 A Operating temperature 0°C to 40°C (32° F to 104°F) Storage temperature -20°C to + 60°C (-4°F to + 140°F) Dimensions (approx.) 56 × 31 × 100 mm (2 1/4 × 1 1/4 × 4 in.) (w/h/

Mass (approx.) 190 g (6.7 oz) excluding the power cord

d) excluding the projecting parts

Rechargeable battery pack (NP-FM30)

Maximum output voltage DC 8.4 V Output voltage DC 7.2 V Capacity 5.0 Wh (700 mAh) Dimensions (approx.) $38.2 \times 20.5 \times 55.6$ mm (1 9/16 × 13/16 × 2 1/4 in.) (w/h/d) Mass (approx.) 65 g (2.3 oz) Operating temperature

0°C to 40°C (32°F to 104°F)

Туре

Lithium ion

Design and specifications are subject to change without notice.

➡ continued

Types of differences

		video Hi8				Digital 8	
Model		CC	CD-		DCR-		
	TRV128	TRV228	TRV328	TRV428	TRV260	TRV265	
Recording system	Hi8	Hi8	Hi8	Hi8	Digital8	Digital8	
Playback system	Hi8/8	Hi8/8	Hi8/8	Hi8/8	Digital8	Digital8	
Audio recording	Monaural	Monaural	Monaural	Monaural	Stereo	Stereo	
AUDIO/VIDEO jack	OUT	OUT	OUT	OUT	OUT	OUT	
S VIDEO jack	OUT	OUT	OUT	OUT	OUT	OUT	
DV Interface		—	—		IN/OUT	IN/OUT	
USB jack		—	—		•	•	
SteadyShot		—	•	•	•	•	
Remote sensor	—	•	—	•	_	•	
RFU jack	•	•	•	٠	_	_	

Provided

- Not provided

Identifying parts and controls

Camcorder



- **1** Lens cap (p. 21, 25)
- 2 LCD screen (p. 3, 16)
- **3** OPEN button (p. 16)
- **4 VOLUME** –/+* button (p. 34)
- **5** END SEARCH button (p. 33)
- 6 Speaker
- **7** Viewfinder (p. 3, 16)
- **8** Battery pack
- 9 LIGHT button (p. 23)
- **10** FADER button (p. 30)
- **11** BACK LIGHT button (p. 27)
- 12 FOCUS button (p. 29)
- 13 SEL/PUSH EXEC dial (p. 43)
- * This button has a tactile dot.

To attach the lens cap





- **1** Built-in light (p. 23)
- 2 Lens
- **3** Infrared ray emitter (p. 64, 70)/ For Hi8 TRV228/428/ 10 TRV265: **Remote sensor**
- **5** Microphone
- 6 NIGHTSHOT PLUS switch (p. 28)
- **7** EASY button (p. 26, 36)
- 8 DSPL/BATT INFO button (p. 13, 37)
- 4 Camera recording lamp (p. 21, 26)



- **1** Jack cover
- **2** For **BTRV260/265**: A/V OUT jack (p. 39, 62)
- **3** For ()TRV260/265: DV Interface (p. 62)
- 4 For HTRV260/265: (USB) jack

- **5** S VIDEO OUT jack (p. 39, 62)
- 6 For HiE TRV128/228/328/428: A/V OUT jack (p. 39, 61)
- 7 For Hi8 TRV128/228/328/428: RFU DC OUT jack (p. 40)



1 RESET button (p. 74)

2 For HTRV260/265: BURN DVD/VCD

You can easily take a picture recorded on the tape and burn it onto a DVD or CD-R. See the supplied "Computer Applications Guide" for details.

For Hild TRV128/228/328/428: EASY DUB (Easy Dubbing) button (p. 64)

- **3** TITLE button (p. 31)
- **4 EXPOSURE button (p. 28)**
- 5 MENU button* (p. 43)
- 6 Video control buttons (p. 34)



- REW (rewind)
- PLAY (playback)*
- FF (fast-forward)
- PAUSE (pause)
- 7 CHG (charge) lamp (p. 12)

- 8 CAMERA mode lamps (p. 15)
- 9 PLAY/EDIT mode lamp (p. 15)
- 10 For HTRV260/265: Rec buttons (p. 68)
- 11 For Hig TRV128/228/328/428: COUNTER RESET button (p. 22)
- 12 For Hig TRV128/228/328/428: TIME button (p. 18, 25)
- 13
 For ▶ii⊠ TRV128/228/328/428:

 DATE button (p. 18, 25)
- * This button has a tactile dot.

→ continued



- **1** Viewfinder lens adjustment lever (p. 16)
- 2 Eyecup
- **3** Cassette lid
- 4 COPEN/EJECT lever (p. 18)

5 Tripod receptacle

Make sure that the length of the tripod screw is less than 5.5 mm (7/32 inch). Otherwise, you cannot attach the tripod securely, and the screw may damage your camcorder.



- **1** Power zoom lever (p. 23)
- **2 BATT** (battery) release button (p. 12)
- **3** Hooks for shoulder strap
- [4] For ⊖ TRV260/265: PHOTO button (p. 25)
- **5** POWER switch (p. 15)
- 6 Grip belt (p. 4)
- **7 REC START/STOP button (p. 21)**
- 8 DC IN jack (p. 12)

To attaching the shoulder strap

Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.



Remote Commander

Remove the insulation sheet before using the Remote Commander.

For Hi8 TRV228/428:



For HTRV265:



1 Transmitter

After turning on your camcorder, point towards the remote sensor to control your camcorder.

- **2 REC START/STOP button (p. 21)**
- **3** Power zoom button (p. 23)
- 4 Video control buttons (Rewind, Playback, Fast-forward, Pause, Stop, Slow) (p. 34)
- **5 DISPLAY button (p. 37, 40)**
- 6 PHOTO button (p. 25)
- **7** SEARCH M. button (p. 41, 42)
- **9** ZERO SET MEMORY button (p. 40)

To remove the insulation sheet



- To change the button-type battery
- **1** While pressing on the tab, inset your fingernail into the slit to pull out the battery case.



2 Remove the button-type lithium battery.



3 Place a new button-type lithium battery with the + side facing up.



4 Insert the battery case back into the Remote Commander until it clicks.

→ continued

WARNING

Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

() Notes on the Remote Commander

- A button-type lithium battery (CR2025) is used in the Remote Commander. Do not use batteries other than CR2025.
- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- When you are operating with the Remote Commander supplied with your camcorder, your VCR may also operate. In that case, select a commander mode other than VTR 2 for your VCR, or cover the sensor of your VCR with black paper.

Following indicators will appear on the LCD screen and viewfinder to indicate the state of your camcorder.

Indicators and their on-screen/viewfinder positions vary depending on your camcorder model.

Example: Indicators in the CAMERA mode

Time code (p. 22)/Tape counter (p. 22)/Selfdiagnosis (p. 79)/Tape photo recording (p. 25)

CRUTO	<u>9</u> 0	STB)	r (0:00 T T N	:00 +0+
H ® 2	8	<u>+</u> q	16:9	.	

Indicators	Meanings
▲ ⊂ 2 (5)	Warning (p. 79)
₽	Manual exposure (p. 28)
🕼 🔺 🛔	Manual focus (p. 29)
24	Back light (p. 27)
🕲 🏜 🎲 🎓 🛫 🏔	PROGRAM AE (p. 44)
P+	Picture effect (p. 45)
<u>16:9</u>	16:9 WIDE/CINEMA/16:9 FULL (p. 48)
(*************************************	SteadyShot off (p. 50)

Indicators	Meanings
demin €00min	Remaining battery time (p. 22)
<u>SP</u> <u>LP</u>	Recording mode (p. 22)
STBY REC	Recording standby/ recording mode
8	Mirror mode (p. 24)
	Tape photo recording (p. 25)
Hi B	Format indicator
♪ 16b	Audio mode (p. 54)
σο	Remaining tape (p. 22)
Ü	Interval recording (p. 56)
	Frame recording (p. 55)
DVIN	DV input (p. 68)
+0+	Zero set memory (p. 40)
ECAUTO ECOON	Built-light (p. 23)
0	NightShot plus (p. 28)

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CCD-TRV128/TRV228/TRV228E/TRV328/TRV428/TRV428E RMT-833

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Argentine Model Brazilian Model CCD-TRV128

> Tourist Model CCD-TRV428/TRV428E

SUPPLEMENT-1

File this supplement with the service manual. (PV05-004)

• Addition of repair parts

5-1. EXPLODED VIEWS 5-1-5. CABINET R BLOCK (See original service manual page 5-6.)



CCD-TRV128/TRV228/TRV228E/TRV328/TRV428/TRV428E

Sony EMCS Co.

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

- 1. Click the Print button 🖾.
- 2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:

To set a range to be printed within a page, select the graphic selection tool 🔂 and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

- 1. Click the Find button **P**.
- 2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:

To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



 Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:

The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.

Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the
- To move to the last page, click the **>**.
- To move to the previous page, click the **4**.
- To move to the next page, click the

Reversing the screens displayed once

- To reverse the previous screens (operation) one by one, click the **4**.
- To advance the reversed screens (operation) one by one, click the \clubsuit .

Application to the Service Manual:

This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

- Select either palm tool , zoom tool , text selection tool
 T: or graphic selection tool .
- Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form ^h.
- 3. Then, click the link. (You will go to the link destination.)

Moving with bookmark:

Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.



Zooming or rotating the screen display "Zoom in/out"

Click the triangle button in the zoom control box to select the display magnification. Or, you may click 🕑 or 🕞 for zooming in or out.



"Rotate"

• Click rotate tool 🖺, and the page then rotates 90 degrees each.

Application to the Service Manual:



Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.11	Official Release		
1.1	2005.06	Supplement-1 (S1 PV05-004)	Addition of repair parts	No
1.2	2007.11	Revised-1	Change of Repair Parts	Yes
		(A1 DI07-199)	S.M. revised: Page 5-23	