



INSTRUCTIONS

BASIC

COLOR VIDEO PRINTER

OEP-5

Table of Contents

Labels and Symbols

Important Information –
Please Read Before Use

Package Contents

1

Installation and
Connection

2

Inspection Before Use

3

Operation

4

Appendix

USA: CAUTION: Federal law restricts this device to sale by or on the order of a physician.

Table of Contents

Labels and Symbols

Important Information – Please Read Before Use

Intended Use	5
Instruction Manual	5
Instrument Compatibility	5
Repair and Modification	6
Signal Words	6
Dangers, Warnings and Cautions	6

Chapter 1 Package Contents

1.1 Checking the Package Contents	8
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Chapter 2 Installation and Connection

2.1 Installation of the Color Video Printer (OEP-5)	9
2.2 Connection of the EVIS EXERA II Video System Center (CV-180)	11
2.3 Connection to the AC Mains Power Supply	12

Chapter 3 Inspection Before Use

3.1 Inspection of the Power Supply	14
3.2 Installation of the Color Printing Pack (UPC-55)	15
Installation of the Ink Ribbon	15
Installation of the Print Sheets	17
3.3 Setup of Connected Equipment	20
3.4 Inspection of the LCD Panel Display	21
3.5 Setup of This Instrument	22
3.6 Inspection of the Monitor Display	23
3.7 Check the Printed Picture	24

Chapter 4 Operation

4.1 Turning the Power ON	25
4.2 Control from the Connected Equipment	26
4.3 In the Case of a Paper Jam	27
Removing the Jammed Paper Sheet	27
Restart Printing	28
4.4 Exiting from Examination	29

Appendix

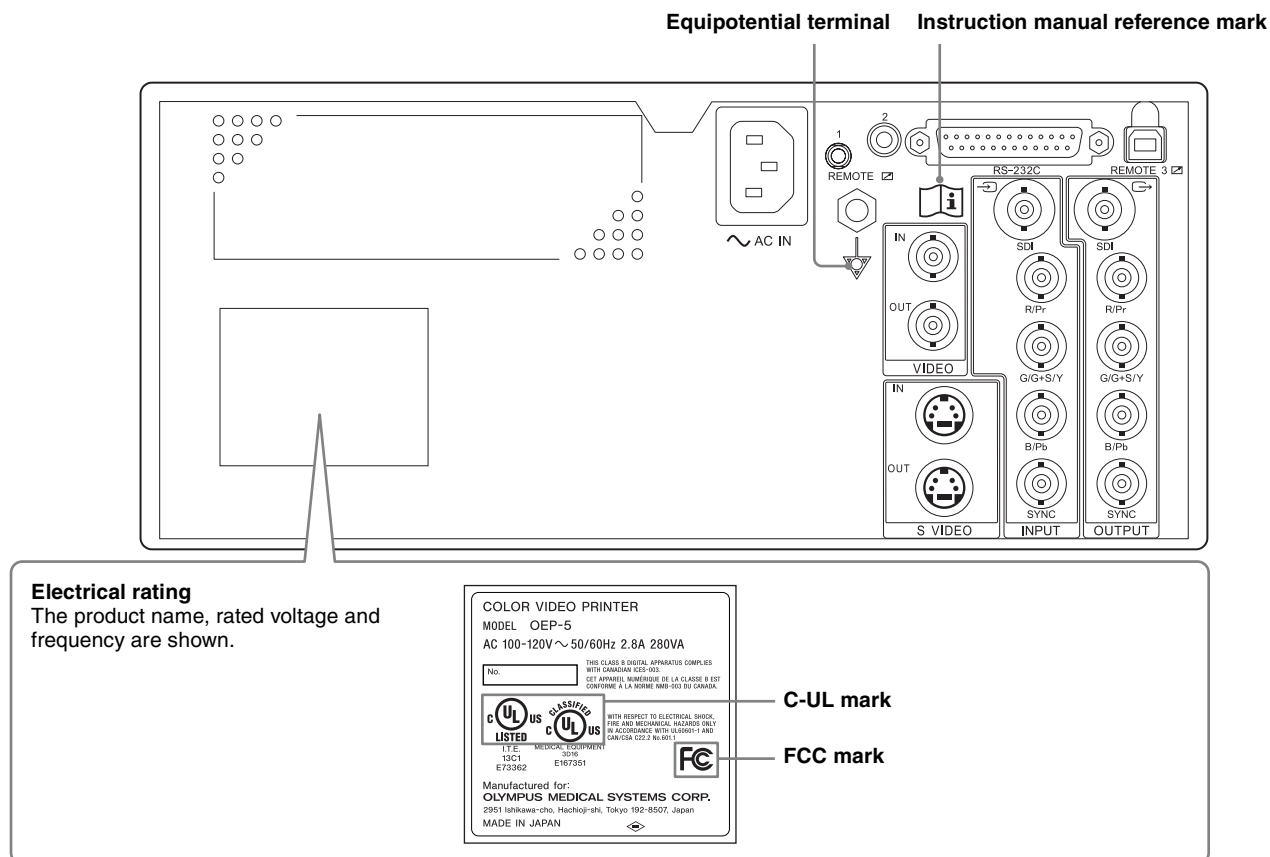
System Chart	30
Operating/Transport/Storage Environment	32
Specifications	32
EMC Information	34
FCC	36
FCC WARNING	36
Index	37

Labels and Symbols

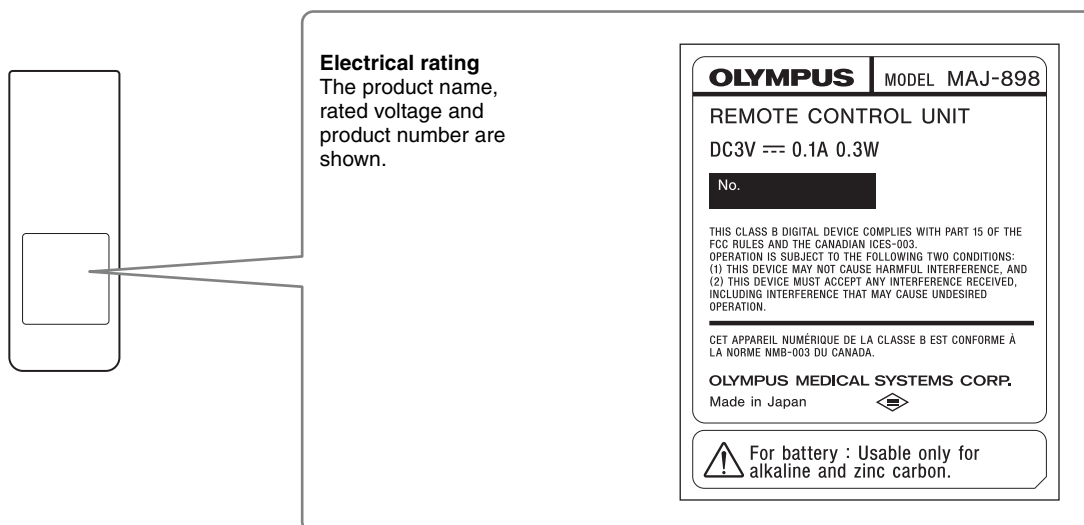
Safety-related labels and symbols are attached to this instrument (OEP-5 color video printer) at the locations shown below.

If labels or symbols are missing or illegible, contact Olympus.

Color video printer (OEP-5)



Remote control unit (MAJ-898) (optional)



Important Information – Please Read Before Use

Intended Use

The OEP-5 color video printer has been designed to be used with Olympus endoscopes for recording and printing endoscopic documentation.

Do not use this instrument for any purpose other than its intended use.

Instruction Manual

This instruction manual contains essential information on using this instrument safely and effectively. Before use, thoroughly review this manual and the manuals of all equipment that will be used during the procedure and use the equipment as instructed.

In addition, the “INSTRUCTIONS” for this instrument are incorporated by “BASIC” and “ADVANCED.”

This “INSTRUCTIONS” is “BASIC,” and provides the most basic information about this instrument.

More detailed information is described in “ADVANCED.”

Keep this and all related instruction manuals in a safe, accessible location. If you have any questions or comments about any information in this manual, please contact Olympus.

Terms used in this manual

Wall mains outlet

An electrical outlet that has a terminal used exclusively for grounding.

Isolation transformer

The isolation transformer is a safety device that is used to isolate non insulated equipment with potentially high leakage currents to decrease the possibility of electric shock.

Freeze

The freeze function creates a stationary view of the moving image.

Video system center/Video system

These are the devices used to convert the endoscopic image captured using a videoscope or fiberscope into the signal to be output to the monitor device.

Ultrasound center

The ultrasound center converts the ultrasonic signals from an ultrasonic endoscope or probe into monitor images.

SDTV

Standard Definition Television. It is the format used by ordinary television systems.

HDTV

High Definition Television. It is a format featuring higher image definition than the SDTV format.

SDI

Serial Digital Interface. It is a digital interface standard used in video distribution.

Color printing pack

Set of ink ribbon and print sheets used to print pictures on this instrument.

Source image

Live image being input from the video signal input source.

Memory image

Image stored in the memory of this instrument.

Capture

Stores the image, sent from connected equipment, in the memory of this instrument for printing.

Wireless remote control

Remote control that operates this instrument by radio communications.

Wired remote control

Remote control that operates this instrument by cable connecting.

Instrument Compatibility

Refer to the “System Chart” on page 30 in the “Appendix” to confirm that this instrument is compatible with the ancillary equipment being used. Using incompatible equipment can result in patient or operator injury and/or equipment damage. It may also impair the functionality of the instrument.

This instrument complies the EMC standard for medical electrical equipment edition 2 (IEC 60601-1-2 : 2001) and edition 3 (IEC 60601-1-2 : 2007). However when connecting to an instrument that complies with the EMC standard for medical electrical equipment edition 1 (IEC 60601-1-2 : 1993), the whole system then complies with edition 1. (See, “EMC Information” on page 34 for EMC compliance level.)

For the customers in Canada

This unit has been certified according to Standard CSA C22.2 No.601.1.

Repair and Modification

This instrument does not contain any user-serviceable parts. Do not disassemble, modify or attempt to repair it; patient or operator injury and/or equipment damage can result.

Some problems that appear to be malfunctions may be correctable by referring to “Chapter 7 Troubleshooting” in “INSTRUCTIONS (ADVANCED).” If the problem cannot be resolved using the information in Chapter 7 in “INSTRUCTIONS (ADVANCED),” contact Olympus.

Signal Words

The following signal words are used throughout this manual:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices or potential equipment damage.

NOTE

Indicates additional helpful information.

Dangers, Warnings and Cautions

Follow the dangers, warnings and cautions given below when handling this instrument. This information is to be supplemented by the dangers, warnings and cautions given in each chapter.

Especially, about a power supply, refer to “2.3 Connection to the AC Mains Power Supply” on page 12.

DANGER

- Strictly observe the following precautions. Failure to do so may place the patient and medical personnel in danger of an electric shock:
 - Keep fluids away from all electrical equipment. If fluids are spilled on or into this instrument, immediately stop operating it and contact Olympus.
 - Do not prepare, inspect or use this instrument with wet hands.
- Never install and operate this instrument in locations where:
 - The concentration of oxygen is high.
 - Oxidizing agents (such as nitrous oxide (N₂O)) are present in the atmosphere.
 - Flammable anesthetics are present in the atmosphere.Otherwise, explosion or fire may result because this color video printer is not explosion-proof.

WARNING

- Be sure to turn this instrument OFF and unplug the power cord before proceeding to care and maintenance of this instrument. If the power cord is left plugged in, an electric shock may result.
- Never insert metal and/or thing that are easy to burn, or do not drop it into this instrument inside from the ventilation grills. Electric shock and/or fire may result. Moreover, if something go into the inside of this instrument, turn OFF the power immediately and stop use, then disconnect the power cord and connecting cables. Contact Olympus.
- When there are abnormally sound, smell and/or heat from this instrument, stop use immediately and contact Olympus.

CAUTION

- Do not use a pointed or hard object to press the switches on the front panel and/or remote control unit (MAJ-898) (optional). This may damage the switches.
- Do not use this instrument roughly. Otherwise, equipment damage, patient and operator injury can occur.
- Strictly observe the following precautions. Otherwise, damage and/or malfunction can occur.
 - Do not touch the electrical contacts inside this instrument’s terminals.

- Do not apply excessive force to the terminals of this instrument.
- When using spray-type medical agents such as lubricate, anesthetic, or alcohol, use them away from this instrument so that the medical agents will not fall on this instrument. The medical agents possibly may come into this instrument from its ventilation grills and cause the failure.
- Do not use a humidifier by this instrument as dew condensation possibly might occur and it may cause the failure.
- Be sure that this instrument is not used adjacent to or stacked with other equipment (other than the components of this instrument or system) to avoid electromagnetic interference.
- Electromagnetic interference may occur to this instrument near equipment marked with the following symbol or other portable and mobile radio telecommunications equipment such as cellular phones. If radio interference occurs, mitigation measures may be necessary, such as reorienting or relocating this instrument or shielding the location.



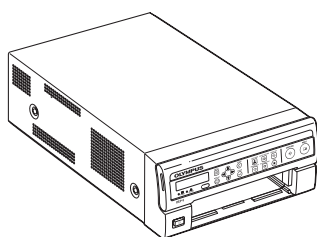
For the State of California, USA only

Perchlorate Material - special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate
Perchlorate Material : Lithium battery contains perchlorate.

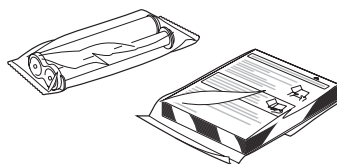
1.1 Checking the Package Contents

Match all items in the package with the components shown below. Inspect each item for damage. If this instrument is damaged, a component is missing, or you have any questions, do not use this instrument; immediately contact Olympus.

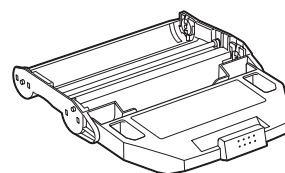
Color video printer (OEP-5)



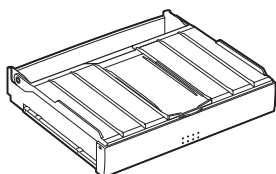
Color video printer
(OEP-5)



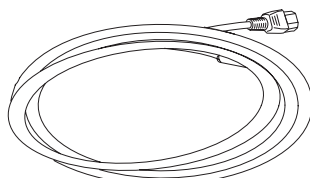
Trial pack (100 sheets)



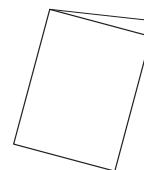
Ink ribbon holder



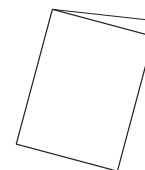
Paper tray



Power cord

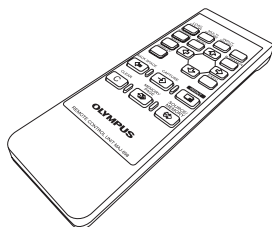


INSTRUCTIONS
(BASIC)

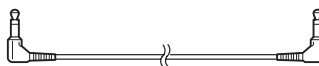


INSTRUCTIONS
(ADVANCED)

Remote control unit (MAJ-898) (optional)



Remote control unit (MAJ-898)



Remote cable

"AA"-size batteries are not supplied. Prepare batteries before use.

Prepare this instrument and compatible equipment (shown in the “System Chart” on page 30 in “Appendix”) before each use, and refer to the instruction manuals of each system component. Install and connect the equipment as follows:

In addition, this “INSTRUCTIONS (BASIC)” explains the EVIS EXERA II Video System Center (CV-180). For other equipment, refer to “Chapter 2 Installation and Connection” in “INSTRUCTIONS (ADVANCED).”

WARNING

- Review this chapter thoroughly before each use. If the equipment is not properly prepared before each use, equipment damage, patient and operator injury and/or fire can occur.
- When non medical electrical ancillary equipment is used, connect its power cord via an isolation transformer prior to connecting it to this instrument. Failure to do so can cause electric shock, burns and/or fire.
- Use this instrument, the remote control unit (MAJ-898) and color printing pack (UPC-55) under the conditions described in “Operating/Transport/Storage Environment” on page 32 and “Specifications” on page 32 in “Appendix”. Otherwise, improper performance, compromised safety and/or equipment damage may result.
- Connect the power cord to a wall mains outlet, and the connecting cables to each equipment firmly. If connections are not made correctly/firmly, fire or electric shock may result.

CAUTION

- Turn OFF all equipment before connecting them. Otherwise, equipment damage or malfunction may result.
- Use appropriate cables. Otherwise, equipment damage or malfunction may result.
- The cables should not be sharply bent, pulled, twisted or crushed.
- When you connect another piece of video equipment between this instrument and the video system center, be sure not to turn off the power of the video equipment while this instrument is being used. If you turn off the power of the video equipment, the video signal may not be input to this instrument properly, and this instrument may not work correctly, depending on the video equipment connected.

2.1 Installation of the Color Video Printer (OEP-5)

CAUTION

- Do not place any object on the top of this instrument. Otherwise, equipment damage may result.
- Keep the ventilation grilles of this instrument clear. Blockage may cause overheating and equipment damage.
- Place this instrument on a stable and level surface. Otherwise, this instrument topple down or drop.
- If a trolley other than the mobile workstation (WM-NP1, WM-WP1) is used, confirm that the trolley can withstand the weight of the equipment installed on it.
- Do not use this instrument in an inclined position. Unstable operation, damage and/or abnormal printing may result.
- Do not install this instrument near a source of strong magnetic radiation (microwave treatment device, short wave treatment device, MRI, radio equipment, etc.). Otherwise, this instrument may cause malfunction.

Installation on the mobile workstation (WM-NP1, WM-WP1)

- 1 Place the mobile workstation on a level surface.
Lock the caster brakes by pushing them down (see Figure 2.1).

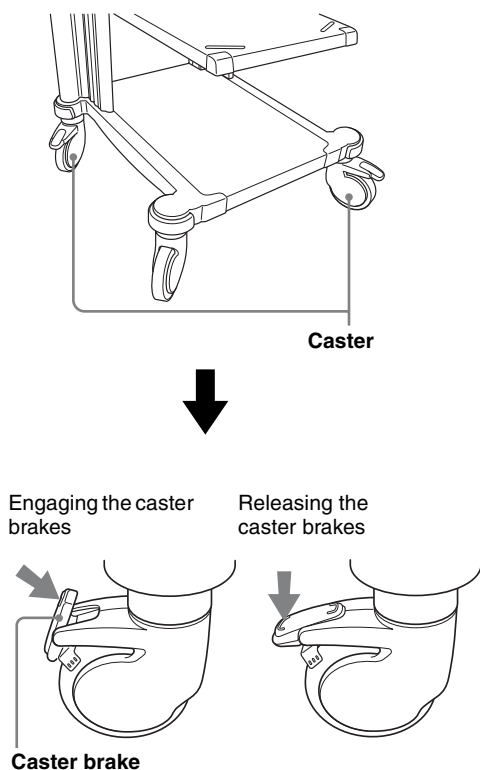


Figure 2.1

- 2 Install the mobile shelf of the mobile workstation according to the configuration of the equipment installed on it, as described in the mobile workstation's instruction manual.
- 3 Place the color video printer (OEP-5) on the mobile shelf of the mobile workstation.
- 4 Be sure the portion of the color video printer (OEP-5) does not contact with the mobile workstation, etc., when you attach or remove the paper tray, or open the front door.
If the color video printer (OEP-5) comes into physical contact with the mobile workstation, etc., move the color video printer (OEP-5) to a location where it will not contact with the mobile workstation.

2.2 Connection of the EVIS EXERA II Video System Center (CV-180)

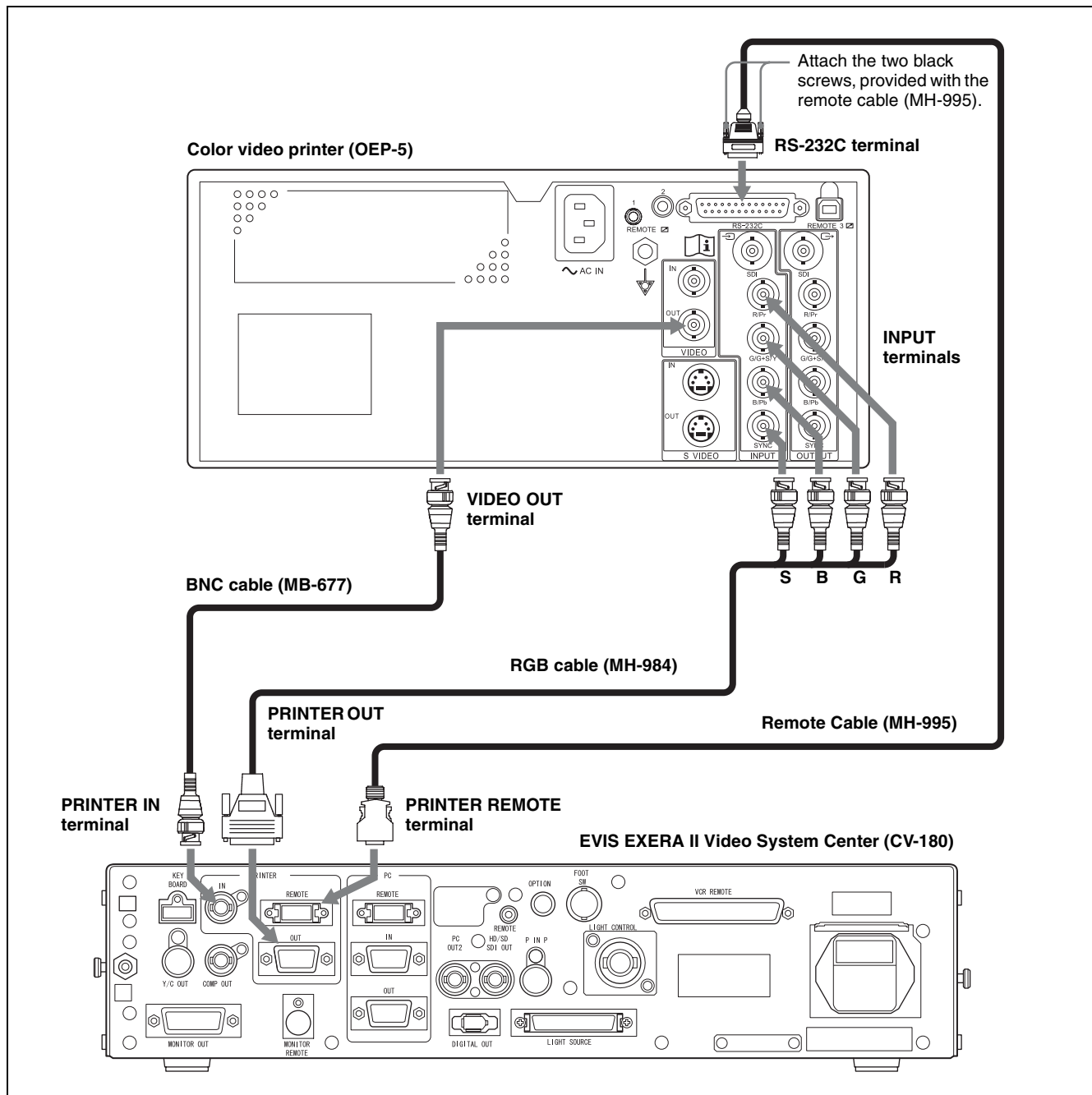


Figure 2.2

NOTE

For connecting the EVIS EXERA II Video System Center (CV-180) to a monitor, refer to the instruction manual supplied with the EVIS EXERA II Video System Center (CV-180).

2.3 Connection to the AC Mains Power Supply

DANGER

Always power this instrument from a wall mains outlet that has an exclusive terminal for grounding this instrument. Otherwise, fire or electric shock may result.

WARNING

- Strictly observe the following precautions for the power cord. Damaging the power cord may result in fire or an electric shock:
Moreover, if the power cord is damaged, turn OFF the power and stop using this instrument immediately and contact Olympus.
 - Take care to place the cord such that it is not crushed between the instrument and a wall, mobile workstation or a shelf, etc.
 - Do not modify or damage the power cord.
 - Do not use damaged power cord.
 - Do not stretch or place a heavy object on the power cord.
 - Do not place the power cord near heating equipment or expose it to excessive heat.
 - Always grasp and pull the plug when unplugging the power cord. Do not pull on the cord itself.
- Always use this instrument with the voltage specified in “Specifications” on page 32 in “Appendix”. With an incorrect supply voltage, fire and/or electric shock may result.
- If there is metal and/or dust on the power cord plug or near the plug of the power cord, disconnect the power cord and remove it with a dry cloth. Otherwise, fire and/or electric shock may result.
- Always use the power cord and connection cables that were shipped with this instrument or mobile workstation. Using other power cords or connection cables may result in electric shock and/or malfunction.
- Do not allow the power plug to become wet. Also do not hold the power cord with a wet hand. A wet power plug may cause electric shock.
- Confirm that the wall mains outlet has adequate electrical capacities. Failure to do so may cause fire or a power failure to all of the equipment connected to the same power circuit.
- Do not bend, pull or twist the power cord. Equipment damage, including separation of the power plug or disconnection of the cord wire, as well as fire or electric shock, can result.
- Do not use the adapter that the power cord plug changed into 3-pin to 2-pin. Electric shock may result.

CAUTION

- Use a power supply that suits the specifications in “Specifications” on page 32 in “Appendix.” Otherwise, malfunction may result.
- Be sure to connect the power plug securely. Otherwise, the equipment will not function.
- Do not use of a power supply with insufficient electrical capacities. Otherwise, malfunction may result.
- Be especially careful not to allow the power cord to become disconnected. If the power cord disconnects during use, any picture being printing will be lost, or may not be printed correctly.
- Do not connect or disconnect the power cord while power is ON. Otherwise, malfunction may result.

To connect to the AC mains power supply

- 1 Confirm that the color video printer (OEP-5) is turned OFF.

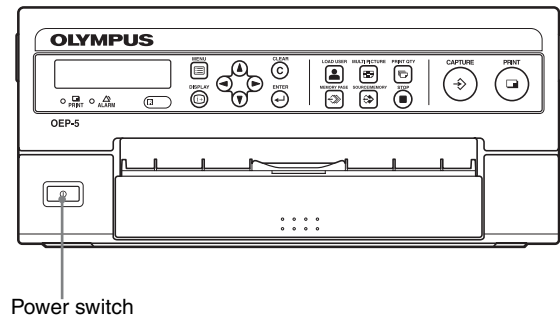


Figure 2.3

- 2 Connect the power cord provided with the mobile workstation to the AC mains power inlet of the color video printer (OEP-5) (see Figure 2.4).

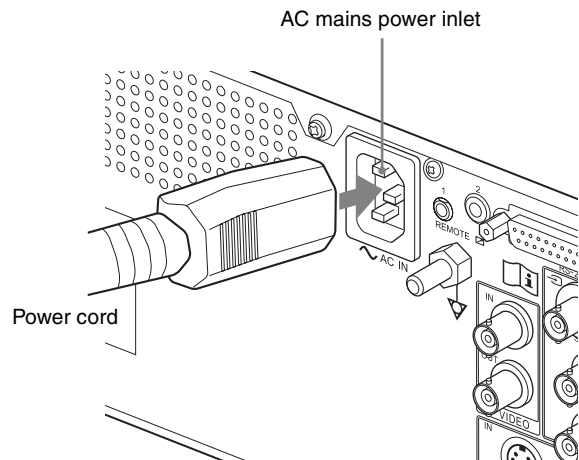


Figure 2.4

- 3 Connect the power cords of the ancillary equipment to the mobile workstation by referring to the respective instruction manuals.

- 4 Connect the power cord of the mobile workstation to a wall mains outlet.

WARNING on power connection for medical use

Please use the following power supply cord.

With connectors (plug or female) and cord types other than those indicated in this table, use the power supply cord that is approved for use in your area.

	United States and Canada
Plug Type	HOSPITAL GRADE*
Cord Type	Min. Type SJT Min. 18 AWG
Minimum Rating for Plug and Appliance Couplers	10A/125V
Safety Approval	UL Listed and CSA

*Note: Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked 'Hospital Only' or 'Hospital Grade'.

WARNING

Before each use, inspect this instrument as instructed below. Inspect other equipment to be used with this instrument as instructed in their respective instruction manuals. Should the slightest irregularity be observed, do not use this instrument and see “Chapter 7 Troubleshooting” in “INSTRUCTIONS (ADVANCED).” If the irregularity is still observed, contact Olympus.

Damage or irregularity may compromise the patient or user safety, and may result in more severe equipment damage.

Prepare this instrument and other equipment (shown in “System Chart” on page 30 in the “Appendix”) to be used with this instrument for each particular case. Refer to the respective instruction manuals for each piece of ancillary equipment.

To disconnect the main power, unplug the AC IN connector.

3.1 Inspection of the Power Supply

- 1 Press the power switch to turn ON the color video printer (OEP-5) (see Figure 3.1).
- 2 Confirm that the “PRINT” lamp and “ALARM” lamp lights and then turns off (see Figure 3.1).
- 3 Press the power switch again.
- 4 Confirm that the LCD panel turns off.

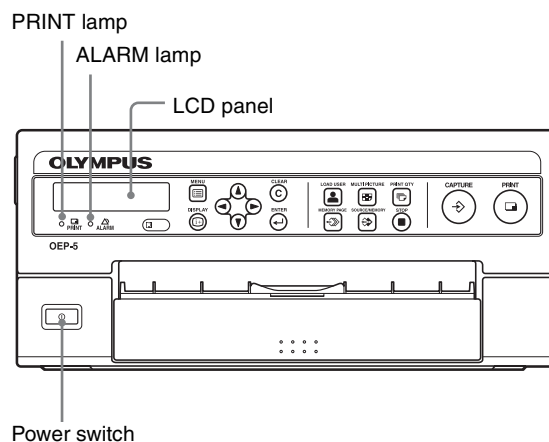


Figure 3.1

If the power fails to come on

If the power fails to come on, inspect according to “Chapter 7 Troubleshooting” in “INSTRUCTIONS (ADVANCED).”

If power still fails to turn ON, contact Olympus.

3.2 Installation of the Color Printing Pack (UPC-55)

Install the separately available color printing pack (UPC-55) on this instrument. Never use printing packs other than UPC-55. When using this instrument for the first time, the supplied trial pack can be used for an operation check.

CAUTION

The color printing pack (UPC-55) is a set of ink ribbon and print sheets. Be sure to use the ink ribbon and print sheets provided in the same set. Otherwise, the color tones in printed pictures may be abnormal. Always replace the ink ribbon and print sheets simultaneously, even if either of them is remaining. Otherwise, the color tones in printed pictures may be abnormal.

Installation of the Ink Ribbon

Install the ink ribbon on the provided ink ribbon holder.

- 1 Open the front door by flipping it downward from the top edge (see Figure 3.2).

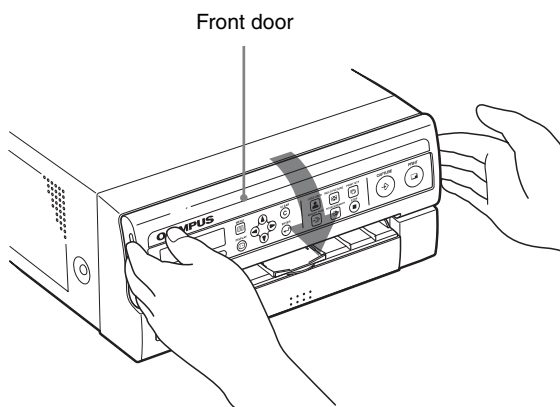


Figure 3.2

CAUTION

- Be careful not to catch your hand in the front door. Otherwise, injury may result.
- Do not apply excessive force to the front door. Otherwise, damage may result.

- 2 Take out the ink ribbon holder (see Figure 3.3).

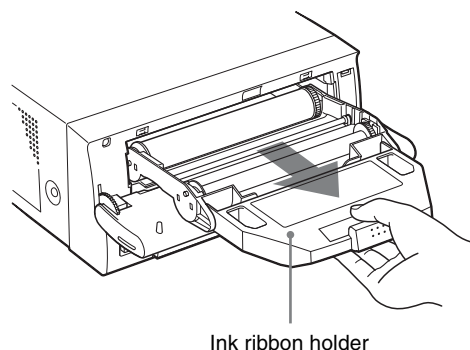


Figure 3.3

CAUTION

- Do not apply excessive force to the ink ribbon holder. Otherwise, damage may result.
- Remove the ink ribbon holder squarely from this instrument. If you take out the ink ribbon holder at a slant, this instrument and/or the ink ribbon holder may be damaged.

- 3 Remove the used ink ribbon from the ink ribbon holder.

While pushing the take-up side gear (gray ink ribbon gear) in the direction of the arrow, remove the ink ribbon from the take-up side gear shaft. Also remove it from the feed side gear shaft by pushing the feed side gear (white ink ribbon gear) in the direction of the arrow (see Figure 3.4).

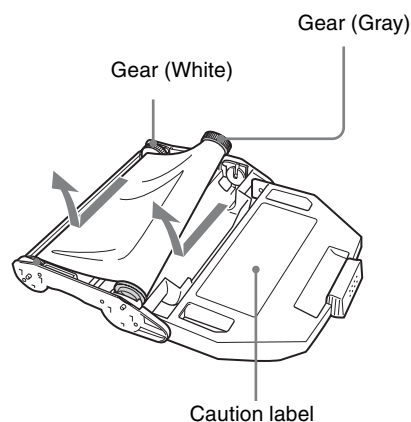


Figure 3.4

CAUTION

Do not attempt to reuse a used ink ribbon. Also do not attempt to rewind and reuse an ink ribbon. Otherwise, the printing will not only be incorrect but damage to this instrument may also occur.

NOTE

Also refer to the caution label on the ink ribbon holder.

- 4** Set a new ink ribbon on the ink ribbon holder. Hold the ink ribbon right and remove the gear cover (see Figure 3.5).

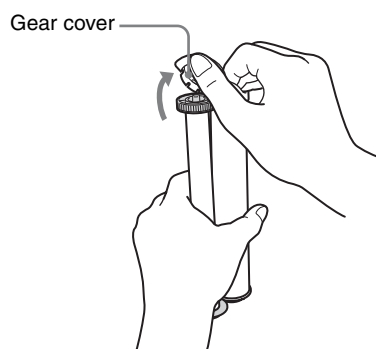


Figure 3.5

CAUTION

- Do not place an ink ribbon in a location exposed to direct strong electromagnetic radiation. Electromagnetic radiation may damage the IC chip built into the ink ribbon, and the remaining ink level cannot be correctly displayed.
- Do not touch the surface of the ink ribbon for longer than is necessary. Do not leave it in a dusty environment. If smudges or dust attach to the ink ribbon, printing will not only be incorrect but also damage to this instrument may occur.

- 5** Firstly, firmly secure the white gear in the ink ribbon, and then the gray gear (see Figure 3.6).

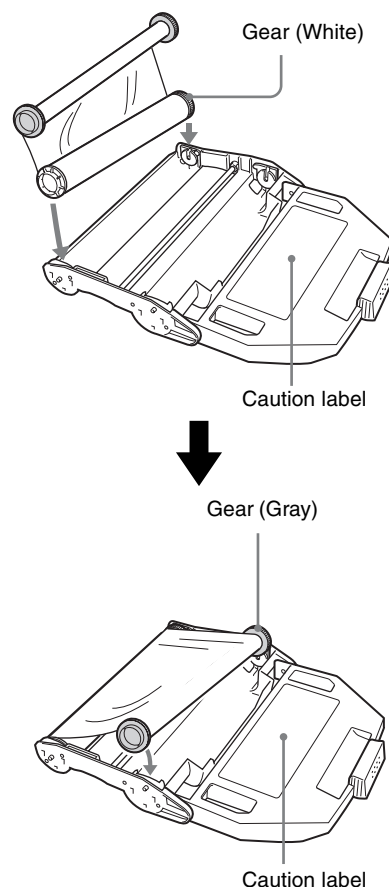


Figure 3.6

CAUTION

Install the ink ribbon securely on the ink ribbon holder, and be sure that the ink ribbon film is stretched tightly (not loose), otherwise printing will not only be incorrect but may result in damage to this instrument.

NOTE

Also refer to the caution label on the ink ribbon holder.

- 6** Turn the gears in the arrow direction until the magenta section of the ink ribbon appears all over to remove slack from the ink ribbon (see Figure 3.7).

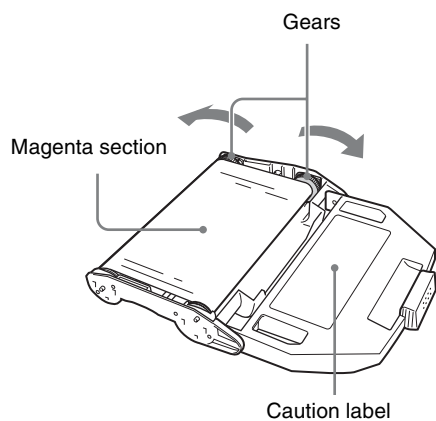


Figure 3.7

NOTE

Also refer to the caution label on the ink ribbon holder.

- 7** Push the ink ribbon holder all the way into the color video printer (OEP-5) (see Figure 3.8).

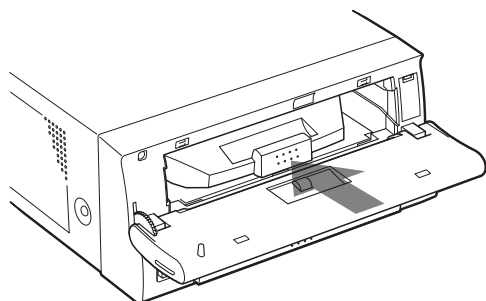


Figure 3.8

WARNING

Do not insert or put anything except the ink ribbon holder into the slot. Otherwise, damage, fire and/or electric shock may result.

CAUTION

Push the ink ribbon holder squarely into this instrument. If you push the ink ribbon holder in at a slant, the ink ribbon may be torn, or this instrument and/or the ink ribbon holder may be damaged.

- 8** Close the front door of the color video printer (OEP-5) (see Figure 3.9).

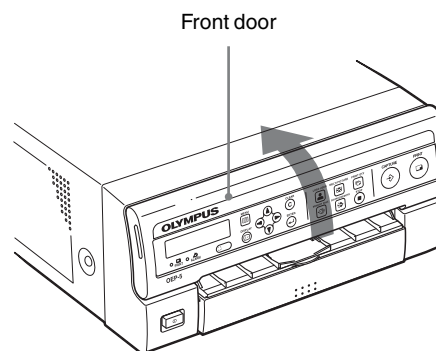


Figure 3.9

CAUTION

- Be careful not to catch your hand in the front door. Otherwise, injury may result.
- Do not apply excessive force to the front door. Otherwise, damage may result.

If the ink ribbon is torn in the middle

- 1** Connect the torn sections with transparent plastic tape (see Figure 3.10).
- 2** Turn the gray gear on the take-up side in the direction of the arrow to take up the ink ribbon until the plastic tape is invisible (see Figure 3.10). Be sure to remove slack from the ink ribbon.

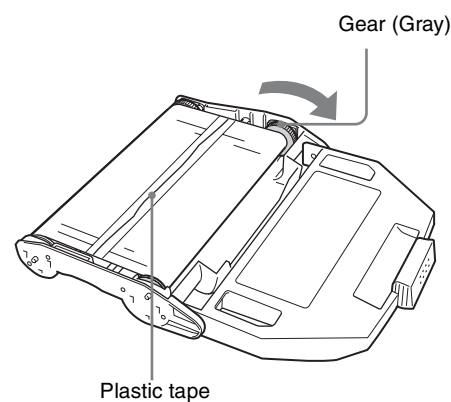


Figure 3.10

Installation of the Print Sheets**NOTE**

When removing the print sheets from this instrument (for storage), put the print sheets in its original package bag or a similar bag according to the instruction manuals supplied with the color printing pack (UPC-55).

- 1 Press the “PUSH EJECT” area of the paper tray and take out the paper tray from the color video printer (OEP-5) (see Figure 3.11).

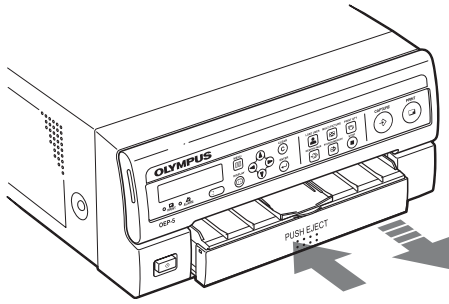


Figure 3.11

CAUTION

- When attaching or detaching the paper tray, be careful not to move this instrument together. Otherwise, this instrument may drop and cause injury or malfunction.
- Do not apply excessive force to the paper tray. Otherwise, damage may result.
- Remove the paper tray squarely from this instrument. If you take out the paper tray at a slant, it may result in damage to the paper tray or to this instrument.
- Do not remove the paper tray while printing, as damage to this instrument may result.

- 2 Flip through the print sheets together with the protective sheet (see Figure 3.12).

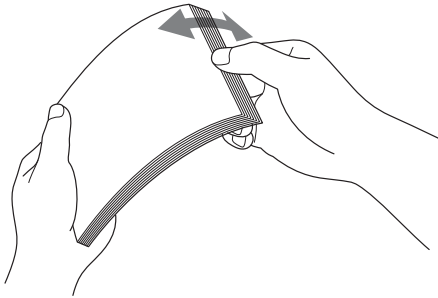


Figure 3.12

CAUTION

- Do not touch the print surface of print sheets with a hand. Always handle the print sheets without removing the print surface protective sheet. If smudges or dust attach to the print surface, printing will not only be incorrect but also damage to this instrument may occur.
- If you use print sheets that have stuck to each other, these stuck print sheets will be double-fed into this instrument and may cause frequent paper jamming.
- Do not bend and/or fold print sheets when you flip print sheets. Also, do not use extremely

warped print sheets. Otherwise, paper jam may result.

- 3 Open the cover of the paper tray. If print sheets remain in the paper tray, remove them. Align the direction of the arrow of the positioning mark on the protective sheet with that of the arrow of the positioning mark on the paper tray, and place the print sheets in the paper tray together with the protective sheet, so that the print surfaces face upward (see Figure 3.13).

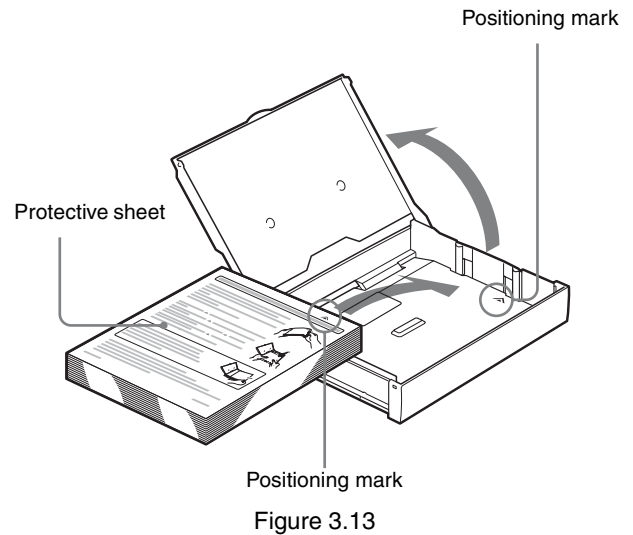


Figure 3.13

CAUTION

- Set print sheets so that they accurately fit the paper tray. Otherwise, paper jam may result.
- Do not add additional print sheets to the paper tray while paper sheets remain. If you add additional print sheets, this may cause paper jamming.
- Do not reuse the print sheets left in the paper tray.

NOTE

Also refer to the indications on the paper tray and the protective sheet.

- 4** Remove the protective sheet (see Figure 3.14).

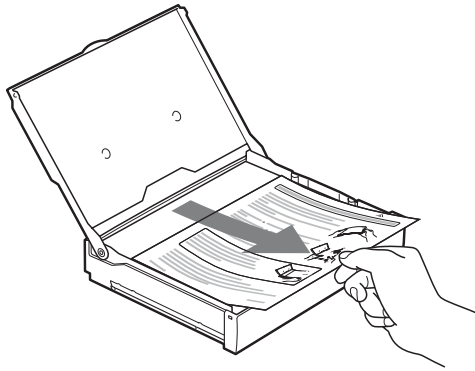


Figure 3.14

- 5** Insert the paper tray into the color video printer (OEP-5) until it clicks (see Figure 3.15).

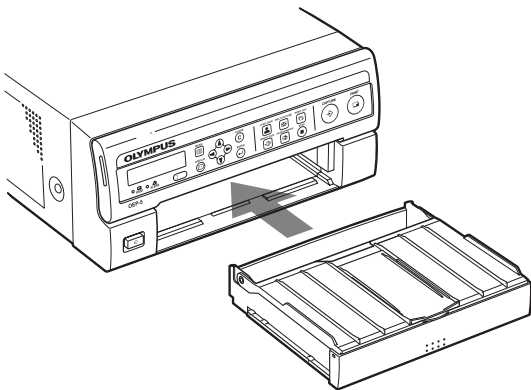


Figure 3.15

- 6** Pull out the stopper of the paper tray until it clicks (see Figure 3.16).

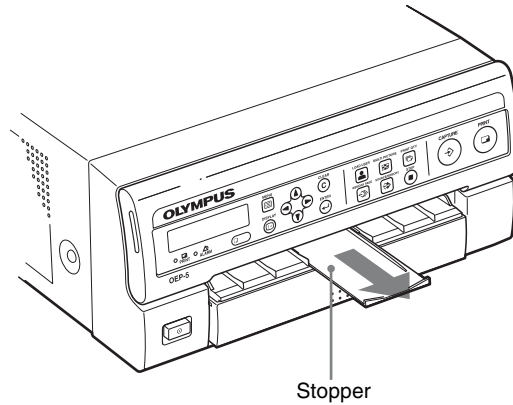


Figure 3.16

CAUTION

- When attaching or detaching the paper tray, be careful not to move this instrument together. Otherwise, this instrument may drop and cause injury or malfunction.
- If the paper tray cannot be inserted all the way, check that the print sheet is remaining in the paper tray slot. If any is remaining, remove it and do not attempt to reuse it.
- Do not place your hand in the paper exit. Otherwise, injury may result from catching in the internal roller.
- Insert the paper tray into this instrument squarely. If you insert the paper tray at a slant, it may result in damage to the paper tray or to this instrument. Also, abnormal noise or paper jamming may occur during printing.
- Insert the paper tray into this instrument after turning the power on. Otherwise, damage to this instrument may result.

3.3 Setup of Connected Equipment

This document, “INSTRUCTIONS (BASIC),” explains the EVIS EXERA II video system center (CV-180).

Refer to the instruction manuals of the connected equipment, which must be set up as required for use with this instrument.

Refer to “INSTRUCTIONS (ADVANCED)” when you use equipment other than the equipment introduced in “INSTRUCTIONS (BASIC).”

Table 3.1

Connected Device	Instruction Manual References	Setup Item	Setup	Note
CV-180	“9.2 System setup” “Printer”	“Type”	“OEP4”	Select the printer type. Be sure to set “Type” to “OEP4” when using this instrument.
		“Qty. “N””	“4” – “9”	Select the print quantity when the “Print quantity indicator” on the keyboard is set to “N.” Select any setting, as required.
		“Caption”	Max. 32 characters.	Input the characters to be printed in the margin of print sheet.
		“Release Time”	“0.5sec” “1sec” “1.5sec” “2sec”	Set the time while still images from the endoscope are captured before the images are read by the printer.
		“OEP4 mode”	“Mode1” “Mode2”	Select the output signal format for the endoscope image. Select “Mode1” when HDTV signals are input.
	“9.3 User preset” “Remote switch and foot switch (EXERA and VISERA)”	“Scope switch”	“Release1” “Release2”	Select the function to be controlled from the scope switch and foot switch on the camera head. Select any setting, as required.
		“Switch1”		
		“Switch2”		
	“9.3 User preset” “Release function”	“Switch3”	“CVP”	Select the instrument to be controlled from “Release1” and “Release2” that are assigned to the scope switch and foot switch on the camera head. Be sure to set this item to “CVP” when using this instrument. The RELEASE key of the keyboard provides the same function as “Release1.”
		“Switch4”		
		“Foot switch”		
	“9.3 User preset” “Release function”	“Switch1”	“CVP”	Select the instrument to be controlled from “Release1” and “Release2” that are assigned to the scope switch and foot switch on the camera head. Be sure to set this item to “CVP” when using this instrument. The RELEASE key of the keyboard provides the same function as “Release1.”
		“Switch2”		
		“Release setting”		
	“9.3 User preset” “Release function”	“Release1”	“CVP”	Select the instrument to be controlled from “Release1” and “Release2” that are assigned to the scope switch and foot switch on the camera head. Be sure to set this item to “CVP” when using this instrument. The RELEASE key of the keyboard provides the same function as “Release1.”
		“Release2”		

3.4 Inspection of the LCD Panel Display

The LCD panel displays the information and messages according to the conditions of this instrument.

CAUTION

If an error or warning message is displayed, refer to “Countermeasures Against Messages” in “7.1 Troubleshooting Guide” in “INSTRUCTIONS (ADVANCED)”, and take the appropriate measures.

- 1 Turn the color video printer (OEP-5) ON as described in “3.1 Inspection of the Power Supply” on page 14.
- 2 Confirm that the LCD panel displays the startup message and that the display then changes as shown in Figure 3.17.
For details of each item, refer to “INSTRUCTIONS (ADVANCED).”

Startup message

OEP-5	COLOR
VIDEO	PRINTER

Caption display

This field shows “C” when the printed picture is set to contain a comment (caption).

Input signal display

This field shows the selected input signal format (see Table 3.2).

Remaining ink ribbon display

This field shows the remaining ink ribbon.

Print quantity display

This field shows the number of prints.

Memory page display

This field shows the selected memory page.

Print layout (ZOOM MODE Settings) display

This field shows the setting of the print layout (see Table 3.3).

Source/Memory display

This field shows “S” when the source image is displayed on the monitor, and shows “M” when the memory image is displayed on the monitor.

Operation mode display

This field shows the operation mode of this instrument. The number on the left is the number of images used in multi-picture printing. Also, in the case of a printed image with white frame, “F” is displayed on the right side of the number of images. The number on the right indicates the current position of the pointer. It is the location where the image is stored next.

HDAUTO	C	COL : 100
Q1	A	RM 4F : 1 S

Table 3.2

Display	Input signal format
VIDEO	VBS composite video
SVIDEO	Y/C signals
SD	RGB signals (SDTV)
HD	RGB signals (HDTV)
SDAUTO	Auto input detection (for SDTV input)
HDAUTO	Auto input detection (for HDTV input)
SD-SDI	SDI signal (SDTV)
HD-SDI	SDI signal (HDTV)
SSDAUT	Auto SDI signal input detection (for SDTV input)
HSDAUT	Auto SDI signal input detection (for HDTV input)

Table 3.3

Display	ZOOM MODE Settings
OFF	OFF (Print normally.)
PT	PART (Only the “4:3” and “5:4” aspect ratios are available.)
ALL	ALL (Only the “4:3” and “5:4” aspect ratios are available.)
RM	REMOTE (All aspect ratios are available. ZOOM MODE activates depending on the signal being input.) This setting is for future expansion. Not used.

3

Inspection Before Use

Figure 3.17

3.5 Setup of This Instrument

The procedures in this section describe basic operation when used with the EVIS EXERA II video system center (CV-180).
For other setups of this instrument, set them as desired by “Chapter 5 System Setup” in “INSTRUCTIONS (ADVANCED).”

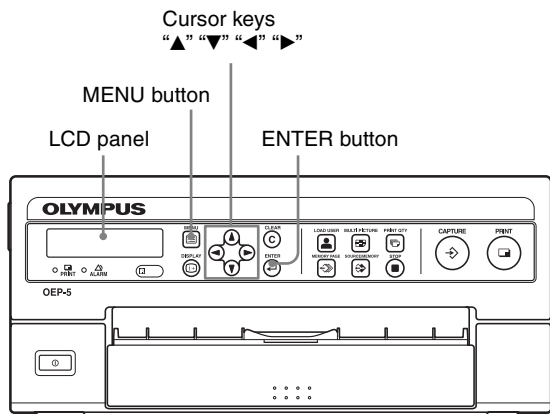


Figure 3.18

- 1 Press the “MENU” button.
- 2 Depending on the connected equipment, perform setup of the color video printer (OEP-5) by following the procedures below.

Table 3.4

Connecting	Procedure
CV-180	1 Press “▲” or “▼” until the LCD panel shows “SIGNAL SETUP;” and press the “ENTER” button. 2 When “INPUT SETUP” appears, press “▲” or “▼” to display “INPUT SEL;” and press the “ENTER” button. 3 Press “▲” or “▼” until “COMPONENT” appears below “INPUT SEL;” and press the “ENTER” button. 4 Press the “MENU” button. Press “▲” or “▼” until “SIGNAL SETUP” appears on the LCD panel, and press the “ENTER” button. 5 When “INPUT SETUP” appears, press “▲” or “▼” to display “SD/HD SEL;” and press the “ENTER” button. 6 Press “▲” or “▼” until “AUTO” appears below “SD/HD SEL;” and press the “ENTER” button.

3.6 Inspection of the Monitor Display

The monitor displays information and messages according to the conditions of this instrument.

Inspection of the output image

1 Turn the color video printer (OEP-5) ON as described in “3.1 Inspection of the Power Supply” on page 14.

2 Display the output image from the color video printer (OEP-5) on the monitor.

3 When the color video printer (OEP-5) is connected to a video system center, display the image from the color video printer (OEP-5) on the monitor by referring to the instruction manuals for the video system center and monitor.

4 Confirm that the monitor first displays the startup message, and then shows the display as shown in Figure 3.19. For details of each item, refer to “INSTRUCTIONS (ADVANCED).”

Message display 1
This field shows less urgent messages that may be displayed during normal use.

Print layout display
This field shows “ZOOM” except when “ZOOM PART” is set to “OFF” in “ZOOM MODE.”

Caption display
This field shows “CAPTION” when the printed picture is set to contain a comment (caption).

White frame display
It is displayed in the case of a printed picture with a white frame.

Print quantity display
This field shows the number of prints. It blinks during printing.

Memory page display
This field shows the selected memory page. The memory page number blinks during printing or when it is reserved for printing.

Message display 2
This field shows more urgent message.

Remaining ink ribbon display
This field shows the remaining ink ribbon quantity.

Pointers
These indicate the locations where the images are stored. They can be moved using the cursor keys (“▲” “▼” “◀” “▶”). The green blinking pointer indicates the location where the image is stored next. The pointers are not displayed on the monitor when the number of multi-picture images is set to “1.”

Source/Memory display
This field shows “S” when the source image is displayed on the monitor, and shows “M” when the memory image is displayed on the monitor.

Operation mode display

This field shows the operation mode of this instrument. The symbol on the left shows how the screen is split for displaying the multi-picture images to be printed. The number on the right shows the location where the pointer is now means that this is the image to be printed next.

Display	Number of multi-picture images
	1
	2
	3
	4

Figure 3.19

CAUTION

If messages are displayed in message display 1 or 2, refer to “Countermeasures Against Messages” in “7.1 Troubleshooting Guide” in “INSTRUCTIONS (ADVANCED).”

Inspection of the CVP counter

When this instrument is connected to the following equipment, perform inspection of the CVP counter.

- EVIS EXERA II video system center (CV-180, CV-160)
- VISERA Pro video system center (OTV-S7Pro)

- 1 Display the output image from the video system center on the monitor by referring to the instruction manuals for the video system center and the monitor.
- 2 Confirm that the monitor screen displays the “CVP counter” (see Figure 3.20).

CVP counter

ID No. : Name: Sex: Age: D.O.Birth: 2001/04/01 23:59:59 SCV: 1 CVP: A1/4 D.F: 99 Cc: N E: A3 Cc: 1 Z: 1.0 Physician: Comment:

Figure 3.20

- 3 If the “CVP counter” is not displayed on the monitor screen, refer to “Irregularity: The CVP counter is not displayed” in “7.1 Troubleshooting Guide” in “INSTRUCTIONS (ADVANCED).”

3.7 Check the Printed Picture

Check whether the printed picture is desired.

- 1 Observe, for example, the palm of your hand using the endoscope, while referring to the instruction manual of any connected equipment.
- 2 Capture a picture, while referring to the instruction manual of any connected equipment. Confirm that the number displayed on the “CVP counter” is increased by one. If the number does not increase, refer to “Irregularity: The number displayed on the CVP counter does not increase even if an image has been captured” in “7.1 Troubleshooting Guide” in “INSTRUCTIONS (ADVANCED).”
- 3 Print.
- 4 Check that the printed picture is of a suitable quality. If it is not of the desired picture quality, adjust the picture quality, referring to “Chapter 5 System Setup” in “INSTRUCTIONS (ADVANCED).” After adjustment, print and check again.

WARNING

- Do not use this instrument in a location exposed to direct strong electromagnetic radiation (for example, microwave treatment device, short wave treatment device, MRI or radio equipment). Electromagnetic radiation can interfere with the monitor display.
- It is recommended to use only Olympus high-frequency electrosurgical equipment with this instrument. Non Olympus equipment can cause interference on the monitor display, or a loss of endoscopic image.

NOTE

Prepare the spare color printing pack (UPC-55), in case the current one is nearly finished.

4.1 Turning the Power ON

Press the power switch (see Figure 4.1).

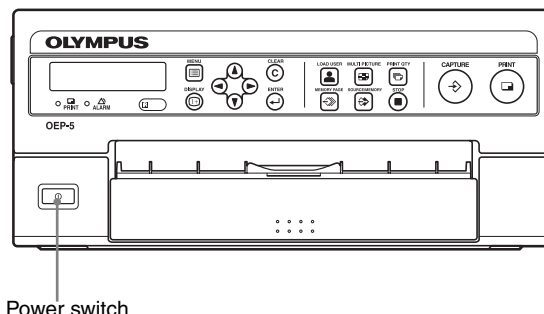


Figure 4.1

CAUTION

If an error or warning message is displayed, take proper measures, referring to “Countermeasures Against Messages” in “7.1 Troubleshooting Guide” in “INSTRUCTIONS (ADVANCED).”

NOTE

For information and messages displayed on the monitor and the LCD panel, see “3.4 Inspection of the LCD Panel Display” on page 21 and “3.6 Inspection of the Monitor Display” on page 23.

4.2 Control from the Connected Equipment

This document, “INSTRUCTIONS (BASIC),” explains the use of the EVIS EXERA II video system center (CV-180) with this instrument.

Refer to “INSTRUCTIONS (ADVANCED)” when you use equipment other than the equipment introduced in “INSTRUCTIONS (BASIC)” or when you attempt to control this instrument from the panel or the remote control unit (MAJ-898) (optional).

CAUTION

- When this instrument is controlled from the EVIS EXERA II video system center (CV-180), do not perform the following tasks from this instrument or remote control unit (MAJ-898) (optional).
 - Setting up the print quantity
 - Setting up the number of multi-pictures
 - Changing memory page
 - Clearing a captured image
 - Moving the pointerBecause of the difference between settings of the EVIS EXERA II video system center (CV-180) and settings of this instrument, desired operation may not be carried out, or image data may disappear.
- The number of multi-picture images cannot be set to “8” or “16.”
- Do not set the number of multi-picture images to “8” or “16” from EVIS EXERA II video system center (CV-180). If it is set as “8” or “16,” it will be set as “1.”
- Do not turn OFF or take out the paper tray while printing is in progress. Otherwise, paper jam and/or malfunction may result.
- Do not open the front door or take out the paper tray while printing is in progress. Otherwise, paper jam and/or malfunction may result.
- Do not leave 10 or more print sheets on the paper exit. Otherwise, paper jam may result. Also, even when the number of print sheets is less than 10, message “REMOVE PRINTS” may be displayed on the monitor and LCD panel and printing is interrupted depending on the print sheet conditions. If this occurs, remove the print sheets from the paper exit. Printing will resume automatically.
- If you turn this instrument OFF while the PRINT lamp is lit, the ink ribbon quantity displayed on the remaining ink ribbon display on the LCD panel and/or the monitor may not match the actual ink ribbon quantity remaining.

Be sure to turn this instrument OFF after the printing is completed and the PRINT lamp turns off.

NOTES

- Refer to the instruction manuals supplied with the connected equipment.
- If print sheets jam during printing, take the measures recommended in to “4.3 In the Case of a Paper Jam” on page 27.
- An image cannot be stored in a memory page that is currently printing, or is reserved for printing. Wait until the printing completes.
- If you open the front door during printing, printing is interrupted. If you close the front door, the print sheet being printed is ejected. To print again, press the “PRINT” button.
- If the remaining print sheets in the paper tray decreases, a rattling sound may be heard during printing. This is not a malfunction.
- Depending on the environment in which this instrument is used, or the condition of the print sheets, printed sheets output from the paper exit may go over the stopper and drop from the paper exit. Printed sheets may slide between previously ejected print sheets, and may not stack up in printed order.

- 1 Set up the connected equipment as shown in Table 3.1 in “3.3 Setup of Connected Equipment” on page 20.
- 2 Set up the color video printer (OEP-5) according to the connected equipment as described in “3.5 Setup of This Instrument” on page 22.
- 3 Control as described in the instruction manuals for the connected equipment (see Table 4.1).

Table 4.1

connected equipment	The part indicated to the instructions manual
CV-180	“5.5 Printing images”

4.3 In the Case of a Paper Jam

If a paper jam occurs during printing, correct it as described below.

The flash memory is built into this instrument to store all image data stored in the memory pages and all current settings of this instrument, in case a print sheet jams unexpectedly. When the power of this instrument is turned OFF, image data stored in the memory pages is cleared. However, data stored in the flash memory will not be cleared even if the power is turned OFF.

Removing the Jammed Paper Sheet

When paper jam occurs, message “SAVING IMAGES..” is displayed together with the error message, and the images captured in this instrument are stored together with the menu setups in the flash memory. When these message have disappeared, remove the jammed paper in the following steps.

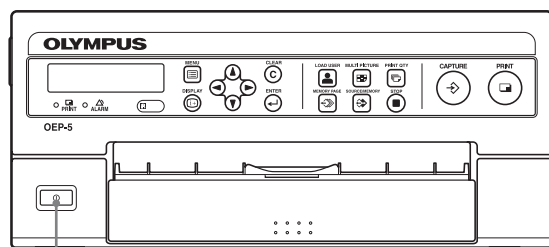
WARNING

Do not insert your hand or put anything into the ink ribbon holder and paper exit while the power is turned on. Otherwise, damage on the instrument, fire and/or electric shock may result.

CAUTION

Do not turn OFF this instrument during the message is displayed. If the power is turned OFF, a image data is not only saved in the flash memory, but damage may result.

- 1 Press the power switch to turn OFF (see Figure 4.2).



Power switch

Figure 4.2

- 2 Push the “PUSH EJECT” area on the paper tray and take out the paper tray (see Figure 4.3).

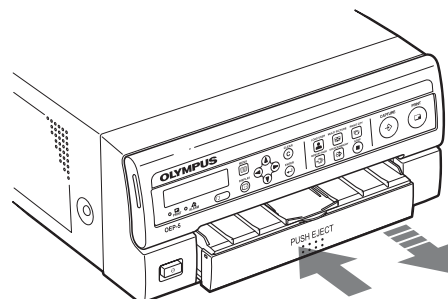


Figure 4.3

- 3 Remove the jammed paper sheet (see Figure 4.4).

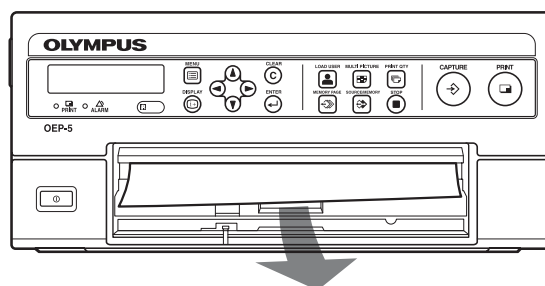


Figure 4.4

CAUTION

Do not reuse the removed print sheet. Paper jam may occur.

- 4 Confirm that the print sheets are placed correctly on the paper tray, and correct if otherwise.
- 5 Install the paper tray.

If jammed paper is not removed in the above-mentioned procedure

- 1 Be sure to turn OFF the power, and disconnect the power cord and other connecting cables.
- 2 Remove the ink ribbon holder and the paper tray from the color video printer (OEP-5), and then turn the color video printer (OEP-5) upside down.

- 3** Remove the single screw by which the back cover plate is secured, using a coin, etc. (see Figure 4.5).

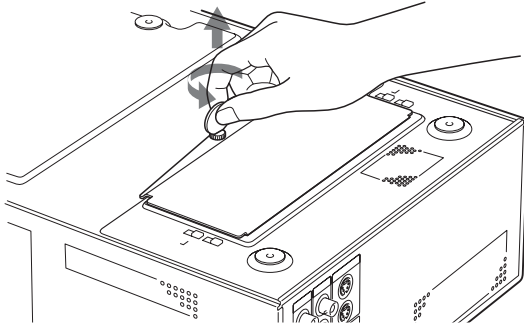


Figure 4.5

- 4** Pull the back cover plate up and remove it from the main body (see Figure 4.6).

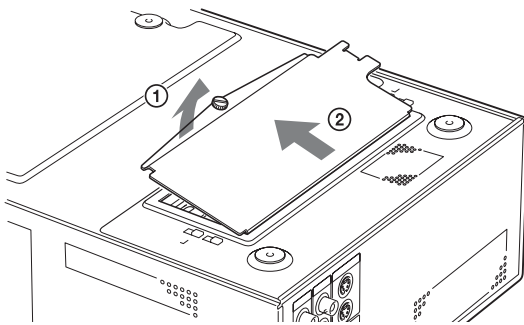


Figure 4.6

- 5** Remove the jammed paper slowly (see Figure 4.7).

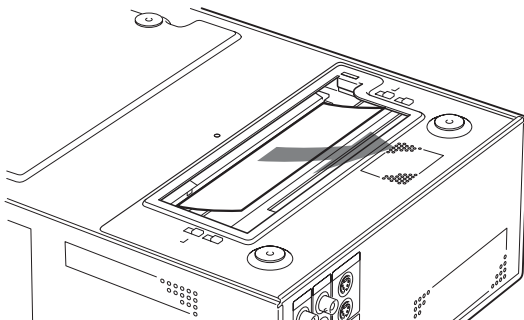


Figure 4.7

- 6** Replace the back cover plate (see Figure 4.8).

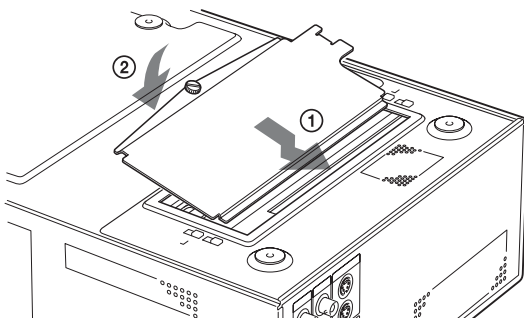
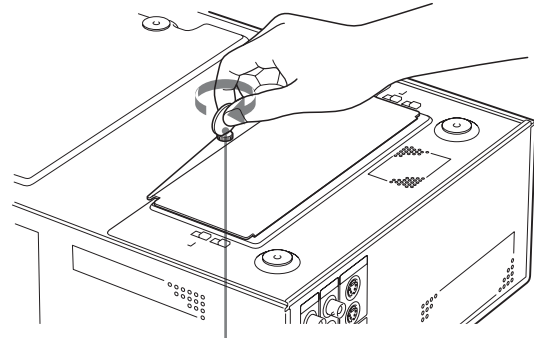


Figure 4.8

- 7** Secure the back cover plate by the screw removed, using a coin, etc. (see Figure 4.9).



Confirm that the screw holes of rear of the main body and the back cover plate align before securing.

Figure 4.9

- 8** Reset the paper tray and ink ribbon holder into the color video printer (OEP-5).
Reconnect the power cord and other connecting cables as they were.
Confirm that any connecting cables and the power cord are securely connected.

NOTE

If jammed paper cannot be removed, or an error message is displayed even after taking the above procedure, stop using this instrument and contact Olympus.

Restart Printing

Even if a paper jam occurs during printing, the image of the print is held in the flash memory of this instrument so it can be reprinted.

CAUTION

- The image of a print stored in the flash memory is overwritten each time a paper jam occurs. If image data is overwritten, you will not be able to print the image data stored before the paper jam occurred.
- Use the buttons on the front panel of this instrument when restarting printing. Restart cannot be executed by the keyboard of the connected equipment or remote control unit (MAJ-898).

- 1** Press the power switch to turn ON.
- 2** When the message “RESTORE IMAGES? YES/ NO” is displayed on the monitor and the LCD panel, press the “◀” or “▶” button to select “YES” and press the ENTER button.

NOTES

- If “NO” is selected in step 2, refer to “Setting “STORE IMAGE”” in “5.7 Setup of the “FUNCTION SETUP” Menu” in “INSTRUCTIONS (ADVANCED)” to restore and print the image manually.
- The message in step 2 will only appear when “OEP-4 MODE” is selected from “Setting “STORE MODE”” in “5.7 Setup of the “FUNCTION SETUP” Menu” in “INSTRUCTIONS (ADVANCED).”

- 3** The message “READING IMAGES” is displayed on the monitor and the LCD panel. And then the display returns to the normal display.
- 4** When image readout completes, message “RESTORE FINISHED” is displayed on the monitor and the LCD panel.
- 5** Select the memory page where images that you want to print are stored.
- 6** Press the PRINT button to start printing.

NOTE

When you control the printer from the EVIS EXERA II video system center (CV-180), EVIS EXERA video system center (CV-160) or VISERA Pro video system center (OTV-S7Pro), change the memory page or print images using the keyboard of the connected equipment. For details, refer to the instruction manuals of the connected equipment.

In any case other than the above, see “Selecting the Memory Page” and “Printing” in “4.2 Control From the Front Panel” in “INSTRUCTIONS (ADVANCED).”

4.4 Exiting from Examination

CAUTION

When this instrument is controlled from connected equipment, the captured images will not be printed automatically until their number reaches the set number of multi-picture images. Confirm that there are no unprinted images in the memory pages before turning this instrument OFF. Once this instrument is turned OFF, all images captured in the memory pages are cleared and cannot be printed.

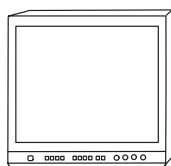
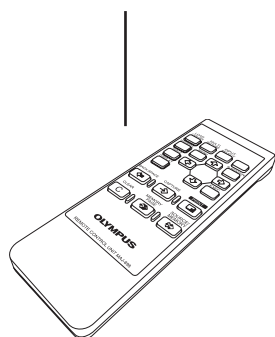
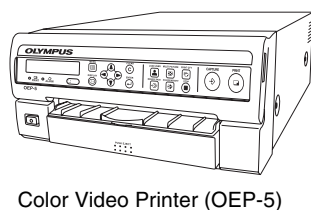
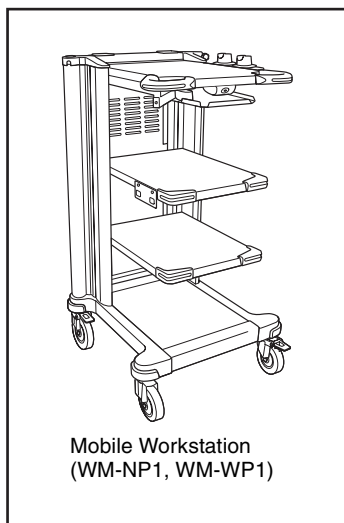
- 1** Display the memory image on the monitor, and confirm that there are no images left unprinted in the memory page (see “3.6 Inspection of the Monitor Display” on page 23).
If there are any, print them (see “3.7 Check the Printed Picture” on page 24).
- 2** After printing is completed, turn the color video printer (OEP-5) OFF.

System Chart

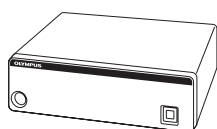
The recommended combinations of equipment that can be used with this instrument are listed below. New products released after the introduction of this instrument may also be compatible for use in combination with it. For further details, contact Olympus.

WARNING

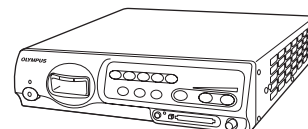
If combinations of equipment other than those shown in the following chart are used, the full responsibility is assumed by the medical treatment facility.



LCD Monitor (OEV191)



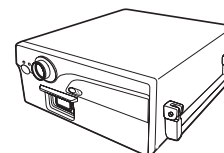
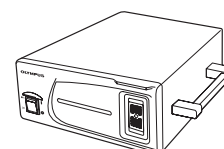
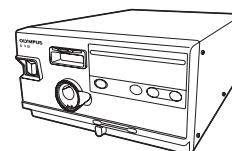
Control Unit For Endosurgery (UCES-2)



EVIS EXERA Video System Center (CV-160)



VISERA Video System Center (OTV-S7V)



EUS EXERA Endoscopic Ultrasound Center
(EU-M60)



Operating/Transport/Storage Environment

Color video printer (OEP-5)

Operating environment	Ambient temperature	10 – 35°C (50 to 95°F)
	Relative humidity	30 – 80% (without condensation)
	Atmospheric pressure	700 – 1060 hPa (0.7 – 1.1 kgf/cm ²) (10.2 – 15.4 psia)
Transport and storage environment	Ambient temperature	–20 to +60°C (–4 to 140°F)
	Relative humidity	20 – 90% (without condensation)
	Atmospheric pressure	700 – 1060 hPa

NOTE: Except the “trial pack.”

Color printing pack (UPC-55)

Operating environment	Ambient temperature	10 – 35°C (50 to 95°F)
	Relative humidity	30 – 80% (without condensation)
	Atmospheric pressure	700 – 1060 hPa
Transport and storage environment	Ambient temperature	–20 to +30°C (–4 to 86°F)
	Relative humidity	30 – 80% (without condensation)
	Atmospheric pressure	700 – 1060 hPa

Remote control unit (MAJ-898)

Operating environment	Ambient temperature	10 – 35°C (50 to 95°F)
	Relative humidity	30 – 80% (without condensation)
	Atmospheric pressure	700 – 1060 hPa (0.7 – 1.1 kgf/cm ²) (10.2 – 15.4 psia)
Transport and storage environment	Ambient temperature	–20 to +60°C (–4 to 140°F)
	Relative humidity	20 – 90% (without condensation)
	Atmospheric pressure	700 – 1060 hPa

Specifications

Color video printer (OEP-5)

Item	Specifications	
Power supply	Rated voltage	100 – 120 V AC
	Voltage fluctuation	±10%
	Rated frequency	50/60 Hz
	Frequency fluctuation	±1 Hz
	Input current	2.8 A
	Apparent power	280 VA
Dimensions and weight	Dimensions	280(W) × 125(H) × 398(D) mm
	Weight	9 kg
Classification (Electro-medical equipment)	Type of protection against electric shock	Class 1
	Degree of protection against explosion	Use prohibited in flammable environment.
Storage and printing	Printer pack	UPC-55 only.
	Printing method	Dye sublimation
	Paper size	178 × 152 mm (Special “A5” size)
	Print area	2528H × 1920V dots (169.4 × 128.6 mm)
Storage and printing	Resolution	379 dpi
	Print speed	Normal: Approx. 29 sec. High : Approx. 21 sec.
	Multi-picture splitting	1, 2, 3 or 4
	Print quantity	1 to 10 copies
	Image capturing instruction	Image storage in synchronism with the capture signal from the connected equipment.
		Image storage in synchronism with the CAPTURE key on the front panel.
		Image storage in synchronism with the CAPTURE key on the remote control unit (MAJ-898).

Item	Specifications
Input signal	HDTV signal (1080/59.94i):
	RGB/YPbPr video signal.
	Y/C video signals
	Composite video signal
	SDI video signal
	Tolerance (75 Ω termination)
	RGB (HDTV) video signals:
	0 to 0.7 Vp-p (Video) ± 0.3 Vp-p (Sync).
	RGB video signals:
	0 to 0.785 Vp-p.
	Composite sync:
	1.0 to 4.0 Vp-p.
	Y/C video signals:
	0 to 0.714 Vp-p.
	Composite video:
	0 to 0.714 Vp-p
	SDI (HDTV) video signal
	SMPTE292M standard 1080/59.94i
	SDI (SDTV) video signal
	SMPTE259M standard 480/59.94i
Output signal	HDTV signal (1080/59.94i):
	RGB/YPbPr video signal.
	Y/C video signals
	Composite video signal
	SDI video signal
	Tolerance (75 Ω termination)
	RGB (HDTV) video signals:
	0 to 0.7 Vp-p (Video) ± 0.3 Vp-p (Sync).
	RGB video signals:
	0 to 0.785 Vp-p.
	Composite sync:
	0.6 $\pm$ 0.2 Vp-p.
	Y/C video signals:
	0 to 0.714 Vp-p.
	Composite video:
	0 to 0.714 Vp-p
	SDI (HDTV) video signal
	SMPTE292M standard 1080/59.94i
	SDI (SDTV) video signal
	SMPTE259M standard 480/59.94i
Memory save after setup	Setups are held in memory even after the power switch is set to OFF.

Item	Specifications
Year of production	7101234 ↑
EMC	Applicable standard: IEC60601-1-2: 2001
	Last digit of the year of production.
	This instrument complies with the standard listed in the left column.
	CISPR 11 of emission:
	Group 1, Class B
	This instrument complies with the EMC standard for medical electrical equipment; edition 2 (IEC 60601-1-2: 2001). However, when connected with an instrument that complies with the EMC standard for medical electrical equipment; edition 1 (IEC 60601-1-2: 1993), the whole system complies with edition 1.

Remote control unit (MAJ-898)

Item	Specifications
Power supply	Supply voltage
	3 V DC
	Input current
	0.1 A
Dimensions and weight	Dimensions
	62(W) $\times$ 18(H) $\times$ 175(D) mm *Not including the projected parts
	Weight
	90 $\pm$ 10 g
Communication environment	Wired/Wireless
Input/Output signal	Supports the dedicated format for infrared remote control.
Battery	Use manganese or alkaline batteries only. (two "AA"-size batteries)

EMC Information

This model is intended for use in the electromagnetic environments specified below. The user and the medical staff should ensure that it is used only in these environments.

Magnetic emission compliance information and recommended electromagnetic environments

Emission standard	Compliance	Guidance
RF emissions CISPR 11	Group 1	This instrument uses RF energy only for its internal function. Therefore, its RF emissions are low and are not likely to cause any interference in nearby electronic equipment.
Radiated emissions CISPR 11	Class B	This instrument's RF emissions are low and are not likely to cause any interference in nearby electronic equipment.
Main terminal conducted emissions CISPR 11		
Harmonic emissions IEC 61000-3-2	Class A	This instrument's harmonic emissions are low and are not likely to cause any problem in the typical commercial power supply connected to this instrument.
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	This instrument stabilizes its own radio variability and has no affect such as flicker in lighting apparatus.

Electromagnetic immunity compliance information and recommended electromagnetic environments

Immunity test	IEC 60601-1-2 test level	Compliance level	Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Contact: $\pm 2, \pm 4, \pm 6$ kV Air: $\pm 2, \pm 4, \pm 8$ kV	Same as left	Floors should by be made of wood, concrete, or ceramic tile that hardly produces static. If floors are covered with synthetic material that tends to produce static, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	Same as left	Mains power quality should be that of a typical commercial (original condition feeding the facilities) or hospital environment.
Surge IEC 61000-4-5	Differential mode: $\pm 0.5, \pm 1$ kV Common mode: $\pm 0.5, \pm 1, \pm 2$ kV	Same as left	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	$< 5\% U_T$ ($> 95\%$ dip in U_T) for 0.5 cycle $40\% U_T$ (60% dip in U_T) for 5 cycle $70\% U_T$ (30% dip in U_T) for 25 cycle $< 5\% U_T$ ($> 95\%$ dip in U_T) for 5 seconds	Same as left	Mains power quality should be that of a typical commercial or hospital environment. If the user of this instrument required continued operation during power mains interruptions, it is recommended that this instrument be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	Same as left	It is recommended to use this instrument by maintaining enough distance from any equipment that operates with high current.

Cautions and recommended electromagnetic environment regarding portable and mobile RF communications equipment such as a cellular phones

Immunity test	IEC 60601-1-2 test level	Compliance level	Guidance
Conducted RF IEC 61000-4-6	3 Vrms (150 kHz to 80 MHz)	3 V (V_1)	Formula for recommended separation distance ($V_1=E_1=3$ according to the compliance level) $d=[\frac{3.5}{V_1}]\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m (80 MHz to 2.5 GHz)	3 V/m (E_1)	$d=[\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz – 800 MHz
			$d=[\frac{7}{E_1}]\sqrt{P}$ 800 MHz – 2.5 GHz

NOTES

- Where “P” is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and “d” is the recommended separation distance in meters (m).
- This instrument complies with the requirements of IEC 60601-1-2: 2001 and IEC60601-1-2: 2007. However, under electromagnetic environment that exceeds its noise level, electromagnetic interference may occur to this instrument.

- Electromagnetic interference may occur to this instrument near a high-frequency electrosurgical equipment and/or other equipment marked with the following symbol:



Recommended separation distance between portable and mobile RF communications equipment and this instrument

Rated maximum output power of transmitter P (W)	Separation distance according to frequency of transmitter (m) (calculated as $V_1=3$ and $E_1=3$)		
	150 kHz to 80 MHz $d=1.2\sqrt{P}$	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 2.5 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

NOTE

The guidance may not apply in some situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people. Portable and mobile RF communications equipment such as cellular phones should be used no closer to any part of this instrument, including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

FCC

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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

Declaration of Conformity

Trade Name : OLYMPUS MEDICAL SYSTEMS

Model : OEP-5

Responsible Party : OLYMPUS AMERICA INC.

Address : Two Corporate Center Drive, Melville,
N.Y. 11747-3157, U.S.A.

Telephone Number : (631)844-5000

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.

Index

C

Capture 5
Check of the printed picture 24
Color printing pack 5, 15
Color video printer 4, 8
Connection
 AC mains power supply 12
 EVIS EXERA II Video System
 Center 11
CVP counter 24

E

EMC information 34
EVIS EXERA II video system center
 20, 22, 26

F

Freeze 5

H

HDTV 5

I

Ink ribbon
 If the ink ribbon is torn in the
 middle 17
 Installation 15
Ink ribbon holder 8, 15
Inspection
 CVP counter 24
 LCD panel display 21
 Monitor display 23
 Power supply 14
Installation of the OEP-5
 Cautions 9
 On the mobile workstation (WM-
 NP1, WM-WP1) 10
Instruction manual 5
INSTRUCTIONS (ADVANCED) 8
INSTRUCTIONS (BASIC) 8
Isolation transformer 5

L

Labels and symbols related to safety
 4

M

Memory image 5

N

Notice for use 6

O

Operating and storage environment
 Color printing pack 32
 Color video printer 32

P

Package contents
 Color video printer 8
 Ink ribbon holder 8
 INSTRUCTIONS (ADVANCED)
 8
 INSTRUCTIONS (BASIC) 8
 Paper tray 8
 Power cord 8
 Trial pack 8
Paper tray 8, 18
Power cord 8, 12
Power supply
 Connection 12
 Inspection before use 14
 Turning on 25
Power switch 12, 14, 25
PRINT lamp 14
Print sheets
 Installation 17
 Removing jammed paper sheets
 27
Protective sheet 18

R

Remote cable 8
Remote control unit (MAJ-898) 4, 8
 Wired remote control 5
 Wireless remote control 5

S

SDTV 5
Setup
 Connected equipment 20
 This instrument (OEP-5) 22
Signal words 6
Source image 5
Specifications 32
Startup message 21
System chart 30

T

Terms used in this manual 5
Trial pack 8

U

Ultrasound center 5

V

Video system 5
Video system center 5

W

Wall mains outlet 5
Wired remote control 5
Wireless remote control 5



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