

Instructions

Coded function system

Notes

This instruction manual is for the coded function system.

To ensure the safety, obtain optimum performance and to familiarize yourself fully with the use of this product, we recommend that you study this manual thoroughly before operating this product, and always keep this manual at hand when operating this product.

Retain this instruction manual in an easily accessible place near the work desk for future reference.

For details of products included in the configuration of this system, see page 4.

Optical Microscope Accessory

This product is applied with the requirements of standard IEC/EN61326-1 concerning electromagnetic compatibility.

- Immunity Industrial and basic electromagnetic environment

Emissions exceeding the level required by aforementioned standards may occur if this product is electrically connected to other equipment.



In accordance with European Directive on Waste Electrical and Electronic Equipment, this symbol indicates that the product must not be disposed of as unsorted municipal waste, but should be collected separately.

Refer to your local Evident distributor in EU for return and/or collection systems available in your country.

For Korea only

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

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IMPORTANT -Be sure to read this section for safe use of the equipment.-

This system enables to read out the information from the coded illuminator and the coded revolving nosepiece and to transmit the information externally.




⚠ Safety precautions

- Before connecting the cables, be sure to set the POWER switch of the control box for coded function (U-CBS) to OFF (out position).
- For safety, always use the provided AC adapter only.
- Keep the cables away from the lamp housings (halogen bulb, etc.) that become hot and the surroundings. Otherwise, the cables may melt and cause an electric shock hazard.
- Never apply an excess force to cables, such as to stretch cables. Otherwise, they may be damaged.

Safety symbols

The following symbols are placed on this product.

Study the meaning of the symbols and always use the product in the safest possible manner.

Symbol	Meaning
	Indicates a non-specific general hazard. Follow the description given after this symbol or in the instruction manual.
	Indicates that the main switch is ON.
	Indicates that the main switch is OFF.

1 Cautions

If the product is used in a manner not specified by this manual, the safety of the user may be imperiled. In addition, the product may also be damaged. Always use the product according to this instruction manual.

The following symbols are used in this instruction manual.

CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in damage to the equipment or other property.

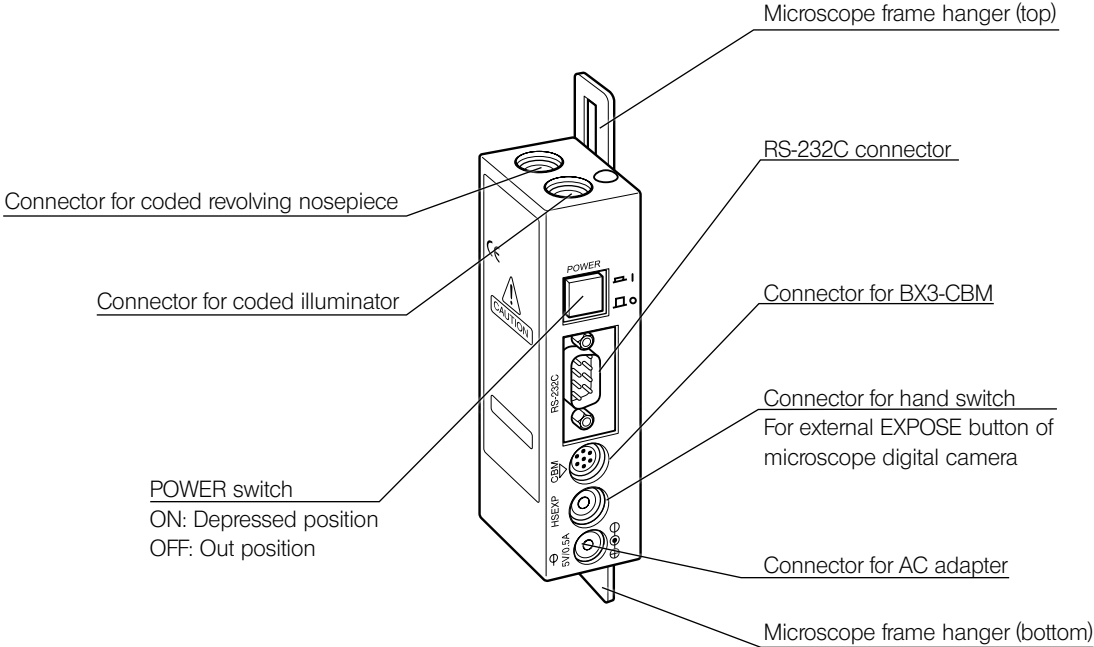
TIP : Indicates the useful knowledge or information for use.

2 Handling Precautions

- CAUTION** • This product is a precision instrument. Handle it with care and connect cables gently to avoid subjecting it to sudden or severe impact. Also, this product is not waterproof.
- Do not use the product in areas where it may be subjected to direct sunlight, high temperature and/or humidity, dust or vibrations.
(For conditions of operating environments, see “5 Specifications“ on page 12.)
- Never connect or disconnect the cable while the POWER switch of the control box is set to ON (depressed position). Otherwise, malfunction may result.
- Never disassemble any part of the product. Otherwise, failure may result.
- Before disposing of this product, be sure to follow the regulations and rules of your local government. Contact Evident for any questions.

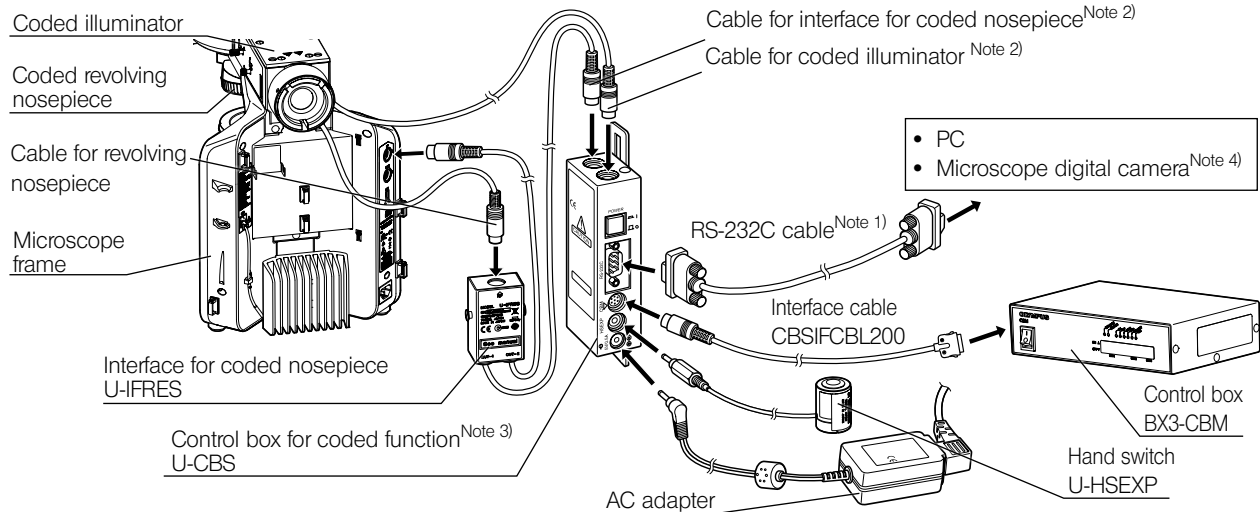
1 Nomenclature of each part

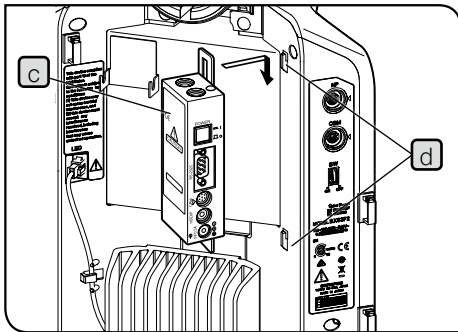
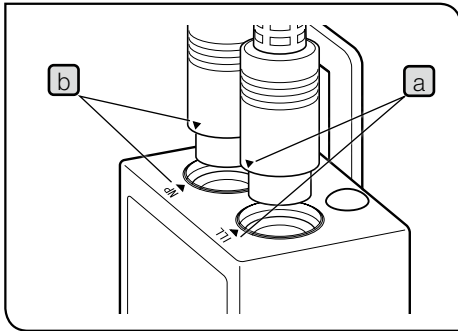
Control box for coded function
U-CBS



2 System diagram

- CAUTION** • The connectors of U-CBS are equipped with dust covers. Remove the dust covers only from the connectors you want to connect cables.
- Be sure to connect only the units specified by Evident to the connectors of U-CBS.
If a non-specified unit is connected, the performance of the entire system cannot be guaranteed.
 - Before connecting the cables, be sure to set the POWER switch of U-CBS to OFF (out position).
Insert the cables securely to connectors paying attention to their shapes. If the connector is provided with clamping screws, be sure to tighten them.
 - If you insert a non-specified connector into the connector of U-CBS, the connector may be damaged.





Note 1)

RS-232C cable specifications

D-sub 9-pin (F) — D-sub 9-pin (F)

Note 2)

Align the ▼ mark **a** on the connector of the coded illuminator with the ▼ mark **a** of U-CBS and attach the coded illuminator. When attaching U-IFRES or the coded revolving nosepiece, align ▼ marks **b** in the same manner.

Note 3)

Hang U-CBS **c** on the hangers **d** on the back side of the microscope frame.

Note 4)

When connecting the microscope digital camera to U-CBS to use U-CBS, the order to turn ON the power is: **1** POWER switch of U-CBS and **2** Switch of the microscope digital camera. If the switches are set to ON in the different order, the microscope digital camera cannot recognize U-CBS.

Also, if the connector of the coded revolving nosepiece are not connected to U-CBS, U-CBS does not recognize the coded revolving nosepiece. So be careful.

3

Layout of the cables

The cables of units can be laid out easily by attaching the cable holders on the back side of the microscope frame.

The cable holders are provided with following units.

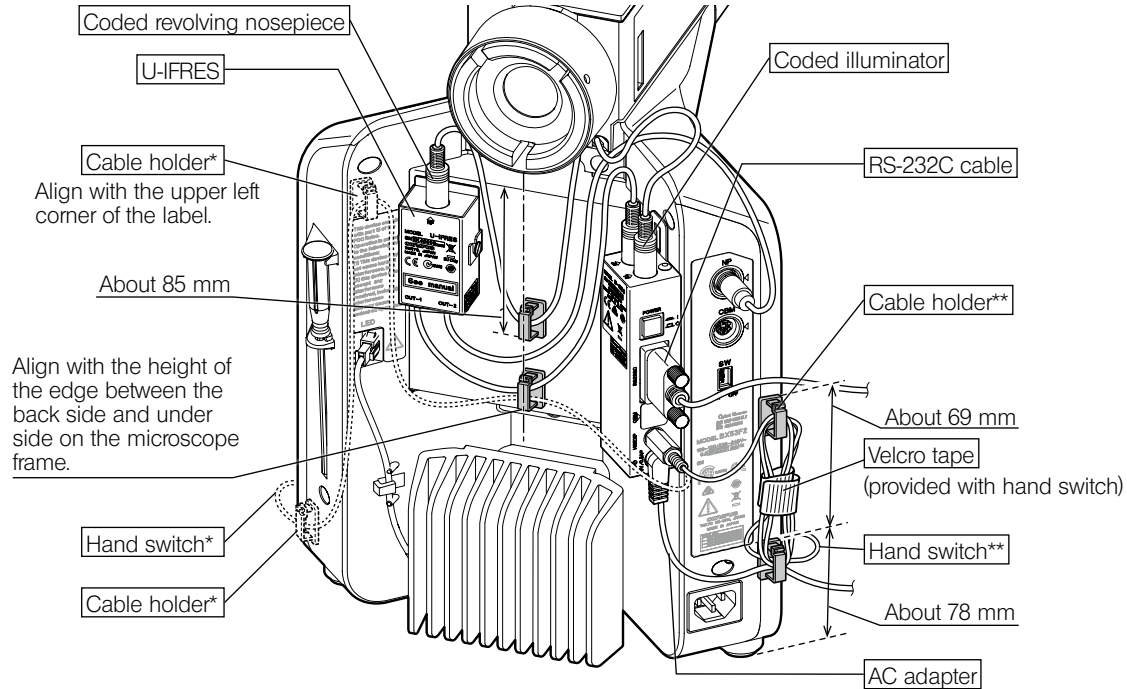
- Control box for coded function (U-CBS): 6 pieces
- Coded revolving nosepiece: 2 pieces

On page 7 and after, the positions to attach cable holders and the cable layout are described for each microscope frame.

TIP

- The number of cable holders to be used differs depending on the units combined with the microscope frame.
- If the cable holder positions are significantly deviated, the cable may not reach the connector. Attach the cable holders while making sure that the cable reaches the connector.
- Make sure that cable holders are not deflected and close the cable holders.

1 Combining with the microscope frame (BX53F2) and U-IFRES



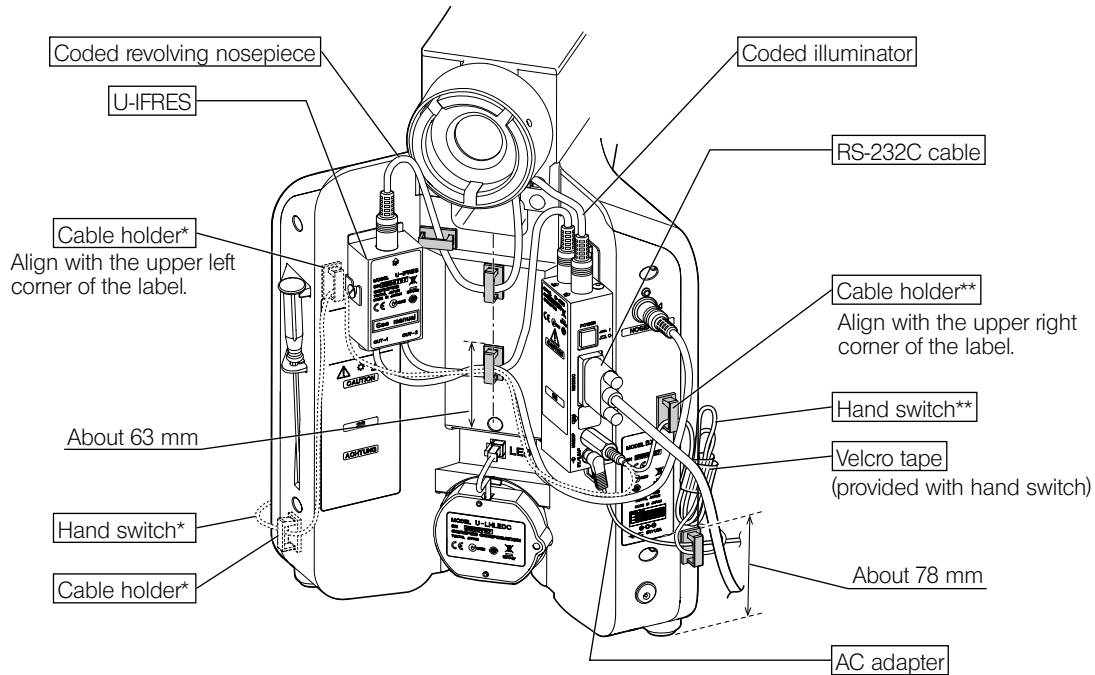
* :In case of laid out the cable for hand switch on the left side as shown above picture

** :In case of laid out the cable for hand switch on the right side as shown above picture

TIP

For procedures to attach the hand switch to microscope frame, see page 11.

2 Combining with the microscope frame (BX43F) and U-IFRES



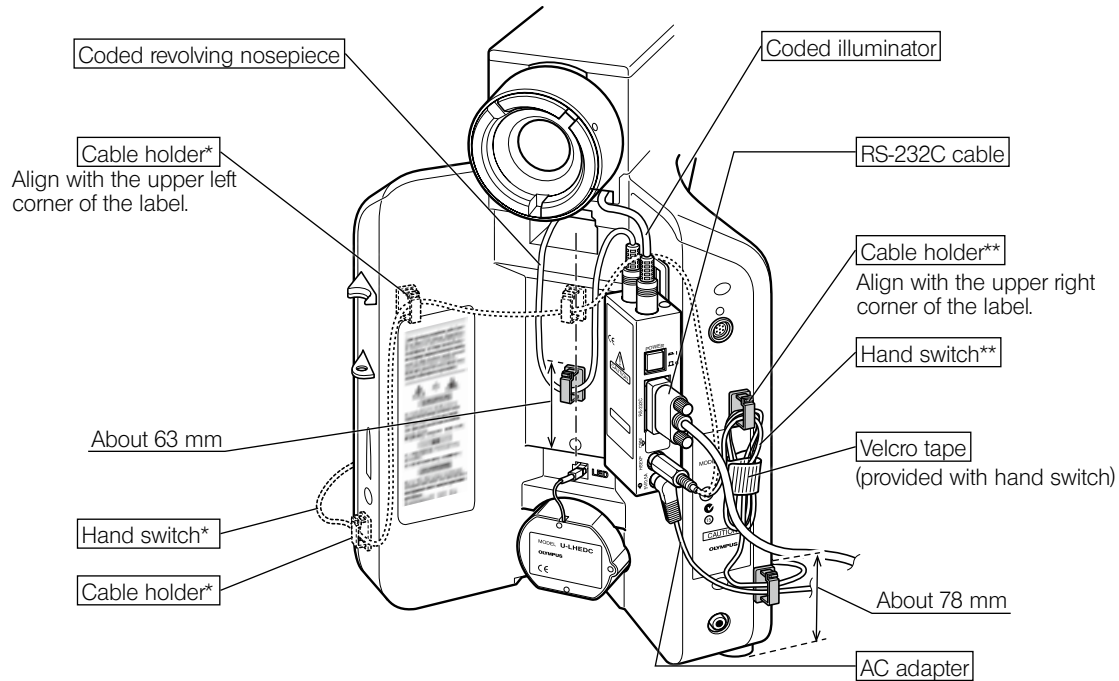
* :In case of laid out the cable for hand switch on the left side as shown above picture

** :In case of laid out the cable for hand switch on the right side as shown above picture

TIP

For procedures to attach the hand switch to microscope frame, see page 11.

3 Combining with the microscope frame (BX43F)



* :In case of laid out the cable for hand switch on the left side as shown above picture

** :In case of laid out the cable for hand switch on the right side as shown above picture

TIP

For procedures to attach the hand switch to microscope frame, see page 11.

4 Information readout / External transmission

This system configuration enables to acquire the information of following units.

- Information of the hole position (objective position) of the revolving nosepiece
- Information of the mirror unit position of the coded illuminator

The acquired information is transmitted to PC or the microscope digital camera through the RS-232C cable to enable following functions.

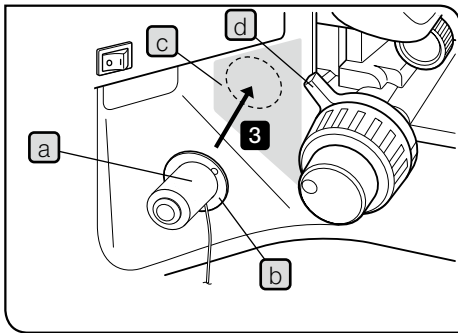
- Implement following functions using PC by interlocking to the hole positions of the revolving nosepiece or mirror unit positions.
(Increase of the speed of exposure time control, addition of the magnification information to acquired images, automatic scale change according to objective, etc.)
- Enable to operate the EXPOSE button of the microscope digital camera near the coarse focusing knob of the microscope frame by using the hand switch.
(For procedures to attach the hand switch, see page 11.)

Transmitting the acquired information to the control box (BX3-CBM) enables following functions.

- Enable to change the optical elements of the motorized condenser when objective is selected by rotating the coded revolving nosepiece.
(The motorized condenser and control box (BX3-CBM) are required.)

Attaching the hand switch

The hand switch is provided with the magnet. Adhering the attaching plate made of iron on the microscope frame allows you to secure the hand switch to the attaching plate. (Two attaching plates are provided with the hand switch and one of them is for use as a spare.)



- 1 Attach the attaching plate **b** to the magnet on the bottom of the hand switch **a**.

TIP Do not remove the sheet on the adhesive surface of the attaching plate until the attaching position is decided.

- 2 Decide the attaching position **c** easy to operate the hand switch ( part) near the right or left coarse adjustment knob.

TIP Be careful if the hand switch is attached too close to the coarse focusing knob, when the pre-focusing lever **d** is rotated, the hand switch may contact the pre-focusing lever.

- 3 Clean the attaching position with a soft cloth, remove the sheet on the adhesive surface of the attaching plate and attach the hand switch firmly to the microscope frame.

CAUTION • Since the hand switch is provided with the magnet, do not let objects that are affected by magnetism come close to the hand switch.

- Be careful, if the connector of the coded revolving nosepiece is not connected to U-CBS, the hand switch does not function.

TIP If the cable for the hand switch disturbs your operation, bundle the cable with the Velcro tape provided with the hand switch.

5 Specifications

Item	Specifications	
Control box for coded function U-CBS	Dimension	378 (W) x 30.6 (D) x 163 (H) mm
	Weight	0.5 kg (including AC adapter 0.17 kg)
	Rating	5 V / 0.5 A $\overline{\text{---}}$
Hand switch U-HSEXP	Dimension	Body: \varnothing 25.4 x 35.5 (H) mm Attaching plate: \varnothing 32 x 1 (H) mm
	Weight	0.065 kg
AC adapter	Input	100-240 V \sim 50-60 Hz 0.4 A
	Output	5 V $\overline{\text{---}}$ 2.5 A
Operating environment	<ul style="list-style-type: none"> • Indoor use • Altitude: Max. 2,000 meters • Ambient temperature: 5 to 40 °C (41 to 104 °F) • Maximum relative humidity: 80% for temperatures up to 31 °C (88 °F) (without condensation) In case of over 31 °C (88 °F), the relative humidity is decreased linearly through 70% at 34 °C (93 °F), 60% at 37 °C (99 °F), and to 50% at 40 °C (104 °F). • Supply voltage fluctuations: Not to exceed \pm10% of the normal voltage. • Pollution degree 2 (in accordance with IEC60664-1) • Installation/Overvoltage category: II (in accordance with IEC60664-1) 	

Manufactured by

Evident Corporation

6666 Inatomi, Tatsuno-machi, Kamiina-gun, Nagano 399-0495, Japan

Distributed by

Evident Europe GmbH

Caffamacherreihe 8-10, 20355 Hamburg, Germany

Evident Europe GmbH – UK Branch

Part 2nd Floor Part A, Endeavour House, Coopers End Road, Stansted CM24 1AL, UK

Evident Scientific, Inc.

48 Woerd Ave, Waltham, MA 02453, USA

Evident Scientific Singapore PTE. LTD.

#04-04/05, 25 Ubi Rd 4, UBIX Singapore 408621

Evident Australia PTY LTD

Level 4, 97 Waterloo Road Macquarie Park NSW 2113, Australia

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