

Instructions

SZX2-ILLTQ/ILLTS

Quad Position / Single Position LED Transmitted Light Illumination Base

Notes

This instruction manual is for the Evident LED Transmitted Light Illumination Base.

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 explained in this instruction manual, see page 8.

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.

NOTE: This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

FCC Supplier's Declaration of Conformity

Hereby declares that the product

Product name: Optical Microscope Accessory

Model Number: SZX2-ILLTQ, SZX2-ILLTS

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107 and Section 15.109

Supplementary Information:

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.

Responsible Party Name: Evident Scientific, Inc.

Address: 48 Woerd Ave Waltham, MA 02453, USA

Phone Number: 781-419-3900



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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Concept of this instruction manual

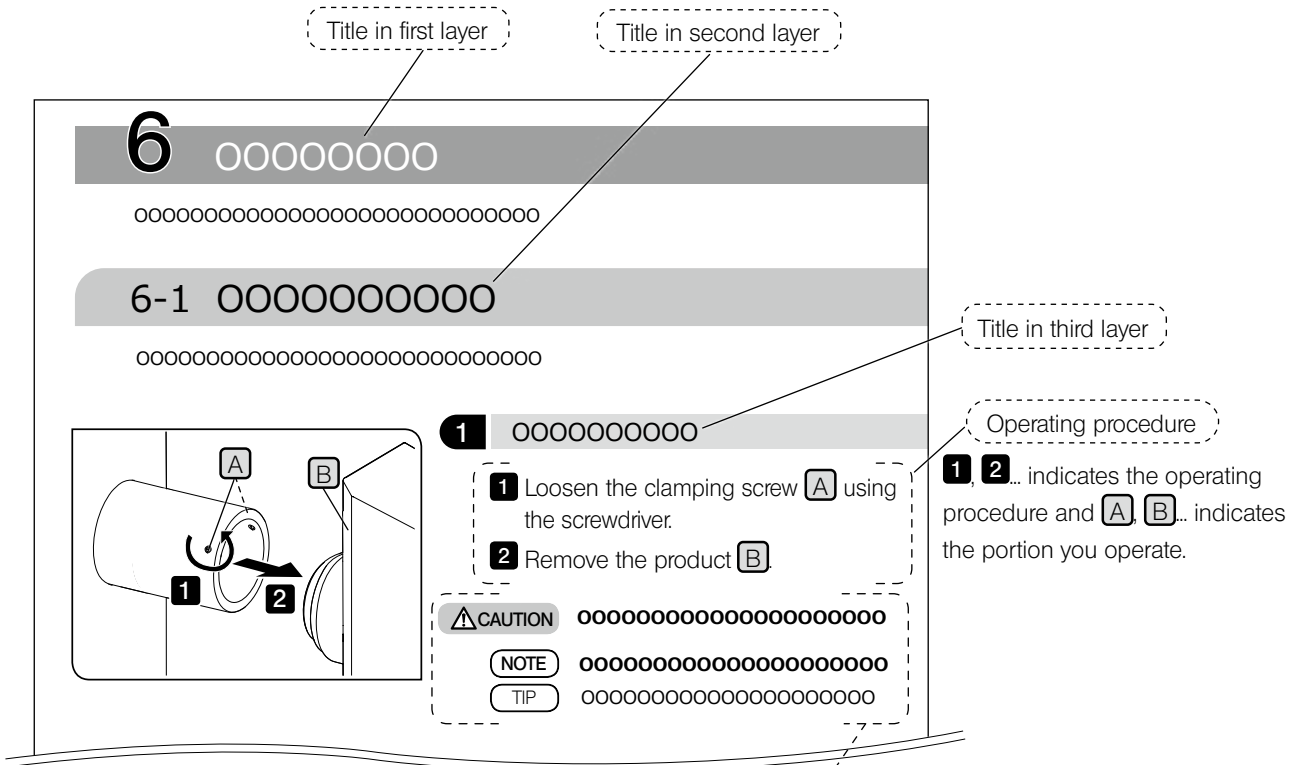
This instruction manual describes only the contents related to Quad Position/Single Position LED Transmitted Light Illumination Base.
 When using this product, read all the instruction manuals supplied with the products (optional) you purchased together with this manual.

Applicable user of this instruction manual

This instruction manual applies to users who use this product according to "Intended use" and Evident distributors. "Intended use" is determined depending on the system product to be combined.

How to read this instruction manual

This instruction manual is created as follows.



Cautions and references

The following symbols are used in this instruction manual.

- 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.
- NOTE** : Indicates a potentially hazardous situation which, if not avoided, may result in damage to the product or other property and/or may cause problems.
- TIP** : Indicates the useful knowledge or information for use.

Product Concept

Product outline

This product is a LED transmitted light illumination base used with SZX16, SZX10, SZX7, SZ61, SZ51 or MVX10 system. SZX2-ILLTQ (Quad position LED transmitted light illumination base) has four illumination cartridge mounts. SZX2-ILLTS (Single position LED transmitted light illumination base) has a single illumination cartridge mount.

Intended use

This product is intended to be used in combination as a system, refer to the instruction manual for the system product to be combined.

Cautions and confirmation before use

When you unpack the package, check all the included items referring to the list of accessories. If any item is missing or damaged, contact Evident.

Safety precautions

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.

Prevention of infection

⚠ WARNING • **Wear the protective equipment such as gloves, etc.**

When you observe specimens which have potentiality of infection, wear protective equipment such as gloves, etc. to prevent the specimens from touching your skin directly.

When you maintain product which may have contacted specimens which have potentiality of infection, wear protective equipment such as gloves, etc., or clean the product before operation.

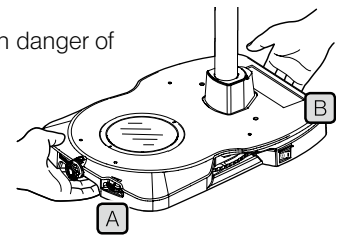
• **After observation, clean the portions where specimens contacted directly.**

• **Remove the specimen when moving the product.**

When moving this product, be sure to remove the specimen first, since it is in danger of dropping and spattering.

Hold the front hook of the base **A** with one hand and the back hook of the base **B** with the other hand to prevent the base from tilting.

Remove all attached items from SZX2-ILLTQ (Quad position LED transmitted light illumination base) or SZX2-ILLTS (Single position LED transmitted light illumination base) and reduce the weight before holding the illumination base.



• **Take appropriate actions to prevent the product from overturning.**

Take proper measures to avoid the product from falling over. In case that the product falls over, the specimen may be dropped and spattered.

• **In case the specimen is damaged, promptly take the infection prevention measures.**

• **When disposing of the product, follow the regulations and rules of your local government.**

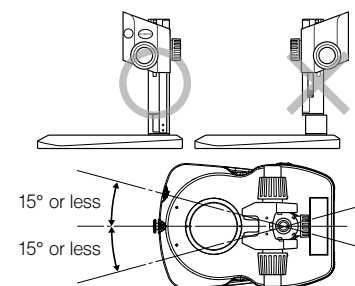
When disposing of the product which contacted specimens which have potentiality of infection, follow the regulations and rules of your local government.

Installation

⚠ CAUTION • **Install the product on a sturdy, level table or bench.**

Use the table where the angle of installation surface is 5° or less with respect to the horizontal surface.

• **Align the direction to attach the microscope frame with the direction of the illumination light. Even if you do not use the transmitted light illumination, be sure to set the right/left deflection angle to 15° or less in order to prevent the product from overturning.**



Prevention of electric shock



WARNING

- **Never disassemble each part of this product.**

It could cause electric shock or failure of the product.

- **Do not touch the product with wet hands.**

In particular, if you touch the main switch of the power unit or the power cord with wet hands, electric shock, ignition or failure of the product may be caused.

- **Do not pull or tie the power cord/cables in a bundle.**

Otherwise they could be damaged, causing a fire or an electric shock.

Electric safety



CAUTION

- **Always use the power cord provided by Evident.**

If the proper AC adapter and the power cord are not used, the electric safety and the EMC (Electromagnetic Compatibility) performance of the product cannot be assured. If no power cord is provided, please select the proper power cord by referring to the section "Proper selection of the power cord" at the end of this instruction manual.

- **Always connect the ground terminal.**

Connect the ground terminal of the power cord and that of the power outlet.

If the product is not grounded, our intended electric safety and EMC performance of the product cannot be assured.

- **Do not use the product in close proximity to the sources of strong electromagnetic radiation.**

Proper operation may be interfered. The electromagnetic environment should be evaluated prior to operation of the product.

- **Disconnect the power cord in case of emergency.**

In case of emergency, disconnect the power cord from the power cord connector on the product or from the power outlet.

Install the product at the location where you can reach the power cord connector or the power outlet at hand to disconnect the power cord quickly.

- **Do not connect or disconnect the power cord, cables and products (optional) while the power is on.**

Preventing eye injuries



CAUTION

- **Do not look directly at the LED light for a long time.**




The LED built in this product is basically eye-safe. However, do not look directly at the light for a long time, since it may cause damage to your eyes.

- **When using SZX2-ILLTQ (Quad position LED transmitted light illumination base), attach the dummy cap provided with the base to the illumination cartridge mount where the illumination cartridge is not attached.**

Safety warning symbols


The following symbols are placed on the 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 seesaw type main switch is ON. (Seesaw type is the type of switch that ON or OFF is selected by pressing it to ON or OFF side.)
	Indicates that the seesaw type main switch is OFF.

Label position and instruction

The labels are attached to the portions which require special cautions during use and operation. Be sure to follow these instructions.

Label position	Label	Instructions in instruction manual	Page
Rear top of SZX2-ILLTQ/ILLTS		Caution for electric safety	4

When caution labels are dirty or peeled off, contact Evident for replacement or inquiries.

Handling precautions

General

- NOTE**
- This product is a precision instrument. Handle it with care and avoid subjecting it to a sudden or severe impact.
 - Never disassemble each part of this product. Otherwise, it could cause unexpected accidents or failure of the product. Never disassemble the product.
 - 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” (P.16).)
 - For products (optional) attachable to this product, see page 8.
The use of this product in combination with other separately available items not only creates the risk of abnormal operation, but it also may damage the product.
 - Applying excess force to the position where the operation portion stops may damage the product.
- TIP**
- The power cord is for exclusive use of this product. Do not use it with other product.
 - Before disposing of this product, be sure to follow the regulations and rules of your local government.
 - This product is not compliant with ESD (Specifications to prevent electrostatic discharge).

Maintenance and storage

Cleaning of each unit

Do not leave stains or fingerprints on the lenses and filters. If they get dirty, blow away dust with a commercially available blower and gently wipe the lens or filter with a piece of cleaning paper (or clean gauze).

Only when cleaning fingerprints and oil stains, slightly moisten a piece of cleaning paper with commercially available absolute alcohol and wipe them off with it.

**WARNING**

Since the absolute alcohol is highly flammable, it must be handled carefully. Be sure to keep it away from open flames or potential sources of electrical sparks. For example, the electrical equipment that is switched ON and OFF may cause the ignition of a fire. Also, always use absolute alcohol only in a well-ventilated room.

Wipe the portions other than the lens with a dry soft cloth. If the dirt cannot be removed by dry-wiping, moisten a soft cloth with diluted neutral detergent and wipe the dirty surface with it.

NOTE

Do not use organic solvents because they may deteriorate the coated surface or plastic parts.

The stage surface is designed as a simple waterproof structure. However, in case of spilling water, set the main switch to **○** (OFF), disconnect the power cord and wipe off water from the stage immediately with a dry cloth, etc.

If water enters inside, contact Evident for assistance and make sure of the electric safety.

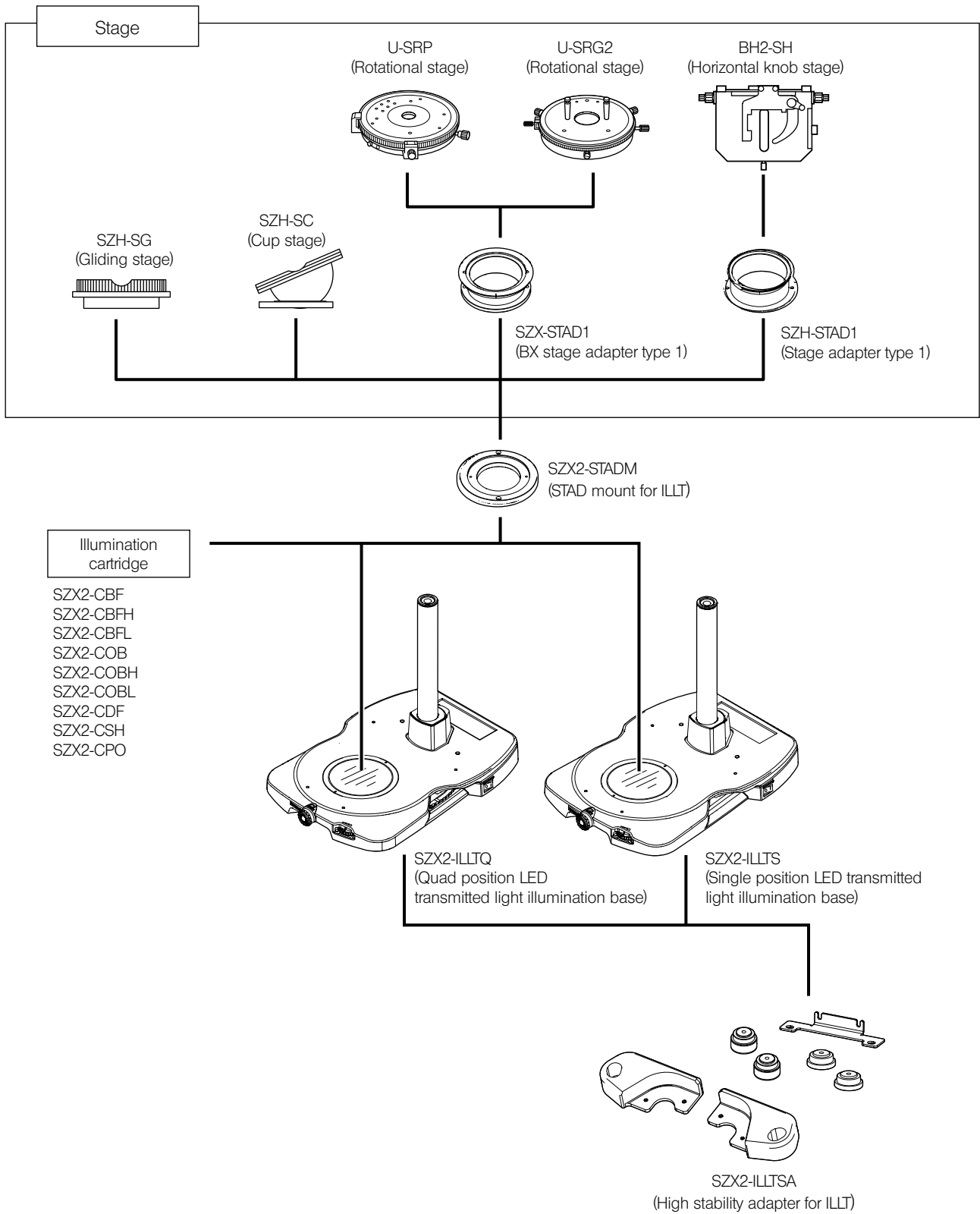
Lifetime

The lifetime of this product is approximately 8 years after purchase if the product is used properly according to this instruction manual (this does not apply to consumables).

If the rubber leg of SZX2-ILLTSA (High stability adapter for ILLT) is deteriorated, its anti-vibration property is decreased due to the nature of the rubber. In this case, we recommend you to change the rubber leg of SZX2-ILLTSA.

There is a fee for replacing the rubber legs of SZX2-ILLTSA even within one year after delivery.

1 Combination of the base and the stage

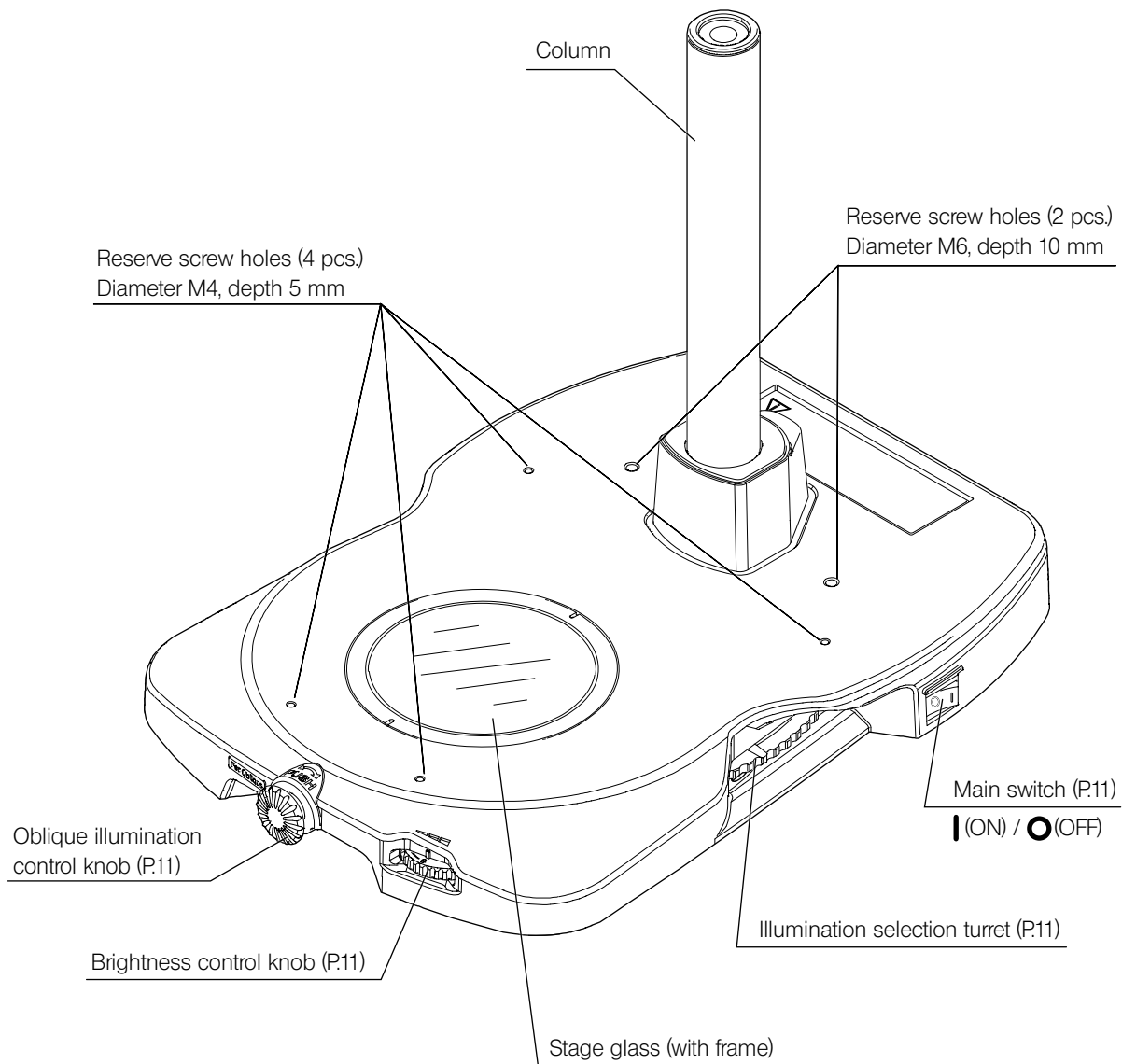


2 Nomenclature of main operating units

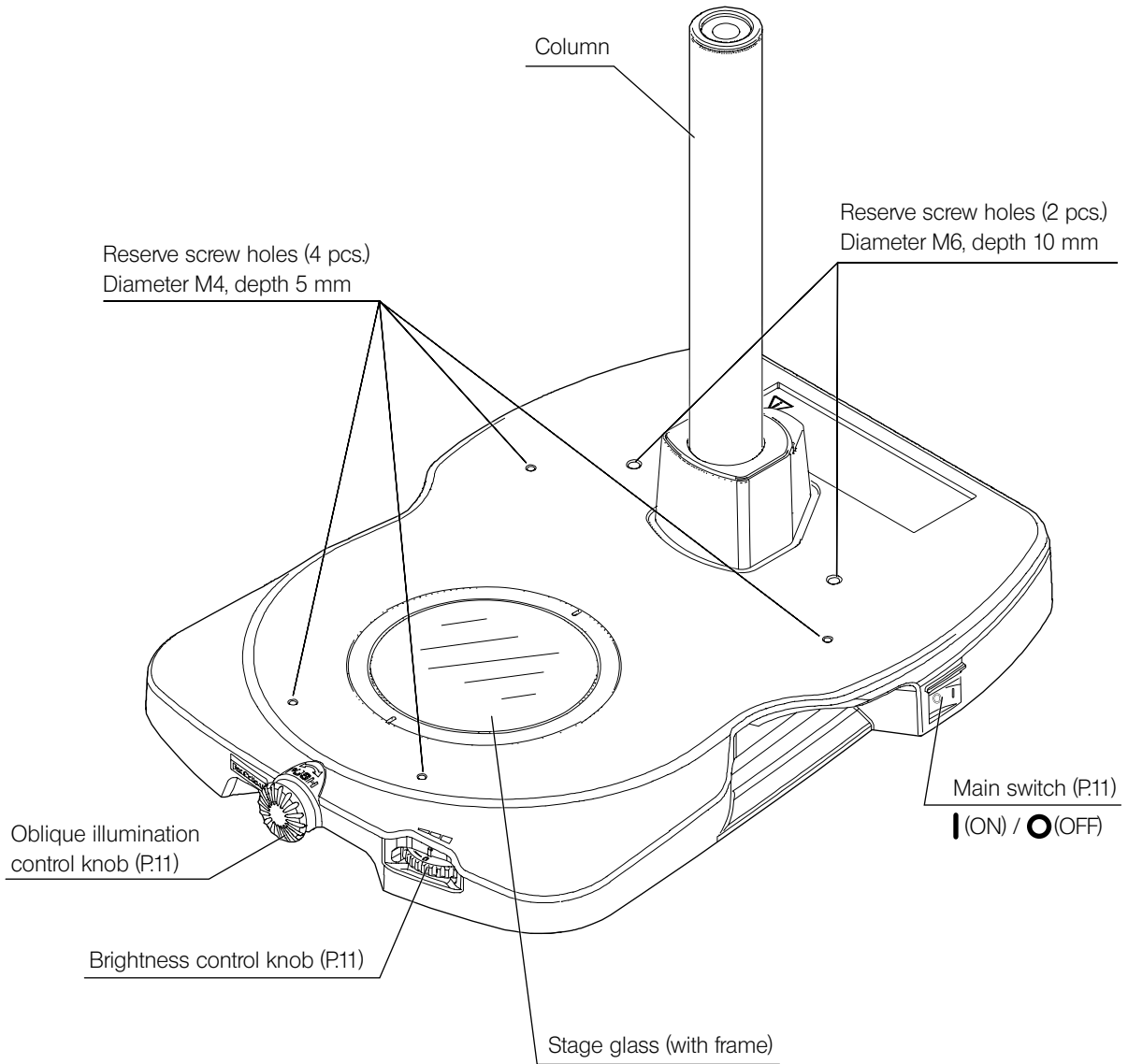
This section describes the nomenclature of main operating portions that composes the product.

TIP If the assembly is not completed yet, see "6 Assembly" (P.19) first.

Quad position LED transmitted light illumination base
SZX2-ILLTQ



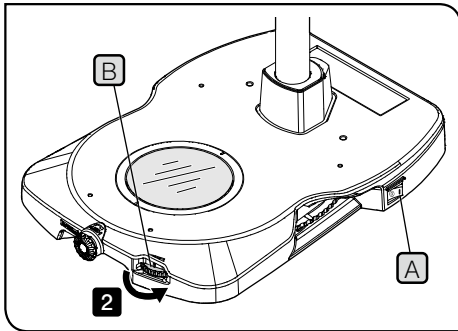
Single position LED transmitted light illumination base
SZX2-ILLTS



3 Operating procedures of each portion

This section describes the basic operating procedure of each portion.

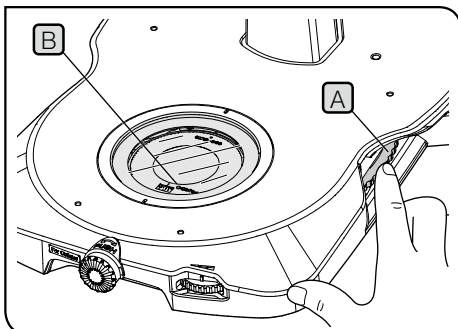
1 Turning ON the main switch and adjusting the brightness



- 1 Set the main switch **A** to **I** (ON).
- 2 Rotating the brightness control knob **B** in the direction of the arrow increases the brightness of the illumination light

2 Changing the illumination

You can select the best illumination method by changing the illumination cartridge according to the sample. For compatible cartridges, see page 18.



SZX2-ILLTQ

You can change the illumination method by rotating the illumination selection turret. Up to four illumination cartridges can be attached.

(For procedures to attach the illumination cartridge, see page 20.)

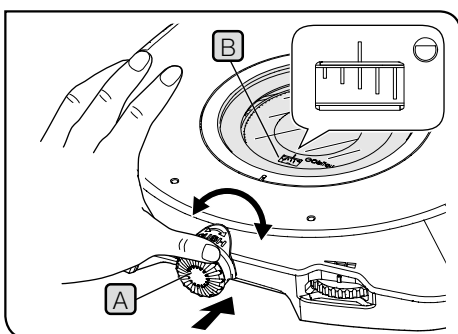
- 1 Rotate the illumination selection turret **A** (also available to operate on the left side) to the click position.

You can confirm the selected illumination method by the illumination cartridge name **B** visible through the stage glass.

SZX2-ILLTS

You can change the illumination method by replacing the illumination cartridge. (For procedures to replace the illumination cartridge, see page 20.)

3 Adjusting Oblique (Oblique brightfield illumination)



- 1 Rotate the oblique illumination control knob **A** on the front by pushing it in and then turning it to the left or right, and adjust the effectiveness of oblique illumination.

TIP

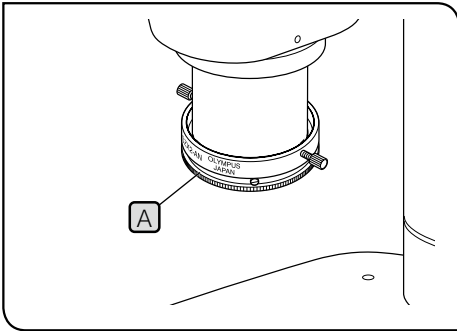
- Adjust the effectiveness of oblique illumination when you use the oblique cartridge (SZX2-COB, SZX2-COBH or SZX2-COBL).
- You can check the degree of oblique of the illumination with the scale **B** on the cartridge. The oblique range of the illumination is between the short scale and the long scale.

NOTE

Do not rotate the oblique illumination control knob with excess force.

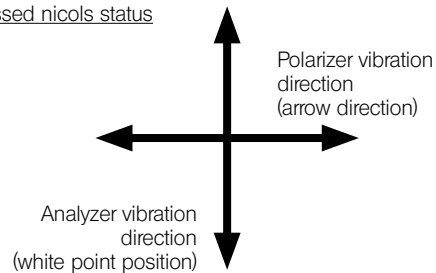
4 Adjusting for polarization observation

The transmitted simple polarization observation is available by combining SZX2-AN (Analyzer). You can check the transmitted polarization properties (birefringence, polarization property) easily.



- 1 Engage SZX2-CPO (polarization plate cartridge) in the light path.
- 2 Rotate the analyzer rotation collar **A** to move the field of view to the position where it is completely dark (crossed nicols). (Remove the sample in advance.)

Crossed nicols status



- 3 Place the sample on the stage glass and rotate the sample to perform the polarization observation.

TIP

- You can also observe the sample by rotating U-SRP or U-SRG2.
- When observing the birefringent substance, a certain area of the sample becomes dark or bright depending on the rotation of the sample.

5 Using SZX2-CSH (Shade plate cartridge)

For reflected fluorescence observation, engage SZX2-CSH (Shade plate cartridge) in the light path.

NOTE

- Do not perform the fluorescence observation with the dummy cap in the light path. The dummy cap may be deformed by the illumination light of the fluorescence observation.
- If you engage the illumination cartridge other than SZX2-CSH (Shade plate cartridge) in the light path, do not collect the illumination light during fluorescence observation onto the illumination cartridge. The performance of the illumination cartridge may be deteriorated.

6 List of objectives applicable to each illumination cartridges

Combination where the insufficient illumination field occurs and zoom magnification

SZX16 (Research high-class stereo microscope)

Objective Illumination cartridge	SDFPLFL 0.3X	SDFPLAPO 0.5XPF	SDFPLAPO 0.8X
SZX2-CBFL	less than 1.25X	less than 0.8X	-
SZX2-CBF	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-CBFH	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-COB	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-COBH	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-COBL	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-CDF	less than 2.5X	less than 1.25X	less than 0.8X
SZX2-CPO	less than 2.5X	less than 1.25X	less than 0.8X
None	less than 1.25X	less than 0.8X	-

SZX10 (Research high-class stereo microscope)

Objective Illumination cartridge	DFPL 0.5X-4	DFPL 0.75X-4
SZX2-CBFL	less than 0.8X	-
SZX2-CBF	less than 1.25X	less than 0.8X
SZX2-CBFH	less than 1.25X	less than 0.8X
SZX2-COB	less than 1.25X	less than 0.8X
SZX2-COBH	less than 1.25X	less than 0.8X
SZX2-COBL	less than 1.25X	less than 0.8X
SZX2-CDF	less than 1.25X	less than 0.8X
SZX2-CPO	less than 1.25X	less than 0.8X
None	less than 0.8X	-

MXV10 (Research high-class stereo microscope)

Objective Illumination cartridge	MVPLAPO 0.63X
SZX2-CBFL	-
SZX2-CBF	less than 1X
SZX2-CBFH	less than 1X
SZX2-COB	less than 1X
SZX2-COBH	less than 1X
SZX2-COBL	less than 1X
SZX2-CDF	less than 1X
SZX2-CPO	less than 1X
None	-

Combination where the vignetting occurs in the field of view and zoom magnification

SZX16 (Research high-class stereo microscope)

Objective Illumination cartridge	SDFPLAPO 1.6XPF	SDFPLAPO 2XPFC
SZX2-CBFL	less than 1.25X	less than 1.6X
SZX2-CBF	less than 1.25X	less than 2X
SZX2-CBFH	less than 1.25X	less than 2X
SZX2-COB	less than 1.25X	less than 2X
SZX2-COBH	less than 1.25X	less than 2X
SZX2-COBL	less than 1.25X	less than 2X
SZX2-CDF	less than 1.25X	less than 2X
SZX2-CPO	less than 1.25X	less than 2X
None	less than 1.25X	less than 1.6X

With SDFPLAPO1.6XPF and SDFPLAPO2XPFC, as the tip of the objective is sharpened to secure the workability, the vignetting appears at both ends of the field of view (right end of right field of view and left end of the left field of view) in the low zoom magnification area.

MX10 (Research high-class stereo microscope)

Objective Illumination cartridge	MVPLAPO 2XC
SZX2-CBFL	less than 0.8X
SZX2-CBF	less than 1X
SZX2-CBFH	less than 1X
SZX2-COB	less than 1X
SZX2-COBH	less than 1X
SZX2-COBL	less than 1X
SZX2-CDF	less than 1X
SZX2-CPO	less than 1X
None	less than 0.8X

4 Troubleshooting

This section describes the possible problems of this product and their remedies.

If problems occur, please review the following list and take remedial action as needed.

If you cannot solve the problem after checking the entire list, please contact Evident for assistance.

Problem	Cause	Remedy	Page
A light is not emitted.	The AC adapter is not connected.	Connect the outlet plug to the AC adapter properly.	19
		Make sure that the outlet plug is connected to the commercial power supply and the DC power jack is connected to the SZX2-ILLTQ or SZX2-ILLTS properly.	19
	The power is not supplied to the AC adapter.	Check the commercial power supply.	-
The illumination unevenness is noticeable.	The turret position is not appropriate.	Rotate the turret to the click position.	11
The oblique (Oblique brightfield illumination) cannot be adjusted.	The oblique cartridge position is not appropriate.	Attach the cartridge to the appropriate position.	20
The dust/dirt is noticeable in the field of view.	The stage glass is dirty.	Clean the stage glass sufficiently.	7

Repair request

If you cannot solve the problems even though taking actions described in Troubleshooting, please contact Evident for assistance. At that time, please tell them the following information as well.

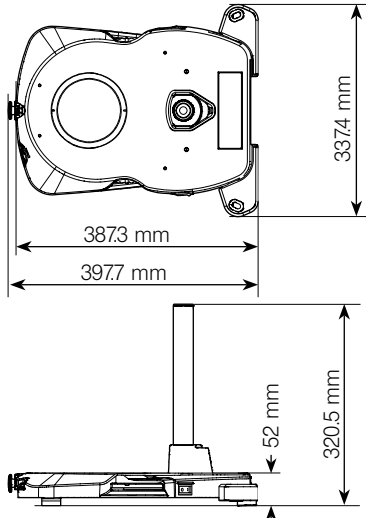
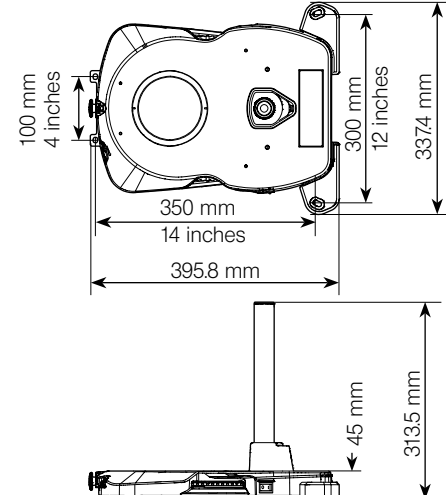
- Product name and abbreviation (Example: Quad position LED transmitted light illumination base SZX2-ILLTQ)
- Product number
- Problem

5 Specifications

This section describes detail specifications, such as shape, functions and performances, etc. of this product.

Item	Specifications	
Product name	SZX2-ILLTQ	SZX2-ILLTS
Applicable microscope	SZX16 / SZX10 / SZX7 / SZ61 / SZ51 series MVX10 series	
Transmitted light illumination light source	White light LED (built-in) Lifetime of LED: Approx. 60,000 hours (Value derived by calculating the LED element alone based on LM80/TM21)	
Light intensity adjustment	Continuous variable knob (Scale: 0 (turned OFF) to 6)	
Illumination method	Selection by changing the illumination cartridge (Illumination cartridge is an option.)	
	Number of attachable illumination cartridges: 4 (turret rotation type)	Number of attachable illumination cartridges: 1 (fixed type)
Oblique illumination adjustment	Continuous variable knob (push-in rotation)	
Attachable filter	Commercially available photo sheet filter (75 x 75 mm) Up to two filters with the thickness of 0.1 mm or less	
Power supply	Use AC adapter (optional) Input: 100 - 240 V ~ 50 - 60 Hz 1.2 A (Maximum) Output: DC15 V 3.34 A (Maximum)	
Rating	Input rating: DC15V 1A Power consumption: 15 W	
Dimension	Base: 268.4 (W) x 386.5 (D) x 41.5 (H) mm	Base: 268.4 (W) x 386.5 (D) x 41.5 (H) mm
Weight	Approx. 4.1 kg	Approx. 3.8 kg
Operating environment	<ul style="list-style-type: none"> • Indoor use • Altitude: Max. 2000 meters • Ambient temperature: 5 to 40 °C (41 to 104 °F) • Relative humidity: Max 80% (31 °C (88 °F) or less) (without condensation) In case of over 31 °C (88 °F), the relative humidity in operating environment 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 fluctuation: ±10 % • Pollution degree 2 (in accordance with IEC60664-1) • Installation/Overtoltage category: II (in accordance with IEC60664-1) 	

■ SZX2-ILLTSA (High stability adapter for ILLT) [Optional]

Item	Specifications	
Applicable base	SZX2-ILLTQ or SZX2-ILLTS	
Attaching to the base	Applicable screw: Provided hexagon socket screw (M4) (4 pcs.) (Applicable tool: Provided Allen wrench (for M4 screw))	
Anti-vibration method	Absolving the vibration with rubber leg Temperature applicable to anti-vibration effect with rubber leg: 15 to 40 °C	
Fixing to surface place or anti-vibration table	<p>This adapter can be fixed to the surface plate or the anti-vibration table equipped with screw holes with the following distances. (When attaching the adapter to the surface plate or the anti-vibration table, remove the rubber legs)</p> <p>Distance between M6 screws: 25 mm (50 mm) Applicable screw: Provided hexagon socket screw with washer (M6) (4 pcs.) (Applicable tool: Provided Allen wrench (for M6 screw))</p> <p>Distance between 1/4-20UNC screws: 1 inch (2 inches) Applicable screw: Commercially available 1/4-20UNC screw (4 pcs.) (Applicable tool: Commercially available Allen wrench (for 1/4-20UNC screw))</p> <p>As the rubber legs are not used, the anti-vibration effect with the rubber leg is lost.</p> <p>For the distance to attach the screws, see the "Dimension diagram" (when fixing to the anti-vibration table).</p>	
Dimension (when attaching to the base)	<p>When using rubber legs</p> 	<p>When fixing to the surface plate or the anti-vibration table</p> 
Weight (excluding the base)	Approx. 0.54 kg	

■ SZX2-STADM (STAD mount for ILLT) [Optional]

Item	Specifications
Usable stage	SZH-SG SZH-SC U-SRG2 (SZX-STAD1 is necessary separately) U-SRP (SZX-STAD1 is necessary separately) BH2-SH (SZH-STAD1 is necessary separately)
Attaching to SZX2-ILLTQ/ILLTS	Available screw: Provided hexagon socket screw (M4) (2 pcs.)
Dimension	Ø125 x 19 (H) mm
Weight	Approx. 0.32 kg

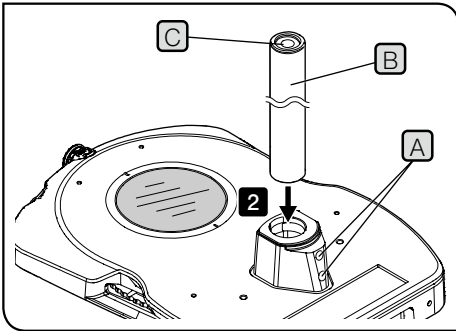
■ Illumination cartridge [Optional]

Name	Specifications		
Product name Name in English	Illumination method Illumination range	Dimension Weight	Others
SZX2-CBF Bright field standard cartridge	Brightfield standard Ø35 mm	Ø80 x 15 mm Approx. 0.07 kg	Usable filter: One Ø45 filter with thickness of 5 mm or less
SZX2-CBFH Bright field high contrast cartridge	Bright field high contrast Ø35 mm	Ø80 x 15 mm Approx. 0.10 kg	Usable filter: One Ø45 filter with thickness of 2.5 mm or less
SZX2-CBFL Bright field low contrast cartridge	Bright field low contrast Ø63 mm	Ø80 x 13 mm Approx. 0.03 kg	-
SZX2-COB Oblique standard cartridge	Oblique standard Ø35 mm	Ø80 x 15 mm Approx. 0.09 kg	-
SZX2-COBH Oblique high contrast cartridge	Oblique high contrast Ø35 mm	Ø80 x 15 mm Approx. 0.09 kg	-
SZX2-COBL Oblique low contrast cartridge	Oblique low contrast Ø35 mm	Ø80 x 15 mm Approx. 0.09 kg	-
SZX2-CDF Dark field cartridge	Darkfield Ø35 mm	Ø80 x 13 mm Approx. 0.07 kg	-
SZX2-CSH Shade plate cartridge	Light shielding -	Ø80 x 13 mm Approx. 0.13 kg	-
SZX2-CPO Polarization plate cartridge	Polarization Ø35 mm	Ø80 x 15 mm Approx. 0.08 kg	Equipped with the vibration direction display of polarizing plate

6 Assembly

This section describes the procedure to assemble each product.

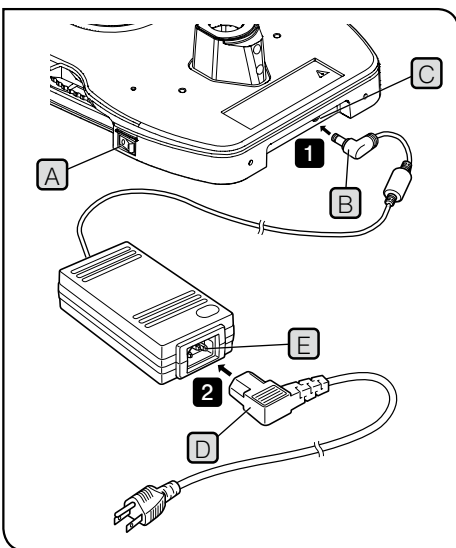
1 Attaching the column



- 1 Loosen the clamping screws (A) (2 pcs.) of the column mount sufficiently using the provided Allen wrench.
- 2 Insert the column (B) into the mount hole completely to the end with the Allen screwdriver storage hole (C) facing up.
- 3 Hold the long side of the Allen wrench, and tighten the clamping screws (A) firmly with the Allen wrench.

NOTE You can also attach the long column SZH-P400 (400 mm) or SZH-P600 (600 mm). However, if you attach the microscope frame at the high position of the column, the microscope frame becomes unstable. In this case, we recommend you to attach SZX2-ILLTSA (High stability adapter for ILLT). Also, be sure to attach SZX-R (Drop prevention ring).

2 Connecting the AC adapter and the power cord



CAUTION

- Always use the AC adapter and the power cord provided by Evident. If the proper AC adapter and the power cord are not used, the electric safety and the EMC (Electromagnetic Compatibility) performance of the product cannot be assured. If no power cord is provided, please select the proper power cord by referring to the section “Proper selection of the power cord” at the end of this instruction manual.
- Connect the power plug to the grounded 3-core outlet. If the outlet is not grounded, the electric safety performance intended by Evident cannot be assured.

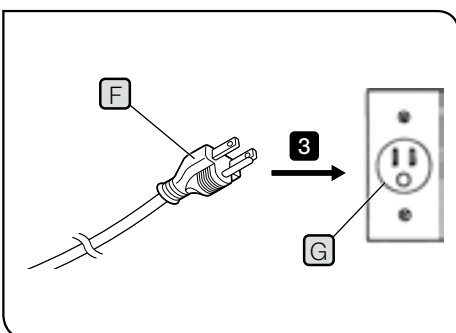
NOTE

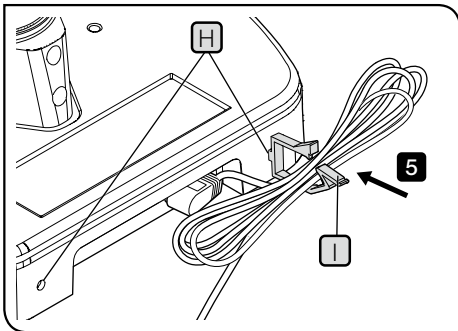
- The power cord and the AC adapter cord are sensitive to bending and twisting. Do not apply excess force.
- Before connecting the power cord or the AC adapter, be sure to set the main switch (A) to **OFF**.

1 Connect the specified AC adapter connector (B) to the connector (C) of the illumination base.

2 Connect the specified power cord connector (D) to the AC adapter connector (E).

3 Connect the power plug (F) to the power outlet (G).



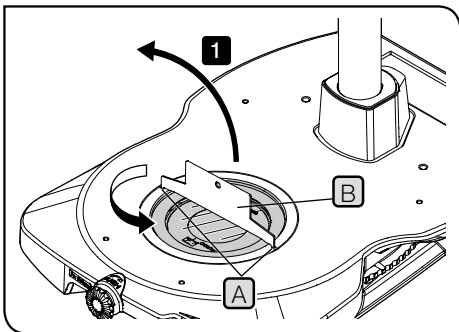


When using a long AC adapter cord:

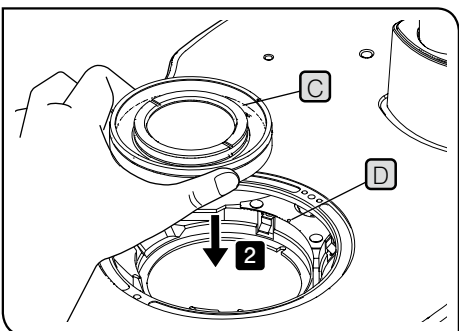
- 4 Insert the binder (large or small) (I) provided with the base to the hole (H) (right or left) on the back of the base.
- 5 Bundle the AC adapter cord and secure them with the binder (I).

NOTE Do not secure the power cord with the binder (I).

3 Attaching the illumination cartridge (Optional)

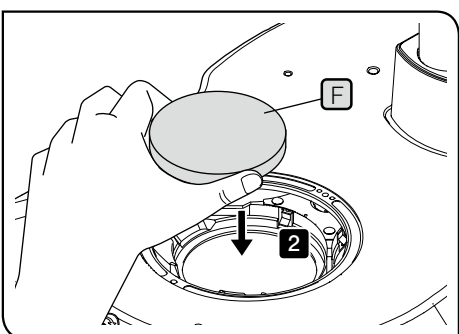
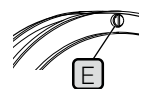


- 1 Insert the screwdriver (B) for stage glass frame provided with the base into the notch (A) of the stage glass frame, and rotate it in counterclockwise direction to remove the stage glass.



- 2 Align the indicator (C) of the illumination cartridge you want to attach with the indicator (D) of the illumination cartridge mount, and push in the illumination cartridge.

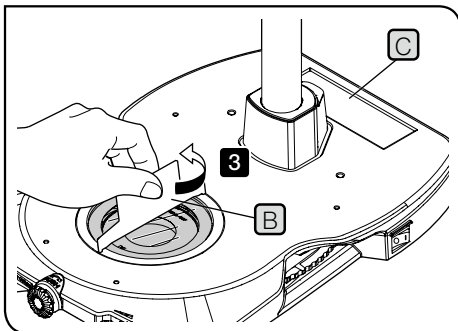
NOTE If you want to attach the illumination cartridge with a protrusion (E) on the back, make sure that the illumination cartridge does not rotate after the illumination cartridge is pushed in.



SZX2-ILLTQ only

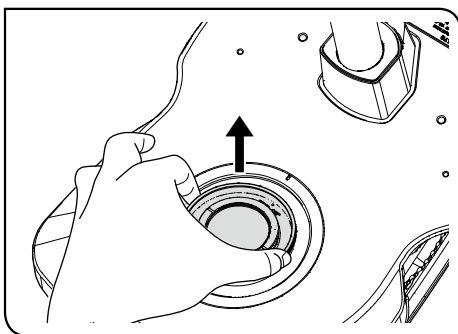
You can attach up to four illumination cartridges in the same procedure by rotating the illumination selection turret.

CAUTION Attach the dummy cap (F) provided with the base to the illumination cartridge mounut not in use.



- 3** Return the stage glass to the original position, and attach it securely with the screwdriver **B** for stage glass frame.

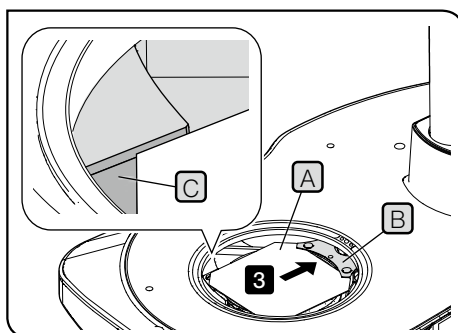
TIP You can place the screwdriver for stage glass frame on the dent **C** on the back of the column.



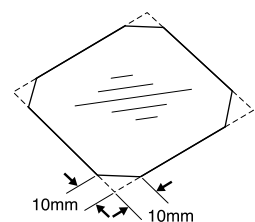
TIP When removing the illumination cartridge, pull the illumination cartridge up and remove it.

4 Attaching the photo sheet filter (commercially available)

TIP You can attach the commercially available photo sheet filter (75 x 75 mm) to the illumination selection turret. Up to two photo sheet filters with the thickness of 0.1 mm can be inserted.



- 1** Cut the four corners of the photo sheet filter by approx. 10 mm using the scissors.



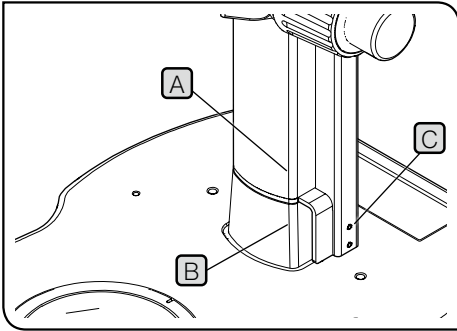
- 2** In a same way as **1** on page 20, insert the screwdriver for stage glass frame into the notch of the stage glass frame and remove the stage glass.

- 3** Place the photo sheet filter **A** on the desired illumination cartridge with the back side of the sheet filter inserting under holding pins **B** of the turret, and then fit two front corners of the photo sheet filter to the two concave parts on the front.

NOTE Insert the photo sheet filter in the concave part **C**.

- 4** Attach the stage glass to the original position.

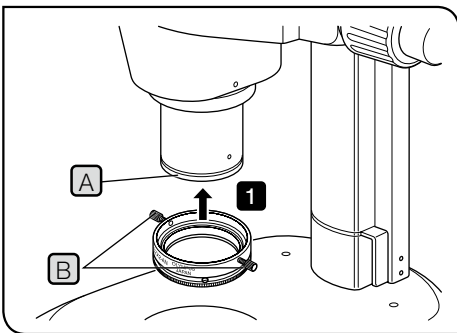
5 Attaching the focusing unit (Optional)



TIP For details, refer to the instruction manual of the microscope frame..

NOTE Insert SZX2-FOFH (Coarse/fine focusing assembly for heavy load) or SZX2-RFA16 (Fluorescence focusing module) into the column by aligning the edge **A** of the focusing unit with the edge **B** of the base. If the edge **A** of the focusing unit is not aligned with the edge **B** of the base, the extended part **C** of the focusing unit may interfere with the back side of the column mount of the base.

6 Attaching SZX2-AN (Analyzer) (Optional)



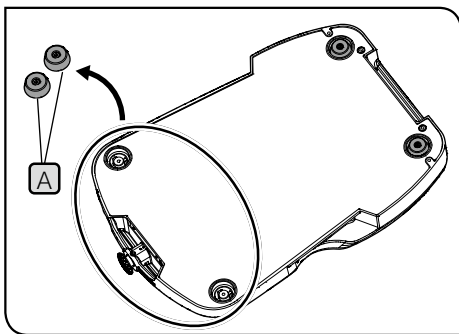
1 Insert SZX2-AN (Analyzer) to the tip **A** of the objective completely to the end so that the display "SZX2-AN" is facing to the front, and tighten it securely with the clamping knobs **B** (2 pcs).
At this time, the clamping knobs are positioned parallel to the focusing knob.

NOTE Inset the analyzer carefully without tilting it.

7 Attaching SZX2-ILLTSA (High stability adapter for ILLT) (Optional)

- TIP**
- You can stabilize the base and reduce the vibration by attaching SZX2-ILLTSA (High stability adapter for ILLT).
 - This adapter is effective for using the fluorescence observation system of SZX series or MVX10.

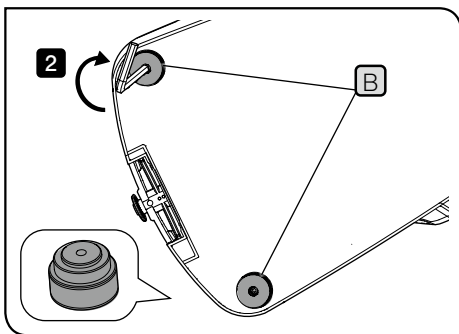
NOTE If you use MVX10 for observation, be sure to attach SZX2-ILLTSA (High stability adapter for ILLT).



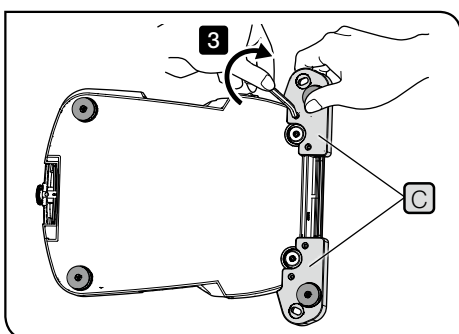
TIP Use the tools shown in the table below.

Tool	Description
Allen wrench (for M4 screw)	Provided with SZX2-ILLTSA
Hexagon socket screw (M4)	Provided with SZX2-ILLTSA

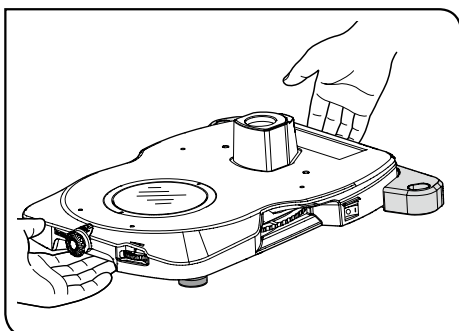
1 Flip the base to its back and remove the front rubber legs (2 pcs.) **A** using the Allen wrench.



2 Securing the screws attached to the provided rubber legs (2 pcs.) **B** to the screw holes (2 positions) used for attaching the rubber legs (2 pcs.) **A** using the Allen wrench, attach the provided rubber legs (2 pcs.) **B**.



3 Securing the screws (4 pcs.) to the screw holes (4 positions) at the back of the base using the Allen wrench, attach SZX2-ILLTSA (High stability adapter for ILLT) **C**.



4 Flip the base back to its front and place it down carefully.

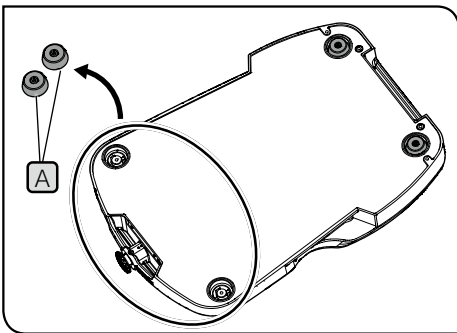
When attaching the base to the anti-vibration table

TIP

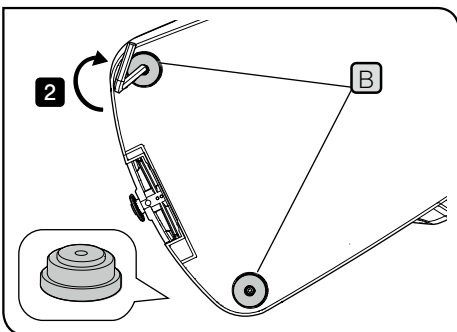
- As the rubber legs are not used, the anti-vibration effect with the rubber leg is lost.
- Use the tools shown in the table below.

Tool	Description
Allen wrench (for M4 screw)	Provided with SZX2-ILLTSA
Hexagon socket screw (M4)	Provided with SZX2-ILLTSA
Allen wrench (for M6 screw)*	Provided with SZX2-ILLTSA
Hexagon socket screw with washer (M6)*	Provided with SZX2-ILLTSA

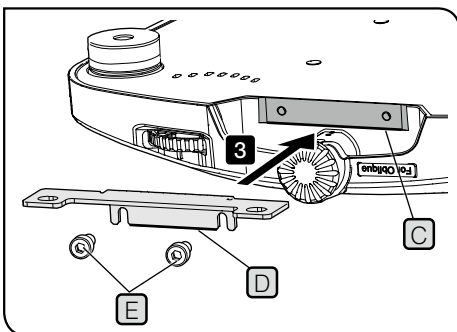
* These tools are used for attaching the base to the anti-vibration table in metric specifications.



- 1 Flip the base to its back and remove the front rubber legs (2 pcs.) **A** using the Allen wrench.



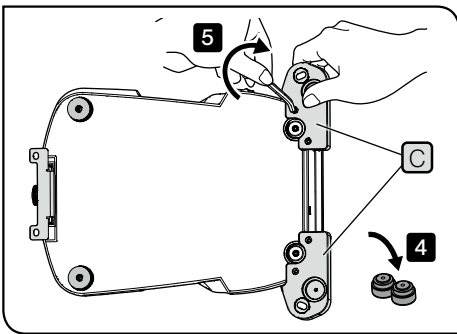
- 2 Securing the screws (2 pcs.) to the screw holes (2 positions) used for attaching the rubber legs (2 pcs.) **A** using the Allen wrench, attach the provided spacers (2 pcs.) **B**.



- 3 Align the edge **D** of the plate with the edge **C** of the base, and secure the screws (2 pcs.) **E** using the Allen wrench.

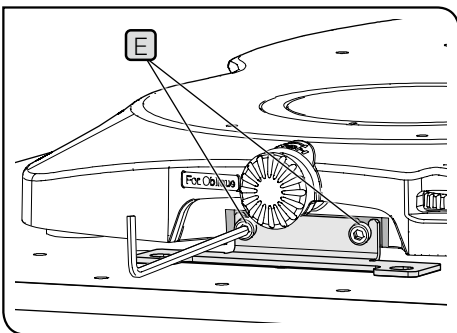
TIP

Secure the screws temporarily at this time.



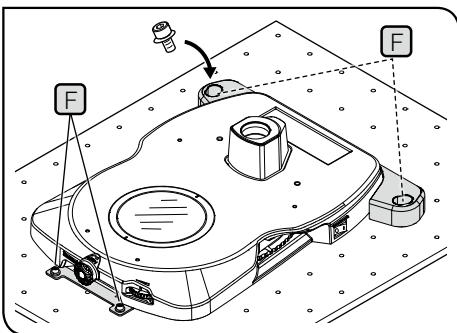
4 Remove the rubber legs attached to SZX2-ILLTSA (High stability adapter for ILLT) (right and left) using the Allen wrench.

5 Securing the screws (4 pcs.) to the screw holes (4 positions) at the back of the base using the Allen wrench, attach SZX2-ILLTSA (High stability adapter for ILLT) to the base.



6 Place the base on the anti-vibration table and loosen the screws **E**.

7 Align the bottom of the plate with the surface of the anti-vibration table, and secure the screws **E**.



8 Securing the screws (4 pcs.) to the screw holes (4 positions) **F** of the anti-vibration table using the Allen wrench, attach the base.

TIP

You can use either the metric units or imperial units for specifications of the anti-vibration table. For details, see “5 Specifications” (P.16).

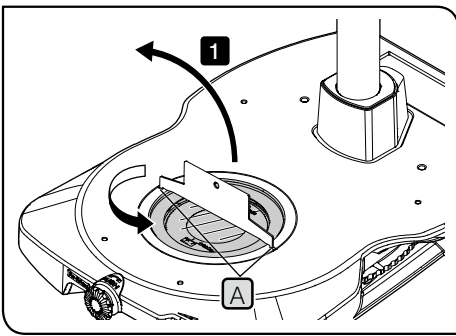
8 Attaching the stage (Optional)

Attaching SZX2-STADM (STAD mount for ILLT)

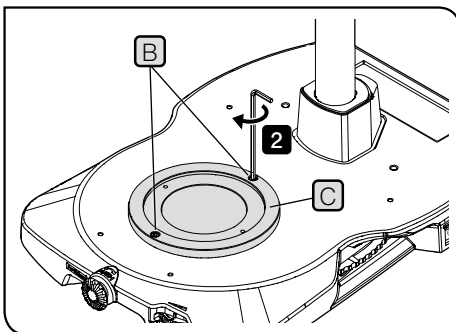
TIP Use the tools shown in the table below.

Tool	Description
Driver for stage glass frame	Provided with the base
Allen wrench (for M4 screw)	Provided with SZX2-STADM
Hexagon socket screw (M4)	Provided with SZX2-STADM

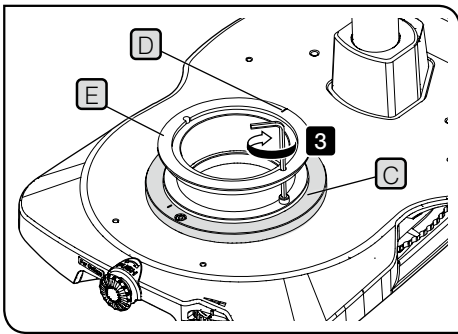
- SZX2-STADM is necessary for attaching the stage.
(For details of the stage, see page 8.)
- You cannot attach SZX2-STADM to SZX2-ILLT.



- 1** Insert the screwdriver for stage glass frame into the notch **A** of the stage glass frame, and rotate it in counterclockwise direction to remove the stage glass.



- 2** Securing the screws (2 pcs) **B** to the screw holes (2 positions) of the base using the Allen wrench, attach SZX2-STADM (STAD mount for ILLT) **C** to the base.

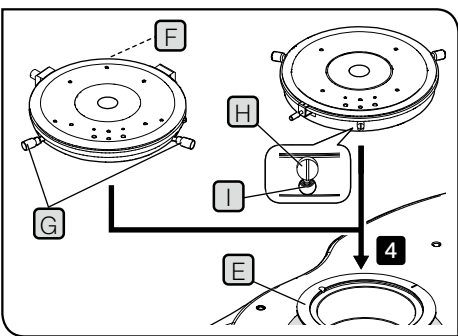


Attaching SZX-STAD1 (BX stage adapter type 1)

TIP Use the tools shown in the table below.

Tool	Description
Allen wrench (for M4 screw)	Provided with SZX-STAD1
Hexagon socket screw (M4)	Provided with SZX-STAD1

3 Place the notch (D) on the back side of the base, and secure the screws (2 pcs.) using the Allen wrench to attach SZX-STAD1 (E) to SZX2-STADM (C).



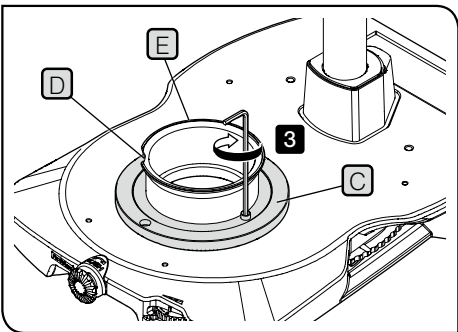
4 Attach U-SRP or U-SRG2 to SZX-STAD1 (E).

Attaching U-SRP

Place the positioning pin (cylinder type) (F) on the back side of the base, and rotate the centering knob (G) in clockwise direction to secure it.

Attaching U-SRG2

Place the protrusion (H) on the front side of the base, and rotate the clamping screw (I) in clockwise direction to secure U-SRG2 using the allen screwdriver provided with the microscope frame.

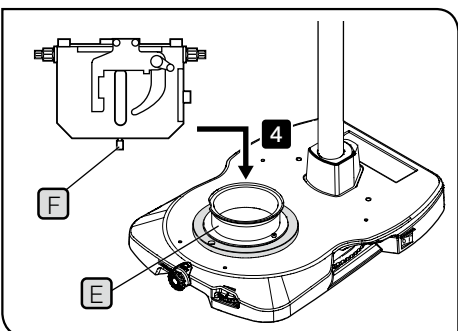


Attaching SZH-STAD1 (Stage adapter type 1)

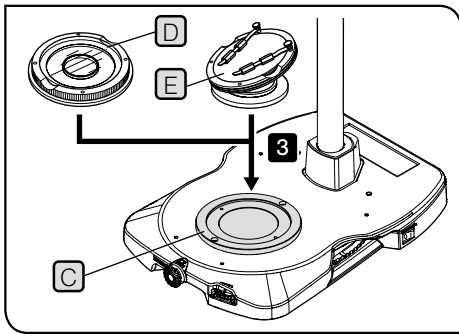
TIP Use the tools shown in the table below.

Tool	Description
Allen wrench (for M4 screw)	Provided with SZH-STAD1
Hexagon socket screw (M4)	Provided with SZH-STAD1

3 Placing the notch (D) comes to the front side of the base, secure the screws (2 pcs.) using the Allen wrench to attach SZH-STAD1 (E) to SZX2-STADM (C).



4 Place the stage clamping screw (F) of BH2-SH (horizontal knob stage) on the front of the base, rotate the clamping knob (F) in clockwise direction to secure it, and attach BH2-SH to SZH-STAD1 (E).



Attaching SZH-SG (Gliding stage) or SZH-SC (Cup stage)

3 Place SZH-SG **D** or SZH-SC **E** on SZX2-STADM **C**.

■ Proper selection of the power supply cord

If no power supply cord is provided, please select the proper power supply cord for the equipment by referring to "Specifications" and "Certified Cord" below:

Caution : In case you use a non-approved power supply cord for Evident products, Evident can no longer warrant the electrical safety of the equipment.

Specifications

Voltage rating	125 V AC (for 100-120 V AC area) or, 250 V AC (for 220-240 V AC area)
Current rating	6 A minimum
Temperature rating	60 °C minimum
Length	3.05 m maximum
Fittings configuration	Grounding type attachment plug cap. Opposite terminates in molded-on IEC configuration appliance coupling.

Table 1 Certified cord

A power supply cord should be certified by one of the agencies listed in Table 1, or comprised of cordage marked with an agency marking per Table 1 or marked per Table 2. The fittings are to be marked with at least one of the agencies listed in Table 1. In case you are unable to buy locally the power supply cord which is approved by one of the agencies mentioned in Table 1, please use replacements approved by any other equivalent and authorized agencies in your country.




















Country	Agency	Certification mark	Country	Agency	Certification mark
Argentina	IRAM		Italy	IMQ	
Australia	SAA		Japan	JET	
Austria	OVE		Netherlands	KEMA	
Belgium	CEBEC		Norway	NEMKO	
Canada	CSA		Spain	AEE	
Denmark	DEMKO		Sweden	SEMKO	
Finland	FEI		Switzerland	SEV	
France	UTE		United Kingdom	ASTA BSI	
Germany	VDE		USA	UL	
Ireland	NSAI				

Table 2 HAR flexible cord

Approval organizations and cordage harmonization marking methods

Approval organization	Printed or embossed harmonization marking (May be located on jacket or insulation of internal wiring)	Alternative marking utilizing black-red-yellow thread (Length of color section in mm)		
		Black	Red	Yellow
Comite Electrotechnique Belge (CEBEC)	CEBEC <HAR>	10	30	10
Verband Deutscher Elektrotechniker (VDE) e.V. Prüfstelle	<VDE> <HAR>	30	10	10
Union Technique de l'Electricite' (UTE)	USE <HAR>	30	10	30
Instituto Italiano del Marchio di Qualita' (IMQ)	IEMMEQU <HAR>	10	30	50
British Approvals Service for Electric Cables (BASEC)	BASEC <HAR>	10	10	30
N.V. KEMA	KEMA-KEUR <HAR>	10	30	30
SEMKO AB Svenska Elektriska Materielkontrollanstalter	SEMKO <HAR>	10	10	50
Österreichischer Verband für Elektrotechnik (ÖVE)	<ÖVE> <HAR>	30	10	50
Danmarks Elektriske Materialkontroll (DEMKO)	<DEMKO><HAR>	30	10	30
National Standards Authority of Ireland (NSAI)	<NSAI> <HAR>	30	30	50
Norges Elektriske Materiekkontroll (NEMKO)	NEMKO <HAR>	10	10	70
Asociacion Electrotecnica Y Electronica Espanola (AEE)	<UNED> <HAR>	30	10	70
Hellenic Organization for Standardization (ELOT)	ELOT <HAR>	30	30	70
Instituto Portages da Qualidade (IPQ)	np <HAR>	10	10	90
Schweizerischer Elektro Technischer Verein (SEV)	SEV <HAR>	10	30	90
Elektriska Inspektoratet	SETI <HAR>	10	30	90

Underwriters Laboratories Inc. (UL)
Canadian Standards Association (CSA)

SV, SVT, SJ or SJT, 3 X 18AWG
SV, SVT, SJ or SJT, 3 X 18AWG

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Evident Scientific Singapore PTE. LTD.

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Official website



<https://www.olympus-ims.com>