

# INSTRUCTIONS

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# U-APT ARROW POINTER

Optical Microscope Accessory

To ensure the safety, obtain optimum performance and to familiarize yourself fully with the use of this attachment, we recommend that you study this manual thoroughly before operating the microscope.

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 our distributor in EU for return and/or collection systems available in your country.

### **For Korea only**

B급 기기 (가정용 방송통신기자재)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

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Correct assembly\* and adjustments are critical for the arrow pointer to exhibit its full performance. If you are going to assemble the attachment yourself, please carefully read Chapter 4, "ASSEMBLY" (pages 10 to 11).

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# *IMPORTANT*




This system employs a UIS (Universal Infinity System) optical design, and should be used only with UIS microscopes, eyepieces, objectives and condensers for the BX2 series. (Some of the modules designed for the BX series are also usable. For details, please consult us or the catalogues.) Less than optimum performance may result if inappropriate accessories are used.

## **1** Getting Ready

1. This manual pertains only to the arrow pointer. Before using this attachment together with the microscope and associated options, make sure that you have carefully read and understood their manuals, and understand how the system should be operated together.
2. This system has a field number of 22. When the arrow pointer is combined with a superwide-field observation tube, the pointer cannot be moved around the entire range of the field of view. Also note that a ghost of pointer may be observed in such a case.
3. If the eyepiece in use incorporates a micrometer, ghost may be observed with dark specimens.
4. Always use the power cord and AC adapter provided by us. If no power cord is provided, please select the proper power cord by referring to the section "PROPER SELECTION OF THE POWER SUPPLY CORD" at the end of this instruction manual. If the proper power cord is not used, product safety and performance cannot be guaranteed.
5. To ensure safety, disconnect the power plug of the AC adapter from the power outlet after operation.
6. The AC adapter cord should be fixed with the provided stoppers at a position that does not come in the way of operation. Take special care so that the cord does not contact the lamp housing.

### Safety Symbols

The following symbols are found on the microscope. Study the meaning of the symbols and always use the equipment in the safest possible manner.

Symbol	Meaning
15V0.2A 	Supply DC current (from the provided AC adapter).
	Indicates an input jack.
	Indicates a pointer.

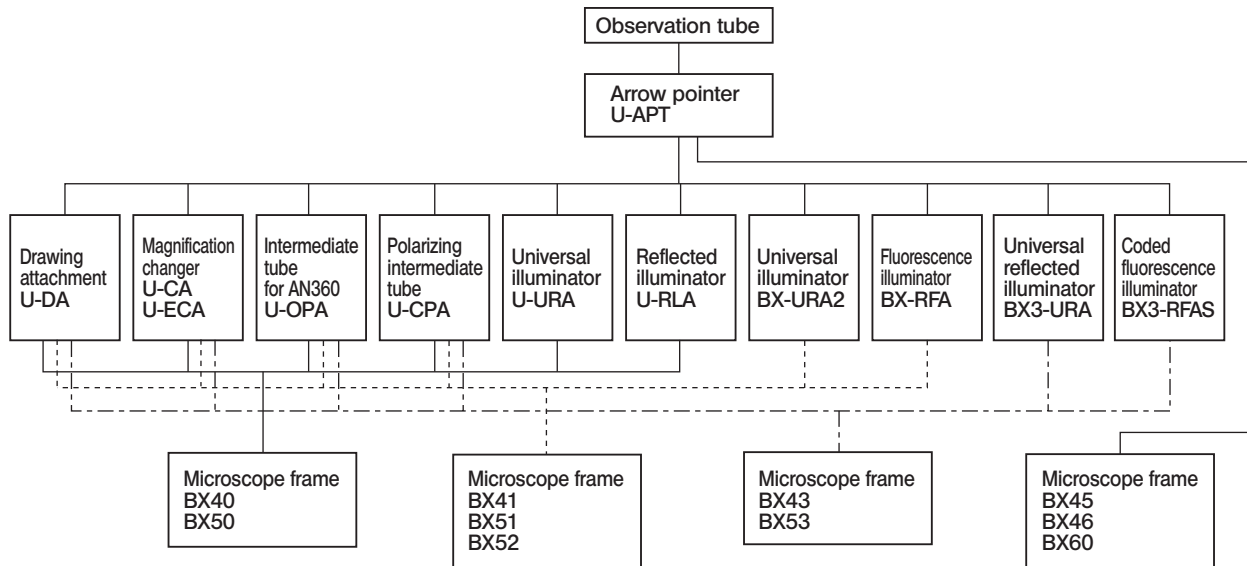
## 2 Maintenance and Storage

1. To clean the lenses and other glass components, simply blow dirty away using a commercially available blower and wipe gently using a piece of cleaning paper (or clean gauze). If a lens is stained with fingerprints or oil smudges, wipe it gauze slightly moistened with commercially available absolute alcohol.
- ▲ **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, electrical equipment that is being switched on or off. Also remember to always use it only in a well-ventilated room.**
2. With any part of the arrow pointer other than glass components gets dirty, do not use organic solvents. If a plastic part gets dirty, use a cloth moistened with a diluted neutral detergent.
3. Do not disassemble any part of the arrow pointer. This could result in malfunctions or reduced performance.
4. When the arrow pointer is not used, make sure to put the dust cover on it.

5. When the arrow pointer is used with the BX40, BX41, BX43, BX45, BX46, BX50, BX51, BX52, BX53, BX60 microscope frame, only one intermediate attachment can be mounted in a 2-level configuration.

However, the usable intermediate attachment is restricted depending on whether it is mounted above or below the arrow pointer.

- The only intermediate attachments that can be used on top of the arrow pointer is the U-EPA or U-EPA2 eyepoint adjuster. For the intermediate attachments that can be used below the arrow pointer, consult the following sketch and select the optimum one.



**3** Caution

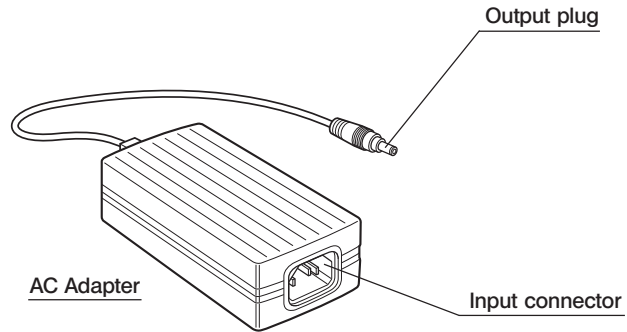
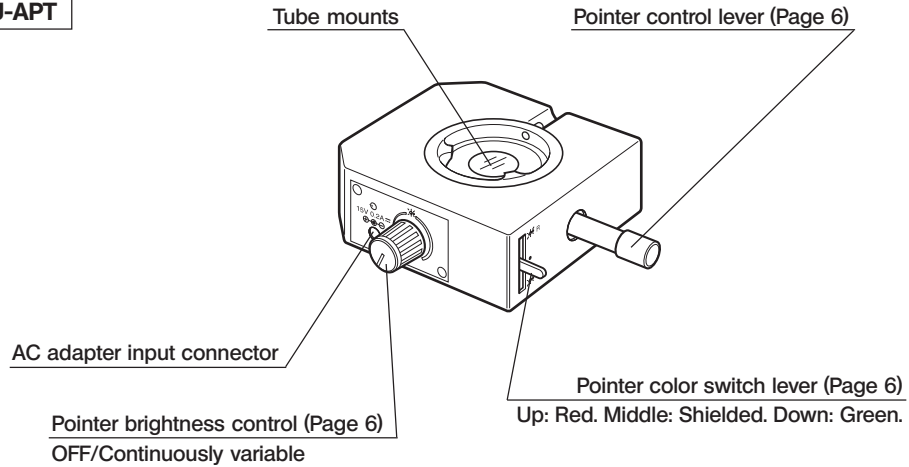
If the system is used in a manner not specified by this manual, the safety of the user may be imperiled. In addition, the system equipment may also be damaged. Always use the system as outlined in this instruction manual.

The following symbols are used to set off text in this instruction manual.

- ▲ : Indicates that failure to follow the instructions in the warning could result in bodily harm to the user and/or damage to equipment (including objects in the vicinity of the equipment).
- ★ : Indicates that failure to follow the instructions could result in damage to equipment.
- ◎ : Indicates commentary (for ease of operation and maintenance).

# 1 CONTROLS

## Arrow Pointer U-APT





## 2 OPERATION

### 2-1 Focus Adjustment of the Arrow Pointer

(Figs 1 & 2)

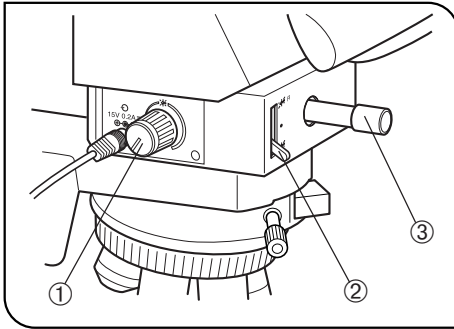


Fig. 1

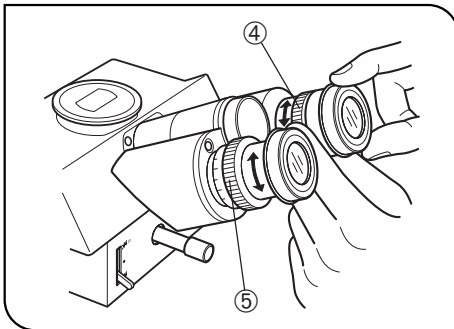


Fig. 2

⊙ For use in focusing of the pointer, one of the eyepiece sleeves should be equipped with a helicoid (or a focusing mask).

1. Turn the pointer brightness control ① of the arrow pointer clockwise to turn on the pointer ( ⬆ ).

⊙ Set the pointer color switching lever ② to other position than the middle position. If the pointer cannot be seen in the field of view, move the pointer at the center of field using the pointer control lever ③.

2. Looking into the eyepiece sleeve without the diopter adjustment ring, turn the helicoid ④ of the eyepiece to focus on the pointer.

3. Looking into the eyepiece sleeve with the diopter adjustment ring, turn the diopter adjustment ring ⑤ to focus on the pointer.

4. Turn the coarse and fine focus adjustment knobs of the microscope to focus on the specimen.

## 2-2 Pointer Operation

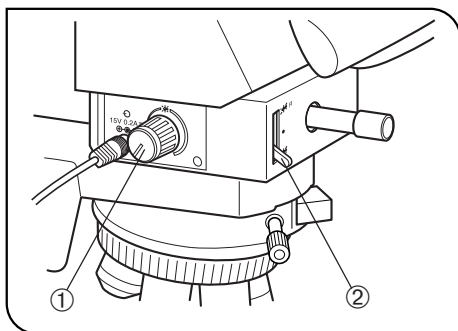


Fig. 3

### 1 Adjusting the Pointer Brightness (Fig. 3)

Ⓞ Light intensity alignment range of the pointer has been set to comply with a dark specimen, such as the case of fluorescence observation. For this reason, in case of brightfield observation with high light illumination, you may feel it difficult to identify the pointer even by rotating the pointer brightness control dial which is not defect of this product.

1. While looking into the eyepiece, turn the pointer brightness control ① clockwise to vary the brightness continuously.
2. Turning the control to the fully counterclockwise position switches it off.

### 2 Selecting the Pointer Color (Fig. 3)

Using the pointer color switching lever ② select a color which is clearly distinguishable from the specimen color.

- Top position: Red
- Middle position: Light shielded.
- Down position: Green

### 3 Moving the Pointer (Fig. 4)

Move the pointer to the desired location in the field of view by operating the pointer control lever ① on the front of the arrow pointer.

Ⓞ When the pointer is not used, move it away from the field of view or set the pointer color switching lever to the middle position.

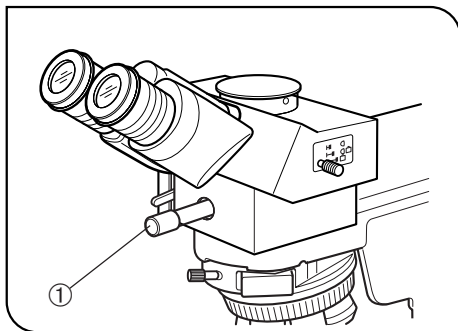


Fig. 4

## 2-3 Notes on Photomicrography

In general, the procedure for taking photographs is the same as usual. This section describes special considerations that apply when taking photographs with the arrow pointer installed.

1. Using the trinocular observation tube on top of the microscope, you can take photographs that include the pointer.  
**★ When you use genuine our trinocular observation tubes, photo eyepiece and photomicrographic equipment, the pointer ( ↱ ) is always focused on the film plane.**
2. Brightness of the pointer is set to be brighter than the specimen to ensure adequate contrast. This has the following effects on photographs that are not apparent during visual observation.
  - Since the pointer is always overexposed when exposure is correct for specimen, the pointer color will bleach to white in color photographs.
  - When taking photographs with photomicrographic equipment with automatic exposure control, the brightness of the pointer will cause the specimen to be underexposed. In such cases, set the photomicrographic equipment's specimen distribution compensation dial to the OVER position.
  - Since the effect of the pointer is especially great when making long exposures of dark specimens, check the exposure time with the pointer illumination turned off, then make the exposure manually after turning the pointer illumination back on.

# 3 SPECIFICATIONS

Item	Specification
Maximum field number	ϕ 22
Pointer color	3 steps switchable (Top: Red. Middle: Shielded. Down: Green.)
Pointer movement	Joystick control.
Pointer power supply	AC adapter Input rating: 100-240 V ~ 50-60 Hz 1.2 A MAX. Output rating: 15 V --- 3.34 A
Arrow pointer dimensions & weight	115(W) x 165(D) x 45(H) mm, approx. 1.2 kg
Operating environment	<ul style="list-style-type: none"><li>• Indoor use.</li><li>• Altitude: Max. 2000 meters</li><li>• Ambient temperature: 5° to 40°C (41° to 104° F)</li><li>• Maximum relative humidity: 80% for temperatures up to 31°C (88°F), decreasing linearly through 70% at 34°C (93°F), 60% at 37°C (99°F), to 50% relative humidity at 40°C (104°F).</li><li>• Supply voltage fluctuations; Not to exceed ±10% of the normal voltage.</li><li>• Pollution degree: 2 (in accordance with IEC60664)</li><li>• Installation/Overvoltage category: II (in accordance with IEC60664)</li></ul>

# 4 ASSEMBLY

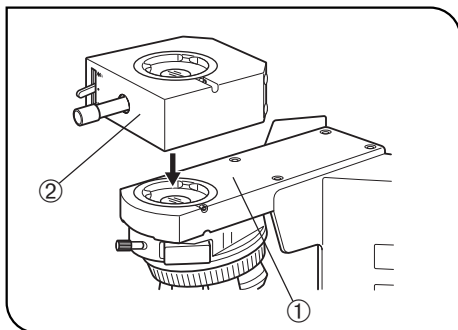


Fig. 5

## 1 Mounting the Arrow Pointer

(Fig. 5)

1. Remove the observation tube from the microscope frame in use ①, and attach the arrow pointer ② so that the pointer control lever is located on the front.
2. Attach the observation tube removed before above the arrow pointer.

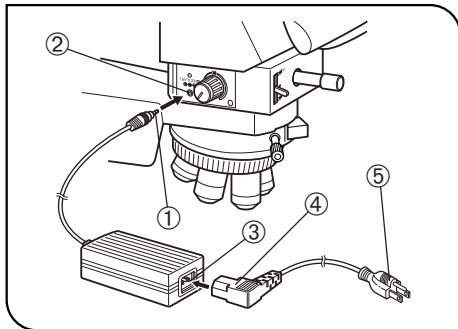


Fig. 6

## 2 Connecting the AC Adapter

(Fig. 6)

- ▲ Before connecting the AC adapter, turn the pointer brightness control fully counterclockwise to the OFF position.
  - ▲ The power cord is vulnerable when bent or twisted. Never subject it to excessive force.
  - ▲ Always use the power cord and AC adapter provided by us. IF no power cord is provided with the microscope, please select the proper power cord by referring to section “PROPER SELECTION OF THE POWER SUPPLY CORD” at the end of this instruction manual.
1. Firmly connect the AC adapter's output plug ① to the AC adapter input connector ② on the left side panel of the arrow pointer.
  2. Connect the power cord's connector ④ into the AC adapter's input connector ③, then connect the power cord's plug ⑤ to the wall power outlet.
- ▲ The power cord should be connected to a grounded, 3-conductor power outlet. If the power outlet is not grounded properly, we can no longer warrant the electrical safety performance of the equipment.

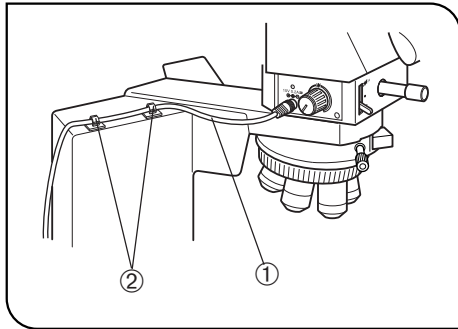


Fig. 7

### 3 Fixing the Cord Stopper

To prevent the AC adapter cord ① from coming in the way of microscope operation and from contacting the lamp housing, peel off the backings from the two provided cord stopper ② stickers and fix the power cord at two positions on the arrow pointer using them.

## ■ 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 our products, we can no longer warrant the electrical safety of the equipment.

### Specifications

Voltage Rating	125V AC (for 100-120V AC area) or, 250V AC (for 220-240V AC area)
Current Rating	6A 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 agencies listed in Table 1. In case you are unable to buy locally in your country 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, JQA, TÜV, UL-APEX / MITI	
Austria	ÖVE		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 Materiellkontroll (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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