

Replacement lenses (Rough standards)

table 1

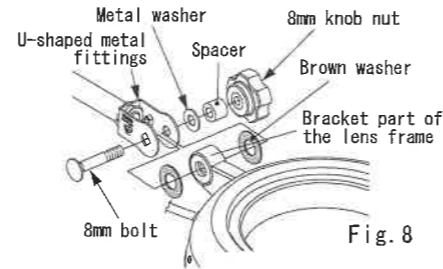
Magnification	①Eye point (mm)	②Lens Aperture (mm)	③Working distance (mm)	④View (mm)	Weight (kg)
SKK-2X	150	φ 130	160	φ 170	0.4
SKK-3X	150	φ 130	130	φ 140	0.5
SKK-4X	150	φ 130	110	φ 120	0.7
SKK-6X	100	φ 105	82	φ 70	0.6
SKK-8X	105	φ 90	54	φ 40	1.3
SKK-10X	80	φ 90	43	φ 40	1.3
SKK-12X	80	φ 90	35	φ 40	1.4
SKK-15X	65	φ 90	30	φ 30	1.4

The magnification is a theoretical value calculated from lens curvature. In addition, eye point and working distance are different values by the eyesight of the observer, age. The list showed the average numerical value of the position that looked have few distortions. Look for your position to see most comfortably.

Assembling method of the bracket part

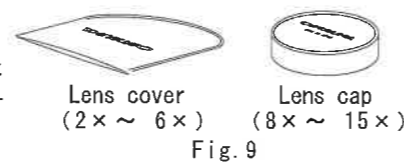
(Each series is common and is assembled at the time of the factory shipment.)

Set a brown washer in both end faces in the bracket part of the lens frame. Insert it between U-shaped metal fittings so that a brown washer does not come off. Insert an 8mm bolt next in a direction of figure 8. Put a metal washer and spacer from the other side, and tighten an 8mm knob nut. (Fig. 8)



Other precautions

- Do not use thinner, benzene, etc. to clean the body and plastic parts such as the Lamp cover. They can flake the paint and deform the parts.
- Do not use our products in a place where a medical device is used. The former can cause noises in the latter.
- Please do not use this appliance at the place that corrosive gas (you include a sulfur ingredient) produces. When use it in these environment: the change in quality of the lamp, the nature I may cause an ability drop, a change of color, bad insulation.
- This product does not adapt to a standard of ESD(IEC61340-5-1).
- The lens of the illuminated magnifier condenses light. Continuous radiation of strong light such as sunbeam to a flammable material can cause a fire. Accordingly, do not set the magnifier on a place where it may be irradiated with such light. While the magnifier is not used, keep the lens cover, the lens cap (Fig. 9) or a sunbeam block-ing cloth on it.



Optional parts (Separate sale)

- Interchangeable lens system**
(Round series 2x~15x)
I prepare 8 kinds of interchangeable lens. A change of the magnification is possible.
- Multicoated lens (2X~10X)**
It is the lens which added anti-reflection coating to all lenses surface. This has high transmissivity and is a bright lens. This prevents that light of the sun and ceiling illumination reflect in a lens.
- Power up lens for 2X**
Only putting on the interchangeable lens system 2X, magnification becomes 5X. Even if you do not take off 2X lens, a magnification change is made quick. Effective aperture: φ 96
Note
This does not support 3X~15X lens.

- φ 130 Polarizing Light Filter (for 2X~6X)
- φ 90 Polarizing Light Filter (for 8X~15X)
This filter removes the unnecessary surface reflection from an observation thing. This improves observation efficiency.



- Counter weight**
When you greatly waved a lens part to the left or right, this prevents that the main body falls down by instability. You can observe it without worrying about the fall.



Applicable model
SKK-A
SKK-B
ENVL-A
ENVL-B

- Flange base**
When a rear wall is near, and a clamp hits something, you can fix the main body at the offset position by changing a normal clamp to a flange base.
(Note)
This model cannot stand by oneself when not fixed. You must fix it with screws. The screws, bolts for installation are not attached. Please prepare appropriate screws.



Flange base dimension
φ 59 × 35H
Applicable model
SKK-F, CF
ENVL-F, CF

- Caster stand**
It is movable as far as the power supply cord is connected.



Applicable model
SKK-F, CF
ENVL-F, CF

After-sales service

- For repair of the illuminated magnifier, ask distributor at which you purchased it.
- This illuminated magnifier has One year guarantee for repairs.

Other items

- We will not guarantee against a damage of the product and its package caused by a forwarding agent's mistake.
- We will not guarantee against a damage of the product caused by a mistake in handling.
- Warranty doesn't cover any loss and expense cost including shipping cost, to arise from use of this products, or breakdown or damage of it.

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Instruction manual



Illuminated magnifier MODEL SKK

Thank you for your purchasing OTSUKA's illuminated magnifier. Check the model name of your magnifier and read the section for it in this instruction manual for long use.

Safety precautions

Before using the device you purchased, be sure to read this "Safety precautions" and understand how to use it. The following section explains important items you must observe to prevent injury to you and other persons or damage to properties and use your device safely. This instruction manual uses various symbols to warn of Max. danger to the user or other persons, as well as property damage. These symbols and their meanings are shown next.

	Ignoring an item under this mark and wrong use could cause death or serious bodily injury.
	Ignoring an item under this mark and wrong use could cause bodily injury or property damage.

	Prohibited items are described under this mark.		Items which you must carry out.		Warnings or cautions.	
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WARNING							
	Since long continuous use of the magnifier tires your eyes and body, take extreme care about working posture and rest. (Stop using the magnifier every 15 minutes and rest your eyes for a while.)		Do not leave a metal piece such as a clip in the magnifier or splash water or oil over it since they can cause a short circuit or a fire. (Protection class: IP20)		Do not use or keep the magnifier in a place where there is much dust, moisture, oil mist or steam. Doing so can cause a fire or an electric shock.		Do not pull the power cable to unplug it. Doing so can cause a short circuit or a fire. Pull it out with the plug part.
	Take care not to forget to turn off the switch. Forgetting it can cause a fire.		Do not touch the magnifier or hold the power plug with wet hand. Doing so can cause an electric shock.		If it starts thundering, do not touch a metallic part or power plug of the magnifier. If the thunderbolt strikes the magnifier, you may get an electric shock.		Do not turn the lens and lamp frame more than 180 degrees. Doing so can cause a disconnection or a short circuit, and that can cause a fire.
	Turning the power on and off unnecessarily can cause a trouble and a fire.		Disconnect the power plug when leaving the magnifier unused for a long time.		Since a lens is used, it condenses light. Continuous radiation of strong light such as sunbeam to a flammable material can cause a fire. Accordingly, do not set the magnifier on a place where it may be irradiated with such light. While the magnifier is not used, keep the lens cover or a sunbeam blocking cloth on it.		Do not modify or disassemble the magnifier. Doing so can cause a fire or an electric shock. Once the magnifier is modified or disassembled, it may not be repaired even in the guarantee period. We will not be liable for any property accident or personal accident caused by modification.
	If you look the sun through the lens, the sunbeam will be condensed on your eye and you may lose your sight.		Unplug		Handle the lamp and lens carefully so as not to break them. If they are broken, you may be injured or get an electric shocked. Stop work, and ask it for repair.		Do not apply your weight or place a heavy thing on the magnifier. Doing so can cause breakage of a magnifier part.
	Be sure to use the voltage and the frequency written in the label. Do not plug in the magnifier to another magnifier to another power source. Doing so can cause a short circuit or a fire. Do not cancel the earth by using the adapter plug.		If abnormal smell, abnormal sound or smoke comes out, turn off the power immediately and disconnect the power plug. Using the magnifier under this condition can cause a fire.		Do not bend or twist the power cable forcibly or place a heavy thing on it. Do not leave the cable bound when using. Doing so can cause a short circuit or a disconnection and that can cause a fire or an electric shock.		If the power cable or power plug is damaged or broken, do not use them. Using them can cause an electric shock or a fire. For repair of the power cable and power plug, ask the shop at which you purchased them.
	Do not turn on and off the the lamp by connecting and disconnecting the power plug. Doing so can cause overheating, a fire and a trouble. Be sure to turn on and off the lamp with the switch.		If dust is accumulated on the power plug, it can lower insulation with moisture and can cause a fire. Periodically wipe off dust from the power cable with a dry cloth.		Please do not use it with the lamp cord pushed like the arrow between pipes. When a free arm is greatly moved, the code might be damaged and it be short if such a usage is done.		Please do not use it wrapping the lamp cord around the pipe. A big tension might join when such a usage is done, the code be damaged, and it be short.
	Do not hold the electric wire to move or operate the illuminated lens. Doing so can cause a disconnection or a short circuit and that can cause a fire or an electric shock.		Bend the arm in the direction of (A) usually. Do not bend it in the opposite direction (B) forcibly.		Do not operate the F-type or CF-type magnifier with your finger in its moving section. If you do so, your finger may be caught, broken or injured.		After replacing the lamp for some reason, check that it is held securely by the lamp holder. If it is not held securely, it may fall and an observation thing may be damaged.
	If an FL-type magnifier is set on an inclined place, it may move and collide with another device and may fall down or damage the device consequently. When using the FL-type, set it on a level place and lock its casters.		If your hand or elbow is strongly pressed or rubbed against an edge of a pressed or die-cast part, it may be hurt. Take care when handling.		Do not remove the spring unnecessarily from an F-type, FL-type or CF-type magnifier. If it is removed wrongly, it may jump out to a person or may break a peripheral device. The spring must be replaced by a person having the maintenance knowledge according to the proper replacement procedure.		Do not wipe the lens with detergent containing polishing powder or a dirty cloth. If you do so, lens surface may be scratched or lens coating may be flaked off. If the lens is stained, wipe it with a lens cleaning cloth or a glass cleaning cloth.
	If the lens frame (shade) is turned upside down, the interchangeable lens may fall and break itself or injure your foot.		It doesn't stabilize if it does not fix. Fix with the screw when you use it.		Do not splash water over the lens to wash. If water is splashed, it may enter the body and it can cause blur and mold.		Do not wipe the lens with detergent containing polishing powder or a dirty cloth. If you do so, lens surface may be scratched or lens coating may be flaked off. If the lens is stained, wipe it with a lens cleaning cloth or a glass cleaning cloth.
	If the body is given many horizontal turns, the power cable is wound onto it and that can cause an accident. Take care that the power cable will not be wound.		A lens frame part, the main body of product or observation thing may be broken.				

