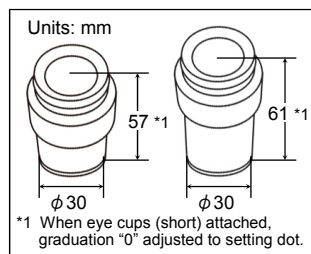
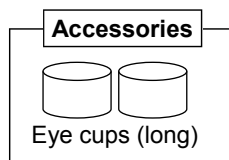


## L-546-10 EYEPIECES (10X)

## L-546-20 EYEPIECES (20X)

Thank you for purchasing the HOZAN L-546-10 EYEPIECES (10X) / L-576-20 EYEPIECES (20X) . With proper care and handling, this fine instrument will provide years of trouble-free operation. Please read this entire instruction manual carefully before attempting to place this instrument in service. Please keep this instruction manual available for reference.

### Identification of parts and contents



### Specifications

Objectives	L-546-10 WF10X, Field number:20	L-546-20 WF10X, Field number:10
Weight	175g *2	235g *2

\*2 When eye cups (short) attached

## Warning and caution symbols

These symbols are used throughout the instruction manual to alert the user to potential safety hazards as follows :

**⚠ Warning** ·· Notice when incorrect handling could cause the user's death or serious injury.

**⚠ Caution** ·· Notice when incorrect handling could cause injury to the user or material damage.

Even if the instructions do not have **⚠ Caution** mark, there are some possibilities for a serious situation. Follow the instructions.

## Precautions

### ⚠ Caution

1. Do not disassemble or modify the eyepieces yourself, otherwise this could cause a malfunction.
2. Protect the unit against physical shock or vibration during transport. Otherwise, this could cause a malfunction.
3. Do not expose the unit to prolonged direct sunlight, high temperature, high humidity, or dust. Such exposure could cause a malfunction.

## Preparation

1 First, make sure that the contents are complete.

2 Prepare the L-46 MICROSCOPE or the L-461 STEREO HEAD SCOPE.

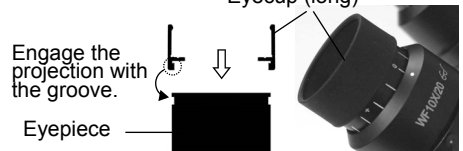
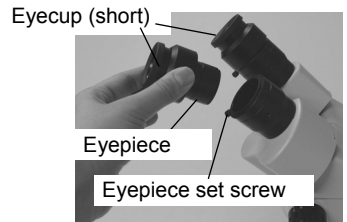
Remove the caps from the barrels. Then, loosen the eyepiece set screws and insert the eyepieces into the barrels.

Drive the eyepiece set screws gently so that the eyepieces stay and the setting dot [ · ] of them, refer to the photo, point at the zenith.

Please use eyecups (long) if necessary.

### < How to attach the eyecup (long) >

1. Remove the eyecup (short) .
2. Attach the eyecup (long) as shown in the illustration.



Choose to suit

Eyecup (short)

- for persons in spectacles

Eyecup (long)

- for persons in contact lenses or without spectacles

Bringing inspector's cheekbones at eyecups (long) stabilizes his/her eye points.

- for blocking the slanting rays

\* Please refer to each instruction manual for operation of the L-46 and the L-461.

# Operation

- 1 Be agreed "0" of the graduation with each setting dot, refer to the photo, of both the eyepieces.



- 2 Adapt the eyepiece distance with your pupil distance to view a single circle of the field. The stereo barrels will rotate drawing arcs interlocking with (refer to the photo).



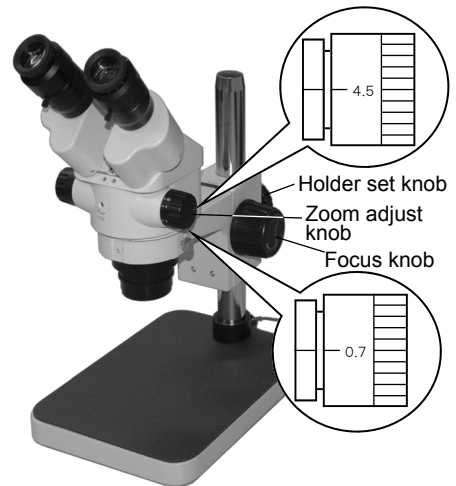
- 3 Place an object just under the objectives. Prepare lighting apparatus such as Hozan's L-711 LED LIGHT if necessary.

- 4 Adjust the zoom adjust knob to 4.5 maximum magnification.

- 5 Adjust for proper focus with the focus knob while looking with both eyes. If the focus knob does not focus enough, move the holder up and down under loosening the holder set knob.

Always aim the same point if the surface of the object is not simply flat, otherwise the working distance\* could differ from before and this could not come into focus.

\*Working distance means the dimension from the top of lens filter to the object.



## ⚠ Caution

Loosen the holder set knob while supporting the holder with one hand when move it up and down. Otherwise, the holder could fall down suddenly damaging the unit, the object and the operator.

- 6 Adjust the zoom adjust knob to 0.7.

## Operation

- 7** If the image is out of focus, it is due to the difference of right and left eyesight. First, turn the draw tube for proper focus by looking with the dominant eye while closing the other eye. Then, adjust the other eyepiece similarly. Proceed to procedure **8** if the image looking with both eyes is in focus. If the image is still not in focus, adjust each eyepiece again.

### Regarding “-” “+” of the graduation

A nearsighted person should turn to minus side and a farsighted person should turn to plus side.

- 8** Treat procedures **4** to **7** and check if the image is in focus. Repeat these procedures so that a clear image can be obtained whenever the zoom magnification is changed.
- 9** Store the L-46 putting the dust sheet on after use. Taking notes of sight adjust value can omit procedure **7** when the next work.

## Magnification table

Objective	0.7-4.5X											
Conversion lens	No			L-57-0.5			L-57-1.5			L-57-2		
Eyepiece	Magnification X	Field of view mm φ	Working distance mm	Magnification X	Field of view mm φ	Working distance mm	Magnification X	Field of view mm φ	Working distance mm	Magnification X	Field of view mm φ	Working distance mm
L-546-10 (Standard)	7-45	28.5-4.4	84	3.5-22.5	57.1-8.9	160	10.5-67.5	19.0-2.9	43	14-90	14.3-2.2	26
L-546-20	14-90	14.3-2.2		7-45	28.5-4.4		21-135	9.5-1.5		28-180	7.1-1.1	

## Note

- Do not allow any dust or fingerprints to get on the lens to get clear images.

## Daily care

### Lenses

- Wipe away any dust gently with a soft cloth or a piece of gauze.
- Clean away fingerprints or oil stains with a cloth which is lightly soaked in IPA or denatured alcohol (such as ethyl alcohol or methyl alcohol).
  - \* Alcohol is extremely flammable, so handle it with care.

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