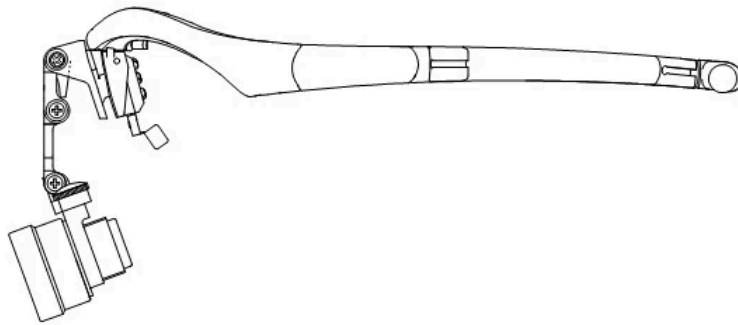




Binocular Loupe BL Series

with NEO Frame

Instruction Manual



Thank you for purchasing the NEITZ Binocular Loupe BL Series with NEO Frame. This device functions as a compact binocular and is a medical device (binocular loupe) intended for medical purposes to magnify the appearance of objects. It is available to provide several types of Loupe to meet your needs depending on the magnification and construction of barrel (see "1-4 Lineup of BL Series").

Please read this instruction manual carefully before use to avoid unexpected accidents, and store it in a safe place for future reference.



Table of Contents

1. IMPORTANT INFORMATION.....	1
1-1 INTENDED USE	1
1-2 SYMBOLS	1
1-3 SAFETY INFORMATION	2
1-4 LINEUP OF BL SERIES	3
2. CHECKING PACKAGE CONTENTS.....	4
3. NOMENCLATURE	5
3-1 LOUPE WITH NEO FRAME	5
3-2 LABELING ON PACKAGE.....	6
4. PREPARATION & OPERATION.....	7
4-1 ADJUSTING NOSE PAD HEIGHT	7
4-2 ADJUSTING BARREL ANGLE AND POSITION	7
4-3 ADJUSTING PUPIL DISTANCE (PD)	8
4-4 ADJUSTING WORKING DISTANCE	8
4-5 USING STRAP	8
4-6 MOUNTING AND USING SHIELD	9
4-7 CUSTOMIZING LOUPE.....	9
4-7-1 <i>Relieving Discomfort on Nose</i>	9
4-7-2 <i>Bringing Nose Pad Close to Nose</i>	9
4-7-3 <i>Adjusting Hinge Movement</i>	10
4-7-4 <i>Using Stopper on Hinge</i>	11
4-7-5 <i>Wiring Arrangement of Illuminator Cord</i>	11
5. MAINTENANCE.....	13
5-1 CLEANING	13
5-2 REPLACING FOREHEAD CUSHION	13
.....	13
5-3 STORAGE AND TRANSPORTATION	14
5-3-1 <i>Storage and Operation Conditions</i>	14
5-3-2 <i>Safekeeping and Transportation</i>	14
5-4 DISPOSAL	14
6. TROUBLESHOOTING	15
7. SPECIFICATIONS.....	16
8. CONTACT INFORMATION	17

1. Important Information

For the U.S. Market;

CAUTION: Federal law restricts this device to sale by or on the order of a physician

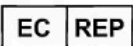
1-1 Intended Use

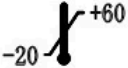
This device is a low-power binocular loupe which consists of two eyepieces, each with lens system and is intended for medical purposes to magnify the appearance of objects, and used by specialists such as ophthalmologists, surgeons, dermatologists, and dentists.

Do not use this device for any purpose other than its intended use.

1-2 Symbols

The following symbols are used on this manual and/or package to assist you in proper handling and using this device, and to warn you of potential hazards to yourself and others.

	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Used with the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that may cause property damage.
 Prohibited	Prohibited action (must not be performed).
 Instruction	Required actions (that must be performed) based on the instructions.
	Serial number. This symbol should be accompanied by the serial number of the device.
	Manufacturer. This symbol should be accompanied by the name and address of the manufacturer.
	Authorized Representative in the European Community. This symbol should be accompanied by the name and address of the Authorized Representative.
	The "CE" mark indicates that this device complies with the European requirements for safety, health, environment and customer protection. CE-marked devices are for sale in Europe.
	This symbol shows that this device may not be disposed of together with general household waste and can be recycled separately from other household waste under the WEEE directive.
	This symbol instructs to consult the instructions of the device for information on how to properly use it.

	This symbol shows the lower and upper temperature limits (°C) for storage and transport.
	This symbol instructs not to expose to sunlight.

1-3 Safety Information

This Loupe with Frame, including accessories and carrying case, is not made with natural rubber latex.

For your safety please strictly comply with the following precautions. Failure to comply may cause safety problem or device failure.

⚠ WARNING	
 Prohibited	Do not apply strong impact, direct force or throw to another person. It may cause injury or product failure.
 Prohibited	Do not look directly at the sun through the Loupe or not use under direct sunlight. It may cause loss of eyesight or eye injury, or device failure.
 Prohibited	Do not leave the Loupe in direct sunlight. It may cause a fire or device failure.
 Prohibited	Do not use in a place where the strap is rolled up or caught. It may cause injury or device failure.
 Instruction	Wear the Frame with Loupe exactly on the head as intended. Failure to do so may cause personal injury or device failure.
 Instruction	Dispose the Shield as medical waste after using in an operation since bodily fluids may have come in contact with the Shield. This may cause infection.
 Instruction	Fit the Shield exactly in the slot of NEO Frame otherwise it may fall during operation if it is not precisely attached. This may cause infection or an accident.

⚠ CAUTION	
 Prohibited	Do not use thinner, cleaning agents, or boiled water to clean the device. It may cause deformation or device failure.
 Prohibited	Do not use together with parts other than standard accessories including in this package. Problems or damage may occur.

 Prohibited	Do not sterilize the device. It may cause deformation or device failure.
 Prohibited	Do not attempt to disassemble or modify the device. Serious damage may result.
 Instruction	Be sure to tighten the screws for adjustment or fixation without fail when loosened. It may cause breakage or injury.

1-4 Lineup of BL Series

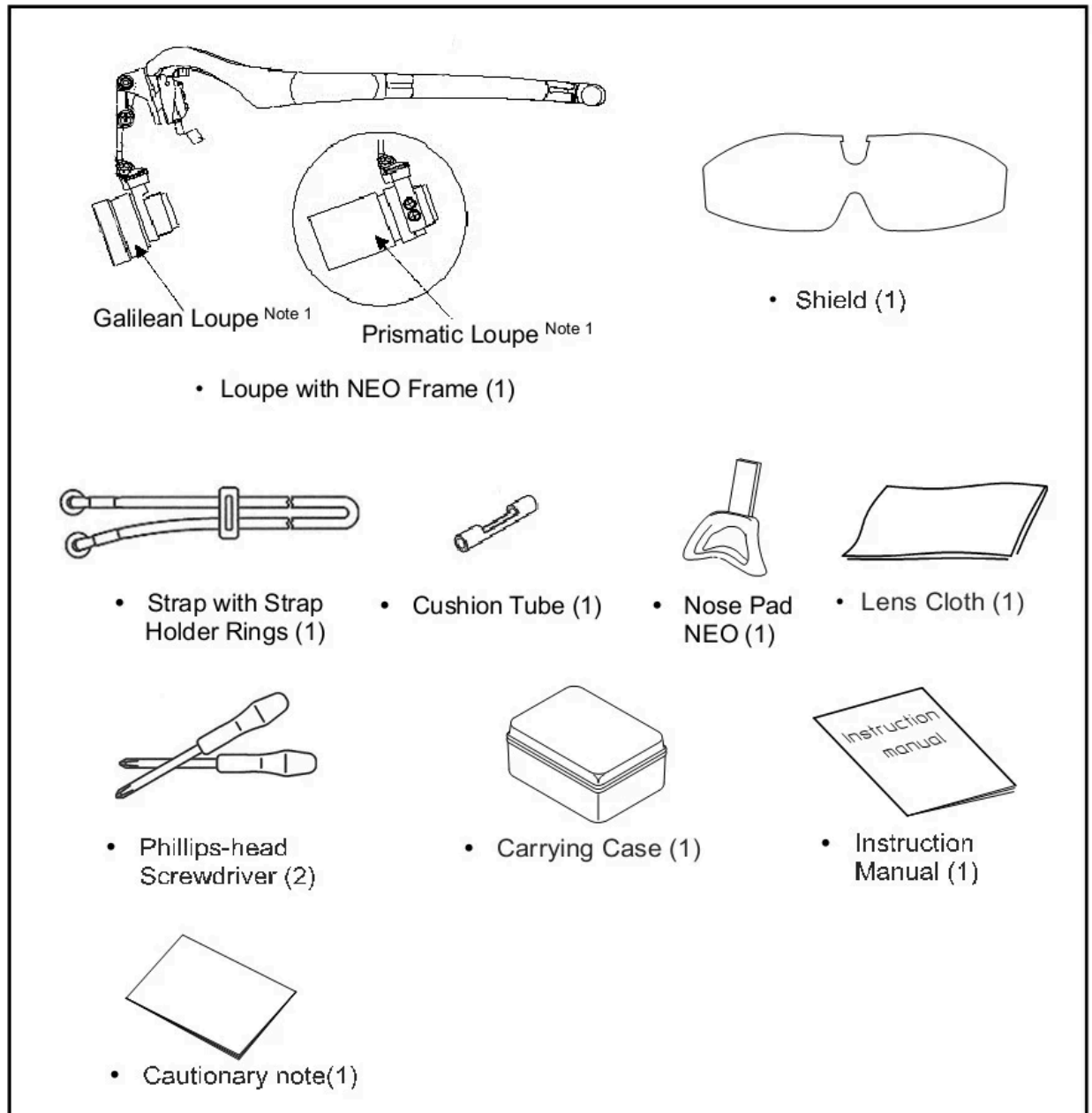
There are several types of Binocular Loupe (hereinafter, called as “Loupe”) depending on the magnification and construction of barrel. The product lineup includes the following products.

Model	Magnification	Working Distance	Field of View
Galilean Loupes			
BLS-1	1.5x - 2.0x	550 - 350 mm (21.7in – 13.8in)	φ145 - 120 mm
BLS-2	2.0x - 2.5x,	550 - 350 mm (21.7in – 13.8in)	φ113 - 58 mm
BLS-3	2.5x - 3.0x	550 - 350 mm (21.7in – 13.8in)	φ78 - 38 mm
BLD-3	2.5x - 3.0x	350 - 250 mm (13.8in – 9.8in)	φ80 - 50 mm
Prismatic Loupes			
BLP-4	4.0x - 4.5x	550 - 350 mm (21.7in – 13.8in)	φ80 - 50 mm
BLP-6	5.5x - 6.0x	550 - 350 mm (21.7in – 13.8in)	φ40 - 25 mm

2. Checking Package Contents

Make sure to match all items in the package with the components shown below. Inspect each item for damage. If any items are missing or damaged, do not use the device and immediately contact your local dealer.

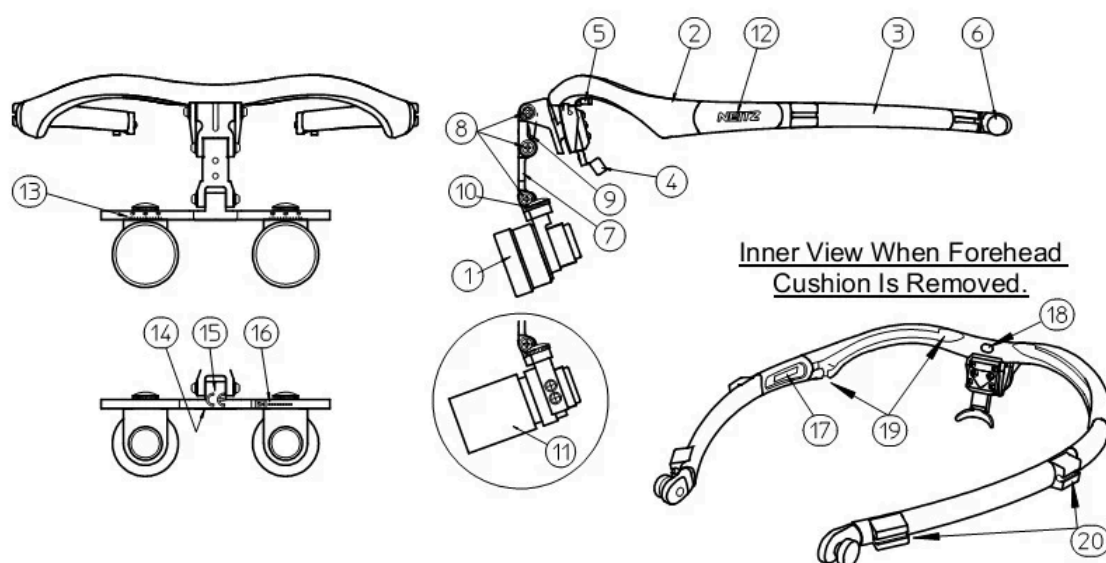
Before using this device for the first time, clean it according to the instructions given in this manual.



Note 1: Two types of Barrels are available, one for Galilean Loupe and another for Prismatic Loupe as per your order.

3. Nomenclature

3-1 Loupe with NEO Frame



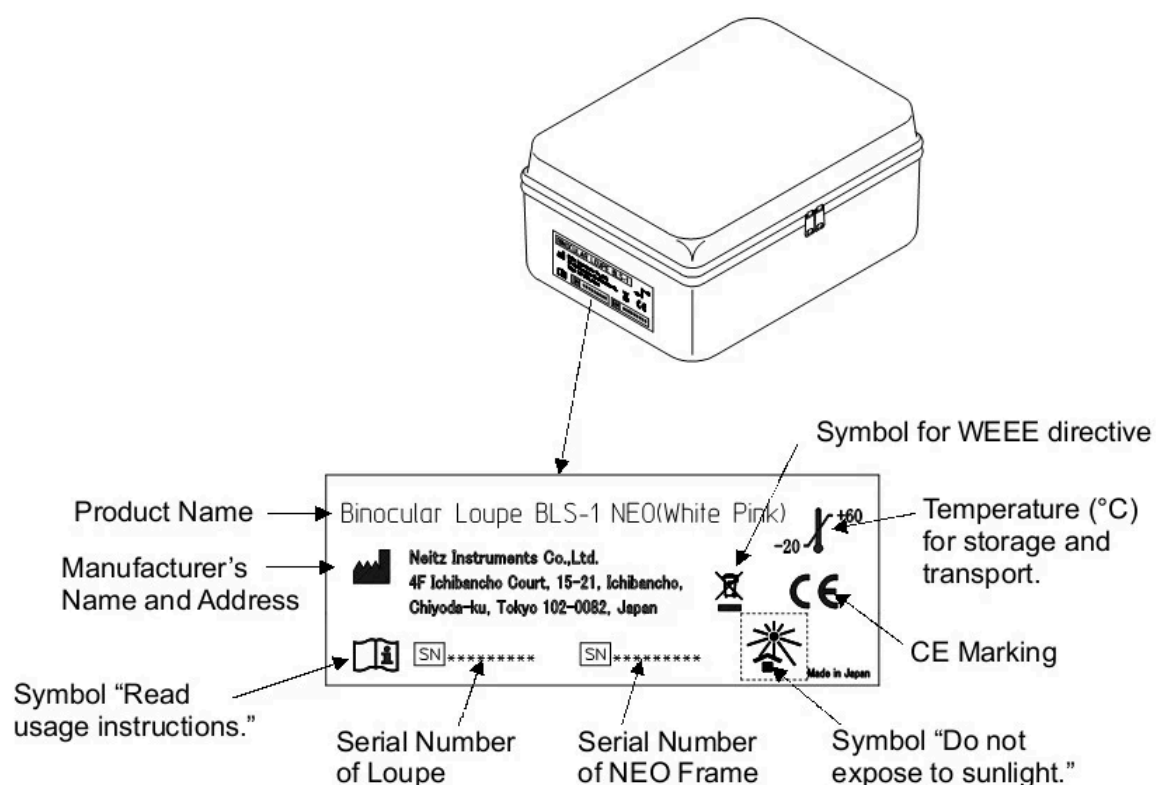
- | | |
|--|--|
| <p>① Barrel (for Galilean Loupes)</p> <p>③ Socks</p> <p>⑤ Forehead Cushion
Easily removable when replaced owing to insertion type.</p> <p>⑦ Hinge</p> <p>⑨ Stopper</p> <p>⑪ Barrel (for Prismatic Loupes)</p> <p>⑬ Scale for Pupil Distance (PD)</p> <p>⑮ CE Mark</p> <p>⑰ Serial Number of NEO Frame</p> <p>⑲ Cord Inlet and Outlet
When mounting an optional Illuminator on the NEO frame, wire the power cord through this Cord inlet and outlet.</p> | <p>② NEO Frame
Made by lightweight nylon resin which is flexible with better fit.</p> <p>④ Nose Pad Eyeglasses (hereinafter, called as "Nose pad")
Designed to avoid the nose pad of eyeglasses when the Loupe is worn over the eyeglasses. It is moveable back and forth to fit to your nose.</p> <p>⑥ Strap Holder</p> <p>⑧ Hinge Joints with screws</p> <p>⑩ Pupil Distance (PD) Fixing Screw</p> <p>⑫ Logo of Manufacturer</p> <p>⑭ Name Plate of Model
Shows the model name purchased and the country of origin. ^{Note 1}</p> <p>⑯ Serial Number of Loupe</p> <p>⑱ Fixing Hole for Forehead Cushion</p> <p>⑳ Illuminator Cord Guides</p> |
|--|--|

Note 1: Either name plate shown below is put on the support of Loupe purchased.



3-2 Labeling on Package

The following labels has been put on the Carrying case of Loupe with NEO Frame.



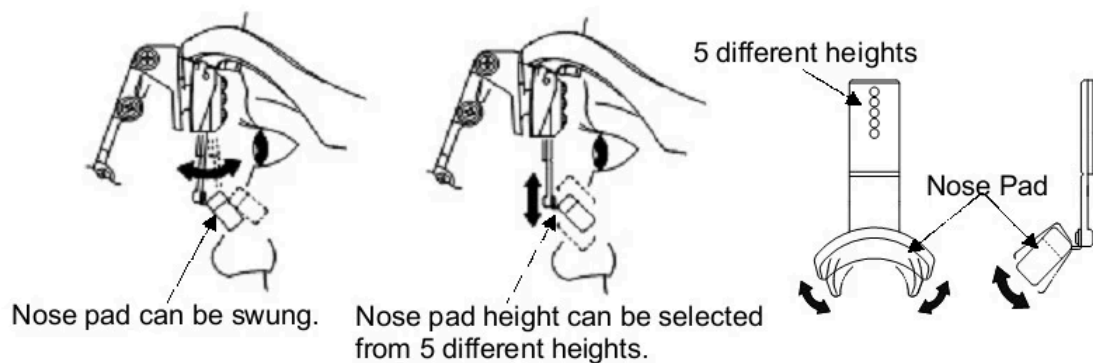
4. Preparation & Operation

4-1 Adjusting Nose Pad Height

- (1) With the Loupe in position on the head, adjust the Nose pad for best fit. The Loupe is supported on the forehead with both the forehead/forehead cushion and nose/nose pad. The Nose pad is moveable back and forth as well as adjustable to five different heights.
- (2) Adjust the height of the Nose pad for the most comfortable fit on the nose, only when the user's forehead is in contact with the forehead cushion.

The Nose pad is designed to avoid the nose pad of eyeglasses when the Loupe is worn over the eyeglasses.

When the glasses are not put, in order to obtain more closer fitting feel, replace the current Nose pad with the accessory Nose Pad NEO, and repeat the above procedures.



The contact area on Nose pad can be formed by slightly bending it so as to fit the shape of the nose.

Note: Do not sharply bend, twist, or repeatedly reshape the Nose pad since it may damage the Nose pad.

4-2 Adjusting Barrel Angle and Position

The Barrel angle and/or position can be adjusted freely to obtain a more optimum angle and/or effective position by adjusting the Hinge assembly. When using the Loupe, bring the Barrels closer to the eyes to prevent a narrow field of view.

Follow the instructions below. Before adjustment the Hinge joints have been slightly loosened with screws on them to allow movement of the Hinge assembly (see Fig. 4-2).

- (1) Move the Hinge assembly by pivoting the Hinge joint to obtain the optimum angle and position of the Barrels.
- (2) With the screws loosened, fix the Barrels in the proper position by tightening each screw on Hinge Joints.

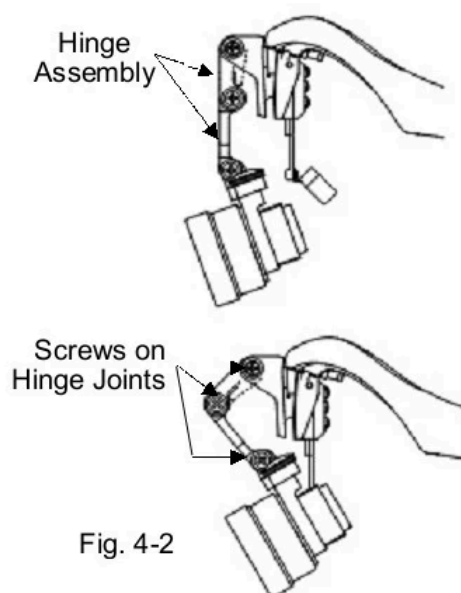


Fig. 4-2

4-3 Adjusting Pupil Distance (PD)

- (1) Loosen the PD fixing screw on the Barrel to slide the Barrel by slightly turning the screw counterclockwise to allow movement (see Fig. 4-3).
- (2) Adjust the pupil distance (PD) by sliding the Barrel horizontally until the target is in the center of the field of view looking at a target with one eye and keeping the head in one position.
- (3) Adjust the PD of the other Barrel by repeating the above procedures for the other eye.
- (4) Check that the target is a clear and single image while looking at it with both eyes.
- (5) When acceptable, tighten the PD fixing screws to secure the Barrels.

Note: If your PD has already been known, set it with the scale on Barrel before adjustment.

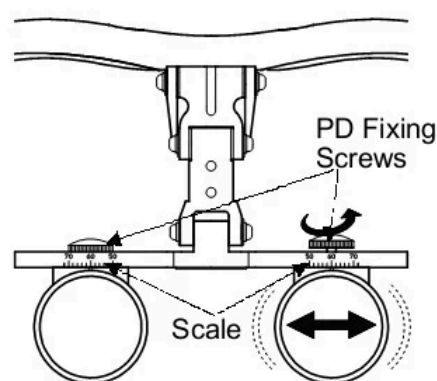


Fig. 4-3

4-4 Adjusting Working Distance

Turning the Barrel adjustment ring counterclockwise will increase the working distance, turning clockwise will decrease the working distance.

Adjust both Barrels to observe the target clearly when viewing through the Barrels simultaneously with both eyes.

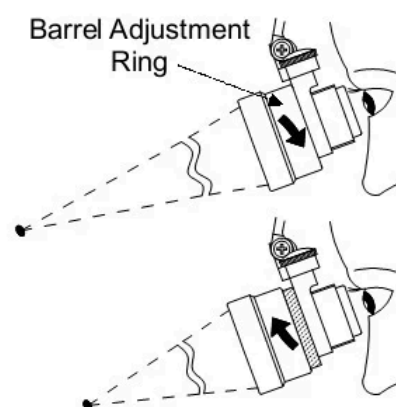


Fig. 4-4

4-5 Using Strap

Use the Strap to keep the frame in place and fixed securely.

Attach the Rubber rings on the Strap to the Strap holders of the Frame, respectively, and move the Strap stopper to tighten the Frame until the desired tension is obtained (see Fig. 4-5).

The Loupe with NEO frame is stable and you are not given trouble when wearing for a long period of time by supporting with 3 points, that is, Forehead pad, Nose pad and Strap.

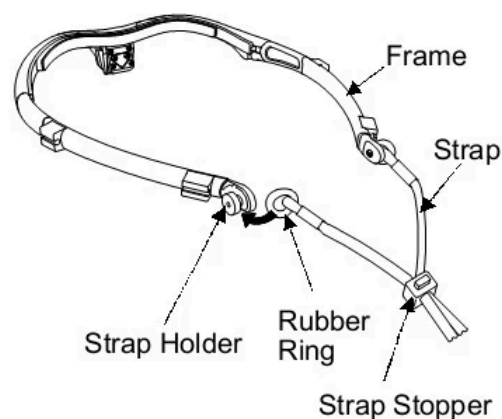


Fig. 4-5

4-6 Mounting and Using Shield

Utilize the Shield to block or prevent particles and material from being splashed on the face.

Note: The Shield is disposable. After using it in an operation, dispose of it properly as medical waste in accordance with local regulations and replace with a new Shield.

- (1) Strongly insert the Shield into the Slot on NEO frame shown in Fig. 4-6 from the bottom side of the Frame until it stops.
- (2) Be sure that the Shield is exactly fitted in the slot of the NEO frame. If it is not precisely attached the Shield may fall during operation.

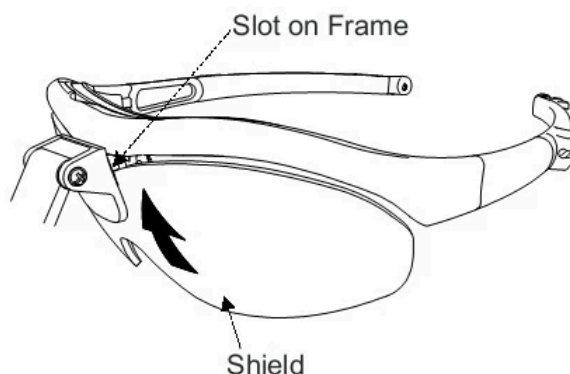


Fig. 4-6

4-7 Customizing Loupe

4-7-1 Relieving Discomfort on Nose

Some discomfort on the nose may be caused by using the Nose pad over a long period of time. Discomfort may be relieved by covering the pad with the included Cushion tube.

Install the Cushion tube onto the Nose pad so that the closed side contacts the nose as shown in Fig. 4-7-1.

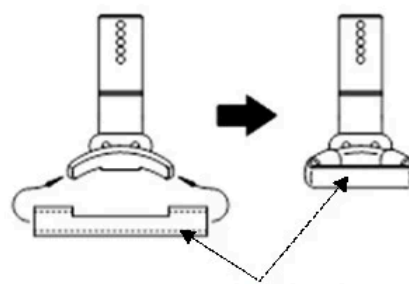


Fig. 4-7-1

4-7-2 Bringing Nose Pad Close to Nose

Even though the height of the Nose pad has been properly adjusted, there may be a gap between the Nose pad and the nose.

In this case, bring the Nose pad closer to your nose by bending the metal part slightly toward the nose with a small jaw plier tool or the like to improve the fitting feeling.

Note: Do not bend the metal part of Nose pad again and again, once the metal has been adjusted. Do not over bend the metal part more than necessary.

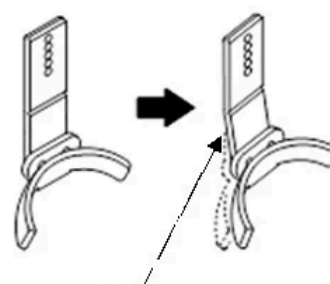


Fig. 4-7-2

4-7-3 Adjusting Hinge Movement

Smooth movement of the hinge can be adjusted by tightening or lessening the tension of the screws on the Hinge joints (joint screws).

When the joint screws may be hard to turn at the beginning, turn each joint screw counterclockwise by using both accessory Phillips-head screwdrivers on the joint screws positioned securely on both sides of the hinge joint (see Fig. 4-7-3-1).

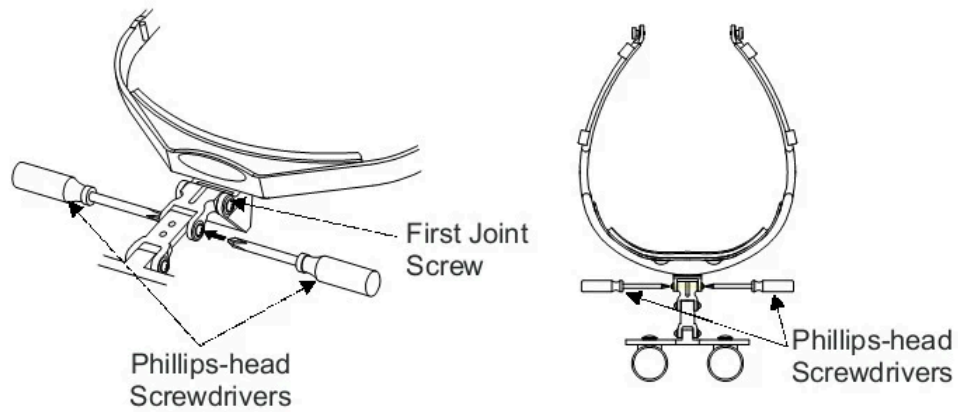


Fig. 4-7-3-1

Tightening all the joint screws securely will retain the Barrels in the same position all the time.

By keeping the first joint screws near the Frame on the hinge slightly loosened, the hinge may be used to pivot for flipping the Barrels up and down as shown in Fig. 4-7-3-2. It is possible to flip up the Barrels (Loupe) when they are not used.

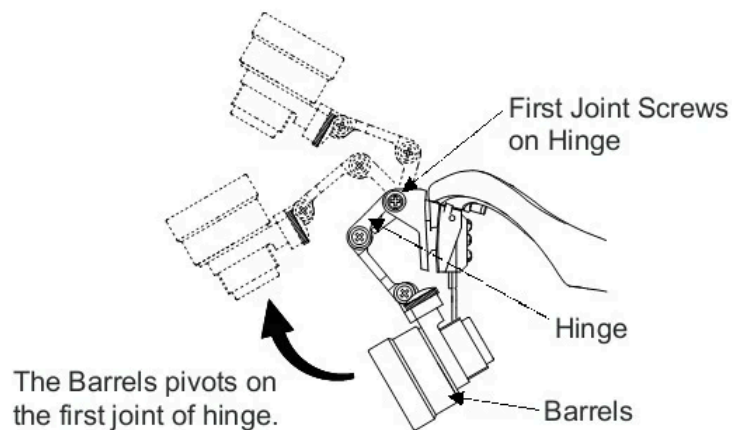


Fig. 4-7-3-2

4-7-4 Using Stopper on Hinge

The stopper on the hinge is an auxiliary mechanism to help to return the flipped-up Barrels to their original position.

Follow the instructions below to set the stopper (refer to the Fig. 4-7-4);

- (1) While wearing the Frame with Loupe attached, adjust the Barrels to the optimum position, and take the Frame with Loupe off of your head.
- (2) Firmly tighten the screws on both sides of the second and third Hinge joints so these joints can hold secure as is.
Tighten the screws on the first joint only slightly, and loose enough but secure enough to hold the Barrels in a stable position.
- (3) Flip up the Barrels and pull the stopper upward by 90 degrees or more.
- (4) Put the Frame with Loupe attached on again while keeping the condition indicated above in item (3), and slowly move the Barrels downward. When the Barrels reach the optimum position as adjusted above in item (1), flip up the Barrels once again and take the Frame with Loupe off of the head.
- (5) Tighten the first joint screws slightly but not so firmly that it can work as the pivot for flipping-up the Barrels. In other word, the first joint screws should be tightened looser compared to these of the second or third screws, but not too loose.

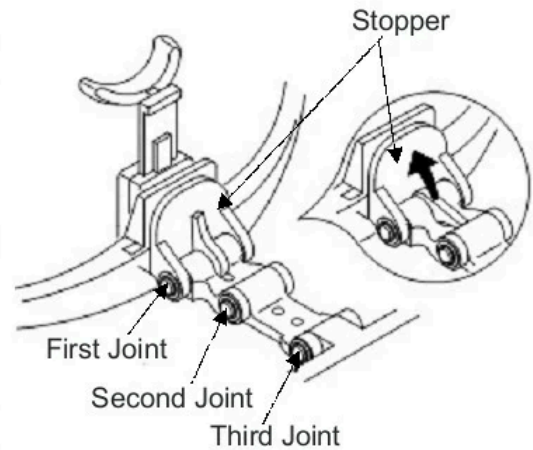


Fig. 4-7-4

The setting of stopper is completed by following the above procedures. The Barrels will now retain the optimum position whenever they are flipped downward from the up position.

If the Barrels flip downward too much and the stopper is pushed into the hinge, reset the stopper once again with the same procedure as mentioned above.

If the stopper is not used, push it completely into the hinge.

4-7-5 Wiring Arrangement of Illuminator Cord

When using an optional Illuminator pay attention for the proper wiring of the Illuminator cord on the frame referring to the following figures. If the Illuminator is improperly wired such that stress is applied to the cord, failure of Illuminator may occur during operation.

Adjust the wiring of the Illuminator not to apply stress to the cord in accordance with the following procedure.

- (1) Remove the Forehead cushion from the frame in accordance with section 5-2 "Replacing Forehead Cushion"

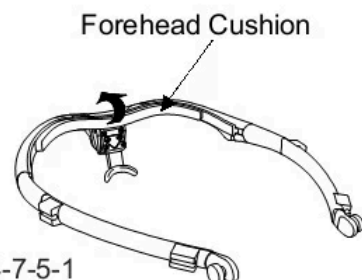


Fig. 4-7-5-1

- (2) Set the Illuminator cord along the gutter of the frame from the Cord inlet through the outlet, so that the stress is not applied to the cord when the Illuminator moves up and down (vertically) and right and left (horizontally) freely and smoothly without any tension, or when the Frame is opened and closed.

The Illuminator cord can be set on either the left side or the right side of the frame.

- (3) Replace the Forehead Cushion in accordance with section 5-2 "Replacing Forehead Cushion."

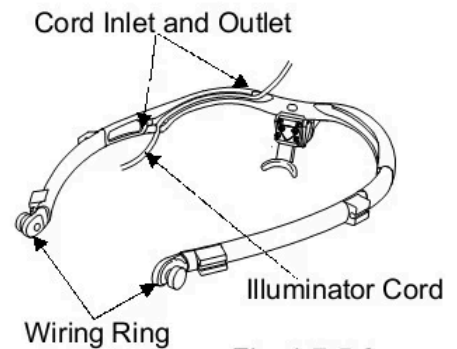


Fig. 4-7-5-2

- (4) Pass the Illuminaor cord throught the Illuminator cord guide in two places without any tension and fix the cord onto the frame with one or two of the Wiring ring(s) which is supplid with the Neitz Illuminator package. Handle the Illuminator cord with care. Never pull it hard or bend it sharply. If necessary fix the Cord with the Wiring Band as well this is also supplied with the Neitz Illuminator package.

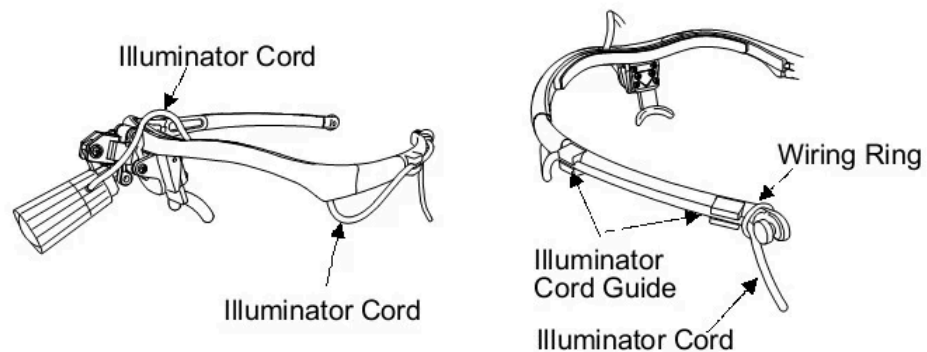


Fig. 4-7-5-3

[Proper Wiring of Illuminator Cord]

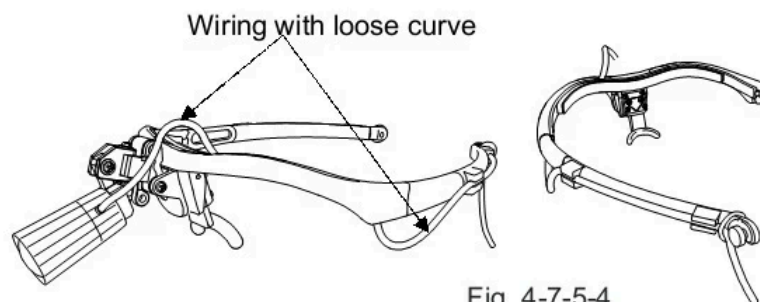


Fig. 4-7-5-4

[Improper Wiring of Illuminator Cord]

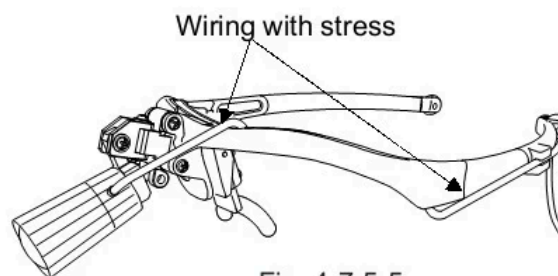


Fig. 4-7-5-5

5. Maintenance

5-1 Cleaning

Do not touch lens surfaces with finger(s) at any time and always keep lenses clean. Fingerprints may increase the scatter of light through the optics.

If lens cleaning is required, first blow off the lens surfaces and wipe with a lens tissue or pure cotton moistened with an optical grade cleaning solution. If it is not enough to clean the lens, wipe all surfaces with a dry lint-free cloth or lint-free soft cloth slightly moistened with diluted neutral detergent, and then completely dry.

Safely dispose of used cleaning materials in accordance with local regulations and/or environmental guidelines if bodily fluids or the like have come in contact with the Frame and Loupe and then cleaned.

5-2 Replacing Forehead Cushion

If the Forehead cushion wears out or deteriorates, replace it with a new one which is available as an optional part.

In order to remove the current Forehead cushion on the frame, pull the Protrusion on the center of the cushion out of the Fixing hole on the Frame while expanding the frame slightly, and then pull the end of Forehead cushion out of the pivot space completely from the frame. Repeat on the other side.

When mounting a new Forehead cushion, insert the both ends of the new Forehead cushion into the right and left pivot spaces and insert the Protrusion on the Forehead cushion into the hole on the frame. Since there is an up and down edge on the Forehead cushion mount it in the proper orientation.

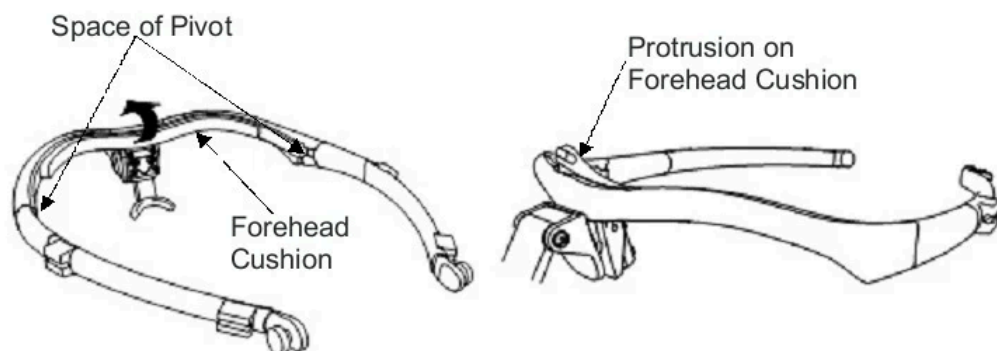


Fig. 5-2

5-3 Storage and Transportation



Do not to expose to sunlight.

5-3-1 Storage and Operation Conditions

Operating Temperature:	10°C to 40°C (50° F to 104° F)
Storage Temperature:	-20°C to 60°C (-4° F to 140° F)

5-3-2 Safekeeping and Transportation

Keep the Loupe, NEO Frame and accessories in the original carrying case without being subjected to any pressure or impact when items are not being used for a long period of time or are being transported.

5-4 Disposal

Safely dispose of the NEO Frame, Loupe and accessories in accordance with the local regulations and/or environmental guidelines.

Dispose the Shield as medical waste after using in operation since bodily fluids may have come in contact with the Shield.

Safely dispose of used cleaning materials in accordance with local regulations and/or environmental guidelines if bodily fluids or the like have come in contact with the Frame and Loupe and then cleaned them away.

6. Troubleshooting

If the Loupe and/or NEO Frame does not function properly, some problems may be solved by referring to the following chart. If the problem cannot be resolved, stop and contact your local dealer or Neitz immediately.

The following table shows the possible causes and troubleshooting solutions.

Problem	Possible Cause	Solution
Viewing is blurred. Visualization of right and left images are different.	Lenses are dirty. Lenses are stained with foreign matter.	Clean the lenses according to Section 5.1 in this manual.
	The working distance is out of adjustment since barrels have been inadvertently turned.	Adjust the working distance according to Section 4.4 in this manual.
The target cannot be observed with both eyes because of seeing double.	Viewing with both eyes may become worse (the target is being seen double) when the working distance has been changed drastically, since both Barrels converge to a single point.	Adjust the working distance roughly at the mid-point of the working distance range specified for the Loupe being used which is shown in the Section 7 "Specifications" according to Section 4.4 in this manual.
The field of view is narrowed.	Eyes are positioned too far away from the Barrels.	Adjust the position of Barrels to be closer to the eyes.
The Barrels shift from the original position.	The screws on the hinge joint or the PD fixing screw(s) on the Barrel(s) have loosened.	Check and tighten every screws properly.
The working distance is out of adjustment.	The working distance varies from person to person, requirement to requirement, depending on the diopter (visibility) of individual user.	Correct eyesight adjustments as needed.

7. Specifications

Frame: Nylon resin

Nose Pad Adjustment: Adjustable in height, self-tilting back and forth movement

Hinge: Versatile owing to adjustable hinge assembly with 3 hinge joints

Magnification, Working Distance, Field of View, Weight:

	Magnification	Working Distance	Field of View	Weight (incl. NEO Frame)
Galilean Loupes				
BLS-1	1.5x - 2.0x	550 - 350 mm (21.7in – 13.8in)	φ145 - 120 mm	77g (2.7oz)
BLS-2	2.0x - 2.5x,	550 - 350 mm (21.7in – 13.8in)	φ113 - 58 mm	82g (2.9oz)
BLS-3	2.5x - 3.0x	550 - 350 mm (21.7in – 13.8in)	φ78 - 38 mm	76g (2.7oz)
BLD-3	2.5x - 3.0x	350 - 250 mm (13.8in – 9.8in)	φ80 - 50 mm	71g (2.5oz)
Prismatic Loupes				
BLP-4	4.0x - 4.5x	550 - 350 mm (21.7in – 13.8in)	φ80 - 50 mm	94g (3.3oz)
BLP 6	5.5x - 6.0x	550 - 350 mm (21.7in – 13.8in)	φ40 - 25 mm	97g (3.4oz)

Optional Accessories:

Product Number	Product Description
805611	Nose Pad NEO
197411	Forehead Cushion NEO
197941	Shield NEO
197951	Lens Cloth
197311	Carrying Case NEO
805971	Nose Pad for Eyeglasses
	Cushion Tube
197931	Loupe Frame Strap
197991	Philips Screw Drivers (2 pieces)

8. Contact Information

If you have any questions or need technical support, contact your local dealer or NEITZ located at the following address.

[Local Dealer]



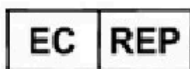
Neitz Instruments Co. Ltd.

4F Ichibancho Court, 15-21, Ichibancho, Chiyoda-ku,
Tokyo 102-0082, Japan

Phone: (+81) 3-3237-0552; Fax: (+81) 3-3237-0554

E-mail: neitz-global@neitz.co.jp

URL: <https://www.neitz.co.jp/en/>



Medical Device Safety Service GmbH

Schiffgraben 41, D-30175 Hannover, Germany



Manufactured by

Neitz Instruments Co. Ltd.

4F Ichibancho Court, 15-21, Ichibancho, Chiyoda-ku,
Tokyo 102-0082, Japan

Phone: (+81) 3-3237-0552; Fax: (+81) 3-3237-0554

E-mail: neitz-global@neitz.co.jp

URL: <https://www.neitz.co.jp/en/>

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